

Lakeland Industry & Community Association

Cold Lake Monitoring Site
Ambient Air Monitoring
Data Report
For
September 2011

Prepared By:



October 31, 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:

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Monitoring Location: Cold Lake
Data Period: September 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 – September 2011

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION COLD LAKE 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	0.05	2	VAR	VAR	VAR	VAR	0.5	30	99.9
TRS (PPB)	-	-	-	-	0.00	0	ALL	ALL	VAR	VAR	0.0	ALL	99.9
NO ₂ (PPB)	159	-	0	-	2.48	11	27	6, 7	1, 0.3	128(SE), 6(N)	5.0	23	99.9
NO (PPB)	-	-	-	-	0.72	30	29	7	0.4	84(E)	2.5	29	99.9
NO _x (PPB)	-	-	-	-	3.19	40	29	7	0.4	84(E)	7.1	23	99.9
O ₃ (PPB)	82	-	0	-	20.43	55	7	14, 15	4.4, 4.5	203(SSW), 179(S)	31.9	25	99.9
THC (PPM)	-	-	-	-	2.37	4.9	9	4	0.8	218(SW)	3.2	9	99.7
PM 2.5 (UG/M ³)	-	30	-	0	4.98	20.8	7	22	1.2	118(ESE)	9.4	24	98.2
TEMPERATURE (DEG C)	-	-	-	-	12.72	30.6	8	15	1.7	221(SW)	20.1	25	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	65.49	98	12	VAR	VAR	VAR	85.6	11	100.0
VECTOR WS (KPH)	-	-	-	-	5.25	18.1	25	14	-	129(SE)	10.2	25	100.0
VECTOR WD (DEGREES)	-	-	-	-	204(SSW)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS NA: NOT AVAILABLE

Monthly Non-Continuous Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Passive Ambient Monitoring Network – September 2011

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO ₂	#27	1.1	0.4
H ₂ S	#27	0.8	0.21
NO ₂	#28	2.7	1.1
O ₃	#32	30.1	20.8

Note: Sample result for station #23 is eliminated from the lab result and is not included in this report, as the reading is much lower than expected. The data result can be found in the passive result from Maxxam Lab (Maxxam JOB#: B194590).

Volatile Organics Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

Xontech Model 910A – September 6, 2011

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

Xontech Model 910A – September 12, 2011

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

Xontech Model 910A – September 18, 2011

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

Xontech Model 910A – September 24, 2011

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

Xontech Model 910A – September 30, 2011

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

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

PUF cartridge – September 6, 2011

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

PUF cartridge – September 12, 2011

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

PUF cartridge – September 18, 2011

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

PUF cartridge – September 24, 2011

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

PUF cartridge – September 30, 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 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 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 issue observed during the month. The inlet filter was changed before the monthly calibration was started. The hydrogen gas cylinder was replaced following a daily zero/span check on September 1st. A new zero air supply was installed after a removal calibration was performed on September 21st. The analyzer was allowed time to stabilize. An installation calibration was then performed. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

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

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.

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 September 22nd. Both the Teom filter and the FDMS filter were changed, the sample pump was rebuilt, the inline flow filters (main, bypass and water knock off) were replaced, and a leak check was performed on September 22nd. Temperature, barometric pressure and flows were calibrated on the same day. 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. Thirteen hours of data were invalidated as the data were below –3 ug/m3.

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. The temperature was calibrated using Total IMM Hg thermometer, S/N 96-3470, on September 22nd.

Trailer Temperature (DEGC)

- System make / model - R&R 61

No operational issues observed during the month. The station temperature was checked against Hg IMM thermometer, S/N 96-3470, on September. The result was good; measured 12.2 degree Celsius, DAS read 12.15 degree Celsius.

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 September 21st.

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 AQI values were within the Fair range this month, and they were all due to Ozone. The rest of AQI values were within the Good range. The highest hourly concentration of ozone was 55 ppb and an AQI value of 29 on September 7th, hour of 14 and 15. The highest hourly concentration of PM_{2.5} was 20.8 ug/m³ and an AQI value of 17 on September 7th, hour of 22.

Passive Network

All passive samples including SO₂, NO₂ and O₃, for station #23 were found on the ground. Sample result for O₃ is eliminated from the lab result and is not included in this report, as the reading is much lower than expected. The data result can be found in the passive result from Maxxam Lab (Maxxam JOB#: B194590).

Volatile Organics (VOCs)

The volatile organics were sampled from September 6th to September 30th. 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.

The flow check on the Xontech canister sampler was performed on September 22nd; target flow was 10.0 sccm, measured flow was 9.4 sccm. The flow was adjusted to 10.0 sccm. Flow was measured using Bios DC-2, S/N: 1193.

Polycyclic Aromatic Hydrocarbons (PAHs)

The PAHs scheduled to be sampled from September 1st to September 31st. 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.

The PUF Hi-Vol was calibrated on September 22nd; measured temperature was 10.9 degree Celsius, Hi-Vol read 10.1 degree Celsius. The temperature was adjusted. Measured BP was 707 mmHg, Hi-Vol read 708 mmHg. BP was adjusted. After the adjustments, an automatic flow cal was performed.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 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	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	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	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	
3	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	IZS	0	0.0	24	
4	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	2	0.1	24	
5	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	0.0	24		
6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	IZS	0	0	0	1	0.0	24		
7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	0	0	0	IZS	0	0	0	0	2	0.2	24		
8	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	0.0	24		
9	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	24		
10	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	IZS	0	0	0	0	0	0	0	0	1	0.1	24		
11	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	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	0	0	0	0	IZS	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	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24		
15	0	0	0	1	0	1	0	1	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24		
16	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		
17	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		
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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24		
21	0	0	0	0	0	IZS	0	0	0	0	0	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23		
22	0	0	0	0	IZS	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24		
23	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		
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	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	IZS	0	0.0	24	
27	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	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	24		
29	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	
30	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	IZS	2	1	0	0	2	0.5	24		
HOURLY MAX	0	0	0	1	0	1	0	1	0	2	1	1	1	1	2	1	1	1	1	1	0	2	1	0	0					
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	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

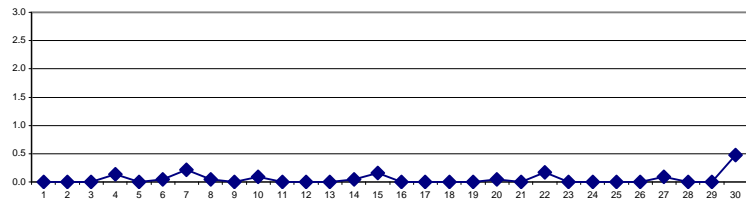
OBJECTIVE LIMIT:

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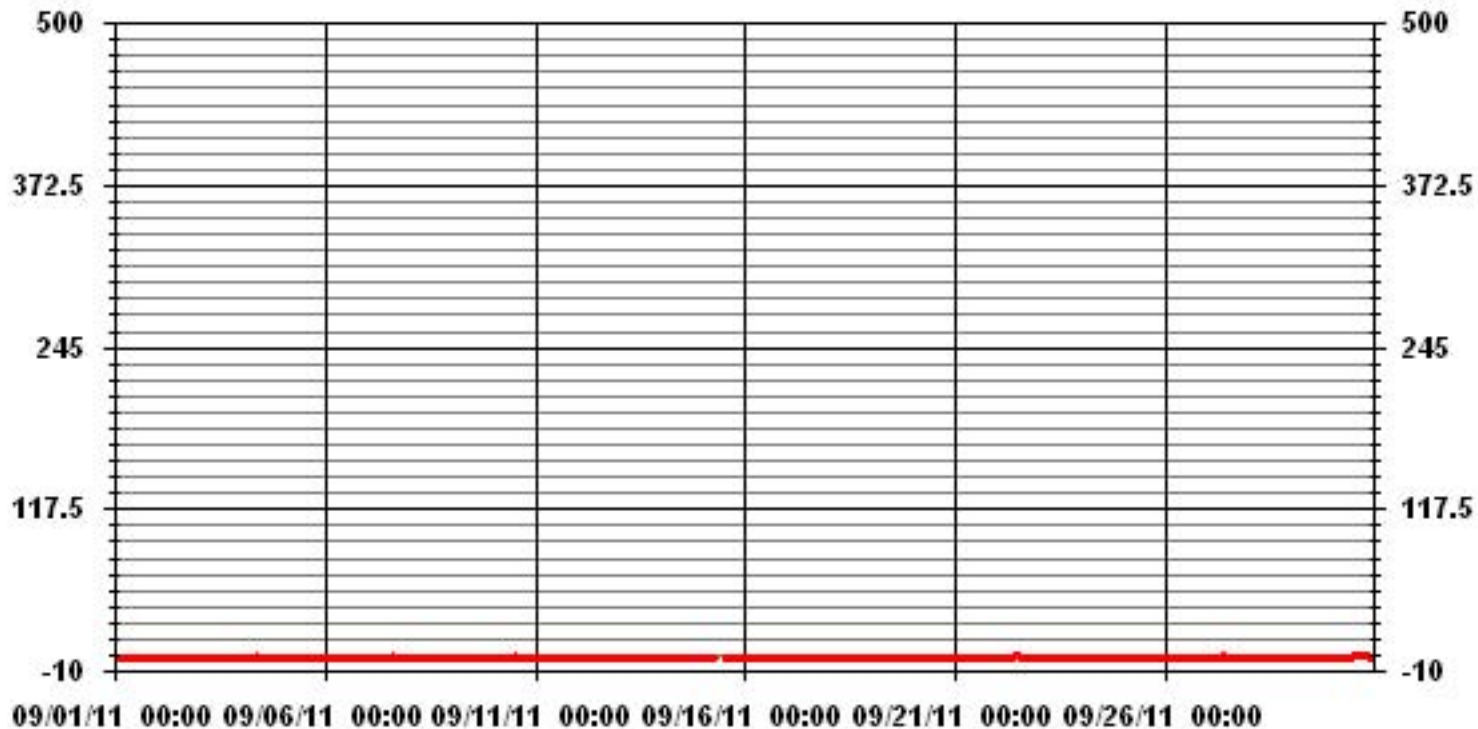
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	31					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.5	PPB			ON DAY(S)	30
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.24		MONTHLY AVERAGE:	0.05	PPB	

24 HOUR AVERAGES FOR SEPTEMBER 2011



01 Hour Averages



— LICA SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 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	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	
2		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	
3		IZS	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0.2	24	
4		0	0	0	0	0	0	0	0	0	4	3	1	0	0	0	0	1	1	0	0	0	0	0	IZS	0	4	0.4	24	
5		0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	0	0	0	0	IZS	0	0	1	0.2	24	
6		0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	IZS	0	0	0	1	0.2	24	
7		0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	1	1	0	0	IZS	0	0	0	0	2	0.3	24	
8		0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	0.1	24	
9		0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	IZS	0	0	0	0	0	0	0	1	0.3	24	
10		0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	IZS	0	0	0	0	0	0	0	0	1	0.2	24	
11		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	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	24	
13		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	
14		0	0	0	0	0	0	0	0	1	0	0	2	IZS	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24	
15		0	1	1	1	1	1	1	1	C	C	C	C	C	0	1	0	0	0	1	0	0	0	0	0	0	1	0.5	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	24	
17		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	
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	0	IZS	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	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
21		0	0	0	0	0	IZS	0	0	0	0	1	M	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.1	23	
22		0	0	0	0	IZS	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0.3	24	
23		0	0	0	0	IZS	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	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	1	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	1	1	1	1	1	0.1	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	24	
27		0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	IZS	0	1	0.2	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	IZS	0	0	0.0	24	
29		0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	IZS	0	0	0.1	24	
30		0	0	0	0	0	0	0	0	0	1	1	1	2	1	2	2	1	1	2	IZS	2	1	1	0	2	0.8	24		
HOURLY MAX		0	1	1	1	1	1	1	1	1	4	3	2	2	1	2	2	1	1	2	1	2	1	1	1					
HOURLY AVG		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0					

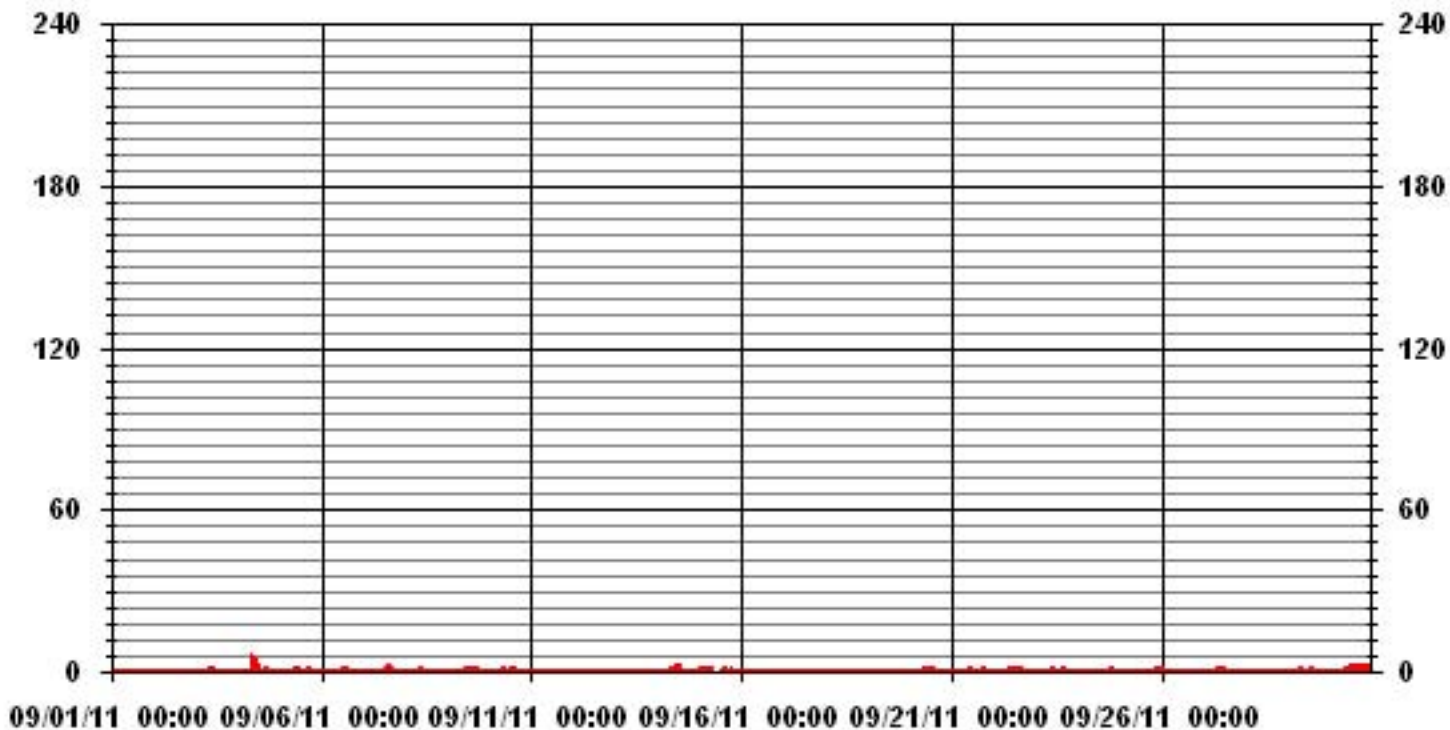
STATUS FLAG CODES

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:	88
MAXIMUM INSTANTANEOUS VALUE:	4 PPB @ HOUR(S) 9 ON DAY(S) 4
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	0.42
OPERATIONAL TIME:	719 HRS

01 Hour Averages



LICA
 SO2_ / WDR Joint Frequency Distribution (Percent)

September 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	1.61	2.19	1.90	1.31	3.66	3.51	21.22	4.68	6.14	6.58	14.49	14.64	9.07	5.12	1.75	2.04	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	1.61	2.19	1.90	1.31	3.66	3.51	21.22	4.68	6.14	6.58	14.49	14.64	9.07	5.12	1.75	2.04	

Calm : .00 %

Total # Operational Hours : 683

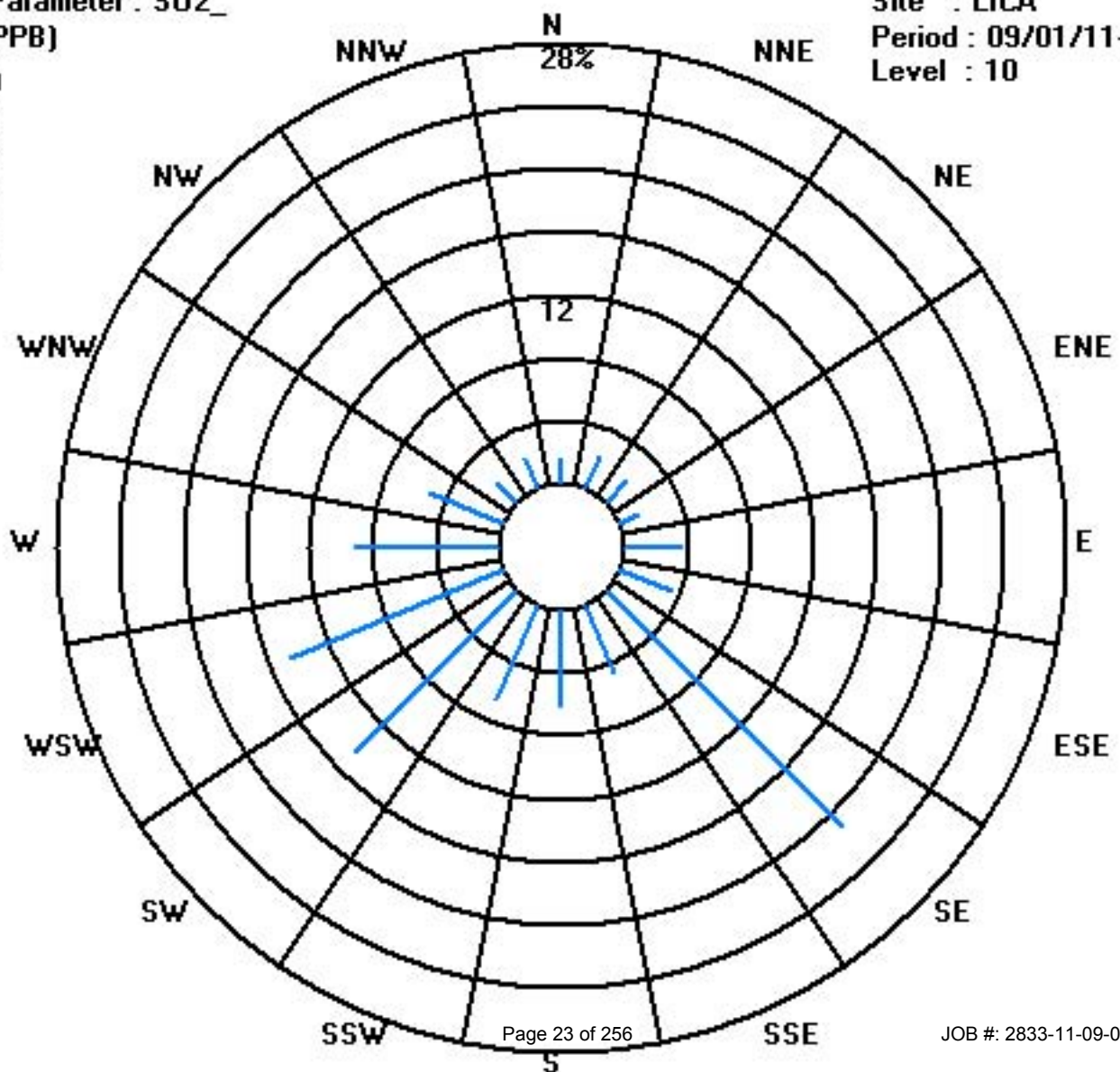
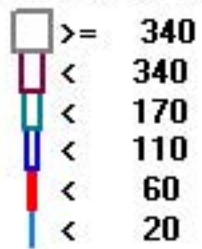
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	11	15	13	9	25	24	145	32	42	45	99	100	62	35	12	14	683
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	11	15	13	9	25	24	145	32	42	45	99	100	62	35	12	14	

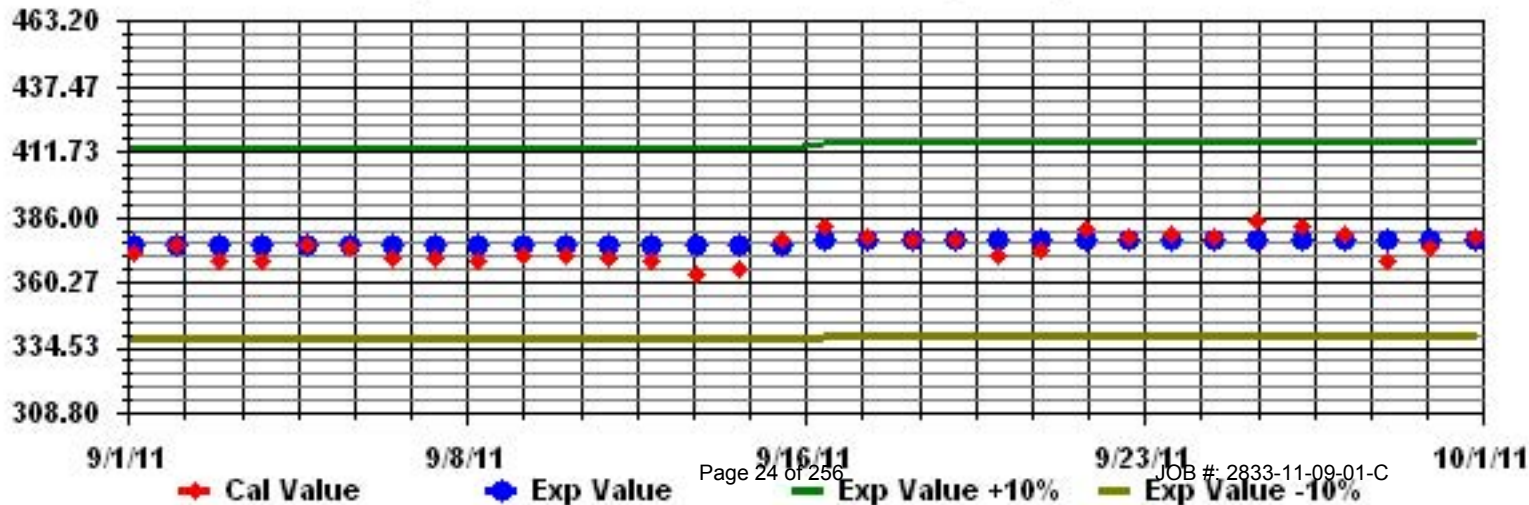
Calm : .00 %

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

SEPTEMBER 2011

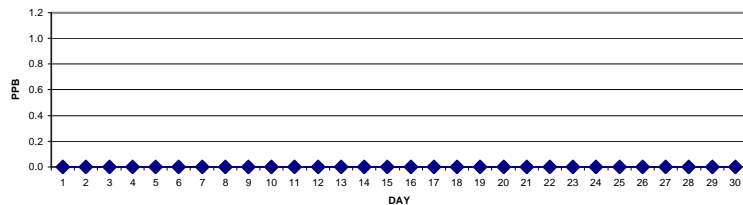
TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

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 MAX.	24-HOUR AVG.	RDGS.																						
		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	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	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																						
3		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																						
4		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																							
5		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																							
6		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																							
7		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																							
8		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																							
9		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																							
10		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																							
11		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																							
12		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																							
13		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																							
14		0	0	0	0	0	0	0	0	0	0	0	0	IZS	C	C	C	C	C	0	0	0	0	0	0	0	0.0	24																							
15		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	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	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	IZS	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	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	24																							
21		0	0	0	0	0	IZS	0	0	0	0	0	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23																							
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	24																							
23		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																							
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	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	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	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	IZS	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	IZS	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	IZS	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	IZS	0	0	0	0	0.0	24																							
HOURLY MAX		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																								
HOURLY AVG		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																								

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

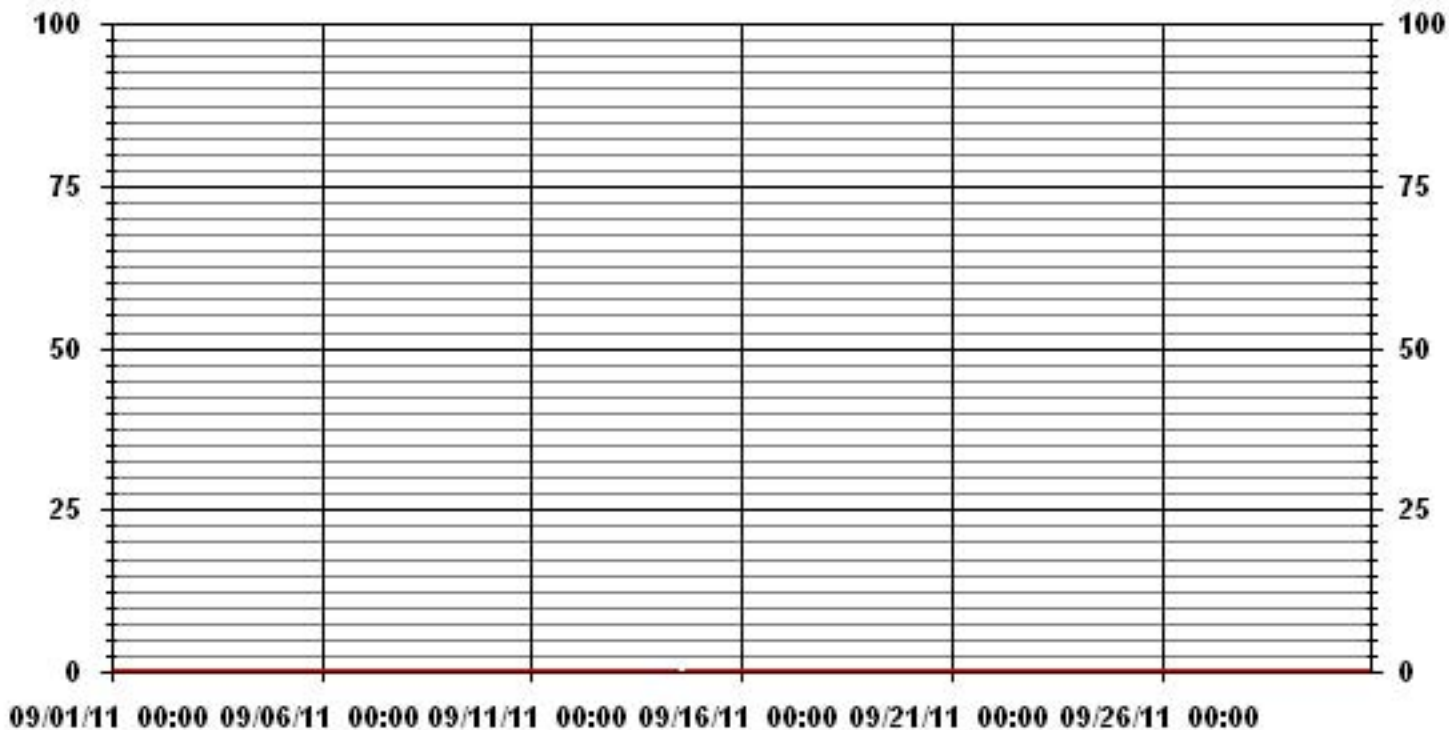
24 HOUR AVERAGES FOR SEPTEMBER 2011



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	0
MAXIMUM 1-HR AVERAGE:	0 PPB @ HOUR(S) ALL ON DAY(S) ALL
MAXIMUM 24-HR AVERAGE:	0.0 PPB ON DAY(S) ALL
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS OPERATIONAL TIME: 719 HRS
MONTHLY CALIBRATION TIME:	5 HRS AMD OPERATION UPTIME: 99.9 %
STANDARD DEVIATION	0.00 MONTHLY AVERAGE: 0.00 PPB

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 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	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
2	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
3	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
4	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
5	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	
6	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	
7	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	
8	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	1	1	0.1	24	
9	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0.0	24
11	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0.1	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	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0	1	0.0	24
14	0	0	0	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	24
15	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	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	IZS	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	IZS	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	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	0	IZS	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	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23
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	24
23	0	0	0	IZS	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	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	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	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	IZS	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	IZS	0	0	0	0.0	24
29	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	1	0.1	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	0	0	1	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1			
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	0.1	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	0.0	0.0	0.0	0.0	0.0	0.0		

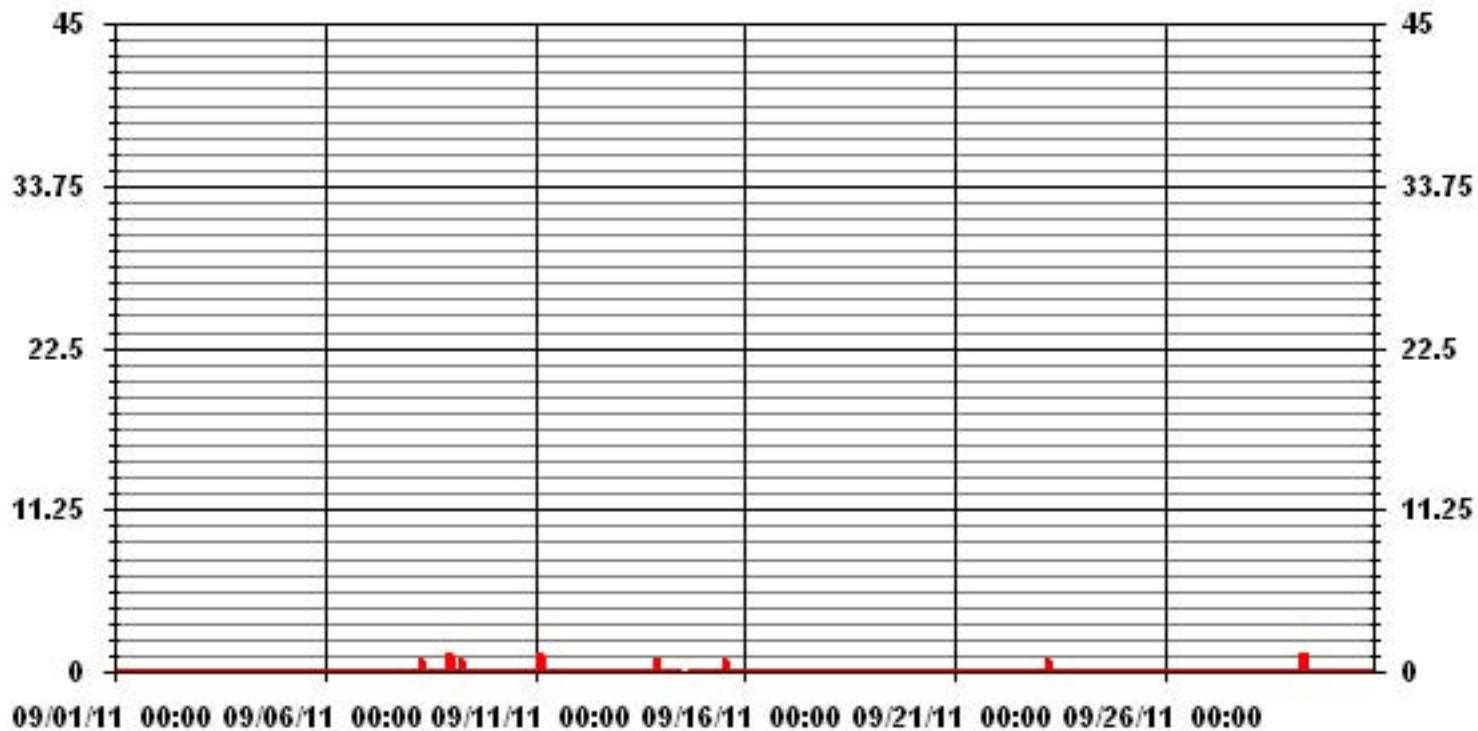
STATUS FLAG CODES

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:	12					
MAXIMUM INSTANTANEOUS VALUE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
				VAR - VARIOUS		
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.13					

01 Hour Averages



LICA
 TRS_ / WD Joint Frequency Distribution (Percent)

September 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	1.61	2.19	1.90	1.31	3.66	3.51	21.11	4.69	6.15	6.59	14.51	14.66	9.09	5.13	1.75	2.05	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	1.61	2.19	1.90	1.31	3.66	3.51	21.11	4.69	6.15	6.59	14.51	14.66	9.09	5.13	1.75	2.05	

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	11	15	13	9	25	24	144	32	42	45	99	100	62	35	12	14	682
< 10																	
< 50																	
>= 50																	
Totals	11	15	13	9	25	24	144	32	42	45	99	100	62	35	12	14	

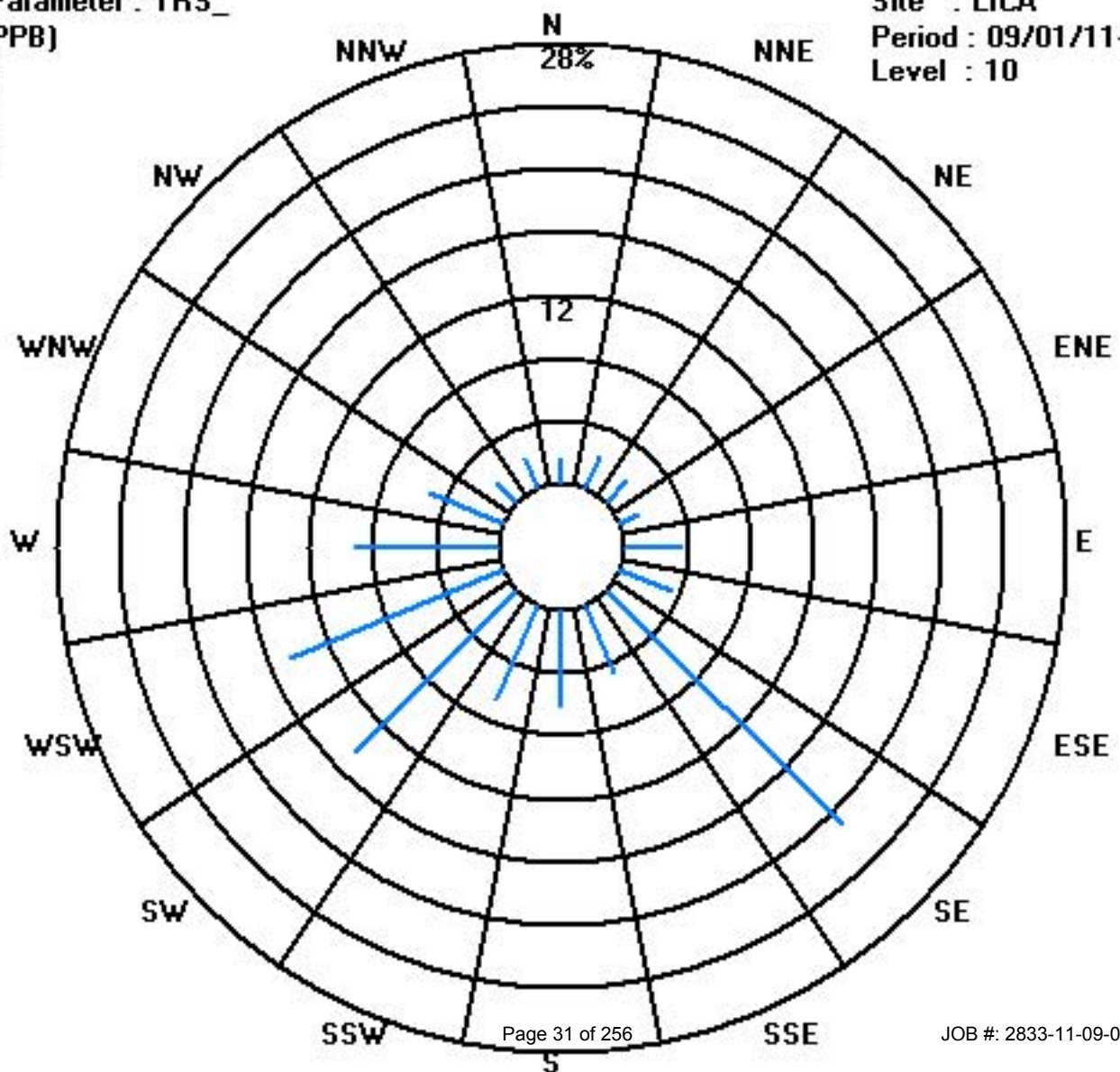
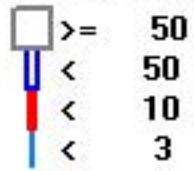
Calm : .00 %

Total # Operational Hours : 682

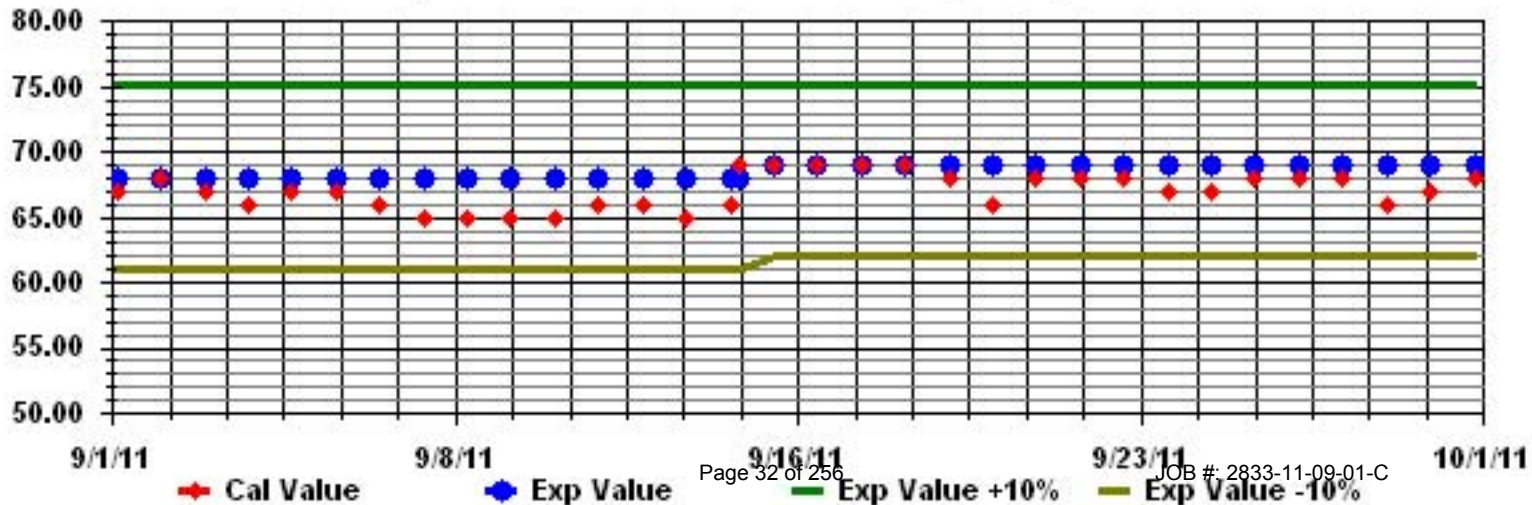
Class Limits (PPB)

Period : 09/01/11-09/30/11

Level : 10



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

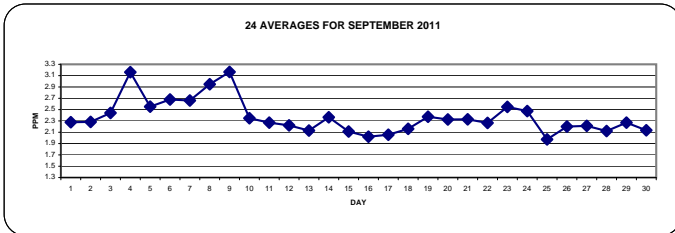
SEPTEMBER 2011

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	0:00	DAILY 24-HOUR	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		2.7	2.7	IZS	2.9	3.2	3.5	3.2	2.8	2.5	C	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.1	2	2	2.1	2.1	3.5	2.3	24		
2		2.3	IZS	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.5	2.1	2.1	2.1	2	2	2	2	2	2	2.1	2.2	2.4	2.4	2.5	2.6	2.3	24	
3		IZS	2.6	2.7	2.7	2.8	2.9	2.9	3.1	2.8	2.6	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.4	2.5	IZS	3.1	2.4	24	
4		3.6	3.6	3.6	3.6	3.5	3.5	3.4	3.3	3.1	3.1	3.1	3	2.9	2.9	2.9	2.9	2.9	2.9	3.1	3	3.1	3.2	IZS	2.5	3.6	3.2	24	
5		2.6	2.8	2.9	3.1	3.1	3.3	3.3	3.1	2.8	2.4	2.3	2.1	2	2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.6	2.8	3.3	24	
6		3	3	3.2	3.2	3.6	3.6	3.8	3.7	3.3	2.7	2.2	2.1	2.1	2	2	2	2	2	2.1	2.3	IZS	2.8	2.5	2.4	3.8	2.7	24	
7		2.4	2.5	2.7	2.8	3	3.1	3.2	3.1	3.1	2.9	2.7	2.4	2.2	2.2	2.3	2.4	2.3	2.3	2.4	IZS	2.6	2.8	2.9	2.9	3.2	2.7	24	
8		3	3.2	3.2	3.3	3.8	4	4.3	4.6	4.2	3.6	3.2	2.4	2.2	2.1	2	2	2	2	IZS	2.3	2.3	2.5	2.5	3.1	4.6	2.9	24	
9		3.9	3.7	3.9	4.5	4.9	4.7	4.8	4.3	3.7	3.3	2.7	2.4	2.2	2.1	2	2.1	2.1	IZS	2.2	2.5	2.6	2.7	2.7	2.8	4.9	3.2	24	
10		2.8	2.9	3	2.7	2.5	2.6	2.6	2.4	2.4	2.1	2	1.9	1.9	1.9	1.9	IZS	2	2	2.2	2.4	2.6	2.6	2.7	3.0	2.3	24		
11		2.8	2.9	3	3.1	2.9	2.8	2.1	2.1	2.1	2	2	2	2	2	IZS	2	2	2	2.1	2.1	2	2	2.1	3.1	2.3	24		
12		2.3	2.5	2.5	2.5	2.7	2.7	2.5	2.3	2.2	2.2	2.2	2.2	2.1	2	IZS	2	2	2	2	2	2	2.1	2	2.1	2	2.7	2.2	24
13		2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2	2	2	2	2	2	2.1	2.2	2.3	2.4	2.6	2.6	2.1	24
14		2.9	3.2	3	2.9	2.6	2.6	2.6	2.6	2.6	2.4	2.2	2.2	IZS	2.1	2.1	2.1	2	2	2.1	2.1	2	2	2	2.1	3.2	2.4	24	
15		2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	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
16		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	IZS	2.1	2	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	2	2	2.3	2.0	24	
17		2	2	2	2	2	2.1	2	2	2	IZS	2	2	2	2	2	2	2	2	2	2.1	2.3	2.3	2.2	2.3	2.3	2.1	24	
18		2.2	2.2	2.3	2.3	2.2	2.1	2.1	2.1	IZS	2.1	2.1	2	2	2	2	2	2	2	2	2.1	2.2	2.3	2.5	2.4	2.5	2.5	2.2	24
19		2.6	2.8	3.2	3.3	3.2	3.1	2.9	IZS	2.3	2.2	2.2	2.3	2.1	2	2	2	2	2	2	2	2	2.1	2.1	2.1	3.3	2.4	24	
20		2.1	2.5	2.9	3	2.8	2.9	IZS	2.8	2.8	2.5	2.2	2	2	2	2	2	2	2	2	2.1	2.2	2.1	2.1	2.2	3.0	2.3	24	
21		2.3	2.4	2.3	2.4	2.4	IZS	2.5	2.5	C	C	C	M	M	C	C	C	C	2.1	2.2	2.2	2.3	2.3	2.3	2.4	2.5	2.3	22	
22		2.4	2.3	2.3	2.4	IZS	2.3	2.3	2.4	2.6	2.5	2.4	2.2	2	2	2	2	2	2	2.1	2.1	2.3	2.4	2.5	2.6	2.6	2.3	24	
23		2.7	2.9	3	IZS	2.9	2.7	2.1	2.1	2.1	2.2	2.3	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.6	2.7	2.8	2.9	2.9	3.0	2.5	24	
24		3	3	IZS	3	3.1	3.2	3.3	3.3	3	2.4	2	2	2	2	2	2	2	2	2.1	2.2	2.3	2.5	2.3	2.2	3.3	2.5	24	
25		2.3	IZS	2.1	2	2	2	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2.3	2.0	24	
26		IZS	2.2	2.3	2.4	2.4	2.4	2.3	2.3	2.2	2.1	2	2	2	2	2	2	2	2	2.1	2.4	2.6	2.2	2.2	IZS	2.6	2.2	24	
27		2.2	2.2	2.3	2.5	2.6	2.6	2.6	2.7	2.4	2.1	2.1	2.1	2.2	2	2	2	2	2	2	2.1	2.2	2	2	IZS	2	2.7	2.2	24
28		2.3	2.3	2.4	2.6	2.7	2.5	2.3	2.2	2.1	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	IZS	2	2.1	2.7	2.1	24	
29		2.1	2.2	2.4	2.5	2.7	2.8	2.9	3	2.6	2.3	2	2	2	2	2.2	2.1	2	2.1	2.1	2	IZS	2.1	2.1	2	3.0	2.3	24	
30		2	2.1	2.1	2.1	2.1	2.1	2	2.1	2.1	2.2	2.2	2.2	2.1	2.2	2.2	2.3	2.2	2.1	2.3	IZS	2.1	2.1	2.1	2.1	2.3	2.1	24	
HOURLY MAX		3.9	3.7	3.9	4.5	4.9	4.7	4.8	4.6	4.2	3.6	3.2	3.0	2.9	2.9	2.9	2.9	2.9	2.9	3.1	3.0	3.1	3.2	2.9	3.1				
HOURLY AVG		2.5	2.6	2.6	2.7	2.8	2.8	2.7	2.7	2.6	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.4				

STATUS FLAG CODES

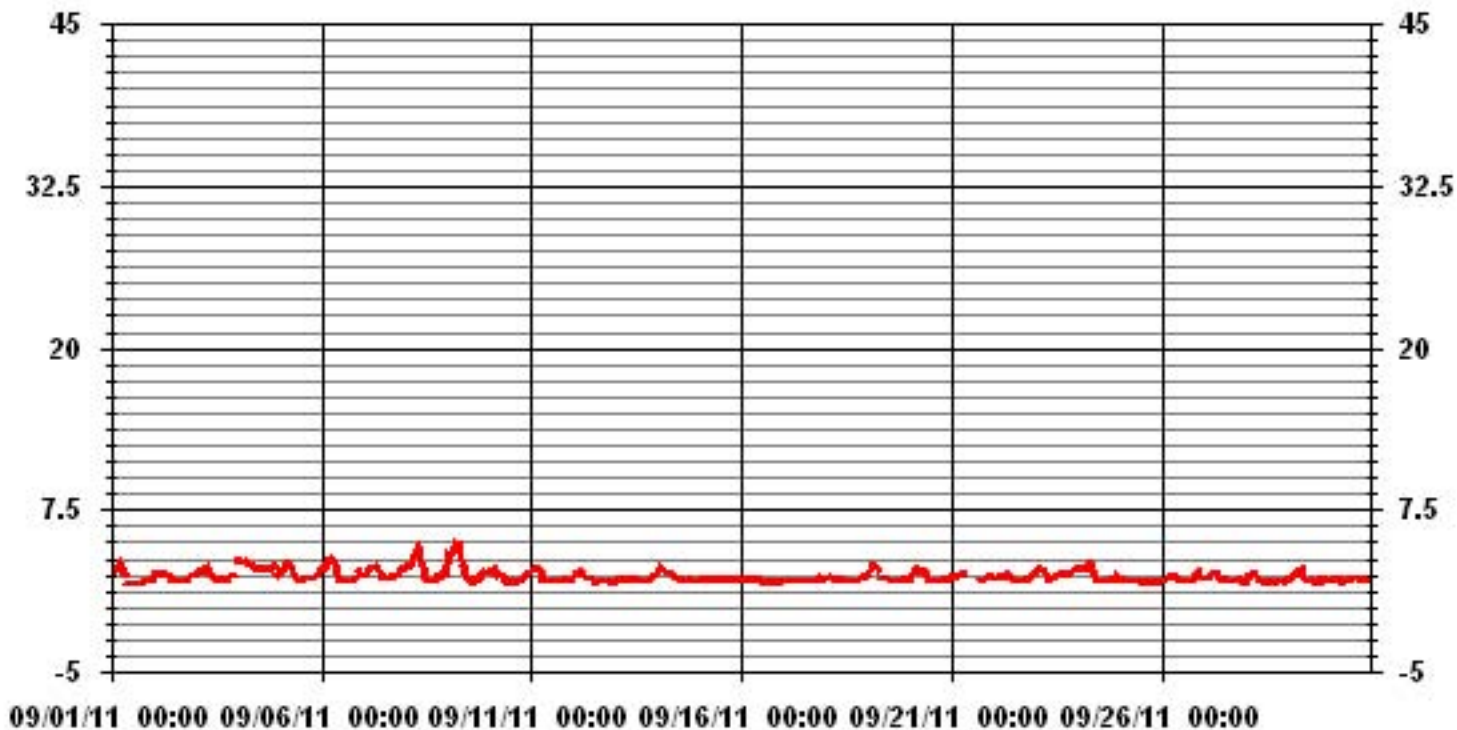
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	678
MAXIMUM 1-HR AVERAGE:	4.9 PPM @ HOUR(S) 4 ON DAY(S) 9
MAXIMUM 24-HR AVERAGE:	3.2 PPM ON DAY(S) 9
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	8 HRS
STANDARD DEVIATION:	0.48
OPERATIONAL TIME:	718 HRS
AMD OPERATION UPTIME:	99.7 %
MONTHLY AVERAGE:	2.37 PPM

01 Hour Averages



— LICA — THC — PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 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	MAX.	AVG.	RDGS.	
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	0:00				
DAY																												
1	2.8	2.8	IZS	3.1	3.4	3.8	3.5	3	2.7	C	C	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.2	2.1	2	2.1	2.6	3.8	2.4	24	
2	2.6	IZS	2.7	2.6	2.6	3	2.6	2.8	2.7	2.6	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2	2.1	2.3	2.3	2.5	2.5	2.5	3	2.4	24	
3	IZS	2.7	2.8	2.8	3	3.1	3.2	3.3	2.9	2.8	2.4	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.5	2.5	IZS	3.3	2.6	24	
4	3.7	3.7	3.6	3.6	3.6	3.7	3.5	3.3	3.2	3.1	3.1	3.1	3	2.9	2.9	2.9	3	3	3.3	3.7	3.2	3.2	IZS	2.6	3.7	3.3	24	
5	2.9	3	3.2	3.5	3.3	3.3	3.4	3.3	3	2.6	2.3	2.2	2.1	2.1	2.6	2.3	2.2	2.2	2.3	2.4	2.5	IZS	3.1	3.3	3.5	2.7	24	
6	3.2	3.3	3.3	3.5	3.9	3.7	4.3	3.9	3.8	3	2.4	2.2	2.1	2.1	2.1	2	2	2.1	2.2	2.4	IZS	3.3	2.7	2.6	4.3	2.9	24	
7	2.5	2.7	2.8	3.1	3.4	3.5	3.5	3.3	3.5	3	3.1	2.6	2.3	2.3	2.4	2.4	2.4	2.4	2.4	IZS	3.3	3.2	3.4	3.4	3.5	2.9	24	
8	3.5	3.3	3.3	3.6	4.2	4.7	4.9	4.8	4.5	3.9	3.4	2.8	2.3	2.1	2.1	2.1	2.1	2.1	IZS	2.4	2.5	2.8	3.2	4.5	4.9	3.3	24	
9	4.8	4.3	4.6	5.3	5.4	5.2	5.6	4.9	4	3.5	3.1	2.5	2.4	2.2	2.1	2.2	IZS	2.2	2.9	3.1	3.1	3.1	3	5.6	3.5	24		
10	3.2	3.2	3.2	3.1	2.6	2.7	2.7	2.6	2.4	2.3	2.1	2	2	2	2	2	IZS	2.1	2.1	2.4	2.6	2.7	2.7	2.9	3.2	2.5	24	
11	3	3	3	3.2	3.1	3.1	2.4	2.1	2.1	2.1	2.1	2.1	2	2	2	IZS	2	2	2.3	2.2	2.3	2.1	2.1	2.4	3.2	2.4	24	
12	2.4	2.6	2.6	2.7	2.8	2.8	2.6	2.5	2.4	2.2	2.3	2.3	2.2	2.1	IZS	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.3	24
13	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.5	2.1	IZS	2.1	2	2.1	2	2.1	2.2	2.2	2.4	2.5	2.8	2.8	2.2	24	
14	3.2	3.4	3.1	3	2.8	2.7	2.8	3.3	2.7	2.5	2.4	2.2	IZS	2.7	2.3	2.1	2.1	2.1	2.2	2.2	2.3	2.1	2.1	2.2	3.4	2.5	24	
15	2.2	2.2	2.2	2.2	2.2	2.2	3	2.8	2.2	2.2	2.2	IZS	2.2	2.1	2.3	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	3	2.2	24	
16	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.3	2.4	IZS	2.2	2	2	2	2	2	2	2	2	2	2	2	2	2.4	2.1	24	
17	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	IZS	2	2	2	2	2	2	2	2	2	2.1	2.2	2.5	2.3	2.3	2.4	2.5	2.1	24
18	2.4	2.3	2.5	2.5	2.2	2.2	2.2	2.3	IZS	2.2	2.2	2.1	2.1	2.1	2.1	2	2	2.1	2.2	2.4	2.4	2.9	2.5	2.6	2.9	2.3	24	
19	2.8	3.1	3.4	3.4	3.3	3.3	3.2	IZS	2.4	2.3	2.3	2.4	2.3	2.1	2.1	2.1	2	2	2	2.1	2.1	2.1	2.1	2.1	3.4	2.5	24	
20	2.1	2.7	3.2	3.1	2.9	2.9	IZS	2.9	3	2.7	2.4	2.1	2.1	2	2	2.1	2.1	2.1	2.2	2.3	2.2	2.2	2.3	3.2	2.4	24		
21	2.3	2.4	2.4	2.5	2.5	IZS	2.6	2.7	C	C	C	M	M	C	C	C	C	C	C	2.3	2.3	2.4	2.4	2.4	2.7	2.4	22	
22	2.4	2.4	2.4	2.9	IZS	2.4	2.4	2.6	2.8	2.7	2.5	2.3	2.1	2	2	2	2.1	2.1	2.2	2.4	2.4	2.4	2.7	2.7	2.9	2.4	24	
23	2.8	3.3	3.1	IZS	3.1	3.4	2.4	2.2	2.2	2.3	2.6	2.7	2.5	2.5	2.5	2.7	2.7	2.6	2.6	2.7	2.8	3	3	3.1	3.4	2.7	24	
24	3.1	3.1	IZS	3.2	3.3	3.4	3.4	3.6	3.2	2.8	2	2.1	2	2	2	2.1	2.1	2	2.4	2.4	2.4	2.6	2.5	2.4	3.6	2.6	24	
25	2.5	IZS	2.3	2.1	2.1	2	2	2	2	2.2	2	2.3	2	2	1.9	2	2	2.2	1.9	1.9	1.9	2	2.1	2.1	2.5	2.1	24	
26	IZS	2.3	2.4	2.6	2.5	2.4	2.4	2.3	2.3	2.3	2.2	2	2	2.1	2.1	2.1	2.1	2.1	2.2	2.9	2.9	2.3	2.3	IZS	2.9	2.3	24	
27	2.2	2.3	2.6	2.6	2.8	3.5	2.8	3.6	2.8	2.2	2.2	2.2	2.3	2.1	2	2	2.1	2.1	2.3	2.3	2.1	2.1	IZS	2.6	3.6	2.4	24	
28	2.4	2.4	2.5	2.7	2.8	2.7	2.5	2.6	2.1	2.2	2.2	2	1.9	2	2	2	2	2	2	2	2	2.1	IZS	2.1	2.2	2.8	2.2	24
29	2.2	2.3	2.6	2.6	2.8	3.1	3.2	3.4	2.9	2.6	2.1	2.1	2.1	2.1	2.3	2.2	2.1	2.4	2.2	2.1	IZS	2.1	2.1	2.1	3.4	2.4	24	
30	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.3	2.2	2.4	IZS	2.1	2.1	2.3	2.4	2.4	2.2	24	
HOURLY MAX	5	4	5	5	5	5	6	5	5	4	3	3	3	3	3	3	3	3	3	3	4	3	3	3	5			
HOURLY AVG	2.7	2.8	2.8	2.9	2.9	3.0	3.0	2.9	2.7	2.6	2.4	2.3	2.2	2.1	2.2	2.1	2.1	2.1	2.2	2.4	2.4	2.5	2.5	2.6				

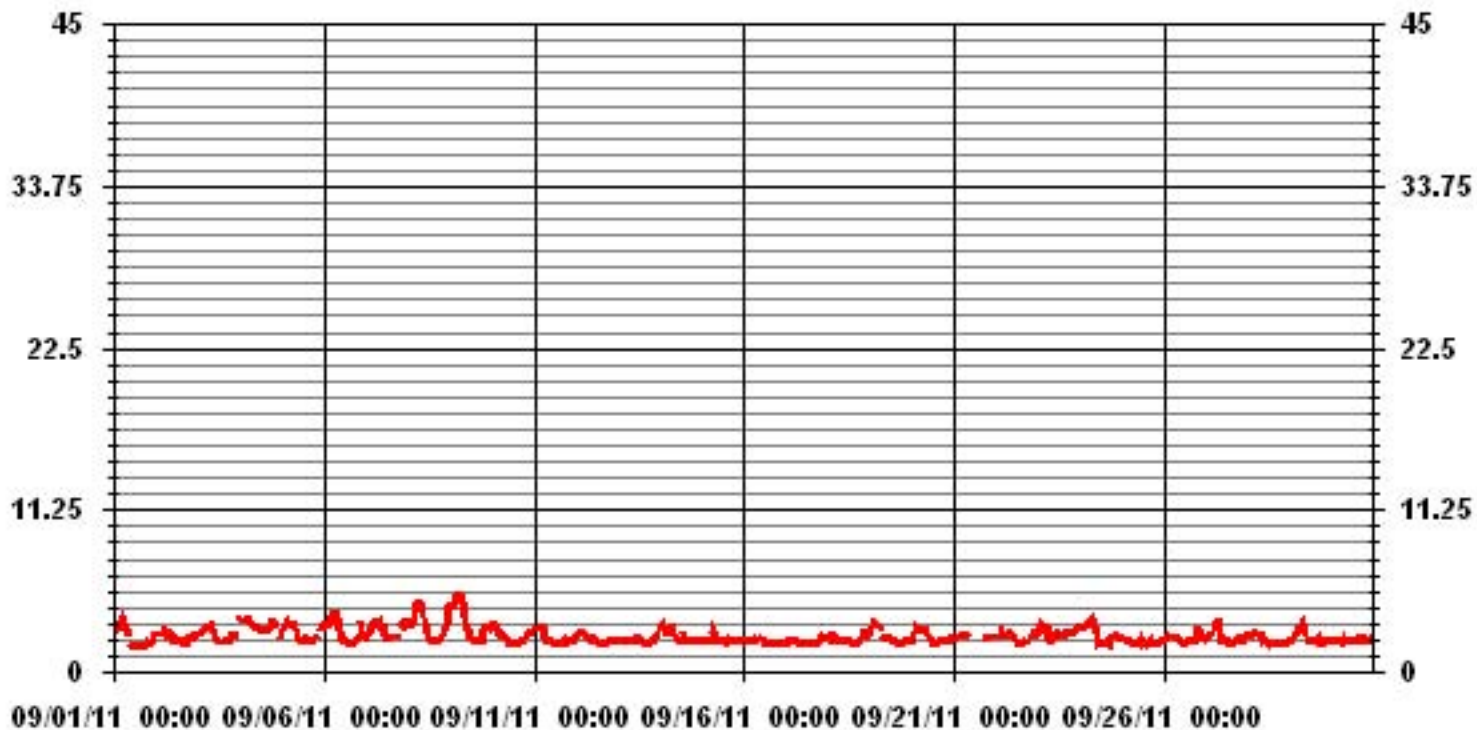
STATUS FLAG CODES

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
BB	- BELOW BACKGROUND OF 1.5 PPM		

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	676					
MAXIMUM INSTANTANEOUS VALUE:	5.6	PPM	@ HOUR(S)	6	ON DAY(S)	9
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	718 HRS		
MONTHLY CALIBRATION TIME:	10 HRS					
STANDARD DEVIATION:	0.58					

01 Hour Averages



— LICA THCMAX PPM

LICA
 THC / WD Joint Frequency Distribution (Percent)

September 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	1.62	2.06	1.91	1.03	3.09	3.24	20.35	2.94	4.42	4.86	12.83	12.53	8.40	5.01	1.62	2.06	88.05
< 10.0	.00	.14	.00	.29	.58	.29	1.03	1.47	1.47	1.76	1.62	2.21	.73	.14	.14	.00	11.94
< 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	1.62	2.21	1.91	1.32	3.68	3.53	21.38	4.42	5.89	6.63	14.45	14.74	9.14	5.16	1.76	2.06	

Calm : .00 %

Total # Operational Hours : 678

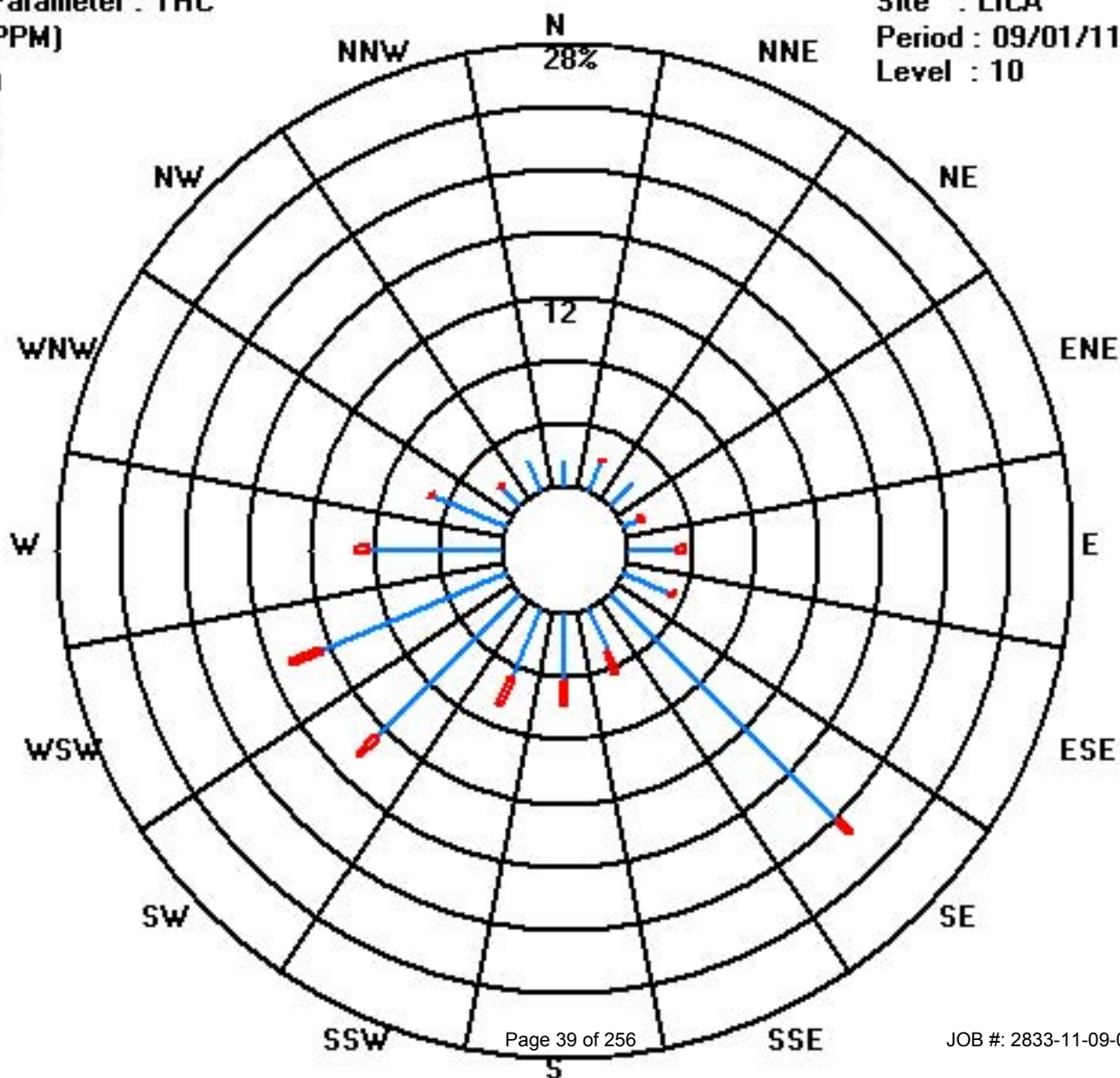
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	11	14	13	7	21	22	138	20	30	33	87	85	57	34	11	14	597
< 10.0		1		2	4	2	7	10	10	12	11	15	5	1	1		81
< 50.0																	
>= 50.0																	
Totals	11	15	13	9	25	24	145	30	40	45	98	100	62	35	12	14	

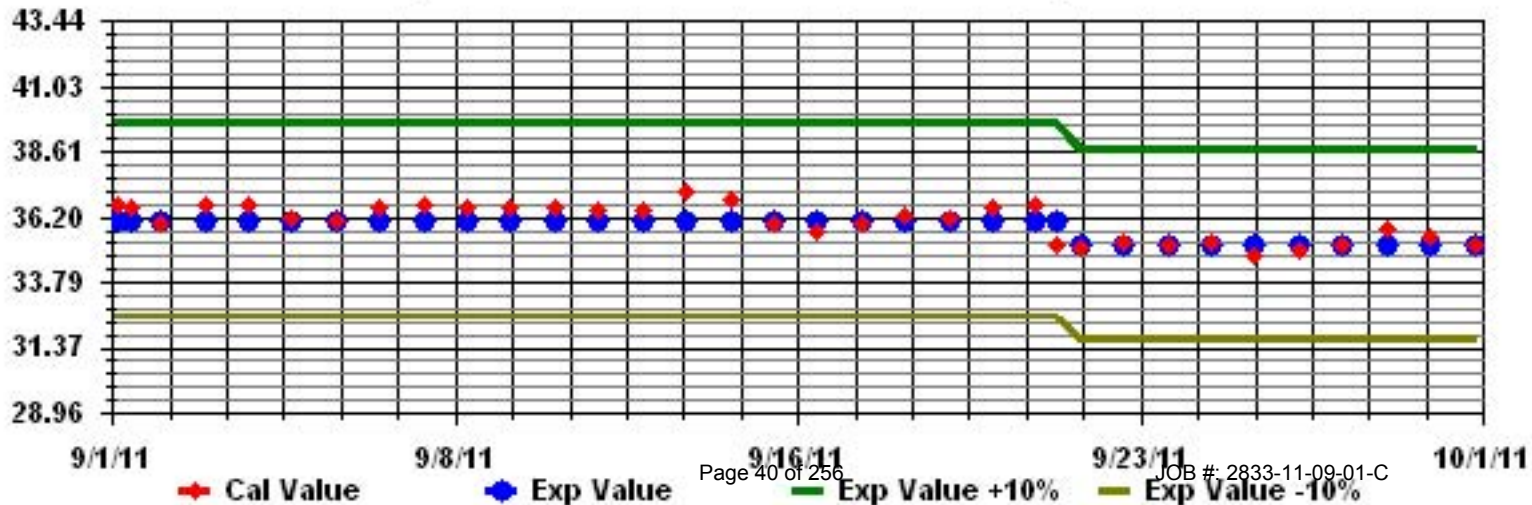
Calm : .00 %

Total # Operational Hours : 678

Class Limits (PPM)



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



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 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	4	0	0	4	0	5	0	4.4	2.9	9	7.5	7.5	1.4	5.5	0	N	14.5	5	9	13.5	7.9	0	0	5.5	14.5	4.6	23
2	9	9	2.9	0	2.9	9.4	9.4	0.4	0	0	0	5	5.5	9.5	0.4	2.9	1.4	4	N	6	0	0	2	2.5	9.5	3.6	23
3	N	1.4	1.4	6	2.5	2.9	1.4	4	1.4	1.9	1.9	7.9	6.9	9	1.9	5.5	4	0.4	3.4	9	0	3.4	1.4	3.4	9.0	3.5	23
4	4.4	5	1.9	0	6.4	3.4	0.4	0.4	1.9	1.4	4.4	3.4	7.9	7.9	6.9	4	9.9	13	5	0	9.9	4.4	5.5	0.4	13.0	4.5	24
5	2	6.4	2.5	1	4.4	5.5	6	1.4	4	1.4	1.9	5	0	4	2	0	9.4	5.5	6	8.5	9.4	9.4	6.9	10	10.0	4.7	24
6	1.9	4.4	6.4	1	2.6	6.4	3	6.4	4.7	3.9	4.4	9.9	5	6.9	11.8	12	7.8	1.4	0	0	6.9	13.4	12	0.5	13.4	5.5	24
7	4.4	2.5	4.5	3.4	6.6	4.2	6.8	14.1	4.5	1.3	10.1	6.3	5.5	9.7	11.7	9.5	0.9	7	16.3	8.8	10.5	5.2	20.8	14.7	20.8	7.9	24
8	16	13.6	6.4	7.6	5	8.2	9.3	14.1	10.5	13	9.8	11.1	7.8	1.9	4.3	2.5	7.5	2.6	0	18.7	15.2	9.8	8.8	15.2	18.7	9.1	24
9	11.3	7.2	3.4	6.4	5.2	6.4	6.4	16.1	4.2	6.5	12	8	11.8	9.7	7.4	3.2	4.4	4.2	7	11.2	14.4	10.5	13.5	9.5	16.1	8.3	24
10	11.1	12.7	9.3	5.5	12	12.7	8.7	6.6	5.2	1.4	4	5.1	0.1	7.6	7.3	3.4	5.6	6.9	0.4	5	9.4	3.2	4.3	7.7	12.7	6.5	24
11	0	12.3	4	6.9	7.3	0	3.2	0.2	0	8	0	1.4	2.6	4	5.3	7.5	9	0	0	4.5	0	5.6	5.6	1.3	12.3	3.7	24
12	1.7	8.1	2.8	3.8	1	0.6	4.9	4.4	0.4	5.5	1.3	1.5	1.4	4.4	4.9	6.6	0	7.4	4.4	2	7.3	1	0	1.9	8.1	3.2	24
13	1	1.4	1.4	1.9	1	0	0	3.4	0	0	0	1.9	0	0	0.4	0	1	1.4	1	2.5	3.4	0	0.4	3.4	3.4	1.1	24
14	4.4	1	0	4.4	3.4	10.5	0.4	0	2.5	1.4	1.4	3.4	6.9	1	4.4	5.5	5	2.9	3.4	5.5	4.4	0	0	1	10.5	3.0	24
15	5.5	6	6.4	1.4	6.9	2.5	5	0.4	6	6.9	6.9	2.9	0.4	1.9	0	0.4	4.4	6	11.5	8.4	10.9	10.5	9.9	10.5	11.5	5.5	24
16	11.5	2.9	0	13.5	7.5	7.5	8.4	6.9	7.5	9.9	6.4	12	1.4	4	2	0	1	0	6.9	12.4	11.5	2.5	N	0	13.5	5.9	23
17	13.5	11.5	4.4	0	N	N	N	1	2.5	0	N	0	N	1.9	1.4	5	6	6.4	8.4	2.5	0	N	1.4	3.4	13.5	3.9	18
18	5	1.4	4	1.4	0	2.9	4.4	5	6	0	4.4	0	0	0	2.5	6	0	0	7.9	3.4	0.4	0	0	6	7.9	2.5	24
19	2.9	1	5	2.5	2.5	8.4	4	5.9	0	2	0.4	4.4	1.9	1	4.4	0.4	4	5.9	1.4	4.4	0.4	N	4.4	0	8.4	2.9	23
20	5	4	2.5	5	5	2.9	7.5	1	5.5	2.9	1	6	2.5	9	1.9	6.4	9.4	1	6.4	4.4	6.9	0.4	4	5.5	9.4	4.4	24
21	6	2.5	8.4	6.9	0	6.9	4	1.4	4.4	1.4	7.9	5	7.9	0.4	7.9	4.4	3.4	2.5	6.4	6	4	6.9	6.9	2.9	8.4	4.8	24
22	2.9	6.9	5	5	9.9	N	C	C	C	C	C	5.5	6.5	6.9	4	5	0	7.5	8.4	5.5	9	5.5	6.5	6	9.9	5.9	23
23	6	4.4	8.5	1	3.4	1.9	7.9	5.5	5.5	6.4	9	9.9	12.5	13.5	13.5	15.5	16	13.9	13	10.9	12	9.5	9.4	10.5	16.0	9.2	24
24	14.5	12	9	11	6	8.4	8.4	10.5	10.5	6	3.4	4.4	6.5	3.4	6	5	6.9	7.5	10.5	13	19.5	20	11.5	12	20.0	9.4	24
25	9	2.5	4	2.9	5	6	6.5	7.9	6.9	6	6.5	7.9	6.5	7	5.5	6.5	9.4	7.9	10.5	9.9	8.4	8.4	7.5	6.5	10.5	6.9	24
26	9.5	7.5	13	8.4	7.9	9.4	5	6.9	1	2.9	7.5	0.5	0.5	5	3.4	1.4	2.5	2.5	5.5	5.5	2.5	1.9	2.5	2	13.0	4.8	24
27	6.9	1	1.4	6.5	6.9	9.5	7	5.5	9.9	2.5	1.4	4.4	5.5	1.9	2.9	1.9	0	1.4	1	2.9	0	2.5	0.4	3.4	9.9	3.6	24
28	4.4	2.5	6.5	4	7.9	1	0	1.4	0	1.4	0	2.9	1.9	1	0	2.5	2.9	0.4	4	0	0	1	1.9	7.9	2.0	24	
29	1	1.9	6	3.4	7	5.5	N	1	2.5	3.4	0	2.9	4.4	1	1.9	2.5	6	5.5	2.5	2.5	1	2.5	5	3.4	7.0	3.2	23
30	2.9	4	4	3.4	2.5	3.4	1.9	0	4.4	2.9	1	7.5	5.5	7.9	8.4	7.5	11.5	4.4	10.5	5	6	6	9.9	0.4	11.5	5.0	24
HOURLY MAX	16	14	13	14	12	13	9	16	11	13	12	12	13	14	14	16	16	14	16	19	20	20	21	15			
HOURLY AVG	6.1	5.2	4.5	4.3	4.8	5.4	4.8	4.7	4.0	3.7	4.1	5.0	4.4	4.9	4.5	4.5	5.4	4.6	5.8	6.5	6.4	5.1	5.6	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

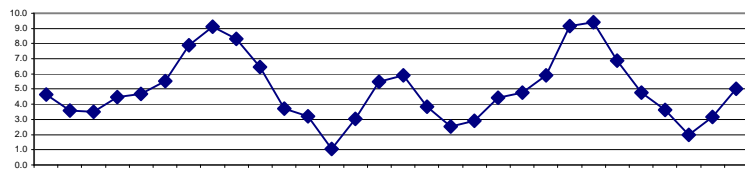
OBJECTIVE LIMIT:

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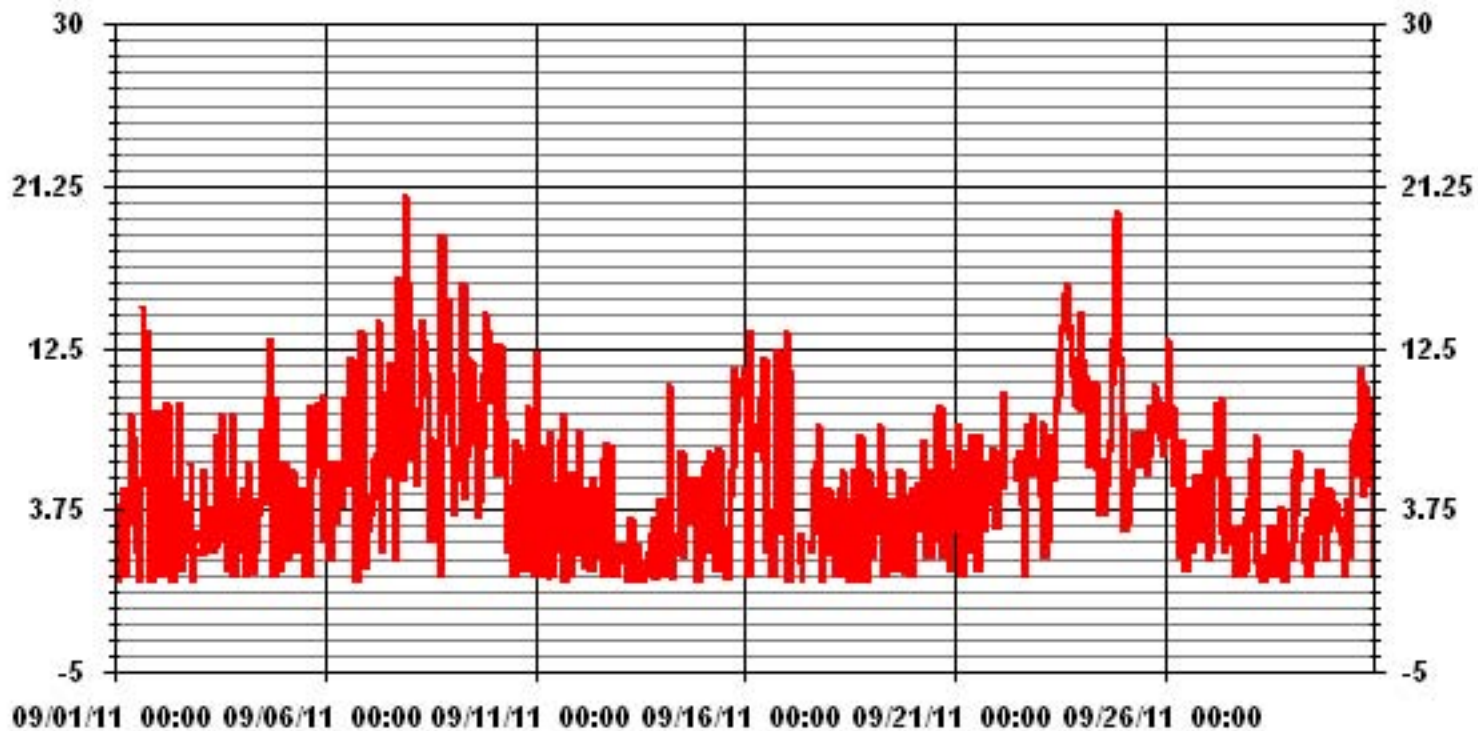
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-
NUMBER OF 24-HR EXCEEDENCES:	0 PROPOSED CANADA WIDE GUIDELINE
NUMBER OF NON-ZERO READINGS:	626
MAXIMUM 1-HR AVERAGE:	20.8 UG/M ³ @ HOUR(S) 22 ON DAY(S) 7
MAXIMUM 24-HR AVERAGE:	9.4 UG/M ³ ON DAY(S) 24
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	5 HRS
OPERATIONAL TIME:	707 HRS
AMD OPERATION UPTIME:	98.2 %
STANDARD DEVIATION:	3.92
MONTHLY AVERAGE:	4.98 UG/M ³

24 HOUR AVERAGES FOR SEPTEMBER 2011



01 Hour Averages



— LICA PM2 UG/M3

LICA
 PM2 / WD Joint Frequency Distribution (Percent)

September 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	1.56	2.27	1.85	1.28	3.70	3.56	22.07	5.41	6.12	6.55	13.96	14.24	8.26	5.27	1.85	1.99	100.00
< 60.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 80.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.56	2.27	1.85	1.28	3.70	3.56	22.07	5.41	6.12	6.55	13.96	14.24	8.26	5.27	1.85	1.99	

Calm : .00 %

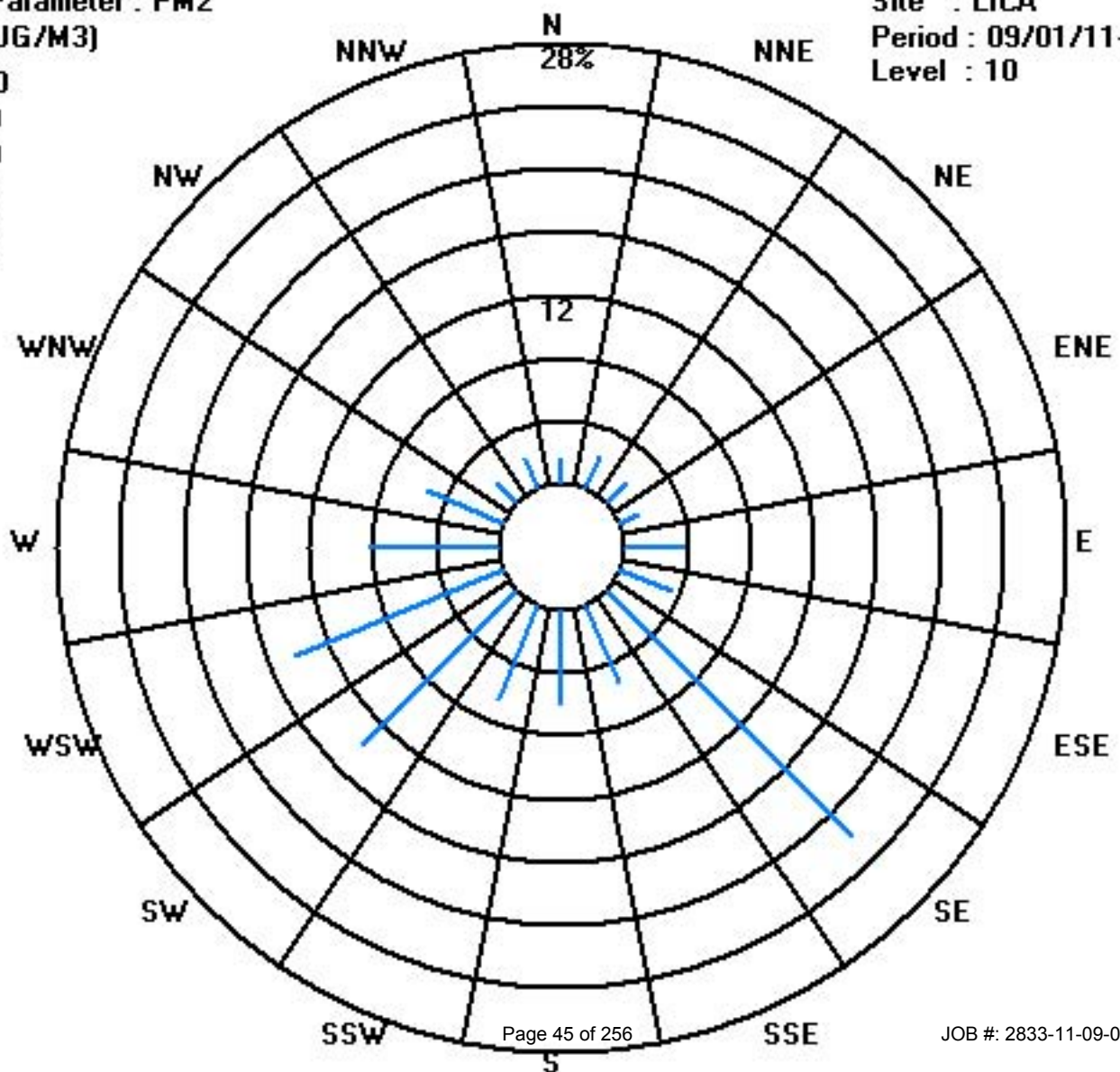
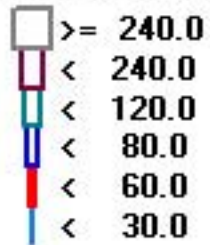
Total # Operational Hours : 702

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	11	16	13	9	26	25	155	38	43	46	98	100	58	37	13	14	702
< 60.0																	
< 80.0																	
< 120.0																	
< 240.0																	
>= 240.0																	
Totals	11	16	13	9	26	25	155	38	43	46	98	100	58	37	13	14	

Calm : .00 %

Total # Operational Hours : 702



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 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	3	2	IZS	3	2	3	4	3	3	2	1	1	1	1	1	1	1	3	5	3	1	1	1	1	5	2.0	24	
2	2	IZS	1	1	2	2	2	4	2	3	1	1	1	1	1	1	2	1	1	2	2	3	3	2	4	1.8	24	
3	IZS	2	2	2	2	2	1	3	3	3	2	1	1	1	1	1	1	1	3	2	2	2	2	IZS	3	1.8	24	
4	3	2	2	2	2	2	2	2	1	2	2	1	1	1	1	1	1	1	1	2	2	2	2	IZS	2	3	1.7	24
5	2	2	1	1	1	2	1	4	5	3	2	1	1	1	1	1	1	1	3	4	4	IZS	3	2	5	2.0	24	
6	2	1	2	2	2	3	4	5	5	4	3	2	1	2	1	1	1	1	3	4	IZS	3	3	2	5	2.5	24	
7	2	2	1	1	2	3	3	5	3	4	3	2	1	1	2	2	2	2	4	IZS	11	10	7	4	11	3.3	24	
8	3	2	2	1	2	2	3	7	10	10	7	3	2	2	1	1	1	2	IZS	5	4	4	5	3	10	3.6	24	
9	2	2	2	1	2	2	2	5	6	4	3	2	2	1	1	1	1	IZS	3	3	4	3	4	4	6	2.6	24	
10	4	5	5	5	4	4	4	4	3	2	1	1	1	1	0	IZS	1	1	4	5	4	4	3	5	2.9	24		
11	3	4	3	4	4	2	1	1	1	1	1	1	1	0	IZS	0	0	2	3	2	2	2	2	1	4	1.7	24	
12	3	3	3	2	4	4	4	4	2	1	2	2	1	1	IZS	1	1	1	1	1	1	1	1	0	4	1.9	24	
13	0	0	0	0	0	1	1	1	0	0	0	0	0	IZS	1	0	1	1	2	2	2	3	3	3	3	0.9	24	
14	3	3	1	2	1	4	4	3	2	1	1	1	C	C	C	C	C	2	2	2	1	2	1	1	4	1.9	24	
15	1	1	1	1	2	2	2	2	1	1	2	IZS	1	1	1	1	1	4	6	4	3	2	2	2	6	1.9	24	
16	1	1	1	1	4	3	4	3	2	2	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	4	1.6	24	
17	1	2	2	2	2	2	2	2	1	IZS	1	1	1	0	1	1	1	1	3	2	3	4	4	4	4	1.9	24	
18	4	3	3	3	3	3	3	2	IZS	1	1	1	1	1	1	1	1	1	2	3	3	3	2	2	4	2.1	24	
19	2	2	7	8	5	5	8	IZS	5	3	2	2	1	1	1	1	1	1	2	1	1	1	2	2	8	2.8	24	
20	2	4	5	5	6	5	IZS	6	5	5	3	2	2	2	1	1	1	2	5	6	3	2	2	2	6	3.3	24	
21	2	1	2	2	2	IZS	3	2	2	2	2	M	2	1	1	1	1	1	2	1	1	2	1	2	3	1.6	23	
22	1	1	1	2	IZS	3	7	6	6	5	4	4	2	2	2	1	1	6	4	6	8	6	5	5	8	3.8	24	
23	5	4	4	IZS	6	4	2	2	2	2	2	3	3	3	6	9	10	10	9	8	6	5	5	4	10	5.0	24	
24	5	4	IZS	2	3	3	2	2	5	5	2	1	1	1	1	2	2	3	10	9	9	9	6	4	10	4.0	24	
25	2	IZS	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1.2	24	
26	IZS	3	4	4	4	6	5	5	6	4	2	1	1	1	1	1	3	6	6	6	6	2	1	IZS	6	3.3	24	
27	1	1	2	2	3	4	11	11	7	3	3	2	3	1	1	1	2	4	4	5	1	1	IZS	2	11	3.3	24	
28	2	5	4	4	6	5	6	5	3	2	1	1	1	1	1	1	1	1	1	1	1	1	3	3	6	2.6	24	
29	2	1	3	4	3	5	5	10	5	2	0	1	1	1	2	1	1	2	1	1	IZS	1	1	1	10	2.3	24	
30	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	3	5	4	5	IZS	9	5	5	4	9	2.8	24	
HOURLY MAX	5	5	7	8	6	6	11	11	10	10	7	4	3	3	6	9	10	10	10	9	11	10	7	5				
HOURLY AVG	2.3	2.3	2.4	2.4	2.8	3.0	3.4	3.9	3.4	2.8	2.0	1.5	1.3	1.3	1.3	1.4	1.6	2.1	3.1	3.4	3.5	3.0	2.9	2.4				

STATUS FLAG CODES

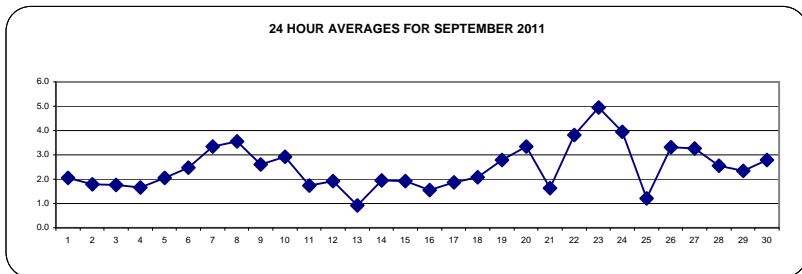
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

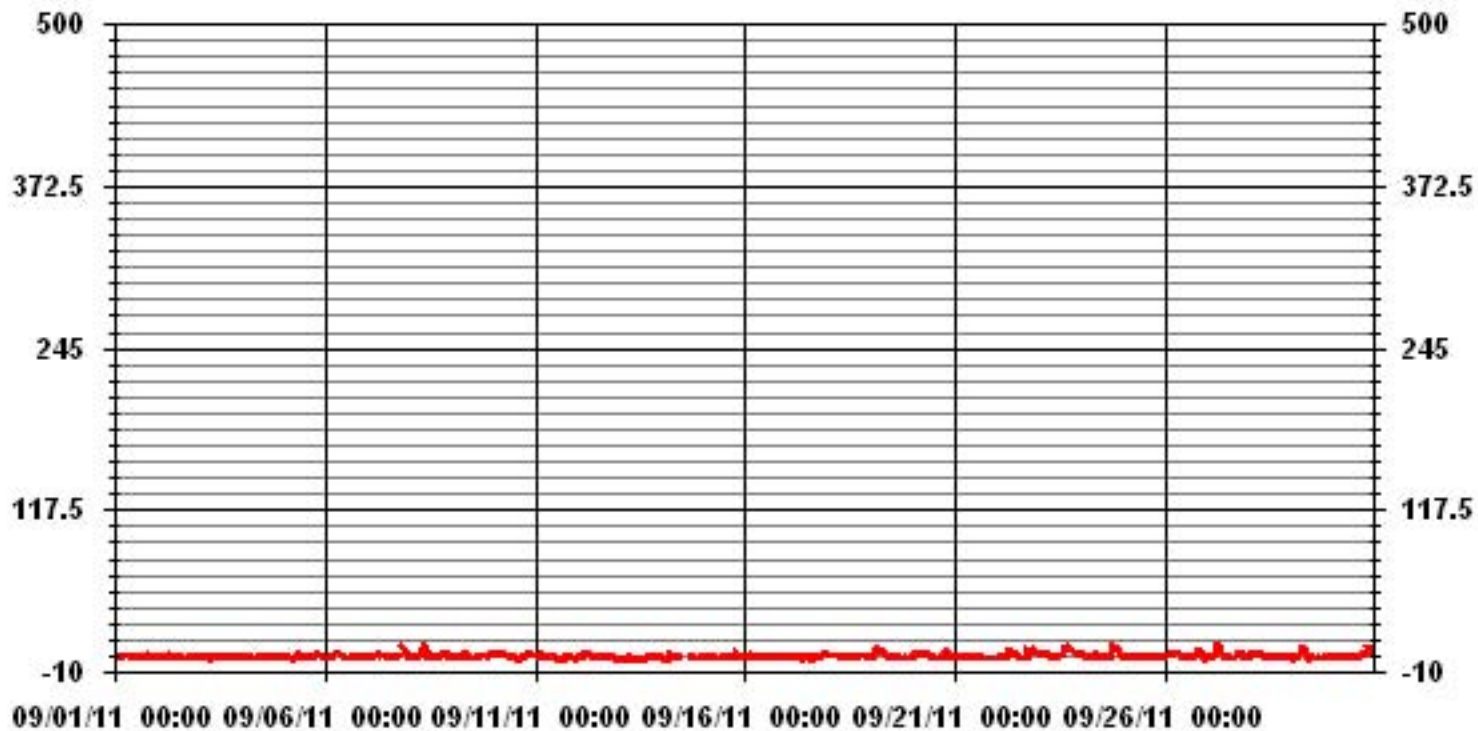
ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	665					
MAXIMUM 1-HR AVERAGE:	11	PPB	@ HOUR(S)	6, 7	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	5.0	PPB			ON DAY(S)	23
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME	99.9	%	
STANDARD DEVIATION	1.92		MONTHLY AVERAGE	2.48	PPB	



01 Hour Averages



— LICA NO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 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	5	4	IZS	11	3	5	5	4	4	5	1	1	1	1	2	2	3	1	8	9	6	2	2	2	2	11	3.8	24
2	4	IZS	4	2	6	15	5	16	3	4	3	2	3	1	2	8	10	3	2	3	3	5	3	3	3	16	4.8	24
3	IZS	3	3	3	2	3	2	5	3	3	3	2	4	1	1	2	1	3	6	6	5	3	IZS	IZS	6	6	3.0	24
4	3	3	2	2	2	2	5	2	2	2	3	2	1	1	1	3	3	3	2	5	4	3	IZS	4	5	2.6	24	
5	3	2	2	2	4	3	3	5	5	4	3	2	1	1	2	1	2	2	4	10	8	IZS	4	3	10	3.3	24	
6	2	2	2	2	3	5	5	6	6	5	4	5	2	3	3	3	3	3	5	9	IZS	4	3	3	9	3.8	24	
7	3	2	2	2	5	4	6	6	5	6	4	2	4	2	3	4	8	4	5	IZS	13	12	8	6	13	5.0	24	
8	5	3	2	2	4	3	7	10	12	13	10	5	3	2	3	3	3	2	IZS	6	7	5	6	4	13	5.2	24	
9	3	3	2	2	2	4	4	11	7	5	4	4	4	2	2	2	3	IZS	5	5	8	4	4	5	11	4.1	24	
10	5	5	6	6	5	5	9	20	4	3	4	1	2	2	2	2	IZS	2	3	6	8	5	5	5	20	5.0	24	
11	4	5	4	5	35	3	13	1	1	1	1	1	2	3	2	IZS	1	1	3	3	3	2	3	4	35	4.4	24	
12	4	5	4	3	5	4	5	5	3	3	3	2	1	2	IZS	1	1	1	2	1	2	1	1	1	5	2.6	24	
13	1	0	1	0	1	1	1	3	1	1	3	1	1	IZS	3	1	1	3	5	4	3	6	4	4	6	2.1	24	
14	4	5	2	5	3	6	7	5	4	2	2	C	C	C	C	C	C	C	C	10	12	5	17	2	1	17	5.4	24
15	2	2	2	2	2	7	7	8	2	2	3	IZS	6	6	11	4	6	7	12	8	7	3	3	4	12	5.0	24	
16	2	2	3	3	20	5	5	8	2	3	IZS	4	2	4	5	6	1	4	2	1	3	1	1	1	20	3.8	24	
17	2	2	2	2	2	3	3	3	2	IZS	1	1	1	1	1	1	1	2	4	3	4	5	5	4	5	2.4	24	
18	6	6	5	3	4	4	3	3	IZS	2	2	1	1	1	1	1	1	2	5	7	6	5	3	3	7	3.3	24	
19	2	5	10	10	8	6	10	IZS	7	3	3	3	3	1	2	1	1	1	6	2	3	2	4	4	10	4.2	24	
20	2	7	8	6	11	8	IZS	8	6	7	4	3	2	4	3	2	5	5	7	9	5	5	3	2	11	5.3	24	
21	2	2	2	2	3	IZS	6	5	4	28	13	M	19	4	4	4	3	3	5	2	6	3	2	2	28	5.6	23	
22	2	2	1	11	IZS	7	12	10	8	7	5	9	3	3	12	3	2	15	8	14	14	7	7	7	15	7.3	24	
23	6	6	6	IZS	12	11	4	5	3	3	3	4	20	8	15	13	24	15	11	11	8	8	7	6	24	9.1	24	
24	7	5	IZS	3	16	5	5	3	7	7	4	6	2	1	2	6	6	6	21	16	15	14	8	7	21	7.5	24	
25	3	IZS	5	6	7	7	3	12	2	2	2	3	4	5	4	4	1	9	4	2	3	1	1	2	12	4.0	24	
26	IZS	5	5	4	5	9	7	7	9	9	3	2	1	2	4	2	2	6	35	9	11	4	2	IZS	35	6.5	24	
27	1	2	12	4	7	9	15	17	13	4	4	3	4	2	2	2	3	10	14	20	4	2	IZS	3	20	6.8	24	
28	3	7	7	7	7	6	9	8	4	3	2	1	2	1	1	2	1	1	1	2	2	IZS	5	4	9	3.7	24	
29	3	2	5	10	6	7	8	18	12	15	6	3	7	4	16	2	2	26	3	2	IZS	1	1	1	26	7.0	24	
30	3	1	1	3	2	2	3	6	2	4	4	3	5	4	6	4	14	9	5	IZS	12	8	6	4	14	4.8	24	
HOURLY MAX	7	7	12	11	35	15	15	20	13	28	13	9	20	8	16	13	24	26	35	20	15	17	8	7				
HOURLY AVG	3.3	3.5	3.9	4.2	6.6	5.5	6.1	7.6	4.9	5.4	3.7	2.8	3.8	2.6	4.1	3.1	4.0	5.3	6.9	6.7	6.4	5.0	3.8	3.5				

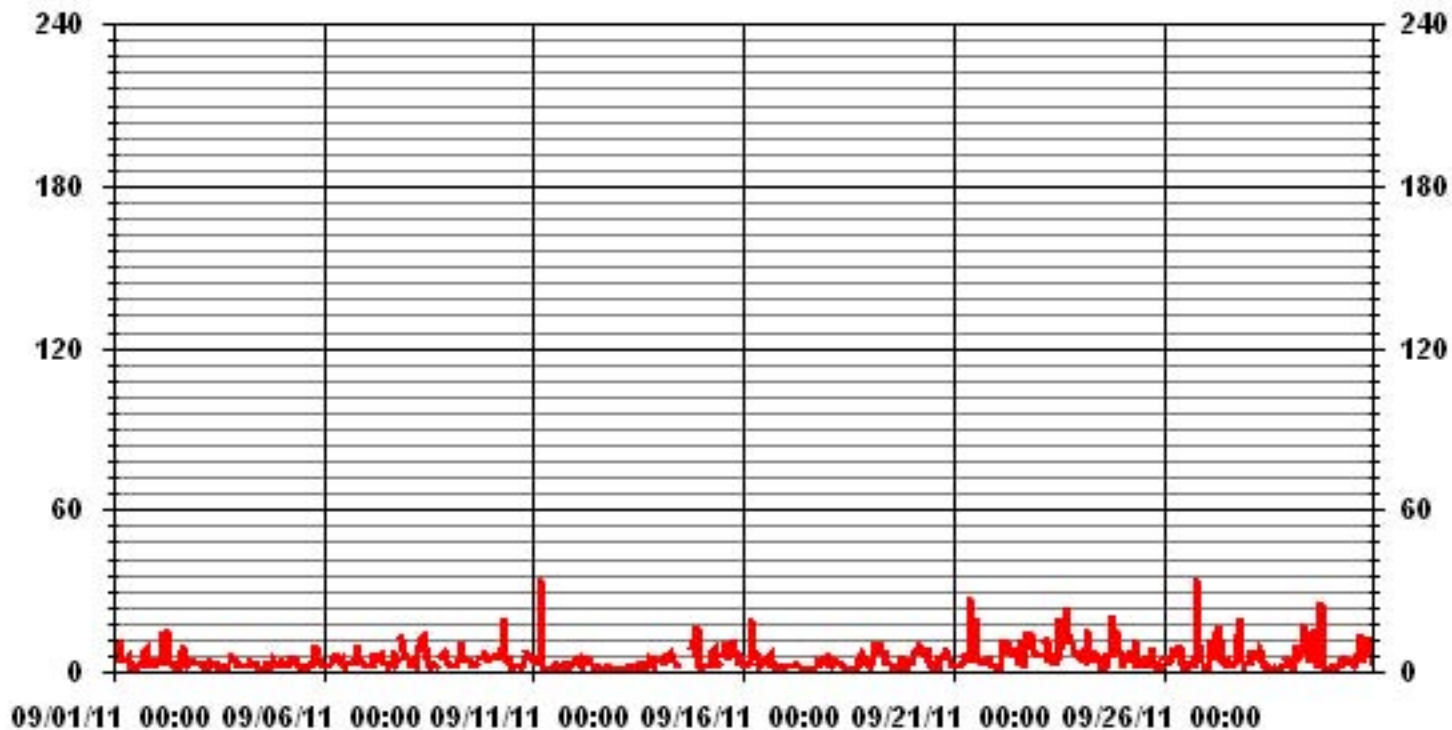
STATUS FLAG CODES

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:	679				
MAXIMUM INSTANTANEOUS VALUE:	35	PPB	@ HOUR(S)	4	ON DAY(S) 11
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS
MONTHLY CALIBRATION TIME:	7	HRS			
STANDARD DEVIATION:	4.16				

01 Hour Averages



— LICA NO2MAX PPB

LICA
 NO2_ / WD Joint Frequency Distribution (Percent)

September 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	1.61	2.19	1.90	1.31	3.66	3.51	21.22	4.68	6.14	6.58	14.49	14.64	9.07	5.12	1.75	2.04	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	1.61	2.19	1.90	1.31	3.66	3.51	21.22	4.68	6.14	6.58	14.49	14.64	9.07	5.12	1.75	2.04	

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	11	15	13	9	25	24	145	32	42	45	99	100	62	35	12	14	683
< 110																	
< 210																	
>= 210																	
Totals	11	15	13	9	25	24	145	32	42	45	99	100	62	35	12	14	

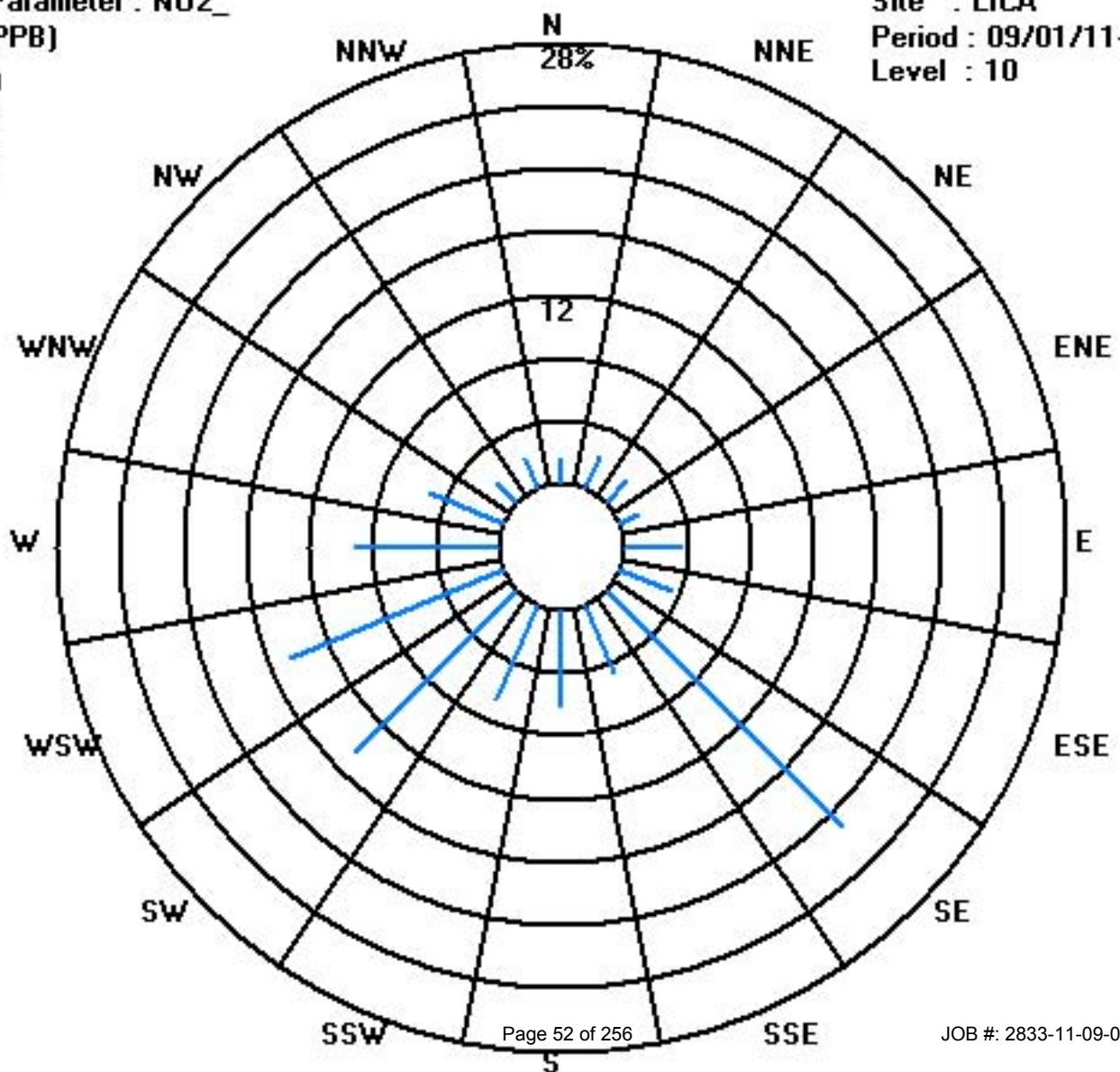
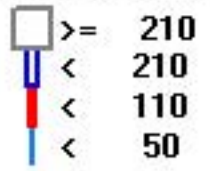
Calm : .00 %

Total # Operational Hours : 683

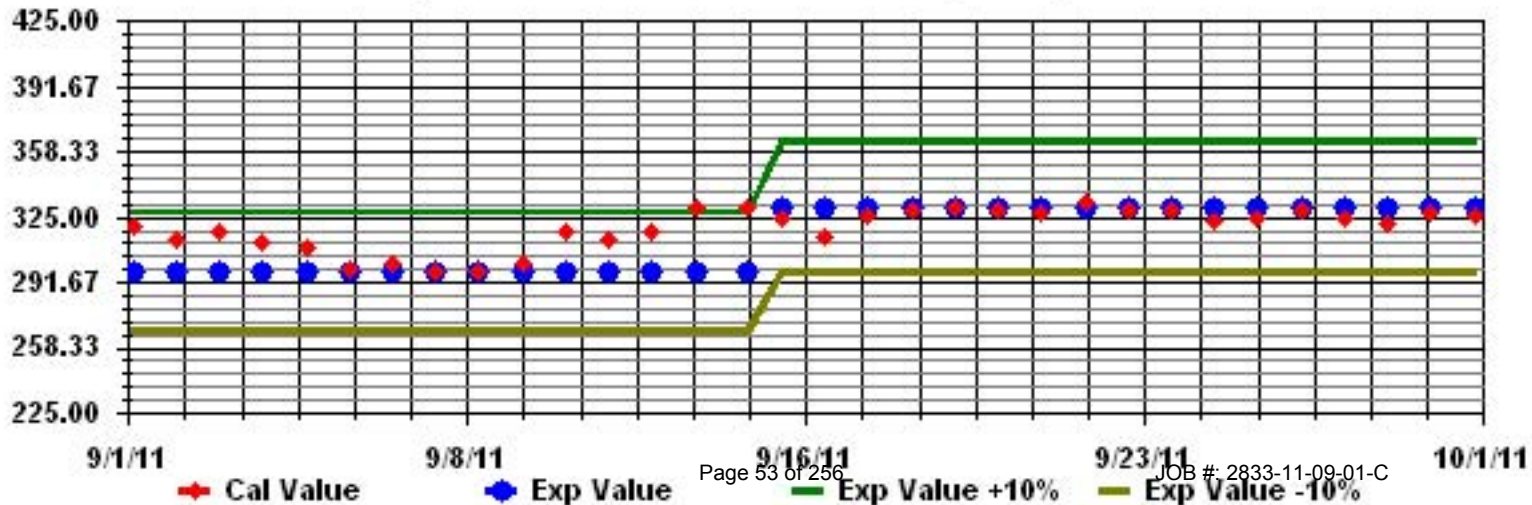
Class Limits (PPB)

Period : 09/01/11-09/30/11

Level : 10



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



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 2011

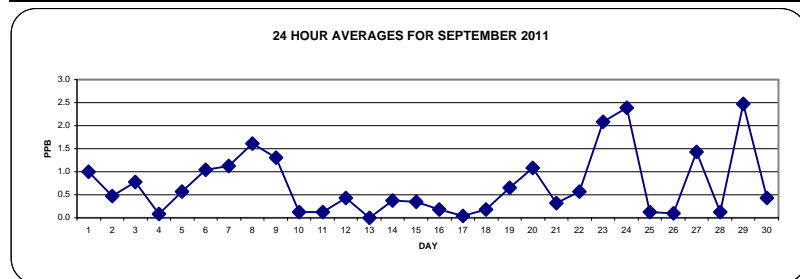
NITRIC OXIDE hourly averages in ppb

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	DAILY MAX.	24-HOUR AVG.	RDGS.	
1	0	0	IZS	6	0	3	4	3	3	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	6	1.0	24	
2	0	IZS	0	0	1	0	1	4	1	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	4	0.5	24	
3	IZS	0	1	1	0	1	3	5	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	IZS	5	0.8	24	
4	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	0.1	24
5	0	0	0	0	1	1	2	4	3	2	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	4	0.6	24	
6	0	0	0	1	1	2	7	6	4	2	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	7	1.0	24	
7	0	0	0	0	2	3	9	10	1	1	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	10	1.1	24	
8	0	0	0	0	1	3	8	12	7	4	2	0	0	0	0	0	0	0	IZS	0	0	0	0	0	12	1.6	24	
9	0	0	0	0	1	3	8	13	4	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	13	1.3	24	
10	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	0.1	24	
11	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	2	0.1	24	
12	0	0	0	0	0	0	2	3	2	1	1	1	0	0	IZS	0	0	0	0	0	0	0	0	0	3	0.4	24	
13	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
14	0	0	0	0	0	1	2	2	1	1	0	0	C	C	C	C	C	0	0	0	0	0	0	0	2	0.4	24	
15	0	0	0	0	0	0	0	1	1	1	1	IZS	0	0	3	0	0	0	1	0	0	0	0	0	3	0.3	24	
16	0	0	0	0	1	0	0	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
17	0	0	0	0	0	0	0	1	0	IZS	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	1	IZS	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0.2	24	
19	0	0	0	0	1	1	8	IZS	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	8	0.7	24	
20	0	0	0	0	1	1	IZS	8	6	5	2	1	1	0	0	0	0	0	0	0	0	0	0	0	8	1.1	24	
21	0	0	0	0	0	IZS	1	2	1	2	1	M	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	23	
22	0	0	0	1	IZS	0	1	1	2	3	2	1	0	0	0	0	0	0	0	1	1	0	0	0	3	0.6	24	
23	0	0	1	IZS	8	12	0	1	0	1	1	1	1	0	1	2	3	2	1	2	2	2	3	4	12	2.1	24	
24	6	4	IZS	3	4	6	8	7	9	3	1	0	0	0	0	0	0	1	0	1	2	0	0	9	2.4	24		
25	0	IZS	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24	
26	IZS	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	IZS	1	0.1	24	
27	0	0	0	0	0	0	6	17	6	1	1	1	1	0	0	0	0	0	0	0	0	0	IZS	0	17	1.4	24	
28	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	0.1	24	
29	0	0	0	2	0	3	6	30	9	2	1	0	1	1	1	0	0	1	0	0	IZS	0	0	0	30	2.5	24	
30	0	0	0	0	0	0	0	2	1	1	1	1	1	1	1	0	1	0	0	IZS	0	0	0	0	2	0.4	24	
HOURLY MAX	6	4	1	6	8	12	9	30	9	5	2	1	1	1	3	2	3	2	1	2	2	2	3	4				
HOURLY AVG	0.2	0.1	0.1	0.5	0.9	1.4	2.7	4.7	2.4	1.5	0.7	0.3	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1				

STATUS FLAG CODES

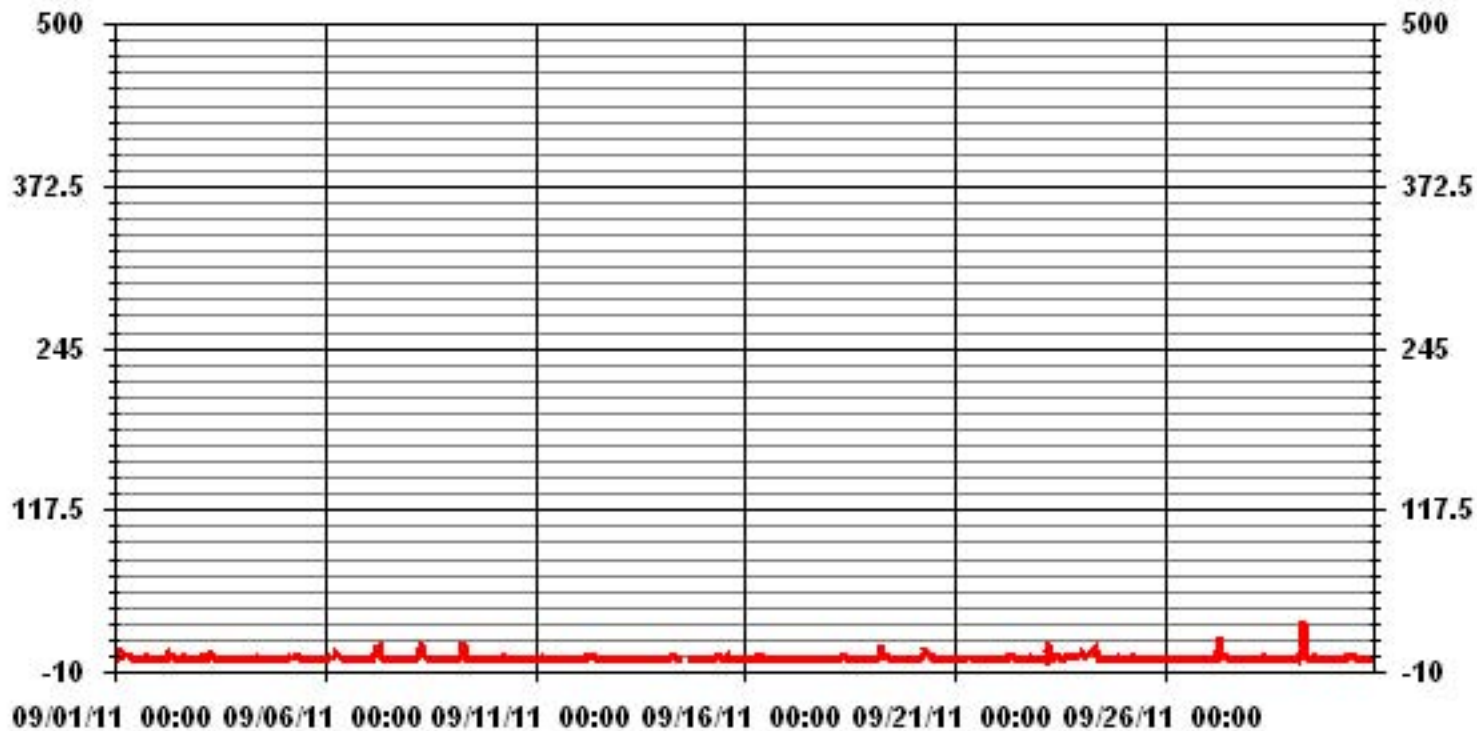
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	183					
MAXIMUM 1-HR AVERAGE:	30	PPB	@ HOUR(S)	7	ON DAY(S)	29
MAXIMUM 24-HR AVERAGE:	2.5	PPB			ON DAY(S)	29
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME	99.9	%	
STANDARD DEVIATION	2.10		MONTHLY AVERAGE	0.72	PPB	

01 Hour Averages



— LICA NO_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 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	IZS	68	3	8	9	5	5	5	1	1	1	1	0	6	3	0	19	16	2	2	2	1	68	7.0	24	
2	1	IZS	3	1	14	1	8	27	1	3	1	1	13	1	1	11	7	1	0	0	0	0	1	1	27	4.2	24	
3	IZS	1	3	1	1	1	6	11	4	4	2	2	12	2	0	0	1	0	0	6	7	3	0	IZS	12	3.0	24	
4	0	0	0	0	1	1	4	1	1	2	4	1	8	0	0	1	1	0	0	2	0	1	IZS	1	8	1.3	24	
5	0	1	1	1	15	2	4	5	4	3	1	2	1	0	0	0	1	0	0	5	2	IZS	1	1	15	2.2	24	
6	1	1	1	2	3	6	11	9	7	3	2	1	3	0	1	0	1	1	1	1	1	IZS	1	0	0	11	2.4	24
7	0	1	2	1	16	5	21	17	5	2	1	0	0	0	0	2	1	0	1	IZS	1	1	1	2	21	3.5	24	
8	1	1	1	1	6	7	35	31	10	5	4	1	1	1	2	0	0	IZS	2	1	1	1	1	1	35	5.0	24	
9	1	1	1	1	2	9	13	62	8	1	1	0	1	0	0	0	1	IZS	0	0	2	0	0	0	62	4.5	24	
10	0	0	0	0	0	0	20	14	1	1	1	0	1	0	0	0	IZS	0	0	0	3	1	1	4	20	2.0	24	
11	1	1	1	1	68	2	1	1	2	1	2	1	1	1	1	IZS	0	1	0	1	0	1	0	0	68	3.8	24	
12	0	0	1	1	1	1	3	4	3	2	2	2	1	1	1	IZS	0	0	0	2	1	1	0	0	4	1.1	24	
13	1	0	0	1	1	1	1	1	0	1	2	1	1	1	IZS	2	1	1	4	1	0	3	1	1	1	4	1.1	24
14	1	4	1	3	2	4	4	12	2	2	1	C	C	C	C	C	C	C	6	6	2	4	2	0	12	3.3	24	
15	1	6	1	1	0	5	5	3	5	1	6	IZS	4	3	108	6	9	4	23	4	7	0	1	1	108	8.9	24	
16	0	0	1	1	7	2	3	6	1	1	IZS	3	1	2	1	2	1	1	0	0	1	0	0	0	7	1.5	24	
17	0	1	0	0	0	0	1	5	1	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	5	0.4	24	
18	0	0	2	0	0	0	1	1	IZS	1	1	1	1	0	0	0	0	2	0	0	14	2	1	1	14	1.3	24	
19	1	1	0	0	8	4	15	IZS	4	2	2	2	1	0	1	0	0	0	3	1	2	1	0	2	15	2.2	24	
20	0	3	1	2	11	5	IZS	12	8	10	4	3	8	1	1	0	3	3	8	1	2	11	0	0	12	4.2	24	
21	1	0	0	0	0	IZS	2	12	3	11	11	M	2	3	5	1	2	5	1	1	5	1	1	0	12	3.0	23	
22	0	0	0	18	IZS	11	14	10	7	4	8	16	1	1	9	1	0	3	2	9	4	1	1	1	18	5.3	24	
23	2	1	3	IZS	44	147	3	6	1	2	5	5	4	3	12	9	24	11	5	7	11	7	7	9	147	14.3	24	
24	9	7	IZS	6	27	11	11	10	16	6	2	2	1	1	1	1	6	1	8	9	13	6	1	1	27	6.8	24	
25	1	IZS	4	2	7	66	1	10	2	1	2	3	1	1	2	3	2	4	1	3	7	0	0	0	66	5.3	24	
26	IZS	0	0	0	0	0	0	1	4	1	1	1	0	1	1	1	0	14	3	4	3	0	0	IZS	14	1.6	24	
27	0	0	3	1	1	6	18	25	18	2	2	1	1	1	1	0	0	1	2	2	0	0	IZS	0	25	3.7	24	
28	2	3	3	1	3	3	2	2	1	1	1	1	1	1	1	0	0	0	0	0	0	0	IZS	0	0	3	1.2	24
29	0	1	1	16	2	8	21	55	27	18	10	4	12	18	3	8	2	31	5	2	IZS	0	0	0	55	10.6	24	
30	2	0	1	1	2	1	1	33	2	3	6	18	4	3	2	1	5	1	0	IZS	0	0	0	0	33	3.7	24	
HOURLY MAX	9	7	4	68	68	147	35	62	27	18	11	18	13	18	108	11	24	31	23	16	13	11	7	9				
HOURLY AVG	1.0	1.3	1.3	4.5	8.4	10.9	8.2	13.5	5.3	3.4	3.0	2.7	3.0	1.6	5.5	2.0	2.6	2.6	3.5	3.4	2.9	1.7	0.8	1.0				

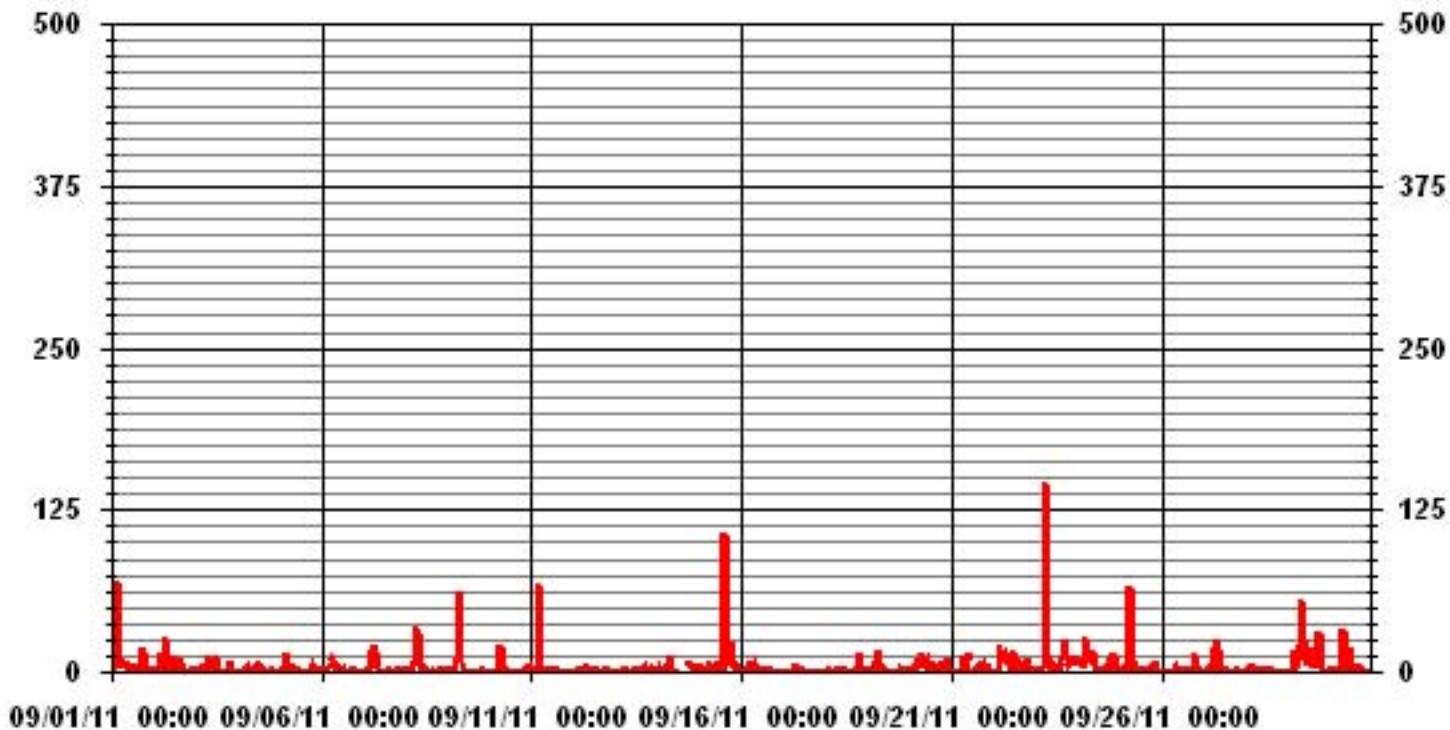
STATUS FLAG CODES

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:	511				
MAXIMUM INSTANTANEOUS VALUE:	147	PPB	@ HOUR(S)	5	ON DAY(S) 23
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS
MONTHLY CALIBRATION TIME:	7	HRS			
STANDARD DEVIATION:	9.99				

01 Hour Averages



— LICA NOMAX PPB

LICA
 NO_ / WD Joint Frequency Distribution (Percent)

September 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	1.61	2.19	1.90	1.31	3.66	3.51	21.22	4.68	6.14	6.58	14.49	14.64	9.07	5.12	1.75	2.04	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	1.61	2.19	1.90	1.31	3.66	3.51	21.22	4.68	6.14	6.58	14.49	14.64	9.07	5.12	1.75	2.04	

Calm : .00 %

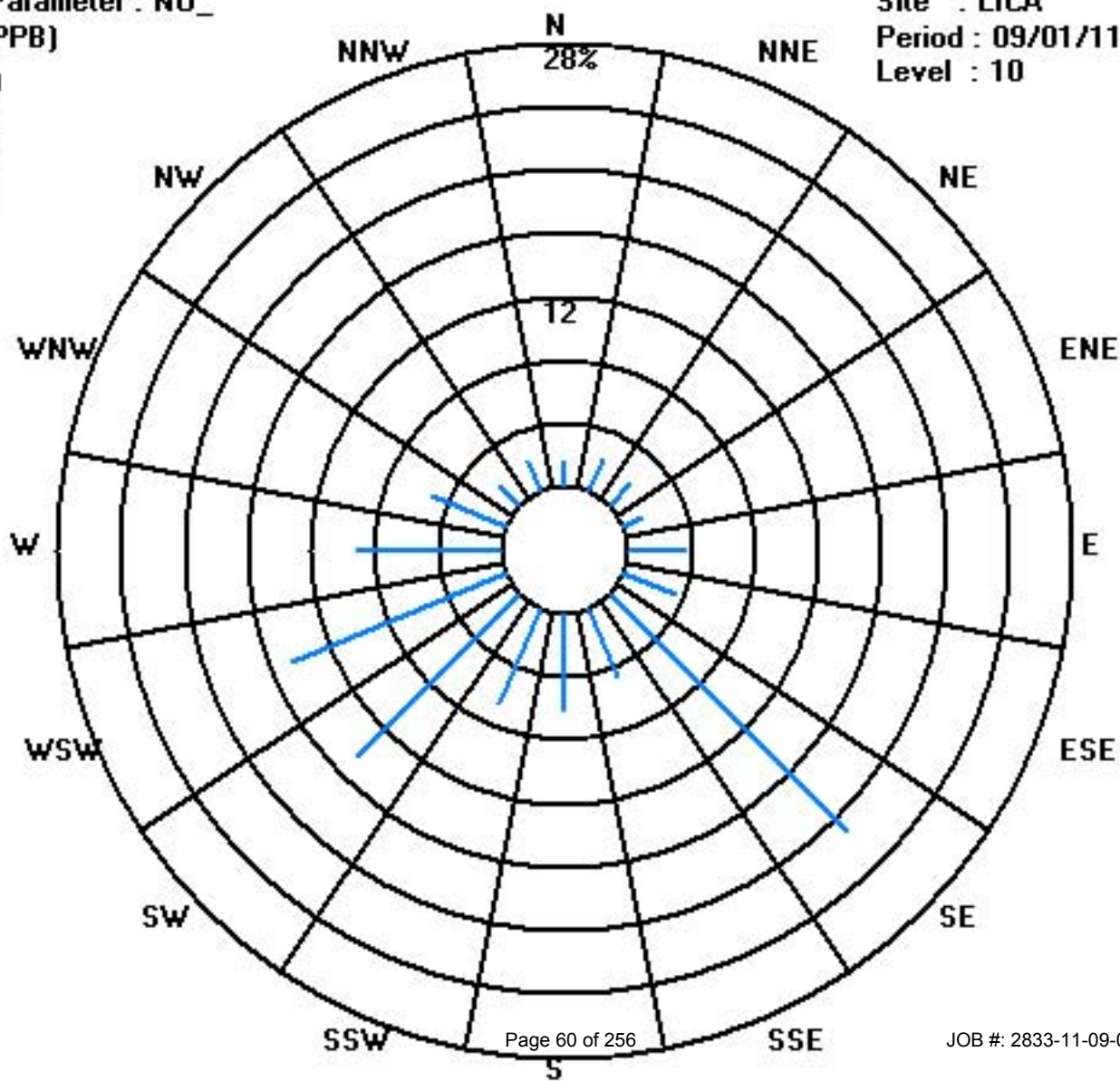
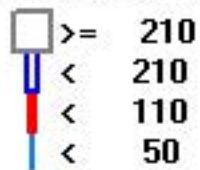
Total # Operational Hours : 683

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	11	15	13	9	25	24	145	32	42	45	99	100	62	35	12	14	683
< 110																	
< 210																	
>= 210																	
Totals	11	15	13	9	25	24	145	32	42	45	99	100	62	35	12	14	

Calm : .00 %

Total # Operational Hours : 683



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 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	3	2	IZS	9	3	6	7	6	6	4	1	1	1	1	1	1	1	1	4	6	3	1	1	1	9	3.0	24	
2	2	IZS	1	1	2	2	4	7	3	5	1	1	1	1	1	1	3	1	1	2	2	3	3	2	7	2.2	24	
3	IZS	2	2	3	2	3	5	7	5	5	3	1	1	1	1	1	1	1	1	3	3	2	2	IZS	7	2.5	24	
4	3	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	2	2	2	IZS	2	3	1.7	24	
5	2	2	1	1	2	2	3	8	8	5	2	1	1	1	1	1	1	1	3	4	4	IZS	3	2	8	2.6	24	
6	2	2	2	2	3	5	10	10	9	6	3	3	2	2	1	1	1	1	3	4	IZS	3	3	2	10	3.5	24	
7	2	2	1	1	4	6	12	14	4	5	3	2	1	1	2	2	2	2	4	IZS	11	10	7	5	14	4.5	24	
8	3	2	2	2	3	6	10	19	17	13	8	3	2	2	1	1	1	2	IZS	5	4	4	5	3	19	5.1	24	
9	2	2	2	2	3	5	10	18	10	4	3	2	2	1	1	1	1	IZS	3	3	4	3	4	4	18	3.9	24	
10	4	5	5	5	4	4	5	6	4	2	1	1	1	1	1	0	IZS	1	1	4	5	4	4	3	6	3.1	24	
11	3	4	3	4	6	2	1	1	1	1	1	1	1	2	0	IZS	0	0	2	3	2	2	2	1	6	1.9	24	
12	3	3	3	2	4	4	6	7	4	3	3	2	1	1	IZS	1	1	1	1	1	1	1	1	0	7	2.3	24	
13	0	0	0	0	0	1	1	2	0	0	0	0	0	0	IZS	1	0	1	1	2	2	2	3	3	3	3	1.0	24
14	4	3	1	3	2	4	6	5	3	2	1	2	C	C	C	C	C	2	2	2	1	2	1	1	6	2.5	24	
15	1	1	1	1	1	2	3	3	2	2	2	IZS	2	1	2	1	2	5	7	4	3	2	2	2	7	2.3	24	
16	1	1	1	1	4	3	4	5	2	2	IZS	3	2	1	2	1	1	1	1	1	1	1	1	1	5	1.8	24	
17	1	2	2	2	2	2	2	2	1	IZS	1	1	1	1	0	1	1	1	3	2	2	4	4	4	4	4	1.8	24
18	4	3	3	3	3	3	3	3	IZS	2	2	1	1	1	1	1	1	1	2	4	3	3	2	2	4	2.3	24	
19	2	2	7	8	6	5	15	IZS	7	4	3	3	2	1	1	1	1	1	2	1	1	1	2	3	15	3.4	24	
20	2	4	5	5	7	7	IZS	14	11	11	5	3	2	2	2	1	1	2	5	6	3	2	2	2	14	4.5	24	
21	2	1	1	2	2	IZS	3	4	3	4	3	M	2	1	1	1	1	2	2	1	1	2	1	1	4	1.9	23	
22	1	1	1	2	IZS	3	8	7	8	7	6	5	2	2	2	1	1	6	4	7	8	6	5	5	8	4.3	24	
23	5	5	6	IZS	14	16	3	3	2	3	3	3	4	4	7	10	13	12	10	10	8	7	7	8	16	7.1	24	
24	11	7	IZS	5	7	9	10	9	15	8	2	2	1	1	2	2	3	3	11	9	11	11	6	4	15	6.5	24	
25	2	IZS	2	2	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1.3	24
26	IZS	3	4	4	4	6	5	5	6	5	3	1	1	1	1	1	1	3	7	6	7	2	1	IZS	7	3.5	24	
27	1	1	3	2	3	5	17	28	13	4	4	3	3	1	1	1	2	4	4	5	1	1	IZS	2	28	4.7	24	
28	3	5	4	4	6	5	6	6	3	3	1	1	1	1	1	1	1	1	1	1	1	1	IZS	3	3	6	2.7	24
29	1	1	3	5	4	7	11	40	14	4	1	1	2	1	2	1	1	3	2	1	IZS	1	1	1	40	4.7	24	
30	1	1	1	1	1	1	2	3	2	3	3	3	3	3	3	3	6	4	4	IZS	9	5	4	3	9	3.0	24	
HOURLY MAX	11	7	7	9	14	16	17	40	17	13	8	5	4	4	7	10	13	12	11	10	11	11	7	8				
HOURLY AVG	2.5	2.5	2.5	2.9	3.7	4.4	6.0	8.4	5.7	4.1	2.5	1.9	1.6	1.4	1.5	1.4	1.8	2.2	3.2	3.6	3.7	3.2	2.9	2.6				

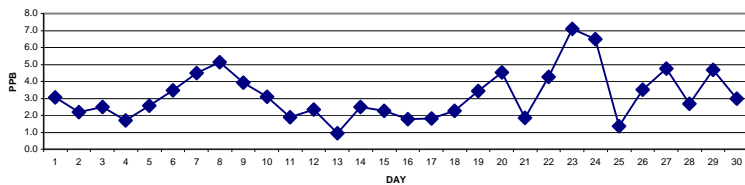
STATUS FLAG CODES

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

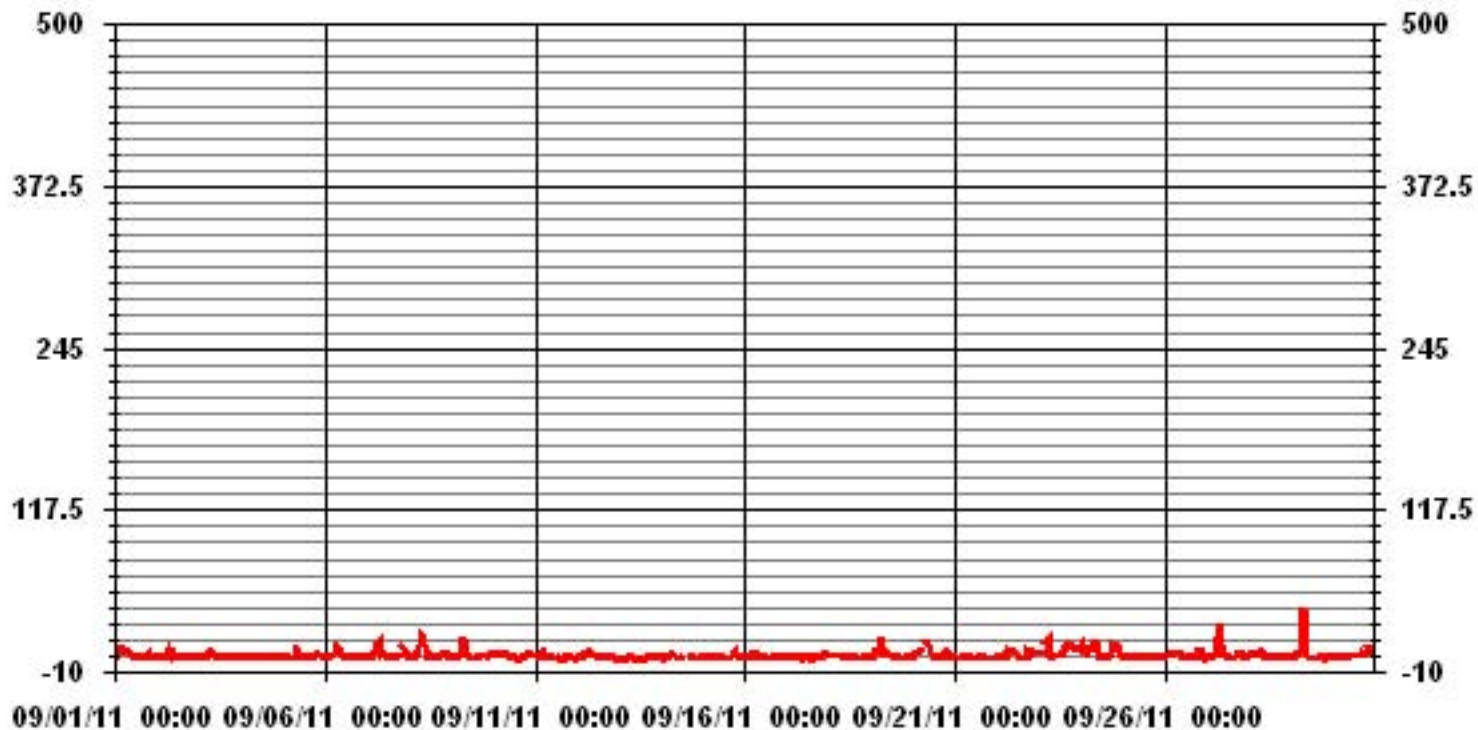
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	666					
MAXIMUM 1-HR AVERAGE:	40	PPB	@ HOUR(S)	7	ON DAY(S)	29
MAXIMUM 24-HR AVERAGE:	7.1	PPB			ON DAY(S)	23
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME	99.9	%	
STANDARD DEVIATION	3.35		MONTHLY AVERAGE	3.19	PPB	

24 HOUR AVERAGES FOR SEPTEMBER 2011



01 Hour Averages



— LICA NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 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	5	4	IZS	73	5	11	12	8	9	10	2	2	2	2	2	6	5	1	22	22	6	4	3	3	73	9.5	24	
2	4	IZS	6	3	16	17	12	33	5	7	4	3	14	2	2	15	17	3	2	3	3	5	3	3	33	7.9	24	
3	IZS	3	5	4	3	4	9	13	7	7	5	3	10	3	1	1	3	2	3	11	10	7	3	IZS	13	5.3	24	
4	3	3	2	2	3	3	9	3	2	4	5	3	2	1	1	4	4	3	2	5	4	3	IZS	4	9	3.3	24	
5	3	3	2	2	17	4	6	10	9	7	4	4	2	1	2	1	3	2	4	12	10	IZS	4	3	17	5.0	24	
6	2	3	2	4	5	11	15	14	14	8	6	6	3	4	4	3	5	4	5	10	IZS	4	3	3	15	6.0	24	
7	3	3	4	2	17	9	26	22	9	8	4	2	5	3	4	5	10	4	6	IZS	14	12	8	6	26	8.1	24	
8	5	3	3	3	9	10	40	35	20	18	13	6	4	3	4	5	4	3	IZS	7	7	5	7	4	40	9.5	24	
9	3	3	3	3	4	13	16	73	14	6	4	4	4	3	2	2	3	IZS	5	5	10	4	4	5	73	8.4	24	
10	5	5	6	6	5	5	27	32	5	4	4	1	2	2	2	2	IZS	2	3	6	11	5	5	9	32	6.7	24	
11	4	5	5	6	94	4	3	2	1	1	2	2	3	3	2	IZS	1	1	3	4	3	2	3	4	94	6.9	24	
12	4	5	4	3	5	5	8	9	6	4	4	4	2	2	IZS	1	1	1	3	1	2	2	1	1	9	3.4	24	
13	1	1	1	1	1	1	2	4	1	2	4	2	2	IZS	4	2	2	6	5	4	5	6	4	5	6	2.9	24	
14	5	9	3	7	4	10	11	13	5	4	2	C	C	C	C	C	C	C	C	17	18	6	19	3	2	19	8.1	24
15	2	3	2	3	3	12	12	11	5	3	7	IZS	7	9	16	6	12	10	34	11	14	3	3	4	34	8.3	24	
16	2	2	3	3	27	7	7	13	3	3	IZS	7	3	6	6	8	2	5	2	1	3	1	1	1	27	5.0	24	
17	2	3	2	2	2	3	3	8	2	IZS	2	2	1	1	1	1	1	2	4	3	4	5	5	4	8	2.7	24	
18	6	6	7	3	4	4	4	4	IZS	3	3	2	1	1	1	1	3	2	5	16	8	5	3	3	16	4.1	24	
19	3	5	10	10	13	10	22	IZS	11	5	5	4	4	1	2	1	1	1	8	3	3	2	4	5	22	5.8	24	
20	2	9	8	7	22	11	IZS	19	13	16	7	5	6	5	4	2	7	8	12	10	6	13	3	2	22	8.6	24	
21	3	2	2	2	3	IZS	7	13	7	37	18	M	21	6	6	4	4	7	6	2	11	3	3	2	37	7.7	23	
22	2	2	1	28	IZS	15	26	18	13	10	11	19	3	4	20	3	2	17	10	23	16	7	8	7	28	11.5	24	
23	7	6	9	IZS	53	116	7	9	3	5	5	8	24	11	26	21	46	24	16	16	16	15	12	15	116	20.4	24	
24	15	11	IZS	9	33	16	14	11	22	11	6	8	2	2	3	7	13	6	28	23	23	18	8	8	33	12.9	24	
25	3	IZS	8	7	13	63	4	22	4	2	3	3	4	5	5	5	2	12	5	4	7	1	1	2	63	8.0	24	
26	IZS	5	5	4	5	9	7	8	13	9	4	2	1	3	5	2	2	6	43	12	14	7	2	IZS	43	7.6	24	
27	2	2	14	4	8	11	33	39	28	5	5	4	4	2	2	2	3	10	15	22	5	2	IZS	3	39	9.8	24	
28	5	9	9	7	9	8	11	10	5	4	3	2	3	2	1	2	1	1	1	2	2	IZS	5	4	11	4.6	24	
29	3	2	5	23	7	15	29	71	38	19	12	4	18	6	18	4	4	56	5	3	IZS	1	1	1	71	15.0	24	
30	5	1	2	4	3	3	4	10	3	6	8	5	8	6	8	4	19	9	5	IZS	12	8	6	5	19	6.3	24	
HOURLY MAX	15	11	14	73	94	116	40	73	38	37	18	19	24	11	26	21	46	56	43	23	23	19	12	15				
HOURLY AVG	3.9	4.2	4.8	8.1	13.6	14.1	13.3	18.5	9.6	7.9	5.6	4.3	5.7	3.5	5.5	4.3	6.4	7.4	9.6	9.3	8.4	6.0	4.1	4.2				

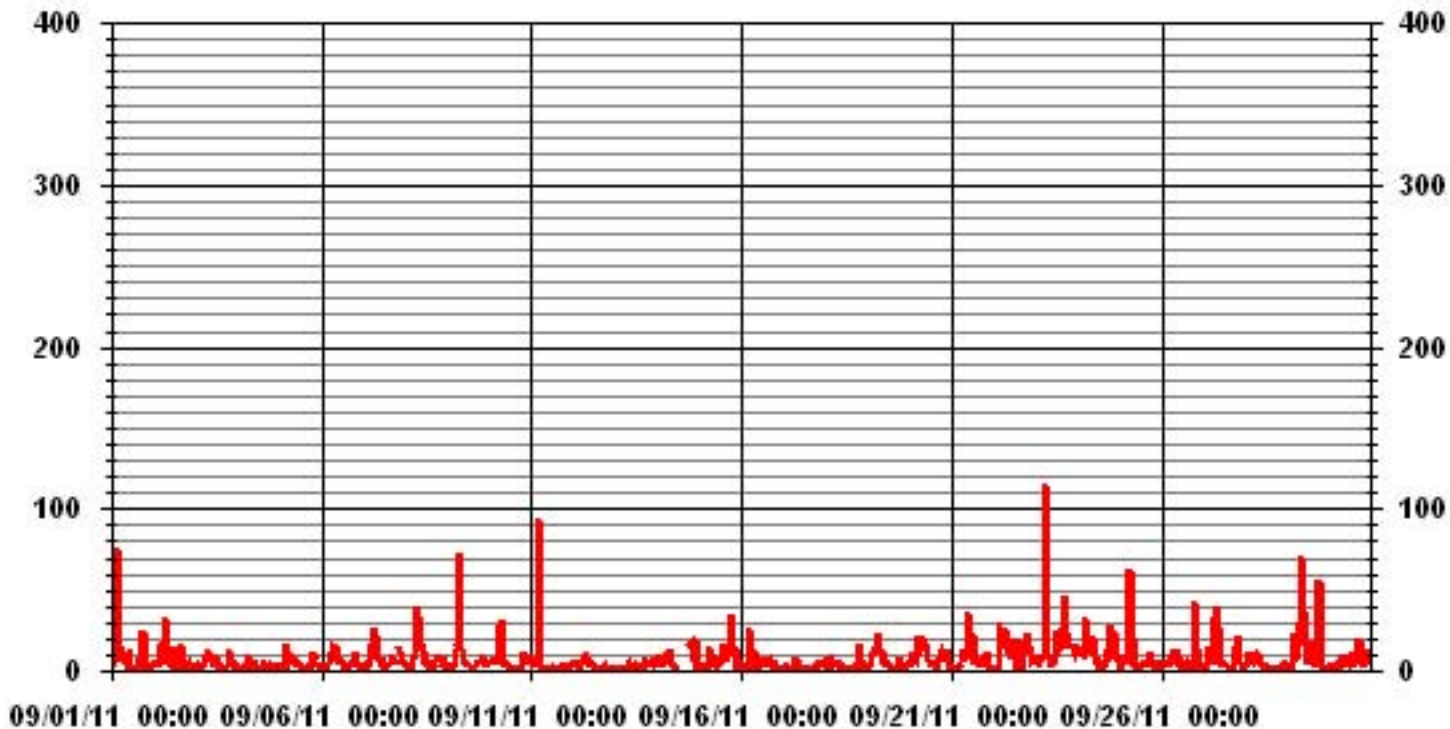
STATUS FLAG CODES

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:	681				
MAXIMUM INSTANTANEOUS VALUE:	116	PPB	@ HOUR(S)	5	ON DAY(S) 23
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS
MONTHLY CALIBRATION TIME:	7	HRS			
STANDARD DEVIATION:	10.20				

01 Hour Averages



LICA
 NOX_ / WD Joint Frequency Distribution (Percent)

September 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	1.61	2.19	1.90	1.31	3.66	3.51	21.22	4.68	6.14	6.58	14.49	14.64	9.07	5.12	1.75	2.04	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	1.61	2.19	1.90	1.31	3.66	3.51	21.22	4.68	6.14	6.58	14.49	14.64	9.07	5.12	1.75	2.04	

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	11	15	13	9	25	24	145	32	42	45	99	100	62	35	12	14	683
< 110																	
< 210																	
>= 210																	
Totals	11	15	13	9	25	24	145	32	42	45	99	100	62	35	12	14	

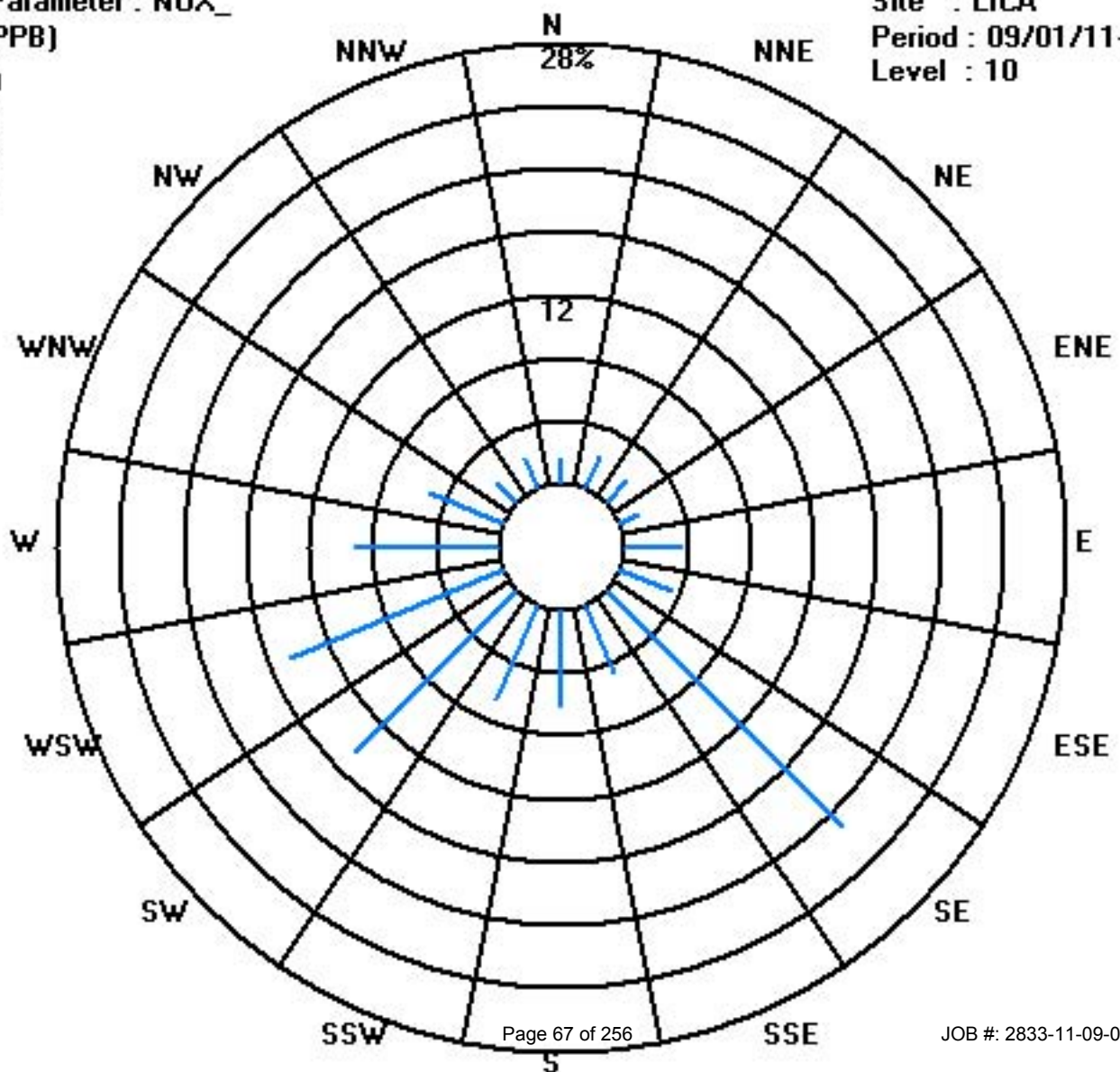
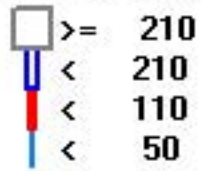
Calm : .00 %

Total # Operational Hours : 683

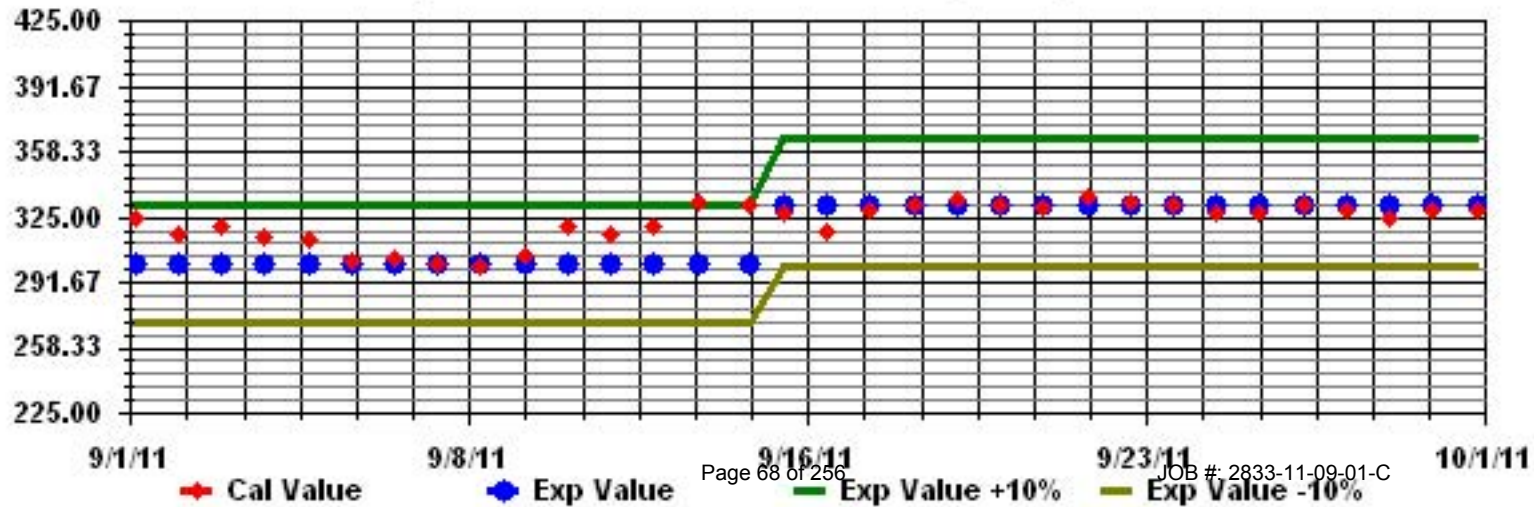
Class Limits (PPB)

Period : 09/01/11-09/30/11

Level : 10



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



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 2011

OZONE (O₃) hourly averages in ppb

MST

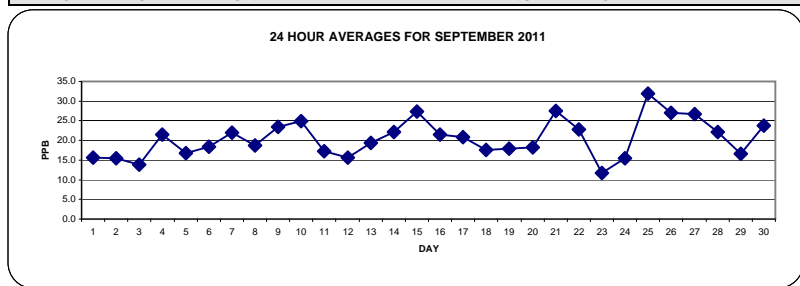
DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
1	4	3	IZS	2	1	1	4	7	11	16	21	26	28	29	29	28	27	15	11	15	19	17	15	29	15.6	24	
2	8	IZS	6	5	6	7	4	7	10	11	23	23	26	31	30	29	27	24	21	17	15	12	9	5	31	15.5	24
3	IZS	3	2	1	1	1	2	5	11	14	20	25	25	26	26	27	26	25	20	10	9	12	13	IZS	27	13.8	24
4	11	11	13	13	14	14	15	17	19	21	22	27	29	31	33	34	34	29	27	24	22	23	IZS	10	34	21.4	24
5	8	4	4	3	2	1	2	7	14	21	27	31	32	33	37	39	38	35	18	12	9	IZS	5	4	39	16.8	24
6	3	2	1	1	1	1	2	5	11	19	29	35	39	43	43	43	39	35	21	11	IZS	9	18	12	43	18.4	24
7	7	4	2	2	1	1	1	4	23	29	36	41	46	50	55	55	54	43	23	IZS	9	8	6	4	55	21.9	24
8	3	2	2	1	1	1	1	4	13	25	36	45	46	47	45	45	44	38	IZS	13	8	6	3	3	47	18.8	24
9	2	1	1	1	1	1	1	3	14	32	44	52	53	52	52	55	54	IZS	37	26	18	16	14	9	55	23.4	24
10	17	24	23	25	26	24	21	20	22	28	32	33	39	44	40	35	IZS	32	28	20	13	10	8	7	44	24.8	24
11	4	3	2	1	7	8	25	25	25	25	23	23	26	25	30	IZS	25	24	19	9	14	19	18	18	30	17.3	24
12	10	8	6	3	4	5	5	7	9	13	16	21	27	27	IZS	28	26	24	19	22	22	21	19	18	28	15.7	24
13	17	19	19	20	19	17	17	20	25	25	26	26	26	IZS	28	28	29	28	17	11	9	9	7	5	29	19.4	24
14	4	4	5	6	7	5	10	15	20	24	29	31	IZS	36	36	36	35	34	31	29	29	28	27	27	36	22.1	24
15	26	25	24	23	23	22	21	22	C	C	C	C	32	33	34	34	33	29	27	29	30	28	27	26	34	27.4	24
16	25	24	24	23	20	19	16	15	16	18	IZS	23	27	23	24	21	21	19	23	27	24	21	22	20	27	21.5	24
17	18	17	18	17	16	15	16	17	20	IZS	25	28	28	28	30	30	28	27	20	19	13	17	17	14	30	20.8	24
18	15	14	14	13	13	14	13	14	IZS	19	21	23	26	27	28	28	29	29	19	14	10	8	8	5	29	17.6	24
19	5	4	5	4	3	2	2	IZS	14	19	22	24	28	31	32	31	30	28	25	24	24	22	19	15	32	18.0	24
20	11	7	5	4	3	2	IZS	4	8	12	17	26	30	34	35	35	35	31	17	13	21	23	23	22	35	18.2	24
21	22	21	20	20	19	IZS	16	16	18	21	30	M	34	36	37	37	37	36	34	33	32	30	29	28	37	27.5	23
22	29	28	26	24	IZS	19	11	12	15	18	24	31	37	39	42	41	39	27	23	15	8	7	6	3	42	22.8	24
23	2	2	1	IZS	1	3	21	21	20	22	21	22	25	25	20	18	15	12	7	4	3	3	1	1	25	11.7	24
24	1	1	IZS	1	1	1	1	5	20	31	32	33	35	36	36	35	33	16	10	7	4	7	9	36	15.5	24	
25	7	IZS	21	24	28	27	25	25	26	26	28	30	33	37	41	43	42	41	41	39	39	39	37	35	43	31.9	24
26	IZS	31	28	23	23	19	23	24	23	21	26	31	34	36	37	36	35	30	19	18	17	30	32	IZS	37	27.1	24
27	32	28	19	15	11	8	3	4	16	27	30	33	34	38	40	40	38	33	28	28	43	43	IZS	24	43	26.7	24
28	27	25	19	15	15	17	18	20	24	25	26	27	27	27	26	25	24	23	23	23	23	IZS	18	12	27	22.1	24
29	12	8	5	2	2	1	1	2	7	13	22	23	23	24	26	28	29	28	27	26	IZS	25	24	24	29	16.6	24
30	24	24	24	23	22	21	20	19	20	21	22	24	27	29	31	31	27	28	25	IZS	19	21	20	25	31	23.8	24
HOURLY MAX	32	31	28	25	28	27	25	25	26	32	44	52	53	52	55	55	54	43	41	39	43	43	37	35			
HOURLY AVG	12.6	12.4	12.1	10.9	10.0	9.6	10.9	12.5	16.4	20.9	26.0	29.1	31.7	33.7	34.6	34.4	33.0	29.4	23.1	19.2	18.0	18.3	16.2	14.3			

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:

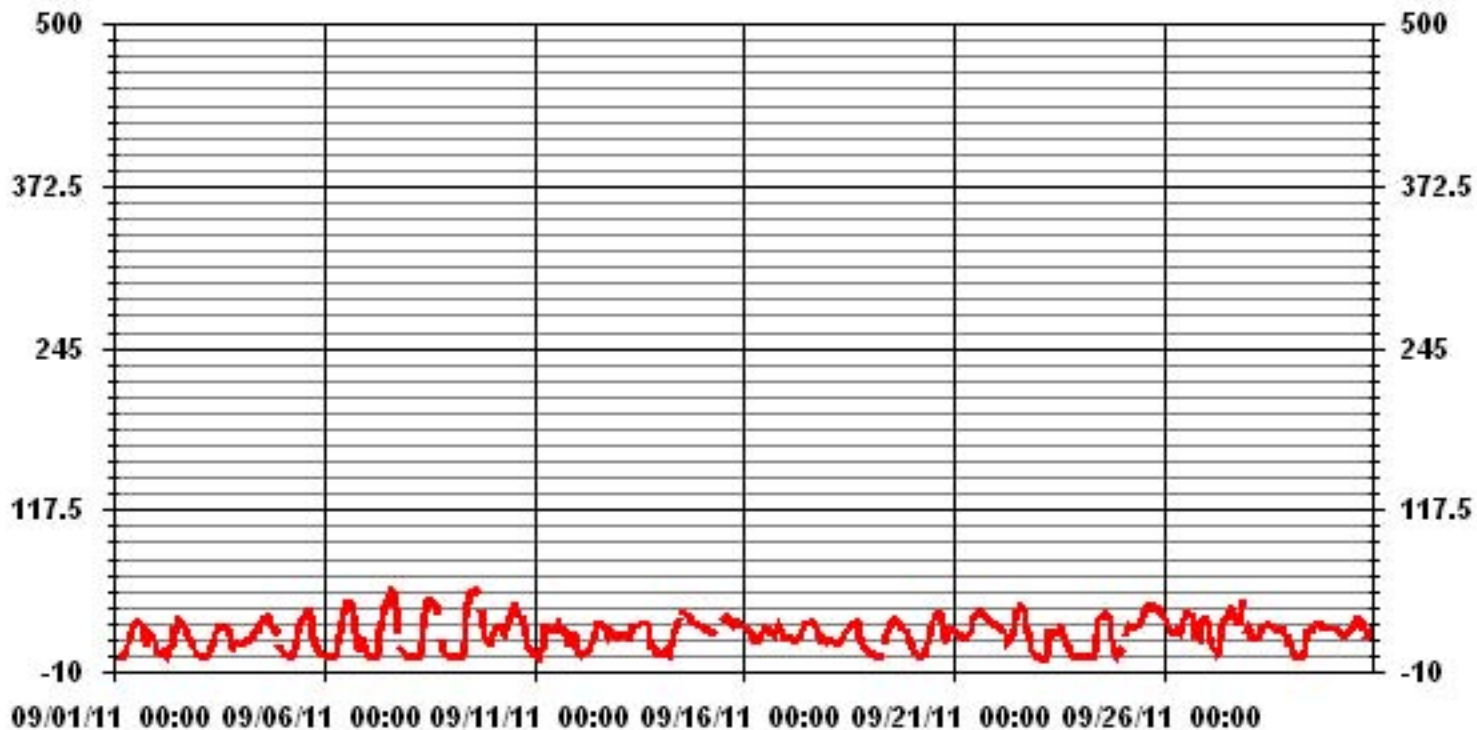
ALBERTA ENVIRONMENT: 1-HR 82 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	684
MAXIMUM 1-HR AVERAGE:	55 PPB @ HOUR(S) 14, 15 ON DAY(S) 7
MAXIMUM 24-HR AVERAGE:	31.9 PPB ON DAY(S) 25
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION	12.00
OPERATIONAL TIME:	719 HRS
AMD OPERATION UPTIME	99.9 %
MONTHLY AVERAGE	20.43 PPB

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 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	7	5	IZS	3	3	3	6	8	14	19	24	29	30	31	31	30	30	29	25	15	19	20	19	19	31	18.2	24	
2	11	IZS	8	8	9	9	8	11	12	16	25	25	30	33	31	31	30	27	24	20	16	14	12	8	33	18.2	24	
3	IZS	5	5	4	2	4	3	7	13	16	27	27	26	27	27	28	27	27	24	15	13	14	14	IZS	28	16.1	24	
4	13	13	14	14	15	15	17	19	21	22	24	28	31	33	34	35	35	34	29	28	25	25	IZS	13	35	23.3	24	
5	12	7	6	4	3	3	5	11	17	26	31	33	33	35	44	41	40	39	28	16	13	IZS	8	6	44	20.0	24	
6	5	4	3	3	4	2	3	7	16	23	33	37	41	45	45	44	43	39	31	15	IZS	16	20	17	45	21.6	24	
7	10	8	5	5	3	2	3	14	29	33	38	44	50	53	58	58	56	54	30	IZS	14	14	10	7	58	26.0	24	
8	5	6	5	3	3	3	4	8	23	30	44	47	48	49	47	47	42	IZS	18	13	9	5	6	49	22.3	24		
9	4	3	3	2	3	4	2	6	27	39	52	54	55	54	55	58	57	IZS	47	36	24	22	18	13	58	27.7	24	
10	27	28	28	28	28	26	23	22	24	32	33	35	43	46	46	37	IZS	34	31	23	18	14	13	9	46	28.2	24	
11	7	5	4	2	21	19	28	27	26	26	25	25	27	27	33	IZS	28	26	24	17	17	22	20	20	33	20.7	24	
12	11	9	9	6	6	6	6	8	11	16	18	25	29	28	IZS	29	27	26	23	23	23	22	20	19	29	17.4	24	
13	19	20	22	22	20	19	18	25	27	27	26	27	27	IZS	29	29	30	29	28	13	11	13	9	7	30	21.6	24	
14	6	9	7	8	11	7	13	18	23	25	31	33	IZS	38	38	37	36	35	33	30	30	29	28	27	38	24.0	24	
15	26	26	25	24	23	23	22	22	C	C	C	C	C	34	36	35	35	33	30	31	30	29	28	27	36	28.4	24	
16	26	25	24	24	23	21	18	17	17	22	IZS	26	29	25	27	23	22	21	28	29	25	23	23	21	29	23.4	24	
17	20	17	19	18	17	16	16	18	21	IZS	27	29	29	30	32	32	30	29	24	23	18	19	19	16	32	22.6	24	
18	16	16	16	14	14	15	14	16	IZS	21	22	25	27	28	29	29	30	31	26	18	12	11	10	8	31	19.5	24	
19	6	6	7	6	5	4	4	IZS	17	22	23	26	31	32	33	32	31	29	27	25	25	23	22	17	33	19.7	24	
20	15	9	7	6	6	4	IZS	8	11	19	23	29	33	35	36	36	36	35	22	18	24	25	25	23	36	21.1	24	
21	23	22	21	20	20	IZS	17	17	19	25	33	M	36	37	38	38	38	37	36	33	32	31	30	30	38	28.8	23	
22	30	29	28	26	IZS	22	16	15	17	23	28	36	39	42	43	43	42	34	28	22	11	10	11	5	43	26.1	24	
23	4	4	3	IZS	2	11	24	23	21	23	23	24	27	27	25	22	21	15	12	7	6	6	2	2	27	14.5	24	
24	2	2	IZS	2	2	4	2	3	10	31	32	33	34	36	38	39	37	36	30	15	12	7	10	12	39	18.7	24	
25	10	IZS	26	27	30	29	27	26	26	27	30	31	35	41	42	44	43	42	42	41	40	40	38	36	44	33.6	24	
26	IZS	32	31	27	25	23	27	26	25	23	30	33	36	37	39	38	37	36	26	21	28	32	33	IZS	39	30.2	24	
27	32	32	25	23	15	10	7	7	26	28	33	35	38	40	42	42	41	38	37	36	45	45	IZS	28	45	30.7	24	
28	31	28	23	17	17	20	19	22	25	25	27	28	39	28	27	26	25	24	24	24	24	IZS	20	15	39	24.3	24	
29	16	10	7	5	4	3	5	5	10	18	26	25	25	25	27	29	29	29	27	27	IZS	25	25	24	29	18.5	24	
30	24	24	24	24	23	22	21	20	21	21	25	26	28	30	33	32	32	30	27	IZS	22	23	22	28	33	25.3	24	
HOURLY MAX	32	32	31	28	30	29	28	27	29	39	52	54	55	54	58	58	57	54	47	41	45	45	38	36				
HOURLY AVG	14.9	14.4	14.5	12.9	12.3	12.0	13.0	15.0	19.6	24.2	29.0	31.3	34.1	35.4	36.7	36.0	35.0	32.4	28.4	22.8	21.1	20.8	18.4	16.5				

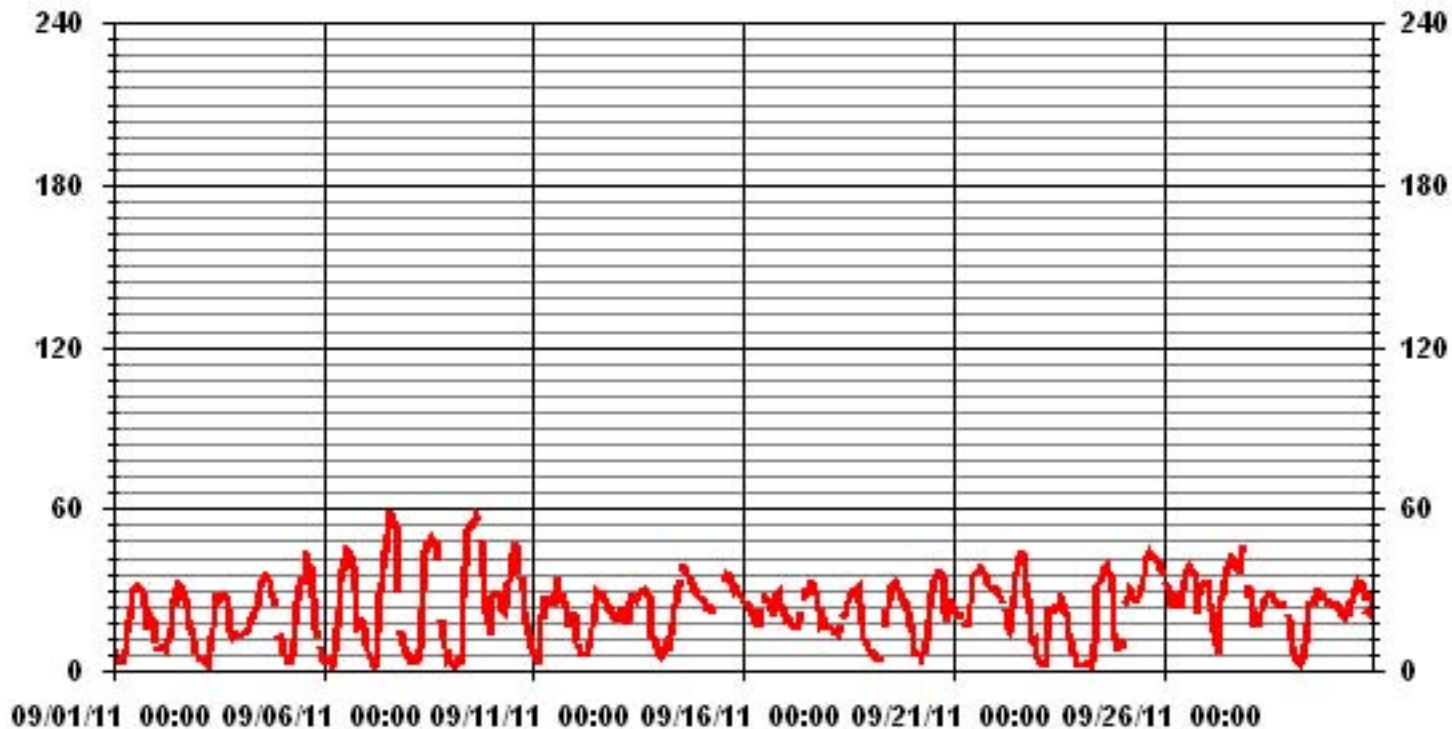
STATUS FLAG CODES

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:	58	PPB	@ HOUR(S)	VAR	ON DAY(S) 7, 9
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS
MONTHLY CALIBRATION TIME:	5	HRS			
STANDARD DEVIATION:	11.95				

01 Hour Averages



— LICA O3MAX PPB

LICA
 O3_ / WD Joint Frequency Distribution (Percent)

September 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	1.60	2.19	1.90	1.31	3.65	3.50	21.34	4.67	5.70	6.14	13.88	14.61	9.06	5.11	1.75	2.04	98.53
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.43	.43	.58	.00	.00	.00	.00	.00	1.46
< 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	1.60	2.19	1.90	1.31	3.65	3.50	21.34	4.67	6.14	6.57	14.47	14.61	9.06	5.11	1.75	2.04	

Calm : .00 %

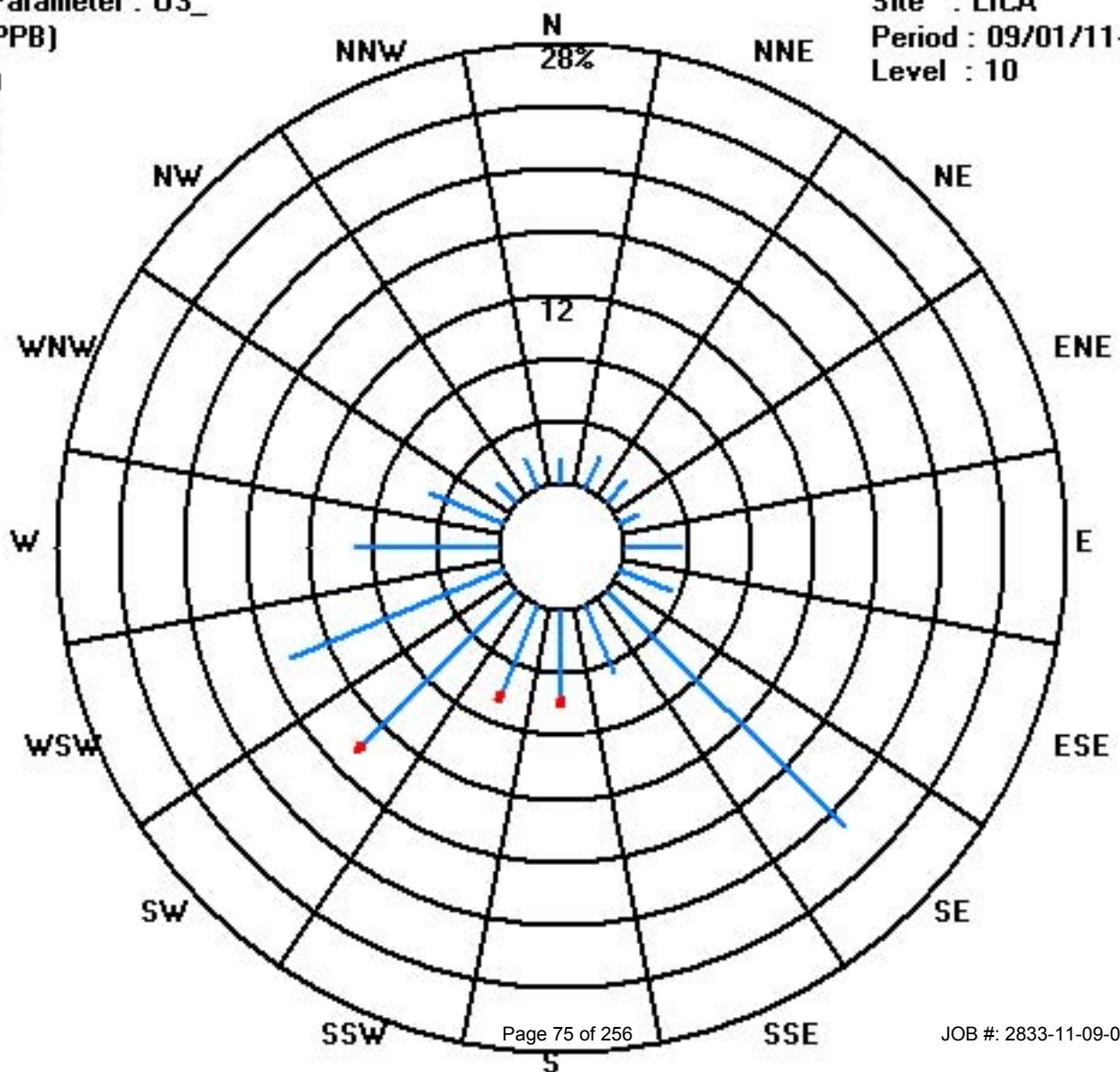
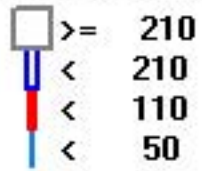
Total # Operational Hours : 684

Distribution By Samples

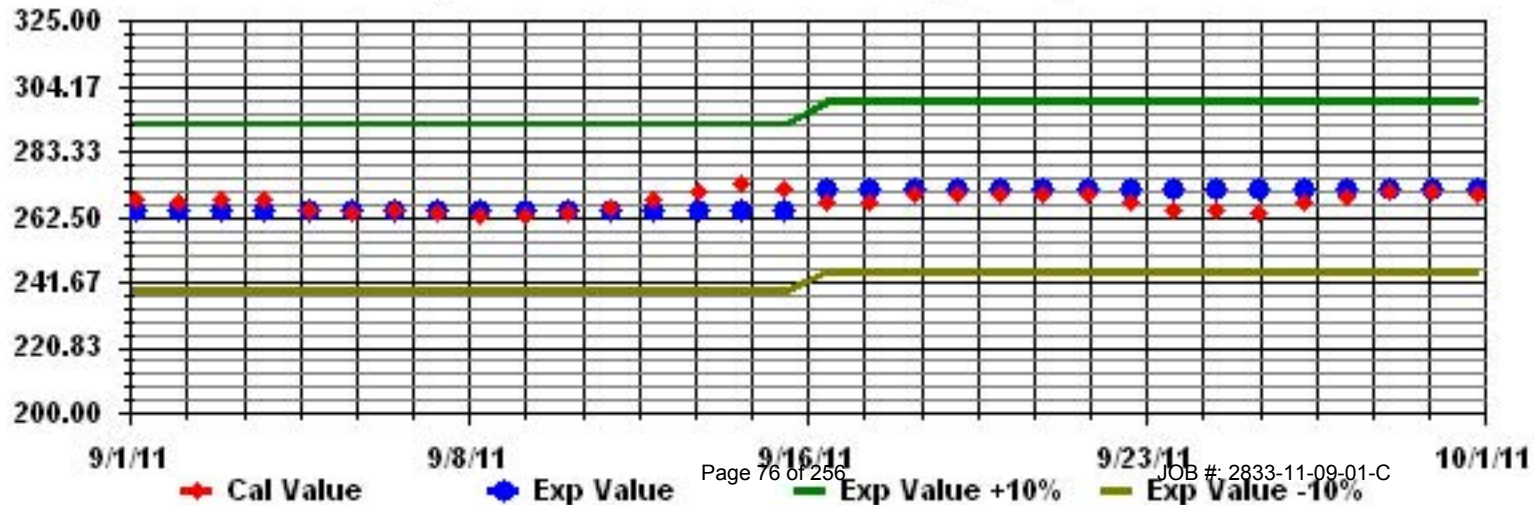
	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	11	15	13	9	25	24	146	32	39	42	95	100	62	35	12	14	674
< 110									3	3	4						10
< 210																	
>= 210																	
Totals	11	15	13	9	25	24	146	32	42	45	99	100	62	35	12	14	

Calm : .00 %

Total # Operational Hours : 684

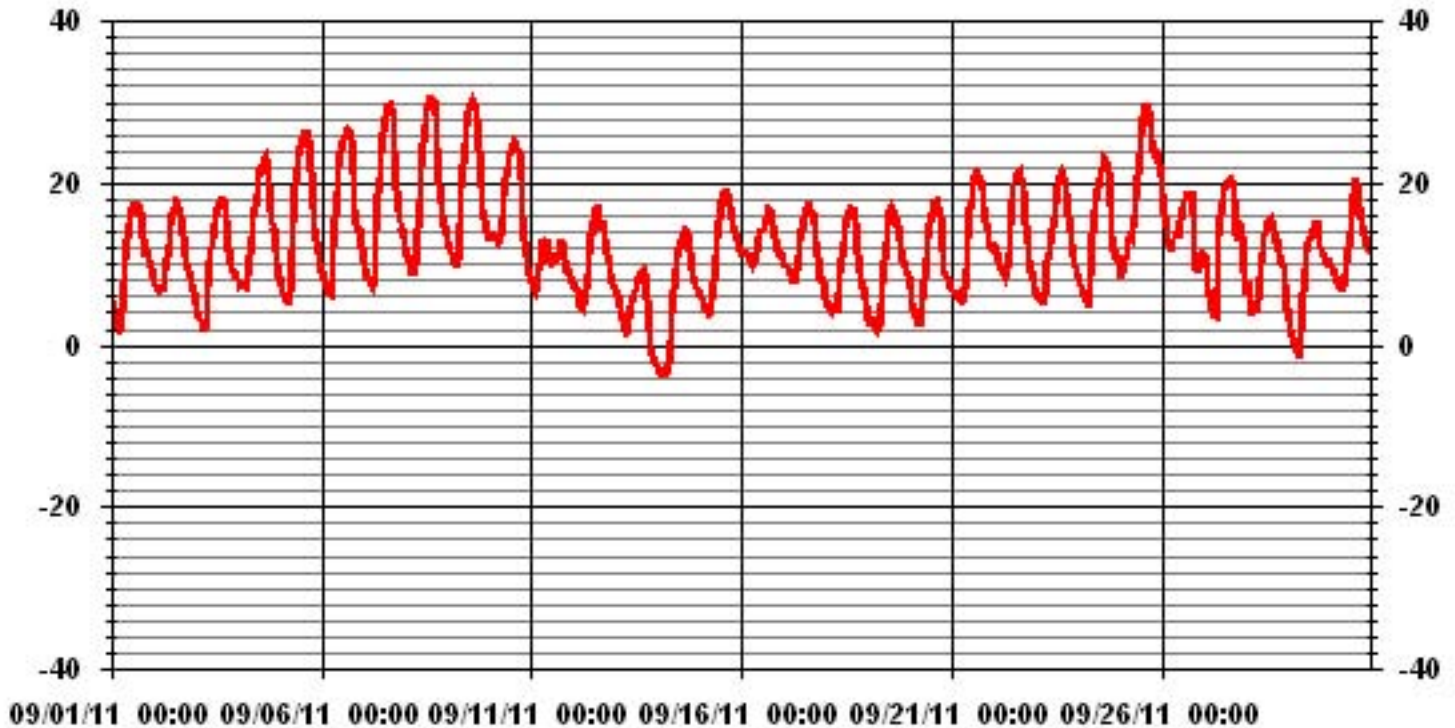


Calibration Graph for Site: LICA Parameter: 03_ Sequence: 03 Phase: SPAll



Ambient Temperature

01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 2011

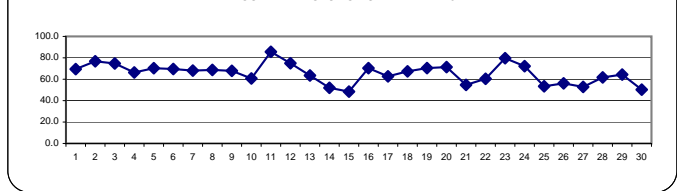
RELATIVE HUMIDITY hourly averages (%)

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.																						
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																											
DAY																																																		
1	92	92	93	93	93	94	92	87	79	67	55	46	41	39	41	40	42	46	67	76	72	70	74	76	94	69.5	24																							
2	83	87	91	92	91	91	93	85	82	78	61	56	49	41	47	51	50	66	87	91	90	92	94	95	95	95	76.8	24																						
3	95	95	94	95	94	95	92	87	77	71	64	55	55	51	48	46	47	50	62	79	84	85	85	87	95	95	74.7	24																						
4	89	90	88	87	86	85	80	71	61	54	53	50	45	43	42	41	41	53	58	67	70	69	82	87	90	66.3	24																							
5	90	91	93	93	92	93	89	77	71	57	51	44	36	35	36	37	39	44	69	86	89	91	91	93	93	93	70.3	24																						
6	93	93	93	93	93	95	93	85	74	65	54	45	40	37	35	32	31	38	61	78	84	88	80	89	95	69.5	24																							
7	92	92	93	92	92	93	89	77	62	56	50	43	37	32	31	32	33	42	64	79	85	89	89	90	93	68.1	24																							
8	93	95	94	94	94	95	89	80	71	59	51	41	37	32	31	29	32	40	60	79	83	87	90	93	95	68.7	24																							
9	94	93	94	94	93	94	93	81	70	57	49	41	37	32	28	30	33	39	54	72	82	87	90	91	94	67.8	24																							
10	86	80	80	79	79	82	79	71	64	49	39	36	36	34	32	28	30	34	44	62	76	83	86	88	88	60.7	24																							
11	91	91	92	88	82	84	65	69	68	65	88	93	93	93	90	92	86	82	89	94	93	87	88	91	94	85.6	24																							
12	96	97	98	98	98	98	98	93	89	78	69	58	47	45	42	50	57	53	63	67	72	75	80	77	98	74.9	24																							
13	78	77	78	77	82	87	85	73	60	54	47	44	40	36	32	30	30	32	60	77	85	85	87	88	88	63.5	24																							
14	89	90	89	90	89	89	85	72	60	48	35	29	29	25	24	23	23	24	31	37	40	41	42	43	90	52.0	24																							
15	44	45	49	51	54	55	55	52	49	44	41	41	37	33	32	33	36	44	52	56	59	64	66	70	70	48.4	24																							
16	72	71	71	72	74	76	79	79	76	71	74	79	84	76	64	57	57	61	56	56	69	75	68	72	84	70.4	24																							
17	77	77	74	76	77	78	77	70	62	57	52	48	45	40	35	38	41	47	60	67	78	74	73	82	82	62.7	24																							
18	82	84	86	88	86	85	84	76	67	61	56	51	46	42	37	37	37	41	62	73	77	83	88	88	88	67.4	24																							
19	91	92	91	90	92	92	88	84	74	65	58	50	43	37	39	42	48	57	61	68	71	81	84	92	92	70.4	24																							
20	88	92	93	94	94	95	94	86	82	74	66	55	50	43	39	36	39	45	67	75	73	75	77	80	95	71.3	24																							
21	79	81	81	82	84	86	85	79	70	59	41	38	33	30	28	29	31	33	36	41	43	47	48	49	86	54.7	24																							
22	46	50	55	60	64	67	72	71	64	53	47	45	44	41	39	39	41	52	69	78	84	88	90	91	91	60.4	24																							
23	92	93	92	91	91	90	81	77	74	68	67	63	58	59	62	63	66	73	86	90	92	93	95	95	95	79.6	24																							
24	95	95	94	94	95	95	94	88	76	59	49	47	45	43	41	42	43	47	66	80	84	84	88	89	95	72.2	24																							
25	94	90	82	78	73	76	79	75	70	64	55	46	39	32	26	24	26	30	34	39	41	36	37	36	94	53.4	24																							
26	43	54	61	71	72	75	70	71	74	82	68	53	44	35	27	28	30	39	58	63	66	54	53	56	82	56.1	24																							
27	57	63	76	75	82	84	83	72	55	44	38	34	32	29	28	26	29	37	49	47	41	47	65	75	84	52.8	24																							
28	74	67	78	81	77	77	71	62	55	53	48	43	44	44	43	48	60	54	56	58	63	66	74	85	85	61.7	24																							
29	90	91	92	91	91	92	92	85	79	68	47	45	49	50	46	43	40	41	48	50	52	54	54	54	92	64.3	24																							
30	55	55	57	60	59	63	65	63	57	53	46	41	37	33	29	31	41	45	46	48	53	57	59	53	65	50.3	24																							
HOURLY MAX	96	97	98	98	98	98	98	93	89	82	88	93	93	93	90	92	86	82	89	94	93	93	95	95																										
HOURLY AVG	81.3	82.1	83.4	84.0	84.1	85.4	83.2	76.7	69.4	61.4	54.2	48.9	45.3	41.6	39.1	39.1	41.1	46.0	59.0	67.5	71.6	73.2	75.8	78.2																										

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

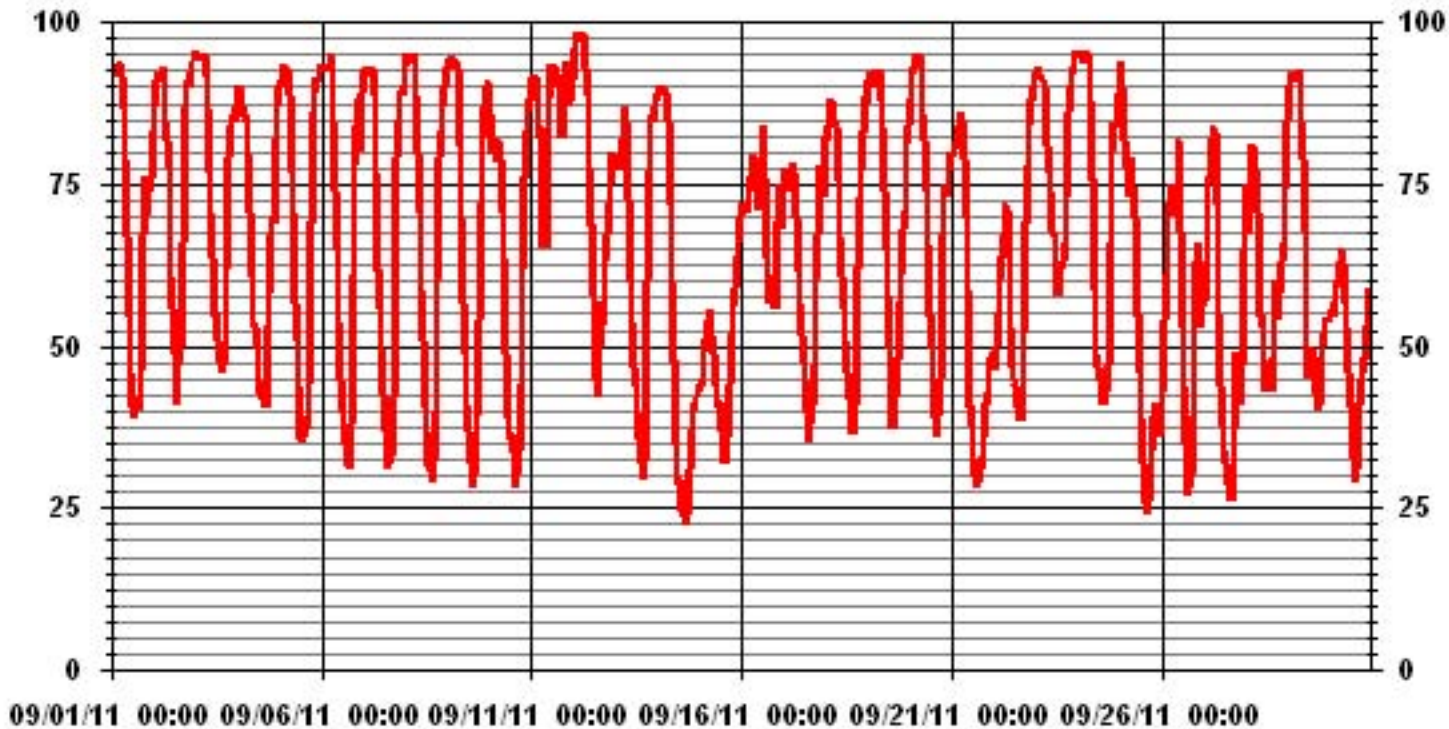
24 HOUR AVERAGES FOR SEPTEMBER 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	98	%	@ HOUR(S)	VAR	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	85.6	%			ON DAY(S)	11
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS	
STANDARD DEVIATION:	21.16		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	65.49	%	

01 Hour Averages



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 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		2.4	1.6	1.6	0.7	0.7	1.1	3.3	4.2	4.6	6.5	7.1	8.2	7.8	7.8	5.8	5.9	5.1	3.1	1.8	2.9	3.9	4.3	4.1	2.8	8.2	3	24
2		0.6	0.3	0.3	0.8	1.2	1.9	2	2.7	1.6	4.5	9.5	11.3	9	8.2	8.9	10.1	6.9	5.4	4.2	5.6	7	5.1	3.7	1.9	11.3	2.8	24
3		1.7	2.7	0.9	1.3	2.1	0.7	0.4	2.2	2.4	4.3	5.3	3.9	4.4	3.1	3.5	3.7	3.6	4	2.2	1.7	2.3	1.3	0.9	1	5.3	2	24
4		0.8	1.5	2.7	2.3	3	2.5	3.2	4.4	5.6	6.8	4.4	5.8	6.6	7	7.4	5.5	5.4	3.6	3.6	2.9	2.9	1.2	0.5	0.6	7.4	3.5	24
5		0.8	0.7	1.6	0.9	0.1	0.9	0.3	1.5	1.6	1.5	3.6	4.6	5.5	5.7	7.7	5.9	3.9	2.5	0.9	1.5	1	0.8	0.8	1.3	7.7	2.3	24
6		0.7	0.6	0.8	0.5	0.2	2.3	0.7	1.9	3.3	5.6	5.4	5.2	6	7.4	7.2	7.4	6.1	3.3	1.8	1.4	0.9	0.7	1.3	0.9	7.4	3.0	24
7		0.3	0.3	1.4	0.7	0.7	0.7	0.4	0.4	1	3.2	2.5	3.5	4.2	4.4	4.4	4.5	3.7	2.4	0.8	1.8	0.4	0.3	1.2	0.4	4.5	1.8	24
8		1.5	1.3	0.3	0.3	0.8	0.4	0.5	1.6	2.8	2.7	4	4.3	3.6	4.4	4.4	1.7	2.5	3.1	1.1	0.4	0.8	0.2	0.7	0.9	4.4	1.8	24
9		0.9	0.3	0.9	0.4	0.8	0.4	0.5	0.7	2	5.1	5.7	5.3	5.3	6.3	7.5	7.6	5.3	4	2.2	0.9	1.3	1.2	1.3	0.9	7.6	2.8	24
10		4.5	3.8	3.7	5.5	5.5	5	5.1	5.1	4.5	4.6	4.7	4.6	3.4	5.3	6.8	7.7	7.6	4.2	4.5	3.5	0.6	0.6	1.4	0.7	7.7	4.3	24
11		0.7	0.5	0.2	1.5	1.9	0.8	4.5	10.3	11.7	12.9	11.8	11.9	8.1	4.1	6.6	7.1	8.1	6	3.9	2.6	4	3.9	4.4	4.9	12.9	5.5	24
12		5.1	5.1	1.7	2.1	4.9	5.3	4.2	5.8	6.6	7	6.7	9.6	11.1	11.2	11.7	13.9	6.7	5.8	5.7	8.9	10.6	8.8	5.9	7.5	13.9	7.2	24
13		8.8	10.3	9.8	8.8	7.4	4.8	5.4	6.6	9.1	8.1	8.9	7.9	6.5	5.2	6.9	6.5	5.8	4.9	1.7	0.9	1	0.9	0.7	0.3	10.3	5.7	24
14		0.6	0.6	0.7	2.1	1.2	1.5	4.4	7.3	7.3	8	9.7	11.3	12.6	13.6	13.2	12.3	10.3	10.7	6.4	6.7	7.8	9	8.1	8.2	13.6	7.2	24
15		7.8	7.3	7	6.4	6.1	6.9	6.6	7.9	7.9	8.7	8.2	8	9	10.5	8.8	10.8	9.8	3.8	4	5.8	6.3	4.8	5.5	5.4	10.8	7.2	24
16		6.8	6.3	6.7	4.4	3.7	4.8	3.8	5.2	8.3	8	9.3	8.5	9.5	11.6	12	10	6.4	4.3	9.5	16.8	14.8	12.6	13.9	9.9	16.8	8.6	24
17		10.4	11	10.7	9.4	8.8	9.1	10.1	9.8	11.4	12.2	13.5	12.2	12.7	11.2	15	13.3	10.5	5	2.5	2.8	2.3	5.4	4	3.8	15.0	9.0	24
18		3.9	3.9	3	4.6	5.3	6.1	5.2	7.7	9.2	9.8	9.9	10.5	11.7	10.5	10.3	8.7	8.6	5.4	1.3	0.6	0.9	0.9	1	0.7	11.7	5.8	24
19		0.6	1.9	4.4	3.1	0.9	1	1	2.9	5.3	7.5	6.6	6.3	6.8	8.4	12	12.1	11.2	9.4	4.3	5.7	4.2	5.7	4.3	2.6	12.1	5.3	24
20		1.4	3.3	3.1	3.5	1.8	4.6	3.2	1.2	3.2	3.6	2.5	1.2	2.2	0.5	0.8	2.5	4.4	3.4	2.3	3.3	5.5	6.4	7.7	9.8	9.8	3.4	24
21		9.5	9	10.4	10.4	9.5	10.8	9.9	9.1	9.7	8.9	10.8	9.3	9.7	9.8	9	11.8	9.5	10	8.5	9.8	9.5	6	4.6	7	11.8	9.3	24
22		7.7	7	4.4	4.2	3.1	1.6	0.9	1.3	4.3	5.1	5.6	6.1	5.8	7.1	6.5	6.6	4	2	1.4	0.9	0.7	0.5	0.6	0.1	7.7	3.6	24
23		1.6	0.9	0.7	1	0.9	1.3	7.3	6.5	5.6	6	7.7	6.3	7.7	4.3	1.8	2.4	1.8	0.6	0.4	0.3	0.7	0.2	0.5	0.7	7.7	2.8	24
24		0.7	1.2	0.4	0.9	0.9	0.5	1.3	1.5	0.8	2.3	5.6	3.8	4.2	4.4	3.4	5.1	5.2	2.3	1.2	0.3	1.3	1.7	1.8	2.2	5.6	2.2	24
25		2	2.9	3.3	3.6	5.2	5.8	4.6	8.2	10.5	11.6	11.8	12	14.6	17.2	18.1	16.6	17.2	16.4	16	13.2	10.3	12.1	7.1	4.8	18.1	10.2	24
26		7.3	5.5	4.6	2.1	5.5	3.1	7.8	7.4	3.2	5.9	10.4	12.2	11.5	11.4	12.9	9.6	5.1	2.1	1	1.5	2.8	7	8.1	9.7	12.9	6.6	24
27		11.4	1	0.6	1.6	0.6	0.6	1	0.3	4.1	7.8	8.1	8	6.8	9.5	7.3	6.5	3.6	1.5	3	4.8	9.8	2.7	0.5	0.8	11.4	4.2	24
28		5.4	3.9	2.9	3	4	4.6	5.5	6.7	9.1	10	11	14.4	15.3	13.4	13.8	13.2	11.3	11.3	10.9	10.4	8.7	6.7	3.2	3.3	15.3	8.4	24
29		2.9	2.5	2.5	0.6	0.7	1.3	0.4	0.4	1.8	7	9.1	9.4	6.9	10	11.2	12.4	12.8	8.7	10.2	12.6	13.6	11.1	10.9	13.3	13.6	7.2	24
30		13.6	12.1	9.1	8.2	10.4	8.1	6.3	6.2	6.2	5.1	4.5	6	7.6	8.2	4.6	8	3.3	4.4	6.8	4.6	3.4	4.2	4.1	7.8	13.6	6.8	24
HOURLY MAX		13.6	12.1	10.7	10.4	10.4	10.8	10.1	10.3	11.7	12.9	13.5	14.4	15.3	17.2	18.1	16.6	17.2	16.4	16.0	16.8	14.8	12.6	13.9	13.3			
HOURLY AVG		4.1	3.6	3.3	3.2	3.3	3.3	3.7	4.6	5.5	6.7	7.5	7.7	7.9	8.1	8.3	8.3	6.9	5.1	4.1	4.5	4.6	4.2	3.8	3.8			

STATUS FLAG CODES

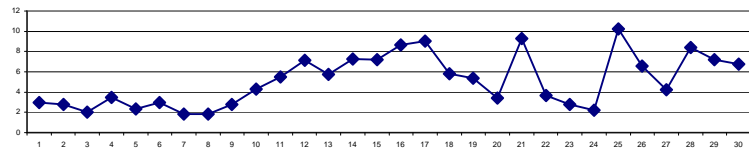
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: November 23, 2010

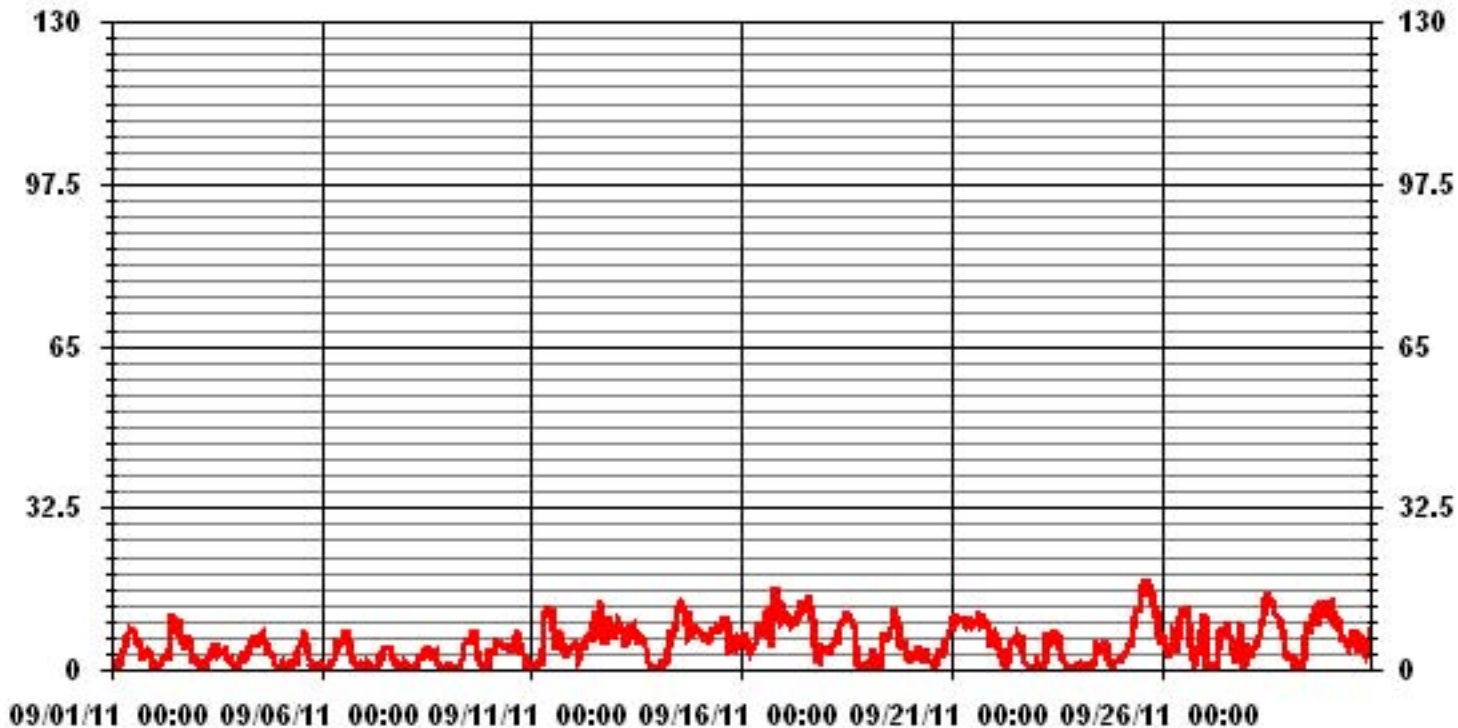
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	18.1	KPH	@ HOUR(S)	14	ON DAY(S)	25
MAXIMUM 24-HR AVERAGE:	10.2	KPH			ON DAY(S)	25
CALMS (≤ 0 KPH)	2.55	%				
MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS	
STANDARD DEVIATION:	3.87		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	5.25	KPH	

24 HOUR AVERAGES FOR SEPTEMBER 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2011

VECTOR WIND SPEED MAX instantaneous maximum in 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	
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	4.4	4.5	4	2.9	2.9	3.4	5.4	7.2	8.2	11.4	13.2	14.2	12.9	16.8	12.2	12.8	12.3	8.7	3.7	6.6	5.3	6.2	5.5	5.7	16.8	
2	2.3	3.7	4.2	3.8	6	6	4.9	8.7	5.3	8	14.6	20	15.3	16.7	13.9	20.9	13	10.3	7.7	8.6	8.9	7.8	5.3	5.2	20.9	
3	4.4	5.3	4.2	6.1	3.9	2.4	2.8	4.6	6.2	9.3	9.5	9	10.6	12	11.8	11.2	8.8	9.2	3.9	2.6	3.6	2.9	3.6	2.9	12	
4	3.3	5	4.5	4.4	5.8	5.3	6.9	9.5	9	12.3	10.6	11.4	13.1	13.9	14.9	10.2	9.9	5.7	6	4.8	5.8	4.5	3.5	2.1	14.9	
5	2.6	3.6	5.4	3.1	1.9	3.1	2.9	4.1	5.2	5.2	7.2	10.1	11.2	11.3	14.5	12	8.2	5.8	1.9	4.5	2.7	2.3	3.1	4.2	14.5	
6	3.3	1.6	2.2	1.8	5.4	6.9	3.2	4	6.5	8.8	10.1	10.2	11.2	13.3	13.4	13.4	11.7	8.9	3	3.4	3.1	2.5	3.4	3.1	13.4	
7	2.3	3.1	3	3.2	3.6	4.2	2.5	2.5	5.3	8.5	6.7	7.7	9.7	9.5	8.7	9.4	7	4.4	2.6	3.7	6.8	3.8	2.4	1.8	9.7	
8	4	4.8	1.7	2.5	3.2	3	1.6	4.8	5.6	5.6	7.3	8.8	9.9	8.8	10.9	11.2	6.8	6.9	2.7	1.5	1.8	1.9	1.9	2.4	11.2	
9	3.7	1.9	3.6	2.3	2.9	4.8	2.5	3.1	4.5	7.7	10.6	8.8	10.9	12.6	13.6	14.1	10.2	6.3	3.9	2.5	3.4	2.2	4.6	4.7	14.1	
10	6.6	5.7	5.3	7	6.8	6.4	7.4	8.5	9	9	10.3	10.8	9.9	12.6	13.6	12.6	12.7	8.7	6.7	5.2	2.3	4.9	5.2	3.9	13.6	
11	6.9	4.4	2	2.9	5.5	5.3	12.5	16.5	16.7	19.3	17.9	19.6	15.5	8.8	12.9	12.4	12.4	9.1	7.5	3.9	9.2	9.3	7.5	7.6	19.6	
12	7.2	7.6	5	3.6	7.9	7.4	5.8	9.7	10.3	11.6	11.1	17	20.2	16.1	21.8	27.7	11.3	10.9	24.2	21.9	16.5	16.3	10.1	11.4	27.7	
13	20.6	15.7	14.7	11.4	10.6	7.9	7.1	10.9	16	13.3	17.9	19.2	14.5	11.5	13.7	13.6	11.9	10	3.1	3.6	3.3	4.5	4.1	1.5	20.6	
14	2.9	1.9	3.1	4.4	2.9	4.5	7.2	9.6	13.5	14	17.1	18.9	22.4	23.4	20.2	21.1	17.2	16.4	11	9.6	9.8	11.1	10.7	10.3	23.4	
15	11.7	9.9	9.9	9.6	9.3	10.8	14	11.6	14.1	12.8	14.2	16.4	15.8	15.4	15.5	14.2	7.8	6.2	8.7	9.5	8.2	8.5	7.5	16.4	16.4	
16	9.5	10.5	12.1	9.4	7.4	9.4	7.9	10.6	13.5	15.2	16.8	13.6	14.6	21.6	19.8	16.2	14.1	9.1	19.8	28.8	22.3	18.7	20.1	16.4	28.8	
17	17	15.4	16.5	15.3	13.7	12.9	15.4	15.5	17.7	17.8	20.5	19	21.2	18.2	25.2	25.3	17.2	12.9	4.8	4.1	4.9	8.9	7	6.1	25.3	
18	5.8	6.1	5	7	8.7	9.7	9	13.9	12.6	14.7	15.3	18.5	19.6	18.7	16	15.8	13.8	12.7	2.7	7.3	4	2.6	5.6	2.7	19.6	
19	2.3	4.8	5.8	6.1	2.8	2.6	3.5	7	10.4	11.8	11.6	12.9	13.6	16.6	20	18.8	15.9	16.3	8.2	10.4	6.9	8.8	9.9	5.2	20	
20	3.8	6.8	6.6	6.5	6.4	6.6	5	3.5	5.4	8.4	6.6	7.5	9.1	7	7.8	9.2	8.1	7	3.9	4.8	6.9	8.3	11.6	12.3	12.3	
21	11.4	11.9	13.7	13	12	13.2	13.4	13.1	15.4	16.8	18	14.4	17.2	19.5	18	19.7	14.7	14.8	10.8	13.8	14.3	8.8	8.4	12.2	19.7	
22	11.8	12.6	7.3	7.4	7.8	6.4	3.6	4.2	8.7	8.9	10	12.3	11.7	11.1	10.2	14.4	8.5	4	3.4	3.1	3.3	4	4.9	4.4	14.4	
23	3.1	3.7	2.4	2.7	2.6	4.7	10.8	9.8	9.3	9.8	11.1	10	11.5	9.2	3.9	5.9	4.4	3.8	2.4	2.8	2.5	4.7	4.1	5.8	11.5	
24	5	3.9	3.8	2.9	4.2	4	5.2	2.9	3.6	7.8	10.1	9	11.3	7.9	9.2	9	7.9	5.6	3.3	4.6	3.9	3.4	4.2	3.9	11.3	
25	5.2	6.3	5.5	5.5	9.7	8.4	8.5	13.5	14.5	18.7	20.4	20.7	22.6	27.1	27.6	24.3	25.8	21.4	22	17.8	19.9	19	9.9	10.7	27.6	
26	11.4	10	8	6.8	8	8.9	13.1	12.8	13.2	14	19.8	19.9	18.1	19.8	23.3	17.4	10.3	4.8	3.1	2.9	5.8	9	12.6	13.7	23.3	
27	17.8	4.5	3.8	3.7	3.1	1.7	2.6	2.2	9.9	12.3	13.1	12.9	13.5	16.1	12	12.1	10.7	4.3	9.8	16	22.4	8.5	2.1	4	22.4	
28	7.8	7.6	5.5	5.7	6.8	6.1	8.3	11.1	17.7	15	19.4	22.5	24.1	21.5	24.9	22.8	21.7	19.4	17.8	15.9	12.8	12.1	5.1	4.9	24.9	
29	4.1	4.5	4	2.6	2.9	3.6	4.1	2.4	6.2	10.9	16.2	16.6	15.4	17.2	19.1	18.3	19.1	13.6	12.9	22.9	17.8	13.7	15.8	18.4	22.9	
30	17.1	15.3	14.5	14.4	13.5	11.6	7.9	9.7	9	9.9	11.2	13.6	13.9	13.1	11.6	12.3	7.5	8	12.1	10.1	5.1	5.9	10.1	11.9	17.1	
PEAK	20.6	15.7	16.5	15.3	13.7	13.2	15.4	16.5	17.7	19.3	20.5	22.5	24.1	27.1	27.6	27.7	25.8	21.4	24.2	28.8	22.4	19.0	20.1	18.4		

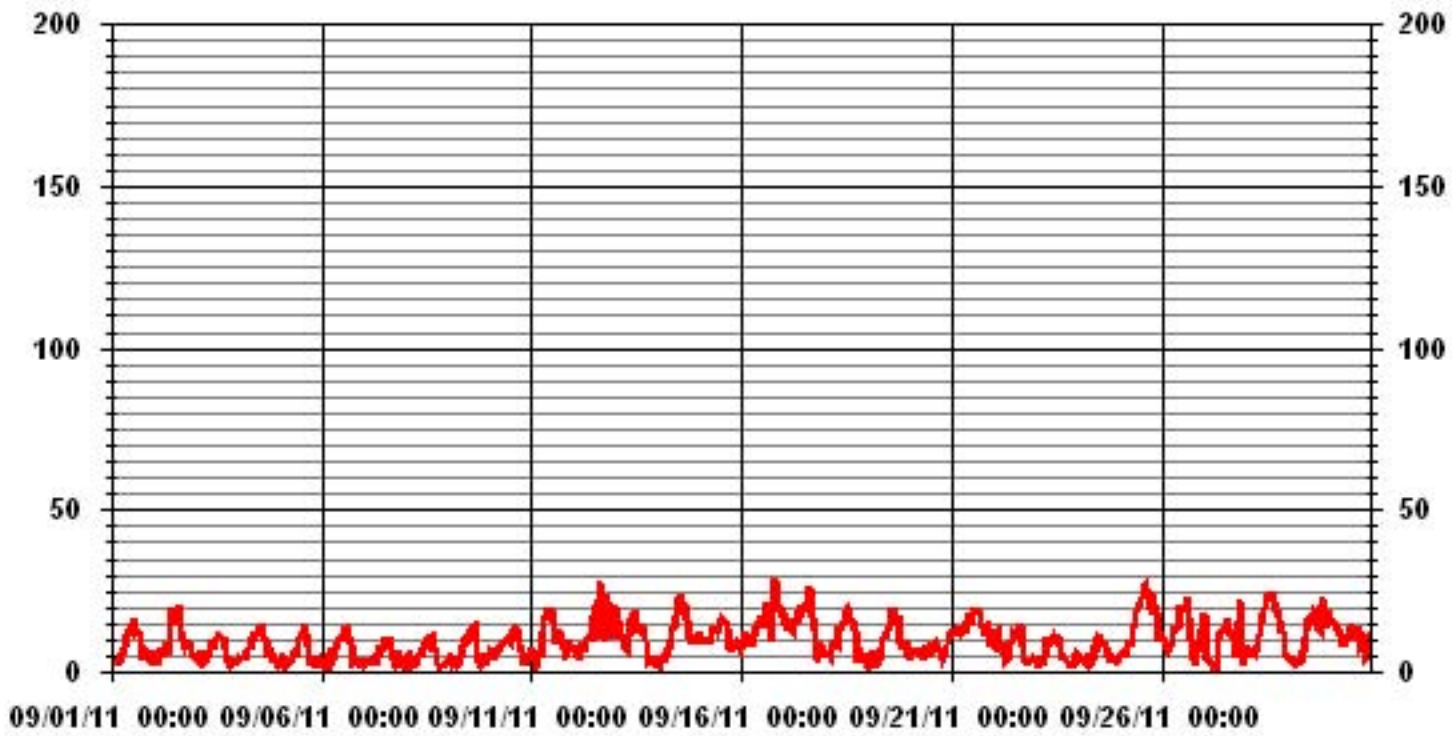
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	28.8	KPH	@ HOUR(S)	19
			ON DAY(S)	16

01 Hour Averages



— LICA WSMAX KPH

LICA
WSP / WD Joint Frequency Distribution (Percent)

September 2011

Distribution By % Of Samples

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

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	
< 6.0	.69	.83	.83	1.11	2.77	2.63	6.66	4.30	5.55	5.83	10.00	10.13	4.30	1.94	.97	.55	59.16
< 12.0	.69	1.11	.83	.13	.55	.00	12.22	.83	.27	.41	3.75	3.19	3.05	2.91	.83	1.38	32.22
< 20.0	.00	.00	.13	.00	.00	.13	2.77	.00	.00	.00	.13	1.25	1.11	.41	.00	.00	5.97
< 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	1.38	1.94	1.80	1.25	3.33	2.77	21.66	5.13	5.83	6.25	13.88	14.58	8.47	5.27	1.80	1.94	

Calm : 2.63 %

Total # Operational Hours : 720

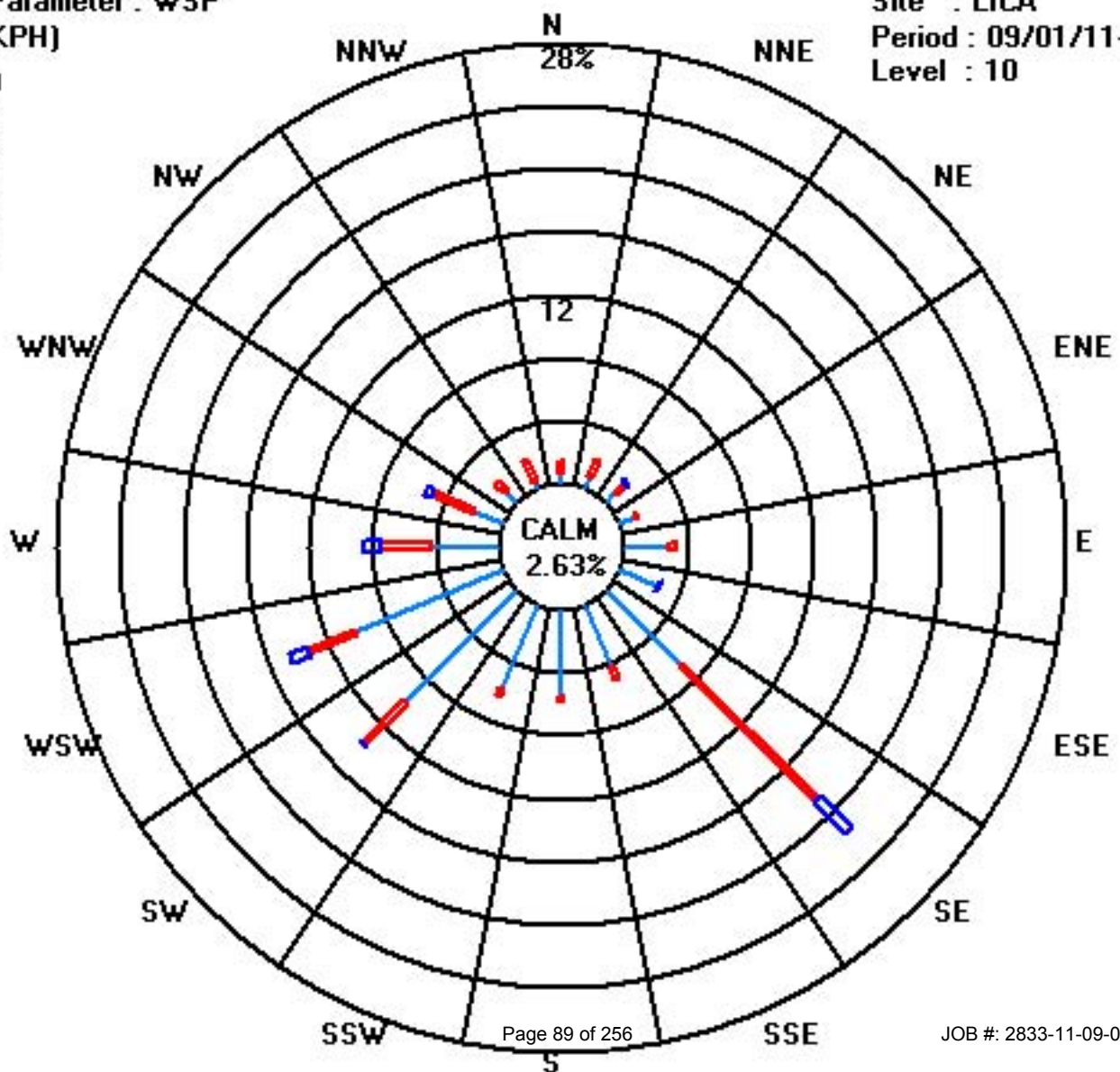
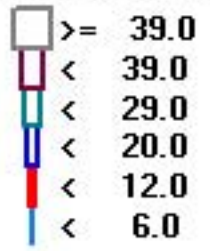
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	5	6	6	8	20	19	48	31	40	42	72	73	31	14	7	4	426
< 12.0	5	8	6	1	4		88	6	2	3	27	23	22	21	6	10	232
< 20.0			1			1	20				1	9	8	3			43
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	10	14	13	9	24	20	156	37	42	45	100	105	61	38	13	14	

Calm : 2.63 %

Total # Operational Hours : 720

Class Limits (KPH)



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 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																										
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	231	233	226	173	160	223	240	237	232	219	229	256	236	244	236	243	221	206	138	126	131	130	124	122	218	SW	24																									
2	70	113	215	281	1	228	268	262	148	341	18	14	19	11	326	351	341	308	263	245	250	260	240	249	328	NNW	24																									
3	225	251	230	251	233	263	221	264	276	226	240	259	238	241	258	185	192	198	161	144	137	141	181	156	223	SW	24																									
4	162	139	155	157	149	150	183	200	200	204	183	181	156	196	194	192	190	139	144	143	143	188	245	177	176	S	24																									
5	131	145	235	152	132	236	274	239	255	231	214	215	211	219	219	203	186	170	178	239	185	160	165	196	209	SSW	24																									
6	212	191	101	160	14	248	163	303	236	244	227	226	219	234	233	242	228	209	167	146	166	173	220	266	227	SW	24																									
7	121	33	144	119	104	119	237	193	190	250	216	200	207	183	203	179	189	140	140	137	88	109	118	79	184	S	24																									
8	234	246	235	193	227	168	63	240	222	223	278	250	217	225	233	221	221	193	183	143	124	121	162	207	226	SW	24																									
9	235	169	175	180	218	207	249	304	245	224	229	217	212	218	223	220	212	204	177	195	223	245	247	217	219	SW	24																									
10	243	243	240	237	237	235	237	256	274	335	343	280	269	297	297	287	288	292	250	235	166	168	222	177	268	W	24																									
11	274	197	101	73	83	5	68	45	46	53	37	41	65	82	349	321	327	323	298	242	262	277	254	246	18	NNE	24																									
12	244	251	187	179	235	245	246	246	245	244	254	268	278	277	287	302	291	294	315	348	352	346	326	336	286	WNW	24																									
13	349	345	343	345	344	317	309	341	19	25	21	31	45	26	35	26	69	88	169	184	186	187	156	156	9	N	24																									
14	205	136	213	132	160	128	133	130	134	139	143	140	136	140	141	142	139	134	130	131	130	130	129	129	137	SE	24																									
15	129	127	128	129	125	127	127	127	129	133	135	131	142	138	142	136	129	108	105	92	94	90	95	102	125	SE	24																									
16	94	94	97	94	77	87	99	130	137	221	241	230	238	256	250	253	245	237	232	235	240	244	258	232	227	SW	24																									
17	231	231	230	233	230	232	232	235	250	252	257	249	241	243	253	272	286	284	231	218	218	243	245	221	245	WSW	24																									
18	226	223	221	226	232	234	232	246	258	267	258	265	261	265	271	257	242	227	211	146	176	198	236	164	249	WSW	24																									
19	144	235	245	250	209	271	174	227	252	256	280	272	262	288	268	268	284	295	271	293	283	287	284	255	271	W	24																									
20	203	238	244	253	250	259	256	228	230	230	187	218	267	90	265	164	136	143	135	138	133	136	134	134	176	S	24																									
21	134	132	134	134	134	133	131	133	134	137	151	157	174	180	166	143	143	139	132	133	133	127	122	129	141	SE	24																									
22	128	131	130	131	132	146	132	218	259	268	292	296	306	302	287	290	291	225	196	231	112	192	110	226	255	WSW	24																									
23	132	279	92	84	53	108	130	127	125	128	133	127	133	135	119	105	81	147	191	294	185	84	291	116	126	SE	24																									
24	194	250	161	210	244	181	142	267	253	43	10	32	26	9	25	28	38	19	48	103	108	51	72	99	31	NNE	24																									
25	246	139	69	42	84	83	103	129	130	126	124	121	125	131	129	130	128	128	127	127	128	139	147	192	126	SE	24																									
26	231	244	225	237	242	236	251	262	242	237	266	269	261	264	272	275	260	185	146	112	122	133	132	134	243	WSW	24																									
27	134	210	183	175	198	147	128	6	230	235	254	279	267	284	267	294	276	195	192	204	217	213	150	209	237	SW	24																									
28	243	250	215	213	227	225	238	254	261	270	280	279	280	302	287	279	284	293	294	305	304	303	273	239	277	W	24																									
29	244	240	240	135	151	230	268	84	160	139	143	142	151	136	139	137	137	133	127	128	131	133	132	136	139	SE	24																									
30	134	131	131	129	133	130	128	128	130	131	154	132	134	131	171	283	359	331	323	297	252	256	259	295	143	SE	24																									
HOURLY AVG	349	345	343	345	344	317	309	341	276	341	343	296	306	302	349	351	359	331	323	348	352	346	326	336																												

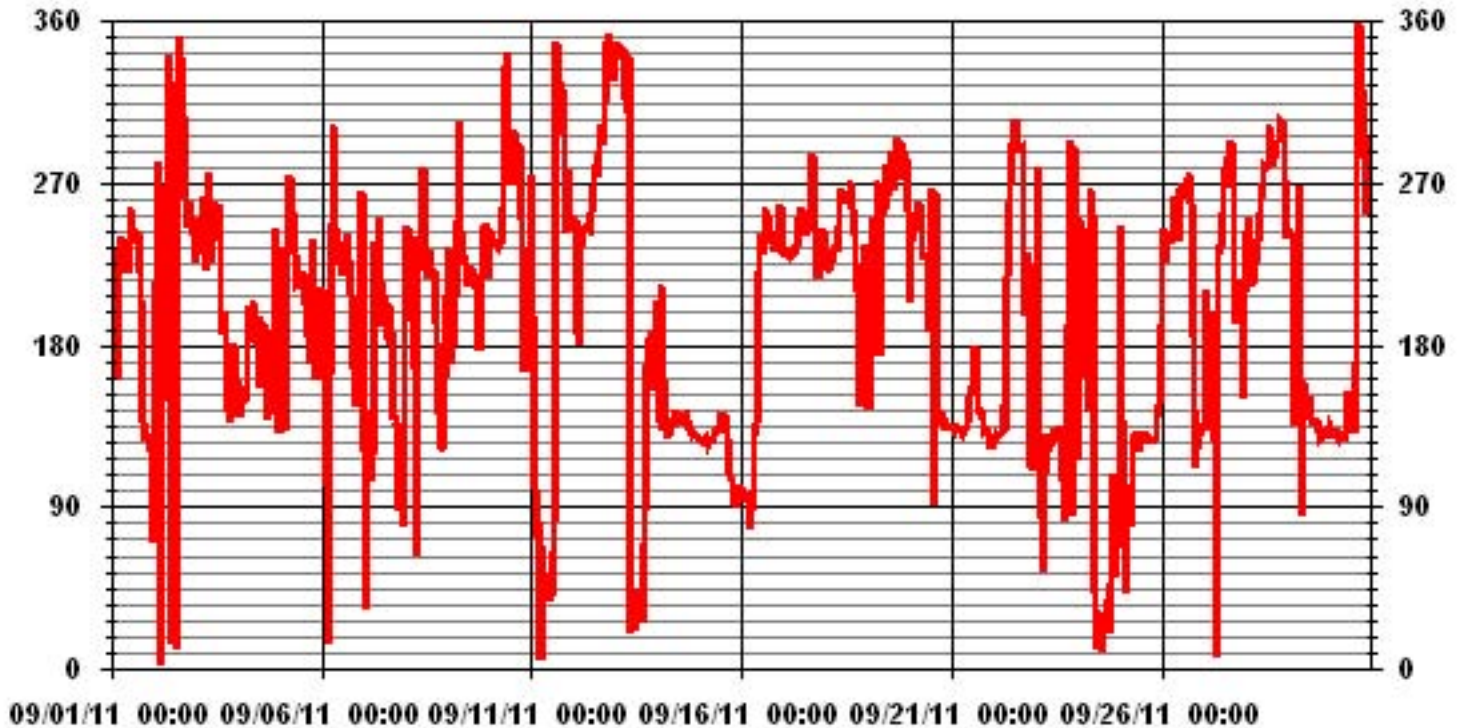
STATUS FLAG CODES

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	74.01		AMD OPERATION UPTIME	100.0	%
			MONTHLY AVERAGE	204	DEG

01 Hour Averages



— LICA WDR DEG

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

SEPTEMBER 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	14	49	32	53	56	44	18	26	29	25	31	29	31	39	28	32	34	31	11	13	11	10	10	20
2	59	31	40	56	38	54	38	44	63	23	21	21	24	30	19	22	18	24	28	16	13	16	14	40
3	25	15	45	60	14	53	48	27	39	41	31	47	41	50	56	42	48	29	23	21	21	52	74	69
4	71	69	33	44	35	38	37	36	35	34	43	42	37	38	36	41	33	19	23	25	24	52	49	57
5	46	56	31	49	69	31	57	38	46	55	36	38	35	38	30	35	36	26	33	57	26	35	35	20
6	50	51	36	68	72	57	42	33	29	23	32	34	30	32	33	27	25	24	13	26	48	52	67	59
7	79	62	29	48	63	73	46	53	57	38	51	47	43	40	41	38	33	15	48	14	40	49	25	50
8	54	38	74	79	54	40	45	33	26	36	32	38	48	46	36	69	51	21	34	43	24	48	42	29
9	55	52	43	56	54	41	65	43	42	22	27	33	36	34	30	29	29	22	22	42	45	46	37	42
10	13	12	11	13	13	14	15	19	25	36	45	42	61	36	30	28	25	20	14	10	65	45	53	66
11	66	67	64	24	29	38	27	21	18	18	21	19	22	33	22	15	16	18	15	16	26	32	16	16
12	14	20	34	29	18	16	16	21	24	24	29	26	24	23	24	22	21	22	23	16	18	17	19	20
13	16	17	16	17	15	15	12	17	24	28	26	35	40	43	36	32	27	25	18	18	43	48	62	42
14	63	41	55	40	38	35	14	11	18	24	29	26	25	20	22	26	27	17	13	12	12	12	13	12
15	13	14	13	14	14	14	15	15	18	20	21	26	29	22	25	15	14	21	20	18	21	21	19	20
16	18	19	29	35	24	23	24	16	18	29	25	27	25	20	23	24	22	25	22	24	24	22	21	23
17	23	23	22	24	25	23	22	25	23	22	23	25	25	26	22	22	22	21	21	17	19	14	14	19
18	16	17	21	20	20	22	23	21	20	24	24	24	26	26	24	26	24	24	33	49	43	43	53	65
19	49	34	14	21	40	58	51	29	23	21	27	29	35	27	24	23	22	19	17	17	16	18	20	26
20	30	23	19	29	37	12	13	49	30	40	56	73	66	55	57	73	36	24	13	13	9	11	11	11
21	12	11	12	11	12	12	14	15	15	25	32	34	42	40	37	23	26	17	13	14	13	13	20	13
22	14	16	15	16	36	53	70	50	24	29	28	20	19	19	23	22	25	32	34	44	70	77	68	65
23	41	58	63	30	36	58	14	15	18	20	15	20	15	20	36	24	31	46	34	69	65	59	60	62
24	67	61	41	33	33	66	38	45	57	43	26	39	43	31	39	22	21	20	42	53	52	31	41	27
25	44	26	18	16	21	20	23	18	14	18	20	22	20	16	14	15	15	14	14	13	19	20	27	35
26	23	23	21	33	15	41	17	21	33	34	22	24	24	24	23	30	20	29	24	22	10	14	13	
27	13	53	60	34	53	53	41	51	35	25	27	25	28	22	25	23	37	31	25	23	26	36	46	38
28	17	16	18	18	16	15	18	19	21	23	24	22	22	22	23	22	21	19	16	15	13	14	15	12
29	13	18	19	59	41	37	34	61	45	23	29	27	37	22	25	19	17	15	13	15	14	14	13	13
30	13	13	13	15	11	14	13	15	17	25	39	30	24	23	42	21	24	15	11	18	16	17	35	17

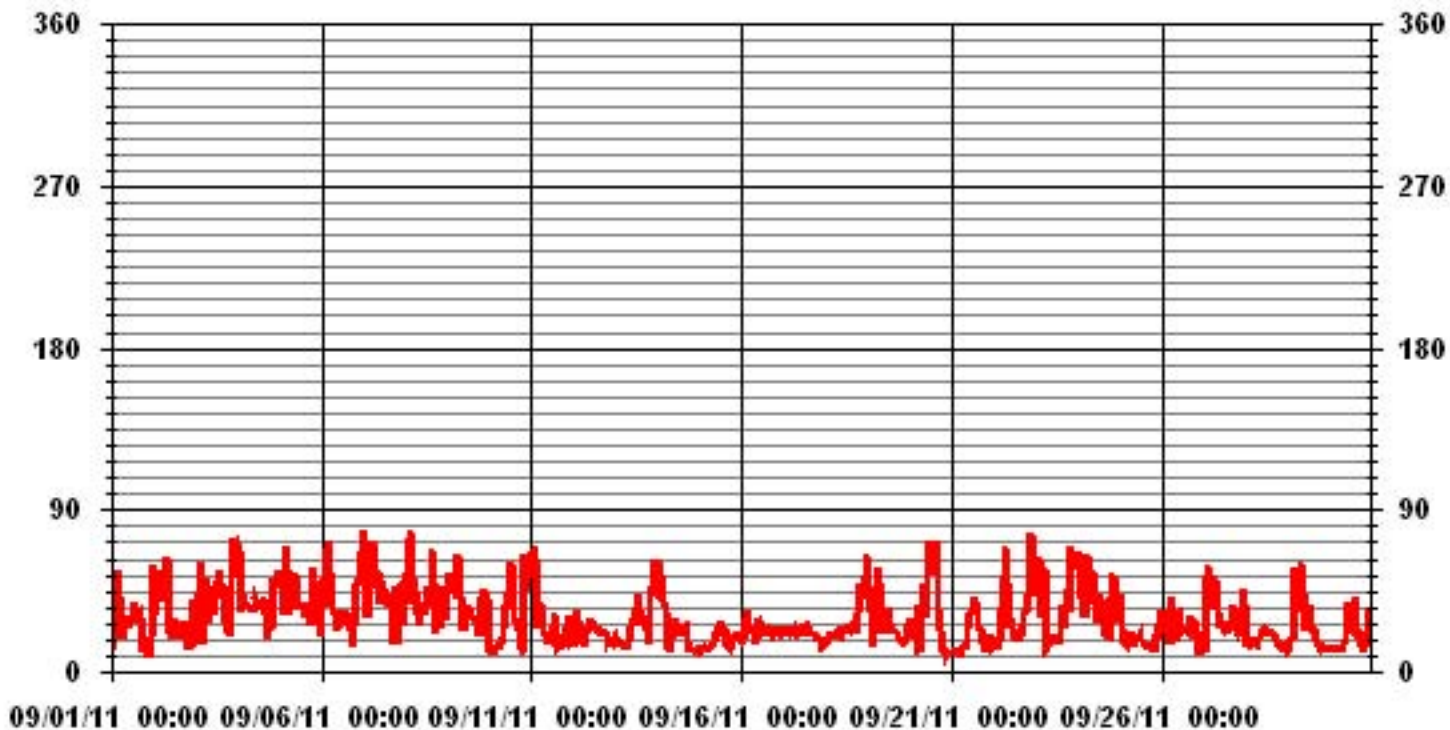
STATUS FLAG CODES

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



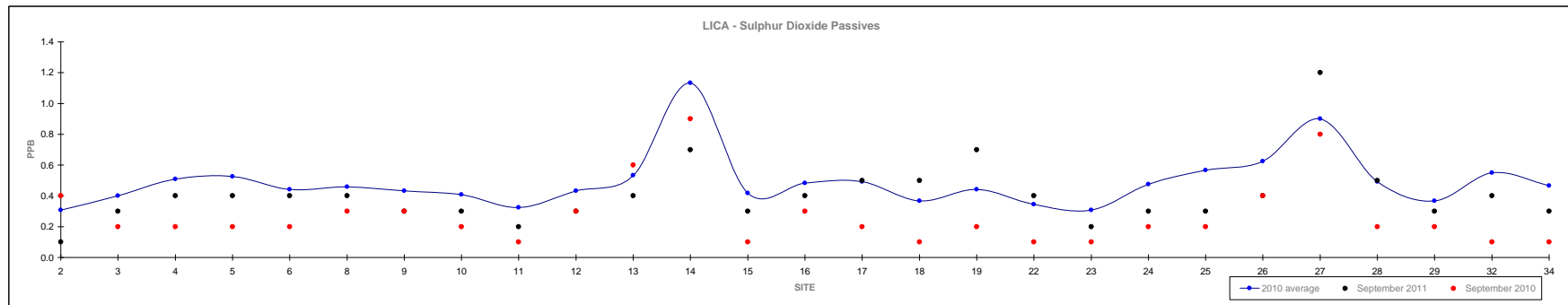
— LICA STDWDIR DEG

Non-Continuous Monitoring

Passive Summary Results for September 2011

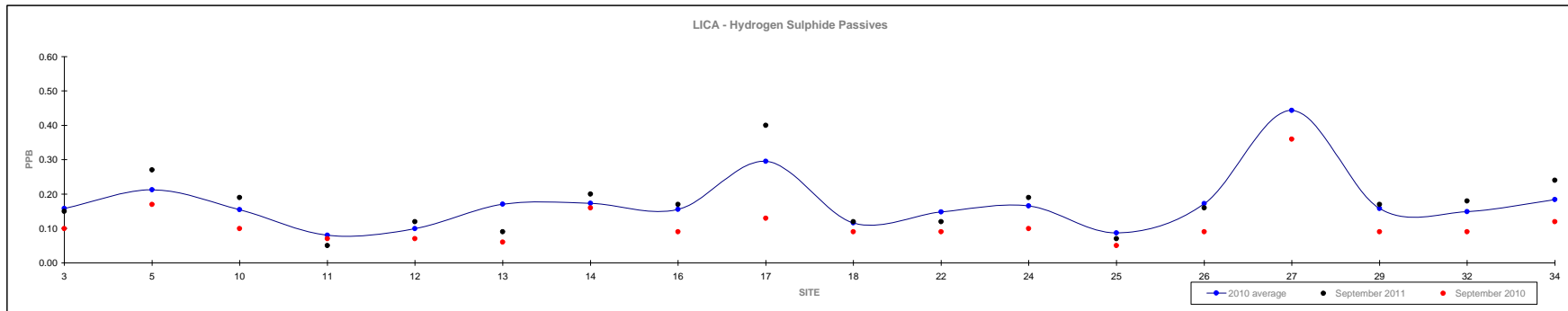
Lakeland Industry & Community Association

	Sulphur Dioxide ppb																												Reading	Site
	2010																												September 2011	
Mean	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	0.4	-	
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	0.1	0.2	0.2	0.4	0.2	0.2	0.1	0.1	0.1	#12	
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	1.2	#27	



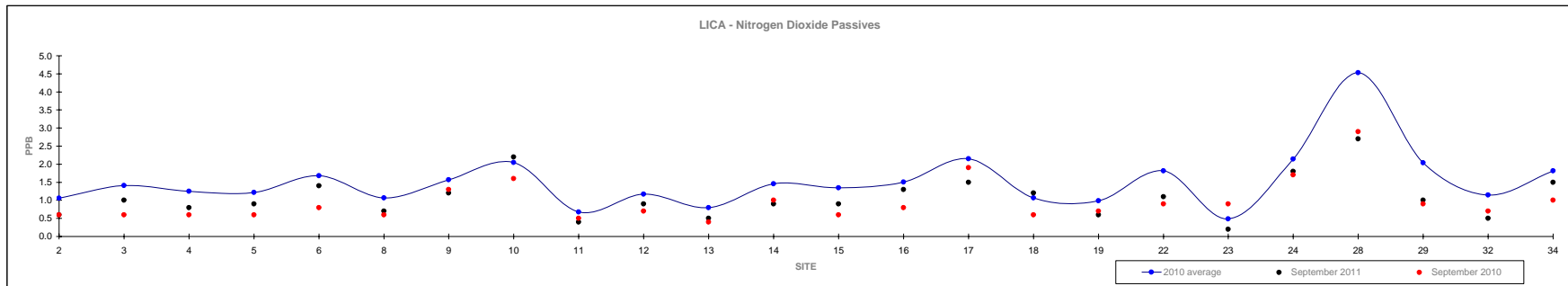
Passive Summary Results for September 2011 Lakeland Industry & Community Association

	Hydrogen Sulphide ppb																September 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	0.21	-
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	#11
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	0.80	#27



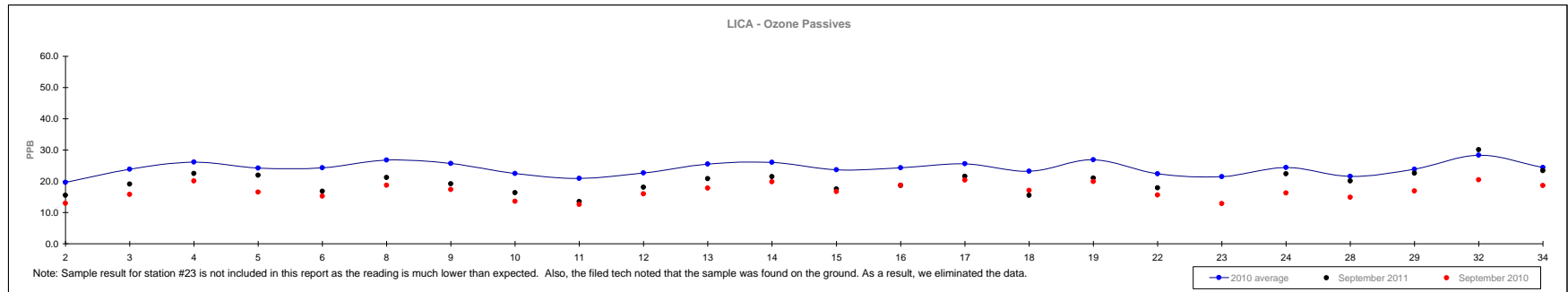
Passive Summary Results for September 2011 Lakeland Industry & Community Association

	2010																								September 2011	
	Nitrogen Dioxide ppb																								Reading	Site
Mean	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	28	29	32	34	1.1	-
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	0.2	#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	2.7	#28



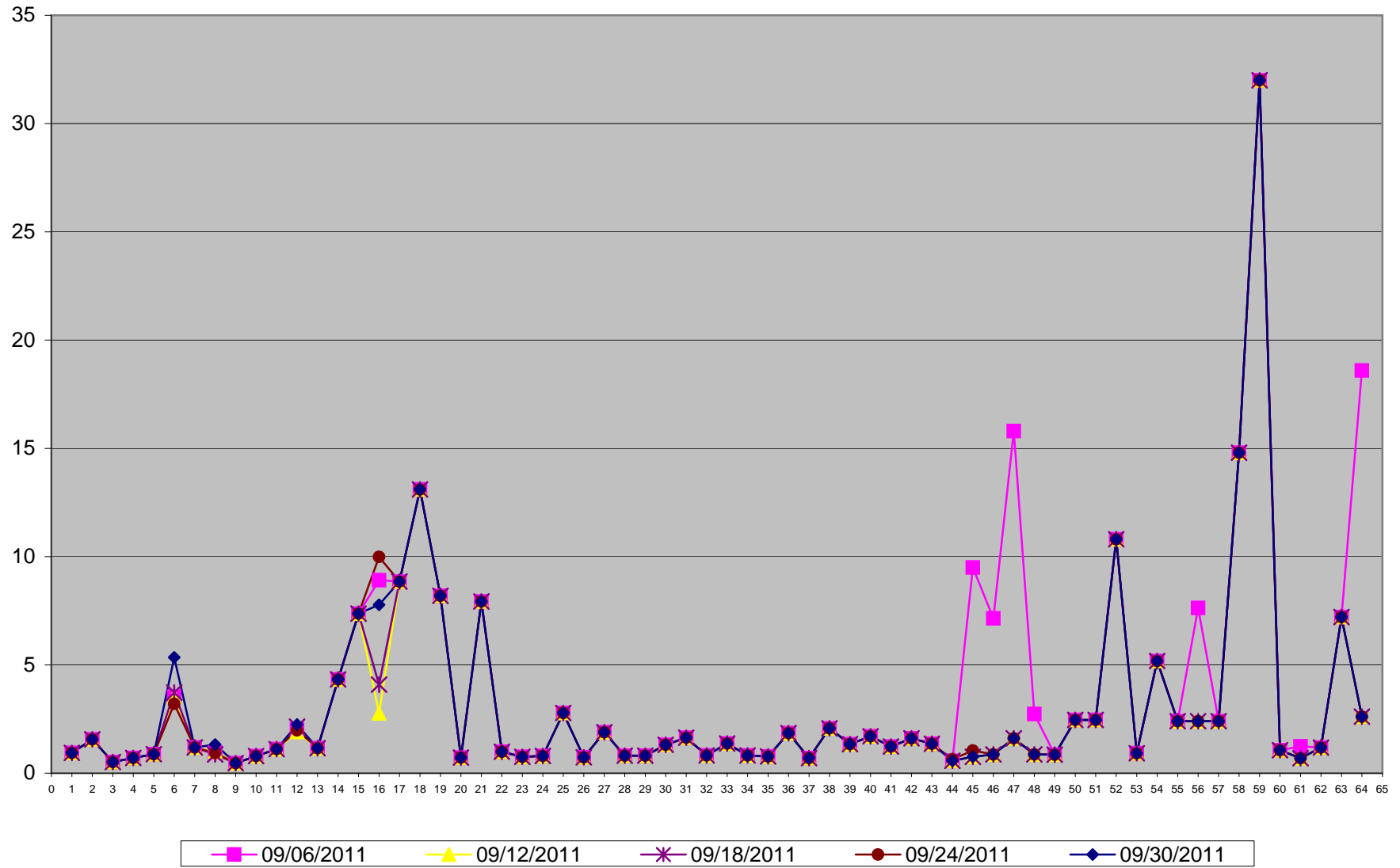
Passive Summary Results for September 2011 Lakeland Industry & Community Association

	Ozone ppb																												September 2011	
	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	Site			
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	20.8	-				
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	13.5	#11				
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	30.1	#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)

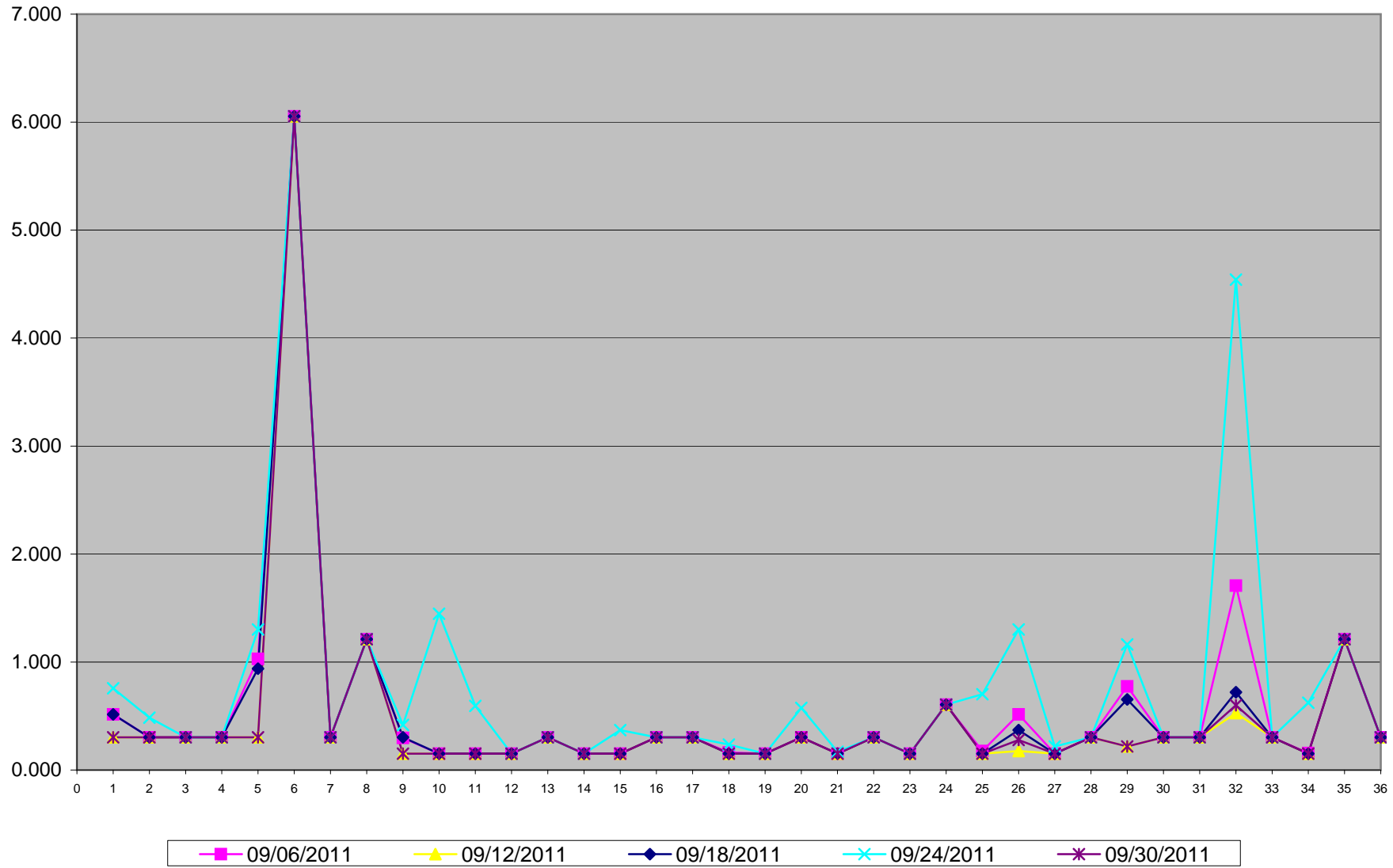
Polycyclic Aromatic Hydrocarbons

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

PAHs	09/06/2011	09/12/2011	09/18/2011	09/24/2011	09/30/2011
Sample Volume (unit: m3)	330.34	330.33	330.34	330.33	330.33
1 1-Methylnaphthalene	0.515	0.303	0.515	0.757	0.303
2 1-Methylphenanthrene	0.303	0.303	0.303	0.484	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	1.029	0.303	0.938	1.302	0.303
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-Dimethylanthracene	1.211	1.211	1.211	1.211	1.211
9 Acenaphthene	0.297	0.151	0.303	0.418	0.151
10 Acenaphthylene	0.151	0.151	0.151	1.447	0.151
11 Anthracene	0.151	0.151	0.151	0.593	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	0.369	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	0.163	0.151	0.151	0.236	0.151
19 Benzo(k)fluoranthene	0.151	0.151	0.151	0.151	0.151
20 Biphenyl	0.303	0.303	0.303	0.575	0.303
21 Chrysene	0.151	0.151	0.151	0.170	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	0.176	0.151	0.151	0.702	0.151
26 Fluorene	0.515	0.176	0.369	1.302	0.279
27 Indeno(1,2,3-cd)pyrene	0.151	0.151	0.151	0.218	0.151
28 m-Terphenyl	0.303	0.303	0.303	0.303	0.303
29 Naphthalene	0.775	0.218	0.654	1.162	0.218
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	1.707	0.527	0.720	4.541	0.599
33 p-Terphenyl	0.303	0.303	0.303	0.303	0.303
34 Pyrene	0.157	0.151	0.151	0.624	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.

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	September 15, 2011	Previous Calibration	August 3, 2011
Company	Lakeland Community and Industry Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	8:34	End Time (MST)	12:23
Reason:	Monthly Calibration		
Barometric Pressure	0.935 atm	Station Temperature	22 Deg C
Cal Gas	49 ppm	Gas Cyl. #	LL103822 Cal Gas Expiry date February 4, 2013
DAS Output Voltage	0 - 10 Volts	Chart Rec. Output	NA 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	30.2 Deg C	446 ccm	30	Deg C
HVPS / Lamp Setting	-632	743	-632	742	
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	5.9	1.015	6	1.021	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4997	0	0	0	N/A
	No Zero Adj			
4959	40.8	400	393	1.0174
4959	40.8	400	400	1.0000
4975	23.0	225	227	0.9933
4986	12.8	125	127	0.9880
4995	0	0	0	N/A
Sum of Least Squares				0.9974
New Correction Factor				1.0000

	Before Calibration	After Calibration
Auto Zero	-0.1	-0.1
Auto Span	366.0	377.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0021
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	0.2%

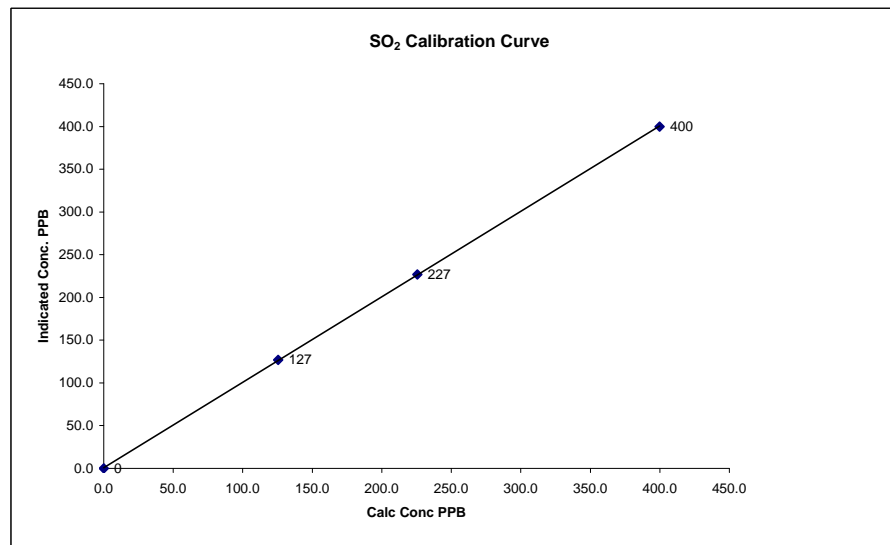
Notes: **N/A : Not applicable**

Calibration Performed by: Ting Xu

SO2 Calibration Curve

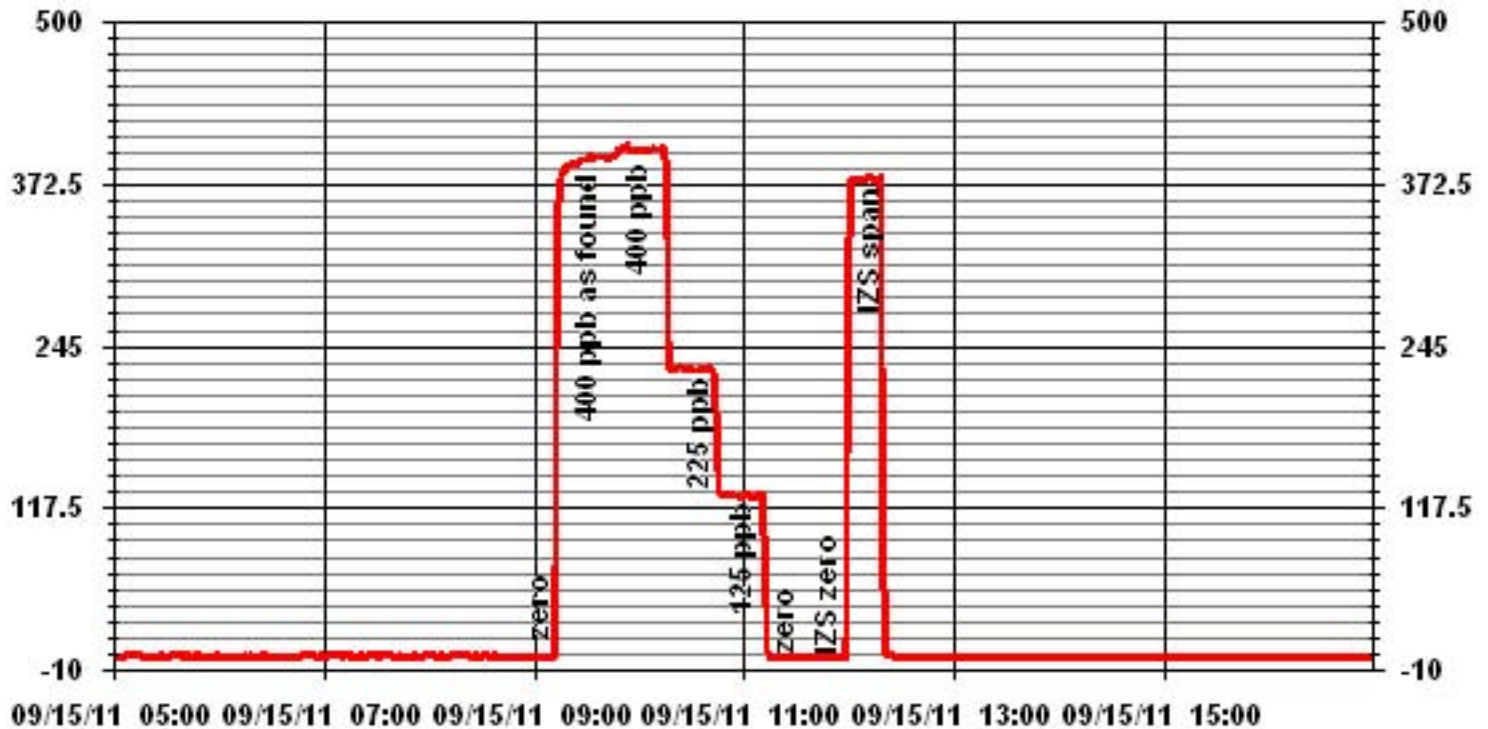
Calibration Date	September 15, 2011
Company	Lakeland Community and Industry Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	8:34
End Time (MST)	12:23

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept (± 3% F.S.)	(≥ 0.995)
0	0	n/a	0.999975	0.999911
125	127	0.9880	0.999911	0.812623
225	227	0.9933		
400	400	0.9996		



Notes:

01 Minute Averages



Total Reduced Sulphur

TRS Calibration Report

Station Information

Calibration Date	September 4, 2011	Previous Calibration	August 3, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	12:57	End Time (MST)	17:15
Reason:	Monthly Calibration		
Barometric Pressure	0.945 atm	Station Temperature	24 Deg C
Cal Gas	10.2 ppm	Gas Cyl. #	BLM000804
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 ppb			
Sample Flow / Box Temp	356 ccm	32.3 Deg C	355 ccm	32 Deg C
HVPS / Lamp Setting	-623.1	749	-623.1	750
PMT / RxCell Temp	OK Deg C	45.1 Deg C	OK Deg C	45.2 Deg C
Converter / IZS Temp	810 Deg C	45 Deg C	810 Deg C	45.0 Deg C
Offset / Slope	12.7	1.244	13.1	1.279

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
	No Zero Adj			
4959	39.2	80	77	1.0389
4959	39.2	80	80	1.0000
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		0.9995
		New Correction Factor		1.0000

Before Calibration

Auto Zero	-0.3	After Calibration	0.0
Auto Span	65.7		68.6
Sample Lines Connected			YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9876
Current Correction Factor Before Span Adjust:	1.0389
Percent Change:	-4.9%

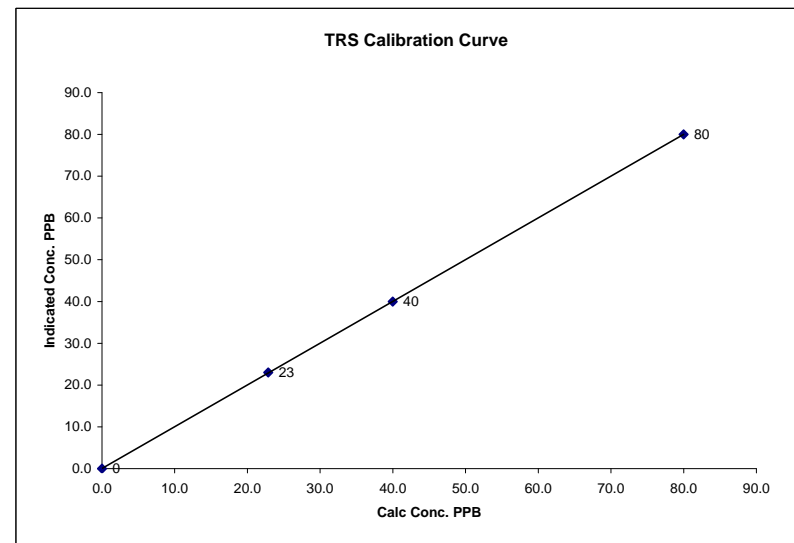
Notes: **N/A : Not applicable**

Calibration Performed by: Ting Xu

TRS Calibration Curve

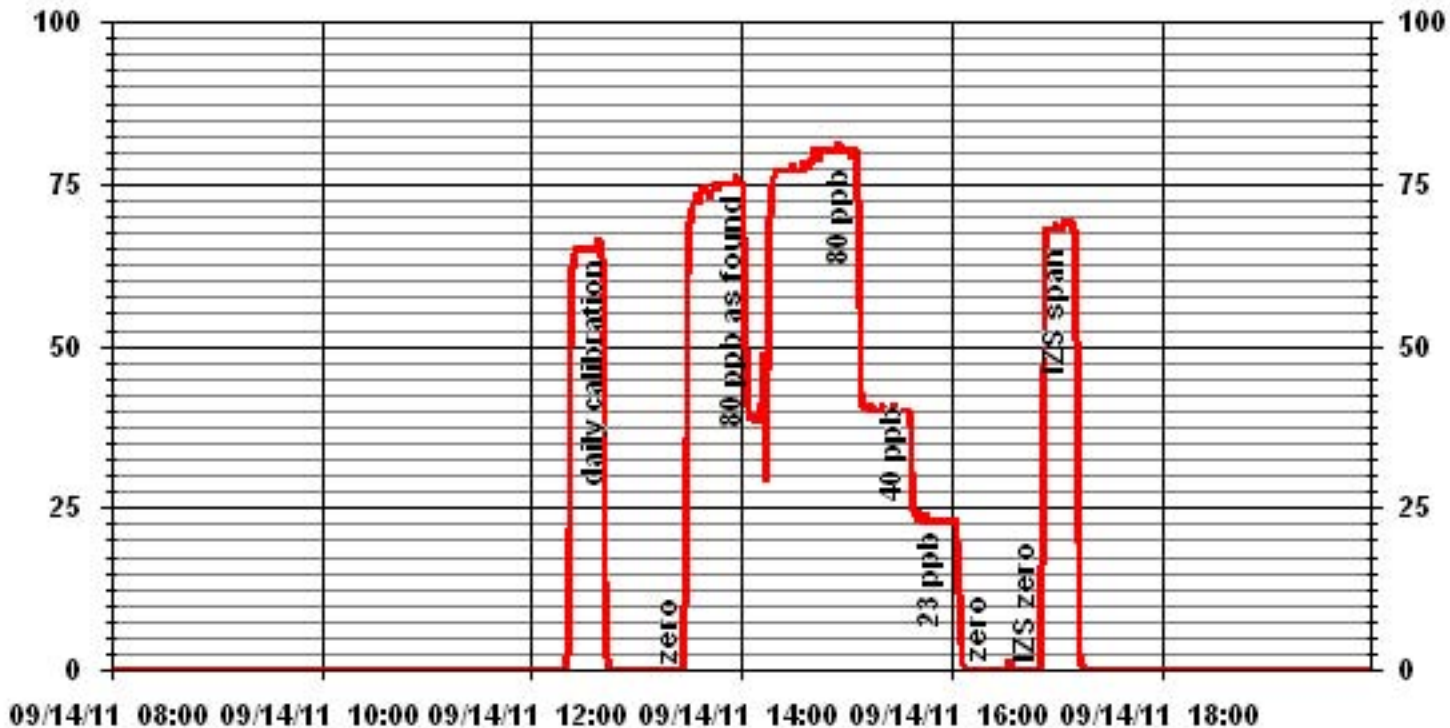
Calibration Date	September 4, 2011
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	12:57
End Time (MST)	17:15

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999996
0	0	n/a	Intercept	(± 3% F.S.)	0.055426
23	23	0.0000			
40	40	0.5715			
80	80	0.4998			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	September 21, 2011	Previous Calibration	August 3, 2011
Company:	Lakeland Industry and Community Association		
Plant / Location:	LICA1/Cold Lake		
Start Time (MST)	8:23	End Time (MST)	10:44
Reason:	Removal Calibration		
Barometric Pressure:	0.936 atm	Station Temperature:	24 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 980 PPM	C3H8 304 PPM	
	TOTAL CH4 1816.0 PPM	Gas Cyl. # LL84144	Cal Gas Expiry Date: December 3, 2013
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
3000	0.0	0.0	-0.2	NA
	No Zero Adj			
3000	70.0	41.4	43.0	0.9630
	No Span Adj			
3000	34.9	20.9	21.1	0.9897
3000	20.0	12.0	12.0	1.0000
3000	0.0	0.0	0.0	NA
New Correction Factor:				0.9630

Percent Change	
Previous Calibration Correction Factor:	0.9958
Current Correction Factor Before Span Adjust:	0.9630
Percent Change:	3.4%

IZS Calibration Data		
	Before Calibration	After Calibration
Auto Zero	-0.2	NA
Auto Span	36.7	NA
Sample Lines Connected	YES	

Cylinder Pressures			
Span	300 psi	Hydrogen	700 psi
Zero Air	32 psi		

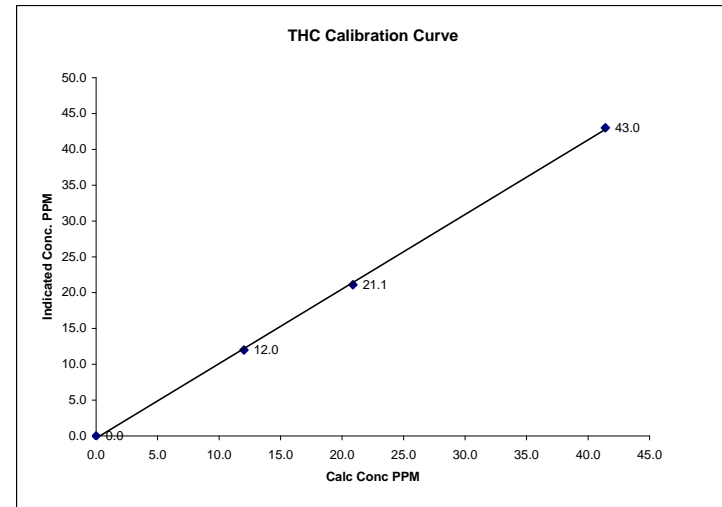
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

THC Calibration Curve

Calibration Date	September 21, 2011		
Company	Lakeland Industry and Community Association		
Plant / Location	LICA1/Cold Lake		
Start Time (MST)	8:23	End Time (MST)	10:44

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope (0.85 to 1.15)	(≥ 0.995)	1.040495
0.0	0.0	NA	Intercept	(± 3% F.S.)	-0.30657
12.0	12.0	1.0022			
20.9	21.1	0.9897			
41.4	43.0	0.9630			



Notes:

THC Calibration Report

Station Information			
Calibration Date:	September 21, 2011	Previous Calibration	NA
Company:	Lakeland Industry and Community Association		
Plant / Location:	LICA1/Cold Lake		
Start Time (MST)	13:33	End Time (MST)	17:03
Reason:	Installation Calibration		
Barometric Pressure:	0.947 atm	Station Temperature:	22 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 980 PPM	C3H8 304 PPM	
	TOTAL CH4 1816.0 PPM	Gas Cyl. # LL84144	Cal Gas Expiry Date: December 3, 2013
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
3000	0.0	0.0	0.0	NA
	No Zero Adj			
3000	70.0	41.4	41.5	0.9978
	No Span Adj			
3000	34.9	20.9	20.4	1.0237
3000	20.0	12.0	11.7	1.0279
3000	0.0	0.0	0.0	NA
New Correction Factor:				0.9978

Percent Change	
Previous Calibration Correction Factor:	NA
Current Correction Factor Before Span Adjust:	0.9978
Percent Change:	#VALUE!

IZS Calibration Data		
	Before Calibration	After Calibration
Auto Zero	-0.2	0.0
Auto Span	36.7	35.2
Sample Lines Connected	YES	

Cylinder Pressures			
Span	300 psi	Hydrogen	700 psi
Zero Air	32 psi		

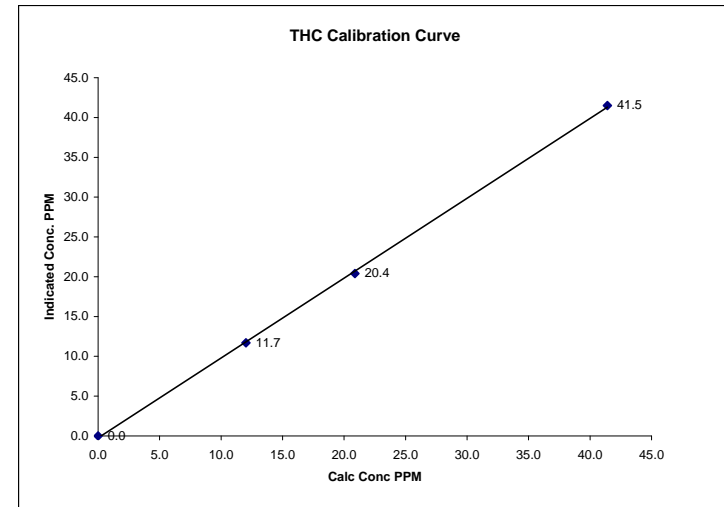
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

THC Calibration Curve

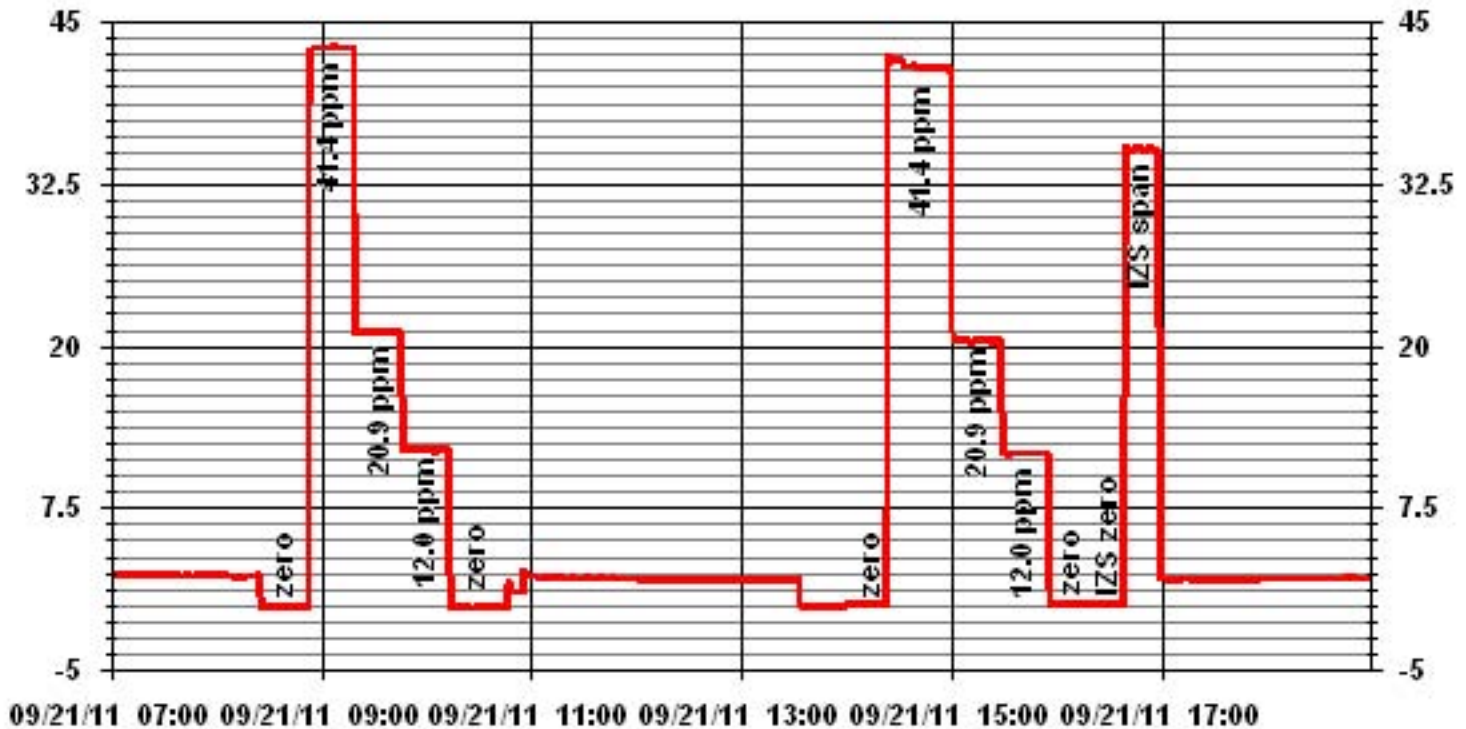
Calibration Date	September 21, 2011		
Company	Lakeland Industry and Community Association		
Plant / Location	LICA1/Cold Lake		
Start Time (MST)	13:33	End Time (MST)	17:03

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope (0.85 to 1.15)	Correlation Coefficient Intercept (±3% F.S.)
0.0	0.0	NA	0.999773	1.003439
12.0	11.7	1.0279		-0.24311
20.9	20.4	1.0237		
41.4	41.5	0.9978		



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOM 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	September 22, 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 (%)	30.4%
Firmware Ver.	1.52	K _o Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	8.4
		Press (ATM)	0.932

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	0.009	Warnings	None
0.36	0.40		
Temperature/Pressure			
Measured Temp (± 2 °C)	8.8	Δ °C	0.6
Measured Press (± 0.01atm)	0.930	DATM	0.005
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	1.20%
Measured Main Flow (l/min)	3.03	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	1.96%
Measured Bypass Flow (l/min)	13.77	Flow Adjusted to Measured?	Yes
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	Baes=0.07 Ref=0.06	Flow Control = Active	
Aux (< 0.6 l/min)	Base=0.29 Ref=0.27	Report Conditions = Actual	
K_o Factor			
Measured	NA		
K _o Difference (± 2.5%)	NA		

Start Time: 6:50 **Finish Time:** 11:30

Sample Inlet Cleaned: Yes **New Filters Installed:** YES
New Filter Loading %: 22.7%

Comments:

Auditor/s: Ting Xu / Shea Beaton

Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	September 14, 2011		Previous Calibration	August 3, 2011	
Company	LICA		Plant/Location	Cold Lake South	
Start Time (MST)	11:57		End Time (MST)	17:02	
Reason:	Monthly Calibration				
Barometric Pressure	0.952 atm	Station Temperature	24 Deg C	MFCF	0
Cal Gas Concentration	NOx 51.7 ppm	NO	50.4 ppm	Cal Gas Expiry date	February 4, 2013
Cal Gas Cylinder #	LL103822				
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 - 500			ppb			
Sample Flow/Conv. Temp	760 ccm	317 Deg C		753 ccm	317 Deg C		
Ozone Flow / Vacuum	OK ccm	171.6 "Hg-A		OK ccm	169.1 "Hg-A		
HVPS / A ZERO	-821 Volts	NA MV		-821 Volts	NA MV		
Rx/ Temp / PMT Temp	49.8 Deg C	-2.4 Deg C		49.9 Deg C	-2.5 Deg C		
Box Temp / IZS Temp	28.0 Deg C	OK Deg C		28.2 Deg C	OK Deg C		
Offset	3.5 NOx	3.1 NO		3.5 NOx	3.1 NO		
Slope	1.025 NOx	0.810 NO		1.025 NOx	0.810 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
4954	No Zero Adj 39.6	NA	410	400	NA	411	401	10	0.9975	0.9967
4973	No Span Adj 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
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		
4954	39.6	NA	410	400	NA	409	400	9	NA	NA
No Adj Required										
4954	39.6	350	410	NA	334	409	75	334	1.0000	100.00%
4954	39.6	150	410	NA	150	409	259	150	1.0000	100.00%
5954	39.6	75	342	NA	79	409	330	79	1.0000	100.00%

Linearity	Sum of Least Squares		NOx= 0.995	NO= 0.975	NO2= 1.000
OK?	Yes	No	Correction Factors: NOx= 0.9975	NO= 0.9967	NO2= 1.0000
Average Converter Efficiency= 100.00%					

Before Calibration				After Calibration			
Auto Zero	0.1 NOx	0.3 NO2		0.1 NOx	0.2 NO2		
Auto Span	333 NOx	330 NO2		332 NOx	330 NO2		
Sample Lines Connected YES							

Percent Change from Previous Calibration	NOx	0.5%	NO	0.3%	NO2	0.3%
--	-----	------	----	------	-----	------

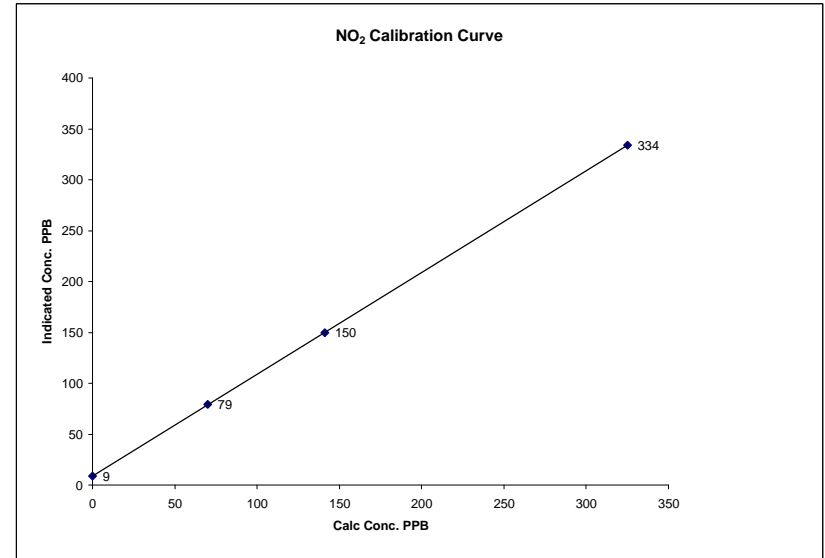
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	September 14, 2011	
Company	LICA	
Plant / Location	Cold Lake South	
Start Time (MST)	11:57	End Time (MST) 17:02

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	1.000000
0	9	N/A	Intercept	(± 3% F.S.)	9.00000
70	79	0.8861			
141	150	0.9400			
325	334	0.9731			

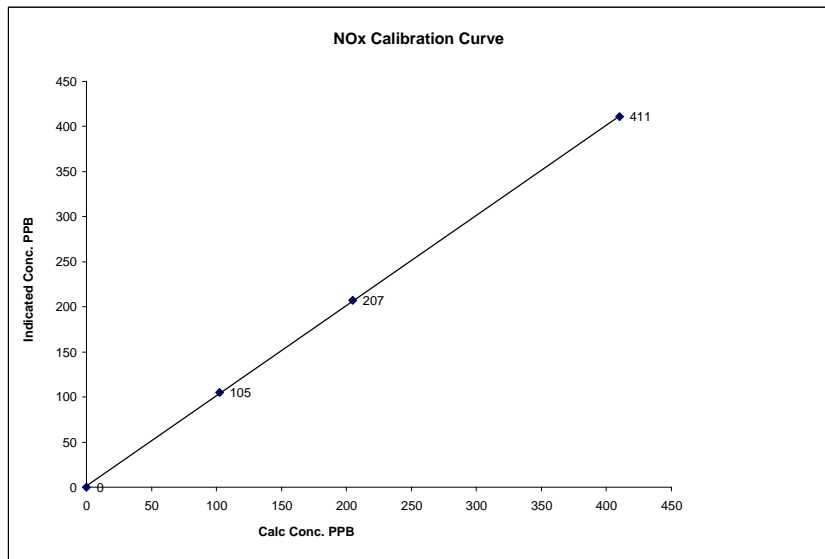


Notes:

NOx Calibration Curve

Calibration Date	September 14, 2011		
Company	LICA		
Plant / Location	Cold Lake South		
Start Time (MST)	11:57	End Time (MST)	17:02

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			

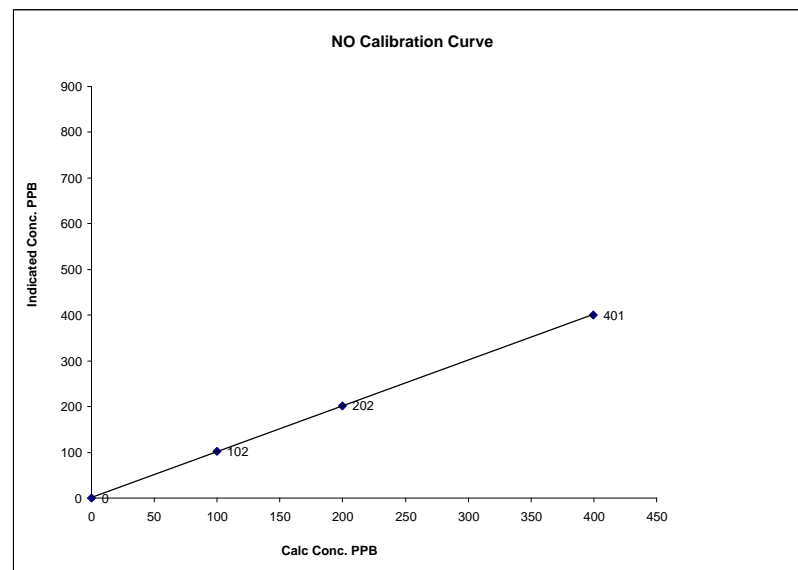


Notes:

NO Calibration Curve

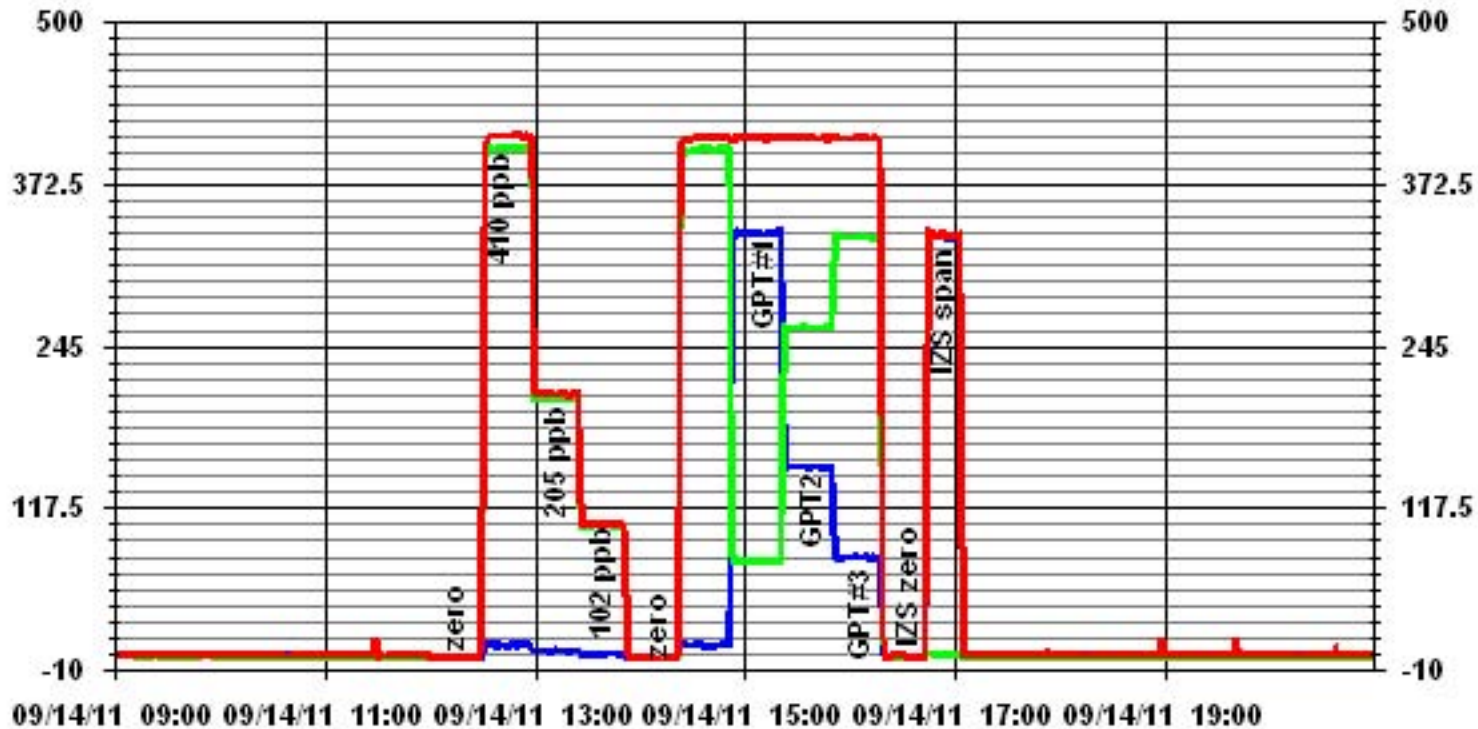
Calibration Date	September 14, 2011		
Company	LICA		
Plant / Location	Cold Lake South		
Start Time (MST)	11:57	End Time (MST)	17:02

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999971
0	0	N/A	Intercept	(± 3% F.S.)	2.9362
100	102	0.9795			
200	202	0.9895			
400	401	0.9967			



Notes:

01 Minute Averages



Ozone

O₃ Calibration Report

Station Information

Calibration Date	September 15, 2011	Previous Calibration	August 3, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	8:34	End Time (MST)	12:00
Reason:	Monthly Calibration		
Barometric Pressure	0.937 atm	Station Temperature	23 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	700419951	Method:	Photometric
Calibrator Make / Model:	EnviroNics 6100		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	707 ccm	748 ccm	713 ccm	756 ccm				
Pressure	697 mmHg		709 mmHg					
Bench Lamp	53.5 Deg C		53.5 Deg C					
O3 Lamp / Box Temp	67.5 Deg C	29.1 Deg C	67.6 Deg C	28.8 Deg C				
Offset / Slope	0.1	0.993	0.1	0.993				

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4495	0	0	0	NA
	No Zero Adj Required			
4996	350	325	324	1.0031
	No Span Adj Required			
4996	150	141	140	1.0071
4996	75	70	69	1.0145
4996	0	0	0	NA
Sum of Least Squares				1.0041
New Correction Factor				1.0031

	Before Calibration	After Calibration
Auto Zero	-0.1	-0.3
Auto Span	273.0	272.0
Sample Lines Connected		YES
Previous Calibration Correction Factor:		0.9969
Current Correctio Factor Before Span Adjust:		1.0031
Percent Change:		-0.6%

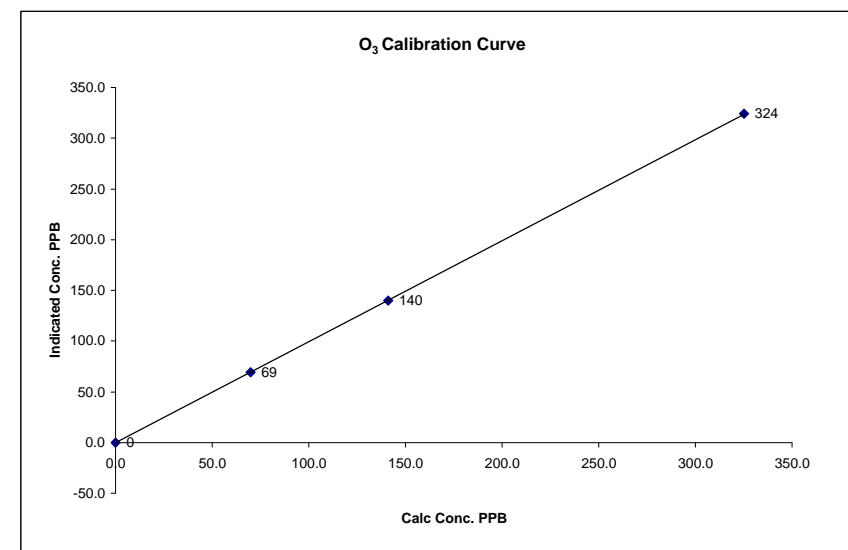
Note: NA : Not Applicable

Calibration Performed by: Ting Xu

O₃ Calibration Curve

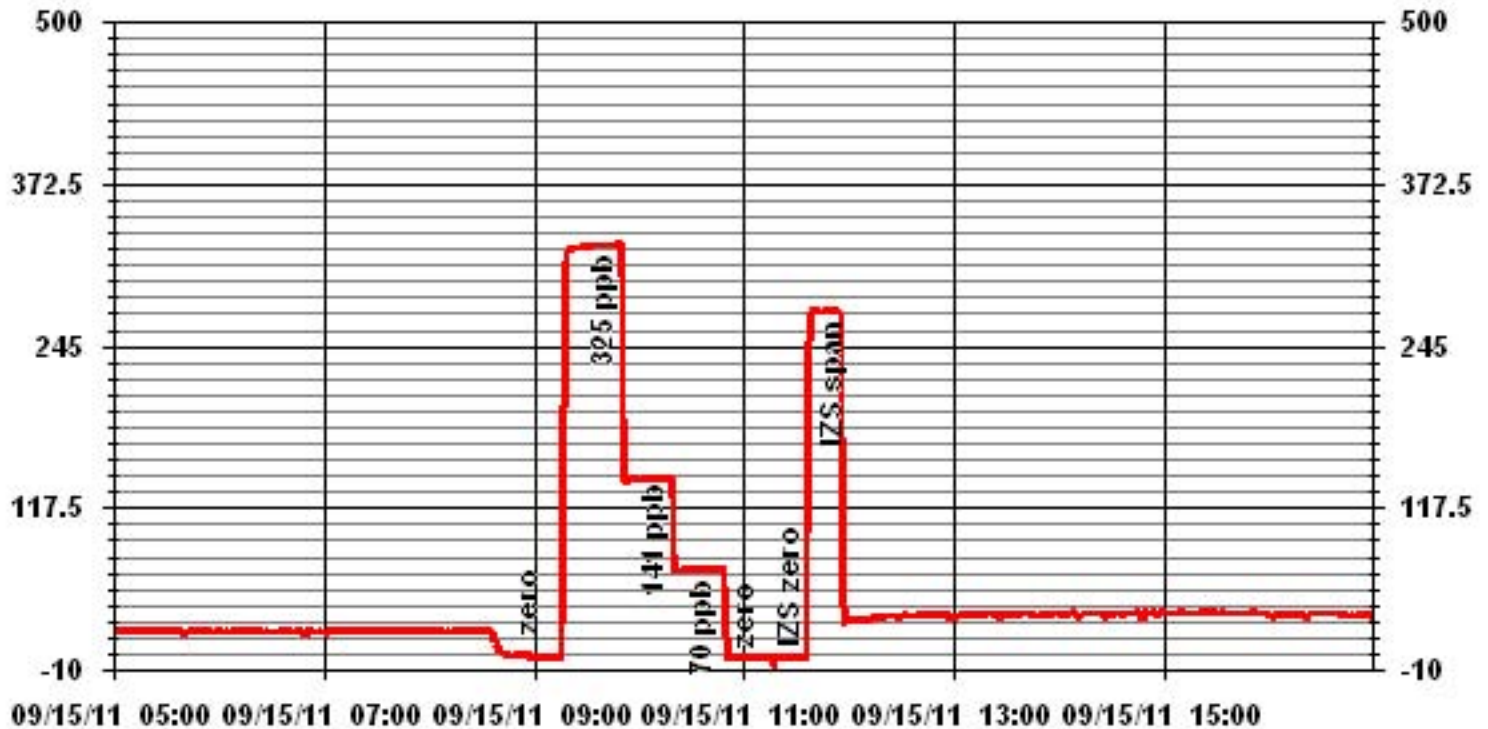
Calibration Date	September 15, 2011		
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	8:34	End Time (MST)	12:00

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		0.999992
70	69	1.0145		0.997713
141	140	1.0071		-0.443489
325	324	1.0031		



Notes:

01 Minute Averages



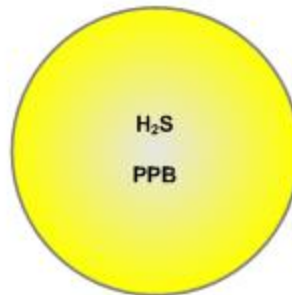
Passive Bubble Maps

Lakeland Industry & Community Association H₂S Passive Bubble Map

SEPTEMBER 2011

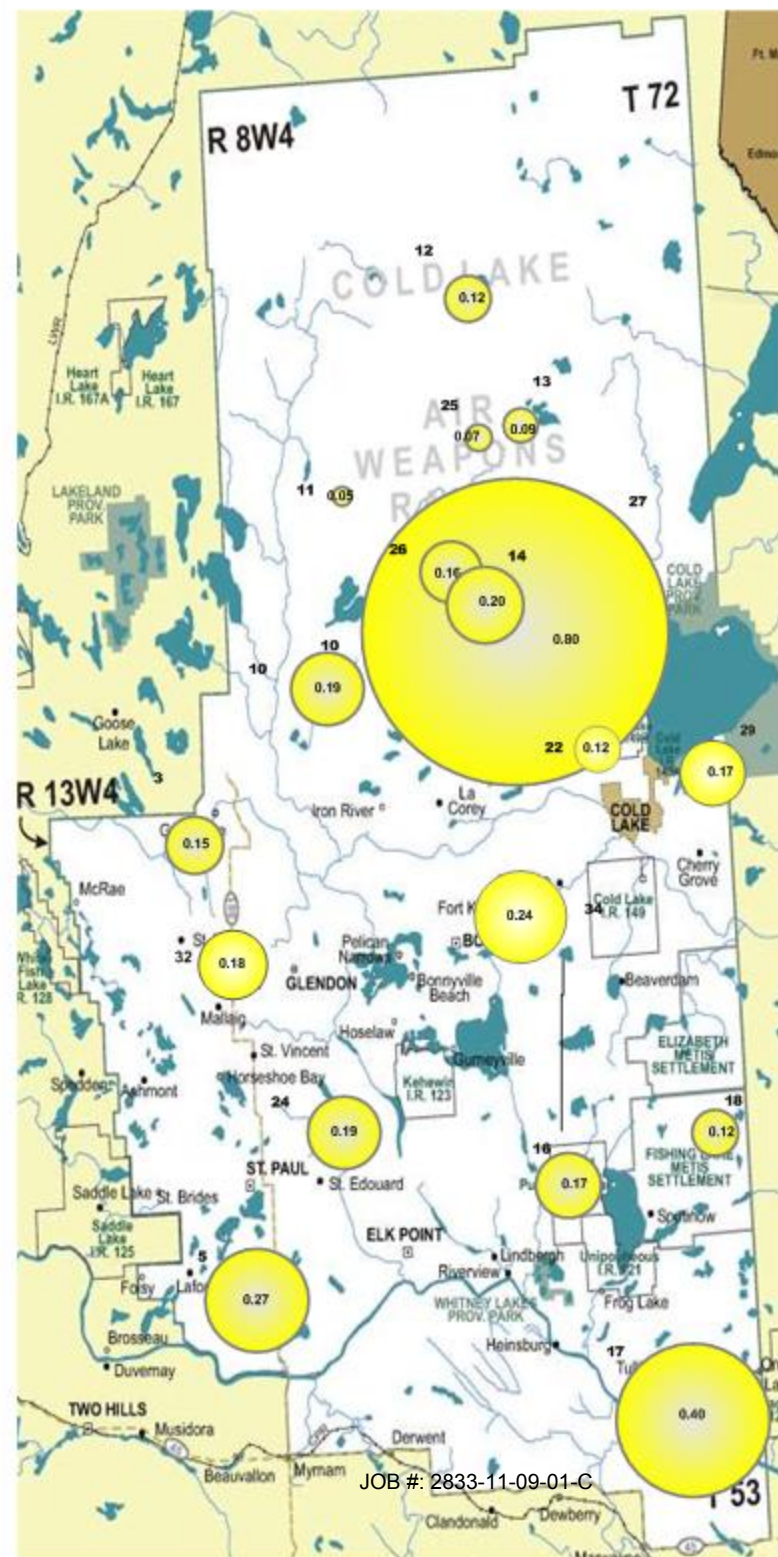
PASSIVE STATIONS

		DUPLICATE
3 – Therien	0.15 PPB	NA
5 – Lake Eliza	0.34 PPB	0.19 PPB
10 – La Corey	0.19 PPB	0.18 PPB
11 – Wolf Lake	0.05 PPB	NA
12 – Foster Creek	0.11 PPB	0.13 PPB
13 – Primrose	0.09 PPB	NA
14 – Maskwa	0.19 PPB	0.20 PPB
16 – Frog Lake	0.17 PPB	NA
17 – Clear Range	0.35 PPB	0.44 PPB
18 – Fishing Lake	0.12 PPB	NA
22 – Cold Lake South	0.12 PPB	NA
24 – Fort George	0.20 PPB	0.18 PPB
25 – Burnt Lake	0.07 PPB	NA
26 – Mahihkan	0.16 PPB	0.15 PPB
27 – Mahkeses	0.80 PPB	NA
29 – Cold Lake South 2	0.16 PPB	0.18 PPB
32 – St. Lina	0.18 PPB	NA
34 – Portable	0.24 PPB	NA



Summary

Minimum : 0.05 PPB – Wolf Lake
 Maximum: 0.80 PPB – Mahkeses
 Average: 0.21 PPB *Includes Duplicates

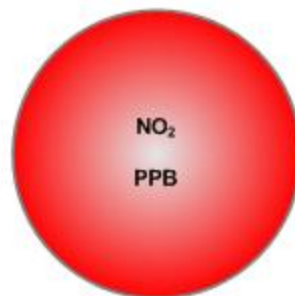


Lakeland Industry & Community Association NO₂ Passive Bubble Map

SEPTEMBER 2011

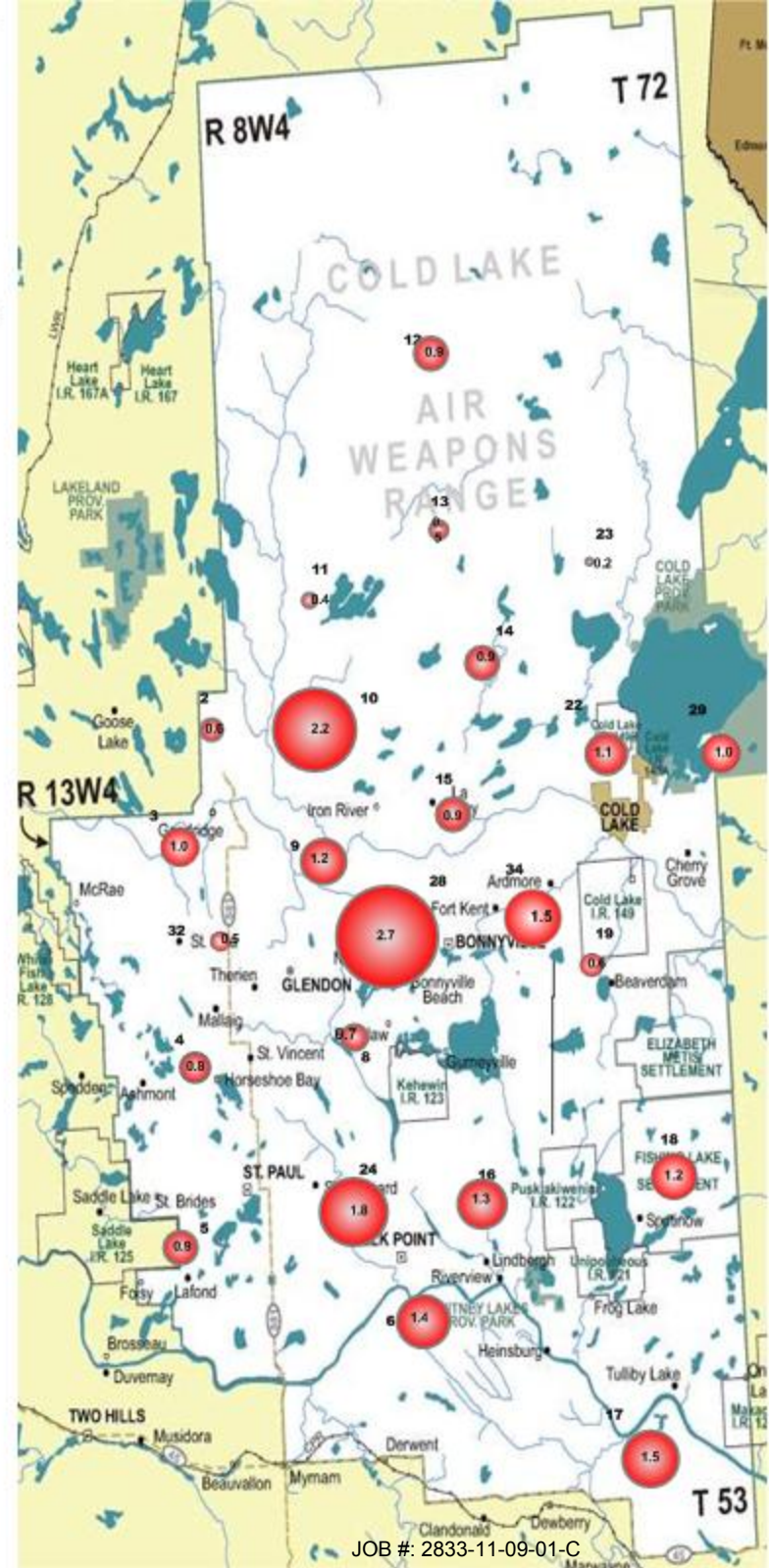
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	0.6 PPB	NA
3 – Therien	1.1 PPB	0.8 PPB
4 – Flat Lake	0.8 PPB	NA
5 – Lake Eliza	1.0 PPB	0.7 PPB
6 – Telegraph Creek	1.4 PPB	NA
8 – Muriel-Kehewin	0.6 PPB	0.7 PPB
9 – Dupre	1.2 PPB	NA
10 – La Corey	2.1 PPB	2.2 PPB
11 – Wolf Lake	0.4 PPB	NA
12 – Foster Creek	1.0 PPB	0.7 PPB
13 – Primrose	0.5 PPB	NA
14 – Maskwa	0.9 PPB	0.9 PPB
15 – Ardmore	0.9 PPB	NA
16 – Frog Lake	1.3 PPB	1.3 PPB
17 – Clear Range	1.5 PPB	NA
18 – Fishing Lake	1.1 PPB	1.2 PPB
19 – Beaverdam	0.6 PPB	NA
22 – Cold Lake South	1.1 PPB	NA
23 – Medley-Martineau	0.2 PPB	0.2 PPB
24 – Fort George	1.8 PPB	NA
28 – Town of Bonnyville	2.6 PPB	2.8 PPB
29 – Cold Lake South 2	1.0 PPB	NA
32 – St. Lina	0.5 PPB	NA
34 – Portable	1.5 PPB	NA



Summary

Minimum : 0.2 PPB – Medley-Martineau
Maximum: 2.7 PPB – Town of Bonnyville
Average: 1.1 PPB *Includes Duplicates

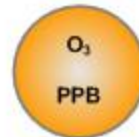


Lakeland Industry & Community Association O₃ Passive Bubble Map

SEPTEMBER 2011

PASSIVE STATIONS

		DUPLICATE
2 – Sand River	15.5 PPB	NA
3 – Therien	19.5 PPB	18.7 PPB
4 – Flat Lake	22.5 PPB	NA
5 – Lake Eliza	21.7 PPB	22.1 PPB
6 – Telegraph Creek	16.8 PPB	NA
8 – Muriel-Kehewin	20.6 PPB	21.8 PPB
9 – Dupre	19.2 PPB	NA
10 – La Corey	16.0 PPB	16.6 PPB
11 – Wolf Lake	13.5 PPB	NA
12 – Foster Creek	19.0 PPB	17.2 PPB
13 – Primrose	20.8 PPB	NA
14 – Maskwa	21.2 PPB	21.8 PPB
15 – Ardmore	17.5 PPB	NA
16 – Frog Lake	17.8 PPB	19.3 PPB
17 – Clear Range	21.6 PPB	NA
18 – Fishing Lake	16.2 PPB	14.8 PPB
19 – Beaverdam	21.0 PPB	NA
22 – Cold Lake South	17.9 PPB	NA
23 – Medley-Martineau	NA	NA
24 – Fort George	22.4 PPB	NA
28 – Town of Bonnyville	21.1 PPB	19.6 PPB
29 – Cold Lake South 2	22.6 PPB	NA
32 – St. Lina	30.1 PPB	NA
34 – Portable	23.4 PPB	NA



Summary

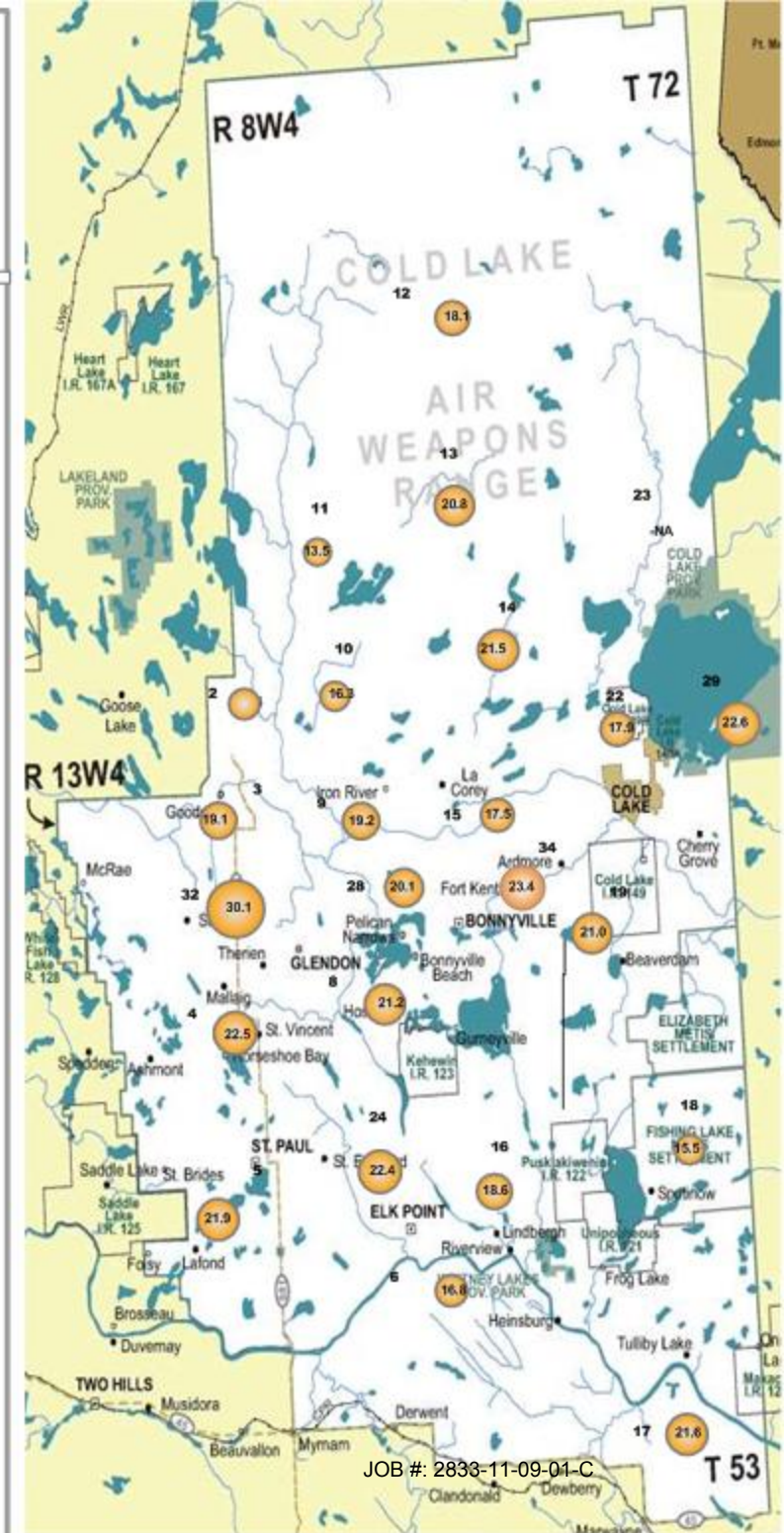
Minimum : 13.5 PPB – Wolf Lake

Maximum: 30.1 PPB –St. Lina

Average: 20.8 PPB *Includes Duplicates

The sample at station #23 was found on the ground. The sample result is eliminated from the lab result and is not include in this report, as the reading is much lower than expected.

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JOB #: 2833-11-09-01-C

T 53

Lakeland Industry & Community Association SO₂ Passive Bubble Map

SEPTEMBER 2011

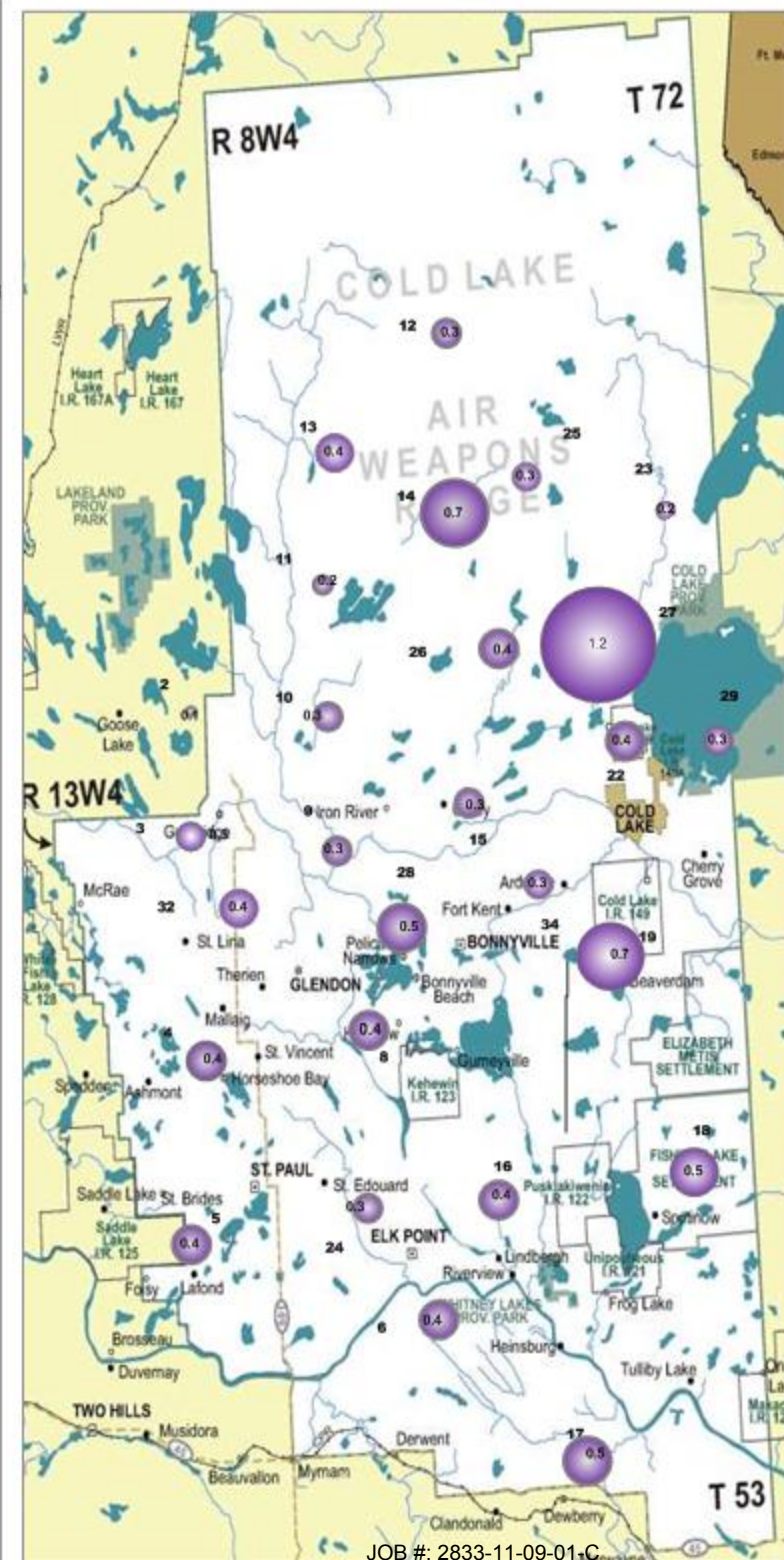
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	0.1 PPB	NA
3 – Therien	0.3 PPB	0.3 PPB
4 – Flat Lake	0.4 PPB	NA
5 – Lake Eliza	0.4 PPB	0.4 PPB
6 – Telegraph Creek	0.4 PPB	NA
8 – Muriel-Kehewin	0.3 PPB	0.4 PPB
9 – Dupre	0.3 PPB	NA
10 – La Corey	0.3 PPB	0.3 PPB
11 – Wolf Lake	0.2 PPB	NA
12 – Foster Creek	0.3 PPB	0.3 PPB
13 – Primrose	0.4 PPB	NA
14 – Maskwa	0.6 PPB	0.7 PPB
15 – Ardmore	0.3 PPB	NA
16 – Frog Lake	0.4 PPB	0.3 PPB
17 – Clear Range	0.5 PPB	NA
18 – Fishing Lake	0.2 PPB	0.7 PPB
19 – Beaverdam	0.7 PPB	NA
22 – Cold Lake South	0.4 PPB	NA
23 – Medley-Martineau	0.1 PPB	0.3 PPB
24 – Fort George	0.3 PPB	NA
25 – Burnt Lake	0.3 PPB	0.3 PPB
26 – Mahikan	0.4 PPB	NA
27 – Mahkeses	1.1 PPB	1.2 PPB
28 – Town of Bonnyville	0.5 PPB	NA
29 – Cold Lake South 2	0.3 PPB	0.3 PPB
32 – St. Lina	0.4 PPB	NA
34 – Portable	0.3 PPB	NA



Summary

Minimum : 0.1PPB –Sand River
 Maximum: 1.2 PPB –Mahkeses
 Average: 0.4PPB *Includes Duplicates



Passive Field Data

Field Notes

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
2	SO ₂ /NO ₂ /O ₃	08/31/11	17:05	09/29/11	16:33	
2A (Dup)	NA	NA	NA	NA	NA	
3	H ₂ S/SO ₂ /NO ₂ /O ₃	08/31/11	14:27	09/29/11	15:54	
3A (Dup)	SO ₂ /NO ₂ /O ₃	08/31/11	14:27	09/29/11	15:54	
4	SO ₂ /NO ₂ /O ₃	08/31/11	13:42	29/29/11	13:53	
4A (Dup)	NA	NA	NA	NA	NA	
5	H ₂ S/SO ₂ /NO ₂ /O ₃	08/31/11	13:00	09/29/11	13:15	
5A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	08/31/11	13:00	09/29/11	13:15	
6	SO ₂ /NO ₂ /O ₃	08/31/11	11:40	09/29/11	11:40	
6A (Dup)	NA	NA	NA	NA	NA	
8	SO ₂ /NO ₂ /O ₃	08/31/11	15:20	09/30/11	12:26	
8A (Dup)	SO ₂ /NO ₂ /O ₃	08/31/11	15:20	09/30/11	12:26	
9	SO ₂ /NO ₂ /O ₃	08/31/11	16:19	09/28/11	11:14	
9A (Dup)	NA	NA	NA	NA	NA	
10	H ₂ S/SO ₂ /NO ₂ /O ₃	08/30/11	15:18	09/30/11	11:36	
10A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	08/30/11	15:18	09/30/11	11:36	
11	H ₂ S/SO ₂ /NO ₂ /O ₃	08/30/11	15:57	09/30/11	10:59	
11A (Dup)	NA	NA	NA	NA	NA	
12	H ₂ S/SO ₂ /NO ₂ /O ₃	08/31/11	18:00	09/30/11	09:45	
12A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	08/31/11	18:00	09/30/11	09:45	
13	H ₂ S/SO ₂ /NO ₂ /O ₃	09/01/11	13:26	09/28/11	14:30	
13A (Dup)	NA	NA	NA	NA	NA	
14	H ₂ S/SO ₂ /NO ₂ /O ₃	09/01/11	14:32	09/28/11	15:26	
14A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	09/01/11	14:32	09/28/11	15:26	
15	SO ₂ /NO ₂ /O ₃	08/29/11	14:48	09/28/11	13:43	
15A (Dup)	NA	NA	NA	NA	NA	
16	H ₂ S/SO ₂ /NO ₂ /O ₃	08/31/11	10:00	09/29/11	09:58	
16A (Dup)	SO ₂ /NO ₂ /O ₃	08/31/11	10:00	09/29/11	09:58	

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
17	H ₂ S/SO ₂ /NO ₂ /O ₃	08/31/11	10:47	09//29/11	10:50	
17A (Dup)	H ₂ S	08/31/11	10:47	09//29/11	10:50	
18	H ₂ S/SO ₂ /NO ₂ /O ₃	08/31/11	09:15	09/29/11	09:16	
18A (Dup)	SO ₂ /NO ₂ /O ₃	08/31/11	09:15	09/29/11	09:16	
19	SO ₂ /NO ₂ /O ₃	08/31/11	08:08	09/29/11	08:10	
19A (Dup)	NA	NA	NA	NA	NA	
22	H ₂ S/SO ₂ /NO ₂ /O ₃	08/29/11	16:35	09/28/11	09:20	
22A (Dup)	NA	NA	NA	NA	NA	All samples were found on the ground.
23	SO ₂ /NO ₂ /O ₃	08/29/11	14:00	09/29/11	18:10	All samples were found on the ground.
23A (Dup)	SO ₂ /NO ₂ /O ₃	08/29/11	14:00	09/29/11	18:10	
24	H ₂ S/SO ₂ /NO ₂ /O ₃	08/31/11	12:15	09/29/11	12:18	
24A (Dup)	H ₂ S	08/31/11	12:15	09/29/11	12:18	
25	H ₂ S/SO ₂	08/30/11	16:50	09/30/11	08:34	
25A (Dup)	SO ₂	08/30/11	16:50	09/30/11	08:34	
26	H ₂ S/SO ₂	09/01/11	14:00	09/28/11	15:05	
26A (Dup)	H ₂ S	09/01/11	14:00	09/28/11	15:05	
27	H ₂ S/SO ₂	09/01/11	14:54	09/28/11	15:45	
27A (Dup)	SO ₂	09/01/11	14:54	09/28/11	15:45	
28	SO ₂ /NO ₂ /O ₃	08/31/11	15:54	09/28/11	11:35	
28A (Dup)	NO ₂ /O ₃	08/31/11	15:54	09/28/11	11:35	
29	H ₂ S/SO ₂ /NO ₂ /O ₃	08/29/11	16:46	09/28/11	09:30	
29A (Dup)	H ₂ S/SO ₂	08/29/11	16:46	09/28/11	09:30	
32	H ₂ S/SO ₂ /NO ₂ /O ₃	08/30/11	08:39	09/29/11	15:07	
32A(Dup)	NA	NA	NA	NA	NA	
34	H ₂ S/SO ₂ /NO ₂ /O ₃	08/29/11	15:40	09/28/11	10:44	
34A(Dup)	NA	NA	NA	NA	NA	

Passive Network Laboratory Analysis



Your Project #: 2011/08/31 - 2011/09/29
Site Location: LICA

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

Report Date: 2011/10/17

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B194590
Received: 2011/10/04, 14:51

Sample Matrix: Air
Samples Received: 43

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
H2S Passive Analysis (0)	25	2011/10/10	2011/10/17	EINDSOP-00150	Tang.Passive H2S in
H2S Passive Analysis (0)	1	2011/10/11	2011/10/17	EINDSOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (0)	34	2011/10/08	2011/10/17	EINDSOP-00148	Tang Passive NO2 in
O3 Passive Analysis (0)	34	2011/10/14	2011/10/17	EINDSOP-00197	EPA 300 R2.1
SO2 Passive Analysis (0)	39	2011/10/12	2011/10/17	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 #: B194590
 Report Date: 2011/10/17

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2011/08/31 - 2011/09/29
 Site Location: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		BS3972	BS3974	BS3975	BS3976	BS3978		
Sampling Date		2011/08/31 17:05	2011/08/31 14:27	2011/08/31 14:27	2011/08/31 13:42	2011/08/31 13:00		
	Units	2	3	3A (DUP)	4	5	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb		0.15			0.34	0.02	5251074
Calculated NO2	ppb	0.6	1.1	0.8	0.8	1.0	0.1	5250107
Calculated O3	ppb	15.5	19.5	18.7	22.5	21.7	0.1	5261852
Calculated SO2	ppb	0.1	0.3	0.3	0.4	0.4	0.1	5254806

RDL = Reportable Detection Limit

Maxxam ID		BS3979	BS3980	BS3981	BS3982	BS3983		
Sampling Date		2011/08/31 13:00	2011/08/31 11:40	2011/08/31 15:20	2011/08/31 15:20	2011/08/31 16:19		
	Units	5A (DUP)	6	8	8A (DUP)	9	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.19					0.02	5251074
Calculated NO2	ppb	0.7	1.4	0.6	0.7	1.2	0.1	5250107
Calculated O3	ppb	22.1	16.8	20.6	21.8	19.2	0.1	5261852
Calculated SO2	ppb	0.4	0.4	0.3	0.4	0.3	0.1	5254806

RDL = Reportable Detection Limit

Maxxam ID		BS3984	BS3985	BS3986		BS3987		
Sampling Date		2011/08/30 15:18	2011/08/30 15:18	2011/08/30 15:57		2011/08/30 18:00		
	Units	10	10A (DUP)	11	QC Batch	12	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.19	0.18	0.05	5251074	0.11	0.02	5251074
Calculated NO2	ppb	2.1	2.2	0.4	5250107	1.0	0.1	5250107
Calculated O3	ppb	16.0	16.6	13.5	5261852	19.0	0.1	5263690
Calculated SO2	ppb	0.3	0.3	0.2	5254806	0.3	0.1	5254806

RDL = Reportable Detection Limit



Maxxam Job #: B194590
 Report Date: 2011/10/17

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2011/08/31 - 2011/09/29
 Site Location: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		BS3988		BS3989	BS3990		BS3991		
Sampling Date		2011/08/30 18:00		2011/09/01 13:26	2011/09/01 14:32		2011/09/01 14:32		
	Units	12A (DUP)	QC Batch	13	14	QC Batch	14A (DUP)	RDL	QC Batch

Passive Monitoring									
Calculated H2S	ppb	0.13	5251074	0.09	0.19	5251074	0.20	0.02	5251067
Calculated NO2	ppb	0.7	5250107	0.5	0.9	5250109	0.9	0.1	5250109
Calculated O3	ppb	17.2	5263690	20.8	21.2	5263690	21.8	0.1	5263690
Calculated SO2	ppb	0.3	5254806	0.4	0.6	5254806	0.7	0.1	5254806

RDL = Reportable Detection Limit

Maxxam ID		BS3992		BS3993	BS3994	BS3995		
Sampling Date		2011/08/29 14:48		2011/08/31 10:00	2011/08/31 10:00	2011/08/31 10:47		
	Units	15	QC Batch	16	16A (DUP)	17	RDL	QC Batch

Passive Monitoring									
Calculated H2S	ppb		5251067	0.17		0.35	0.02	5251074	
Calculated NO2	ppb	0.9	5250109	1.3	1.3	1.5	0.1	5250109	
Calculated O3	ppb	17.5	5263690	17.8	19.3	21.6	0.1	5263690	
Calculated SO2	ppb	0.3	5254806	0.4	0.3	0.5	0.1	5254827	

RDL = Reportable Detection Limit

Maxxam ID		BS3996	BS3997	BS3998	BS4000	BS4002		
Sampling Date		2011/08/31 10:47	2011/08/31 09:15	2011/08/31 09:15	2011/08/31 08:08	2011/08/29 16:35		
	Units	17A (DUP)	18	18A (DUP)	19	22	RDL	QC Batch

Passive Monitoring									
Calculated H2S	ppb	0.44	0.12			0.12	0.02	5251074	
Calculated NO2	ppb		1.1	1.2	0.6	1.1	0.1	5250109	
Calculated O3	ppb		16.2	14.8	21.0	17.9	0.1	5263690	
Calculated SO2	ppb		0.2	0.7	0.7	0.4	0.1	5254827	

RDL = Reportable Detection Limit



Maxxam Job #: B194590
 Report Date: 2011/10/17

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2011/08/31 - 2011/09/29
 Site Location: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		BS4003	BS4004	BS4005	BS4006	BS4007		
Sampling Date		2011/08/29 14:00	2011/08/29 14:00	2011/08/31 12:15	2011/08/31 12:15	2011/08/30 16:50		
	Units	23	23A (DUP)	24	24A (DUP)	25	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb			0.20	0.18	0.07	0.02	5251074
Calculated NO2	ppb	0.2	0.2	1.8			0.1	5250109
Calculated O3	ppb	6.7	DAMAGED	22.4			0.1	5263690
Calculated SO2	ppb	0.1	0.3	0.3		0.3	0.1	5254827
RDL = Reportable Detection Limit								

Maxxam ID		BS4008	BS4009	BS4010	BS4011	BS4012		
Sampling Date		2011/08/30 16:50	2011/09/01 14:00	2011/09/01 14:00	2011/09/01 14:54	2011/09/01 14:54		
	Units	25A (DUP)	26	26A (DUP)	27	27A (DUP)	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb		0.16	0.15	0.80		0.02	5251074
Calculated SO2	ppb	0.3	0.4		1.1	1.2	0.1	5254827
RDL = Reportable Detection Limit								

Maxxam ID		BS4013	BS4014	BS4015	BS4016	BS4017		
Sampling Date		2011/08/31 15:54	2011/08/31 15:54	2011/08/31 16:46	2011/08/31 16:46	2011/08/30 08:39		
	Units	28	28A (DUP)	29	29A (DUP)	32	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb			0.16	0.18	0.18	0.02	5251074
Calculated NO2	ppb	2.6	2.8	1.0		0.5	0.1	5250109
Calculated O3	ppb	21.1	19.6	22.6		30.1	0.1	5263690
Calculated SO2	ppb	0.5		0.3	0.3	0.4	0.1	5254827
RDL = Reportable Detection Limit								



Maxxam Job #: B194590
Report Date: 2011/10/17

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2011/08/31 - 2011/09/29
Site Location: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		BS9254		
Sampling Date		2011/08/29 15:40		
	Units	34	RDL	QC Batch

Passive Monitoring				
Calculated H2S	ppb	0.24	0.02	5251074
Calculated NO2	ppb	1.5	0.1	5250109
Calculated O3	ppb	23.4	0.1	5263690
Calculated SO2	ppb	0.3	0.1	5254827
RDL = Reportable Detection Limit				



Maxxam Job #: B194590
Report Date: 2011/10/17

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2011/08/31 - 2011/09/29
Site Location: LICA
Sampler Initials: SB

General Comments

Samples: BS4003 (#23)and BS4004 (#23A) for O3 parametr fell on the ground.- OZ

Results relate only to the items tested.



LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Attention: MICHAEL BISAGA
 Client Project #: 2011/08/31 - 2011/09/29
 P.O. #:
 Site Location: LICA

Quality Assurance Report
 Maxxam Job Number: PB194590

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
5250107 DF4	Calibration Check	Calculated NO2	2011/10/08		98	%	76 - 118
	Spiked Blank	Calculated NO2	2011/10/08		97	%	N/A
	Method Blank	Calculated NO2	2011/10/08	<0.1		ppb	
5250109 DF4	Calibration Check	Calculated NO2	2011/10/08		98	%	76 - 118
	Spiked Blank	Calculated NO2	2011/10/08		98	%	N/A
	Method Blank	Calculated NO2	2011/10/08	<0.1		ppb	
5251067 SS6	Calibration Check	Calculated H2S	2011/10/10		100	%	80 - 120
	Spiked Blank	Calculated H2S	2011/10/10		101	%	N/A
5251074 SS6	Calibration Check	Calculated H2S	2011/10/10		100	%	80 - 120
	Spiked Blank	Calculated H2S	2011/10/10		101	%	N/A
5254806 DF4	Calibration Check	Calculated SO2	2011/10/12		102	%	95 - 105
	Spiked Blank	Calculated SO2	2011/10/12		100	%	N/A
	Method Blank	Calculated SO2	2011/10/12	<0.1		ppb	
5254827 DF4	Calibration Check	Calculated SO2	2011/10/12		101	%	95 - 105
	Spiked Blank	Calculated SO2	2011/10/12		103	%	N/A
	Method Blank	Calculated SO2	2011/10/12	<0.1		ppb	
5261852 OZ	Calibration Check	Calculated O3	2011/10/13		98	%	91 - 107
	Spiked Blank	Calculated O3	2011/10/13		100	%	N/A
	Method Blank	Calculated O3	2011/10/13	<0.1		ppb	
5263690 OZ	Calibration Check	Calculated O3	2011/10/14		99	%	91 - 107
	Spiked Blank	Calculated O3	2011/10/14		98	%	N/A
	Method Blank	Calculated O3	2011/10/14	<0.1		ppb	

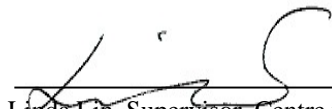
Calibration Check: A calibration standard analyzed at different times to evaluate on-going calibration accuracy.
 Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
 Method Blank: A blank matrix containing all reagents used in the analytical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

Maxxam Analytics International Corporation o/a Maxxam Analytics Edmonton: 6744 - 50th Street T6B 3M9 Telephone(780) 378-8500 FAX(780) 378-8699

Validation Signature Page

Maxxam Job #: B194590

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: 127
Station ID: Lica 1 Canister Installation Date/Time: Sept 01, 2011 @ 15:18 mst
Field Sample ID: LICA VOC/ CLS /Sept 06,11 Canister Removal Date/Time: Sept 07, 2011 @ 8:39 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
06-Sep-11	09/06/2011 0:00	09/07/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	620	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 # 05862

Technician Signiture: Ting Xu

Your C.O.C. #: 05862

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

Report Date: 2011/09/20

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1D8383****Received: 2011/09/09, 10:34**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/09/15	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/09/15	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

=====

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Total cover pages: 1

Page 1 of 14

Maxxam Job #: B1D8383
 Report Date: 2011/09/20

RESULTS OF ANALYSES OF AIR

Maxxam ID		KV1532	KV1533	
Sampling Date		2011/09/06 00:00	2011/09/06 00:00	
COC Number		05862	05862	
	Units	LICA/VOC/CLS/SEP 06,2011 - 127	LICA/VOC/PORT/SEP 06,2011 - 7852	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	20	2616696

QC Batch = Quality Control Batch

Maxxam Job #: B1D8383
 Report Date: 2011/09/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KV1532				
Sampling Date		2011/09/06 00:00				
COC Number		05862				
	Units	LICA/VO/CLS/SEP	RDL	ug/m3	DL (ug/m3)	QC Batch
		06,2011 - 127				

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2617054
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2617054
Propene	ppbv	<0.30	0.30	<0.516	0.516	2617054
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2617054
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2617054
Dichlorodifluoromethane (FREON 12)	ppbv	0.72	0.20	3.54	0.989	2617054
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2617054
Chloromethane	ppbv	0.46	0.30	0.956	0.620	2617054
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2617054
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2617054
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2617054
Trichlorofluoromethane (FREON 11)	ppbv	0.36	0.20	2.02	1.12	2617054
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2617054
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2617054
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2617054
2-Propanone	ppbv	3.75	0.80	8.91	1.90	2617054
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2617054
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2617054
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2617054
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2617054
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2617054
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2617054
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2617054
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2617054
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2617054
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2617054
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2617054
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2617054
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2617054
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2617054
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2617054

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1D8383
 Report Date: 2011/09/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KV1532				
Sampling Date		2011/09/06 00:00				
COC Number		05862				
	Units	LICA/VO/CLS/SEP	RDL	ug/m3	DL (ug/m3)	QC Batch
		06,2011 - 127				
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2617054
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2617054
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2617054
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2617054
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2617054
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2617054
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2617054
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2617054
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2617054
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2617054
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2617054
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2617054
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2617054
Toluene	ppbv	2.52	0.20	9.50	0.753	2617054
Ethylbenzene	ppbv	1.65	0.20	7.15	0.868	2617054
p+m-Xylene	ppbv	3.65	0.37	15.8	1.61	2617054
o-Xylene	ppbv	0.63	0.20	2.73	0.868	2617054
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2617054
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2617054
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2617054
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2617054
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2617054
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2617054
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2617054
1,4-Dichlorobenzene	ppbv	1.27	0.40	7.63	2.40	2617054
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2617054
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2617054
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2617054
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2617054
Cyclohexane	ppbv	0.36	0.20	1.24	0.688	2617054
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2617054
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2617054
Xylene (Total)	ppbv	4.28	0.60	18.6	2.61	2617054
QC Batch = Quality Control Batch						

Maxxam Job #: B1D8383
 Report Date: 2011/09/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KV1532				
Sampling Date		2011/09/06 00:00				
COC Number		05862				
	Units	LICA/VOC/CLS/SEP	RDL	ug/m3	DL (ug/m3)	QC Batch
		06,2011 - 127				

Surrogate Recovery (%)						
Bromochloromethane	%	85		N/A	N/A	2617054
D5-Chlorobenzene	%	89		N/A	N/A	2617054
Difluorobenzene	%	86		N/A	N/A	2617054

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

Maxxam Job #: B1D8383
 Report Date: 2011/09/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KV1533				
Sampling Date		2011/09/06 00:00				
COC Number		05862				
	Units	LICA/VOC/PORT/SEP	RDL	ug/m3	DL (ug/m3)	QC Batch
		06,2011 - 7852				

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2617054
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2617054
Propene	ppbv	<0.30	0.30	<0.516	0.516	2617054
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2617054
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2617054
Dichlorodifluoromethane (FREON 12)	ppbv	0.71	0.20	3.50	0.989	2617054
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2617054
Chloromethane	ppbv	0.48	0.30	1.00	0.620	2617054
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2617054
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2617054
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2617054
Trichlorofluoromethane (FREON 11)	ppbv	0.34	0.20	1.91	1.12	2617054
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2617054
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2617054
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2617054
2-Propanone	ppbv	5.23	0.80	12.4	1.90	2617054
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2617054
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2617054
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2617054
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2617054
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2617054
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2617054
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2617054
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2617054
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2617054
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2617054
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2617054
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2617054
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2617054
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2617054
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2617054
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B1D8383
 Report Date: 2011/09/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KV1533				
Sampling Date		2011/09/06				
		00:00				
COC Number		05862				
	Units	LICA/VOC/PORT/SEP	RDL	ug/m3	DL (ug/m3)	QC Batch
		06,2011 - 7852				
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2617054
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2617054
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2617054
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2617054
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2617054
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2617054
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2617054
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2617054
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2617054
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2617054
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2617054
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2617054
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2617054
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2617054
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2617054
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2617054
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2617054
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2617054
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2617054
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2617054
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2617054
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2617054
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2617054
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2617054
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2617054
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2617054
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2617054
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2617054
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2617054
Cyclohexane	ppbv	0.41	0.20	1.41	0.688	2617054
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2617054
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2617054
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2617054
QC Batch = Quality Control Batch						

Maxxam Job #: B1D8383
 Report Date: 2011/09/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KV1533				
Sampling Date		2011/09/06 00:00				
COC Number		05862				
	Units	LICA/VOC/PORT/SEP 06,2011 - 7852	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	85		N/A	N/A	2617054
D5-Chlorobenzene	%	89		N/A	N/A	2617054
Difluorobenzene	%	86		N/A	N/A	2617054

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

Maxxam Job #: B1D8383
Report Date: 2011/09/20

Test Summary

Maxxam ID KV1532 **Collected** 2011/09/06
Sample ID LICA/VOC/CLS/SEP 06,2011 - 127 **Shipped**
Matrix AIR **Received** 2011/09/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2616696	N/A	2011/09/15	YAO LIANG SUN
Volatile Organics in Air (TO-15)	GC/MS	2617054	N/A	2011/09/15	YAO LIANG SUN

Maxxam ID KV1533 **Collected** 2011/09/06
Sample ID LICA/VOC/PORT/SEP 06,2011 - 7852 **Shipped**
Matrix AIR **Received** 2011/09/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2616696	N/A	2011/09/15	YAO LIANG SUN
Volatile Organics in Air (TO-15)	GC/MS	2617054	N/A	2011/09/15	YAO LIANG SUN

Maxxam Job #: B1D8383
Report Date: 2011/09/20

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB1D8383

QA/QC Batch			Date Analyzed				
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2617054	LSY	Spiked Blank					
		Bromochloromethane	2011/09/15		94	%	60 - 140
		D5-Chlorobenzene	2011/09/15		96	%	60 - 140
		Difluorobenzene	2011/09/15		96	%	60 - 140
		2,2,4-Trimethylpentane	2011/09/15		88	%	70 - 130
		Carbon Disulfide	2011/09/15		84	%	70 - 130
		Propene	2011/09/15		74	%	70 - 130
		Vinyl Acetate	2011/09/15		91	%	70 - 130
		Vinyl Bromide	2011/09/15		119	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/09/15		102	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/09/15		117	%	70 - 130
		Chloromethane	2011/09/15		94	%	70 - 130
		Vinyl Chloride	2011/09/15		98	%	70 - 130
		Chloroethane	2011/09/15		103	%	70 - 130
		1,3-Butadiene	2011/09/15		79	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/09/15		110	%	70 - 130
		Trichlorotrifluoroethane	2011/09/15		101	%	70 - 130
		Ethanol	2011/09/15		90	%	70 - 130
		2-propanol	2011/09/15		84	%	70 - 130
		2-Propanone	2011/09/15		81	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/09/15		80	%	70 - 130
		Methyl Isobutyl Ketone	2011/09/15		86	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/09/15		86	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/09/15		104	%	70 - 130
		Ethyl Acetate	2011/09/15		87	%	70 - 130
		1,1-Dichloroethylene	2011/09/15		98	%	70 - 130
		cis-1,2-Dichloroethylene	2011/09/15		97	%	70 - 130
		trans-1,2-Dichloroethylene	2011/09/15		94	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/09/15		80	%	70 - 130
		Chloroform	2011/09/15		104	%	70 - 130
		Carbon Tetrachloride	2011/09/15		121	%	70 - 130
		1,1-Dichloroethane	2011/09/15		94	%	70 - 130
		1,2-Dichloroethane	2011/09/15		109	%	70 - 130
		Ethylene Dibromide	2011/09/15		106	%	70 - 130
		1,1,1-Trichloroethane	2011/09/15		114	%	70 - 130
		1,1,2-Trichloroethane	2011/09/15		104	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/09/15		84	%	70 - 130
		cis-1,3-Dichloropropene	2011/09/15		106	%	70 - 130
		trans-1,3-Dichloropropene	2011/09/15		107	%	70 - 130
		1,2-Dichloropropane	2011/09/15		92	%	70 - 130
		Bromomethane	2011/09/15		112	%	70 - 130
		Bromoform	2011/09/15		127	%	70 - 130
		Bromodichloromethane	2011/09/15		106	%	70 - 130
		Dibromochloromethane	2011/09/15		121	%	70 - 130
		Heptane	2011/09/15		89	%	70 - 130
		Trichloroethylene	2011/09/15		110	%	70 - 130
		Tetrachloroethylene	2011/09/15		118	%	70 - 130
		Benzene	2011/09/15		97	%	70 - 130
		Toluene	2011/09/15		107	%	70 - 130
		Ethylbenzene	2011/09/15		109	%	70 - 130
		p+m-Xylene	2011/09/15		112	%	70 - 130
		o-Xylene	2011/09/15		110	%	70 - 130
		Styrene	2011/09/15		111	%	70 - 130
		1,3,5-Trimethylbenzene	2011/09/15		98	%	70 - 130
		1,2,4-Trimethylbenzene	2011/09/15		94	%	70 - 130
		4-ethyltoluene	2011/09/15		101	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1D8383

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2617054 LSY	Spiked Blank	Chlorobenzene	2011/09/15		107	%	70 - 130
		Benzyl chloride	2011/09/15		84	%	70 - 130
		1,3-Dichlorobenzene	2011/09/15		93	%	70 - 130
		1,4-Dichlorobenzene	2011/09/15		93	%	70 - 130
		1,2-Dichlorobenzene	2011/09/15		88	%	70 - 130
		1,2,4-Trichlorobenzene	2011/09/15		85	%	70 - 130
		Hexachlorobutadiene	2011/09/15		98	%	70 - 130
		Hexane	2011/09/15		91	%	70 - 130
		Cyclohexane	2011/09/15		93	%	70 - 130
		Tetrahydrofuran	2011/09/15		86	%	70 - 130
		1,4-Dioxane	2011/09/15		91	%	70 - 130
	Method Blank	Xylene (Total)	2011/09/15		111	%	70 - 130
		Bromochloromethane	2011/09/15		89	%	60 - 140
		D5-Chlorobenzene	2011/09/15		90	%	60 - 140
		Difluorobenzene	2011/09/15		90	%	60 - 140
		2,2,4-Trimethylpentane	2011/09/15	<0.20		ppbv	
		Carbon Disulfide	2011/09/15	<0.50		ppbv	
		Propene	2011/09/15	<0.30		ppbv	
		Vinyl Acetate	2011/09/15	<0.20		ppbv	
		Vinyl Bromide	2011/09/15	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/09/15	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/09/15	<0.17		ppbv	
		Chloromethane	2011/09/15	<0.30		ppbv	
		Vinyl Chloride	2011/09/15	<0.18		ppbv	
		Chloroethane	2011/09/15	<0.30		ppbv	
		1,3-Butadiene	2011/09/15	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/09/15	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/09/15	<0.15		ppbv	
		Ethanol	2011/09/15	<2.3		ppbv	
		2-propanol	2011/09/15	<3.0		ppbv	
		2-Propanone	2011/09/15	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/09/15	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/09/15	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/09/15	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/09/15	<0.20		ppbv	
		Ethyl Acetate	2011/09/15	<2.2		ppbv	
		1,1-Dichloroethylene	2011/09/15	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/09/15	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/09/15	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/09/15	<0.80		ppbv	
		Chloroform	2011/09/15	<0.15		ppbv	
		Carbon Tetrachloride	2011/09/15	<0.30		ppbv	
		1,1-Dichloroethane	2011/09/15	<0.20		ppbv	
		1,2-Dichloroethane	2011/09/15	<0.20		ppbv	
		Ethylene Dibromide	2011/09/15	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/09/15	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/09/15	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/09/15	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/09/15	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/09/15	<0.17		ppbv	
		1,2-Dichloropropane	2011/09/15	<0.40		ppbv	
		Bromomethane	2011/09/15	<0.18		ppbv	
		Bromoform	2011/09/15	<0.20		ppbv	
		Bromodichloromethane	2011/09/15	<0.20		ppbv	
		Dibromochloromethane	2011/09/15	<0.20		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1D8383

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2617054 LSY	Method Blank	Heptane	2011/09/15	<0.30		ppbv	
		Trichloroethylene	2011/09/15	<0.30		ppbv	
		Tetrachloroethylene	2011/09/15	<0.20		ppbv	
		Benzene	2011/09/15	<0.18		ppbv	
		Toluene	2011/09/15	<0.20		ppbv	
		Ethylbenzene	2011/09/15	<0.20		ppbv	
		p+m-Xylene	2011/09/15	<0.37		ppbv	
		o-Xylene	2011/09/15	<0.20		ppbv	
		Styrene	2011/09/15	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/09/15	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/09/15	<0.50		ppbv	
		4-ethyltoluene	2011/09/15	<2.2		ppbv	
		Chlorobenzene	2011/09/15	<0.20		ppbv	
		Benzyl chloride	2011/09/15	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/09/15	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/09/15	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/09/15	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/09/15	<2.0		ppbv	
		Hexachlorobutadiene	2011/09/15	<3.0		ppbv	
		Hexane	2011/09/15	<0.30		ppbv	
		Cyclohexane	2011/09/15	<0.20		ppbv	
		Tetrahydrofuran	2011/09/15	<0.40		ppbv	
		1,4-Dioxane	2011/09/15	<2.0		ppbv	
		Xylene (Total)	2011/09/15	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/09/15	NC		%	25
		Carbon Disulfide	2011/09/15	NC		%	25
		Propene	2011/09/15	NC		%	25
		Vinyl Acetate	2011/09/15	NC		%	25
		Vinyl Bromide	2011/09/15	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/09/15	1.5		%	25
		1,2-Dichlorotetrafluoroethane	2011/09/15	NC		%	25
		Chloromethane	2011/09/15	NC		%	25
		Vinyl Chloride	2011/09/15	NC		%	25
		Chloroethane	2011/09/15	NC		%	25
		1,3-Butadiene	2011/09/15	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/09/15	0.09		%	25
		Trichlorotrifluoroethane	2011/09/15	NC		%	25
		Ethanol	2011/09/15	NC		%	25
		2-propanol	2011/09/15	NC		%	25
		2-Propanone	2011/09/15	NC		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/09/15	NC		%	25
		Methyl Isobutyl Ketone	2011/09/15	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/09/15	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/09/15	NC		%	25
		Ethyl Acetate	2011/09/15	NC		%	25
		1,1-Dichloroethylene	2011/09/15	NC		%	25
		cis-1,2-Dichloroethylene	2011/09/15	NC		%	25
		trans-1,2-Dichloroethylene	2011/09/15	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/09/15	NC		%	25
		Chloroform	2011/09/15	NC		%	25
		Carbon Tetrachloride	2011/09/15	NC		%	25
		1,1-Dichloroethane	2011/09/15	NC		%	25
		1,2-Dichloroethane	2011/09/15	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1D8383

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2617054 LSY	RPD - Sample/Sample Dup	Ethylene Dibromide	2011/09/15	NC		%	25
		1,1,1-Trichloroethane	2011/09/15	NC		%	25
		1,1,2-Trichloroethane	2011/09/15	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/09/15	NC		%	25
		cis-1,3-Dichloropropene	2011/09/15	NC		%	25
		trans-1,3-Dichloropropene	2011/09/15	NC		%	25
		1,2-Dichloropropane	2011/09/15	NC		%	25
		Bromomethane	2011/09/15	NC		%	25
		Bromoform	2011/09/15	NC		%	25
		Bromodichloromethane	2011/09/15	NC		%	25
		Dibromochloromethane	2011/09/15	NC		%	25
		Heptane	2011/09/15	NC		%	25
		Trichloroethylene	2011/09/15	NC		%	25
		Tetrachloroethylene	2011/09/15	NC		%	25
		Benzene	2011/09/15	NC		%	25
		Toluene	2011/09/15	2.6		%	25
		Ethylbenzene	2011/09/15	NC		%	25
		p+m-Xylene	2011/09/15	NC		%	25
		o-Xylene	2011/09/15	NC		%	25
		Styrene	2011/09/15	NC		%	25
		1,3,5-Trimethylbenzene	2011/09/15	NC		%	25
		1,2,4-Trimethylbenzene	2011/09/15	NC		%	25
		4-ethyltoluene	2011/09/15	NC		%	25
		Chlorobenzene	2011/09/15	NC		%	25
		Benzyl chloride	2011/09/15	NC		%	25
		1,3-Dichlorobenzene	2011/09/15	NC		%	25
		1,4-Dichlorobenzene	2011/09/15	NC		%	25
		1,2-Dichlorobenzene	2011/09/15	NC		%	25
		1,2,4-Trichlorobenzene	2011/09/15	NC		%	25
		Hexachlorobutadiene	2011/09/15	NC		%	25
		Hexane	2011/09/15	NC		%	25
		Cyclohexane	2011/09/15	NC		%	25
		Tetrahydrofuran	2011/09/15	NC		%	25
		1,4-Dioxane	2011/09/15	NC		%	25
		Xylene (Total)	2011/09/15	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.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
 Location: Cold Lake South Canister ID: 7819
 Station ID: Lica 1 Canister Installation Date/Time: Sept 09, 2011 @ 7:40 mst
 Field Sample ID: LICA VOC/ CLS /Sept 12,11 Canister Removal Date/Time: Sept 13, 2011 @ 7:36 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
12-Sep-11	09/12/2011 0:00	09/13/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	620	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 # 05922

Technician Signiture: Ting Xu



Your C.O.C. #: 05922

Attention: Michael Bisaga

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

Report Date: 2011/09/23

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1E1777

Received: 2011/09/15, 09:50

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/09/19	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/09/19	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 #: B1E1777
 Report Date: 2011/09/23

RESULTS OF ANALYSES OF AIR

Maxxam ID		KW9019	KW9020	
Sampling Date		2011/09/12	2011/09/12	
COC Number		05922	05922	
	Units	LICA VOC/ CLS/SEP12,11/ #7819	LICA VOC/ PORT/SEP12,11/ #7805	QC Batch

Volatile Organics				
Pressure on Receipt	psig	20	20	2620075

QC Batch = Quality Control Batch

Maxxam Job #: B1E1777
 Report Date: 2011/09/23

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KW9019				
Sampling Date		2011/09/12				
COC Number		05922				
	Units	LICA VOC/ CLS/SEP12,11/ #7819	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2620074
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2620074
Propene	ppbv	<0.30	0.30	<0.516	0.516	2620074
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2620074
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2620074
Dichlorodifluoromethane (FREON 12)	ppbv	0.71	0.20	3.53	0.989	2620074
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2620074
Chloromethane	ppbv	0.48	0.30	0.984	0.620	2620074
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2620074
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2620074
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2620074
Trichlorofluoromethane (FREON 11)	ppbv	0.34	0.20	1.90	1.12	2620074
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2620074
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2620074
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2620074
2-Propanone	ppbv	1.16	0.80	2.76	1.90	2620074
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2620074
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2620074
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2620074
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2620074
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2620074
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2620074
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2620074
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2620074
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2620074
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2620074
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2620074
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2620074
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2620074
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2620074
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2620074

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1E1777
 Report Date: 2011/09/23

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KW9019				
Sampling Date		2011/09/12				
COC Number		05922				
	Units	LICA VOC/ CLS/SEP12,11/ #7819	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2620074
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2620074
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2620074
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2620074
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2620074
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2620074
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2620074
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2620074
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2620074
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2620074
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2620074
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2620074
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2620074
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2620074
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2620074
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2620074
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2620074
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2620074
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2620074
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2620074
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2620074
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2620074
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2620074
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2620074
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2620074
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2620074
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2620074
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2620074
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2620074
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2620074
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2620074
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2620074
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2620074
QC Batch = Quality Control Batch						

Maxxam Job #: B1E1777
 Report Date: 2011/09/23

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KW9019				
Sampling Date		2011/09/12				
COC Number		05922				
	Units	LICA VOC/ CLS/SEP12,11/ #7819	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	82		N/A	N/A	2620074
D5-Chlorobenzene	%	81		N/A	N/A	2620074
Difluorobenzene	%	85		N/A	N/A	2620074

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

Maxxam Job #: B1E1777
 Report Date: 2011/09/23

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KW9020				
Sampling Date		2011/09/12				
COC Number		05922				
	Units	LICA VOC/ PORT/SEP12,11/ #7805	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2620074
Carbon Disulfide	ppbv	0.76	0.50	2.37	1.56	2620074
Propene	ppbv	<0.30	0.30	<0.516	0.516	2620074
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2620074
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2620074
Dichlorodifluoromethane (FREON 12)	ppbv	0.70	0.20	3.47	0.989	2620074
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2620074
Chloromethane	ppbv	0.44	0.30	0.903	0.620	2620074
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2620074
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2620074
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2620074
Trichlorofluoromethane (FREON 11)	ppbv	0.31	0.20	1.72	1.12	2620074
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2620074
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2620074
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2620074
2-Propanone	ppbv	1.27	0.80	3.03	1.90	2620074
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2620074
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2620074
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2620074
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2620074
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2620074
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2620074
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2620074
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2620074
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2620074
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2620074
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2620074
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2620074
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2620074
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2620074
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2620074
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B1E1777
 Report Date: 2011/09/23

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KW9020				
Sampling Date		2011/09/12				
COC Number		05922				
	Units	LICA VOC/ PORT/SEP12,11/ #7805	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2620074
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2620074
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2620074
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2620074
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2620074
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2620074
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2620074
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2620074
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2620074
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2620074
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2620074
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2620074
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2620074
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2620074
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2620074
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2620074
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2620074
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2620074
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2620074
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2620074
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2620074
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2620074
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2620074
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2620074
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2620074
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2620074
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2620074
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2620074
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2620074
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2620074
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2620074
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2620074
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2620074
QC Batch = Quality Control Batch						

Maxxam Job #: B1E1777
 Report Date: 2011/09/23

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KW9020				
Sampling Date		2011/09/12				
COC Number		05922				
	Units	LICA VOC/ PORT/SEP12,11/ #7805	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	81		N/A	N/A	2620074
D5-Chlorobenzene	%	81		N/A	N/A	2620074
Difluorobenzene	%	85		N/A	N/A	2620074

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

Maxxam Job #: B1E1777
 Report Date: 2011/09/23

Test Summary

Maxxam ID	KW9019	Collected	2011/09/12
Sample ID	LICA VOC/ CLS/SEP12,11/ #7819	Shipped	
Matrix	AIR	Received	2011/09/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2620075	N/A	2011/09/19	VALERIE RANDALL
Volatile Organics in Air (TO-15)	GC/MS	2620074	N/A	2011/09/19	VALERIE RANDALL

Maxxam ID	KW9020	Collected	2011/09/12
Sample ID	LICA VOC/ PORT/SEP12,11/ #7805	Shipped	
Matrix	AIR	Received	2011/09/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2620075	N/A	2011/09/19	VALERIE RANDALL
Volatile Organics in Air (TO-15)	GC/MS	2620074	N/A	2011/09/19	VALERIE RANDALL

Maxxam Job #: B1E1777
Report Date: 2011/09/23

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB1E1777

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2620074 VEA	Spiked Blank	Bromochloromethane	2011/09/19		96	%	60 - 140
		D5-Chlorobenzene	2011/09/19		101	%	60 - 140
		Difluorobenzene	2011/09/19		98	%	60 - 140
		2,2,4-Trimethylpentane	2011/09/19		87	%	70 - 130
		Carbon Disulfide	2011/09/19		85	%	70 - 130
		Propene	2011/09/19		80	%	70 - 130
		Vinyl Acetate	2011/09/19		83	%	70 - 130
		Vinyl Bromide	2011/09/19		98	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/09/19		93	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/09/19		108	%	70 - 130
		Chloromethane	2011/09/19		97	%	70 - 130
		Vinyl Chloride	2011/09/19		94	%	70 - 130
		Chloroethane	2011/09/19		97	%	70 - 130
		1,3-Butadiene	2011/09/19		93	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/09/19		99	%	70 - 130
		Trichlorotrifluoroethane	2011/09/19		93	%	70 - 130
		Ethanol	2011/09/19		103	%	70 - 130
		2-propanol	2011/09/19		91	%	70 - 130
		2-Propanone	2011/09/19		117	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/09/19		90	%	70 - 130
		Methyl Isobutyl Ketone	2011/09/19		91	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/09/19		93	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/09/19		79	%	70 - 130
		Ethyl Acetate	2011/09/19		89	%	70 - 130
		1,1-Dichloroethylene	2011/09/19		90	%	70 - 130
		cis-1,2-Dichloroethylene	2011/09/19		89	%	70 - 130
		trans-1,2-Dichloroethylene	2011/09/19		90	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/09/19		82	%	70 - 130
		Chloroform	2011/09/19		93	%	70 - 130
		Carbon Tetrachloride	2011/09/19		76	%	70 - 130
		1,1-Dichloroethane	2011/09/19		93	%	70 - 130
		1,2-Dichloroethane	2011/09/19		90	%	70 - 130
		Ethylene Dibromide	2011/09/19		91	%	70 - 130
		1,1,1-Trichloroethane	2011/09/19		78	%	70 - 130
		1,1,2-Trichloroethane	2011/09/19		93	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/09/19		86	%	70 - 130
		cis-1,3-Dichloropropene	2011/09/19		88	%	70 - 130
		trans-1,3-Dichloropropene	2011/09/19		83	%	70 - 130
		1,2-Dichloropropane	2011/09/19		91	%	70 - 130
		Bromomethane	2011/09/19		101	%	70 - 130
		Bromoform	2011/09/19		92	%	70 - 130
		Bromodichloromethane	2011/09/19		91	%	70 - 130
		Dibromochloromethane	2011/09/19		95	%	70 - 130
		Heptane	2011/09/19		88	%	70 - 130
		Trichloroethylene	2011/09/19		90	%	70 - 130
		Tetrachloroethylene	2011/09/19		92	%	70 - 130
		Benzene	2011/09/19		94	%	70 - 130
		Toluene	2011/09/19		94	%	70 - 130
		Ethylbenzene	2011/09/19		89	%	70 - 130
		p+m-Xylene	2011/09/19		87	%	70 - 130
		o-Xylene	2011/09/19		88	%	70 - 130
		Styrene	2011/09/19		91	%	70 - 130
		1,3,5-Trimethylbenzene	2011/09/19		84	%	70 - 130
		1,2,4-Trimethylbenzene	2011/09/19		81	%	70 - 130
		4-ethyltoluene	2011/09/19		107	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1E1777

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2620074 VEA	Spiked Blank	Chlorobenzene	2011/09/19		87	%	70 - 130	
		Benzyl chloride	2011/09/19		69 (1)	%	70 - 130	
1,3-Dichlorobenzene		2011/09/19		82	%	70 - 130		
1,4-Dichlorobenzene		2011/09/19		84	%	70 - 130		
1,2-Dichlorobenzene		2011/09/19		81	%	70 - 130		
1,2,4-Trichlorobenzene		2011/09/19		64 (1)	%	70 - 130		
Hexachlorobutadiene		2011/09/19		74	%	70 - 130		
Hexane		2011/09/19		100	%	70 - 130		
Cyclohexane		2011/09/19		90	%	70 - 130		
Tetrahydrofuran		2011/09/19		94	%	70 - 130		
Method Blank	Method Blank	1,4-Dioxane	2011/09/19		96	%	70 - 130	
		Bromochloromethane	2011/09/19		80	%	60 - 140	
		D5-Chlorobenzene	2011/09/19		80	%	60 - 140	
		Difluorobenzene	2011/09/19		84	%	60 - 140	
		2,2,4-Trimethylpentane	2011/09/19	<0.20			ppbv	
		Carbon Disulfide	2011/09/19	<0.50			ppbv	
		Propene	2011/09/19	<0.30			ppbv	
		Vinyl Acetate	2011/09/19	<0.20			ppbv	
		Vinyl Bromide	2011/09/19	<0.20			ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/09/19	<0.20			ppbv	
		1,2-Dichlorotetrafluoroethane	2011/09/19	<0.17			ppbv	
		Chloromethane	2011/09/19	<0.30			ppbv	
		Vinyl Chloride	2011/09/19	<0.18			ppbv	
		Chloroethane	2011/09/19	<0.30			ppbv	
		1,3-Butadiene	2011/09/19	<0.50			ppbv	
		Trichlorofluoromethane (FREON 11)	2011/09/19	<0.20			ppbv	
		Trichlorotrifluoroethane	2011/09/19	<0.15			ppbv	
		Ethanol	2011/09/19	<2.3			ppbv	
		2-propanol	2011/09/19	<3.0			ppbv	
		2-Propanone	2011/09/19	<0.80			ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/09/19	<3.0			ppbv	
		Methyl Isobutyl Ketone	2011/09/19	<3.2			ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/09/19	<2.0			ppbv	
		Methyl t-butyl ether (MTBE)	2011/09/19	<0.20			ppbv	
		Ethyl Acetate	2011/09/19	<2.2			ppbv	
		1,1-Dichloroethylene	2011/09/19	<0.25			ppbv	
		cis-1,2-Dichloroethylene	2011/09/19	<0.19			ppbv	
		trans-1,2-Dichloroethylene	2011/09/19	<0.20			ppbv	
		Methylene Chloride(Dichloromethane)	2011/09/19	<0.80			ppbv	
		Chloroform	2011/09/19	<0.15			ppbv	
		Carbon Tetrachloride	2011/09/19	<0.30			ppbv	
		1,1-Dichloroethane	2011/09/19	<0.20			ppbv	
		1,2-Dichloroethane	2011/09/19	<0.20			ppbv	
		Ethylene Dibromide	2011/09/19	<0.17			ppbv	
		1,1,1-Trichloroethane	2011/09/19	<0.30			ppbv	
		1,1,2-Trichloroethane	2011/09/19	<0.15			ppbv	
		1,1,2,2-Tetrachloroethane	2011/09/19	<0.20			ppbv	
		cis-1,3-Dichloropropene	2011/09/19	<0.18			ppbv	
trans-1,3-Dichloropropene	2011/09/19	<0.17			ppbv			
1,2-Dichloropropane	2011/09/19	<0.40			ppbv			
Bromomethane	2011/09/19	<0.18			ppbv			
Bromoform	2011/09/19	<0.20			ppbv			
Bromodichloromethane	2011/09/19	<0.20			ppbv			
Dibromochloromethane	2011/09/19	<0.20			ppbv			
Heptane	2011/09/19	<0.30			ppbv			

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1E1777

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2620074 VEA	Method Blank	Trichloroethylene	2011/09/19	<0.30		ppbv	
		Tetrachloroethylene	2011/09/19	<0.20		ppbv	
		Benzene	2011/09/19	<0.18		ppbv	
		Toluene	2011/09/19	<0.20		ppbv	
		Ethylbenzene	2011/09/19	<0.20		ppbv	
		p+m-Xylene	2011/09/19	<0.37		ppbv	
		o-Xylene	2011/09/19	<0.20		ppbv	
		Styrene	2011/09/19	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/09/19	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/09/19	<0.50		ppbv	
		4-ethyltoluene	2011/09/19	<2.2		ppbv	
		Chlorobenzene	2011/09/19	<0.20		ppbv	
		Benzyl chloride	2011/09/19	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/09/19	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/09/19	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/09/19	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/09/19	<2.0		ppbv	
		Hexachlorobutadiene	2011/09/19	<3.0		ppbv	
		Hexane	2011/09/19	<0.30		ppbv	
		Cyclohexane	2011/09/19	<0.20		ppbv	
		Tetrahydrofuran	2011/09/19	<0.40		ppbv	
		1,4-Dioxane	2011/09/19	<2.0		ppbv	
		Xylene (Total)	2011/09/19	<0.60		ppbv	
	RPD - Sample/Sample						
	Dup	Trichloroethylene	2011/09/19	NC		%	25
		Tetrachloroethylene	2011/09/19	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: 7791
Station ID: Lica 1 Canister Installation Date/Time: Sept 16, 2011 @ 8:07 mst
Field Sample ID: LICA VOC/ CLS /Sept 18,11 Canister Removal Date/Time: Sept 19, 2011 @ 7:55 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
18-Sep-11	09/18/2011 0:00	09/19/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	620	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 # 05985

Technician Signiture: Ting Xu

Your C.O.C. #: 05985

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

Report Date: 2011/09/26

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1E5305****Received: 2011/09/21, 10:05**Sample Matrix: AIR
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	1	N/A	2011/09/22	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	1	N/A	2011/09/22	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 #: B1E5305
Report Date: 2011/09/26

RESULTS OF ANALYSES OF AIR

Maxxam ID		KY7900	
Sampling Date		2011/09/18	
COC Number		05985	
	Units	LICAVOC/CLS/SEPT18,11/ #7791	QC Batch

Volatile Organics			
Pressure on Receipt	psig	21	2624635

QC Batch = Quality Control Batch

Maxxam Job #: B1E5305
 Report Date: 2011/09/26

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KY7900				
Sampling Date		2011/09/18				
COC Number		05985				
	Units	LICAVOC/CLS/SEPT18,11/ #7791	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2624734
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2624734
Propene	ppbv	<0.30	0.30	<0.516	0.516	2624734
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2624734
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2624734
Dichlorodifluoromethane (FREON 12)	ppbv	0.75	0.20	3.72	0.989	2624734
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2624734
Chloromethane	ppbv	0.42	0.30	0.865	0.620	2624734
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2624734
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2624734
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2624734
Trichlorofluoromethane (FREON 11)	ppbv	0.38	0.20	2.15	1.12	2624734
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2624734
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2624734
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2624734
2-Propanone	ppbv	1.72	0.80	4.09	1.90	2624734
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2624734
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2624734
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2624734
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2624734
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2624734
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2624734
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2624734
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2624734
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2624734
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2624734
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2624734
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2624734
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2624734
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2624734
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2624734
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2624734

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1E5305
 Report Date: 2011/09/26

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KY7900				
Sampling Date		2011/09/18				
COC Number		05985				
	Units	LICAVOC/CLS/SEPT18,11/ #7791	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2624734
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2624734
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2624734
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2624734
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2624734
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2624734
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2624734
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2624734
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2624734
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2624734
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2624734
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2624734
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2624734
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2624734
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2624734
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2624734
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2624734
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2624734
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2624734
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2624734
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2624734
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2624734
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2624734
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2624734
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2624734
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2624734
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2624734
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2624734
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2624734
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2624734
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2624734
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2624734
Surrogate Recovery (%)						
Bromochloromethane	%	91		N/A	N/A	2624734
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B1E5305
 Report Date: 2011/09/26

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KY7900				
Sampling Date		2011/09/18				
COC Number		05985				
	Units	LICAVOC/CLS/SEPT18,11/ #7791	RDL	ug/m3	DL (ug/m3)	QC Batch

D5-Chlorobenzene	%	92		N/A	N/A	2624734
Difluorobenzene	%	91		N/A	N/A	2624734

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

Maxxam Job #: B1E5305
 Report Date: 2011/09/26

Test Summary

Maxxam ID	KY7900	Collected	2011/09/18
Sample ID	LICAVOC/CLS/SEPT18,11/ #7791	Shipped	
Matrix	AIR	Received	2011/09/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2624635	N/A	2011/09/22	YAO LIANG SUN
Volatile Organics in Air (TO-15)	GC/MS	2624734	N/A	2011/09/22	YAO LIANG SUN

Maxxam Job #: B1E5305
Report Date: 2011/09/26

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB1E5305

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2624734 LSY	Spiked Blank	Bromochloromethane	2011/09/22		96	%	60 - 140
		D5-Chlorobenzene	2011/09/22		99	%	60 - 140
		Difluorobenzene	2011/09/22		99	%	60 - 140
		2,2,4-Trimethylpentane	2011/09/22		87	%	70 - 130
		Carbon Disulfide	2011/09/22		83	%	70 - 130
		Propene	2011/09/22		70	%	70 - 130
		Vinyl Acetate	2011/09/22		89	%	70 - 130
		Vinyl Bromide	2011/09/22		107	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/09/22		102	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/09/22		110	%	70 - 130
		Chloromethane	2011/09/22		86	%	70 - 130
		Vinyl Chloride	2011/09/22		87	%	70 - 130
		Chloroethane	2011/09/22		90	%	70 - 130
		1,3-Butadiene	2011/09/22		72	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/09/22		115	%	70 - 130
		Trichlorotrifluoroethane	2011/09/22		103	%	70 - 130
		Ethanol	2011/09/22		74	%	70 - 130
		2-propanol	2011/09/22		83	%	70 - 130
		2-Propanone	2011/09/22		82	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/09/22		78	%	70 - 130
		Methyl Isobutyl Ketone	2011/09/22		87	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/09/22		86	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/09/22		105	%	70 - 130
		Ethyl Acetate	2011/09/22		85	%	70 - 130
		1,1-Dichloroethylene	2011/09/22		97	%	70 - 130
		cis-1,2-Dichloroethylene	2011/09/22		96	%	70 - 130
		trans-1,2-Dichloroethylene	2011/09/22		94	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/09/22		80	%	70 - 130
		Chloroform	2011/09/22		105	%	70 - 130
		Carbon Tetrachloride	2011/09/22		130	%	70 - 130
		1,1-Dichloroethane	2011/09/22		95	%	70 - 130
		1,2-Dichloroethane	2011/09/22		113	%	70 - 130
		Ethylene Dibromide	2011/09/22		107	%	70 - 130
		1,1,1-Trichloroethane	2011/09/22		121	%	70 - 130
		1,1,2-Trichloroethane	2011/09/22		106	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/09/22		85	%	70 - 130
		cis-1,3-Dichloropropene	2011/09/22		107	%	70 - 130
		trans-1,3-Dichloropropene	2011/09/22		109	%	70 - 130
		1,2-Dichloropropane	2011/09/22		91	%	70 - 130
		Bromomethane	2011/09/22		101	%	70 - 130
		Bromoform	2011/09/22		135 (1)	%	70 - 130
		Bromodichloromethane	2011/09/22		109	%	70 - 130
		Dibromochloromethane	2011/09/22		127	%	70 - 130
		Heptane	2011/09/22		88	%	70 - 130
		Trichloroethylene	2011/09/22		112	%	70 - 130
		Tetrachloroethylene	2011/09/22		121	%	70 - 130
		Benzene	2011/09/22		97	%	70 - 130
		Toluene	2011/09/22		109	%	70 - 130
		Ethylbenzene	2011/09/22		112	%	70 - 130
		p+m-Xylene	2011/09/22		115	%	70 - 130
		o-Xylene	2011/09/22		115	%	70 - 130
		Styrene	2011/09/22		113	%	70 - 130
		1,3,5-Trimethylbenzene	2011/09/22		106	%	70 - 130
		1,2,4-Trimethylbenzene	2011/09/22		101	%	70 - 130
		4-ethyltoluene	2011/09/22		108	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1E5305

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2624734 LSY	Spiked Blank	Chlorobenzene	2011/09/22		108	%	70 - 130
		Benzyl chloride	2011/09/22		89	%	70 - 130
		1,3-Dichlorobenzene	2011/09/22		98	%	70 - 130
		1,4-Dichlorobenzene	2011/09/22		98	%	70 - 130
		1,2-Dichlorobenzene	2011/09/22		92	%	70 - 130
		1,2,4-Trichlorobenzene	2011/09/22		92	%	70 - 130
		Hexachlorobutadiene	2011/09/22		114	%	70 - 130
		Hexane	2011/09/22		89	%	70 - 130
		Cyclohexane	2011/09/22		92	%	70 - 130
		Tetrahydrofuran	2011/09/22		83	%	70 - 130
		1,4-Dioxane	2011/09/22		90	%	70 - 130
		Xylene (Total)	2011/09/22		115	%	70 - 130
	Method Blank	Bromochloromethane	2011/09/22		91	%	60 - 140
		D5-Chlorobenzene	2011/09/22		90	%	60 - 140
		Difluorobenzene	2011/09/22		92	%	60 - 140
		2,2,4-Trimethylpentane	2011/09/22	<0.20		ppbv	
		Carbon Disulfide	2011/09/22	<0.50		ppbv	
		Propene	2011/09/22	<0.30		ppbv	
		Vinyl Acetate	2011/09/22	<0.20		ppbv	
		Vinyl Bromide	2011/09/22	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/09/22	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/09/22	<0.17		ppbv	
		Chloromethane	2011/09/22	<0.30		ppbv	
		Vinyl Chloride	2011/09/22	<0.18		ppbv	
		Chloroethane	2011/09/22	<0.30		ppbv	
		1,3-Butadiene	2011/09/22	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/09/22	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/09/22	<0.15		ppbv	
		Ethanol	2011/09/22	<2.3		ppbv	
		2-propanol	2011/09/22	<3.0		ppbv	
		2-Propanone	2011/09/22	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/09/22	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/09/22	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/09/22	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/09/22	<0.20		ppbv	
		Ethyl Acetate	2011/09/22	<2.2		ppbv	
		1,1-Dichloroethylene	2011/09/22	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/09/22	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/09/22	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/09/22	<0.80		ppbv	
		Chloroform	2011/09/22	<0.15		ppbv	
		Carbon Tetrachloride	2011/09/22	<0.30		ppbv	
		1,1-Dichloroethane	2011/09/22	<0.20		ppbv	
		1,2-Dichloroethane	2011/09/22	<0.20		ppbv	
		Ethylene Dibromide	2011/09/22	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/09/22	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/09/22	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/09/22	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/09/22	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/09/22	<0.17		ppbv	
		1,2-Dichloropropane	2011/09/22	<0.40		ppbv	
		Bromomethane	2011/09/22	<0.18		ppbv	
		Bromoform	2011/09/22	<0.20		ppbv	
		Bromodichloromethane	2011/09/22	<0.20		ppbv	
		Dibromochloromethane	2011/09/22	<0.20		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1E5305

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2624734 LSY	Method Blank	Heptane	2011/09/22	<0.30		ppbv	
		Trichloroethylene	2011/09/22	<0.30		ppbv	
		Tetrachloroethylene	2011/09/22	<0.20		ppbv	
		Benzene	2011/09/22	<0.18		ppbv	
		Toluene	2011/09/22	<0.20		ppbv	
		Ethylbenzene	2011/09/22	<0.20		ppbv	
		p+m-Xylene	2011/09/22	<0.37		ppbv	
		o-Xylene	2011/09/22	<0.20		ppbv	
		Styrene	2011/09/22	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/09/22	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/09/22	<0.50		ppbv	
		4-ethyltoluene	2011/09/22	<2.2		ppbv	
		Chlorobenzene	2011/09/22	<0.20		ppbv	
		Benzyl chloride	2011/09/22	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/09/22	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/09/22	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/09/22	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/09/22	<2.0		ppbv	
		Hexachlorobutadiene	2011/09/22	<3.0		ppbv	
		Hexane	2011/09/22	<0.30		ppbv	
		Cyclohexane	2011/09/22	<0.20		ppbv	
		Tetrahydrofuran	2011/09/22	<0.40		ppbv	
		1,4-Dioxane	2011/09/22	<2.0		ppbv	
		Xylene (Total)	2011/09/22	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane		TBA		%	25
		Carbon Disulfide		TBA		%	25
		Propene		TBA		%	25
		Vinyl Acetate		TBA		%	25
		Vinyl Bromide		TBA		%	25
		Dichlorodifluoromethane (FREON 12)		TBA		%	25
		1,2-Dichlorotetrafluoroethane		TBA		%	25
		Chloromethane		TBA		%	25
		Vinyl Chloride		TBA		%	25
		Chloroethane		TBA		%	25
		1,3-Butadiene		TBA		%	25
		Trichlorofluoromethane (FREON 11)		TBA		%	25
		Trichlorotrifluoroethane		TBA		%	25
		Ethanol		TBA		%	25
		2-propanol		TBA		%	25
		2-Propanone		TBA		%	25
		Methyl Ethyl Ketone (2-Butanone)		TBA		%	25
		Methyl Isobutyl Ketone		TBA		%	25
		Methyl Butyl Ketone (2-Hexanone)		TBA		%	25
		Methyl t-butyl ether (MTBE)		TBA		%	25
		Ethyl Acetate		TBA		%	25
		1,1-Dichloroethylene		TBA		%	25
		cis-1,2-Dichloroethylene		TBA		%	25
		trans-1,2-Dichloroethylene		TBA		%	25
		Methylene Chloride(Dichloromethane)		TBA		%	25
		Chloroform		TBA		%	25
		Carbon Tetrachloride		TBA		%	25
		1,1-Dichloroethane		TBA		%	25
		1,2-Dichloroethane		TBA		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1E5305

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2624734 LSY	RPD - Sample/Sample Dup	Ethylene Dibromide		TBA		%	25
		1,1,1-Trichloroethane		TBA		%	25
		1,1,2-Trichloroethane		TBA		%	25
		1,1,2,2-Tetrachloroethane		TBA		%	25
		cis-1,3-Dichloropropene		TBA		%	25
		trans-1,3-Dichloropropene		TBA		%	25
		1,2-Dichloropropane		TBA		%	25
		Bromomethane		TBA		%	25
		Bromoform		TBA		%	25
		Bromodichloromethane		TBA		%	25
		Dibromochloromethane		TBA		%	25
		Heptane		TBA		%	25
		Trichloroethylene		TBA		%	25
		Tetrachloroethylene		TBA		%	25
		Benzene		TBA		%	25
		Toluene		TBA		%	25
		Ethylbenzene		TBA		%	25
		p+m-Xylene		TBA		%	25
		o-Xylene		TBA		%	25
		Styrene		TBA		%	25
		1,3,5-Trimethylbenzene		TBA		%	25
		1,2,4-Trimethylbenzene		TBA		%	25
		4-ethyltoluene		TBA		%	25
		Chlorobenzene		TBA		%	25
		Benzyl chloride		TBA		%	25
		1,3-Dichlorobenzene		TBA		%	25
		1,4-Dichlorobenzene		TBA		%	25
		1,2-Dichlorobenzene		TBA		%	25
		1,2,4-Trichlorobenzene		TBA		%	25
		Hexachlorobutadiene		TBA		%	25
		Hexane		TBA		%	25
		Cyclohexane		TBA		%	25
		Tetrahydrofuran		TBA		%	25
		1,4-Dioxane		TBA		%	25
		Xylene (Total)		TBA		%	25

TBA = Result to follow

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: 7838
Station ID: Lica 1 Canister Installation Date/Time: Sept 23, 2011 @ 12:57 mst
Field Sample ID: LICA VOC/ CLS /Sept 24,11 Canister Removal Date/Time: Sept 26, 2011 @ 7:45 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
24-Sep-11	09/24/2011 0:00	09/25/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	650	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	23

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 # 07862

Technician Signiture: Ting Xu

Your C.O.C. #: 07862

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7**Report Date: 2011/10/06****CERTIFICATE OF ANALYSIS****MAXXAM JOB #: B1F1681****Received: 2011/09/30, 10:20**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/10/05	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/10/05	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 14

Maxxam Job #: B1F1681
 Report Date: 2011/10/06

RESULTS OF ANALYSES OF AIR

Maxxam ID		LC1051	LC1052	
Sampling Date		2011/09/24	2011/09/24	
COC Number		07862	07862	
	Units	LICA VOC/CLS/SEPT 24,11	LICA VOC/PORT/SEPT 24,11	QC Batch

Volatile Organics				
Pressure on Receipt	psig	23	22	2638269

QC Batch = Quality Control Batch

Maxxam Job #: B1F1681
 Report Date: 2011/10/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LC1051				
Sampling Date		2011/09/24				
COC Number		07862				
	Units	LICA VOC/CLS/SEPT 24,11	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2638945
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2638945
Propene	ppbv	<0.30	0.30	<0.516	0.516	2638945
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2638945
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2638945
Dichlorodifluoromethane (FREON 12)	ppbv	0.65	0.20	3.20	0.989	2638945
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2638945
Chloromethane	ppbv	0.45	0.30	0.938	0.620	2638945
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2638945
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2638945
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2638945
Trichlorofluoromethane (FREON 11)	ppbv	0.35	0.20	1.98	1.12	2638945
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2638945
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2638945
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2638945
2-Propanone	ppbv	4.20	0.80	9.99	1.90	2638945
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2638945
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2638945
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2638945
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2638945
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2638945
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2638945
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2638945
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2638945
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2638945
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2638945
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2638945
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2638945
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2638945
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2638945
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2638945
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LC1051				
Sampling Date		2011/09/24				
COC Number		07862				
	Units	LICA VOC/CLS/SEPT 24,11	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2638945
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2638945
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2638945
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2638945
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2638945
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2638945
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2638945
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2638945
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2638945
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2638945
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2638945
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2638945
Benzene	ppbv	0.20	0.18	0.636	0.575	2638945
Toluene	ppbv	0.28	0.20	1.05	0.753	2638945
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2638945
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2638945
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2638945
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2638945
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2638945
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2638945
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2638945
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2638945
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2638945
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2638945
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2638945
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2638945
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2638945
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2638945
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2638945
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2638945
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2638945
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2638945
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2638945
QC Batch = Quality Control Batch						

Maxxam Job #: B1F1681
 Report Date: 2011/10/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LC1051				
Sampling Date		2011/09/24				
COC Number		07862				
	Units	LICA VOC/CLS/SEPT 24,11	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	81		N/A	N/A	2638945
D5-Chlorobenzene	%	77		N/A	N/A	2638945
Difluorobenzene	%	80		N/A	N/A	2638945

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

Maxxam Job #: B1F1681
 Report Date: 2011/10/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LC1052				
Sampling Date		2011/09/24				
COC Number		07862				
	Units	LICA VOC/PORT/SEPT 24,11	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2638945
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2638945
Propene	ppbv	<0.30	0.30	<0.516	0.516	2638945
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2638945
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2638945
Dichlorodifluoromethane (FREON 12)	ppbv	0.65	0.20	3.22	0.989	2638945
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2638945
Chloromethane	ppbv	0.48	0.30	1.00	0.620	2638945
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2638945
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2638945
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2638945
Trichlorofluoromethane (FREON 11)	ppbv	0.36	0.20	2.00	1.12	2638945
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2638945
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2638945
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2638945
2-Propanone	ppbv	6.69	0.80	15.9	1.90	2638945
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2638945
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2638945
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2638945
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2638945
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2638945
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2638945
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2638945
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2638945
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2638945
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2638945
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2638945
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2638945
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2638945
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2638945
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2638945
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B1F1681
 Report Date: 2011/10/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LC1052				
Sampling Date		2011/09/24				
COC Number		07862				
	Units	LICA VOC/PORT/SEPT 24,11	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2638945
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2638945
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2638945
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2638945
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2638945
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2638945
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2638945
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2638945
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2638945
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2638945
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2638945
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2638945
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2638945
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2638945
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2638945
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2638945
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2638945
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2638945
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2638945
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2638945
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2638945
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2638945
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2638945
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2638945
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2638945
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2638945
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2638945
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2638945
Hexane	ppbv	0.34	0.30	1.19	1.06	2638945
Cyclohexane	ppbv	0.51	0.20	1.74	0.688	2638945
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2638945
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2638945
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2638945
QC Batch = Quality Control Batch						

Maxxam Job #: B1F1681
 Report Date: 2011/10/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LC1052				
Sampling Date		2011/09/24				
COC Number		07862				
	Units	LICA VOC/PORT/SEPT 24,11	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	81		N/A	N/A	2638945
D5-Chlorobenzene	%	77		N/A	N/A	2638945
Difluorobenzene	%	79		N/A	N/A	2638945

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

Maxxam Job #: B1F1681
 Report Date: 2011/10/06

Test Summary

Maxxam ID LC1051 **Collected** 2011/09/24
Sample ID LICA VOC/CLS/SEPT 24,11 **Shipped**
Matrix AIR **Received** 2011/09/30

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2638269	N/A	2011/10/05	SPOMENKA SMILJANIC
Volatile Organics in Air (TO-15)	GC/MS	2638945	N/A	2011/10/05	SPOMENKA SMILJANIC

Maxxam ID LC1052 **Collected** 2011/09/24
Sample ID LICA VOC/PORT/SEPT 24,11 **Shipped**
Matrix AIR **Received** 2011/09/30

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2638269	N/A	2011/10/05	SPOMENKA SMILJANIC
Volatile Organics in Air (TO-15)	GC/MS	2638945	N/A	2011/10/05	SPOMENKA SMILJANIC

Maxxam ID LC1052 Dup **Collected** 2011/09/24
Sample ID LICA VOC/PORT/SEPT 24,11 **Shipped**
Matrix AIR **Received** 2011/09/30

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organics in Air (TO-15)	GC/MS	2638945	N/A	2011/10/05	SPOMENKA SMILJANIC

Maxxam Job #: B1F1681
Report Date: 2011/10/06

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB1F1681

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2638945 S_S	Spiked Blank	Bromochloromethane	2011/10/05		99	%	60 - 140
		D5-Chlorobenzene	2011/10/05		97	%	60 - 140
		Difluorobenzene	2011/10/05		100	%	60 - 140
		2,2,4-Trimethylpentane	2011/10/05		97	%	70 - 130
		Carbon Disulfide	2011/10/05		96	%	70 - 130
		Propene	2011/10/05		85	%	70 - 130
		Vinyl Acetate	2011/10/05		98	%	70 - 130
		Vinyl Bromide	2011/10/05		103	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/10/05		109	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/10/05		120	%	70 - 130
		Chloromethane	2011/10/05		104	%	70 - 130
		Vinyl Chloride	2011/10/05		100	%	70 - 130
		Chloroethane	2011/10/05		98	%	70 - 130
		1,3-Butadiene	2011/10/05		99	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/10/05		119	%	70 - 130
		Trichlorotrifluoroethane	2011/10/05		108	%	70 - 130
		Ethanol	2011/10/05		103	%	70 - 130
		2-propanol	2011/10/05		95	%	70 - 130
		2-Propanone	2011/10/05		124	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/10/05		91	%	70 - 130
		Methyl Isobutyl Ketone	2011/10/05		98	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/10/05		98	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/10/05		99	%	70 - 130
		Ethyl Acetate	2011/10/05		100	%	70 - 130
		1,1-Dichloroethylene	2011/10/05		108	%	70 - 130
		cis-1,2-Dichloroethylene	2011/10/05		103	%	70 - 130
		trans-1,2-Dichloroethylene	2011/10/05		101	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/10/05		99	%	70 - 130
		Chloroform	2011/10/05		109	%	70 - 130
		Carbon Tetrachloride	2011/10/05		117	%	70 - 130
		1,1-Dichloroethane	2011/10/05		100	%	70 - 130
		1,2-Dichloroethane	2011/10/05		112	%	70 - 130
		Ethylene Dibromide	2011/10/05		105	%	70 - 130
		1,1,1-Trichloroethane	2011/10/05		115	%	70 - 130
		1,1,2-Trichloroethane	2011/10/05		104	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/10/05		98	%	70 - 130
		cis-1,3-Dichloropropene	2011/10/05		106	%	70 - 130
		trans-1,3-Dichloropropene	2011/10/05		107	%	70 - 130
		1,2-Dichloropropane	2011/10/05		101	%	70 - 130
		Bromomethane	2011/10/05		104	%	70 - 130
		Bromoform	2011/10/05		115	%	70 - 130
		Bromodichloromethane	2011/10/05		110	%	70 - 130
		Dibromochloromethane	2011/10/05		116	%	70 - 130
		Heptane	2011/10/05		93	%	70 - 130
		Trichloroethylene	2011/10/05		101	%	70 - 130
		Tetrachloroethylene	2011/10/05		100	%	70 - 130
		Benzene	2011/10/05		99	%	70 - 130
		Toluene	2011/10/05		101	%	70 - 130
		Ethylbenzene	2011/10/05		102	%	70 - 130
		p+m-Xylene	2011/10/05		101	%	70 - 130
		o-Xylene	2011/10/05		102	%	70 - 130
		Styrene	2011/10/05		97	%	70 - 130
		1,3,5-Trimethylbenzene	2011/10/05		99	%	70 - 130
		1,2,4-Trimethylbenzene	2011/10/05		97	%	70 - 130
		4-ethyltoluene	2011/10/05		94	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1F1681

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2638945 S_S	Spiked Blank	Chlorobenzene	2011/10/05		102	%	70 - 130
		Benzyl chloride	2011/10/05		100	%	70 - 130
		1,3-Dichlorobenzene	2011/10/05		93	%	70 - 130
		1,4-Dichlorobenzene	2011/10/05		91	%	70 - 130
		1,2-Dichlorobenzene	2011/10/05		93	%	70 - 130
		1,2,4-Trichlorobenzene	2011/10/05		95	%	70 - 130
		Hexachlorobutadiene	2011/10/05		103	%	70 - 130
		Hexane	2011/10/05		93	%	70 - 130
		Cyclohexane	2011/10/05		97	%	70 - 130
		Tetrahydrofuran	2011/10/05		99	%	70 - 130
		1,4-Dioxane	2011/10/05		99	%	70 - 130
		Xylene (Total)	2011/10/05		101	%	70 - 130
	Method Blank	Bromochloromethane	2011/10/05		94	%	60 - 140
		D5-Chlorobenzene	2011/10/05		89	%	60 - 140
		Difluorobenzene	2011/10/05		93	%	60 - 140
		2,2,4-Trimethylpentane	2011/10/05	<0.20		ppbv	
		Carbon Disulfide	2011/10/05	<0.50		ppbv	
		Propene	2011/10/05	<0.30		ppbv	
		Vinyl Acetate	2011/10/05	<0.20		ppbv	
		Vinyl Bromide	2011/10/05	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/10/05	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/10/05	<0.17		ppbv	
		Chloromethane	2011/10/05	<0.30		ppbv	
		Vinyl Chloride	2011/10/05	<0.18		ppbv	
		Chloroethane	2011/10/05	<0.30		ppbv	
		1,3-Butadiene	2011/10/05	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/10/05	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/10/05	<0.15		ppbv	
		Ethanol	2011/10/05	<2.3		ppbv	
		2-propanol	2011/10/05	<3.0		ppbv	
		2-Propanone	2011/10/05	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/10/05	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/10/05	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/10/05	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/10/05	<0.20		ppbv	
		Ethyl Acetate	2011/10/05	<2.2		ppbv	
		1,1-Dichloroethylene	2011/10/05	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/10/05	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/10/05	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/10/05	<0.80		ppbv	
		Chloroform	2011/10/05	<0.15		ppbv	
		Carbon Tetrachloride	2011/10/05	<0.30		ppbv	
		1,1-Dichloroethane	2011/10/05	<0.20		ppbv	
		1,2-Dichloroethane	2011/10/05	<0.20		ppbv	
		Ethylene Dibromide	2011/10/05	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/10/05	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/10/05	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/10/05	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/10/05	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/10/05	<0.17		ppbv	
		1,2-Dichloropropane	2011/10/05	<0.40		ppbv	
		Bromomethane	2011/10/05	<0.18		ppbv	
		Bromoform	2011/10/05	<0.20		ppbv	
		Bromodichloromethane	2011/10/05	<0.20		ppbv	
		Dibromochloromethane	2011/10/05	<0.20		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1F1681

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2638945 S_S	Method Blank	Heptane	2011/10/05	<0.30		ppbv	
		Trichloroethylene	2011/10/05	<0.30		ppbv	
		Tetrachloroethylene	2011/10/05	<0.20		ppbv	
		Benzene	2011/10/05	<0.18		ppbv	
		Toluene	2011/10/05	<0.20		ppbv	
		Ethylbenzene	2011/10/05	<0.20		ppbv	
		p+m-Xylene	2011/10/05	<0.37		ppbv	
		o-Xylene	2011/10/05	<0.20		ppbv	
		Styrene	2011/10/05	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/10/05	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/10/05	<0.50		ppbv	
		4-ethyltoluene	2011/10/05	<2.2		ppbv	
		Chlorobenzene	2011/10/05	<0.20		ppbv	
		Benzyl chloride	2011/10/05	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/10/05	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/10/05	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/10/05	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/10/05	<2.0		ppbv	
		Hexachlorobutadiene	2011/10/05	<3.0		ppbv	
		Hexane	2011/10/05	<0.30		ppbv	
		Cyclohexane	2011/10/05	<0.20		ppbv	
		Tetrahydrofuran	2011/10/05	<0.40		ppbv	
		1,4-Dioxane	2011/10/05	<2.0		ppbv	
		Xylene (Total)	2011/10/05	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/10/05	NC		%	25
		Carbon Disulfide	2011/10/05	NC		%	25
		Propene	2011/10/05	NC		%	25
		Vinyl Acetate	2011/10/05	NC		%	25
		Vinyl Bromide	2011/10/05	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/10/05	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/10/05	NC		%	25
		Chloromethane	2011/10/05	NC		%	25
		Vinyl Chloride	2011/10/05	NC		%	25
		Chloroethane	2011/10/05	NC		%	25
		1,3-Butadiene	2011/10/05	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/10/05	NC		%	25
		Trichlorotrifluoroethane	2011/10/05	NC		%	25
		Ethanol	2011/10/05	NC		%	25
		2-propanol	2011/10/05	NC		%	25
		2-Propanone	2011/10/05	1.2		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/10/05	NC		%	25
		Methyl Isobutyl Ketone	2011/10/05	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/10/05	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/10/05	NC		%	25
		Ethyl Acetate	2011/10/05	NC		%	25
		1,1-Dichloroethylene	2011/10/05	NC		%	25
		cis-1,2-Dichloroethylene	2011/10/05	NC		%	25
		trans-1,2-Dichloroethylene	2011/10/05	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/10/05	NC		%	25
		Chloroform	2011/10/05	NC		%	25
		Carbon Tetrachloride	2011/10/05	NC		%	25
		1,1-Dichloroethane	2011/10/05	NC		%	25
		1,2-Dichloroethane	2011/10/05	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1F1681

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2638945 S_S	RPD - Sample/Sample Dup	Ethylene Dibromide	2011/10/05	NC		%	25
		1,1,1-Trichloroethane	2011/10/05	NC		%	25
		1,1,2-Trichloroethane	2011/10/05	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/10/05	NC		%	25
		cis-1,3-Dichloropropene	2011/10/05	NC		%	25
		trans-1,3-Dichloropropene	2011/10/05	NC		%	25
		1,2-Dichloropropane	2011/10/05	NC		%	25
		Bromomethane	2011/10/05	NC		%	25
		Bromoform	2011/10/05	NC		%	25
		Bromodichloromethane	2011/10/05	NC		%	25
		Dibromochloromethane	2011/10/05	NC		%	25
		Heptane	2011/10/05	NC		%	25
		Trichloroethylene	2011/10/05	NC		%	25
		Tetrachloroethylene	2011/10/05	NC		%	25
		Benzene	2011/10/05	NC		%	25
		Toluene	2011/10/05	NC		%	25
		Ethylbenzene	2011/10/05	NC		%	25
		p+m-Xylene	2011/10/05	NC		%	25
		o-Xylene	2011/10/05	NC		%	25
		Styrene	2011/10/05	NC		%	25
		1,3,5-Trimethylbenzene	2011/10/05	NC		%	25
		1,2,4-Trimethylbenzene	2011/10/05	NC		%	25
		4-ethyltoluene	2011/10/05	NC		%	25
		Chlorobenzene	2011/10/05	NC		%	25
		Benzyl chloride	2011/10/05	NC		%	25
		1,3-Dichlorobenzene	2011/10/05	NC		%	25
		1,4-Dichlorobenzene	2011/10/05	NC		%	25
		1,2-Dichlorobenzene	2011/10/05	NC		%	25
		1,2,4-Trichlorobenzene	2011/10/05	NC		%	25
		Hexachlorobutadiene	2011/10/05	NC		%	25
		Hexane	2011/10/05	NC		%	25
		Cyclohexane	2011/10/05	NC		%	25
		Tetrahydrofuran	2011/10/05	NC		%	25
		1,4-Dioxane	2011/10/05	NC		%	25
		Xylene (Total)	2011/10/05	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.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: 141
Station ID: Lica 1 Canister Installation Date/Time: Sept 28, 2011 @ 07:54 mst
Field Sample ID: LICA VOC/ CLS /Sept 30,11 Canister Removal Date/Time: Oct 03, 2011 @ 10:39 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
30-Sep-11	09/30/2011 0:00	10/01/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	650	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	24

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 # 08013

Technician Signiture: Ting Xu



Your C.O.C. #: 08013

Attention: Michael Bisaga

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

Report Date: 2011/10/17

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1F4499

Received: 2011/10/05, 10:11

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/10/06	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/10/07	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

Maxxam Job #: B1F4499
 Report Date: 2011/10/17

RESULTS OF ANALYSES OF AIR

Maxxam ID		LD5920	LD5921	
Sampling Date		2011/09/30	2011/09/30	
COC Number		08013	08013	
	Units	LICAVOC/CLS/SEPT30,11/141	LICAVOC/PORT/SEPT30,11/7818	QC Batch

Volatile Organics				
Pressure on Receipt	psig	23	22	2643994

QC Batch = Quality Control Batch

Maxxam Job #: B1F4499
 Report Date: 2011/10/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LD5920				
Sampling Date		2011/09/30				
COC Number		08013				
	Units	LICAVOC/CLS/SEPT30,11/141	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2643993
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2643993
Propene	ppbv	<0.30	0.30	<0.516	0.516	2643993
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2643993
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2643993
Dichlorodifluoromethane (FREON 12)	ppbv	1.08	0.20	5.35	0.989	2643993
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2643993
Chloromethane	ppbv	0.64	0.30	1.32	0.620	2643993
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2643993
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2643993
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2643993
Trichlorofluoromethane (FREON 11)	ppbv	0.40	0.20	2.25	1.12	2643993
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2643993
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2643993
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2643993
2-Propanone	ppbv	3.27	0.80	7.78	1.90	2643993
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2643993
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2643993
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2643993
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2643993
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2643993
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2643993
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2643993
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2643993
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2643993
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2643993
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2643993
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2643993
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2643993
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2643993
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2643993
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2643993
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B1F4499
 Report Date: 2011/10/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LD5920				
Sampling Date		2011/09/30				
COC Number		08013				
	Units	LICAVOC/CLS/SEPT30,11/141	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2643993
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2643993
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2643993
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2643993
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2643993
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2643993
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2643993
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2643993
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2643993
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2643993
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2643993
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2643993
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2643993
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2643993
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2643993
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2643993
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2643993
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2643993
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2643993
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2643993
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2643993
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2643993
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2643993
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2643993
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2643993
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2643993
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2643993
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2643993
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2643993
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2643993
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2643993
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2643993
Surrogate Recovery (%)						
Bromochloromethane	%	97		N/A	N/A	2643993
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B1F4499
 Report Date: 2011/10/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LD5920				
Sampling Date		2011/09/30				
COC Number		08013				
	Units	LICAVOC/CLS/SEPT30,11/141	RDL	ug/m3	DL (ug/m3)	QC Batch
D5-Chlorobenzene	%	96		N/A	N/A	2643993
Difluorobenzene	%	98		N/A	N/A	2643993
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B1F4499
 Report Date: 2011/10/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LD5921				
Sampling Date		2011/09/30				
COC Number		08013				
	Units	LICAVOC/PORT/SEPT30,11/7818	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2643993
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2643993
Propene	ppbv	<0.30	0.30	<0.516	0.516	2643993
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2643993
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2643993
Dichlorodifluoromethane (FREON 12)	ppbv	0.89	0.20	4.40	0.989	2643993
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2643993
Chloromethane	ppbv	0.65	0.30	1.34	0.620	2643993
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2643993
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2643993
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2643993
Trichlorofluoromethane (FREON 11)	ppbv	0.42	0.20	2.36	1.12	2643993
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2643993
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2643993
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2643993
2-Propanone	ppbv	3.20	0.80	7.61	1.90	2643993
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2643993
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2643993
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2643993
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2643993
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2643993
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2643993
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2643993
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2643993
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2643993
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2643993
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2643993
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2643993
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2643993
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2643993
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2643993
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2643993

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1F4499
 Report Date: 2011/10/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LD5921				
Sampling Date		2011/09/30				
COC Number		08013				
	Units	LICAVOC/PORT/SEPT30,11/7818	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2643993
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2643993
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2643993
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2643993
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2643993
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2643993
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2643993
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2643993
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2643993
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2643993
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2643993
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2643993
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2643993
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2643993
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2643993
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2643993
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2643993
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2643993
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2643993
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2643993
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2643993
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2643993
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2643993
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2643993
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2643993
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2643993
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2643993
Hexane	ppbv	0.50	0.30	1.78	1.06	2643993
Cyclohexane	ppbv	0.41	0.20	1.41	0.688	2643993
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2643993
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2643993
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2643993
Surrogate Recovery (%)						
Bromochloromethane	%	92		N/A	N/A	2643993
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B1F4499
 Report Date: 2011/10/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LD5921				
Sampling Date		2011/09/30				
COC Number		08013				
	Units	LICAVOC/PORT/SEPT30,11/7818	RDL	ug/m3	DL (ug/m3)	QC Batch

D5-Chlorobenzene	%	95		N/A	N/A	2643993
Difluorobenzene	%	97		N/A	N/A	2643993

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

Maxxam Job #: B1F4499
 Report Date: 2011/10/17

Test Summary

Maxxam ID LD5920 **Collected** 2011/09/30
Sample ID LICAVOC/CLS/SEPT30,11/141 **Shipped**
Matrix AIR **Received** 2011/10/05

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2643994	N/A	2011/10/06	MELANIE MABINI
Volatile Organics in Air (TO-15)	GC/MS	2643993	N/A	2011/10/07	MELANIE MABINI

Maxxam ID LD5921 **Collected** 2011/09/30
Sample ID LICAVOC/PORT/SEPT30,11/7818 **Shipped**
Matrix AIR **Received** 2011/10/05

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2643994	N/A	2011/10/06	MELANIE MABINI
Volatile Organics in Air (TO-15)	GC/MS	2643993	N/A	2011/10/07	MELANIE MABINI

Maxxam Job #: B1F4499
Report Date: 2011/10/17

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB1F4499

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2643993 MM2	Spiked Blank	Bromochloromethane	2011/10/07		99	%	60 - 140
		D5-Chlorobenzene	2011/10/07		102	%	60 - 140
		Difluorobenzene	2011/10/07		102	%	60 - 140
		2,2,4-Trimethylpentane	2011/10/07		93	%	70 - 130
		Carbon Disulfide	2011/10/07		94	%	70 - 130
		Propene	2011/10/07		92	%	70 - 130
		Vinyl Acetate	2011/10/07		93	%	70 - 130
		Vinyl Bromide	2011/10/07		108	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/10/07		98	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/10/07		114	%	70 - 130
		Chloromethane	2011/10/07		104	%	70 - 130
		Vinyl Chloride	2011/10/07		110	%	70 - 130
		Chloroethane	2011/10/07		105	%	70 - 130
		1,3-Butadiene	2011/10/07		110	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/10/07		100	%	70 - 130
		Trichlorotrifluoroethane	2011/10/07		70	%	70 - 130
		Ethanol	2011/10/07		98	%	70 - 130
		2-propanol	2011/10/07		106	%	70 - 130
		2-Propanone	2011/10/07		103	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/10/07		101	%	70 - 130
		Methyl Isobutyl Ketone	2011/10/07		87	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/10/07		90	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/10/07		100	%	70 - 130
		Ethyl Acetate	2011/10/07		95	%	70 - 130
		1,1-Dichloroethylene	2011/10/07		90	%	70 - 130
		cis-1,2-Dichloroethylene	2011/10/07		102	%	70 - 130
		trans-1,2-Dichloroethylene	2011/10/07		102	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/10/07		90	%	70 - 130
		Chloroform	2011/10/07		103	%	70 - 130
		Carbon Tetrachloride	2011/10/07		101	%	70 - 130
		1,1-Dichloroethane	2011/10/07		94	%	70 - 130
		1,2-Dichloroethane	2011/10/07		104	%	70 - 130
		Ethylene Dibromide	2011/10/07		101	%	70 - 130
		1,1,1-Trichloroethane	2011/10/07		100	%	70 - 130
		1,1,2-Trichloroethane	2011/10/07		100	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/10/07		93	%	70 - 130
		cis-1,3-Dichloropropene	2011/10/07		105	%	70 - 130
		trans-1,3-Dichloropropene	2011/10/07		106	%	70 - 130
		1,2-Dichloropropane	2011/10/07		97	%	70 - 130
		Bromomethane	2011/10/07		108	%	70 - 130
		Bromoform	2011/10/07		103	%	70 - 130
		Bromodichloromethane	2011/10/07		96	%	70 - 130
		Dibromochloromethane	2011/10/07		104	%	70 - 130
		Heptane	2011/10/07		86	%	70 - 130
		Trichloroethylene	2011/10/07		103	%	70 - 130
		Tetrachloroethylene	2011/10/07		103	%	70 - 130
		Benzene	2011/10/07		99	%	70 - 130
		Toluene	2011/10/07		100	%	70 - 130
		Ethylbenzene	2011/10/07		99	%	70 - 130
		p+m-Xylene	2011/10/07		98	%	70 - 130
		o-Xylene	2011/10/07		95	%	70 - 130
		Styrene	2011/10/07		96	%	70 - 130
		1,3,5-Trimethylbenzene	2011/10/07		97	%	70 - 130
		1,2,4-Trimethylbenzene	2011/10/07		96	%	70 - 130
		4-ethyltoluene	2011/10/07		93	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1F4499

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2643993 MM2	Spiked Blank	Chlorobenzene	2011/10/07		101	%	70 - 130	
		Benzyl chloride	2011/10/07		104	%	70 - 130	
1,3-Dichlorobenzene		2011/10/07		100	%	70 - 130		
1,4-Dichlorobenzene		2011/10/07		98	%	70 - 130		
1,2-Dichlorobenzene		2011/10/07		99	%	70 - 130		
1,2,4-Trichlorobenzene		2011/10/07		90	%	70 - 130		
Hexachlorobutadiene		2011/10/07		92	%	70 - 130		
Hexane		2011/10/07		88	%	70 - 130		
Cyclohexane		2011/10/07		97	%	70 - 130		
Tetrahydrofuran		2011/10/07		98	%	70 - 130		
Method Blank		1,4-Dioxane	2011/10/07		88	%	70 - 130	
		Bromochloromethane	2011/10/07		99	%	60 - 140	
		D5-Chlorobenzene	2011/10/07		100	%	60 - 140	
		Difluorobenzene	2011/10/07		102	%	60 - 140	
		2,2,4-Trimethylpentane	2011/10/07	<0.20			ppbv	
		Carbon Disulfide	2011/10/07	<0.50			ppbv	
		Propene	2011/10/07	<0.30			ppbv	
		Vinyl Acetate	2011/10/07	<0.20			ppbv	
		Vinyl Bromide	2011/10/07	<0.20			ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/10/07	<0.20			ppbv	
		1,2-Dichlorotetrafluoroethane	2011/10/07	<0.17			ppbv	
		Chloromethane	2011/10/07	<0.30			ppbv	
		Vinyl Chloride	2011/10/07	<0.18			ppbv	
		Chloroethane	2011/10/07	<0.30			ppbv	
		1,3-Butadiene	2011/10/07	<0.50			ppbv	
		Trichlorofluoromethane (FREON 11)	2011/10/07	<0.20			ppbv	
		Trichlorotrifluoroethane	2011/10/07	<0.15			ppbv	
		Ethanol	2011/10/07	<2.3			ppbv	
		2-propanol	2011/10/07	<3.0			ppbv	
		2-Propanone	2011/10/07	<0.80			ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/10/07	<3.0			ppbv	
		Methyl Isobutyl Ketone	2011/10/07	<3.2			ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/10/07	<2.0			ppbv	
		Methyl t-butyl ether (MTBE)	2011/10/07	<0.20			ppbv	
		Ethyl Acetate	2011/10/07	<2.2			ppbv	
		1,1-Dichloroethylene	2011/10/07	<0.25			ppbv	
		cis-1,2-Dichloroethylene	2011/10/07	<0.19			ppbv	
		trans-1,2-Dichloroethylene	2011/10/07	<0.20			ppbv	
		Methylene Chloride(Dichloromethane)	2011/10/07	<0.80			ppbv	
		Chloroform	2011/10/07	<0.15			ppbv	
		Carbon Tetrachloride	2011/10/07	<0.30			ppbv	
		1,1-Dichloroethane	2011/10/07	<0.20			ppbv	
		1,2-Dichloroethane	2011/10/07	<0.20			ppbv	
		Ethylene Dibromide	2011/10/07	<0.17			ppbv	
		1,1,1-Trichloroethane	2011/10/07	<0.30			ppbv	
		1,1,2-Trichloroethane	2011/10/07	<0.15			ppbv	
		1,1,2,2-Tetrachloroethane	2011/10/07	<0.20			ppbv	
		cis-1,3-Dichloropropene	2011/10/07	<0.18			ppbv	
trans-1,3-Dichloropropene	2011/10/07	<0.17			ppbv			
1,2-Dichloropropane	2011/10/07	<0.40			ppbv			
Bromomethane	2011/10/07	<0.18			ppbv			
Bromoform	2011/10/07	<0.20			ppbv			
Bromodichloromethane	2011/10/07	<0.20			ppbv			
Dibromochloromethane	2011/10/07	<0.20			ppbv			
Heptane	2011/10/07	<0.30			ppbv			

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1F4499

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2643993	MM2	Method Blank					
		Trichloroethylene	2011/10/07	<0.30		ppbv	
		Tetrachloroethylene	2011/10/07	<0.20		ppbv	
		Benzene	2011/10/07	<0.18		ppbv	
		Toluene	2011/10/07	<0.20		ppbv	
		Ethylbenzene	2011/10/07	<0.20		ppbv	
		p+m-Xylene	2011/10/07	<0.37		ppbv	
		o-Xylene	2011/10/07	<0.20		ppbv	
		Styrene	2011/10/07	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/10/07	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/10/07	<0.50		ppbv	
		4-ethyltoluene	2011/10/07	<2.2		ppbv	
		Chlorobenzene	2011/10/07	<0.20		ppbv	
		Benzyl chloride	2011/10/07	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/10/07	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/10/07	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/10/07	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/10/07	<2.0		ppbv	
		Hexachlorobutadiene	2011/10/07	<3.0		ppbv	
		Hexane	2011/10/07	<0.30		ppbv	
		Cyclohexane	2011/10/07	<0.20		ppbv	
		Tetrahydrofuran	2011/10/07	<0.40		ppbv	
		1,4-Dioxane	2011/10/07	<2.0		ppbv	
		Xylene (Total)	2011/10/07	<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.

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/Sept 06,11

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Sept 01, 2011 @ 15:30 mst
Removal Date/Time: Sept 07, 2011 @ 8:45 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
06-Sep-11	09/06/2011 0:00	09/07/2011 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
31-Aug-11	07-Sep-11	12-Sep-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 25-May-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
714	229	17.9	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# 05863

GB1C7374 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Sept 06, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 05863

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

Report Date: 2011/09/26

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1D8651****Received: 2011/09/09, 10:10**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/09/12	2011/09/22	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

Maxxam Job #: B1D8651
 Report Date: 2011/09/26

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

Maxxam ID		KV2854	KV2855		
Sampling Date		2011/09/06	2011/09/06		
COC Number		05863	05863		
	Units	LICA PUFF&QFF/CLS/SEPT 06,11	LICA PUFF&QFF/PORT/SEPT 06,11	RDL	QC Batch

Semivolatiles Organics					
1-Methylnaphthalene	ug	0.17	<0.10	0.10	2610780
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2610780
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2610780
2-Methylantracene	ug	<0.10	<0.10	0.10	2610780
2-Methylnaphthalene	ug	0.34	0.14	0.10	2610780
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2610780
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2610780
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2610780
Acenaphthene	ug	0.098	<0.050	0.050	2610780
Acenaphthylene	ug	<0.050	<0.050	0.050	2610780
Anthracene	ug	<0.050	<0.050	0.050	2610780
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2610780
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2610780
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2610780
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2610780
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2610780
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2610780
Benzo(g,h,i)perylene	ug	0.054	0.050	0.050	2610780
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2610780
Biphenyl	ug	<0.10	<0.10	0.10	2610780
Chrysene	ug	<0.050	<0.050	0.050	2610780
Coronene	ug	<0.10	<0.10	0.10	2610780
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2610780
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2610780
Fluoranthene	ug	0.058	<0.050	0.050	2610780
Fluorene	ug	0.170	0.064	0.050	2610780
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2610780
m-Terphenyl	ug	<0.10	<0.10	0.10	2610780
Naphthalene	ug	0.256	0.154	0.072	2610780
o-Terphenyl	ug	<0.10	<0.10	0.10	2610780
Perylene	ug	<0.10	<0.10	0.10	2610780
RDL = Reportable Detection Limit QC Batch = Quality Control Batch					

Maxxam Job #: B1D8651
 Report Date: 2011/09/26

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

Maxxam ID		KV2854	KV2855		
Sampling Date		2011/09/06	2011/09/06		
COC Number		05863	05863		
	Units	LICA PUFF&QFF/CLS/SEPT 06,11	LICA PUFF&QFF/PORT/SEPT 06,11	RDL	QC Batch

Phenanthrene	ug	0.564	0.188	0.050	2610780
p-Terphenyl	ug	<0.10	<0.10	0.10	2610780
Pyrene	ug	0.052	<0.050	0.050	2610780
Quinoline	ug	<0.40	<0.40	0.40	2610780
Tetralin	ug	<0.10	<0.10	0.10	2610780
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	82	84		2610780
D10-Fluoranthene	%	92	88		2610780
D10-Fluorene (FS)	%	17 (1)	18 (1)		2610780
D10-Phenanthrene	%	86	84		2610780
D12-Benzo(a)anthracene	%	104	108		2610780
D12-Benzo(a)pyrene	%	100	104		2610780
D12-Benzo(b)fluoranthene	%	96	96		2610780
D12-Benzo(ghi)perylene	%	100	100		2610780
D12-Benzo(k)fluoranthene	%	96	98		2610780
D12-Chrysene	%	88	90		2610780
D12-Indeno(1,2,3-cd)pyrene	%	104	104		2610780
D12-Perylene	%	96	98		2610780
D14-Dibenzo(a,h)anthracene	%	106	108		2610780
D14-Terphenyl (FS)	%	93	91		2610780
D8-Acenaphthylene	%	92	94		2610780
D8-Naphthalene	%	82	84		2610780

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 #: B1D8651
 Report Date: 2011/09/26

Test Summary

Maxxam ID KV2854 **Collected** 2011/09/06
Sample ID LICA PUFF&QFF/CLS/SEPT 06,11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/09/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2610780	2011/09/12	2011/09/22	WENDY ZHAO

Maxxam ID KV2855 **Collected** 2011/09/06
Sample ID LICA PUFF&QFF/PORT/SEPT 06,11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/09/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2610780	2011/09/12	2011/09/22	WENDY ZHAO

Maxxam Job #: B1D8651
Report Date: 2011/09/26

GENERAL COMMENTS

PAHMS-F

9,10-Dimethylanthracene and 7,12-Dimethylbenzo(a)anthracene are above 25% RSD in initial calibration. No positives found for these 2 compounds.

Pyrene is statistically out of control at 70.5% recovery in the spike:dup. Spike recovery is in control. Acenaphthylene is statistically out of control at 87.8% recovery in the spike:dup. Spike recovery is in control. Acceptance criteria met for both spike and dup. Data reported and flagged.

Naphthalene positive found in blank. Samples should be considered to be possibly contaminated to the level found in the blank.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene or Triphenylene. An estimated mdl for each of these compounds is 0.1ug. Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(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 Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample KV2854-01: PAHMS-F

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

Sample KV2855-01: 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. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB1D8651

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits		
2610780 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/09/22		84	%	50 - 150		
		D10-Fluoranthene	2011/09/22		86	%	50 - 150		
		D10-Phenanthrene	2011/09/22		78	%	50 - 150		
		D12-Benzo(a)anthracene	2011/09/22		98	%	50 - 150		
		D12-Benzo(a)pyrene	2011/09/22		98	%	50 - 150		
		D12-Benzo(b)fluoranthene	2011/09/22		98	%	50 - 150		
		D12-Benzo(ghi)perylene	2011/09/22		90	%	50 - 150		
		D12-Benzo(k)fluoranthene	2011/09/22		94	%	50 - 150		
		D12-Chrysene	2011/09/22		92	%	50 - 150		
		D12-Indeno(1,2,3-cd)pyrene	2011/09/22		94	%	50 - 150		
		D12-Perylene	2011/09/22		94	%	50 - 150		
		D14-Dibenzo(a,h)anthracene	2011/09/22		98	%	50 - 150		
		RPD	Acenaphthylene	2011/09/22		1.3		%	50
	Acenaphthene		2011/09/22			87	%	60 - 130	
	Acenaphthylene		2011/09/22		1.1		%	50	
	Anthracene		2011/09/22			65	%	60 - 130	
	Anthracene		2011/09/22		15.6		%	50	
	Benzo(a)anthracene		2011/09/22			79	%	60 - 130	
	Benzo(a)anthracene		2011/09/22		3.2		%	50	
	Benzo(a)pyrene		2011/09/22			72	%	60 - 130	
	Benzo(a)pyrene		2011/09/22		2.8		%	50	
	Benzo(b)fluoranthene		2011/09/22			81	%	60 - 130	
	Benzo(b)fluoranthene		2011/09/22		6.0		%	50	
	Benzo(g,h,i)perylene		2011/09/22			75	%	60 - 130	
	Benzo(g,h,i)perylene		2011/09/22		2.4		%	50	
	Benzo(k)fluoranthene		2011/09/22			89	%	60 - 130	
	Benzo(k)fluoranthene		2011/09/22		1.4		%	50	
	Spiked Blank		Chrysene	2011/09/22			82	%	60 - 130
			Chrysene	2011/09/22		4.7		%	50
		Dibenz(a,h)anthracene	2011/09/22			78	%	60 - 130	
		Dibenz(a,h)anthracene	2011/09/22		1.3		%	50	
		Fluoranthene	2011/09/22			77	%	60 - 130	
		Fluoranthene	2011/09/22		2.0		%	50	
		Fluorene	2011/09/22			73	%	60 - 130	
		Fluorene	2011/09/22		1.0		%	50	
		Indeno(1,2,3-cd)pyrene	2011/09/22			78	%	60 - 130	
		Indeno(1,2,3-cd)pyrene	2011/09/22		1.6		%	50	
		Naphthalene	2011/09/22			92	%	60 - 130	
		Naphthalene	2011/09/22		1.6		%	50	
		Phenanthrene	2011/09/22			68	%	60 - 130	
Phenanthrene		2011/09/22		2.2		%	50		
Pyrene		2011/09/22			72	%	60 - 130		
Pyrene		2011/09/22		1.4		%	50		
Method Blank	D10-2-Methylnaphthalene	2011/09/22			82	%	50 - 150		
	D10-Fluoranthene	2011/09/22			84	%	50 - 150		
	D10-Phenanthrene	2011/09/22			74	%	50 - 150		
	D12-Benzo(a)anthracene	2011/09/22			98	%	50 - 150		
	D12-Benzo(a)pyrene	2011/09/22			100	%	50 - 150		
	D12-Benzo(b)fluoranthene	2011/09/22			94	%	50 - 150		
	D12-Benzo(ghi)perylene	2011/09/22			96	%	50 - 150		
	D12-Benzo(k)fluoranthene	2011/09/22			92	%	50 - 150		
	D12-Chrysene	2011/09/22			86	%	50 - 150		

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1D8651

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2610780 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/09/22		100	%	50 - 150
		D12-Perylene	2011/09/22		96	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/09/22		104	%	50 - 150
		D8-Acenaphthylene	2011/09/22		92	%	50 - 150
		D8-Naphthalene	2011/09/22		80	%	50 - 150
		1-Methylnaphthalene	2011/09/22	<0.10		ug	
		1-Methylphenanthrene	2011/09/22	<0.10		ug	
		2-Chloronaphthalene	2011/09/22	<0.10		ug	
		2-Methylantracene	2011/09/22	<0.10		ug	
		2-Methylnaphthalene	2011/09/22	<0.10		ug	
		3-Methylcholanthrene	2011/09/22	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/09/22	<0.10		ug	
		9,10-Dimethylantracene	2011/09/22	<0.40		ug	
		Acenaphthene	2011/09/22	<0.050		ug	
		Acenaphthylene	2011/09/22	<0.050		ug	
		Anthracene	2011/09/22	<0.050		ug	
		Benzo(a)anthracene	2011/09/22	<0.050		ug	
		Benzo(a)fluorene	2011/09/22	<0.10		ug	
		Benzo(a)pyrene	2011/09/22	<0.050		ug	
		Benzo(b)fluoranthene	2011/09/22	<0.050		ug	
		Benzo(b)fluorene	2011/09/22	<0.10		ug	
		Benzo(e)pyrene	2011/09/22	<0.10		ug	
		Benzo(g,h,i)perylene	2011/09/22	<0.050		ug	
		Benzo(k)fluoranthene	2011/09/22	<0.050		ug	
		Biphenyl	2011/09/22	<0.10		ug	
		Chrysene	2011/09/22	<0.050		ug	
		Coronene	2011/09/22	<0.10		ug	
		Dibenz(a,h)anthracene	2011/09/22	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/09/22	<0.20		ug	
		Fluoranthene	2011/09/22	<0.050		ug	
		Fluorene	2011/09/22	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/09/22	<0.050		ug	
		m-Terphenyl	2011/09/22	<0.10		ug	
		Naphthalene	2011/09/22	0.082, RDL=0.072		ug	
		o-Terphenyl	2011/09/22	<0.10		ug	
		Perylene	2011/09/22	<0.10		ug	
		Phenanthrene	2011/09/22	<0.050		ug	
		p-Terphenyl	2011/09/22	<0.10		ug	
		Pyrene	2011/09/22	<0.050		ug	
		Quinoline	2011/09/22	<0.40		ug	
		Tetralin	2011/09/22	<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/Sept 12,11

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Sept 09, 2011 @ 7:51 mst
Removal Date/Time: Sept 13, 2011 @ 7:44 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
12-Sep-11	09/12/2011 0:00	09/13/2011 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
07-Sep-11	13-Sep-11	15-Sep-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 25-May-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
716	229	11.2	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# 05923

GB1D0898 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Sept 12, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 05923

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

Report Date: 2011/09/28

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1E2083**

Received: 2011/09/15, 09:13

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/09/18	2011/09/26	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 #: B1E2083
 Report Date: 2011/09/28

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

Maxxam ID		KX0271	KX0272		
Sampling Date		2011/09/12	2011/09/12		
COC Number		05923	05923		
	Units	LICAPUFF/QFF/CLS/SEP12,11	LICAPUFF/QFF/PORT/SEP12,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2618101
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2618101
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2618101
2-Methylanthracene	ug	<0.10	<0.10	0.10	2618101
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2618101
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2618101
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2618101
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2618101
Acenaphthene	ug	<0.050	<0.050	0.050	2618101
Acenaphthylene	ug	<0.050	<0.050	0.050	2618101
Anthracene	ug	<0.050	<0.050	0.050	2618101
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2618101
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2618101
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2618101
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2618101
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2618101
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2618101
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2618101
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2618101
Biphenyl	ug	<0.10	<0.10	0.10	2618101
Chrysene	ug	<0.050	<0.050	0.050	2618101
Coronene	ug	<0.10	<0.10	0.10	2618101
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2618101
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2618101
Fluoranthene	ug	<0.050	<0.050	0.050	2618101
Fluorene	ug	0.058	<0.050	0.050	2618101
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2618101
m-Terphenyl	ug	<0.10	<0.10	0.10	2618101
Naphthalene	ug	<0.072	0.072	0.072	2618101
o-Terphenyl	ug	<0.10	<0.10	0.10	2618101
Perylene	ug	<0.10	<0.10	0.10	2618101
Phenanthrene	ug	0.174	0.118	0.050	2618101

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1E2083
 Report Date: 2011/09/28

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

Maxxam ID		KX0271	KX0272		
Sampling Date		2011/09/12	2011/09/12		
COC Number		05923	05923		
	Units	LICAPUFF/QFF/CLS/SEP12,11	LICAPUFF/QFF/PORT/SEP12,11	RDL	QC Batch

p-Terphenyl	ug	<0.10	<0.10	0.10	2618101
Pyrene	ug	<0.050	<0.050	0.050	2618101
Quinoline	ug	<0.40	<0.40	0.40	2618101
Tetralin	ug	<0.10	<0.10	0.10	2618101
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	84	90		2618101
D10-Fluoranthene	%	104	112		2618101
D10-Fluorene (FS)	%	24 (1)	20 (1)		2618101
D10-Phenanthrene	%	98	102		2618101
D12-Benzo(a)anthracene	%	112	112		2618101
D12-Benzo(a)pyrene	%	100	106		2618101
D12-Benzo(b)fluoranthene	%	98	98		2618101
D12-Benzo(ghi)perylene	%	98	108		2618101
D12-Benzo(k)fluoranthene	%	98	96		2618101
D12-Chrysene	%	88	86		2618101
D12-Indeno(1,2,3-cd)pyrene	%	100	108		2618101
D12-Perylene	%	96	98		2618101
D14-Dibenzo(a,h)anthracene	%	102	114		2618101
D14-Terphenyl (FS)	%	106	114		2618101
D8-Acenaphthylene	%	96	102		2618101
D8-Naphthalene	%	82	86		2618101

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 #: B1E2083
 Report Date: 2011/09/28

Test Summary

Maxxam ID	KX0271	Collected	2011/09/12
Sample ID	LICAPUFF/QFF/CLS/SEP12,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/09/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2618101	2011/09/18	2011/09/26	WENDY ZHAO

Maxxam ID	KX0272	Collected	2011/09/12
Sample ID	LICAPUFF//QFF/PORT/SEP12,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/09/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2618101	2011/09/18	2011/09/26	WENDY ZHAO

Maxxam Job #: B1E2083
Report Date: 2011/09/28

GENERAL COMMENTS

PAHMS-F

9,10-Dimethylanthracene and 7,12-Dimethylbenzo(a)anthracene are above 25% RSD in initial calibration. No positives found for these 2 compounds.

Pyrene is statistically out of control at 90.0% recovery in the spike:dup. Spike recovery is in control. Acceptance criteria met for both spike and dup. Data reported and flagged.

Naphthalene positive found in blank. Samples should be considered to be possibly contaminated to the level found in the blank.

Internal Std area response criteria was high in Spike:dup . Rerun with similar results. Original run reported.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene or Triphenylene. An estimated mdl for each of these compounds is 0.1ug

. Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(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 Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample KX0271-01: PAHMS-F

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

Sample KX0272-01: 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. #:
 Site Location:

Quality Assurance Report

Maxxam Job Number: GB1E2083

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2618101 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/09/26		96	%	50 - 150
		D10-Fluoranthene	2011/09/26		108	%	50 - 150
		D10-Phenanthrene	2011/09/26		108	%	50 - 150
		D12-Benzo(a)anthracene	2011/09/26		114	%	50 - 150
		D12-Benzo(a)pyrene	2011/09/26		108	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/09/26		102	%	50 - 150
		D12-Benzo(ghi)perylene	2011/09/26		106	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/09/26		98	%	50 - 150
		D12-Chrysene	2011/09/26		88	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/09/26		110	%	50 - 150
		D12-Perylene	2011/09/26		102	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/09/26		112	%	50 - 150
		D8-Acenaphthylene	2011/09/26		98	%	50 - 150
		D8-Naphthalene	2011/09/26		92	%	50 - 150
	RPD	Acenaphthene	2011/09/26		6.5	%	60 - 130
		Acenaphthene	2011/09/26				50
		Acenaphthylene	2011/09/26		3.8	%	60 - 130
		Acenaphthylene	2011/09/26				50
		Anthracene	2011/09/26		5.4	%	60 - 130
		Anthracene	2011/09/26				50
		Benzo(a)anthracene	2011/09/26		6.1	%	60 - 130
		Benzo(a)anthracene	2011/09/26				50
		Benzo(a)pyrene	2011/09/26		4.4	%	60 - 130
		Benzo(a)pyrene	2011/09/26				50
		Benzo(b)fluoranthene	2011/09/26		7.1	%	60 - 130
		Benzo(b)fluoranthene	2011/09/26				50
		Benzo(g,h,i)perylene	2011/09/26		6.2	%	60 - 130
		Benzo(g,h,i)perylene	2011/09/26				50
Benzo(k)fluoranthene	2011/09/26		8.7	%	60 - 130		
Benzo(k)fluoranthene	2011/09/26				50		
Chrysene	2011/09/26		5.2	%	60 - 130		
Chrysene	2011/09/26				50		
Dibenz(a,h)anthracene	2011/09/26		8.2	%	60 - 130		
Dibenz(a,h)anthracene	2011/09/26				50		
Fluoranthene	2011/09/26		5.9	%	60 - 130		
Fluoranthene	2011/09/26				50		
Fluorene	2011/09/26		7.3	%	60 - 130		
Fluorene	2011/09/26				50		
Indeno(1,2,3-cd)pyrene	2011/09/26		6.8	%	60 - 130		
Indeno(1,2,3-cd)pyrene	2011/09/26				50		
Naphthalene	2011/09/26		11.8	%	60 - 130		
Naphthalene	2011/09/26				50		
Phenanthrene	2011/09/26		8.9	%	60 - 130		
Phenanthrene	2011/09/26				50		
Pyrene	2011/09/26		4.1	%	60 - 130		
Pyrene	2011/09/26				50		
Method Blank	D10-2-Methylnaphthalene	2011/09/26			88	%	50 - 150
	D10-Fluoranthene	2011/09/26			96	%	50 - 150
	D10-Phenanthrene	2011/09/26			94	%	50 - 150
	D12-Benzo(a)anthracene	2011/09/26			114	%	50 - 150
	D12-Benzo(a)pyrene	2011/09/26			104	%	50 - 150
	D12-Benzo(b)fluoranthene	2011/09/26			96	%	50 - 150
	D12-Benzo(ghi)perylene	2011/09/26			98	%	50 - 150
	D12-Benzo(k)fluoranthene	2011/09/26			96	%	50 - 150
	D12-Chrysene	2011/09/26			92	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1E2083

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2618101 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/09/26		102	%	50 - 150
		D12-Perylene	2011/09/26		100	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/09/26		104	%	50 - 150
		D8-Acenaphthylene	2011/09/26		94	%	50 - 150
		D8-Naphthalene	2011/09/26		86	%	50 - 150
		1-Methylnaphthalene	2011/09/26	<0.10		ug	
		1-Methylphenanthrene	2011/09/26	<0.10		ug	
		2-Chloronaphthalene	2011/09/26	<0.10		ug	
		2-Methylanthracene	2011/09/26	<0.10		ug	
		2-Methylnaphthalene	2011/09/26	<0.10		ug	
		3-Methylcholanthrene	2011/09/26	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/09/26	<0.10		ug	
		9,10-Dimethylanthracene	2011/09/26	<0.40		ug	
		Acenaphthene	2011/09/26	<0.050		ug	
		Acenaphthylene	2011/09/26	<0.050		ug	
		Anthracene	2011/09/26	<0.050		ug	
		Benzo(a)anthracene	2011/09/26	<0.050		ug	
		Benzo(a)fluorene	2011/09/26	<0.10		ug	
		Benzo(a)pyrene	2011/09/26	<0.050		ug	
		Benzo(b)fluoranthene	2011/09/26	<0.050		ug	
		Benzo(b)fluorene	2011/09/26	<0.10		ug	
		Benzo(e)pyrene	2011/09/26	<0.10		ug	
		Benzo(g,h,i)perylene	2011/09/26	<0.050		ug	
		Benzo(k)fluoranthene	2011/09/26	<0.050		ug	
		Biphenyl	2011/09/26	<0.10		ug	
		Chrysene	2011/09/26	<0.050		ug	
		Coronene	2011/09/26	<0.10		ug	
		Dibenz(a,h)anthracene	2011/09/26	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/09/26	<0.20		ug	
		Fluoranthene	2011/09/26	<0.050		ug	
		Fluorene	2011/09/26	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/09/26	<0.050		ug	
		m-Terphenyl	2011/09/26	<0.10		ug	
		Naphthalene	2011/09/26	0.108, RDL=0.072		ug	
		o-Terphenyl	2011/09/26	<0.10		ug	
		Perylene	2011/09/26	<0.10		ug	
		Phenanthrene	2011/09/26	<0.050		ug	
		p-Terphenyl	2011/09/26	<0.10		ug	
		Pyrene	2011/09/26	<0.050		ug	
		Quinoline	2011/09/26	<0.40		ug	
		Tetralin	2011/09/26	<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/Sept 18,11

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Sept 16, 2011 @ 8:14 mst
Removal Date/Time: Sept 19, 2011 @ 8:00 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
18-Sep-11	09/18/2011 0:00	09/19/2011 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
14-Sep-11	19-Sep-11	26-Sep-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 25-May-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
708	229	10.6	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# 05986

GB1D0939 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Sept 18, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 05986

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

Report Date: 2011/10/05

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1E5616****Received: 2011/09/21, 09:59**

Sample Matrix: PUF AND FILTER

Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	1	2011/09/27	2011/10/01	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 #: B1E5616
 Report Date: 2011/10/05

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

Maxxam ID		KY9439		
Sampling Date		2011/09/18		
COC Number		05986		
	Units	LICAPUFF/QFF/CLS/SEPT18,11	RDL	QC Batch

Semivolatile Organics				
1-Methylnaphthalene	ug	0.17	0.10	2627783
1-Methylphenanthrene	ug	<0.10	0.10	2627783
2-Chloronaphthalene	ug	<0.10	0.10	2627783
2-Methylantracene	ug	<0.10	0.10	2627783
2-Methylnaphthalene	ug	0.31	0.10	2627783
3-Methylcholanthrene	ug	<2.0	2.0	2627783
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	0.10	2627783
9,10-Dimethylantracene	ug	<0.40	0.40	2627783
Acenaphthene	ug	0.100	0.050	2627783
Acenaphthylene	ug	<0.050	0.050	2627783
Anthracene	ug	<0.050	0.050	2627783
Benzo(a)anthracene	ug	<0.050	0.050	2627783
Benzo(a)fluorene	ug	<0.10	0.10	2627783
Benzo(a)pyrene	ug	<0.050	0.050	2627783
Benzo(b)fluoranthene	ug	<0.050	0.050	2627783
Benzo(b)fluorene	ug	<0.10	0.10	2627783
Benzo(e)pyrene	ug	<0.10	0.10	2627783
Benzo(g,h,i)perylene	ug	<0.050	0.050	2627783
Benzo(k)fluoranthene	ug	<0.050	0.050	2627783
Biphenyl	ug	<0.10	0.10	2627783
Chrysene	ug	<0.050	0.050	2627783
Coronene	ug	<0.10	0.10	2627783
Dibenz(a,h)anthracene	ug	<0.050	0.050	2627783
Dibenzo(a,e)pyrene	ug	<0.20	0.20	2627783
Fluoranthene	ug	<0.050	0.050	2627783
Fluorene	ug	0.122	0.050	2627783
Indeno(1,2,3-cd)pyrene	ug	<0.050	0.050	2627783
m-Terphenyl	ug	<0.10	0.10	2627783
Naphthalene	ug	0.216	0.072	2627783
o-Terphenyl	ug	<0.10	0.10	2627783
Perylene	ug	<0.10	0.10	2627783
Phenanthrene	ug	0.238	0.050	2627783

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1E5616
 Report Date: 2011/10/05

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

Maxxam ID		KY9439		
Sampling Date		2011/09/18		
COC Number		05986		
	Units	LICAPUFF/QFF/CLS/SEPT18,11	RDL	QC Batch

p-Terphenyl	ug	<0.10	0.10	2627783
Pyrene	ug	<0.050	0.050	2627783
Quinoline	ug	<0.40	0.40	2627783
Tetralin	ug	<0.10	0.10	2627783
Surrogate Recovery (%)				
D10-2-Methylnaphthalene	%	78		2627783
D10-Fluoranthene	%	100		2627783
D10-Fluorene (FS)	%	25 (1)		2627783
D10-Phenanthrene	%	94		2627783
D12-Benzo(a)anthracene	%	92		2627783
D12-Benzo(a)pyrene	%	102		2627783
D12-Benzo(b)fluoranthene	%	88		2627783
D12-Benzo(ghi)perylene	%	98		2627783
D12-Benzo(k)fluoranthene	%	86		2627783
D12-Chrysene	%	82		2627783
D12-Indeno(1,2,3-cd)pyrene	%	98		2627783
D12-Perylene	%	100		2627783
D14-Dibenzo(a,h)anthracene	%	98		2627783
D14-Terphenyl (FS)	%	95		2627783
D8-Acenaphthylene	%	92		2627783
D8-Naphthalene	%	78		2627783

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 #: B1E5616
Report Date: 2011/10/05

Test Summary

Maxxam ID	KY9439	Collected	2011/09/18
Sample ID	LICAPUFF/QFF/CLS/SEPT18,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/09/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2627783	2011/09/27	2011/10/01	WENDY ZHAO

Maxxam Job #: B1E5616
Report Date: 2011/10/05

GENERAL COMMENTS

PAHMS-F

9,10-Dimethylanthracene and 7,12-Dimethylbenzo(a)anthracene are above 25% RSD in initial calibration. No positives found for these 2 compounds.

Pyrene is statistically out of control at 91.8% and 92.3% recovery in the spike and spike:dup. Acceptance criteria met for both spike and dup. Data reported and flagged.

Naphthalene positive found in blank. Samples should be considered to be possibly contaminated to the level found in the blank.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene or Triphenylene. An estimated mdl for each of these compounds is 0.1ug

. Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(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 Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample KY9439-01: 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. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB1E5616

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2627783 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/09/30		82	%	50 - 150
		D10-Fluoranthene	2011/09/30		96	%	50 - 150
		D10-Phenanthrene	2011/09/30		90	%	50 - 150
		D12-Benzo(a)anthracene	2011/09/30		90	%	50 - 150
		D12-Benzo(a)pyrene	2011/09/30		98	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/09/30		88	%	50 - 150
		D12-Benzo(ghi)perylene	2011/09/30		98	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/09/30		86	%	50 - 150
		D12-Chrysene	2011/09/30		84	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/09/30		100	%	50 - 150
		D12-Perylene	2011/09/30		100	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/09/30		100	%	50 - 150
		RPD	D8-Acenaphthylene	2011/09/30		86	%
	D8-Naphthalene		2011/09/30		84	%	50 - 150
	RPD	Acenaphthene	2011/09/30		80	%	60 - 130
		Acenaphthene	2011/09/30	6.1		%	50
	Spiked Blank	Acenaphthylene	2011/09/30		82	%	60 - 130
		Acenaphthylene	2011/09/30	8.2		%	50
	Spiked Blank	Anthracene	2011/09/30		80	%	60 - 130
		Anthracene	2011/09/30	7.3		%	50
	Spiked Blank	Benzo(a)anthracene	2011/09/30		81	%	60 - 130
		Benzo(a)anthracene	2011/09/30	8.6		%	50
	Spiked Blank	Benzo(a)pyrene	2011/09/30		80	%	60 - 130
		Benzo(a)pyrene	2011/09/30	1.6		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/09/30		83	%	60 - 130
		Benzo(b)fluoranthene	2011/09/30	3.9		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/09/30		87	%	60 - 130
		Benzo(g,h,i)perylene	2011/09/30	1.1		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/09/30		87	%	60 - 130
		Benzo(k)fluoranthene	2011/09/30	4.5		%	50
	Spiked Blank	Chrysene	2011/09/30		80	%	60 - 130
		Chrysene	2011/09/30	8.4		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/09/30		89	%	60 - 130
		Dibenz(a,h)anthracene	2011/09/30	1.4		%	50
	Spiked Blank	Fluoranthene	2011/09/30		92	%	60 - 130
		Fluoranthene	2011/09/30	1.1		%	50
	Spiked Blank	Fluorene	2011/09/30		81	%	60 - 130
		Fluorene	2011/09/30	6.3		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/09/30		89	%	60 - 130
		Indeno(1,2,3-cd)pyrene	2011/09/30	0.6		%	50
Spiked Blank	Naphthalene	2011/09/30		86	%	60 - 130	
	Naphthalene	2011/09/30	7.0		%	50	
Spiked Blank	Phenanthrene	2011/09/30		82	%	60 - 130	
	Phenanthrene	2011/09/30	5.6		%	50	
Spiked Blank	Pyrene	2011/09/30		92	%	60 - 130	
	Pyrene	2011/09/30	0.5		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/09/30		84	%	50 - 150	
	D10-Fluoranthene	2011/09/30		92	%	50 - 150	
	D10-Phenanthrene	2011/09/30		90	%	50 - 150	
	D12-Benzo(a)anthracene	2011/09/30		90	%	50 - 150	
	D12-Benzo(a)pyrene	2011/09/30		96	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/09/30		90	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/09/30		94	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/09/30		84	%	50 - 150	
	D12-Chrysene	2011/09/30		84	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1E5616

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2627783 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/09/30		94	%	50 - 150
		D12-Perylene	2011/09/30		98	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/09/30		94	%	50 - 150
		D8-Acenaphthylene	2011/09/30		90	%	50 - 150
		D8-Naphthalene	2011/09/30		86	%	50 - 150
		1-Methylnaphthalene	2011/09/30	<0.10		ug	
		1-Methylphenanthrene	2011/09/30	<0.10		ug	
		2-Chloronaphthalene	2011/09/30	<0.10		ug	
		2-Methylanthracene	2011/09/30	<0.10		ug	
		2-Methylnaphthalene	2011/09/30	<0.10		ug	
		3-Methylcholanthrene	2011/09/30	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/09/30	<0.10		ug	
		9,10-Dimethylanthracene	2011/09/30	<0.40		ug	
		Acenaphthene	2011/09/30	<0.050		ug	
		Acenaphthylene	2011/09/30	<0.050		ug	
		Anthracene	2011/09/30	<0.050		ug	
		Benzo(a)anthracene	2011/09/30	<0.050		ug	
		Benzo(a)fluorene	2011/09/30	<0.10		ug	
		Benzo(a)pyrene	2011/09/30	<0.050		ug	
		Benzo(b)fluoranthene	2011/09/30	<0.050		ug	
		Benzo(b)fluorene	2011/09/30	<0.10		ug	
		Benzo(e)pyrene	2011/09/30	<0.10		ug	
		Benzo(g,h,i)perylene	2011/09/30	<0.050		ug	
		Benzo(k)fluoranthene	2011/09/30	<0.050		ug	
		Biphenyl	2011/09/30	<0.10		ug	
		Chrysene	2011/09/30	<0.050		ug	
		Coronene	2011/09/30	<0.10		ug	
		Dibenz(a,h)anthracene	2011/09/30	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/09/30	<0.20		ug	
		Fluoranthene	2011/09/30	<0.050		ug	
		Fluorene	2011/09/30	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/09/30	<0.050		ug	
		m-Terphenyl	2011/09/30	<0.10		ug	
		Naphthalene	2011/09/30	0.076, RDL=0.072		ug	
		o-Terphenyl	2011/09/30	<0.10		ug	
		Perylene	2011/09/30	<0.10		ug	
		Phenanthrene	2011/09/30	<0.050		ug	
		p-Terphenyl	2011/09/30	<0.10		ug	
		Pyrene	2011/09/30	<0.050		ug	
		Quinoline	2011/09/30	<0.40		ug	
		Tetralin	2011/09/30	<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/Sept 24,11

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Sept 23, 2011 @ 12:08 mst
Removal Date/Time: Sept 26, 2011 @ 7:55 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
24-Sep-11	09/24/2011 0:00	09/25/2011 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
21-Sep-11	26-Sep-11	30-Oct-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 25-May-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
707	229	16.1	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# 07863

GB1E1584 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Sept 24, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 07863

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

Report Date: 2011/10/06

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1F0025**

Received: 2011/09/28, 08:45

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/09/30	2011/10/03	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 #: B1F0025
 Report Date: 2011/10/06

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

Maxxam ID		LB3385	LB3386		
Sampling Date		2011/09/24	2011/09/24		
COC Number		07863	07863		
	Units	LICA PUFF+QFF/CLS/SEPT 24,11	LICA PUFF+QFF/PORT/SEPT 24,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.25	<0.10	0.10	2632595
1-Methylphenanthrene	ug	0.16	<0.10	0.10	2632595
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2632595
2-Methylantracene	ug	<0.10	<0.10	0.10	2632595
2-Methylnaphthalene	ug	0.43	<0.10	0.10	2632595
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2632595
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2632595
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2632595
Acenaphthene	ug	0.138	<0.050	0.050	2632595
Acenaphthylene	ug	0.478	0.054	0.050	2632595
Anthracene	ug	0.196	<0.050	0.050	2632595
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2632595
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2632595
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2632595
Benzo(b)fluoranthene	ug	0.122	<0.050	0.050	2632595
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2632595
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2632595
Benzo(g,h,i)perylene	ug	0.078	<0.050	0.050	2632595
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2632595
Biphenyl	ug	0.19	<0.10	0.10	2632595
Chrysene	ug	0.056	<0.050	0.050	2632595
Coronene	ug	<0.10	<0.10	0.10	2632595
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2632595
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2632595
Fluoranthene	ug	0.232	0.064	0.050	2632595
Fluorene	ug	0.430	0.088	0.050	2632595
Indeno(1,2,3-cd)pyrene	ug	0.072	<0.050	0.050	2632595
m-Terphenyl	ug	<0.10	<0.10	0.10	2632595
Naphthalene	ug	0.384	<0.072	0.072	2632595
o-Terphenyl	ug	<0.10	<0.10	0.10	2632595
Perylene	ug	<0.10	<0.10	0.10	2632595

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1F0025
 Report Date: 2011/10/06

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

Maxxam ID		LB3385	LB3386		
Sampling Date		2011/09/24	2011/09/24		
COC Number		07863	07863		
	Units	LICA PUFF+QFF/CLS/SEPT 24,11	LICA PUFF+QFF/PORT/SEPT 24,11	RDL	QC Batch

Phenanthrene	ug	1.50	0.234	0.050	2632595
p-Terphenyl	ug	<0.10	<0.10	0.10	2632595
Pyrene	ug	0.206	0.086	0.050	2632595
Quinoline	ug	<0.40	<0.40	0.40	2632595
Tetralin	ug	<0.10	<0.10	0.10	2632595
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	82	78		2632595
D10-Fluoranthene	%	100	100		2632595
D10-Fluorene (FS)	%	6.4 (1)	5.4 (1)		2632595
D10-Phenanthrene	%	96	92		2632595
D12-Benzo(a)anthracene	%	94	92		2632595
D12-Benzo(a)pyrene	%	106	106		2632595
D12-Benzo(b)fluoranthene	%	92	90		2632595
D12-Benzo(ghi)perylene	%	96	96		2632595
D12-Benzo(k)fluoranthene	%	92	88		2632595
D12-Chrysene	%	84	84		2632595
D12-Indeno(1,2,3-cd)pyrene	%	100	100		2632595
D12-Perylene	%	106	104		2632595
D14-Dibenzo(a,h)anthracene	%	100	98		2632595
D14-Terphenyl (FS)	%	95	95		2632595
D8-Acenaphthylene	%	96	94		2632595
D8-Naphthalene	%	86	76		2632595

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 #: B1F0025
Report Date: 2011/10/06

Test Summary

Maxxam ID LB3385 **Collected** 2011/09/24
Sample ID LICA PUFF+QFF/CLS/SEPT 24,11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/09/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2632595	2011/09/30	2011/10/03	WENDY ZHAO

Maxxam ID LB3386 **Collected** 2011/09/24
Sample ID LICA PUFF+QFF/PORT/SEPT 24,11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/09/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2632595	2011/09/30	2011/10/03	WENDY ZHAO

Maxxam Job #: B1F0025
Report Date: 2011/10/06

GENERAL COMMENTS

PAHMS-F

9,10-Dimethylanthracene and 7,12-Dimethylbenzo(a)anthracene are above 25% RSD in initial calibration. No positives found for these 2 compounds.

Pyrene is statistically out of control at 92.0% and 95.0% recovery in the spike and 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 or Triphenylene. An estimated mdl for each of these compounds is 0.1 ug. Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(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 Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample LB3385-01: PAHMS-F

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

Sample LB3386-01: 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. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB1F0025

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2632595 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/10/03		84	%	50 - 150
		D10-Fluoranthene	2011/10/03		94	%	50 - 150
		D10-Phenanthrene	2011/10/03		86	%	50 - 150
		D12-Benzo(a)anthracene	2011/10/03		88	%	50 - 150
		D12-Benzo(a)pyrene	2011/10/03		104	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/10/03		90	%	50 - 150
		D12-Benzo(ghi)perylene	2011/10/03		96	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/10/03		88	%	50 - 150
		D12-Chrysene	2011/10/03		84	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/10/03		98	%	50 - 150
		D12-Perylene	2011/10/03		106	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/10/03		96	%	50 - 150
		RPD	D8-Acenaphthylene	2011/10/03		94	%
	D8-Naphthalene		2011/10/03		86	%	50 - 150
	Acenaphthene		2011/10/03		84	%	60 - 130
	Acenaphthene		2011/10/03	2.4		%	50
	Acenaphthylene		2011/10/03		89	%	60 - 130
	Acenaphthylene		2011/10/03	1.1		%	50
	Anthracene		2011/10/03		85	%	60 - 130
	Anthracene		2011/10/03	0.6		%	50
	Benzo(a)anthracene		2011/10/03		80	%	60 - 130
	Benzo(a)anthracene		2011/10/03	0.3		%	50
	Benzo(a)pyrene		2011/10/03		90	%	60 - 130
	Benzo(a)pyrene		2011/10/03	2.0		%	50
	Benzo(b)fluoranthene		2011/10/03		83	%	60 - 130
	Benzo(b)fluoranthene		2011/10/03	0.6		%	50
	Benzo(g,h,i)perylene		2011/10/03		84	%	60 - 130
	Benzo(g,h,i)perylene		2011/10/03	1.8		%	50
	Spiked Blank		Benzo(k)fluoranthene	2011/10/03		90	%
		Benzo(k)fluoranthene	2011/10/03	1.4		%	50
		Chrysene	2011/10/03		82	%	60 - 130
		Chrysene	2011/10/03	2.5		%	50
		Dibenz(a,h)anthracene	2011/10/03		88	%	60 - 130
		Dibenz(a,h)anthracene	2011/10/03	4.2		%	50
		Fluoranthene	2011/10/03		91	%	60 - 130
		Fluoranthene	2011/10/03	3.5		%	50
		Fluorene	2011/10/03		84	%	60 - 130
		Fluorene	2011/10/03	0.9		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/10/03		89	%	60 - 130
		Indeno(1,2,3-cd)pyrene	2011/10/03	1.4		%	50
Naphthalene		2011/10/03		82	%	60 - 130	
Naphthalene		2011/10/03	6.0		%	50	
Phenanthrene		2011/10/03		81	%	60 - 130	
Phenanthrene		2011/10/03	1.8		%	50	
Pyrene		2011/10/03		92	%	60 - 130	
Pyrene		2011/10/03	3.2		%	50	
Method Blank		D10-2-Methylnaphthalene	2011/10/03		84	%	50 - 150
		D10-Fluoranthene	2011/10/03		96	%	50 - 150
	D10-Phenanthrene	2011/10/03		88	%	50 - 150	
	D12-Benzo(a)anthracene	2011/10/03		88	%	50 - 150	
	D12-Benzo(a)pyrene	2011/10/03		104	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/10/03		90	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/10/03		96	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/10/03		90	%	50 - 150	
	D12-Chrysene	2011/10/03		84	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1F0025

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2632595 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/10/03		96	%	50 - 150
		D12-Perylene	2011/10/03		104	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/10/03		94	%	50 - 150
		D8-Acenaphthylene	2011/10/03		94	%	50 - 150
		D8-Naphthalene	2011/10/03		84	%	50 - 150
		1-Methylnaphthalene	2011/10/03	<0.10		ug	
		1-Methylphenanthrene	2011/10/03	<0.10		ug	
		2-Chloronaphthalene	2011/10/03	<0.10		ug	
		2-Methylantracene	2011/10/03	<0.10		ug	
		2-Methylnaphthalene	2011/10/03	<0.10		ug	
		3-Methylcholanthrene	2011/10/03	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/10/03	<0.10		ug	
		9,10-Dimethylantracene	2011/10/03	<0.40		ug	
		Acenaphthene	2011/10/03	<0.050		ug	
		Acenaphthylene	2011/10/03	<0.050		ug	
		Anthracene	2011/10/03	<0.050		ug	
		Benzo(a)anthracene	2011/10/03	<0.050		ug	
		Benzo(a)fluorene	2011/10/03	<0.10		ug	
		Benzo(a)pyrene	2011/10/03	<0.050		ug	
		Benzo(b)fluoranthene	2011/10/03	<0.050		ug	
		Benzo(b)fluorene	2011/10/03	<0.10		ug	
		Benzo(e)pyrene	2011/10/03	<0.10		ug	
		Benzo(g,h,i)perylene	2011/10/03	<0.050		ug	
		Benzo(k)fluoranthene	2011/10/03	<0.050		ug	
		Biphenyl	2011/10/03	<0.10		ug	
		Chrysene	2011/10/03	<0.050		ug	
		Coronene	2011/10/03	<0.10		ug	
		Dibenz(a,h)anthracene	2011/10/03	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/10/03	<0.20		ug	
		Fluoranthene	2011/10/03	<0.050		ug	
		Fluorene	2011/10/03	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/10/03	<0.050		ug	
		m-Terphenyl	2011/10/03	<0.10		ug	
		Naphthalene	2011/10/03	<0.072		ug	
		o-Terphenyl	2011/10/03	<0.10		ug	
		Perylene	2011/10/03	<0.10		ug	
		Phenanthrene	2011/10/03	<0.050		ug	
		p-Terphenyl	2011/10/03	<0.10		ug	
		Pyrene	2011/10/03	<0.050		ug	
		Quinoline	2011/10/03	<0.40		ug	
		Tetralin	2011/10/03	<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/Sept 30,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: Sept 28, 2011 @ 8:05 mst
 Removal Date/Time: Oct 03, 2011 @ 10:45 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
30-Sep-11	09/30/2011 0:00	10/01/2011 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
27-Sep-11	03-Oct-11	10-Oct-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 25-May-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
706	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# 08014

GB1E1587 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Sept 30, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 08014

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7**Report Date: 2011/10/12****CERTIFICATE OF ANALYSIS****MAXXAM JOB #: B1F4542****Received: 2011/10/05, 10:15**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/10/07	2011/10/11	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 #: B1F4542
 Report Date: 2011/10/12

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

Maxxam ID		LD6063	LD6064		
Sampling Date		2011/09/30	2011/09/30		
COC Number		08014	08014		
	Units	LICAPUFF/QFF/CLS/SEPT30,11	LICAPUFF/QFF/PORT/SEPT30,11	RDL	QC Batch
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2640972
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2640972
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2640972
2-Methylantracene	ug	<0.10	<0.10	0.10	2640972
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2640972
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2640972
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2640972
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2640972
Acenaphthene	ug	<0.050	<0.050	0.050	2640972
Acenaphthylene	ug	<0.050	<0.050	0.050	2640972
Anthracene	ug	<0.050	<0.050	0.050	2640972
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2640972
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2640972
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2640972
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2640972
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2640972
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2640972
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2640972
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2640972
Biphenyl	ug	<0.10	<0.10	0.10	2640972
Chrysene	ug	<0.050	<0.050	0.050	2640972
Coronene	ug	<0.10	<0.10	0.10	2640972
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2640972
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2640972
Fluoranthene	ug	<0.050	<0.050	0.050	2640972
Fluorene	ug	0.092	<0.050	0.050	2640972
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2640972
m-Terphenyl	ug	<0.10	<0.10	0.10	2640972
Naphthalene	ug	<0.072	<0.072	0.072	2640972
o-Terphenyl	ug	<0.10	<0.10	0.10	2640972
Perylene	ug	<0.10	<0.10	0.10	2640972
Phenanthrene	ug	0.198	0.088	0.050	2640972
RDL = Reportable Detection Limit QC Batch = Quality Control Batch					

Maxxam Job #: B1F4542
 Report Date: 2011/10/12

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

Maxxam ID		LD6063	LD6064		
Sampling Date		2011/09/30	2011/09/30		
COC Number		08014	08014		
	Units	LICAPUFF/QFF/CLS/SEPT30,11	LICAPUFF/QFF/PORT/SEPT30,11	RDL	QC Batch
p-Terphenyl	ug	<0.10	<0.10	0.10	2640972
Pyrene	ug	<0.050	<0.050	0.050	2640972
Quinoline	ug	<0.40	<0.40	0.40	2640972
Tetralin	ug	<0.10	<0.10	0.10	2640972
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	72	80		2640972
D10-Fluoranthene	%	92	88		2640972
D10-Fluorene (FS)	%	12 (1)	13 (1)		2640972
D10-Phenanthrene	%	88	86		2640972
D12-Benzo(a)anthracene	%	90	92		2640972
D12-Benzo(a)pyrene	%	88	92		2640972
D12-Benzo(b)fluoranthene	%	88	90		2640972
D12-Benzo(ghi)perylene	%	86	86		2640972
D12-Benzo(k)fluoranthene	%	86	92		2640972
D12-Chrysene	%	82	84		2640972
D12-Indeno(1,2,3-cd)pyrene	%	90	90		2640972
D12-Perylene	%	86	92		2640972
D14-Dibenzo(a,h)anthracene	%	88	90		2640972
D14-Terphenyl (FS)	%	92	83		2640972
D8-Acenaphthylene	%	84	88		2640972
D8-Naphthalene	%	72	82		2640972
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 #: B1F4542
Report Date: 2011/10/12

Test Summary

Maxxam ID	LD6063	Collected	2011/09/30
Sample ID	LICAPUFF/QFF/CLS/SEPT30,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/10/05

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2640972	2011/10/07	2011/10/11	WENDY ZHAO

Maxxam ID	LD6064	Collected	2011/09/30
Sample ID	LICAPUFF/QFF/PORT/SEPT30,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/10/05

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2640972	2011/10/07	2011/10/11	WENDY ZHAO

Maxxam Job #: B1F4542
Report Date: 2011/10/12

GENERAL COMMENTS

PAHMS-F

9,10-Dimethylanthracene and 7,12-Dimethylbenzo(a)anthracene are above 25% RSD in initial calibration. No positives found for these 2 compounds.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene or Triphenylene. An estimated mdl for each of these compounds is 0.1ug. Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(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 Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample LD6063-01: PAHMS-F

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

Sample LD6064-01: 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. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB1F4542

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2640972 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/10/11		86	%	50 - 150
		D10-Fluoranthene	2011/10/11		92	%	50 - 150
		D10-Phenanthrene	2011/10/11		86	%	50 - 150
		D12-Benzo(a)anthracene	2011/10/11		86	%	50 - 150
		D12-Benzo(a)pyrene	2011/10/11		90	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/10/11		86	%	50 - 150
		D12-Benzo(ghi)perylene	2011/10/11		86	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/10/11		86	%	50 - 150
		D12-Chrysene	2011/10/11		86	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/10/11		88	%	50 - 150
		D12-Perylene	2011/10/11		86	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/10/11		88	%	50 - 150
		D8-Acenaphthylene	2011/10/11		90	%	50 - 150
		D8-Naphthalene	2011/10/11		88	%	50 - 150
		Acenaphthene	2011/10/11		83	%	60 - 130
	RPD	Acenaphthene	2011/10/11	2.1		%	50
	Spiked Blank	Acenaphthylene	2011/10/11		89	%	60 - 130
	RPD	Acenaphthylene	2011/10/11	5.8		%	50
	Spiked Blank	Anthracene	2011/10/11		81	%	60 - 130
	RPD	Anthracene	2011/10/11	5.1		%	50
	Spiked Blank	Benzo(a)anthracene	2011/10/11		82	%	60 - 130
	RPD	Benzo(a)anthracene	2011/10/11	1.5		%	50
	Spiked Blank	Benzo(a)pyrene	2011/10/11		73	%	60 - 130
	RPD	Benzo(a)pyrene	2011/10/11	2.4		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/10/11		84	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/10/11	1.5		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/10/11		80	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/10/11	0.6		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/10/11		89	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/10/11	0.3		%	50
	Spiked Blank	Chrysene	2011/10/11		86	%	60 - 130
	RPD	Chrysene	2011/10/11	2.0		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/10/11		84	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/10/11	0.6		%	50
	Spiked Blank	Fluoranthene	2011/10/11		91	%	60 - 130
	RPD	Fluoranthene	2011/10/11	9.5		%	50
	Spiked Blank	Fluorene	2011/10/11		83	%	60 - 130
	RPD	Fluorene	2011/10/11	4.9		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/10/11		84	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/10/11	0.6		%	50
	Spiked Blank	Naphthalene	2011/10/11		87	%	60 - 130
	RPD	Naphthalene	2011/10/11	4.1		%	50
	Spiked Blank	Phenanthrene	2011/10/11		82	%	60 - 130
	RPD	Phenanthrene	2011/10/11	2.2		%	50
	Spiked Blank	Pyrene	2011/10/11		90	%	60 - 130
	RPD	Pyrene	2011/10/11	9.4		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/10/11		66	%	50 - 150
		D10-Fluoranthene	2011/10/11		84	%	50 - 150
		D10-Phenanthrene	2011/10/11		78	%	50 - 150
		D12-Benzo(a)anthracene	2011/10/11		86	%	50 - 150
		D12-Benzo(a)pyrene	2011/10/11		86	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/10/11		84	%	50 - 150
		D12-Benzo(ghi)perylene	2011/10/11		82	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/10/11		82	%	50 - 150
		D12-Chrysene	2011/10/11		82	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1F4542

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2640972 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/10/11		86	%	50 - 150
		D12-Perylene	2011/10/11		84	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/10/11		84	%	50 - 150
		D8-Acenaphthylene	2011/10/11		74	%	50 - 150
		D8-Naphthalene	2011/10/11		70	%	50 - 150
		1-Methylnaphthalene	2011/10/11	<0.10		ug	
		1-Methylphenanthrene	2011/10/11	<0.10		ug	
		2-Chloronaphthalene	2011/10/11	<0.10		ug	
		2-Methylanthracene	2011/10/11	<0.10		ug	
		2-Methylnaphthalene	2011/10/11	<0.10		ug	
		3-Methylcholanthrene	2011/10/11	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/10/11	<0.10		ug	
		9,10-Dimethylanthracene	2011/10/11	<0.40		ug	
		Acenaphthene	2011/10/11	<0.050		ug	
		Acenaphthylene	2011/10/11	<0.050		ug	
		Anthracene	2011/10/11	<0.050		ug	
		Benzo(a)anthracene	2011/10/11	<0.050		ug	
		Benzo(a)fluorene	2011/10/11	<0.10		ug	
		Benzo(a)pyrene	2011/10/11	<0.050		ug	
		Benzo(b)fluoranthene	2011/10/11	<0.050		ug	
		Benzo(b)fluorene	2011/10/11	<0.10		ug	
		Benzo(e)pyrene	2011/10/11	<0.10		ug	
		Benzo(g,h,i)perylene	2011/10/11	<0.050		ug	
		Benzo(k)fluoranthene	2011/10/11	<0.050		ug	
		Biphenyl	2011/10/11	<0.10		ug	
		Chrysene	2011/10/11	<0.050		ug	
		Coronene	2011/10/11	<0.10		ug	
		Dibenz(a,h)anthracene	2011/10/11	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/10/11	<0.20		ug	
		Fluoranthene	2011/10/11	<0.050		ug	
		Fluorene	2011/10/11	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/10/11	<0.050		ug	
		m-Terphenyl	2011/10/11	<0.10		ug	
		Naphthalene	2011/10/11	<0.072		ug	
		o-Terphenyl	2011/10/11	<0.10		ug	
		Perylene	2011/10/11	<0.10		ug	
		Phenanthrene	2011/10/11	<0.050		ug	
		p-Terphenyl	2011/10/11	<0.10		ug	
		Pyrene	2011/10/11	<0.050		ug	
		Quinoline	2011/10/11	<0.40		ug	
		Tetralin	2011/10/11	<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
September 2011

Prepared By:



October 28, 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: September 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 – September 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	0.27	12	30	23	6.8	309(NW)	1.4	28	100.0
H2S (PPB)	10	3	0	0	0.26	4	15	23	4.1	101(E)	0.9	25	99.9
THC (PPM)	-	-	-	-	2.15	3.0	7, 8	3, 0	0.6, 0.3	217(SW), 190(S)	2.5	7	99.7
NOx (PPB)	-	-	-	-	2.57	27	1	7	1.7	271(W)	5.6	28	99.9
NO (PPB)	-	-	-	-	0.43	18	1	7	1.7	271(W)	1.5	1	99.9
NO ₂ (PPB)	159	-	0	-	2.25	18	30	23	6.8	309(NW)	4.3	2	99.9
VECTOR WS (KPH)	-	-	-	-	4.55	14.6	11	9	-	32(NNE)	9.1	21	99.7
VECTOR WD (DEGREES)	-	-	-	-	197(SSW)	-	-	-	-	-	-	-	99.7
RELATIVE HUMIDITY (%)	-	-	-	-	64.27	93	VAR	VAR	VAR	VAR	83.9	11	100.0
TEMPERATURE (DEG C)	-	-	-	-	12.71	31.9	8	15	3	271(W)	20.1	9	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	942	958	13	VAR	VAR	VAR	956	13	100.0
PRECIPITATION (MM)	-	-	-	-	0.02	4.6	11	11	7.8	44(NE)	11.5	11	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. The hot fan for the analyzer was replaced on September 6th. Data was corrected using daily zero information.

Total HydroCarbon (PPM)

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

The monthly calibration was performed on September 6th. The inlet filter was changed before the monthly calibration was started. It was noticed that the zero air supply pump was noisy on September 22nd. The zero air pump was replaced with a Maxxam-Supplied temporary pump following the as found points on September 22nd. The hydrogen gas cylinder was also replaced on the same day. The analyzer was allowed to stabilize overnight. A post-repair calibration was performed on September 23rd. 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

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.

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

- System make / model - RM Young 5103VK, S/N: 46553 replaced to MetOne 50.5 Sonic, S/N: H10703

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

The Maxxam-Supplied RM Young wind system was removed and a LICA-Supplied MetOne 50.5 wind system was installed on September 27th. The MetOne 50.5 wind system was sent to the factory for repair: they determined that part of the array was bent. The MetOne was factory repaired and was recalibrated on July 21st. During the wind system installation on September 27th, both zero and span check were performed, and the results were fine.

Relative Humidity (PERCENT)

- System make / model - Met One 083

No operational issues observed during the month.

Precipitation (MM)

- System make / model - Met One 387

No operational issues observed during this month.

General Monthly Summary

AQM STATION – LICA – Maskwa

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 September 7th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA
SEPTEMBER 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	2	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24
2	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	4	0	4	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	0	1	1	1	1	1	1	0	0	0	0	0	0	0	1	0.3	24
5	0	0	0	0	0	0	0	1	IZS	4	0	0	0	0	0	0	0	0	0	1	5	0	0	0	5	0.5	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	0.0	24
7	0	0	0	0	0	0	IZS	0	0	0	0	C	C	C	C	1	0	0	0	0	0	0	0	0	1	0.1	24	
8	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	1	0.0	24
9	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
10	0	1	0	IZS	0	0	0	3	0	0	0	1	3	0	1	0	0	0	0	0	0	0	0	0	3	0.4	24	
11	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
12	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	0	0	0	0	0	6	0.3	24	
13	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
14	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	
15	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	2	3	2	IZS	0	1	3	0.7	24	
16	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	0.1	24	
17	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	0	0	0	0	0	0	0.0	24	
19	0	0	0	0	0	0	0	0	0	3	1	5	0	0	0	0	0	0	IZS	1	0	0	0	0	5	0.4	24	
20	0	1	0	0	0	0	0	0	0	2	1	1	0	0	0	0	IZS	0	0	0	0	1	0	0	2	0.3	24	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	0	0	0	0	1	1	0.1	24	
22	0	0	0	0	0	0	0	0	0	8	3	0	0	1	IZS	0	0	0	0	0	1	1	0	0	8	0.6	24	
23	0	0	0	0	0	0	0	0	1	1	1	1	1	1	IZS	1	2	2	1	0	0	0	0	0	2	0.5	24	
24	1	0	0	0	0	0	0	0	0	0	0	1	IZS	0	1	1	1	1	0	0	0	0	0	0	1	0.3	24	
25	0	0	0	0	0	0	0	0	2	2	3	IZS	1	0	0	0	0	0	1	1	0	0	0	0	3	0.4	24	
26	0	3	9	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	9	0.5	24	
27	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0.1	24	
28	0	5	4	0	0	0	0	0	IZS	0	1	0	0	0	3	0	4	6	3	4	3	0	0	0	6	1.4	24	
29	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	
30	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0	1	1	0	3	12	12	0.8	24		
HOURLY MAX	1	5	9	1	0	0	0	3	2	8	3	5	3	1	3	2	4	6	3	4	5	1	4	12				
HOURLY AVG	0.1	0.4	0.5	0.0	0.0	0.0	0.0	0.2	0.2	0.8	0.4	0.4	0.3	0.1	0.3	0.2	0.3	0.6	0.3	0.3	0.4	0.1	0.2	0.5				

STATUS FLAG CODES

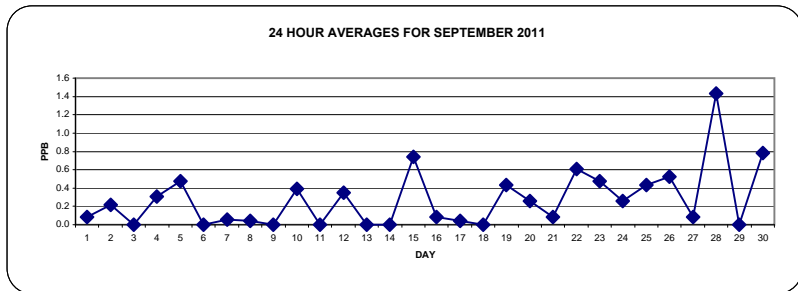
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

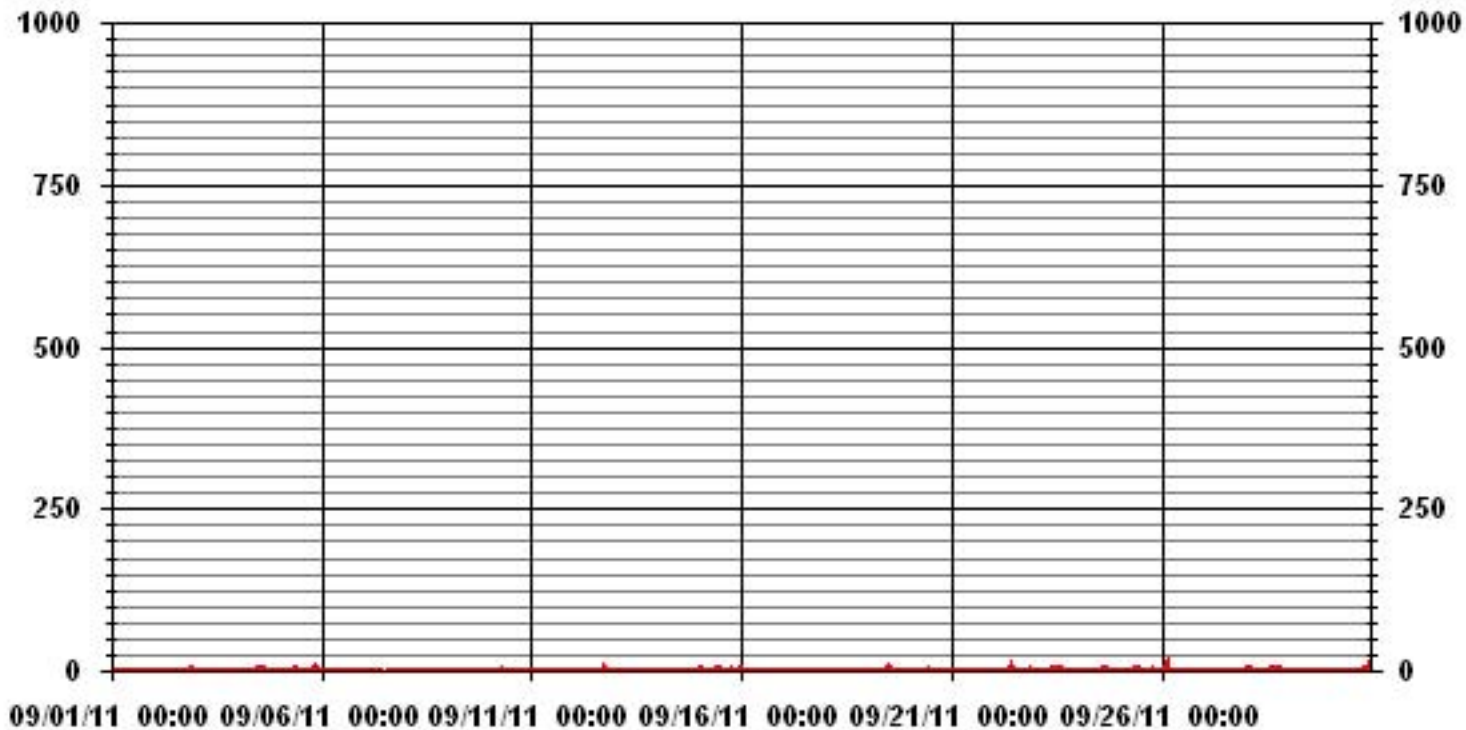
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	93					
MAXIMUM 1-HR AVERAGE:	12	PPB	@ HOUR(S)	23	ON DAY(S)	30
MAXIMUM 24-HR AVERAGE:	1.4	PPB			ON DAY(S)	28
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.98		MONTHLY AVERAGE:	0.27	PPB	



01 Hour Averages



— LICA30 SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

SEPTEMBER 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																													
1		1	1	1	1	0	1	1	3	1	1	1	1	IZS	0	1	1	1	1	1	1	1	1	1	1	1	3	1.0	24
2		1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	1	2	0	0	1	9	8	4	9	1.6	24
3		2	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	1	2	0.2	24	
4		1	0	0	1	1	1	1	1	1	1	1	IZS	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
5		1	1	1	1	1	1	1	4	IZS	13	2	0	0	0	0	0	0	0	0	3	12	1	1	2	13	2.0	24	
6		0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	24
7		1	1	1	0	1	0	IZS	1	1	1	1	C	C	C	C	C	1	0	0	0	0	0	0	0	1	0.5	24	
8		0	0	0	0	0	IZS	0	0	1	2	1	0	0	0	2	1	0	0	0	0	0	0	0	0	0	2	0.3	24
9		0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0	1	0.2	24
10		1	3	1	IZS	0	0	0	13	1	0	1	4	8	2	6	5	1	0	0	0	0	0	0	0	13	2.0	24	
11		0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	7	2	0	0	7	0.5	24	
12		1	IZS	2	1	1	0	1	1	0	0	0	0	5	0	0	4	7	12	15	0	0	0	0	0	15	2.2	24	
13		IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	IZS	1	0.2	24
14		0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	IZS	1	0.2	24	
15		1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	5	4	4	IZS	1	3	5	1.6	24	
16		3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	3	1.0	24	
17		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	1	0.8	24	
18		0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	IZS	0	0	0	0	0	0	2	0.3	24
19		1	0	0	0	0	0	0	1	1	8	5	9	3	1	0	0	0	IZS	4	5	0	1	1	1	1	9	1.8	24
20		2	3	1	1	1	0	1	1	1	3	3	1	1	1	1	1	IZS	0	0	0	1	1	1	1	3	1.1	24	
21		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	2	2	1	1	1	1	1	2	1.0	24	
22		1	1	1	1	1	1	1	1	1	16	7	2	1	5	IZS	2	1	1	1	1	3	3	1	1	16	2.3	24	
23		1	1	1	1	1	0	1	1	1	2	2	1	1	IZS	2	3	2	2	1	1	1	1	1	1	3	1.3	24	
24		1	1	1	1	1	1	1	1	1	1	1	6	IZS	1	5	1	1	1	1	1	1	1	1	1	1	6	1.4	24
25		1	1	0	1	1	1	1	1	4	5	5	IZS	1	2	1	0	1	2	2	1	0	0	1	0	5	1.4	24	
26		1	17	17	3	0	0	0	5	0	0	0	IZS	0	0	0	0	2	0	0	0	0	1	1	0	17	2.0	24	
27		0	0	0	0	1	1	1	0	1	IZS	1	1	4	1	1	0	8	0	0	0	0	0	0	0	8	0.9	24	
28		1	11	11	2	0	0	0	0	IZS	2	7	0	0	4	17	3	16	17	12	10	13	0	0	1	17	5.5	24	
29		0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	1	1	1	0	0	0	1	1	1	0.3	24	
30		1	1	1	1	1	1	IZS	0	0	0	0	1	1	1	0	1	6	1	6	5	1	17	20	20	2.9	24		
HOURLY MAX		3	17	17	3	1	1	1	13	4	16	7	9	8	5	17	5	16	17	15	10	13	9	17	20				
HOURLY AVG		0.9	1.7	1.6	0.7	0.6	0.5	0.5	1.4	0.8	2.1	1.6	1.2	1.2	1.0	1.6	1.1	1.7	1.9	1.8	1.3	1.8	1.0	1.3	1.4				

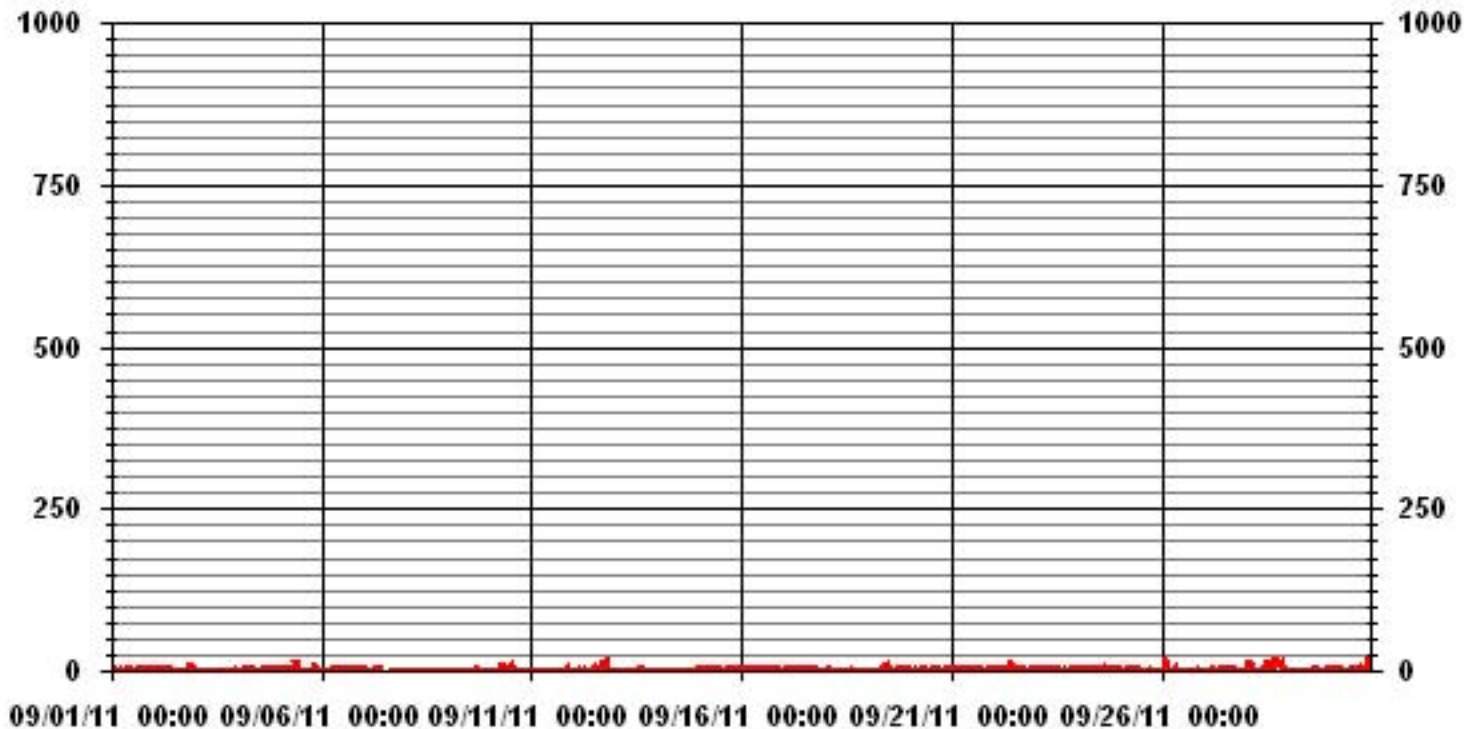
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	414
MAXIMUM INSTANTANEOUS VALUE:	20 PPB @ HOUR(S) 23 ON DAY(S) 30
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	2.56
OPERATIONAL TIME:	720 HRS

01 Hour Averages



— LICA30 SO2MAX PPB

LICA30
 SO2_ / WDR Joint Frequency Distribution (Percent)

September 2011

Distribution By % Of Samples

Logger Id : 30
 Site Name : LICA30
 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	3.21	3.50	3.36	3.36	1.16	3.50	8.18	10.23	11.54	15.05	11.40	5.55	7.45	6.43	3.65	2.33	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	3.21	3.50	3.36	3.36	1.16	3.50	8.18	10.23	11.54	15.05	11.40	5.55	7.45	6.43	3.65	2.33	

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	22	24	23	23	8	24	56	70	79	103	78	38	51	44	25	16	684
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	22	24	23	23	8	24	56	70	79	103	78	38	51	44	25	16	

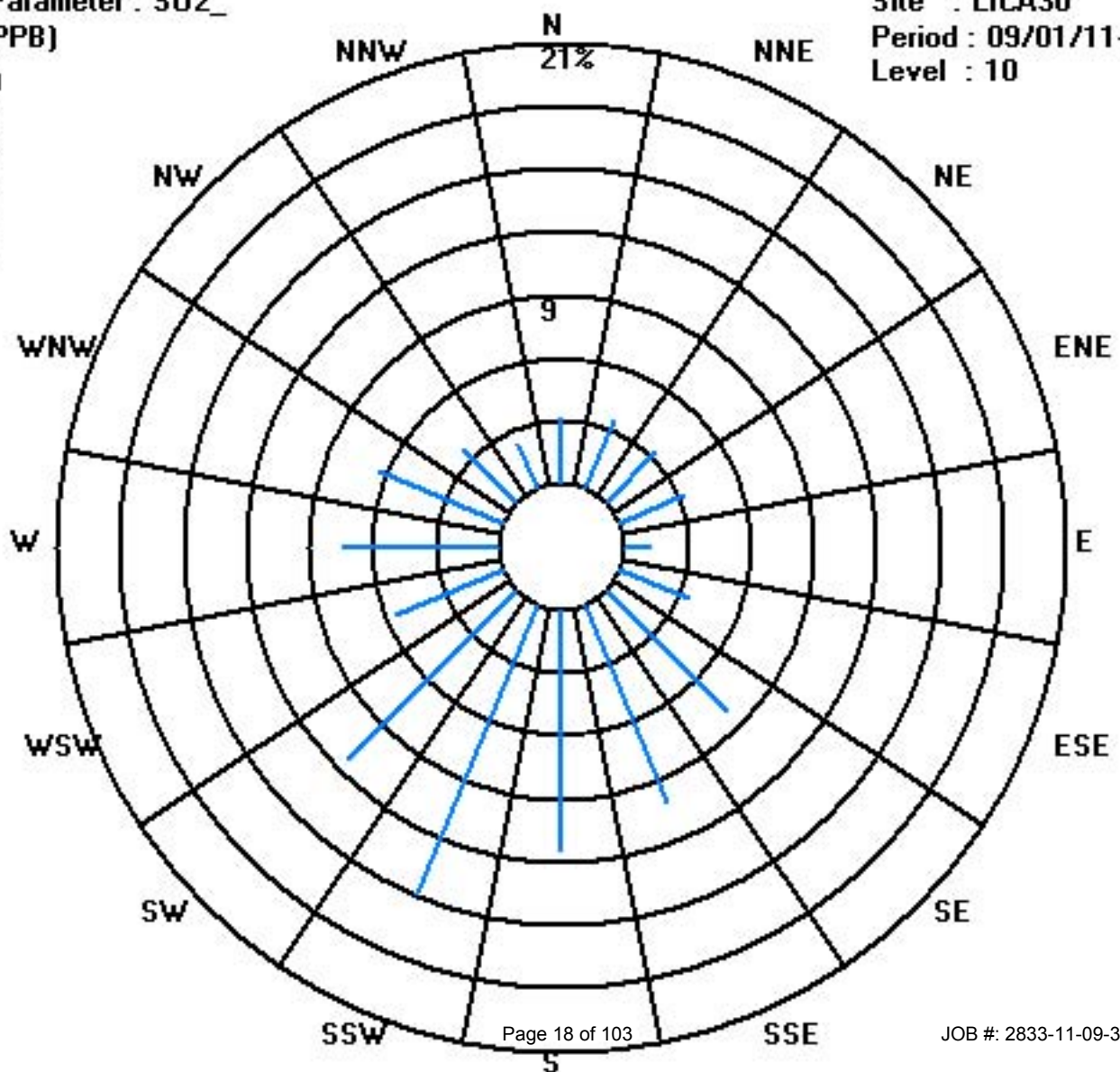
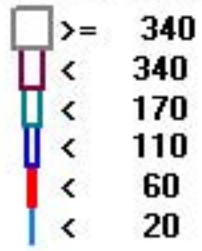
Calm : .00 %

Total # Operational Hours : 684

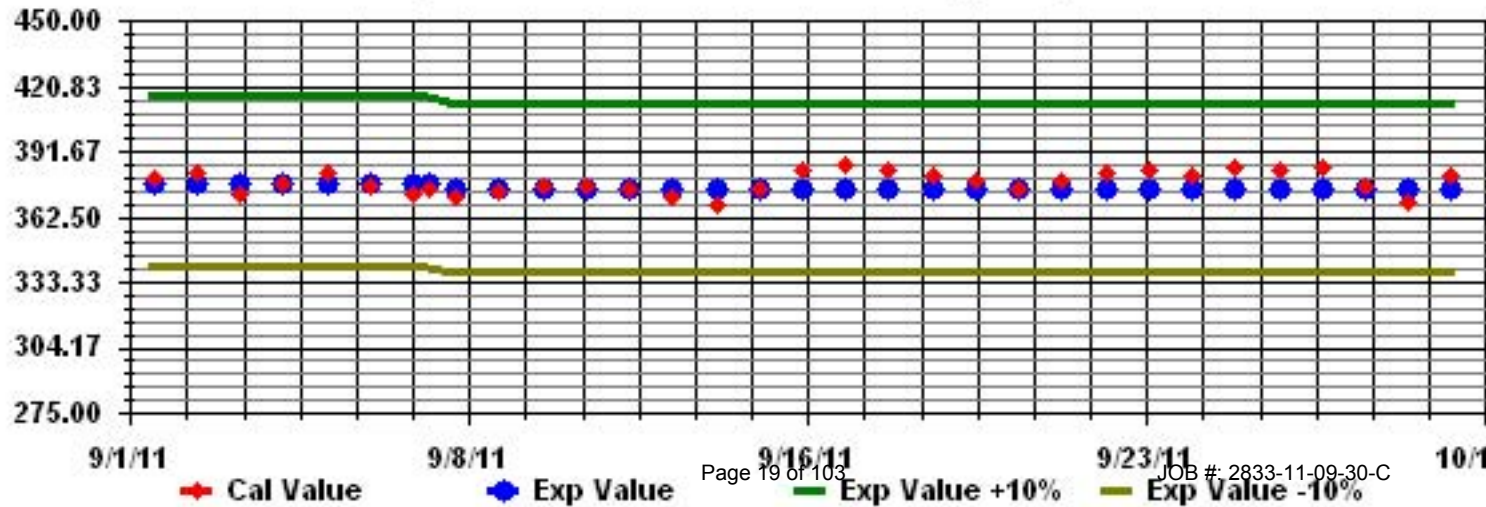
Class Limits (PPB)

Period : 09/01/11-09/30/11

Level : 10



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



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 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 MAX.	24-HR 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	1	1	1	1	1	1	2	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	2	0.6	24	
2	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	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	0.0	24
4	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
5	0	0	0	0	0	0	0	0	0	IZS	1	1	0	0	0	0	1	1	0	1	1	0	0	0	1	1	0.4	24	
6	1	0	0	0	0	1	2	IZS	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24	
7	0	0	0	0	0	0	0	IZS	1	0	0	1	1	1	1	M	0	0	0	0	0	0	1	0	1	1	0.3	23	
8	1	1	1	0	0	IZS	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0.3	24	
9	1	1	1	1	IZS	0	0	1	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0.5	24	
10	1	1	0	IZS	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	1	0.3	24
11	0	0	IZS	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0.2	24	
12	1	IZS	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.3	24	
13	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	
14	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	IZS	0	1	0.2	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	3	IZS	3	4	4	0.6	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	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	24	
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	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	0.0	24
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	0	0	0	0	1	0.1	24
21	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	IZS	1	0	1	0	0	1	0	1	0	1	1	0.3	24
22	1	0	1	0	1	1	1	1	0	1	1	1	0	0	IZS	0	0	1	0	1	1	1	1	0	1	1	1	0.6	24
23	1	1	1	2	2	1	1	0	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	2	0.6	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	0	0	1	0	1	0	0	0	0	0	1	0.2	24
25	0	1	0	0	1	1	1	0	1	3	1	IZS	1	1	2	0	0	1	3	3	0	0	0	0	0	3	0.9	24	
26	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	0.4	24	
27	1	0	1	2	1	1	1	1	1	1	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.4	24	
28	0	0	0	0	0	0	0	0	0	0	IZS	0	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	0.2	24
29	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	1	0.1	24	
30	0	0	0	1	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
HOURLY MAX		1	1	1	2	2	1	2	2	3	1	1	1	1	2	0	1	2	3	3	3	3	1	3	4				
HOURLY AVG		0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.4	0.3	0.3	0.4	0.1	0.3	0.2	0.3	0.0	0.1	0.3	0.3	0.3	0.2	0.2	0.3					

STATUS FLAG CODES

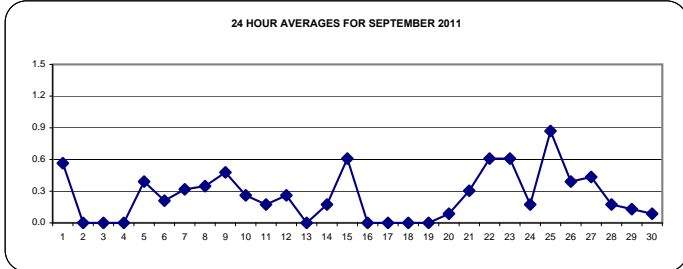
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

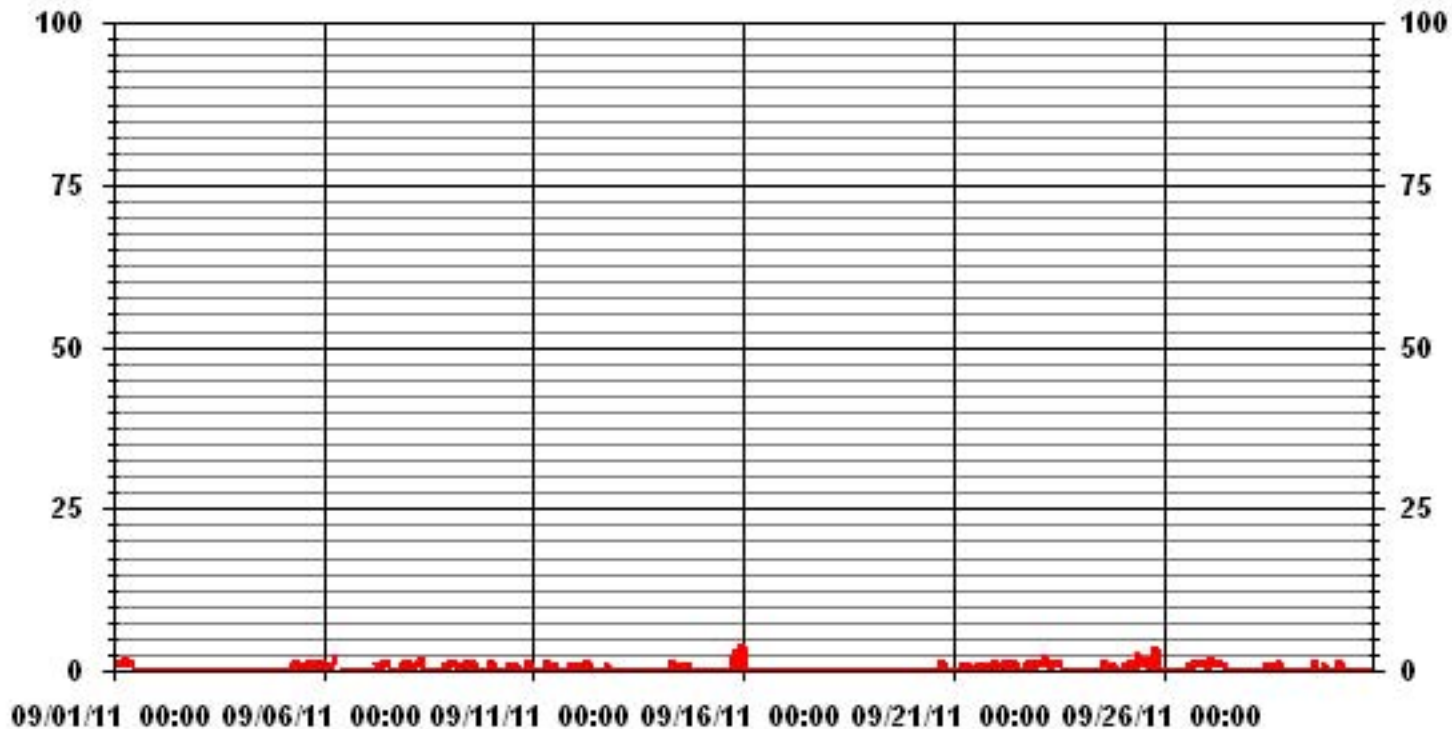
ALBERTA ENVIRONMENT:	1-HR	10	PPB	24-HR	3	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	153					
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	23	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	0.9	PPB			ON DAY(S)	25
	VAR-VARIOUS					
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.53		MONTHLY AVERAGE:	0.26	PPB	



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

SEPTEMBER 2011

HYDROGEN SULPHIDE MAX instantaneous maximum 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	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	1	1	1	1	1	3	1	1	1	2	IZS	0	0	0	0	0	0	0	0	0	0	0	3	0.7	24	
2	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	
3	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		
4	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	
5	0	0	0	0	0	0	1	1	IZS	2	1	1	1	1	1	2	2	1	1	1	1	1	0	1	2	0.8	24	
6	1	0	0	1	1	2	2	IZS	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	2	0.4	24		
7	0	0	0	0	0	0	IZS	2	1	1	1	1	1	1	M	M	0	1	1	0	1	1	1	1	2	0.7	22	
8	2	2	1	1	0	IZS	1	1	3	2	1	1	1	1	1	0	1	1	0	1	1	1	1	1	3	1.1	24	
9	1	1	1	2	IZS	1	1	1	1	1	1	1	2	1	1	1	1	1	0	0	1	1	1	1	2	1.0	24	
10	1	1	1	IZS	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	0.9	24	
11	0	0	IZS	1	0	1	1	1	1	1	0	1	1	0	0	1	1	0	0	0	1	1	1	1	1	0.6	24	
12	2	IZS	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	0	1	2	0.9	24	
13	IZS	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	1	1	0	IZS	1	0.3	24	
14	0	1	0	0	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	IZS	0	1	0.7	24	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	4	5	1	6	IZS	5	4	6	1.2	24	
16	2	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	1	0	0	IZS	1	0	0	2	0.3	24		
17	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	1	1	0	0	0	0	0	0	0	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	0	0	0	0	IZS	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	IZS	1	1	1	1	1	0	1	1	1	0.3	24	
21	1	0	0	1	1	1	0	0	1	1	1	0	0	1	1	IZS	1	1	1	1	1	1	1	1	1	0.7	24	
22	1	0	1	1	1	1	1	1	1	2	2	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	2	1.0	24
23	3	2	1	3	3	1	1	1	1	1	1	1	1	IZS	0	0	1	1	0	1	1	0	0	0	3	1.0	24	
24	0	0	0	0	0	1	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	1	0.5	24	
25	1	1	1	1	1	1	1	0	3	3	2	IZS	1	2	3	3	1	3	4	5	2	0	1	1	5	1.8	24	
26	0	0	3	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	3	0.7	24	
27	1	1	1	2	2	2	1	1	2	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.6	24	
28	0	1	0	0	0	0	0	0	IZS	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0.6	24	
29	1	1	1	1	1	0	0	IZS	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0.9	24	
30	0	1	1	1	1	1	IZS	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.3	24	
HOURLY MAX	3	2	3	3	3	2	2	3	3	3	2	2	2	2	3	3	2	4	5	5	6	1	5	4				
HOURLY AVG	0.6	0.4	0.6	0.7	0.5	0.6	0.5	0.6	0.7	0.8	0.6	0.5	0.5	0.5	0.5	0.6	0.8	0.8	0.6	0.9	0.5	0.6	0.7					

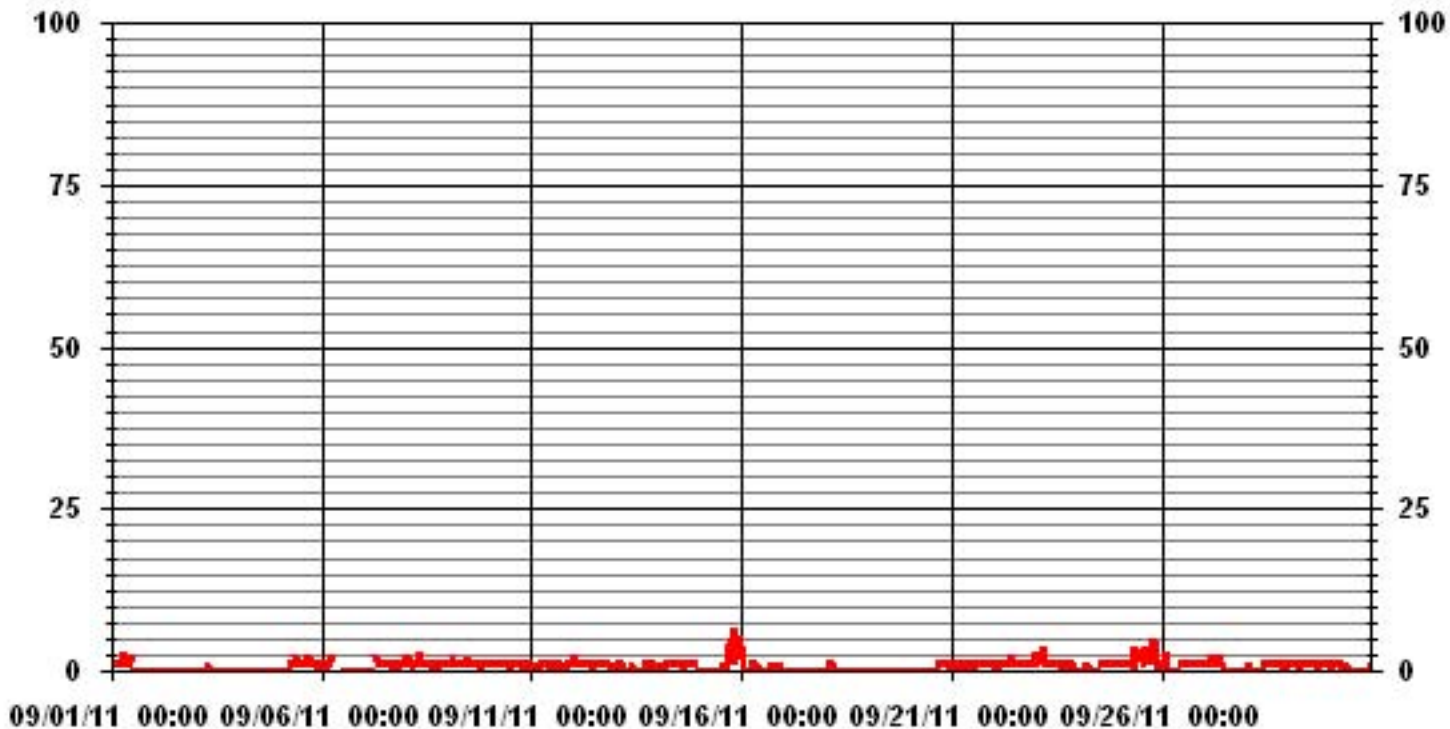
STATUS FLAG CODES

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:	341					
MAXIMUM INSTANTANEOUS VALUE:	6	PPB	@ HOUR(S)	20	ON DAY(S)	15
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.77					

01 Hour Averages



— LICA30 H2S MAX PPB

LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

September 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	3.22	3.51	3.36	3.36	1.02	2.78	8.19	10.24	11.56	14.93	11.42	5.56	7.46	6.44	3.66	2.34	99.12
< 10	.00	.00	.00	.00	.14	.73	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.87
< 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	3.22	3.51	3.36	3.36	1.17	3.51	8.19	10.24	11.56	14.93	11.42	5.56	7.46	6.44	3.66	2.34	

Calm : .00 %

Total # Operational Hours : 683

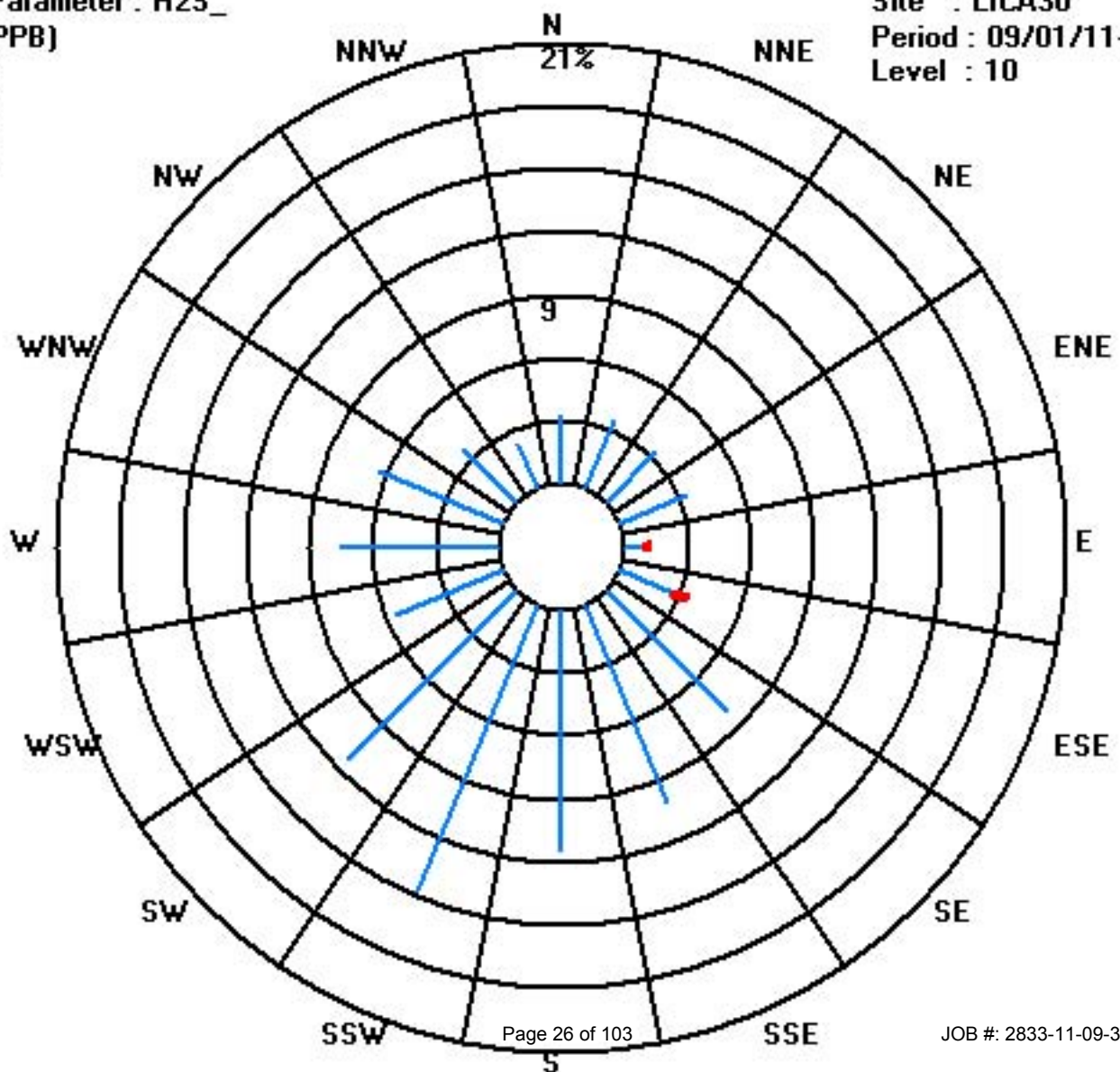
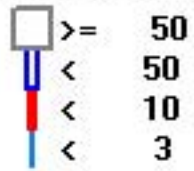
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	22	24	23	23	7	19	56	70	79	102	78	38	51	44	25	16	677
< 10					1	5											6
< 50																	
>= 50																	
Totals	22	24	23	23	8	24	56	70	79	102	78	38	51	44	25	16	

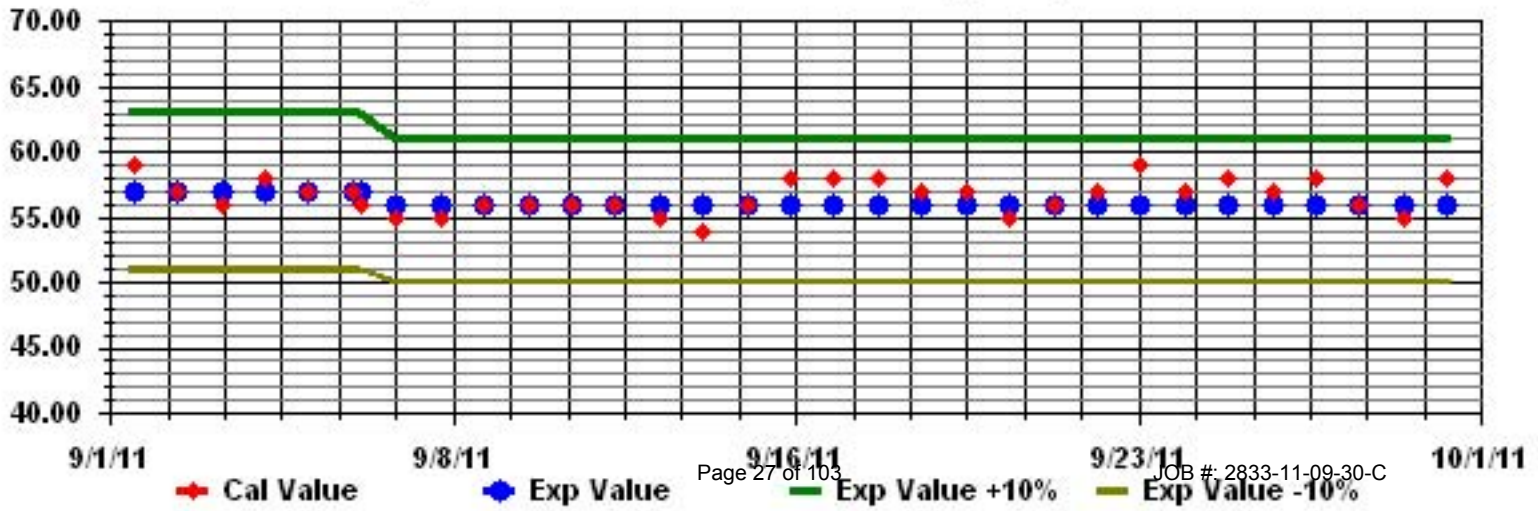
Calm : .00 %

Total # Operational Hours : 683

Class Limits (PPB)



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

SEPTEMBER 2011

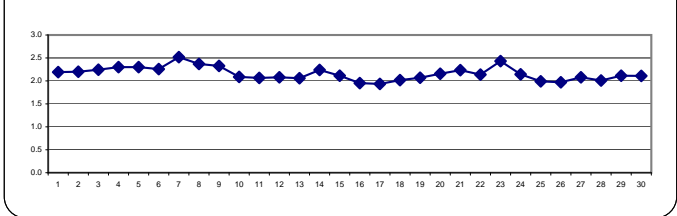
TOTAL HYDROCARBONS hourly averages in ppm

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

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

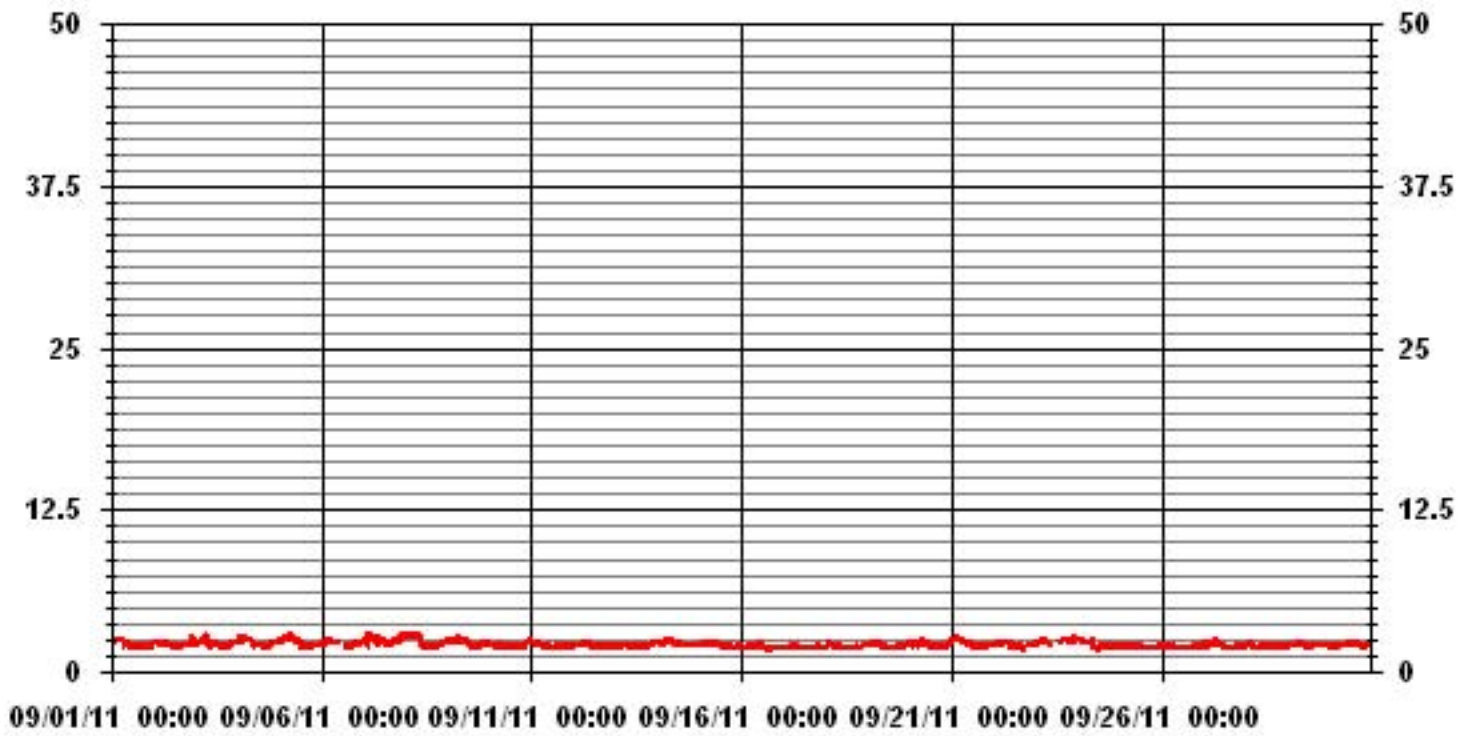
24 AVERAGES FOR SEPTEMBER 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	676		
MAXIMUM 1-HR AVERAGE:	3.0 PPM @ HOUR(S) 3, 0 ON DAY(S) 7, 8		
MAXIMUM 24-HR AVERAGE:	2.5 PPM ON DAY(S) 7		
	VAR- VARIOUS		
IZS CALIBRATION TIME:	31 HRS	OPERATIONAL TIME:	718 HRS
MONTHLY CALIBRATION TIME:	11 HRS	AMD OPERATION UPTIME:	99.7 %
STANDARD DEVIATION:	0.21	MONTHLY AVERAGE:	2.15 PPM

01 Hour Averages



— LICA30 THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 2011

TOTAL HYDROCARBONS MAX instantaneous maximum in ppr

MST

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	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	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	2.3	2.4	2.6	2.6	2.6	2.6	2.6	2.6	2.3	2.5	2.3	2.2	IZS	2	2	2	2	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.7	2.7	2.3	24
2	2.6	2.3	2.3	2.4	2.3	2.2	2.3	2.4	2.4	2.3	2.1	IZS	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.9	2.9	2.9	2.3	24
3	2.4	2.2	2.3	2.4	2.5	2.9	2.9	2.9	2.4	2.2	IZS	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.9	2.3	2.3	24
4	2.4	2.4	2.7	2.7	2.7	2.7	2.7	2.6	2.5	IZS	2.2	2.2	2.2	2.1	2.1	2.1	2	2	2.1	2.2	2.3	2.3	2.3	2.4	2.7	2.3	24	
5	2.4	2.6	2.6	2.7	2.7	2.9	3	2.9	IZS	2.6	2.6	2.6	2.2	2	2	2	2	2	2.1	2.3	2.2	2.1	2.4	2.4	3	2.4	24	
6	2.2	2.6	2.3	2.6	2.6	2.7	2.7	IZS	2.3	2.4	2.5	C	C	C	C	2	2	2	2.2	2.5	2.5	2.3	2.3	2.4	2.7	2.4	24	
7	2.5	2.7	2.7	3.4	2.8	2.9	IZS	3.3	2.6	2.4	2.6	2.7	2.4	2.3	M	M	2.4	2.4	2.5	2.9	2.8	2.9	3	3.2	3.4	2.7	22	
8	3.1	3.4	3.4	3.1	3.4	IZS	2.9	2.9	3	2.3	2.1	2.1	2.2	2.1	2.1	2	2	2	2.1	2.2	2.3	2.7	2.7	2.5	3.4	2.5	24	
9	2.9	2.5	3	3.1	IZS	2.5	3.3	3.2	2.5	2.6	2.5	2.7	2.7	2.3	2.2	2.1	2	2.1	2.1	2.3	2.2	2.2	2.4	2.4	3.3	2.5	24	
10	2.3	2.1	2.1	IZS	2.2	2.3	2.3	2.2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.4	2.5	2.3	2.5	2.5	2.1	24	
11	2.5	2.3	IZS	2.4	2.3	2.2	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.2	2.1	2.1	2.5	2.1	24	
12	2.4	IZS	2.3	2.1	2.2	2.3	2.4	2.3	2.3	2.3	2.3	2.2	2.2	2.4	2.2	2.1	2.1	2.1	2.1	2	2	2.1	2.1	2.1	2.4	2.2	24	
13	IZS	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	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.4	IZS	2.4	2.1	24	
14	2.3	2.3	2.3	2.2	2.4	2.4	2.6	2.6	2.5	2.4	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.6	2.3	24	
15	2.2	2.1	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	2.1	2.1	2.1	2.3	2.3	2.1	IZS	2	2.1	2.3	2.2	24
16	2.1	2	1.9	2	2.1	2	2	2	2	2.1	2.2	2.2	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	1.9	1.9	2.2	2.0	24
17	1.9	1.9	2	2	2	2	2.1	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	2	2	1.9	2	2.1	2.0	24
18	2.1	2.3	2.3	2.2	2.2	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	2	IZS	2.1	2.1	2.2	2.1	2.2	2.3	2.0	24	
19	2.2	2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2	2	2	2	1.9	IZS	2.1	2	2.5	2.2	2.2	2.3	2.5	2.2	24	
20	2.2	2.2	2.2	2.2	2.2	2.3	2.7	2.6	2.2	2.3	2.3	2.1	2.1	2.1	2.1	IZS	2	2	2	2.1	2.1	2.1	2.2	2.3	2.7	2.2	24	
21	2.4	2.6	2.7	2.6	2.6	2.5	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2	2	IZS	2	2	2	2.1	2.1	2.1	2.1	2.1	2.7	2.3	24	
22	2.2	2.2	2.2	2.2	2.2	2.4	2.4	2.4	2.4	2.5	2.2	1.9	1.9	2.2	IZS	2.4	1.9	C	M	C	C	2.4	2.3	2.3	2.5	2.2	23	
23	2.4	2.4	2.6	2.5	2.4	2.5	2.6	2.3	C	C	C	C	2.4	IZS	2.4	2.7	2.7	2.5	2.5	2.5	2.6	2.7	2.7	2.7	2.7	2.5	24	
24	2.6	2.6	2.4	2.4	2.4	2.4	2.5	2.6	2.2	2	2	2	IZS	2	2	2	2	2	2.1	2.2	2.1	2.1	2.3	2.1	2.6	2.2	24	
25	2	2.1	2.1	2.1	2.2	2.2	2.1	2	2.3	2.2	2.1	IZS	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.1	2.3	2.0	24	
26	2.1	2.1	2	2	2.1	2	2	2.1	2	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.1	2.1	2.1	2	2	2.1	2.0	24	
27	2.1	2.3	2.4	2.3	2.3	2.4	2.5	2.5	2.4	IZS	2.2	2.1	1.9	1.9	1.9	1.9	1.9	2.1	1.9	2	2	2.1	2	2	2.1	2.5	2.1	24
28	2.1	2.2	2.2	2.2	2	2	2	2	IZS	2	2	2	2	2	2.1	2	2	2.1	2.1	2	2.1	2	2.1	2.1	2.2	2.1	24	
29	2.2	2.2	2.1	2.4	2.2	2.3	2.5	IZS	2.4	2.2	2.2	2.1	2.1	2.1	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.2	24
30	2.1	2.1	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	2.3	2.2	2.1	2.1	2.2	2.1	2.4	2.3	2.4	2.2	24
HOURLY MAX	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3			
HOURLY AVG	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3			

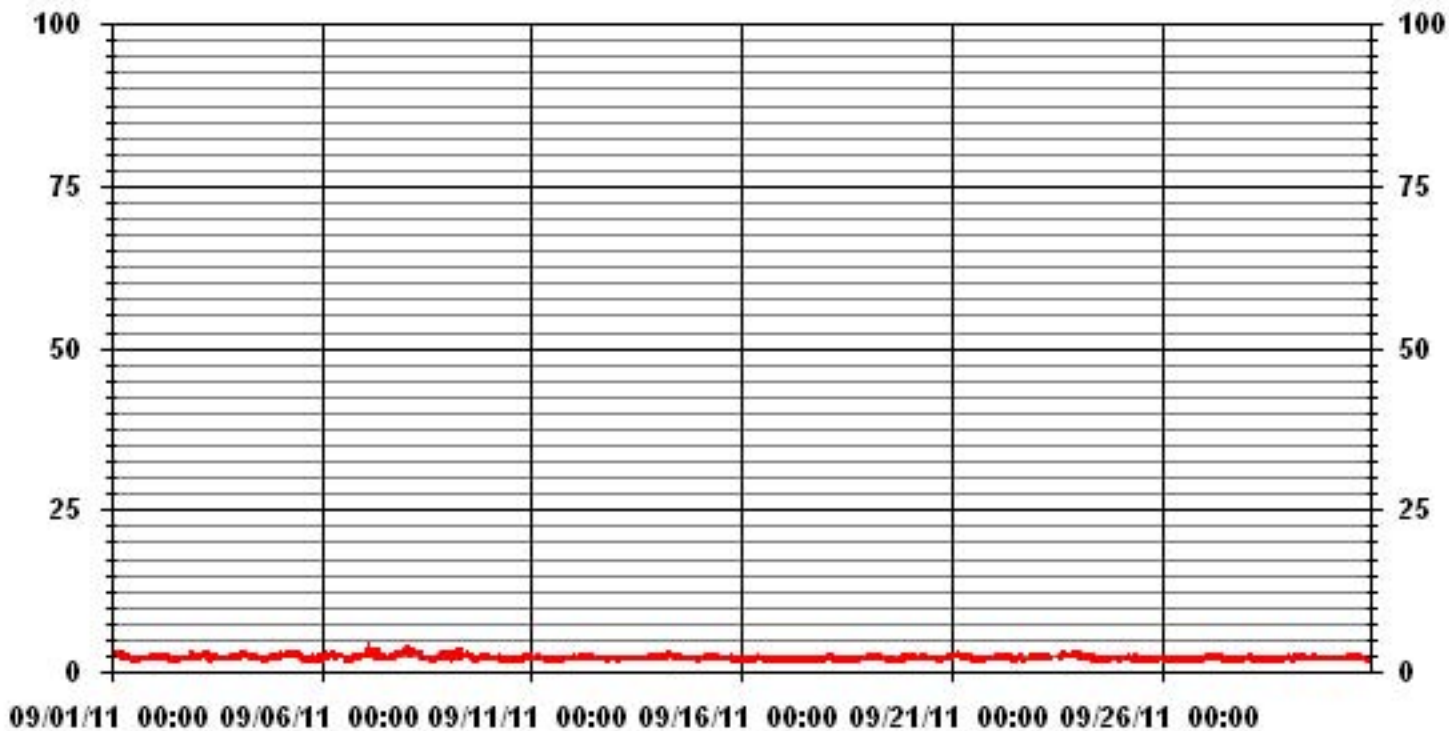
STATUS FLAG CODES

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
BB - BELOW BACKGROUND OF 1.5 PPM	

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	675
MAXIMUM INSTANTANEOUS VALUE:	3.4 PPM @ HOUR(S) VAR ON DAY(S) 7, 8
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	11 HRS
STANDARD DEVIATION:	0.27
OPERATIONAL TIME:	717 HRS

01 Hour Averages



— LICA30 THCMAX PPM

LICA30
 THC / WDR Joint Frequency Distribution (Percent)

September 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	3.25	3.55	3.40	3.40	1.18	3.55	8.00	10.22	11.40	14.96	11.25	5.48	7.40	6.51	3.70	2.37	99.70
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.14	.00	.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	3.25	3.55	3.40	3.40	1.18	3.55	8.00	10.22	11.55	14.96	11.40	5.48	7.40	6.51	3.70	2.37	

Calm : .00 %

Total # Operational Hours : 675

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	22	24	23	23	8	24	54	69	77	101	76	37	50	44	25	16	673
< 10.0									1		1						2
< 50.0																	
>= 50.0																	
Totals	22	24	23	23	8	24	54	69	78	101	77	37	50	44	25	16	

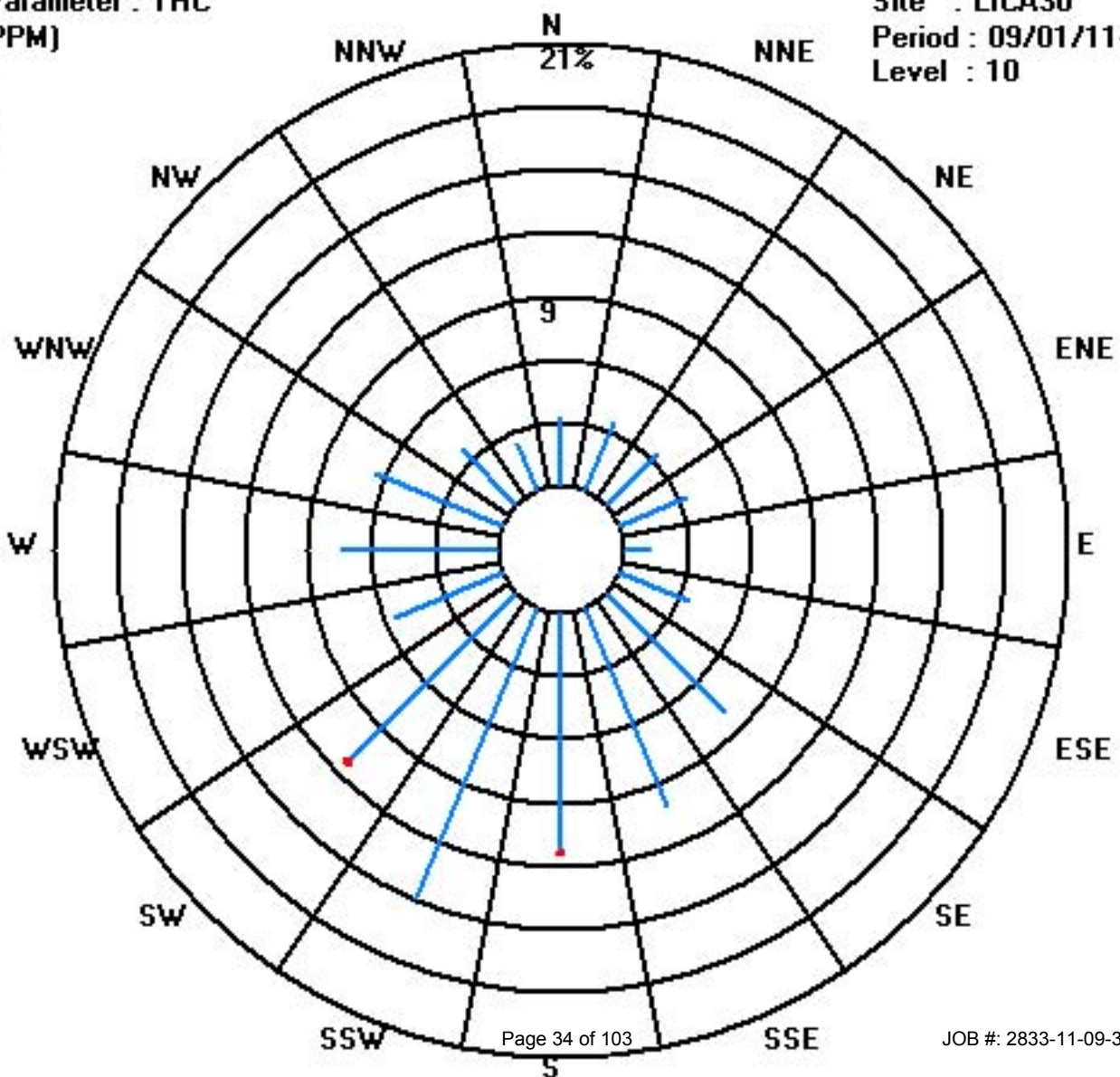
Calm : .00 %

Total # Operational Hours : 675

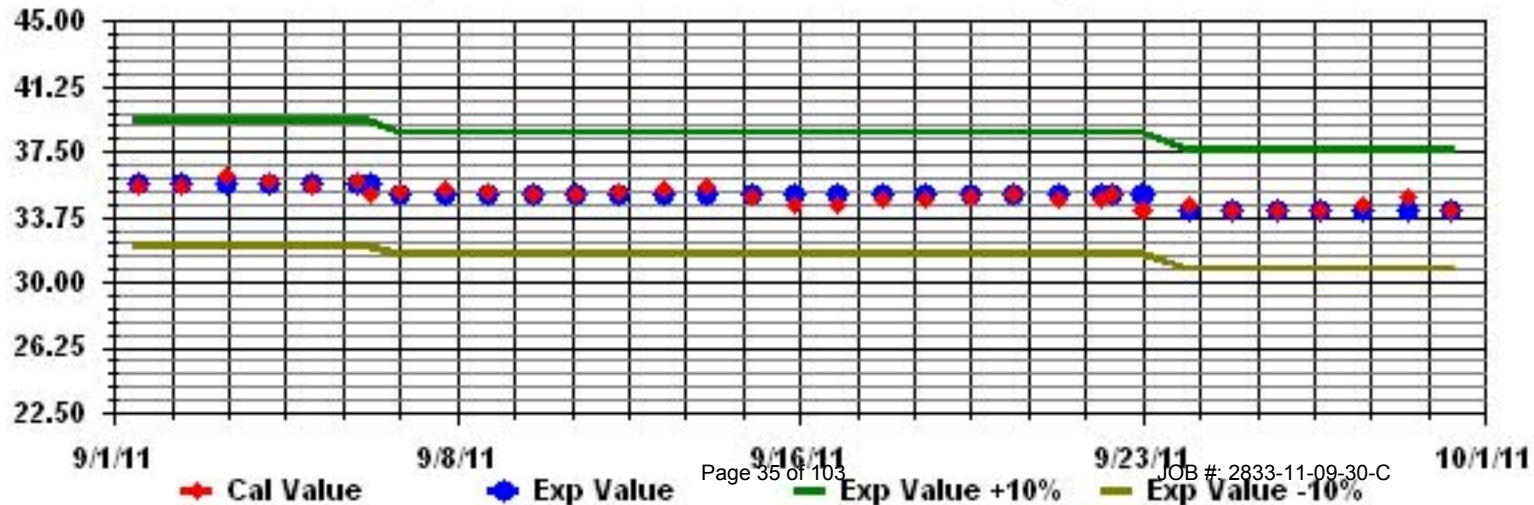
Class Limits (PPM)

Period : 09/01/11-09/30/11

Level : 10



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



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 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 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	4	1	5	5	3	2	4	8	2	1	1	0	IZS	0	0	0	0	0	0	0	1	0	0	0	8	1.6	24	
2	0	0	0	0	0	0	1	2	1	0	0	IZS	1	1	1	1	2	6	3	4	13	9	13	4	13	2.7	24	
3	4	2	2	2	2	3	5	4	2	2	IZS	2	1	1	1	1	1	1	1	1	1	1	2	2	5	1.9	24	
4	2	2	3	3	3	3	3	2	2	IZS	2	2	2	1	1	1	1	1	1	2	2	2	2	2	3	2.0	24	
5	3	3	2	2	2	3	5	9	IZS	10	5	2	1	1	1	1	1	1	1	6	17	3	3	13	17	4.1	24	
6	3	2	2	2	2	3	5	IZS	C	C	C	C	C	C	C	1	2	2	2	2	2	3	3	3	5	2.4	24	
7	4	4	4	3	2	2	IZS	2	3	2	2	2	2	2	M	2	2	2	2	1	1	2	1	1	4	2.2	23	
8	1	1	1	1	1	IZS	5	3	8	7	3	1	0	0	1	1	0	0	0	0	0	1	0	0	8	1.5	24	
9	0	0	0	0	IZS	2	5	5	5	4	3	3	2	2	1	1	1	1	1	2	3	3	4	3	5	2.2	24	
10	4	13	3	IZS	1	3	5	7	1	1	1	2	4	1	3	2	1	0	0	1	1	1	2	2	13	2.6	24	
11	2	1	IZS	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	2	4	5	7	1	1	7	1.4	24	
12	8	IZS	7	3	6	2	6	3	2	2	2	0	1	1	1	2	2	8	4	1	1	2	1	1	8	2.9	24	
13	IZS	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0.0	24
14	1	1	2	4	3	7	4	2	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	IZS	2	7	1.8	24
15	3	2	2	1	3	2	2	2	2	2	3	2	2	1	1	1	1	2	7	11	7	IZS	1	5	11	2.8	24	
16	4	0	0	0	0	0	1	0	1	1	2	1	0	0	0	0	0	0	0	0	0	IZS	1	1	1	4	0.6	24
17	2	1	2	4	4	4	4	3	2	1	0	0	0	0	0	0	0	1	1	IZS	0	0	0	0	4	1.3	24	
18	0	6	4	4	1	1	1	1	0	0	0	0	0	0	0	0	0	1	IZS	1	1	1	2	2	6	1.1	24	
19	2	2	2	1	1	2	4	4	3	6	5	8	2	1	0	0	0	0	IZS	3	3	1	1	7	9	2.9	24	
20	5	8	6	7	8	8	9	6	4	6	6	3	2	2	2	1	IZS	1	1	1	2	5	3	2	9	4.3	24	
21	4	4	4	4	3	4	3	2	2	2	2	1	1	1	1	IZS	1	1	2	1	1	1	1	1	4	2.0	24	
22	2	2	2	2	2	6	5	3	5	10	4	1	1	4	IZS	2	3	1	1	3	5	6	3	2	10	3.3	24	
23	1	1	1	1	1	1	2	2	3	3	3	3	3	IZS	4	6	5	3	2	1	1	1	2	3	6	2.3	24	
24	7	6	3	3	3	5	5	3	2	2	1	1	IZS	1	2	2	2	2	2	2	1	1	1	1	7	2.5	24	
25	1	1	1	1	1	1	1	1	5	5	5	IZS	4	3	2	1	2	3	5	4	1	1	2	2	5	2.3	24	
26	3	8	13	3	3	3	4	6	7	2	IZS	1	0	0	1	1	0	1	1	1	2	3	1	1	13	2.8	24	
27	2	2	2	3	5	9	10	8	7	IZS	3	1	1	0	0	0	4	0	0	1	1	0	0	0	10	2.6	24	
28	4	15	13	2	0	1	2	2	IZS	1	2	0	0	3	6	1	6	9	6	5	5	0	0	4	15	3.8	24	
29	7	5	1	0	1	2	3	IZS	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	7	1.0	24	
30	0	0	0	0	0	1	IZS	1	2	2	1	1	2	1	2	1	3	3	2	3	9	2	7	18	18	2.7	24	
HOURLY MAX	8	15	13	7	8	9	10	9	8	10	6	8	4	4	6	6	6	9	7	11	17	9	13	18				
HOURLY AVG	2.9	3.2	3.0	2.1	2.1	2.8	3.8	3.3	2.7	2.7	2.1	1.4	1.3	1.0	1.2	1.1	1.4	1.9	1.8	2.1	2.9	2.0	2.2	2.9				

STATUS FLAG CODES

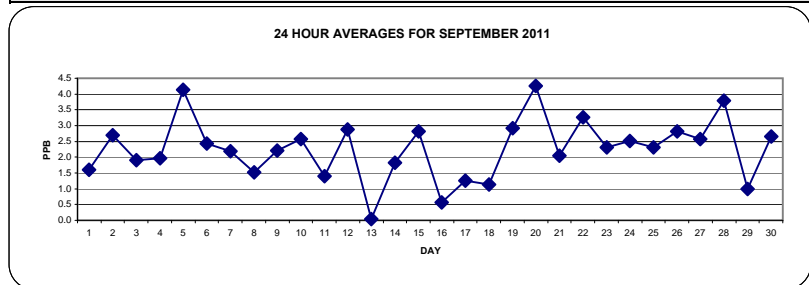
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

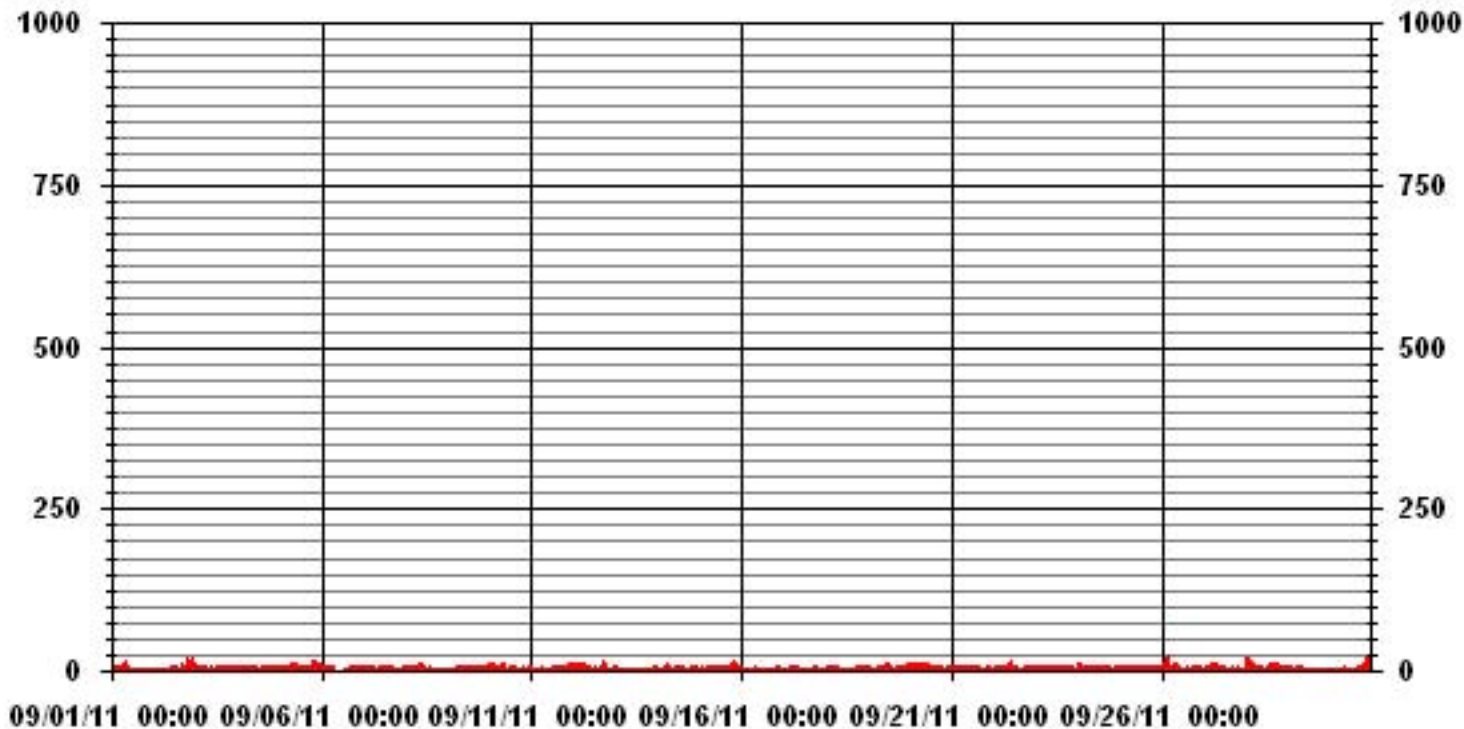
ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	547					
MAXIMUM 1-HR AVERAGE:	18	PPB	@ HOUR(S)	23	ON DAY(S)	30
MAXIMUM 24-HR AVERAGE:	4.3	PPB			ON DAY(S)	2
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	2.48		MONTHLY AVERAGE:	2.25	PPB	



01 Hour Averages



— LICA30 IIO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 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	2	10	10	4	3	5	12	6	2	1	1	IZS	1	1	1	0	1	0	1	3	1	1	1	12	3.2	24	
2	1	1	0	0	0	0	3	3	2	1	0	IZS	1	2	2	1	6	12	5	9	16	18	17	11	18	4.8	24	
3	12	6	2	2	3	4	6	8	3	3	IZS	3	3	2	2	2	1	1	1	2	2	2	2	2	12	3.2	24	
4	2	3	4	4	4	4	4	3	3	IZS	3	2	2	2	2	2	2	2	2	2	3	3	3	3	4	2.8	24	
5	3	4	3	3	2	5	7	16	IZS	20	10	3	2	2	2	2	2	2	2	10	26	7	7	19	26	6.9	24	
6	4	3	3	2	3	4	14	IZS	C	C	C	C	C	C	C	2	2	2	2	4	4	3	3	14	3.6	24		
7	4	6	6	4	3	3	IZS	4	5	4	3	3	2	2	M	M	3	3	3	2	2	2	2	6	3.2	22		
8	1	1	2	2	2	IZS	11	5	11	12	4	2	1	2	4	4	1	0	0	0	1	2	1	1	12	3.0	24	
9	1	1	1	1	IZS	6	9	9	7	5	4	4	4	2	3	3	2	2	2	3	4	4	5	5	9	3.8	24	
10	10	20	10	IZS	2	5	6	18	3	1	1	5	9	3	9	7	2	1	1	1	1	2	3	3	20	5.3	24	
11	2	2	IZS	1	1	1	12	1	1	1	1	1	1	1	1	1	1	2	5	8	21	14	3	1	21	3.6	24	
12	15	IZS	10	5	9	6	9	7	2	2	3	1	7	1	2	8	10	12	14	2	2	2	2	15	5.8	24		
13	IZS	0	0	0	0	0	4	0	0	0	0	0	1	3	2	2	2	0	0	1	0	0	1	IZS	4	0.7	24	
14	1	2	5	5	5	26	8	3	3	2	2	2	2	2	2	2	2	3	2	2	2	2	IZS	2	26	3.8	24	
15	3	3	2	2	4	3	2	3	3	3	3	3	2	2	2	2	2	3	13	14	13	IZS	3	11	14	4.4	24	
16	11	1	0	0	1	1	2	1	2	3	3	2	0	0	0	1	0	2	1	IZS	2	1	2	11	1.7	24		
17	3	3	4	6	8	6	6	6	3	2	1	1	1	1	1	1	2	2	IZS	1	1	0	0	8	2.6	24		
18	2	9	9	7	2	2	2	1	1	0	0	0	0	0	1	0	3	3	IZS	3	2	4	4	2	9	2.5	24	
19	4	3	2	2	2	3	7	21	5	9	10	11	6	2	2	1	1	IZS	10	12	3	3	15	13	21	6.4	24	
20	10	12	9	10	11	10	10	8	5	8	8	4	3	4	2	2	IZS	2	1	2	4	6	5	4	12	6.1	24	
21	4	4	5	5	4	5	4	3	3	3	2	2	2	1	2	IZS	1	3	4	2	2	2	2	5	2.9	24		
22	2	2	3	2	3	30	9	6	9	14	7	2	2	16	IZS	4	31	4	2	5	9	10	6	3	31	7.9	24	
23	2	2	2	2	1	2	3	3	4	4	5	4	4	IZS	5	7	6	4	2	2	2	2	3	7	7	3.4	24	
24	10	7	5	4	5	7	7	4	3	2	1	8	IZS	2	7	3	2	2	2	2	2	2	1	10	3.9	24		
25	1	1	1	1	1	1	1	1	10	9	9	IZS	6	6	4	3	5	6	7	6	2	2	3	10	3.8	24		
26	5	25	24	5	7	4	8	19	20	5	IZS	3	1	1	1	4	1	1	2	2	5	5	2	2	25	6.6	24	
27	3	3	3	3	7	14	14	10	8	IZS	4	3	8	3	2	0	11	0	1	3	2	1	1	1	14	4.6	24	
28	15	24	23	10	1	7	5	14	IZS	5	9	12	1	7	15	5	15	19	17	12	15	2	2	9	24	10.6	24	
29	11	11	2	1	1	9	5	IZS	4	2	1	1	0	1	1	1	1	1	1	1	1	1	1	1	11	2.6	24	
30	1	1	1	1	1	1	IZS	2	2	2	2	2	3	2	2	2	6	8	3	15	15	7	22	24	24	5.4	24	
HOURLY MAX	15	25	24	10	11	30	14	21	20	20	10	12	9	16	15	8	31	19	17	15	26	18	22	24				
HOURLY AVG	5.2	5.6	5.2	3.4	3.3	5.9	6.5	6.8	4.7	4.6	3.6	3.2	2.8	2.6	2.9	2.6	4.2	3.5	3.7	4.4	5.7	3.9	4.2	4.8				

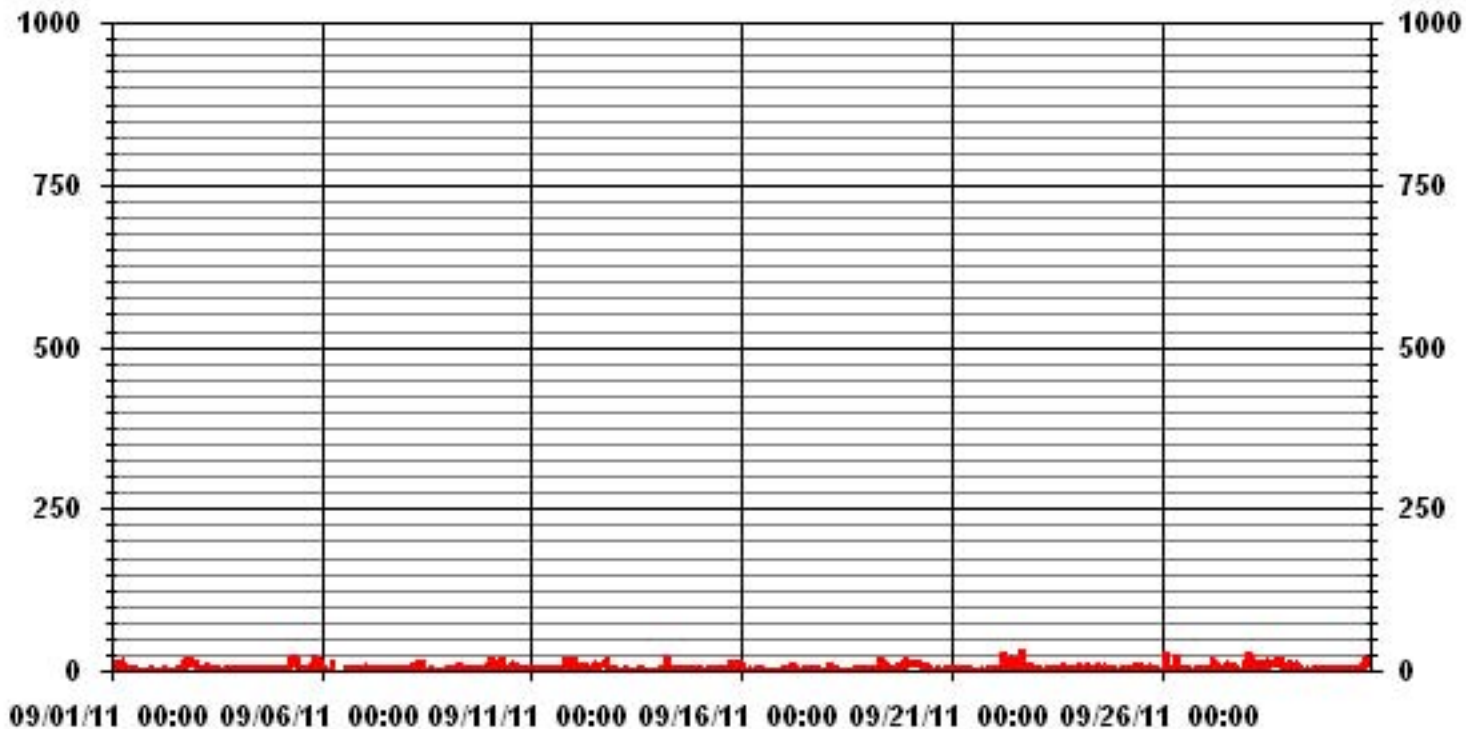
STATUS FLAG CODES

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:	639					
MAXIMUM INSTANTANEOUS VALUE:	31	PPB	@ HOUR(S)	16	ON DAY(S)	22
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	4.73					

01 Hour Averages



— LICA30 IIO2MAX PPB

LICA30
 NO2_ / WDR Joint Frequency Distribution (Percent)

September 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	3.23	3.52	3.38	3.38	1.17	3.52	8.23	10.29	11.61	14.70	11.47	5.44	7.50	6.47	3.67	2.35	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	3.23	3.52	3.38	3.38	1.17	3.52	8.23	10.29	11.61	14.70	11.47	5.44	7.50	6.47	3.67	2.35	

Calm : .00 %

Total # Operational Hours : 680

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	22	24	23	23	8	24	56	70	79	100	78	37	51	44	25	16	680
< 110																	
< 210																	
>= 210																	
Totals	22	24	23	23	8	24	56	70	79	100	78	37	51	44	25	16	

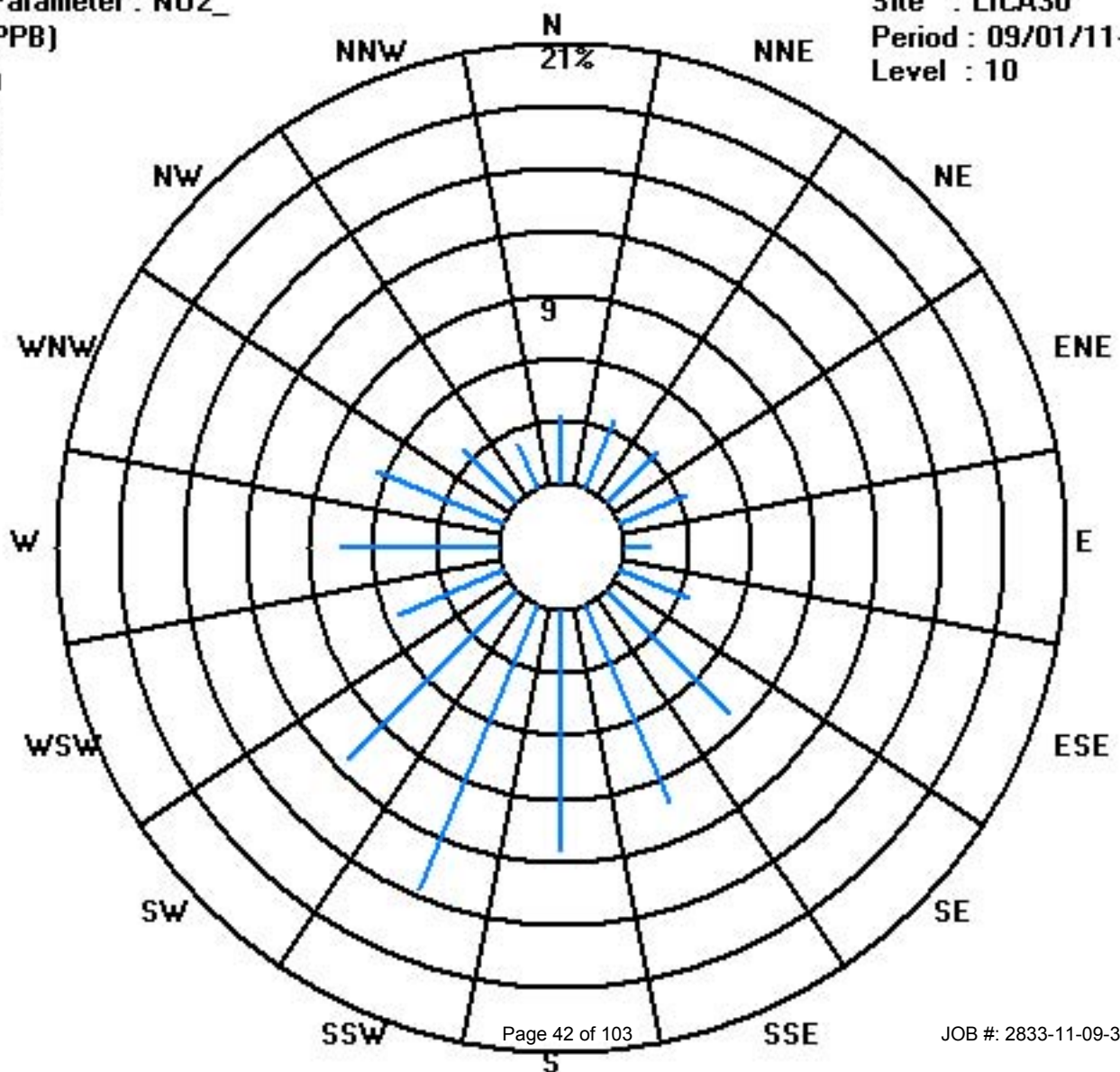
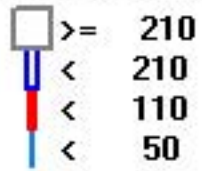
Calm : .00 %

Total # Operational Hours : 680

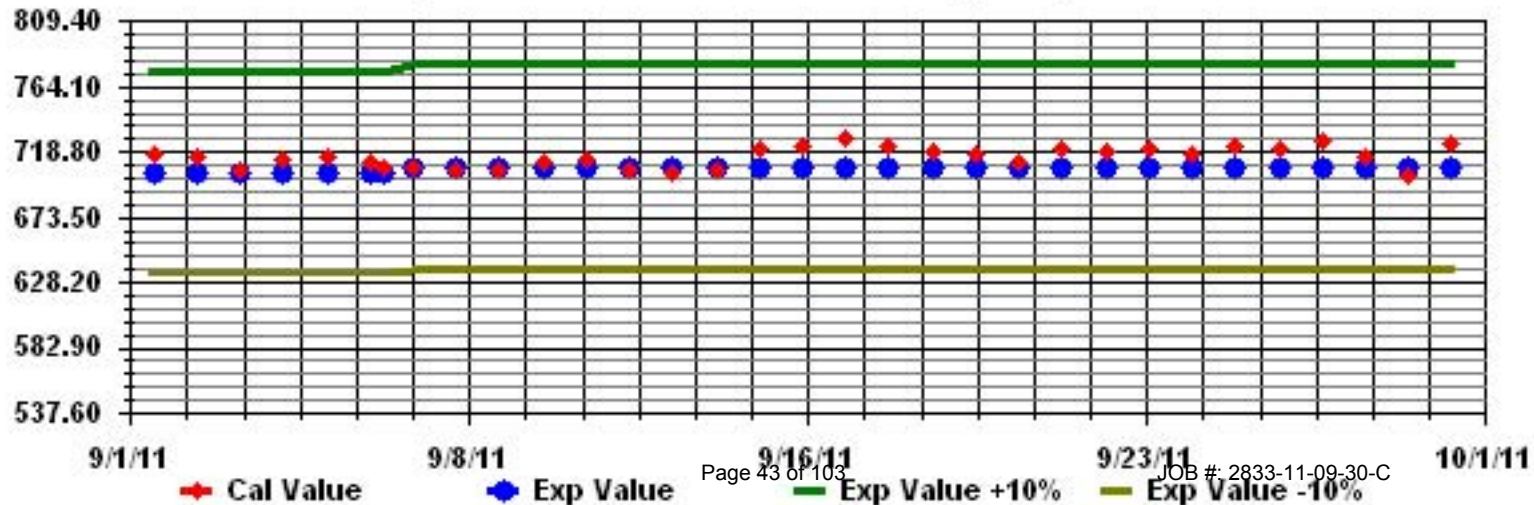
Class Limits (PPB)

Period : 09/01/11-09/30/11

Level : 10



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



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOICATION - MASKWA

SEPTEMBER 2011

NITRIC OXIDE hourly averages in ppb

MST

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	DAILY 24-HOUR		
	MAX.	AVG.	RDGS.																								
1	1	1	1	1	1	1	3	18	3	2	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	18	1.5	24
2	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	2	5	0	5	0.3	24
3	0	0	0	0	0	0	1	2	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24
4	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
5	0	0	0	0	0	1	1	8	IZS	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0.9	24
6	0	0	0	0	0	0	7	IZS	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	7	0.4	24
7	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	M	0	0	0	0	0	0	0	0	0	0	0.0	23
8	0	0	0	0	0	IZS	8	3	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0.9	24
9	0	0	0	0	IZS	1	3	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0.5	24
10	0	0	0	IZS	0	0	0	3	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3	0.2	24
11	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0.0	24
12	5	IZS	3	1	2	0	3	2	2	2	1	0	0	0	0	0	3	2	0	0	0	0	0	0	5	1.1	24
13	IZS	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
14	0	0	0	0	0	10	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	IZS	0	10	0.7	24
15	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	0.2	24
16	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
17	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	1	0.1	24
18	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
19	0	0	0	0	0	2	2	2	4	3	5	0	0	0	0	0	0	IZS	0	0	0	0	1	1	5	0.9	24
20	0	3	1	1	1	4	7	5	2	5	5	1	0	0	0	0	IZS	0	0	0	0	0	0	0	7	1.5	24
21	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	1	0.1	24
22	0	0	0	0	0	2	1	0	2	7	1	0	0	1	IZS	0	0	0	0	0	0	0	0	0	7	0.6	24
23	0	0	0	0	0	0	0	0	0	1	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0.0	24
24	1	0	0	0	0	0	1	1	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
25	0	0	0	0	0	0	0	0	1	2	2	IZS	1	1	0	0	0	0	0	0	0	0	0	0	2	0.3	24
26	0	1	2	0	0	0	0	0	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24
27	0	0	0	0	0	0	1	2	3	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24
28	0	2	0	0	0	0	0	0	IZS	0	2	0	0	1	4	0	3	5	1	1	1	0	0	0	5	0.9	24
29	0	0	0	0	0	3	3	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24
30	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	2	6	6	0.7	24
HOURLY MAX	5	3	3	1	2	10	8	18	7	9	5	5	1	1	4	0	3	5	2	1	1	2	5	6			
HOURLY AVG	0.2	0.2	0.2	0.1	0.1	0.8	1.5	2.0	1.1	1.4	0.8	0.3	0.1	0.2	0.2	0.0	0.1	0.3	0.1	0.0	0.1	0.1	0.3	0.2			

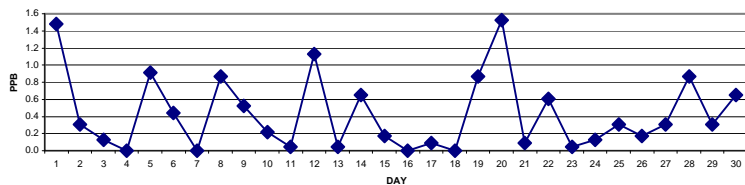
STATUS FLAG CODES

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

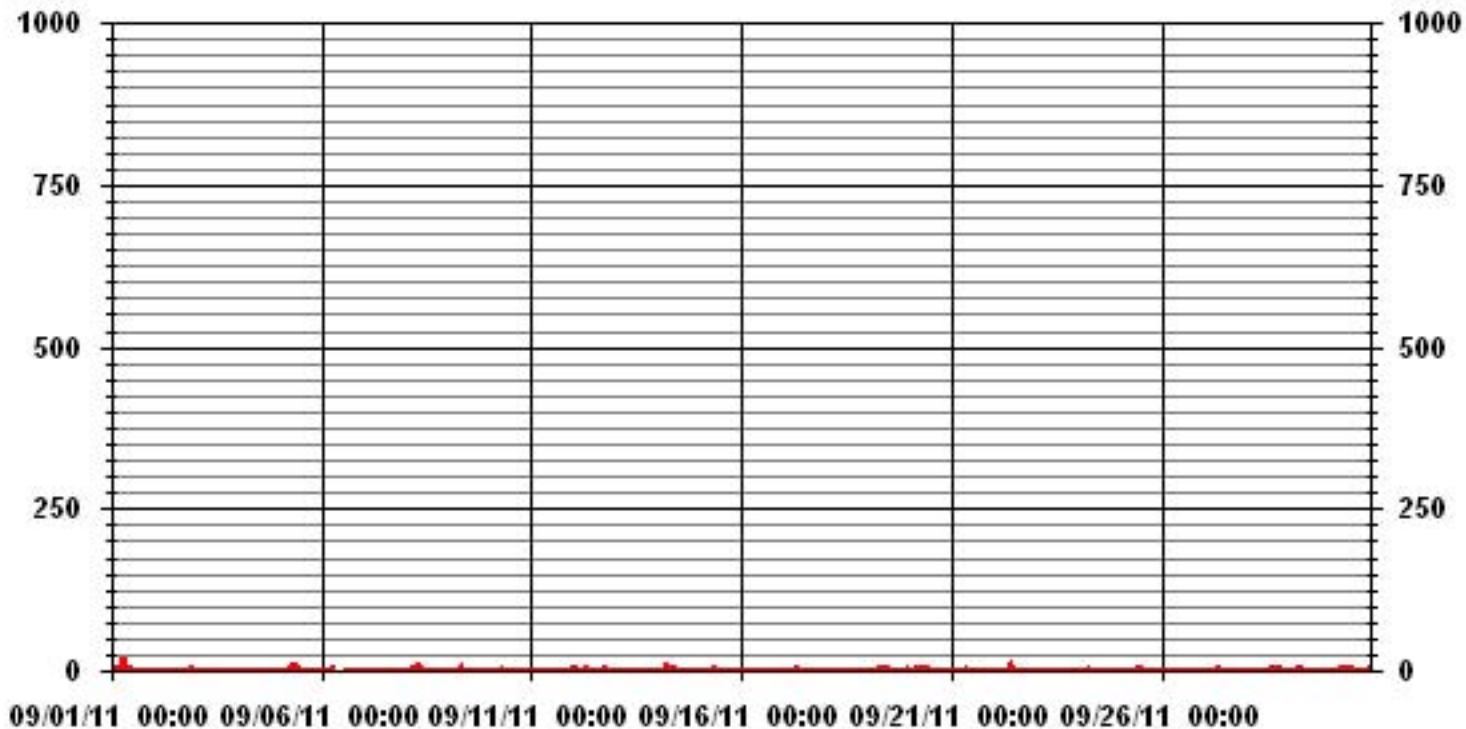
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	122					
MAXIMUM 1-HR AVERAGE:	18	PPB	@ HOUR(S)	7	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	1.5	PPB			ON DAY(S)	1
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	1.38		MONTHLY AVERAGE:	0.43	PPB	

24 HOUR AVERAGES FOR SEPTEMBER 2011



01 Hour Averages



— LICA30 NO_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 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	3	1	3	3	1	3	5	38	9	3	2	1	IZS	0	0	0	0	0	0	0	0	0	0	0	38	3.1	24	
2	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	17	13	2	17	1.4	24	
3	3	0	0	0	0	0	3	9	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	9	0.7	24	
4	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
5	0	0	0	0	0	9	2	25	IZS	31	9	0	0	0	0	0	0	0	0	0	6	0	0	3	31	3.7	24	
6	0	0	0	0	0	0	72	IZS	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	72	4.5	24	
7	0	0	0	0	0	0	IZS	2	0	0	0	0	0	0	M	M	0	0	0	0	0	0	0	0	2	0.1	22	
8	0	0	0	0	0	IZS	34	6	10	6	1	1	0	0	1	0	0	0	0	0	0	0	0	0	34	2.6	24	
9	0	0	0	0	IZS	6	7	17	2	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	17	1.6	24	
10	0	1	0	IZS	1	0	1	13	1	0	0	1	3	1	4	2	0	0	0	0	0	0	0	0	13	1.2	24	
11	0	0	IZS	1	1	1	1	1	1	0	0	1	0	1	0	0	0	0	1	3	12	2	1	0	12	1.1	24	
12	15	IZS	9	2	6	1	7	8	3	4	3	0	6	0	1	4	5	6	11	0	0	0	0	1	15	4.0	24	
13	IZS	1	0	1	0	1	2	1	1	1	1	0	1	3	1	1	1	0	0	1	0	0	1	IZS	3	0.8	24	
14	1	1	1	1	1	93	2	2	2	1	2	1	1	0	0	1	0	0	0	1	1	1	IZS	1	93	5.0	24	
15	1	1	1	0	1	1	1	1	1	2	2	1	1	1	0	1	0	0	1	1	1	IZS	1	0	2	0.9	24	
16	1	1	0	0	0	0	0	0	1	1	1	1	1	0	0	1	1	0	0	0	IZS	1	1	0	1	0.5	24	
17	0	0	1	0	2	1	1	19	2	1	0	1	0	0	0	0	1	1	0	IZS	1	0	1	1	19	1.4	24	
18	1	1	1	0	0	2	3	1	2	1	1	0	1	0	1	0	1	1	IZS	1	0	1	1	1	3	0.9	24	
19	1	1	1	1	1	1	5	22	4	8	9	9	4	1	1	1	0	IZS	5	6	0	1	7	2	22	4.0	24	
20	4	7	2	3	4	13	10	9	4	8	9	3	1	3	1	1	IZS	0	0	0	0	1	1	0	13	3.7	24	
21	0	0	1	1	1	1	1	1	1	2	1	1	0	0	0	IZS	1	1	0	1	1	1	0	0	2	0.7	24	
22	1	1	1	0	1	39	5	2	4	12	4	0	1	14	IZS	2	9	1	0	0	1	1	1	1	39	4.4	24	
23	1	1	1	0	1	1	1	1	1	1	2	1	1	IZS	1	1	1	1	0	0	1	0	1	2	2	0.9	24	
24	2	1	1	1	0	3	2	2	1	1	0	2	IZS	1	2	0	1	0	0	0	0	1	0	0	3	0.9	24	
25	0	0	0	0	1	1	0	0	4	4	5	IZS	2	2	1	0	1	1	0	0	0	0	0	5	1.0	24		
26	0	6	5	0	0	0	5	4	13	1	IZS	1	1	1	0	1	0	0	0	0	1	1	1	1	13	1.8	24	
27	0	1	1	1	1	2	4	4	4	IZS	2	1	3	0	0	0	2	0	0	0	0	0	0	0	4	1.1	24	
28	0	7	5	0	0	4	2	16	IZS	3	9	11	1	4	16	1	12	16	6	5	8	0	0	1	16	5.5	24	
29	0	0	0	0	0	32	8	IZS	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	2.0	24	
30	0	0	0	0	0	0	IZS	1	2	2	2	2	2	1	2	0	1	1	1	1	1	1	9	12	12	1.8	24	
HOURLY MAX	15	7	9	3	6	93	72	38	13	31	9	11	6	14	16	4	12	16	11	6	12	17	13	12				
HOURLY AVG	1.2	1.1	1.2	0.5	0.8	7.4	6.6	7.3	2.8	3.6	2.5	1.5	1.1	1.1	1.2	0.6	1.3	1.0	0.9	0.7	1.2	1.0	1.3	1.0				

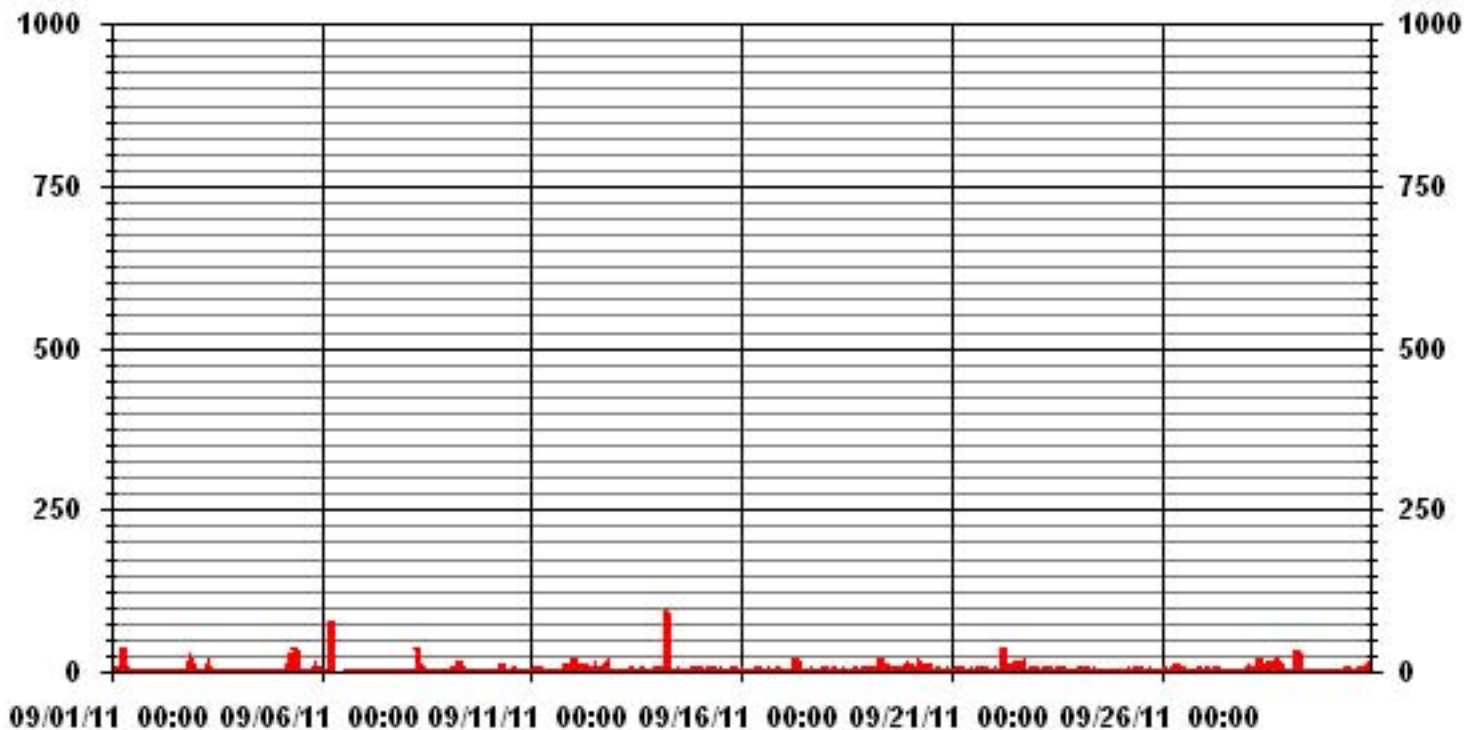
STATUS FLAG CODES

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:	356				
MAXIMUM INSTANTANEOUS VALUE:	93	PPB	@ HOUR(S)	5	ON DAY(S) 14
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS
MONTHLY CALIBRATION TIME:	7	HRS			
STANDARD DEVIATION:	6.07				

01 Hour Averages



LICA30
 NO_ / WDR Joint Frequency Distribution (Percent)

September 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	3.23	3.52	3.38	3.38	1.17	3.52	8.23	10.29	11.61	14.70	11.47	5.44	7.50	6.47	3.67	2.35	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	3.23	3.52	3.38	3.38	1.17	3.52	8.23	10.29	11.61	14.70	11.47	5.44	7.50	6.47	3.67	2.35	

Calm : .00 %

Total # Operational Hours : 680

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	22	24	23	23	8	24	56	70	79	100	78	37	51	44	25	16	680
< 110																	
< 210																	
>= 210																	
Totals	22	24	23	23	8	24	56	70	79	100	78	37	51	44	25	16	

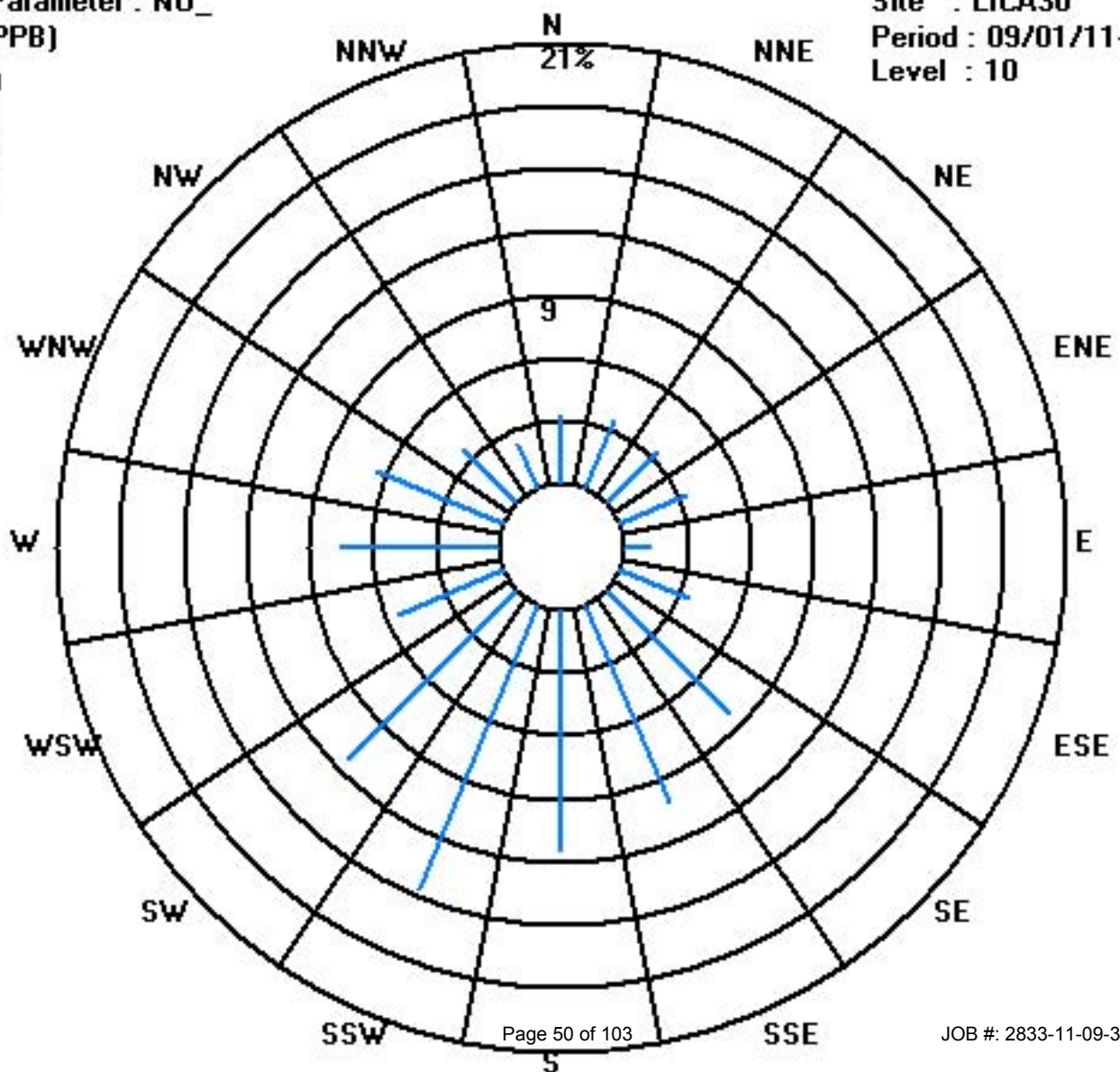
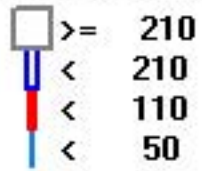
Calm : .00 %

Total # Operational Hours : 680

Class Limits (PPB)

Period : 09/01/11-09/30/11

Level : 10



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 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	2	6	7	4	4	8	27	5	3	3	1	IZS	2	1	1	1	1	1	1	2	1	1	1	27	3.9	24
2	1	1	1	1	1	1	2	3	2	1	1	IZS	0	0	0	0	2	6	2	4	14	12	19	4	19	3.4	24
3	4	1	1	1	1	2	7	7	2	2	IZS	2	1	1	0	0	0	0	0	0	0	0	1	1	7	1.5	24
4	1	1	2	2	2	2	2	2	2	IZS	1	1	1	0	0	0	0	0	0	1	1	1	1	1	2	1.0	24
5	2	2	1	1	1	5	6	18	IZS	20	7	1	0	0	0	0	0	0	0	5	19	2	2	14	20	4.6	24
6	2	1	1	1	1	2	13	IZS	C	C	C	C	C	C	C	1	1	1	1	1	2	3	2	2	13	2.2	24
7	3	3	4	3	2	2	IZS	4	5	3	3	3	2	2	M	3	2	2	2	2	2	2	2	1	5	2.6	23
8	1	1	2	1	1	IZS	13	7	16	11	4	1	1	1	2	2	0	0	0	0	0	1	0	0	16	2.8	24
9	1	1	1	0	IZS	3	7	13	6	4	3	3	2	1	1	1	1	1	1	1	2	3	3	2	13	2.7	24
10	4	12	2	IZS	1	2	5	10	1	0	0	1	5	1	4	1	0	0	0	0	0	0	2	1	12	2.3	24
11	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	4	6	7	0	0	7	0.9	24
12	13	IZS	10	3	8	2	9	5	3	4	2	0	1	0	0	2	2	10	5	1	1	1	0	1	13	3.6	24
13	IZS	0	0	0	0	0	2	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	IZS	2	0.2	24
14	0	1	1	3	3	16	4	3	3	1	1	1	1	1	0	1	0	1	0	1	0	1	IZS	1	16	1.9	24
15	2	1	1	1	2	1	1	2	2	3	3	2	2	1	1	1	1	1	7	11	6	IZS	2	6	11	2.6	24
16	5	0	0	0	0	0	1	1	2	2	3	2	1	0	0	0	0	1	0	1	0	IZS	1	0	5	0.8	24
17	2	1	1	4	4	3	3	4	2	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	4	1.1	24
18	0	6	4	4	2	2	2	1	1	0	0	0	0	0	0	1	2	IZS	2	2	2	2	2	2	6	1.5	24
19	3	2	2	2	1	2	7	6	6	11	9	13	3	1	1	1	1	IZS	3	3	0	1	8	9	13	4.1	24
20	5	11	7	8	9	11	15	11	6	10	11	3	2	2	1	1	IZS	1	0	0	2	4	2	2	15	5.4	24
21	3	3	3	3	3	3	2	2	2	2	1	1	1	0	0	IZS	0	1	2	1	1	1	1	1	3	1.6	24
22	1	1	1	1	1	7	6	2	7	17	5	0	0	4	IZS	2	3	1	0	2	5	5	3	1	17	3.3	24
23	1	0	1	0	0	0	1	1	3	3	4	3	3	IZS	4	6	5	3	1	1	1	1	2	2	6	2.0	24
24	7	5	3	2	2	5	5	4	2	1	0	1	IZS	1	2	1	1	1	1	1	1	1	0	0	7	2.0	24
25	0	0	0	0	0	0	0	0	6	7	7	IZS	5	4	2	1	2	3	4	3	0	0	1	1	7	2.0	24
26	3	9	15	3	3	2	4	6	7	2	IZS	1	0	0	0	1	0	0	1	0	1	2	1	1	15	2.7	24
27	1	1	2	2	4	9	10	9	9	IZS	6	2	2	0	0	0	6	0	0	2	1	1	0	1	10	3.0	24
28	5	18	15	3	0	2	3	3	IZS	3	5	1	0	5	11	2	10	15	9	7	7	0	0	4	18	5.6	24
29	8	6	1	1	1	6	7	IZS	3	2	1	0	0	0	1	1	1	1	0	0	0	0	0	1	8	1.8	24
30	0	1	1	1	1	1	IZS	2	3	3	3	3	3	2	2	4	3	2	3	10	2	9	24	24	3.7	24	
HOURLY MAX	13	18	15	8	9	16	15	27	16	20	11	13	5	5	11	6	10	15	9	11	19	12	19	24			
HOURLY AVG	2.9	3.1	3.1	2.0	2.0	3.3	5.2	5.5	3.9	4.3	3.1	1.7	1.3	1.1	1.3	1.1	1.6	1.9	1.6	2.0	3.0	1.9	2.2	2.9			

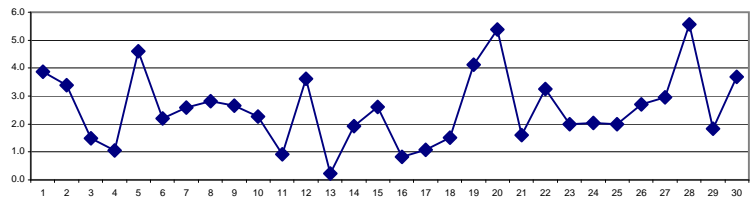
STATUS FLAG CODES

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

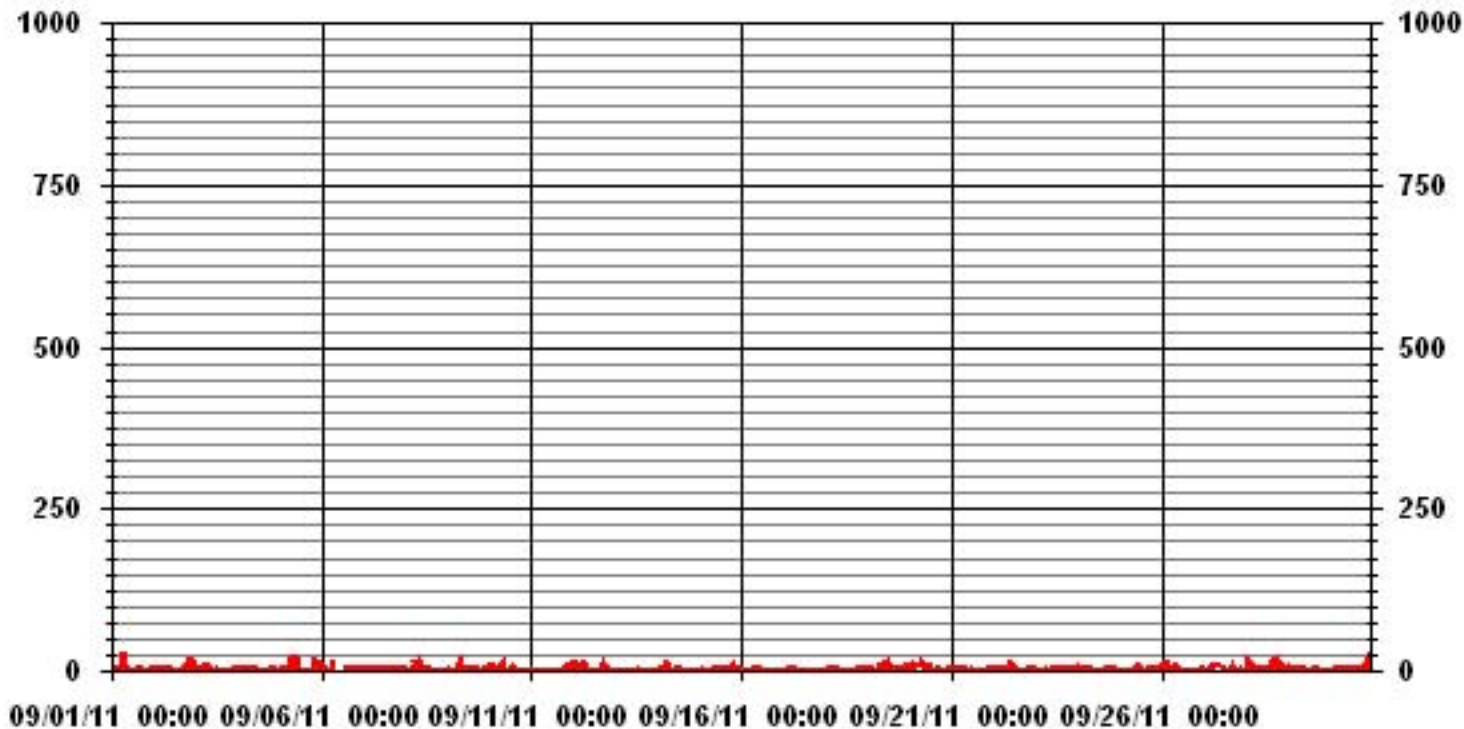
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	512					
MAXIMUM 1-HR AVERAGE:	27	PPB	@ HOUR(S)	7	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	5.6	PPB			ON DAY(S)	28
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME	99.9	%	
STANDARD DEVIATION	3.53		MONTHLY AVERAGE	2.57	PPB	

24 HOUR AVERAGES FOR SEPTEMBER 2011



01 Hour Averages



— LICA30 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 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	9	3	13	13	5	6	10	50	16	5	3	2	IZS	3	1	2	1	1	0	1	3	1	1	0	50	6.5	24	
2	1	0	0	0	0	0	4	3	2	2	0	IZS	0	3	1	0	6	13	4	8	17	35	30	13	35	6.2	24	
3	15	6	2	2	3	4	10	17	3	3	IZS	4	3	3	1	1	0	0	1	1	1	1	1	1	17	3.6	24	
4	1	2	3	3	3	3	3	4	3	IZS	4	2	2	1	1	1	1	1	1	1	2	2	2	2	4	2.1	24	
5	3	3	2	2	2	14	10	40	IZS	40	19	4	1	2	1	1	1	1	2	9	32	6	6	22	40	9.7	24	
6	4	2	2	1	2	4	86	IZS	C	C	C	C	C	C	C	2	2	2	2	2	3	3	3	3	86	7.7	24	
7	4	5	5	4	3	3	IZS	8	6	6	4	4	3	3	M	M	4	3	3	2	3	3	2	2	8	3.8	22	
8	2	2	3	2	2	IZS	45	11	21	19	5	3	2	2	6	4	2	0	1	1	1	2	1	1	45	6.0	24	
9	1	2	2	1	IZS	12	14	22	9	6	4	4	3	2	3	3	2	1	1	2	3	4	4	4	22	4.7	24	
10	10	20	10	IZS	2	5	7	30	3	1	1	6	11	3	12	9	1	0	0	1	1	1	3	3	30	6.1	24	
11	2	1	IZS	1	1	0	1	1	0	0	1	0	1	1	0	1	1	2	5	11	32	15	2	0	32	3.4	24	
12	29	IZS	18	6	15	6	14	14	5	5	5	1	12	1	2	12	14	17	24	2	2	1	1	1	29	9.0	24	
13	IZS	1	0	0	0	0	5	1	1	0	1	0	2	6	4	3	4	1	0	1	1	0	1	IZS	6	1.5	24	
14	1	1	4	5	4	111	10	4	4	2	2	2	1	1	1	1	1	2	1	1	1	1	1	IZS	2	111	7.1	24
15	3	2	2	1	4	2	2	2	3	3	4	3	2	2	1	1	1	2	13	14	13	IZS	4	12	14	4.2	24	
16	12	1	1	1	1	1	3	2	3	3	4	4	3	1	1	1	3	1	3	1	IZS	2	1	2	12	2.4	24	
17	3	2	3	5	9	5	6	24	4	1	0	0	1	0	1	0	1	2	1	IZS	1	1	0	0	24	3.0	24	
18	2	10	10	8	3	5	5	2	3	2	1	0	1	0	2	0	4	4	IZS	3	3	5	5	3	10	3.5	24	
19	5	3	3	2	2	4	12	40	9	17	19	20	10	4	3	2	2	IZS	14	17	3	3	21	15	40	10.0	24	
20	14	19	11	12	14	22	19	16	8	14	15	6	4	6	2	2	IZS	2	1	1	3	5	4	3	22	8.8	24	
21	4	4	4	4	4	4	4	3	4	4	3	2	1	1	1	IZS	1	2	3	1	1	1	1	1	4	2.5	24	
22	2	2	2	2	2	65	14	7	11	25	11	2	1	29	IZS	5	39	4	1	4	8	9	5	2	65	11.0	24	
23	2	1	1	1	1	1	3	3	4	5	6	4	3	IZS	6	8	6	4	2	1	1	1	3	9	9	3.3	24	
24	11	7	5	3	4	9	9	4	3	2	1	10	IZS	2	9	2	2	2	2	2	1	1	1	1	11	4.0	24	
25	1	1	1	1	1	1	0	0	13	12	13	IZS	8	8	4	2	5	6	6	6	1	1	2	2	13	4.1	24	
26	4	31	27	5	6	4	11	22	28	6	IZS	3	1	2	1	4	0	1	1	1	4	4	2	1	31	7.3	24	
27	2	2	2	3	6	16	17	12	11	IZS	7	5	12	5	2	1	14	1	1	3	2	2	1	1	17	5.6	24	
28	15	31	30	10	1	11	8	28	IZS	10	18	24	2	12	32	7	28	36	25	18	24	2	2	11	36	16.7	24	
29	12	12	2	2	2	37	13	IZS	9	4	2	1	1	1	1	2	1	2	1	1	1	1	1	1	37	4.8	24	
30	1	1	1	1	2	2	IZS	3	4	3	3	4	4	4	4	3	7	9	4	16	16	7	31	36	36	7.2	24	
HOURLY MAX	29	31	30	13	15	111	86	50	28	40	19	24	12	29	32	12	39	36	25	18	32	35	31	36				
HOURLY AVG	6.0	6.1	5.8	3.5	3.6	12.3	12.3	13.3	7.0	7.4	5.8	4.4	3.5	3.9	3.8	2.9	5.3	4.2	4.2	4.6	6.3	4.1	4.9	5.3				

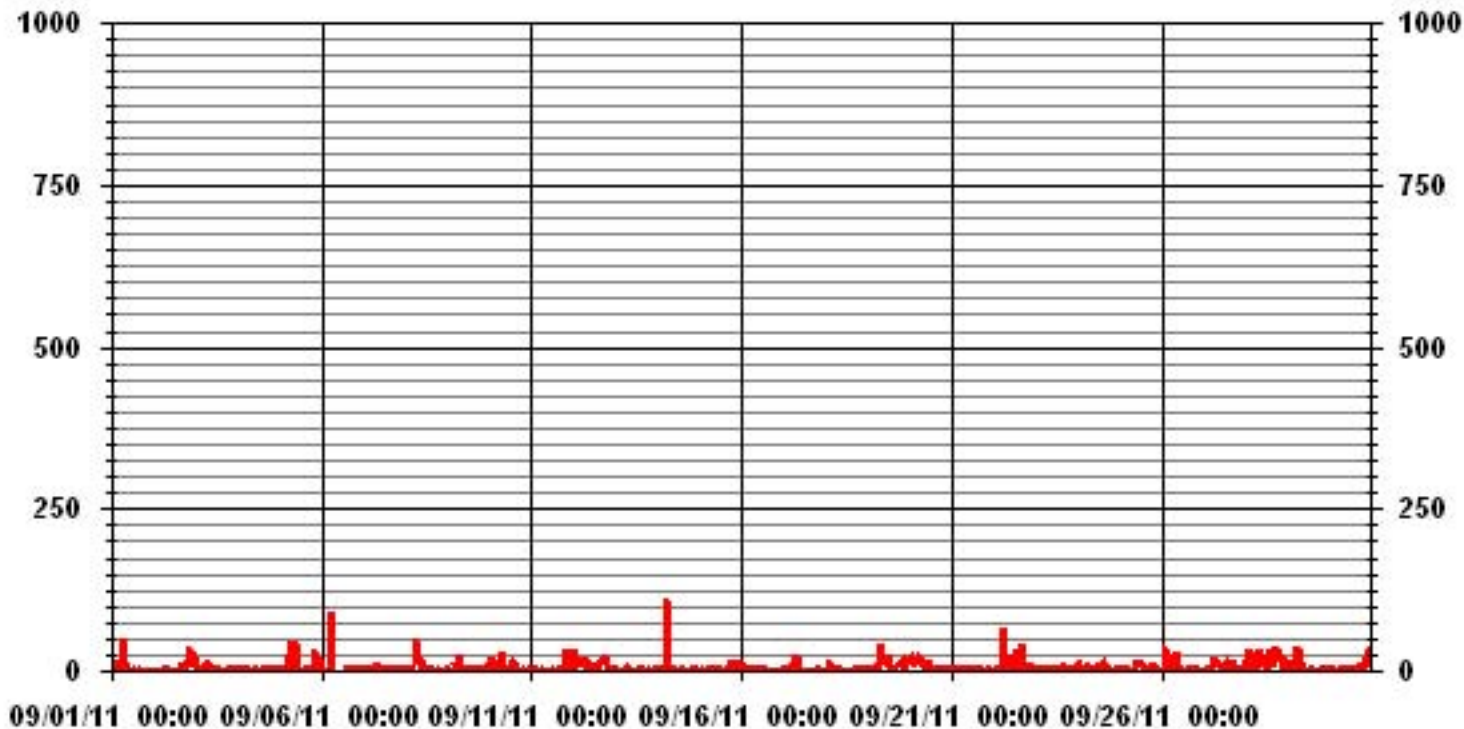
STATUS FLAG CODES

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:	638				
MAXIMUM INSTANTANEOUS VALUE:	111	PPB	@ HOUR(S)	5	ON DAY(S) 14
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS
MONTHLY CALIBRATION TIME:	7	HRS			
STANDARD DEVIATION:	9.30				

01 Hour Averages



— LICA30 NOXMAX PPB

LICA30
NOX_ / WDR Joint Frequency Distribution (Percent)

September 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	3.23	3.52	3.38	3.38	1.17	3.52	8.23	10.29	11.61	14.70	11.47	5.44	7.50	6.47	3.67	2.35	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	3.23	3.52	3.38	3.38	1.17	3.52	8.23	10.29	11.61	14.70	11.47	5.44	7.50	6.47	3.67	2.35	

Calm : .00 %

Total # Operational Hours : 680

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	22	24	23	23	8	24	56	70	79	100	78	37	51	44	25	16	680
< 110																	
< 210																	
>= 210																	
Totals	22	24	23	23	8	24	56	70	79	100	78	37	51	44	25	16	

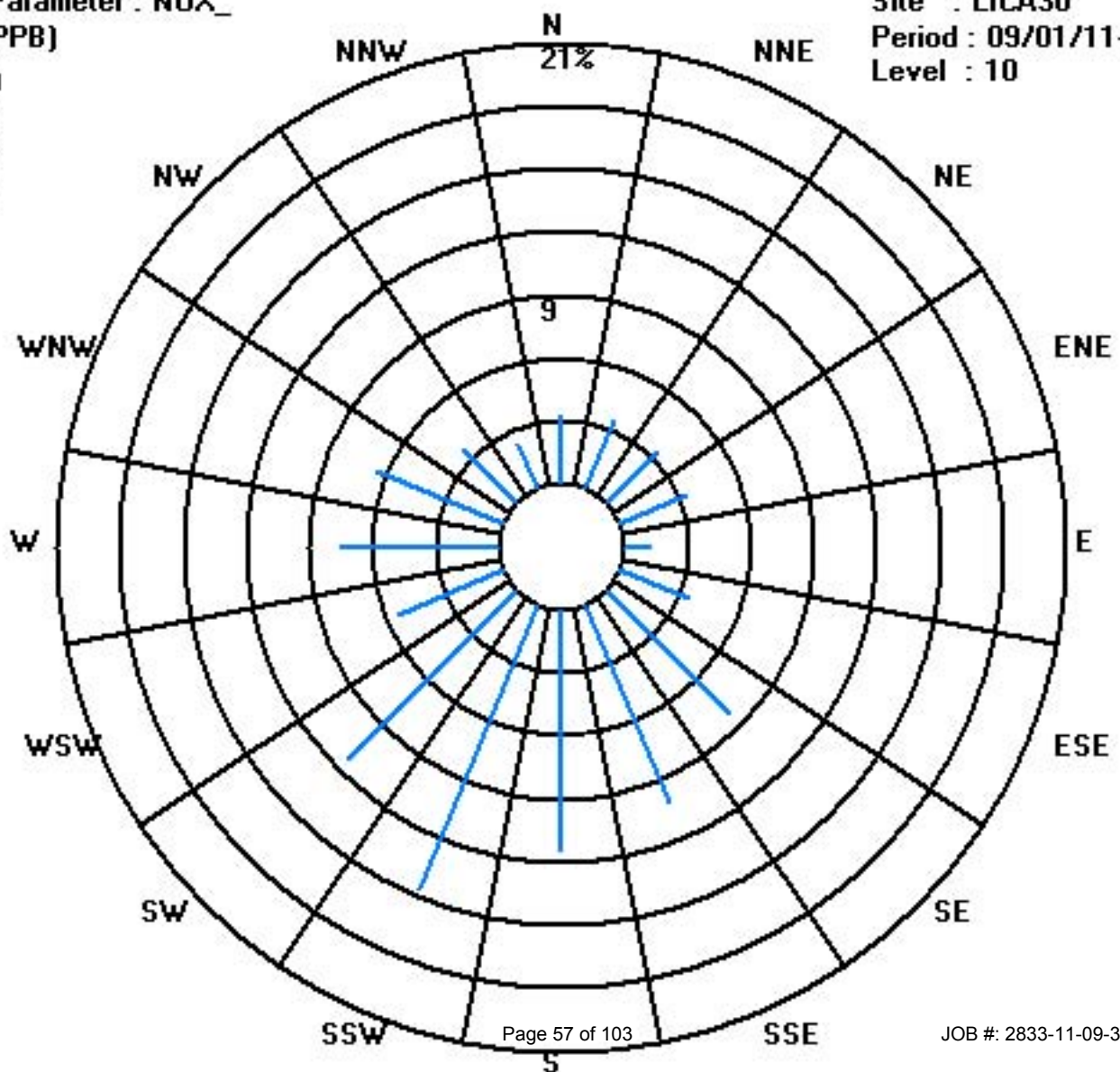
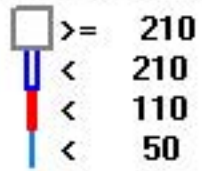
Calm : .00 %

Total # Operational Hours : 680

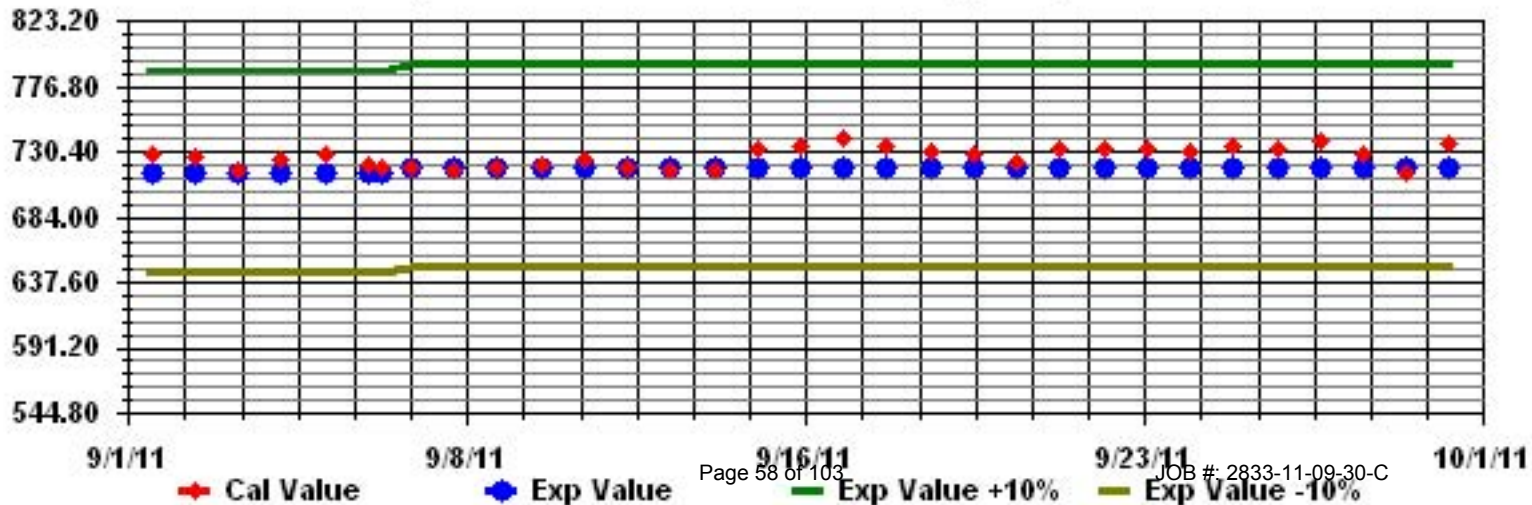
Class Limits (PPB)

Period : 09/01/11-09/30/11

Level : 10



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



Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 2011

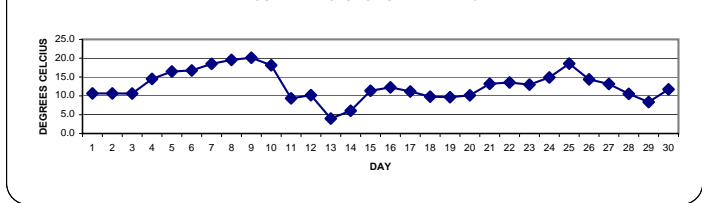
AMBIENT TEMPERATURE hourly averages (Degrees C)

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	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	4.5	3.6	3.5	3	1.7	1.5	3.9	8.3	12.6	14.3	15.5	16.3	18.2	17.2	18.4	17.7	17.2	15.5	11.9	10.5	10.5	10.3	10	9.3	18.4	10.6	24	
2	6.5	6.3	5.9	5.8	6.3	6	7.4	8.5	9.1	11.3	13.7	16.8	18.4	16.3	18.5	16.2	14.1	12.6	11.9	9.7	9.1	9	8.7	7.5	18.5	10.7	24	
3	6.2	5.6	3.9	2.9	2.3	1.9	2.8	6.9	11.8	14	15.2	16.1	16.5	17.3	18.7	18.9	18.1	17.1	13.6	10.1	9.4	9	8.1	8.5	18.9	10.6	24	
4	8.4	8.5	7.9	7.4	7.1	7.4	8.1	10.3	12.5	15.4	17.2	19.3	21	21.7	22.4	22.8	22.8	20.7	18	14.2	13.9	15	13.8	12.5	22.8	14.5	24	
5	12.1	9.3	7.5	6.9	6.4	5.8	7.3	12.9	18.3	21.4	22.9	23.9	25.6	25.6	25.9	26.4	26.7	25.4	19.3	15.9	15.4	12.7	11.3	10.3	26.7	16.5	24	
6	9.3	8.6	8.3	7.9	7.4	7.7	8.3	12.8	17.1	20.9	24.1	25.5	26.3	26.4	27.2	27.4	26.8	25.1	19	15.1	12.8	12.3	13.5	12.3	27.4	16.8	24	
7	13	11.8	13.1	9.9	8.1	7.2	7.8	13.3	19.2	21.8	24.8	26.3	28.3	29.8	30.4	30.2	29.7	27.6	21.2	17.4	15	13.7	12.7	11.7	30.4	18.5	24	
8	10.9	10.5	10	9.5	9.3	9.5	10	14.4	21.7	26	27.1	29	30	30.9	31.7	31.9	31	28.5	22.9	18.3	15.9	14.5	13.4	12.5	31.9	19.6	24	
9	12.2	12	11.7	10.9	10.4	10.1	11	15.6	20.4	23.5	25.8	27.6	28.7	30.3	31.1	30.9	30	27.9	23.2	18.6	19.2	19.4	16.4	16.1	31.1	20.1	24	
10	16.5	16.9	16	15.7	14.3	13.1	13.8	17.4	19.8	21.5	23.9	25	25.6	25.6	25.8	25.8	25.3	22.7	17.9	14	11.7	10.2	8.9	7.6	25.8	18.1	24	
11	7	6.6	6.8	7.6	9	10	10.7	11.2	10.7	9.5	8.8	9	9.8	9.9	10.6	11.6	12.3	11.1	10.3	9.7	9.3	8.9	7.3	6.7	12.3	9.4	24	
12	7	6.8	5.9	4.9	3.8	3.2	4.6	7.4	10.2	12.5	15.6	17.1	17.7	18	17.7	13.2	14.5	14.3	12.3	9.9	8.5	7.1	6.1	6.3	18.0	10.2	24	
13	5.6	3.9	2.4	1.4	0.2	-0.7	-0.9	1.7	3.2	4.9	6.9	8.4	9.9	10.6	11.1	11.2	10.8	8.4	4.8	1.1	-0.8	-2.4	-2.8	-3.4	11.2	4.0	24	
14	-4.1	-4.8	-3.9	-2.5	-2.8	-3.7	-1.9	2.4	5.2	7.7	9.1	11.6	12.7	13.7	14.5	14.6	14.5	12.9	10.3	8.6	8.4	7.8	7.3	7.5	14.6	6.0	24	
15	7.1	6.6	5.9	3.3	1.3	1.5	2.4	6.8	9.2	11.8	13.2	16.1	17.6	19.8	20.1	19.2	18.7	15.7	13.2	12.5	13	12.7	12.6	12.2	20.1	11.4	24	
16	11	11	11.2	11.2	10.9	10.4	10.1	11.3	12.7	12.8	12.6	13.6	14.6	15.9	15.4	16.4	15.2	13.1	11.9	11.6	10.6	10.4	10	10.5	16.4	12.3	24	
17	10	9.9	9.3	8.3	7.6	7	6.9	8.7	10.7	13	13.9	15.9	17.2	17.3	17.3	15.5	16.1	14.2	10.9	7.8	7.2	8.1	8.1	7.1	17.3	11.2	24	
18	6.4	5.6	5.4	5.3	4.8	4.7	4.5	6.9	9.7	12.4	14.3	15.6	16.4	16.9	17	16.8	16.4	13.5	9.2	7.7	7	5.7	5.8	6.9	17.0	9.8	24	
19	6	3.8	3.1	3.2	2.4	1.9	2.6	5.2	8.4	13.3	15.6	16.5	17.5	17.6	17.2	16.7	16	14	11.9	9.1	7.7	8.7	7.2	6.1	17.6	9.7	24	
20	4.6	4.4	3.7	3.4	2.6	2.3	2.2	5.3	9.7	12.8	14.9	16	17.3	17.8	18.4	18.1	17.3	14	10.8	9.4	10.1	9.9	9.4	9.2	18.4	10.2	24	
21	8.2	7.5	7.1	6.7	6	5.7	6	8.1	9.8	13.1	16.2	18	19.8	20.7	21.5	20.9	20.7	18.5	16.3	14.6	13.6	13	12.8	12.1	21.5	13.2	24	
22	9.4	9.7	9.2	7.4	7.2	7.6	7.8	9	11.9	17	20.4	20.7	20.3	20.7	21.1	21	20.1	17.7	14.7	13.3	11.5	10.5	8.9	8	21.1	13.5	24	
23	8.3	7.6	6.4	5.4	5.1	5	6.2	10.1	14.5	16.7	17.6	18.1	21.4	21.3	20.8	20.2	19.5	17.5	14.2	12.4	11.6	11	10.5	10.3	21.4	13.0	24	
24	10.2	9.5	9.6	8.9	8.5	7.9	7.2	9.9	14	17.3	20	21.7	23.5	24.4	25.2	25.7	25	20	15.2	12.3	11.3	11	9.8	9.4	25.7	14.9	24	
25	8.2	8	6.5	6.8	7.4	8	9.6	12.9	17.3	20.2	22.2	24	25.6	27.1	28.9	29.6	28.3	25.1	23.4	22	21.9	21.5	21	20.1	29.6	18.6	24	
26	18.2	17.4	16.6	13.6	12.8	12.7	12.8	14	13	13.7	15.7	17.9	18.4	19.1	18.6	18.5	17.4	13.5	9.4	7.6	7.9	11.2	12.7	12.4	19.1	14.4	24	
27	11.2	9.8	9	9.4	7.7	6.6	6	8.6	12.2	15.2	17.5	20.4	21.4	21.8	21.2	20.9	20.1	15.8	13	11.3	12	10	8.1	6.7	21.8	13.2	24	
28	7.6	8.5	7.1	5.9	6.8	7.3	7.7	9.3	12.7	13.2	13.5	15.8	14	14.4	15.1	13.8	13.4	12.4	11	10.5	9.9	9	7.6	6.1	15.8	10.5	24	
29	4.5	3.5	2.4	1.6	-0.2	-1.2	0	2.7	6.8	9.7	11.6	13.2	13.6	14.8	14.8	14.9	14.3	12.7	11.2	10.7	10.5	10	9.3	9.2	14.9	8.4	24	
30	9	8.6	7.7	6.8	7	5.8	4.9	6.6	9.3	10.5	12.3	14.8	16.5	18.4	19.8	18.8	17	15.9	13.2	11.9	11.5	11.7	11.9	11.6	19.8	11.7	24	
HOURLY MAX	18.2	17.4	16.6	15.7	14.3	13.1	13.8	17.4	21.7	26.0	27.1	29.0	30.0	30.9	31.7	31.9	31.0	28.5	23.4	22.0	21.9	21.5	21.0	20.1				
HOURLY AVG	8.5	7.9	7.3	6.6	6.0	5.7	6.3	9.3	12.5	14.9	16.7	18.3	19.5	20.0	20.5	20.2	19.6	17.4	14.2	11.9	11.2	10.7	10.0	9.4				

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	NA	- NOT APPLICABLE

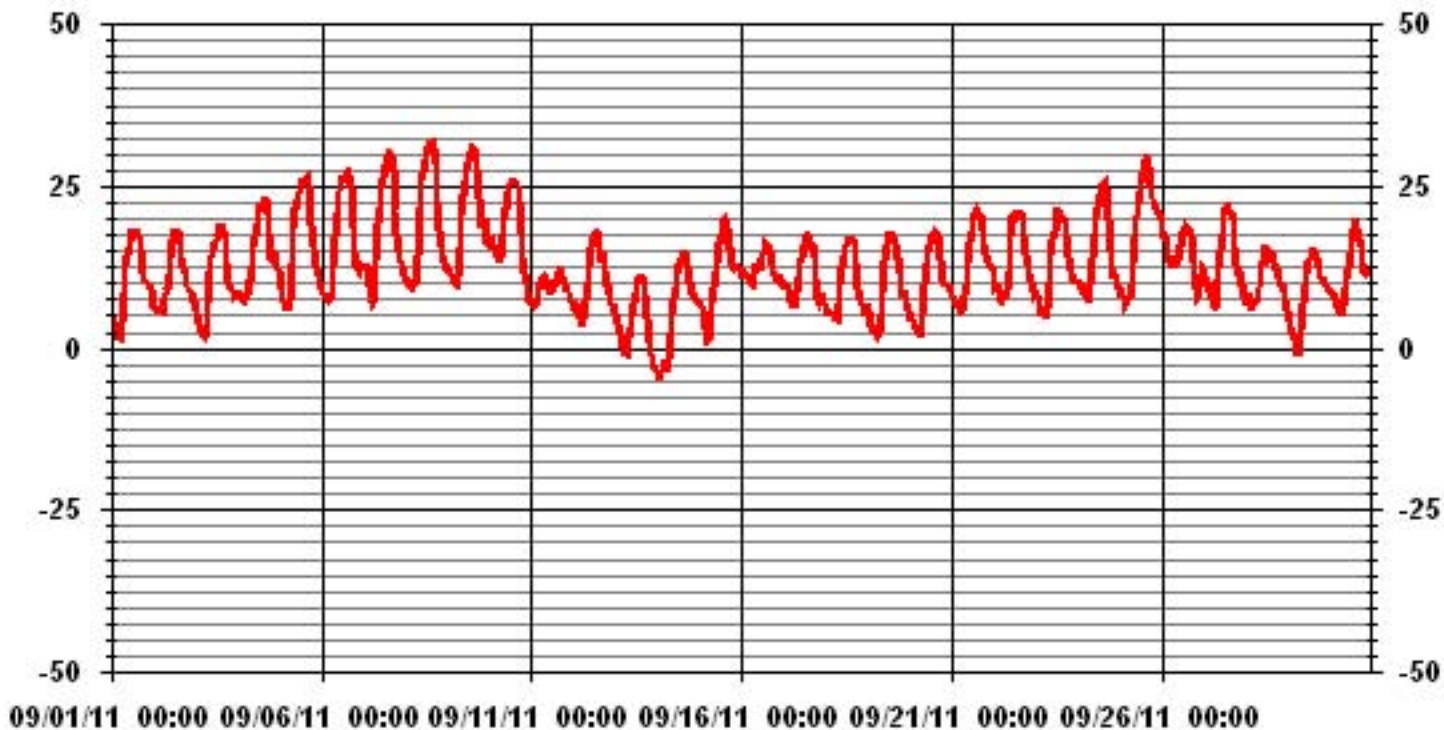
24 HOUR AVERAGES FOR SEPTEMBER 2011



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-4.8 °C	@ HOUR(S)	1	ON DAY(S)	14
MAXIMUM 1-HR AVERAGE:	31.9 °C	@ HOUR(S)	15	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	20.1 °C			ON DAY(S)	9
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS
STANDARD DEVIATION:	6.83		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	12.71	°C

01 Hour Averages



Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 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	0.1	0	0	0	0	0	0	0	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	0	0	0	0	0.5	0	0.1	0.1	0	0	0	0	0	0	0	0	0.5	0.7	24
3		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	0.1	0.1	24
4		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	0.1	0.1	24
5		0	0	0	0	0	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		0	0	0	0	0	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	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
8		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
9		0	0	0	0	0	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
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	0.9	4.3	4.6	1	0.5	0.1	0	0.1	0	0	0	0	0	0	0	0	4.6	11.5	24
12		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	0.1	0.1	24
13		0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.3	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	1.1	0	0	0	0	0	0	0	1.1	1.1	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	0.0	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	0.1	0.1	24
20		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
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	0.0	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	24
24		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	0.1	0.1	24
25		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	0.1	0.1	24
26		0	0	0	0	0	0	0	0	0.5	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.6	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		0.3	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.5	0.9	4.3	4.6	1.0	0.5	0.1	0.1	1.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0				

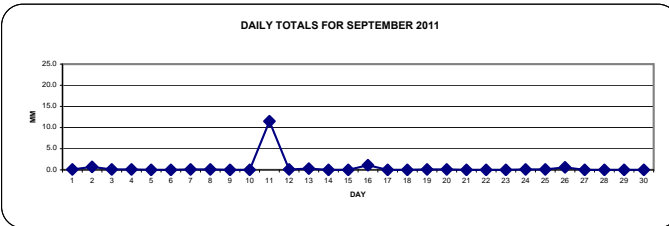
STATUS FLAG CODES

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

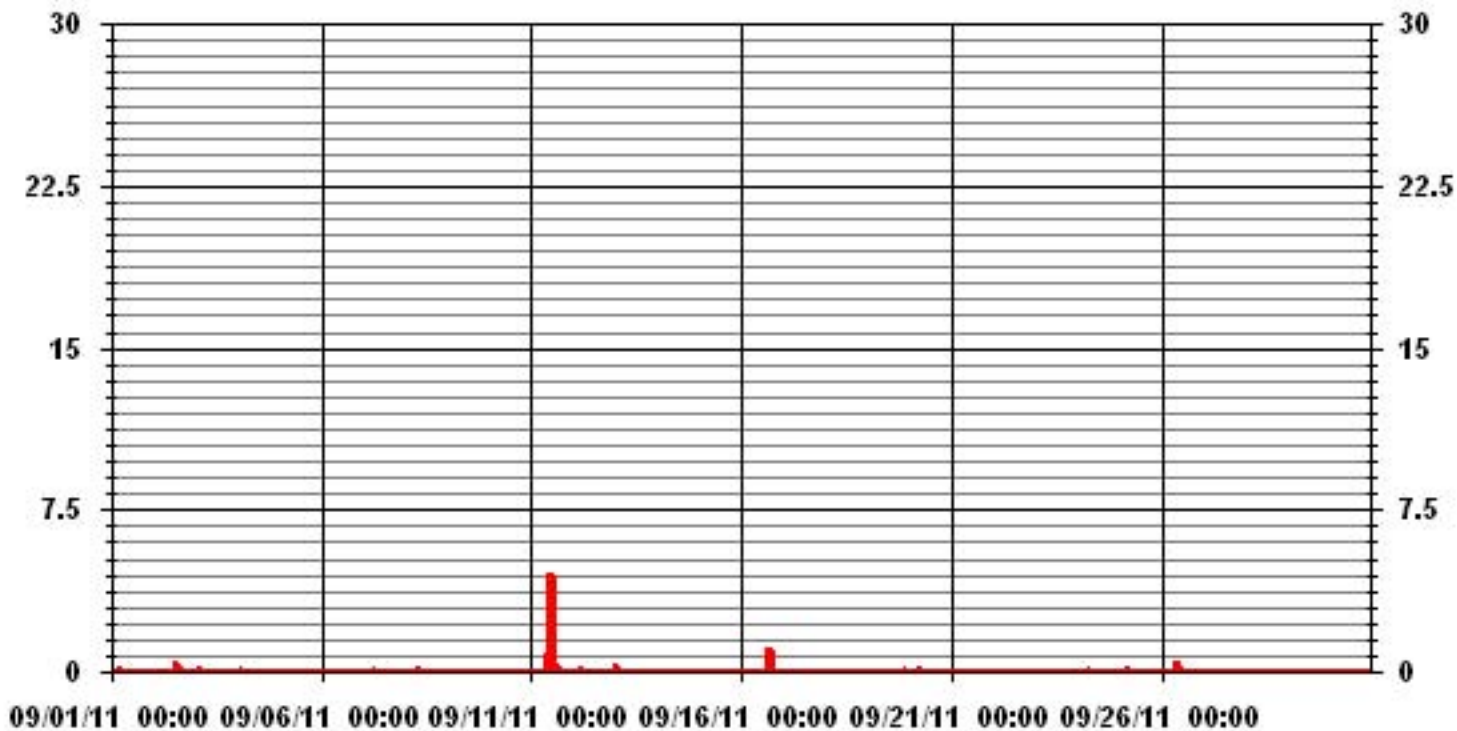
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	4.6	MM	HOUR(S)	11	ON DAY(S)	11
MAXIMUM DAILY TOTAL	11.5	MM			ON DAY(S)	11
MONTHLY TOTAL	15.2	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS	
STANDARD DEVIATION:	0.25		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	0.02	MM	

DAILY TOTALS FOR SEPTEMBER 2011



01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 2011

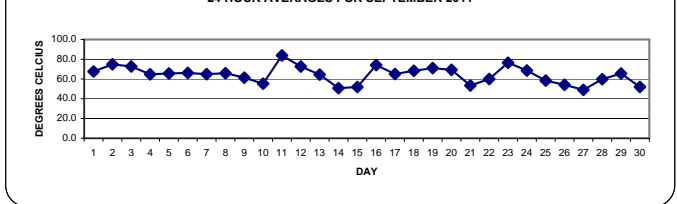
RELATIVE HUMIDITY hourly averages (%)

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	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.
1		89	91	91	91	91	91	92	84	66	60	55	49	40	42	38	41	43	50	69	74	70	67	67	71	92	67.6	24
2		84	88	89	90	87	87	85	83	82	75	61	50	43	58	45	56	66	69	75	85	85	83	84	87	90	74.9	24
3		90	91	91	91	92	92	92	88	68	60	56	56	54	50	45	45	46	51	66	80	82	85	88	86	92	72.7	24
4		85	82	84	83	83	81	78	71	65	57	53	49	46	44	42	41	40	50	62	77	76	65	68	72	85	64.8	24
5		71	83	89	91	92	92	93	83	63	55	50	44	33	34	34	34	33	39	63	74	72	81	84	87	93	65.6	24
6		91	91	92	92	92	92	92	82	68	58	46	38	35	32	28	28	29	37	63	76	83	83	77	82	92	66.1	24
7		76	81	73	88	91	91	92	78	58	49	46	40	36	31	29	26	29	40	68	79	85	89	91	92	92	64.9	24
8		92	93	93	93	93	93	93	89	63	48	43	38	33	29	29	26	29	35	54	73	81	85	87	89	93	65.9	24
9		91	92	92	92	93	93	92	81	63	55	45	39	38	31	26	24	27	33	48	65	59	58	70	66	93	61.4	24
10		64	64	67	67	72	77	75	63	54	42	32	30	28	27	27	27	29	35	51	67	76	80	85	88	88	55.3	24
11		90	88	86	84	81	75	73	74	75	83	90	90	89	88	88	85	80	82	87	86	80	81	87	91	91	83.9	24
12		92	91	91	92	91	92	92	87	79	75	64	46	44	45	43	61	55	53	57	72	77	81	82	81	92	72.6	24
13		84	83	85	86	86	86	87	75	67	52	41	34	32	31	31	30	34	42	57	76	83	87	89	89	89	64.5	24
14		89	88	88	83	82	84	79	64	52	43	42	31	28	27	25	24	25	28	35	40	40	40	41	40	89	50.8	24
15		41	43	47	60	68	66	63	51	46	43	44	41	41	37	35	36	39	50	61	67	66	65	66	69	69	51.9	24
16		75	76	77	78	80	80	81	76	71	72	76	77	74	65	64	58	69	79	81	68	73	77	78	73	81	74.1	24
17		74	73	75	80	81	82	82	74	67	59	56	50	45	42	41	46	45	52	65	78	78	71	70	76	82	65.1	24
18		80	84	83	83	83	83	83	74	67	60	52	47	45	41	40	41	42	54	75	80	83	87	88	85	88	68.3	24
19		85	90	91	91	91	91	92	90	79	65	57	51	44	39	39	41	46	53	60	75	82	80	85	88	92	71.0	24
20		91	91	91	91	91	92	91	90	76	68	61	55	47	45	42	41	46	56	64	67	65	67	67	68	92	69.3	24
21		72	73	75	76	78	79	79	72	67	58	46	41	36	31	30	31	32	36	41	44	46	46	45	48	79	53.4	24
22		59	57	61	69	73	74	76	74	63	51	44	43	42	39	39	41	47	55	64	67	71	73	77	81	81	60.0	24
23		81	83	88	89	90	90	89	83	67	60	59	59	52	54	58	58	61	74	85	90	91	91	92	92	92	76.5	24
24		92	92	93	93	93	93	93	91	62	48	38	33	35	35	34	34	37	55	75	82	85	83	85	86	93	68.6	24
25		90	89	91	92	92	92	88	78	69	59	53	47	44	41	34	26	28	35	39	43	44	45	42	41	92	58.4	24
26		47	51	53	63	65	65	67	67	79	77	62	48	39	34	30	30	31	44	60	69	67	53	48	50	79	54.1	24
27		55	60	62	60	65	68	71	65	55	48	43	33	27	25	23	23	25	37	44	46	44	57	68	73	73	49.0	24
28		67	60	64	68	66	66	66	62	52	50	49	44	49	48	46	52	53	55	61	63	66	70	76	82	82	59.8	24
29		86	89	90	91	91	91	91	92	83	66	53	42	45	47	48	46	46	48	51	53	54	55	57	58	92	65.5	24
30		58	59	61	63	61	66	69	64	56	51	47	42	39	34	32	35	42	44	51	56	58	59	54	47	69	52.0	24
HOURLY MAX		92	93	93	93	93	93	93	92	83	83	90	90	89	88	88	85	80	82	87	90	91	91	92	92			
HOURLY AVG		78.0	79.2	80.4	82.3	83.1	83.5	83.2	76.8	66.1	58.2	52.1	46.2	42.8	40.9	38.8	39.6	41.8	49.0	61.1	69.1	70.7	71.5	73.3	74.6			

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

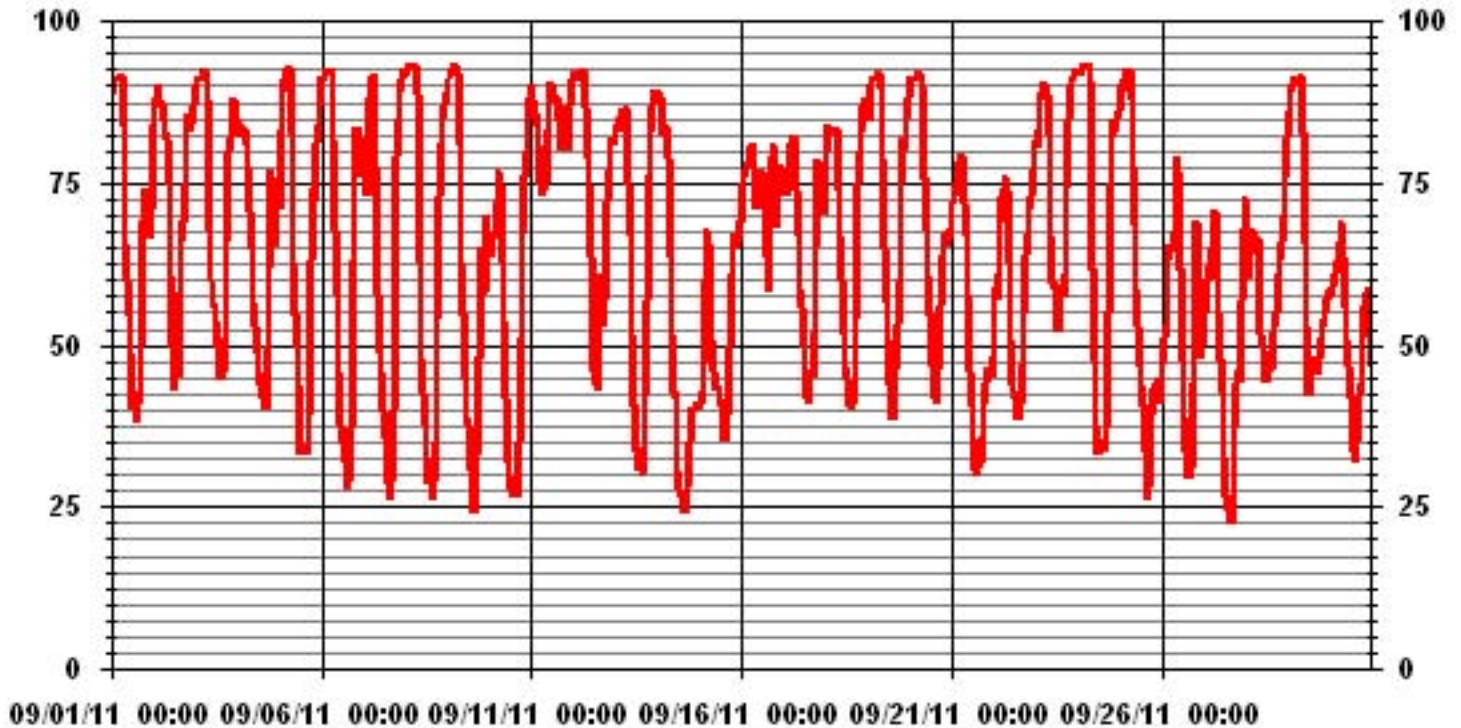
24 HOUR AVERAGES FOR SEPTEMBER 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	93	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	83.9	%			ON DAY(S)	11
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS	
STANDARD DEVIATION:	20.27		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	64.27	%	

01 Hour Averages



Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 2011

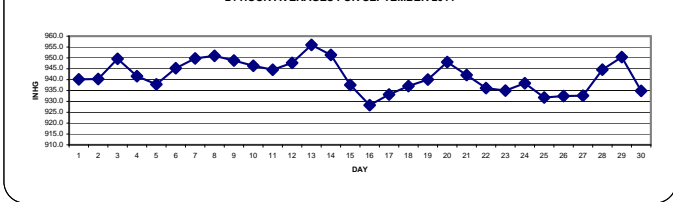
BAROMETRIC PRESSURE hourly averages (millibar)

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		
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	0:00	MAX.	AVG.	RDGS	
DAY																													
1		941	941	942	942	942	941	942	942	943	943	943	942	941	940	940	939	939	939	938	937	937	937	936	936	943	940.1	24	
2		935	935	935	935	935	935	936	937	937	938	939	940	940	941	942	942	943	944	945	945	946	947	947	948	948	948	940.3	24
3		948	948	948	949	949	949	949	949	950	951	952	952	952	952	951	951	951	950	950	949	949	948	948	947	947	952	949.6	24
4		947	946	946	945	945	944	944	944	944	943	943	943	942	941	941	940	939	939	938	937	937	937	937	936	947	941.6	24	
5		936	936	936	936	936	936	937	938	938	939	939	939	939	938	938	938	938	938	938	938	939	939	939	940	940	937.8	24	
6		940	941	941	942	942	943	943	944	945	946	947	947	947	947	947	947	947	947	947	947	947	947	947	948	948	945.3	24	
7		948	948	948	948	949	949	949	949	950	951	951	951	951	951	951	950	950	950	950	949	950	949	950	949	950	951	949.8	24
8		950	950	950	950	950	950	951	951	952	953	953	952	952	951	951	951	951	951	951	951	951	951	950	950	951	951.0	24	
9		950	950	950	950	950	950	951	951	952	951	951	950	949	949	948	947	947	947	947	946	946	946	945	945	952	948.8	24	
10		946	946	946	946	946	945	946	947	948	948	949	949	948	948	947	947	946	946	946	945	945	945	944	944	949	946.4	24	
11		944	944	944	943	943	943	943	943	943	943	943	944	944	943	943	945	945	946	946	946	947	947	947	946	947	944.5	24	
12		946	947	947	947	947	947	947	947	948	948	948	948	948	947	947	947	947	947	947	948	949	950	950	951	951	947.7	24	
13		951	952	953	953	954	954	955	956	957	957	958	958	958	958	958	958	958	958	958	957	956	956	956	956	958	956.0	24	
14		956	956	955	955	955	955	954	955	955	955	955	954	953	952	951	950	949	948	947	946	945	945	944	943	956	951.4	24	
15		943	942	942	941	940	940	939	940	939	939	939	939	938	938	937	937	936	935	934	934	933	933	932	931	943	937.5	24	
16		930	930	929	928	928	927	926	926	926	927	927	927	928	929	929	929	929	929	929	929	929	929	929	929	930	928.3	24	
17		930	930	930	931	931	931	932	932	933	933	934	934	934	934	934	934	935	935	935	935	934	935	935	935	935	935	933.2	24
18		935	936	936	936	936	936	936	937	937	938	938	939	938	938	938	938	938	938	938	937	937	937	936	937	937	939	937.0	24
19		937	937	937	937	937	937	937	938	938	939	940	940	940	941	941	941	942	942	943	943	944	945	945	945	945	940.0	24	
20		945	946	946	947	947	947	946	948	949	950	951	951	951	950	950	950	949	949	948	947	947	947	947	946	951	948.1	24	
21		946	946	946	945	945	945	944	945	944	944	944	944	943	943	942	941	941	940	939	938	938	937	936	935	946	942.1	24	
22		934	933	933	933	933	934	934	935	936	937	938	937	938	938	938	938	938	938	938	938	938	938	938	938	938	936.1	24	
23		937	937	937	937	937	936	936	936	936	936	936	935	935	934	934	934	933	933	933	933	933	933	933	934	937	935.0	24	
24		935	935	936	936	937	937	937	938	939	939	940	940	940	940	940	940	940	939	939	939	939	939	938	938	940	938.3	24	
25		938	937	937	937	936	936	935	935	935	935	934	933	932	931	930	929	928	928	928	927	926	926	926	926	938	931.8	24	
26		927	927	929	929	929	930	931	932	932	934	934	935	935	936	936	936	936	935	935	934	933	932	932	930	936	932.5	24	
27		930	930	929	930	930	931	931	932	932	933	934	934	934	934	934	934	934	934	934	933	933	934	934	934	935	932.6	24	
28		936	937	937	938	938	939	940	941	942	943	943	944	945	945	946	947	948	949	950	951	952	952	953	954	954	944.6	24	
29		954	954	954	954	954	954	954	954	955	954	954	953	953	952	951	949	948	947	946	945	944	943	942	941	955	950.4	24	
30		940	939	938	937	936	935	934	934	934	934	934	933	933	932	933	933	933	933	934	934	935	935	936	937	940	934.8	24	
HOURLY MAX		956	956	955	955	955	955	955	956	957	957	958	958	958	958	958	958	958	958	957	956	956	956	956	956				
HOURLY AVG		941	941	941	941	941	941	942	942	943	943	943	943	943	942	942	942	942	942	942	941	941	941	941	941				

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 SEPTEMBER 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	958	MB	@ HOUR(S)	VAR	ON DAY(S)	13
MAXIMUM 24-HR AVERAGE:	956.0	MB			ON DAY(S)	13
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS	
			AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	7.51		MONTHLY AVERAGE:	942	MB	

01 Hour Averages



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 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	1.1	1.7	1.5	0.9	1.2	0.6	1	1.7	3.6	6.8	7.1	5.9	5.6	5.3	4.6	5.9	5.3	3.8	2.8	3.1	3.5	3.6	4.4	2.5	7.1	2.8	24
2	1.6	1.5	0.2	1.2	2	1.1	2.1	2.2	3.8	6.3	7.9	7.6	7.7	4.4	5.7	2.6	2.6	3.4	1.8	3.1	3	4.8	2.5	1.6	7.9	2.3	24
3	1.2	1.9	0.5	0.3	1.7	1.3	0.9	2.1	0.5	3.4	5.7	6.1	4	4.6	4.6	5.1	5.9	6.1	3.7	3.9	4.3	4.2	4.2	4.9	6.1	2.9	24
4	5.4	5.7	5.3	4.4	4.6	6.6	8.3	9.2	9.4	9.6	7.4	8.1	7.4	9.6	11.3	10.1	10.5	4.7	3.5	2.7	4.8	5.9	5.4	5.1	11.3	6.8	24
5	5.6	0.3	0.6	2.4	1.1	1.3	1.2	1.2	1.4	3	4.7	4.7	4.4	8.2	9.2	6.9	3.6	2	0.9	1.3	1.3	1	0.4	1.5	9.2	2.5	24
6	2.7	2.2	2.3	0.6	1.1	1.7	1.4	1.7	3.3	3.9	4.7	4.1	5.6	6.6	4.8	3.9	3.6	2.4	3.4	2.9	2	3.5	4.1	3.5	6.6	3	24
7	4.5	4.6	4.5	0.6	0.1	0.1	0.5	0.6	4.8	5.6	5.4	7.3	5	3.8	4.8	6.2	6	3.5	2.6	2.2	1	0.8	0.7	0.6	7.3	3	24
8	0.3	1	0.1	0.1	0.6	1.9	0.9	0.3	0.7	1.9	4.3	4.2	4.5	3.9	2.4	3	3	2.4	2.4	2	2.6	1	0.4	1.4	4.5	1.7	24
9	1.3	2	1.3	0.5	1.3	1.7	1.8	1.9	6	4.4	5.9	5.7	7.2	5.8	6	6.5	7.2	5.7	4.8	3.8	5.2	5.4	2.3	3.4	7.2	4	24
10	2.8	3.2	2.9	3.6	3.7	3.6	2.6	3.1	3.2	4.8	3.9	3.8	4.1	4.2	3.5	4	3.4	3.4	2.4	2.2	2.1	1.6	1	0.7	4.8	1.8	24
11	1.4	1.5	1.9	3.1	2.9	4.6	8.5	12.9	13.9	14.6	11.7	7.8	3.3	4.9	6	5.4	4.1	2.7	2.7	5.1	4.6	3.1	3	2.3	14.6	4.4	24
12	3.9	3.5	1.2	1.4	0.5	2.1	3	3	3.7	4.6	4.8	7.3	8.3	7.2	9.4	4.2	5.9	4.1	6.4	9.9	6.8	6.2	4.8	6	9.9	3.1	24
13	10.1	7.5	5.4	5.2	5.4	4.4	2.2	7.2	8.7	9.1	6.7	5.1	2.9	1.4	2.7	2.2	3	4.5	3.1	2.9	1.2	0.8	1.1	0.5	10.1	3	24
14	0.1	0.3	3.4	3.2	3.4	1.7	4.2	5.9	6.7	9	9.6	9.4	9.5	10.3	10.6	11.2	9.4	8.3	5.6	5.9	8.1	7.5	7.7	7.4	11.2	6.4	24
15	7.5	6.2	4.2	2.4	2.8	3.2	3.5	4.6	5.8	5.8	5.8	6.1	6.7	7.1	8.1	6.6	6.7	4.2	3.2	3.8	5.7	5.7	6	4.1	8.1	4.9	24
16	3.3	3.9	3.8	2.9	3.2	3.5	2	5.4	6.2	8	7	6.7	7.3	7	6.6	6.1	4.2	3.1	3.5	8.5	8.5	7.9	6.9	7.8	8.5	3.3	24
17	7.7	6.7	6.7	6.8	6.1	7.2	7.2	7.4	6.2	6.8	6.5	7.4	7.2	6.6	6.3	6.8	6.6	3.8	3	2.8	4	4	3.8	2.8	7.7	5.3	24
18	3.9	5.6	3.6	5	4.2	3.7	3.1	3.7	4.4	4.8	7.5	7.4	6.3	6.2	6.6	4.1	4.4	1.1	2.2	1.8	1	2	0.5	3.4	7.5	3.4	24
19	2.3	2.5	2.2	2	2	0.6	3.1	2.4	3.5	3.3	4.2	4.7	4.9	6.1	7	7.4	5.7	5.9	4.3	3.4	1.7	3	2	1.5	7.4	2.9	24
20	1.1	1.3	1.3	1.3	0.5	1.7	1.2	0.4	0.3	1.2	3	4.7	2.5	3.5	3.2	4.5	5.4	4.1	3.6	4.9	7	6.8	6.7	8.2	8.2	2.8	24
21	8.5	7.7	8	8.1	8	9.5	9.2	9.5	9	10.7	12	11.1	12.6	14.1	12.4	11.4	11.1	8.5	8.3	6.4	7	8	7.5	3.8	14.1	9.1	24
22	3.4	3.4	2.8	1.6	1.4	0.7	0.2	1.1	1.6	4.1	4.6	4.8	4.9	4.2	4.6	2.4	0.9	3.8	2.2	0.8	0.5	1.2	1.4	0.7	4.9	0.5	24
23	1.7	2.2	0.4	0.6	0.4	1.2	1.6	1.8	3.9	5.4	4.6	4.3	5.3	5.4	4.5	3.9	1.7	0.9	0.4	0.8	0.1	0.8	0.5	0	5.4	1.7	24
24	2.2	1	0.8	0.3	0.5	0.8	0.4	0.8	4.1	4.9	4.8	4.5	2.6	1.5	1.3	1.6	1	1.3	1.5	2.1	3	3.6	4.1	4	4.9	1.3	24
25	3.4	2.4	1.1	4.6	5.4	4.4	5.4	4.6	3.3	8.3	7.7	8.3	8.5	9.1	10.2	11.5	9.6	6.8	8	7.6	9.6	9.6	7.6	8.4	11.5	5.5	24
26	4.7	6.1	4.5	0.6	4.7	3.5	2.8	5	1.6	3.7	8.9	7.7	5.8	7.5	6.1	4.6	3.5	1.2	2.3	3.4	4	6.7	8.9	9.4	9.4	2.6	24
27	5.7	3.9	6.3	6.4	3.2	5.5	3.7	1.4	5.2	M	M	5.4	7.1	6.9	7.7	4.7	2.8	2.5	5.3	5.5	5.6	5	3.2	3.1	7.7	3.7	22
28	5.1	5.3	3.1	3.8	5.5	5	3.3	3.6	9.2	11.9	10.6	11.1	11.9	10.7	11.2	7	9.2	10.7	5.5	6.5	6	5.7	3.8	3.3	11.9	6.7	24
29	3.5	3	3.6	2.5	0.9	0.9	4.9	3.6	5.6	8.5	9.3	9.7	11.7	9.6	10.6	11.2	10.4	7.1	7.7	10.3	10.1	10.4	9.2	10.1	11.7	6.5	24
30	9.6	9	4.7	5.2	6	5	4.7	5.2	4.8	7	7.7	6.7	7.1	7.1	4	3.6	2.6	4.3	3.3	2.3	3.2	3.6	6.9	6.8	9.6	2.6	24
HOURLY MAX	10.1	9.0	8.0	8.1	8.0	9.5	9.2	12.9	13.9	14.6	12.0	11.1	12.6	14.1	12.4	11.5	11.1	10.7	8.3	10.3	10.1	10.4	9.2	10.1			
HOURLY AVG	3.9	3.6	2.9	2.7	2.8	3.0	3.2	3.8	4.8	6.3	6.7	6.6	6.4	6.4	6.5	5.8	5.3	4.2	3.7	4.1	4.3	4.4	4.0	4.0			

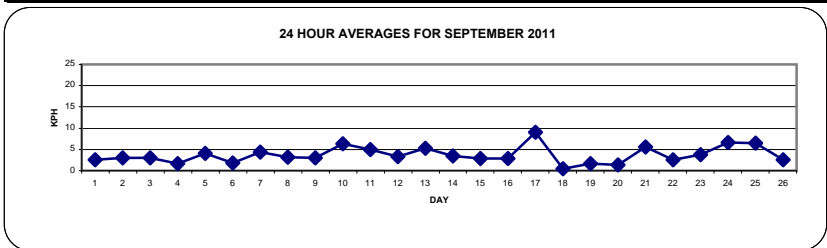
STATUS FLAG CODES

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

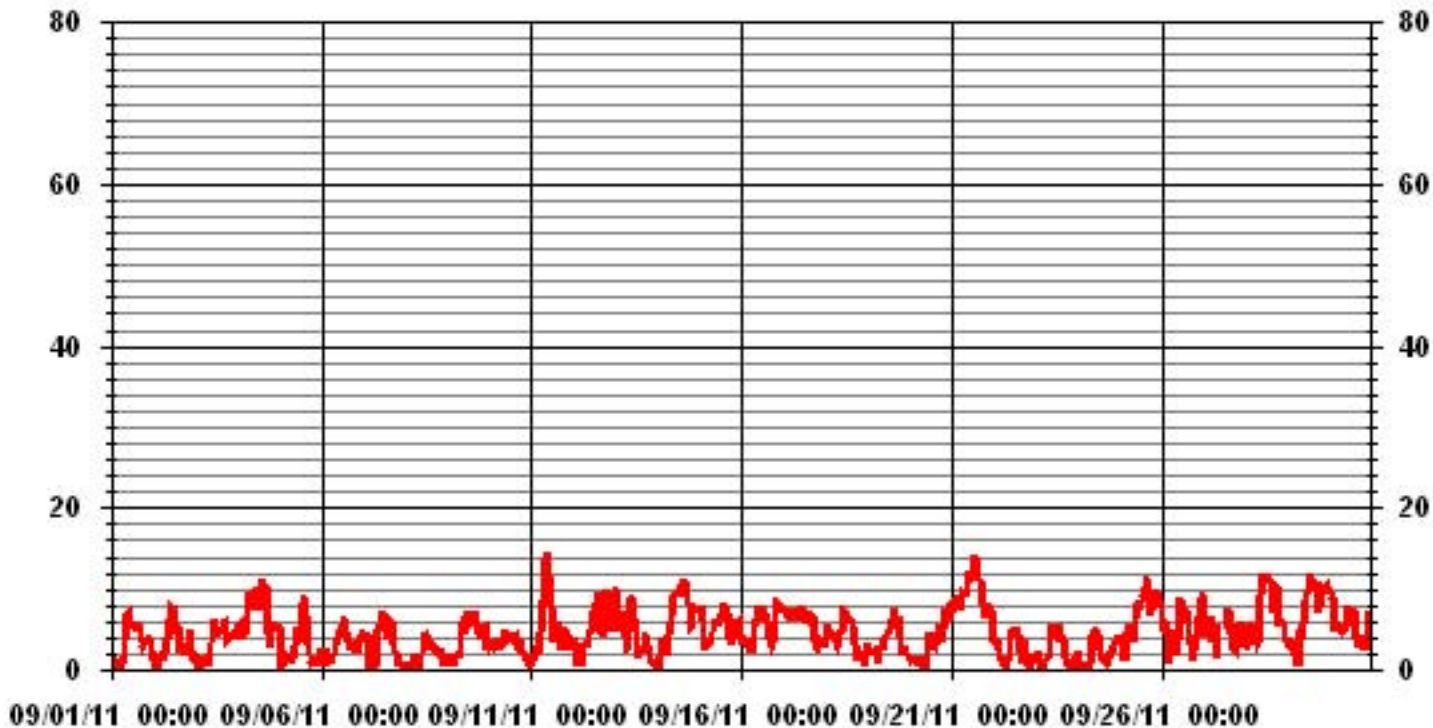
LAST CALIBRATION: September 27, 2011

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	14.6	KPH	@ HOUR(S)	9	ON DAY(S)	11
MAXIMUM 24-HR AVERAGE:	9.1	KPH			ON DAY(S)	21
CALMS (≤ 1 KPH)	7.66	%	OPERATIONAL TIME:	718	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME	99.7	%	
STANDARD DEVIATION	2.87		MONTHLY AVERAGE	4.55	KPH	



01 Hour Averages



— LICA30 WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 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	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
DAY	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	
1		5.1	5.1	6.3	4.6	3.6	5.4	4.5	8.7	9.6	18.1	21.8	20.1	21.9	20.2	20	22.3	17.5	9.9	6.4	5.8	10.1	8	11.2	9.6	22.3
2		4.9	5.7	5.8	9.3	6.6	5.4	7.5	7.5	9.2	16.5	18	20.4	22.8	21.5	19	23.7	18.2	16.1	6.3	10.5	14.6	14.7	11.8	11.3	23.7
3		7.3	11.3	5.5	2.4	4.1	7.3	4.5	8.8	6.2	11.2	13.2	19.1	19.3	19	18.5	17.4	17.5	14.3	9	7.8	9.4	8.2	8.2	10.4	19.3
4		11.5	13.7	14.3	9.8	12.5	14.4	17.7	21.3	23.2	22.6	17.1	20.4	24.5	24.1	25.2	24.5	28	14.1	8	7.8	10.2	21.6	10.9	12	28
5		10.9	4.6	4.4	4.9	5.3	4.3	5.4	6.1	7.5	10.2	12.5	13.4	18	19.5	22.1	21.2	16.1	11.7	6	12.7	8.8	7.3	7.9	5.7	22.1
6		5.4	5.3	6.1	9.9	5.4	10.2	4.4	7.1	9.2	10.1	11.1	15.9	18.9	21.6	18.9	18.4	20.5	9.6	5.8	5.8	4.9	6.9	8.9	7.5	21.6
7		12.6	11.7	12.4	3.8	2.8	1.9	3.4	5.3	13.7	15	13	21.6	17.2	12.8	14.1	16.6	14.2	7.7	4.4	5	5.4	3.7	4	4.5	21.6
8		3.6	3.4	1.9	2.2	3.8	5.3	3.3	2.1	6	9.6	10.5	12.9	15.3	13.6	14.2	14.1	12.1	11.2	8.3	6.3	5.7	3.4	3.3	4.2	15.3
9		4.4	5.1	4.2	4.5	5.4	8	9.5	5.8	13.1	11.4	15.5	16.1	17.5	18.1	26.9	18.1	21.1	14.7	9.6	7.1	11.6	12	8	8.3	26.9
10		12.9	13.9	13.1	12.3	10.3	10.3	11.6	14.6	11.8	14.8	14.7	15.8	15.1	16.3	15.5	16.2	13.6	13.4	9	7	5	4.7	6.3	5	16.3
11		5.5	5.4	6.1	8	7.4	12.5	20.3	29	35.3	35.2	26.5	26.2	14.4	15.6	16.6	16.5	13.5	13.3	15.3	23.6	18.6	13.5	16.9	11.4	35.3
12		17.2	13.3	9.2	7.2	3	10.4	10.7	9.7	10.4	10.2	17.3	28.1	33	27.9	45.7	31.7	23.2	14.3	31.2	26.6	19.1	20.3	16.9	17.1	45.7
13		27.5	22	12.4	12	15.4	10.7	9.5	14.7	18.2	23.8	21.3	21.8	16.3	17.8	12.6	14.8	12.5	11.8	6.8	5.5	4	3.4	2.9	3.1	27.5
14		2	4.7	9.5	8.8	8.8	6.3	14.9	14.7	18.9	25.5	24.5	30	28.3	31	29.7	32.7	30.4	22.5	15.6	15.4	22.8	18.1	20.7	20.7	32.7
15		20.4	16.6	16.9	7.1	7.5	9.2	10.6	13.2	15	16.9	18.1	17.4	19.2	23.2	26.2	18.6	18.5	15.3	8.9	14.9	18.9	18.5	20.7	14.6	26.2
16		9.8	11.1	10.4	11.9	9.8	11.6	8.1	15.4	17	22.9	21.8	26.7	34.6	38	30.3	28.2	25.2	13.6	26	48	33.5	35.2	33.3	33.2	48
17		27.4	27	23.7	21.9	21.5	21.1	22.7	25.4	24.1	27.6	32	29.1	27.6	24.9	29.2	28.5	26.1	16.4	10.7	9.7	10.8	19	19.3	12.5	32
18		14.1	14.8	15.8	13.7	12.5	12.5	12.9	14.5	16.5	22.7	29.5	35.8	23.4	23.3	26.5	19.8	12.6	11.6	5.3	4.3	3.2	5.3	3.8	12.3	35.8
19		9.2	5	5.7	6	6.3	4.9	6.7	8.2	12.1	13.6	16.8	18.8	21.4	29.6	25.2	27.8	25.4	27.1	31.5	32	14.7	14.2	10.7	10	32
20		7.9	7.3	5.5	8.8	3	4.5	3.6	3.3	5	7.1	10.4	16	14.3	16.3	16.6	16.3	16.2	12.8	8.5	11.1	16.3	18	19.8	19.2	19.8
21		24.1	24	21.3	21.8	20.1	30.8	26.2	26.4	23.9	35.8	37.4	38.4	41.9	42.6	35.3	33.3	30.9	29.1	21.7	22.1	19.5	20.3	20.7	16.2	42.6
22		10.1	9.6	6.9	6.7	6	5.2	4.5	8.9	9.1	15.4	19.2	21.3	18.1	14.8	15.6	11.2	8.4	8.7	7.8	6.2	7.5	4.4	5.5	4	21.3
23		5.8	5.6	3.2	4.5	3.8	4.8	7.2	9.1	13.3	14.9	17.6	11	15.9	16.2	14.1	13.7	11	4.5	4.3	4.7	3.7	4.9	8.9	6.3	17.6
24		6.4	6.8	6.1	4.1	4.4	3.5	5.5	3.6	9.4	12.9	16.4	14.7	15.5	11	7.4	7.4	6.8	6.1	5.8	7.5	8.6	9.6	9.6	10.5	16.4
25		8.4	7.5	6.1	11.2	13.1	11.5	13	9.8	19.4	24.5	29	25.4	28.7	31.9	30.7	31.5	30.6	28.1	24.5	20.5	27.2	24.9	20	21.5	31.9
26		20.1	24.7	23.1	7.2	12.3	9.2	14.3	20.1	14.8	13.9	35.3	30.6	25.3	28.9	27.1	26.1	19	5	6.5	6.8	9.8	19.6	21.5	26.1	35.3
27		19.1	10.9	14.8	20	11.5	10.8	9.9	8.8	M	M	M	M	29.9	33.4	27.9	22.2	19.6	8.3	12.7	14	13.8	10.3	10.6	9.5	33.4
28		18.1	19.2	13.3	15	19.9	18.8	13.7	20.7	38.9	39.1	39.3	43.3	46.8	38	40	31.9	36.3	39.3	33.9	29.9	23.2	23.9	21.7	16.3	46.8
29		12.2	10	10.2	7.6	3.9	3.4	12.6	10.2	15	23.3	29.5	34.1	33.3	39	30	34.8	37.4	22.7	25.1	33	33.9	28.8	24.9	26.2	39
30		25.5	27.3	21.1	13.5	21.6	16.3	15.9	16.3	17.9	19	20.3	18.3	19.7	23.2	16.4	13.1	14.2	15.1	11.1	11.1	12.2	16.3	27.7	29.5	29.5
PEAK		27.5	27.3	23.7	21.9	21.6	30.8	26.2	29.0	38.9	39.1	39.3	43.3	46.8	42.6	45.7	34.8	37.4	39.3	33.9	48.0	33.9	35.2	33.3	33.2	

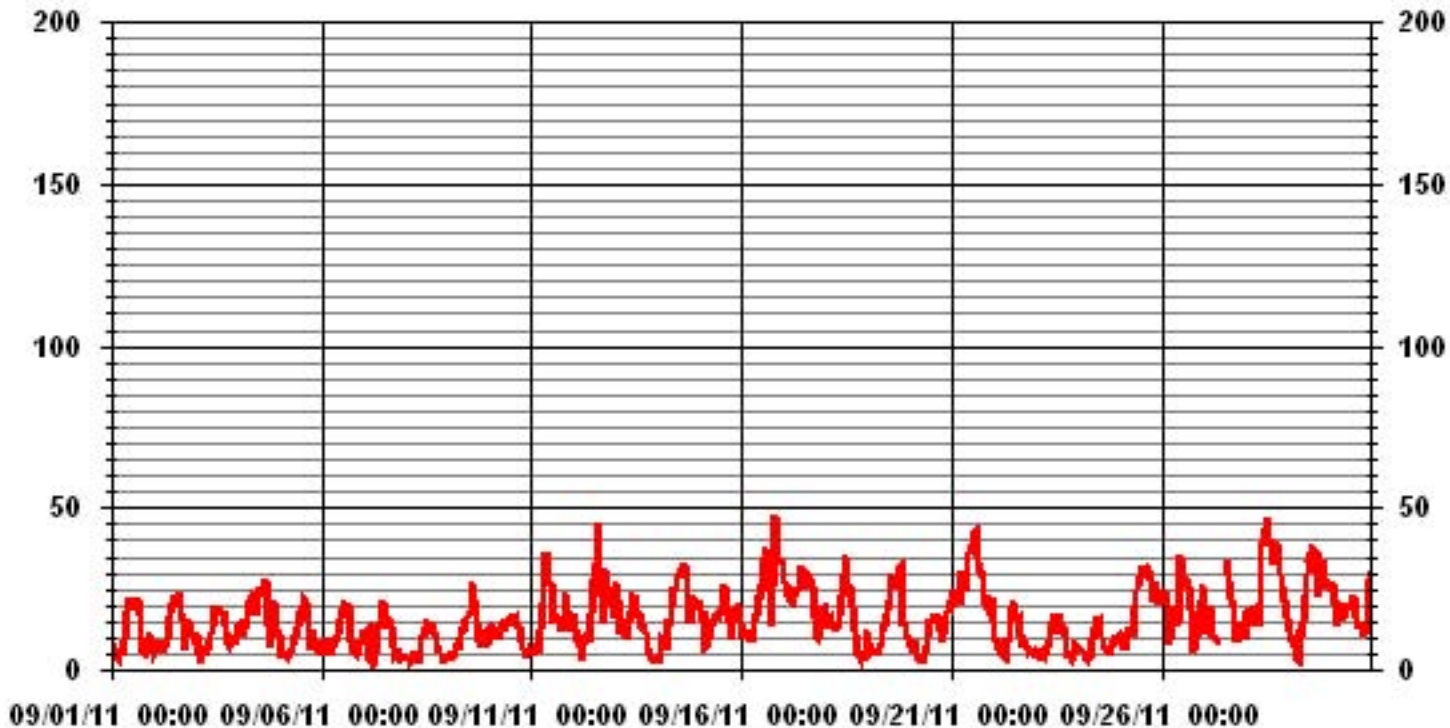
STATUS FLAG CODES

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	48	KPH	@ HOUR(S)	19
			ON DAY(S)	16

01 Hour Averages



— LICA30 WSMAX KPH

LICA30
WSP / WDR Joint Frequency Distribution (Percent)

September 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	2.36	1.81	3.06	3.20	1.11	2.36	4.59	4.17	8.07	13.09	9.33	3.89	5.43	3.89	2.64	1.94	71.03
< 12.0	.69	1.53	.27	.00	.00	1.39	3.48	5.98	2.36	2.92	2.08	1.39	1.81	2.78	.83	.27	27.85
< 20.0	.00	.27	.13	.00	.00	.00	.00	.00	.55	.00	.00	.00	.00	.00	.00	.00	.97
< 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	3.06	3.62	3.48	3.20	1.11	3.76	8.07	10.16	11.00	16.01	11.42	5.29	7.24	6.68	3.48	2.22	

Calm : .13 %

Total # Operational Hours : 718

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	13	22	23	8	17	33	30	58	94	67	28	39	28	19	14	510
< 12.0	5	11	2			10	25	43	17	21	15	10	13	20	6	2	200
< 20.0		2	1						4								7
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	22	26	25	23	8	27	58	73	79	115	82	38	52	48	25	16	

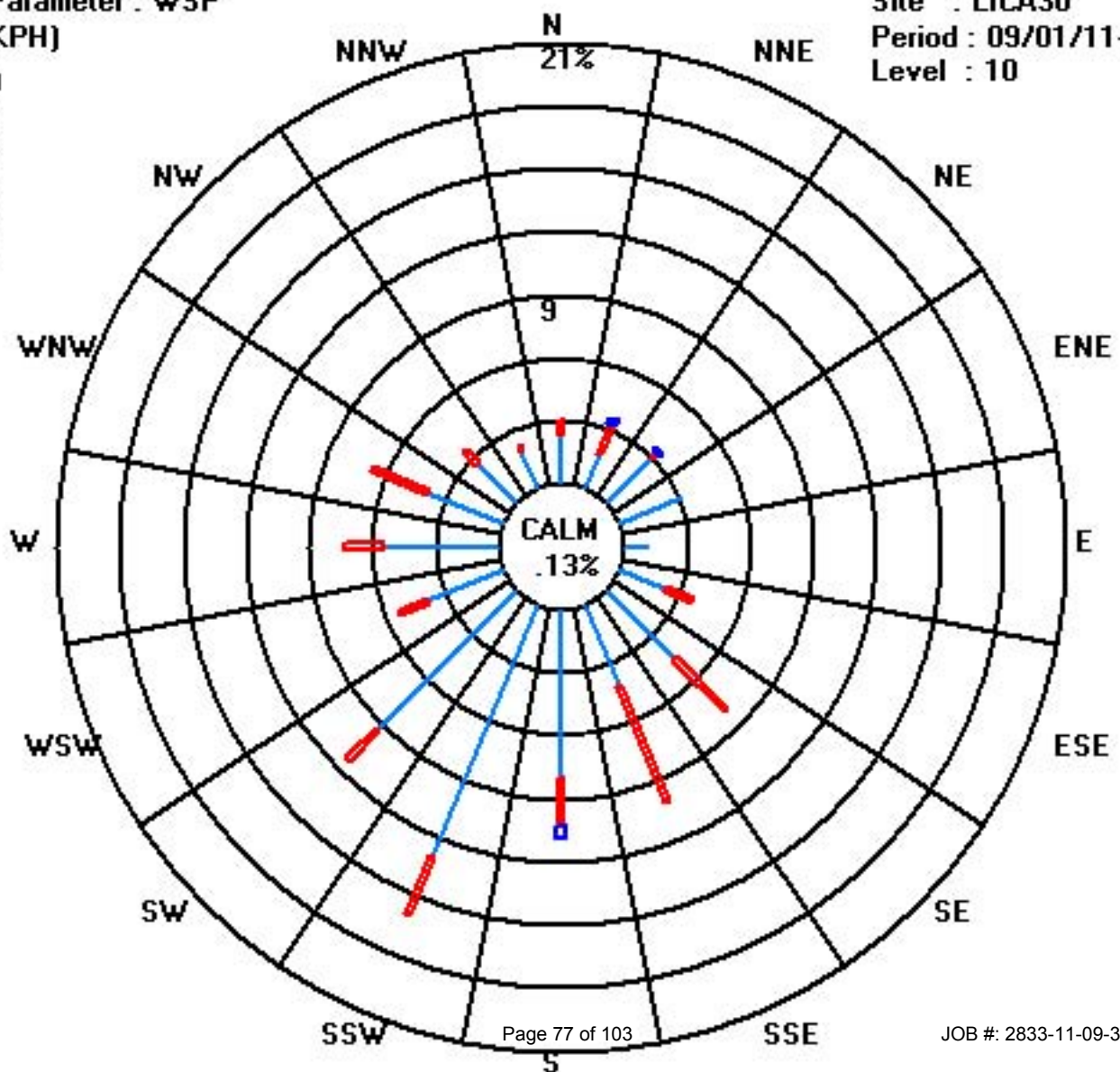
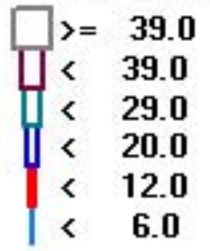
Calm : .13 %

Total # Operational Hours : 718

Class Limits (KPH)

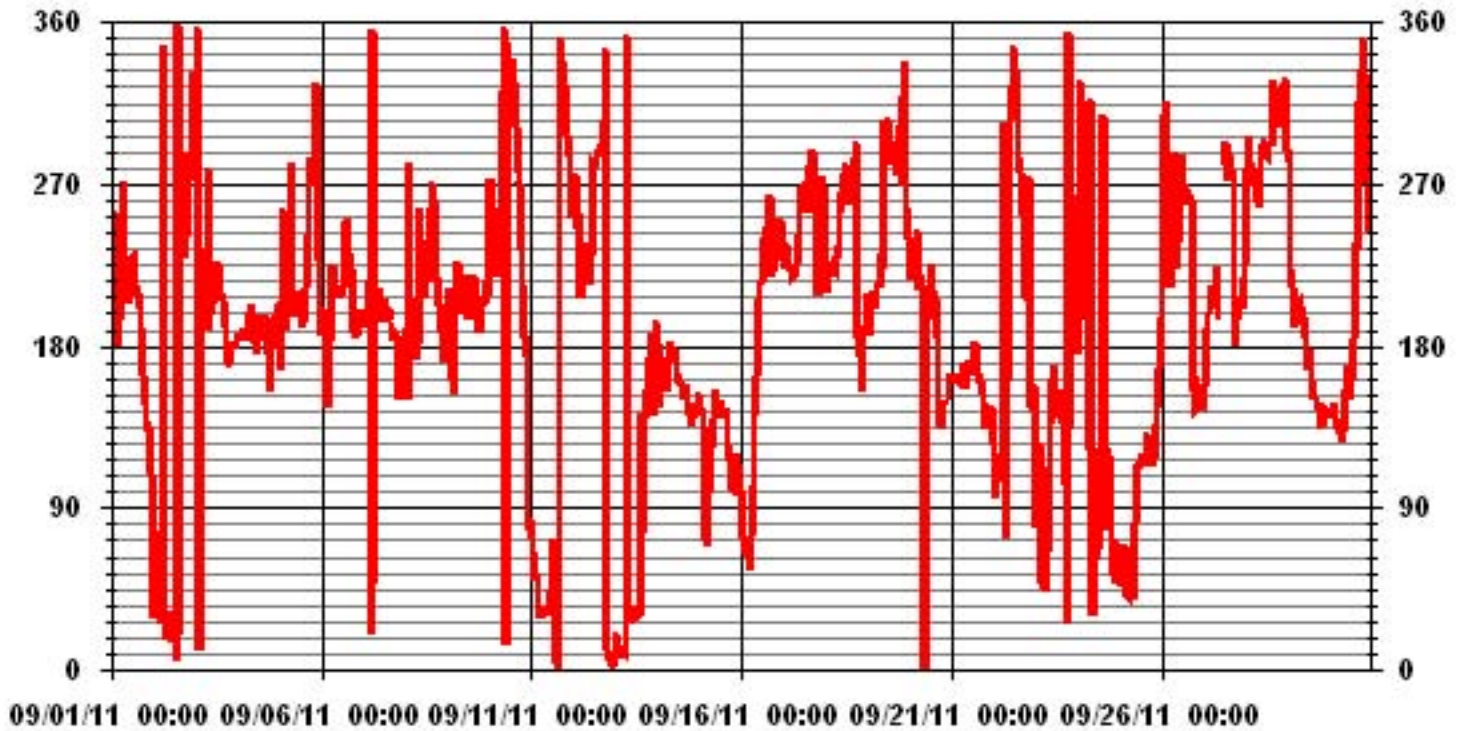
Period : 09/01/11-09/30/11

Level : 10



Vector Wind Direction

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 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	36	23	25	22	10	25	27	38	29	28	32	34	42	38	53	40	32	21	7	8	13	14	17	21
2	12	19	45	30	22	14	27	21	15	19	17	26	30	33	35	41	41	46	37	30	43	30	43	50
3	41	39	25	37	15	29	21	33	36	44	27	33	54	45	43	35	33	16	10	9	9	10	9	13
4	14	16	15	16	17	17	17	18	20	21	23	27	29	24	22	21	20	15	12	14	14	19	13	14
5	13	38	33	13	30	38	17	39	41	51	30	31	39	24	23	32	41	34	36	36	35	43	32	54
6	5	17	12	59	28	32	36	28	30	26	25	37	38	40	44	47	43	26	7	5	10	8	11	9
7	14	11	15	42	54	14	30	36	26	26	28	23	34	38	28	26	18	10	4	5	61	43	62	64
8	51	19	8	14	19	25	8	3	49	39	28	41	43	43	63	53	44	33	23	13	8	5	5	3
9	3	22	30	44	32	22	26	36	18	27	24	32	25	36	37	30	21	18	11	8	11	13	17	22
10	37	34	40	28	20	29	34	40	38	37	34	43	51	46	53	40	43	42	29	23	19	9	51	13
11	23	15	15	15	15	18	16	19	19	18	17	25	26	22	25	28	32	31	38	34	37	41	31	35
12	37	33	35	33	22	16	19	30	28	22	36	44	42	41	40	43	37	37	31	21	21	21	22	20
13	19	20	18	16	15	14	21	14	17	22	29	45	54	58	58	49	42	19	11	12	34	36	14	14
14	36	39	16	17	18	25	18	19	23	28	28	33	30	30	28	27	25	22	20	19	20	22	21	23
15	22	21	29	25	20	19	17	28	30	31	35	35	34	38	28	28	25	20	19	21	28	25	28	31
16	27	25	22	32	24	27	23	24	26	27	28	32	43	42	43	44	42	30	31	38	36	40	45	39
17	33	41	34	31	32	29	30	33	41	44	43	43	41	45	44	42	36	37	22	14	22	37	35	34
18	27	18	32	26	27	27	37	38	41	47	42	43	45	47	45	49	33	47	11	11	15	12	12	18
19	28	9	16	27	41	71	18	32	31	41	49	45	48	42	39	42	45	38	45	38	39	31	50	39
20	38	35	35	37	31	19	23	23	51	54	46	39	57	57	44	32	29	19	13	13	16	15	19	22
21	21	22	22	23	21	22	23	24	26	25	27	26	26	25	26	26	26	24	21	21	21	20	21	29
22	19	24	18	30	54	57	51	27	44	35	39	36	36	40	42	47	40	13	22	32	56	43	57	70
23	41	15	20	41	23	21	41	56	28	29	28	28	38	29	25	23	34	46	42	18	59	42	43	51
24	37	16	25	35	27	32	51	18	18	25	36	42	52	66	58	58	54	17	18	20	19	16	16	16
25	14	25	35	15	16	21	18	16	37	33	33	34	34	31	28	29	28	26	27	26	24	20	20	18
26	34	37	46	42	14	23	37	39	56	35	35	40	43	39	46	49	37	26	10	7	13	17	19	21
27	23	21	14	22	23	13	18	36	20	73	66	40	38	39	33	43	39	44	14	13	17	13	19	24
28	30	33	29	32	29	31	40	35	33	29	31	33	30	29	32	35	35	32	37	35	42	39	34	34
29	28	27	18	30	45	58	15	23	20	22	26	30	24	33	30	26	26	22	21	21	22	21	23	22
30	22	22	31	23	26	23	26	22	29	26	26	31	31	33	38	41	45	34	31	40	34	30	31	35

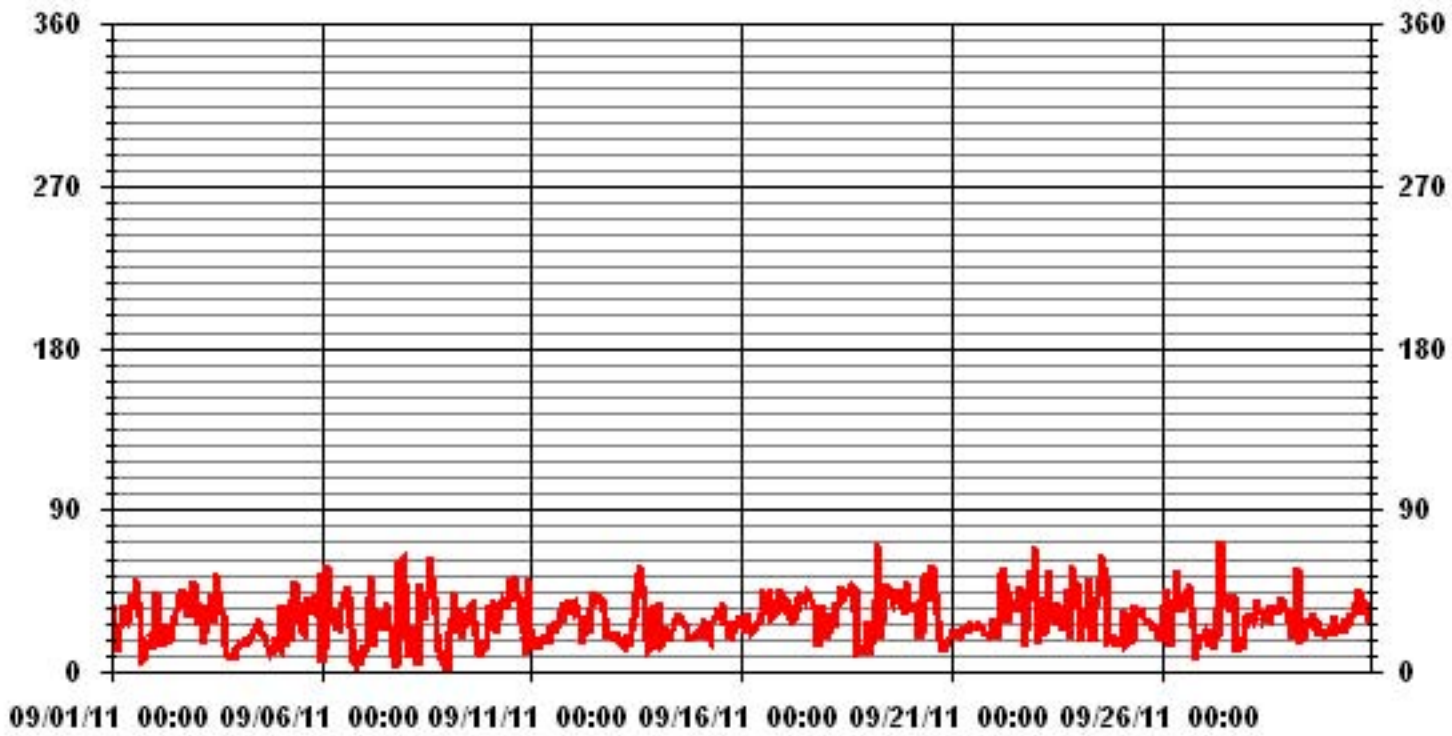
STATUS FLAG CODES

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: September 27, 2011

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 720 HRS

01 Hour Averages



Calibration Reports

Sulphur Dioxide

SO2 Calibration Report
Station Information

Calibration Date	September 7, 2011	Previous Calibration	August 5, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	11:42	End Time (MST)	15:13
Reason:	Monthly Calibration		
Barometric Pressure	951 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	608 ccm	32.5 Deg C	608 ccm	32.8 Deg C	
HVPS / Lamp Setting	494	2817	494	2816	
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	38.8	1.119	39.9	1.12	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4997	0	0	1	N/A
4997	0	0	0	N/A
4923	76.5	750	749	1.0010
4961	40.8	400	395	1.0119
4980	17.3	170	169	1.0037
4997	0	0	0	N/A
Sum of Least Squares				1.0034
New Correction Factor				1.0010

	Before Calibration	After Calibration
Auto Zero	1.4	0.7
Auto Span	373.0	375.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9984
Current Correction Factor Before Span Adjust:	1.0010
Percent Change:	-0.3%

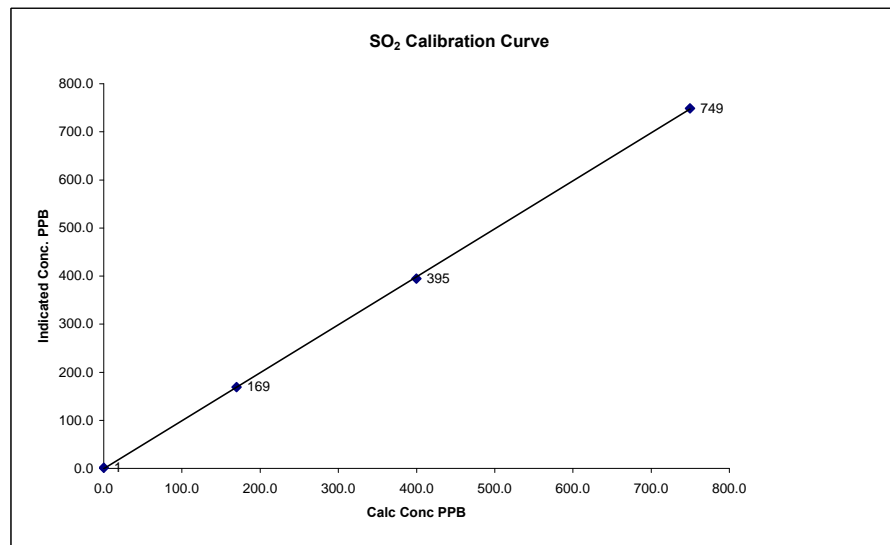
Notes: **N/A : Not applicable**

Calibration Performed by: Ting Xu

SO2 Calibration Curve

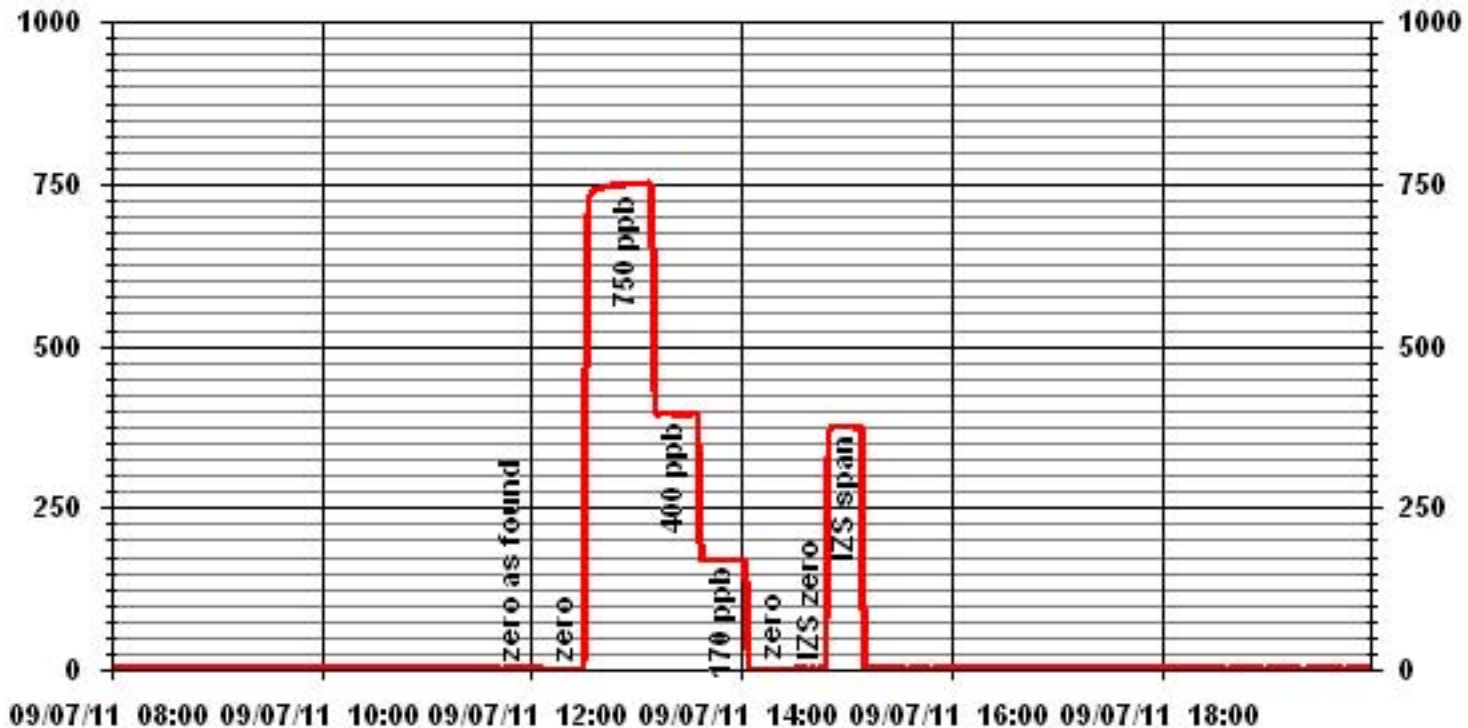
Calibration Date	September 7, 2011
Company	Lakeland Industry & Community Association
Plant / Location	Cold Lake - Maskwa
Start Time (MST)	11:42
End Time (MST)	15:13

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	1	n/a		0.999952
170	169	1.0037		0.997205
400	395	1.0119		-0.353814
750	749	1.0010		



Notes:

01 Minute Averages



Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	September 6, 2011	Previous Calibration	August 4, 2011
Company	Lakelnad Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	8:58	End Time (MST)	12:05
Reason:	Monthly Calibration		
Barometric Pressure	946 mBar	Station Temperature	26 Deg C
Cal Gas	10.2 ppm	Gas Cyl. #	BLM00080
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	February 22, 2012
		Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	511	Method:	Fluorescent
Converter Make / Model:	Internal	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:		Not in use	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, 32.6 Deg C	528 ccm, 33.8 Deg C	
HVPS / Lamp Setting	552, 2071	552, 2067	
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	316 Deg C, 45.0 Deg C	
Offset / Slope	29.2, 1.035	29.2, 1.035	

Calibration Data

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

Before Calibration

After Calibration

Auto Zero	0.6	0.2
Auto Span	57.0	55.8
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%

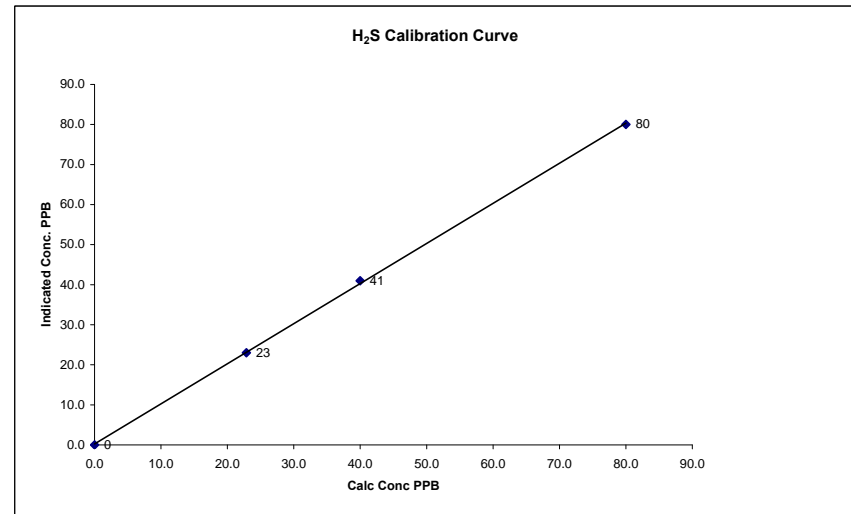
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

H₂S Calibration Curve

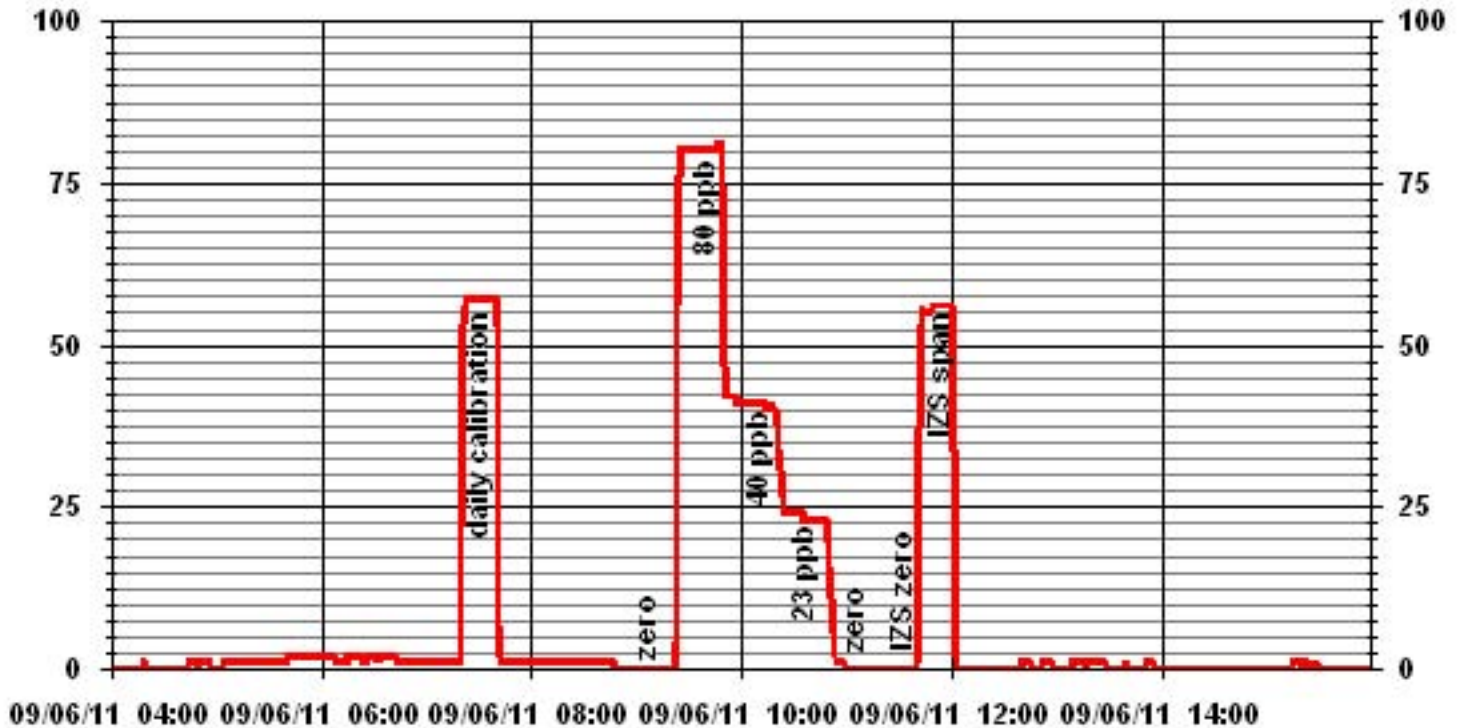
Calibration Date	September 6, 2011
Company	Lakelnad Industry & Community Association
Plant / Location	Cold Lake - Maskwa
Start Time (MST)	8:58
End Time (MST)	12:05

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999796
0	0		Intercept	(± 3% F.S.)	0.259072
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:	September 6, 2011	Previous Calibration	August 4, 2011
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	Maskwa		
Start Time (MST)	11:25	End Time (MST)	14:54
Reason:	Monthly Calibration		
Barometric Pressure:	947 mmHg	Station Temperature:	25 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 980 PPM	C3H8 304 PPM	
	TOTAL CH4 1816.0 PPM	Gas Cyl. # LL84144	Cal Gas Expiry Date: December 3, 2013
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
3000	0.0	0.0	0.0	NA
	No Zero Adj Needed			
3000	70.0	41.4	42.7	0.9697
3000	70.0	41.4	41.7	0.9930
3000	35.0	20.9	20.8	1.0068
3000	20.0	12.0	12.0	1.0000
3000	0.0	0.0	0.0	NA
New Correction Factor:				0.9930

Percent Change	
Previous Calibration Correction Factor:	0.9938
Current Correction Factor Before Span Adjust:	0.9697
Percent Change:	2.5%

IZS Calibration Data		
	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	35.8	35.1
Sample Lines Connected	YES	

Cylinder Pressures			
Span	1700 psi	Hydrogen	400 psi
Zero Air	32 psi		

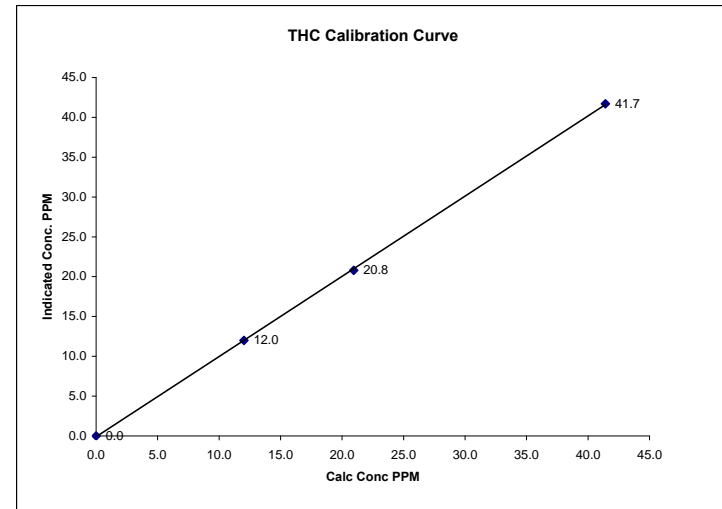
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

THC Calibration Curve

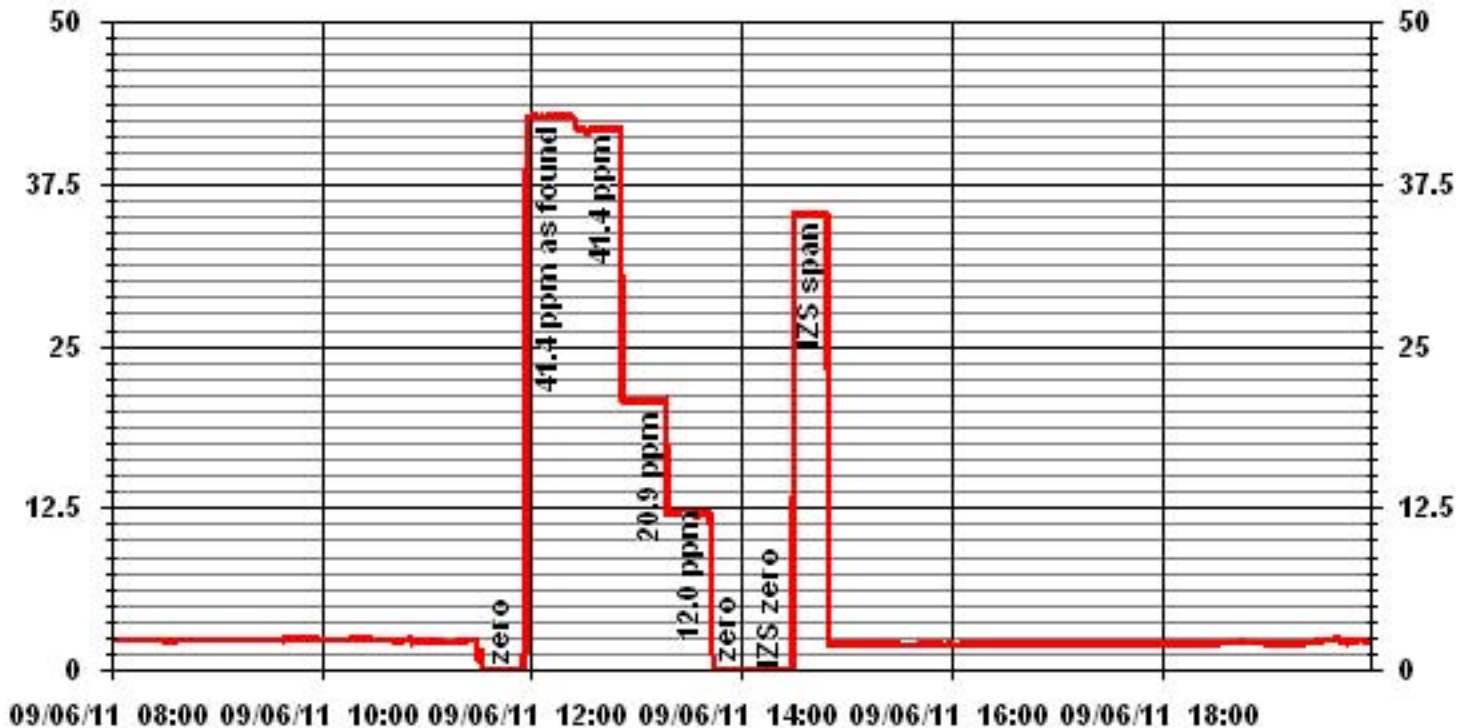
Calibration Date	September 6, 2011		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Maskwa		
Start Time (MST)	11:25	End Time (MST)	14:54

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope (0.85 to 1.15)	Correlation Coefficient Intercept (±3% F.S.)
0.0	0.0	NA	0.99939	1.007127
12.0	12.0	1.0022		-0.10152
20.9	20.8	1.0068		
41.4	41.7	0.9930		

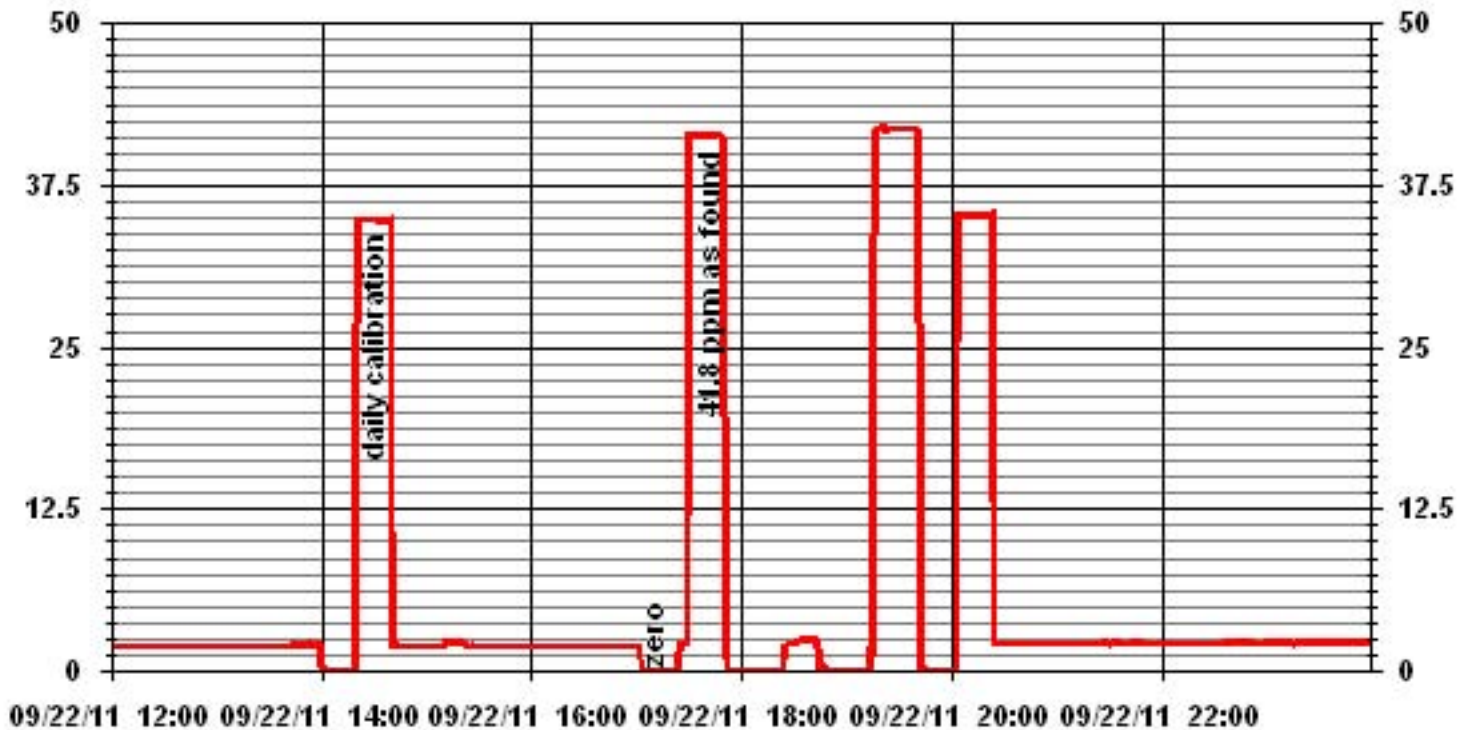


Notes:

01 Minute Averages



01 Minute Averages



THC Calibration Report

Station Information			
Calibration Date:	September 23, 2011	Previous Calibration	September 22, 2011
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	Maskwa		
Start Time (MST)	8:21	End Time (MST)	11:39
Reason:	Post Repair Calibration		
Barometric Pressure:	936 mmHg	Station Temperature:	24 Deg C
Calibrator:	EnviroNics 6100	S/N:	4760
Cal Gas Concentration:	CH4 980 PPM	C3H8 304 PPM	
	TOTAL CH4 1816.0 PPM	Gas Cyl. # LL84144	Cal Gas Expiry Date: December 3, 2013
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
2999	0.0	0.0	0.0	NA
	No Zero Adj Needed			
2999	68.5	40.6	41.8	0.9702
2999	68.5	40.6	40.9	0.9915
2999	34.4	20.6	20.2	1.0195
2999	19.8	11.9	11.5	1.0357
2999	0.0	0.0	0.0	NA
New Correction Factor:				0.9915

Percent Change	
Previous Calibration Correction Factor:	1.0086
Current Correction Factor Before Span Adjust:	0.9702
Percent Change:	4.0%

IZS Calibration Data		
	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	35.1	34.2
Sample Lines Connected	YES	

Cylinder Pressures			
Span	1600 psi	Hydrogen	700 psi
Zero Air	32 psi		

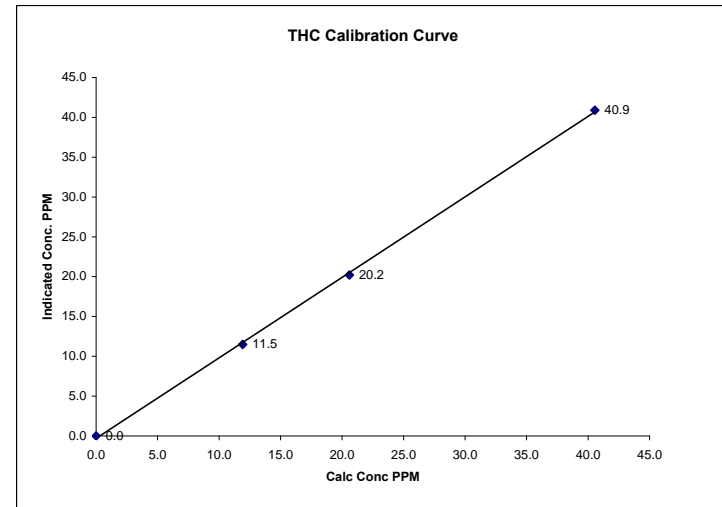
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

THC Calibration Curve

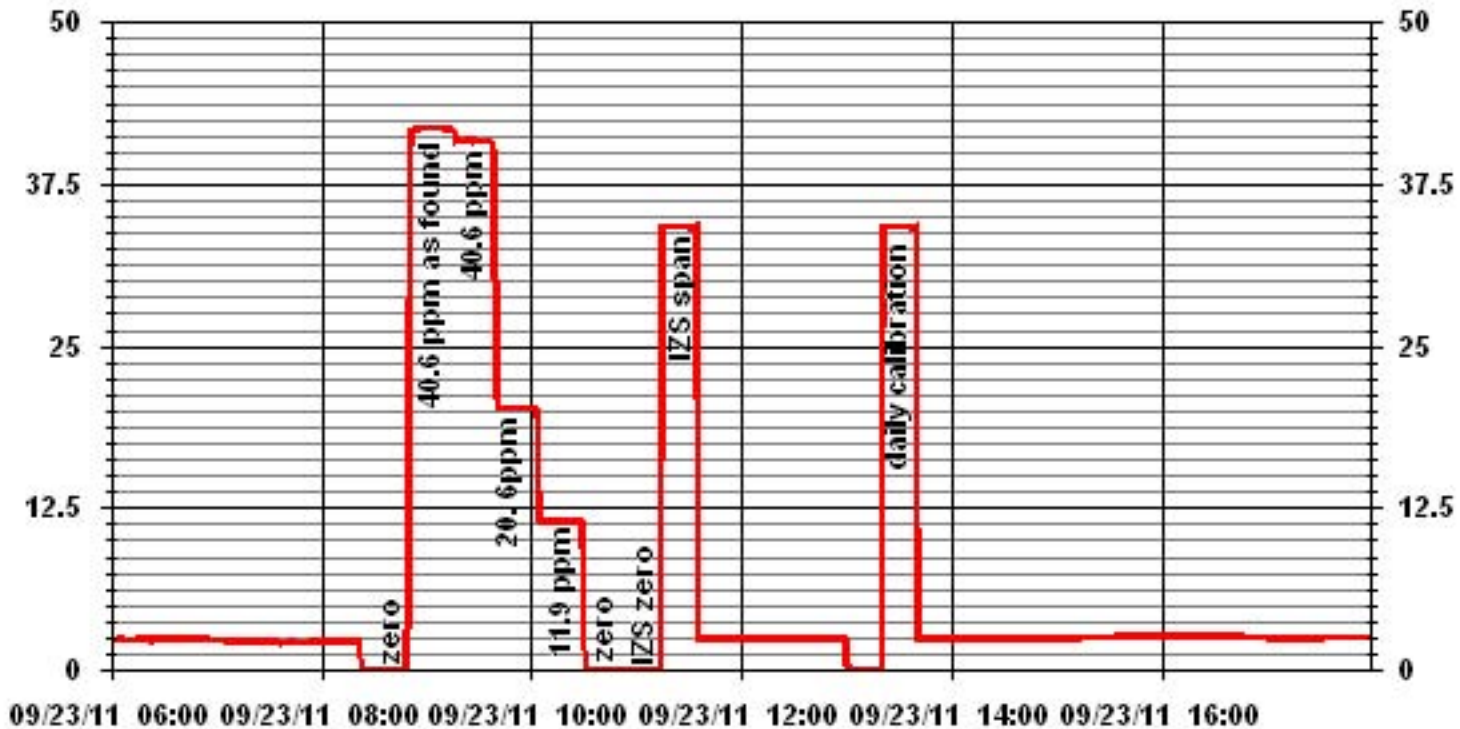
Calibration Date	September 23, 2011		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Maskwa		
Start Time (MST)	8:21	End Time (MST)	11:39

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope (0.85 to 1.15)	Correlation Coefficient Intercept (±3% F.S.)
0.0	0.0	NA	0.999675	1.010762
11.9	11.5	1.0357		-0.31107
20.6	20.2	1.0195		
40.6	40.9	0.9915		



Notes:

01 Minute Averages



Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	September 6, 2011	Previous Calibration	August 4, 2011
Company	LICA	Plant/Location	Maskwa
Start Time (MST)	8:33	End Time (MST)	14:29
Reason:	Monthly Calibration		
Barometric Pressure	946 mBar	Station Temperature	26 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO	50.4 ppm
Cal Gas Cylinder #	LL103822	Cal Gas Expiry date	February 4, 2013
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	API 200E	S/N :	594	Method:	Chemiluminescent
Calibrator Make / Model:	Enviroincs 6100	S/N :	4760		
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Chart Recorder Make / Model:	Not in use	S/N :	NA		
Flow Meter:	ESC 8832	S/N :	4760		

Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 1000				
Sample Flow/Conv. Temp	457 ccm	316 Deg C	458 ccm	314 Deg C	
Ozone Flow / Vacuum	79 ccm	5.3 °Hg-A	79 ccm	5.3 °Hg-A	
HVPS / A ZERO	767 Volts	17.4 MV	767 Volts	17.5 MV	
Rx/ Temp / PMT Temp	50.0 Deg C	6.5 Deg C	50.0 Deg C	6.6 Deg C	
Box Temp / IZS Temp	31.9 Deg C	45.2 Deg C	34 Deg C	45.2 Deg C	
Offset	1.8 NOx	-0.1 NO	-0.1 NOx	-0.6 NO	
Slope	1.163 NOx	1.132 NO	1.163 NOx	1.136 NO	
NO ₂ COEF / Conv Efficiency	NA NO ₂	0.994	NA NO ₂	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
4995	0.0	NA	0	0	NA	-1	0	-1	NA	NA
4995	0.0	NA	0	0	NA	0	0	0	NA	NA
4921	74.2	NA	768	749	NA	765	746	19	1.0026	1.0036
4921	74.2	NA	768	749	NA	767	750	17	1.0000	0.9982
4960	34.6	NA	358	349	NA	358	350	8	1.0000	0.9976
4973	19.8	NA	205	200	NA	206	202	4	0.9905	0.9895
4995	0.0	NA	0	0	NA	1	0	0	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO ₂ Correction Factor	NO ₂ Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4921	74.2	NA	768	749	NA	767	752	15	NA	NA
No Adj needed										
4921	74.2	600	768	NA	549	767	218	548	1.0018	99.81%
4921	74.2	250	768	NA	241	768	526	242	0.9959	100.44%
4921	74.2	140	768	NA	140	767	627	140	1.0000	100.00%

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 1.001	NO= 0.998	NO2= 1.001
				NOx= 1.0000	NO= 0.9982	NO2= 1.0018
Average Converter Efficiency= 100.09%						

Before Calibration **After Calibration**

Auto Zero	-0.3 NOx	-0.5 NO2		1.1 NOx	-0.3 NO2	
Auto Span	723 NOx	711 NO2		720 NOx	708 NO2	
Sample Lines Connected: YES						
Percent Change from Previous Calibration	NOx	-0.3%	NO	-0.3%	NO2	-0.2%

Notes:

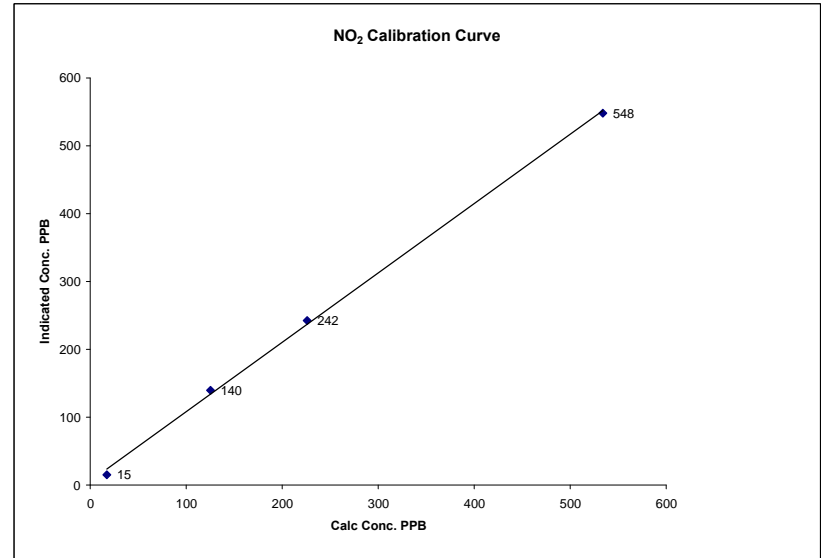
NA : Not Applicable

Calibration Performed by: Ting Xu.

NO₂ Calibration Curve

Calibration Date	September 6, 2011	Company	LICA
Plant / Location	Maskwa	Start Time (MST)	8:33
End Time (MST)	14:29		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999046
17	15	N/A	Intercept	(± 3% F.S.)	5.84341
125	140	0.8929			
226	242	0.9339			
534	548	0.9745			

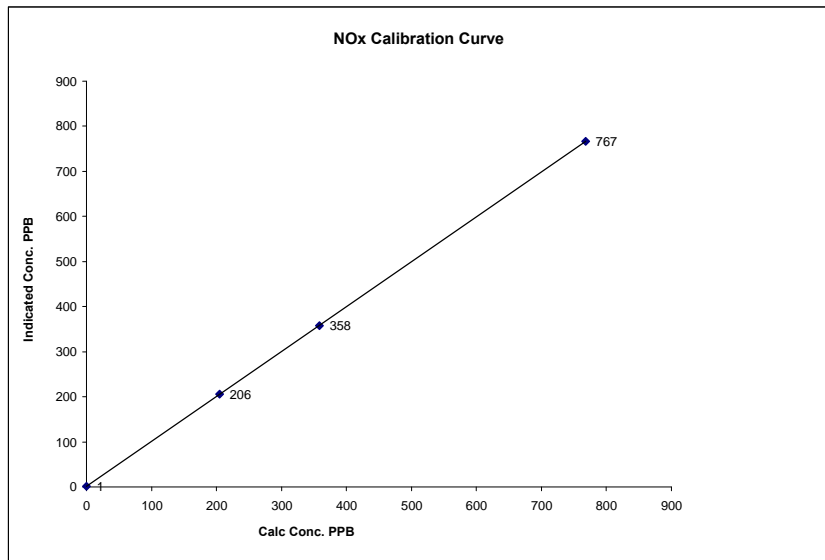


Notes:

NOx Calibration Curve

Calibration Date	September 6, 2011	
Company	LICA	
Plant / Location	Maskwa	
Start Time (MST)	8:33	End Time (MST) 14:29

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999999
0	1	N/A	Slope (0.85 to 1.15)	0.997222
205	206	0.9953	Intercept (± 3% F.S.)	1.13872
358	358	1.0004		
768	767	1.0013		

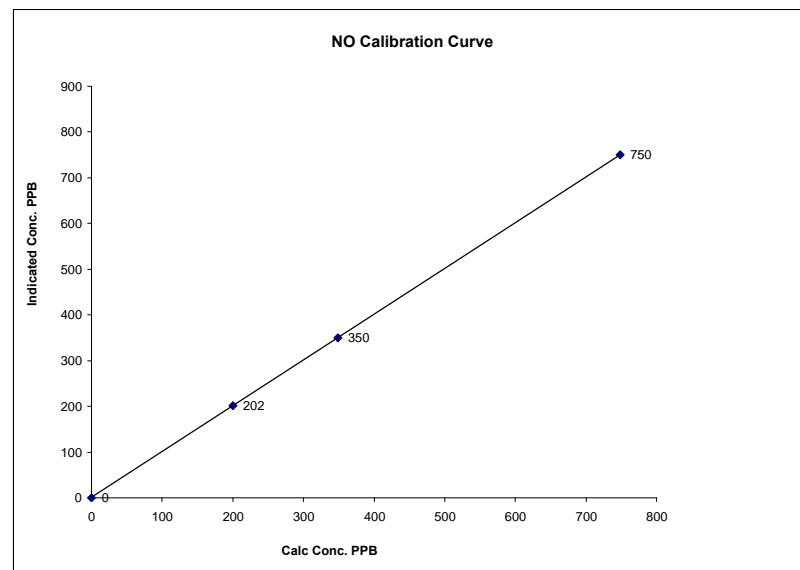


Notes:

NO Calibration Curve

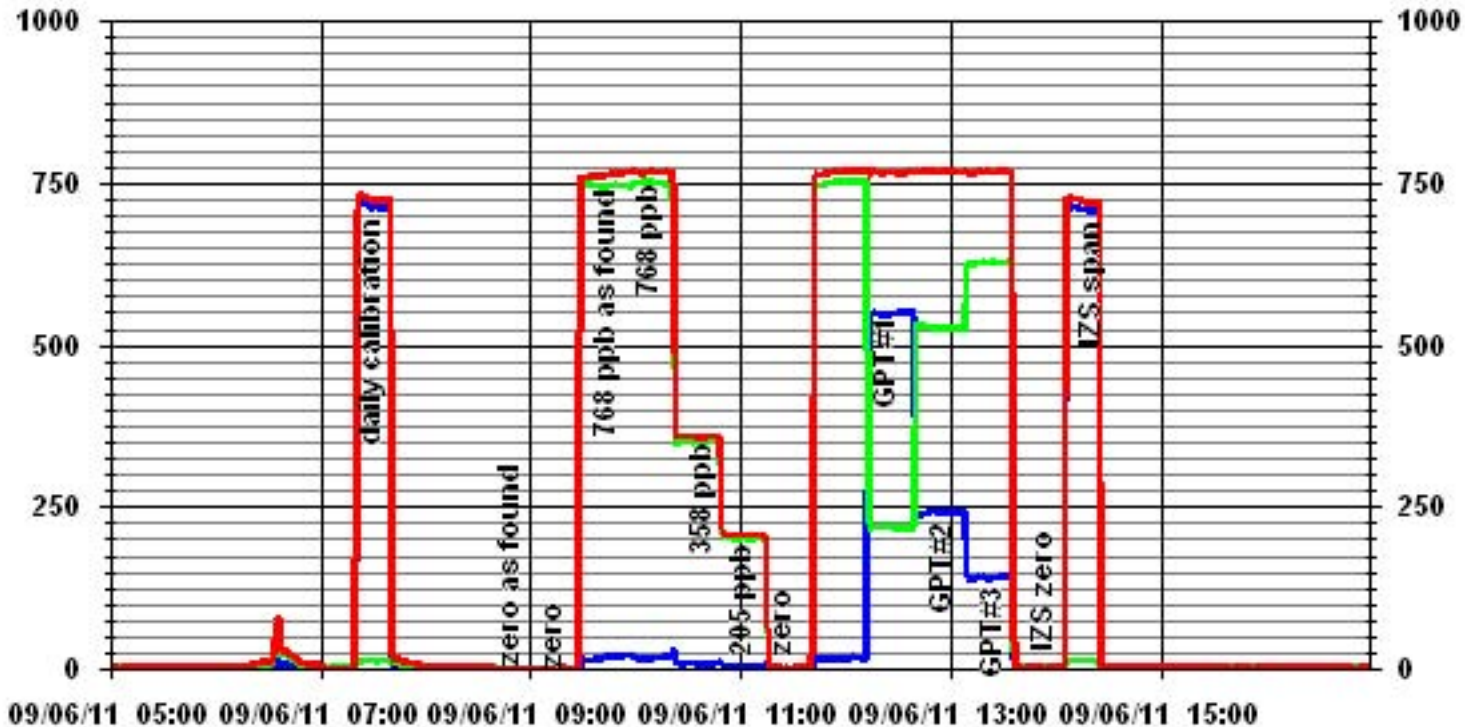
Calibration Date	September 6, 2011	
Company	LICA	
Plant / Location	Maskwa	
Start Time (MST)	8:33	End Time (MST) 14:29

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999993
0	0	N/A	Slope (0.85 to 1.15)	0.999123
200	202	0.9895	Intercept (± 3% F.S.)	0.4264
349	350	0.9976		
749	750	0.9982		



Notes:

01 Minute Averages



— LICA30 NOX_ PPB

— LICA30 NO_ PPB

— LICA30 NO2_ PPB

Wind System

Mastawa



Met One Instruments
1600 NW Washington Blvd.
Grants Pass, Oregon 97526
Telephone 541-471-7111
Facsimile 541-541-7116

Regional Service
3206 Main St. Suite 106
Rowlett, Texas 75088
Telephone 972-412-4715
Facsimile 972-412-4716

Sonic Wind Sensor Certificate of Calibration

Sensor Model No: 50.5H Sonic Sensor Serial No: H10703
Customer: MAXXAM P.O. No: _____ Sales Order: RA 31681
Final Calibration By: Kevin Ricks Calibration Date: 07-21-11
Quality Control Inspected By: Ken Ricks Inspection Date: 7-21-11

New Unit Repair/Adjust Re-Calibration As Found
Unit Within Tolerance as Found Unit Within Tolerance as Left

Calibration Equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal. Due
Digital Multimeter 1	Agilent	34401A	MY41039534	3/02/2012
Digital Multimeter 2	HP	34401A	US36094688	9/17/2011
Frequency Counter	Agilent	53131A	MY40009285	4/28/2012
Standard Sensor	Climet	011-1	2551	7/18/2013
Standard Cup Set	Climet	014	0008	7/18/2013
Temperature Probe	MOI	920005/PC8340	E3402	8/31/2011

Test 1: Average Wind Tunnel Speed: 3.02 Meters per Second Firmware Version: 3194-01 R2.62

WD Setting (Deg)	WD Output (Volts)	WD Indication (Deg)	WD Error (+/- 3 Deg)	WS Standard (m/s)	WS Output (Volts)	WS Indication (m/s)	WS Error (+/- .20 m/s)	Output Type:
30	.085	30.5	.5	3.01	.059	2.94	-.07	0 to 1 volt <input checked="" type="checkbox"/>
60	.165	59.2	-.8	3	.059	2.93	-.07	0 to 2.5 volt <input type="checkbox"/>
120	.335	120.5	.5	3.02	.06	2.99	-.03	0 to 5 volt <input type="checkbox"/>
150	.415	149.4	-.6	3	.059	2.95	-.05	RS-232 <input checked="" type="checkbox"/>
210	.585	210.5	.5	3.05	.059	2.95	-.11	SDI-12 <input type="checkbox"/>
240	.665	239.5	-.5	3.02	.059	2.93	-.09	RS-422 <input type="checkbox"/>
300	.835	300.8	.8	3.05	.059	2.96	-.1	RS-485 <input type="checkbox"/>
330	.916	329.6	-.4	3	.059	2.95	-.05	<input type="checkbox"/>

Test 2: Average Wind Tunnel Speed: 11.64 Meters per Second Output Range: 0-50 m/s

WD Setting (Deg)	WD Output (Volts)	WD Indication (Deg)	WD Error (+/- 3 Deg)	WS Standard (m/s)	WS Output (Volts)	WS Indication (m/s)	WS Error (+/- .24 m/s)	Test Items:
30	.083	30	0	11.66	.232	11.61	-.05	Array Alignment <input checked="" type="checkbox"/>
60	.163	58.7	-1.3	11.59	.234	11.72	.14	Jumper Config <input checked="" type="checkbox"/>
120	.334	120.3	.3	11.69	.233	11.66	-.02	Firmware Config <input checked="" type="checkbox"/>
150	.416	149.6	-.4	11.59	.233	11.65	.07	Zero Calibration <input checked="" type="checkbox"/>
210	.582	209.6	-.4	11.63	.231	11.56	-.08	Low Speed Test OK <input checked="" type="checkbox"/>
240	.664	239.2	-.8	11.58	.234	11.69	.11	High Speed Test OK <input checked="" type="checkbox"/>
300	.835	300.5	.5	11.71	.234	11.72	.01	Sensor Function <input checked="" type="checkbox"/>
330	.915	329.4	-.6	11.64	.233	11.64	-.01	Physical Inspection <input checked="" type="checkbox"/>

The standards used for this calibration have accuracies equal to or greater than the instruments tested. These standards are on record and traceable to NIST to the extent allowed by the institute's calibration facility. Unless otherwise stated hereon, all instruments are calibrated to meet the manufacturer's published specifications. The calibration system complies with MIL-STD-45662A. Calibration performed by direct comparison to the above standard following test procedure: 50.5-6100 Rev E

Lakeland Industry & Community Association

Portable / Devon Wellsite 13-16-62-5 W4M Monitoring Site

Ambient Air Monitoring Data Report

For

September 2011

Prepared By:



October 31, 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: September 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 – September 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	0.09	2	4, 14	VAR	VAR	VAR	0.6	4	100.0
H ₂ S (PPB)	10	3	0	0	0.10	2	VAR	VAR	VAR	VAR	0.6	14	96.1
THC (PPM)	-	-	-	-	2.52	10.7	24	0	1.1	258(WSW)	4.5	7	99.9
NO ₂ (PPB)	159	-	0	-	3.29	20	21	19	13.7	138(SE)	6.5	23	99.7
NO (PPB)	-	-	-	-	1.33	49	21	19	13.7	138(SE)	5.3	7	99.7
NO _x (PPB)	-	-	-	-	4.42	69	21	19	13.7	138(SE)	9.5	7	99.7
O ₃ (PPB)	82	-	0	-	20.26	56	9	VAR	VAR	VAR	30.2	9	100.0
PM 2.5 (UG/M ³)	-	30	-	0	4.62	18.3	9	6	2.1	179(S)	10.8	9	98.8
VECTOR WS (KPH)	-	-	-	-	8.50	25.6	28	15	-	292(WNW0)	16.5	25	100.0
VECTOR WD (DEGREES)	-	-	-	-	219(SW)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS

Volatile Organics Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE

Xontech Model 910A – August 13, 2011

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

Xontech Model 910A – September 6, 2011

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

Xontech Model 910A – September 12, 2011

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

Xontech Model 910A – September 18, 2011

Maximum reading (ug/m3)	Volatile Organic
NA	NA

Note: No sample was collected on September 18, as the canister was not delivered on time.

Xontech Model 910A – September 24, 2011

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

Xontech Model 910A – September 30, 2011

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

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

PUF cartridge – September 6, 2011

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

PUF cartridge – September 12, 2011

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

PUF cartridge – September 18, 2011

Maximum reading (ng/m3)	Semi-Volatile Organic
NA	NA

Note: No sample was collected on September 18th, as the PUF glass holder size was too big to fit the running holder.

PUF cartridge – September 24, 2011

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

PUF cartridge – September 30, 2011

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	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 on September 20th. The maximum concentration on September 22nd at hour 12 was invalidated due to a small power outage. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

- Analyzer make / model –API 101E, S/N: 509
- Converter - Internal

The analyzer spanned low on September 3rd. It was found that the exhaust tubing connecting the pump had a leak. The issue was fixed on September 3rd. Data was invalidated back to the last valid daily calibration, which was September 2nd. A total of 26 hours of data was invalidated. The inlet filter was replaced before the monthly calibration was performed on September 19th. The zero air scrubber material for the daily calibration system was replaced on September 19th. The maximum concentration on September 22nd at hour 12 was invalidated due to a small power outage. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Nitrogen Dioxide (PPB)

- Analyzer make / model – API 200E, S/N: 593

No operational issue observed this month. The inlet filter was replaced before the monthly calibration was performed on September 19th. The flow control orifice, sintered filter and O-rings in the sample flow orifice holder were replaced following the as found points on September 26th. A factory calibration was also performed to normalize the detector. A post-repair calibration was performed on September 27th. The maximum concentration on September 22nd at hour 12 was invalidated due to a small power outage. Data was corrected using daily zero information.

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 on September 20th. The maximum concentration on September 22nd at hour 12 was invalidated due to a small power outage. 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 inlet filter was replaced before the monthly calibration was started on September 19th. The maximum concentration recorded on September 5th at hour 2 went above the full scale. The real concentration may be higher than what we recorded. The maximum concentration on September 22nd at hour 12 was invalidated due to a small power outage. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Particulate Matter 2.5 ($\mu\text{g}/\text{m}^3$)

- Analyzer make / model –TEOM 1405F, S/N: 1405A207691003

No operational issues observed during the month. A routine Teom audit was performed on September 12th. The Teom filter and FDMS filter were replaced on September 12th. 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. 9 hours of data were invalidated as they were below $-3.0 \mu\text{g}/\text{m}^3$. The maximum concentration on September 22nd at hour 12 was invalidated due to a small power outage.

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. The maximum WS reading on September 22nd at hour 12 was invalidated due to a small power outage.

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 September 20th.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. Twelve AQI values were within the Fair range this month, and they were all due to Ozone. The rest of AQI values were within the Good range. The highest hourly concentration of ozone was 56 ppb and an AQI value of 30 on September 9th, in various hours. The highest hourly concentration of PM_{2.5} was 18.3 ug/m³ and an AQI value of 15 on September 9th, hour of 6.

Volatile Organics (VOCs)

The volatile organics were sampled from September 6th to September 30th. 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.

Sample result for August 13th is included in this monthly report.

No sample was collected on September 18th, as the canister was not delivered on time.

Polycyclic Aromatic Hydrocarbons (PAHs)

The PAHs scheduled to be sampled from September 6th to September 30th. 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.

No sample was collected on September 18th, as the Puff glass holder size was too large to fit in the sample holder.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 2011

AIR QUALITY INDEX (AQI)

MST																										DAILY		
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		
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	4	6	9	2	2	-	2	4	6	8	11	14	14	14	14	15	15	15	10	6	6	5	5	4	15			
1	O3	PM2	PM2	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3			
2	4	4	3	2	-	2	2	6	9	4	7	13	15	16	16	14	13	9	5	7	7	6	5	16				
3	PM2	PM2	PM2	O3	NA	O3	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3				
4	4	5	3	-	2	4	4	4	4	7	9	11	12	12	13	13	13	12	9	7	7	8	8	13				
5	O3	PM2	O3	NA	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3				
6	8	8	-	4	3	4	7	9	10	11	12	13	15	16	17	18	17	15	14	13	9	9	7	5	18			
7	O3	O3	NA	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	PM2	O3			
8	4	-	6	3	5	4	4	5	8	11	15	16	17	17	20	19	20	18	17	15	12	8	6	4	20			
9	PM2	NA	O3	O3	O3	O3	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	PM2	PM2	O3		
10	-	6	4	3	6	2	2	4	7	12	14	17	18	19	19	19	19	17	14	9	6	8	9	-	19			
11	NA	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3		
12	5	4	3	4	3	2	3	7	7	13	20	24	27	30	29	28	28	24	18	15	9	10	-	7	30			
13	O3	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	PM2	PM2	NA	PM2	O3	
14	10	11	9	5	7	6	8	9	11	13	20	21	20	20	20	21	21	19	16	12	10	-	8	10	21			
15	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	PM2	PM2	O3		
16	10	5	7	4	7	5	15	9	11	19	24	28	29	30	29	30	28	22	20	-	19	15	15	30				
17	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3		
18	13	17	15	14	13	10	10	8	11	14	16	18	17	17	18	17	16	15	15	-	10	14	7	9	18			
19	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			
20	7	6	4	7	4	3	6	8	11	12	11	12	13	12	12	13	13	-	4	5	8	3	5	13				
21	PM2	PM2	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	PM2	O3	O3	O3			
22	3	5	4	3	2	3	3	5	6	7	-	-	14	14	13	12	-	10	9	10	10	9	8	14				
23	O3	PM2	O3	O3	O3	O3	O3	O3	O3	NA	NA	NA	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3			
24	8	8	7	6	5	7	4	6	10	13	14	14	14	15	15	-	13	9	6	6	3	3	4	15				
25	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	PM2	O3			
26	3	2	-	2	-	3	5	7	10	13	14	15	16	17	18	-	18	16	13	12	8	7	11	12	18			
27	O3	O3	NA	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3			
28	10	-	10	8	8	7	6	9	11	12	12	14	15	15	-	17	17	14	12	11	12	11	11	10	17			
29	O3	NA	O3	O3	O3	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3			
30	O3	O3	O3	O3	O3	O3	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3			
PEAK	15	17	15	14	13	12	15	12	12	19	24	28	29	30	30	29	30	28	22	20	20	19	16	16				
	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	%	
VERY POOR (101-255)	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	
POOR (51-100)	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	
FAIR (26-50)	12	1.7%	30	VAR	9	0	0.0%	-	-	-	0	0.0%	-	-	-	12	1.7%	
GOOD (1-25)	530	73.6%	-	-	-	115	16.0%	15	6	9	0	0.0%	-	-	-	645	89.6%	
OVERALL	542	75.3%	-	-	-	115	16.0%	-	-	-	0	0.0%	-	-	-	657	91.3%	
UNAVAILABLE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63	8.8%	

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 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	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.0	24
2	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
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	0.0	24
4	0	0	IZS	0	0	0	0	0	0	1	0	2	2	1	1	1	0	1	1	1	0	0	1	1	2	0.6	24	
5	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	1	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	IZS	0	0.0	24
7	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	IZS	0	1	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	0	0	0.0	24	
9	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	
10	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	
11	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	
12	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	IZS	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	1	2	IZS	0	0	0	0	0	0	0	0	2	0.1	24	
15	0	0	0	0	0	0	0	0	0	0	1	1	1	1	IZS	0	0	0	0	0	0	1	0	0	1	0.2	24	
16	0	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	1	0.5	24	
17	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	IZS	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	IZS	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	C	C	C	C	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
21	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0.1	24	
22	1	0	1	1	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
23	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0.1	24	
24	0	0	0	0	0	IZS	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
25	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0.2	24		
26	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	
27	0	0	IZS	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
28	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	
29	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
30	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	IZS	0	1	0.3	24	
HOURLY MAX	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	1	1	1	1	1	1	1	0	1	1		
HOURLY AVG	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	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

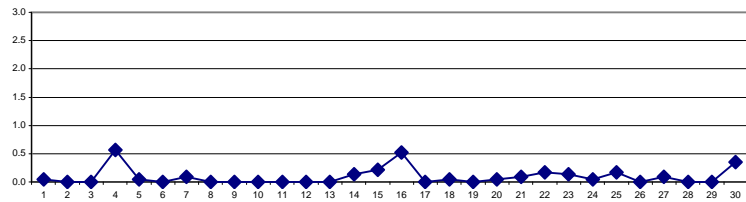
OBJECTIVE LIMIT:

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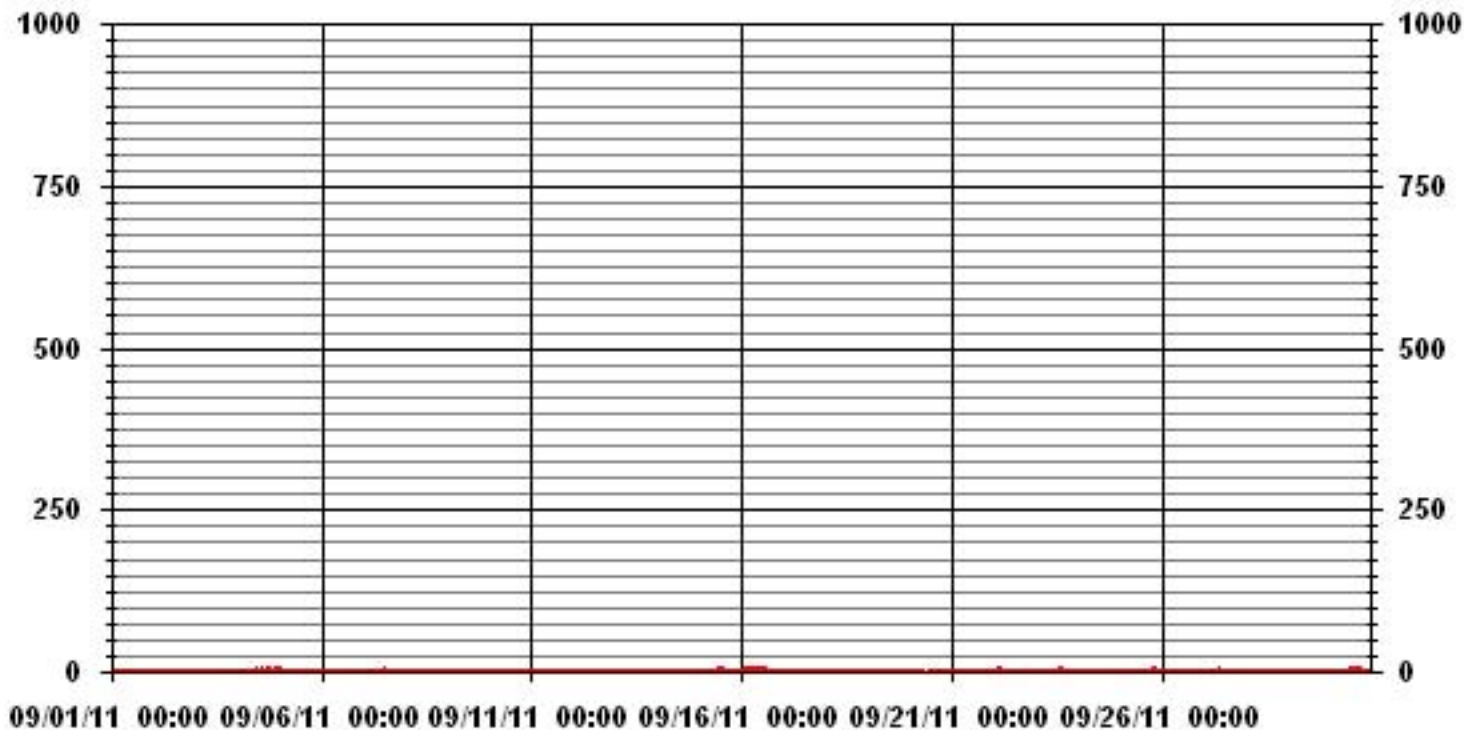
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	60		
MAXIMUM 1-HR AVERAGE:	2 PPB @ HOUR(S) VAR ON DAY(S) 4, 14		
MAXIMUM 24-HR AVERAGE:	0.6 PPB ON DAY(S) 4		
IZS CALIBRATION TIME:	31 HRS	OPERATIONAL TIME:	720 HRS
MONTHLY CALIBRATION TIME:	4 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.30	MONTHLY AVERAGE:	0.09 PPB

24 HOUR AVERAGES FOR SEPTEMBER 2011



01 Hour Averages



— LICA33 SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -PORTABLE SITE

SEPTEMBER 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	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	2	2	2	1.1	24
2		2	2	2	2	IZS	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	2	0.7	24
3		0	0	0	IZS	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	0.9	24
4		1	1	IZS	1	1	1	1	1	2	2	2	3	3	2	2	3	2	2	2	2	1	1	2	2	3	3	1.7	24
5		2	IZS	0	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	4	1	1	1	0	4	1.1	24		
6		IZS	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	IZS	1	0.1	24	
7		0	0	0	0	0	0	0	1	0	0	0	1	3	3	1	1	1	1	1	1	0	0	IZS	0	3	0.6	24	
8		0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	0.0	24	
9		0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	0.6	24	
10		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	IZS	0	1	1	1	1	0.9	24	
11		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	1	1	0	1	0.9	24	
12		1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	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	1	1	1	1	1	1	1	1	0.3	24	
14		1	1	1	1	1	1	1	1	1	1	1	1	3	3	IZS	2	1	2	1	1	1	1	1	1	3	1.3	24	
15		2	1	1	1	1	1	1	1	1	3	2	3	2	2	IZS	2	1	1	1	1	2	2	1	1	3	1.5	24	
16		1	2	2	2	2	2	2	2	2	2	2	2	IZS	1	1	1	1	1	1	0	1	0	1	0	2	1.4	24	
17		1	0	0	1	1	1	1	1	1	0	0	0	IZS	0	0	0	0	0	1	0	0	0	0	0	1	0.3	24	
18		0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	2	1	1	1	1	2	2	1	1	2	1	2	0.7	24
19		1	1	1	2	1	1	1	1	1	1	1	1	IZS	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	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	2	3	1	1	2	2	3	1.2	24
22		2	2	2	2	2	1	2	IZS	1	1	1	0	P	0	1	1	1	1	1	1	0	0	0	0	0	2	1.0	23
23		1	0	0	1	0	1	IZS	0	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	2	1.0	24
24		1	1	1	1	0	IZS	0	1	2	2	1	1	1	1	1	1	1	1	1	1	0	0	1	0	2	0.9	24	
25		1	1	0	1	IZS	1	1	2	1	1	1	1	1	1	1	2	1	1	2	2	2	2	2	2	2	2	1.3	24
26		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
27		1	1	IZS	1	1	1	1	1	2	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1.2	24
28		1	IZS	1	1	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	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	2	IZS	2	1.0	24
30		0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	1	1	1	IZS	1	2	1.3	24
HOURLY MAX		2	2	2	2	2	2	2	2	2	3	2	3	3	3	3	2	3	2	2	4	2	2	2	2				
HOURLY AVG		0.9	0.8	0.7	0.9	0.8	0.8	0.8	0.9	0.9	0.9	0.9	1.0	1.2	1.1	1.0	0.9	0.9	1.0	1.0	1.0	0.7	0.7	1.0	0.8				

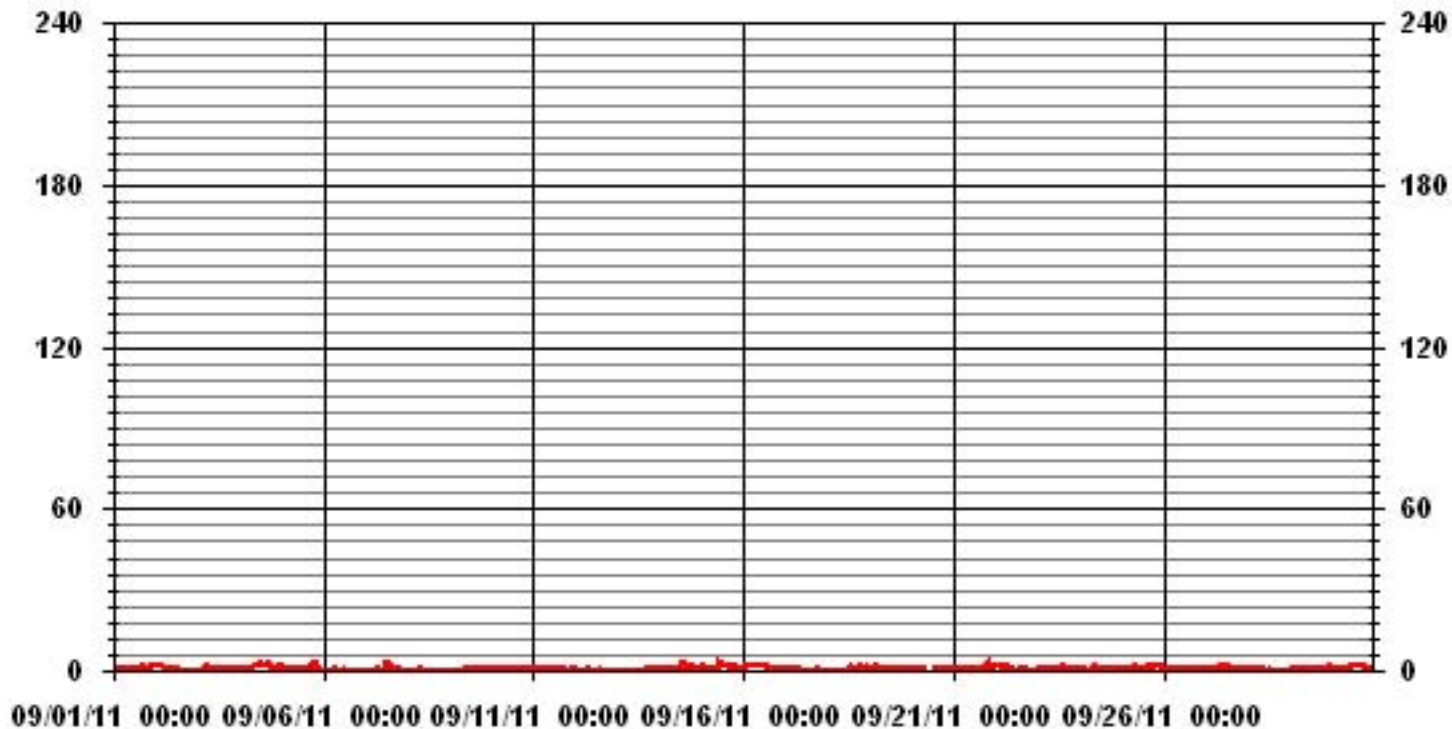
STATUS FLAG CODES

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:	499
MAXIMUM INSTANTANEOUS VALUE:	4 PPB @ HOUR(S) 19 ON DAY(S) 5
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	0.67
OPERATIONAL TIME:	719 HRS

01 Hour Averages



— LICA33 SO2MAX PPB

LICA33
 SO2_ / WDR Joint Frequency Distribution (Percent)

September 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	2.48	1.45	2.33	2.77	5.25	4.96	10.21	9.19	4.67	3.79	11.97	12.26	11.67	11.97	2.04	2.91	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	2.48	1.45	2.33	2.77	5.25	4.96	10.21	9.19	4.67	3.79	11.97	12.26	11.67	11.97	2.04	2.91	

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	17	10	16	19	36	34	70	63	32	26	82	84	80	82	14	20	685
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	17	10	16	19	36	34	70	63	32	26	82	84	80	82	14	20	

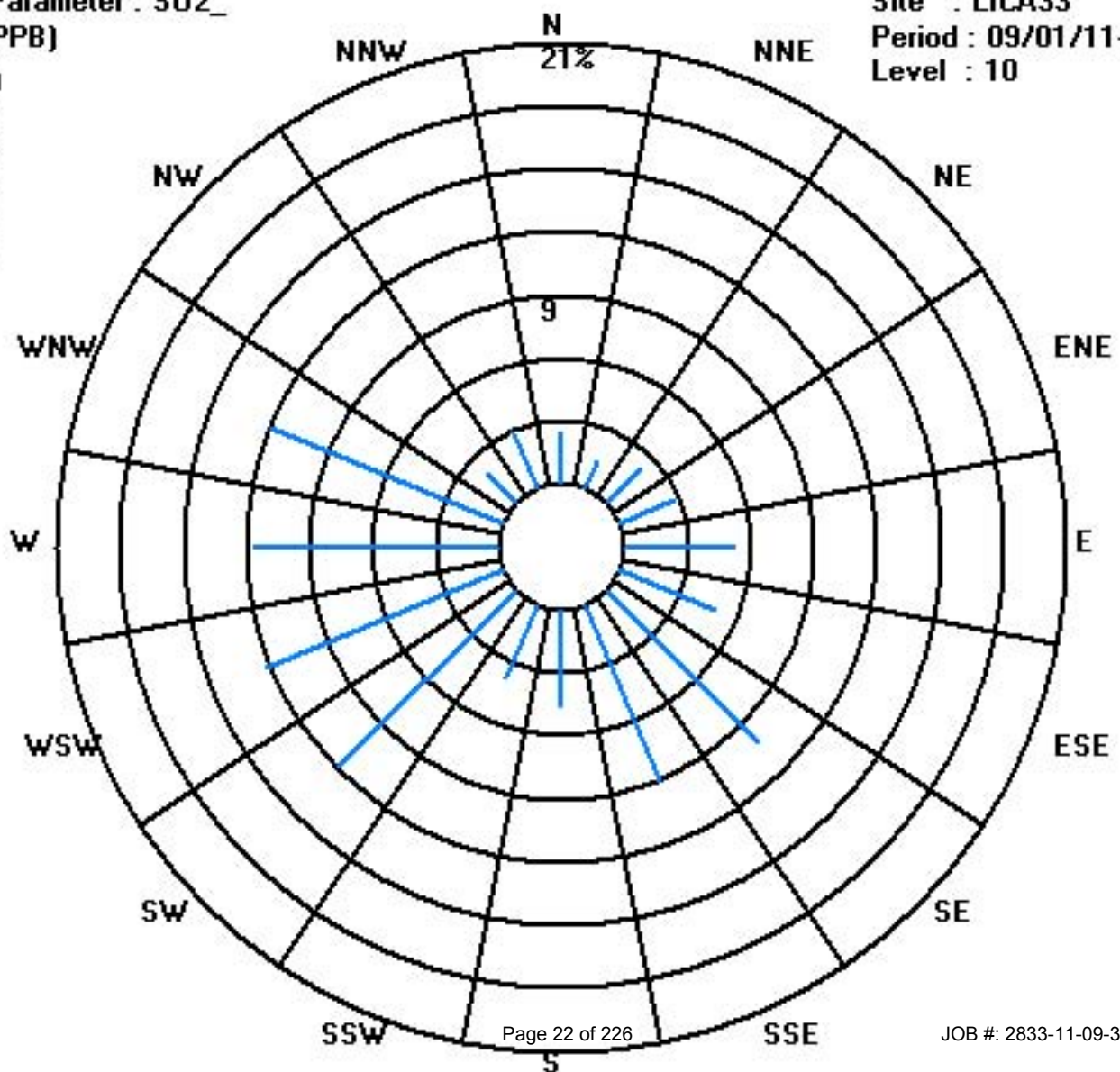
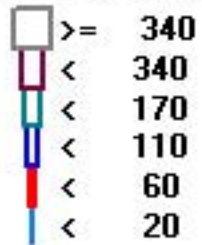
Calm : .00 %

Total # Operational Hours : 685

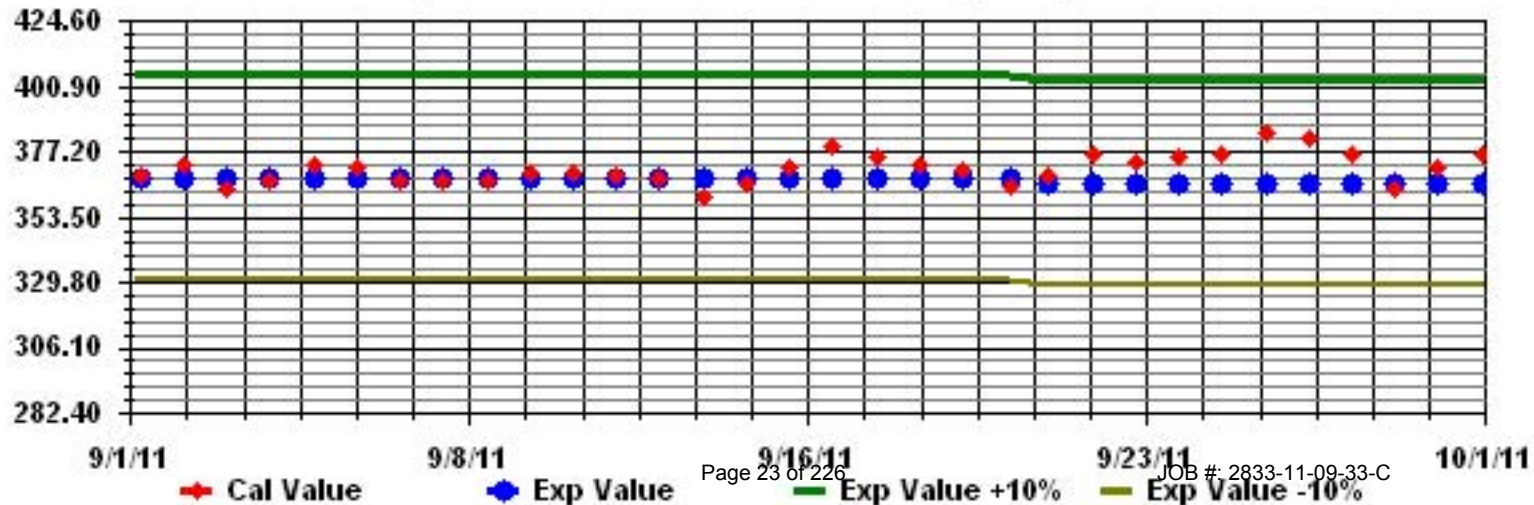
Class Limits (PPB)

Period : 09/01/11-09/30/11

Level : 10



Calibration Graph for Site: LICA33 Parameter: S02_ Sequence: S02 Phase: SPAll



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE

SEPTEMBER 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	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	IZS	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	IZS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0.0	5		
3	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	0.0	16		
4	0	1	IZS	1	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		
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	24		
6	IZS	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	2	0.1	24		
7	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	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	0	0	0	IZS	0	0	0.0	24	
9	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	2	0.2	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	24	
11	1	0	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	0.3	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	0.0	24	
13	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	1	1	1	0.1	24	
14	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	1	0.6	24	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	IZS	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	IZS	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	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	1	0	0	1	0.0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	1	0	0	0	1	0	0	0	1	0.1	24		
20	0	0	0	0	0	0	0	0	0	0	0	IZS	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23	
21	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	1	0	0	1	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	1	0	1	0.0	24	
23	1	1	0	1	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0.3	24	
24	1	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	1	0.0	24	
25	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	1	1	1	0.1	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	24	
27	0	0	0	IZS	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24	
28	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	24	
29	IZS	0	0	0	0	1	0	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.4	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	24	
HOURLY MAX		1	1	1	2	1	1	1	2	2	1	1	1	1	1	1	0	1	0	0	1	1	1	1	1	1	1				
HOURLY AVG		0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.3	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	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

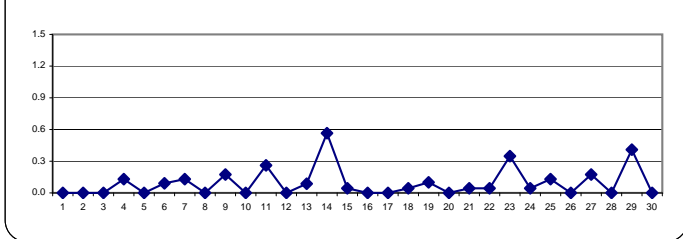
OBJECTIVE LIMIT:

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

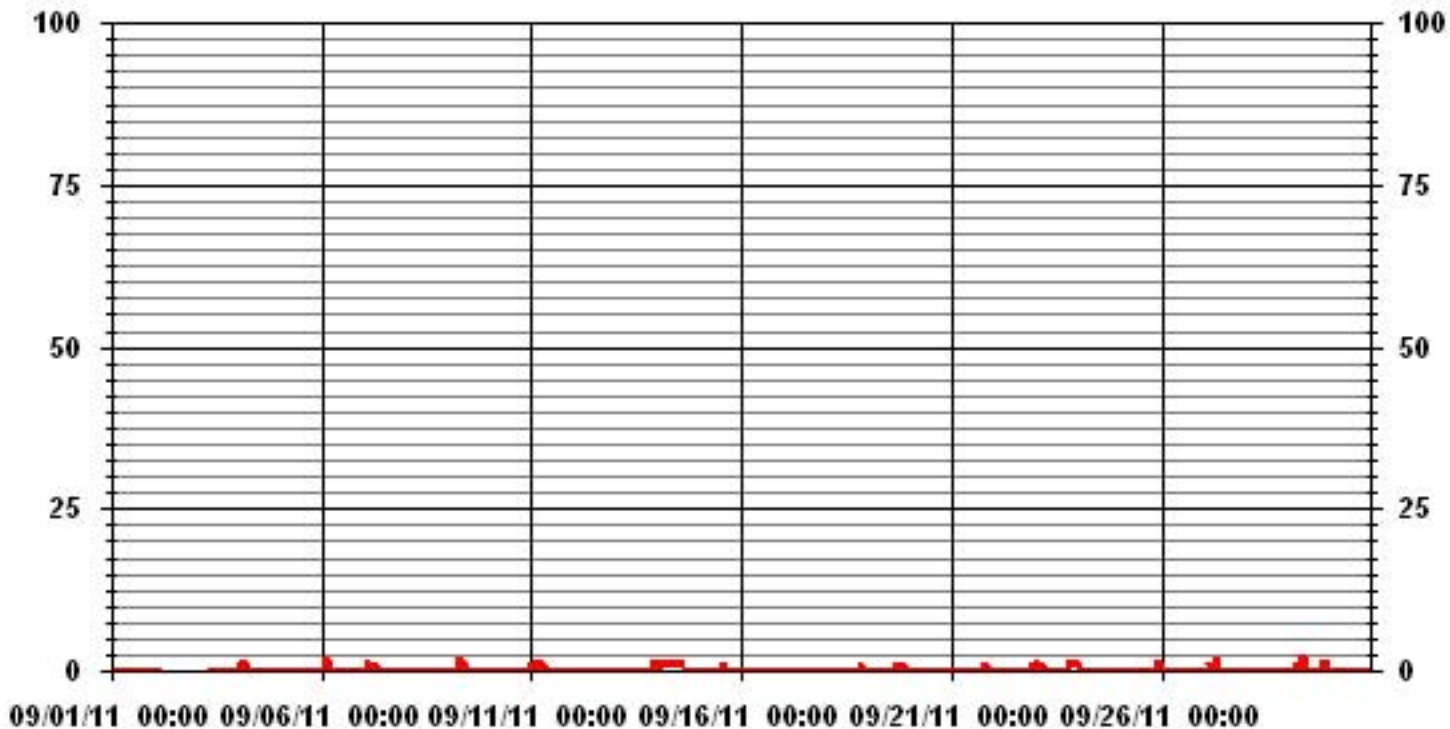
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF 24-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	59				
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	0.6	PPB			ON DAY(S) 14
					VAR-VARIOUS
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	692	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	96.1	%
STANDARD DEVIATION:	0.32		MONTHLY AVERAGE:	0.10	PPB

24 HOUR AVERAGES FOR SEPTEMBER 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 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	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	
2	0	0	0	0	IZS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0.0	5
3	N	N	N	N	N	N	N	M	C	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0.5	16
4	1	1	IZS	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	2	0.4	24	
5	0	IZS	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.2	24		
6	IZS	0	0	6	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	IZS	6	0.5	24		
7	1	1	4	2	1	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	4	0.6	24		
8	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	3	0.2	24		
9	0	0	0	0	0	0	1	4	2	1	0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	0	0	1	3	0.2	24		
11	3	1	1	1	1	2	1	1	1	1	0	0	0	0	0	0	0	0	IZS	0	0	0	1	0	3	0.6	24		
12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	0.0	24		
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	1	1	2	2	2	0.3	24		
14	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	2	0	0	0	0	1	2	0.8	24		
15	2	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	2	0.7	24	
16	0	0	0	0	0	0	0	1	1	1	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
17	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	1	2	0	1	0	2	0.2	24	
19	0	0	0	0	0	0	0	0	0	0	C	C	C	C	1	1	1	1	1	1	1	1	1	1	1	1	0.5	24	
20	1	0	0	0	1	1	1	1	1	0	IZS	1	M	M	0	0	1	0	0	0	1	1	1	1	1	1	0.6	22	
21	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0.5	24	
22	0	0	0	0	1	1	1	IZS	0	0	1	0	P	0	1	1	1	0	0	1	1	0	3	1	3	0.6	23		
23	2	2	1	2	1	1	IZS	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2	2	1	2	0.9	24		
24	2	2	1	1	1	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0.4	24		
25	1	1	0	0	IZS	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0.5	24		
26	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.2	24		
27	0	0	IZS	1	1	1	4	3	1	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	4	0.6	24		
28	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		
29	IZS	0	1	1	2	2	1	3	3	0	1	0	0	1	1	0	1	1	1	1	1	1	1	1	1	3	1.0	24	
30	0	0	0	0	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	1	0	IZS	0	1	0.6	24		
HOURLY MAX	3	2	4	6	2	2	4	4	3	1	1	1	2	1	1	1	1	1	2	3	2	2	3	3					
HOURLY AVG	0.6	0.4	0.5	0.7	0.6	0.6	0.6	0.8	0.4	0.3	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.4	0.5	0.4	0.7	0.6					

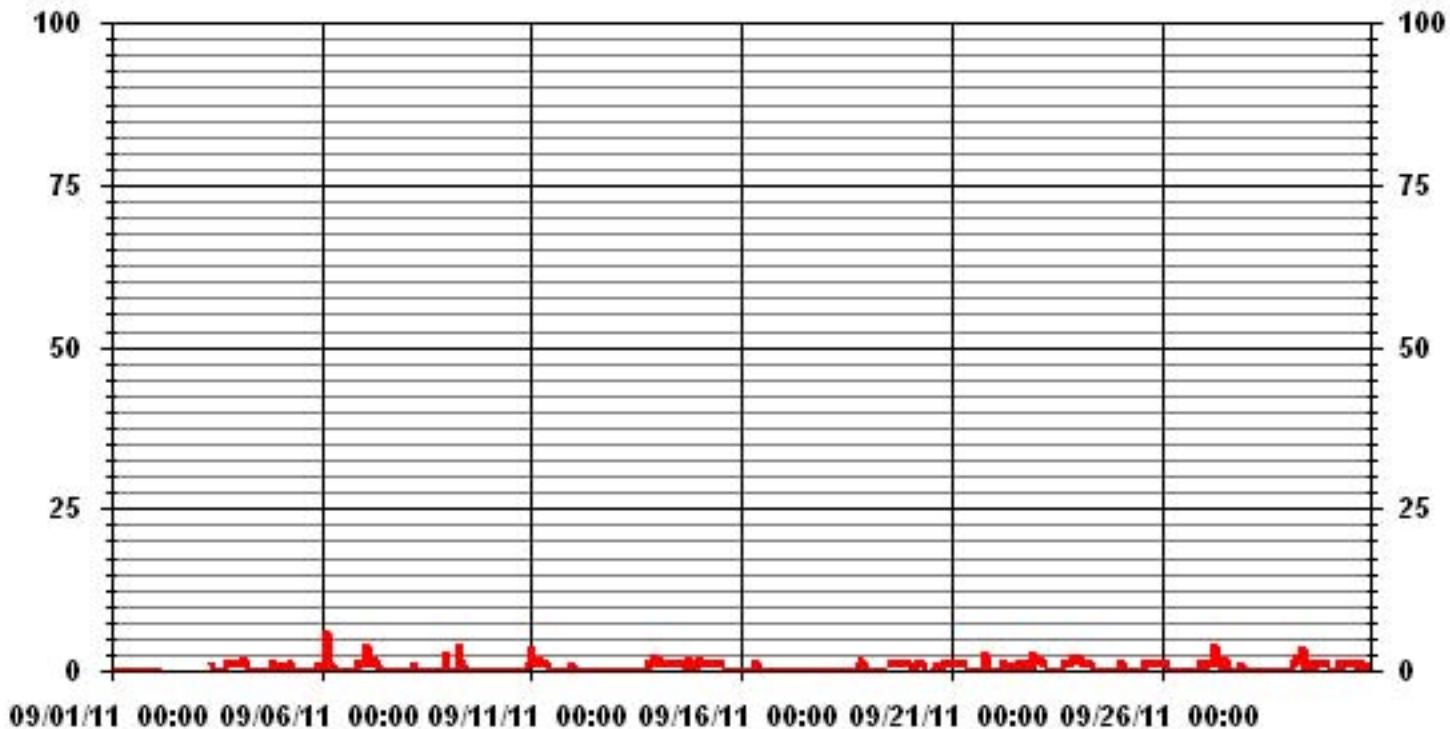
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	216				
MAXIMUM INSTANTANEOUS VALUE:	6	PPB	@ HOUR(S)	3	ON DAY(S) 6
	VAR - VARIOUS				
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	690	HRS
MONTHLY CALIBRATION TIME:	5	HRS			
STANDARD DEVIATION:	0.70				

01 Hour Averages



— LICA33 H2S MAX PPB

LICA33
H2S_ / WDR Joint Frequency Distribution (Percent)

September 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	2.43	1.36	2.28	2.89	5.47	5.17	10.65	9.58	4.87	4.10	12.48	12.48	11.26	11.11	1.67	2.13	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	2.43	1.36	2.28	2.89	5.47	5.17	10.65	9.58	4.87	4.10	12.48	12.48	11.26	11.11	1.67	2.13	

Calm : .00 %

Total # Operational Hours : 657

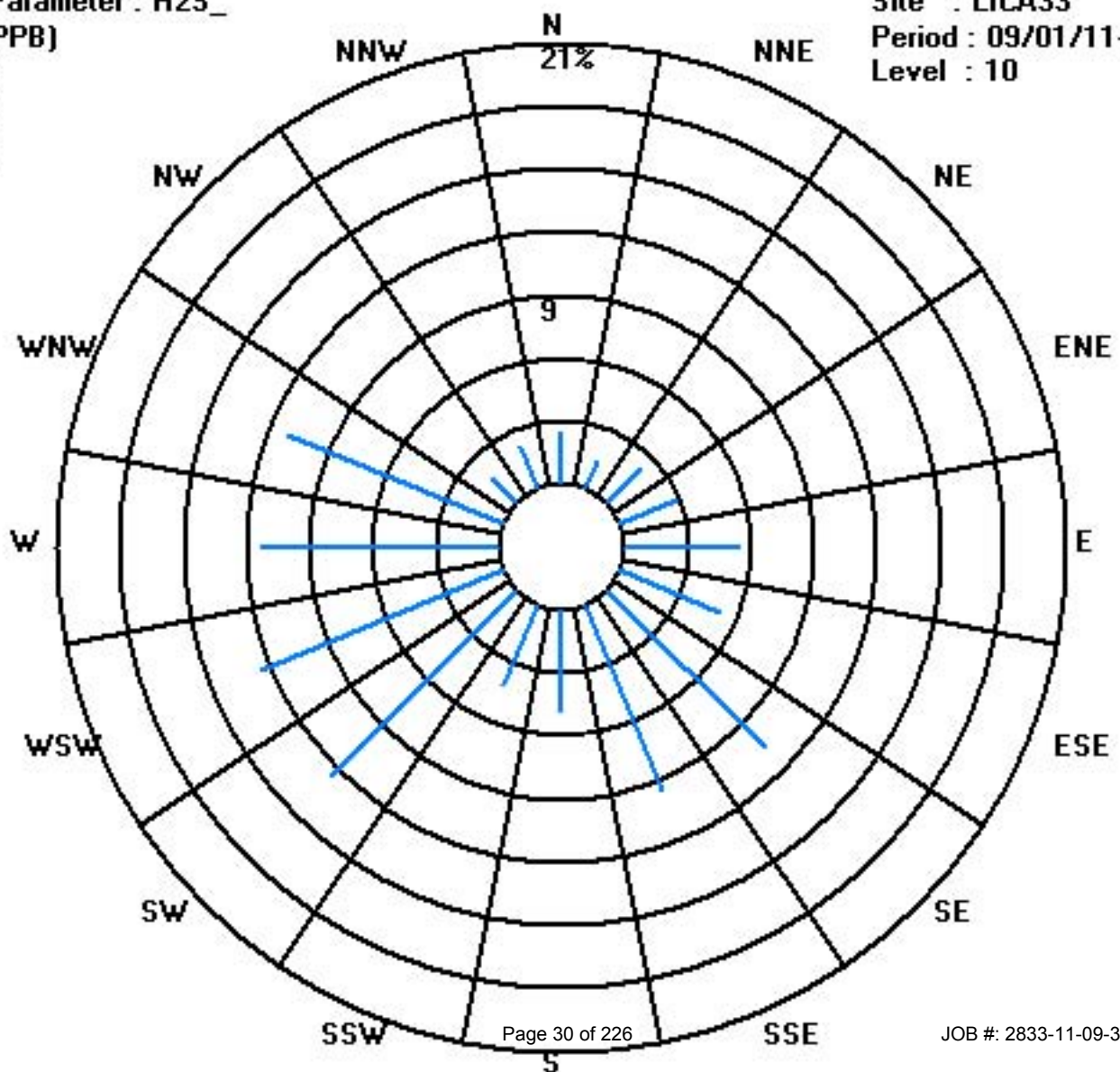
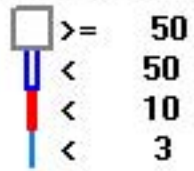
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	16	9	15	19	36	34	70	63	32	27	82	82	74	73	11	14	657
< 10																	
< 50																	
>= 50																	
Totals	16	9	15	19	36	34	70	63	32	27	82	82	74	73	11	14	

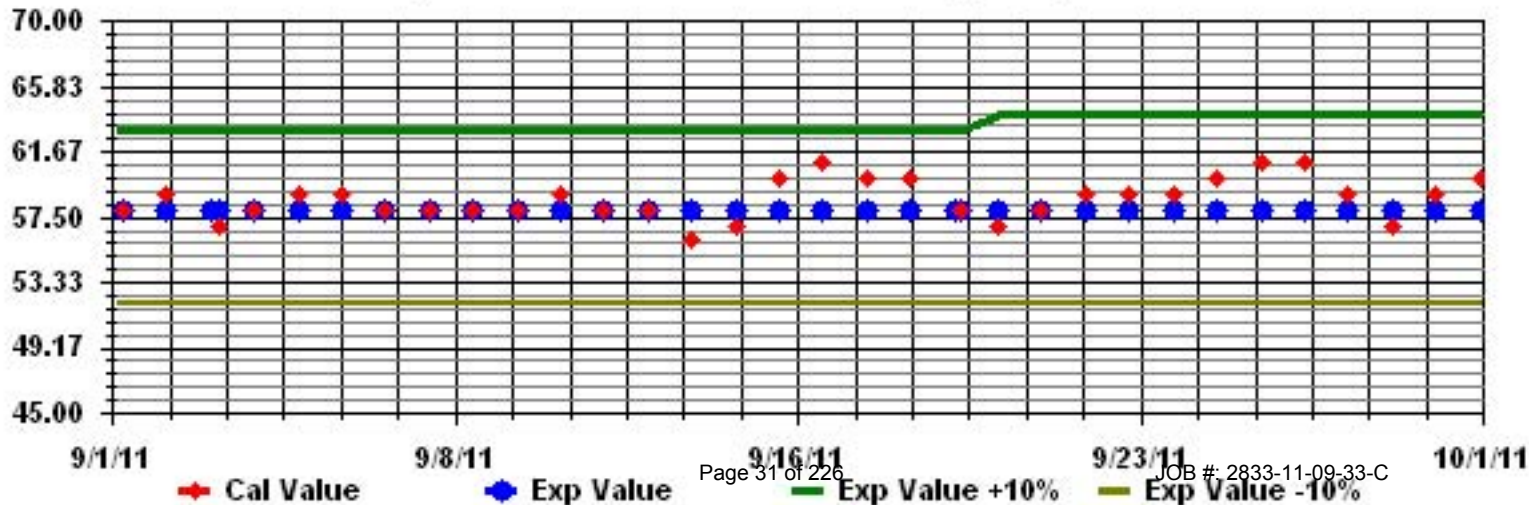
Calm : .00 %

Total # Operational Hours : 657

Class Limits (PPB)



Calibration Graph for Site: LICA33 Parameter: H2S_ Sequence: H2S Phase: SPAll



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE
SEPTEMBER 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	1.8	6.8	10.9	1.7	0	0.8	0	4.3	2.8	0.8	2.3	2.3	4.9	6.8	5.8	5.3	2.8	4.8	6.3	4.3	4.3	0.3	1.8	0.8	10.9	3.4	24
2	4.8	4.8	3.8	1.8	3.3	0.8	2.8	7.3	10.8	5.3	4.8	9.8	5.3	2.3	0	1.8	0.3	1.8	1.3	4.8	2.3	7.8	0	3.8	10.8	3.8	24
3	4.3	6.3	2.8	6.8	2.3	4.3	4.3	4.3	2.3	4.8	1.8	2.8	2.3	8.3	0.3	6.3	1.8	0.8	2.3	2.8	6.8	4.3	5.3	3.3	8.3	3.8	24
4	0	3.3	8.3	4.8	3.8	1.3	1.3	2.8	3.8	0	0.3	0	2.3	4.3	4.3	4.8	1.3	8.3	1.8	6.8	6.3	3.8	4.8	6.3	8.3	3.5	24
5	5.3	3.8	4.3	0	0	0.8	4.8	5.8	9.3	5.8	4.3	2.8	1.8	2.3	3.8	4.8	2.3	7.8	12.8	6.8	5.8	4.3	7.3	5.3	12.8	4.7	24
6	2.3	6.8	5.3	3.3	6.8	1.8	2.3	5.3	4.8	8.3	5.3	0	6.8	1.8	3.8	5.8	1.3	0	6.3	4.8	5.3	3.3	5.3	3.8	8.3	0.0	24
7	2.3	5.3	3.3	4.3	3.3	2.3	3.8	8.8	6.8	11.8	7.8	5.3	11.3	7.8	8.8	6.8	8.3	7.8	12.3	8.3	11.8	11.8	10.8	8.8	12.3	7.5	24
8	12.3	13.3	11.3	6.3	8.8	6.8	9.8	11.3	13.3	11.3	7.8	6.3	7.8	9.8	7.3	6.8	10.3	6.8	8.8	10.8	6.3	8.8	9.3	11.8	13.3	9.3	24
9	11.8	5.8	7.8	5.3	8.3	5.8	18.3	10.8	11.3	10.3	9.8	9.3	10.3	5.8	3.3	10.8	13.3	17.8	12.3	16.8	17.8	9.3	12.8	14.8	18.3	10.8	24
10	14.3	12.3	12.3	10.8	8.3	5.3	6.8	4.8	6.8	2.3	3.8	3.8	3.8	2.3	7.3	0.8	6.8	3.8	2.3	6.3	5.3	17.3	8.8	10.3	17.3	6.9	24
11	7.8	7.3	4.8	8.3	4.8	3.3	1.8	6.8	3.8	1.3	4.3	8.8	6.3	1.8	4.3	0	0	1.8	0	0.3	1.3	9.3	2.8	0	9.3	3.8	24
12	2.8	6.3	2.3	0	0.8	1.3	0.3	2.3	3.3	3.8	C	C	C	0.3	0.8	0.8	1.8	2.8	0.3	1.3	2.8	2.3	0.3	2.3	6.3	1.9	24
13	0.8	3.8	0	0	0	0	0	4.8	6.3	3.3	1.3	0	0	0	0	0	0	0	3.8	1.8	0.8	3.3	0	5.3	6.3	1.5	24
14	2.3	1.3	N	0	2.8	N	3.3	2.3	8.3	3.3	4.8	2.8	1.8	2.3	6.3	2.8	1.3	2.3	5.8	6.3	6.3	6.3	2.3	0.8	8.3	3.4	22
15	1.8	N	6.3	3.8	3.3	1.8	6.8	2.3	1.8	4.8	3.3	2.3	8.3	5.8	9.8	6.8	6.8	9.8	4.8	6.3	8.8	6.3	5.8	5.3	9.8	5.3	23
16	3.8	7.8	6.3	3.8	5.3	5.8	7.8	7.3	4.3	5.3	1.3	2.3	0	0	0	0	0	0.3	5.3	1.8	0	0	0	2.3	7.8	3.0	24
17	2.3	0.3	0	N	0	0.3	3.3	0	0.8	4.8	1.8	0.8	0	6.8	5.8	N	1.3	1.3	0	1.3	0	0.8	0	6.8	6.8	1.8	22
18	9.8	0	0.8	1.8	0.8	3.8	4.3	0	0	1.3	1.8	1.3	2.8	4.3	0.8	1.3	1.8	2.3	0.3	5.8	0	1.3	5.3	0	9.8	2.2	24
19	10.8	0	4.3	4.8	0.8	0.3	4.8	3.8	0	2.3	N	2.3	0.3	3.3	0	0	1.8	2.3	2.3	0.3	3.3	0	0	2.3	10.8	2.2	23
20	1.3	0	3.3	N	2.8	0.8	0.3	5.8	0	2.3	1.3	6.3	5.8	2.3	0.8	0	6.3	4.9	3.8	7.3	5.8	1.3	7.8	5.8	7.8	3.3	23
21	11.8	0	0	10.3	15.3	7.8	N	6.8	0	6.3	5.3	5.3	1.8	1.8	9.3	5.8	4.3	1.3	2.4	3.3	1.8	3.8	4.8	3.3	15.3	4.9	23
22	4.3	0.3	1.3	4.3	2.8	6.3	2.3	6.8	9.8	8.4	8.4	1.8	0.3	0	4.6	0.3	1.2	1.9	4.5	6.5	9.6	7.4	8	5.6	9.8	4.4	24
23	7.8	3.6	2.2	3.9	8.9	7.3	1.8	2.2	4.8	10.5	8.8	12	6.2	5.5	7	15.7	13.3	13.9	14.8	13.9	15	12	12.5	7.1	15.7	8.8	24
24	11.6	8.5	7.4	7.2	3.9	3.3	7.8	5.5	6.3	3.6	7.2	0.6	9.8	9	5.2	8.3	10.9	9	12.3	8.1	11.3	7.8	6.3	9.1	12.3	7.5	24
25	8.1	8.8	7.8	7.6	4.5	6.1	6.5	7.8	3.5	3	5.9	8.8	6.2	5.4	11.1	8	3.6	6.6	12.1	10.3	8.5	8.6	9	12.3	12.3	7.5	24
26	11.4	11.8	8.7	6.3	8.2	7.3	6.2	7.9	5.7	4.9	0	0	0	1.2	3.6	5	0	0	0	0	2.2	0	1.8	5	11.8	4.1	24
27	6.8	7.9	10.8	10.7	7.4	6.3	0.7	2.8	11.8	3.3	8.4	4.9	4	1.9	4.4	0	2	2.4	2.7	1.4	1.3	5.1	2.9	0	11.8	4.6	24
28	0	2.3	2.4	2.7	0.9	6.4	4.2	0.8	0	1.3	0.9	2.8	3.8	N	0	3.3	1.3	4.8	0	4.9	1.2	4.8	5.8	7.8	7.8	2.7	23
29	1.3	2.3	0.9	0.4	6.8	1.8	1.9	5.8	4.3	0.8	1.3	1.9	3.8	1.9	4.3	5.8	6.8	7.4	2.8	4.3	0	1.8	2.3	3.8	7.4	3.1	24
30	3.3	2.3	0	0	2.8	0	6.3	1.8	4.8	5.3	6.8	6.3	2.8	6.3	4.9	6.8	4.3	4.3	3.8	9.3	5.3	2.4	0.3	2.8	9.3	3.9	24
HOURLY MAX	14	13	12	11	15	8	18	11	13	12	10	12	11	10	11	16	13	18	15	17	18	17	13	15			
HOURLY AVG	5.6	4.9	4.8	4.3	4.3	3.4	4.3	5.0	5.1	4.7	4.3	3.9	4.2	3.8	4.3	4.3	3.9	4.6	4.9	5.6	5.2	5.2	4.8	5.2			

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

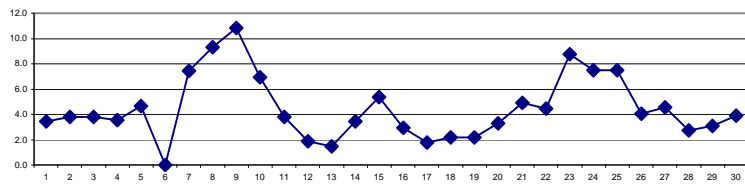
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	-	PPB	24-HR	30	PPB
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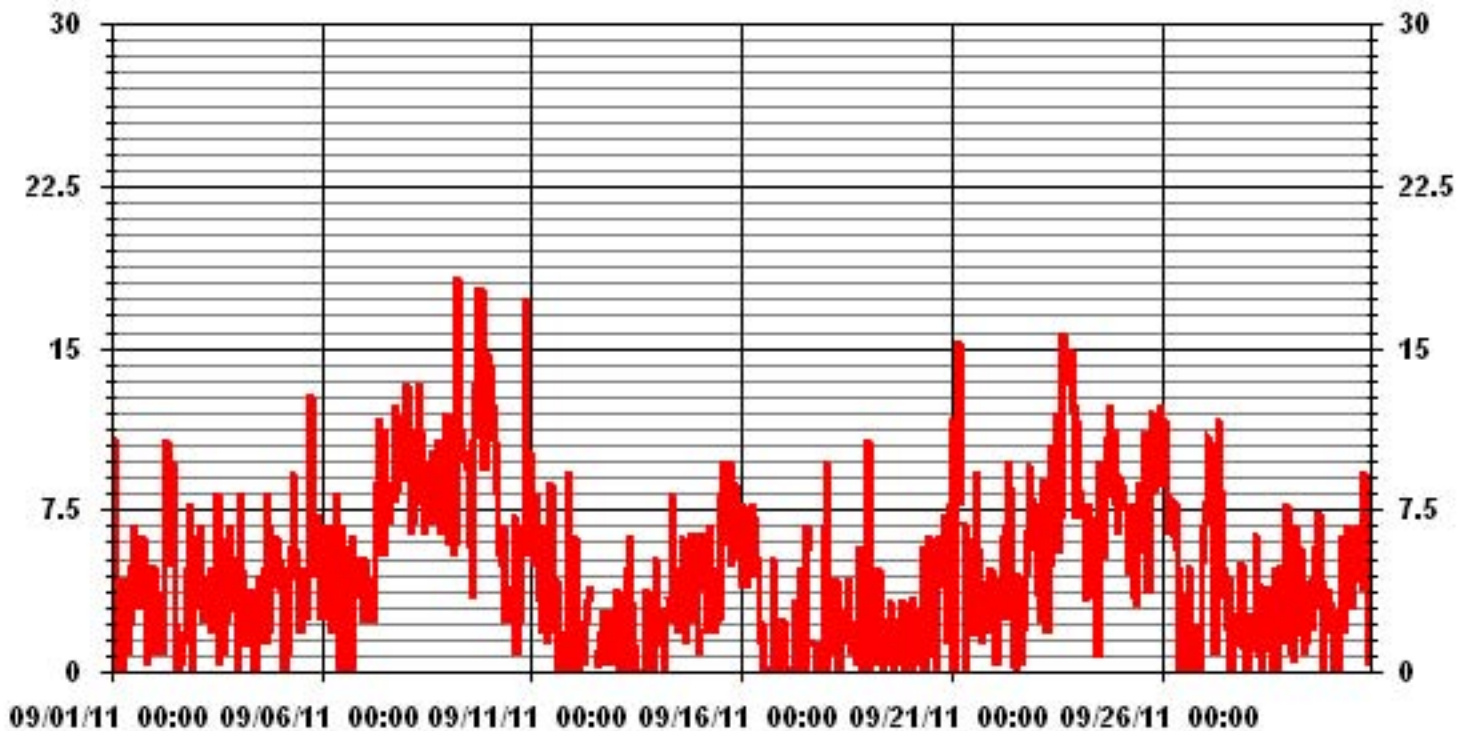
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-	PROPOSED CANADA WIDE GUIDELINE
NUMBER OF 24-HR EXCEEDENCES:	0	
NUMBER OF NON-ZERO READINGS:	627	
MAXIMUM 1-HR AVERAGE:	18.3 UG/M ³	@ HOUR(S) 6 ON DAY(S) 9
MAXIMUM 24-HR AVERAGE:	10.8 UG/M ³	ON DAY(S) 9
IZS CALIBRATION TIME:	0 HRS	OPERATIONAL TIME: 711 HRS
MONTHLY CALIBRATION TIME:	3 HRS	AMD OPERATION UPTIME: 98.8 %
STANDARD DEVIATION:	3.69	MONTHLY AVERAGE: 4.62 UG/M ³

24 HOUR AVERAGES FOR SEPTEMBER 2011



01 Hour Averages



— LICA33 PM2 UG/M3

LICA33
 PM2 / WDR Joint Frequency Distribution (Percent)

September 2011

Distribution By % Of Samples

Logger Id : 33
 Site Name : LICA33
 Parameter : PM2
 Units : UG/M3

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
< 30.0	2.54	1.41	2.25	2.82	5.36	4.51	10.02	9.03	4.80	3.95	12.14	12.85	11.58	11.72	2.11	2.82	100.00
< 60.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 80.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.54	1.41	2.25	2.82	5.36	4.51	10.02	9.03	4.80	3.95	12.14	12.85	11.58	11.72	2.11	2.82	

Calm : .00 %

Total # Operational Hours : 708

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30.0	18	10	16	20	38	32	71	64	34	28	86	91	82	83	15	20	708
< 60.0																	
< 80.0																	
< 120.0																	
< 240.0																	
>= 240.0																	
Totals	18	10	16	20	38	32	71	64	34	28	86	91	82	83	15	20	

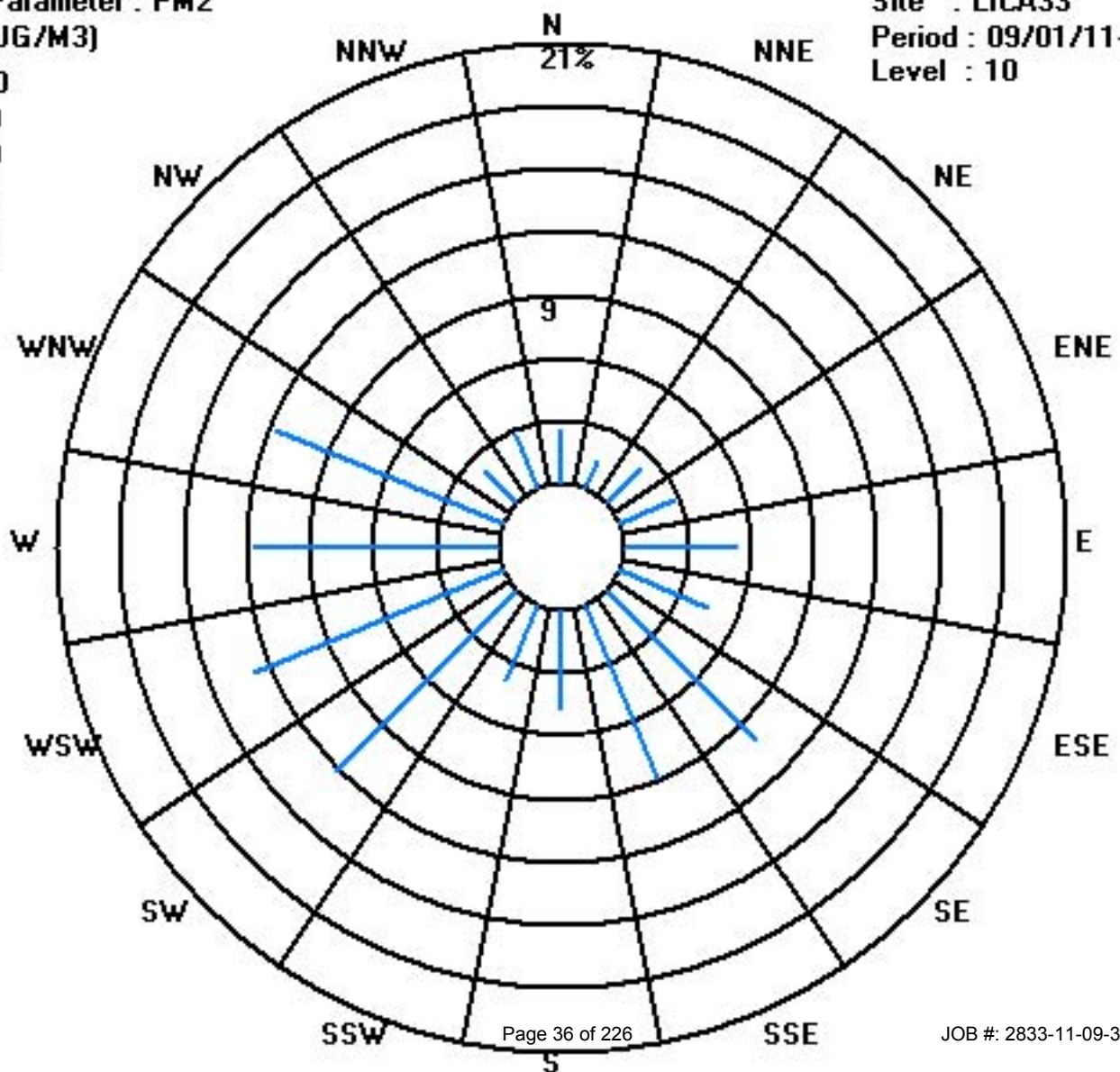
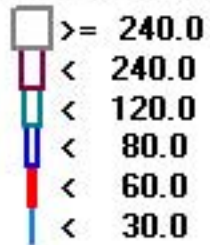
Calm : .00 %

Total # Operational Hours : 708

Class Limits (UG/M3)

Period : 09/01/11-09/30/11

Level : 10



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 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	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	4	4	5	5	4	IZS	3	2	2	1	1	0	1	0	0	1	1	1	2	3	7	3	5	7	2.4	24	
2	6	3	4	5	IZS	6	5	5	5	7	3	1	1	1	1	1	1	3	6	3	2	3	3	7	3.3	24	
3	4	4	5	IZS	5	6	4	4	2	1	1	1	1	0	0	0	1	1	2	3	4	2	2	6	2.3	24	
4	2	2	IZS	2	3	3	2	2	2	2	1	2	1	1	1	1	2	1	2	2	2	3	6	6	2.0	24	
5	8	IZS	3	2	2	5	5	7	5	3	1	1	0	1	0	1	8	3	3	3	10	4	6	10	3.6	24	
6	IZS	5	6	4	5	9	6	5	4	3	2	1	1	1	1	1	2	2	2	4	5	6	IZS	9	3.5	24	
7	3	3	5	6	5	6	5	7	8	7	3	2	2	2	1	1	1	4	6	11	9	IZS	9	11	4.7	24	
8	7	13	9	10	10	10	9	9	9	6	4	2	1	1	1	1	1	2	3	4	IZS	4	4	13	5.3	24	
9	6	6	4	4	3	5	4	6	6	4	2	2	2	2	2	1	2	5	6	IZS	3	5	5	6	3.8	24	
10	12	4	5	4	3	5	3	6	2	2	1	1	1	1	1	1	1	1	IZS	2	5	14	5	14	3.5	24	
11	11	13	14	13	8	9	4	5	2	1	1	1	1	1	2	2	1	1	IZS	7	3	6	13	4	14	5.3	24
12	7	2	2	3	4	3	3	2	2	2	1	1	1	0	1	1	1	IZS	1	2	3	2	3	2	7	2.1	24
13	1	3	3	6	7	3	8	6	2	1	1	1	1	1	1	1	IZS	0	1	2	2	3	3	4	8	2.7	24
14	4	6	4	5	5	5	3	3	2	1	1	1	1	1	1	IZS	1	1	8	2	3	2	1	3	8	2.8	24
15	8	2	1	1	2	3	10	3	2	2	2	2	3	5	IZS	8	1	2	4	5	4	3	3	4	10	3.5	24
16	2	2	2	2	3	2	3	6	3	3	2	2	2	IZS	1	1	1	1	1	1	0	0	1	6	1.8	24	
17	1	1	2	2	2	2	2	2	2	2	2	1	IZS	1	1	1	1	1	2	1	5	3	2	3	5	1.8	24
18	3	4	3	4	3	4	6	3	3	1	1	IZS	0	0	0	1	1	2	4	4	4	3	3	5	6	2.7	24
19	6	4	2	4	4	3	5	5	2	2	C	C	C	C	C	C	C	1	1	3	3	3	3	4	6	3.2	24
20	5	4	4	6	6	7	4	3	3	IZS	5	M	1	1	1	2	0	1	2	3	4	3	2	3	7	3.2	23
21	3	2	2	3	3	2	2	2	IZS	1	1	1	1	1	1	1	1	1	2	20	2	2	2	2	20	2.5	24
22	2	2	2	2	2	5	14	IZS	5	5	9	3	4	1	10	5	6	3	5	4	5	4	4	8	14	4.8	24
23	10	8	10	9	8	6	IZS	6	4	4	3	3	3	4	5	6	7	8	9	9	10	7	5	5	10	6.5	24
24	10	7	11	11	11	IZS	8	7	9	5	2	1	2	3	2	2	3	4	7	3	6	10	6	2	11	5.7	24
25	3	3	9	4	IZS	2	3	2	2	2	1	1	1	1	1	1	1	1	2	2	1	1	2	2	9	2.1	24
26	3	3	3	IZS	2	6	3	4	4	2	1	3	5	1	1	C	M	C	C	4	5	3	2	2	6	3.0	23
27	2	3	IZS	3	2	4	4	6	C	C	C	C	C	C	C	1	1	1	5	1	1	1	2	2	6	2.4	24
28	3	IZS	4	4	3	2	3	4	3	1	0	0	0	0	0	0	0	1	1	1	2	3	4	4	4	1.9	24
29	IZS	6	9	4	2	3	7	4	4	1	0	1	1	1	1	1	1	2	2	2	2	1	1	IZS	9	2.5	24
30	1	1	1	1	1	2	3	4	3	2	2	2	2	3	3	4	9	6	5	7	6	5	IZS	4	9	3.3	24
HOURLY MAX	12	13	14	13	11	10	14	9	9	7	9	3	5	5	10	8	9	8	9	20	11	10	14	9			
HOURLY AVG	4.9	4.3	4.8	4.6	4.2	4.6	4.9	4.5	3.6	2.6	1.9	1.5	1.5	1.3	1.5	1.7	1.7	2.0	3.0	4.0	3.7	3.9	3.8	3.9			

STATUS FLAG CODES

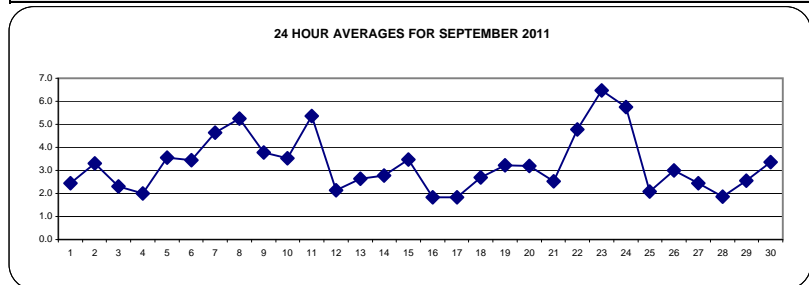
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

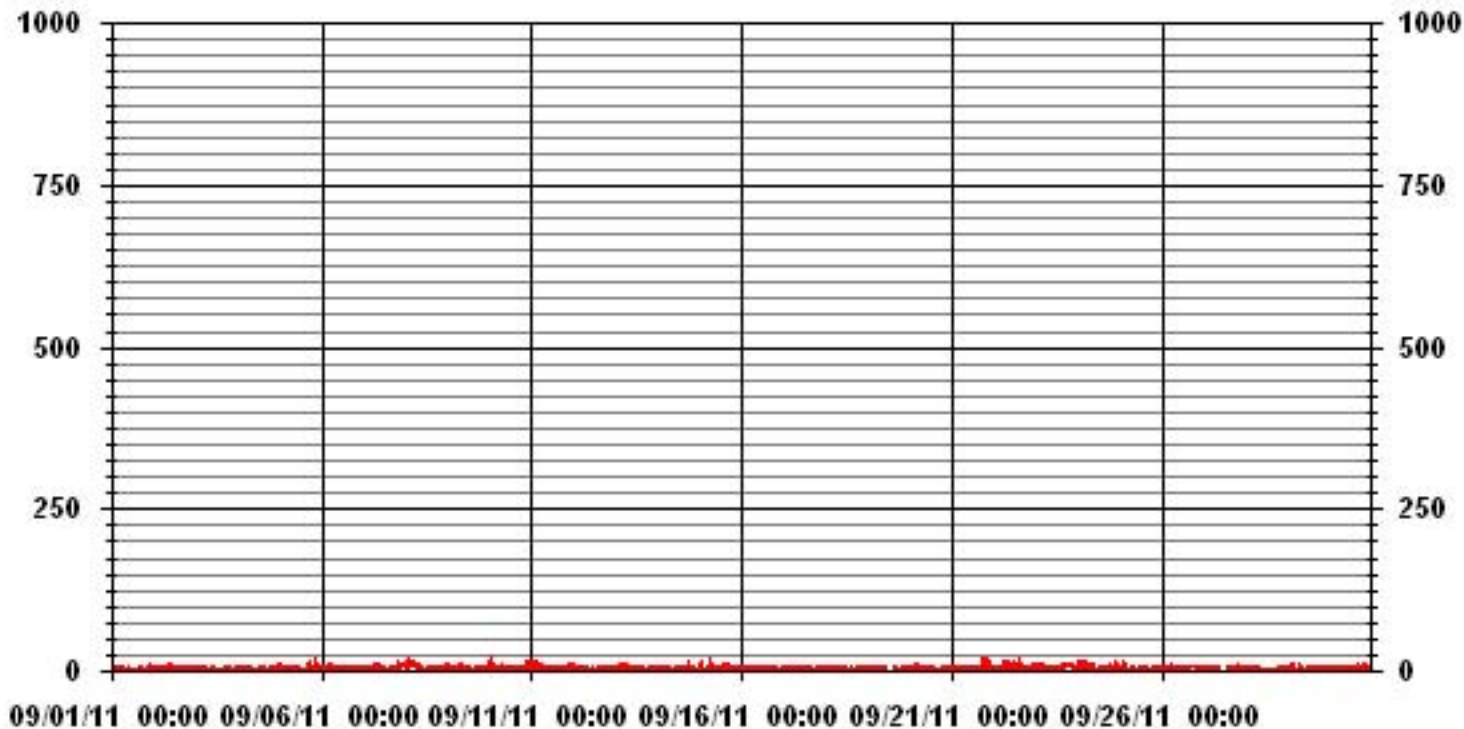
ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	645					
MAXIMUM 1-HR AVERAGE:	20	PPB	@ HOUR(S)	19	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	6.5	PPB			ON DAY(S)	23
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS	
MONTHLY CALIBRATION TIME:	17	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	2.67		MONTHLY AVERAGE:	3.29	PPB	



01 Hour Averages



— LICA33 IIO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 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	4	5	6	6	6	IZS	5	4	2	1	2	2	1	2	1	1	2	1	2	2	5	9	7	13	13	3.9	24	
2	9	7	7	9	IZS	10	7	7	7	9	6	3	2	2	2	2	2	2	10	15	8	3	3	4	15	5.9	24	
3	5	5	7	IZS	6	12	6	6	3	2	2	2	1	1	1	1	1	2	3	5	6	3	2	12	3.6	24		
4	3	3	IZS	3	7	6	3	2	2	2	2	2	2	1	1	1	2	3	2	3	3	3	6	10	10	3.1	24	
5	16	IZS	4	4	3	6	8	9	7	4	2	1	1	1	2	1	5	16	15	4	5	14	7	9	16	6.3	24	
6	IZS	10	13	8	9	10	11	7	6	4	3	3	2	2	1	2	2	4	5	4	7	7	9	IZS	13	5.9	24	
7	4	4	8	16	8	14	12	12	11	12	3	3	3	2	2	2	2	2	8	9	24	13	IZS	19	24	8.4	24	
8	10	17	17	12	13	37	11	11	15	9	5	4	2	2	2	2	2	3	4	5	6	IZS	10	9	37	9.0	24	
9	13	13	10	8	5	7	8	9	11	22	11	3	13	5	17	4	3	7	14	9	IZS	4	13	13	22	9.7	24	
10	28	8	7	7	5	7	10	13	3	3	2	2	2	1	2	1	1	2	3	IZS	4	8	44	9	44	7.5	24	
11	18	16	16	15	11	12	8	10	7	3	3	2	3	3	5	15	2	2	IZS	13	4	24	22	16	24	10.0	24	
12	14	3	3	4	6	3	4	4	3	3	2	2	2	1	1	3	1	IZS	1	5	6	4	5	4	14	3.7	24	
13	3	5	7	9	11	4	11	10	3	2	2	1	1	1	1	1	IZS	1	2	3	4	5	4	4	11	4.1	24	
14	5	8	5	6	6	5	4	4	3	3	2	2	2	2	21	IZS	1	2	60	4	4	3	2	33	60	8.1	24	
15	71	2	2	5	12	12	14	4	2	2	2	3	32	26	IZS	50	3	4	7	7	6	4	4	17	71	12.7	24	
16	3	2	4	4	6	2	7	72	4	5	3	3	4	IZS	3	4	12	2	2	6	5	1	1	72	6.8	24		
17	3	2	2	3	3	3	3	9	3	3	3	3	IZS	8	4	5	1	2	6	3	8	12	6	5	12	4.3	24	
18	4	6	4	6	4	10	10	5	6	2	2	IZS	2	1	1	1	1	4	20	9	6	5	5	7	20	5.3	24	
19	8	6	3	6	7	4	13	7	4	3	C	C	C	C	C	C	C	C	7	2	4	4	4	4	5	13	5.4	24
20	7	5	6	6	7	8	7	5	6	IZS	25	M	M	2	2	32	1	3	4	4	6	5	3	10	32	7.3	22	
21	13	3	3	3	3	3	3	4	IZS	1	2	2	1	1	1	1	2	3	109	2	2	2	2	109	7.3	24		
22	2	3	3	3	3	14	16	IZS	7	6	97	5	P	3	65	66	51	5	20	6	7	6	5	15	97	18.5	23	
23	15	14	15	13	10	9	IZS	10	6	4	4	4	4	5	6	10	10	10	11	10	16	10	8	11	16	9.3	24	
24	13	9	13	13	13	IZS	19	29	53	7	4	2	2	80	7	3	6	9	17	5	11	18	13	3	80	15.2	24	
25	3	10	16	14	IZS	3	3	3	3	3	2	2	2	1	1	2	2	2	9	10	2	3	3	3	16	4.4	24	
26	5	3	4	IZS	4	11	5	8	6	8	2	29	43	2	C	C	M	C	C	5	6	4	3	3	43	8.4	23	
27	3	4	IZS	7	3	18	7	11	C	C	C	C	C	C	C	2	3	3	7	3	1	2	3	3	18	5.0	24	
28	4	IZS	5	5	5	3	5	36	30	2	1	1	1	4	1	1	1	1	2	2	3	5	5	5	36	5.6	24	
29	IZS	10	15	9	3	8	10	5	5	2	1	3	3	2	3	1	2	3	3	2	2	2	2	IZS	15	4.4	24	
30	1	1	2	2	2	2	5	6	5	3	3	3	3	3	4	5	14	9	8	8	8	6	IZS	4	14	4.7	24	
HOURLY MAX	71	17	17	16	13	37	19	72	53	22	97	29	43	80	65	66	51	16	60	109	24	24	44	33				
HOURLY AVG	10.3	6.6	7.4	7.4	6.5	8.7	8.1	11.1	8.0	4.6	7.1	3.5	5.4	6.1	6.0	8.1	5.0	4.0	8.9	9.4	6.1	6.6	7.2	8.5				

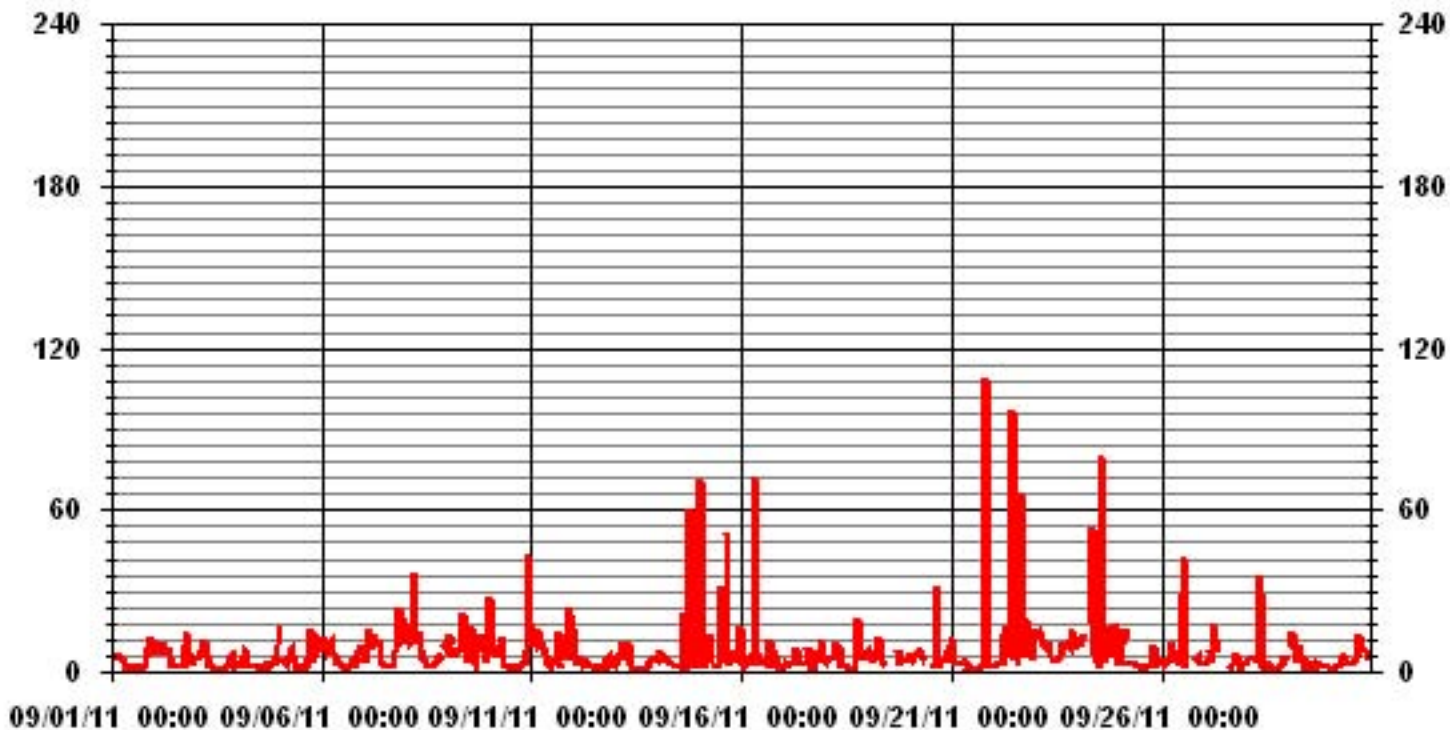
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	667					
MAXIMUM INSTANTANEOUS VALUE:	109	PPB	@ HOUR(S)	19	ON DAY(S)	21
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	716	HRS	
MONTHLY CALIBRATION TIME:	18	HRS				
STANDARD DEVIATION:	10.27					

01 Hour Averages



LICA33
 NO2_ / WDR Joint Frequency Distribution (Percent)

September 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	2.53	1.49	2.38	2.83	5.37	5.07	10.44	9.40	4.62	4.02	11.94	12.23	11.79	10.89	1.94	2.98	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	2.53	1.49	2.38	2.83	5.37	5.07	10.44	9.40	4.62	4.02	11.94	12.23	11.79	10.89	1.94	2.98	

Calm : .00 %

Total # Operational Hours : 670

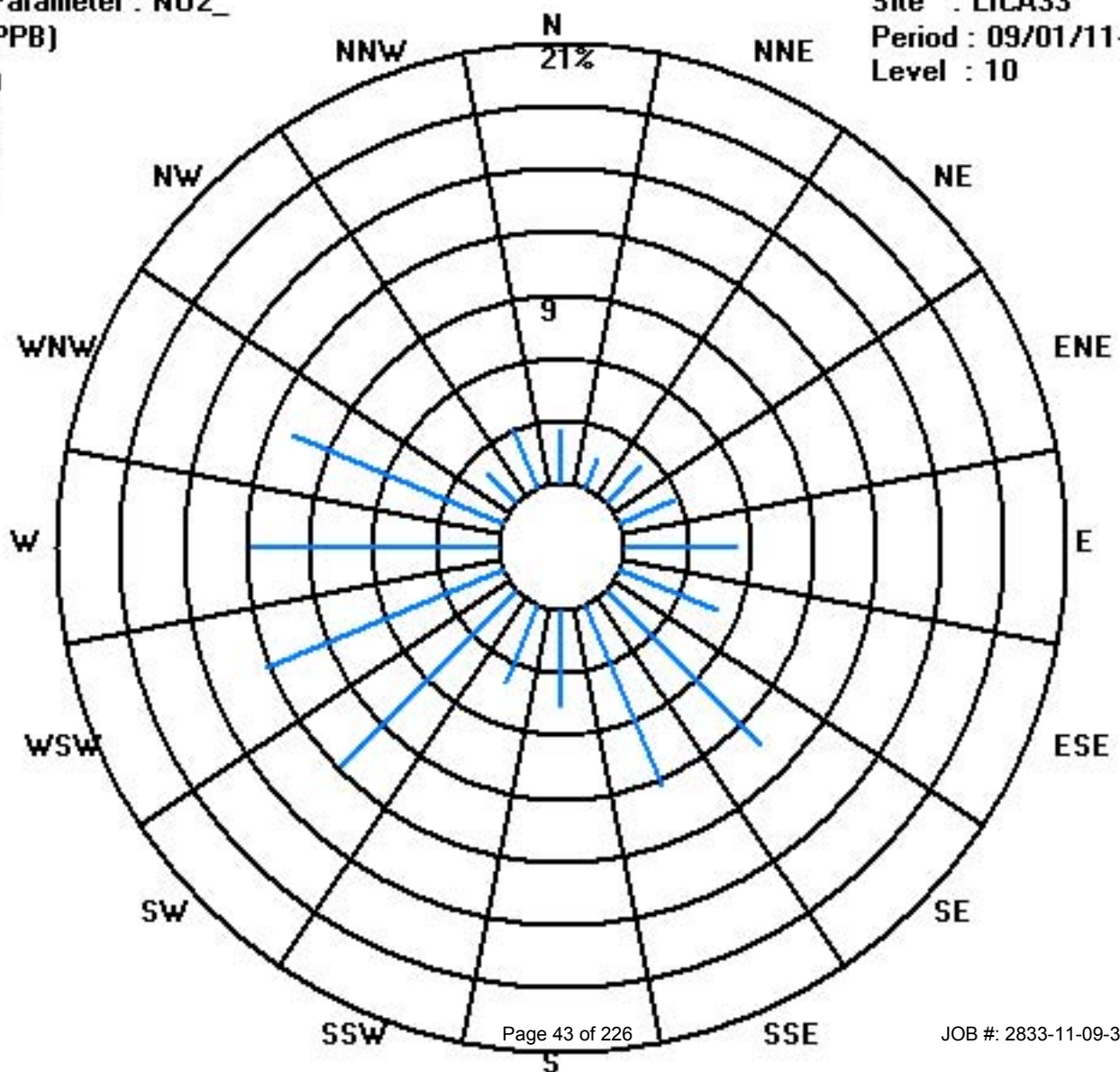
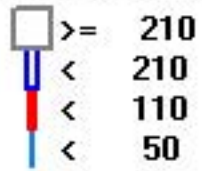
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	17	10	16	19	36	34	70	63	31	27	80	82	79	73	13	20	670
< 110																	
< 210																	
>= 210																	
Totals	17	10	16	19	36	34	70	63	31	27	80	82	79	73	13	20	

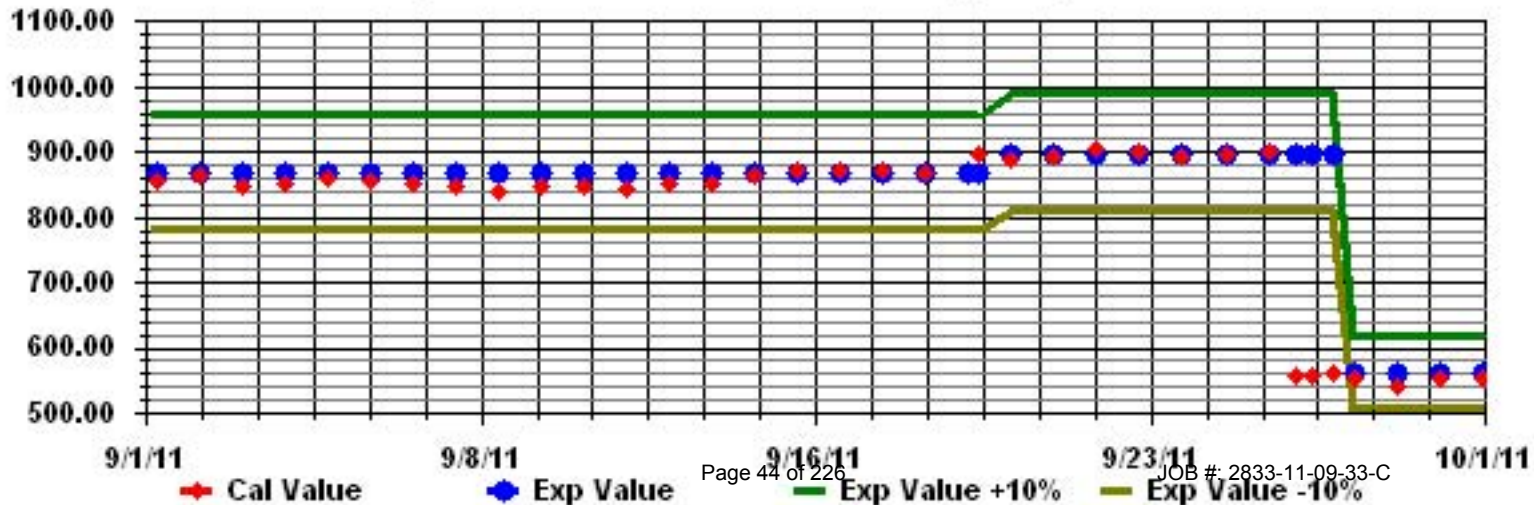
Calm : .00 %

Total # Operational Hours : 670

Class Limits (PPB)



Calibration Graph for Site: LICA33 Parameter: NO2_ Sequence: NO2 Phase: SPAN



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 2011

NITRIC OXIDE hourly averages in ppb

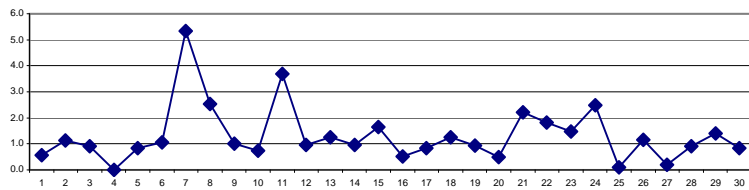
MST

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	1	1	1	IZS	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0.6	24	
2	2	0	1	1	IZS	4	3	4	3	4	2	0	0	0	0	0	0	0	0	2	0	0	0	0	4	1.1	24	
3	0	0	0	IZS	1	5	4	7	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0.9	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	24	
5	1	IZS	0	0	0	0	3	9	4	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	9	0.8	24	
6	IZS	1	1	0	4	5	3	5	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	5	1.0	24
7	1	1	1	10	18	21	19	25	7	5	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	3	25	5.3	24
8	0	2	2	3	7	15	8	12	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	15	2.5	24
9	1	1	0	0	0	2	5	7	5	1	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	7	1.0	24	
10	2	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	10	0	10	0.7	24
11	3	8	14	12	4	8	0	1	0	0	0	0	0	0	0	0	0	0	0	IZS	7	0	3	22	3	22	3.7	24
12	9	0	0	0	0	0	1	2	1	1	1	0	0	0	0	0	0	0	IZS	2	1	1	1	1	1	9	1.0	24
13	1	1	1	1	2	1	6	5	2	1	1	1	1	1	1	1	IZS	1	0	0	0	1	0	0	6	1.3	24	
14	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	IZS	0	0	15	0	0	0	0	0	3	15	1.0	24
15	11	0	0	0	1	0	7	1	0	0	0	0	2	7	IZS	9	0	0	0	0	0	0	0	0	0	11	1.7	24
16	0	0	0	0	0	0	0	7	1	1	0	0	1	IZS	1	1	0	0	0	0	0	0	0	0	0	7	0.5	24
17	0	0	0	0	0	0	0	1	1	1	1	0	IZS	2	2	2	1	1	1	1	1	1	2	1	1	2	0.8	24
18	1	1	1	1	1	1	2	2	4	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	4	1.3	24
19	1	1	1	1	1	1	3	3	2	2	C	C	C	C	C	C	C	C	0	0	0	0	0	0	0	3	0.9	24
20	0	0	0	0	0	0	0	2	2	IZS	4	M	0	0	0	3	0	0	0	0	0	0	0	0	0	4	0.5	23
21	0	0	0	0	0	0	0	1	IZS	1	0	0	0	0	0	0	0	0	0	0	49	0	0	0	0	49	2.2	24
22	0	0	0	0	0	0	5	IZS	3	3	6	0	1	0	14	6	4	0	0	0	0	0	0	0	14	1.8	24	
23	0	0	1	1	2	0	IZS	5	3	2	1	1	2	1	2	2	2	1	1	2	1	1	1	1	5	1.5	24	
24	12	3	4	12	7	IZS	3	6	5	2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	12	2.5	24	
25	0	0	1	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
26	0	0	0	IZS	2	1	1	1	1	1	1	4	8	1	1	C	M	C	C	0	0	0	0	0	8	1.2	23	
27	0	0	IZS	0	0	1	0	2	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	2	0.2	24	
28	0	IZS	1	1	1	0	1	3	3	1	1	0	1	1	1	0	1	0	1	1	1	1	1	0	3	0.9	24	
29	IZS	1	4	1	1	1	2	5	5	1	1	1	2	1	1	1	1	1	1	0	0	0	1	0	IZS	5	1.4	24
30	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	IZS	0	1	0.8	24
HOURLY MAX	12	8	14	12	18	21	19	25	7	5	6	4	8	7	14	9	4	2	15	49	2	3	22	3				
HOURLY AVG	1.7	0.8	1.3	1.6	1.9	2.4	2.8	4.2	2.4	1.3	0.8	0.3	0.8	0.7	1.0	1.0	0.4	0.3	0.8	2.2	0.3	0.5	1.3	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

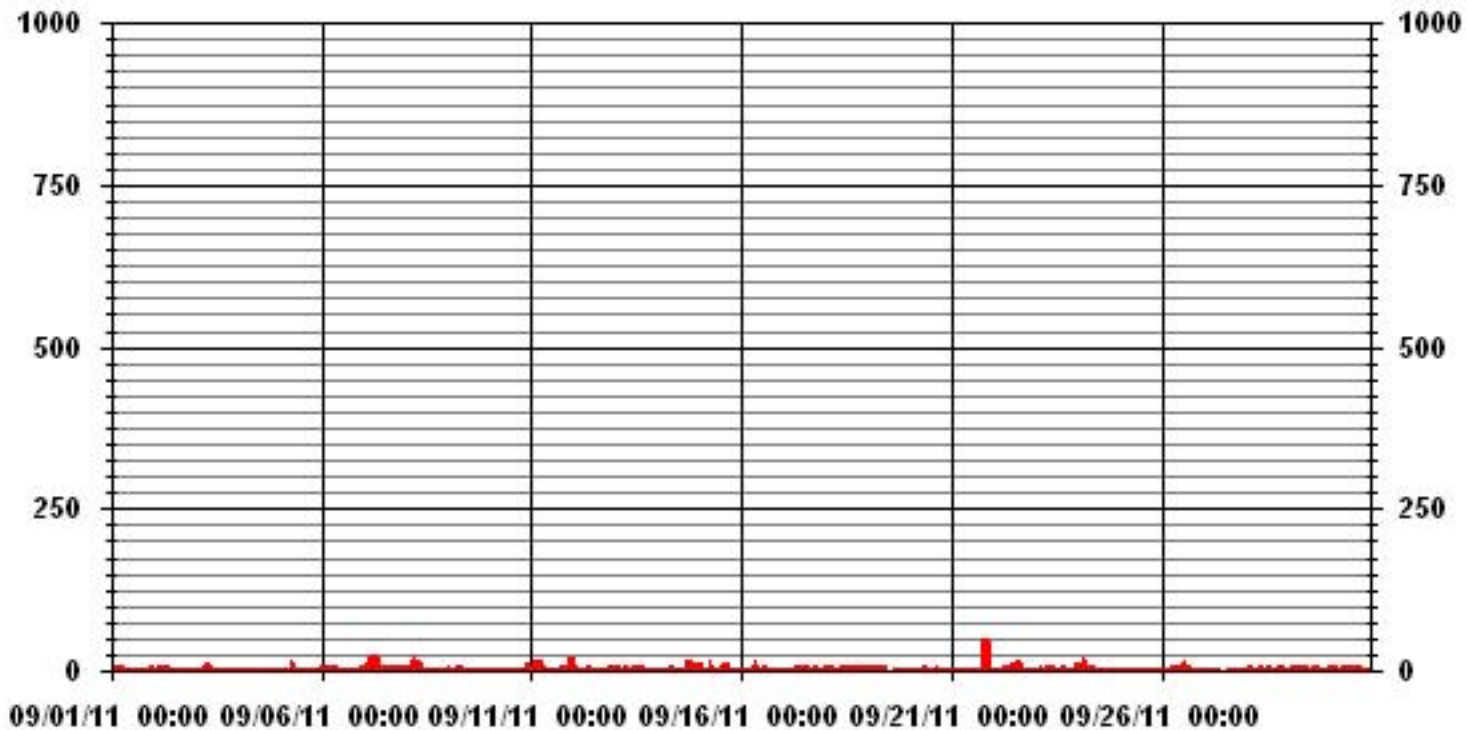
24 HOUR AVERAGES FOR SEPTEMBER 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	308					
MAXIMUM 1-HR AVERAGE:	49	PPB	@ HOUR(S)	19	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	5.3	PPB			ON DAY(S)	7
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS	
MONTHLY CALIBRATION TIME:	17	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	3.32		MONTHLY AVERAGE:	1.33	PPB	

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 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	2	1	4	4	IZS	5	6	2	1	1	1	1	1	1	0	1	0	0	0	0	0	0	11	11	1.9	24	
2	6	3	5	4	IZS	18	6	6	5	5	4	1	1	0	0	0	0	0	5	9	3	0	0	0	18	3.5	24	
3	0	0	2	IZS	2	12	13	18	4	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	18	2.4	24	
4	0	0	IZS	1	2	1	1	1	1	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	2	0.5	24	
5	9	IZS	1	2	0	4	8	11	8	2	1	0	0	0	0	0	0	3	1	0	0	2	0	0	11	2.3	24	
6	IZS	3	3	1	17	10	5	11	8	2	1	0	0	0	0	1	0	0	0	0	0	0	0	IZS	17	2.8	24	
7	2	2	2	61	29	75	28	63	12	10	1	1	1	1	1	1	1	1	1	1	4	2	IZS	27	75	14.2	24	
8	1	10	7	6	17	75	11	22	14	4	1	1	1	0	0	0	0	0	0	0	0	0	IZS	1	1	75	7.5	24
9	4	2	1	2	1	3	20	17	15	20	16	2	17	2	11	1	0	1	1	1	1	IZS	2	1	1	20	6.1	24
10	9	1	0	0	0	0	7	11	1	1	1	0	0	0	0	0	0	1	1	IZS	3	1	96	1	96	5.8	24	
11	9	18	18	16	11	24	3	4	2	1	1	0	0	1	0	3	0	0	IZS	19	1	40	44	30	44	10.7	24	
12	26	0	0	1	1	1	3	4	3	2	2	1	1	0	0	2	0	IZS	3	2	2	1	1	1	1	26	2.5	24
13	1	2	2	2	3	1	13	10	3	2	2	2	1	1	1	1	IZS	2	1	1	1	3	1	0	13	2.4	24	
14	0	1	1	1	1	0	2	2	2	2	0	0	0	0	21	IZS	2	1	132	0	0	0	0	47	132	9.3	24	
15	96	0	0	4	20	9	12	2	1	1	1	1	48	67	IZS	51	1	1	1	0	0	0	0	4	96	13.9	24	
16	0	0	0	0	0	0	4	84	3	3	2	1	3	IZS	3	3	4	0	0	4	1	0	0	0	84	5.0	24	
17	0	0	0	0	0	1	1	5	2	3	2	2	IZS	4	3	3	1	2	2	1	1	21	2	1	21	2.5	24	
18	1	1	1	1	1	2	4	4	7	2	2	IZS	3	2	2	2	1	3	18	1	2	1	1	1	18	2.7	24	
19	1	1	1	1	2	1	21	5	3	3	C	C	C	C	C	C	C	C	11	0	0	0	0	0	21	2.9	24	
20	0	0	0	0	0	1	1	5	11	IZS	42	M	M	0	0	45	0	0	2	0	0	0	0	8	45	5.5	22	
21	15	0	0	0	0	0	0	4	IZS	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	198	0	9.7	24
22	0	0	0	0	0	3	11	IZS	5	4	80	2	P	1	91	120	62	5	11	1	0	0	0	1	120	18.0	23	
23	2	2	3	4	5	0	IZS	13	5	4	2	2	2	2	2	2	2	2	2	2	2	6	2	1	3	13	3.0	24
24	23	10	12	15	12	IZS	19	37	57	3	1	1	0	78	1	0	0	0	1	0	2	3	1	0	78	12.0	24	
25	0	2	5	2	IZS	2	1	1	1	1	0	0	0	0	0	0	0	0	5	7	0	1	0	0	7	1.2	24	
26	0	0	0	IZS	3	2	2	2	3	12	2	56	70	1	C	C	M	C	C	1	0	0	0	0	70	8.6	23	
27	0	0	IZS	6	6	14	7	7	C	C	C	C	C	C	C	1	0	0	0	1	0	0	0	0	14	2.6	24	
28	0	IZS	1	1	1	1	1	54	53	2	2	1	1	9	1	1	2	1	2	2	2	1	1	1	54	6.1	24	
29	IZS	2	14	2	1	3	3	8	8	2	1	4	4	1	1	1	1	1	1	1	1	1	1	1	14	2.8	24	
30	1	1	1	1	1	1	1	3	2	2	2	2	2	2	2	2	2	2	1	1	1	1	2	IZS	0	3	1.5	24
HOURLY MAX	96	18	18	61	29	75	28	84	57	20	80	56	70	78	91	120	62	11	132	198	6	40	96	47				
HOURLY AVG	7.4	2.3	2.9	4.9	5.0	9.4	7.3	14.5	8.6	3.6	6.2	3.2	6.2	6.4	5.4	8.9	3.0	1.4	6.8	8.7	1.0	2.9	5.4	4.9				

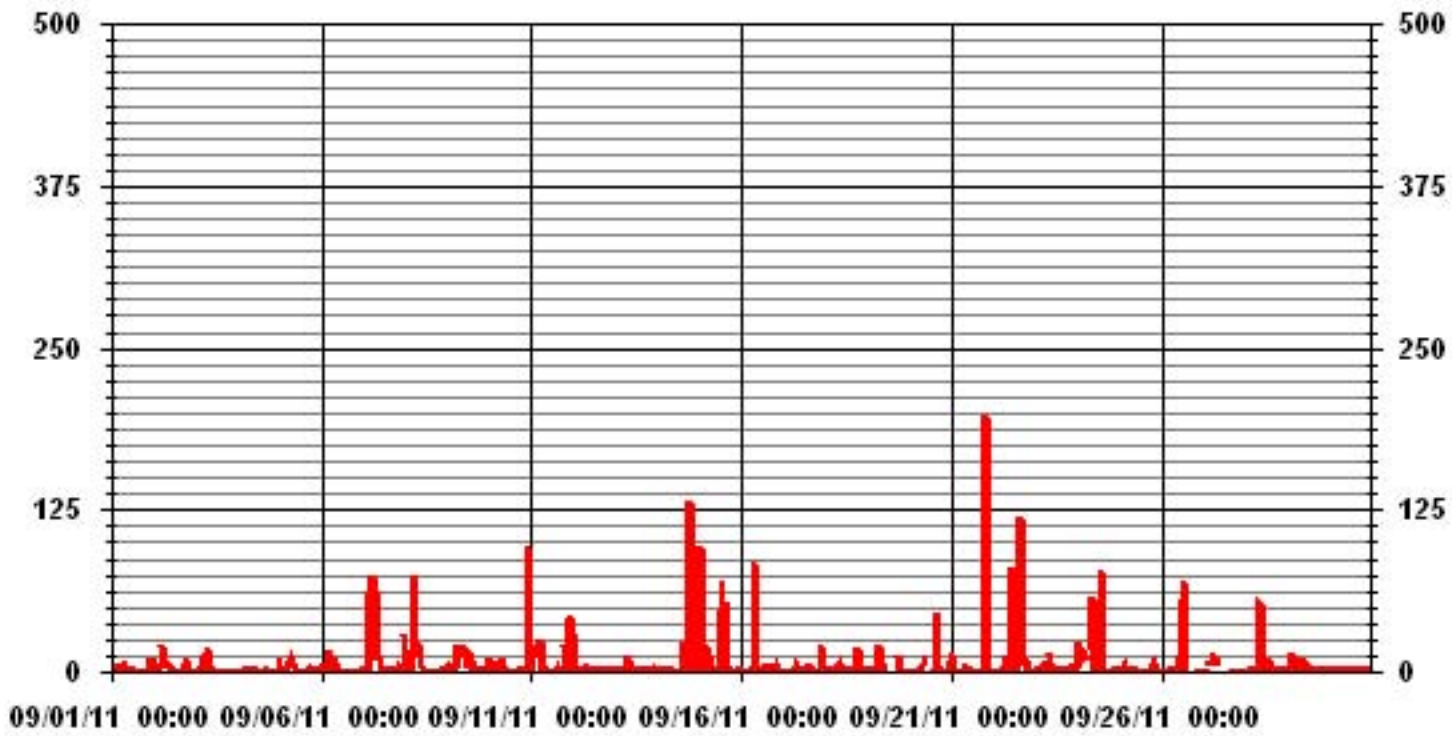
STATUS FLAG CODES

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:	461					
MAXIMUM INSTANTANEOUS VALUE:	198	PPB	@ HOUR(S)	19	ON DAY(S)	21
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	716	HRS	
MONTHLY CALIBRATION TIME:	18	HRS				
STANDARD DEVIATION:	16.21					

01 Hour Averages



LICA33
 NO_ / WDR Joint Frequency Distribution (Percent)

September 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	2.53	1.49	2.38	2.83	5.37	5.07	10.44	9.40	4.62	4.02	11.94	12.23	11.79	10.89	1.94	2.98	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	2.53	1.49	2.38	2.83	5.37	5.07	10.44	9.40	4.62	4.02	11.94	12.23	11.79	10.89	1.94	2.98	

Calm : .00 %

Total # Operational Hours : 670

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	17	10	16	19	36	34	70	63	31	27	80	82	79	73	13	20	670
< 110																	
< 210																	
>= 210																	
Totals	17	10	16	19	36	34	70	63	31	27	80	82	79	73	13	20	

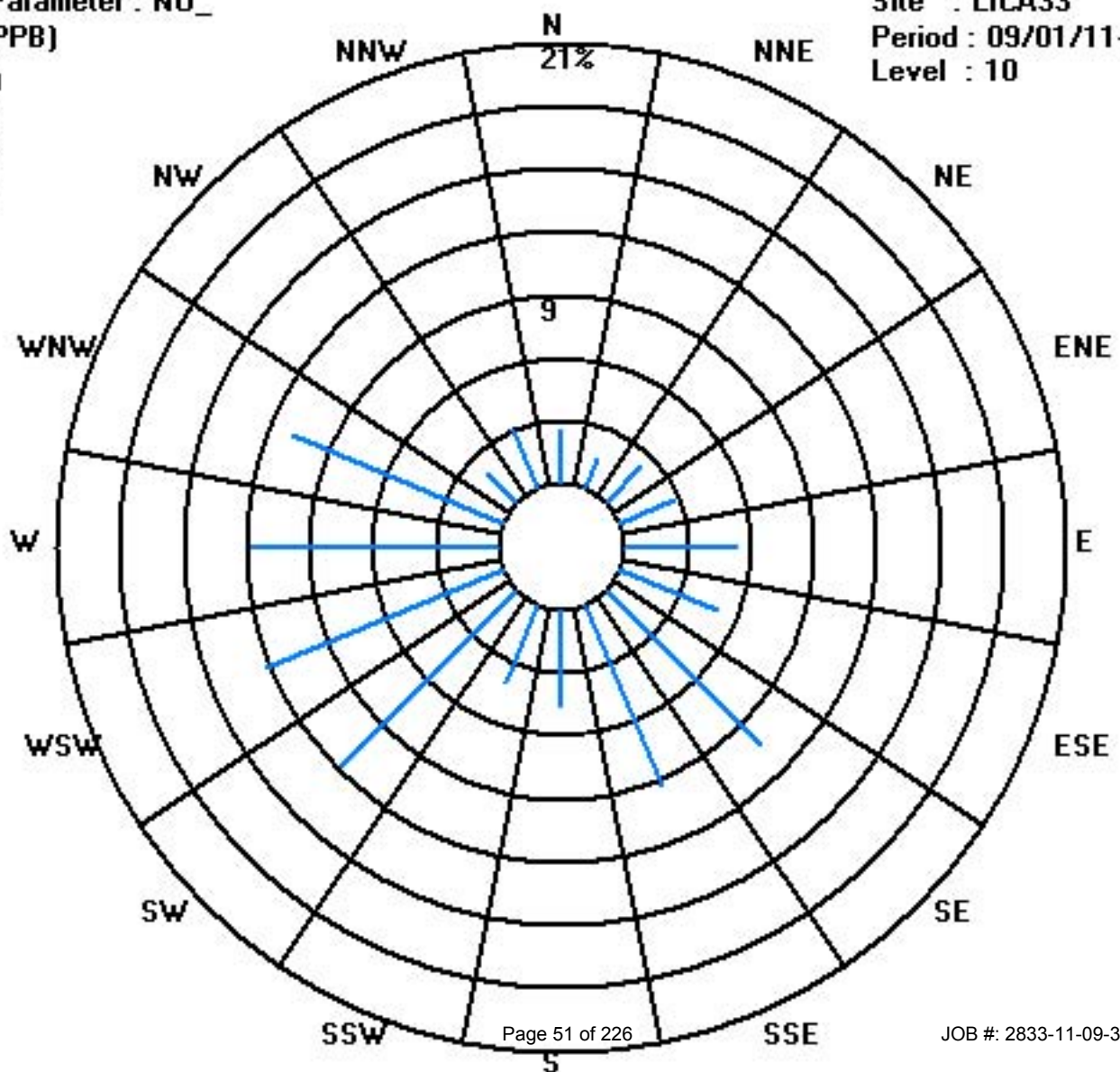
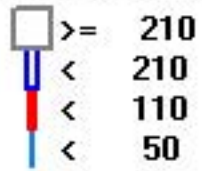
Calm : .00 %

Total # Operational Hours : 670

Class Limits (PPB)

Period : 09/01/11-09/30/11

Level : 10



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 2011

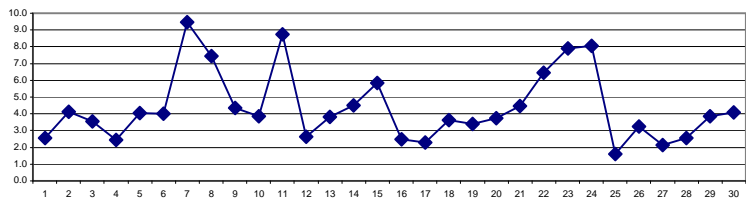
OXIDES OF NITROGEN hourly averages in ppb

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		4	5	5	6	5	IZS	6	4	3	1	1	0	0	0	0	0	0	0	1	2	6	3	7	7	2.6	24	
2		7	3	5	6	IZS	10	8	9	8	10	6	2	1	1	0	1	0	0	3	8	2	1	2	2	10	4.1	24
3		3	4	4	IZS	7	12	9	12	4	2	2	1	1	1	1	1	1	1	2	4	4	2	2	12	3.6	24	
4		2	2	IZS	3	4	3	3	3	3	2	3	2	1	1	1	1	2	2	2	2	2	3	6	6	2.4	24	
5		10	IZS	3	2	1	5	8	16	8	3	1	0	0	0	0	1	9	3	2	3	10	3	5	16	4.0	24	
6		IZS	5	7	4	9	13	9	10	7	3	2	1	0	0	0	0	1	2	2	3	4	6	IZS	13	4.0	24	
7		4	4	6	15	22	26	23	32	14	12	3	3	2	2	2	1	2	2	4	6	12	9	IZS	12	32	9.5	24
8		7	15	11	12	16	25	17	21	16	7	3	2	1	1	0	0	1	1	2	3	3	IZS	4	3	25	7.4	24
9		7	6	4	4	3	7	8	12	11	5	1	1	2	2	1	1	1	2	5	5	IZS	3	4	5	12	4.3	24
10		14	4	4	4	3	4	4	9	2	2	1	0	0	0	0	0	0	1	IZS	3	5	24	5	24	3.9	24	
11		14	21	27	25	12	17	4	6	2	0	1	1	1	2	1	0	1	IZS	13	2	9	34	7	34	8.7	24	
12		16	2	2	2	4	2	4	4	3	2	1	0	0	0	1	0	1	IZS	2	3	4	3	3	3	16	2.7	24
13		2	3	4	7	9	4	13	11	3	2	2	1	1	1	1	1	IZS	2	2	3	3	5	4	4	13	3.8	24
14		5	6	5	6	6	5	5	5	4	3	2	2	1	1	3	IZS	2	2	23	3	3	3	2	7	23	4.5	24
15		20	2	2	2	4	4	17	4	2	3	3	3	6	12	IZS	18	2	3	4	6	4	4	4	5	20	5.8	24
16		3	2	3	3	3	2	4	14	4	5	3	2	4	IZS	2	2	1	0	0	0	0	0	0	0	14	2.5	24
17		1	1	1	1	1	2	1	2	3	3	2	2	IZS	3	3	3	1	2	3	2	5	4	3	4	5	2.3	24
18		3	4	3	4	3	5	9	4	7	2	2	IZS	2	1	1	1	1	3	5	5	5	4	4	5	9	3.6	24
19		7	5	3	4	5	3	7	8	4	3	C	C	C	C	C	C	1	0	1	2	1	1	3	8	3.4	24	
20		3	3	3	4	5	6	4	6	6	IZS	10	M	2	1	1	6	1	1	3	3	5	3	2	4	10	3.7	23
21		4	3	3	3	3	2	4	IZS	2	1	1	0	0	0	0	0	0	0	1	69	1	1	1	1	69	4.5	24
22		1	1	2	2	1	5	19	IZS	8	7	15	3	5	1	24	11	11	3	5	4	5	4	3	8	24	6.4	24
23		10	8	11	10	9	6	IZS	11	7	6	5	4	5	5	6	8	9	10	10	12	8	6	6	6	12	7.9	24
24		22	10	15	23	18	IZS	11	13	14	7	2	1	1	5	2	2	3	4	6	2	6	10	6	2	23	8.0	24
25		2	3	9	4	IZS	2	2	2	2	2	1	0	0	0	0	0	0	0	2	2	0	1	1	2	9	1.6	24
26		2	2	2	IZS	3	6	3	4	4	2	1	7	12	0	0	C	M	C	C	4	4	3	2	1	12	3.3	23
27		1	2	IZS	2	2	4	5	8	C	C	C	C	C	C	1	1	1	4	1	0	0	1	1	1	8	2.1	24
28		3	IZS	4	4	4	3	3	7	6	2	1	1	1	1	1	1	1	1	1	1	2	3	4	4	7	2.6	24
29		IZS	7	14	5	2	4	9	9	9	2	1	2	3	2	2	1	2	2	2	2	2	2	1	IZS	14	3.9	24
30		1	1	2	2	2	3	5	4	3	3	4	4	4	4	4	10	7	6	7	7	6	IZS	3	10	4.1	24	
HOURLY MAX		22	21	27	25	22	26	23	32	16	12	15	7	12	12	24	18	11	10	23	69	12	10	34	12			
HOURLY AVG		6.4	4.8	5.9	6.0	5.9	6.8	7.6	8.8	6.0	3.7	2.8	1.8	2.1	1.7	2.1	2.4	1.9	2.2	3.6	5.9	3.7	4.1	4.8	4.2			

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

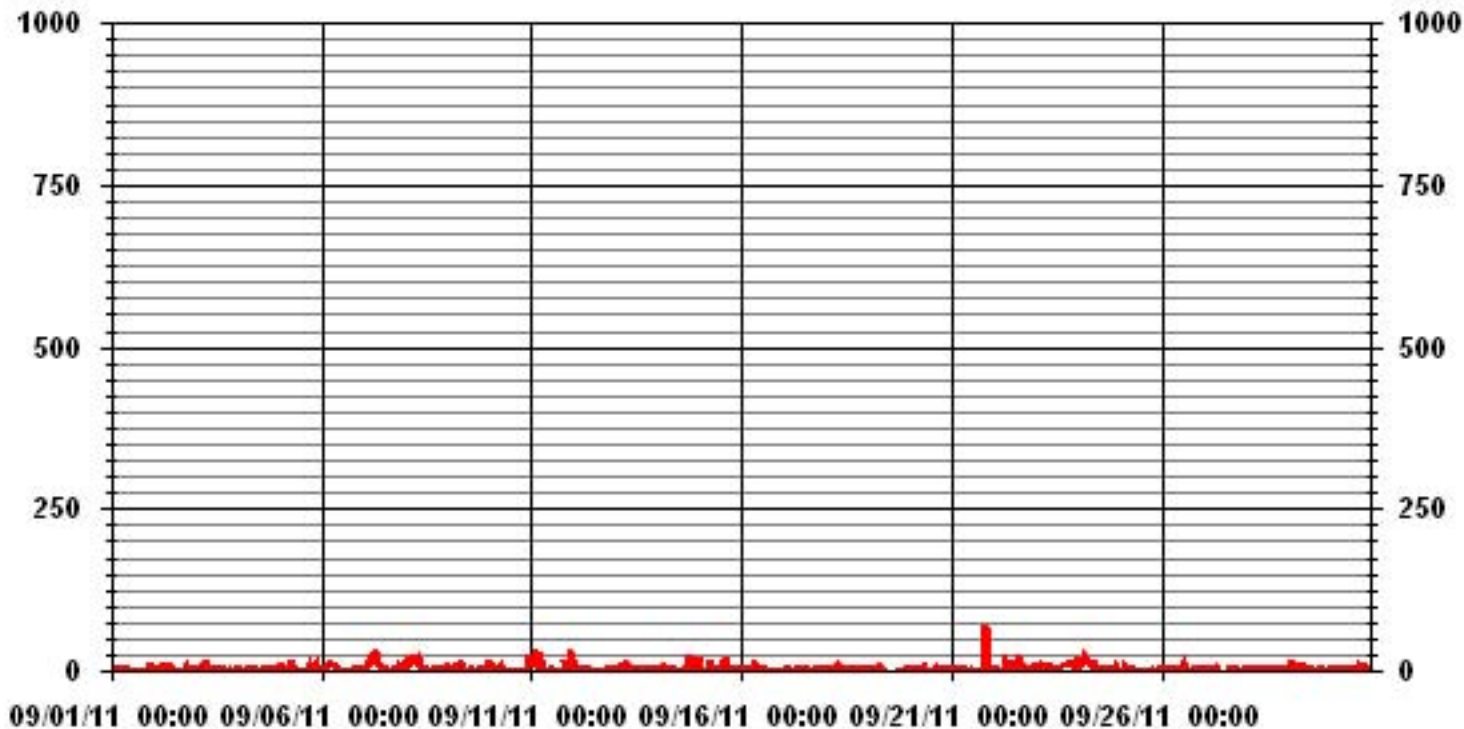
24 HOUR AVERAGES FOR SEPTEMBER 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	607					
MAXIMUM 1-HR AVERAGE:	69	PPB	@ HOUR(S)	19	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	9.5	PPB			ON DAY(S)	7
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS	
MONTHLY CALIBRATION TIME:	17	HRS	AMD OPERATION UPTIME	99.7	%	
STANDARD DEVIATION	5.37		MONTHLY AVERAGE	4.42	PPB	

01 Hour Averages



— LICA33 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 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	5	5	7	10	9	IZS	10	9	4	2	3	2	1	1	1	1	2	1	1	2	4	9	7	24	24	5.2	24	
2	13	10	12	12	IZS	27	11	12	11	13	9	3	2	2	1	2	2	2	14	24	11	2	3	3	27	8.7	24	
3	4	4	8	IZS	9	24	20	25	8	3	3	2	2	2	1	2	2	2	3	5	6	3	3	25	6.2	24		
4	3	3	IZS	3	8	7	4	4	3	4	3	4	3	2	2	2	3	4	2	3	3	3	7	11	11	4.0	24	
5	26	IZS	4	6	3	9	15	19	15	6	2	1	1	0	2	1	5	18	16	3	5	15	6	8	26	8.1	24	
6	IZS	13	16	8	26	19	15	18	13	6	3	2	1	2	1	2	1	4	5	4	6	7	8	IZS	26	8.2	24	
7	5	5	10	69	36	89	39	74	23	21	4	3	3	3	2	2	2	3	8	9	27	14	IZS	40	89	21.3	24	
8	9	19	20	18	26	106	21	33	29	13	5	4	2	1	1	1	1	2	4	5	5	IZS	10	9	106	15.0	24	
9	17	14	10	9	5	10	28	25	22	41	20	4	24	6	28	4	3	7	15	9	IZS	5	13	13	41	14.4	24	
10	36	8	7	6	4	6	17	23	3	2	2	1	1	1	1	1	1	2	3	IZS	4	8	134	9	134	12.2	24	
11	27	31	33	30	19	34	9	13	9	2	2	2	2	3	4	18	1	1	IZS	31	3	62	65	45	65	19.4	24	
12	36	3	2	5	6	4	6	7	5	4	3	2	1	1	1	4	1	IZS	3	6	7	5	6	4	36	5.3	24	
13	3	6	8	10	14	5	24	19	5	3	3	2	2	2	2	2	IZS	2	3	4	5	7	5	5	24	6.1	24	
14	5	8	6	7	7	6	6	6	5	4	2	2	2	2	42	IZS	3	2	158	4	4	3	3	81	158	16.0	24	
15	157	3	2	10	28	22	26	6	3	3	4	4	61	87	IZS	82	5	5	8	8	6	4	5	22	157	24.4	24	
16	4	3	4	4	6	3	11	156	7	8	5	4	8	IZS	5	6	15	1	1	6	5	0	0	1	156	11.4	24	
17	2	1	2	3	2	3	2	11	4	6	3	4	IZS	10	7	7	2	3	7	4	9	28	6	6	28	5.7	24	
18	5	7	4	7	4	11	13	8	12	4	3	IZS	3	2	2	2	2	4	35	10	7	5	5	8	35	7.1	24	
19	9	6	4	6	8	4	28	12	6	5	C	C	C	C	C	C	C	16	1	3	3	2	2	3	28	6.9	24	
20	6	4	4	5	7	8	6	10	17	IZS	65	M	M	2	2	71	1	4	4	5	6	6	3	18	71	12.1	22	
21	29	4	4	4	4	3	3	8	IZS	3	3	2	1	1	1	1	1	1	3	247	2	2	2	2	247	14.4	24	
22	1	2	2	2	2	16	24	IZS	11	10	176	6	P	3	134	176	114	10	24	6	6	6	4	15	176	34.1	23	
23	15	16	17	16	13	9	IZS	22	10	7	5	5	5	6	7	11	11	12	11	11	20	10	8	13	22	11.3	24	
24	34	17	25	28	21	IZS	34	65	110	10	4	2	2	154	7	2	5	9	17	4	13	20	14	2	154	26.0	24	
25	3	11	20	15	IZS	3	4	3	3	3	1	1	1	1	1	1	1	1	12	14	1	3	3	2	20	4.7	24	
26	4	2	3	IZS	6	11	5	8	8	16	2	78	112	1	C	C	M	C	C	5	6	4	2	2	112	15.3	23	
27	2	3	IZS	10	6	30	10	17	C	C	C	C	C	C	2	2	2	2	6	3	1	1	2	2	30	6.2	24	
28	4	IZS	6	6	5	3	5	90	77	3	2	2	1	13	1	1	2	2	4	4	4	5	6	5	90	10.9	24	
29	IZS	11	29	10	3	11	13	12	13	4	2	6	6	3	4	2	2	3	3	2	3	3	2	IZS	29	6.7	24	
30	2	2	2	2	2	2	5	8	7	4	4	4	4	4	5	6	16	10	8	9	8	8	IZS	4	16	5.5	24	
HOURLY MAX	157	31	33	69	36	106	39	156	110	41	176	78	112	154	134	176	114	18	158	247	27	62	134	81				
HOURLY AVG	16.6	7.9	9.7	11.5	10.3	17.3	14.3	24.9	15.8	7.5	12.3	5.8	10.0	11.7	10.2	15.3	7.6	4.8	13.5	15.4	6.5	8.7	11.9	12.9				

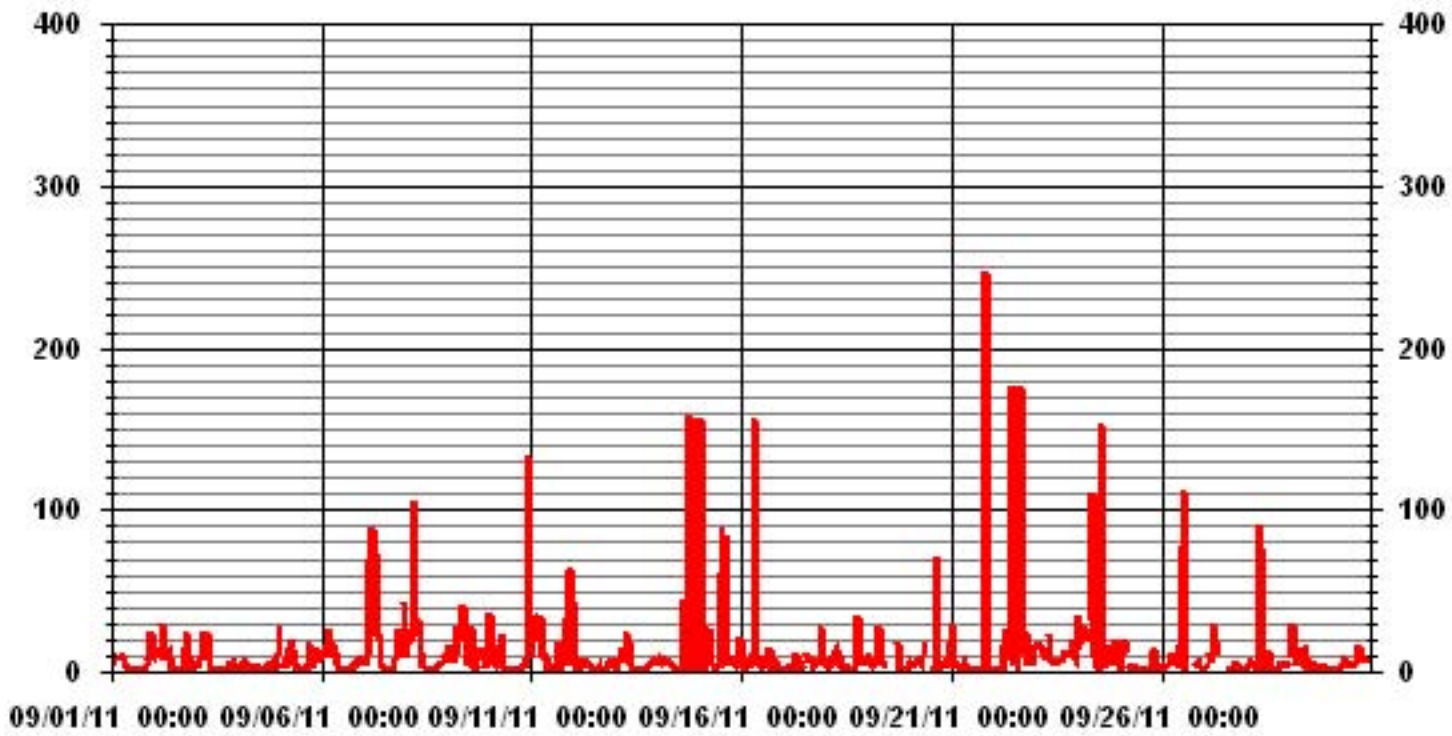
STATUS FLAG CODES

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:	664
MAXIMUM INSTANTANEOUS VALUE:	247 PPB @ HOUR(S) 19 ON DAY(S) 21
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	18 HRS
STANDARD DEVIATION:	23.63
OPERATIONAL TIME:	716 HRS

01 Hour Averages



LICA33
NOX_ / WDR Joint Frequency Distribution (Percent)

September 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	2.53	1.49	2.38	2.83	5.37	5.07	10.29	9.40	4.62	4.02	11.94	12.23	11.79	10.89	1.94	2.98	99.85
< 110	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
< 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	2.53	1.49	2.38	2.83	5.37	5.07	10.44	9.40	4.62	4.02	11.94	12.23	11.79	10.89	1.94	2.98	

Calm : .00 %

Total # Operational Hours : 670

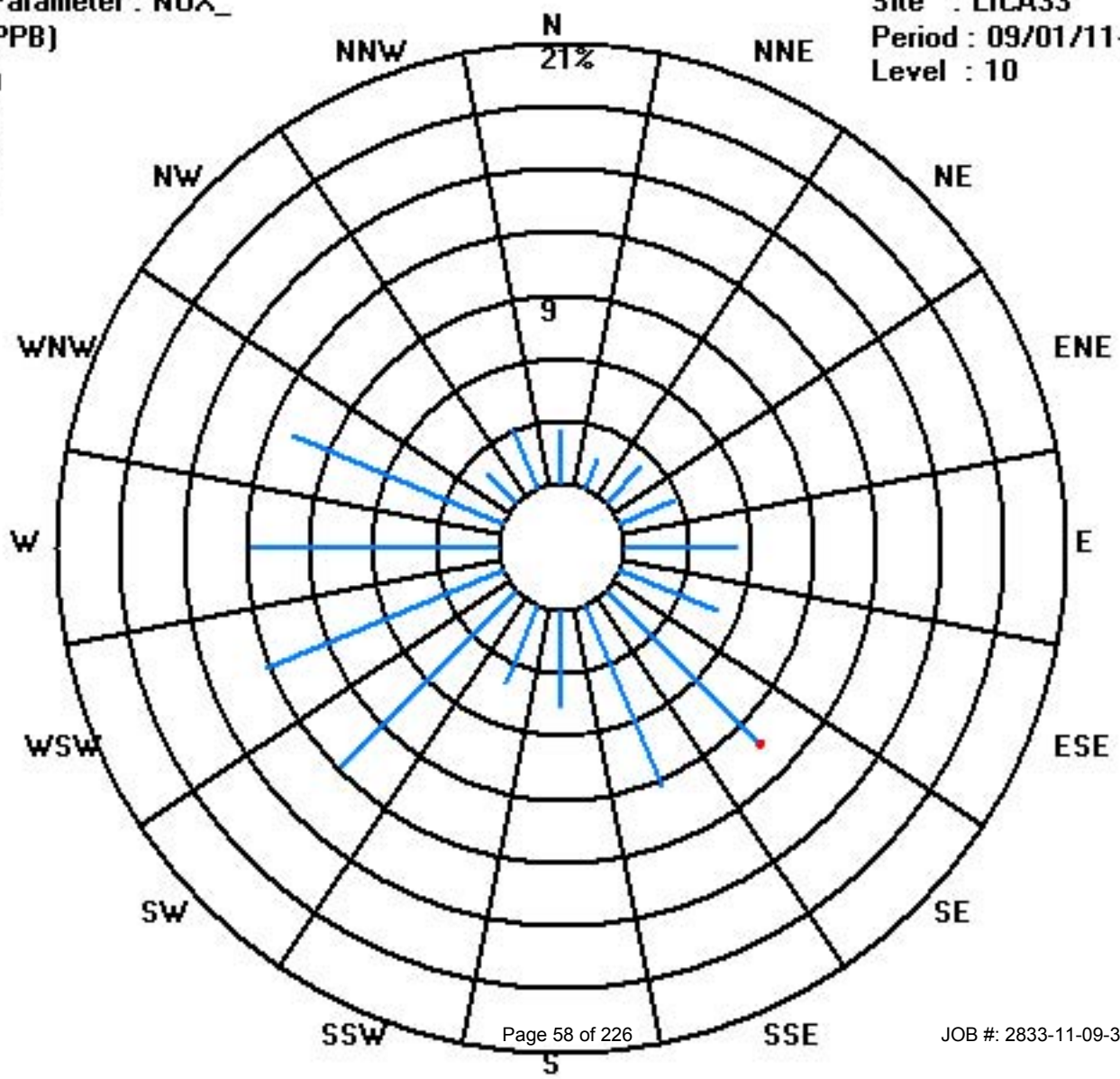
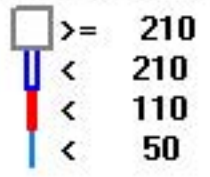
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	17	10	16	19	36	34	69	63	31	27	80	82	79	73	13	20	669
< 110							1										1
< 210																	
>= 210																	
Totals	17	10	16	19	36	34	70	63	31	27	80	82	79	73	13	20	

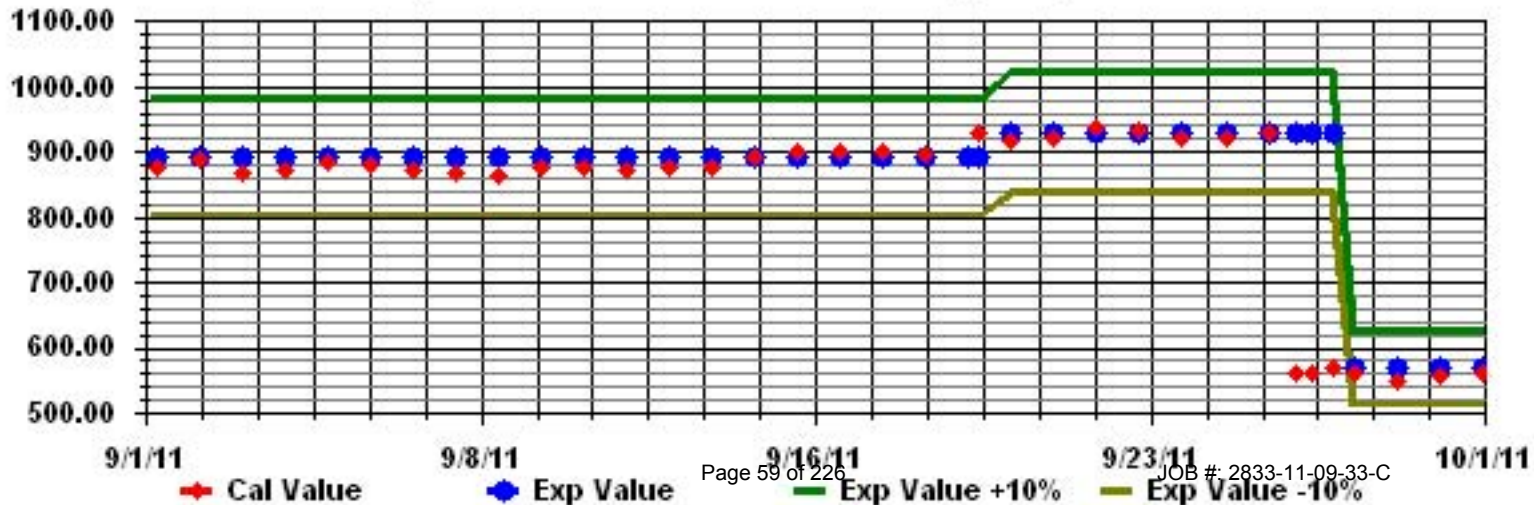
Calm : .00 %

Total # Operational Hours : 670

Class Limits (PPB)



Calibration Graph for Site: LICA33 Parameter: NOX_ Sequence: NO2 Phase: SPAN



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 2011

OZONE (O₃) hourly averages in ppb

MST

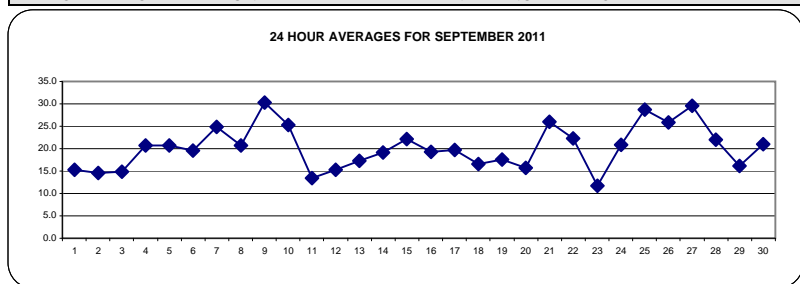
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00			
DAY																											
1	7	6	4	4	3	IZS	3	8	11	16	21	27	28	28	29	30	29	19	12	11	10	9	7	30	15.2	24	
2	4	7	4	3	IZS	3	4	4	7	7	14	25	29	31	31	31	28	26	17	10	14	14	11	10	31	14.5	24
3	8	7	5	IZS	3	1	3	4	8	13	17	22	23	24	25	26	26	26	24	18	14	13	16	15	26	14.8	24
4	16	15	IZS	7	6	8	14	18	19	21	23	26	30	32	34	36	34	30	28	25	17	17	14	8	36	20.8	24
5	4	IZS	11	6	9	7	5	6	12	22	29	31	33	33	39	37	40	35	34	29	23	16	8	8	40	20.7	24
6	IZS	8	2	3	1	1	3	6	14	23	28	33	36	38	37	37	37	33	28	17	12	15	18	IZS	38	19.5	24
7	9	5	3	2	0	0	1	3	14	25	40	47	52	56	55	54	54	47	36	29	15	16	IZS	8	56	24.8	24
8	8	3	1	0	0	0	3	5	16	26	39	42	39	40	40	41	42	37	31	24	20	IZS	12	9	42	20.8	24
9	3	4	3	5	3	1	1	5	21	37	47	53	55	56	56	55	56	54	44	40	IZS	37	30	29	56	30.2	24
10	26	34	29	27	25	19	19	16	21	27	32	35	33	34	36	34	32	30	29	IZS	19	11	7	7	36	25.3	24
11	2	1	0	0	2	2	11	15	22	23	21	24	25	24	24	23	25	25	IZS	7	10	9	6	9	25	13.5	24
12	6	7	7	6	4	5	5	9	11	13	18	24	27	27	27	25	24	IZS	20	17	19	19	17	16	27	15.3	24
13	16	15	14	12	10	14	7	11	20	25	27	28	28	28	29	29	IZS	25	18	12	11	6	6	5	29	17.2	24
14	5	3	3	4	4	6	9	13	19	25	28	30	32	34	36	IZS	35	32	26	23	16	13	21	24	36	19.2	24
15	20	20	19	16	16	14	5	17	22	23	24	27	29	30	IZS	33	34	28	23	22	24	22	21	19	34	22.1	24
16	20	20	19	16	15	16	11	13	13	15	21	26	20	IZS	21	20	22	23	27	25	21	21	21	17	27	19.3	24
17	15	15	15	13	13	13	14	16	17	21	25	26	IZS	28	30	29	28	27	24	22	17	16	16	14	30	19.7	24
18	15	12	13	13	14	8	7	13	15	19	21	IZS	25	26	27	28	30	27	22	13	7	8	8	10	30	16.6	24
19	9	11	12	10	8	7	6	10	16	19	IZS	28	29	30	29	29	27	26	23	19	16	16	14	11	30	17.6	24
20	10	8	7	4	3	2	2	4	C	C	C	C	28	31	30	28	30	25	20	17	14	15	18	18	31	15.7	24
21	18	18	17	18	17	17	16	17	IZS	25	26	31	33	35	36	36	35	34	29	22	29	30	29	29	36	26.0	24
22	27	24	23	21	17	11	2	IZS	16	20	24	32	38	40	36	36	34	32	27	17	12	9	8	5	40	22.2	24
23	3	4	2	3	3	5	IZS	8	12	20	24	24	24	23	21	19	16	14	13	7	5	6	6	7	24	11.7	24
24	1	2	1	0	0	IZS	3	5	17	27	32	35	36	37	41	42	42	38	27	24	19	16	18	18	42	20.9	24
25	17	15	13	17	IZS	20	18	19	20	21	24	27	34	42	42	42	40	37	38	38	38	35	32	31	42	28.7	24
26	30	30	27	IZS	21	19	24	23	20	25	30	31	32	33	33	34	35	31	25	16	13	20	20	24	35	25.9	24
27	30	28	IZS	25	23	19	16	12	21	24	29	34	32	37	38	37	36	36	32	37	39	34	30	30	39	29.5	24
28	27	IZS	21	22	21	24	22	23	23	25	26	26	25	25	25	24	23	22	21	21	18	16	13	12	27	22.0	24
29	IZS	9	5	5	6	4	2	4	8	17	21	20	21	23	25	27	27	24	22	19	19	22	24	IZS	27	16.1	24
30	23	23	22	21	19	18	13	12	18	20	21	22	24	26	28	27	21	23	23	18	18	19	IZS	23	28	21.0	24
HOURLY MAX	30	34	29	27	25	24	24	23	23	37	47	53	55	56	56	55	56	54	44	40	39	37	32	31			
HOURLY AVG	13.5	12.6	10.8	10.1	9.5	9.4	8.6	11.0	16.2	21.5	26.1	29.9	31.0	32.8	33.1	32.7	32.5	30.2	25.9	20.7	17.6	17.3	16.2	15.1			

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:

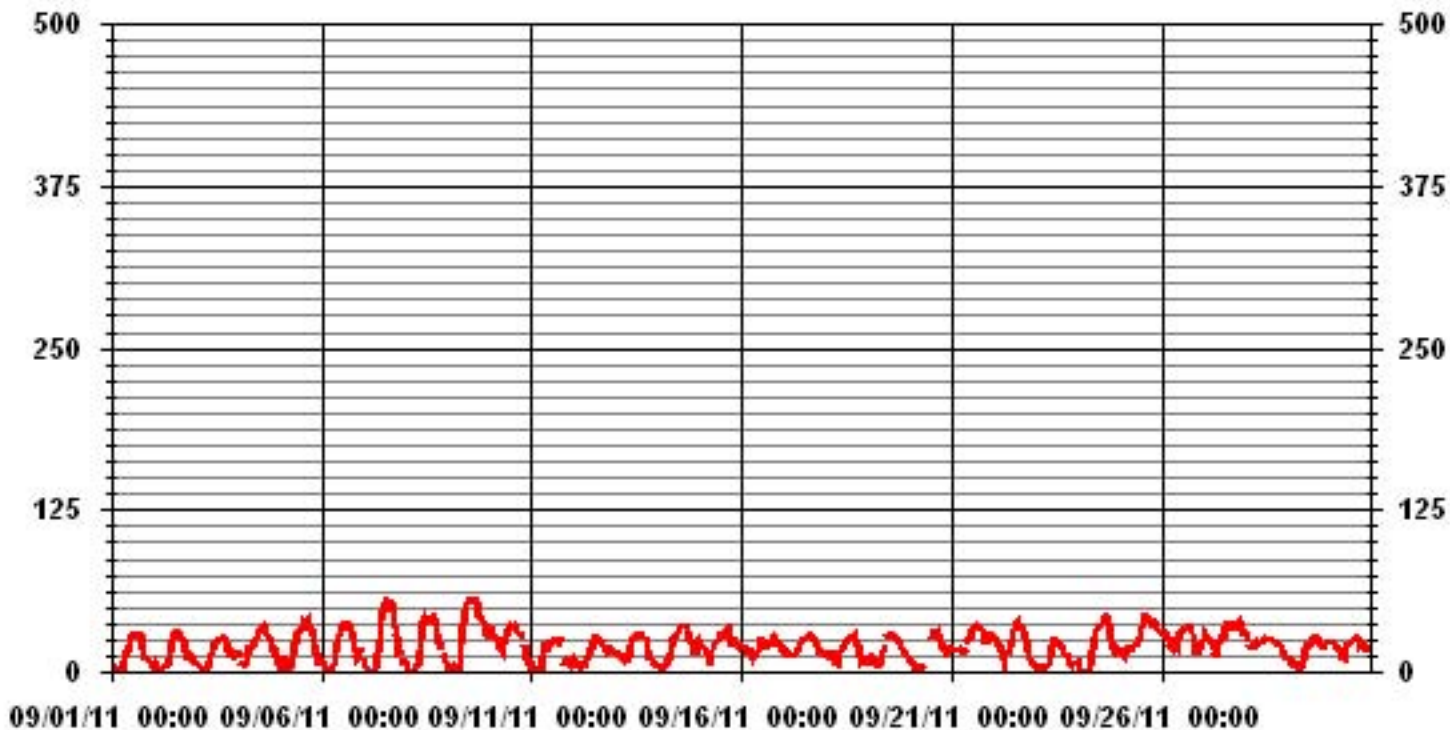
ALBERTA ENVIRONMENT: 1-HR 82 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	676					
MAXIMUM 1-HR AVERAGE:	56	PPB	@ HOUR(S)	VAR	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:	30.2	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	11.62		MONTHLY AVERAGE	20.26	PPB	

01 Hour Averages



— LICA33_03_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 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	9	7	7	6	4	IZS	6	11	14	19	25	28	29	29	29	31	31	31	26	15	13	11	12	12	31	17.6	24
2	8	9	8	6	IZS	6	5	6	11	9	22	29	31	32	32	33	32	29	25	16	16	15	12	11	33	17.5	24
3	9	8	7	IZS	4	3	4	7	10	16	22	24	24	26	27	28	27	27	25	22	17	16	17	17	28	16.8	24
4	17	18	IZS	12	10	15	17	19	20	22	25	28	32	33	36	37	36	32	30	28	22	20	23	11	37	23.6	24
5	10	IZS	18	13	12	11	6	10	16	27	30	34	35	36	42	38	43	43	41	33	25	22	18	14	43	25.1	24
6	IZS	14	5	5	3	2	5	8	20	27	31	36	38	40	39	39	39	37	31	25	19	21	25	IZS	40	23.1	24
7	19	9	8	5	1	1	1	10	23	37	45	50	55	59	58	59	59	53	41	41	29	24	IZS	15	59	30.5	24
8	15	5	3	1	1	1	6	9	24	36	42	44	41	43	42	43	44	43	35	31	28	IZS	18	17	44	24.9	24
9	11	8	7	9	6	4	4	9	35	45	50	55	58	59	58	57	60	60	52	46	IZS	40	38	36	60	35.1	24
10	39	39	32	30	27	23	21	21	23	30	36	36	35	36	37	36	34	32	30	IZS	29	18	15	13	39	29.2	24
11	7	4	1	1	5	6	17	19	25	24	24	26	27	26	26	24	26	27	IZS	12	12	17	17	11	27	16.7	24
12	10	8	7	7	5	6	6	11	13	16	21	26	28	28	28	27	25	IZS	22	21	21	21	19	17	28	17.1	24
13	18	18	17	16	15	15	13	17	23	27	28	28	29	29	30	30	IZS	28	21	18	15	12	11	7	30	20.2	24
14	7	5	5	5	6	7	11	15	21	27	30	31	33	36	36	IZS	36	34	30	27	18	15	26	26	36	21.2	24
15	26	23	22	19	18	18	14	22	23	24	26	28	31	34	IZS	36	36	31	27	24	25	24	22	21	36	25.0	24
16	21	21	21	18	18	17	15	16	15	18	25	30	24	IZS	23	21	23	25	28	27	23	22	22	20	30	21.4	24
17	16	15	15	14	13	14	17	18	19	24	28	28	IZS	30	32	30	30	29	29	24	23	18	19	16	32	21.8	24
18	18	18	14	16	15	13	10	15	19	20	23	IZS	26	27	28	29	31	30	25	23	14	14	15	16	31	20.0	24
19	12	13	14	14	12	12	10	16	17	20	IZS	30	30	31	30	30	28	28	25	21	19	19	16	13	31	20.0	24
20	12	10	8	5	4	3	3	6	C	C	C	C	C	32	31	30	31	29	23	21	16	17	20	19	32	16.8	24
21	19	20	18	18	18	18	17	19	IZS	27	28	32	34	36	37	37	36	35	33	30	30	30	29	37	37	27.4	24
22	28	26	24	23	20	17	5	IZS	20	21	28	36	P	42	40	38	37	37	30	29	18	15	14	8	42	25.3	23
23	6	9	4	6	6	7	IZS	10	16	24	25	25	24	24	23	22	18	16	16	12	10	12	13	11	25	14.7	24
24	2	4	2	1	1	IZS	6	9	24	32	35	36	37	40	42	44	45	41	34	27	24	22	23	20	45	24.0	24
25	20	18	20	21	IZS	22	19	19	21	23	26	29	39	43	43	43	41	39	40	40	39	36	33	32	43	30.7	24
26	32	31	29	IZS	24	24	25	28	24	27	32	33	34	34	35	35	36	36	31	20	20	23	24	30	36	29.0	24
27	33	30	IZS	26	24	23	20	14	23	26	32	36	37	38	39	39	37	38	40	41	41	38	33	32	41	32.2	24
28	29	IZS	22	23	23	25	24	25	25	26	26	26	35	26	25	25	24	23	22	22	20	17	15	14	35	23.6	24
29	IZS	12	12	9	12	5	4	6	14	21	22	22	23	24	26	28	28	27	23	21	21	24	24	IZS	28	18.5	24
30	24	24	23	22	21	19	17	14	20	21	22	23	25	28	29	29	26	24	24	21	19	20	IZS	24	29	22.6	24
HOURLY MAX	39	39	32	30	27	25	25	28	35	45	50	55	58	59	58	59	60	60	52	46	41	40	38	36			
HOURLY AVG	17.0	15.2	13.3	12.5	11.7	12.0	11.3	14.1	19.9	24.7	28.9	31.8	33.1	34.5	34.6	34.4	34.4	33.2	29.6	25.4	21.6	20.8	20.5	18.3			

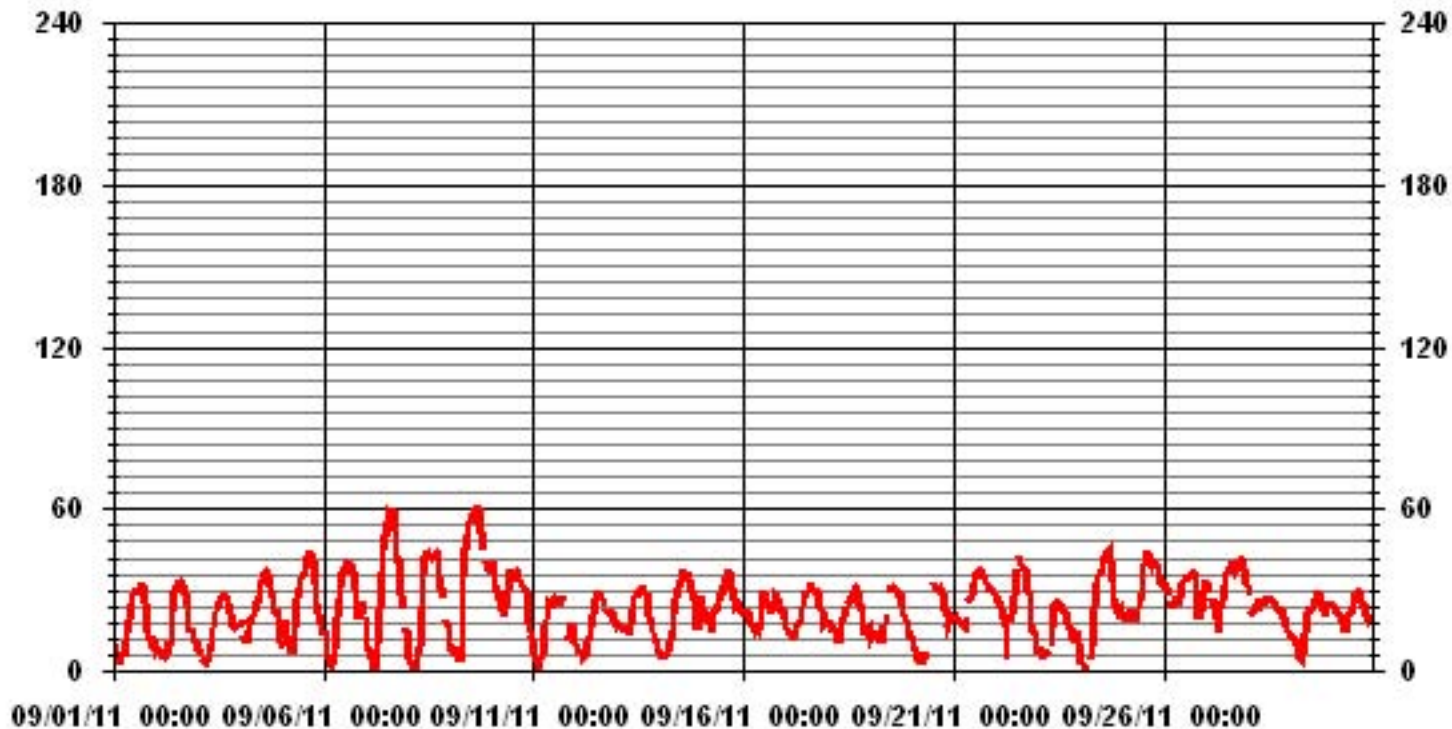
STATUS FLAG CODES

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:	683				
MAXIMUM INSTANTANEOUS VALUE:	60	PPB	@ HOUR(S)	16, 17	ON DAY(S) 9
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS
MONTHLY CALIBRATION TIME:	5	HRS			
STANDARD DEVIATION:	11.52				

01 Hour Averages



— LICA33 O3MAX PPB

LICA33
 O3_ / WDR Joint Frequency Distribution (Percent)

September 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	2.48	1.45	2.33	2.77	5.25	4.96	10.21	9.05	4.52	3.35	10.94	12.26	11.67	11.97	2.04	2.91	98.24
< 110	.00	.00	.00	.00	.00	.00	.00	.14	.14	.43	1.02	.00	.00	.00	.00	.00	1.75
< 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	2.48	1.45	2.33	2.77	5.25	4.96	10.21	9.19	4.67	3.79	11.97	12.26	11.67	11.97	2.04	2.91	

Calm : .00 %

Total # Operational Hours : 685

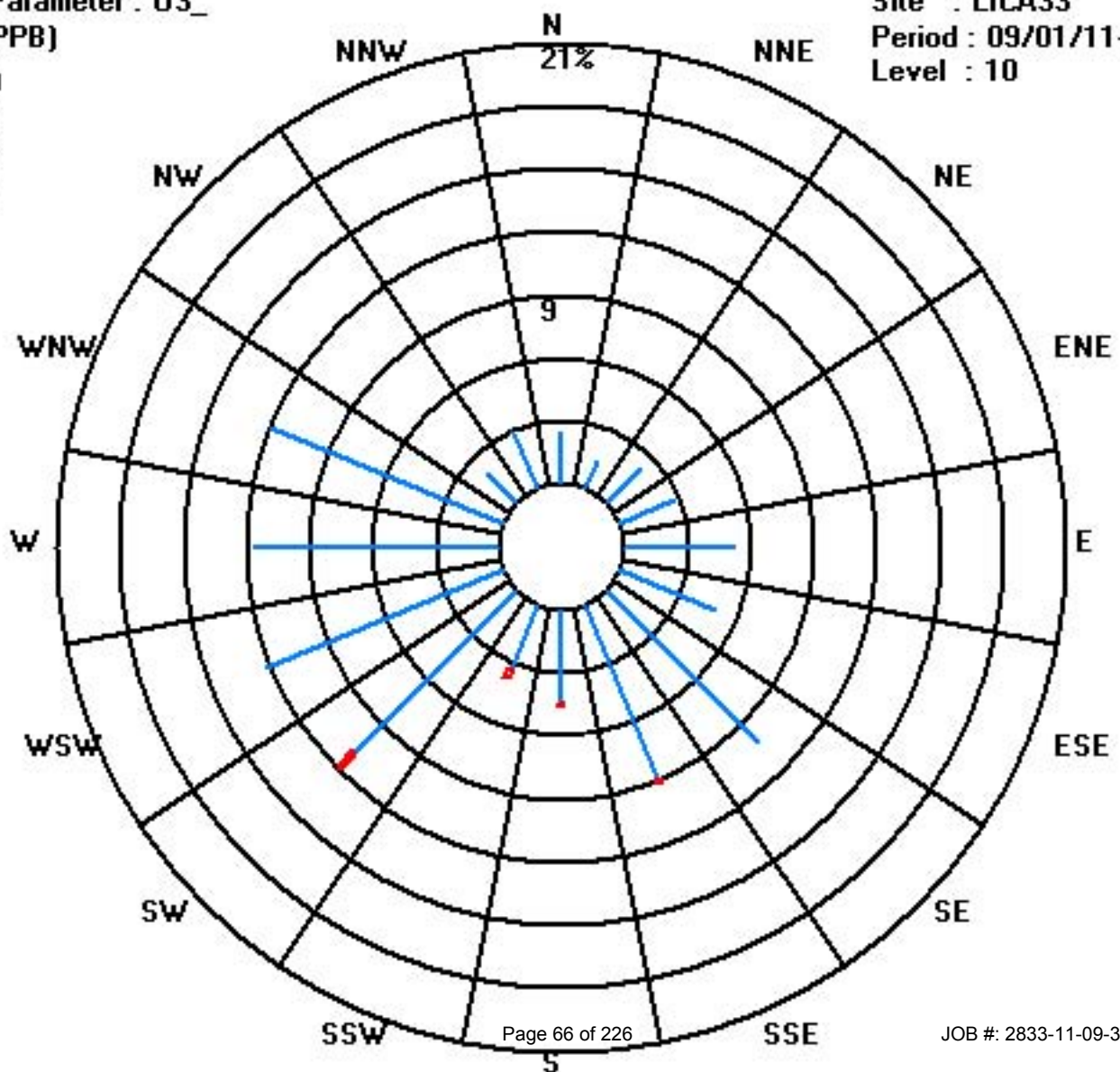
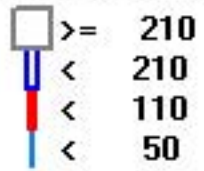
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	17	10	16	19	36	34	70	62	31	23	75	84	80	82	14	20	673
< 110								1	1	3	7						12
< 210																	
>= 210																	
Totals	17	10	16	19	36	34	70	63	32	26	82	84	80	82	14	20	

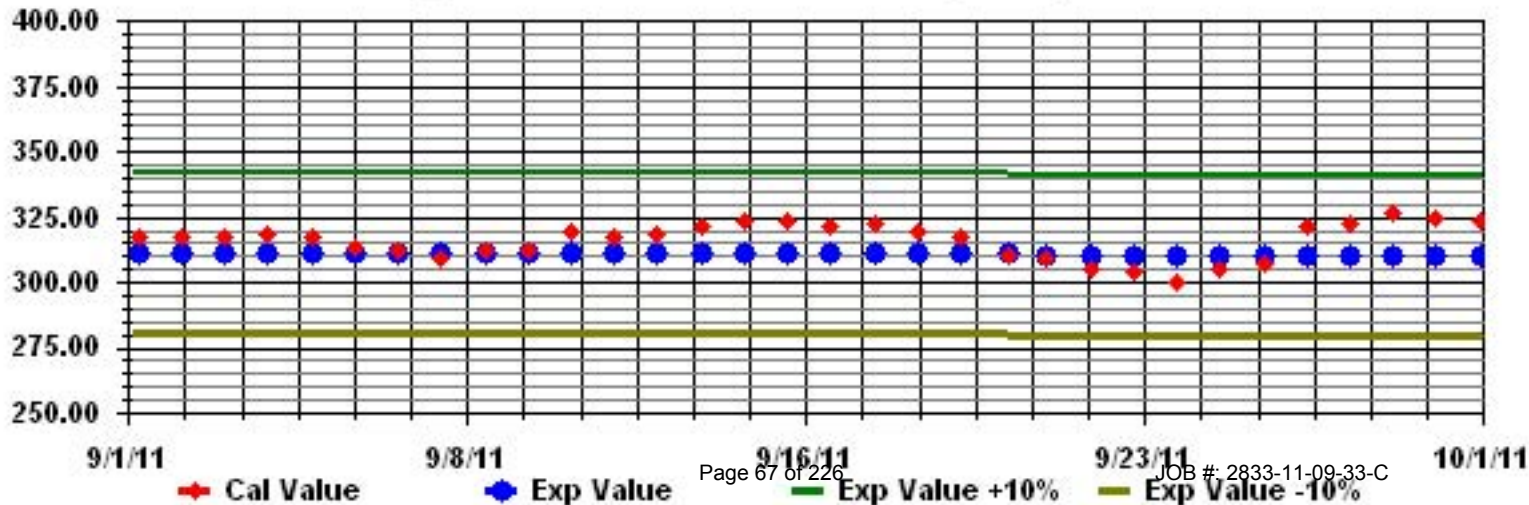
Calm : .00 %

Total # Operational Hours : 685

Class Limits (PPB)



Calibration Graph for Site: LICA33 Parameter: 03_ Sequence: 03 Phase: SPAN



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 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	2.9	3	2.7	2.7	2.7	IZS	2	1.7	1.6	1.6	1.5	C	1.9	1.9	1.9	1.9	1.9	2	2.6	2.5	2.5	2.5	3.3	3.3	3.3	2.2	24		
2	3	2.8	3	3.6	IZS	4.6	3.1	3.3	2.9	2.9	2.5	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2	2.1	2.3	2.4	2.6	2.7	4.6	2.6	24		
3	2.7	2.8	2.7	IZS	2.7	2.7	2.6	2.3	2.1	2	2	2	2	2	2	2	2	1.9	2	2	2	2.1	2.1	2.1	2.8	2.2	24		
4	2.1	2.1	IZS	2.9	3.4	3.6	2.5	2.1	2.1	2.1	2	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.4	2.7	2.4	3.9	3.9	24		
5	3.1	IZS	4.5	2.9	2.4	2.4	2.7	2.5	2.4	2.1	2	2	1.9	2	2.2	1.9	1.9	2	2	2.1	2.3	2.3	3	2.4	4.5	2.4	24		
6	IZS	2.6	3.7	4.4	3.7	3.6	3.2	2.5	2.3	2.2	2.1	2.1	2	2	2	2	2	2	2	2.2	2.6	2.6	2.3	IZS	4.4	2.6	24		
7	8.2	3.6	5.4	6.5	9.1	10	9.2	8.6	4.5	3.7	2.4	2.3	2.3	2.3	2.4	2.2	2.2	2.1	2.8	3.1	2.9	3.6	IZS	3.1	10.0	4.5	24		
8	3.5	3.7	3.8	4.4	4.6	5	3.9	3.7	2.7	2.8	2.2	2	2	2	2	2	2.2	2.4	2	2.2	2.3	IZS	2.9	3.5	5.0	2.9	24		
9	3.4	2.9	3.5	3	3.5	3.2	3.3	3.1	2.9	2.3	2.2	2.2	2.1	2.1	2	2	2	2	2	2	2	IZS	2	2.5	2.3	3.5	2.5	24	
10	2.1	2.2	2.3	2.3	2.1	2.1	2	2.1	2.2	2.1	2	2	1.9	1.9	1.9	1.9	1.9	1.9	2	IZS	2.1	2.5	2.6	2.8	2.8	2.1	24		
11	3.5	6.3	9.3	8.3	6.1	5.5	2.7	2.1	2	2	1.9	1.9	1.9	2	2.3	1.9	2	2.1	IZS	2	2.2	2.2	2.2	2.1	9.3	3.2	24		
12	2.1	2.3	2.4	2.5	2.3	2.1	2.1	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	2.1	2.3	2.2	2.3	2.5	2.5	2.1	24	
13	2.5	2.6	2.5	3.5	3.7	3.1	5.2	3.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	1.9	1.9	1.9	2.3	2.2	2.5	2.9	3.4	5.2	2.6	24	
14	3.9	4.8	4.5	4.2	4.4	3.8	3.5	2.8	2.6	2.3	2.1	2.1	2	2	1.9	IZS	2	2	2.1	2.2	2.4	2.6	2.4	2.2	4.8	2.8	24		
15	2.5	2.4	2.6	2.8	2.6	2.9	3	2.5	2.2	2.2	2.2	2.1	2.1	2.1	IZS	2.1	2.1	2.5	3.1	2.6	2.4	2.4	2.5	2.4	3.1	2.4	24		
16	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2	2	2	IZS	1.9	1.8	1.8	2.2	1.9	1.9	1.8	1.9	1.9	1.8	2.3	2.0	24		
17	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	1.9	2	IZS	1.9	1.9	1.9	1.9	1.9	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.0	24	
18	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	IZS	1.9	1.9	2	2.1	2	2.2	3.3	3.6	2.5	2.3	3.3	2.5	3.6	2.3	24		
19	2.5	2.4	2.5	2.7	2.9	2.9	2.3	2.2	2.2	2.2	IZS	1.8	1.9	C	C	C	C	C	1.9	2	2.1	2.6	2.5	2.4	2.6	2.9	2.3	24	
20	2.5	2.8	2.7	2.8	2.9	2.7	2.8	2.3	2.3	IZS	2.1	M	2	2	2	2	2	1.9	2	2.3	2.6	2.8	2.6	2.6	2.6	2.9	2.4	23	
21	2.7	2.6	2.7	2.7	2.7	2.6	2.5	2.5	IZS	2.1	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	2	2.1	2.7	2.2	24	
22	2.1	2.4	2.3	2.4	2.6	3	5.1	IZS	2.8	2.6	2.4	2.2	1.8	1.9	1.9	1.9	1.9	1.9	2.4	2.8	2.5	2.5	3	3.7	5.1	2.5	24		
23	4	4.8	5.5	5.6	4	3.3	IZS	2.9	3.1	2.9	2.8	2.6	2.6	2.6	2.8	3.1	3.7	3.8	4.1	4.2	3.9	3.9	4.3	3.1	5.6	3.6	24		
24	10.7	4.9	3.7	4.1	4.6	IZS	3.9	3.8	3.7	2.5	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.6	2.8	2.6	2.8	2.6	2.4	2.4	10.7	3.3	24		
25	2.4	2.5	2.5	2.2	IZS	2.1	2.2	2.1	2.1	2.1	2.1	2	2	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.9	2	1.9	2.5	2.0	24		
26	2.1	2	2.5	IZS	2.2	2.7	2.6	2.2	2.4	2	1.9	1.9	2	2	1.9	1.9	2	1.9	2.2	2.3	3.3	2.7	2.5	2.5	3.3	2.2	24		
27	2.3	2.3	IZS	2.1	2	2	2.1	2.4	2	2	2	2	2	1.9	1.9	2	1.9	1.9	2.1	2	1.9	1.9	1.9	2	2.3	2.4	2.0	24	
28	2.9	IZS	4	2.7	2.8	2.3	2.1	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2.1	2.2	3	3.7	4.0	2.3	24		
29	IZS	2.6	2.4	2.6	3.1	2.3	2.7	3.3	2.8	2	2	2	2	2	2	1.9	2	2	2	2	2.3	2.1	2	IZS	3.3	2.3	24		
30	2.1	2.1	2.1	2.3	2.5	2.6	2.8	2.6	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.4	4	2.5	2.3	2.4	2.4	2.4	IZS	2.1	4.0	2.4	24	
HOURLY MAX	10.7	6.3	9.3	8.3	9.1	10.0	9.2	8.6	4.5	3.7	2.8	2.6	2.6	2.6	2.8	3.1	4.0	3.8	4.1	4.2	3.9	3.9	4.3	3.9					
HOURLY AVG	3.1	2.9	3.3	3.3	3.3	3.2	3.0	2.7	2.4	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.3	2.4	2.4	2.5	2.6					

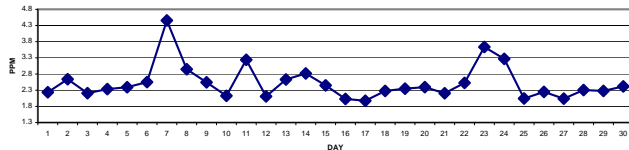
STATUS FLAG CODES

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		

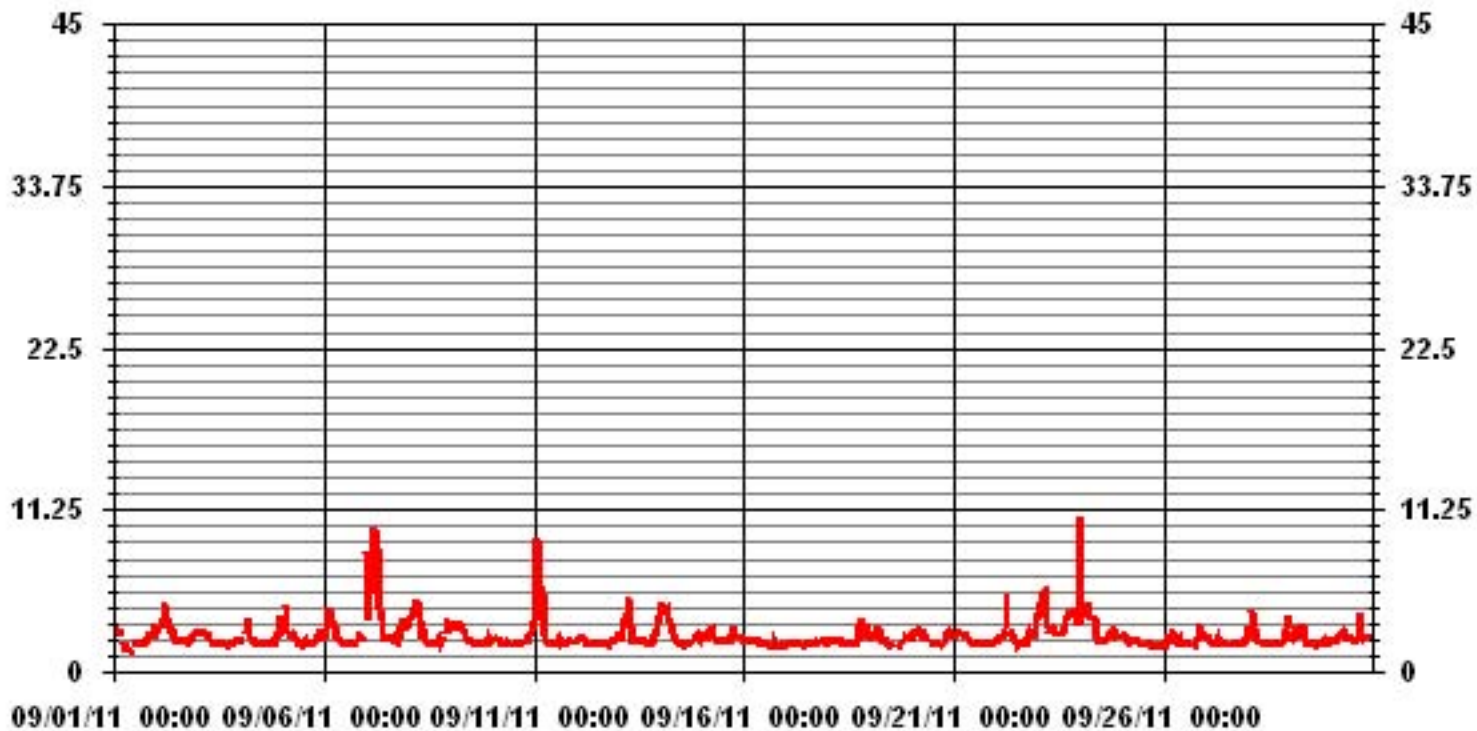
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	682
MAXIMUM 1-HR AVERAGE:	10.7 PPM @ HOUR(S) 0 ON DAY(S) 24
MAXIMUM 24-HR AVERAGE:	4.5 PPM ON DAY(S) 7
IZS CALIBRATION TIME:	32 HRS OPERATIONAL TIME: 719 HRS
MONTHLY CALIBRATION TIME:	5 HRS AMD OPERATION UPTIME: 99.9 %
STANDARD DEVIATION:	1.01 MONTHLY AVERAGE: 2.52 PPM

24 AVERAGES FOR SEPTEMBER 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 2011

TOTAL HYDROCARBONS MAX instantaneous maximum in ppr

MST																										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	3.1	3.1	2.8	2.8	2.9	IZS	3.8	1.8	1.7	1.6	M	C	2	2	2	2	2	2	3.2	2.9	2.8	2.6	4.8	6.3	6.3	2.8	23	
2	6.3	4.1	5.1	5.5	IZS	9.9	4.9	13.4	3.8	3.6	2.8	2.5	2.4	2.3	2.5	2.6	2.5	2.8	2	2.2	2.4	2.5	3.2	2.8	13.4	4.0	24	
3	2.9	2.9	2.9	IZS	6.5	2.8	2.8	2.5	2.3	2.1	2	2	2.1	2.5	2	2	2	2	2.1	2	2.1	2.2	2.2	2.1	6.5	2.5	24	
4	2.2	5.7	IZS	5.6	9.3	9.3	6.7	2.2	2.1	2.1	2.1	2	2	2	2	1.9	1.9	2	1.9	2	4.2	5.5	4.5	11.1	3.9	24		
5	7.3	IZS	49.1	21.5	2.6	5.7	6.7	3.7	3.1	3.1	2	2	2	2.1	2.4	2	2	2	2.2	2.2	2.3	2.4	9.7	2.6	49.1	6.1	24	
6	IZS	7.9	8.6	11.4	4.1	4.2	5.2	3	2.8	2.3	2.1	2.6	2.1	2	2	2	2	2	2.2	4.8	6.6	5.4	3.8	IZS	11.4	4.1	24	
7	47.8	6.3	7.9	23.3	14.8	19.3	14	15.7	7.6	5.8	2.9	2.4	2.3	2.4	2.5	2.4	2.2	4.3	11	11.3	8.5	IZS	4.9	47.8	9.7	24		
8	12.7	4.1	4.2	4.9	5	6.8	5	5.1	3.3	3.2	2.5	2.2	2	2	2.2	2.1	3.3	3.9	2.1	4.1	5.3	IZS	9.4	6.4	12.7	4.4	24	
9	4.5	5.3	10.2	4.2	16.4	4.3	8.7	5.4	5.1	2.4	2.2	2.2	2.2	2.1	2.1	2	2.1	2	2.9	2.1	IZS	2.8	18.3	4.2	18.3	4.9	24	
10	2.2	2.3	2.4	2.3	2.2	2.2	2.1	2.2	2.3	2.5	2.1	2.2	2.2	1.9	2	1.9	2	2.1	IZS	3.8	8.7	10	5.5	10	3.0	24		
11	4.3	15.4	14.4	9.9	8.7	8.9	5.3	2.5	2.6	2.2	2.1	2	2.4	2.8	3.9	2.2	2.4	2.8	IZS	2.2	2.5	2.3	2.3	2.3	15.4	4.6	24	
12	2.2	2.4	2.5	2.5	2.5	2.2	2.2	2.1	2	2	2	2	2	2	2	2	2	IZS	2	6.7	3.3	2.9	2.9	3.1	6.7	2.5	24	
13	3	3.3	3.8	4.5	4.9	3.9	7.7	4.8	2.5	2.4	2.8	2.5	2.5	3.1	2.8	2.7	IZS	2.6	2	6.2	5.9	6	9.4	6.3	9.4	4.2	24	
14	6.7	9.2	6.9	4.3	6.5	5.9	5.5	3.8	2.9	2.6	2.2	2.2	2.2	2	2	IZS	2	2.1	2.1	2.4	2.5	4.4	3.6	3.2	9.2	3.8	24	
15	3.9	4.2	4.1	5.1	4.3	5.6	4	3.5	2.2	2.3	2.3	2.3	2.4	2.4	IZS	2.3	2.7	3.8	4.4	3.9	3.4	3.7	3.9	4.1	5.6	3.5	24	
16	2.6	3.1	2.8	3.9	3.2	3.1	6.2	3	2.8	2.7	2.7	3	2.8	IZS	2.5	2.3	2.5	4	2.7	2.7	2.1	2.5	2.7	1.9	6.2	2.9	24	
17	1.9	1.9	1.9	2	2	2	2	2.1	2.4	2.5	2.2	2.5	IZS	2.2	2.1	2.1	1.9	2	3	3.7	2.2	2.4	3.1	2.1	3.7	2.3	24	
18	2.1	2.2	2.1	2.1	3	2.3	2.2	2.4	2.5	2.2	2	IZS	2.3	2.2	2.3	2.6	2.3	3.8	15.1	10.6	7.7	3.7	10.5	4	15.1	4.0	24	
19	4.4	3.2	3.5	6.1	7	6.1	2.5	2.6	3.6	2.4	IZS	1.9	1.9	C	C	C	C	C	2	2.1	9.3	4.5	3.8	3.4	9.3	3.9	24	
20	2.6	2.9	2.9	2.9	4.6	3.2	6.3	2.6	2.5	IZS	2.9	M	M	2.1	2.4	2.4	2	2	2.7	2.9	3.2	4.2	3.5	2.7	6.3	3.0	22	
21	2.7	3	3.3	2.8	2.8	2.8	2.5	2.5	IZS	2.2	2.1	2.1	2	2	2	2	1.9	1.9	3.9	2.1	2	2	2.1	2.1	3.9	2.4	24	
22	3.7	4.2	2.3	4.4	7	6.7	8.1	IZS	4.3	2.8	2.8	2.6	P	1.9	1.9	1.9	2	2.5	4.9	12.5	6.9	6.4	8.7	9.1	12.5	4.9	23	
23	7.2	24.8	15.5	8.1	6.6	5.2	IZS	4.6	4.4	3.5	3.5	3.2	2.6	2.6	3.4	4.8	7.1	5.9	6	8.2	10.5	8.7	10.8	5.9	24.8	7.1	24	
24	21.5	10.6	3.9	7.5	17.8	IZS	8.3	12.6	5.6	3.5	2.7	2.6	2.7	2.7	3.2	3.4	4	3.4	15	3.6	5.2	4.3	3.8	3.9	21.5	6.6	24	
25	4.7	3.2	3.4	3	IZS	3	3.2	2.4	2.4	2.5	2.4	2.3	2.2	2.1	1.9	2	2	2.3	2	1.8	1.8	2	2	2	4.7	2.5	24	
26	3.7	2.3	3.9	IZS	3.3	4.5	5.3	4	3.9	2.6	2	1.9	2.2	2.2	2.5	2.2	2.3	2	11.4	3.6	5.9	4.6	3.8	7	11.4	3.8	24	
27	2.8	2.4	IZS	2.2	2	2.1	2.4	5.2	2.1	2.4	2.2	2	2	2.1	2.2	2.1	2.3	3.8	2	1.9	1.9	2	2.7	4.3	5.2	2.5	24	
28	4.3	IZS	7.3	5	5.1	3.6	3.1	2.8	2.1	2	1.9	1.9	1.9	1.9	1.9	2	2	2	2.2	2.1	2.1	2.3	6	9.6	9.6	3.3	24	
29	IZS	3.9	2.6	6.6	8.6	4.6	6.9	5	4.5	2.1	2	2.1	2	2.1	2	2	2.3	2.4	2.1	3.3	4.1	2	IZS	8.6	3.4	24		
30	2.1	2.1	2.2	3.2	4.4	4.7	5.3	6.3	2.6	2.4	2.9	2.8	2.5	2.3	2.4	3.4	5.6	4.1	2.5	2.5	2.6	4.2	IZS	2.2	6.3	3.3	24	
HOURLY MAX	48	25	49	23	18	19	14	16	8	6	4	3	3	3	4	5	7	6	15	13	11	9	18	11				
HOURLY AVG	6.3	5.2	6.5	6.0	6.0	5.2	5.1	4.5	3.2	2.6	2.4	2.3	2.2	2.2	2.3	2.3	2.5	2.7	3.9	4.0	4.3	4.1	5.5	4.5				

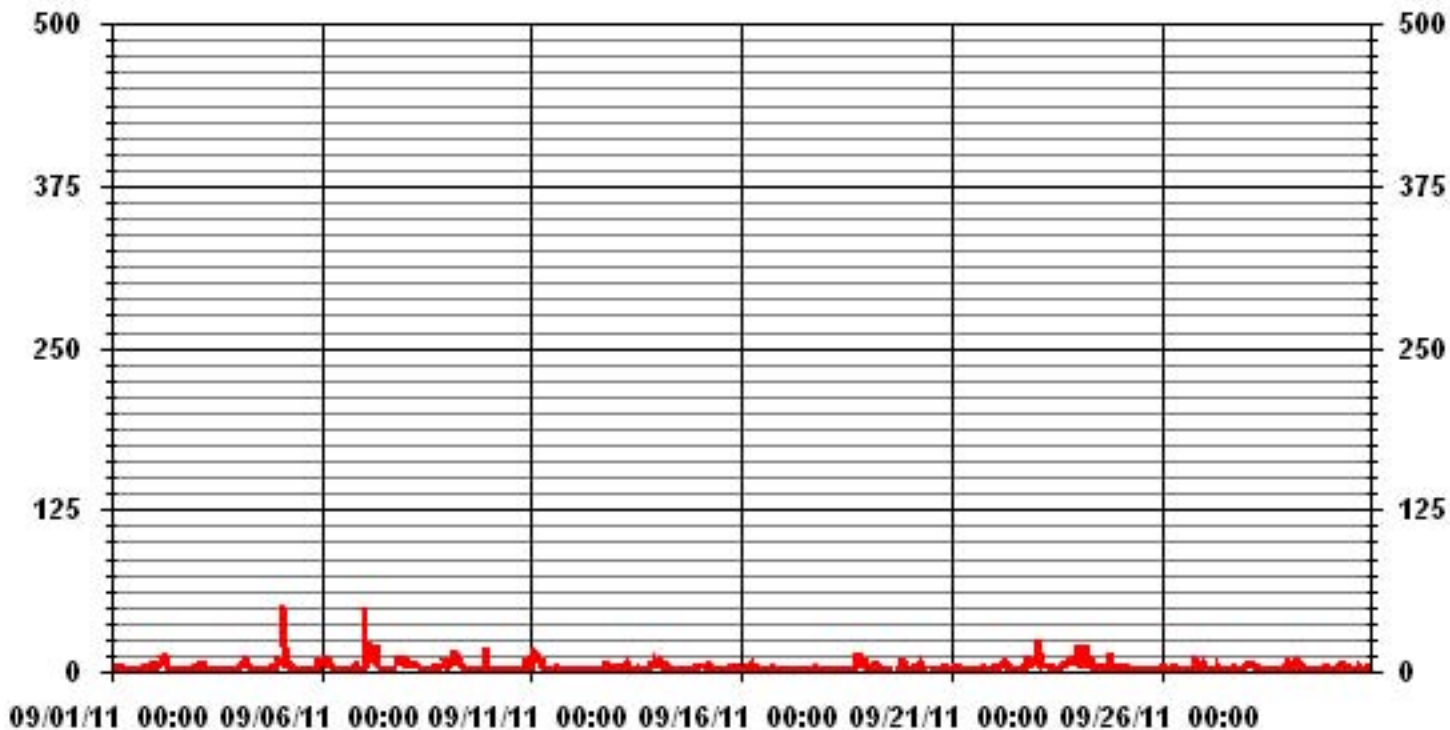
STATUS FLAG CODES

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
BB	- BELOW BACKGROUND OF 1.5 PPM		

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	678					
MAXIMUM INSTANTANEOUS VALUE:	49.1	PPM	@ HOUR(S)	2	ON DAY(S)	5
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	716	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	3.89					

01 Hour Averages



— LICA33 THCMAX PPM

LICA33
 THC / WDR Joint Frequency Distribution (Percent)

September 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	1.31	.87	1.75	1.75	3.95	3.37	9.23	8.79	3.81	3.51	11.14	10.55	10.55	9.67	1.46	2.49	84.31
< 10.0	1.17	.58	.58	1.02	1.31	1.61	1.02	.43	.87	.43	.87	1.46	1.17	1.75	.58	.43	15.39
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.14	.00	.00	.29
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.49	1.46	2.34	2.78	5.27	4.98	10.26	9.23	4.69	3.95	12.02	12.17	11.73	11.58	2.05	2.93	

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	9	6	12	12	27	23	63	60	26	24	76	72	72	66	10	17	575
< 10.0	8	4	4	7	9	11	7	3	6	3	6	10	8	12	4	3	105
< 50.0												1		1			2
>= 50.0																	
Totals	17	10	16	19	36	34	70	63	32	27	82	83	80	79	14	20	

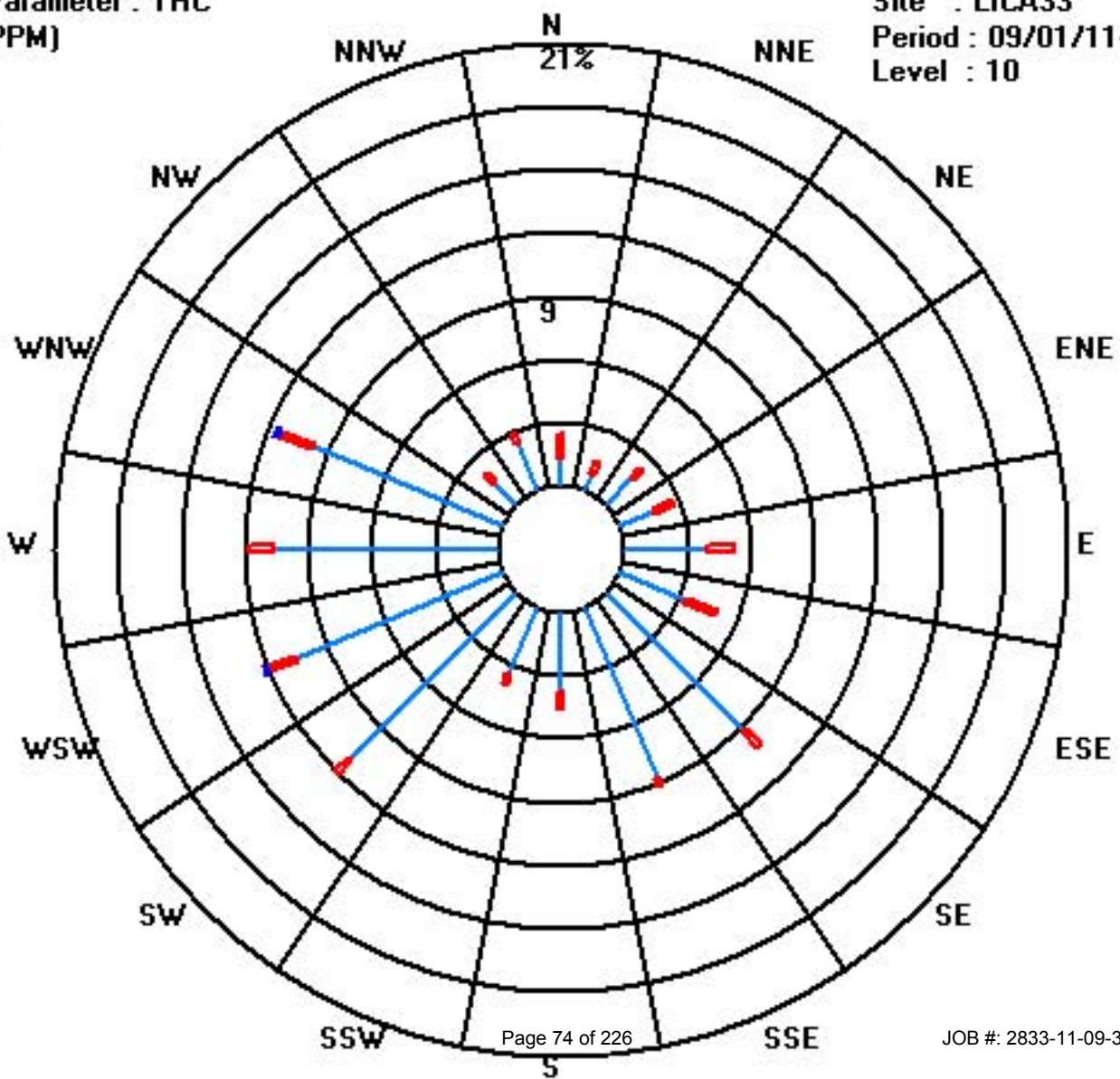
Calm : .00 %

Total # Operational Hours : 682

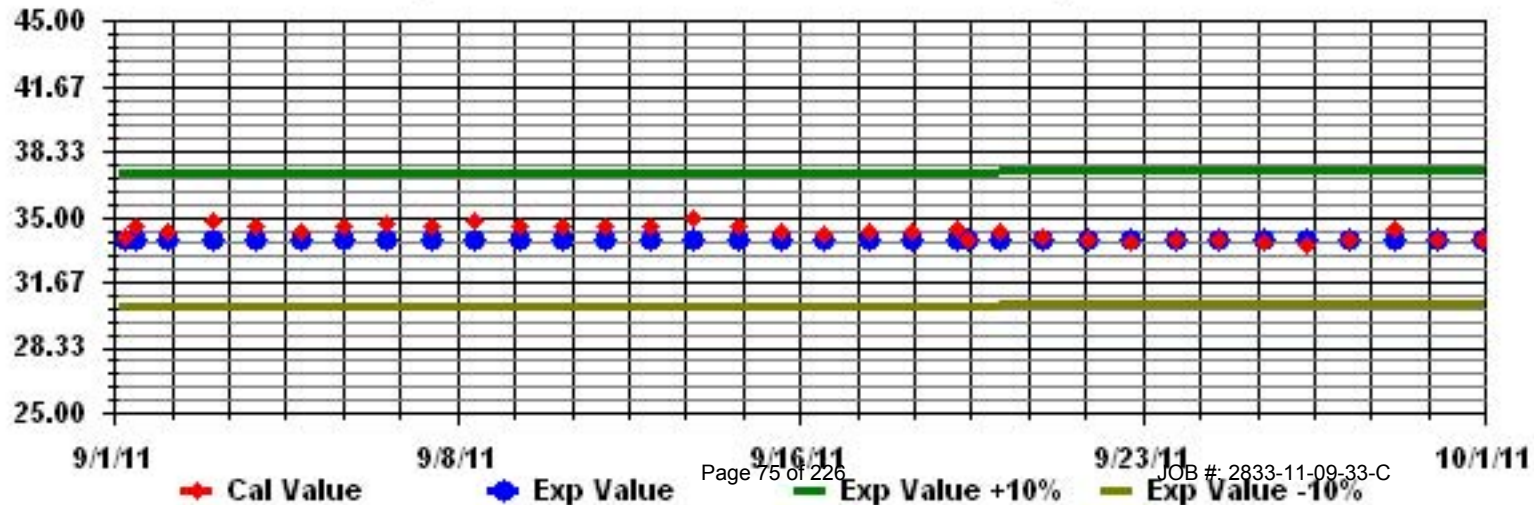
Class Limits (PPM)

Period : 09/01/11-09/30/11

Level : 10



Calibration Graph for Site: LICA33 Parameter: THC Sequence: THC Phase: SPAll



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 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	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	7.3	7.7	5.3	7.1	3.6	5.4	4.3	5.9	8	9.3	9.9	12.4	10.8	10.4	10.6	8.4	4.7	4.4	6	7.8	6.9	6.4	4.3	12.4	4.5	24
2		5.1	3.2	3.9	3	5	5.3	3.8	6.5	3.7	5.4	8.2	13.4	12.1	7.9	12.9	14.9	12.6	13.6	4.9	3.3	9.9	9.9	8	8.1	14.9	5.8	24
3		7.1	5.5	4.2	5	4.3	3.6	4.3	4	4.4	4.6	4.9	3.9	4.2	2.8	5.9	7.5	8.9	7.8	4.6	4.5	3.2	4.1	4.2	4.1	8.9	4.2	24
4		4	4.1	5	2.3	2.5	2.6	3.7	6.4	8.2	8.8	9.3	13.2	14.2	14.5	13.2	10.2	7.5	5.6	8	8.1	4.9	3.7	1.2	1.4	14.5	6.3	24
5		1.5	4.7	3.6	2	5.7	3.7	1.7	0.5	1.5	1.3	3.9	5.2	7.8	9.5	12	12.4	9.1	5.8	5.7	7.6	6.7	5.4	1.8	4.6	12.4	5.2	24
6		4.3	4.2	0.8	1.6	6.1	3.9	4.2	2.8	3.7	4.2	4.5	3.6	4.8	6	7.2	8.4	8.7	5.4	5	3.5	3.9	4	4.9	2.4	8.7	4.5	24
7		1.2	1	3	1	0.7	0.6	0.8	1.5	1.3	1.6	4.8	5.8	7.1	7.2	6.6	6.4	7.6	6.4	2.1	0.1	0.9	4.8	1.6	3.1	7.6	3.2	24
8		4.5	4.2	2.8	4.5	4.3	2.8	4.5	1.7	3.4	4.4	2.5	3.3	4.2	3.8	4.5	4.7	5.3	2.1	5.2	4.2	4.2	4.2	0.3	1.6	5.3	3.6	24
9		1.4	3.1	3.5	3.6	2.9	0.9	2.1	1.3	3.3	5.5	8.8	10.1	9.9	11.8	12.7	11.1	11.4	7.1	3.4	5.6	6.6	7.1	3.5	4.6	12.7	5.9	24
10		7.2	5.7	6.9	7.9	6.8	7.6	6.2	7.1	8.4	6.3	6.4	4.4	4.9	8.1	8.7	9	11.9	10.4	8.2	5.3	2.4	3	3	2.1	11.9	6.6	24
11		2.6	3.9	1.5	1.4	1.2	5.2	7.5	9.5	16.9	16.8	17.9	20.5	15	8.3	8	8.2	9.9	8.1	5.7	6.7	7.1	5.6	7.2	8.6	20.5	8.5	24
12		7.8	9.5	9	6.5	7.6	6.8	7.4	7.3	6.1	8.1	11.1	15	16.1	17.4	16.8	13.6	14.6	13	10.9	9.3	11.9	12.7	6.6	8.5	17.4	10.6	24
13		8.9	9.9	7.9	6.9	6.5	3.8	5.4	7.6	8	11.3	10.2	8.1	6.8	6.1	5.7	5.6	5.1	8.4	8.3	3.6	1.9	1.5	2.4	2.4	11.3	6.3	24
14		3.4	3.8	5.4	5.4	5.6	6.9	6.6	7.4	9.5	15.5	19.1	17.7	19.9	19.6	23	21.4	19.7	15.2	12	10.9	9.5	8.2	7.1	9	23.0	11.7	24
15		7.9	9.2	6.3	6.7	9	7.4	4.8	8.7	15.3	13.4	13.5	13.1	12.8	14.2	15.4	17.2	14.2	9.3	8.5	10.9	11.4	8.1	9.6	9.1	17.2	10.7	24
16		9.6	11.4	13.7	6.1	8.4	8.6	2.8	6.2	6.3	11.8	13.9	15.8	14.2	17.5	13.8	9.7	11.6	12.1	21.1	21.7	19.4	22	18.2	16.4	22.0	13.0	24
17		16.9	18.5	17.3	14.9	15.7	16.8	16.4	15.8	14.9	16.2	15	16.2	15.9	16.3	18.9	15.2	11.6	9.5	6.7	7.2	7.3	6.8	7.8	8.1	18.9	13.6	24
18		8.3	8.5	10.3	9.8	9.1	9.1	8.2	9.7	11.7	13	13.9	15.3	12.9	14.8	13.6	12.2	11.9	6	3.5	1.5	1.5	2.6	2.8	3.6	15.3	8.9	24
19		5.5	6.1	3.4	3	3.1	1.4	5.5	7.1	8.5	10.4	14.1	12.3	12.1	15	17	14.7	12.5	8.8	7.6	6.1	8.5	7.3	8.2	8.2	17.0	9.0	24
20		11.2	9.4	8.6	5.4	5.3	5.3	1.5	4.3	5.5	2.3	1.4	3.5	4.1	1.9	3.1	5.8	8.2	7.3	6.7	5.8	6.7	7.4	9.3	9.6	11.2	5.8	24
21		9.7	8.5	10.3	11.6	13	12.7	9.7	14.3	14.7	21.1	20.9	20	22.1	22.4	23.8	22.8	17.7	13.6	12.7	13.7	10.5	15.2	13.8	14	23.8	15.4	24
22		10.1	6.6	9.6	8.3	5.5	1.7	0.9	3.6	5.7	6.8	7.2	6.5	10.7	8.2	12.8	8.3	3.2	4.1	4.7	1.8	2	2.3	3.5	2.2	12.8	5.7	24
23		4.4	1.5	3.4	2.2	4.1	7.2	6.1	4.5	4.8	8	8.3	10.4	13	9.8	9.3	6.1	4.4	4.5	3.3	2	0.9	0.9	3	1.6	13.0	5.2	24
24		1.1	5.1	8.9	5.1	5.8	9	2.3	4.6	4	6	6.7	6.2	3.6	1.6	2.1	1.7	4.3	5.6	5.7	5	7	7.4	8.5	7.9	9.0	5.2	24
25		6.9	10.4	11.1	10.4	11.6	10.4	10.3	12.7	14.5	15.8	17.9	19.9	21.9	24.7	23.6	23.6	20.7	18.1	21.1	23.8	25.4	19	9.6	11.5	25.4	16.5	24
26		10.9	10.9	6.6	7.7	7.1	8.6	8.4	7.3	7.4	15	20.7	18.3	15.7	15.9	11.5	8.9	8.4	7	3	6.1	5.7	6.9	7.8	6.1	20.7	9.7	24
27		9.9	4	4.6	9.1	11.7	9.1	5.1	3.4	8	8.2	12.4	14.1	9.7	8.4	7.5	7	8.2	9.1	10.1	11.1	10	4.7	7.2	10.2	14.1	8.5	24
28		11.2	8.6	8.2	9.6	8.3	11.2	10.3	11.5	14.9	19	23.1	21.4	22.7	24.2	22	25.6	22.5	18.8	13.1	12.2	7.2	6.1	6.8	5.1	25.6	14.3	24
29		5.9	6.9	6.6	1.5	2.6	5.2	1.9	2.3	3.7	15.1	17.6	17.6	15.5	17	19.7	22.4	19.7	13	12.6	11.1	11.7	12.9	15.4	18.4	22.4	11.5	24
30		17.6	16.1	10.8	9.6	10.6	10.6	5.6	8.1	8.8	9.4	7.4	9.4	9.9	7.2	5.7	5.2	5.3	9.4	9.8	10.5	9.6	9.4	9.4	9.4	17.6	9.4	24
HOURLY MAX		17.6	18.5	17.3	14.9	15.7	16.8	16.4	15.8	16.9	21.1	23.1	21.4	22.7	24.7	23.8	25.6	22.5	18.8	21.1	23.8	25.4	22.0	18.2	18.4			
HOURLY AVG		7.1	7.1	6.8	5.9	6.6	6.4	5.4	6.4	7.8	9.8	11.2	11.8	11.9	11.8	12.2	11.8	10.9	9.1	8.0	7.7	7.4	7.4	6.6	6.9			

STATUS FLAG CODES

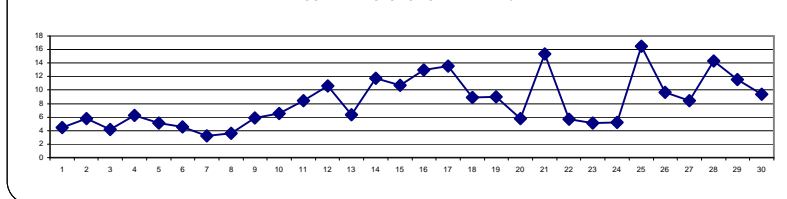
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: September 24, 2009

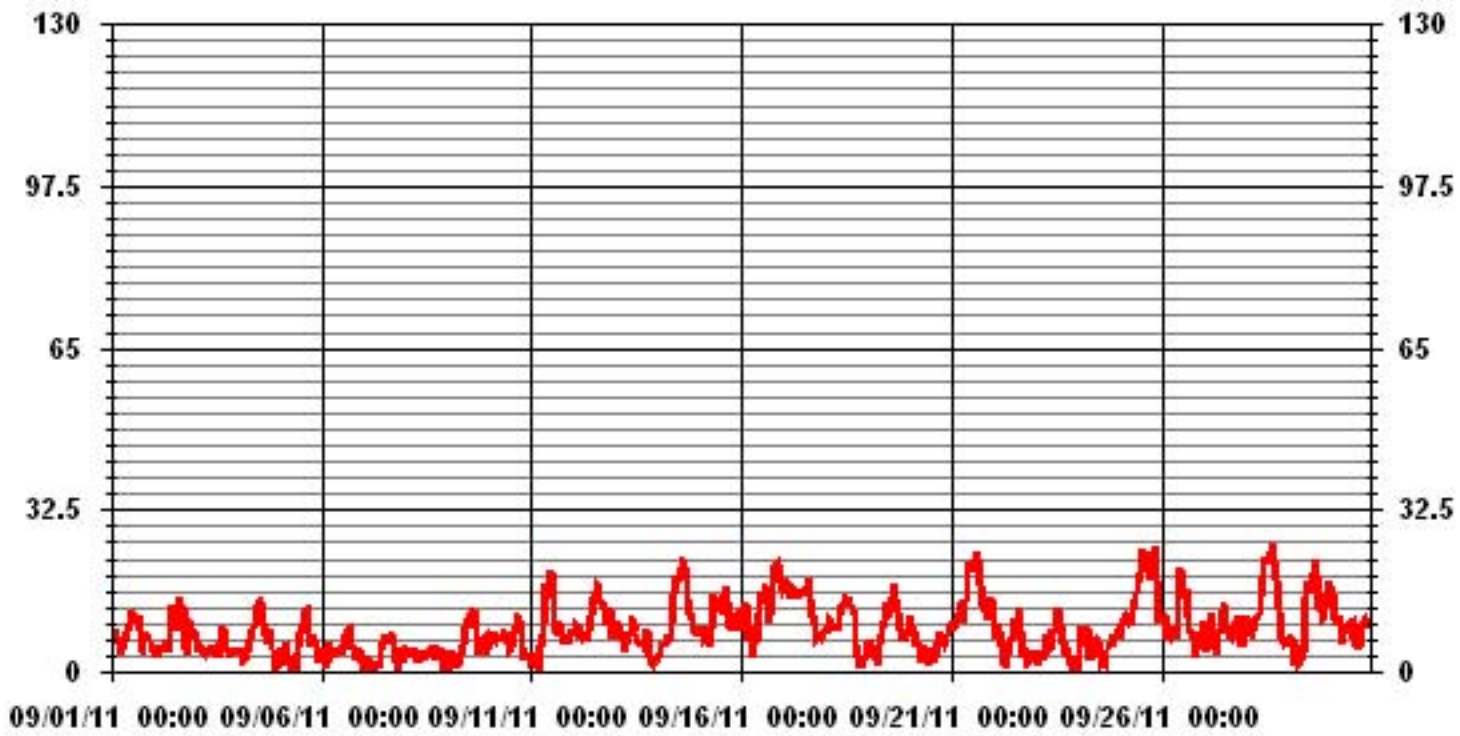
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	25.6	KPH	@ HOUR(S)	15	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	16.5	KPH			ON DAY(S)	25
CALMS (≤ 1 KPH)	0.27	%	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	5.26		MONTHLY AVERAGE:	8.50	KPH	

24 HOUR AVERAGES FOR SEPTEMBER 2011



01 Hour Averages



— LICA33 WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 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	12	9.9	11	10.1	10.6	9	11	9.4	11.5	15.6	22.8	26.8	25.6	23.2	24.6	23.8	22.1	14.2	6.5	8.3	10.4	9.7	8.8	6.3	26.8
2	7.8	8.8	10.2	7.9	7.8	9.7	10	12.2	9.3	10.8	22.7	25.4	23.9	25.3	31.5	34.1	38.9	35.2	16.9	11.2	17	15.4	10.5	13	38.9	
3	10.9	8.1	8.2	7.8	6.8	6.3	7.7	8.5	9.3	11.8	11.6	14.1	14.2	19.1	16.2	23.8	21.9	16.4	12.9	11.2	7.7	10.3	11.2	8.8	23.8	
4	10.3	14.4	10.3	7.8	5.6	5.9	11.4	19.7	21.4	19.1	19.7	22.7	23.5	26.7	24.8	23.8	22.2	12.1	13.3	16.6	9.1	8.7	8.3	3.4	26.7	
5	4.3	8.3	10	7.7	10.5	7.8	5.6	4.6	5	9.3	12.2	13	20.3	24.1	24.7	25.8	22	16.6	12	10.7	11.4	7.5	5.7	7.9	25.8	
6	6.5	7.7	4.5	5.8	10.8	11.3	10.9	9.8	8.8	11.3	11.3	11.2	15.8	20.1	20.4	18.6	19.6	12.5	7.8	7.9	9.2	9.1	10.1	6.9	20.4	
7	4.7	5.3	7.5	6	4.2	3.9	4.1	8.1	12.9	10.1	12.9	14.9	17.7	16.9	17.5	16.7	13	9.1	8.4	4.6	4.9	14.3	5.9	7.8	17.7	
8	8.4	7.4	6.3	6.3	6.6	6.5	9.7	7.1	8.3	9.5	7.6	8.8	13.8	14	14.1	12.4	12	11.7	9.6	9.4	7	9.4	3.8	4.8	14.1	
9	4.3	5.2	7	8	6.9	6.3	6.7	4.8	9.7	11.7	17.5	19.7	22.5	22.5	25.2	24.4	23.7	15.2	7.6	8.7	9.7	11	13.3	9.8	25.2	
10	12.6	8.2	10.2	11	11.2	13.5	13.5	16	16.1	13.3	14.4	14.2	15	20.5	19.9	20.7	20.7	17.3	13.6	8.9	6.7	7	5.5	5.3	20.7	
11	10.5	16.5	6.1	5.6	4.5	9.2	17.6	17.2	36.6	29.2	34.7	37	29.2	17.1	18.6	17.9	20	17.8	11.7	14	13.4	14	16	17.1	37	
12	14.9	16.4	13.6	11.8	10.4	9.1	10.9	15.9	16.6	20	20.6	28.2	32.1	33.4	33.6	35.8	29	27.1	21.4	28.2	24.8	27.9	15.8	15.8	35.8	
13	17.8	26.1	17.7	14.8	14	9.5	9.9	14	17.6	20.4	22.2	21.1	19.4	18.1	15.7	15.7	13.7	13.4	10	8.4	4.2	3.5	6	4.9	26.1	
14	6.2	6.4	6.9	6.8	7.3	8.6	9.2	11.1	15.7	29	32.7	29.3	32.9	31.9	36.3	35.8	32.8	29.3	16.3	14.5	12.1	11.6	13.7	15.7	36.3	
15	13.6	14.6	13	11.8	16.1	11.5	9.3	18	23.9	21	22.2	21.6	21.7	24.4	26	29.1	24.9	12.5	12.4	17.5	17.2	14.4	14.5	14	29.1	
16	16	19.6	25.1	15.8	13.3	16.5	6.4	12.4	16.4	23.9	32.2	33.8	36.5	36.7	34.5	19.1	23.9	30.8	45.3	49	39.4	50.8	47.2	29.1	50.8	
17	27.7	31.3	29.7	25.6	27.3	28.2	29.1	28.4	30.2	38.5	33.4	34.4	35	41.6	38.2	33.4	25.9	16.6	14	12	12.1	11.3	13.9	12.9	41.6	
18	13.2	13.3	14.8	18	16.2	13.3	16.1	25.3	27.1	24.8	30.7	30	28.5	32.4	30.7	26	23.1	16.4	6.3	3.9	6.4	5.2	6.8	11.6	32.4	
19	10.2	10.5	9.7	8.9	8.6	6.5	9.4	14.4	17.8	20.5	24.4	21.6	26	28.6	32.6	33.2	28.3	26	14	20.4	10.7	12.8	11.4	12.2	33.2	
20	16.2	15.8	14	8.5	8.6	8.8	6.9	8	12.8	8.2	9.9	16.2	14.5	11.2	15	14	15.4	10.9	8.9	8.2	9.6	10.2	13.8	12.8	16.2	
21	13.4	13.1	14.5	22.3	21.5	23.3	17.6	26.4	29.3	38.6	34.9	37.5	39.5	38.8	41.1	36.6	34.2	25.9	20.4	19.3	15.7	31.5	27.5	22.7	41.1	
22	25.7	17.9	13.7	14.6	9.5	6.5	7.4	10.8	14	12.4	16.8	15.8	0	17.7	23.6	17.4	13.2	8.1	8.7	6	5.9	5.1	6.9	5	25.7	
23	7.9	6.4	5.1	5.4	7.5	12.6	10.4	7.6	8.7	13.3	12.4	17.1	20.8	18.3	16	10	6.9	6.9	6.3	9.2	6.7	6.5	8.5	13	20.8	
24	9	8	11.6	9.2	8.5	11.6	10.6	9.1	10.3	11.2	13.5	14.9	14.3	9.4	9.7	6.5	7.7	9.4	10.7	8.4	10	10.7	13.2	12.2	14.9	
25	11.9	13.6	16.5	16	17.7	17.8	17.8	20.7	22.9	24.3	25.6	32.4	33	44.4	38.2	42	34	28.6	35.7	41.4	46.7	34.4	24.9	20.6	46.7	
26	21.9	20.3	15.7	13	12.3	18.6	20.7	19.6	24.1	29.8	40.5	35.8	34.7	41.3	25.1	17.7	19.5	17.4	7.1	8.4	8.5	9.7	13	13.4	41.3	
27	24.8	14.9	13.7	20.6	17.2	15.5	12.8	7.6	16.7	17.4	25.8	26	22	22.3	22.5	25.1	17.9	16.7	16	33.8	36	9.4	11.8	19.7	36	
28	20.9	14.1	12	14.7	15.3	22.7	21.3	21.7	28.8	36.3	41.8	39	40.9	41.8	40	50.1	48.2	36.4	24.6	22.9	14.2	11.5	9.9	9.5	50.1	
29	8.6	9.6	9.2	6.4	4.7	10.7	8.7	5.4	17.1	27.4	28	29	25.7	28.4	32.7	36.4	37.9	20.9	17.5	17.8	17.6	24.9	27.3	30.5	37.9	
30	28.4	30.3	21.9	18.6	17.8	14.3	9.8	13.6	14.7	15.5	14.1	17.4	17	15.3	19.3	13.9	11.2	19.2	19.7	16.5	13.6	17	19	14.2	30.3	
PEAK		28.4	31.3	29.7	25.6	27.3	28.2	29.1	28.4	36.6	38.6	41.8	39.0	40.9	44.4	41.1	50.1	48.2	36.4	45.3	49.0	46.7	50.8	47.2	30.5	

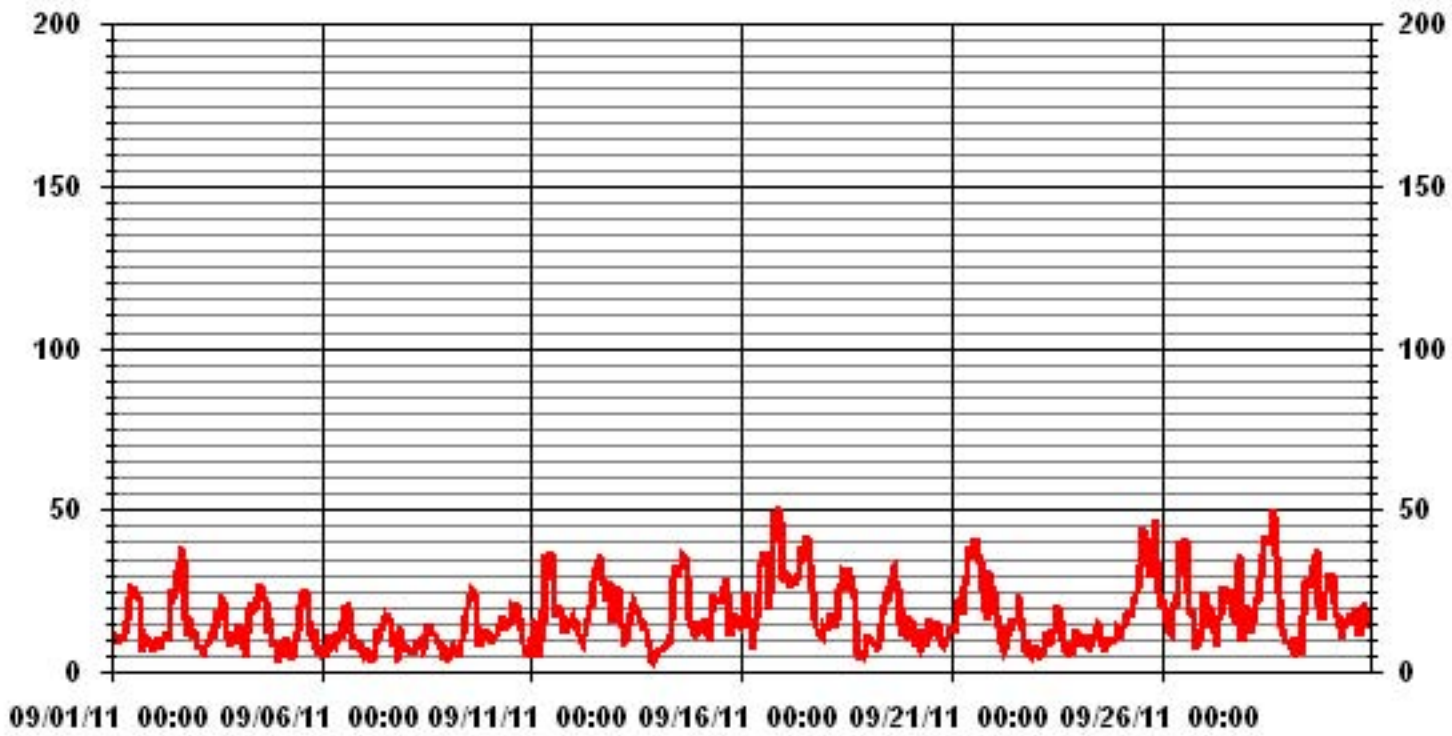
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	50.8	KPH	@ HOUR(S)	21
			ON DAY(S)	16

01 Hour Averages



— LICA33 WSMAX KPH

LICA33
WSP / WDR Joint Frequency Distribution (Percent)

September 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	1.25	.69	.55	1.52	1.80	1.94	2.08	1.94	2.77	2.77	5.00	5.55	3.61	3.19	1.25	.69	36.66
< 12.0	1.11	.55	.97	1.11	2.63	2.36	4.02	2.63	1.38	1.11	5.55	5.00	5.27	5.13	.83	1.52	41.25
< 20.0	.13	.13	.55	.13	.83	.27	2.91	3.47	.13	.00	1.52	1.80	2.63	2.77	.00	.55	17.91
< 29.0	.00	.00	.13	.00	.00	.13	.97	.97	.41	.00	.00	.27	.13	1.11	.00	.00	4.16
< 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	2.50	1.38	2.22	2.77	5.27	4.72	10.00	9.02	4.72	3.88	12.08	12.63	11.66	12.22	2.08	2.77	

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	9	5	4	11	13	14	15	14	20	20	36	40	26	23	9	5	264
< 12.0	8	4	7	8	19	17	29	19	10	8	40	36	38	37	6	11	297
< 20.0	1	1	4	1	6	2	21	25	1		11	13	19	20		4	129
< 29.0			1			1	7	7	3			2	1	8			30
< 39.0																	
>= 39.0																	
Totals	18	10	16	20	38	34	72	65	34	28	87	91	84	88	15	20	

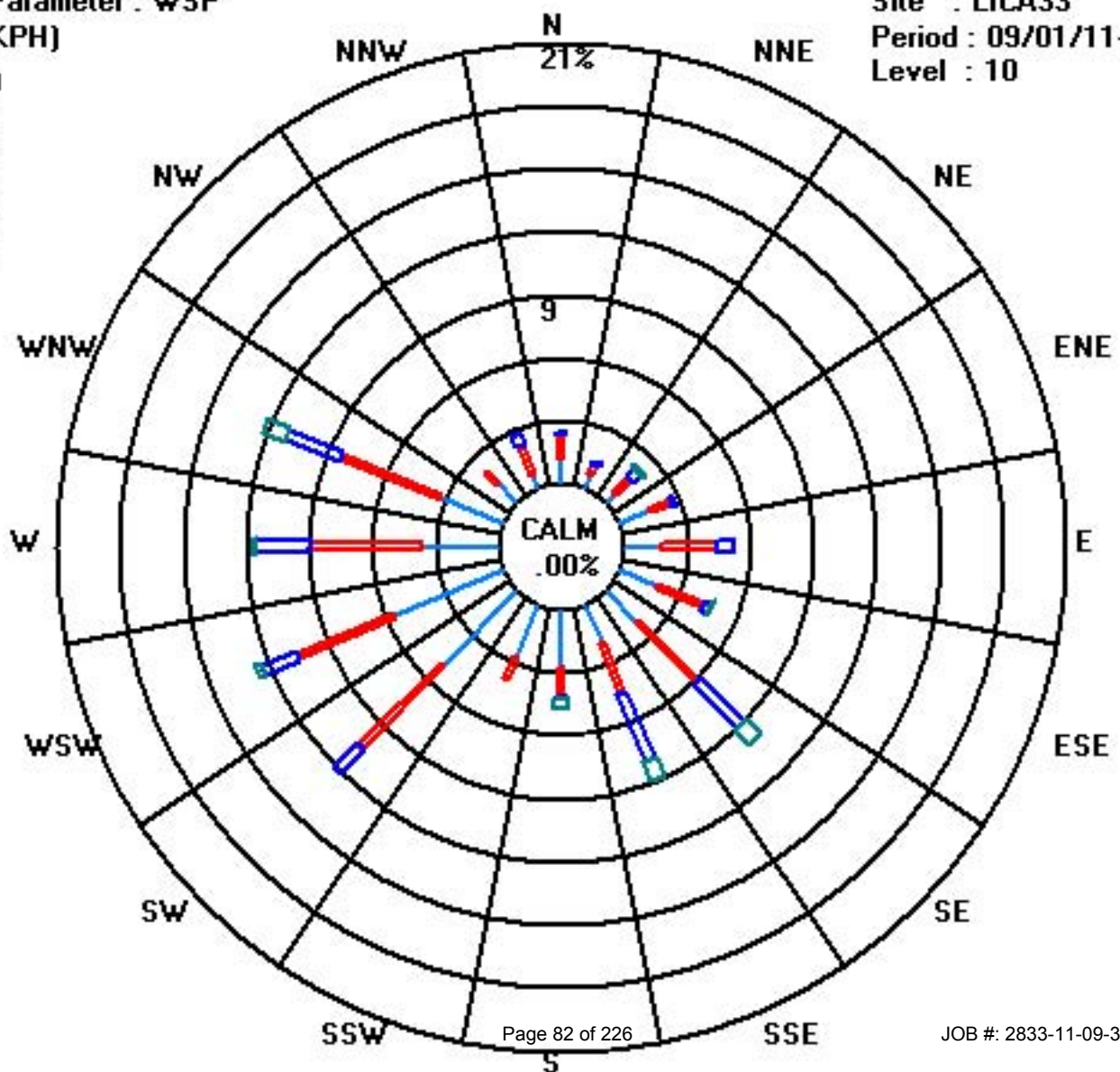
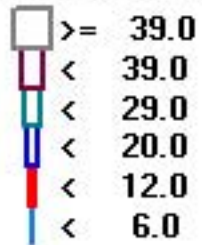
Calm : .00 %

Total # Operational Hours : 720

Class Limits (KPH)

Period : 09/01/11-09/30/11

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 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	287	283	287	269	295	236	221	241	230	225	238	254	231	229	223	223	218	196	149	126	121	127	108	67	228	SW	24	
2	63	67	34	4	9	284	312	311	330	324	345	20	34	3	336	344	333	338	285	251	278	282	290	279	334	NNW	24	
3	285	284	272	264	293	273	262	265	246	244	253	245	217	220	218	234	220	221	200	188	193	188	193	203	237	SW	24	
4	193	188	176	94	75	142	167	196	192	186	186	165	162	168	172	186	201	180	178	177	150	163	222	57	174	S	24	
5	230	234	233	197	226	225	252	349	106	183	203	213	160	189	222	219	240	262	273	290	284	277	186	235	230	SW	24	
6	239	227	314	125	293	261	181	282	244	261	241	238	230	247	252	244	240	250	220	190	191	194	204	176	235	SW	24	
7	58	37	126	9	12	284	360	114	203	185	154	190	188	193	197	202	157	134	352	149	256	320	247	283	184	S	24	
8	269	283	244	296	244	242	225	256	256	317	289	271	262	255	297	325	1	166	191	206	224	233	162	137	261	W	24	
9	293	256	230	229	216	211	179	238	229	227	229	214	219	217	225	235	235	218	206	221	221	223	249	265	226	SW	24	
10	257	240	228	230	233	237	248	267	282	323	317	336	303	291	298	302	299	298	287	302	272	216	247	110	277	W	24	
11	241	338	28	168	169	43	52	30	51	43	44	36	64	51	349	327	331	331	297	272	295	276	260	249	13	NNE	24	
12	274	281	282	263	225	225	231	248	263	269	279	284	282	281	280	302	289	296	295	342	4	3	334	338	289	WNW	24	
13	343	354	5	354	351	343	357	4	27	39	36	29	68	57	71	64	100	122	134	147	152	137	126	114	38	NE	24	
14	94	118	108	105	109	114	126	127	140	154	159	151	144	143	152	152	154	146	138	125	115	116	138	152	141	SE	24	
15	143	136	116	106	103	95	72	127	146	160	152	144	134	138	139	135	125	97	88	91	93	85	91	88	122	ESE	24	
16	85	86	93	72	69	81	143	126	195	239	246	256	259	252	260	275	276	249	242	244	241	263	260	229	244	WSW	24	
17	236	233	235	234	234	236	237	240	250	261	258	250	252	252	271	280	286	280	253	242	241	246	240	233	249	WSW	24	
18	240	234	234	244	248	236	242	250	271	275	280	281	264	275	267	249	243	256	249	287	141	219	243	261	257	WSW	24	
19	230	236	259	244	240	272	223	240	266	278	303	290	288	293	299	294	299	287	280	288	264	277	277	278	281	W	24	
20	282	284	284	294	277	254	218	217	286	321	206	248	251	241	195	150	160	140	140	140	150	150	155	156	207	SSW	24	
21	158	148	145	154	158	148	156	150	155	163	165	173	171	174	166	160	160	150	134	138	150	162	167	161	159	SSE	24	
22	151	132	146	145	128	347	70	246	264	295	302	343	332	308	293	296	311	245	283	292	123	162	147	14	273	W	24	
23	125	101	46	101	79	82	78	81	85	126	131	132	156	161	136	123	91	103	123	176	248	199	242	277	123	ESE	24	
24	258	276	297	274	286	298	297	295	12	46	36	79	104	124	135	88	65	24	82	84	33	45	76	92	30	NNE	24	
25	95	87	70	76	84	87	85	86	87	88	94	97	107	140	141	126	125	122	130	143	155	160	182	228	119	ESE	24	
26	250	277	253	228	229	244	256	275	238	273	285	280	285	269	282	284	252	224	185	115	108	127	123	129	258	WSW	24	
27	172	218	198	226	233	232	223	189	229	249	283	300	292	279	325	291	235	243	234	207	182	211	226	241	241	WSW	24	
28	273	270	265	270	259	268	271	275	281	280	288	287	282	292	286	292	300	294	287	286	297	293	275	269	284	WNW	24	
29	253	245	233	228	144	217	172	99	142	164	155	160	161	143	132	142	146	127	118	115	111	132	143	141	147	SE	24	
30	146	154	160	143	121	117	103	117	140	151	147	131	141	167	219	316	352	328	321	280	278	275	268	299	164	SSE	24	
HOURLY AVG	343	354	314	354	351	347	360	349	330	324	345	343	332	308	349	344	352	338	352	342	297	320	334	338				

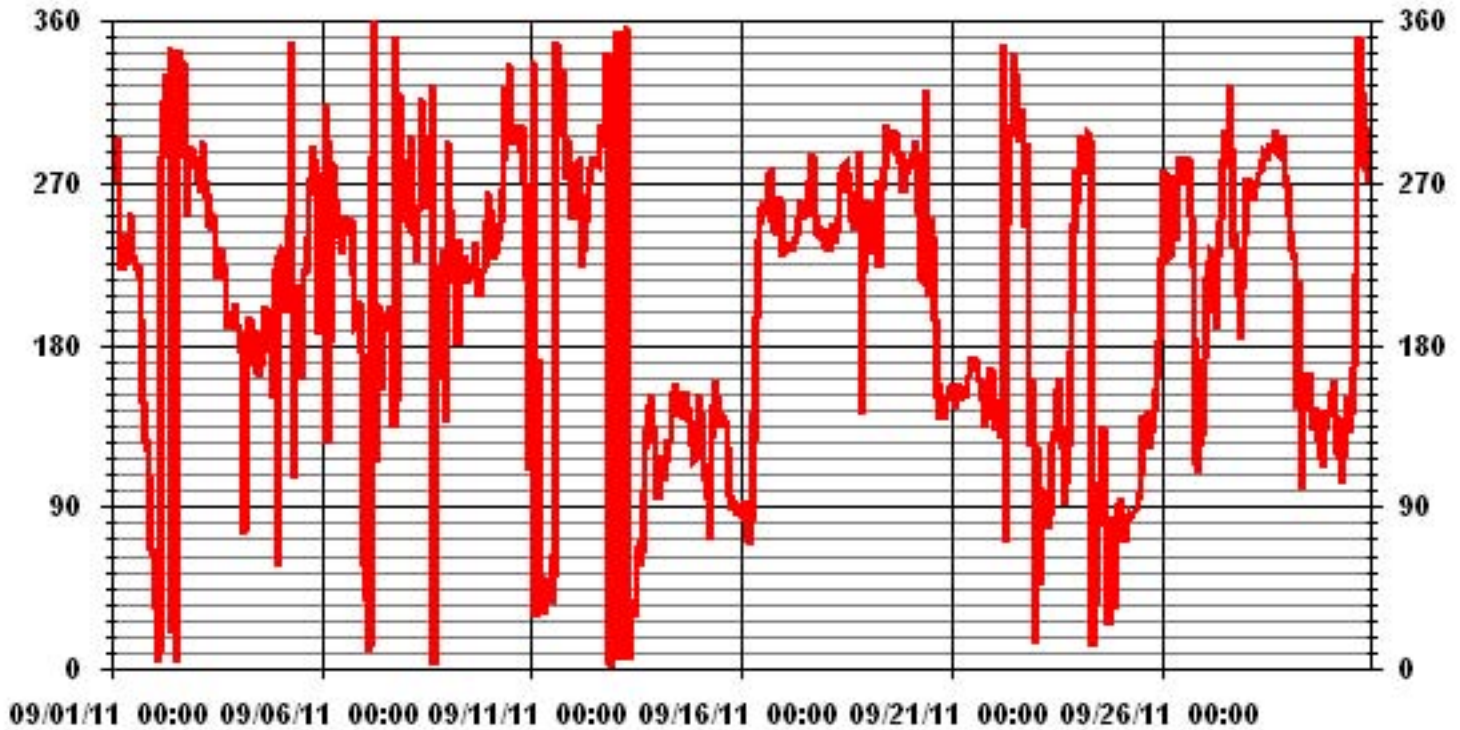
STATUS FLAG CODES

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	81.47		AMD OPERATION UPTIME	100.0	%
			MONTHLY AVERAGE	219	DEG

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 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	4	4	4	12	11	22	13	22	19	17	23	24	21	17	26	17	20	19	4	4	4	4	3	12
2	6	13	50	50	11	17	25	17	38	16	20	21	19	35	16	16	25	18	23	18	9	9	4	8
3	8	5	13	8	13	12	13	17	21	27	26	43	50	71	38	33	23	18	19	16	18	21	21	22
4	22	23	16	23	30	13	18	25	23	22	20	13	13	14	18	22	25	16	12	13	12	16	39	23
5	41	8	14	21	10	20	38	24	39	51	35	27	22	23	20	18	18	18	10	4	6	7	19	19
6	8	9	51	54	11	29	26	23	23	27	24	42	34	40	24	23	19	17	11	17	20	17	21	36
7	39	54	12	26	58	54	51	23	51	61	25	28	27	27	29	26	9	5	27	40	20	26	20	33
8	12	17	31	8	14	32	12	23	22	20	27	36	42	43	38	25	20	30	13	14	13	45	49	37
9	29	14	9	24	33	41	22	38	28	19	14	20	21	19	17	19	13	13	22	12	11	11	30	19
10	13	9	6	6	7	9	17	21	14	24	22	45	35	23	21	20	12	9	6	11	36	13	31	17
11	42	25	21	26	19	16	24	11	12	12	13	11	11	18	17	15	16	14	13	12	19	26	18	16
12	17	8	6	13	5	5	7	20	23	22	16	17	18	17	18	15	11	10	9	19	13	14	14	14
13	14	13	14	14	13	15	11	12	20	17	19	27	39	38	45	37	25	10	3	15	19	27	16	17
14	8	11	6	5	5	4	6	7	11	12	13	13	13	13	12	12	10	9	4	3	3	5	11	9
15	8	8	9	10	6	11	9	11	10	12	14	16	17	14	11	11	8	5	5	6	7	8	6	6
16	7	8	9	23	10	11	29	16	18	16	18	19	21	18	19	18	15	18	15	16	14	15	16	10
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18	11	7	8	11	13	8	11	19	18	17	16	17	24	19	20	19	17	15	13	26	39	20	10	17
19	10	7	15	39	18	46	11	14	16	16	15	17	19	18	13	14	12	9	6	18	10	9	9	9
20	7	7	7	8	12	15	28	13	17	44	75	44	51	72	50	49	15	7	4	4	4	4	4	4
21	5	6	6	8	9	10	10	9	10	11	11	13	12	13	12	10	9	9	5	5	8	9	11	9
22	18	15	7	8	16	43	54	36	19	17	18	25	16	20	14	15	39	18	11	32	50	19	24	25
23	16	20	9	23	13	8	11	13	12	12	13	11	10	11	10	9	7	8	16	37	31	63	38	20
24	29	25	5	18	6	3	46	14	17	19	21	28	46	55	49	56	12	9	11	15	8	4	10	6
25	6	5	6	9	8	8	9	7	7	9	9	9	10	11	10	10	9	8	8	9	9	8	18	9
26	12	11	12	10	22	12	13	30	27	12	13	15	15	19	20	21	16	17	19	5	7	6	5	23
27	17	23	22	14	7	7	23	18	13	19	17	15	20	31	46	25	15	10	8	15	17	16	10	10
28	9	10	8	8	9	11	11	12	10	13	13	15	14	13	12	12	12	10	9	12	7	9	9	8
29	7	7	6	35	16	12	20	15	18	12	12	11	13	13	10	11	9	7	4	6	5	9	8	8
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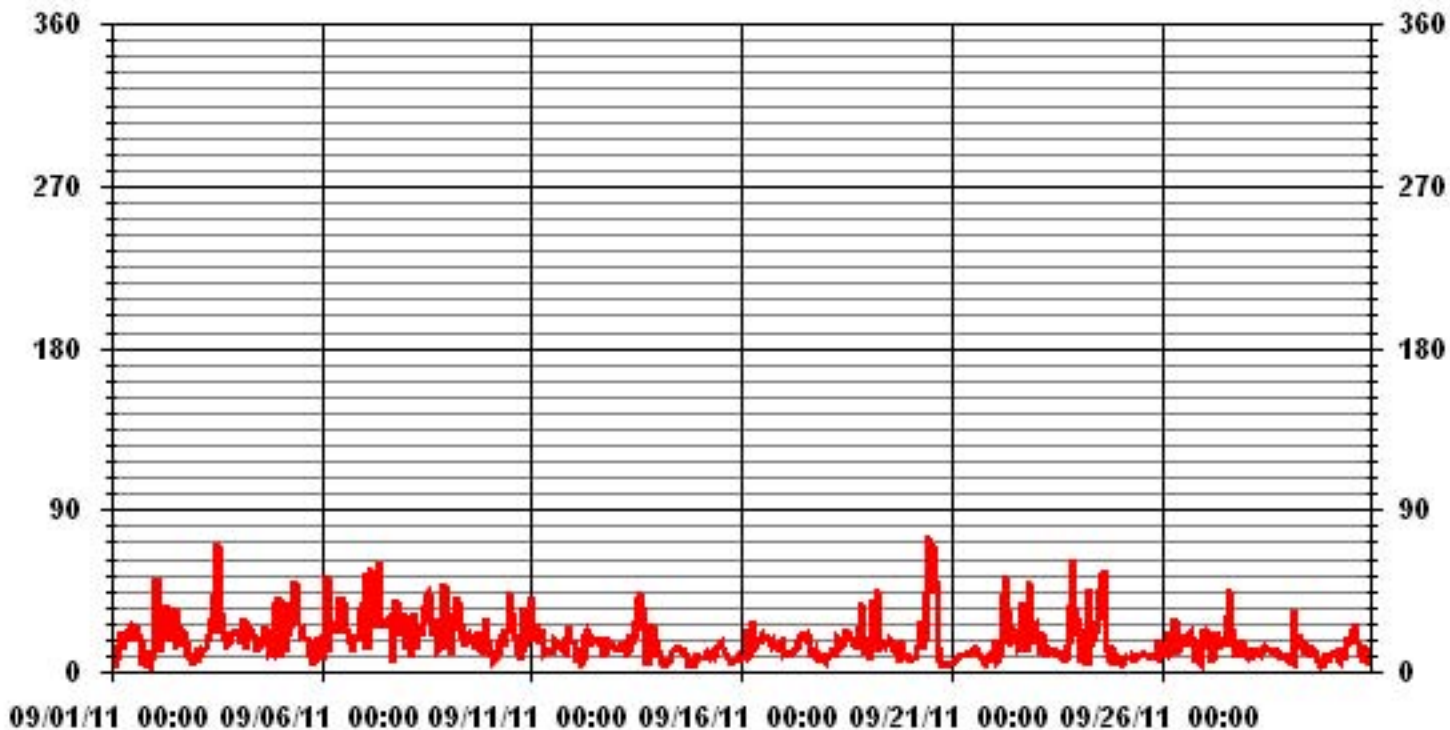
STATUS FLAG CODES

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

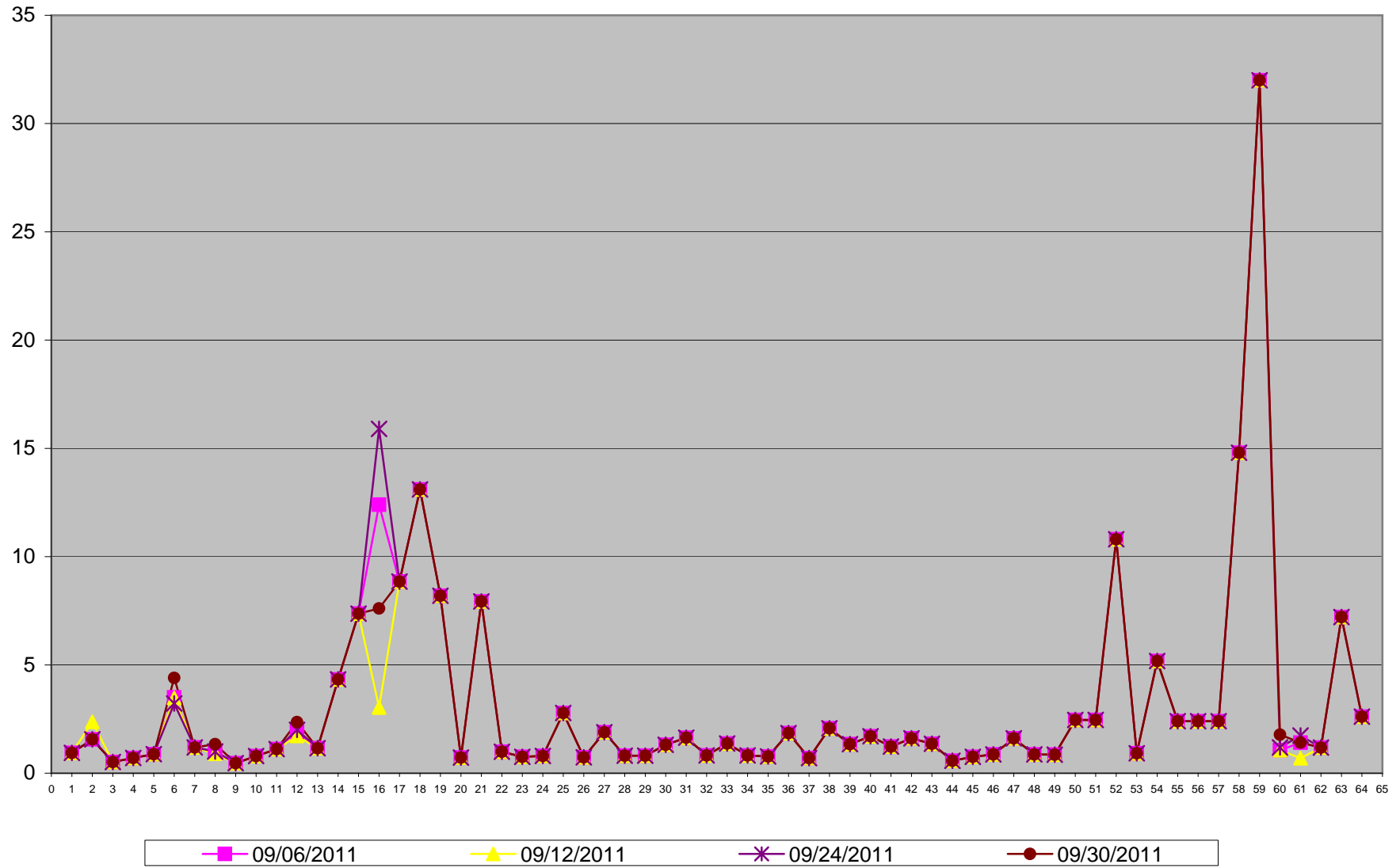
CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 720 HRS

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)

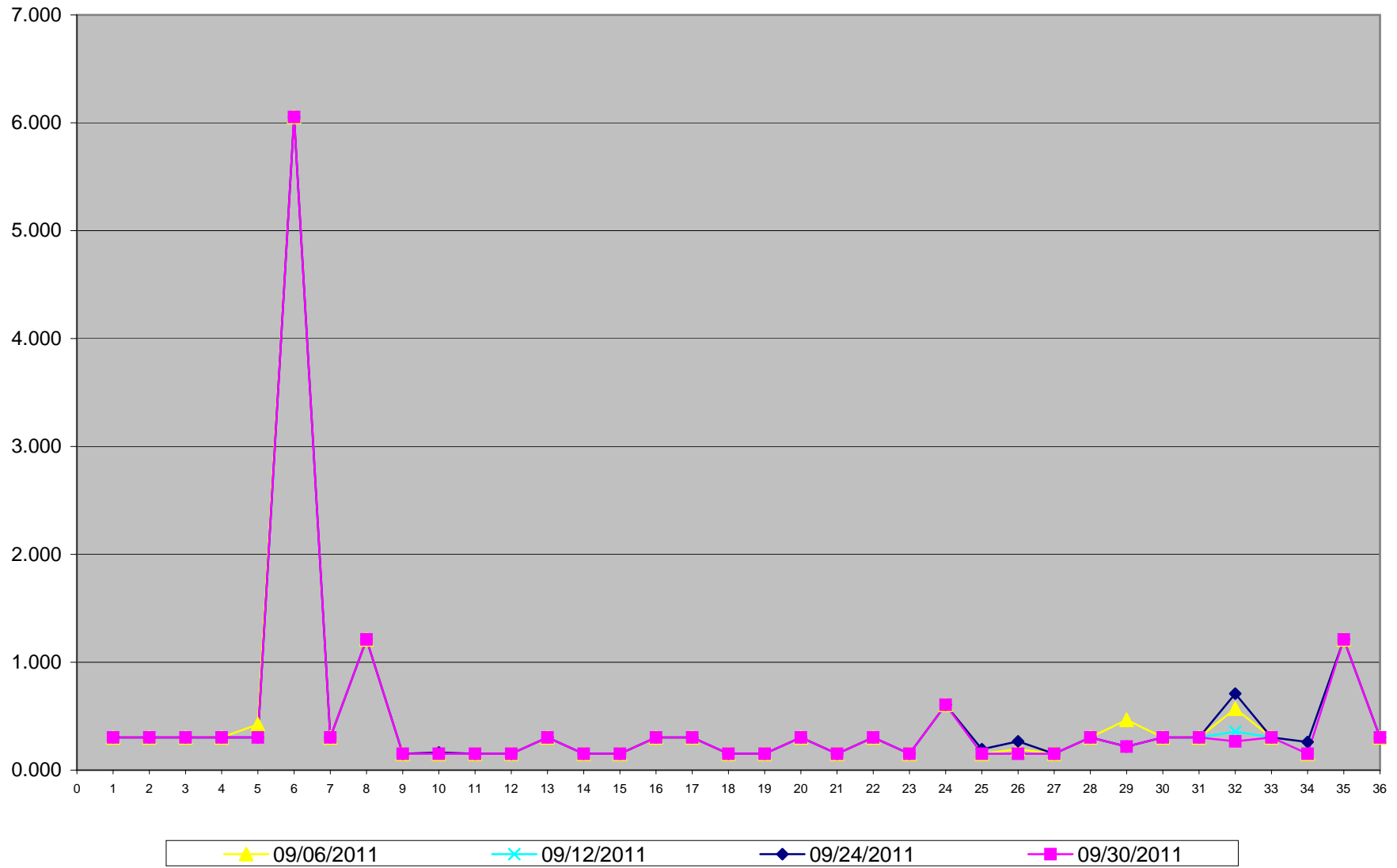
Polycyclic Aromatic Hydrocarbons

Polycyclic Aromatic Hydrocarbons (PAHs) Results for September 2011
LICA- Portable Site
Unit: ng/m3

PAHs	09/06/2011	09/12/2011	09/18/2011	09/24/2011	09/30/2011
Sample Volume (unit: m3)	330.34	330.33	NA	330.33	330.34
1 1-Methylnaphthalene	0.303	0.303	NA	0.303	0.303
2 1-Methylphenanthrene	0.303	0.303	NA	0.303	0.303
3 2-Chloronaphthalene	0.303	0.303	NA	0.303	0.303
4 2-Methylantracene	0.303	0.303	NA	0.303	0.303
5 2-Methylnaphthalene	0.424	0.303	NA	0.303	0.303
6 3-Methylcholanthrene	6.054	6.055	NA	6.055	6.054
7 7,12-Dimethylbenzo(a)anthracene	0.303	0.303	NA	0.303	0.303
8 9,10-Dimethylanthracene	1.211	1.211	NA	1.211	1.211
9 Acenaphthene	0.151	0.151	NA	0.151	0.151
10 Acenaphthylene	0.151	0.151	NA	0.163	0.151
11 Anthracene	0.151	0.151	NA	0.151	0.151
12 Benzo(a)anthracene	0.151	0.151	NA	0.151	0.151
13 Benzo(a)fluorene	0.303	0.303	NA	0.303	0.303
14 Benzo(a)pyrene	0.151	0.151	NA	0.151	0.151
15 Benzo(b)fluoranthene	0.151	0.151	NA	0.151	0.151
16 Benzo(b)fluorene	0.303	0.303	NA	0.303	0.303
17 Benzo(e)pyrene	0.303	0.303	NA	0.303	0.303
18 Benzo(g,h,i)perylene	0.151	0.151	NA	0.151	0.151
19 Benzo(k)fluoranthene	0.151	0.151	NA	0.151	0.151
20 Biphenyl	0.303	0.303	NA	0.303	0.303
21 Chrysene	0.151	0.151	NA	0.151	0.151
22 Coronene	0.303	0.303	NA	0.303	0.303
23 Dibenz(a,h)anthracene	0.151	0.151	NA	0.151	0.151
24 Dibenzo(a,e)pyrene	0.605	0.605	NA	0.605	0.605
25 Fluoranthene	0.151	0.151	NA	0.194	0.151
26 Fluorene	0.194	0.151	NA	0.266	0.151
27 Indeno(1,2,3-cd)pyrene	0.151	0.151	NA	0.151	0.151
28 m-Terphenyl	0.303	0.303	NA	0.303	0.303
29 Naphthalene	0.466	0.218	NA	0.218	0.218
30 o-Terphenyl	0.303	0.303	NA	0.303	0.303
31 Perylene	0.303	0.303	NA	0.303	0.303
32 Phenanthrene	0.569	0.357	NA	0.708	0.266
33 p-Terphenyl	0.303	0.303	NA	0.303	0.303
34 Pyrene	0.151	0.151	NA	0.260	0.151
35 Quinoline	1.211	1.211	NA	1.211	1.211
36 Tetralin	0.303	0.303	NA	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-Methylantracene
5	2-Methylnaphthalene
6	3-Methylcholanthrene
7	7,12-Dimethylbenzo(a)anthracene
8	9,10-Dimethylantracene
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	September 20, 2011		Previous Calibration	August 25, 2011	
Company	Lakeland Community and Industry Association				
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M				
Start Time (MST)	8:11		End Time (MST)	12:07	
Reason:	Monthly Calibration				
Barometric Pressure	0.934	atm	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

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		ppb		
Sample Flow / Box Temp	590	ccm	32.3	Deg C	590
HVPS / Lamp Setting	612		2013		612
PMT / RxCell Temp	8.1	Deg C	50	Deg C	8.1
Converter / IZS Temp	NA	Deg C	45	Deg C	NA
Offset / Slope	80.6		1.008		82.9
					1.015

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	2	N/A
4995	0	0	0	N/A
4923	76.5	750	744	1.0078
4923	76.5	750	751	0.9984
4959	40.8	400	398	1.0047
4977	17.3	170	170	1.0000
4995	0	0	0	N/A
Sum of Least Squares				1.0067
New Correction Factor				0.9984

Before Calibration

After Calibration

Auto Zero	2.5	0.7
Auto Span	371.0	366.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9981
Current Correction Factor Before Span Adjust:	1.0078
Percent Change:	-1.0%

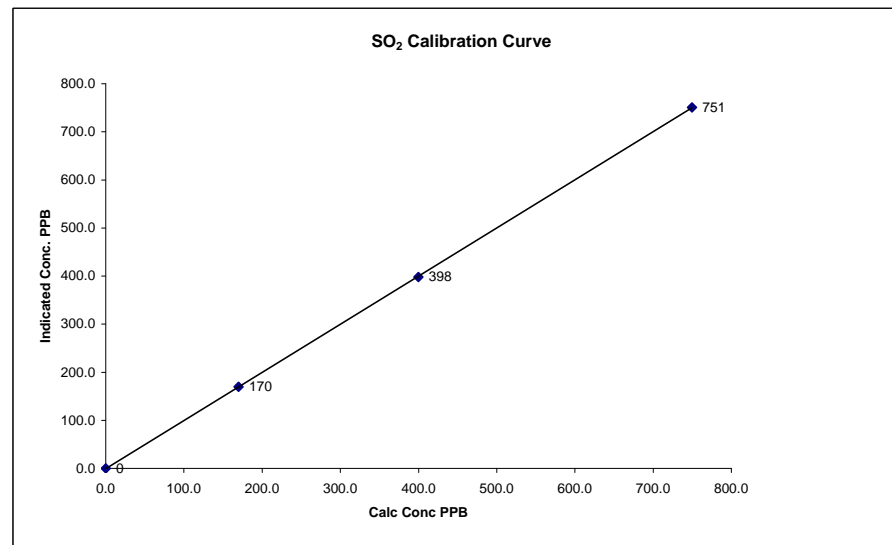
Notes: N/A : Not applicable

Calibration Performed by: Ting Xu

SO2 Calibration Curve

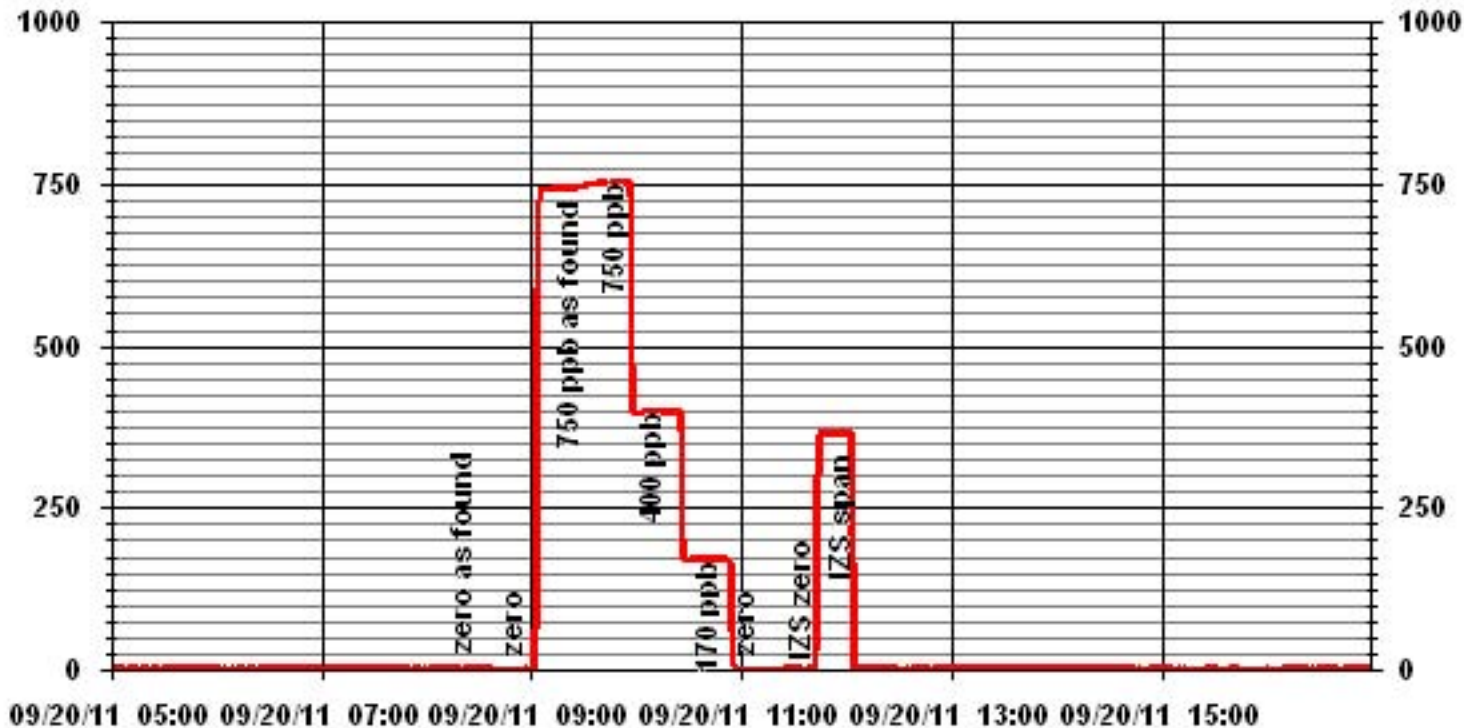
Calibration Date	September 20, 2011		
Company	Lakeland Community and Industry Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	8:11	End Time (MST)	12:07

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		0.999985
170	170	0.9984		1.001083
400	398	1.0047		-0.448267
750	751	0.9984		



Notes:

01 Minute Averages



Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	September 19, 2011	Previous Calibration	August 25, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Portable/ Devon Wellsite 13-16-62-5-W4M		
Start Time (MST)	10:18	End Time (MST)	13:59
Reason:	Monthly Calibration		
Barometric Pressure	0.936 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	525 ccm 32.9 Deg C	527 ccm 32.4 Deg C	
HV/PS / Lamp Setting	540 1960	540 1958	
PMT / RxCell Temp	7.9 Deg C 50 Deg C	7.9 Deg C 50 Deg C	
Converter / IZS Temp	314.7 Deg C 45 Deg C	315.9 Deg C 45.0 Deg C	
Offset / Slope	61.6 1.057	61.6 1.041	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	NA
	No Zero Adj.			
4959	39.2	80	81	0.9876
4959	39.2	80	80	1.0000
4981	19.6	40	41	0.9751
4986	11.3	23	24	0.9610
4995	0	0	1	NA
Sum of Least Squares				0.9927
New Correction Factor				1.0000

Before Calibration		After Calibration	
Auto Zero	1.7		0.6
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:	0.9876
Percent Change:	1.3%

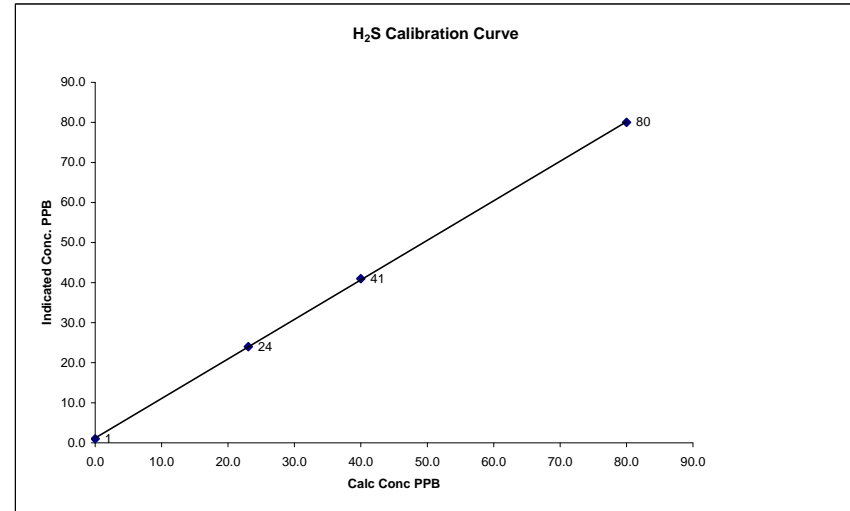
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

H₂S Calibration Curve

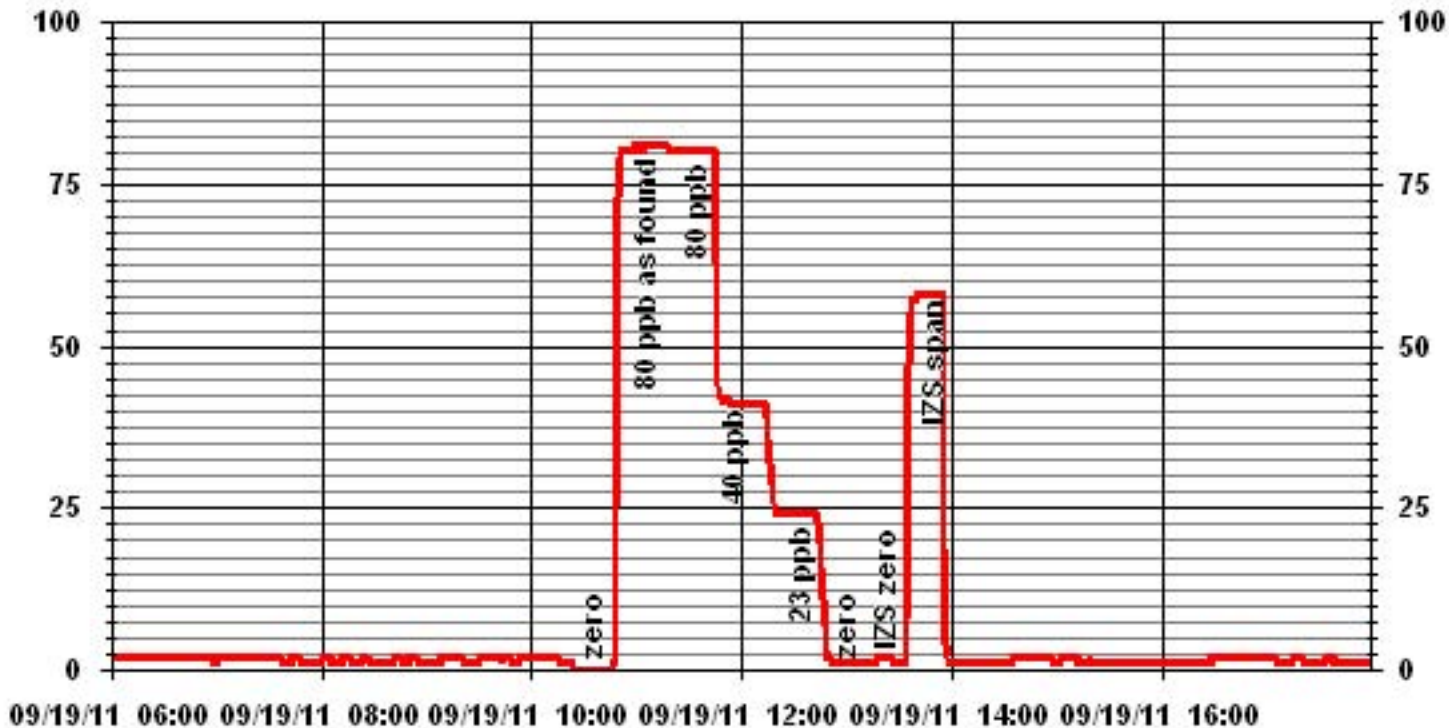
Calibration Date	September 19, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	Portable/ Devon Wellsite 13-16-62-5-W4M
Start Time (MST)	10:18
End Time (MST)	13:59

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	1			0.999946
23	24	0.9610		0.987352
40	41	0.9751		1.192185
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>September 12, 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>21.2%</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>14.0</u>
		Press (ATM)	<u>0.940</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>
Pump Vacuum <0.40atm	<u>0.34</u>	Pump Gauge (inHg)	<u>-19</u>
Temperature/Pressure			
Measured Temp (± 2 °C)	<u>14.0</u>	D °C	<u>-0.6</u>
Measured Press (± 0.01atm)	<u>0.942</u>	DATM	<u>-0.001</u>
Flow Audit			
Indicated Main Flow (l/min)	<u>3.00</u>	Main Flow Drift (±10.0%)	<u>0.28%</u>
Measured Main Flow (l/min)	<u>2.99</u>	Flow Adjusted to Measured?	<u>Yes</u>
Indicated Bypass Flow (l/min)	<u>13.67</u>	Bypass Flow Drift (±10.0%)	<u>1.08%</u>
Measured Bypass Flow (l/min)	<u>13.74</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: 10:41 **Finish Time:** 13:06

Sample Inlet Cleaned: Yes **New Filters Installed:** Yes
New Filter Loading %: 17.6%

Comments:

Auditor/s: Ting Xu

Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	September 19, 2011		Previous Calibration		August 24, 2011	
Company	LICA		Plant/Location		Portable/ 13-16-62-5W4M	
Start Time (MST)	10:18		End Time (MST)		16:42	
Reason:	Monthly Calibration					
Barometric Pressure	0.936 atm	Station Temperature	24 Deg C	MFCF	0	
Cal Gas Concentration	NOx 51.7 ppm	NO	50.4 ppm	Cal Gas Expiry date	February 4, 2013	
Cal Gas Cylinder #	LL103822					
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	483 ccm	315.3 Deg C	481 ccm	315 Deg C		
Ozone Flow / Vacuum	78 ccm	4.4 "Hg-A	78 ccm	4.4 "Hg-A		
HVPS / A ZERO	662 Volts	6.7 MV	662 Volts	7.1 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.7 Deg C	50.0 Deg C	6.7 Deg C		
Box Temp / IZS Temp	32.4 Deg C	45.0 Deg C	33.2 Deg C	45.2 Deg C		
Offset	1.1 NOx	0.9 NO	1.1 NOx	0.9 NO		
Slope	1.268 NOx	1.236 NO	1.328 NOx	1.291 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	3	0	4	NA	NA
	No Zero Adj									
4921	74.2	NA	768	749	NA	741	715	26	1.0406	1.0471
4921	74.2	NA	768	749	NA	771	750	21	1.0000	0.9982
4954	39.6	NA	410	400	NA	411	399	12	1.0049	1.0017
4973	19.8	NA	205	200	NA	207	201	6	1.0050	0.9944
4995	0.0	NA	0	0	NA	1	0	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	74.2	NA	768	749	NA	773	751	22	NA	NA
	No Adj Required									
4921	74.2	600	768	NA	544	773	229	543	1.0093	99.81%
4921	74.2	250	768	NA	237	774	536	238	1.0128	100.47%
4921	74.2	140	768	NA	141	774	632	143	1.0144	101.68%

Linearity	Sum of Least Squares		NOx= 0.996	NO= 0.999	NO2= 1.000
OK?	Yes	No	Correction Factors: NOx= 1.0000	NO= 0.9982	NO2= 1.0093
Average Converter Efficiency= 100.65%					

Before Calibration			After Calibration		
Auto Zero	-0.6 NOx	0.1 NO2	1.3 NOx	-0.4 NO2	
Auto Span	896 NOx	869 NO2	929 NOx	898 NO2	
Sample Lines Connected: YES					
Percent Change from Previous Calibration			NOx -4.3%	NO -4.7%	NO2 -0.4%

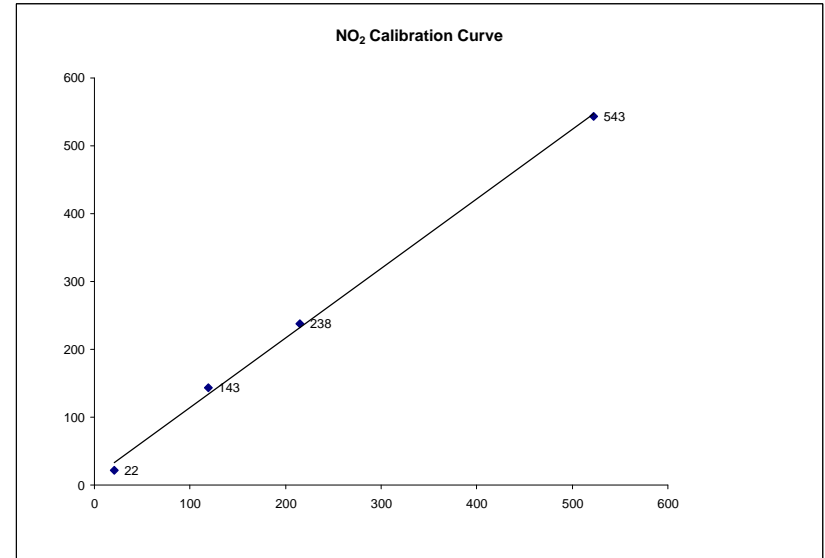
Notes: **NA : Not Applicable**
Additional GPT was done for O3 clibration. O3 set point 420, NOx=774, NO=386, NO2=389

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	September 19, 2011	
Company	LICA	
Plant / Location	Portable/ 13-16-62-5W4M	
Start Time (MST)	10:18	End Time (MST) 16:42

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.998238
21	22	N/A	Intercept	(± 3% F.S.)	11.56660
119	143	0.8322			
215	238	0.9034			
522	543	0.9613			

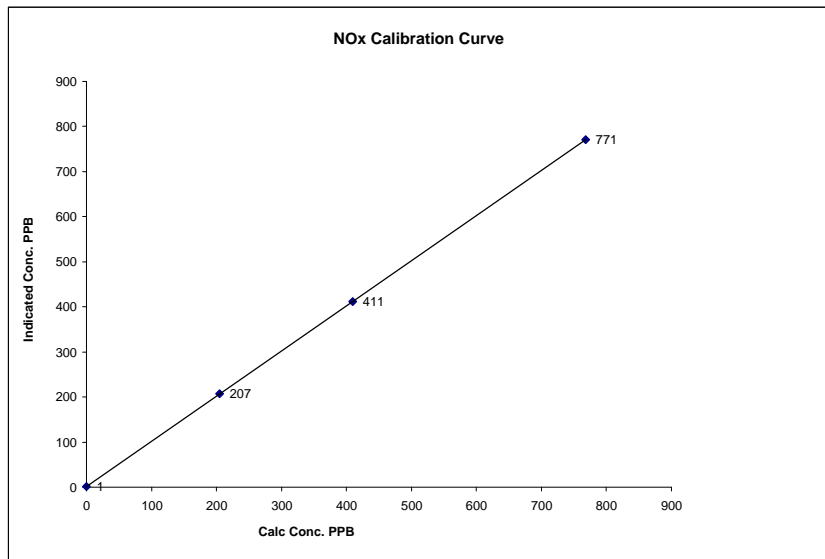


Notes:

NOx Calibration Curve

Calibration Date September 19, 2011
 Company LICA
 Plant / Location Portable/ 13-16-62-5W4M
 Start Time (MST) 10:18 End Time (MST) 16:42

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999996
0	1	N/A	Intercept	(± 3% F.S.)	0.97779
205	207	0.9905			
410	411	0.9975			
768	771	0.9961			

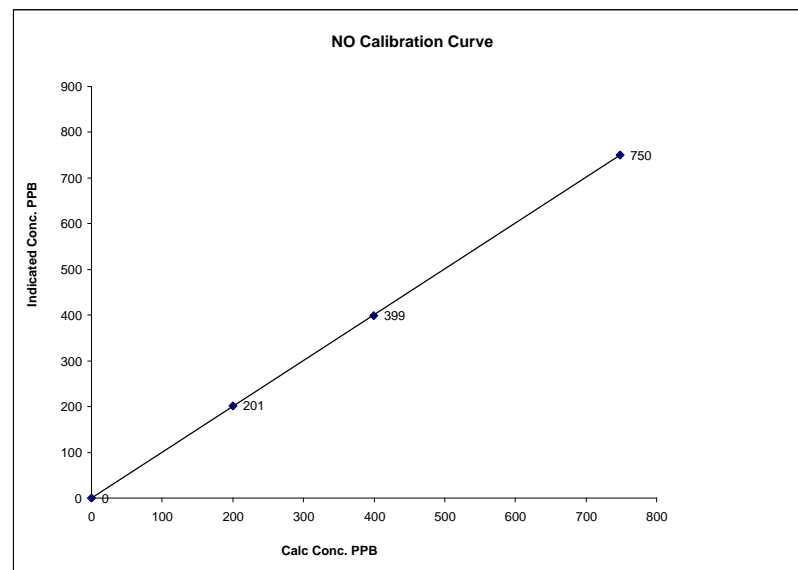


Notes:

NO Calibration Curve

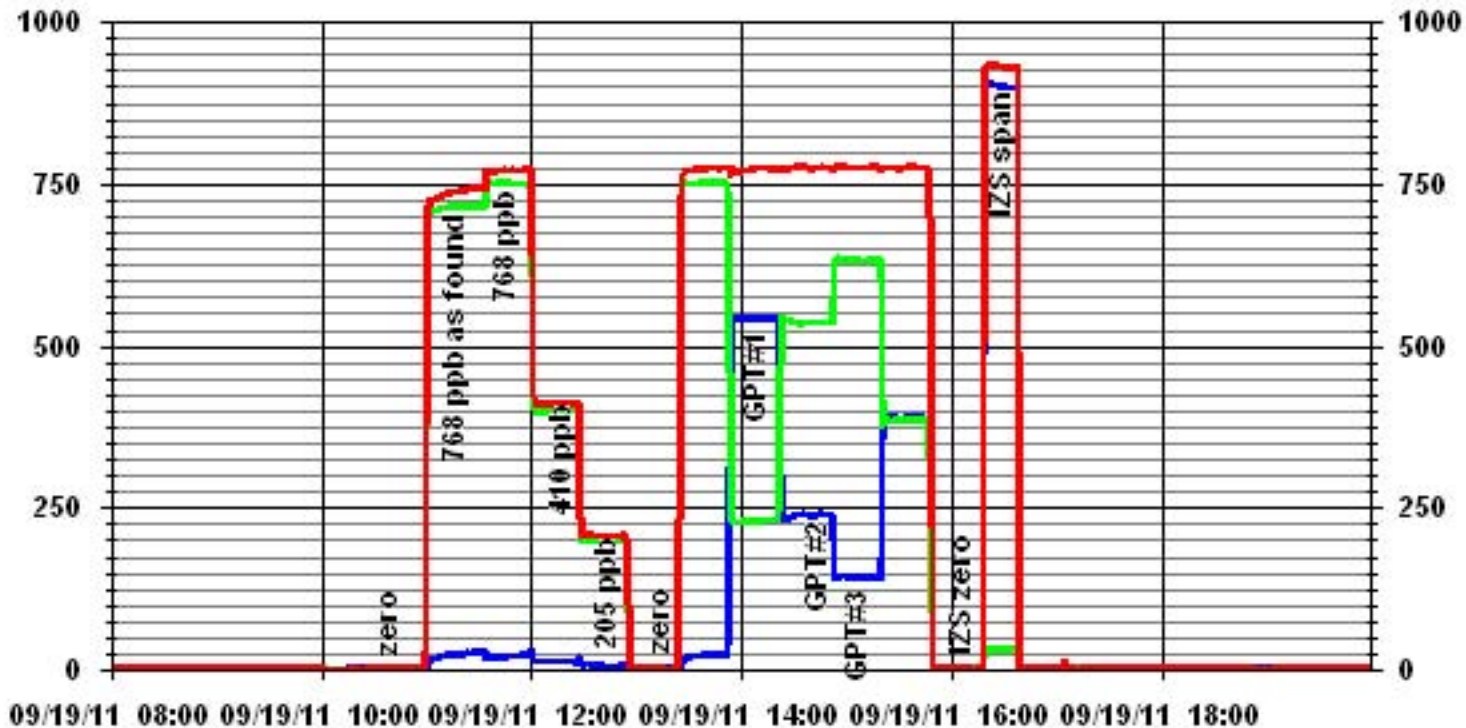
Calibration Date September 19, 2011
 Company LICA
 Plant / Location Portable/ 13-16-62-5W4M
 Start Time (MST) 10:18 End Time (MST) 16:42

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999992
0	0	N/A	Intercept	(± 3% F.S.)	-2.9987
200	201	0.9944			
400	399	1.0017			
749	750	0.9982			



Notes:

01 Minute Averages



NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	September 26, 2011	Previous Calibration	September 19, 2011
Company	LICA	Plant/Location	Portable/ 13-16-62-5W4M
Start Time (MST)	14:47	End Time (MST)	15:52
Reason:	As Found		
Barometric Pressure	707 mmHg	Station Temperature	24 Deg C
Cal Gas Concentration	NOx 49.7 ppm	NO	49.4 ppm
Cal Gas Cylinder #	LL103831	Cal Gas Expiry date	February 4, 2013
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:	API 700	S/N :	829		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N :	NA		
Flow Meter:	API 700	S/N :	829		

Analyzer Settings

Before Calibration			After Calibration			
Concentration Range	0 - 1000			ppb		
Sample Flow/Conv. Temp	484 ccm	314.6 Deg C	475 ccm	314 Deg C		
Ozone Flow / Vacuum	78 ccm	4.4 "Hg-A	78 ccm	4.9 "Hg-A		
HVPS / A ZERO	662 Volts	7.1 MV	646 Volts	6.6 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.7 Deg C	50.0 Deg C	6.7 Deg C		
Box Temp / IZS Temp	33.3 Deg C	45.1 Deg C	33.5 Deg C	45.4 Deg C		
Offset	1.1 NOx	0.9 NO	1.1 NOx	0.9 NO		
Slope	1.329 NOx	1.291 NO	1.007 NOx	0.990 NO		
NO2 COEF / Conv Efficiency	NA NO2	1.000	NA NO2	1.000		

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
3998	0.0	NA	0	0	NA	-1	-1	0	NA	NA
	No Zero Adj									
3939	60.7	NA	754	750	NA	791	783	9	0.9523	0.9563

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= 0.9523	NO= 0.9563	NO2=
				Average Converter Efficiency=		

Before Calibration			After Calibration		
Auto Zero	-0.4 NOx	0.3 NO2	1.3 NOx	-0.4 NO2	
Auto Span	928 NOx	902 NO2	929 NOx	898 NO2	
Sample Lines Connected			YES		

Percent Change from Previous Calibration	NOx 5.0%	NO 4.4%	NO2 #VALUE!
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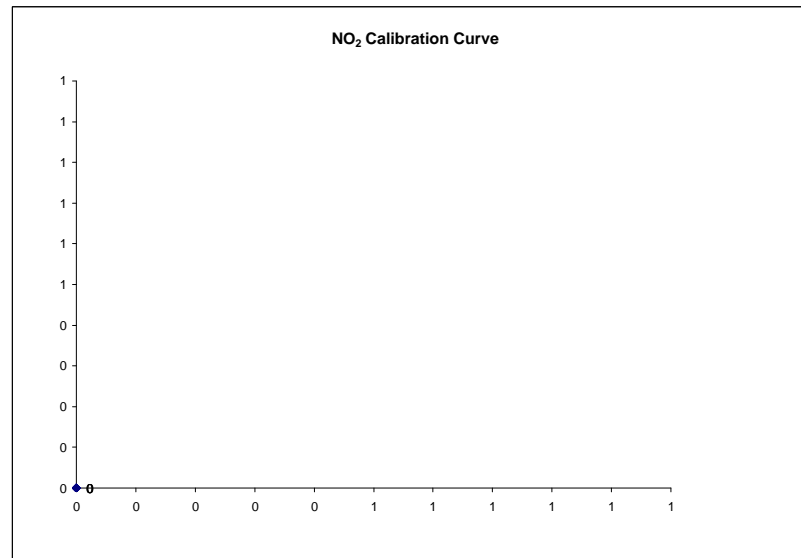
Notes: **NA : Not Applicable**

Calibration Performed by: Shea Beaton

NO2 Calibration Curve

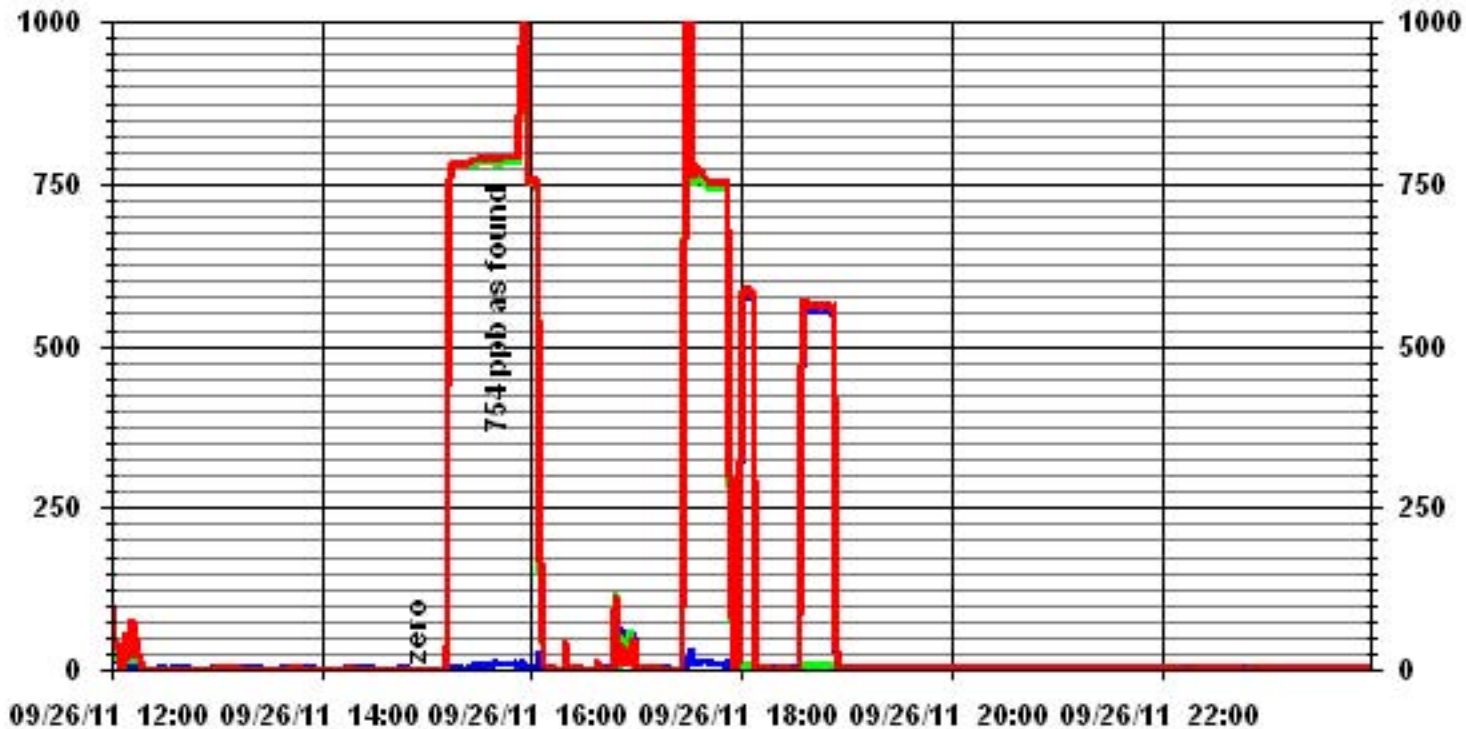
Calibration Date	September 26, 2011
Company	LICA
Plant / Location	Portable/ 13-16-62-5W4M
Start Time (MST)	14:47
End Time (MST)	15:52

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



— LICA33 IIOX_ PPB

— LICA33 IIO_ PPB

— LICA33 IIO2_ PPB

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	September 27, 2011		Previous Calibration	September 26, 2011	
Company	LICA		Plant/Location	Portable/ 13-16-62-5W4M	
Start Time (MST)	8:18		End Time (MST)	14:26	
Reason:	Post Repair Calibration				
Barometric Pressure	0.926 atm	Station Temperature	24 Deg C	MFCF	0
Cal Gas Concentration	NOx 49.7 ppm	NO	49.4 ppm	Cal Gas Expiry date	February 28, 2013
Cal Gas Cylinder #	LL103831				
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				
Sample Flow/Conv. Temp	474 ccm	315.3 Deg C	471 ccm	316 Deg C	
Ozone Flow / Vacuum	78 ccm	4.9 "Hg-A	78 ccm	4.9 "Hg-A	
HVPS / A ZERO	662 Volts	6.3 MV	662 Volts	6.4 MV	
Rx/ Temp / PMT Temp	50.0 Deg C	6.7 Deg C	50.0 Deg C	6.7 Deg C	
Box Temp / IZS Temp	32.9 Deg C	45.1 Deg C	33.7 Deg C	45 Deg C	
Offset	1.1 NOx	0.9 NO	1.1 NOx	0.9 NO	
Slope	1.007 NOx	0.990 NO	1.015 NOx	0.998 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
4993	0.0	NA	0	0	NA	-1	0	0	NA	NA
	No Zero Adj									
4918	75.7	NA	753	749	NA	745	744	1	1.0099	1.0065
4918	75.7	NA	753	749	NA	755	751	5	0.9966	0.9971
4954	40.4	NA	402	400	NA	400	397	3	1.0026	1.0065
4974	20.2	NA	201	200	NA	200	198	2	1.0001	1.0091
4994	0.0	NA	0	0	NA	1	0	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		
4918	75.7	NA	753	749	NA	758	752	6	NA	NA
	No Adj Required									
4918	75.7	600	753	NA	530	757	228	529	1.0019	99.81%
4918	75.7	250	753	NA	228	759	530	229	0.9956	100.45%
4918	75.7	140	753	NA	130	761	628	132	0.9848	101.61%

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 1.000 / 0.9966	NO= 1.000 / 0.9971	NO2= 1.000 / 1.0019	Average Converter Efficiency= 100.62%
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Before Calibration			After Calibration		
Auto Zero	-0.4 NOx	0.1 NO2	-0.2 NOx	0.0 NO2	
Auto Span	563 NOx	555 NO2	569 NOx	561 NO2	
Sample Lines Connected	YES				

Percent Change from Previous Calibration	NOx	-	NO	-	NO2	-
--	-----	---	----	---	-----	---

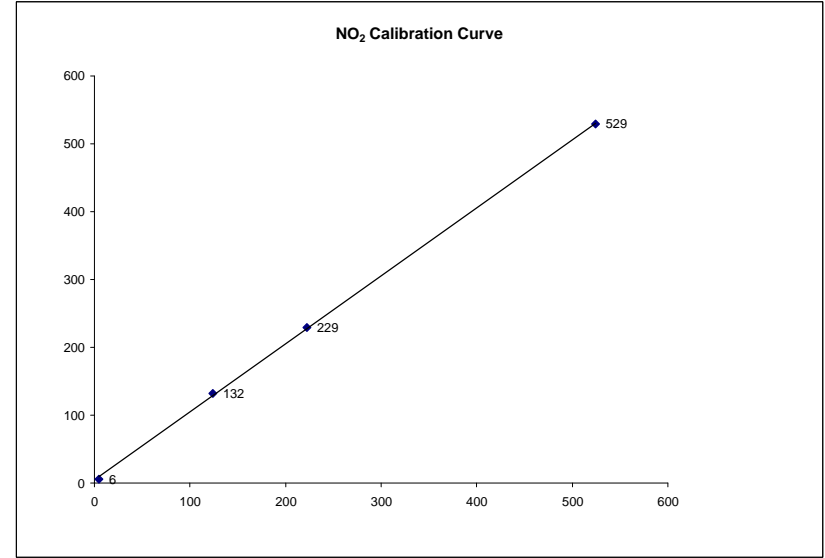
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	September 27, 2011	
Company	LICA	
Plant / Location	Portable/ 13-16-62-5W4M	
Start Time (MST)	8:18	End Time (MST) 14:26

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999822
5	6	N/A	Intercept	(± 3% F.S.)	4.39596
124	132	0.9394			
222	229	0.9694			
524	529	0.9905			

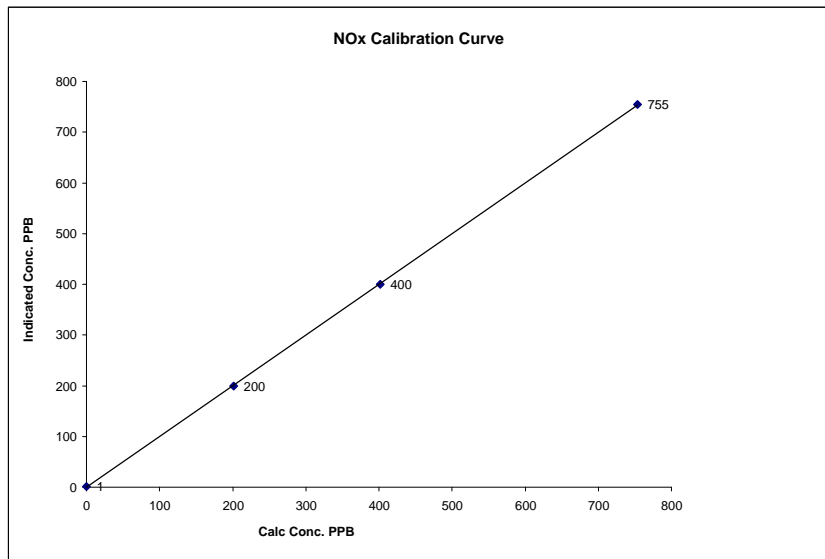


Notes:

NOx Calibration Curve

Calibration Date	September 27, 2011		
Company	LICA		
Plant / Location	Portable/ 13-16-62-5W4M		
Start Time (MST)	8:18	End Time (MST)	14:26

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999973
0	1	N/A	Slope (0.85 to 1.15)	1.001079
201	200	1.0051	Intercept (± 3% F.S.)	-0.47975
402	400	1.0051		
753	755	0.9979		

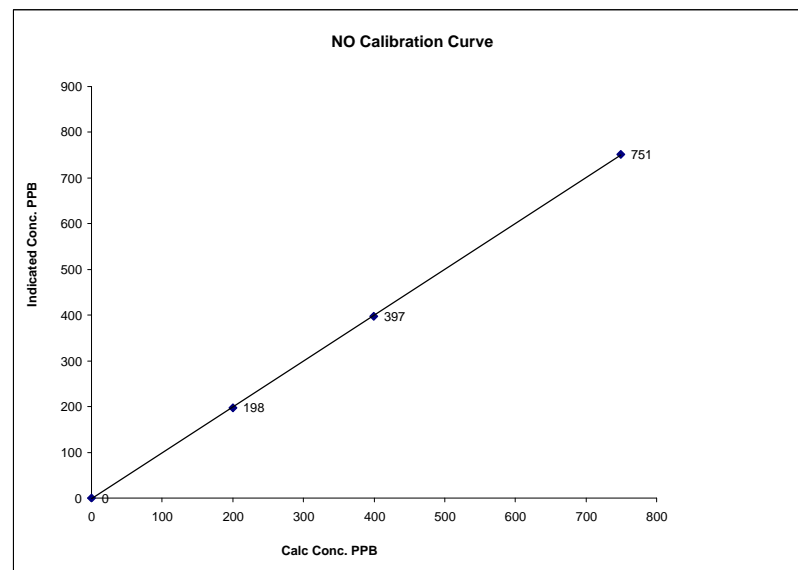


Notes:

NO Calibration Curve

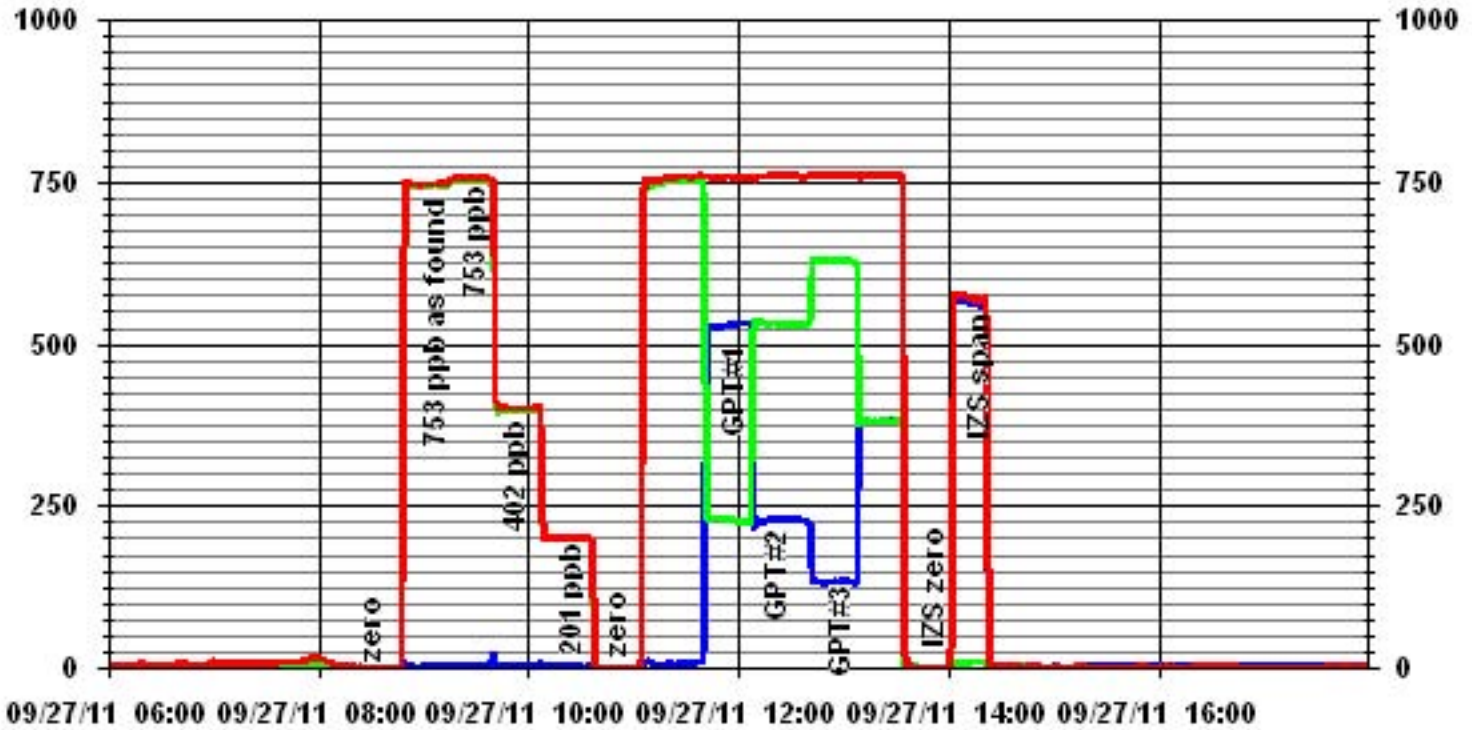
Calibration Date	September 27, 2011		
Company	LICA		
Plant / Location	Portable/ 13-16-62-5W4M		
Start Time (MST)	8:18	End Time (MST)	14:26

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999967
0	0	N/A	Slope (0.85 to 1.15)	1.007910
200	198	1.0091	Intercept (± 3% F.S.)	-8.0227
400	397	1.0065		
749	751	0.9971		



Notes:

01 Minute Averages



Ozone

O₃ Calibration Report

Station Information

Calibration Date	September 20, 2011	Previous Calibration	August 30, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	8:11	End Time (MST)	11:47
Reason:	Monthly Calibration		
Barometric Pressure	0.934 atm	Station Temperature	23 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	1002240372	Method:	Photometric
Calibrator Make / Model:	Enviroics 2000		4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO 717		

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 500 ppb			
Cell A Flow / Cell B Flow	758 ccm	769 ccm	759 ccm	769 ccm
Pressure	705 mmHg		706 mmHg	
Bench Lamp	54.1 Deg C		54.1 Deg C	
O3 Lamp / Box Temp	68.2 Deg C	32 Deg C	68.2 Deg C	32.3 Deg C
Offset / Slope	0	0.948	0	0.926

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	NA
	No Zero Adj			
4995	420	365	370	0.9865
4995	420	365	366	0.9973
4995	250	215	218	0.9862
4995	140	119	122	0.9754
4995	0	0	0	NA
Sum of Least Squares				0.9930
New Correction Factor				0.9973

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	317.0	310.0
Sample Lines Connected		YES
Previous Calibration Correction Factor:		1.0081
Current Correctio Factor Before Span Adjust:		0.9973
Percent Change:		1.1%

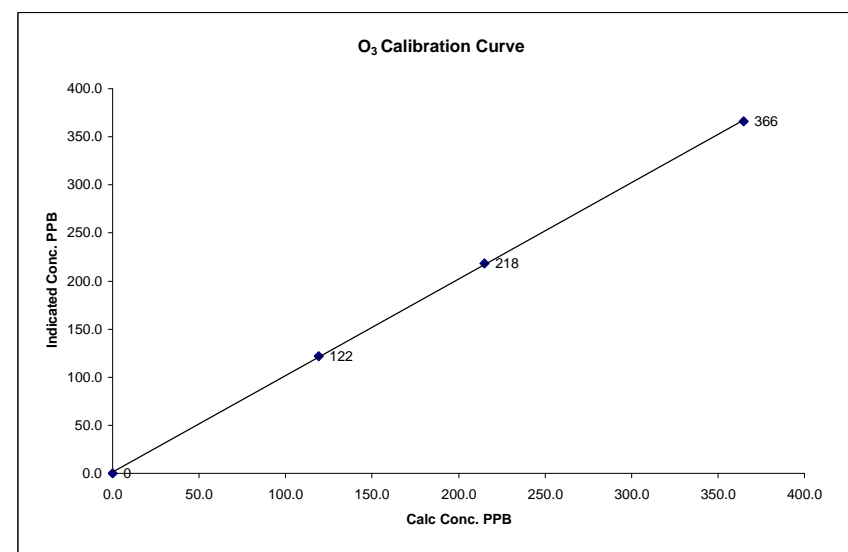
Note: NA : Not Applicable

Calibration Performed by: Ting Xu

O₃ Calibration Curve

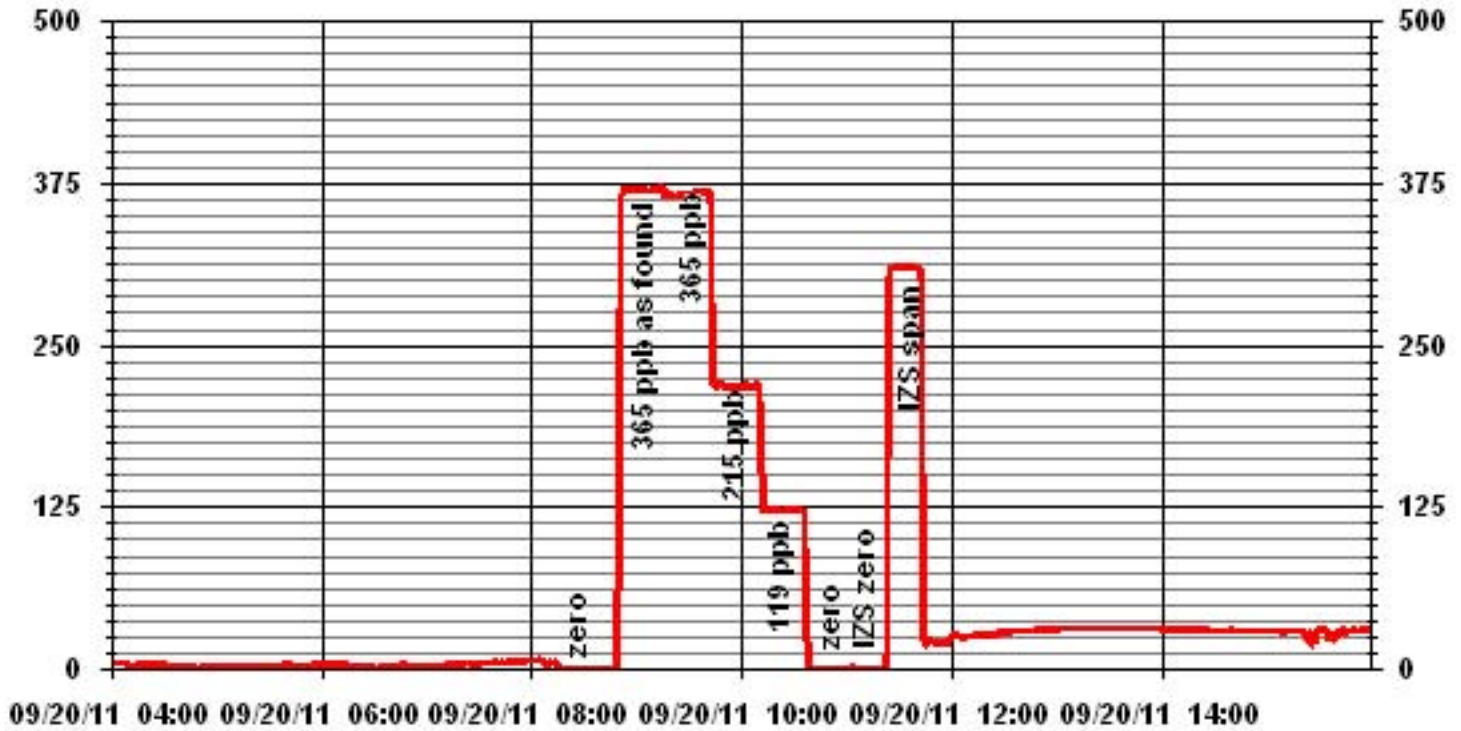
Calibration Date	September 20, 2011		
Company	Lakeland Industry & Community Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	8:11	End Time (MST)	11:47

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)	0.999910 1.002012 1.398474
0	0	n/a			
119	122	0.9754			
215	218	0.9862			
365	366	0.9973			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	September 19, 2011	Previous Calibration	August 24, 2011
Company:	Lakeland Industry and Community Association		
Plant / Location:	Portable Station Devon Wellsite 13-16-62-5W4M		
Start Time (MST)	13:18	End Time (MST)	17:03
Reason:	Monthly Calibration		
Barometric Pressure:	0.932 atm	Station Temperature:	25 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 980 PPM	C3H8 304 PPM	
	TOTAL CH4 1816.0 PPM	Gas Cyl. # LL84144	Cal Gas Expiry Date: December 3, 2013
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
3000	0.0	0.0	0.5	NA
3000	0.0	0.0	0.0	NA
3000	70.0	41.4	42.2	0.9812
3000	70.0	41.4	41.5	0.9978
3000	35.0	20.9	20.4	1.0266
3000	20.0	12.0	11.8	1.0192
3000	0.0	0.0	0.0	NA
New Correction Factor:				0.9978

Percent Change

Previous Calibration Correction Factor:	0.9978
Current Correction Factor Before Span Adjust:	0.9812
Percent Change:	1.7%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.5	0.0
Auto Span	34.4	33.9
Sample Lines Connected		YES

Cylinder Pressures			
Span	400 psi	Hydrogen	800 psi
		Zero Air	38 psi

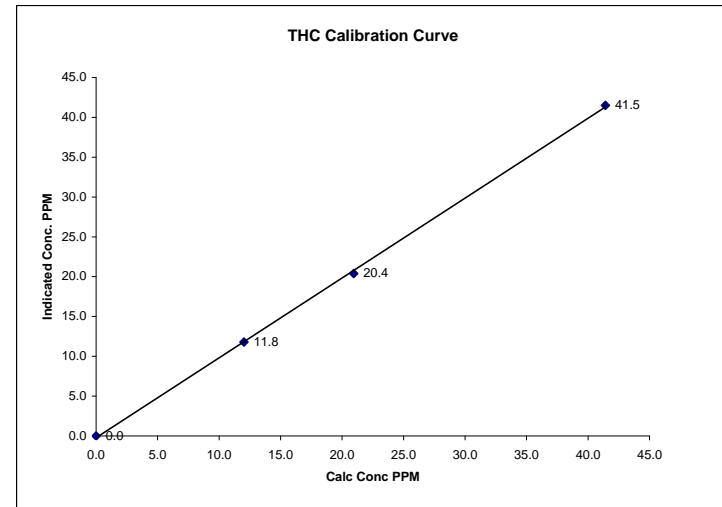
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

THC Calibration Curve

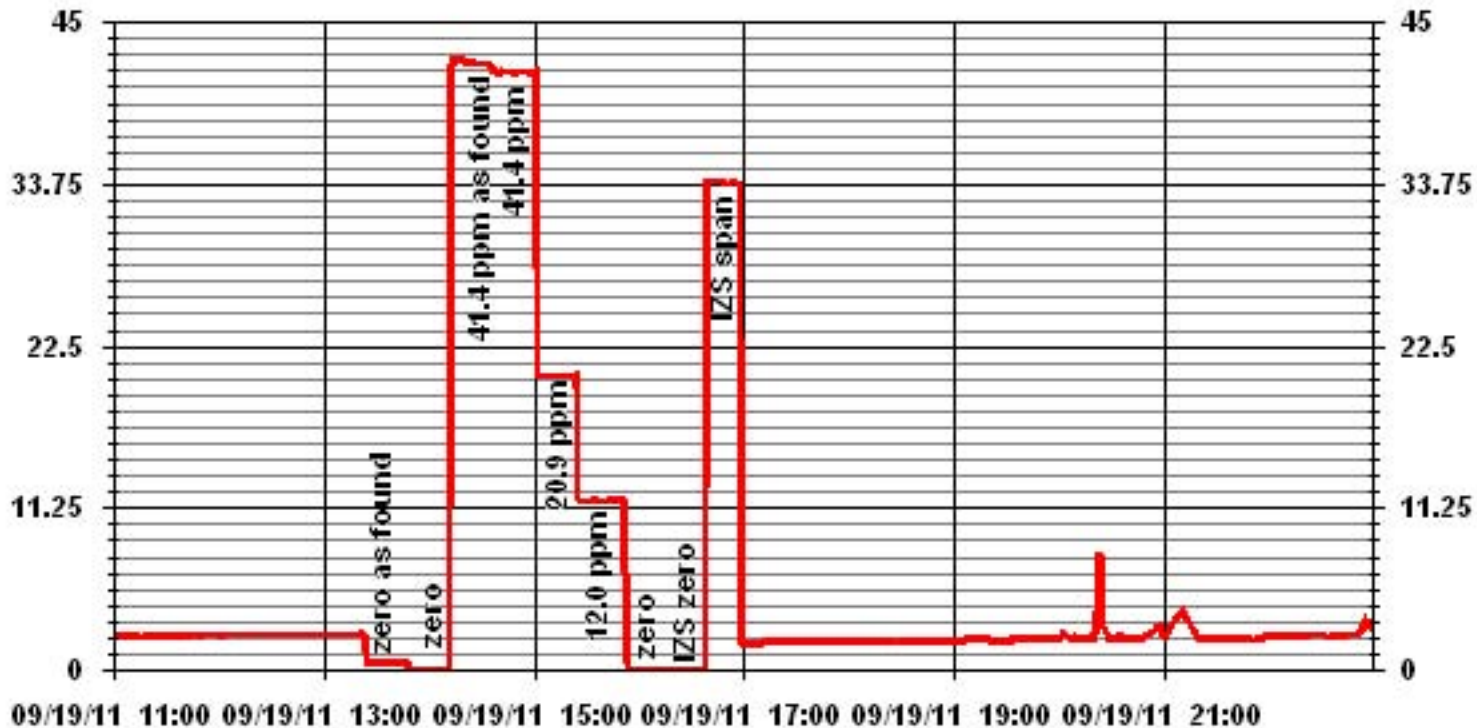
Calibration Date	September 19, 2011
Company	Lakeland Industry and Community Association
Plant / Location	Portable Station Devon Wellsite 13-16-62-5W4M
Start Time (MST)	13:18
End Time (MST)	17:03

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope (0.85 to 1.15)	Correlation Coefficient Intercept (±3% F.S.)
0.0	0.0	NA	1.002549	-0.21639
12.0	11.8	1.0192		
20.9	20.4	1.0266		
41.4	41.5	0.9978		



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: 7857
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Aug 12, 11 @ 8:20 mst
Field Sample ID: LICA VOC/PORT/ Aug 19, 11 Canister Removal Date/Time: Aug 16, 2011 @ 12:15 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
19-Aug-11	08/19/2011 0:00	08/20/2011 0:00	

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)

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 # 05526

Technician Signiture: Jacob Roch_____

Your C.O.C. #: 05526

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

Report Date: 2011/09/26

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1E4488****Received: 2011/09/20, 09:41**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/09/22	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/09/22	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 14

Maxxam Job #: B1E4488
 Report Date: 2011/09/26

RESULTS OF ANALYSES OF AIR

Maxxam ID		KY3716	KY3717	
Sampling Date		2011/08/13	2011/08/13	
COC Number		05526	05526	
	Units	LICAVOC/CLS/AUG13,11 #7793	LICAVOC/ PORT/AUG13,11 #7857	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	20	2624635

QC Batch = Quality Control Batch

Maxxam Job #: B1E4488
 Report Date: 2011/09/26

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KY3716				
Sampling Date		2011/08/13				
COC Number		05526				
	Units	LICAVOC/CLS/AUG13,11	RDL	ug/m3	DL (ug/m3)	QC Batch
		#7793				

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2624734
Carbon Disulfide	ppbv	5.61	0.50	17.5	1.56	2624734
Propene	ppbv	<0.30	0.30	<0.516	0.516	2624734
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2624734
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2624734
Dichlorodifluoromethane (FREON 12)	ppbv	0.74	0.20	3.68	0.989	2624734
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2624734
Chloromethane	ppbv	0.47	0.30	0.976	0.620	2624734
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2624734
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2624734
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2624734
Trichlorofluoromethane (FREON 11)	ppbv	0.39	0.20	2.17	1.12	2624734
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2624734
Ethanol	ppbv	3.0	2.3	5.73	4.33	2624734
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2624734
2-Propanone	ppbv	4.65	0.80	11.1	1.90	2624734
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2624734
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2624734
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2624734
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2624734
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2624734
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2624734
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2624734
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2624734
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2624734
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2624734
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2624734
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2624734
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2624734
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2624734
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2624734
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2624734

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1E4488
 Report Date: 2011/09/26

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KY3716				
Sampling Date		2011/08/13				
COC Number		05526				
	Units	LICAVOC/CLS/AUG13,11	RDL	ug/m3	DL (ug/m3)	QC Batch
		#7793				

1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2624734
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2624734
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2624734
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2624734
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2624734
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2624734
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2624734
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2624734
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2624734
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2624734
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2624734
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2624734
Toluene	ppbv	0.73	0.20	2.75	0.753	2624734
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2624734
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2624734
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2624734
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2624734
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2624734
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2624734
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2624734
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2624734
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2624734
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2624734
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2624734
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2624734
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2624734
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2624734
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2624734
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2624734
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2624734
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2624734
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2624734
Surrogate Recovery (%)						
Bromochloromethane	%	90		N/A	N/A	2624734

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

Maxxam Job #: B1E4488
 Report Date: 2011/09/26

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KY3716				
Sampling Date		2011/08/13				
COC Number		05526				
	Units	LICAVOC/CLS/AUG13,11	RDL	ug/m3	DL (ug/m3)	QC Batch
		#7793				

D5-Chlorobenzene	%	94		N/A	N/A	2624734
Difluorobenzene	%	93		N/A	N/A	2624734

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

Maxxam Job #: B1E4488
 Report Date: 2011/09/26

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KY3717				
Sampling Date		2011/08/13				
COC Number		05526				
	Units	LICAVOC/ PORT/AUG13,11 #7857	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2624734
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2624734
Propene	ppbv	<0.30	0.30	<0.516	0.516	2624734
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2624734
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2624734
Dichlorodifluoromethane (FREON 12)	ppbv	0.76	0.20	3.75	0.989	2624734
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2624734
Chloromethane	ppbv	0.49	0.30	1.01	0.620	2624734
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2624734
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2624734
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2624734
Trichlorofluoromethane (FREON 11)	ppbv	0.37	0.20	2.07	1.12	2624734
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2624734
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2624734
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2624734
2-Propanone	ppbv	5.70	0.80	13.5	1.90	2624734
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2624734
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2624734
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2624734
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2624734
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2624734
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2624734
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2624734
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2624734
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2624734
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2624734
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2624734
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2624734
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2624734
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2624734
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2624734
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B1E4488
 Report Date: 2011/09/26

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KY3717				
Sampling Date		2011/08/13				
COC Number		05526				
	Units	LICAVOC/ PORT/AUG13,11 #7857	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2624734
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2624734
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2624734
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2624734
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2624734
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2624734
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2624734
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2624734
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2624734
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2624734
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2624734
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2624734
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2624734
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2624734
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2624734
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2624734
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2624734
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2624734
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2624734
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2624734
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2624734
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2624734
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2624734
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2624734
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2624734
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2624734
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2624734
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2624734
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2624734
Cyclohexane	ppbv	0.24	0.20	0.837	0.688	2624734
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2624734
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2624734
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2624734
QC Batch = Quality Control Batch						

Maxxam Job #: B1E4488
 Report Date: 2011/09/26

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KY3717				
Sampling Date		2011/08/13				
COC Number		05526				
	Units	LICAVOC/ PORT/AUG13,11 #7857	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	90		N/A	N/A	2624734
D5-Chlorobenzene	%	91		N/A	N/A	2624734
Difluorobenzene	%	92		N/A	N/A	2624734

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

Maxxam Job #: B1E4488
Report Date: 2011/09/26

Test Summary

Maxxam ID KY3716 **Collected** 2011/08/13
Sample ID LICAVOC/CLS/AUG13,11 #7793 **Shipped**
Matrix AIR **Received** 2011/09/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2624635	N/A	2011/09/22	YAO LIANG SUN
Volatile Organics in Air (TO-15)	GC/MS	2624734	N/A	2011/09/22	YAO LIANG SUN

Maxxam ID KY3717 **Collected** 2011/08/13
Sample ID LICAVOC/ PORT/AUG13,11 #7857 **Shipped**
Matrix AIR **Received** 2011/09/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2624635	N/A	2011/09/22	YAO LIANG SUN
Volatile Organics in Air (TO-15)	GC/MS	2624734	N/A	2011/09/22	YAO LIANG SUN

Maxxam Job #: B1E4488
Report Date: 2011/09/26

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB1E4488

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2624734 LSY	Spiked Blank	Bromochloromethane	2011/09/22		96	%	60 - 140
		D5-Chlorobenzene	2011/09/22		99	%	60 - 140
		Difluorobenzene	2011/09/22		99	%	60 - 140
		2,2,4-Trimethylpentane	2011/09/22		87	%	70 - 130
		Carbon Disulfide	2011/09/22		83	%	70 - 130
		Propene	2011/09/22		70	%	70 - 130
		Vinyl Acetate	2011/09/22		89	%	70 - 130
		Vinyl Bromide	2011/09/22		107	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/09/22		102	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/09/22		110	%	70 - 130
		Chloromethane	2011/09/22		86	%	70 - 130
		Vinyl Chloride	2011/09/22		87	%	70 - 130
		Chloroethane	2011/09/22		90	%	70 - 130
		1,3-Butadiene	2011/09/22		72	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/09/22		115	%	70 - 130
		Trichlorotrifluoroethane	2011/09/22		103	%	70 - 130
		Ethanol	2011/09/22		74	%	70 - 130
		2-propanol	2011/09/22		83	%	70 - 130
		2-Propanone	2011/09/22		82	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/09/22		78	%	70 - 130
		Methyl Isobutyl Ketone	2011/09/22		87	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/09/22		86	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/09/22		105	%	70 - 130
		Ethyl Acetate	2011/09/22		85	%	70 - 130
		1,1-Dichloroethylene	2011/09/22		97	%	70 - 130
		cis-1,2-Dichloroethylene	2011/09/22		96	%	70 - 130
		trans-1,2-Dichloroethylene	2011/09/22		94	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/09/22		80	%	70 - 130
		Chloroform	2011/09/22		105	%	70 - 130
		Carbon Tetrachloride	2011/09/22		130	%	70 - 130
		1,1-Dichloroethane	2011/09/22		95	%	70 - 130
		1,2-Dichloroethane	2011/09/22		113	%	70 - 130
		Ethylene Dibromide	2011/09/22		107	%	70 - 130
		1,1,1-Trichloroethane	2011/09/22		121	%	70 - 130
		1,1,2-Trichloroethane	2011/09/22		106	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/09/22		85	%	70 - 130
		cis-1,3-Dichloropropene	2011/09/22		107	%	70 - 130
		trans-1,3-Dichloropropene	2011/09/22		109	%	70 - 130
		1,2-Dichloropropane	2011/09/22		91	%	70 - 130
		Bromomethane	2011/09/22		101	%	70 - 130
		Bromoform	2011/09/22		135 (1)	%	70 - 130
		Bromodichloromethane	2011/09/22		109	%	70 - 130
		Dibromochloromethane	2011/09/22		127	%	70 - 130
		Heptane	2011/09/22		88	%	70 - 130
		Trichloroethylene	2011/09/22		112	%	70 - 130
		Tetrachloroethylene	2011/09/22		121	%	70 - 130
		Benzene	2011/09/22		97	%	70 - 130
		Toluene	2011/09/22		109	%	70 - 130
		Ethylbenzene	2011/09/22		112	%	70 - 130
		p+m-Xylene	2011/09/22		115	%	70 - 130
		o-Xylene	2011/09/22		115	%	70 - 130
		Styrene	2011/09/22		113	%	70 - 130
		1,3,5-Trimethylbenzene	2011/09/22		106	%	70 - 130
		1,2,4-Trimethylbenzene	2011/09/22		101	%	70 - 130
		4-ethyltoluene	2011/09/22		108	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1E4488

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2624734 LSY	Spiked Blank	Chlorobenzene	2011/09/22		108	%	70 - 130
		Benzyl chloride	2011/09/22		89	%	70 - 130
		1,3-Dichlorobenzene	2011/09/22		98	%	70 - 130
		1,4-Dichlorobenzene	2011/09/22		98	%	70 - 130
		1,2-Dichlorobenzene	2011/09/22		92	%	70 - 130
		1,2,4-Trichlorobenzene	2011/09/22		92	%	70 - 130
		Hexachlorobutadiene	2011/09/22		114	%	70 - 130
		Hexane	2011/09/22		89	%	70 - 130
		Cyclohexane	2011/09/22		92	%	70 - 130
		Tetrahydrofuran	2011/09/22		83	%	70 - 130
		1,4-Dioxane	2011/09/22		90	%	70 - 130
		Xylene (Total)	2011/09/22		115	%	70 - 130
	Method Blank	Bromochloromethane	2011/09/22		91	%	60 - 140
		D5-Chlorobenzene	2011/09/22		90	%	60 - 140
		Difluorobenzene	2011/09/22		92	%	60 - 140
		2,2,4-Trimethylpentane	2011/09/22	<0.20		ppbv	
		Carbon Disulfide	2011/09/22	<0.50		ppbv	
		Propene	2011/09/22	<0.30		ppbv	
		Vinyl Acetate	2011/09/22	<0.20		ppbv	
		Vinyl Bromide	2011/09/22	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/09/22	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/09/22	<0.17		ppbv	
		Chloromethane	2011/09/22	<0.30		ppbv	
		Vinyl Chloride	2011/09/22	<0.18		ppbv	
		Chloroethane	2011/09/22	<0.30		ppbv	
		1,3-Butadiene	2011/09/22	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/09/22	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/09/22	<0.15		ppbv	
		Ethanol	2011/09/22	<2.3		ppbv	
		2-propanol	2011/09/22	<3.0		ppbv	
		2-Propanone	2011/09/22	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/09/22	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/09/22	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/09/22	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/09/22	<0.20		ppbv	
		Ethyl Acetate	2011/09/22	<2.2		ppbv	
		1,1-Dichloroethylene	2011/09/22	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/09/22	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/09/22	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/09/22	<0.80		ppbv	
		Chloroform	2011/09/22	<0.15		ppbv	
		Carbon Tetrachloride	2011/09/22	<0.30		ppbv	
		1,1-Dichloroethane	2011/09/22	<0.20		ppbv	
		1,2-Dichloroethane	2011/09/22	<0.20		ppbv	
		Ethylene Dibromide	2011/09/22	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/09/22	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/09/22	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/09/22	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/09/22	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/09/22	<0.17		ppbv	
		1,2-Dichloropropane	2011/09/22	<0.40		ppbv	
		Bromomethane	2011/09/22	<0.18		ppbv	
		Bromoform	2011/09/22	<0.20		ppbv	
		Bromodichloromethane	2011/09/22	<0.20		ppbv	
		Dibromochloromethane	2011/09/22	<0.20		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1E4488

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2624734 LSY	Method Blank	Heptane	2011/09/22	<0.30		ppbv	
		Trichloroethylene	2011/09/22	<0.30		ppbv	
		Tetrachloroethylene	2011/09/22	<0.20		ppbv	
		Benzene	2011/09/22	<0.18		ppbv	
		Toluene	2011/09/22	<0.20		ppbv	
		Ethylbenzene	2011/09/22	<0.20		ppbv	
		p+m-Xylene	2011/09/22	<0.37		ppbv	
		o-Xylene	2011/09/22	<0.20		ppbv	
		Styrene	2011/09/22	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/09/22	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/09/22	<0.50		ppbv	
		4-ethyltoluene	2011/09/22	<2.2		ppbv	
		Chlorobenzene	2011/09/22	<0.20		ppbv	
		Benzyl chloride	2011/09/22	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/09/22	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/09/22	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/09/22	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/09/22	<2.0		ppbv	
		Hexachlorobutadiene	2011/09/22	<3.0		ppbv	
		Hexane	2011/09/22	<0.30		ppbv	
		Cyclohexane	2011/09/22	<0.20		ppbv	
		Tetrahydrofuran	2011/09/22	<0.40		ppbv	
		1,4-Dioxane	2011/09/22	<2.0		ppbv	
		Xylene (Total)	2011/09/22	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane		TBA		%	25
		Carbon Disulfide		TBA		%	25
		Propene		TBA		%	25
		Vinyl Acetate		TBA		%	25
		Vinyl Bromide		TBA		%	25
		Dichlorodifluoromethane (FREON 12)		TBA		%	25
		1,2-Dichlorotetrafluoroethane		TBA		%	25
		Chloromethane		TBA		%	25
		Vinyl Chloride		TBA		%	25
		Chloroethane		TBA		%	25
		1,3-Butadiene		TBA		%	25
		Trichlorofluoromethane (FREON 11)		TBA		%	25
		Trichlorotrifluoroethane		TBA		%	25
		Ethanol		TBA		%	25
		2-propanol		TBA		%	25
		2-Propanone		TBA		%	25
		Methyl Ethyl Ketone (2-Butanone)		TBA		%	25
		Methyl Isobutyl Ketone		TBA		%	25
		Methyl Butyl Ketone (2-Hexanone)		TBA		%	25
		Methyl t-butyl ether (MTBE)		TBA		%	25
		Ethyl Acetate		TBA		%	25
		1,1-Dichloroethylene		TBA		%	25
		cis-1,2-Dichloroethylene		TBA		%	25
		trans-1,2-Dichloroethylene		TBA		%	25
		Methylene Chloride(Dichloromethane)		TBA		%	25
		Chloroform		TBA		%	25
		Carbon Tetrachloride		TBA		%	25
		1,1-Dichloroethane		TBA		%	25
		1,2-Dichloroethane		TBA		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1E4488

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2624734 LSY	RPD - Sample/Sample Dup	Ethylene Dibromide		TBA		%	25
		1,1,1-Trichloroethane		TBA		%	25
		1,1,2-Trichloroethane		TBA		%	25
		1,1,2,2-Tetrachloroethane		TBA		%	25
		cis-1,3-Dichloropropene		TBA		%	25
		trans-1,3-Dichloropropene		TBA		%	25
		1,2-Dichloropropane		TBA		%	25
		Bromomethane		TBA		%	25
		Bromoform		TBA		%	25
		Bromodichloromethane		TBA		%	25
		Dibromochloromethane		TBA		%	25
		Heptane		TBA		%	25
		Trichloroethylene		TBA		%	25
		Tetrachloroethylene		TBA		%	25
		Benzene		TBA		%	25
		Toluene		TBA		%	25
		Ethylbenzene		TBA		%	25
		p+m-Xylene		TBA		%	25
		o-Xylene		TBA		%	25
		Styrene		TBA		%	25
		1,3,5-Trimethylbenzene		TBA		%	25
		1,2,4-Trimethylbenzene		TBA		%	25
		4-ethyltoluene		TBA		%	25
		Chlorobenzene		TBA		%	25
		Benzyl chloride		TBA		%	25
		1,3-Dichlorobenzene		TBA		%	25
		1,4-Dichlorobenzene		TBA		%	25
		1,2-Dichlorobenzene		TBA		%	25
		1,2,4-Trichlorobenzene		TBA		%	25
		Hexachlorobutadiene		TBA		%	25
		Hexane		TBA		%	25
		Cyclohexane		TBA		%	25
		Tetrahydrofuran		TBA		%	25
		1,4-Dioxane		TBA		%	25
		Xylene (Total)		TBA		%	25

TBA = Result to follow

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: 7852
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Sept 01, 11 @ 15:25 mst
Field Sample ID: LICA VOC/PORT/ Sept 06, 11 Canister Removal Date/Time: Sept 07, 11 @ 9:51 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
06-Sep-11	09/06/2011 0:00	09/07/2011 0:00	24.0000

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 # 05862

Technician Signiture: Ting Xu_____

Your C.O.C. #: 05862

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

Report Date: 2011/09/20

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1D8383****Received: 2011/09/09, 10:34**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/09/15	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/09/15	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 #: B1D8383
 Report Date: 2011/09/20

RESULTS OF ANALYSES OF AIR

Maxxam ID		KV1532	KV1533	
Sampling Date		2011/09/06 00:00	2011/09/06 00:00	
COC Number		05862	05862	
	Units	LICA/VOC/CLS/SEP 06,2011 - 127	LICA/VOC/PORT/SEP 06,2011 - 7852	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	20	2616696

QC Batch = Quality Control Batch

Maxxam Job #: B1D8383
 Report Date: 2011/09/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KV1532				
Sampling Date		2011/09/06 00:00				
COC Number		05862				
	Units	LICA/VO/CLS/SEP	RDL	ug/m3	DL (ug/m3)	QC Batch
		06,2011 - 127				

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2617054
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2617054
Propene	ppbv	<0.30	0.30	<0.516	0.516	2617054
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2617054
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2617054
Dichlorodifluoromethane (FREON 12)	ppbv	0.72	0.20	3.54	0.989	2617054
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2617054
Chloromethane	ppbv	0.46	0.30	0.956	0.620	2617054
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2617054
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2617054
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2617054
Trichlorofluoromethane (FREON 11)	ppbv	0.36	0.20	2.02	1.12	2617054
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2617054
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2617054
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2617054
2-Propanone	ppbv	3.75	0.80	8.91	1.90	2617054
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2617054
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2617054
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2617054
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2617054
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2617054
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2617054
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2617054
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2617054
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2617054
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2617054
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2617054
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2617054
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2617054
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2617054
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2617054

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1D8383
 Report Date: 2011/09/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KV1532				
Sampling Date		2011/09/06				
		00:00				
COC Number		05862				
	Units	LICA/VO/CLS/SEP	RDL	ug/m3	DL (ug/m3)	QC Batch
		06,2011 - 127				
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2617054
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2617054
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2617054
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2617054
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2617054
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2617054
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2617054
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2617054
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2617054
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2617054
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2617054
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2617054
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2617054
Toluene	ppbv	2.52	0.20	9.50	0.753	2617054
Ethylbenzene	ppbv	1.65	0.20	7.15	0.868	2617054
p+m-Xylene	ppbv	3.65	0.37	15.8	1.61	2617054
o-Xylene	ppbv	0.63	0.20	2.73	0.868	2617054
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2617054
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2617054
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2617054
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2617054
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2617054
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2617054
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2617054
1,4-Dichlorobenzene	ppbv	1.27	0.40	7.63	2.40	2617054
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2617054
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2617054
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2617054
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2617054
Cyclohexane	ppbv	0.36	0.20	1.24	0.688	2617054
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2617054
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2617054
Xylene (Total)	ppbv	4.28	0.60	18.6	2.61	2617054
QC Batch = Quality Control Batch						

Maxxam Job #: B1D8383
 Report Date: 2011/09/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KV1532				
Sampling Date		2011/09/06 00:00				
COC Number		05862				
	Units	LICA/VOC/CLS/SEP	RDL	ug/m3	DL (ug/m3)	QC Batch
		06,2011 - 127				

Surrogate Recovery (%)						
Bromochloromethane	%	85		N/A	N/A	2617054
D5-Chlorobenzene	%	89		N/A	N/A	2617054
Difluorobenzene	%	86		N/A	N/A	2617054

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

Maxxam Job #: B1D8383
 Report Date: 2011/09/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KV1533				
Sampling Date		2011/09/06 00:00				
COC Number		05862				
	Units	LICA/VOC/PORT/SEP 06,2011 - 7852	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2617054
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2617054
Propene	ppbv	<0.30	0.30	<0.516	0.516	2617054
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2617054
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2617054
Dichlorodifluoromethane (FREON 12)	ppbv	0.71	0.20	3.50	0.989	2617054
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2617054
Chloromethane	ppbv	0.48	0.30	1.00	0.620	2617054
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2617054
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2617054
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2617054
Trichlorofluoromethane (FREON 11)	ppbv	0.34	0.20	1.91	1.12	2617054
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2617054
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2617054
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2617054
2-Propanone	ppbv	5.23	0.80	12.4	1.90	2617054
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2617054
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2617054
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2617054
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2617054
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2617054
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2617054
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2617054
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2617054
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2617054
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2617054
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2617054
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2617054
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2617054
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2617054
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2617054
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B1D8383
 Report Date: 2011/09/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KV1533				
Sampling Date		2011/09/06 00:00				
COC Number		05862				
	Units	LICA/VOC/PORT/SEP	RDL	ug/m3	DL (ug/m3)	QC Batch
		06,2011 - 7852				
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2617054
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2617054
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2617054
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2617054
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2617054
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2617054
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2617054
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2617054
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2617054
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2617054
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2617054
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2617054
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2617054
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2617054
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2617054
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2617054
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2617054
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2617054
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2617054
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2617054
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2617054
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2617054
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2617054
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2617054
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2617054
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2617054
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2617054
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2617054
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2617054
Cyclohexane	ppbv	0.41	0.20	1.41	0.688	2617054
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2617054
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2617054
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2617054
QC Batch = Quality Control Batch						

Maxxam Job #: B1D8383
 Report Date: 2011/09/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KV1533				
Sampling Date		2011/09/06 00:00				
COC Number		05862				
	Units	LICA/VOC/PORT/SEP 06,2011 - 7852	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	85		N/A	N/A	2617054
D5-Chlorobenzene	%	89		N/A	N/A	2617054
Difluorobenzene	%	86		N/A	N/A	2617054

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

Maxxam Job #: B1D8383
 Report Date: 2011/09/20

Test Summary

Maxxam ID KV1532 **Collected** 2011/09/06
Sample ID LICA/VOC/CLS/SEP 06,2011 - 127 **Shipped**
Matrix AIR **Received** 2011/09/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2616696	N/A	2011/09/15	YAO LIANG SUN
Volatile Organics in Air (TO-15)	GC/MS	2617054	N/A	2011/09/15	YAO LIANG SUN

Maxxam ID KV1533 **Collected** 2011/09/06
Sample ID LICA/VOC/PORT/SEP 06,2011 - 7852 **Shipped**
Matrix AIR **Received** 2011/09/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2616696	N/A	2011/09/15	YAO LIANG SUN
Volatile Organics in Air (TO-15)	GC/MS	2617054	N/A	2011/09/15	YAO LIANG SUN

Maxxam Job #: B1D8383
Report Date: 2011/09/20

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB1D8383

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2617054 LSY	Spiked Blank	Bromochloromethane	2011/09/15		94	%	60 - 140
		D5-Chlorobenzene	2011/09/15		96	%	60 - 140
		Difluorobenzene	2011/09/15		96	%	60 - 140
		2,2,4-Trimethylpentane	2011/09/15		88	%	70 - 130
		Carbon Disulfide	2011/09/15		84	%	70 - 130
		Propene	2011/09/15		74	%	70 - 130
		Vinyl Acetate	2011/09/15		91	%	70 - 130
		Vinyl Bromide	2011/09/15		119	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/09/15		102	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/09/15		117	%	70 - 130
		Chloromethane	2011/09/15		94	%	70 - 130
		Vinyl Chloride	2011/09/15		98	%	70 - 130
		Chloroethane	2011/09/15		103	%	70 - 130
		1,3-Butadiene	2011/09/15		79	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/09/15		110	%	70 - 130
		Trichlorotrifluoroethane	2011/09/15		101	%	70 - 130
		Ethanol	2011/09/15		90	%	70 - 130
		2-propanol	2011/09/15		84	%	70 - 130
		2-Propanone	2011/09/15		81	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/09/15		80	%	70 - 130
		Methyl Isobutyl Ketone	2011/09/15		86	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/09/15		86	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/09/15		104	%	70 - 130
		Ethyl Acetate	2011/09/15		87	%	70 - 130
		1,1-Dichloroethylene	2011/09/15		98	%	70 - 130
		cis-1,2-Dichloroethylene	2011/09/15		97	%	70 - 130
		trans-1,2-Dichloroethylene	2011/09/15		94	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/09/15		80	%	70 - 130
		Chloroform	2011/09/15		104	%	70 - 130
		Carbon Tetrachloride	2011/09/15		121	%	70 - 130
		1,1-Dichloroethane	2011/09/15		94	%	70 - 130
		1,2-Dichloroethane	2011/09/15		109	%	70 - 130
		Ethylene Dibromide	2011/09/15		106	%	70 - 130
		1,1,1-Trichloroethane	2011/09/15		114	%	70 - 130
		1,1,2-Trichloroethane	2011/09/15		104	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/09/15		84	%	70 - 130
		cis-1,3-Dichloropropene	2011/09/15		106	%	70 - 130
		trans-1,3-Dichloropropene	2011/09/15		107	%	70 - 130
		1,2-Dichloropropane	2011/09/15		92	%	70 - 130
		Bromomethane	2011/09/15		112	%	70 - 130
		Bromoform	2011/09/15		127	%	70 - 130
		Bromodichloromethane	2011/09/15		106	%	70 - 130
		Dibromochloromethane	2011/09/15		121	%	70 - 130
		Heptane	2011/09/15		89	%	70 - 130
		Trichloroethylene	2011/09/15		110	%	70 - 130
		Tetrachloroethylene	2011/09/15		118	%	70 - 130
		Benzene	2011/09/15		97	%	70 - 130
		Toluene	2011/09/15		107	%	70 - 130
		Ethylbenzene	2011/09/15		109	%	70 - 130
		p+m-Xylene	2011/09/15		112	%	70 - 130
		o-Xylene	2011/09/15		110	%	70 - 130
		Styrene	2011/09/15		111	%	70 - 130
		1,3,5-Trimethylbenzene	2011/09/15		98	%	70 - 130
		1,2,4-Trimethylbenzene	2011/09/15		94	%	70 - 130
		4-ethyltoluene	2011/09/15		101	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1D8383

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2617054 LSY	Spiked Blank	Chlorobenzene	2011/09/15		107	%	70 - 130
		Benzyl chloride	2011/09/15		84	%	70 - 130
		1,3-Dichlorobenzene	2011/09/15		93	%	70 - 130
		1,4-Dichlorobenzene	2011/09/15		93	%	70 - 130
		1,2-Dichlorobenzene	2011/09/15		88	%	70 - 130
		1,2,4-Trichlorobenzene	2011/09/15		85	%	70 - 130
		Hexachlorobutadiene	2011/09/15		98	%	70 - 130
		Hexane	2011/09/15		91	%	70 - 130
		Cyclohexane	2011/09/15		93	%	70 - 130
		Tetrahydrofuran	2011/09/15		86	%	70 - 130
		1,4-Dioxane	2011/09/15		91	%	70 - 130
		Xylene (Total)	2011/09/15		111	%	70 - 130
	Method Blank	Bromochloromethane	2011/09/15		89	%	60 - 140
		D5-Chlorobenzene	2011/09/15		90	%	60 - 140
		Difluorobenzene	2011/09/15		90	%	60 - 140
		2,2,4-Trimethylpentane	2011/09/15	<0.20		ppbv	
		Carbon Disulfide	2011/09/15	<0.50		ppbv	
		Propene	2011/09/15	<0.30		ppbv	
		Vinyl Acetate	2011/09/15	<0.20		ppbv	
		Vinyl Bromide	2011/09/15	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/09/15	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/09/15	<0.17		ppbv	
		Chloromethane	2011/09/15	<0.30		ppbv	
		Vinyl Chloride	2011/09/15	<0.18		ppbv	
		Chloroethane	2011/09/15	<0.30		ppbv	
		1,3-Butadiene	2011/09/15	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/09/15	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/09/15	<0.15		ppbv	
		Ethanol	2011/09/15	<2.3		ppbv	
		2-propanol	2011/09/15	<3.0		ppbv	
		2-Propanone	2011/09/15	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/09/15	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/09/15	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/09/15	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/09/15	<0.20		ppbv	
		Ethyl Acetate	2011/09/15	<2.2		ppbv	
		1,1-Dichloroethylene	2011/09/15	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/09/15	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/09/15	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/09/15	<0.80		ppbv	
		Chloroform	2011/09/15	<0.15		ppbv	
		Carbon Tetrachloride	2011/09/15	<0.30		ppbv	
		1,1-Dichloroethane	2011/09/15	<0.20		ppbv	
		1,2-Dichloroethane	2011/09/15	<0.20		ppbv	
		Ethylene Dibromide	2011/09/15	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/09/15	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/09/15	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/09/15	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/09/15	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/09/15	<0.17		ppbv	
		1,2-Dichloropropane	2011/09/15	<0.40		ppbv	
		Bromomethane	2011/09/15	<0.18		ppbv	
		Bromoform	2011/09/15	<0.20		ppbv	
		Bromodichloromethane	2011/09/15	<0.20		ppbv	
		Dibromochloromethane	2011/09/15	<0.20		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1D8383

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2617054 LSY	Method Blank	Heptane	2011/09/15	<0.30		ppbv	
		Trichloroethylene	2011/09/15	<0.30		ppbv	
		Tetrachloroethylene	2011/09/15	<0.20		ppbv	
		Benzene	2011/09/15	<0.18		ppbv	
		Toluene	2011/09/15	<0.20		ppbv	
		Ethylbenzene	2011/09/15	<0.20		ppbv	
		p+m-Xylene	2011/09/15	<0.37		ppbv	
		o-Xylene	2011/09/15	<0.20		ppbv	
		Styrene	2011/09/15	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/09/15	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/09/15	<0.50		ppbv	
		4-ethyltoluene	2011/09/15	<2.2		ppbv	
		Chlorobenzene	2011/09/15	<0.20		ppbv	
		Benzyl chloride	2011/09/15	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/09/15	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/09/15	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/09/15	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/09/15	<2.0		ppbv	
		Hexachlorobutadiene	2011/09/15	<3.0		ppbv	
		Hexane	2011/09/15	<0.30		ppbv	
		Cyclohexane	2011/09/15	<0.20		ppbv	
		Tetrahydrofuran	2011/09/15	<0.40		ppbv	
		1,4-Dioxane	2011/09/15	<2.0		ppbv	
		Xylene (Total)	2011/09/15	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/09/15	NC		%	25
		Carbon Disulfide	2011/09/15	NC		%	25
		Propene	2011/09/15	NC		%	25
		Vinyl Acetate	2011/09/15	NC		%	25
		Vinyl Bromide	2011/09/15	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/09/15	1.5		%	25
		1,2-Dichlorotetrafluoroethane	2011/09/15	NC		%	25
		Chloromethane	2011/09/15	NC		%	25
		Vinyl Chloride	2011/09/15	NC		%	25
		Chloroethane	2011/09/15	NC		%	25
		1,3-Butadiene	2011/09/15	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/09/15	0.09		%	25
		Trichlorotrifluoroethane	2011/09/15	NC		%	25
		Ethanol	2011/09/15	NC		%	25
		2-propanol	2011/09/15	NC		%	25
		2-Propanone	2011/09/15	NC		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/09/15	NC		%	25
		Methyl Isobutyl Ketone	2011/09/15	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/09/15	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/09/15	NC		%	25
		Ethyl Acetate	2011/09/15	NC		%	25
		1,1-Dichloroethylene	2011/09/15	NC		%	25
		cis-1,2-Dichloroethylene	2011/09/15	NC		%	25
		trans-1,2-Dichloroethylene	2011/09/15	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/09/15	NC		%	25
		Chloroform	2011/09/15	NC		%	25
		Carbon Tetrachloride	2011/09/15	NC		%	25
		1,1-Dichloroethane	2011/09/15	NC		%	25
		1,2-Dichloroethane	2011/09/15	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1D8383

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2617054 LSY	RPD - Sample/Sample Dup	Ethylene Dibromide	2011/09/15	NC		%	25
		1,1,1-Trichloroethane	2011/09/15	NC		%	25
		1,1,2-Trichloroethane	2011/09/15	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/09/15	NC		%	25
		cis-1,3-Dichloropropene	2011/09/15	NC		%	25
		trans-1,3-Dichloropropene	2011/09/15	NC		%	25
		1,2-Dichloropropane	2011/09/15	NC		%	25
		Bromomethane	2011/09/15	NC		%	25
		Bromoform	2011/09/15	NC		%	25
		Bromodichloromethane	2011/09/15	NC		%	25
		Dibromochloromethane	2011/09/15	NC		%	25
		Heptane	2011/09/15	NC		%	25
		Trichloroethylene	2011/09/15	NC		%	25
		Tetrachloroethylene	2011/09/15	NC		%	25
		Benzene	2011/09/15	NC		%	25
		Toluene	2011/09/15	2.6		%	25
		Ethylbenzene	2011/09/15	NC		%	25
		p+m-Xylene	2011/09/15	NC		%	25
		o-Xylene	2011/09/15	NC		%	25
		Styrene	2011/09/15	NC		%	25
		1,3,5-Trimethylbenzene	2011/09/15	NC		%	25
		1,2,4-Trimethylbenzene	2011/09/15	NC		%	25
		4-ethyltoluene	2011/09/15	NC		%	25
		Chlorobenzene	2011/09/15	NC		%	25
		Benzyl chloride	2011/09/15	NC		%	25
		1,3-Dichlorobenzene	2011/09/15	NC		%	25
		1,4-Dichlorobenzene	2011/09/15	NC		%	25
		1,2-Dichlorobenzene	2011/09/15	NC		%	25
		1,2,4-Trichlorobenzene	2011/09/15	NC		%	25
		Hexachlorobutadiene	2011/09/15	NC		%	25
		Hexane	2011/09/15	NC		%	25
		Cyclohexane	2011/09/15	NC		%	25
		Tetrahydrofuran	2011/09/15	NC		%	25
		1,4-Dioxane	2011/09/15	NC		%	25
		Xylene (Total)	2011/09/15	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.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: 7805
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Sept 09, 11 @ 9:27 mst
Field Sample ID: LICA VOC/PORT/ Sept 12, 11 Canister Removal Date/Time: Sept 13, 11 @ 8:51 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
12-Sep-11	09/12/2011 0:00	09/13/2011 0:00	24.0000

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 # 05922

Technician Signiture: Ting Xu_____

Your C.O.C. #: 05922

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

Report Date: 2011/09/23

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1E1777****Received: 2011/09/15, 09:50**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/09/19	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/09/19	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 13

Maxxam Job #: B1E1777
 Report Date: 2011/09/23

RESULTS OF ANALYSES OF AIR

Maxxam ID		KW9019	KW9020	
Sampling Date		2011/09/12	2011/09/12	
COC Number		05922	05922	
	Units	LICA VOC/ CLS/SEP12,11/ #7819	LICA VOC/ PORT/SEP12,11/ #7805	QC Batch

Volatile Organics				
Pressure on Receipt	psig	20	20	2620075

QC Batch = Quality Control Batch

Maxxam Job #: B1E1777
 Report Date: 2011/09/23

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KW9019				
Sampling Date		2011/09/12				
COC Number		05922				
	Units	LICA VOC/ CLS/SEP12,11/ #7819	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2620074
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2620074
Propene	ppbv	<0.30	0.30	<0.516	0.516	2620074
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2620074
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2620074
Dichlorodifluoromethane (FREON 12)	ppbv	0.71	0.20	3.53	0.989	2620074
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2620074
Chloromethane	ppbv	0.48	0.30	0.984	0.620	2620074
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2620074
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2620074
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2620074
Trichlorofluoromethane (FREON 11)	ppbv	0.34	0.20	1.90	1.12	2620074
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2620074
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2620074
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2620074
2-Propanone	ppbv	1.16	0.80	2.76	1.90	2620074
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2620074
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2620074
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2620074
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2620074
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2620074
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2620074
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2620074
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2620074
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2620074
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2620074
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2620074
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2620074
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2620074
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2620074
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2620074

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1E1777
 Report Date: 2011/09/23

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KW9019				
Sampling Date		2011/09/12				
COC Number		05922				
	Units	LICA VOC/ CLS/SEP12,11/ #7819	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2620074
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2620074
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2620074
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2620074
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2620074
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2620074
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2620074
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2620074
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2620074
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2620074
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2620074
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2620074
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2620074
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2620074
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2620074
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2620074
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2620074
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2620074
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2620074
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2620074
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2620074
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2620074
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2620074
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2620074
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2620074
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2620074
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2620074
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2620074
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2620074
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2620074
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2620074
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2620074
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2620074
QC Batch = Quality Control Batch						

Maxxam Job #: B1E1777
 Report Date: 2011/09/23

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KW9019				
Sampling Date		2011/09/12				
COC Number		05922				
	Units	LICA VOC/ CLS/SEP12,11/ #7819	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	82		N/A	N/A	2620074
D5-Chlorobenzene	%	81		N/A	N/A	2620074
Difluorobenzene	%	85		N/A	N/A	2620074

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

Maxxam Job #: B1E1777
 Report Date: 2011/09/23

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KW9020				
Sampling Date		2011/09/12				
COC Number		05922				
	Units	LICA VOC/ PORT/SEP12,11/ #7805	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2620074
Carbon Disulfide	ppbv	0.76	0.50	2.37	1.56	2620074
Propene	ppbv	<0.30	0.30	<0.516	0.516	2620074
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2620074
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2620074
Dichlorodifluoromethane (FREON 12)	ppbv	0.70	0.20	3.47	0.989	2620074
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2620074
Chloromethane	ppbv	0.44	0.30	0.903	0.620	2620074
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2620074
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2620074
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2620074
Trichlorofluoromethane (FREON 11)	ppbv	0.31	0.20	1.72	1.12	2620074
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2620074
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2620074
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2620074
2-Propanone	ppbv	1.27	0.80	3.03	1.90	2620074
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2620074
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2620074
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2620074
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2620074
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2620074
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2620074
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2620074
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2620074
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2620074
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2620074
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2620074
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2620074
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2620074
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2620074
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2620074
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B1E1777
 Report Date: 2011/09/23

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KW9020				
Sampling Date		2011/09/12				
COC Number		05922				
	Units	LICA VOC/ PORT/SEP12,11/ #7805	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2620074
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2620074
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2620074
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2620074
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2620074
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2620074
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2620074
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2620074
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2620074
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2620074
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2620074
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2620074
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2620074
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2620074
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2620074
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2620074
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2620074
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2620074
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2620074
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2620074
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2620074
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2620074
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2620074
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2620074
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2620074
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2620074
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2620074
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2620074
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2620074
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2620074
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2620074
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2620074
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2620074
QC Batch = Quality Control Batch						

Maxxam Job #: B1E1777
 Report Date: 2011/09/23

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KW9020				
Sampling Date		2011/09/12				
COC Number		05922				
	Units	LICA VOC/ PORT/SEP12,11/ #7805	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	81		N/A	N/A	2620074
D5-Chlorobenzene	%	81		N/A	N/A	2620074
Difluorobenzene	%	85		N/A	N/A	2620074

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

Maxxam Job #: B1E1777
 Report Date: 2011/09/23

Test Summary

Maxxam ID KW9019 **Collected** 2011/09/12
Sample ID LICA VOC/ CLS/SEP12,11/ #7819 **Shipped**
Matrix AIR **Received** 2011/09/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2620075	N/A	2011/09/19	VALERIE RANDALL
Volatile Organics in Air (TO-15)	GC/MS	2620074	N/A	2011/09/19	VALERIE RANDALL

Maxxam ID KW9020 **Collected** 2011/09/12
Sample ID LICA VOC/ PORT/SEP12,11/ #7805 **Shipped**
Matrix AIR **Received** 2011/09/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2620075	N/A	2011/09/19	VALERIE RANDALL
Volatile Organics in Air (TO-15)	GC/MS	2620074	N/A	2011/09/19	VALERIE RANDALL

Maxxam Job #: B1E1777
Report Date: 2011/09/23

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB1E1777

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2620074 VEA	Spiked Blank	Bromochloromethane	2011/09/19		96	%	60 - 140
		D5-Chlorobenzene	2011/09/19		101	%	60 - 140
		Difluorobenzene	2011/09/19		98	%	60 - 140
		2,2,4-Trimethylpentane	2011/09/19		87	%	70 - 130
		Carbon Disulfide	2011/09/19		85	%	70 - 130
		Propene	2011/09/19		80	%	70 - 130
		Vinyl Acetate	2011/09/19		83	%	70 - 130
		Vinyl Bromide	2011/09/19		98	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/09/19		93	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/09/19		108	%	70 - 130
		Chloromethane	2011/09/19		97	%	70 - 130
		Vinyl Chloride	2011/09/19		94	%	70 - 130
		Chloroethane	2011/09/19		97	%	70 - 130
		1,3-Butadiene	2011/09/19		93	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/09/19		99	%	70 - 130
		Trichlorotrifluoroethane	2011/09/19		93	%	70 - 130
		Ethanol	2011/09/19		103	%	70 - 130
		2-propanol	2011/09/19		91	%	70 - 130
		2-Propanone	2011/09/19		117	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/09/19		90	%	70 - 130
		Methyl Isobutyl Ketone	2011/09/19		91	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/09/19		93	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/09/19		79	%	70 - 130
		Ethyl Acetate	2011/09/19		89	%	70 - 130
		1,1-Dichloroethylene	2011/09/19		90	%	70 - 130
		cis-1,2-Dichloroethylene	2011/09/19		89	%	70 - 130
		trans-1,2-Dichloroethylene	2011/09/19		90	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/09/19		82	%	70 - 130
		Chloroform	2011/09/19		93	%	70 - 130
		Carbon Tetrachloride	2011/09/19		76	%	70 - 130
		1,1-Dichloroethane	2011/09/19		93	%	70 - 130
		1,2-Dichloroethane	2011/09/19		90	%	70 - 130
		Ethylene Dibromide	2011/09/19		91	%	70 - 130
		1,1,1-Trichloroethane	2011/09/19		78	%	70 - 130
		1,1,2-Trichloroethane	2011/09/19		93	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/09/19		86	%	70 - 130
		cis-1,3-Dichloropropene	2011/09/19		88	%	70 - 130
		trans-1,3-Dichloropropene	2011/09/19		83	%	70 - 130
		1,2-Dichloropropane	2011/09/19		91	%	70 - 130
		Bromomethane	2011/09/19		101	%	70 - 130
		Bromoform	2011/09/19		92	%	70 - 130
		Bromodichloromethane	2011/09/19		91	%	70 - 130
		Dibromochloromethane	2011/09/19		95	%	70 - 130
		Heptane	2011/09/19		88	%	70 - 130
		Trichloroethylene	2011/09/19		90	%	70 - 130
		Tetrachloroethylene	2011/09/19		92	%	70 - 130
		Benzene	2011/09/19		94	%	70 - 130
		Toluene	2011/09/19		94	%	70 - 130
		Ethylbenzene	2011/09/19		89	%	70 - 130
		p+m-Xylene	2011/09/19		87	%	70 - 130
		o-Xylene	2011/09/19		88	%	70 - 130
		Styrene	2011/09/19		91	%	70 - 130
		1,3,5-Trimethylbenzene	2011/09/19		84	%	70 - 130
		1,2,4-Trimethylbenzene	2011/09/19		81	%	70 - 130
		4-ethyltoluene	2011/09/19		107	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1E1777

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2620074 VEA	Spiked Blank	Chlorobenzene	2011/09/19		87	%	70 - 130	
		Benzyl chloride	2011/09/19		69 (1)	%	70 - 130	
1,3-Dichlorobenzene		2011/09/19		82	%	70 - 130		
1,4-Dichlorobenzene		2011/09/19		84	%	70 - 130		
1,2-Dichlorobenzene		2011/09/19		81	%	70 - 130		
1,2,4-Trichlorobenzene		2011/09/19		64 (1)	%	70 - 130		
Hexachlorobutadiene		2011/09/19		74	%	70 - 130		
Hexane		2011/09/19		100	%	70 - 130		
Cyclohexane		2011/09/19		90	%	70 - 130		
Tetrahydrofuran		2011/09/19		94	%	70 - 130		
Method Blank	Method Blank	1,4-Dioxane	2011/09/19		96	%	70 - 130	
		Bromochloromethane	2011/09/19		80	%	60 - 140	
		D5-Chlorobenzene	2011/09/19		80	%	60 - 140	
		Difluorobenzene	2011/09/19		84	%	60 - 140	
		2,2,4-Trimethylpentane	2011/09/19	<0.20			ppbv	
		Carbon Disulfide	2011/09/19	<0.50			ppbv	
		Propene	2011/09/19	<0.30			ppbv	
		Vinyl Acetate	2011/09/19	<0.20			ppbv	
		Vinyl Bromide	2011/09/19	<0.20			ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/09/19	<0.20			ppbv	
		1,2-Dichlorotetrafluoroethane	2011/09/19	<0.17			ppbv	
		Chloromethane	2011/09/19	<0.30			ppbv	
		Vinyl Chloride	2011/09/19	<0.18			ppbv	
		Chloroethane	2011/09/19	<0.30			ppbv	
		1,3-Butadiene	2011/09/19	<0.50			ppbv	
		Trichlorofluoromethane (FREON 11)	2011/09/19	<0.20			ppbv	
		Trichlorotrifluoroethane	2011/09/19	<0.15			ppbv	
		Ethanol	2011/09/19	<2.3			ppbv	
		2-propanol	2011/09/19	<3.0			ppbv	
		2-Propanone	2011/09/19	<0.80			ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/09/19	<3.0			ppbv	
		Methyl Isobutyl Ketone	2011/09/19	<3.2			ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/09/19	<2.0			ppbv	
		Methyl t-butyl ether (MTBE)	2011/09/19	<0.20			ppbv	
		Ethyl Acetate	2011/09/19	<2.2			ppbv	
		1,1-Dichloroethylene	2011/09/19	<0.25			ppbv	
		cis-1,2-Dichloroethylene	2011/09/19	<0.19			ppbv	
		trans-1,2-Dichloroethylene	2011/09/19	<0.20			ppbv	
		Methylene Chloride(Dichloromethane)	2011/09/19	<0.80			ppbv	
		Chloroform	2011/09/19	<0.15			ppbv	
		Carbon Tetrachloride	2011/09/19	<0.30			ppbv	
		1,1-Dichloroethane	2011/09/19	<0.20			ppbv	
		1,2-Dichloroethane	2011/09/19	<0.20			ppbv	
		Ethylene Dibromide	2011/09/19	<0.17			ppbv	
		1,1,1-Trichloroethane	2011/09/19	<0.30			ppbv	
		1,1,2-Trichloroethane	2011/09/19	<0.15			ppbv	
		1,1,2,2-Tetrachloroethane	2011/09/19	<0.20			ppbv	
		cis-1,3-Dichloropropene	2011/09/19	<0.18			ppbv	
trans-1,3-Dichloropropene	2011/09/19	<0.17			ppbv			
1,2-Dichloropropane	2011/09/19	<0.40			ppbv			
Bromomethane	2011/09/19	<0.18			ppbv			
Bromoform	2011/09/19	<0.20			ppbv			
Bromodichloromethane	2011/09/19	<0.20			ppbv			
Dibromochloromethane	2011/09/19	<0.20			ppbv			
Heptane	2011/09/19	<0.30			ppbv			

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1E1777

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2620074 VEA	Method Blank	Trichloroethylene	2011/09/19	<0.30		ppbv	
		Tetrachloroethylene	2011/09/19	<0.20		ppbv	
		Benzene	2011/09/19	<0.18		ppbv	
		Toluene	2011/09/19	<0.20		ppbv	
		Ethylbenzene	2011/09/19	<0.20		ppbv	
		p+m-Xylene	2011/09/19	<0.37		ppbv	
		o-Xylene	2011/09/19	<0.20		ppbv	
		Styrene	2011/09/19	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/09/19	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/09/19	<0.50		ppbv	
		4-ethyltoluene	2011/09/19	<2.2		ppbv	
		Chlorobenzene	2011/09/19	<0.20		ppbv	
		Benzyl chloride	2011/09/19	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/09/19	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/09/19	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/09/19	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/09/19	<2.0		ppbv	
		Hexachlorobutadiene	2011/09/19	<3.0		ppbv	
		Hexane	2011/09/19	<0.30		ppbv	
		Cyclohexane	2011/09/19	<0.20		ppbv	
		Tetrahydrofuran	2011/09/19	<0.40		ppbv	
		1,4-Dioxane	2011/09/19	<2.0		ppbv	
		Xylene (Total)	2011/09/19	<0.60		ppbv	
	RPD - Sample/Sample						
	Dup	Trichloroethylene	2011/09/19	NC		%	25
		Tetrachloroethylene	2011/09/19	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: 7842
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Sept 23, 11 @ 12:59 mst
Field Sample ID: LICA VOC/PORT/ Sept 24, 11 Canister Removal Date/Time: Sept 26, 11 @ 8:48 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
24-Sep-11	09/24/2011 0:00	09/25/2011 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1496	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	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 # 07862

Technician Signiture: Ting Xu_____

Your C.O.C. #: 07862

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

Report Date: 2011/10/06

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1F1681****Received: 2011/09/30, 10:20**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/10/05	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/10/05	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 #: B1F1681
 Report Date: 2011/10/06

RESULTS OF ANALYSES OF AIR

Maxxam ID		LC1051	LC1052	
Sampling Date		2011/09/24	2011/09/24	
COC Number		07862	07862	
	Units	LICA VOC/CLS/SEPT 24,11	LICA VOC/PORT/SEPT 24,11	QC Batch

Volatile Organics				
Pressure on Receipt	psig	23	22	2638269

QC Batch = Quality Control Batch

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LC1051				
Sampling Date		2011/09/24				
COC Number		07862				
	Units	LICA VOC/CLS/SEPT 24,11	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2638945
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2638945
Propene	ppbv	<0.30	0.30	<0.516	0.516	2638945
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2638945
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2638945
Dichlorodifluoromethane (FREON 12)	ppbv	0.65	0.20	3.20	0.989	2638945
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2638945
Chloromethane	ppbv	0.45	0.30	0.938	0.620	2638945
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2638945
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2638945
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2638945
Trichlorofluoromethane (FREON 11)	ppbv	0.35	0.20	1.98	1.12	2638945
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2638945
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2638945
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2638945
2-Propanone	ppbv	4.20	0.80	9.99	1.90	2638945
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2638945
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2638945
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2638945
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2638945
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2638945
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2638945
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2638945
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2638945
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2638945
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2638945
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2638945
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2638945
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2638945
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2638945
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2638945

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1F1681
 Report Date: 2011/10/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LC1051				
Sampling Date		2011/09/24				
COC Number		07862				
	Units	LICA VOC/CLS/SEPT 24,11	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2638945
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2638945
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2638945
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2638945
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2638945
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2638945
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2638945
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2638945
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2638945
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2638945
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2638945
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2638945
Benzene	ppbv	0.20	0.18	0.636	0.575	2638945
Toluene	ppbv	0.28	0.20	1.05	0.753	2638945
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2638945
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2638945
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2638945
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2638945
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2638945
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2638945
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2638945
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2638945
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2638945
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2638945
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2638945
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2638945
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2638945
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2638945
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2638945
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2638945
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2638945
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2638945
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2638945
QC Batch = Quality Control Batch						

Maxxam Job #: B1F1681
 Report Date: 2011/10/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LC1051				
Sampling Date		2011/09/24				
COC Number		07862				
	Units	LICA VOC/CLS/SEPT 24,11	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	81		N/A	N/A	2638945
D5-Chlorobenzene	%	77		N/A	N/A	2638945
Difluorobenzene	%	80		N/A	N/A	2638945

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

Maxxam Job #: B1F1681
 Report Date: 2011/10/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LC1052				
Sampling Date		2011/09/24				
COC Number		07862				
	Units	LICA VOC/PORT/SEPT 24,11	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2638945
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2638945
Propene	ppbv	<0.30	0.30	<0.516	0.516	2638945
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2638945
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2638945
Dichlorodifluoromethane (FREON 12)	ppbv	0.65	0.20	3.22	0.989	2638945
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2638945
Chloromethane	ppbv	0.48	0.30	1.00	0.620	2638945
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2638945
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2638945
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2638945
Trichlorofluoromethane (FREON 11)	ppbv	0.36	0.20	2.00	1.12	2638945
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2638945
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2638945
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2638945
2-Propanone	ppbv	6.69	0.80	15.9	1.90	2638945
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2638945
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2638945
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2638945
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2638945
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2638945
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2638945
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2638945
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2638945
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2638945
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2638945
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2638945
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2638945
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2638945
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2638945
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2638945
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B1F1681
 Report Date: 2011/10/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LC1052				
Sampling Date		2011/09/24				
COC Number		07862				
	Units	LICA VOC/PORT/SEPT 24,11	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2638945
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2638945
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2638945
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2638945
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2638945
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2638945
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2638945
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2638945
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2638945
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2638945
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2638945
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2638945
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2638945
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2638945
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2638945
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2638945
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2638945
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2638945
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2638945
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2638945
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2638945
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2638945
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2638945
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2638945
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2638945
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2638945
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2638945
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2638945
Hexane	ppbv	0.34	0.30	1.19	1.06	2638945
Cyclohexane	ppbv	0.51	0.20	1.74	0.688	2638945
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2638945
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2638945
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2638945
QC Batch = Quality Control Batch						

Maxxam Job #: B1F1681
 Report Date: 2011/10/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LC1052				
Sampling Date		2011/09/24				
COC Number		07862				
	Units	LICA VOC/PORT/SEPT 24,11	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	81		N/A	N/A	2638945
D5-Chlorobenzene	%	77		N/A	N/A	2638945
Difluorobenzene	%	79		N/A	N/A	2638945

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

Maxxam Job #: B1F1681
Report Date: 2011/10/06

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB1F1681

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2638945 S_S	Spiked Blank	Bromochloromethane	2011/10/05		99	%	60 - 140
		D5-Chlorobenzene	2011/10/05		97	%	60 - 140
		Difluorobenzene	2011/10/05		100	%	60 - 140
		2,2,4-Trimethylpentane	2011/10/05		97	%	70 - 130
		Carbon Disulfide	2011/10/05		96	%	70 - 130
		Propene	2011/10/05		85	%	70 - 130
		Vinyl Acetate	2011/10/05		98	%	70 - 130
		Vinyl Bromide	2011/10/05		103	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/10/05		109	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/10/05		120	%	70 - 130
		Chloromethane	2011/10/05		104	%	70 - 130
		Vinyl Chloride	2011/10/05		100	%	70 - 130
		Chloroethane	2011/10/05		98	%	70 - 130
		1,3-Butadiene	2011/10/05		99	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/10/05		119	%	70 - 130
		Trichlorotrifluoroethane	2011/10/05		108	%	70 - 130
		Ethanol	2011/10/05		103	%	70 - 130
		2-propanol	2011/10/05		95	%	70 - 130
		2-Propanone	2011/10/05		124	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/10/05		91	%	70 - 130
		Methyl Isobutyl Ketone	2011/10/05		98	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/10/05		98	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/10/05		99	%	70 - 130
		Ethyl Acetate	2011/10/05		100	%	70 - 130
		1,1-Dichloroethylene	2011/10/05		108	%	70 - 130
		cis-1,2-Dichloroethylene	2011/10/05		103	%	70 - 130
		trans-1,2-Dichloroethylene	2011/10/05		101	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/10/05		99	%	70 - 130
		Chloroform	2011/10/05		109	%	70 - 130
		Carbon Tetrachloride	2011/10/05		117	%	70 - 130
		1,1-Dichloroethane	2011/10/05		100	%	70 - 130
		1,2-Dichloroethane	2011/10/05		112	%	70 - 130
		Ethylene Dibromide	2011/10/05		105	%	70 - 130
		1,1,1-Trichloroethane	2011/10/05		115	%	70 - 130
		1,1,2-Trichloroethane	2011/10/05		104	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/10/05		98	%	70 - 130
		cis-1,3-Dichloropropene	2011/10/05		106	%	70 - 130
		trans-1,3-Dichloropropene	2011/10/05		107	%	70 - 130
		1,2-Dichloropropane	2011/10/05		101	%	70 - 130
		Bromomethane	2011/10/05		104	%	70 - 130
		Bromoform	2011/10/05		115	%	70 - 130
		Bromodichloromethane	2011/10/05		110	%	70 - 130
		Dibromochloromethane	2011/10/05		116	%	70 - 130
		Heptane	2011/10/05		93	%	70 - 130
		Trichloroethylene	2011/10/05		101	%	70 - 130
		Tetrachloroethylene	2011/10/05		100	%	70 - 130
		Benzene	2011/10/05		99	%	70 - 130
		Toluene	2011/10/05		101	%	70 - 130
		Ethylbenzene	2011/10/05		102	%	70 - 130
		p+m-Xylene	2011/10/05		101	%	70 - 130
		o-Xylene	2011/10/05		102	%	70 - 130
		Styrene	2011/10/05		97	%	70 - 130
		1,3,5-Trimethylbenzene	2011/10/05		99	%	70 - 130
		1,2,4-Trimethylbenzene	2011/10/05		97	%	70 - 130
		4-ethyltoluene	2011/10/05		94	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1F1681

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2638945 S_S	Spiked Blank	Chlorobenzene	2011/10/05		102	%	70 - 130
		Benzyl chloride	2011/10/05		100	%	70 - 130
		1,3-Dichlorobenzene	2011/10/05		93	%	70 - 130
		1,4-Dichlorobenzene	2011/10/05		91	%	70 - 130
		1,2-Dichlorobenzene	2011/10/05		93	%	70 - 130
		1,2,4-Trichlorobenzene	2011/10/05		95	%	70 - 130
		Hexachlorobutadiene	2011/10/05		103	%	70 - 130
		Hexane	2011/10/05		93	%	70 - 130
		Cyclohexane	2011/10/05		97	%	70 - 130
		Tetrahydrofuran	2011/10/05		99	%	70 - 130
		1,4-Dioxane	2011/10/05		99	%	70 - 130
		Xylene (Total)	2011/10/05		101	%	70 - 130
	Method Blank	Bromochloromethane	2011/10/05		94	%	60 - 140
		D5-Chlorobenzene	2011/10/05		89	%	60 - 140
		Difluorobenzene	2011/10/05		93	%	60 - 140
		2,2,4-Trimethylpentane	2011/10/05	<0.20		ppbv	
		Carbon Disulfide	2011/10/05	<0.50		ppbv	
		Propene	2011/10/05	<0.30		ppbv	
		Vinyl Acetate	2011/10/05	<0.20		ppbv	
		Vinyl Bromide	2011/10/05	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/10/05	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/10/05	<0.17		ppbv	
		Chloromethane	2011/10/05	<0.30		ppbv	
		Vinyl Chloride	2011/10/05	<0.18		ppbv	
		Chloroethane	2011/10/05	<0.30		ppbv	
		1,3-Butadiene	2011/10/05	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/10/05	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/10/05	<0.15		ppbv	
		Ethanol	2011/10/05	<2.3		ppbv	
		2-propanol	2011/10/05	<3.0		ppbv	
		2-Propanone	2011/10/05	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/10/05	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/10/05	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/10/05	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/10/05	<0.20		ppbv	
		Ethyl Acetate	2011/10/05	<2.2		ppbv	
		1,1-Dichloroethylene	2011/10/05	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/10/05	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/10/05	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/10/05	<0.80		ppbv	
		Chloroform	2011/10/05	<0.15		ppbv	
		Carbon Tetrachloride	2011/10/05	<0.30		ppbv	
		1,1-Dichloroethane	2011/10/05	<0.20		ppbv	
		1,2-Dichloroethane	2011/10/05	<0.20		ppbv	
		Ethylene Dibromide	2011/10/05	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/10/05	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/10/05	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/10/05	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/10/05	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/10/05	<0.17		ppbv	
		1,2-Dichloropropane	2011/10/05	<0.40		ppbv	
		Bromomethane	2011/10/05	<0.18		ppbv	
		Bromoform	2011/10/05	<0.20		ppbv	
		Bromodichloromethane	2011/10/05	<0.20		ppbv	
		Dibromochloromethane	2011/10/05	<0.20		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1F1681

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2638945 S_S	Method Blank	Heptane	2011/10/05	<0.30		ppbv	
		Trichloroethylene	2011/10/05	<0.30		ppbv	
		Tetrachloroethylene	2011/10/05	<0.20		ppbv	
		Benzene	2011/10/05	<0.18		ppbv	
		Toluene	2011/10/05	<0.20		ppbv	
		Ethylbenzene	2011/10/05	<0.20		ppbv	
		p+m-Xylene	2011/10/05	<0.37		ppbv	
		o-Xylene	2011/10/05	<0.20		ppbv	
		Styrene	2011/10/05	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/10/05	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/10/05	<0.50		ppbv	
		4-ethyltoluene	2011/10/05	<2.2		ppbv	
		Chlorobenzene	2011/10/05	<0.20		ppbv	
		Benzyl chloride	2011/10/05	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/10/05	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/10/05	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/10/05	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/10/05	<2.0		ppbv	
		Hexachlorobutadiene	2011/10/05	<3.0		ppbv	
		Hexane	2011/10/05	<0.30		ppbv	
		Cyclohexane	2011/10/05	<0.20		ppbv	
		Tetrahydrofuran	2011/10/05	<0.40		ppbv	
		1,4-Dioxane	2011/10/05	<2.0		ppbv	
		Xylene (Total)	2011/10/05	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/10/05	NC		%	25
		Carbon Disulfide	2011/10/05	NC		%	25
		Propene	2011/10/05	NC		%	25
		Vinyl Acetate	2011/10/05	NC		%	25
		Vinyl Bromide	2011/10/05	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/10/05	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/10/05	NC		%	25
		Chloromethane	2011/10/05	NC		%	25
		Vinyl Chloride	2011/10/05	NC		%	25
		Chloroethane	2011/10/05	NC		%	25
		1,3-Butadiene	2011/10/05	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/10/05	NC		%	25
		Trichlorotrifluoroethane	2011/10/05	NC		%	25
		Ethanol	2011/10/05	NC		%	25
		2-propanol	2011/10/05	NC		%	25
		2-Propanone	2011/10/05	1.2		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/10/05	NC		%	25
		Methyl Isobutyl Ketone	2011/10/05	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/10/05	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/10/05	NC		%	25
		Ethyl Acetate	2011/10/05	NC		%	25
		1,1-Dichloroethylene	2011/10/05	NC		%	25
		cis-1,2-Dichloroethylene	2011/10/05	NC		%	25
		trans-1,2-Dichloroethylene	2011/10/05	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/10/05	NC		%	25
		Chloroform	2011/10/05	NC		%	25
		Carbon Tetrachloride	2011/10/05	NC		%	25
		1,1-Dichloroethane	2011/10/05	NC		%	25
		1,2-Dichloroethane	2011/10/05	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1F1681

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2638945 S_S	RPD - Sample/Sample Dup	Ethylene Dibromide	2011/10/05	NC		%	25
		1,1,1-Trichloroethane	2011/10/05	NC		%	25
		1,1,2-Trichloroethane	2011/10/05	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/10/05	NC		%	25
		cis-1,3-Dichloropropene	2011/10/05	NC		%	25
		trans-1,3-Dichloropropene	2011/10/05	NC		%	25
		1,2-Dichloropropane	2011/10/05	NC		%	25
		Bromomethane	2011/10/05	NC		%	25
		Bromoform	2011/10/05	NC		%	25
		Bromodichloromethane	2011/10/05	NC		%	25
		Dibromochloromethane	2011/10/05	NC		%	25
		Heptane	2011/10/05	NC		%	25
		Trichloroethylene	2011/10/05	NC		%	25
		Tetrachloroethylene	2011/10/05	NC		%	25
		Benzene	2011/10/05	NC		%	25
		Toluene	2011/10/05	NC		%	25
		Ethylbenzene	2011/10/05	NC		%	25
		p+m-Xylene	2011/10/05	NC		%	25
		o-Xylene	2011/10/05	NC		%	25
		Styrene	2011/10/05	NC		%	25
		1,3,5-Trimethylbenzene	2011/10/05	NC		%	25
		1,2,4-Trimethylbenzene	2011/10/05	NC		%	25
		4-ethyltoluene	2011/10/05	NC		%	25
		Chlorobenzene	2011/10/05	NC		%	25
		Benzyl chloride	2011/10/05	NC		%	25
		1,3-Dichlorobenzene	2011/10/05	NC		%	25
		1,4-Dichlorobenzene	2011/10/05	NC		%	25
		1,2-Dichlorobenzene	2011/10/05	NC		%	25
		1,2,4-Trichlorobenzene	2011/10/05	NC		%	25
		Hexachlorobutadiene	2011/10/05	NC		%	25
		Hexane	2011/10/05	NC		%	25
		Cyclohexane	2011/10/05	NC		%	25
		Tetrahydrofuran	2011/10/05	NC		%	25
		1,4-Dioxane	2011/10/05	NC		%	25
		Xylene (Total)	2011/10/05	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.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: 7818
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Sept 28, 11 @9:29 mst
Field Sample ID: LICA VOC/PORT/ Sept 30, 11 Canister Removal Date/Time: Oct 03, 11 @11:47 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
30-Sep-11	09/30/2011 0:00	10/01/2011 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1496	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	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 # 08013

Technician Signiture: Ting Xu_____



Your C.O.C. #: 08013

Attention: Michael Bisaga

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

Report Date: 2011/10/17

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1F4499

Received: 2011/10/05, 10:11

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/10/06	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/10/07	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

Maxxam Job #: B1F4499
 Report Date: 2011/10/17

RESULTS OF ANALYSES OF AIR

Maxxam ID		LD5920	LD5921	
Sampling Date		2011/09/30	2011/09/30	
COC Number		08013	08013	
	Units	LICAVOC/CLS/SEPT30,11/141	LICAVOC/PORT/SEPT30,11/7818	QC Batch

Volatile Organics				
Pressure on Receipt	psig	23	22	2643994

QC Batch = Quality Control Batch

Maxxam Job #: B1F4499
 Report Date: 2011/10/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LD5920				
Sampling Date		2011/09/30				
COC Number		08013				
	Units	LICAVOC/CLS/SEPT30,11/141	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2643993
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2643993
Propene	ppbv	<0.30	0.30	<0.516	0.516	2643993
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2643993
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2643993
Dichlorodifluoromethane (FREON 12)	ppbv	1.08	0.20	5.35	0.989	2643993
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2643993
Chloromethane	ppbv	0.64	0.30	1.32	0.620	2643993
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2643993
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2643993
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2643993
Trichlorofluoromethane (FREON 11)	ppbv	0.40	0.20	2.25	1.12	2643993
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2643993
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2643993
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2643993
2-Propanone	ppbv	3.27	0.80	7.78	1.90	2643993
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2643993
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2643993
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2643993
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2643993
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2643993
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2643993
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2643993
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2643993
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2643993
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2643993
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2643993
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2643993
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2643993
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2643993
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2643993
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2643993
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B1F4499
 Report Date: 2011/10/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LD5920				
Sampling Date		2011/09/30				
COC Number		08013				
	Units	LICAVOC/CLS/SEPT30,11/141	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2643993
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2643993
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2643993
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2643993
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2643993
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2643993
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2643993
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2643993
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2643993
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2643993
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2643993
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2643993
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2643993
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2643993
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2643993
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2643993
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2643993
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2643993
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2643993
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2643993
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2643993
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2643993
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2643993
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2643993
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2643993
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2643993
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2643993
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2643993
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2643993
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2643993
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2643993
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2643993
Surrogate Recovery (%)						
Bromochloromethane	%	97		N/A	N/A	2643993
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B1F4499
 Report Date: 2011/10/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LD5920				
Sampling Date		2011/09/30				
COC Number		08013				
	Units	LICAVOC/CLS/SEPT30,11/141	RDL	ug/m3	DL (ug/m3)	QC Batch
D5-Chlorobenzene	%	96		N/A	N/A	2643993
Difluorobenzene	%	98		N/A	N/A	2643993
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B1F4499
 Report Date: 2011/10/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LD5921				
Sampling Date		2011/09/30				
COC Number		08013				
	Units	LICAVOC/PORT/SEPT30,11/7818	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2643993
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2643993
Propene	ppbv	<0.30	0.30	<0.516	0.516	2643993
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2643993
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2643993
Dichlorodifluoromethane (FREON 12)	ppbv	0.89	0.20	4.40	0.989	2643993
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2643993
Chloromethane	ppbv	0.65	0.30	1.34	0.620	2643993
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2643993
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2643993
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2643993
Trichlorofluoromethane (FREON 11)	ppbv	0.42	0.20	2.36	1.12	2643993
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2643993
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2643993
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2643993
2-Propanone	ppbv	3.20	0.80	7.61	1.90	2643993
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2643993
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2643993
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2643993
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2643993
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2643993
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2643993
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2643993
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2643993
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2643993
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2643993
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2643993
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2643993
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2643993
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2643993
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2643993
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2643993

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1F4499
 Report Date: 2011/10/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LD5921				
Sampling Date		2011/09/30				
COC Number		08013				
	Units	LICAVOC/PORT/SEPT30,11/7818	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2643993
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2643993
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2643993
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2643993
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2643993
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2643993
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2643993
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2643993
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2643993
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2643993
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2643993
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2643993
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2643993
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2643993
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2643993
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2643993
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2643993
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2643993
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2643993
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2643993
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2643993
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2643993
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2643993
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2643993
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2643993
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2643993
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2643993
Hexane	ppbv	0.50	0.30	1.78	1.06	2643993
Cyclohexane	ppbv	0.41	0.20	1.41	0.688	2643993
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2643993
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2643993
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2643993
Surrogate Recovery (%)						
Bromochloromethane	%	92		N/A	N/A	2643993
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B1F4499
 Report Date: 2011/10/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		LD5921				
Sampling Date		2011/09/30				
COC Number		08013				
	Units	LICAVOC/PORT/SEPT30,11/7818	RDL	ug/m3	DL (ug/m3)	QC Batch

D5-Chlorobenzene	%	95		N/A	N/A	2643993
Difluorobenzene	%	97		N/A	N/A	2643993

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

Maxxam Job #: B1F4499
Report Date: 2011/10/17

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB1F4499

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2643993 MM2	Spiked Blank	Bromochloromethane	2011/10/07		99	%	60 - 140
		D5-Chlorobenzene	2011/10/07		102	%	60 - 140
		Difluorobenzene	2011/10/07		102	%	60 - 140
		2,2,4-Trimethylpentane	2011/10/07		93	%	70 - 130
		Carbon Disulfide	2011/10/07		94	%	70 - 130
		Propene	2011/10/07		92	%	70 - 130
		Vinyl Acetate	2011/10/07		93	%	70 - 130
		Vinyl Bromide	2011/10/07		108	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/10/07		98	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/10/07		114	%	70 - 130
		Chloromethane	2011/10/07		104	%	70 - 130
		Vinyl Chloride	2011/10/07		110	%	70 - 130
		Chloroethane	2011/10/07		105	%	70 - 130
		1,3-Butadiene	2011/10/07		110	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/10/07		100	%	70 - 130
		Trichlorotrifluoroethane	2011/10/07		70	%	70 - 130
		Ethanol	2011/10/07		98	%	70 - 130
		2-propanol	2011/10/07		106	%	70 - 130
		2-Propanone	2011/10/07		103	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/10/07		101	%	70 - 130
		Methyl Isobutyl Ketone	2011/10/07		87	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/10/07		90	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/10/07		100	%	70 - 130
		Ethyl Acetate	2011/10/07		95	%	70 - 130
		1,1-Dichloroethylene	2011/10/07		90	%	70 - 130
		cis-1,2-Dichloroethylene	2011/10/07		102	%	70 - 130
		trans-1,2-Dichloroethylene	2011/10/07		102	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/10/07		90	%	70 - 130
		Chloroform	2011/10/07		103	%	70 - 130
		Carbon Tetrachloride	2011/10/07		101	%	70 - 130
		1,1-Dichloroethane	2011/10/07		94	%	70 - 130
		1,2-Dichloroethane	2011/10/07		104	%	70 - 130
		Ethylene Dibromide	2011/10/07		101	%	70 - 130
		1,1,1-Trichloroethane	2011/10/07		100	%	70 - 130
		1,1,2-Trichloroethane	2011/10/07		100	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/10/07		93	%	70 - 130
		cis-1,3-Dichloropropene	2011/10/07		105	%	70 - 130
		trans-1,3-Dichloropropene	2011/10/07		106	%	70 - 130
		1,2-Dichloropropane	2011/10/07		97	%	70 - 130
		Bromomethane	2011/10/07		108	%	70 - 130
		Bromoform	2011/10/07		103	%	70 - 130
		Bromodichloromethane	2011/10/07		96	%	70 - 130
		Dibromochloromethane	2011/10/07		104	%	70 - 130
		Heptane	2011/10/07		86	%	70 - 130
		Trichloroethylene	2011/10/07		103	%	70 - 130
		Tetrachloroethylene	2011/10/07		103	%	70 - 130
		Benzene	2011/10/07		99	%	70 - 130
		Toluene	2011/10/07		100	%	70 - 130
		Ethylbenzene	2011/10/07		99	%	70 - 130
		p+m-Xylene	2011/10/07		98	%	70 - 130
		o-Xylene	2011/10/07		95	%	70 - 130
		Styrene	2011/10/07		96	%	70 - 130
		1,3,5-Trimethylbenzene	2011/10/07		97	%	70 - 130
		1,2,4-Trimethylbenzene	2011/10/07		96	%	70 - 130
		4-ethyltoluene	2011/10/07		93	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1F4499

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2643993 MM2	Spiked Blank	Chlorobenzene	2011/10/07		101	%	70 - 130
		Benzyl chloride	2011/10/07		104	%	70 - 130
		1,3-Dichlorobenzene	2011/10/07		100	%	70 - 130
		1,4-Dichlorobenzene	2011/10/07		98	%	70 - 130
		1,2-Dichlorobenzene	2011/10/07		99	%	70 - 130
		1,2,4-Trichlorobenzene	2011/10/07		90	%	70 - 130
		Hexachlorobutadiene	2011/10/07		92	%	70 - 130
		Hexane	2011/10/07		88	%	70 - 130
		Cyclohexane	2011/10/07		97	%	70 - 130
		Tetrahydrofuran	2011/10/07		98	%	70 - 130
		1,4-Dioxane	2011/10/07		88	%	70 - 130
	Method Blank	Bromochloromethane	2011/10/07		99	%	60 - 140
		D5-Chlorobenzene	2011/10/07		100	%	60 - 140
		Difluorobenzene	2011/10/07		102	%	60 - 140
		2,2,4-Trimethylpentane	2011/10/07	<0.20		ppbv	
		Carbon Disulfide	2011/10/07	<0.50		ppbv	
		Propene	2011/10/07	<0.30		ppbv	
		Vinyl Acetate	2011/10/07	<0.20		ppbv	
		Vinyl Bromide	2011/10/07	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/10/07	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/10/07	<0.17		ppbv	
		Chloromethane	2011/10/07	<0.30		ppbv	
		Vinyl Chloride	2011/10/07	<0.18		ppbv	
		Chloroethane	2011/10/07	<0.30		ppbv	
		1,3-Butadiene	2011/10/07	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/10/07	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/10/07	<0.15		ppbv	
		Ethanol	2011/10/07	<2.3		ppbv	
		2-propanol	2011/10/07	<3.0		ppbv	
		2-Propanone	2011/10/07	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/10/07	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/10/07	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/10/07	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/10/07	<0.20		ppbv	
		Ethyl Acetate	2011/10/07	<2.2		ppbv	
		1,1-Dichloroethylene	2011/10/07	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/10/07	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/10/07	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/10/07	<0.80		ppbv	
		Chloroform	2011/10/07	<0.15		ppbv	
		Carbon Tetrachloride	2011/10/07	<0.30		ppbv	
		1,1-Dichloroethane	2011/10/07	<0.20		ppbv	
		1,2-Dichloroethane	2011/10/07	<0.20		ppbv	
		Ethylene Dibromide	2011/10/07	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/10/07	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/10/07	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/10/07	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/10/07	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/10/07	<0.17		ppbv	
		1,2-Dichloropropane	2011/10/07	<0.40		ppbv	
		Bromomethane	2011/10/07	<0.18		ppbv	
		Bromoform	2011/10/07	<0.20		ppbv	
		Bromodichloromethane	2011/10/07	<0.20		ppbv	
		Dibromochloromethane	2011/10/07	<0.20		ppbv	
		Heptane	2011/10/07	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1F4499

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2643993	MM2	Method Blank					
		Trichloroethylene	2011/10/07	<0.30		ppbv	
		Tetrachloroethylene	2011/10/07	<0.20		ppbv	
		Benzene	2011/10/07	<0.18		ppbv	
		Toluene	2011/10/07	<0.20		ppbv	
		Ethylbenzene	2011/10/07	<0.20		ppbv	
		p+m-Xylene	2011/10/07	<0.37		ppbv	
		o-Xylene	2011/10/07	<0.20		ppbv	
		Styrene	2011/10/07	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/10/07	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/10/07	<0.50		ppbv	
		4-ethyltoluene	2011/10/07	<2.2		ppbv	
		Chlorobenzene	2011/10/07	<0.20		ppbv	
		Benzyl chloride	2011/10/07	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/10/07	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/10/07	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/10/07	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/10/07	<2.0		ppbv	
		Hexachlorobutadiene	2011/10/07	<3.0		ppbv	
		Hexane	2011/10/07	<0.30		ppbv	
		Cyclohexane	2011/10/07	<0.20		ppbv	
		Tetrahydrofuran	2011/10/07	<0.40		ppbv	
		1,4-Dioxane	2011/10/07	<2.0		ppbv	
		Xylene (Total)	2011/10/07	<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.

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/Sept 06, 11

Puf+ s/n: 100-1015
 Motor s/n: 1139
 Installation Date/Time: Sept 01, 2011 @ 16:35 mst
 Removal Date/Time: Sept 07, 2011 @ 9:58 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
06-Sep-11	09/06/2011 0:00	09/07/2011 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
31-Aug-11	07-Sep-11	12-Sep-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 25-May-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
713	229	17.3	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# 05863
GB1C7374 Puff #2
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Sept 06, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 05863

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

Report Date: 2011/09/26

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1D8651****Received: 2011/09/09, 10:10**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/09/12	2011/09/22	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

Maxxam Job #: B1D8651
 Report Date: 2011/09/26

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

Maxxam ID		KV2854	KV2855		
Sampling Date		2011/09/06	2011/09/06		
COC Number		05863	05863		
	Units	LICA PUFF&QFF/CLS/SEPT 06,11	LICA PUFF&QFF/PORT/SEPT 06,11	RDL	QC Batch

Semivolatiles Organics					
1-Methylnaphthalene	ug	0.17	<0.10	0.10	2610780
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2610780
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2610780
2-Methylantracene	ug	<0.10	<0.10	0.10	2610780
2-Methylnaphthalene	ug	0.34	0.14	0.10	2610780
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2610780
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2610780
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2610780
Acenaphthene	ug	0.098	<0.050	0.050	2610780
Acenaphthylene	ug	<0.050	<0.050	0.050	2610780
Anthracene	ug	<0.050	<0.050	0.050	2610780
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2610780
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2610780
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2610780
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2610780
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2610780
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2610780
Benzo(g,h,i)perylene	ug	0.054	0.050	0.050	2610780
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2610780
Biphenyl	ug	<0.10	<0.10	0.10	2610780
Chrysene	ug	<0.050	<0.050	0.050	2610780
Coronene	ug	<0.10	<0.10	0.10	2610780
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2610780
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2610780
Fluoranthene	ug	0.058	<0.050	0.050	2610780
Fluorene	ug	0.170	0.064	0.050	2610780
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2610780
m-Terphenyl	ug	<0.10	<0.10	0.10	2610780
Naphthalene	ug	0.256	0.154	0.072	2610780
o-Terphenyl	ug	<0.10	<0.10	0.10	2610780
Perylene	ug	<0.10	<0.10	0.10	2610780

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1D8651
 Report Date: 2011/09/26

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

Maxxam ID		KV2854	KV2855		
Sampling Date		2011/09/06	2011/09/06		
COC Number		05863	05863		
	Units	LICA PUFF&QFF/CLS/SEPT 06,11	LICA PUFF&QFF/PORT/SEPT 06,11	RDL	QC Batch
Phenanthrene	ug	0.564	0.188	0.050	2610780
p-Terphenyl	ug	<0.10	<0.10	0.10	2610780
Pyrene	ug	0.052	<0.050	0.050	2610780
Quinoline	ug	<0.40	<0.40	0.40	2610780
Tetralin	ug	<0.10	<0.10	0.10	2610780
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	82	84		2610780
D10-Fluoranthene	%	92	88		2610780
D10-Fluorene (FS)	%	17 (1)	18 (1)		2610780
D10-Phenanthrene	%	86	84		2610780
D12-Benzo(a)anthracene	%	104	108		2610780
D12-Benzo(a)pyrene	%	100	104		2610780
D12-Benzo(b)fluoranthene	%	96	96		2610780
D12-Benzo(ghi)perylene	%	100	100		2610780
D12-Benzo(k)fluoranthene	%	96	98		2610780
D12-Chrysene	%	88	90		2610780
D12-Indeno(1,2,3-cd)pyrene	%	104	104		2610780
D12-Perylene	%	96	98		2610780
D14-Dibenzo(a,h)anthracene	%	106	108		2610780
D14-Terphenyl (FS)	%	93	91		2610780
D8-Acenaphthylene	%	92	94		2610780
D8-Naphthalene	%	82	84		2610780
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 #: B1D8651
Report Date: 2011/09/26

GENERAL COMMENTS

PAHMS-F

9,10-Dimethylanthracene and 7,12-Dimethylbenzo(a)anthracene are above 25% RSD in initial calibration. No positives found for these 2 compounds.

Pyrene is statistically out of control at 70.5% recovery in the spike:dup. Spike recovery is in control. Acenaphthylene is statistically out of control at 87.8% recovery in the spike:dup. Spike recovery is in control. Acceptance criteria met for both spike and dup. Data reported and flagged.

Naphthalene positive found in blank. Samples should be considered to be possibly contaminated to the level found in the blank.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene or Triphenylene. An estimated mdl for each of these compounds is 0.1ug. Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(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 Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample KV2854-01: PAHMS-F

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

Sample KV2855-01: 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. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB1D8651

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2610780 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/09/22		84	%	50 - 150
		D10-Fluoranthene	2011/09/22		86	%	50 - 150
		D10-Phenanthrene	2011/09/22		78	%	50 - 150
		D12-Benzo(a)anthracene	2011/09/22		98	%	50 - 150
		D12-Benzo(a)pyrene	2011/09/22		98	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/09/22		98	%	50 - 150
		D12-Benzo(ghi)perylene	2011/09/22		90	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/09/22		94	%	50 - 150
		D12-Chrysene	2011/09/22		92	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/09/22		94	%	50 - 150
		D12-Perylene	2011/09/22		94	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/09/22		98	%	50 - 150
		RPD	D8-Acenaphthylene	2011/09/22		92	%
	D8-Naphthalene		2011/09/22		82	%	50 - 150
	Spiked Blank	Acenaphthene	2011/09/22		75	%	60 - 130
		Acenaphthene	2011/09/22	1.3		%	50
	RPD	Acenaphthylene	2011/09/22		87	%	60 - 130
		Acenaphthylene	2011/09/22	1.1		%	50
	Spiked Blank	Anthracene	2011/09/22		65	%	60 - 130
		Anthracene	2011/09/22	15.6		%	50
	Spiked Blank	Benzo(a)anthracene	2011/09/22		79	%	60 - 130
		Benzo(a)anthracene	2011/09/22	3.2		%	50
	Spiked Blank	Benzo(a)pyrene	2011/09/22		72	%	60 - 130
		Benzo(a)pyrene	2011/09/22	2.8		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/09/22		81	%	60 - 130
		Benzo(b)fluoranthene	2011/09/22	6.0		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/09/22		75	%	60 - 130
		Benzo(g,h,i)perylene	2011/09/22	2.4		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/09/22		89	%	60 - 130
		Benzo(k)fluoranthene	2011/09/22	1.4		%	50
	Spiked Blank	Chrysene	2011/09/22		82	%	60 - 130
		Chrysene	2011/09/22	4.7		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/09/22		78	%	60 - 130
		Dibenz(a,h)anthracene	2011/09/22	1.3		%	50
	Spiked Blank	Fluoranthene	2011/09/22		77	%	60 - 130
		Fluoranthene	2011/09/22	2.0		%	50
	Spiked Blank	Fluorene	2011/09/22		73	%	60 - 130
		Fluorene	2011/09/22	1.0		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/09/22		78	%	60 - 130
		Indeno(1,2,3-cd)pyrene	2011/09/22	1.6		%	50
Spiked Blank	Naphthalene	2011/09/22		92	%	60 - 130	
	Naphthalene	2011/09/22	1.6		%	50	
Spiked Blank	Phenanthrene	2011/09/22		68	%	60 - 130	
	Phenanthrene	2011/09/22	2.2		%	50	
Spiked Blank	Pyrene	2011/09/22		72	%	60 - 130	
	Pyrene	2011/09/22	1.4		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/09/22		82	%	50 - 150	
	D10-Fluoranthene	2011/09/22		84	%	50 - 150	
	D10-Phenanthrene	2011/09/22		74	%	50 - 150	
	D12-Benzo(a)anthracene	2011/09/22		98	%	50 - 150	
	D12-Benzo(a)pyrene	2011/09/22		100	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/09/22		94	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/09/22		96	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/09/22		92	%	50 - 150	
	D12-Chrysene	2011/09/22		86	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1D8651

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2610780 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/09/22		100	%	50 - 150
		D12-Perylene	2011/09/22		96	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/09/22		104	%	50 - 150
		D8-Acenaphthylene	2011/09/22		92	%	50 - 150
		D8-Naphthalene	2011/09/22		80	%	50 - 150
		1-Methylnaphthalene	2011/09/22	<0.10		ug	
		1-Methylphenanthrene	2011/09/22	<0.10		ug	
		2-Chloronaphthalene	2011/09/22	<0.10		ug	
		2-Methylanthracene	2011/09/22	<0.10		ug	
		2-Methylnaphthalene	2011/09/22	<0.10		ug	
		3-Methylcholanthrene	2011/09/22	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/09/22	<0.10		ug	
		9,10-Dimethylanthracene	2011/09/22	<0.40		ug	
		Acenaphthene	2011/09/22	<0.050		ug	
		Acenaphthylene	2011/09/22	<0.050		ug	
		Anthracene	2011/09/22	<0.050		ug	
		Benzo(a)anthracene	2011/09/22	<0.050		ug	
		Benzo(a)fluorene	2011/09/22	<0.10		ug	
		Benzo(a)pyrene	2011/09/22	<0.050		ug	
		Benzo(b)fluoranthene	2011/09/22	<0.050		ug	
		Benzo(b)fluorene	2011/09/22	<0.10		ug	
		Benzo(e)pyrene	2011/09/22	<0.10		ug	
		Benzo(g,h,i)perylene	2011/09/22	<0.050		ug	
		Benzo(k)fluoranthene	2011/09/22	<0.050		ug	
		Biphenyl	2011/09/22	<0.10		ug	
		Chrysene	2011/09/22	<0.050		ug	
		Coronene	2011/09/22	<0.10		ug	
		Dibenz(a,h)anthracene	2011/09/22	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/09/22	<0.20		ug	
		Fluoranthene	2011/09/22	<0.050		ug	
		Fluorene	2011/09/22	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/09/22	<0.050		ug	
		m-Terphenyl	2011/09/22	<0.10		ug	
		Naphthalene	2011/09/22	0.082, RDL=0.072		ug	
		o-Terphenyl	2011/09/22	<0.10		ug	
		Perylene	2011/09/22	<0.10		ug	
		Phenanthrene	2011/09/22	<0.050		ug	
		p-Terphenyl	2011/09/22	<0.10		ug	
		Pyrene	2011/09/22	<0.050		ug	
		Quinoline	2011/09/22	<0.40		ug	
		Tetralin	2011/09/22	<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/Sept 12, 11

Puf+ s/n: 100-1015
 Motor s/n: 1139
 Installation Date/Time: Sept 09, 2011 @ 09:37 mst
 Removal Date/Time: Sept 13, 2011 @ 08:59 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
12-Sep-11	09/12/2011 0:00	09/13/2011 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
07-Sep-11	13-Sep-11	15-Sep-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 25-May-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
715	229	10.1	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# 05923

GB1D0898 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Sept 12, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 05923

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

Report Date: 2011/09/28

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1E2083**

Received: 2011/09/15, 09:13

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/09/18	2011/09/26	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 #: B1E2083
 Report Date: 2011/09/28

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

Maxxam ID		KX0271	KX0272		
Sampling Date		2011/09/12	2011/09/12		
COC Number		05923	05923		
	Units	LICAPUFF/QFF/CLS/SEP12,11	LICAPUFF/QFF/PORT/SEP12,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2618101
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2618101
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2618101
2-Methylanthracene	ug	<0.10	<0.10	0.10	2618101
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2618101
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2618101
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2618101
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2618101
Acenaphthene	ug	<0.050	<0.050	0.050	2618101
Acenaphthylene	ug	<0.050	<0.050	0.050	2618101
Anthracene	ug	<0.050	<0.050	0.050	2618101
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2618101
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2618101
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2618101
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2618101
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2618101
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2618101
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2618101
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2618101
Biphenyl	ug	<0.10	<0.10	0.10	2618101
Chrysene	ug	<0.050	<0.050	0.050	2618101
Coronene	ug	<0.10	<0.10	0.10	2618101
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2618101
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2618101
Fluoranthene	ug	<0.050	<0.050	0.050	2618101
Fluorene	ug	0.058	<0.050	0.050	2618101
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2618101
m-Terphenyl	ug	<0.10	<0.10	0.10	2618101
Naphthalene	ug	<0.072	0.072	0.072	2618101
o-Terphenyl	ug	<0.10	<0.10	0.10	2618101
Perylene	ug	<0.10	<0.10	0.10	2618101
Phenanthrene	ug	0.174	0.118	0.050	2618101

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1E2083
 Report Date: 2011/09/28

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

Maxxam ID		KX0271	KX0272		
Sampling Date		2011/09/12	2011/09/12		
COC Number		05923	05923		
	Units	LICAPUFF/QFF/CLS/SEP12,11	LICAPUFF//QFF/PORT/SEP12,11	RDL	QC Batch

p-Terphenyl	ug	<0.10	<0.10	0.10	2618101
Pyrene	ug	<0.050	<0.050	0.050	2618101
Quinoline	ug	<0.40	<0.40	0.40	2618101
Tetralin	ug	<0.10	<0.10	0.10	2618101
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	84	90		2618101
D10-Fluoranthene	%	104	112		2618101
D10-Fluorene (FS)	%	24 (1)	20 (1)		2618101
D10-Phenanthrene	%	98	102		2618101
D12-Benzo(a)anthracene	%	112	112		2618101
D12-Benzo(a)pyrene	%	100	106		2618101
D12-Benzo(b)fluoranthene	%	98	98		2618101
D12-Benzo(ghi)perylene	%	98	108		2618101
D12-Benzo(k)fluoranthene	%	98	96		2618101
D12-Chrysene	%	88	86		2618101
D12-Indeno(1,2,3-cd)pyrene	%	100	108		2618101
D12-Perylene	%	96	98		2618101
D14-Dibenzo(a,h)anthracene	%	102	114		2618101
D14-Terphenyl (FS)	%	106	114		2618101
D8-Acenaphthylene	%	96	102		2618101
D8-Naphthalene	%	82	86		2618101

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 #: B1E2083
 Report Date: 2011/09/28

Test Summary

Maxxam ID	KX0271	Collected	2011/09/12
Sample ID	LICAPUFF/QFF/CLS/SEP12,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/09/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2618101	2011/09/18	2011/09/26	WENDY ZHAO

Maxxam ID	KX0272	Collected	2011/09/12
Sample ID	LICAPUFF//QFF/PORT/SEP12,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/09/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2618101	2011/09/18	2011/09/26	WENDY ZHAO

Maxxam Job #: B1E2083
Report Date: 2011/09/28

GENERAL COMMENTS

PAHMS-F

9,10-Dimethylanthracene and 7,12-Dimethylbenzo(a)anthracene are above 25% RSD in initial calibration. No positives found for these 2 compounds.

Pyrene is statistically out of control at 90.0% recovery in the spike:dup. Spike recovery is in control. Acceptance criteria met for both spike and dup. Data reported and flagged.

Naphthalene positive found in blank. Samples should be considered to be possibly contaminated to the level found in the blank.

Internal Std area response criteria was high in Spike:dup . Rerun with similar results. Original run reported.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene or Triphenylene. An estimated mdl for each of these compounds is 0.1ug

. Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(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 Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample KX0271-01: PAHMS-F

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

Sample KX0272-01: 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. #:
 Site Location:

Quality Assurance Report

Maxxam Job Number: GB1E2083

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2618101 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/09/26		96	%	50 - 150
		D10-Fluoranthene	2011/09/26		108	%	50 - 150
		D10-Phenanthrene	2011/09/26		108	%	50 - 150
		D12-Benzo(a)anthracene	2011/09/26		114	%	50 - 150
		D12-Benzo(a)pyrene	2011/09/26		108	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/09/26		102	%	50 - 150
		D12-Benzo(ghi)perylene	2011/09/26		106	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/09/26		98	%	50 - 150
		D12-Chrysene	2011/09/26		88	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/09/26		110	%	50 - 150
		D12-Perylene	2011/09/26		102	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/09/26		112	%	50 - 150
		D8-Acenaphthylene	2011/09/26		98	%	50 - 150
	2011/09/26			92	%	50 - 150	
	Acenaphthene	2011/09/26		87	%	60 - 130	
		2011/09/26		6.5	%	50	
	RPD	Acenaphthene	2011/09/26		95	%	60 - 130
		Acenaphthylene	2011/09/26		3.8	%	50
	Spiked Blank	Anthracene	2011/09/26		91	%	60 - 130
		Anthracene	2011/09/26		5.4	%	50
	Spiked Blank	Benzo(a)anthracene	2011/09/26		93	%	60 - 130
		Benzo(a)anthracene	2011/09/26		6.1	%	50
	Spiked Blank	Benzo(a)pyrene	2011/09/26		82	%	60 - 130
		Benzo(a)pyrene	2011/09/26		4.4	%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/09/26		84	%	60 - 130
		Benzo(b)fluoranthene	2011/09/26		7.1	%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/09/26		87	%	60 - 130
		Benzo(g,h,i)perylene	2011/09/26		6.2	%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/09/26		96	%	60 - 130
		Benzo(k)fluoranthene	2011/09/26		8.7	%	50
	Spiked Blank	Chrysene	2011/09/26		85	%	60 - 130
		Chrysene	2011/09/26		5.2	%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/09/26		92	%	60 - 130
		Dibenz(a,h)anthracene	2011/09/26		8.2	%	50
	Spiked Blank	Fluoranthene	2011/09/26		100	%	60 - 130
		Fluoranthene	2011/09/26		5.9	%	50
	Spiked Blank	Fluorene	2011/09/26		93	%	60 - 130
		Fluorene	2011/09/26		7.3	%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/09/26		91	%	60 - 130
		Indeno(1,2,3-cd)pyrene	2011/09/26		6.8	%	50
Spiked Blank	Naphthalene	2011/09/26		104	%	60 - 130	
	Naphthalene	2011/09/26		11.8	%	50	
Spiked Blank	Phenanthrene	2011/09/26		97	%	60 - 130	
	Phenanthrene	2011/09/26		8.9	%	50	
Spiked Blank	Pyrene	2011/09/26		94	%	60 - 130	
	Pyrene	2011/09/26		4.1	%	50	
Method Blank	D10-2-Methylnaphthalene	2011/09/26		88	%	50 - 150	
	D10-Fluoranthene	2011/09/26		96	%	50 - 150	
	D10-Phenanthrene	2011/09/26		94	%	50 - 150	
	D12-Benzo(a)anthracene	2011/09/26		114	%	50 - 150	
	D12-Benzo(a)pyrene	2011/09/26		104	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/09/26		96	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/09/26		98	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/09/26		96	%	50 - 150	
	D12-Chrysene	2011/09/26		92	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1E2083

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2618101 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/09/26		102	%	50 - 150
		D12-Perylene	2011/09/26		100	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/09/26		104	%	50 - 150
		D8-Acenaphthylene	2011/09/26		94	%	50 - 150
		D8-Naphthalene	2011/09/26		86	%	50 - 150
		1-Methylnaphthalene	2011/09/26	<0.10		ug	
		1-Methylphenanthrene	2011/09/26	<0.10		ug	
		2-Chloronaphthalene	2011/09/26	<0.10		ug	
		2-Methylanthracene	2011/09/26	<0.10		ug	
		2-Methylnaphthalene	2011/09/26	<0.10		ug	
		3-Methylcholanthrene	2011/09/26	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/09/26	<0.10		ug	
		9,10-Dimethylanthracene	2011/09/26	<0.40		ug	
		Acenaphthene	2011/09/26	<0.050		ug	
		Acenaphthylene	2011/09/26	<0.050		ug	
		Anthracene	2011/09/26	<0.050		ug	
		Benzo(a)anthracene	2011/09/26	<0.050		ug	
		Benzo(a)fluorene	2011/09/26	<0.10		ug	
		Benzo(a)pyrene	2011/09/26	<0.050		ug	
		Benzo(b)fluoranthene	2011/09/26	<0.050		ug	
		Benzo(b)fluorene	2011/09/26	<0.10		ug	
		Benzo(e)pyrene	2011/09/26	<0.10		ug	
		Benzo(g,h,i)perylene	2011/09/26	<0.050		ug	
		Benzo(k)fluoranthene	2011/09/26	<0.050		ug	
		Biphenyl	2011/09/26	<0.10		ug	
		Chrysene	2011/09/26	<0.050		ug	
		Coronene	2011/09/26	<0.10		ug	
		Dibenz(a,h)anthracene	2011/09/26	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/09/26	<0.20		ug	
		Fluoranthene	2011/09/26	<0.050		ug	
		Fluorene	2011/09/26	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/09/26	<0.050		ug	
		m-Terphenyl	2011/09/26	<0.10		ug	
		Naphthalene	2011/09/26	0.108, RDL=0.072		ug	
		o-Terphenyl	2011/09/26	<0.10		ug	
		Perylene	2011/09/26	<0.10		ug	
		Phenanthrene	2011/09/26	<0.050		ug	
		p-Terphenyl	2011/09/26	<0.10		ug	
		Pyrene	2011/09/26	<0.050		ug	
		Quinoline	2011/09/26	<0.40		ug	
		Tetralin	2011/09/26	<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/Sept 24, 11

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Sept 23, 2011 @ 13:15 mst
Removal Date/Time: Sept 26, 2011 @ 08:52 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
24-Sep-11	09/24/2011 0:00	09/25/2011 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
21-Sep-11	26-Sep-11	30-Oct-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 25-May-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
707	229	15.5	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# 07863

GB1E1548 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Sept 24, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 07863

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

Report Date: 2011/10/06

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1F0025**

Received: 2011/09/28, 08:45

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/09/30	2011/10/03	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 #: B1F0025
 Report Date: 2011/10/06

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

Maxxam ID		LB3385	LB3386		
Sampling Date		2011/09/24	2011/09/24		
COC Number		07863	07863		
	Units	LICA PUFF+QFF/CLS/SEPT 24,11	LICA PUFF+QFF/PORT/SEPT 24,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.25	<0.10	0.10	2632595
1-Methylphenanthrene	ug	0.16	<0.10	0.10	2632595
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2632595
2-Methylantracene	ug	<0.10	<0.10	0.10	2632595
2-Methylnaphthalene	ug	0.43	<0.10	0.10	2632595
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2632595
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2632595
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2632595
Acenaphthene	ug	0.138	<0.050	0.050	2632595
Acenaphthylene	ug	0.478	0.054	0.050	2632595
Anthracene	ug	0.196	<0.050	0.050	2632595
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2632595
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2632595
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2632595
Benzo(b)fluoranthene	ug	0.122	<0.050	0.050	2632595
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2632595
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2632595
Benzo(g,h,i)perylene	ug	0.078	<0.050	0.050	2632595
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2632595
Biphenyl	ug	0.19	<0.10	0.10	2632595
Chrysene	ug	0.056	<0.050	0.050	2632595
Coronene	ug	<0.10	<0.10	0.10	2632595
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2632595
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2632595
Fluoranthene	ug	0.232	0.064	0.050	2632595
Fluorene	ug	0.430	0.088	0.050	2632595
Indeno(1,2,3-cd)pyrene	ug	0.072	<0.050	0.050	2632595
m-Terphenyl	ug	<0.10	<0.10	0.10	2632595
Naphthalene	ug	0.384	<0.072	0.072	2632595
o-Terphenyl	ug	<0.10	<0.10	0.10	2632595
Perylene	ug	<0.10	<0.10	0.10	2632595

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

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

Maxxam ID		LB3385	LB3386		
Sampling Date		2011/09/24	2011/09/24		
COC Number		07863	07863		
	Units	LICA PUFF+QFF/CLS/SEPT 24,11	LICA PUFF+QFF/PORT/SEPT 24,11	RDL	QC Batch

Phenanthrene	ug	1.50	0.234	0.050	2632595
p-Terphenyl	ug	<0.10	<0.10	0.10	2632595
Pyrene	ug	0.206	0.086	0.050	2632595
Quinoline	ug	<0.40	<0.40	0.40	2632595
Tetralin	ug	<0.10	<0.10	0.10	2632595
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	82	78		2632595
D10-Fluoranthene	%	100	100		2632595
D10-Fluorene (FS)	%	6.4 (1)	5.4 (1)		2632595
D10-Phenanthrene	%	96	92		2632595
D12-Benzo(a)anthracene	%	94	92		2632595
D12-Benzo(a)pyrene	%	106	106		2632595
D12-Benzo(b)fluoranthene	%	92	90		2632595
D12-Benzo(ghi)perylene	%	96	96		2632595
D12-Benzo(k)fluoranthene	%	92	88		2632595
D12-Chrysene	%	84	84		2632595
D12-Indeno(1,2,3-cd)pyrene	%	100	100		2632595
D12-Perylene	%	106	104		2632595
D14-Dibenzo(a,h)anthracene	%	100	98		2632595
D14-Terphenyl (FS)	%	95	95		2632595
D8-Acenaphthylene	%	96	94		2632595
D8-Naphthalene	%	86	76		2632595

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 #: B1F0025
Report Date: 2011/10/06

GENERAL COMMENTS

PAHMS-F

9,10-Dimethylanthracene and 7,12-Dimethylbenzo(a)anthracene are above 25% RSD in initial calibration. No positives found for these 2 compounds.

Pyrene is statistically out of control at 92.0% and 95.0% recovery in the spike and 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 or Triphenylene. An estimated mdl for each of these compounds is 0.1 ug. Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(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 Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample LB3385-01: PAHMS-F

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

Sample LB3386-01: 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. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB1F0025

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2632595 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/10/03		84	%	50 - 150
		D10-Fluoranthene	2011/10/03		94	%	50 - 150
		D10-Phenanthrene	2011/10/03		86	%	50 - 150
		D12-Benzo(a)anthracene	2011/10/03		88	%	50 - 150
		D12-Benzo(a)pyrene	2011/10/03		104	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/10/03		90	%	50 - 150
		D12-Benzo(ghi)perylene	2011/10/03		96	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/10/03		88	%	50 - 150
		D12-Chrysene	2011/10/03		84	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/10/03		98	%	50 - 150
		D12-Perylene	2011/10/03		106	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/10/03		96	%	50 - 150
		D8-Acenaphthylene	2011/10/03		94	%	50 - 150
		D8-Naphthalene	2011/10/03		86	%	50 - 150
		Acenaphthene	2011/10/03		84	%	60 - 130
	RPD	Acenaphthene	2011/10/03	2.4		%	50
	Spiked Blank	Acenaphthylene	2011/10/03		89	%	60 - 130
	RPD	Acenaphthylene	2011/10/03	1.1		%	50
	Spiked Blank	Anthracene	2011/10/03		85	%	60 - 130
	RPD	Anthracene	2011/10/03	0.6		%	50
	Spiked Blank	Benzo(a)anthracene	2011/10/03		80	%	60 - 130
	RPD	Benzo(a)anthracene	2011/10/03	0.3		%	50
	Spiked Blank	Benzo(a)pyrene	2011/10/03		90	%	60 - 130
	RPD	Benzo(a)pyrene	2011/10/03	2.0		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/10/03		83	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/10/03	0.6		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/10/03		84	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/10/03	1.8		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/10/03		90	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/10/03	1.4		%	50
	Spiked Blank	Chrysene	2011/10/03		82	%	60 - 130
	RPD	Chrysene	2011/10/03	2.5		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/10/03		88	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/10/03	4.2		%	50
	Spiked Blank	Fluoranthene	2011/10/03		91	%	60 - 130
	RPD	Fluoranthene	2011/10/03	3.5		%	50
	Spiked Blank	Fluorene	2011/10/03		84	%	60 - 130
	RPD	Fluorene	2011/10/03	0.9		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/10/03		89	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/10/03	1.4		%	50
	Spiked Blank	Naphthalene	2011/10/03		82	%	60 - 130
	RPD	Naphthalene	2011/10/03	6.0		%	50
	Spiked Blank	Phenanthrene	2011/10/03		81	%	60 - 130
	RPD	Phenanthrene	2011/10/03	1.8		%	50
	Spiked Blank	Pyrene	2011/10/03		92	%	60 - 130
RPD	Pyrene	2011/10/03	3.2		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/10/03		84	%	50 - 150	
	D10-Fluoranthene	2011/10/03		96	%	50 - 150	
	D10-Phenanthrene	2011/10/03		88	%	50 - 150	
	D12-Benzo(a)anthracene	2011/10/03		88	%	50 - 150	
	D12-Benzo(a)pyrene	2011/10/03		104	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/10/03		90	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/10/03		96	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/10/03		90	%	50 - 150	
	D12-Chrysene	2011/10/03		84	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1F0025

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2632595 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/10/03		96	%	50 - 150
		D12-Perylene	2011/10/03		104	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/10/03		94	%	50 - 150
		D8-Acenaphthylene	2011/10/03		94	%	50 - 150
		D8-Naphthalene	2011/10/03		84	%	50 - 150
		1-Methylnaphthalene	2011/10/03	<0.10		ug	
		1-Methylphenanthrene	2011/10/03	<0.10		ug	
		2-Chloronaphthalene	2011/10/03	<0.10		ug	
		2-Methylantracene	2011/10/03	<0.10		ug	
		2-Methylnaphthalene	2011/10/03	<0.10		ug	
		3-Methylcholanthrene	2011/10/03	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/10/03	<0.10		ug	
		9,10-Dimethylantracene	2011/10/03	<0.40		ug	
		Acenaphthene	2011/10/03	<0.050		ug	
		Acenaphthylene	2011/10/03	<0.050		ug	
		Anthracene	2011/10/03	<0.050		ug	
		Benzo(a)anthracene	2011/10/03	<0.050		ug	
		Benzo(a)fluorene	2011/10/03	<0.10		ug	
		Benzo(a)pyrene	2011/10/03	<0.050		ug	
		Benzo(b)fluoranthene	2011/10/03	<0.050		ug	
		Benzo(b)fluorene	2011/10/03	<0.10		ug	
		Benzo(e)pyrene	2011/10/03	<0.10		ug	
		Benzo(g,h,i)perylene	2011/10/03	<0.050		ug	
		Benzo(k)fluoranthene	2011/10/03	<0.050		ug	
		Biphenyl	2011/10/03	<0.10		ug	
		Chrysene	2011/10/03	<0.050		ug	
		Coronene	2011/10/03	<0.10		ug	
		Dibenz(a,h)anthracene	2011/10/03	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/10/03	<0.20		ug	
		Fluoranthene	2011/10/03	<0.050		ug	
		Fluorene	2011/10/03	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/10/03	<0.050		ug	
		m-Terphenyl	2011/10/03	<0.10		ug	
		Naphthalene	2011/10/03	<0.072		ug	
		o-Terphenyl	2011/10/03	<0.10		ug	
		Perylene	2011/10/03	<0.10		ug	
		Phenanthrene	2011/10/03	<0.050		ug	
		p-Terphenyl	2011/10/03	<0.10		ug	
		Pyrene	2011/10/03	<0.050		ug	
		Quinoline	2011/10/03	<0.40		ug	
		Tetralin	2011/10/03	<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/Sept 30, 11

Puf+ s/n: 100-1015
 Motor s/n: 1139
 Installation Date/Time: Sept 28, 2011 @ 09:42 mst
 Removal Date/Time: Oct 03, 2011 @ 11:51 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
30-Sep-11	09/23/2011 0:00	10/01/2011 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
27-Sep-11	03-Oct-11	10-Oct-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 25-May-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
706	229	11.7	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# 08014

GB1E1587 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Sept 30, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 08014

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7**Report Date: 2011/10/12****CERTIFICATE OF ANALYSIS****MAXXAM JOB #: B1F4542****Received: 2011/10/05, 10:15**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/10/07	2011/10/11	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 #: B1F4542
 Report Date: 2011/10/12

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

Maxxam ID		LD6063	LD6064		
Sampling Date		2011/09/30	2011/09/30		
COC Number		08014	08014		
	Units	LICAPUFF/QFF/CLS/SEPT30,11	LICAPUFF/QFF/PORT/SEPT30,11	RDL	QC Batch
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2640972
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2640972
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2640972
2-Methylantracene	ug	<0.10	<0.10	0.10	2640972
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2640972
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2640972
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2640972
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2640972
Acenaphthene	ug	<0.050	<0.050	0.050	2640972
Acenaphthylene	ug	<0.050	<0.050	0.050	2640972
Anthracene	ug	<0.050	<0.050	0.050	2640972
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2640972
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2640972
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2640972
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2640972
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2640972
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2640972
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2640972
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2640972
Biphenyl	ug	<0.10	<0.10	0.10	2640972
Chrysene	ug	<0.050	<0.050	0.050	2640972
Coronene	ug	<0.10	<0.10	0.10	2640972
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2640972
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2640972
Fluoranthene	ug	<0.050	<0.050	0.050	2640972
Fluorene	ug	0.092	<0.050	0.050	2640972
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2640972
m-Terphenyl	ug	<0.10	<0.10	0.10	2640972
Naphthalene	ug	<0.072	<0.072	0.072	2640972
o-Terphenyl	ug	<0.10	<0.10	0.10	2640972
Perylene	ug	<0.10	<0.10	0.10	2640972
Phenanthrene	ug	0.198	0.088	0.050	2640972
RDL = Reportable Detection Limit QC Batch = Quality Control Batch					

Maxxam Job #: B1F4542
Report Date: 2011/10/12

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

Maxxam ID		LD6063	LD6064		
Sampling Date		2011/09/30	2011/09/30		
COC Number		08014	08014		
	Units	LICAPUFF/QFF/CLS/SEPT30,11	LICAPUFF/QFF/PORT/SEPT30,11	RDL	QC Batch
p-Terphenyl	ug	<0.10	<0.10	0.10	2640972
Pyrene	ug	<0.050	<0.050	0.050	2640972
Quinoline	ug	<0.40	<0.40	0.40	2640972
Tetralin	ug	<0.10	<0.10	0.10	2640972
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	72	80		2640972
D10-Fluoranthene	%	92	88		2640972
D10-Fluorene (FS)	%	12 (1)	13 (1)		2640972
D10-Phenanthrene	%	88	86		2640972
D12-Benzo(a)anthracene	%	90	92		2640972
D12-Benzo(a)pyrene	%	88	92		2640972
D12-Benzo(b)fluoranthene	%	88	90		2640972
D12-Benzo(ghi)perylene	%	86	86		2640972
D12-Benzo(k)fluoranthene	%	86	92		2640972
D12-Chrysene	%	82	84		2640972
D12-Indeno(1,2,3-cd)pyrene	%	90	90		2640972
D12-Perylene	%	86	92		2640972
D14-Dibenzo(a,h)anthracene	%	88	90		2640972
D14-Terphenyl (FS)	%	92	83		2640972
D8-Acenaphthylene	%	84	88		2640972
D8-Naphthalene	%	72	82		2640972
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 #: B1F4542
 Report Date: 2011/10/12

Test Summary

Maxxam ID	LD6063	Collected	2011/09/30
Sample ID	LICAPUFF/QFF/CLS/SEPT30,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/10/05

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2640972	2011/10/07	2011/10/11	WENDY ZHAO

Maxxam ID	LD6064	Collected	2011/09/30
Sample ID	LICAPUFF/QFF/PORT/SEPT30,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/10/05

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2640972	2011/10/07	2011/10/11	WENDY ZHAO

Maxxam Job #: B1F4542
Report Date: 2011/10/12

GENERAL COMMENTS

PAHMS-F

9,10-Dimethylanthracene and 7,12-Dimethylbenzo(a)anthracene are above 25% RSD in initial calibration. No positives found for these 2 compounds.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene or Triphenylene. An estimated mdl for each of these compounds is 0.1ug. Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(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 Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample LD6063-01: PAHMS-F

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

Sample LD6064-01: 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. #:
 Site Location:

Quality Assurance Report

Maxxam Job Number: GB1F4542

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2640972 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/10/11		86	%	50 - 150
		D10-Fluoranthene	2011/10/11		92	%	50 - 150
		D10-Phenanthrene	2011/10/11		86	%	50 - 150
		D12-Benzo(a)anthracene	2011/10/11		86	%	50 - 150
		D12-Benzo(a)pyrene	2011/10/11		90	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/10/11		86	%	50 - 150
		D12-Benzo(ghi)perylene	2011/10/11		86	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/10/11		86	%	50 - 150
		D12-Chrysene	2011/10/11		86	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/10/11		88	%	50 - 150
		D12-Perylene	2011/10/11		86	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/10/11		88	%	50 - 150
		D8-Acenaphthylene	2011/10/11		90	%	50 - 150
		D8-Naphthalene	2011/10/11		88	%	50 - 150
		Acenaphthene	2011/10/11		83	%	60 - 130
	RPD	Acenaphthene	2011/10/11	2.1		%	50
	Spiked Blank	Acenaphthylene	2011/10/11		89	%	60 - 130
	RPD	Acenaphthylene	2011/10/11	5.8		%	50
	Spiked Blank	Anthracene	2011/10/11		81	%	60 - 130
	RPD	Anthracene	2011/10/11	5.1		%	50
	Spiked Blank	Benzo(a)anthracene	2011/10/11		82	%	60 - 130
	RPD	Benzo(a)anthracene	2011/10/11	1.5		%	50
	Spiked Blank	Benzo(a)pyrene	2011/10/11		73	%	60 - 130
	RPD	Benzo(a)pyrene	2011/10/11	2.4		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/10/11		84	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/10/11	1.5		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/10/11		80	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/10/11	0.6		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/10/11		89	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/10/11	0.3		%	50
	Spiked Blank	Chrysene	2011/10/11		86	%	60 - 130
	RPD	Chrysene	2011/10/11	2.0		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/10/11		84	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/10/11	0.6		%	50
	Spiked Blank	Fluoranthene	2011/10/11		91	%	60 - 130
	RPD	Fluoranthene	2011/10/11	9.5		%	50
	Spiked Blank	Fluorene	2011/10/11		83	%	60 - 130
	RPD	Fluorene	2011/10/11	4.9		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/10/11		84	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/10/11	0.6		%	50
	Spiked Blank	Naphthalene	2011/10/11		87	%	60 - 130
	RPD	Naphthalene	2011/10/11	4.1		%	50
	Spiked Blank	Phenanthrene	2011/10/11		82	%	60 - 130
	RPD	Phenanthrene	2011/10/11	2.2		%	50
	Spiked Blank	Pyrene	2011/10/11		90	%	60 - 130
	RPD	Pyrene	2011/10/11	9.4		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/10/11		66	%	50 - 150
		D10-Fluoranthene	2011/10/11		84	%	50 - 150
		D10-Phenanthrene	2011/10/11		78	%	50 - 150
		D12-Benzo(a)anthracene	2011/10/11		86	%	50 - 150
		D12-Benzo(a)pyrene	2011/10/11		86	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/10/11		84	%	50 - 150
		D12-Benzo(ghi)perylene	2011/10/11		82	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/10/11		82	%	50 - 150
		D12-Chrysene	2011/10/11		82	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1F4542

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2640972 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/10/11		86	%	50 - 150
		D12-Perylene	2011/10/11		84	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/10/11		84	%	50 - 150
		D8-Acenaphthylene	2011/10/11		74	%	50 - 150
		D8-Naphthalene	2011/10/11		70	%	50 - 150
		1-Methylnaphthalene	2011/10/11	<0.10		ug	
		1-Methylphenanthrene	2011/10/11	<0.10		ug	
		2-Chloronaphthalene	2011/10/11	<0.10		ug	
		2-Methylanthracene	2011/10/11	<0.10		ug	
		2-Methylnaphthalene	2011/10/11	<0.10		ug	
		3-Methylcholanthrene	2011/10/11	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/10/11	<0.10		ug	
		9,10-Dimethylanthracene	2011/10/11	<0.40		ug	
		Acenaphthene	2011/10/11	<0.050		ug	
		Acenaphthylene	2011/10/11	<0.050		ug	
		Anthracene	2011/10/11	<0.050		ug	
		Benzo(a)anthracene	2011/10/11	<0.050		ug	
		Benzo(a)fluorene	2011/10/11	<0.10		ug	
		Benzo(a)pyrene	2011/10/11	<0.050		ug	
		Benzo(b)fluoranthene	2011/10/11	<0.050		ug	
		Benzo(b)fluorene	2011/10/11	<0.10		ug	
		Benzo(e)pyrene	2011/10/11	<0.10		ug	
		Benzo(g,h,i)perylene	2011/10/11	<0.050		ug	
		Benzo(k)fluoranthene	2011/10/11	<0.050		ug	
		Biphenyl	2011/10/11	<0.10		ug	
		Chrysene	2011/10/11	<0.050		ug	
		Coronene	2011/10/11	<0.10		ug	
		Dibenz(a,h)anthracene	2011/10/11	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/10/11	<0.20		ug	
		Fluoranthene	2011/10/11	<0.050		ug	
		Fluorene	2011/10/11	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/10/11	<0.050		ug	
		m-Terphenyl	2011/10/11	<0.10		ug	
		Naphthalene	2011/10/11	<0.072		ug	
		o-Terphenyl	2011/10/11	<0.10		ug	
		Perylene	2011/10/11	<0.10		ug	
		Phenanthrene	2011/10/11	<0.050		ug	
		p-Terphenyl	2011/10/11	<0.10		ug	
		Pyrene	2011/10/11	<0.050		ug	
		Quinoline	2011/10/11	<0.40		ug	
		Tetralin	2011/10/11	<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
September 2011

Prepared By:



October 28, 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: September 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 – September 2011

LICA ST. LINA 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		
SO2 (PPB)	172	48	0	0	0.06	3	6	12	6.8	327(NW)	0.3	9, 30	100.0
H2S (PPB)	10	3	0	0	0.12	1	VAR	VAR	VAR	VAR	0.9	12	99.9
THC (PPM)	-	-	-	-	1.92	2.7	23	8	6.1	10(N)	2.1	30	99.3
OZONE (PPB)	82	-	0	-	26.3	63	9	15, 16	16.2, 14.7	309(NW), 321(NW)	42.7	9	100.0
NOx (PPB)	-	-	-	-	1.24	6	11	6, 7	13.4, 13.1	304(WNW), 314(NW)	2.7	23	99.9
NO (PPB)	-	-	-	-	0.15	2	6	7	9.4	326(NW)	0.4	23, 30	99.9
NO2 (PPB)	159	-	0	-	0.97	6	11	6	13.4	304(WNW)	2.4	23	99.9
PM2.5 (ug/m3)	-	30	-	0	5.18	15.9	10	0	14.7	218(SW)	8.8	9	99.6
TEMPERATURE (DEGREE C)	-	-	-	-	14.06	31.2	8	15	2.8	229(SW)	24.3	8	100.0
BP (MILLIBAR)	-	-	-	-	932	947	13	VAR	VAR	VAR	944.5	13	100.0
RH (%)	-	-	-	-	56.03	91	VAR	VAR	VAR	VAR	80.9	11	100.0
PRECIPITATION (MM)	-	-	-	-	0.02	2.8	11	11	17.1	338(NNW)	7.1	11	100.0
VECTOR WS (KPH)	-	-	-	-	9.55	19.5	25	15	-	185(S)	11.0	9	100.0
VECTOR WD (DEGREES)	-	-	-	-	34(NE)	-	-	-	-	-	-	-	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 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: 510

The analyzer was working well throughout 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, S/N: 77021-384

The analyzer did not span on September 1st due to run out the span gas. A new span gas was installed on September 2nd. The monthly calibration was performed on September 8th. The inlet filter was changed before the monthly calibration was started. The hydrogen gas cylinder was replaced on September 29th. 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. 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. Data was corrected using daily zero information.

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 September 9th. Following the audit, the Teom filter and FDMS filter were replaced. 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. Three hours of data were invalidated as the data were above –3 ug/m³.

Temperature (Degree C)

Analyzer make / model – Met One 060

No operational issue was observed during the month.

General Monthly Summary

AQM STATION – LICA – St. Lina

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. Both wind speed and wind direction channels were put into the Maintenance mode for a camera installation on September 15th.

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 September 9th.

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. Ten hours of AQI values recorded in September 2011 were within the Fair range, and they were all due to Ozone. The rest of AQI values were within the Good range. The highest hourly concentration of Ozone was 63 ppb and an AQI value of 36, on September 9th, hour of 15 and 16. The highest AQI value of PM2.5 was 10, the concentration was 15.2 ug/m3 and an of 23, on September 23rd, hour of 22.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

SEPTEMBER 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	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		8	8	8	8	7	7	6	5	7	8	11	13	14	15	NA	15	15	14	14	13	13	13	13	13	13	15
		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
2		11	11	11	11	7	6	9	7	8	8	9	11	14	-	15	15	13	13	12	12	11	9	9	9	10	15
		O3	O3	O3	O3	O3	PM2	PM2	PM2	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3
3		9	8	7	7	6	6	6	5	7	9	11	-	13	13	13	13	13	13	13	13	13	12	10	10	9	13
		O3	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
4		9	9	10	10	9	9	8	8	9	9	10	-	14	15	17	17	17	16	16	15	15	14	14	13	13	17
		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	O3
5		12	12	13	14	13	13	13	10	9	11	-	14	16	18	21	23	21	21	19	18	16	14	13	13	23	23
		O3	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
6		12	13	14	14	12	11	-	8	10	-	13	17	18	18	18	19	18	17	17	17	17	17	17	17	16	19
		O3	O3	O3	O3	O3	O3	NA	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3
7		16	16	16	15	14	13	12	12	-	17	20	23	26	24	24	25	25	26	27	28	25	22	22	22	28	28
		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
8		21	21	21	21	21	21	19	-	14	-	-	-	-	-	-	-	18	-	16	16	-	17	18	16	21	21
		O3	O3	O3	O3	O3	O3	O3	NA	O3	NA	NA	NA	NA	NA	NA	NA	O3	NA	O3	O3	NA	O3	O3	O3	O3	O3
9		17	17	15	15	14	16	-	13	14	17	21	-	-	-	-	-	36	36	34	32	30	26	24	25	25	36
		O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	NA	NA	NA	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3
10		24	22	20	18	15	-	12	11	11	12	14	15	16	16	17	17	17	16	15	16	16	16	16	16	16	24
		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	O3
11		14	14	15	9	-	12	7	7	9	10	10	11	12	12	12	13	12	11	11	10	10	9	9	9	8	15
		O3	O3	O3	O3	NA	O3	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3
12		8	8	9	-	8	7	6	7	9	9	12	13	14	14	14	14	13	12	11	11	10	10	9	8	14	14
		O3	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
13		7	8	-	8	7	7	7	8	11	13	13	14	14	15	15	15	15	15	14	14	14	13	14	12	15	15
		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
14		12	-	10	9	9	10	10	11	12	13	14	14	15	15	16	16	16	16	16	16	16	15	14	14	16	16
		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
15		-	13	12	12	11	10	10	10	10	11	12	14	16	17	18	17	17	17	16	15	14	13	12	-	18	18
		NA	O3	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		11	10	9	10	8	7	9	9	8	9	9	10	11	10	11	13	12	13	13	12	11	10	-	8	13	13
		O3	O3	O3	PM2	PM2	O3	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3
17		-	6	7	6	7	7	7	8	8	11	11	12	14	15	15	15	15	15	14	14	13	-	11	10	15	15
		NA	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		9	9	8	8	7	7	7	7	8	9	10	12	13	14	15	15	16	15	15	15	15	-	13	13	16	16
		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	O3
19		12	11	9	7	8	9	8	7	9	12	14	14	15	14	14	14	13	13	12	-	12	11	10	8	15	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	O3
20		8	8	8	8	7	7	7	7	7	8	9	10	11	12	12	13	13	13	-	12	12	12	13	13	13	13
		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	O3
21		13	12	11	11	10	10	10	11	12	13	14	16	17	18	19	19	20	-	18	17	17	18	18	16	20	20
		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	O3
22		15	14	13	13	12	11	11	11	14	17	19	19	19	19	19	20	-	18	17	16	17	17	16	17	20	20
		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	O3
23		18	18	17	16	14	13	12	11	10	10	10	11	12	11	11	-	11	10	9	9	10	9	13	10	18	18
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	PM2	PM2	PM2	PM2	PM2	PM2	O3
24		7	7	10	10	10	9	9	10	14	15	17	17	18	19	-	21	21	21	21	20	19	16	15	14	21	21
		PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3
25		13	13	11	10	10	9	9	10	10	14	17	20	22	-	23	23	22	22	21	20	19	18	18	16	23	23
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3
26		16	16	16	16	15	12	11	13	15	16	16	16	-	18	18	19	19	18	19	18	18	18	17	17	19	19
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3
27		16	15	14	13	12	12	11	11	12	14	16	-	18	19	19	20	21	20	19	19	20	18	17	17	21	21
		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	O3
28		16	15	15	15	14	13	13	13	12	13	-	13	13	13	13	12	12	11	11	11	11	10	10	10	16	16
		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	O3
29		9	9	9	9	8	6	6	7	7	-	10	11	12	13	14	14	14	14	13	13	13	12	12	12	14	14
		O3	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
30		12	12	12	11	11	11	10	10	-	11	12	12	13	13	13	12	12	12	12	12	12	14	17	17	16	17
		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
PEAK		24	22	21	21	21	21	19	13	15	17	21	23	26	24	24	36	36	34	32	30	26	24	25	25	25	25
		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)			
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Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA
SEPTEMBER 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	0	0	0	0	0	0	IZS	0	0	0	0	1	1	1	0	0	1	0.1	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	0.0	24
3	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
4	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	0	0	0	0	0	0	0	0	0	1	0.0	24
5	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	1	1	1	1	1	0	0	0	0	0	1	0.2	24	
6	0	0	0	0	0	0	C	0	0	IZS	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	IZS	0	1	1	3	0	0	0	0	0	0	0	0	0	0	0	3	0.2	24	
8	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
9	0	0	0	0	0	0	IZS	0	0	0	0	C	C	C	C	1	1	1	1	1	1	1	0	0	1	0.3	24	
10	1	1	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	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	1	1	0	0	0	1	0	0	0	0	0	0	0	IZS	1	0.1	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	IZS	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	IZS	0	0.0	24		
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	IZS	1	0	0	1	0.2	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	0	IZS	0	0	0	0	0	0	0	0	0.0	24	
23	0	0	0	0	0	0	0	0	0	0	0	1	1	1	IZS	0	0	0	0	0	0	0	0	0	1	0.1	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	1	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
28	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	
29	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	
30	0	0	0	0	1	0	1	1	IZS	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	0.3	24	
HOURLY MAX	1	1	1	0	1	0	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	0	0			
HOURLY AVG	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	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	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

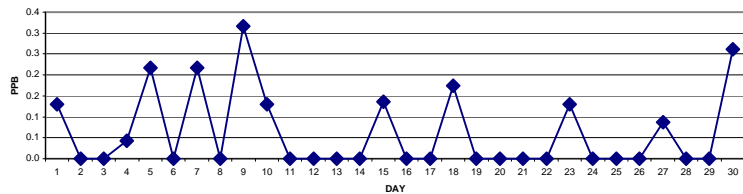
OBJECTIVE LIMIT:

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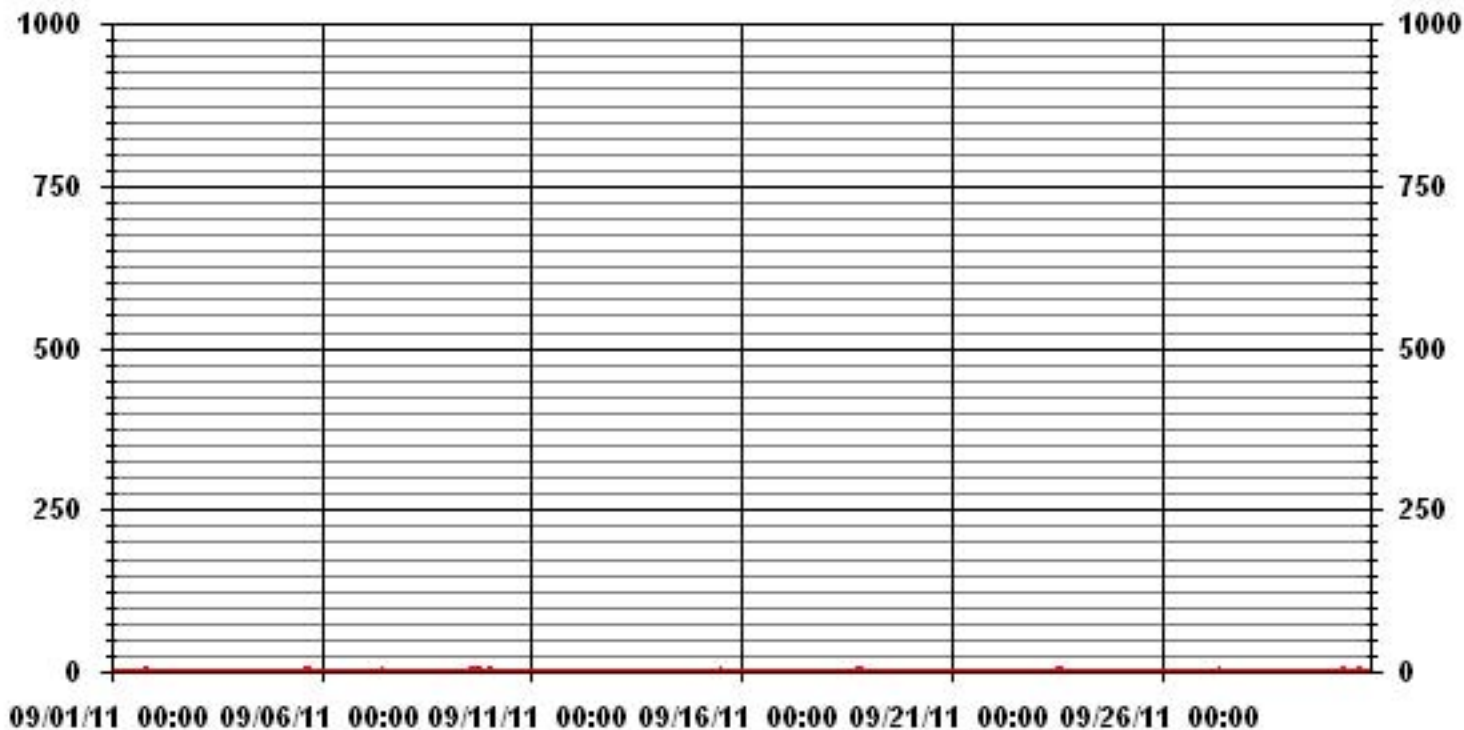
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	39					
MAXIMUM 1-HR AVERAGE:	3	PPB	@ HOUR(S)	12	ON DAY(S)	6
MAXIMUM 24-HR AVERAGE:	0.3	PPB			ON DAY(S)	9, 30
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.26		MONTHLY AVERAGE:	0.06	PPB	

24 HOUR AVERAGES FOR SEPTEMBER 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 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	0	0	0	0	1	0	0	1	0	1	1	1	1	2	IZS	1	1	1	1	2	2	1	1	1	2	0.8	24	
2	2	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	0	0	0	0	0	0	0	2	0.7	24	
3	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	0	0	0	0	1	0.0	24	
4	0	0	1	1	1	1	1	1	1	1	1	1	IZS	1	1	2	1	1	1	1	1	1	1	1	2	1.0	24	
5	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	2	2	2	3	2	1	1	1	1	3	1.3	24	
6	1	1	1	1	1	1	C	C	IZS	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0.9	24	
7	1	1	1	1	1	1	1	1	IZS	1	2	3	4	3	1	1	1	2	1	1	1	1	1	1	4	1.4	24	
8	1	1	1	1	1	1	1	IZS	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	1	0.4	24	
9	0	0	1	0	1	1	IZS	1	1	1	C	C	C	C	C	2	2	2	2	2	2	1	1	2	1.2	24		
10	2	2	1	1	1	IZS	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	2	1.0	24	
11	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	1	0.7	24	
12	0	0	0	IZS	0	0	1	0	0	0	1	1	0	0	1	1	0	0	0	0	0	1	0	0	1	0.3	24	
13	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	0.0	24	
14	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	0.3	24	
15	IZS	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1.1	24
16	0	1	1	1	0	1	0	1	0	1	1	0	1	1	1	1	1	1	0	0	0	0	0	0	1	0.6	24	
17	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	0.3	24
18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	IZS	2	1	1	2	1.1	24	
19	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	
20	1	0	1	0	0	0	0	1	0	0	0	1	1	1	1	0	1	1	IZS	0	1	1	1	1	1	0.6	24	
21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0.7	24	
22	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	0.2	24	
23	0	0	0	1	0	1	0	1	1	1	1	1	2	2	IZS	1	1	1	1	1	0	1	1	1	2	0.8	24	
24	1	0	0	0	0	0	0	0	0	0	0	0	1	1	IZS	0	1	1	1	1	1	1	1	0	1	0.4	24	
25	0	0	0	0	0	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	0.8	24	
26	1	1	1	1	1	1	1	1	0	0	1	0	IZS	0	0	0	0	0	1	1	1	1	1	1	1	0.7	24	
27	1	1	1	1	1	1	1	1	2	3	1	IZS	0	1	0	1	1	1	1	1	1	0	0	0	3	0.9	24	
28	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	0	1	1	0	1	0	0	1	0.4	24	
29	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0.5	24	
30	1	2	1	1	1	1	1	1	IZS	1	1	1	1	1	3	2	1	1	1	1	1	1	0	0	3	1.1	24	
HOURLY MAX	2	2	1	1	1	1	1	1	2	3	2	3	4	3	2	3	2	3	2	2	2	2	1	2				
HOURLY AVG	0.7	0.6	0.6	0.6	0.6	0.7	0.6	0.7	0.5	0.7	0.7	0.7	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.6	0.6				

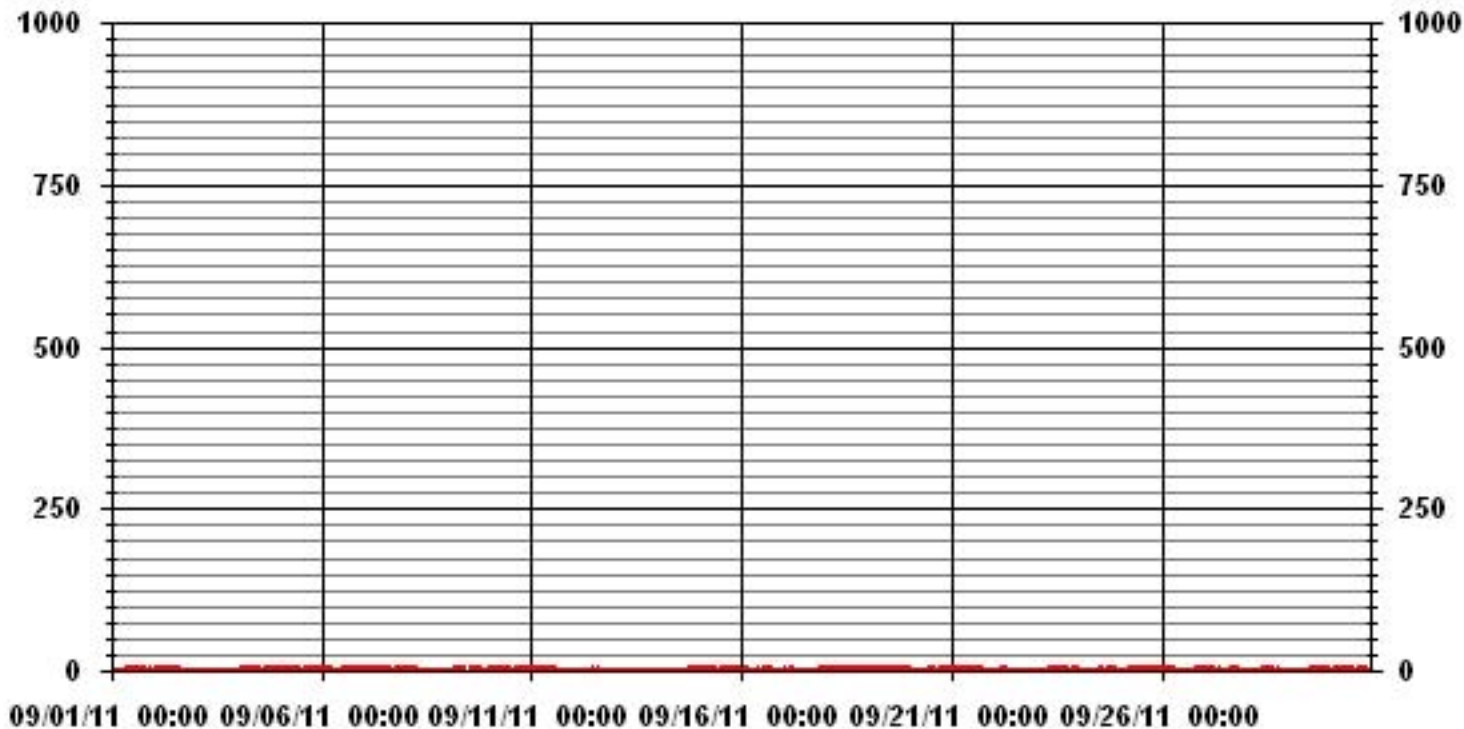
STATUS FLAG CODES

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:	437
MAXIMUM INSTANTANEOUS VALUE:	4 PPB @ HOUR(S) 12 ON DAY(S) 7
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	0.60
OPERATIONAL TIME:	720 HRS

01 Hour Averages



— LICA31 SO2MAX PPB

LICA31
 SO2_ / WDR Joint Frequency Distribution (Percent)

September 2011

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 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	5.42	3.95	9.38	8.50	8.79	5.27	4.83	4.69	7.03	5.71	5.42	3.37	5.57	5.86	5.71	10.41	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	5.42	3.95	9.38	8.50	8.79	5.27	4.83	4.69	7.03	5.71	5.42	3.37	5.57	5.86	5.71	10.41	

Calm : .00 %

Total # Operational Hours : 682

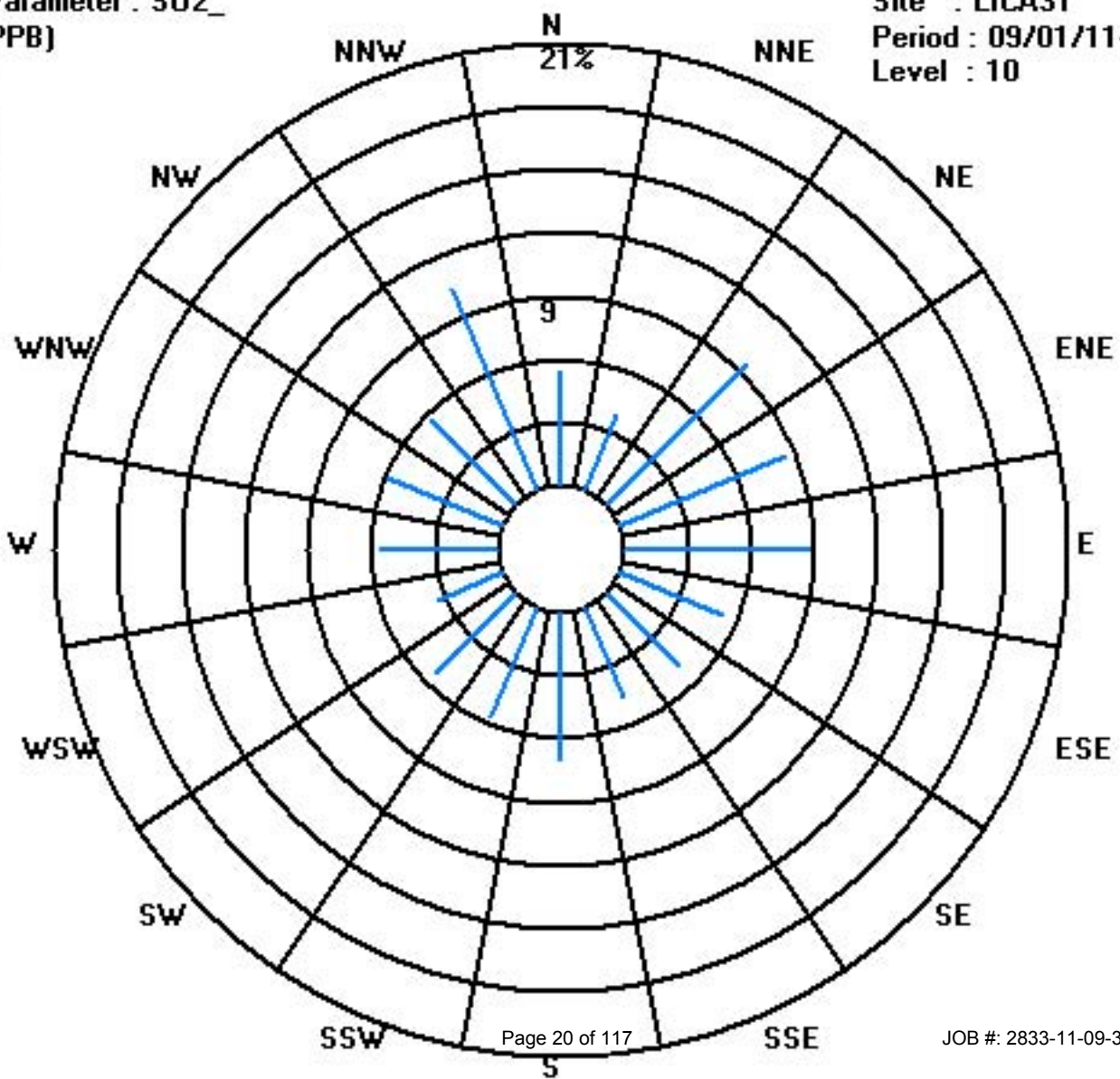
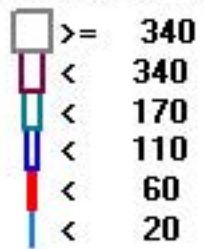
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	37	27	64	58	60	36	33	32	48	39	37	23	38	40	39	71	682
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	37	27	64	58	60	36	33	32	48	39	37	23	38	40	39	71	

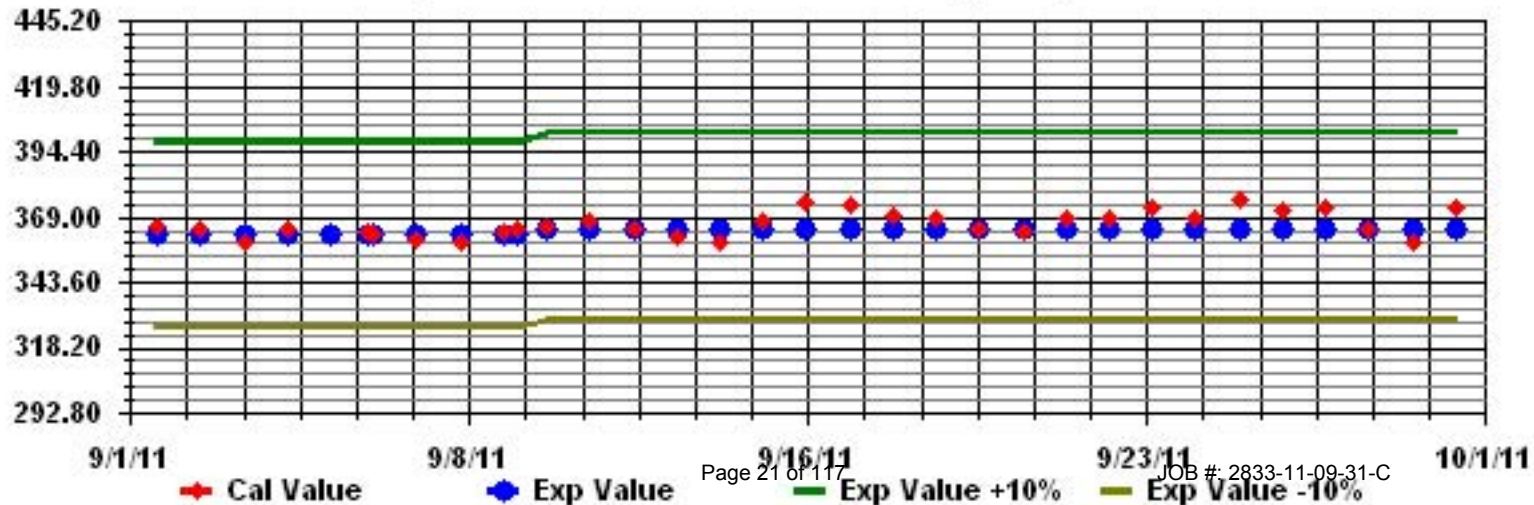
Calm : .00 %

Total # Operational Hours : 682

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: S02_ Sequence: S02 Phase: SPAll



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 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	0	0	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	1	1	0.0	24
4	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24	
5	0	0	0	0	0	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	0	0	0	0	0	0	0	C	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	24
9	0	0	0	0	0	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
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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	1	0.9	24	
13	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	0.1	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	1	1	0.8	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	1	0.4	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	0.0	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	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	0.0	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	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	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.4	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	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	1	1	0.2	24
30	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	0.3	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	0.2	0.2	0.2	0.2	0.2	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	0.2	0.2	0.2	

STATUS FLAG CODES

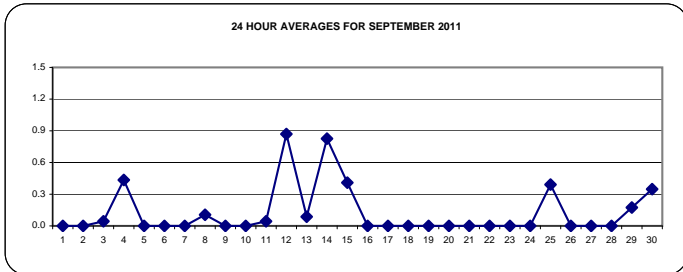
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

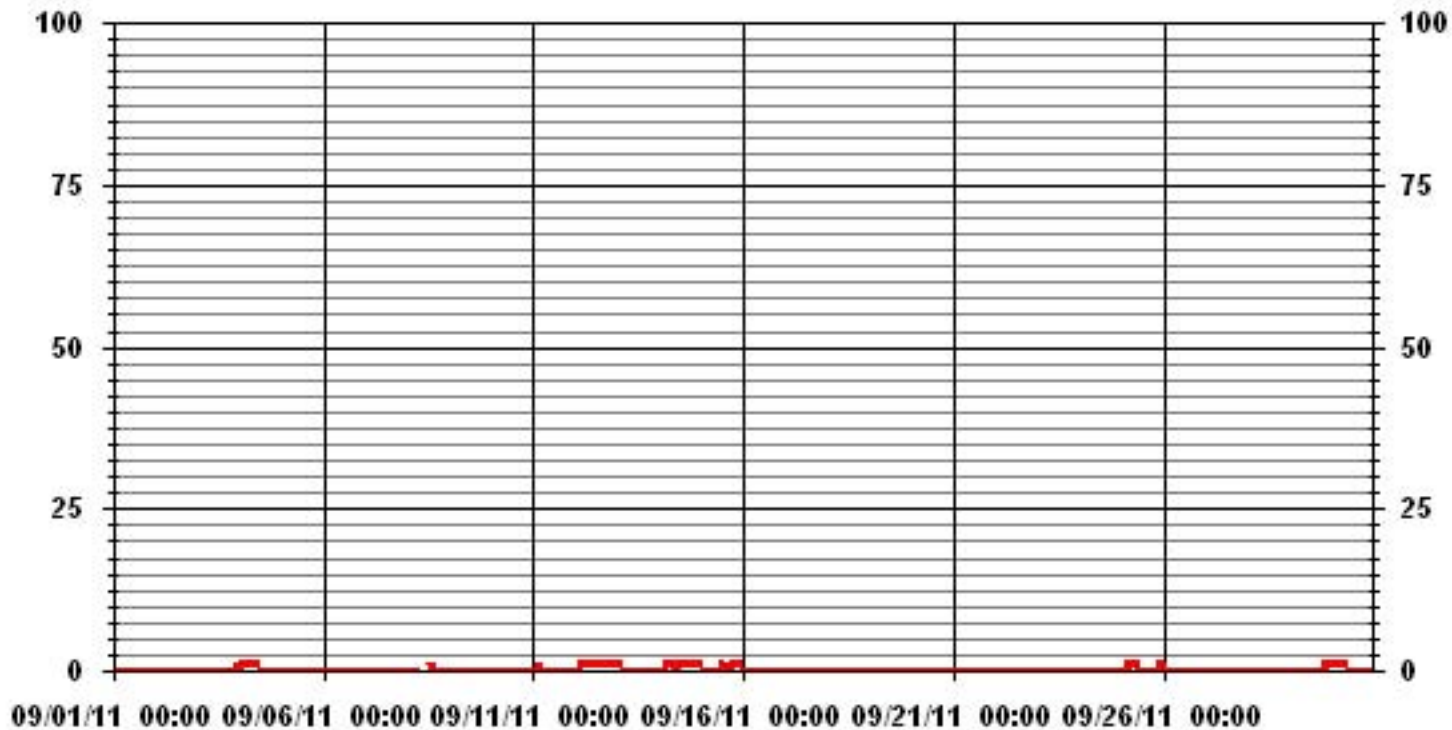
ALBERTA ENVIRONMENT: 1-HR 10 PPB 24-HR 3 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	85
MAXIMUM 1-HR AVERAGE:	1 PPB @ HOUR(S) VAR ON DAY(S) VAR
MAXIMUM 24-HR AVERAGE:	0.9 PPB ON DAY(S) VAR-VARIOUS 12
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	5 HRS
OPERATIONAL TIME:	719 HRS
AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	0.33
MONTHLY AVERAGE:	0.12 PPB



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

SEPTEMBER 2011

HYDROGEN SULPHIDE MAX instantaneous maximum 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	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	2	2	0	1	1	0	0	1	2	1	0	1	0	0	IZS	0	0	0	0	0	0	0	0	0	2	0.5	24	
2	1	1	0	0	1	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
3	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	0.5	24	
4	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	1	0.5	24	
5	0	0	0	0	0	0	0	0	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
6	1	0	0	0	0	0	C	C	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	0	0	0	0.0	24	
8	0	0	0	0	0	0	0	IZS	1	C	C	C	C	C	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	M	M	0	0	0	0	0	0	0	0	0	0	0.0	22	
10	0	0	0	0	2	IZS	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24	
11	1	1	0	1	IZS	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
12	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
13	1	1	IZS	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0.4	24		
14	0	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	0	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	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.1	24	
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	0	0	0	0	0	0	0	IZS	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	IZS	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	IZS	0	0	0	0	0	0.0	24	
21	0	0	0	0	1	1	1	1	0	1	1	1	1	0	1	1	1	IZS	0	0	0	0	0	0	1	0.5	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	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	
24	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	
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	0	1	1	1	1	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
27	0	1	1	0	0	0	1	1	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
28	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	
29	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0.4	24	
30	1	1	1	1	1	1	1	1	IZS	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0.4	24	
HOURLY MAX	2	2	1	1	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
HOURLY AVG	0.3	0.3	0.2	0.3	0.4	0.3	0.5	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2			

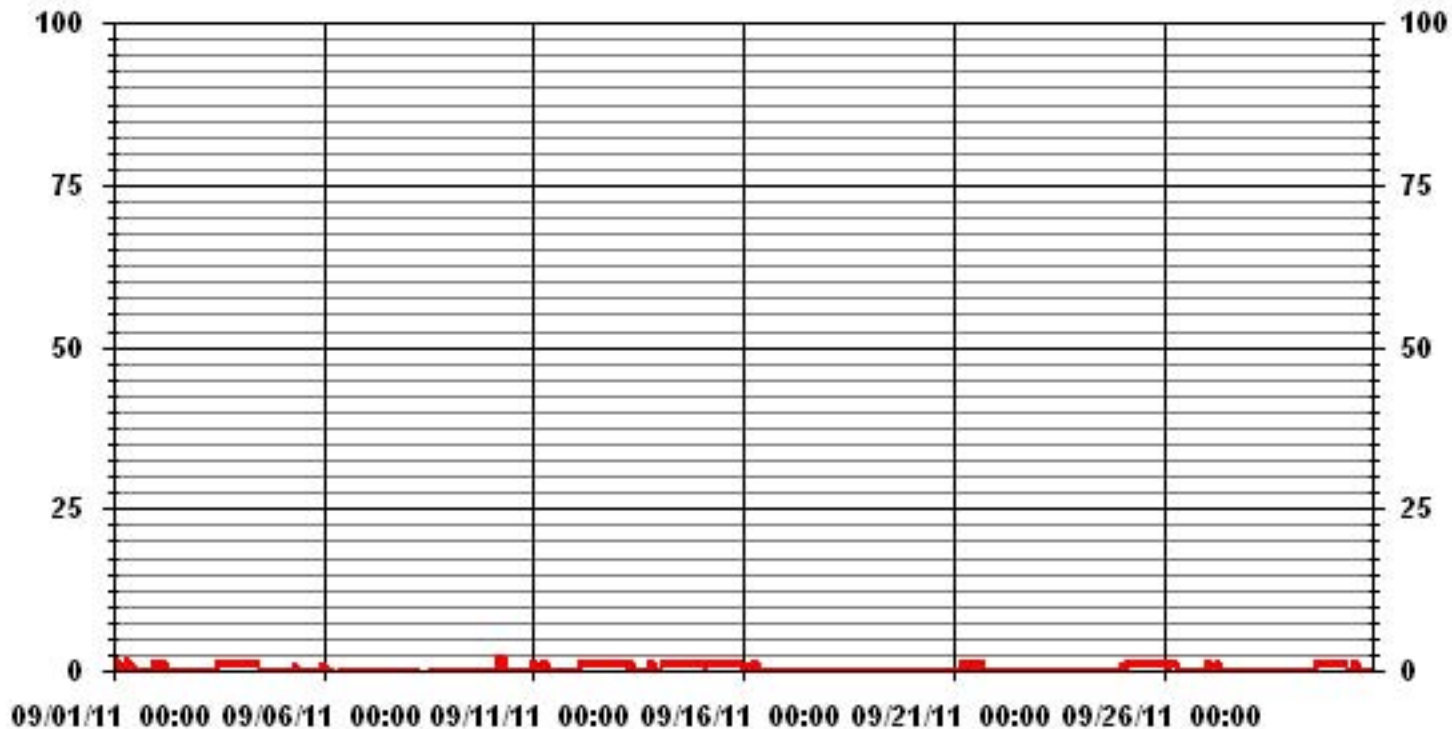
STATUS FLAG CODES

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:	182					
MAXIMUM INSTANTANEOUS VALUE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	1, 10
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	0.46					

01 Hour Averages



LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

September 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	5.43	3.96	9.39	8.51	8.81	5.28	4.84	4.69	7.04	5.72	5.43	3.08	5.43	5.87	5.72	10.71	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	5.43	3.96	9.39	8.51	8.81	5.28	4.84	4.69	7.04	5.72	5.43	3.08	5.43	5.87	5.72	10.71		

Calm : .00 %

Total # Operational Hours : 681

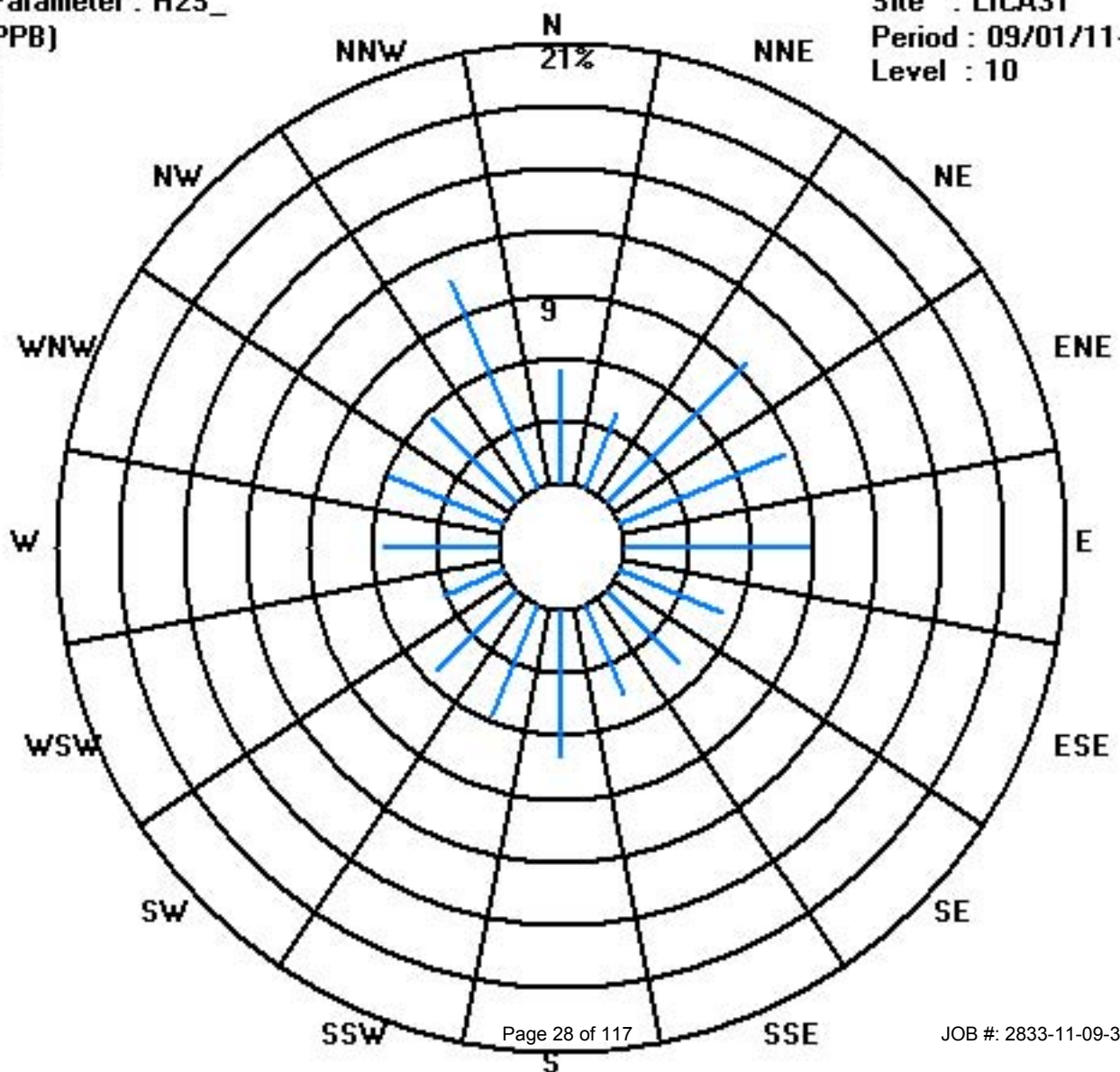
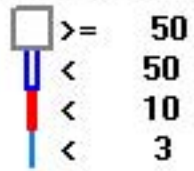
Distribution By Samples

		Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 3	37	27	64	58	60	36	33	32	48	39	37	21	37	40	39	73	681	
< 10																		
< 50																		
>= 50																		
Totals	37	27	64	58	60	36	33	32	48	39	37	21	37	40	39	73		

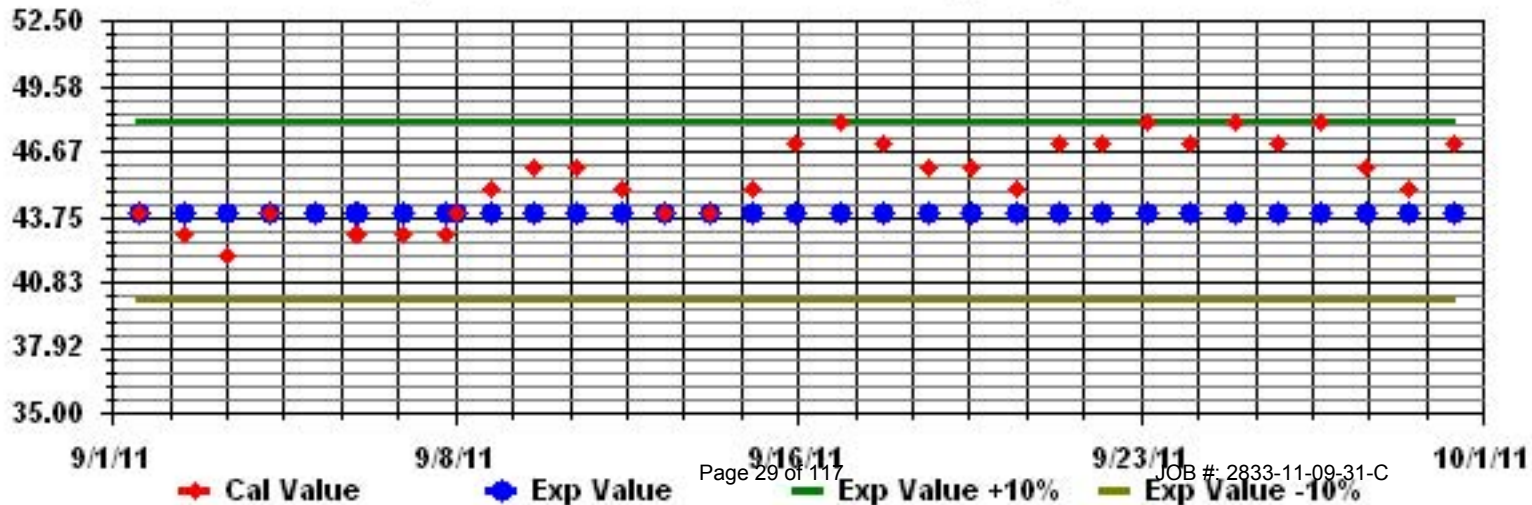
Calm : .00 %

Total # Operational Hours : 681

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: H2S_ Sequence: H2S Phase: SPAll



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

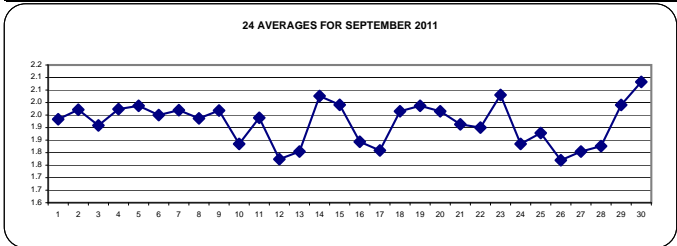
SEPTEMBER 2011

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				
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		1.9	1.9	1.9	2	2	2	2	2	2.1	1.9	1.9	1.8	1.9	1.9	IZS	1.9	1.9	1.9	1.9	1.9	2	M	M	1.9	2.1	1.9	22		
2		2	2	2	2	2.2	2.2	M	C	2	2	2	2	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	2.2	2.0	23
3		1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	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	2	2.0	1.9	24		
4		1.9	2	2	1.9	1.9	1.9	2	2	2	1.9	1.9	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	2.0	24	
5		2	2.1	2.1	2	2	2	2	2.1	2.1	2	IZS	2	2	1.9	1.9	1.9	1.9	2	2	2	1.9	1.9	1.9	2	2.1	2.0	24		
6		2.1	2	2	2	2.1	2.1	C	2.1	1.9	IZS	1.9	1.8	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	2.0	24		
7		2	2	2	2	2.1	2	2	2	IZS	2	2	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	1.9	1.9	1.9	2.1	2.0	24		
8		1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	2.1	2.1	2.1	2	C	C	C	C	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	1.9	24	
9		2	2	2	2	2.1	2.1	IZS	2	2	2.1	2.1	2	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	2.1	2.0	23	
10		1.9	1.9	1.9	1.9	1.9	IZS	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	24
11		1.9	1.9	1.8	2.3	IZS	2.1	2.6	2.5	2.1	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.6	1.9	24	
12		1.9	1.9	1.9	IZS	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	24	
13		1.8	1.8	IZS	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	24	
14		1.8	IZS	2.3	2.4	2.4	2.4	2.4	2.2	2.1	2	2	2	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2.4	2.0	24	
15		IZS	1.9	1.9	2	2.1	2.1	2.2	2.2	2.2	2.1	2	1.9	1.9	1.8	1.8	1.9	1.9	1.9	2	2	2	2.1	IZS	2.2	2.0	24			
16		2.1	2.1	2	2	2.1	2.1	2.1	2.1	1.9	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	IZS	1.7	2.1	1.8	24	
17		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	24	
18		1.9	2	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2	2	IZS	2	2.2	1.9	2.2	2.0	24		
19		2	2	2	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	IZS	2.4	1.9	2.1	2.1	2.4	2.0	24		
20		2.1	2.2	2.1	2.1	2.1	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.8	1.9	1.9	1.9	1.9	2.2	2.0	24	
21		2	2	2	2	2	2	2	2	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	IZS	1.9	1.9	1.9	2	2	2.0	1.9	24	
22		2	2	2	2	2	2	2	2	2.1	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	IZS	1.7	1.8	1.8	1.8	1.8	1.9	1.8	2.1	1.9	24	
23		1.8	1.8	1.9	2	2.3	2.4	2.6	2.7	2.7	2.5	2.2	2	2	2	1.8	IZS	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	2.7	2.0	24		
24		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.8	IZS	1.8	1.8	1.8	1.8	1.9	2	1.9	1.9	2	2.0	1.8	24		
25		2	2	2.1	2	2	2	2	2	2	2	2	2	2	1.9	IZS	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	2.1	1.9	24	
26		1.8	1.7	1.7	1.7	1.7	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7	IZS	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2	2.0	1.8	24		
27		1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.8	IZS	1.7	1.8	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	24		
28		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	IZS	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.8	24	
29		1.9	1.9	1.9	1.9	1.9	2	2	2	1.9	IZS	1.9	1.9	1.9	M	C	2	2	2	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.0	23	
30		2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	IZS	2.1	2.1	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2.2	2.1	24		
HOURLY MAX		2.1	2.2	2.3	2.4	2.4	2.4	2.6	2.7	2.7	2.5	2.2	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.1	2.2	2.1					
HOURLY AVG		1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9					

STATUS FLAG CODES

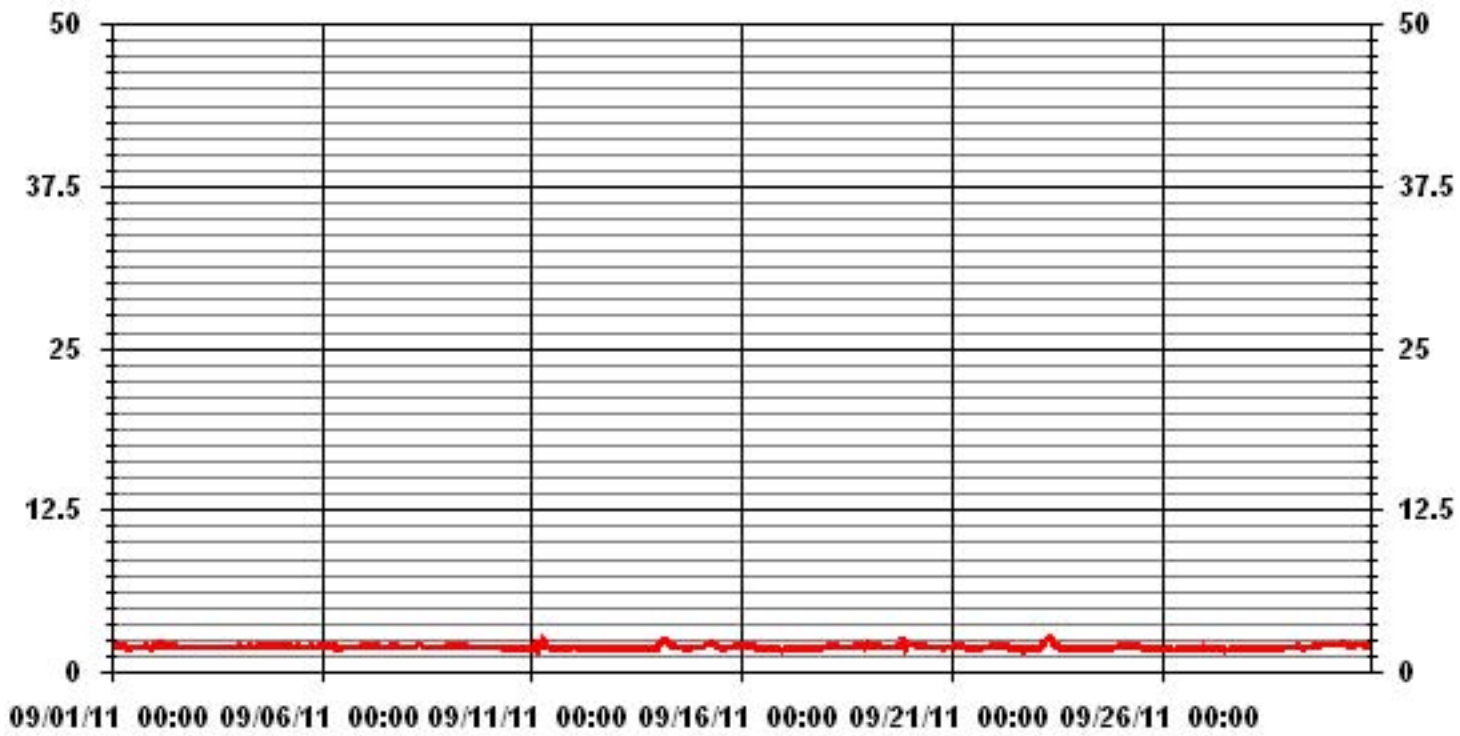
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	677
MAXIMUM 1-HR AVERAGE:	2.7 PPM @ HOUR(S) 8 ON DAY(S) 23
MAXIMUM 24-HR AVERAGE:	2.1 PPM ON DAY(S) 30
	VAR- VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	715 HRS
AMD OPERATION UPTIME:	99.3 %
STANDARD DEVIATION:	0.14
MONTHLY AVERAGE:	1.92 PPM

01 Hour Averages



— LICA31 THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 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	0:00	MAX.	AVG.	RDGS.
DAY																													
1		3	2	2	2.9	2.7	2	2	2.1	2.2	2	1.9	1.9	1.9	1.9	IZS	1.9	1.9	1.9	5	2	2.1	M	M	2	5	2.3	22	
2		2	2.1	2.3	2.3	2.5	2.3	M	C	2.1	2	2	2	2	IZS	1.9	1.9	1.9	2	1.9	2	2	2	1.9	1.9	2.5	2.0	23	
3		2	1.9	2	2	2	2	2	2	2	2	2	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	2.0	24	
4		2	2	2	2	2	2	2	2	2	2	1.9	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	24	
5		2.1	2.1	2.1	2.1	2.1	2.1	2	2.2	2.1	2.1	IZS	2	2	2	2	2	2	2.7	2	2.2	2	2	2	2.1	2.7	2.1	24	
6		2.1	2.1	2	2.1	2.3	2.2	C	C	1.9	IZS	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2	2.1	1.9	2	2	2.3	2.0	24	
7		2	2	2	2	2.1	2	2	2	IZS	2	2	2	2	2	2.1	2.2	2.2	2.6	2.6	2.4	2.2	2	1.9	2.1	2.6	2.1	24	
8		1.9	2	2	2	1.9	2	IZS	2.2	2.1	2.1	2.1	2.1	C	C	C	C	C	1.9	1.9	1.9	1.9	1.9	1.9	2	2.2	2.0	24	
9		2.1	2.1	2	2.1	2.1	2.1	IZS	2.1	2.1	2.1	2.1	2.1	1.9	M	M	1.9	1.9	1.9	2	2	1.9	1.9	2	2	2.1	2.0	22	
10		1.9	2	1.9	1.9	2.1	IZS	1.9	2.3	2	1.9	1.8	1.9	1.9	1.9	1.9	1.9	2.2	1.9	1.9	1.8	1.9	1.8	1.9	1.8	2.3	1.9	24	
11		1.9	2	2	2.9	IZS	2.4	3	3	2.1	2	1.9	2.1	2	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	3	2.1	24	
12		1.9	1.9	1.9	IZS	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	24
13		1.8	1.8	IZS	1.8	1.8	1.8	1.8	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	2	1.9	24
14		1.9	IZS	2.4	2.4	2.4	2.4	2.4	2.3	2.2	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2.4	2.1	24	
15		IZS	1.9	2	2	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	2	2.1	2.1	2.1	2.2	IZS	2.2	2.0	24	
16		2.1	2.2	2.2	2.2	2.2	2.7	2.5	2.4	2	1.9	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.7	1.8	1.8	IZS	1.8	2.7	2.0	24	
17		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.1	1.8	2.5	1.8	IZS	2.4	2	2.5	1.9	24
18		2	2	2	2	2	2	2	2	2	2	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	5.6	2.8	3.3	IZS	2.6	3.9	2.1	5.6	2.3	24
19		2.6	2	2	2	2	2	2	2	2.2	2.3	2.3	2.3	2.5	2.2	2.2	2.2	2.2	2.5	2.5	IZS	4.8	2	2.9	2.5	4.8	2.4	24	
20		2.5	2.9	3.6	3.1	3.5	2.9	2.1	2.1	2	2	2	2	2.1	2	1.9	2	2	2	IZS	1.9	1.9	1.9	1.9	2	3.6	2.3	24	
21		2	2	2	2	2	2	2	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	IZS	1.9	1.9	1.9	2	2	2	1.9	24	
22		2	2	2	2	2	2	2.5	2.6	2.2	2.1	2	1.9	1.9	2.1	2	1.9	IZS	2.2	2.9	2	1.8	2.4	2.3	1.9	2.9	2.1	24	
23		1.8	1.8	1.9	2.1	2.4	2.5	2.7	2.8	2.7	2.6	2.4	2.1	2	2.1	1.9	IZS	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.8	2.8	2.1	24	
24		1.9	1.9	1.8	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	1.8	1.8	1.9	2	2	2	2	2.1	2.1	1.9	24	
25		2.2	2.1	2.2	2.1	2.2	2.1	2.1	2.1	2	2	2.1	2	2	IZS	1.7	1.7	1.7	1.7	1.8	1.8	1.7	1.8	1.8	1.8	2.2	1.9	24	
26		1.8	1.8	1.9	1.7	1.8	1.8	1.8	1.9	2	1.7	1.7	1.7	IZS	1.8	1.8	1.8	1.8	1.8	2.3	2	1.8	1.8	1.9	2	2.3	1.8	24	
27		2	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.8	1.8	IZS	1.8	1.8	1.9	1.8	1.8	1.9	1.8	1.8	1.9	1.8	1.8	1.8	2	1.8	24	
28		1.9	2	1.9	1.8	1.8	1.9	2	2	1.9	1.8	IZS	1.9	2	1.8	2.1	1.9	2	2	2	2.2	1.9	2.2	1.9	1.9	2.2	1.9	24	
29		1.9	2	1.9	2	2	2	2	2	2	IZS	1.9	1.9	1.9	M	C	2	2	2	2.1	2.1	2.2	2.2	2.1	2.1	2.2	2.0	23	
30		2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	IZS	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	2.1	2	2.2	2.1	24	
HOURLY MAX		3	3	4	3	4	3	3	3	3	3	2	2	3	2	2	2	2	2	6	5	3	5	3	4	3			
HOURLY AVG		2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.1	2.0	2.0	2.0	2.1	2.0			

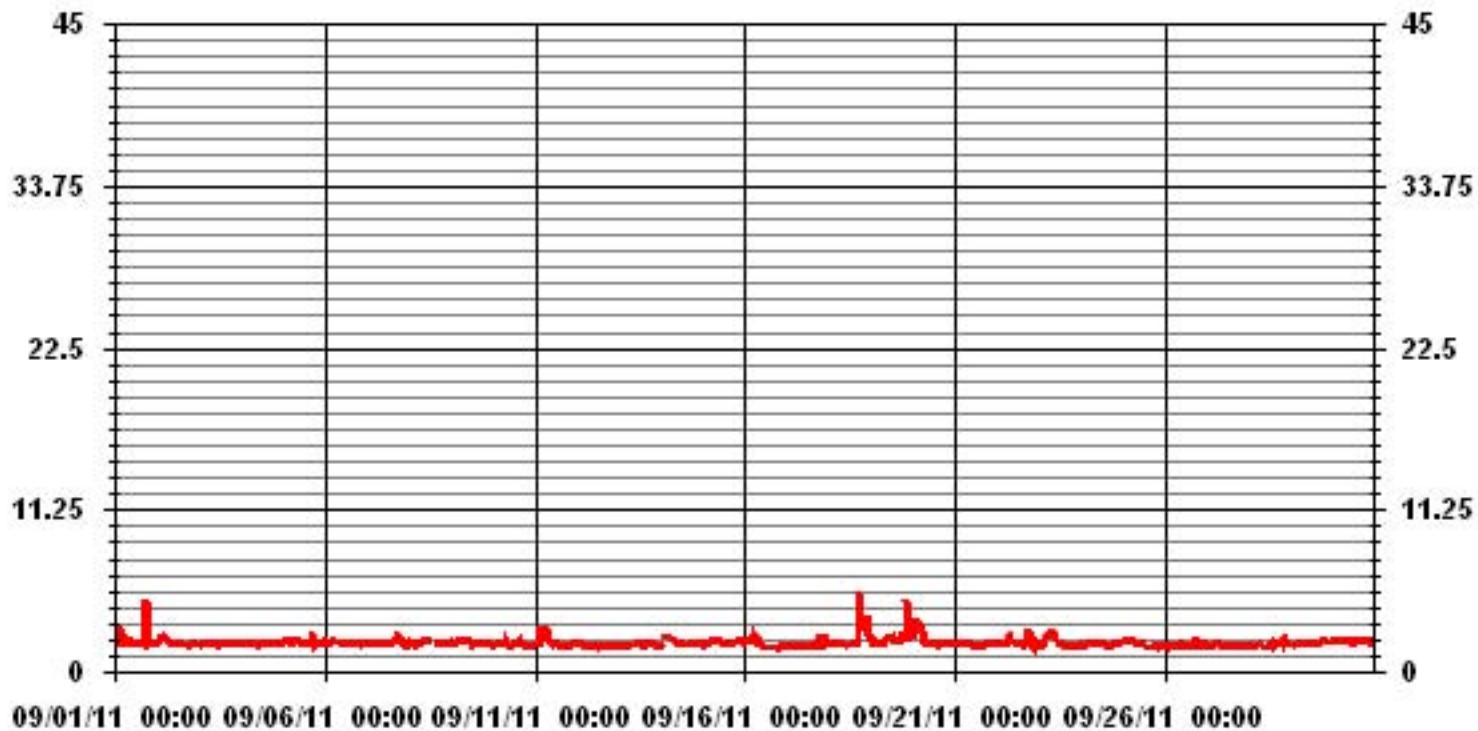
STATUS FLAG CODES

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
BB - BELOW BACKGROUND OF 1.5 PPM	

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	674					
MAXIMUM INSTANTANEOUS VALUE:	5.6	PPM	@ HOUR(S)	17	ON DAY(S)	18
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	714 HRS		
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	0.32					

01 Hour Averages



— LICA31 THCMAX PPM

LICA31
 THC / WDR Joint Frequency Distribution (Percent)

September 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	5.33	4.00	9.48	8.44	8.74	5.33	4.74	4.59	7.11	5.77	5.33	3.40	5.62	5.62	5.77	10.66	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	5.33	4.00	9.48	8.44	8.74	5.33	4.74	4.59	7.11	5.77	5.33	3.40	5.62	5.62	5.77	10.66	

Calm : .00 %

Total # Operational Hours : 675

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	36	27	64	57	59	36	32	31	48	39	36	23	38	38	39	72	675
< 10.0																	
< 50.0																	
>= 50.0																	
Totals	36	27	64	57	59	36	32	31	48	39	36	23	38	38	39	72	

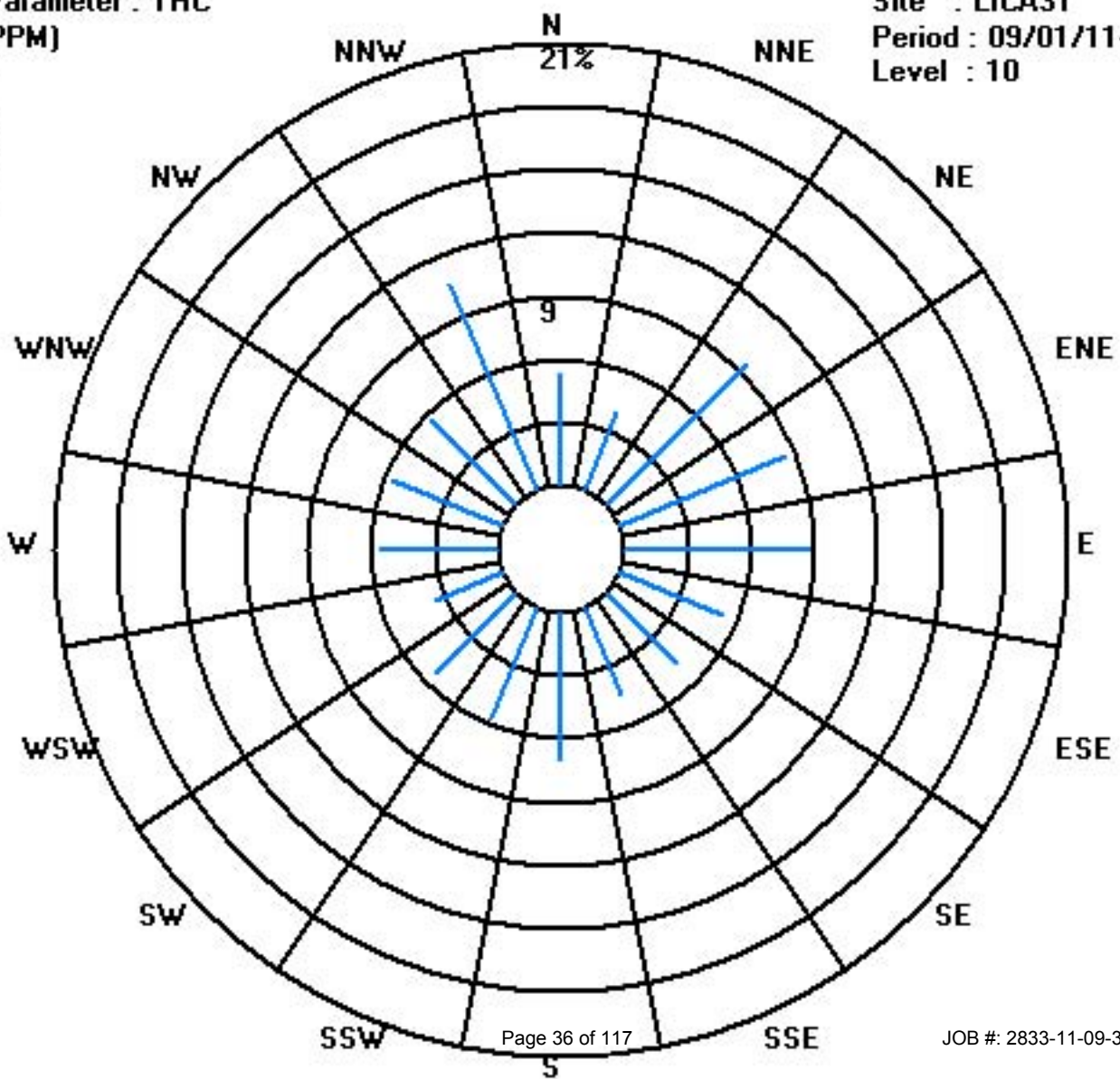
Calm : .00 %

Total # Operational Hours : 675

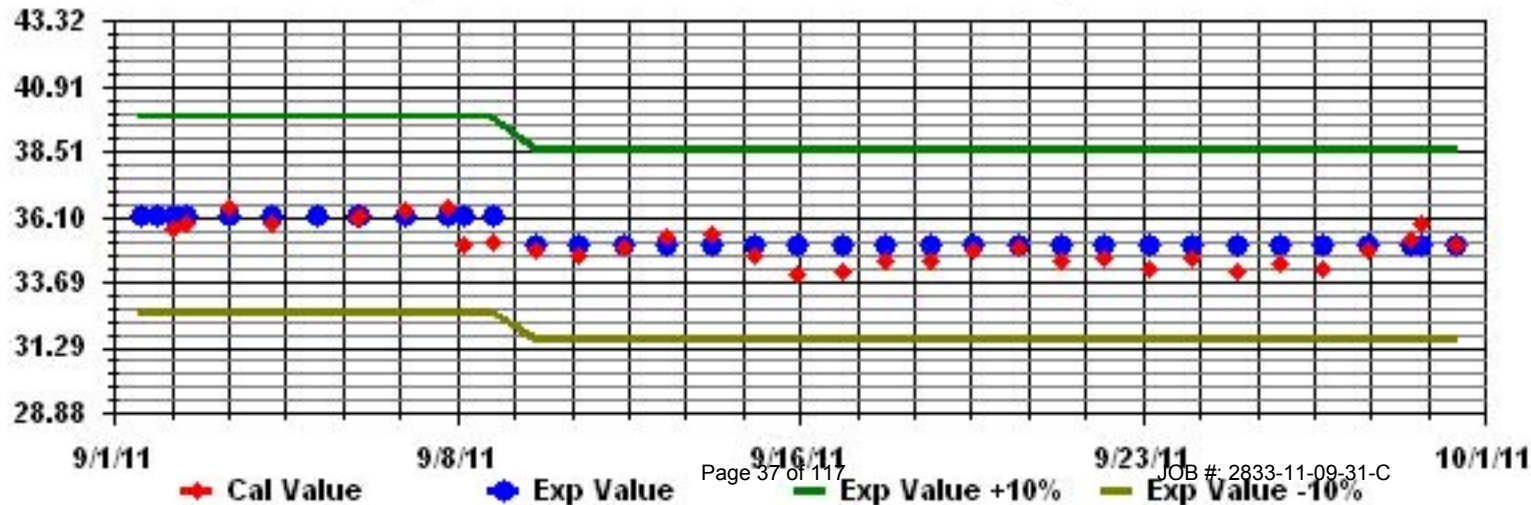
Class Limits (PPM)

Period : 09/01/11-09/30/11

Level : 10



Calibration Graph for Site: LICA31 Parameter: THC Sequence: THC Phase: SPAll



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 2011

OZONE (O₃) hourly averages in ppb

MST

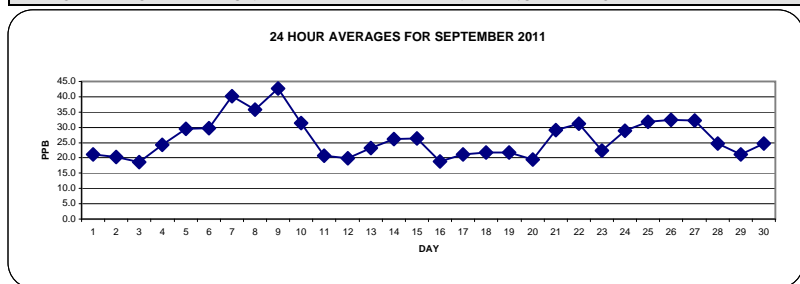
DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
1	16	15	15	15	14	14	11	9	13	16	22	26	28	29	IZS	30	29	27	27	26	26	25	26	26	30	21.1	24	
2	22	22	22	21	13	8	12	14	15	16	18	21	27	IZS	30	30	26	25	24	24	21	18	18	19	30	20.3	24	
3	17	16	14	14	12	12	11	11	10	14	18	22	IZS	25	25	26	26	26	25	25	23	20	19	18	26	18.7	24	
4	18	18	19	19	17	17	16	16	17	18	20	IZS	28	30	34	34	34	32	31	30	30	27	27	25	34	24.2	24	
5	23	23	26	27	26	25	25	20	18	21	IZS	27	31	35	41	46	42	41	37	35	31	27	26	25	46	29.5	24	
6	23	26	28	27	23	21	C	15	19	IZS	26	34	35	35	36	37	36	34	33	34	33	34	34	32	37	29.8	24	
7	32	31	31	29	28	26	24	24	IZS	34	40	46	51	47	48	49	50	51	52	54	49	44	43	43	54	40.3	24	
8	42	42	42	41	41	41	37	IZS	28	30	34	38	37	36	35	36	35	33	32	32	32	34	35	32	42	35.9	24	
9	33	33	30	29	27	31	IZS	26	28	34	42	C	C	C	63	63	61	58	56	51	48	50	49	63	42.7	24		
10	48	44	40	35	29	IZS	23	22	21	23	27	29	31	32	33	33	33	32	30	31	32	32	32	31	48	31.4	24	
11	28	27	29	18	IZS	23	11	10	18	19	20	21	23	23	24	26	24	22	21	19	19	17	17	16	29	20.7	24	
12	16	16	17	IZS	16	13	11	14	17	18	23	25	27	27	27	25	24	22	21	19	19	18	16	27	19.9	24		
13	14	16	IZS	15	13	13	13	15	21	25	26	28	28	30	30	30	29	27	27	27	26	27	23	30	23.2	24		
14	23	IZS	20	18	18	19	19	21	24	26	28	28	29	30	31	32	32	32	31	31	29	28	28	27	32	26.3	24	
15	IZS	25	24	23	22	20	20	19	20	21	23	27	31	33	35	34	33	33	31	29	27	25	23	IZS	35	26.3	24	
16	22	20	17	14	14	13	11	12	16	17	18	19	22	20	21	25	24	26	25	23	21	20	IZS	15	26	18.9	24	
17	13	12	13	12	13	13	14	15	16	21	22	24	28	30	29	29	29	29	28	28	26	IZS	21	20	30	21.1	24	
18	18	17	16	15	13	14	13	14	15	18	20	24	26	28	29	30	31	29	29	29	IZS	25	26	23	31	21.8	24	
19	23	21	18	14	16	18	16	14	17	24	27	28	29	28	28	27	26	25	24	IZS	23	21	19	16	29	21.8	24	
20	16	15	15	15	14	14	14	14	13	15	17	19	22	23	24	25	26	26	IZS	24	24	24	24	25	25	26	19.5	24
21	25	24	22	21	20	19	19	21	23	25	27	31	34	36	38	38	39	IZS	36	33	34	36	35	32	39	29.0	24	
22	29	28	26	25	24	22	21	21	27	34	38	37	37	37	38	40	IZS	36	34	31	34	33	31	33	40	31.1	24	
23	36	35	34	31	28	26	23	21	20	20	20	22	23	22	22	IZS	21	19	18	17	16	15	14	12	36	22.4	24	
24	10	14	19	19	19	18	17	20	28	29	33	34	36	38	IZS	41	42	41	41	39	37	32	30	28	42	28.9	24	
25	25	25	22	20	19	18	18	19	19	27	34	39	44	IZS	46	45	44	43	41	40	38	36	36	32	46	31.7	24	
26	31	31	32	32	29	23	22	25	30	32	31	32	IZS	36	36	37	37	36	37	36	36	36	34	33	37	32.3	24	
27	32	30	27	25	24	24	22	21	23	27	32	IZS	36	37	38	40	41	40	40	37	38	39	35	33	41	32.2	24	
28	31	30	29	29	28	26	26	25	23	26	IZS	25	25	25	25	24	23	23	22	21	21	20	20	19	31	24.6	24	
29	18	18	18	18	16	12	12	13	14	IZS	19	21	23	26	27	28	28	27	26	26	25	24	24	24	28	21.2	24	
30	23	24	23	22	22	21	20	20	IZS	21	23	23	25	26	26	24	24	25	24	24	24	28	34	32	34	24.7	24	
HOURLY MAX	48	44	42	41	41	41	37	26	30	34	42	46	51	47	48	63	63	61	58	56	51	48	50	49				
HOURLY AVG	24.4	24.1	23.7	22.2	20.6	19.4	17.9	17.6	19.8	23.3	26.0	27.8	30.2	30.5	31.7	34.0	32.9	32.0	31.2	30.4	29.3	28.2	27.8	26.2				

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:

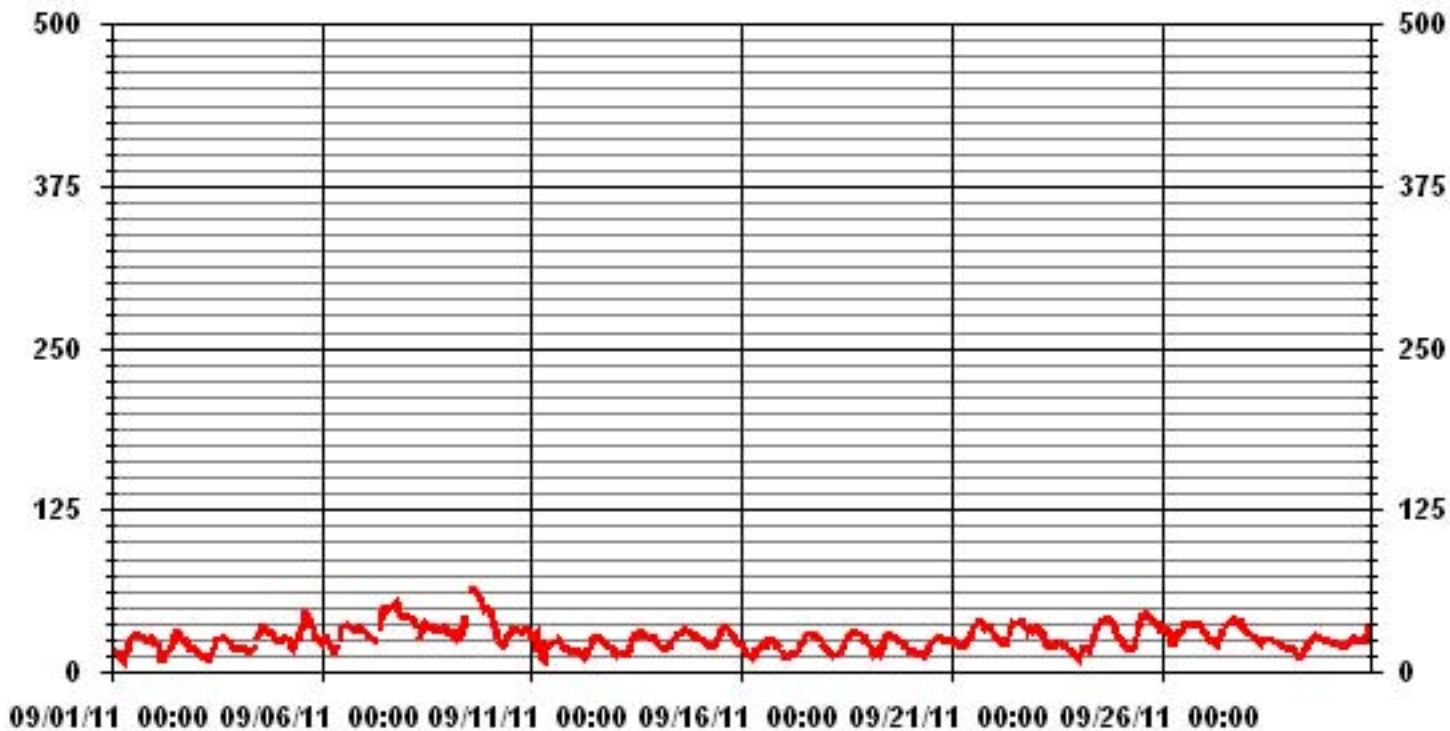
ALBERTA ENVIRONMENT: 1-HR 82 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	684					
MAXIMUM 1-HR AVERAGE:	63	PPB	@ HOUR(S)	15, 16	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:	42.7	PPB			ON DAY(S)	9
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME	100.0	%	
STANDARD DEVIATION	8.94		MONTHLY AVERAGE	26.3	PPB	

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 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	19	19	18	17	17	17	13	13	16	20	28	29	31	31	IZS	32	32	32	30	29	27	28	27	28	32	24.0	24
2	27	26	27	26	18	11	14	16	16	19	19	26	29	IZS	31	32	29	28	26	25	24	20	19	20	32	23.0	24
3	19	18	17	17	14	14	13	11	11	17	20	24	IZS	27	27	27	27	28	27	27	26	21	21	19	28	20.5	24
4	19	19	20	20	19	17	17	17	18	20	22	IZS	30	32	35	35	36	34	32	31	31	30	28	27	36	25.6	24
5	25	26	27	28	27	26	27	26	22	23	IZS	30	33	37	46	47	46	43	39	36	33	29	27	27	47	31.7	24
6	25	28	29	29	26	22	C	C	22	IZS	33	36	36	36	37	38	37	37	35	36	34	35	35	34	38	32.4	24
7	34	32	32	30	29	27	27	IZS	38	44	50	52	51	50	51	52	52	54	55	51	45	43	44	55	42.2	24	
8	43	43	43	42	42	43	38	IZS	31	33	37	39	39	38	37	37	37	36	33	34	34	36	36	34	43	37.6	24
9	34	34	31	32	32	34	IZS	28	31	39	C	C	C	C	C	66	64	63	59	59	54	50	52	50	66	45.1	24
10	50	46	44	37	31	IZS	24	22	22	26	29	30	33	33	34	34	34	33	31	32	33	33	33	33	50	32.9	24
11	31	29	30	27	IZS	24	21	14	20	20	21	22	24	25	26	27	26	24	23	20	21	18	17	31	23.0	24	
12	17	17	18	IZS	17	15	13	18	18	22	25	27	28	28	28	26	26	23	21	20	21	20	17	28	21.4	24	
13	16	17	IZS	16	14	15	14	19	24	27	27	28	29	31	31	31	31	31	28	27	28	28	28	24	31	24.5	24
14	24	IZS	21	19	19	19	21	23	25	28	29	29	30	31	32	33	33	33	32	32	30	29	29	28	33	27.3	24
15	IZS	26	25	24	23	21	20	20	20	23	24	29	32	34	36	35	34	34	33	30	27	26	24	IZS	36	27.3	24
16	22	23	19	15	16	17	13	14	17	22	22	22	23	21	23	26	25	28	27	24	21	22	IZS	16	28	20.8	24
17	16	13	14	14	14	15	15	17	19	23	23	26	30	30	30	30	30	30	29	29	28	IZS	22	21	30	22.5	24
18	19	18	17	16	14	14	14	15	17	20	22	26	28	29	30	31	32	30	31	30	IZS	27	27	25	32	23.1	24
19	26	26	23	15	18	20	17	15	20	26	28	29	29	29	28	28	27	26	25	IZS	24	23	20	18	29	23.5	24
20	17	16	16	15	15	15	15	16	15	17	18	22	23	25	26	26	27	27	IZS	25	25	25	25	26	27	20.7	24
21	25	25	23	22	21	20	20	22	24	26	29	33	35	37	39	39	IZS	37	35	35	37	36	34	39	30.1	24	
22	31	28	27	26	25	23	22	22	32	38	39	39	38	38	40	41	IZS	39	36	33	36	36	33	37	41	33.0	24
23	37	36	36	32	30	27	25	22	21	21	21	25	25	23	23	IZS	23	21	19	18	17	15	15	14	37	23.7	24
24	11	18	20	20	20	19	20	27	30	32	34	36	38	40	IZS	43	43	42	42	40	39	35	32	30	43	30.9	24
25	27	26	24	21	20	19	19	20	21	32	37	42	45	IZS	47	46	45	44	42	41	39	38	38	35	47	33.4	24
26	32	32	33	34	31	27	24	29	32	33	32	33	IZS	37	37	38	38	38	38	38	37	36	35	34	38	33.8	24
27	33	32	29	26	25	25	24	23	24	31	34	IZS	37	39	40	41	42	41	41	40	40	40	38	34	42	33.9	24
28	33	31	30	29	29	28	27	26	25	27	IZS	26	37	25	25	25	24	24	23	22	21	21	20	19	37	26.0	24
29	19	19	19	19	20	14	13	14	15	IZS	20	22	25	27	28	29	29	28	27	27	26	25	24	29	22.3	24	
30	24	24	24	23	22	22	21	21	IZS	22	24	24	26	27	27	26	25	26	25	25	33	35	35	33	35	25.8	24
HOURLY MAX	50	46	44	42	42	43	38	29	32	39	44	50	52	51	50	66	64	63	59	59	54	50	52	50			
HOURLY AVG	26.0	25.8	25.4	23.8	22.3	21.0	19.7	19.9	21.7	25.9	27.4	29.8	32.0	31.9	33.1	35.2	34.2	33.7	32.7	31.8	30.8	29.8	29.0	27.7			

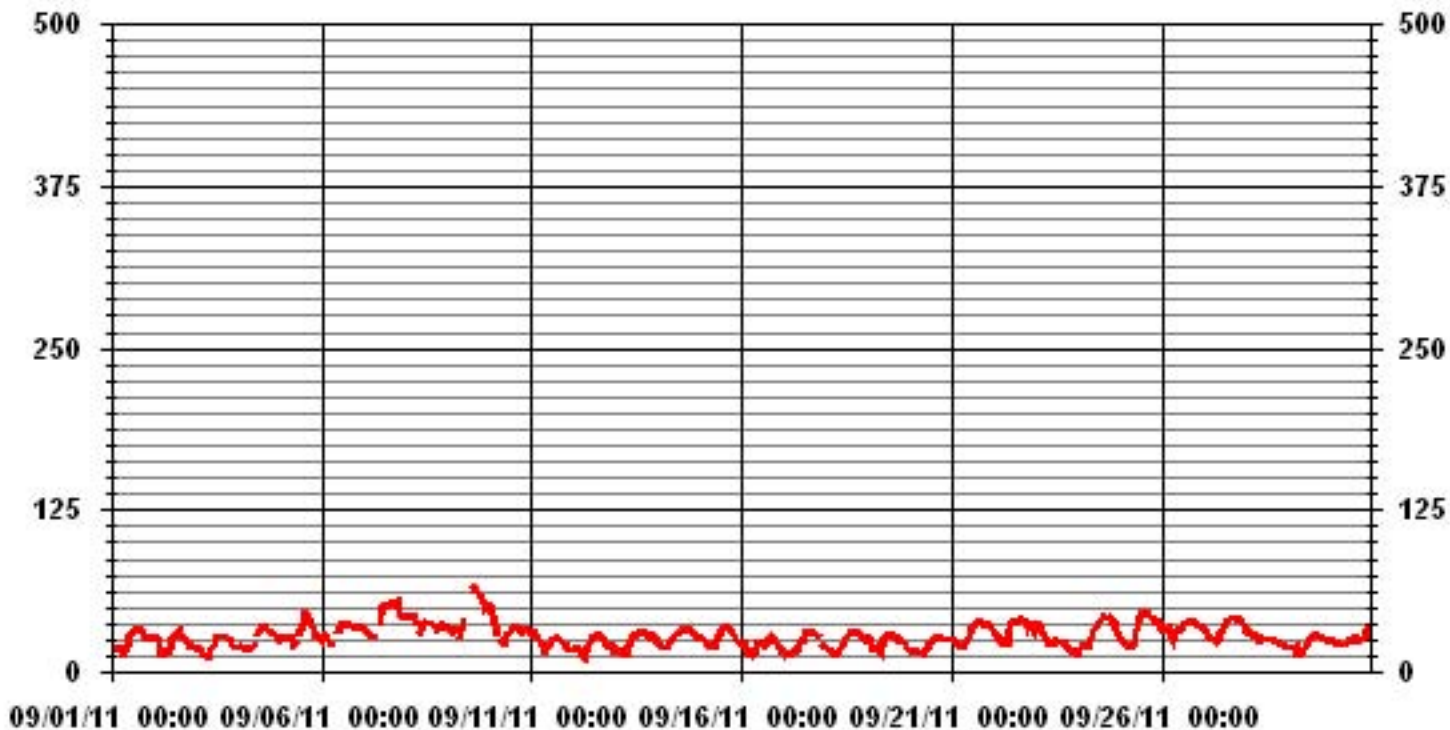
STATUS FLAG CODES

S - OUT OF SERVICE	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:	682					
MAXIMUM INSTANTANEOUS VALUE:	66	PPB	@ HOUR(S)	15	ON DAY(S)	9
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	8.93					

01 Hour Averages



— LICA31 O3MAX PPB

LICA31
 O3_ / WDR Joint Frequency Distribution (Percent)

September 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	5.42	3.95	9.38	8.50	8.79	5.27	4.83	4.69	7.03	5.71	5.42	3.22	5.42	5.57	5.27	9.67	98.24
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.14	.29	.43	.73	1.75
< 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	5.42	3.95	9.38	8.50	8.79	5.27	4.83	4.69	7.03	5.71	5.42	3.37	5.57	5.86	5.71	10.41	

Calm : .00 %

Total # Operational Hours : 682

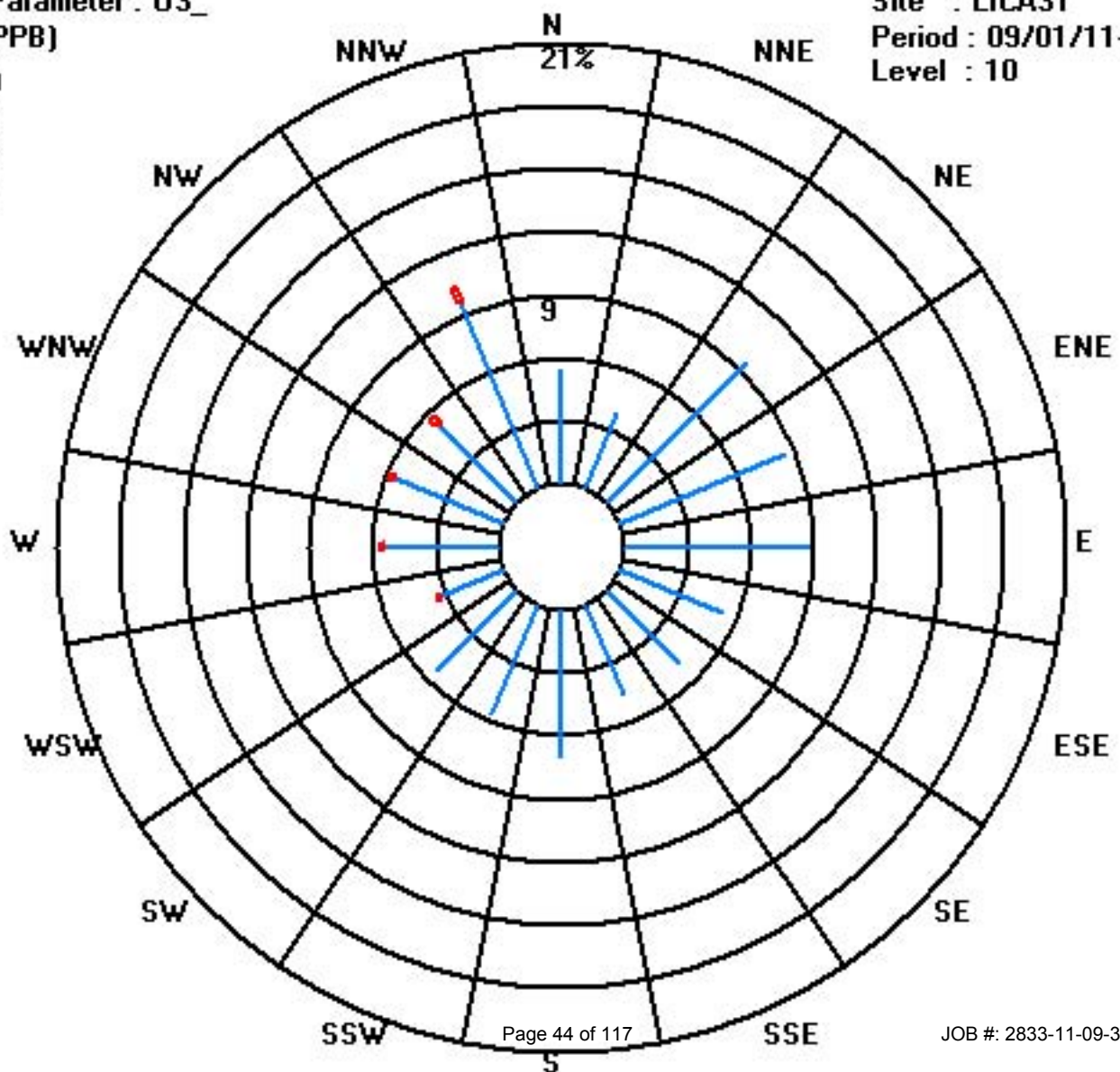
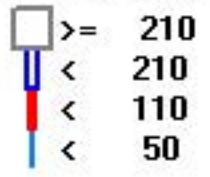
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	37	27	64	58	60	36	33	32	48	39	37	22	37	38	36	66	670
< 110												1	1	2	3	5	12
< 210																	
>= 210																	
Totals	37	27	64	58	60	36	33	32	48	39	37	23	38	40	39	71	

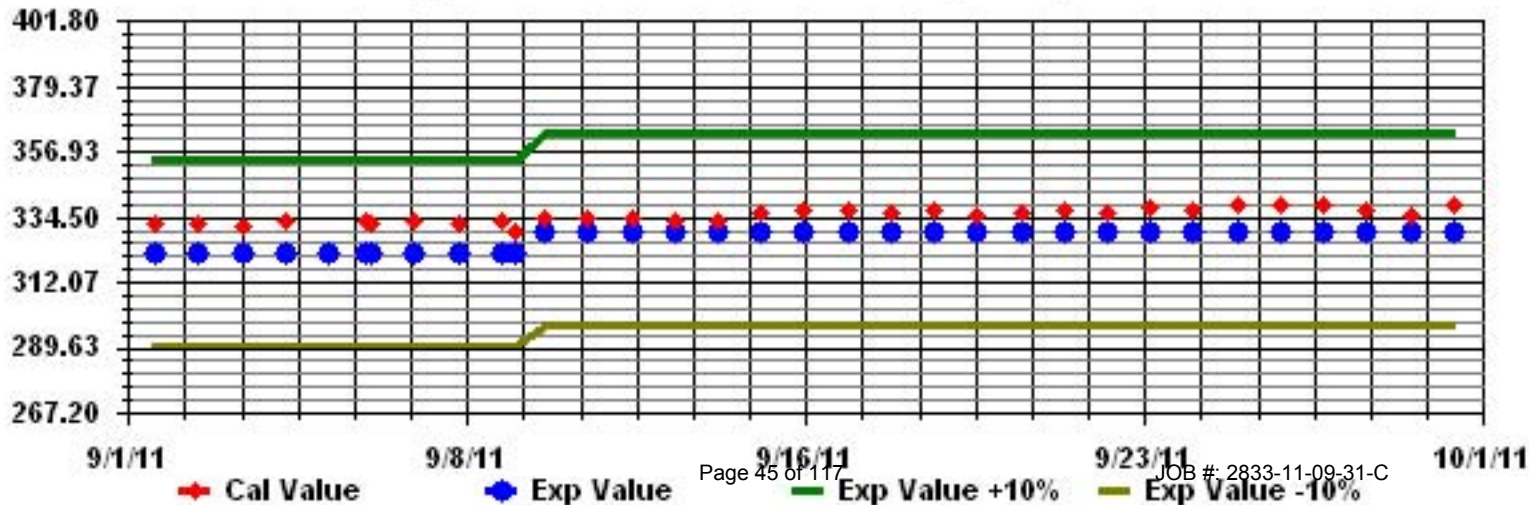
Calm : .00 %

Total # Operational Hours : 682

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: 03_ Sequence: 03 Phase: SPAN



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 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	0	1	1	1	0	0	1	1	1	1	0	0	0	0	1	1	1	2	3	3	3	2	2	3	3	1.1	24	
2	2	2	2	2	2	3	3	3	2	2	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	3	1.3	24	
3	3	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0.4	24	
4	4	1	2	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	0	1	1	1	1	1	1	2	0.9	24	
5	5	2	1	2	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
6	6	2	2	1	2	1	2	C	1	1	1	0	0	0	0	0	0	0	1	2	2	2	1	1	1	2	1.0	24	
7	7	2	2	1	1	3	2	3	2	1	2	1	1	2	1	1	1	1	1	1	1	1	0	0	0	3	1.3	24	
8	8	0	0	1	0	1	1	0	1	C	C	C	C	C	C	C	C	1	1	2	3	2	2	1	1	3	1.1	24	
9	9	2	2	3	2	3	3	1	2	2	2	1	1	1	1	M	1	1	1	2	1	2	1	1	2	3	1.7	23	
10	10	2	2	2	2	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0.6	24
11	11	1	2	1	1	1	1	6	5	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	6	1.0	24	
12	12	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
13	13	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	1	0.3	24	
14	14	0	1	1	2	2	1	2	1	1	0	0	1	1	0	0	0	0	0	0	1	1	1	1	1	2	0.7	24	
15	15	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	0	1	1	2	2	2	2	2	2	1.3	24	
16	16	2	2	2	2	2	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.8	24
17	17	1	2	2	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0.7	24
18	18	2	2	2	2	2	1	1	1	1	1	0	0	0	0	0	0	0	1	1	2	1	1	1	1	2	1.0	24	
19	19	0	1	1	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	2	0.5	24
20	20	1	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0.4	24
21	21	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	2	2	2	0.8	24	
22	22	1	1	2	1	2	2	2	2	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	1	2	0.8	24	
23	23	0	1	1	1	2	2	3	3	3	3	2	2	2	3	3	1	1	2	3	3	4	3	3	4	4	2.4	24	
24	24	5	3	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3	4	4	3	5	2.0	24
25	25	3	2	2	2	2	2	1	1	2	1	1	1	1	1	0	0	0	1	1	1	1	2	2	2	3	1.3	24	
26	26	3	1	1	1	1	2	2	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	2	3	0.9	24	
27	27	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2	1.1	24	
28	28	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.1	24
29	29	1	1	0	1	1	1	1	2	1	1	0	0	1	0	0	0	0	1	1	1	1	1	1	1	2	0.7	24	
30	30	1	1	1	1	1	1	1	2	1	2	2	2	2	2	2	3	3	3	2	3	2	0	1	1	3	1.7	24	
HOURLY MAX		5	3	3	2	3	3	6	5	3	3	2	2	2	3	3	3	3	3	3	4	3	4	4	4				
HOURLY AVG		1.3	1.3	1.2	1.3	1.3	1.3	1.5	1.3	1.1	0.9	0.6	0.4	0.5	0.4	0.3	0.4	0.4	0.7	1.0	1.2	1.1	1.0	1.1	1.2				

STATUS FLAG CODES

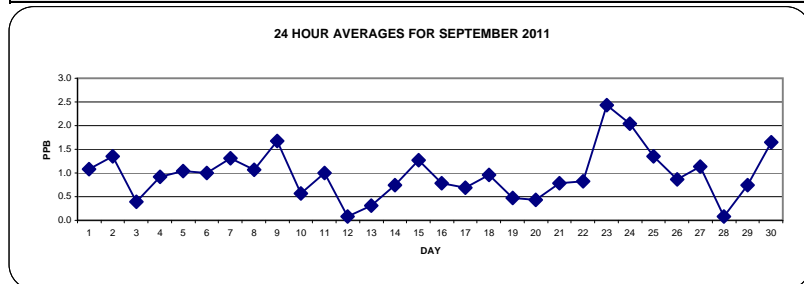
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

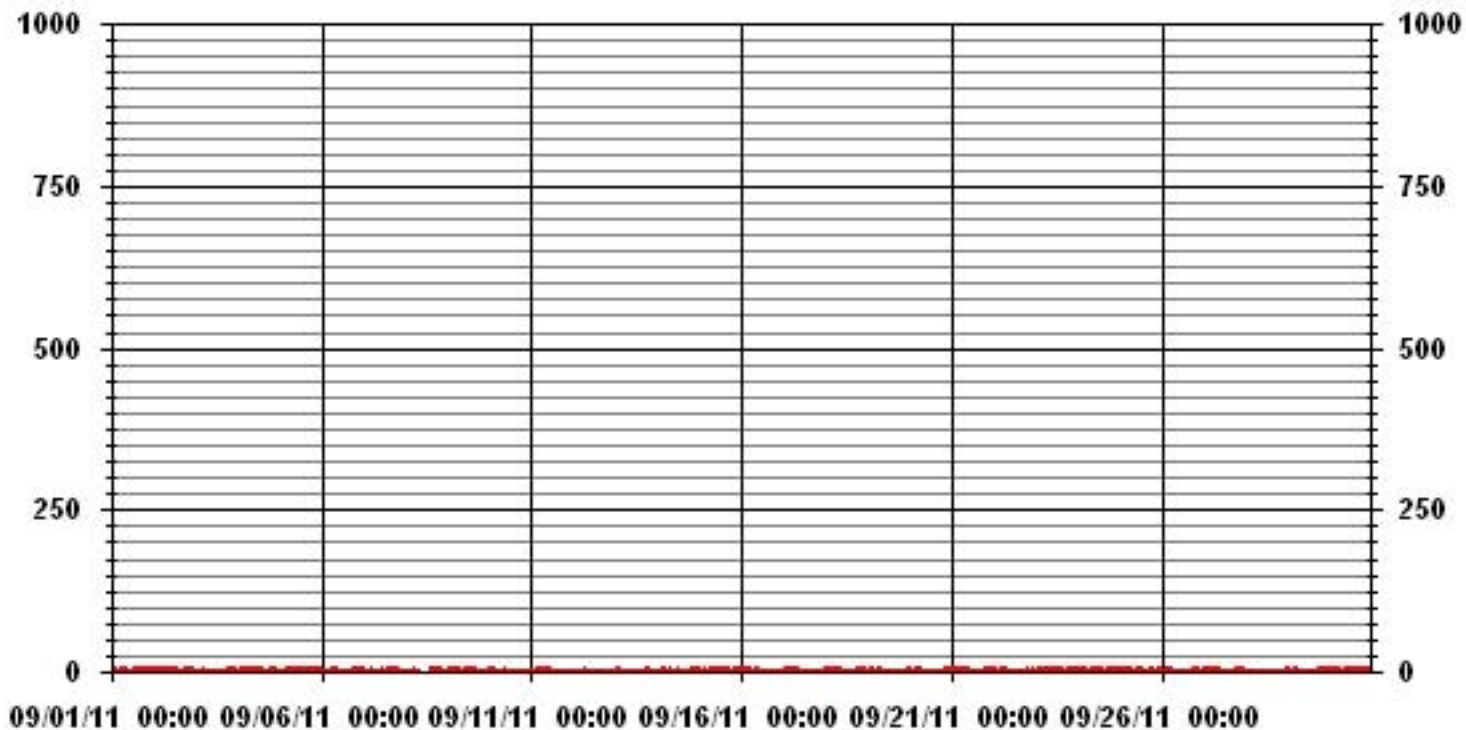
ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	441				
MAXIMUM 1-HR AVERAGE:	6	PPB	@ HOUR(S)	6	ON DAY(S) 11
MAXIMUM 24-HR AVERAGE:	2.4	PPB			ON DAY(S) 23
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	99.9	%
STANDARD DEVIATION:	0.93		MONTHLY AVERAGE:	0.97	PPB



01 Hour Averages



— LICA31 IIO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 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	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	2	2	1	2	3	3	2	1	1	1	1	IZS	1	2	2	3	4	3	3	3	3	4	2.0	24	
2	3	3	3	3	4	5	4	3	3	2	2	2	2	IZS	1	1	1	2	2	1	2	2	1	2	5	2.3	24	
3	2	1	1	1	1	1	2	1	1	1	1	2	IZS	1	1	1	1	2	2	2	2	2	1	2	2	1.3	24	
4	2	3	2	1	2	2	2	2	2	2	1	IZS	1	1	2	1	1	1	2	2	2	2	2	2	3	1.7	24	
5	3	2	3	2	2	2	2	4	2	1	IZS	1	2	1	2	3	1	3	3	2	1	1	2	2	4	2.0	24	
6	3	3	2	3	2	3	C	C	13	IZS	2	1	2	1	1	1	2	2	8	4	3	2	2	2	13	3.0	24	
7	3	3	2	2	4	4	8	5	IZS	3	3	3	2	2	2	2	2	2	4	2	2	1	1	1	8	2.7	24	
8	1	1	1	1	2	1	1	IZS	2	C	C	C	C	C	C	C	2	3	5	10	3	2	2	2	10	2.4	24	
9	2	3	4	3	4	4	IZS	3	3	3	6	3	3	M	M	2	2	3	4	3	3	2	2	3	6	3.1	22	
10	3	3	3	2	2	IZS	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1.5	24
11	3	3	2	2	IZS	3	9	8	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	9	2.2	24	
12	1	1	1	1	IZS	1	1	2	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
13	1	2	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	0	1	2	1.1	24	
14	1	IZS	3	3	3	2	3	2	1	1	1	1	1	1	1	1	1	1	2	1	2	2	2	1	3	1.6	24	
15	IZS	1	1	2	2	2	2	3	3	2	2	2	2	1	1	1	1	1	2	3	3	3	4	IZS	4	2.0	24	
16	3	3	3	3	3	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.7	24	
17	3	3	3	3	3	3	2	2	1	1	1	1	1	1	1	1	1	2	1	1	1	1	IZS	2	3	1.8	24	
18	3	3	3	2	2	2	2	1	2	1	1	1	1	1	1	1	2	4	3	9	IZS	3	2	2	9	2.3	24	
19	1	2	2	3	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1	IZS	0	2	1	2	3	1.5	24	
20	2	1	1	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	2	2	1.3	24
21	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	IZS	1	2	2	2	3	2	3	1.7	24
22	2	2	2	2	2	3	3	3	2	2	1	1	1	1	1	1	IZS	2	3	2	2	1	3	3	3	2.0	24	
23	1	1	2	2	3	3	4	4	4	3	3	3	4	4	4	IZS	4	5	14	6	4	4	4	5	14	4.0	24	
24	6	5	2	3	2	2	4	4	1	1	2	2	2	2	IZS	2	2	3	3	4	4	5	5	4	6	3.0	24	
25	4	3	3	3	3	3	2	2	2	2	2	2	2	IZS	1	1	1	2	2	2	3	2	3	4	4	2.3	24	
26	4	2	2	1	2	3	3	2	1	1	9	1	IZS	1	7	2	1	3	2	2	2	2	2	3	9	2.5	24	
27	3	3	3	3	3	15	4	3	3	3	1	IZS	1	1	2	1	1	2	2	3	2	1	2	2	15	2.8	24	
28	1	1	1	1	1	1	1	1	2	1	IZS	1	1	1	1	1	1	8	1	1	1	1	1	2	8	1.4	24	
29	2	1	1	2	1	4	3	3	3	IZS	1	1	1	1	1	1	1	1	2	2	2	2	1	2	4	1.7	24	
30	1	1	2	1	2	2	2	2	IZS	3	3	3	3	3	3	4	4	3	4	3	3	1	2	1	4	2.4	24	
HOURLY MAX	6	5	4	3	4	15	9	8	13	3	9	3	4	4	7	4	4	8	14	10	4	5	5	5				
HOURLY AVG	2.3	2.2	2.1	2.1	2.3	2.8	2.8	2.6	2.4	1.7	1.9	1.5	1.5	1.2	1.6	1.3	1.4	2.2	2.9	2.7	2.0	1.9	2.0	2.2				

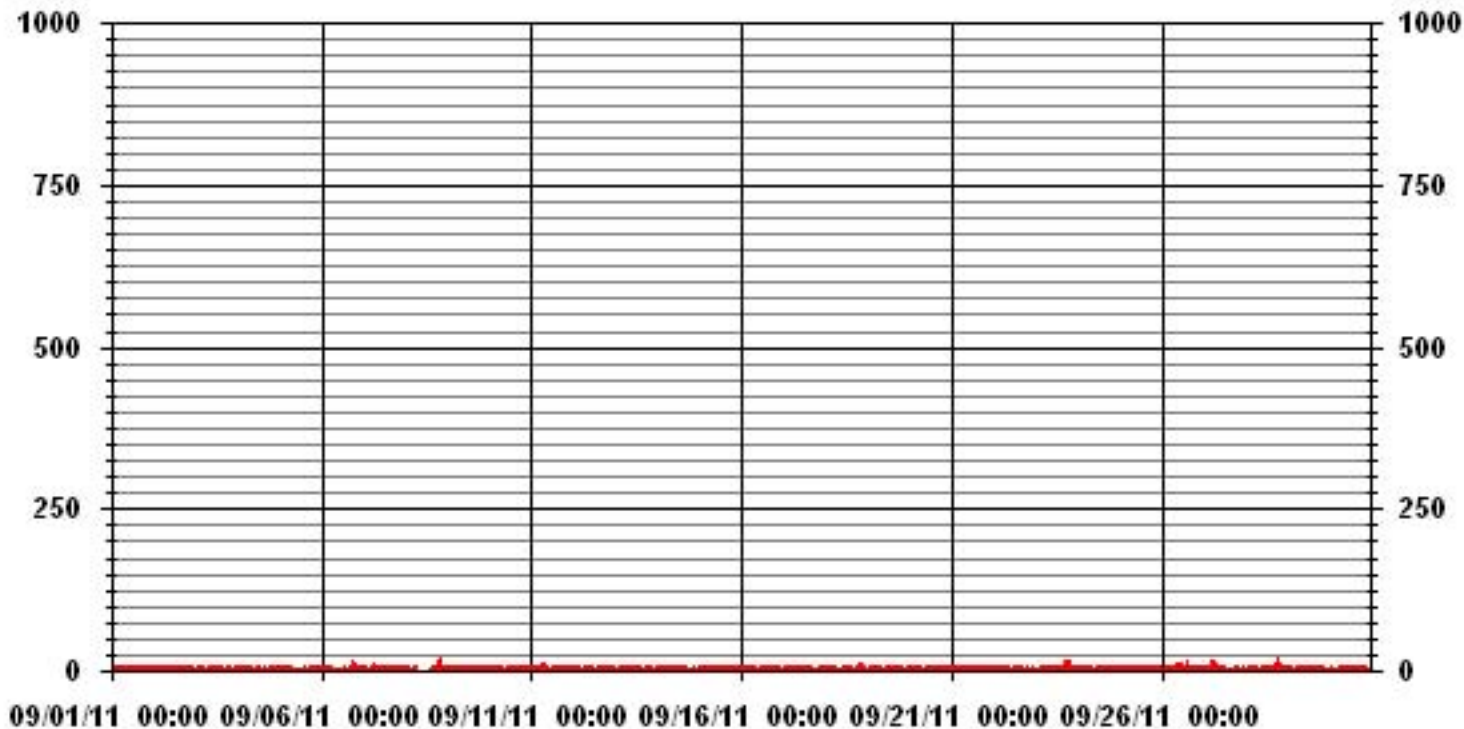
STATUS FLAG CODES

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:	675				
MAXIMUM INSTANTANEOUS VALUE:	15	PPB	@ HOUR(S)	5	ON DAY(S) 27
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS
MONTHLY CALIBRATION TIME:	9	HRS			
STANDARD DEVIATION:	1.48				

01 Hour Averages



— LICA31 IIO2MAX PPB

LICA31
 NO2_ / WDR Joint Frequency Distribution (Percent)

September 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	5.30	3.98	9.43	8.55	8.84	5.30	4.86	4.71	7.07	5.75	5.30	3.09	5.45	5.75	5.75	10.76	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	5.30	3.98	9.43	8.55	8.84	5.30	4.86	4.71	7.07	5.75	5.30	3.09	5.45	5.75	5.75	10.76	

Calm : .00 %

Total # Operational Hours : 678

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	36	27	64	58	60	36	33	32	48	39	36	21	37	39	39	73	678
< 110																	
< 210																	
>= 210																	
Totals	36	27	64	58	60	36	33	32	48	39	36	21	37	39	39	73	

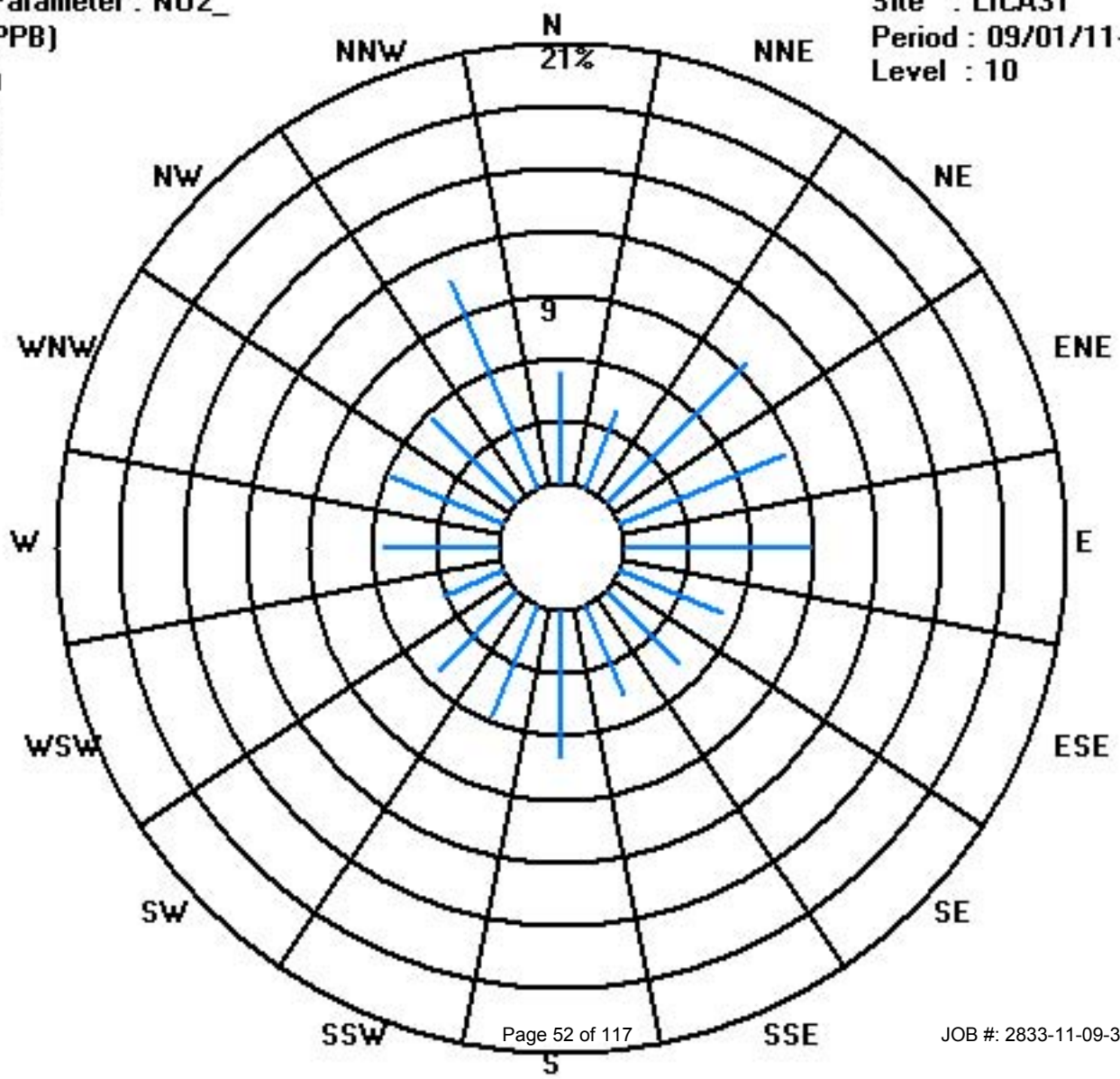
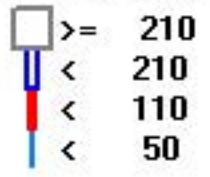
Calm : .00 %

Total # Operational Hours : 678

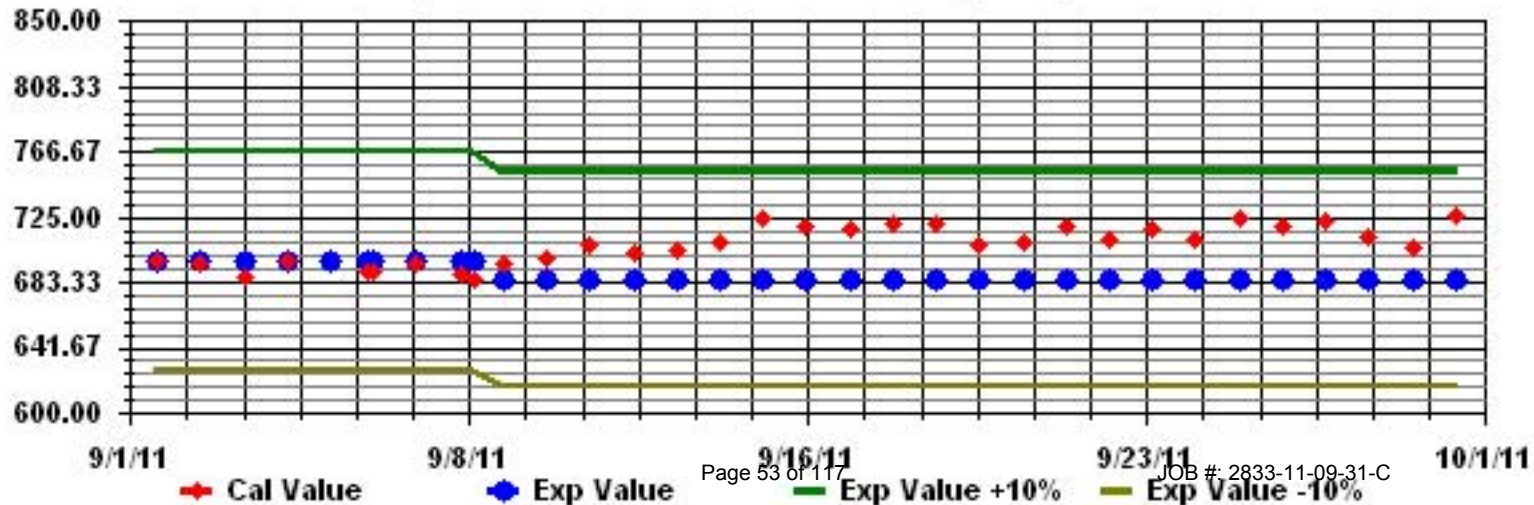
Class Limits (PPB)

Period : 09/01/11-09/30/11

Level : 10



Calibration Graph for Site: LICA31 Parameter: NO2_ Sequence: NO2 Phase: SPAN



Nitric Oxide

LAKELAND INDUSTRY & COMMUNICATY ASSOCIATION - ST. LINA

SEPTEMBER 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	1	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	1	0.2	24
2	0	0	0	0	0	1	1	1	1	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
3	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
4	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
5	0	0	0	0	0	0	0	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
6	0	0	0	0	0	0	C	2	1	IZS	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0.2	24
7	0	0	0	0	0	0	1	1	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
8	0	0	0	0	0	0	0	IZS	1	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	1	0.1	24
9	0	0	0	0	0	0	IZS	1	1	1	1	1	0	0	M	0	0	0	0	0	0	0	0	0	0	1	0.2	23
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	0.0	24
11	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
12	0	0	0	IZS	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
13	0	0	IZS	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
14	0	IZS	1	1	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
15	IZS	1	1	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
16	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0.2	24
17	0	1	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	24
18	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	1	IZS	1	0	0	1	0.3	24	
19	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	1	0.1	24	
20	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	1	0.0	24
21	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	1	0.1	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	0.0	24
23	0	0	0	0	0	0	0	0	1	1	1	1	0	1	IZS	1	1	1	0	0	0	0	0	0	0	1	0.4	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	1	1	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	1	0.1	24
26	0	0	0	0	0	0	0	0	1	0	0	0	IZS	1	1	0	0	0	0	0	0	0	0	0	0	1	0.1	24
27	0	0	0	0	0	0	0	1	1	1	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
28	0	0	0	0	0	0	0	0	1	1	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
29	0	0	0	0	0	1	0	1	1	IZS	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
30	0	0	0	0	0	0	1	0	IZS	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0.4	24	
HOURLY MAX	1	1	1	1	0	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
HOURLY AVG	0.0	0.1	0.1	0.1	0.0	0.1	0.3	0.6	0.7	0.4	0.3	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0			

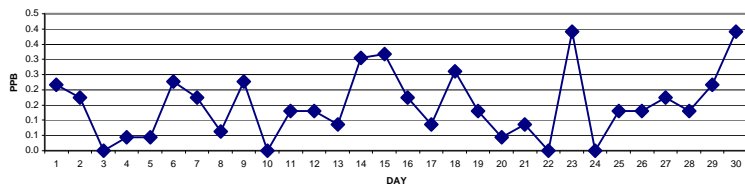
STATUS FLAG CODES

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

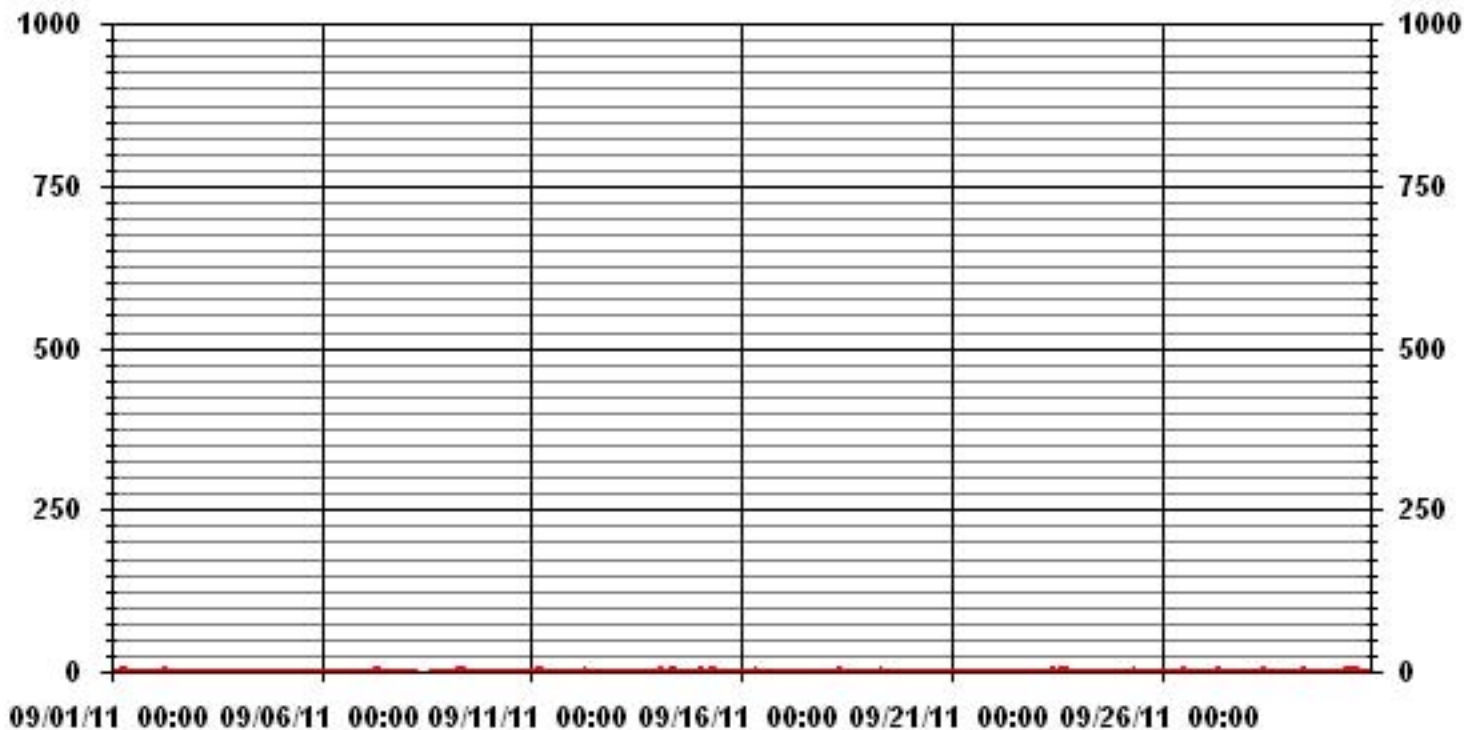
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	101					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	7	ON DAY(S)	6
MAXIMUM 24-HR AVERAGE:	0.4	PPB			ON DAY(S)	23, 30
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.36		MONTHLY AVERAGE:	0.15	PPB	

24 HOUR AVERAGES FOR SEPTEMBER 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 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	4	6	5	2	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	6	1.6	24	
2	1	1	1	1	1	2	3	1	2	1	1	1	1	IZS	1	0	0	0	2	0	1	0	0	0	0	3	0.9	24	
3	1	0	0	0	0	0	0	0	0	1	0	0	2	IZS	1	0	0	1	0	0	0	0	0	0	0	2	0.3	24	
4	0	0	0	0	0	0	0	0	0	1	0	IZS	2	1	1	1	1	1	1	1	1	1	1	1	2	0.6	24		
5	1	1	1	1	1	1	1	3	1	1	IZS	1	1	1	1	2	1	2	1	1	1	1	1	1	3	1.2	24		
6	1	1	1	1	0	1	C	C	21	IZS	2	1	1	1	1	1	2	1	2	1	1	1	1	1	21	2.0	24		
7	1	1	1	1	1	1	4	2	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.2	24		
8	1	1	1	1	1	1	1	IZS	1	C	C	C	C	C	C	C	0	0	1	0	0	0	0	0	1	0.6	24		
9	0	0	0	0	0	0	IZS	2	2	2	3	1	2	M	M	1	1	1	1	1	1	1	1	1	3	1.0	22		
10	1	1	1	1	1	IZS	1	1	2	3	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	3	1.1	24	
11	1	1	1	1	IZS	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1.1	24		
12	1	1	1	IZS	2	1	5	5	1	2	2	1	1	1	1	1	1	1	1	2	1	1	1	1	5	1.5	24		
13	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24		
14	1	IZS	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24		
15	IZS	2	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1.2	24	
16	2	1	1	1	1	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1.2	24		
17	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	2	1.0	24
18	1	1	1	1	1	1	1	2	2	2	1	1	1	1	2	1	1	2	2	4	IZS	2	1	2	4	1.5	24		
19	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	2	1	1	2	1.1	24		
20	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	IZS	1	1	1	1	1	2	1.1	24		
21	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	2	1.1	24		
22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	2	1.0	24		
23	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	IZS	2	4	12	4	1	1	1	1	12	1.8	24		
24	1	1	1	1	1	1	2	2	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	2	1.1	24		
25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	0	1	1	2	1.0	24		
26	1	1	1	1	1	1	1	2	2	1	14	1	IZS	2	16	2	1	2	1	1	1	1	1	1	16	2.4	24		
27	1	1	1	1	1	13	1	3	2	3	1	IZS	2	1	2	1	1	1	1	1	1	1	1	1	13	1.8	24		
28	1	1	1	1	1	1	1	1	2	1	IZS	2	1	1	1	1	1	10	2	2	2	1	1	1	10	1.6	24		
29	1	1	1	1	1	4	1	2	2	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.3	24		
30	1	1	1	1	1	1	1	1	IZS	3	2	2	2	2	2	1	2	2	1	1	1	1	1	1	3	1.3	24		
HOURLY MAX	2	2	2	2	1	13	5	6	21	3	14	2	2	2	16	2	2	10	12	4	2	2	2	2					
HOURLY AVG	1.0	0.9	0.9	0.9	0.9	1.5	1.5	1.8	2.1	1.5	1.7	1.1	1.1	1.1	1.7	1.1	1.0	1.5	1.5	1.2	1.0	0.9	0.9	1.0					

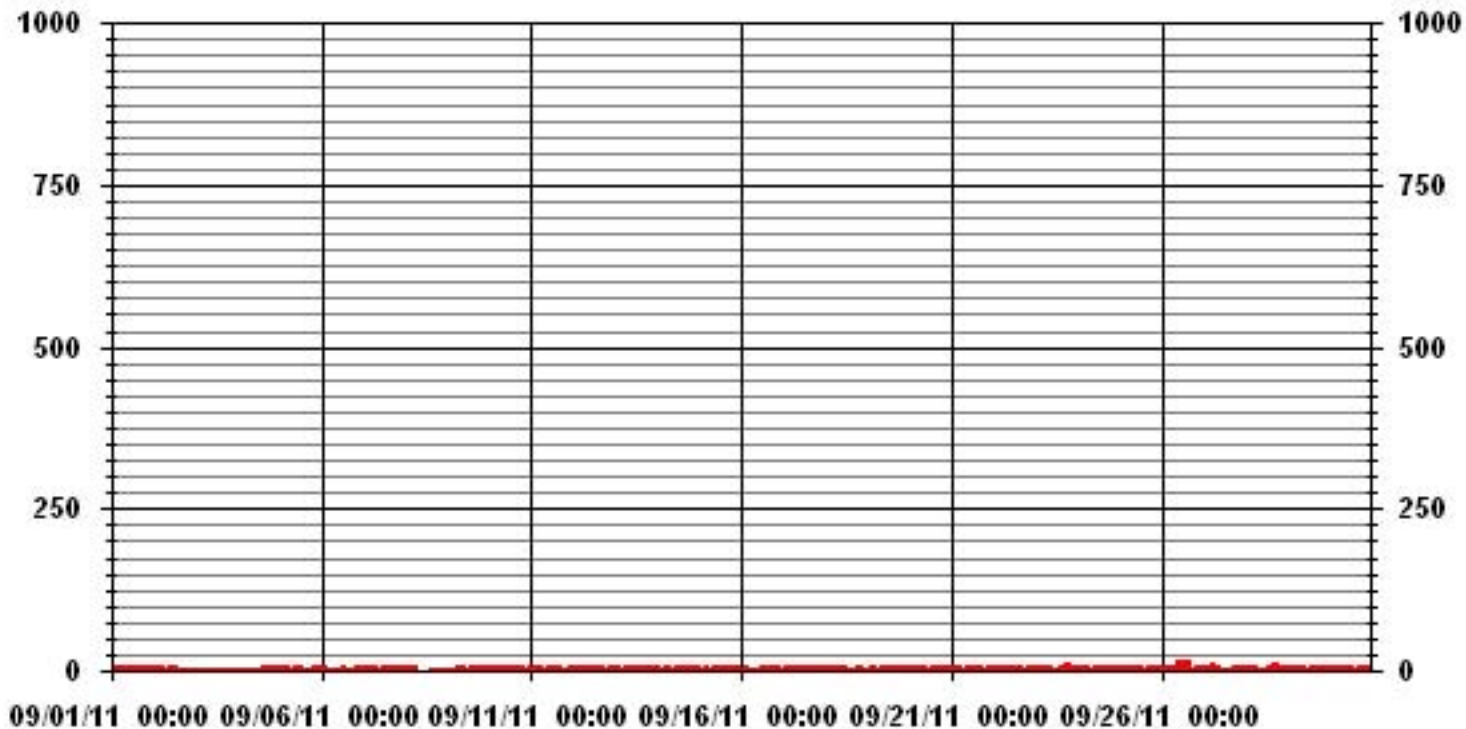
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	627					
MAXIMUM INSTANTANEOUS VALUE:	21	PPB	@ HOUR(S)	8	ON DAY(S)	6
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	1.43					

01 Hour Averages



LICA31
 NO_ / WDR Joint Frequency Distribution (Percent)

September 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	5.30	3.98	9.43	8.55	8.84	5.30	4.86	4.71	7.07	5.75	5.30	3.09	5.45	5.75	5.75	10.76	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	5.30	3.98	9.43	8.55	8.84	5.30	4.86	4.71	7.07	5.75	5.30	3.09	5.45	5.75	5.75	10.76	

Calm : .00 %

Total # Operational Hours : 678

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	36	27	64	58	60	36	33	32	48	39	36	21	37	39	39	73	678
< 110																	
< 210																	
>= 210																	
Totals	36	27	64	58	60	36	33	32	48	39	36	21	37	39	39	73	

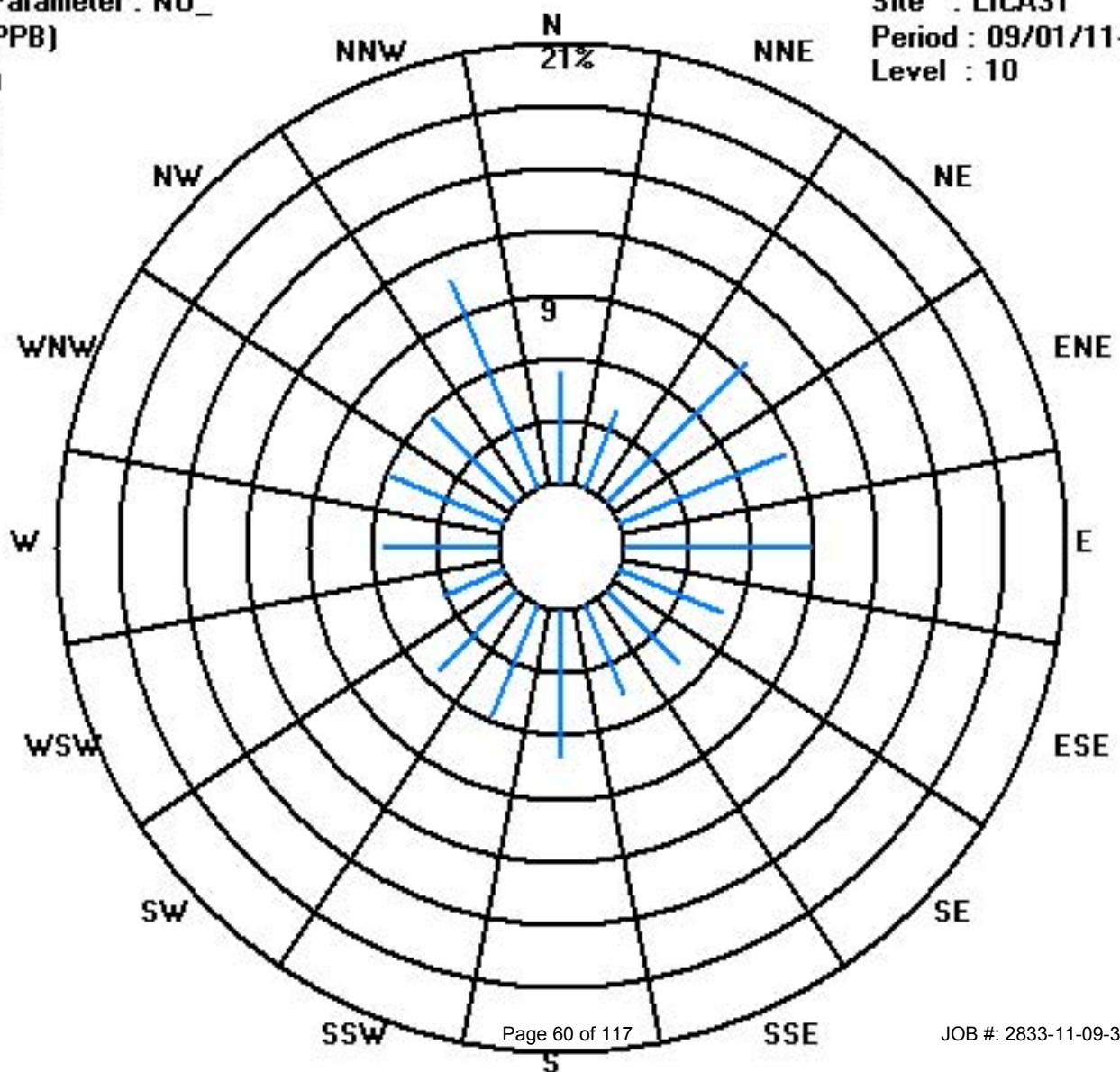
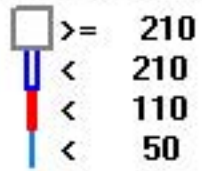
Calm : .00 %

Total # Operational Hours : 678

Class Limits (PPB)

Period : 09/01/11-09/30/11

Level : 10



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 2011

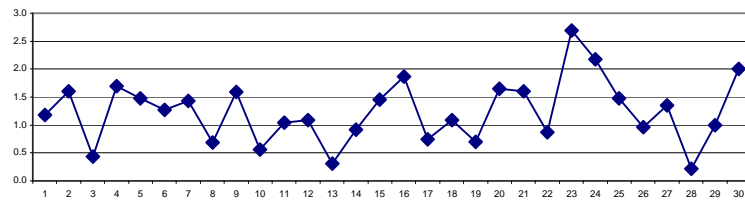
OXIDES OF NITROGEN hourly averages in ppb

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	0	1	1	1	0	0	1	2	2	1	0	0	0	0	IZS	1	1	1	2	3	3	3	2	2	3	1.2	24	
2	2	3	2	2	3	4	4	2	2	1	2	2	1	IZS	1	0	0	1	1	0	1	1	1	1	4	1.6	24	
3	0	0	0	0	1	0	1	0	1	0	0	0	IZS	1	0	0	0	0	1	1	1	1	1	1	1	0.4	24	
4	1	2	1	1	1	1	2	2	2	2	1	IZS	2	2	2	2	2	1	2	2	2	2	2	2	2	1.7	24	
5	2	3	3	2	2	2	2	3	2	1	IZS	0	1	1	1	1	1	1	1	1	1	1	1	1	3	1.5	24	
6	2	2	1	2	1	2	C	3	3	IZS	1	0	1	0	0	0	0	1	2	1	2	2	1	1	3	1.3	24	
7	2	3	1	1	3	2	3	3	IZS	2	2	1	2	1	1	1	1	1	1	1	1	0	0	0	3	1.4	24	
8	0	0	1	0	1	1	1	IZS	1	C	C	C	C	C	C	C	0	1	1	2	1	1	0	0	2	0.7	24	
9	1	1	2	1	2	2	IZS	3	2	2	2	2	1	1	M	1	1	1	2	2	2	1	1	2	3	1.6	23	
10	2	2	2	1	1	IZS	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0.6	24	
11	1	1	1	1	IZS	2	6	6	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	6	1.0	24	
12	0	0	0	IZS	1	1	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24	
13	2	2	IZS	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	0.3	24	
14	0	IZS	2	2	2	1	2	2	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	2	0.9	24	
15	IZS	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	0	1	1	2	2	2	2	IZS	2	1.5	24	
16	3	3	3	3	3	3	3	3	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	IZS	1	3	1.9	24
17	1	2	2	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	2	2	0.7	24	
18	2	2	2	2	2	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	3	IZS	2	1	1	3	1.1	24
19	1	1	1	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	2	2	0.7	24
20	2	2	1	2	2	2	2	2	2	1	2	2	1	1	1	1	1	1	IZS	2	2	2	2	2	2	1.7	24	
21	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	IZS	1	1	1	1	2	2	2	1.6	24	
22	1	1	2	1	2	2	2	2	1	0	0	0	0	0	0	0	IZS	1	1	1	1	0	1	1	2	0.9	24	
23	0	0	1	1	2	2	3	3	4	3	3	3	3	4	3	IZS	3	3	4	4	3	3	3	4	4	2.7	24	
24	5	3	2	1	1	2	2	2	1	1	1	1	1	2	IZS	2	2	2	2	3	3	4	4	3	5	2.2	24	
25	3	2	2	2	2	2	2	2	2	2	1	1	1	1	IZS	1	0	0	1	1	1	1	1	2	2	3	1.5	24
26	3	1	0	1	1	1	2	2	1	0	1	0	IZS	0	1	0	0	1	1	1	1	1	1	2	3	1.0	24	
27	2	2	2	2	2	3	3	3	3	3	1	IZS	0	0	1	0	0	0	1	1	1	1	0	1	3	1.3	24	
28	1	0	0	0	0	0	1	0	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.2	24	
29	1	1	1	1	1	1	1	3	2	IZS	1	1	1	1	0	0	0	1	1	1	1	1	1	1	3	1.0	24	
30	0	1	1	1	1	1	2	2	IZS	3	3	3	3	3	4	4	4	3	3	2	2	0	1	0	4	2.0	24	
HOURLY MAX	5	3	3	3	3	4	6	6	4	3	3	3	3	4	3	4	4	3	4	4	3	4	4	4	4			
HOURLY AVG	1.4	1.5	1.4	1.3	1.6	1.5	2.0	2.1	1.8	1.3	1.2	0.9	0.9	0.8	0.7	0.6	0.7	0.9	1.1	1.3	1.2	1.1	1.2	1.3				

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

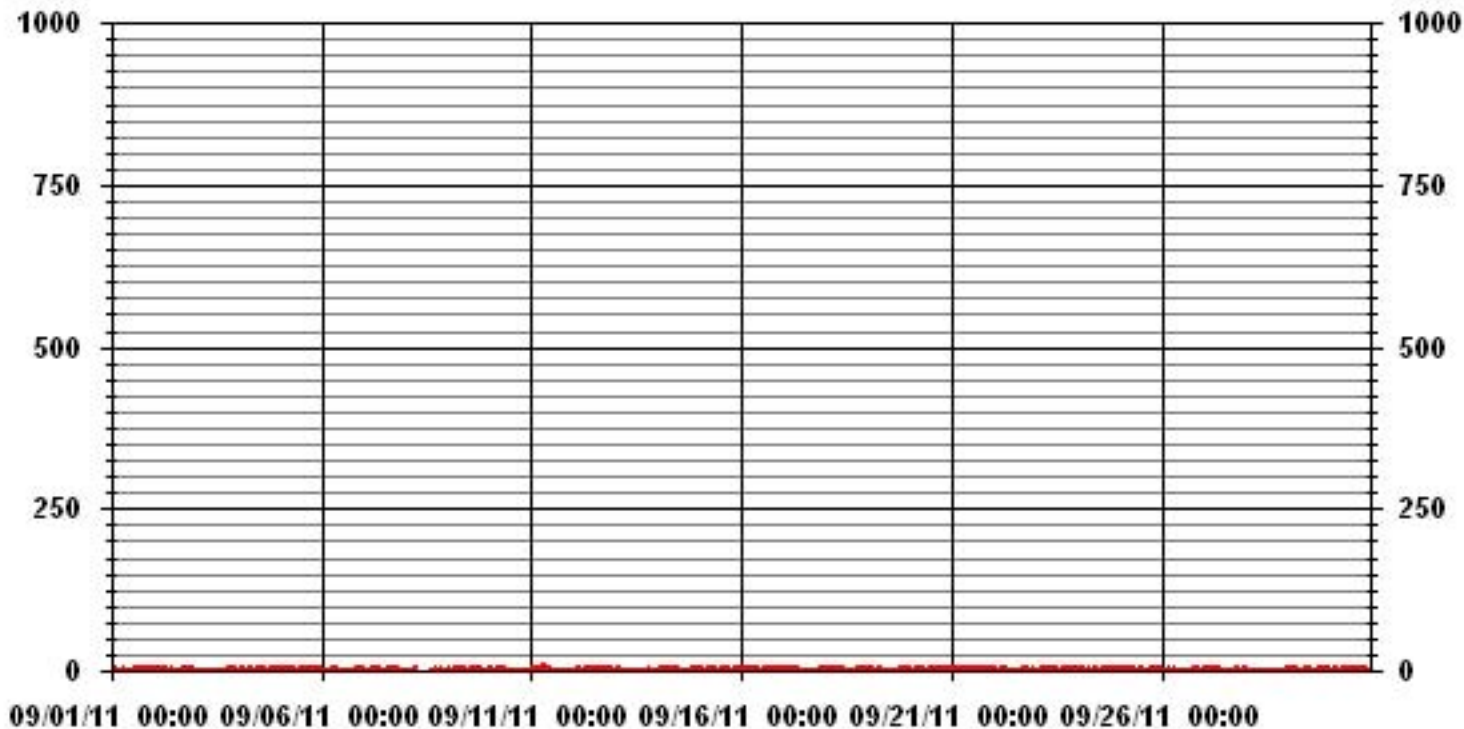
24 HOUR AVERAGES FOR SEPTEMBER 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	512					
MAXIMUM 1-HR AVERAGE:	6	PPB	@ HOUR(S)	6.7	ON DAY(S)	11
MAXIMUM 24-HR AVERAGE:	2.7	PPB			ON DAY(S)	23
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME	99.9	%	
STANDARD DEVIATION	1.01		MONTHLY AVERAGE	1.24	PPB	

01 Hour Averages



— LICA31 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 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	1	2	2	2	1	2	5	7	7	2	2	1	2	1	IZS	2	2	2	3	4	3	4	3	3	7	2.7	24	
2	3	3	3	3	4	5	5	3	4	2	3	3	2	IZS	3	1	1	2	4	2	3	2	2	3	5	2.9	24	
3	3	1	1	1	1	1	2	1	2	2	1	4	IZS	2	1	1	1	2	3	2	2	2	2	2	4	1.7	24	
4	2	2	2	2	2	2	2	3	2	3	2	IZS	2	2	3	2	2	2	3	3	3	3	3	3	3	2.3	24	
5	4	3	4	3	3	3	3	7	3	2	IZS	2	2	2	2	5	1	3	3	2	1	1	2	2	7	2.7	24	
6	3	2	2	3	2	3	C	C	33	IZS	3	1	3	2	2	1	3	3	9	3	3	2	2	2	33	4.1	24	
7	3	3	3	2	4	4	11	7	IZS	4	3	2	3	2	2	2	2	2	4	2	1	1	1	1	11	3.0	24	
8	1	1	1	1	1	1	2	IZS	2	C	C	C	C	C	C	1	2	5	10	1	1	1	1	1	10	2.0	24	
9	1	2	3	2	4	3	IZS	4	4	4	8	4	4	M	M	2	3	3	4	3	3	2	2	3	8	3.2	22	
10	3	3	3	2	2	IZS	1	2	3	5	1	1	1	1	1	1	0	1	1	1	1	1	1	1	2	5	1.7	24
11	2	2	2	2	IZS	3	9	8	3	2	2	1	1	1	1	1	1	1	1	2	1	1	1	1	9	2.1	24	
12	1	1	1	IZS	2	2	7	8	2	3	3	2	2	2	3	2	1	2	2	3	2	2	2	2	8	2.5	24	
13	3	3	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	0	1	3	1.2	24	
14	1	IZS	3	3	3	2	3	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1	3	1.6	24
15	IZS	2	2	2	2	2	3	3	3	3	2	2	2	1	1	1	1	1	2	3	3	3	3	IZS	3	2.1	24	
16	4	4	4	4	4	5	4	4	3	4	3	2	2	1	2	3	2	2	2	2	2	2	IZS	2	5	2.9	24	
17	3	3	3	3	3	3	2	2	2	2	1	0	0	1	1	1	2	2	1	1	2	1	IZS	2	3	1.8	24	
18	3	2	3	2	2	2	2	2	3	2	2	1	1	1	2	1	2	5	4	12	IZS	3	2	3	12	2.7	24	
19	1	2	2	3	4	2	3	2	2	2	1	1	0	1	1	1	1	1	2	IZS	2	4	2	3	4	1.9	24	
20	3	2	2	3	4	3	3	3	2	3	3	3	2	2	1	2	2	2	IZS	2	2	3	3	3	4	2.5	24	
21	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	IZS	2	2	2	2	2	2	3	2.4	24	
22	2	2	2	2	2	3	3	4	3	1	1	1	1	1	1	1	IZS	2	3	2	2	1	3	3	4	2.0	24	
23	1	1	2	2	2	3	4	4	4	4	4	4	4	4	5	IZS	5	8	24	9	4	4	4	5	24	4.8	24	
24	6	5	2	2	2	2	5	5	2	2	2	2	2	2	IZS	2	2	2	3	4	4	5	5	4	6	3.1	24	
25	4	3	3	3	3	3	2	3	3	2	2	2	2	IZS	1	1	1	1	2	2	4	2	2	4	4	2.4	24	
26	4	2	1	1	2	2	3	3	2	1	21	2	IZS	1	20	3	1	4	2	2	2	2	2	3	21	3.7	24	
27	3	3	3	3	4	27	5	6	4	5	2	IZS	1	1	3	1	1	1	1	3	2	1	1	2	27	3.6	24	
28	1	1	1	1	1	1	1	1	2	1	IZS	1	1	1	1	1	1	17	3	2	2	2	2	1	17	2.0	24	
29	2	1	1	1	2	6	2	4	4	IZS	2	1	2	2	1	1	1	1	2	2	2	2	1	1	6	1.9	24	
30	1	2	1	2	2	2	2	2	IZS	4	4	5	4	5	4	5	5	4	4	4	3	1	1	1	5	3.0	24	
HOURLY MAX	6	5	4	4	4	27	11	8	33	5	21	5	4	5	20	5	5	17	24	12	4	5	5	5				
HOURLY AVG	2.5	2.3	2.2	2.2	2.5	3.5	3.5	3.7	3.9	2.6	3.0	2.0	1.9	1.6	2.5	1.7	1.7	2.8	3.5	3.2	2.2	2.1	2.0	2.3				

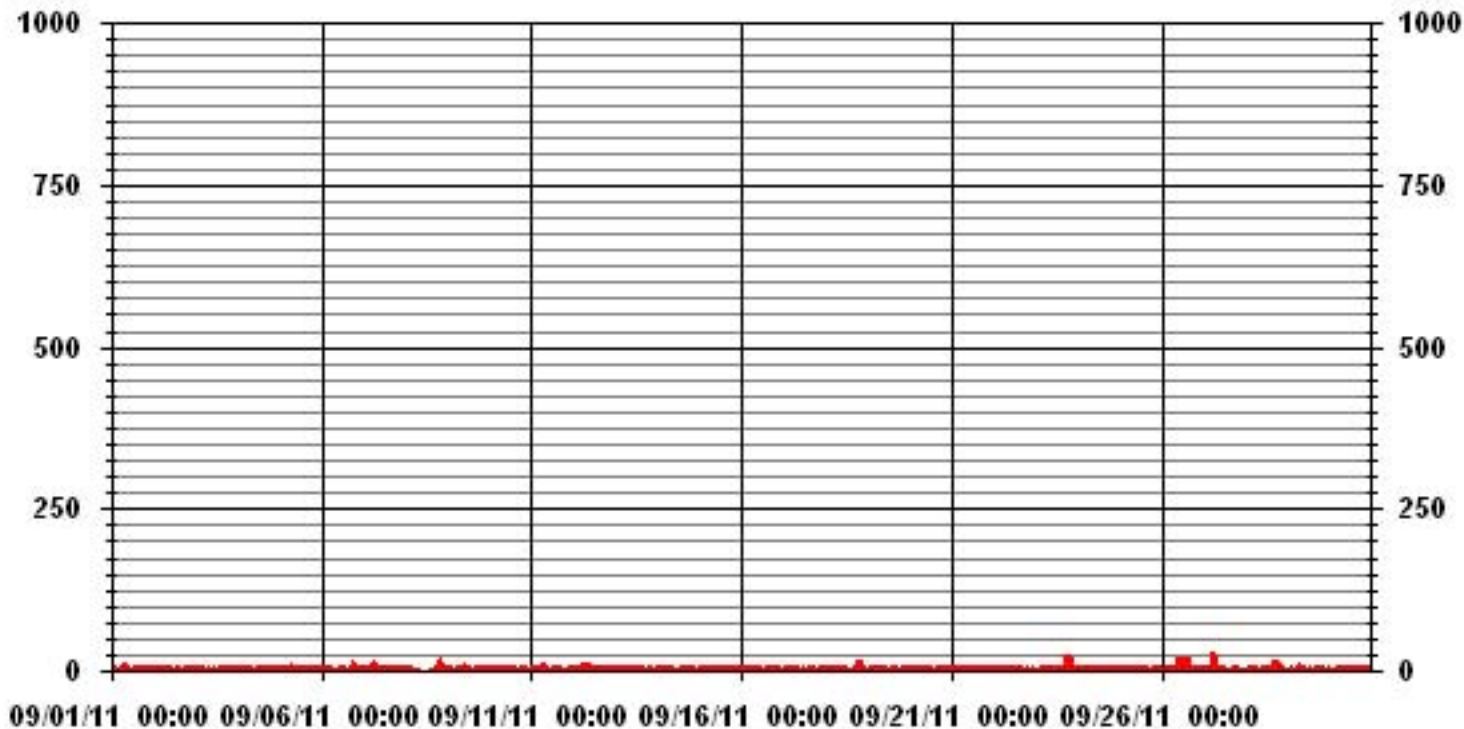
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	673
MAXIMUM INSTANTANEOUS VALUE:	33 PPB @ HOUR(S) 8 ON DAY(S) 6
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	9 HRS
STANDARD DEVIATION:	2.51
OPERATIONAL TIME:	718 HRS

01 Hour Averages



LICA31
NOX_ / WDR Joint Frequency Distribution (Percent)

September 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	5.30	3.98	9.43	8.55	8.84	5.30	4.86	4.71	7.07	5.75	5.30	3.09	5.45	5.75	5.75	10.76	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	5.30	3.98	9.43	8.55	8.84	5.30	4.86	4.71	7.07	5.75	5.30	3.09	5.45	5.75	5.75	10.76	

Calm : .00 %

Total # Operational Hours : 678

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	36	27	64	58	60	36	33	32	48	39	36	21	37	39	39	73	678
< 110																	
< 210																	
>= 210																	
Totals	36	27	64	58	60	36	33	32	48	39	36	21	37	39	39	73	

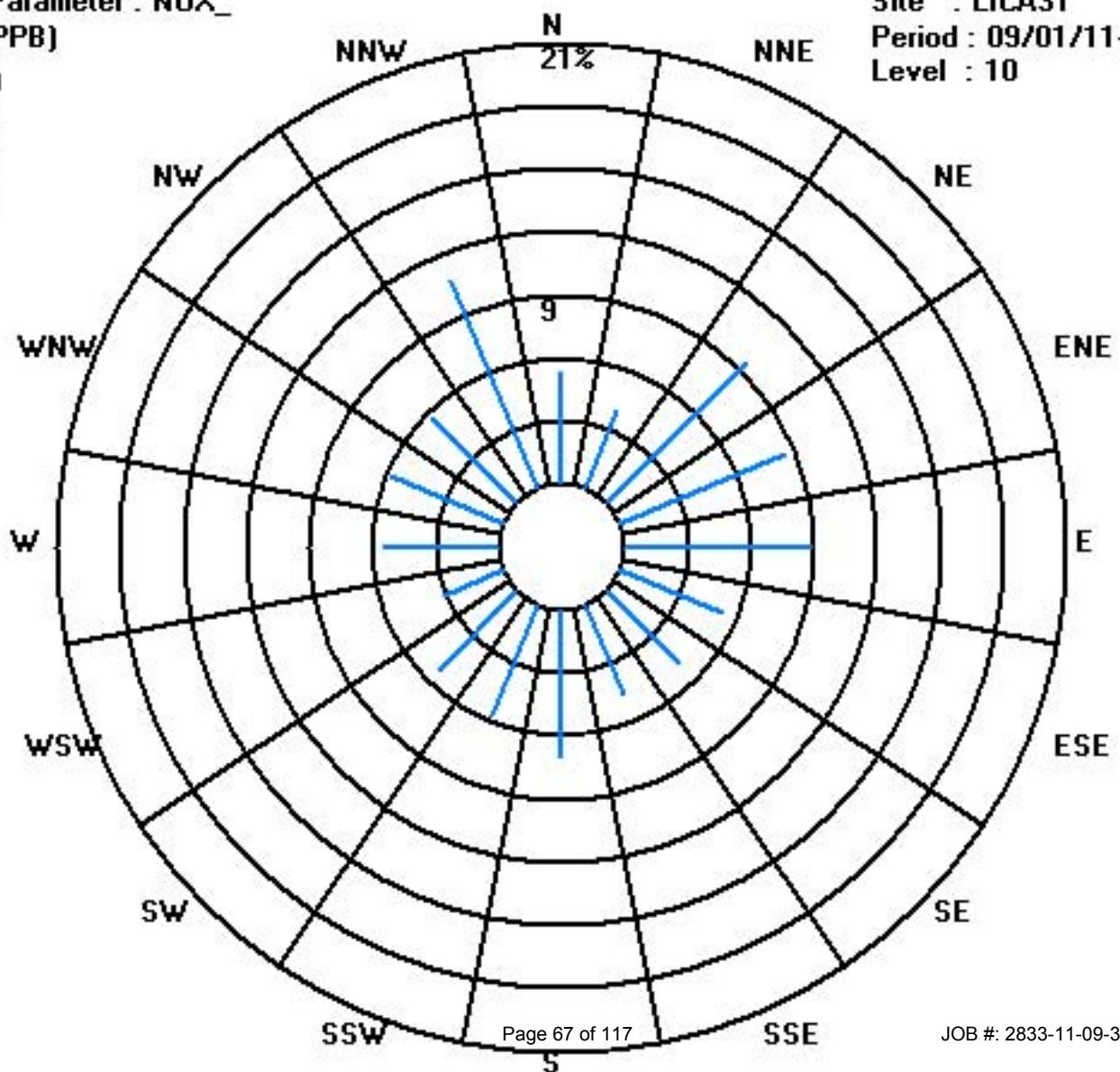
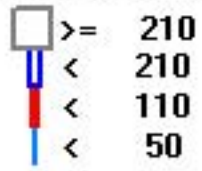
Calm : .00 %

Total # Operational Hours : 678

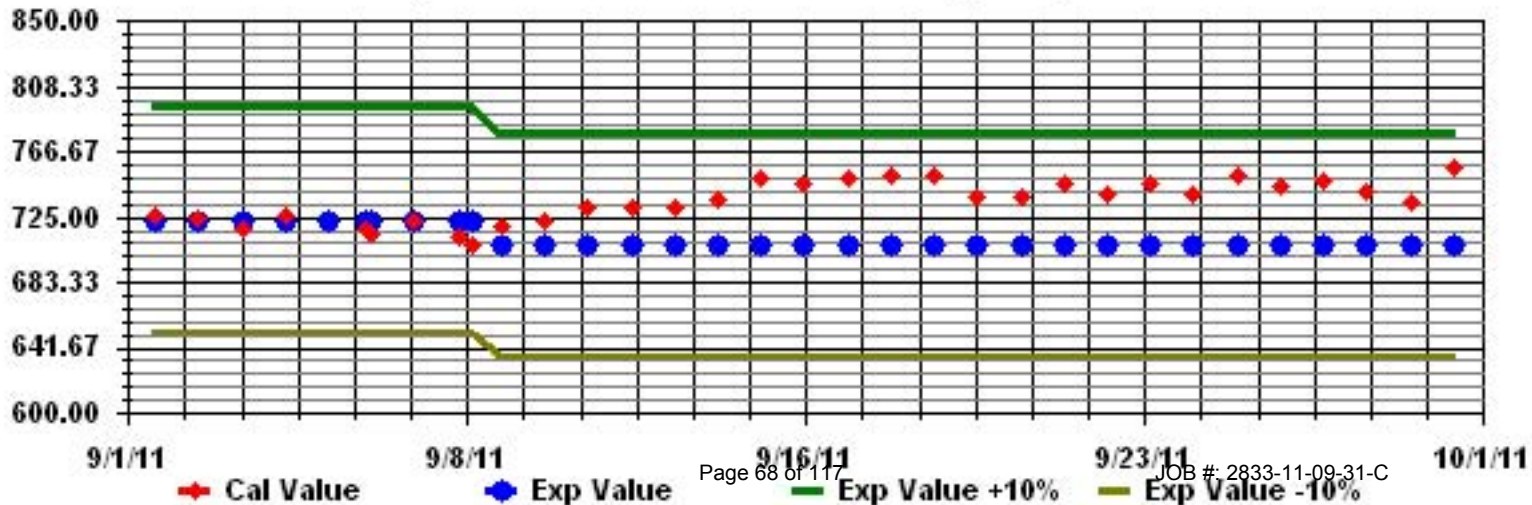
Class Limits (PPB)

Period : 09/01/11-09/30/11

Level : 10



Calibration Graph for Site: LICA31 Parameter: NOX_ Sequence: NO2 Phase: SPAN



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 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	2.9	5	0.5	5.2	5.8	0	0.1	1.2	4.8	3.4	3.2	3.7	6.3	4.5	5.1	4.3	6.9	6.8	4.9	6.4	7.2	7.4	8.1	7.6	8.1	4.6	24
2	2	8.2	7	6.4	6.7	6.6	7.7	10.6	8.9	8.1	5.4	6.1	5.1	2.3	4.2	5.2	5.8	4.7	6.2	7.3	3.3	2.6	2.4	3.7	4.4	10.6	5.8	24
3	3	3.7	6.2	5.4	7.7	5.3	4.7	6.2	5.4	4.6	6.3	5.2	4.7	6.9	4.6	5	4.7	4.4	3.4	3.7	5.5	7.4	9.9	10.6	8.2	10.6	5.8	24
4	4	9.1	7.1	8.5	4.8	6.5	6.4	8.5	5.6	5.6	4.7	3.2	4.4	2.9	4	2.9	5.8	5.8	5.2	2.8	6.4	5.4	7.7	5.4	5.4	9.1	5.6	24
5	5	6.9	8.4	6.5	6.3	5.2	7.6	5.2	5.4	3.4	2.9	0	0.8	2.9	3.3	6.2	9.6	8.5	6	6.3	7.8	0	3.2	4.5	4.4	9.6	5.1	24
6	6	5.7	7.9	7.3	7.4	6.1	8	7.5	6.9	5.5	7.8	5.6	5.6	2.2	3.3	4.9	5.6	4.7	6.6	6.8	6.7	5.2	10.7	9.8	8.2	10.7	0.0	24
7	7	6.1	6.2	6.1	7	9.4	9.9	6.3	5.7	7.3	5.8	6.2	4.1	4.8	6.4	7.8	9.5	9.2	8.9	10.4	9.8	11.4	8.9	6.4	6.7	11.4	7.5	24
8	8	7.5	5.6	6.3	6.7	6.7	5.3	7.4	5.8	7.9	4.2	3.7	7	8.7	4.4	4	4.8	5.5	N	4.3	8.1	N	1	10.5	7.7	10.5	6.1	22
9	9	3.1	4.6	5.7	5.5	7.3	9.2	9.5	8.5	13.6	11.1	11.3	C	C	C	5.9	5.6	9.3	10.4	10.5	10.9	12.3	9.2	10.6	11.3	13.6	8.8	24
10	10	15.9	12.6	11.4	9.5	8.1	8.4	4.8	5.4	4.6	4.4	5.7	5.7	4	2.8	6.5	6.7	2.7	3.8	2.4	8.6	5.5	6.2	5.3	6.2	15.9	6.6	24
11	11	4.6	9.4	5	3.6	5.6	6.4	8.1	7.9	8.1	6.5	9.8	4.7	3.2	4.4	5.8	3.7	5	3.5	2.2	2.5	2.1	5.4	4.2	1	9.8	5.1	24
12	12	1.9	4.3	7.2	2.9	1.8	3.4	3.1	3.2	2	4.9	3.8	3.9	3.5	1.9	2.8	2.9	0.8	2.8	6	2.6	1.9	1.2	2.9	0	7.2	3.0	24
13	13	4.6	5.4	2.9	2.9	2.5	3.2	1.2	1.4	2.4	1.1	0	1.8	2.5	1.2	2.2	2.9	6.3	2.5	3.4	2.8	3.3	0.8	0.9	3.6	6.3	2.6	24
14	14	0.8	0	3	6.7	6.7	4.9	3.9	3.4	4.8	2.1	2.2	2.8	2.7	1.6	3.9	5.1	4.2	3.7	4.4	5.3	5.1	6.3	8.4	2.8	8.4	4.0	24
15	15	8.2	7	5.7	6.3	6.2	3.8	3.9	2.7	2.8	2.8	5.7	6.8	6.5	5.7	8.5	8.8	4.5	4	7.1	7.5	7.9	7.3	10.7	8.9	10.7	6.2	24
16	16	5.9	5.4	3.2	12.1	9	5.6	10.3	10.5	5.5	6.9	6.2	5.7	2.1	1.7	0.4	1.2	5.4	5.7	3.3	1.6	0	1.3	2.7	0	12.1	4.7	24
17	17	N	0.7	5.4	4.1	2.3	0.2	1.7	2.1	3.7	5.5	6	1.8	2.7	3.2	3.9	3	1.7	4.6	0	0.7	1.5	4.7	5.4	2.4	6.0	2.9	23
18	18	4.2	4	1.4	3.9	2.2	4.3	0.2	3.1	5.6	4.7	0.3	0	0	2.8	3.6	4.8	3.1	5.1	1.3	1.5	4.2	3.6	5.6	4.1	5.6	3.1	24
19	19	3	4.1	8.4	5.8	4.4	1.3	3.7	2.6	0	0	4.7	3.6	4.4	1.5	2	1.1	1	3.3	1.3	3.9	3.1	2.1	2.4	3.2	8.4	3.0	24
20	20	1.7	2.5	1.9	3.4	0.4	2.7	0	0.6	3.6	0.8	0.4	4.4	5.2	4.3	2.8	2.9	3.2	2.8	2.2	5.8	5.4	3.9	2.3	4.7	5.8	2.8	24
21	21	4	6.9	7	3.3	6.2	5.5	5.2	4.4	4.2	7.5	5.1	2.5	6.2	10.5	13.5	10.2	6.4	4.1	4.7	5.3	5.5	8	13.5	13.9	13.9	6.8	24
22	22	9.9	8.8	10.7	9.1	11.1	10.5	10.2	9.3	5.2	3.5	0.4	1	2.1	0	2.9	4.3	3.9	5.6	8.1	1.6	0.5	5.9	5.4	3.1	11.1	5.5	24
23	23	0	3.5	2	3.5	3	5.9	11.6	10.5	8.5	4.7	4.5	5.4	6.5	8.7	10.9	8.9	4.8	7	7.3	10.2	11.7	10.8	15.2	11.7	15.2	7.4	24
24	24	8.6	6.3	4.4	5.3	9	6.6	4.8	2	4.3	2.6	1.6	5.3	2.2	4.4	5.7	7.4	10.4	11.5	11.2	8.1	6	7.4	9.4	9.1	11.5	6.4	24
25	25	7.6	8.4	8.7	6	5.1	5.6	4.1	6.3	7.7	10.1	10.1	11.1	9.7	8.8	7.3	9.7	10.1	6.9	3.9	7.6	13.2	13.9	9.4	7	13.9	8.3	24
26	26	7.2	11.5	10.5	8.8	6.7	9.3	8.4	7.8	2.7	2.8	4.6	0.5	2.5	3.2	2.4	3	0.9	2.4	2.5	2.9	1.7	2.6	2.7	3.3	11.5	4.6	24
27	27	7.6	10.8	12.2	9.5	7.6	5.1	5.5	5.5	2.6	3.6	1.3	2	4	1.7	1.9	3.1	2.8	3.2	4.8	2.2	2.5	3.1	5.1	4.1	12.2	4.7	24
28	28	1.1	3.9	0.7	1.6	2.4	5.8	2.4	0.9	2.9	2.3	0.5	1.8	0	1.8	3.1	3.1	4.4	4.1	3.9	2.2	6.2	7.6	6	4.7	7.6	3.1	24
29	29	5.3	1.7	4.3	4	4.7	5.9	2.2	6.3	5.4	1.6	0.1	0.1	2.9	3.5	3.1	4.2	7.1	3.8	5.7	5.2	4.2	6.4	6.4	7.5	7.5	4.2	24
30	30	4.7	4.8	4.9	1.7	1	4.9	5	6.7	2.2	0	3.6	8.2	7.1	4.6	8.4	7.7	9.5	6.5	8.8	8.5	5.5	6	8.8	0	9.5	5.4	24
HOURLY MAX		16	13	12	12	11	11	12	11	14	11	11	11	10	11	14	10	10	12	11	11	13	14	15	14			
HOURLY AVG		5.5	6.0	5.8	5.7	5.5	5.6	5.4	5.2	5.0	4.3	4.0	3.9	4.0	3.9	5.0	5.3	5.2	5.2	5.1	5.4	5.1	5.8	6.7	5.5			

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

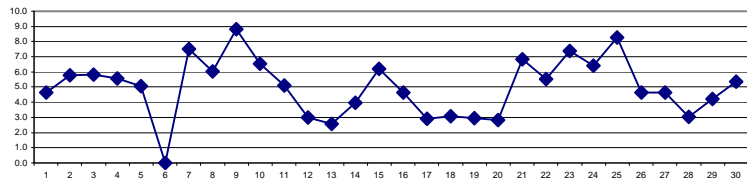
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR - ug/m³ | 24-HR 30 ug/m³

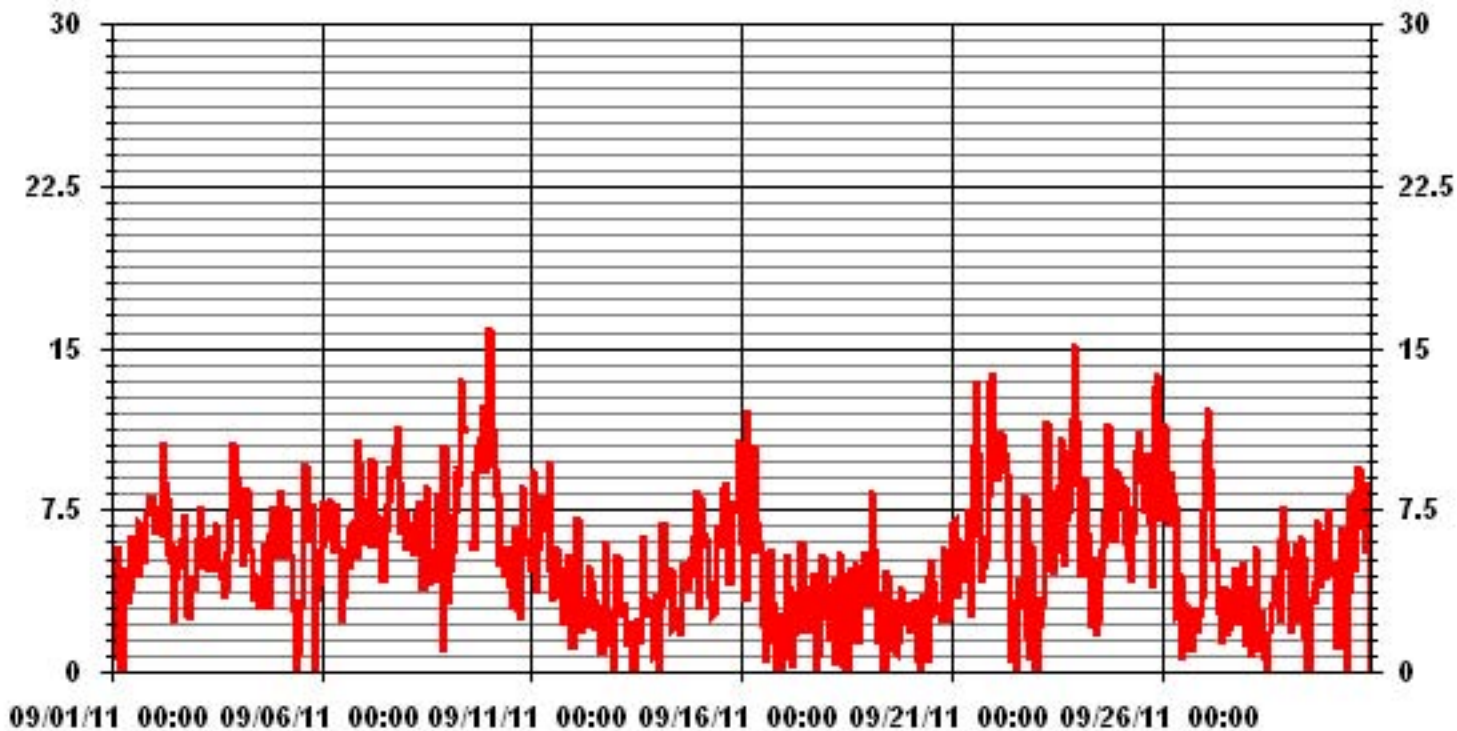
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-
NUMBER OF 24-HR EXCEEDENCES:	0
PROPOSED CANADA WIDE GUIDELINE	
NUMBER OF NON-ZERO READINGS:	695
MAXIMUM 1-HR AVERAGE:	15.9 UG/M ³ @ HOUR(S) 0 ON DAY(S) 10
MAXIMUM 24-HR AVERAGE:	8.8 UG/M ³ ON DAY(S) 9
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	3 HRS
OPERATIONAL TIME:	717 HRS
AMD OPERATION UPTIME:	99.6 %
STANDARD DEVIATION:	2.94
MONTHLY AVERAGE:	5.18 UG/M ³

24 HOUR AVERAGES FOR SEPTEMBER 2011



01 Hour Averages



— LICA31 PM2 UG/M3

LICA31
 PM2 / WDR Joint Frequency Distribution (Percent)

September 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	5.47	4.07	9.55	8.28	8.70	5.47	4.77	4.63	7.02	5.47	5.47	3.51	5.47	5.75	5.89	10.39	100.00
< 60.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 80.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.47	4.07	9.55	8.28	8.70	5.47	4.77	4.63	7.02	5.47	5.47	3.51	5.47	5.75	5.89	10.39	

Calm : .00 %

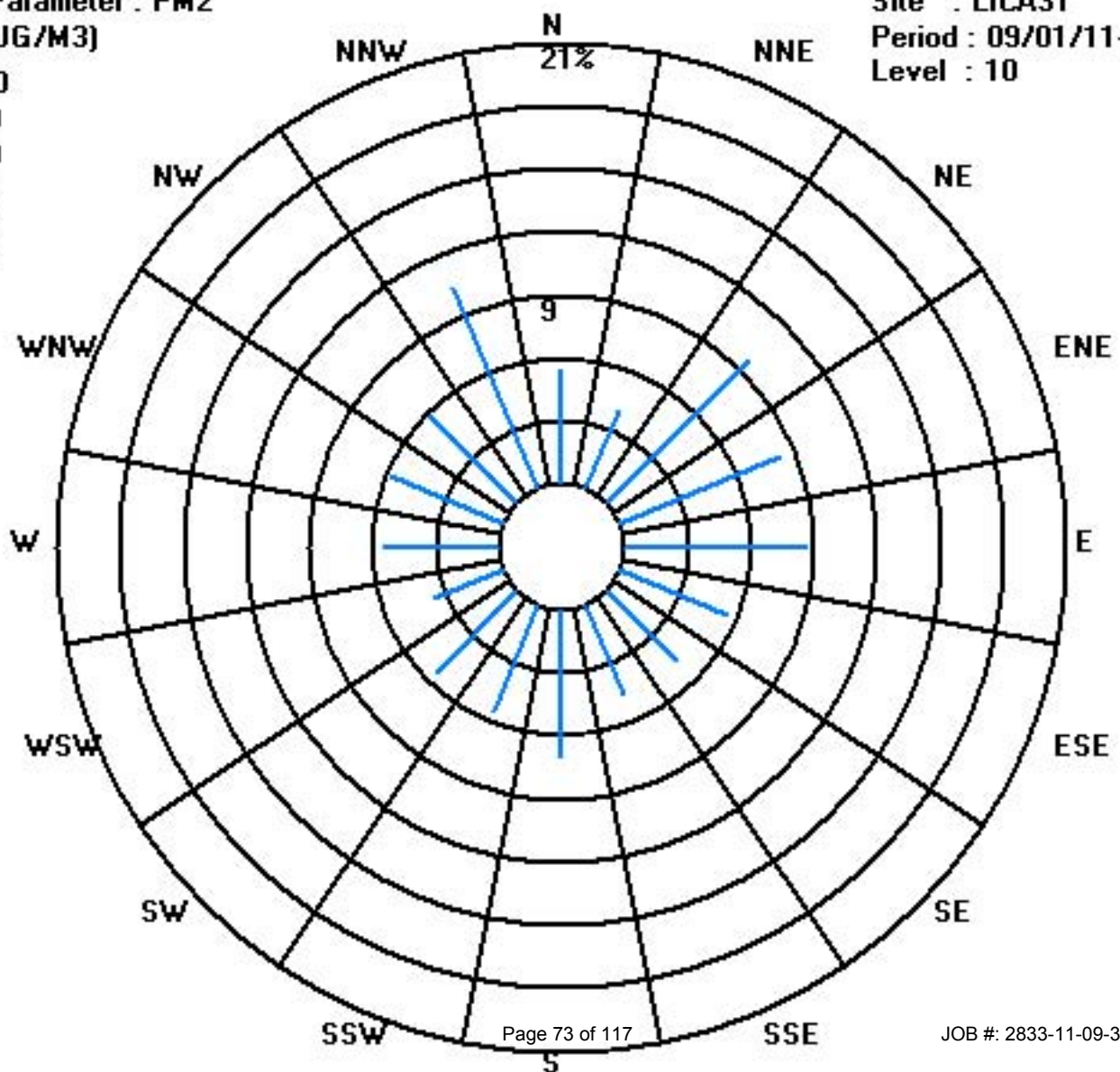
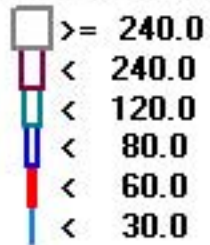
Total # Operational Hours : 712

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	39	29	68	59	62	39	34	33	50	39	39	25	39	41	42	74	712
< 60.0																	
< 80.0																	
< 120.0																	
< 240.0																	
>= 240.0																	
Totals	39	29	68	59	62	39	34	33	50	39	39	25	39	41	42	74	

Calm : .00 %

Total # Operational Hours : 712



Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 2011

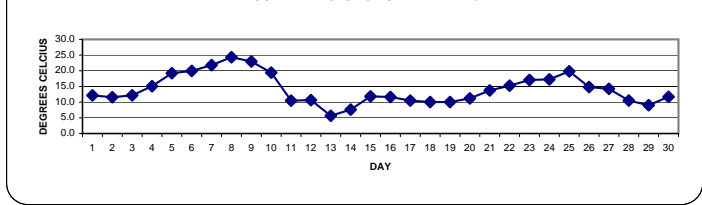
AMBIENT TEMPERATURE hourly averages (Degrees C)

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	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		7.8	7.4	7	6.7	5.7	5.2	6.3	9.6	12.7	14.9	16.3	17.3	17.1	17.2	17.4	16.7	15.1	14.2	13	12.5	12.2	11.8	11.6	17.4	12.2	24	
2		10.9	10.6	10.4	9.7	8.5	7.4	8.1	9.5	10.3	11.9	14.3	15.8	17.9	18.6	16	15.1	13.9	13.1	11.5	9.9	8.9	8.6	8.3	8.3	18.6	11.6	24
3		7.7	7.2	7.2	7	6.8	6.7	8.2	8.3	9.7	13.5	15.4	16.6	17.6	19.3	18.6	18.4	18.2	17.3	14.6	12.5	11.6	10.5	9.9	9.3	19.3	12.2	24
4		9.1	9.1	8.7	8.3	7.8	7.8	9	9.8	12.8	14.2	16.6	18.3	20.6	21.4	22.5	23.2	22.8	22.1	19.7	17.6	17.4	15.6	14.8	12.8	23.2	15.1	24
5		11.4	11.7	13.2	13.5	13.6	12.8	16.1	18.6	18.6	22.5	24	23.6	25	26.2	27.2	27	26.5	24.8	21.2	18.7	17.7	16.8	15.7	15.3	27.2	19.2	24
6		13.7	14.1	15.2	14.3	13.3	11.9	12.1	16.1	20.4	23	25	25.4	26.1	27.1	27.4	27.3	27.1	25.7	22	20.2	18.9	18.4	17.4	16.4	27.4	19.9	24
7		16.1	15.5	14.6	13.8	13.4	12.6	14.3	17.5	19	21.3	24.6	27.5	29.6	30	30.3	30.3	30.3	28.6	25.3	23.5	23	21.4	20.2	20.5	30.3	21.8	24
8		20.2	19	18.7	18.7	18.7	17.4	19.3	20.9	23.9	26.8	28.7	29.8	30.6	30.9	31	31.2	30.6	28.7	25.4	23.8	23.4	22.9	22.4	20.7	31.2	24.3	24
9		20.5	19.4	18.1	16.4	15.6	15.6	17.1	20.2	22.2	24.9	26.9	29	29.9	30.7	30.9	30.4	30.2	28.1	24.5	22.2	20.6	18.9	19.5	19.2	30.9	23.0	24
10		18.7	18	16.8	15.8	14.7	14.1	15.2	17.1	19.1	21.6	23	23.8	24.6	24.7	25	24.9	24.5	22.6	18.9	17.1	17.1	16.9	15.9	15.9	25.0	19.4	24
11		14	13.3	14.1	11.2	11.7	12	10.3	10	10.9	9.9	8.9	8.6	9.6	10.6	12.3	11.2	11	11.1	10	9.1	8.4	8	8	7.3	14.1	10.5	24
12		6.9	6.7	6.6	6.2	5.6	4.5	4.8	7.4	10.2	12.4	14.3	15.5	15.7	16.5	16.2	16.9	15.2	15.1	13.2	11.4	10.8	9.3	7.5	6.7	16.9	10.7	24
13		5.7	4.9	4.2	2.4	1.1	0.4	2	4	5.2	6.5	7.2	8.3	9.2	9.8	10.2	10.7	10.3	8.8	6.2	4.9	3.9	3.3	3.5	3.1	10.7	5.7	24
14		2.8	2.3	1.2	0.4	-0.3	-0.7	0	2.3	4.8	7.1	8.9	10.5	12.1	13.3	14.1	14.8	15	14.3	12.3	10.9	9.9	9.3	9.2	8.4	15.0	7.6	24
15		7.6	6.7	6.5	6.1	5.1	4.6	4.9	6.2	7.9	11.2	13.5	15.6	18	19.5	19.9	19.4	18.4	18.4	15.5	13.3	12.4	11.4	11	11	19.9	11.8	24
16		11.3	11	10.2	9	8.7	8.9	8.9	9.4	10.7	11.1	12.1	13.4	14.8	16.1	16.3	17.8	16.6	14.7	11.4	9.2	9.8	10.1	9.2	8.7	17.8	11.6	24
17		8.1	7.3	7.4	6.7	6.3	5.5	5.8	7.3	9.5	12	13.7	14.8	15.5	16.2	16	15.8	15.3	14.6	12.4	10.7	9.6	7.7	7.4	6.3	16.2	10.5	24
18		5.1	4.7	4.4	3.6	2.6	2.8	3.4	6.4	8.9	11.7	13.6	14.8	15.8	16.5	16	16.8	16.4	13.5	12.6	12.3	11.2	10	9.6	8.1	16.8	10.0	24
19		7.3	5.8	5.2	3.7	4.1	4.6	4.4	5.8	10	12.4	13.5	14.8	15.8	16.1	16.2	16.3	15.3	13.8	12.3	10.3	9.1	8.4	8.1	7.5	16.3	10.0	24
20		6.8	6.1	5.8	5.6	5.5	5.1	5.5	8.3	9.9	13	14.8	15.8	17.2	17	17.5	17.1	17.3	15.8	13.5	11.8	10.9	10.1	9.4	8.9	17.5	11.2	24
21		8.1	7.3	6.6	6	5.7	5.5	6.3	8.2	11.2	13.5	15.8	17.7	19.5	20.7	21.4	21.6	21.1	20.5	18	16.4	15.7	14.9	14.2	13.3	21.6	13.7	24
22		12.6	11.7	11.2	11	10.9	10.5	10.4	11.8	16.2	19.6	19.6	17.8	18.2	19.9	20.4	21.1	19.4	17.4	15.9	14.6	14.3	13.7	13.4	14.3	21.1	15.2	24
23		14.9	14.2	13.2	12.2	12	12.3	11.4	11.4	12.9	14.9	17.9	21.7	21.8	21	21.8	21.9	22.3	21.6	20.2	19.7	19.2	18.4	16.6	16.2	22.3	17.1	24
24		13.9	13.3	13.4	12.5	11.7	10.6	10.4	13.8	16.1	17.7	19.4	20.5	22.7	24.2	25.1	25.3	24.6	21.9	18.3	17.1	16.6	15.6	15.3	14.1	25.3	17.3	24
25		12.6	12.7	11.7	10.9	10.6	10.3	10.1	12.5	15.3	19.9	23.5	26.2	28.3	29.8	30.4	30.6	29.2	27.2	25.6	24.3	22	18.4	17.6	16.2	30.6	19.8	24
26		16.1	16	15.3	14	12.6	12.4	12.5	12.6	13.6	13.8	14.9	15.9	17.6	18.6	19.2	19	18	15.1	13.9	12.9	13.4	13.4	12.6	11.9	19.2	14.8	24
27		11.4	11.3	9.8	9.5	8.3	7.7	7.8	11.2	13.9	16.7	18.8	19.9	20.8	21.2	20.9	19.8	18.8	17.1	15.7	13.7	13.1	12.6	11.6	10.4	21.2	14.3	24
28		10.1	9.9	9.1	8.6	8.1	6.8	7.2	8	9.4	13.2	12.7	13.8	15	14.8	14.4	13.5	12.7	12.1	11.6	10.5	9	8.1	7.2	6.3	15.0	10.5	24
29		5.4	4.8	4	3.9	3.5	1.4	0.9	3.3	5.9	9.4	10.8	12.1	13.2	14.5	15	15.3	14.4	13.5	12	11.3	10.8	11	10.6	9.8	15.3	9.0	24
30		9.5	9.3	8.3	7.2	6.7	6.1	5.4	5.9	7.3	10.4	13.8	15.5	17.8	19.3	18.5	17	16.2	14.1	12.4	12.4	12.5	11.8	10.6	19.3	11.7	24	
HOURLY MAX		20.5	19.4	18.7	18.7	18.7	17.4	19.3	20.9	23.9	26.8	28.7	29.8	30.6	30.9	31.0	31.2	30.6	28.7	25.6	24.3	23.4	22.9	22.4	20.7			
HOURLY AVG		10.9	10.4	9.9	9.2	8.6	8.1	8.6	10.4	12.6	15.0	16.8	18.0	19.3	20.1	20.3	20.2	19.6	18.2	16.0	14.5	13.8	12.9	12.3	11.6			

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

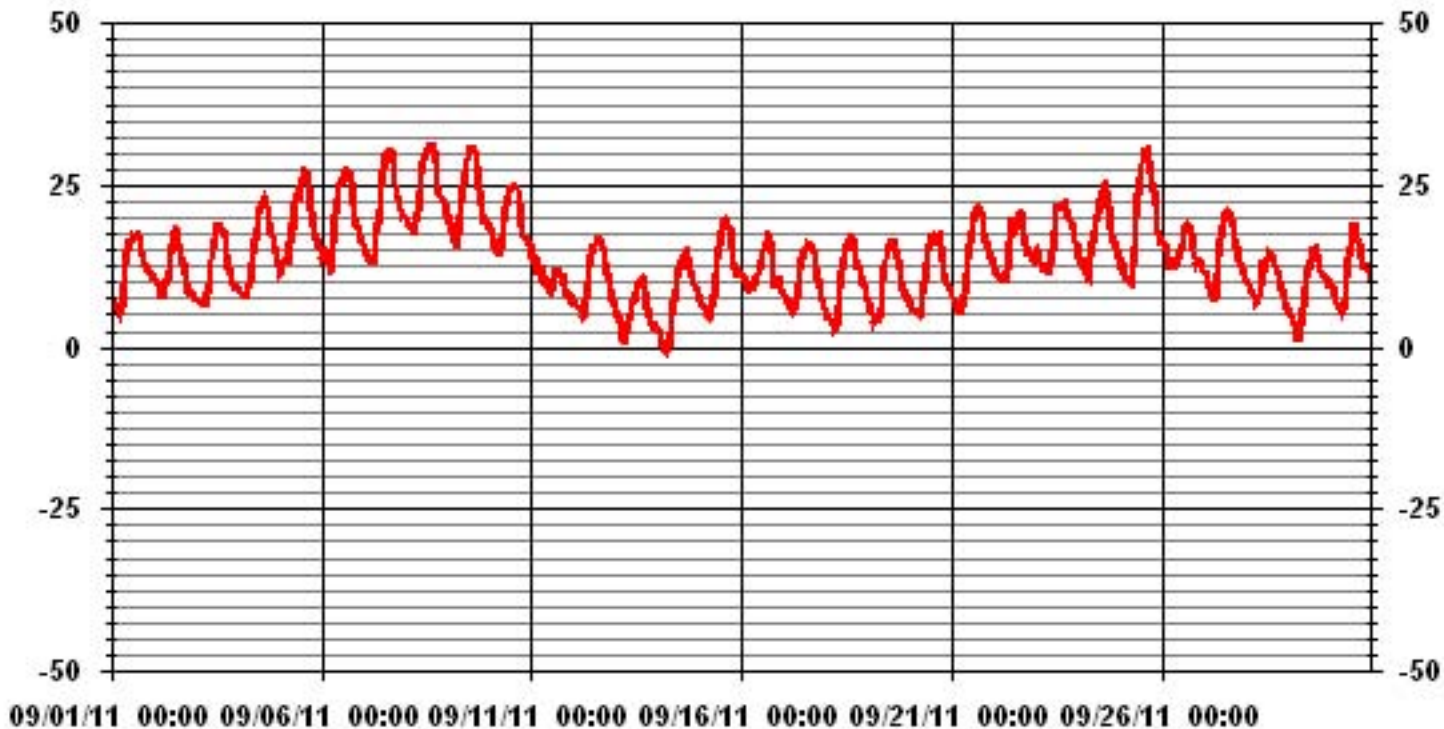
24 HOUR AVERAGES FOR SEPTEMBER 2011



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-0.7 °C	@ HOUR(S)	5	ON DAY(S)	14
MAXIMUM 1-HR AVERAGE:	31.2 °C	@ HOUR(S)	15	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	24.3 °C			ON DAY(S)	8
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	720 HRS		
STANDARD DEVIATION:	6.45	AMD OPERATION UPTIME:	100.0 %		
		MONTHLY AVERAGE:	14.06 °C		

01 Hour Averages



Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

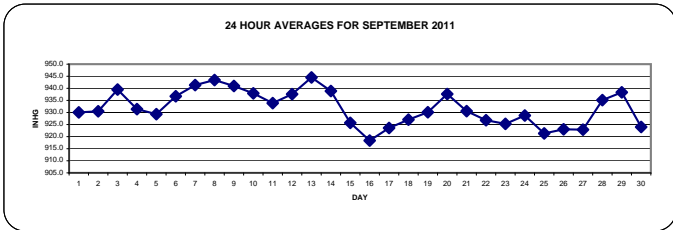
SEPTEMBER 2011

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	HR	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	931	931	931	932	931	931	931	931	932	933	933	932	932	931	931	930	930	929	928	927	927	926	926	925	933	930.0	24		
2	2	924	924	924	924	924	925	925	926	927	928	930	931	932	933	933	934	935	935	935	936	936	936	937	937	937	937	937	930.5	24
3	3	937	937	938	938	938	939	939	939	939	940	941	942	942	942	942	942	942	942	941	940	939	938	937	937	936	942	939.5	24	
4	4	936	935	935	934	933	933	933	932	932	932	932	932	932	932	931	931	930	929	928	928	927	927	927	927	927	936	931.4	24	
5	5	926	926	927	927	927	927	927	928	929	930	931	931	930	931	931	931	931	931	931	931	930	930	930	930	931	931	929.3	24	
6	6	931	931	932	932	933	933	933	934	936	937	939	939	939	940	940	940	940	940	940	940	939	939	938	938	938	940	936.7	24	
7	7	938	939	938	939	939	939	939	940	941	941	942	943	943	944	944	944	944	944	943	942	942	942	941	941	944	941.3	24		
8	8	942	942	942	942	942	942	942	942	943	944	945	945	945	945	945	945	945	944	943	943	943	943	943	943	945	943.4	24		
9	9	942	942	942	942	941	941	941	942	942	943	943	943	943	943	942	942	941	941	940	938	938	937	937	937	943	941.0	24		
10	10	938	937	937	937	937	937	937	938	939	939	940	940	940	940	940	940	939	939	938	936	936	936	935	935	940	937.9	24		
11	11	935	934	934	933	932	931	931	931	931	931	931	932	933	933	935	935	936	936	936	936	937	937	936	936	937	933.9	24		
12	12	936	936	936	936	936	936	936	936	937	938	938	938	938	939	938	938	938	939	938	938	939	939	939	940	940	940	937.6	24	
13	13	940	941	941	942	942	942	943	944	945	946	946	946	947	947	947	947	947	947	946	945	945	944	944	944	947	944.5	24		
14	14	944	944	943	943	942	941	941	941	941	942	941	941	940	940	939	938	938	937	935	934	933	932	932	931	944	938.9	24		
15	15	930	930	929	928	928	927	927	927	927	927	927	927	927	927	927	926	925	925	924	922	921	920	920	920	919	930	925.7	24	
16	16	918	918	918	916	916	916	916	915	916	916	917	917	918	919	920	920	920	921	921	920	920	920	920	920	921	918.4	24		
17	17	920	920	920	921	921	921	921	922	923	924	924	925	925	925	925	926	926	926	926	925	925	925	925	925	925	926	923.6	24	
18	18	925	925	925	925	925	925	925	926	927	928	929	929	929	929	929	929	929	928	927	927	927	927	927	927	929	927.0	24		
19	19	927	926	926	926	926	926	926	927	928	929	930	930	931	931	932	932	933	933	933	934	934	934	934	935	935	930.1	24		
20	20	935	935	936	936	937	937	937	937	938	939	940	941	941	941	940	940	939	939	938	937	936	935	935	934	941	937.6	24		
21	21	934	933	933	933	932	932	932	932	932	932	932	932	932	932	931	930	930	930	928	927	927	926	925	924	934	930.5	24		
22	22	923	923	923	922	922	923	924	925	926	928	929	928	929	930	930	930	930	929	928	928	928	928	928	928	930	926.8	24		
23	23	928	927	927	926	926	926	925	925	925	925	925	925	925	924	924	924	924	925	925	925	925	925	925	925	928	925.3	24		
24	24	926	926	926	926	927	927	927	928	929	929	930	930	931	931	931	932	932	931	930	929	929	929	928	927	932	928.8	24		
25	25	927	926	925	925	924	923	923	923	923	923	923	923	922	922	921	920	919	918	917	917	917	917	917	917	927	921.3	24		
26	26	918	919	919	920	920	921	922	922	924	925	926	926	926	927	927	927	927	926	924	923	922	922	921	919	927	923.0	24		
27	27	919	919	919	920	920	920	921	922	923	924	924	924	925	925	925	925	925	925	924	924	924	924	925	925	926	926	922.9	24	
28	28	927	927	928	928	929	929	930	931	932	933	934	935	936	937	938	938	939	940	941	941	942	942	943	943	943	943	935.1	24	
29	29	943	943	943	942	942	942	942	942	942	942	942	941	940	940	939	938	936	935	934	932	931	930	930	929	943	938.3	24		
30	30	927	926	926	925	923	923	922	921	921	922	922	922	923	923	924	924	924	924	924	925	926	926	926	927	927	924.0	24		
HOURLY MAX		944	944	943	943	942	942	943	944	945	946	946	946	947	947	947	947	947	947	946	945	945	944	944	944					
HOURLY AVG		931	931	931	931	931	931	931	931	932	932	933	933	933	933	933	933	933	933	932	932	931	931	931	931					

STATUS FLAG CODES

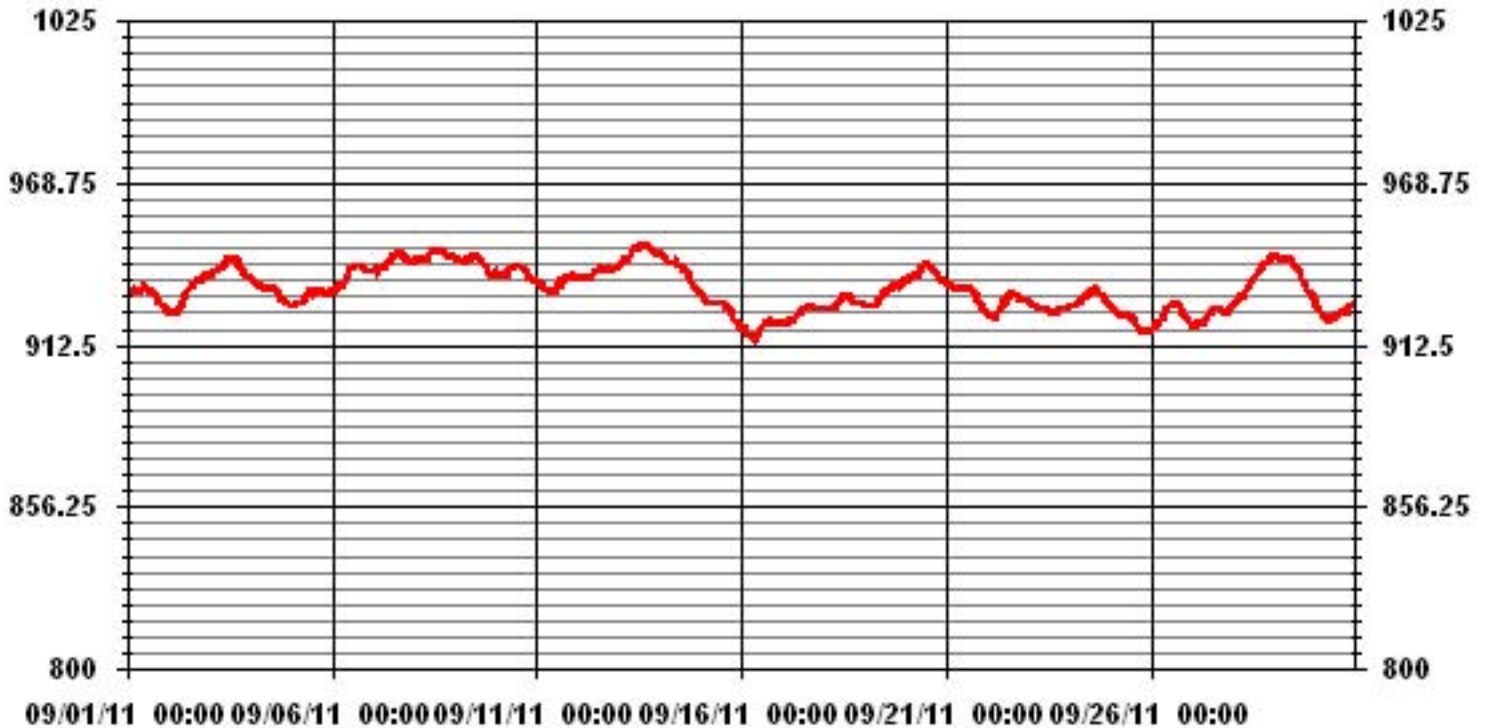
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	947	MB	@ HOUR(S)	VAR	ON DAY(S)	13
MAXIMUM 24-HR AVERAGE:	944.5	MB			ON DAY(S)	13
				VAR-VARIOUS		
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS	
			AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	7.57		MONTHLY AVERAGE:	932	MB	

01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 2011

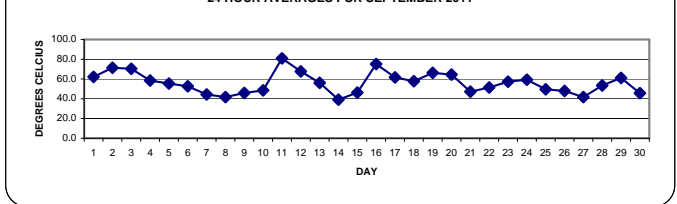
RELATIVE HUMIDITY hourly averages (%)

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		
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		79	80	81	83	87	88	82	72	66	61	53	46	41	41	42	40	43	50	56	59	59	60	61	62	88	62.2	24	
2		67	68	69	72	82	86	86	80	79	74	67	60	49	44	52	53	64	67	73	78	84	86	87	86	87	71.4	24	
3		88	89	90	90	91	91	85	87	85	72	62	54	49	43	45	45	48	50	60	67	72	74	76	76	91	70.4	24	
4		75	74	74	74	75	75	71	69	62	59	55	50	46	44	41	38	37	40	48	56	53	59	61	67	75	58.5	24	
5		74	75	72	72	73	77	65	61	62	50	42	41	38	36	32	30	31	35	52	59	60	61	64	68	77	55.4	24	
6		78	75	68	73	75	80	81	69	58	52	41	31	32	28	27	28	29	35	43	47	52	51	53	57	81	52.6	24	
7		55	57	58	62	63	67	62	54	51	47	38	32	26	25	26	27	28	32	38	39	39	45	48	46	67	44.4	24	
8		46	52	52	52	52	56	50	52	49	40	35	30	29	27	26	27	28	33	41	43	45	43	43	50	56	41.7	24	
9		50	53	60	66	70	67	61	56	53	47	40	33	31	28	26	25	27	34	44	45	44	47	45	49	70	45.9	24	
10		54	57	61	63	66	67	64	59	57	50	42	40	38	34	29	30	29	36	46	49	46	47	50	50	67	48.5	24	
11		60	64	59	76	71	70	80	80	74	83	89	90	89	87	82	83	85	83	86	90	91	91	90	89	91	80.9	24	
12		89	88	87	86	86	89	87	79	74	70	64	54	48	43	41	39	48	45	54	59	64	71	77	82	89	67.7	24	
13		82	77	77	83	86	87	83	74	63	51	47	42	38	36	35	35	39	45	46	42	43	44	46	56	87	56.1	24	
14		54	54	59	62	64	65	62	55	48	41	37	32	27	24	21	19	18	19	25	28	30	31	31	33	65	39.1	24	
15		36	39	41	44	48	50	49	48	47	43	42	40	36	35	35	35	36	37	45	55	61	67	70	71	71	46.3	24	
16		70	74	81	88	87	87	89	91	89	90	88	78	67	59	56	47	50	51	64	82	79	75	80	81	91	75.1	24	
17		82	82	82	83	81	81	78	71	65	58	53	47	40	39	41	43	44	44	48	53	57	65	68	74	83	61.6	24	
18		79	80	82	84	85	82	80	70	64	57	51	45	40	36	37	33	33	42	42	40	46	56	58	65	85	57.8	24	
19		71	79	81	87	86	87	88	86	72	57	51	45	42	40	39	41	45	49	56	72	75	81	80	80	88	66.3	24	
20		82	85	86	86	86	86	86	76	74	67	62	58	50	45	42	41	41	43	51	56	59	61	62	62	86	64.5	24	
21		64	66	68	71	72	72	69	63	54	48	41	36	30	28	26	27	30	36	40	40	40	42	43	72	47.2	24		
22		45	48	50	52	56	60	64	65	55	46	44	48	47	43	41	38	43	50	56	61	57	57	55	53	65	51.4	24	
23		52	55	61	67	69	69	73	73	69	64	57	46	45	50	46	46	46	47	50	52	53	56	63	66	73	57.3	24	
24		75	76	73	76	78	81	81	68	55	50	43	41	39	38	39	41	42	49	57	59	61	65	65	71	81	59.3	24	
25		78	77	81	84	86	86	87	80	73	55	39	31	23	18	17	16	18	21	24	24	28	38	49	56	87	49.5	24	
26		56	56	57	61	69	72	71	70	59	51	38	34	33	30	29	28	30	37	39	43	44	45	48	50	72	47.9	24	
27		49	47	53	56	60	63	65	55	48	41	35	32	29	29	28	26	25	30	32	39	38	37	39	45	65	41.7	24	
28		49	51	54	53	55	59	58	58	55	43	45	43	40	41	42	44	48	50	52	57	64	69	74	79	79	53.5	24	
29		82	84	85	86	86	89	89	82	75	63	60	56	49	42	38	36	38	42	46	46	47	47	48	50	89	61.1	24	
30		50	50	52	55	55	56	58	57	55	47	40	37	33	32	34	38	39	46	51	53	47	36	36	39	58	45.7	24	
HOURLY MAX		89	89	90	90	91	91	89	91	89	90	89	90	89	87	82	83	85	83	86	90	91	91	90	89				
HOURLY AVG		65.7	67.1	68.5	71.6	73.3	74.8	73.5	68.7	63.0	55.9	50.0	45.1	40.8	38.2	37.2	36.6	38.5	42.2	48.7	53.2	54.6	56.8	58.9	61.9				

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

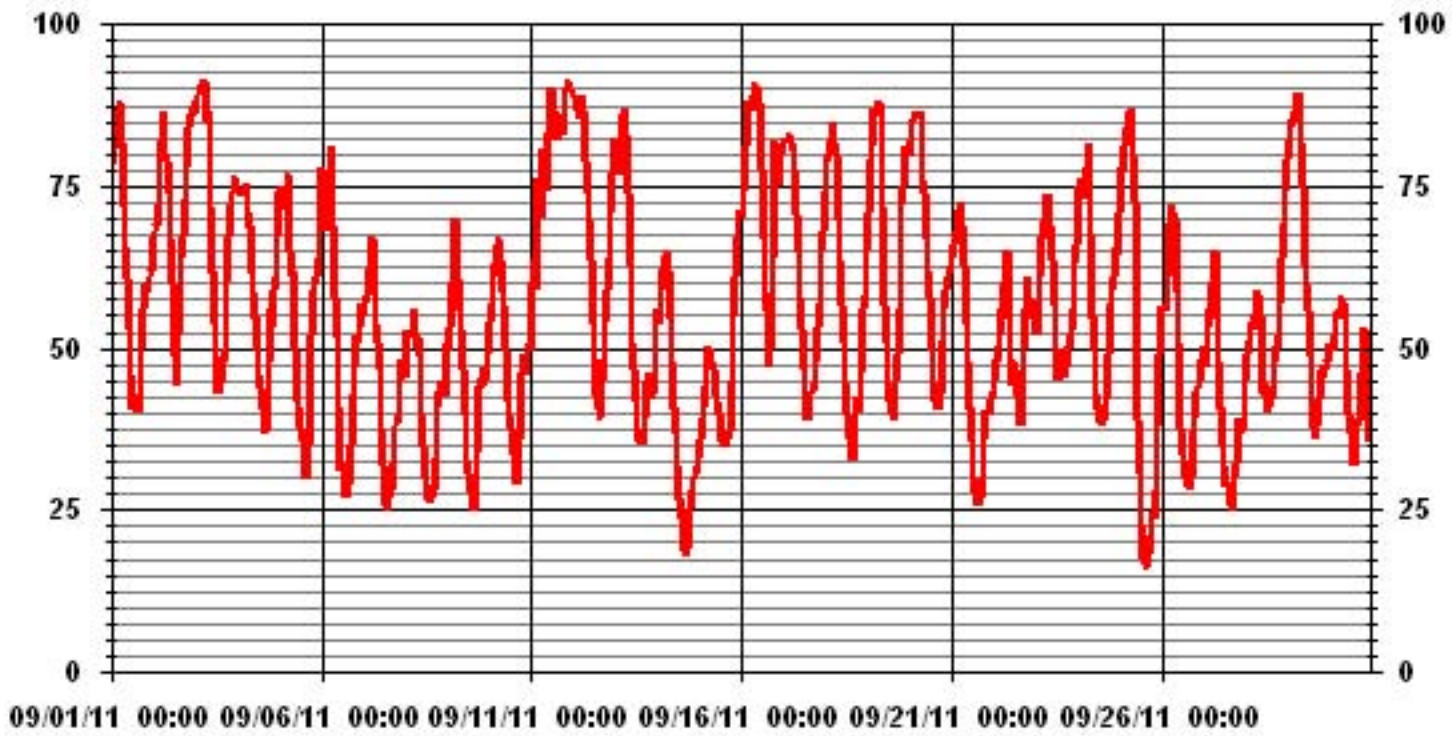
24 HOUR AVERAGES FOR SEPTEMBER 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	91	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	80.9	%			ON DAY(S)	11
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS	
STANDARD DEVIATION:	18.24		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	56.03	%	

01 Hour Averages



Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 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	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.	TOTAL	RDGS.
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	0.0	24
2	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	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	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	5	0	0	0	0	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	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	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	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	24
9	9	0	0	0	0	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
10	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	11	0	0	0	0	0	0	0	0	0	2.1	1.5	2.8	0.4	0.1	0	0.1	0.1	0	0	0	0	0	0	0	2.8	7.1	24
12	12	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	0.1	0.1	24
13	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	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	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	24
16	16	0	0	0.9	0.1	0	0.1	1.7	0.2	0	0.2	0	0	0	0	0	0	0	0	0.1	0.6	0.2	0	0	0	1.7	4.1	24
17	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	24
18	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	24
19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	0.1	0	0	0	0.9	1.0	24
20	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	24
21	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	24
22	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	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	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	24
25	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	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	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	24
28	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	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	24
30	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	24
HOURLY MAX		0.0	0.0	0.9	0.1	0.0	0.1	1.7	0.2	0.0	2.1	1.5	2.8	0.4	0.1	0.0	0.1	0.1	0.0	0.1	0.9	0.2	0.0	0.0	0.0			

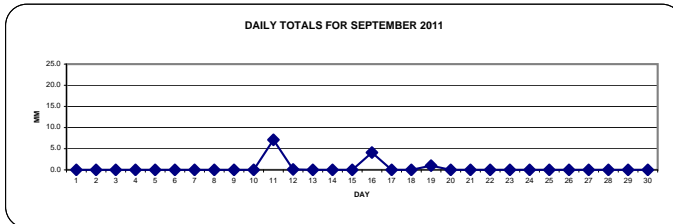
STATUS FLAG CODES

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

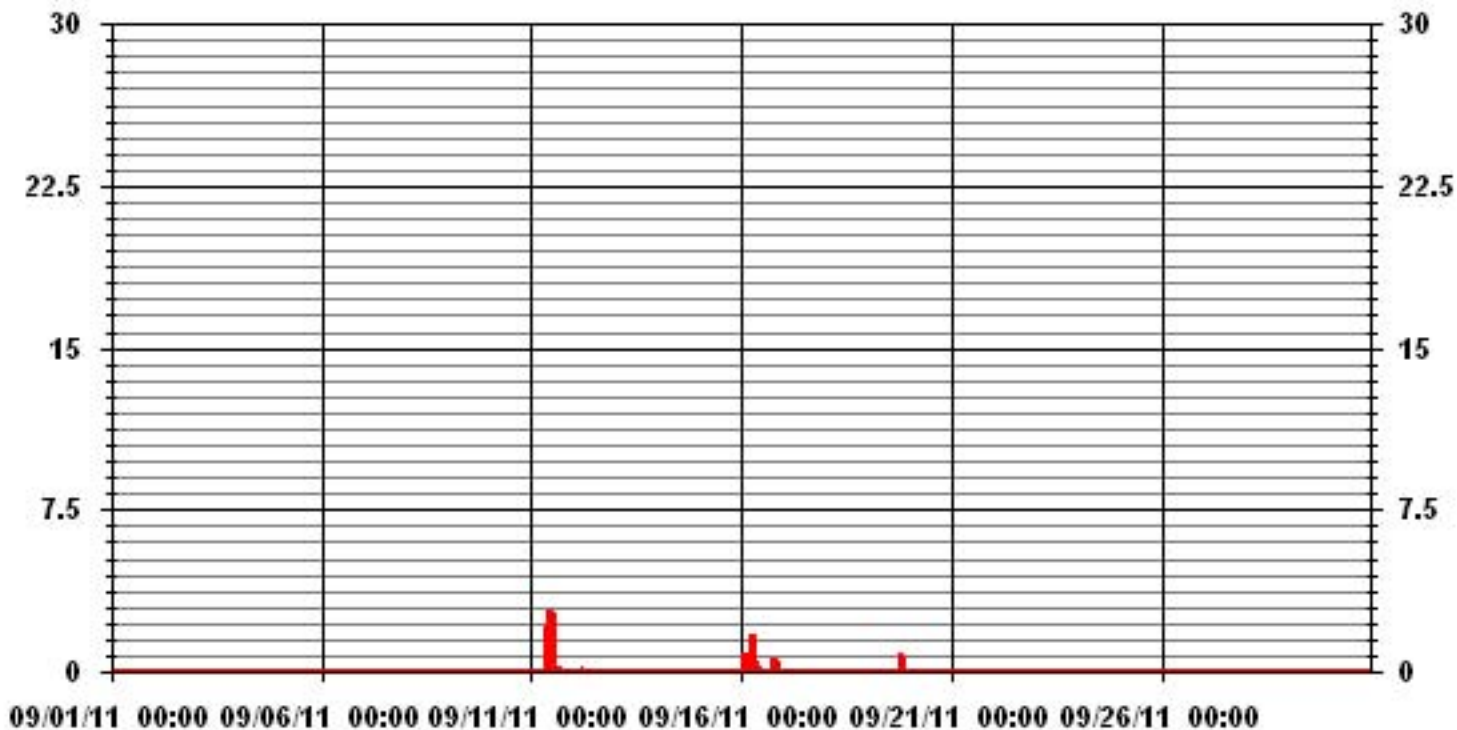
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	2.8	MM	HOUR(S)	11	ON DAY(S)	11
MAXIMUM DAILY TOTAL	7.1	MM			ON DAY(S)	11
MONTHLY TOTAL	12.3	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS	
STANDARD DEVIATION:	0.16		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	0.02	MM	

DAILY TOTALS FOR SEPTEMBER 2011



01 Hour Averages



— LICA31 PRECIP MM

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

SEPTEMBER 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	10.7	10.5	9.9	8.7	6.1	6.8	7	7.1	7.4	7.3	10.5	4.9	8.4	10.2	9.8	9.5	9.8	11.4	2.7	4.8	6	6.7	7.2	6.7	11.4	3.4	24
2	5.5	0.7	2	5.3	6.7	9	8.6	12.3	11.6	11.5	6	7.9	3.5	9.1	11.5	11	14	11.7	11.6	9.4	9.5	11.5	9.8	10.3	14	4.7	24
3	11.3	11.9	10.2	10.9	11	10.7	12.3	12.3	12.4	10.2	10.3	11.7	9.7	7.8	10.5	10.8	7.1	8.3	7.9	6.5	8.3	1.5	9.4	9.3	12.4	5.9	24
4	8	7.5	7.6	6.5	5.7	5.6	6.7	6	6.7	5.5	6.1	2.4	7.4	5.5	6.8	8.1	8.4	10.4	9	10.3	9.6	11.9	10.9	12.5	12.5	7.6	24
5	12.5	14.7	10.2	8.1	7.4	5.6	1.9	6.6	13.6	2.9	2.4	9.1	9.8	9.2	13.1	15.2	13.6	7.1	6.5	7.8	6.9	6.7	6.1	2.4	15.2	5.6	24
6	6.2	7.3	5.5	9.2	11.3	15.3	13.5	9.4	5.1	4.7	3.1	3.5	6.8	3.1	9.6	10.1	11.9	13.5	13.2	8.9	6.5	6.5	6.1	7.2	15.3	1.7	24
7	9.6	10.9	9.5	10.1	10.1	11.3	12	12.2	11.2	9.6	10.1	10.5	13.7	14.2	13	6.7	3.6	3.9	4	6.9	7.2	6.1	5.7	2.2	14.2	8.1	24
8	1.6	4.6	4.8	10.1	15.4	5.9	6.1	4.7	4.7	4.5	4.6	5.4	7.4	4.6	2.5	2.8	4.1	6.3	5.1	4.7	6	7	7.2	7	15.4	4.1	24
9	6.6	6.5	7.3	13.8	12.1	11.8	12.6	12.4	9	13.5	12.2	11.1	11.5	13	14.6	16.2	14.7	14.9	15.3	15.8	13.8	14.7	13.8	10.2	16.2	11	24
10	14.7	14.2	9.7	9.5	8.9	13.7	9.8	8.9	7.1	13	13.2	9.1	8.6	9.2	10.5	11.8	13.4	6.2	14.5	14.3	13.1	13.6	14.6	6.2	14.7	3.8	24
11	6.8	6.6	2.7	9.4	10.8	10.9	13.4	13.1	11.7	13.8	14.7	17.1	11.4	11.8	10.4	8.9	9.1	8.7	8.3	8.7	8.1	9.5	10.4	9.7	17.1	9	24
12	10.2	9.7	9.7	9.2	8.9	10.3	9.6	9.2	9.1	9.3	11.4	12.2	4.8	6.6	6.2	8.8	10.5	9.6	11.2	12.8	9.2	14	13.1	9.6	14	5.6	24
13	13.2	13.1	13.5	13.7	13.5	13.2	13.5	12	10.3	10	10	10.7	9.9	9.1	10.5	11.2	4.2	6	7.6	9.6	10.2	10.8	13.9	11.5	13.9	5.5	24
14	11.1	9.7	8.5	7.5	8.3	8.8	8.4	6.5	4.5	3.8	6.7	9	11.1	11	10.2	9.9	7.3	6.1	10.6	10.2	9.4	6.6	5.2	4.8	11.1	7.5	24
15	5.3	5.7	5	5.6	4.9	5.8	5.7	6.2	6.8	7.2	9.8	9.9	9	9.4	M	M	13.9	14.8	11.4	11.6	13.3	12.3	9.9	8.9	14.8	8.1	22
16	12.6	12.7	8.2	6.6	6	4.1	7.9	9	14.1	16.1	10.6	6.9	6	5.3	5.8	13	8.1	12.7	18.4	12.9	6.2	5.7	9.7	10.4	18.4	6	24
17	10.8	9.8	7.9	10.2	8	10.5	9.4	8.9	5.6	2.6	6.9	8.1	8.7	12.4	12.2	8	4.5	6.5	9.4	10.2	9.6	9.8	9.8	8.7	12.4	6.3	24
18	11.8	9.1	9	11.7	10	7.9	7.5	7.8	7.5	6.8	6.2	5.7	5.8	6.7	8.5	7.5	8.2	12.7	13.6	14	13.4	11.5	12.9	11.9	14	8.3	24
19	11.7	11.2	12	13.3	8.7	10.5	10.5	9.7	7.8	8.4	8.5	10.1	6.6	2.6	5.6	8.2	11.6	9.4	11.8	11.6	11.2	8.8	10.7	9.3	13.3	8.7	24
20	10.6	11.3	11.7	10.5	10.4	10.6	11.7	12.2	10.6	12.3	3.7	4.6	7.5	5.5	6	7.7	7.7	8.3	7.2	9.4	10.6	12	12.1	12.8	12.8	5.9	24
21	12	11.2	11.7	11.9	13.5	13.9	13.5	15.2	10.8	3.3	8.3	7.1	9.3	8.8	5.3	4.5	4	6.6	10	8.4	6.4	5.4	5.7	5.1	15.2	6	24
22	3.5	6.4	6.9	9.6	12.4	15	7.6	12	9.5	7.7	5.5	6.8	9	11.9	11.2	11	12.1	15.1	14.7	13.8	13.9	13.6	9.4	14.6	15.1	4.4	24
23	14.4	14	12.2	11.5	8	8.4	5.4	4.5	6.1	6.7	5.6	4.1	2.3	6.9	2.3	6.6	6.7	9.7	12.9	11.4	10.1	12	11.8	11.2	14.4	6.8	24
24	12.8	9.1	10.4	10.9	10	10.4	13	13.1	12.6	12.3	9.3	12	9.8	1.8	5.9	5.9	6.8	7	8.8	10.4	12.2	13.6	14.5	12.7	14.5	4.6	24
25	13.9	15.2	13.9	12.8	14.5	13	11.1	11.6	10.6	12.6	14.9	14.9	16.4	17	16.9	19.5	14.3	11.8	12.9	11.7	7.8	15.2	17.4	16.4	19.5	5.5	24
26	11.9	13.7	12.6	7.3	15.8	14.6	11.2	10.9	15	18.4	13.8	6.3	4.7	2	7.2	8.9	10.5	13.5	5.6	9.8	10.7	9.2	11.3	13.5	18.4	2.5	24
27	12.8	5.7	13	15.1	12.6	13.4	11.4	15.1	16.1	17.3	15.5	12.7	8.3	7	9.9	3.6	7	14.9	13.7	15.5	11.1	7.6	6.7	8.6	17.3	2.2	24
28	10.8	9.5	11.3	9.8	9.1	10	9.3	9.5	7.2	8.7	9.9	10.2	8	8.6	10.6	10.7	11.3	10	10.3	12.7	12.6	11.7	11.1	11.2	12.7	8.4	24
29	12.6	12.8	14	4.9	5.4	11	10.1	10.1	9.6	7.5	7.6	7.8	8.2	10.4	12.4	10.2	9.1	13.4	15.5	14.9	13.6	10.4	9.2	7.9	15.5	8.8	24
30	6	4.4	6	5.8	4.8	2.2	5.4	5.2	6.8	6.8	8.3	9.8	12.6	11.4	12.9	12.3	7.6	6.1	9	11.6	12.3	7.4	13.1	11.9	13.1	1.7	24
HOURLY MAX	14.7	15.2	14.0	15.1	15.8	15.3	13.5	15.2	16.1	18.4	15.5	17.1	16.4	17.0	16.9	19.5	14.7	15.1	18.4	15.8	13.9	15.2	17.4	16.4			
HOURLY AVG	10.1	9.7	9.2	9.7	9.7	10.0	9.5	9.8	9.4	9.1	8.9	8.7	8.5	8.4	9.4	9.6	9.2	9.9	10.4	10.7	10.0	9.8	10.3	9.5			

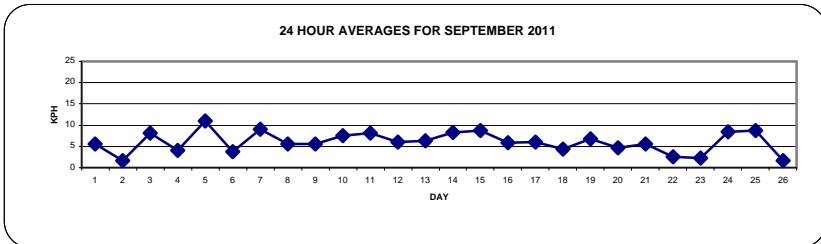
STATUS FLAG CODES

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

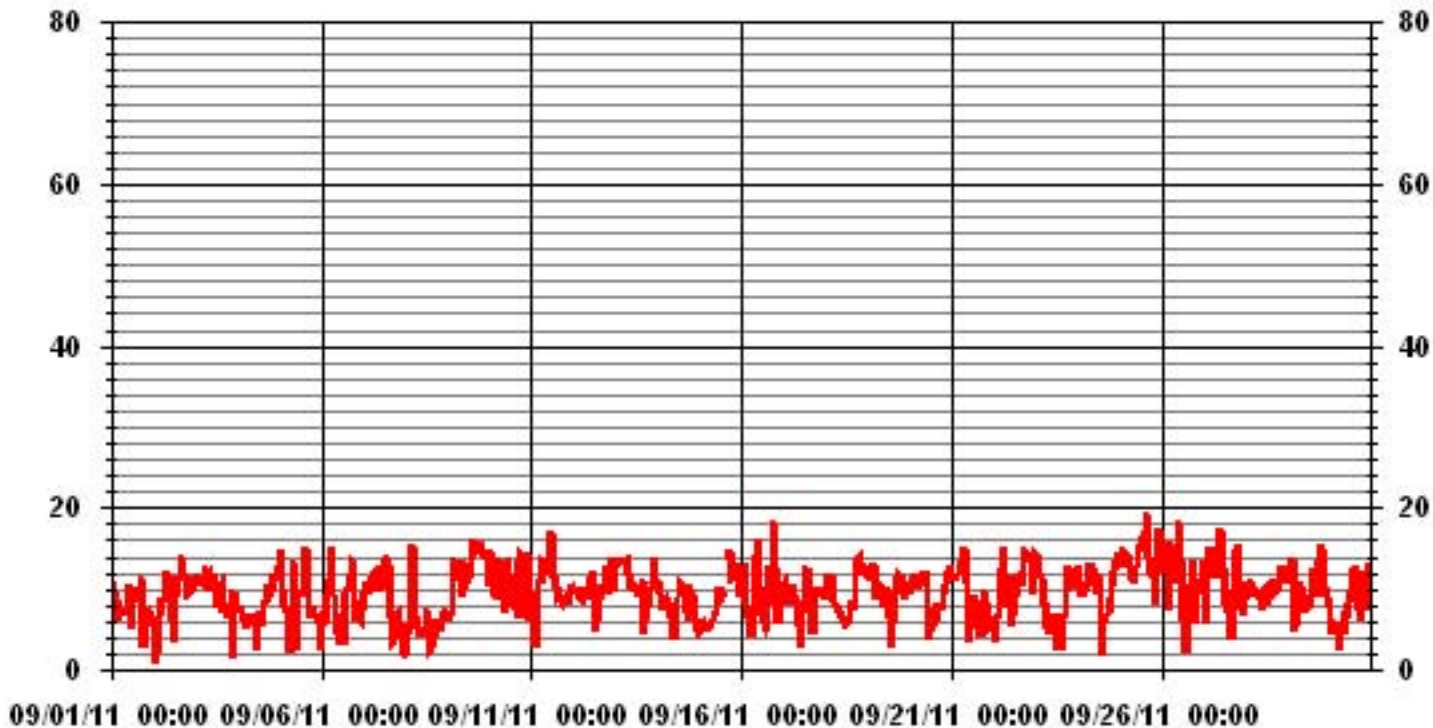
LAST CALIBRATION: June 17, 2010

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	19.5	KPH	@ HOUR(S)	15	ON DAY(S)	25
MAXIMUM 24-HR AVERAGE:	11.0	KPH			ON DAY(S)	9
CALMS (≤ 0 KPH)	0.13	%	OPERATIONAL TIME:	718	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME	99.7	%	
STANDARD DEVIATION	3.30		MONTHLY AVERAGE	9.55	KPH	



01 Hour Averages



— LICA31 WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 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	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.
1	23.4	22.4	19.9	18	12.5	10.3	10.3	12.9	14	19.1	23.9	25.4	30.6	33.5	21.9	30.2	25.6	19.5	5.9	8.1	9.9	11.6	11.2	10.3	33.5	
2	32.8	7	7.2	13.4	14.7	18	18.4	29.3	25.4	28.2	28.7	29.6	31.8	29.3	33.1	33.3	34.8	24.9	21	21	17.1	19.5	18.2	18.4	34.8	
3	18.6	18	17.7	18.4	17.5	18.2	17.5	18.2	19.7	18.4	21	24.5	20.6	27.1	25.8	25.9	24.5	22.1	19.1	11	12.3	19.7	19.3	19.3	27.1	
4	23	26.9	27.1	26.7	29.3	32	31.3	35.5	35	31.5	31.8	33.9	28.3	33.3	32.4	31.3	31.5	26.9	24.7	17.6	18.2	21.4	19.3	16.2	35.5	
5	16.2	21.4	19.7	15.6	11.2	9.8	5.7	20.6	25.8	21.5	0	22.5	35.2	27.3	34.8	30.4	25.6	19	18.9	14.7	12.9	12.7	9.8	9.2	35.2	
6	9.4	11	9	30.4	27.8	19.9	18.2	18.6	7.9	9.7	13.3	24.9	22.1	22.7	21.9	25.4	20.4	19.8	17.7	19.5	11	11.6	11	11.9	30.4	
7	17.6	16	16.4	17.9	17.3	19.1	18.6	21.7	21.2	23.6	29.1	24.7	22.1	23.4	23.2	21	11	7.7	8.8	12	12.7	17.1	7.7	7.9	29.1	
8	5.5	6.4	7	19.7	19.3	19.7	8.3	6.6	7.7	8.5	12.9	13.3	22.5	22.4	24.5	23.2	12.5	21.2	6.8	6.2	9.5	9.9	10.7	11.8	24.5	
9	11.4	12.7	20.6	19.9	16	17.7	18.6	18.8	20.6	22.5	23.4	26.7	23.2	26.9	26.9	26.5	21.6	21	19.3	20.1	17.9	20.1	22.5	24.5	26.9	
10	25.2	22.5	21.2	22.1	18.2	23.4	21.9	20.4	20.4	22.1	22.1	23.7	24.1	24.3	24.7	25.4	26.9	20.4	20.1	17.1	17.3	16.6	20.4	19.7	26.9	
11	9.9	10.7	8	18.4	17.5	18.6	21.4	24.9	30	36.8	38.8	44	35.9	22.5	28.5	31.1	28.1	24.7	20.8	18	16	19.5	19.3	16.7	44	
12	18	18.8	18.2	19.7	17.1	14.9	18	19.5	18.2	19.3	22.8	30.3	23.6	27.4	24.9	33.9	28.7	25.4	23.9	20	28.5	41.2	32	21.4	41.2	
13	27.8	25.6	31.5	21.4	21.2	20.8	22.3	21.9	20.8	28.9	21.2	22.1	22.3	21.3	20.8	21.7	20.6	13.8	13.6	16	17.1	20.4	19.9	19.5	31.5	
14	19.5	19.1	18	17.7	17.3	19.1	17.3	30.4	32.9	40.9	39.6	40.3	40.3	39.9	42.2	40.5	37.4	37	28.7	25.4	21.9	33.3	35.7	31.5	42.2	
15	33.5	29.8	27.6	27.8	28.5	33.3	27.6	28.9	25.2	31.5	30.9	28.2	37.6	34.4	M	M	24.9	28.4	25.4	23.4	25.4	26.3	24.1	23	37.6	
16	23.6	25.4	22.1	24.7	16.4	11.6	20.4	18	24.9	29.3	29.3	30.9	34.4	29.2	28.9	41.2	30	46.2	52.9	42.7	44.1	25.6	24.7	25.8	52.9	
17	25.4	25.2	19.5	19.5	18.6	21.9	21.7	29.4	20.6	19.8	27.1	29.8	41.8	34.8	33.9	39.8	19.3	18.2	16.2	18	14.7	17.7	17.3	14.5	41.8	
18	17.1	13.4	12.7	18	17.5	12.5	12.7	15.6	17.3	19.7	25.2	37.4	24.7	26.7	24.9	21.9	25.4	17.3	17.5	18.7	18.6	17.5	17.5	18	37.4	
19	18.2	17.3	18.2	16.2	13.6	17.1	14.9	13.7	17.7	23.8	23.8	28.5	25.6	24.1	28.9	39.2	32.8	21	19.3	35.5	18.8	15.8	18.9	18.4	39.2	
20	19.5	19.3	19.9	19.5	19.8	19.3	19.1	20.2	18	21	14.1	22.1	24.1	24.3	27.6	27.6	20.4	27.8	13.4	18	23.8	26.7	29.1	33.3	33.3	
21	28.5	26.5	24.7	26.7	29.6	31.5	30.4	33.6	44.6	47	49.7	49.4	60.6	58.4	49.5	54.7	46	37.9	29.3	26.3	31.7	35	32.2	37	60.6	
22	31.7	28.7	30.9	24.5	19.1	18.4	21	20.8	30.2	46.6	38.7	31.7	28	23.5	28	24.7	24.1	19.3	18.8	19.3	18.9	20.1	20.8	21.7	46.6	
23	22.3	21.9	21.6	18.9	25.8	26	31.5	30.4	26.3	28.7	29.8	34.6	39.2	28.7	33.7	29.3	32	28	20.1	22.1	20.4	17.5	22.5	22.5	39.2	
24	20.8	24.1	22.8	17.7	22.3	25	20.1	20.2	21.3	21.7	23.6	20.8	23.6	21.9	23.2	14.2	19.1	13.1	17.3	20.6	22.8	29.1	26.3	24.5	29.1	
25	23	27.6	28.2	25.8	37.4	36.3	20.8	23	25.4	32.4	36.3	34.6	43.3	44.4	50.1	67.4	42.4	30	33	35.2	23.2	22.1	24.3	26.7	67.4	
26	28.7	27.8	20.6	18.8	22.1	24.1	23	25.4	38.7	50.7	43.5	29.8	20.6	23.9	23.6	31.7	24.1	19.5	18.8	19.1	20.2	21.7	31.3	33.9	50.7	
27	29.8	32	22.1	21.7	19.5	17.3	19.1	20.8	25.8	27.8	33.3	31.3	27.5	27.1	30	24.1	18.6	19	18	19.7	18.6	13.4	15.3	19.5	33.3	
28	20.6	20	18.4	18	16.9	16.4	19.3	17.1	18.6	41.8	39.8	47.7	46	38.7	39.7	37.3	40.3	29.1	26.9	24.3	19.9	19.1	17.5	17.3	47.7	
29	18	17.7	18.4	19.5	14.5	19.1	16.2	17.7	18.6	30.9	38.7	32	40.9	40.9	47.3	45.1	40.8	28.7	30.2	30	35.9	32.8	33.5	34.2	47.3	
30	35.9	39.2	30.7	28.7	34.2	35.1	29.8	28.9	29.8	32	24.9	24.7	21.3	21.2	24.1	20.6	33.1	37.9	28	18.1	20.2	25.6	24.1	22.5	39.2	
PEAK	35.9	39.2	31.5	30.4	37.4	36.3	31.5	35.5	44.6	50.7	49.7	49.4	60.6	58.4	50.1	67.4	46.0	46.2	52.9	42.7	44.1	41.2	35.7	37.0		

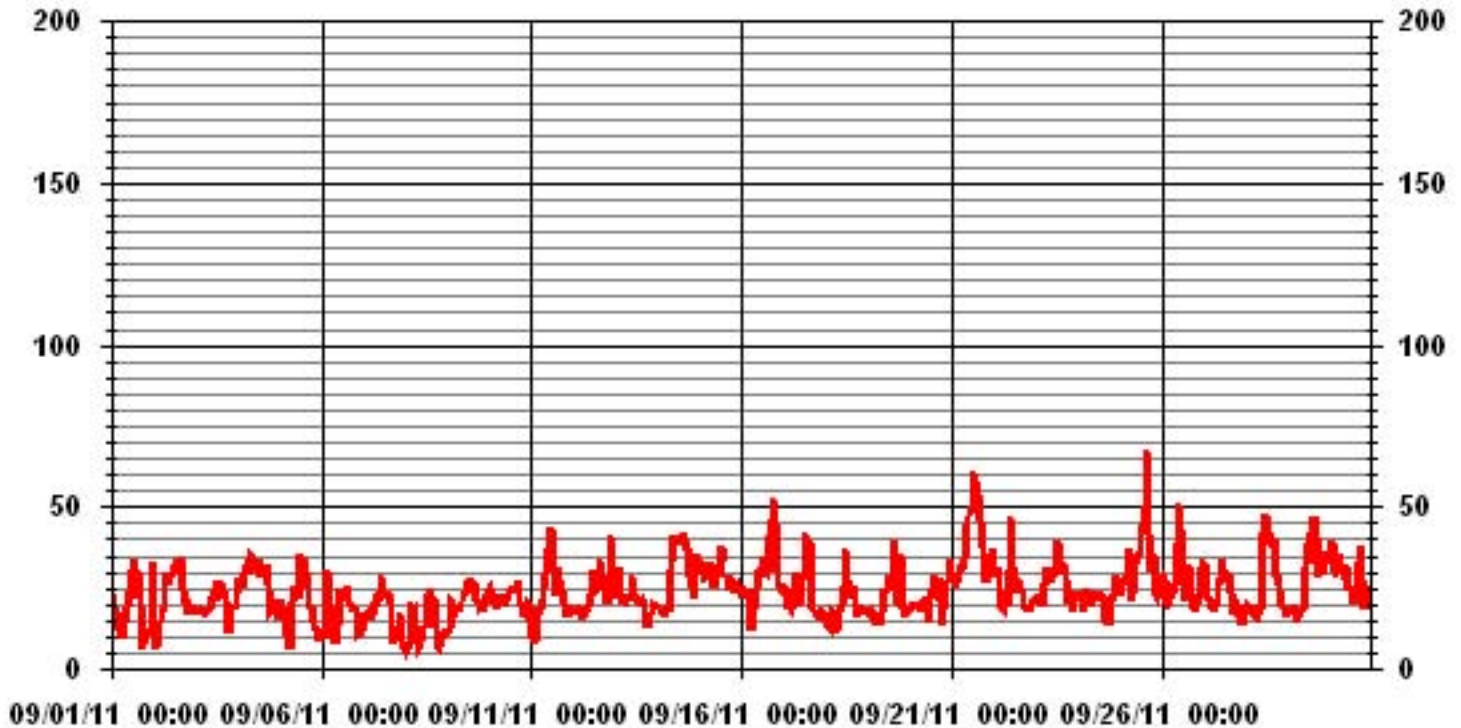
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS READING	67.4	KPH	@ HOUR(S)	15
			ON DAY(S)	25

01 Hour Averages



LICA31
WSP / WDR Joint Frequency Distribution (Percent)

September 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	.83	1.39	2.36	.41	.69	.69	.55	.27	1.67	.55	1.53	1.25	.69	.69	.41	.27	14.34
< 12.0	4.31	2.50	5.71	6.54	4.73	3.48	3.62	2.78	3.62	3.48	2.36	1.25	4.31	3.48	2.36	6.12	60.72
< 20.0	.27	.13	1.39	1.25	3.20	1.25	.41	1.67	1.81	1.39	1.53	.97	.41	1.53	3.20	4.31	24.79
< 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	5.43	4.03	9.47	8.21	8.63	5.43	4.59	4.73	7.10	5.43	5.43	3.48	5.43	5.71	5.98	10.72	

Calm : .13 %

Total # Operational Hours : 718

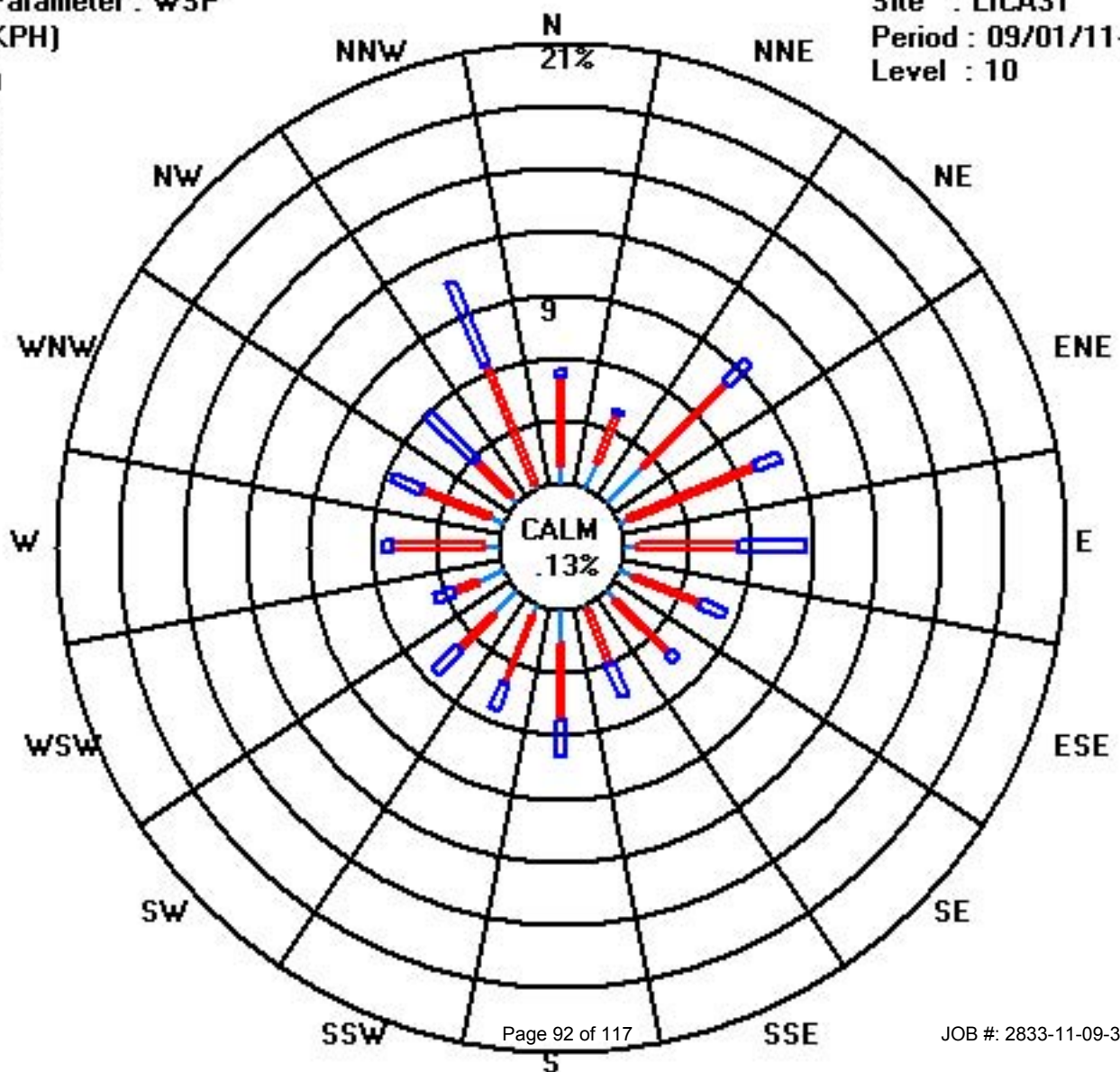
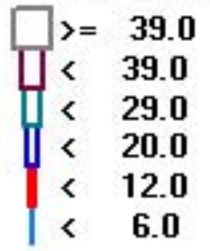
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	6	10	17	3	5	5	4	2	12	4	11	9	5	5	3	2	103
< 12.0	31	18	41	47	34	25	26	20	26	25	17	9	31	25	17	44	436
< 20.0	2	1	10	9	23	9	3	12	13	10	11	7	3	11	23	31	178
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	39	29	68	59	62	39	33	34	51	39	39	25	39	41	43	77	

Calm : .13 %

Total # Operational Hours : 718

Class Limits (KPH)



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

SEPTEMBER 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		
DAY	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	0:00	AVG.	QUADRANT	RDGS.	
1		300	307	307	302	282	274	253	233	232	220	229	184	151	137	124	153	131	248	189	144	134	140	155	147	208	SW	24	
2		181	124	292	289	327	319	328	301	306	320	241	196	18	21	44	45	32	50	57	54	54	59	68	60	17	NNE	24	
3		67	81	71	71	60	60	79	99	102	102	101	108	114	147	126	133	207	217	225	196	173	18	350	342	100	E	24	
4		335	327	344	342	339	322	319	317	329	331	348	15	343	2	344	336	342	343	346	352	348	344	351	341	341	NNW	24	
5		339	323	292	296	272	250	92	359	360	263	252	355	338	309	231	243	246	270	338	325	336	4	31	185	307	NW	24	
6		202	192	190	279	261	336	346	326	247	229	228	205	327	54	115	128	120	108	106	128	208	198	199	193	180	S	24	
7		352	356	352	341	342	341	346	342	339	339	343	340	328	324	333	299	240	266	299	303	331	11	46	71	337	NNW	24	
8		319	279	269	218	203	252	261	236	231	243	240	260	311	297	358	229	244	348	230	222	184	181	184	193	236	SW	24	
9		197	223	262	330	338	338	343	335	334	342	347	336	330	318	308	309	321	329	330	329	333	333	318	262	323	NW	24	
10		218	210	269	268	268	313	275	282	301	184	182	82	75	93	74	60	63	29	285	286	271	255	251	203	259	WSW	24	
11		229	257	257	284	278	283	304	314	334	339	344	338	314	297	317	345	350	322	302	287	282	274	279	277	306	NW	24	
12		281	287	294	287	275	261	259	279	297	281	269	278	353	52	53	21	43	56	59	63	10	327	314	308	318	NW	24	
13		307	311	313	300	301	297	300	300	295	295	289	275	279	276	266	282	113	101	121	124	119	95	36	43	306	NW	24	
14		40	43	32	25	25	23	26	18	28	85	76	77	81	82	89	85	78	63	43	57	48	50	76	54	55	NE	24	
15		46	47	37	36	42	42	48	51	29	25	44	47	58	64	0	0	48	50	66	94	87	86	98	90	60	ENE	22	
16		130	127	25	36	91	305	267	263	248	241	201	243	247	231	216	220	219	223	232	206	231	204	175	181	216	SW	24	
17		160	162	157	142	157	152	170	168	150	118	190	205	216	219	220	215	138	98	98	88	104	112	87	108	153	SSE	24	
18		119	111	113	122	121	127	131	131	138	132	156	177	181	169	163	145	132	100	92	73	94	86	76	94	116	ESE	24	
19		89	101	106	110	114	98	99	105	95	52	52	48	75	95	32	25	41	60	79	52	69	80	65	56	76	ENE	24	
20		57	63	60	58	49	52	61	79	102	98	211	197	131	179	171	164	191	175	155	141	157	167	167	173	118	ESE	24	
21		173	173	175	169	168	164	169	173	174	177	185	190	180	186	190	116	66	47	45	56	59	51	51	156	SSE	24		
22		50	10	345	338	323	330	278	214	204	219	229	193	186	201	198	176	188	184	176	164	165	150	126	36	193	S	24	
23		42	43	44	34	35	41	14	9	10	356	3	5	16	22	17	0	344	340	341	350	2	348	310	226	7	N	24	
24		213	197	187	179	179	168	167	159	152	150	152	274	282	225	151	54	49	40	42	55	65	70	79	92	137	SE	24	
25		89	98	88	79	81	84	76	89	104	118	122	131	201	190	181	185	196	203	211	206	214	327	318	306	142	SE	24	
26		257	227	213	307	329	309	296	241	289	299	312	29	102	109	110	142	144	113	138	126	136	147	159	173	226	SW	24	
27		190	295	309	318	339	340	343	330	307	305	284	257	268	139	179	130	87	90	95	111	109	112	107	68	337	NNW	24	
28		52	57	81	75	87	102	83	94	109	5	353	4	5	4	7	3	8	26	41	51	65	60	73	74	48	NE	24	
29		83	83	96	95	177	354	359	1	14	45	68	66	78	77	86	91	75	53	54	58	71	78	75	68	64	ENE	24	
30		72	97	44	42	53	35	14	12	342	340	0	356	352	339	214	204	204	204	209	204	212	248	221	216	261	W	24	
HOURLY AVG		352	356	352	342	342	354	359	359	360	356	353	356	353	339	358	345	350	348	346	352	348	348	351	342				

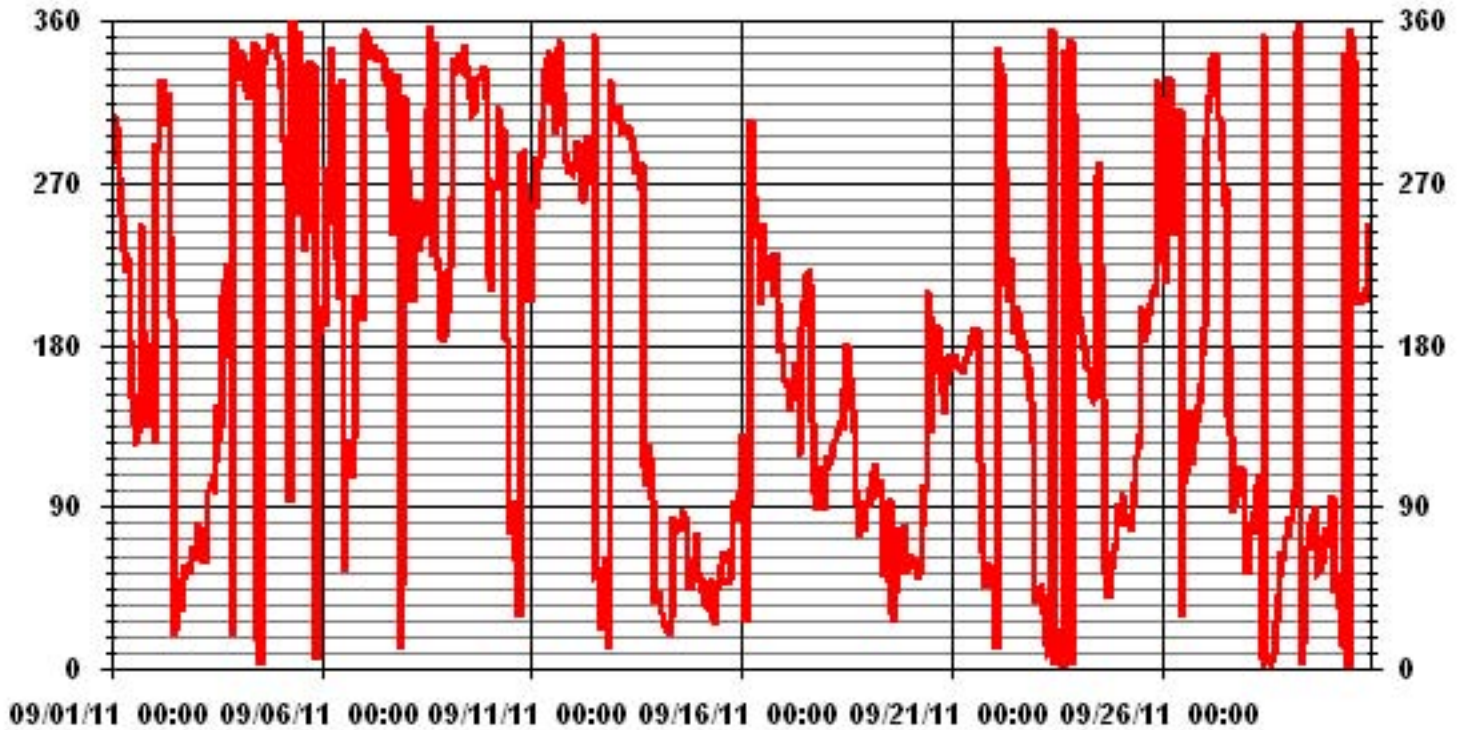
STATUS FLAG CODES

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:	718 HRS
STANDARD DEVIATION	108.54	AMD OPERATION UPTIME	99.7 %
		MONTHLY AVERAGE	34 DEG

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

SEPTEMEBR 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	13	12	12	12	10	7	6	9	17	24	22	36	44	43	35	53	56	29	21	12	7	9	5	7
2	20	47	45	12	16	13	14	15	16	18	32	42	61	60	26	26	26	25	21	20	19	15	17	17
3	13	10	15	11	11	13	8	5	10	14	18	26	38	45	35	37	40	20	11	9	6	31	19	16
4	21	29	23	26	36	41	39	48	43	50	50	67	43	51	47	39	33	20	17	19	14	12	8	6
5	4	24	12	10	6	6	27	21	42	37	44	45	34	40	22	14	11	18	18	10	10	11	7	29
6	8	8	15	11	42	3	4	20	12	18	38	65	44	45	31	24	19	11	3	28	8	10	12	9
7	40	7	9	11	11	10	9	14	15	22	24	38	23	26	22	64	28	10	17	8	9	11	5	45
8	16	7	6	18	8	21	6	11	10	14	23	22	58	43	84	65	33	64	4	4	9	5	5	6
9	8	7	22	4	5	7	8	23	35	13	19	22	26	24	33	18	13	8	5	3	5	4	38	46
10	29	24	23	11	22	42	42	15	31	21	23	58	53	31	24	31	29	63	20	3	4	4	5	11
11	9	7	30	42	9	10	17	20	27	30	25	28	26	26	49	25	19	17	15	14	13	11	13	11
12	12	13	13	13	10	7	8	15	16	18	19	22	45	48	54	47	42	27	28	11	37	41	39	57
13	32	33	33	24	31	36	28	20	24	26	25	28	42	45	29	34	47	18	8	8	9	19	8	14
14	14	20	19	26	19	18	22	33	54	68	52	44	38	40	41	40	48	47	20	24	25	38	50	48
15	40	36	40	33	37	32	34	34	31	33	29	29	37	37	28	25	19	20	44	26	13	13	58	64
16	46	44	48	16	14	49	34	19	10	17	25	55	66	67	57	29	46	31	22	24	55	46	23	20
17	19	19	20	18	21	17	19	19	48	70	50	44	54	32	30	50	48	36	13	11	6	10	15	9
18	5	7	7	6	7	10	11	11	17	30	40	55	54	50	33	34	23	4	5	5	6	9	6	7
19	10	6	5	4	7	6	5	6	23	31	36	32	55	69	61	50	26	25	12	34	11	14	14	20
20	18	13	13	15	18	17	14	12	11	46	41	46	50	73	69	31	23	13	9	10	12	12	13	13
21	12	11	9	11	12	13	12	13	65	97	78	75	72	72	86	87	68	42	22	29	40	47	43	43
22	50	28	29	17	9	6	20	16	26	42	55	44	31	22	23	24	15	5	4	6	7	31	54	19
23	11	11	15	12	23	26	41	45	31	32	44	55	68	30	63	36	35	23	7	10	11	8	42	37
24	13	20	16	10	15	14	12	10	28	37	58	22	55	68	59	21	16	12	9	9	12	12	12	11
25	10	12	13	12	13	14	12	14	16	17	17	23	26	26	28	23	24	25	23	42	43	18	16	28
26	50	23	17	37	7	36	50	53	28	18	35	54	55	73	44	35	23	18	22	9	11	14	13	14
27	13	35	13	7	8	4	8	17	27	17	39	35	43	45	36	53	37	7	5	16	6	15	28	20
28	17	19	10	13	15	11	18	13	32	50	46	46	55	51	42	40	37	31	26	18	13	13	11	10
29	7	6	6	30	20	35	9	10	16	35	44	43	51	43	35	41	38	19	17	17	24	34	35	39
30	44	56	33	33	42	67	36	41	33	37	28	24	20	30	25	16	38	44	25	13	14	23	28	16

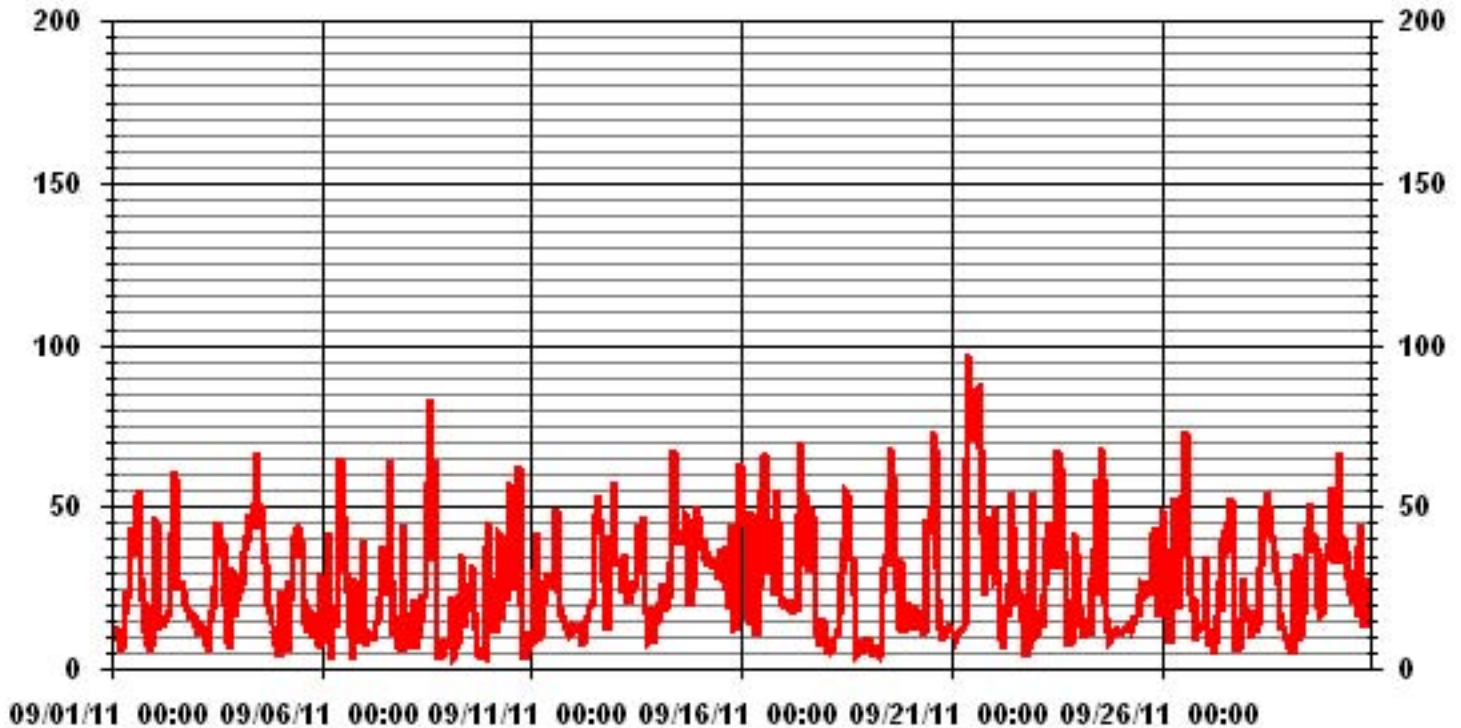
STATUS FLAG CODES

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	September 9, 2011	Previous Calibration	August 11, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	10:46	End Time (MST)	14:28
Reason:	Monthly Calibration		
Barometric Pressure	943 mBar	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	NA Volts

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	533 ccm	38.3 Deg C	535 ccm	36.8	Deg C
HVPS / Lamp Setting	528	2365	528	2371	
PMT / RxCell Temp	7.9 Deg C	50 Deg C	7.9 Deg C	50	Deg C
Converter / IZS Temp	NA Deg C	40 Deg C	NA Deg C	40.0	Deg C
Offset / Slope	70.9	1.106	70.9	1.112	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
	No Zero Adj Needed			
4922	76.5	750	744	1.0080
4922	76.5	750	751	0.9986
4959	40.8	400	397	1.0072
4979	17.3	170	171	0.9922
4998	0	0	0	N/A
		Sum of Least Squares		1.0072
		New Correction Factor		0.9986

	Before Calibration	After Calibration
Auto Zero	1.2	0.6
Auto Span	363.0	365.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0080
Percent Change:	-0.8%

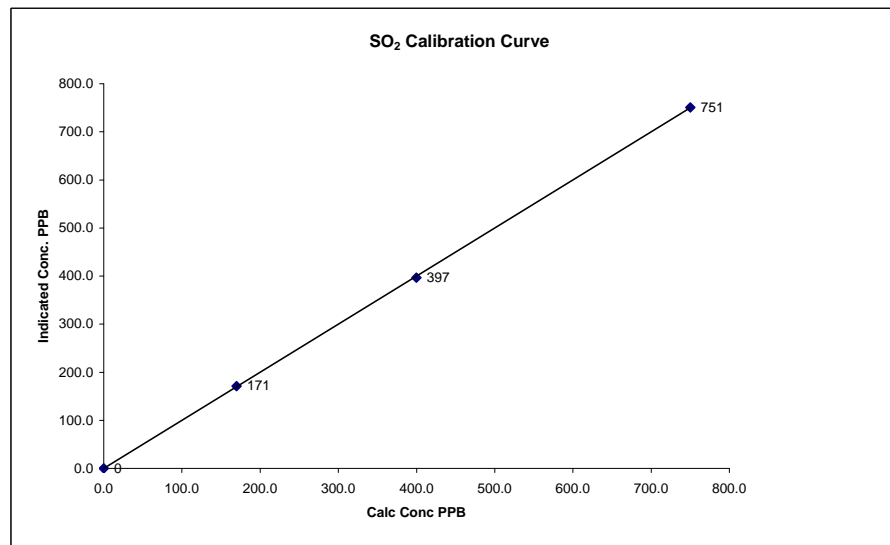
Notes: **N/A : Not applicable**

Calibration Performed by: Ting Xu

SO2 Calibration Curve

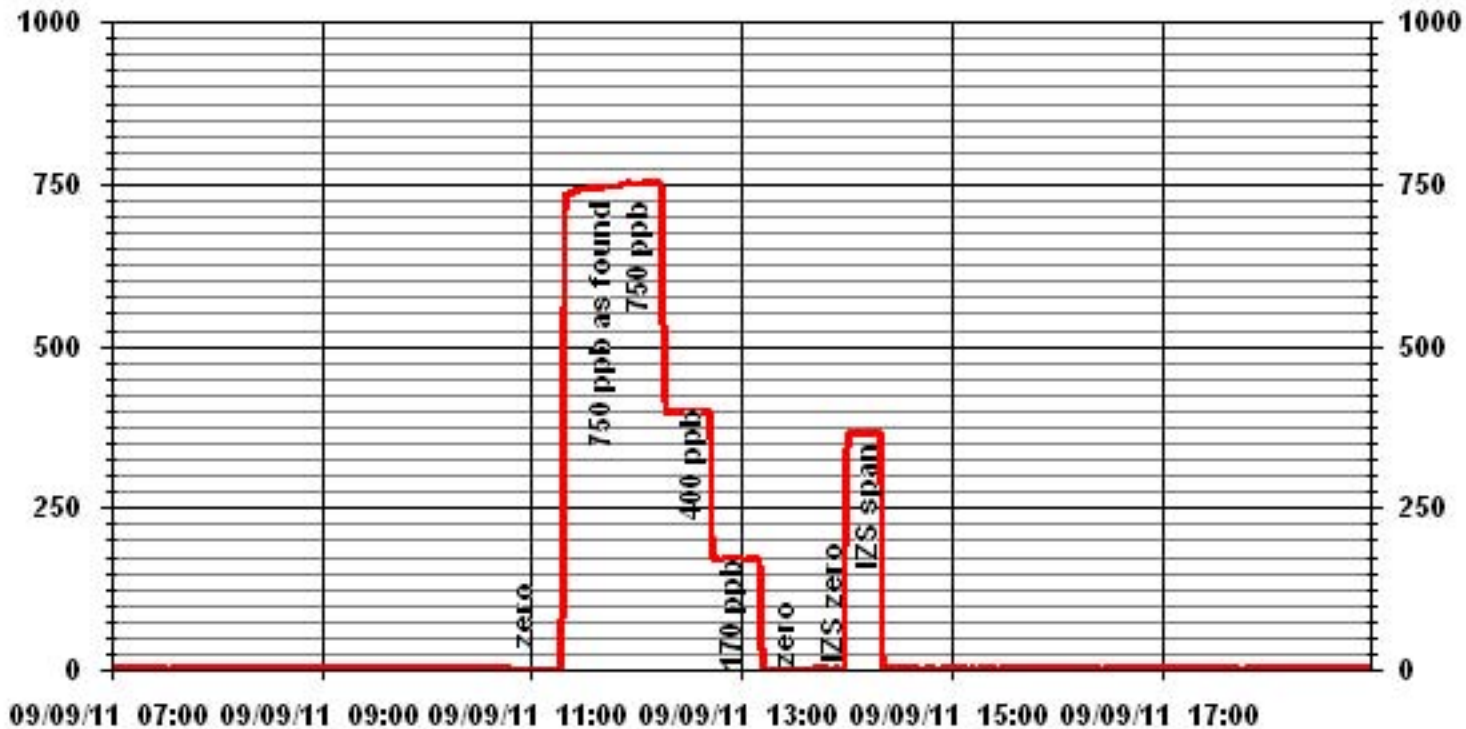
Calibration Date	September 9, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	10:46
End Time (MST)	14:28

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		0.999965
170	171	0.9922		1.000120
400	397	1.0072		-0.151216
750	751	0.9986		



Notes:

01 Minute Averages



Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	September 8, 2011	Previous Calibration	August 10, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST.LINA		
Start Time (MST)	9:16	End Time (MST)	13:01
Reason:	Monthly Calibration		
Barometric Pressure	944 mmHg	Station Temperature	26 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	554 ccm	34.9 Deg C	554 ccm	34.1 Deg C
HVPS / Lamp Setting	518	2404	518	2403
PMT / RxCell Temp	8.4 Deg C	50 Deg C	8.4 Deg C	50 Deg C
Converter / IZS Temp	315.5 Deg C	45 Deg C	315.2 Deg C	45.0 Deg C
Offset / Slope	67.3	1.001	67.3	1.054

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	NA
	No Zero Adj.			
4959	39.2	80	76	1.0526
4959	39.2	80	80	1.0000
4980	19.6	40	41	0.9753
4986	11.2	23	24	0.9525
4996	0	0	1	NA
Sum of Least Squares				0.9922
New Correction Factor				1.0000

	Before Calibration	After Calibration
Auto Zero	0.5	0.9
Auto Span	43.0	44.3
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9878
Current Correction Factor Before Span Adjust:	1.0526
Percent Change:	-6.2%

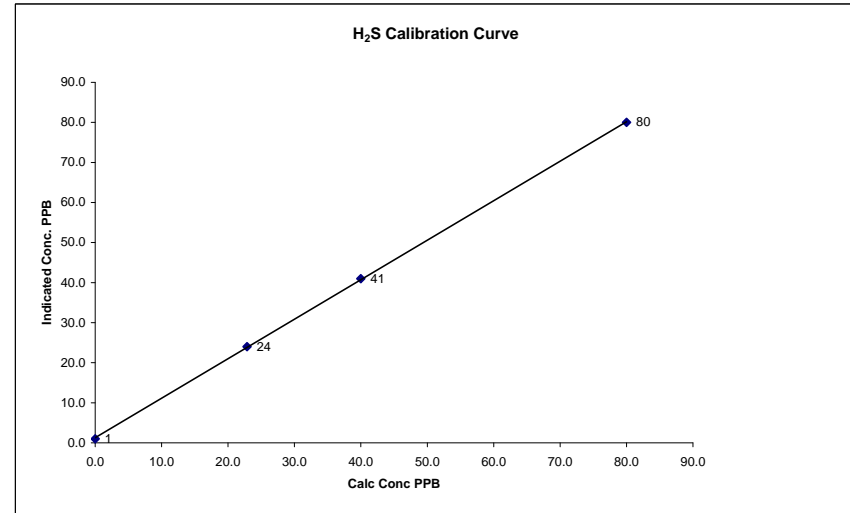
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

H₂S Calibration Curve

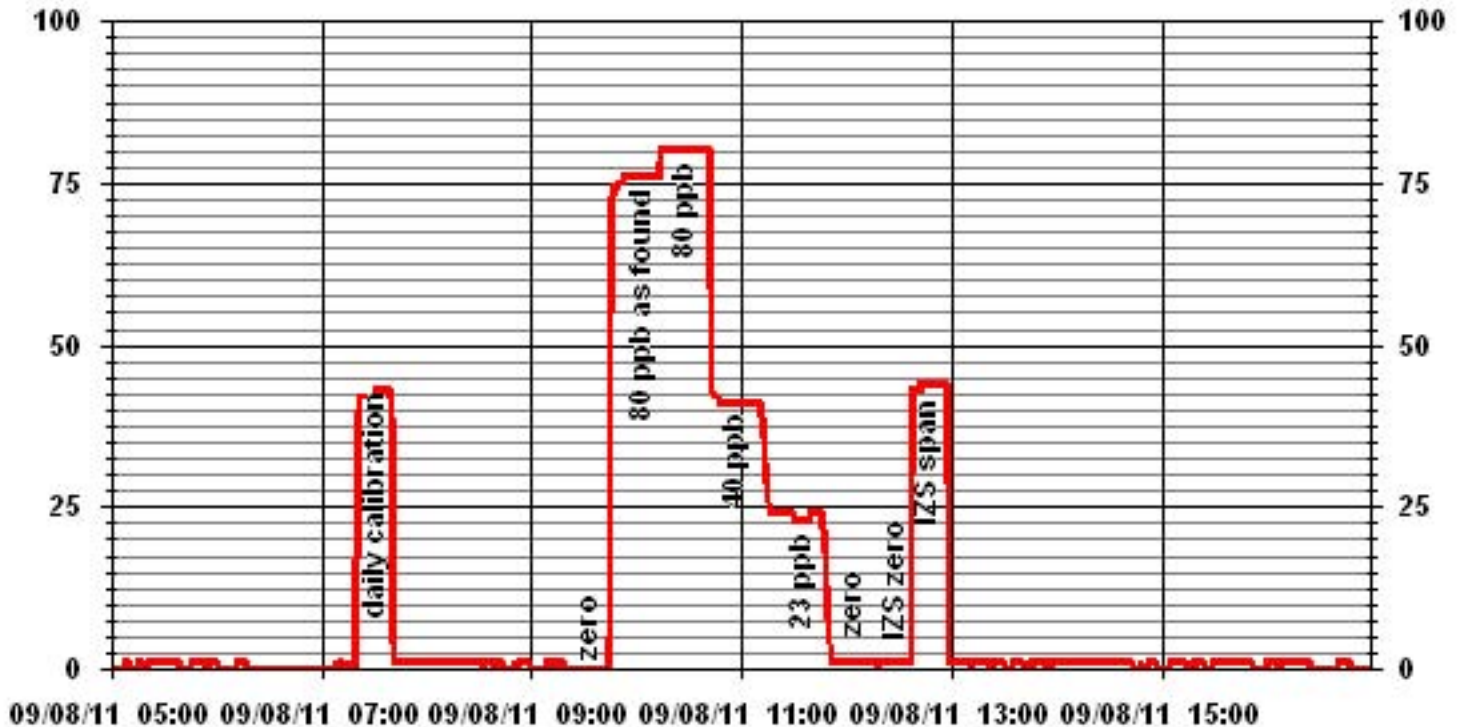
Calibration Date	September 8, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST.LINA
Start Time (MST)	9:16
End Time (MST)	13:01

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)	0.999934
0	1		Intercept		0.986585
23	24	0.9525			
40	41	0.9753			
80	80	1.0000			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	September 8, 2011	Previous Calibration	August 10, 2011
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	ST. LINA		
Start Time (MST)	12:20	End Time (MST)	16:06
Reason:	Monthly Calibration		
Barometric Pressure:	944 mmHg	Station Temperature:	26 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 980 PPM	C3H8 304 PPM	
	TOTAL CH4 1816.0 PPM	Gas Cyl. # -	Cal Gas Expiry Date: December 3, 2013
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
3000	0.0	0.0	0.0	NA
	No Zero Adj. Needed			
3000	70.0	41.4	43.2	0.9585
3000	70.0	41.4	41.6	0.9954
3000	35.0	20.9	20.6	1.0166
3000	20.0	12.0	11.8	1.0192
3000	0.0	0.0	0.0	NA
New Correction Factor:				0.9954

Percent Change

Previous Calibration Correction Factor:	0.9953
Current Correction Factor Before Span Adjust:	0.9585
Percent Change:	3.8%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.3
Auto Span	36.5	35.1
Sample Lines Connected		YES

Cylinder Pressures			
Span	1900 psi	Hydrogen	500 psi
		Zero Air	34 psi

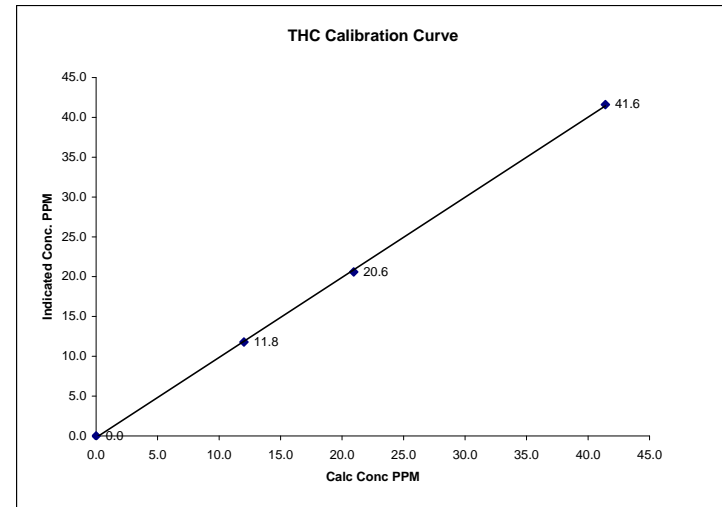
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

THC Calibration Curve

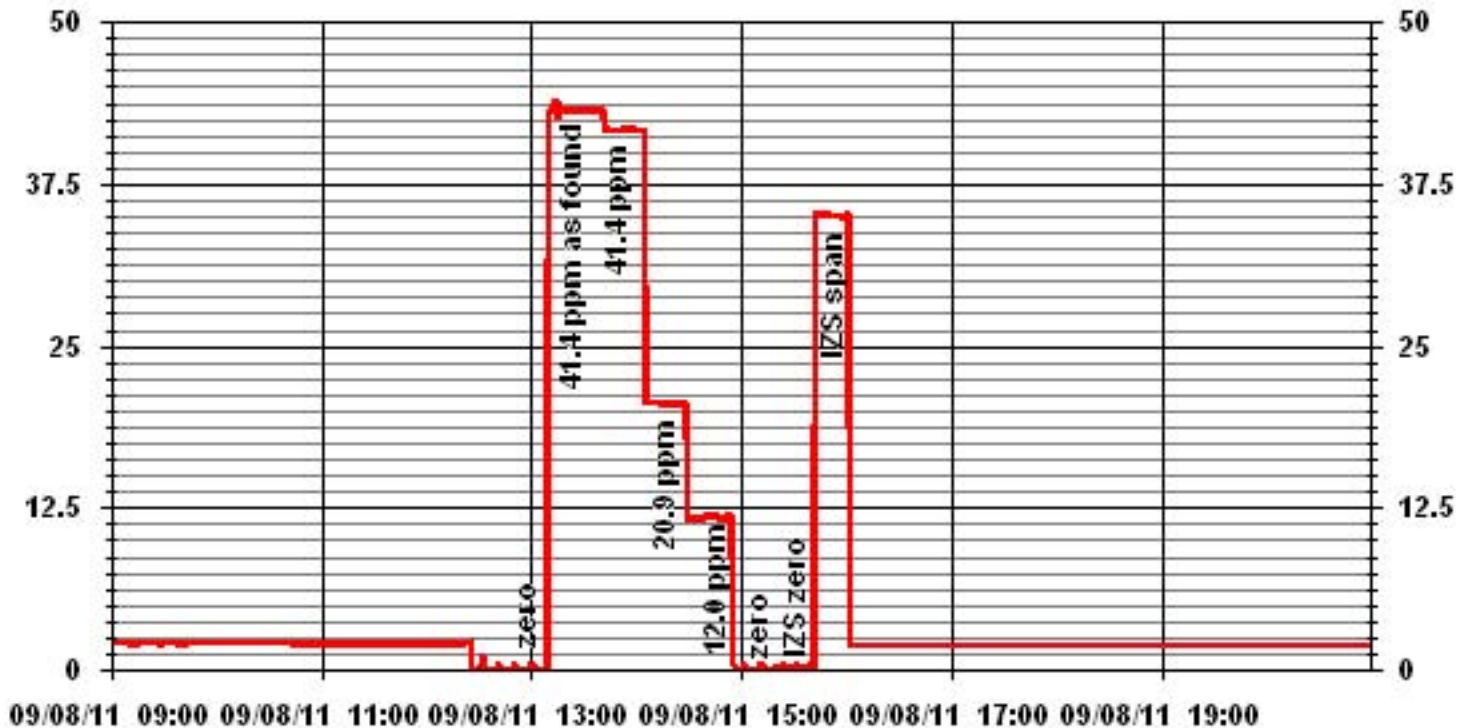
Calibration Date	September 8, 2011		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	12:20	End Time (MST)	16:06

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope (0.85 to 1.15)	Correlation Coefficient Intercept (±3% F.S.)
0.0	0.0	NA	0.999846	1.005556
12.0	11.8	1.0192		-0.19731
20.9	20.6	1.0166		
41.4	41.6	0.9954		



Notes:

01 Minute Averages



Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	September 8, 2011	Previous Calibration	August 10, 2011
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	9:16	End Time (MST)	15:25
Reason:	Monthly Calibration		
Barometric Pressure	944 mmHg	Station Temperature	26 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 :	592	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		0 - 1000		After Calibration	
Concentration Range	480 ccm	316.2 Deg C	484 ccm	315 Deg C	
Sample Flow/Conv. Temp	73 ccm	5.3 °Hg-A	73 ccm	5.2 °Hg-A	
Ozone Flow / Vacuum	662 Volts	21.2 MV	662 Volts	20.7 MV	
HVPS / A ZERO	50.0 Deg C	6.9 Deg C	50.0 Deg C	6.9 Deg C	
Rx/ Temp / PMT Temp	32.6 Deg C	45.1 Deg C	32.1 Deg C	45 Deg C	
Box Temp / IZS Temp	Offset 3.7 NOx	0.4 NO	3.7 NOx	0.4 NO	
Slope	1.118 NOx	1.085 NO	1.107 NOx	1.077 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	0	0	0	NA	NA
No Zero Adj.										
4921	74.2	NA	768	749	NA	774	755	19	0.9922	0.9916
4921	74.2	NA	768	749	NA	767	750	17	1.0013	0.9982
4960	34.6	NA	358	349	NA	357	350	7	1.0032	0.9976
4978	16.8	NA	174	170	NA	174	172	3	1.0000	0.9856
4994	0.0	NA	0	0	NA	-1	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	74.2	NA	768	749	NA	767	750	17	NA	NA
No Adj Required										
4921	74.2	550	768	NA	493	771	274	497	0.9920	100.84%
4921	74.2	300	768	NA	276	769	491	278	0.9928	100.77%
4921	74.2	120	768	NA	118	770	649	121	0.9752	102.97%

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 1.002 / 1.0013	NO= 0.998 / 0.9982	NO2= 0.991 / 0.9920
Average Converter Efficiency= 101.53%						

Before Calibration		After Calibration	
Auto Zero	-0.9 NOx	-1.2 NO2	-1.1 NOx
Auto Span	713 NOx	689 NO2	707 NOx
Sample Lines Connected		YES	
Percent Change from Previous Calibration		NOx 1.2%	NO 0.8%
Notes		NO2 0.6%	

NA : Not Applicable

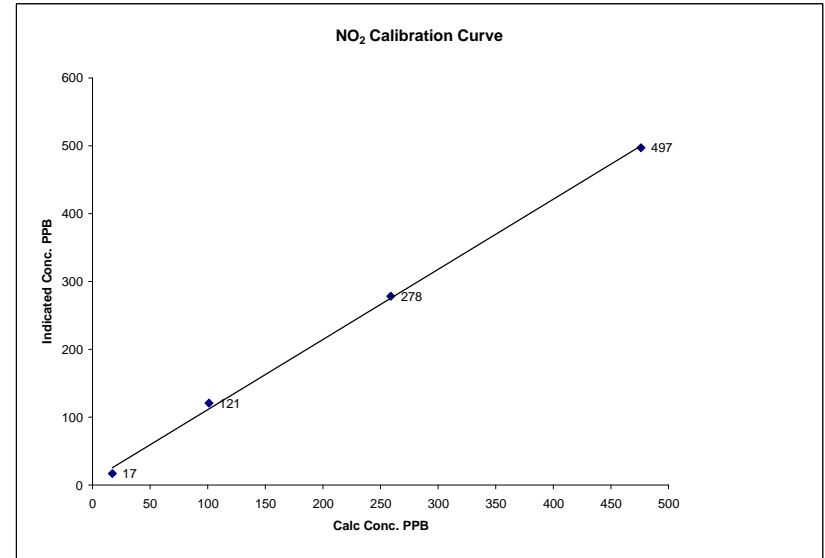
Additional GPT was done for O3 clibration. O3 set point 450, NO=357, NO2=413, NOx=769

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	September 8, 2011	Company	LICA
Plant / Location	St. Lina	Start Time (MST)	9:16
End Time (MST)	15:25		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.998764
17	17	N/A	Intercept	(± 3% F.S.)	7.77448
101	121	0.8347			
259	278	0.9317			
476	497	0.9577			

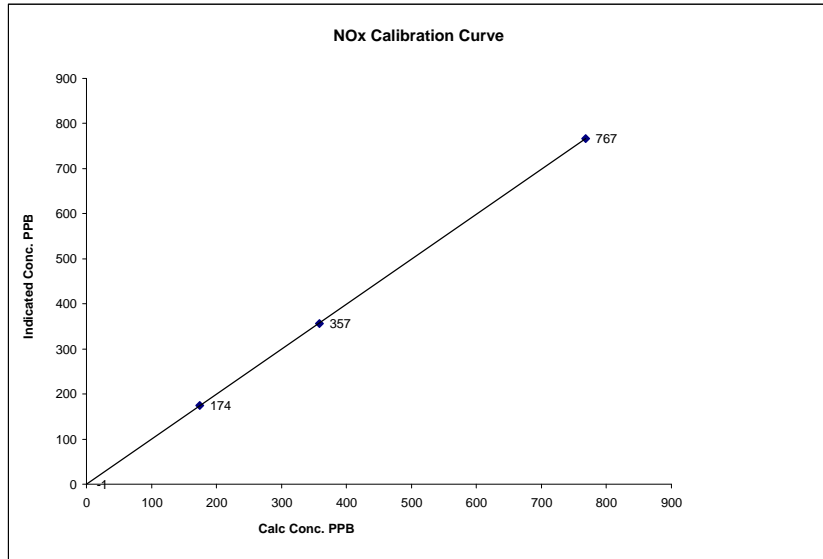


Notes:

NOx Calibration Curve

Calibration Date September 8, 2011
 Company LICA
 Plant / Location St. Lina
 Start Time (MST) 9:16 End Time (MST) 15:25

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999997
0	-1	N/A	Intercept	(± 3% F.S.)	-0.59569
174	174	0.9994			
358	357	1.0032			
768	767	1.0013			

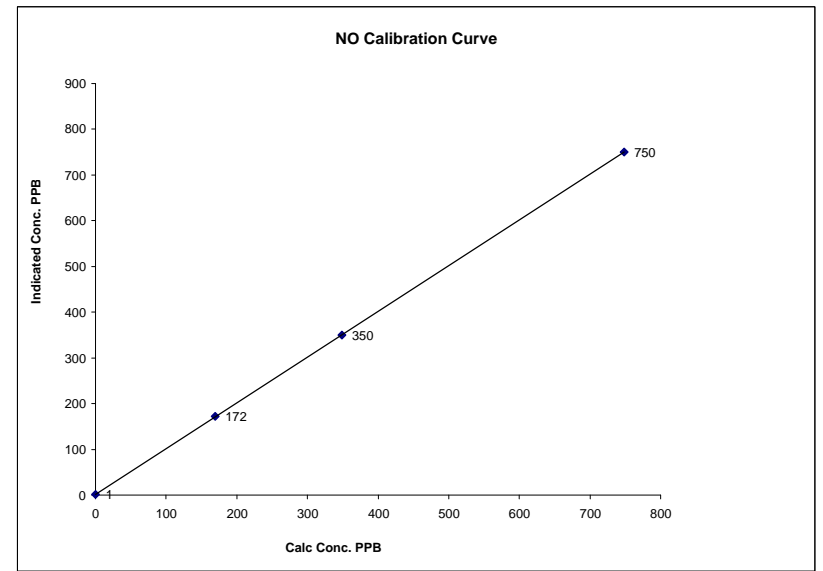


Notes:

NO Calibration Curve

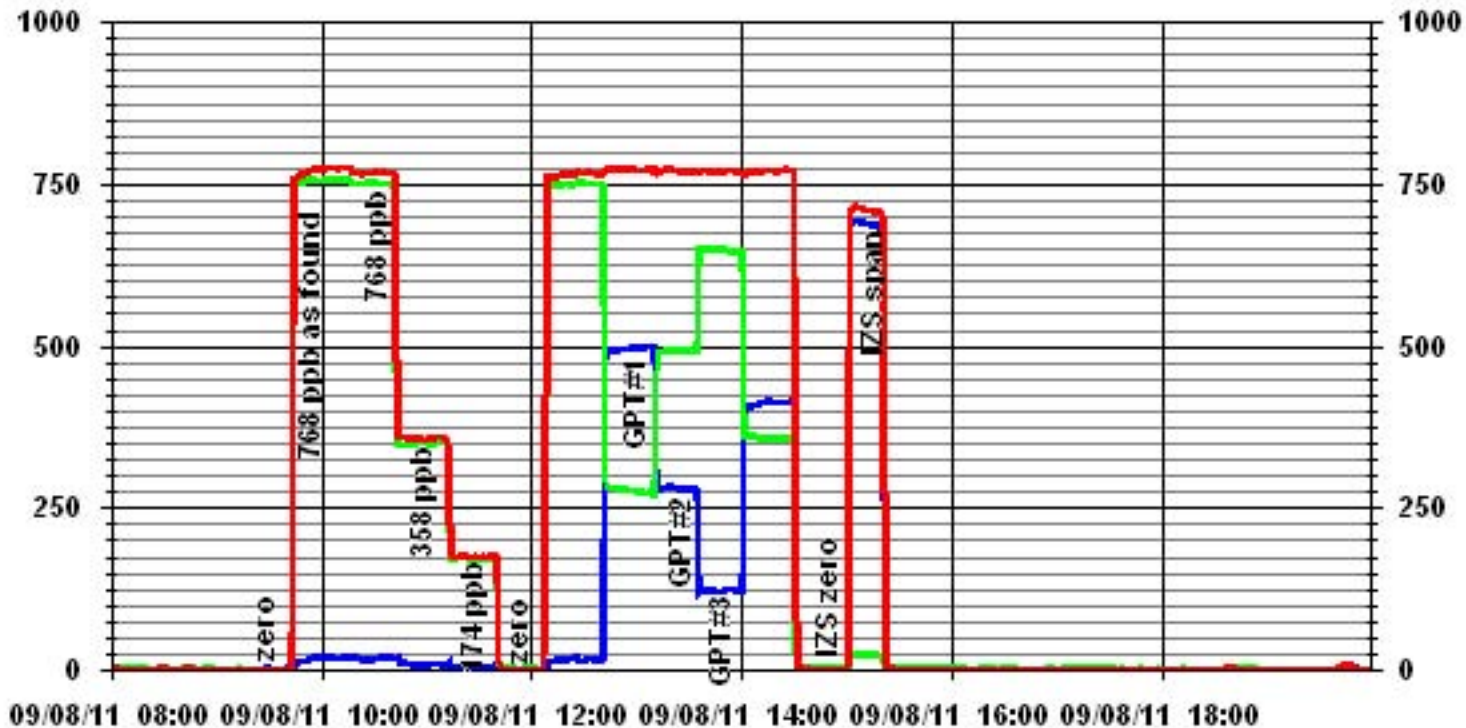
Calibration Date September 8, 2011
 Company LICA
 Plant / Location St. Lina
 Start Time (MST) 9:16 End Time (MST) 15:25

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999995
0	1	N/A	Intercept	(± 3% F.S.)	0.4264
170	172	0.9856			
349	350	0.9976			
749	750	0.9982			



Notes:

01 Minute Averages



— LICA31 IIOX_ PPB

— LICA31 IIO_ PPB

— LICA31 IIO2_ PPB

Ozone

O₃ Calibration Report

Station Information

Calibration Date	September 9, 2011	Previous Calibration	August 11, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	10:46	End Time (MST)	14:28
Reason:	Monthly Calibration		
Barometric Pressure	943 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:	Enviroics 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	724 ccm	743 ccm	725 ccm	744 ccm
Pressure	704.5 mmHg		706.5 mmHg	
Bench Temp	55.6 Deg C		55.6 Deg C	
O3 Lamp / Box Temp	80 Deg C	33.8 Deg C	80 Deg C	33.9 Deg C
Offset / Slope	0.1	0.962	0.1	0.962

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	-1	NA
	No Zero Adj Needed			
4994	450	393	395	0.9949
	No Span Adj Needed			
4994	300	259	264	0.9811
4994	120	101	106	0.9528
4994	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				0.0000

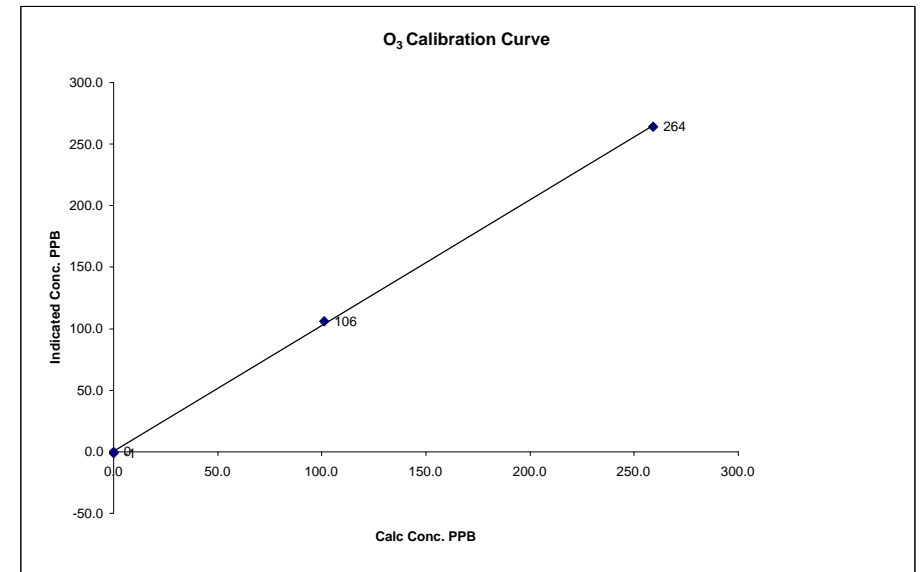
	Before Calibration	After Calibration
Auto Zero	1.1	1.6
Auto Span	334	330
Sample Lines Connected		YES
Percent Change from Previous Calibration		0.0%

Calibration Performed by: Ting Xu

O₃ Calibration Curve

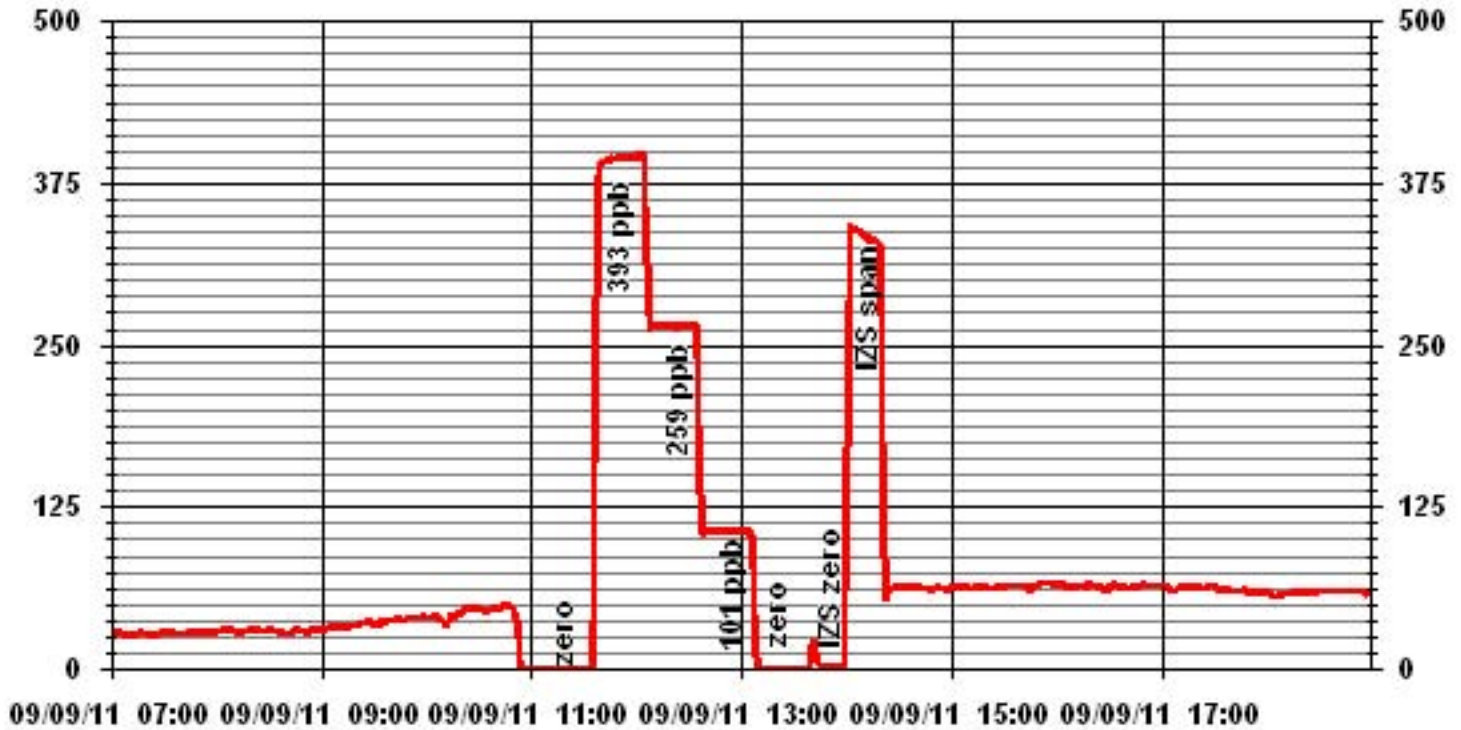
Calibration Date	September 9, 2011		
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	10:46	End Time (MST)	14:28

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope (≥ 0.995) (0.85 to 1.15)	0.999810
0	-1	n/a	Intercept (± 3% F.S.)	1.022058
101	106	0.9528		
259	264	0.9811		
0	0	#DIV/0!		0.264794



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOMÒ 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	September 9, 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 (%)	23.9%
Firmware Ver.	1.52	K _o Factor	13125.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	28.1
		Press (ATM)	0.931

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	0.32	Pump Gauge (inHg)	19
Temperature/Pressure		D °C	
Measured Temp (± 2 °C)	27.7	DATM	0.4
Measured Press (± 0.01atm)	0.931		0.000
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	0.93%
Measured Main Flow (l/min)	3.03	Flow Adjusted to Measured?	0.3%
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	0.96%
Measured Bypass Flow (l/min)	13.69	Flow Adjusted to Measured?	No
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	NA	Flow Control = Active	
Aux (< 0.6 l/min)	NA	Report Conditions = Actual	
K_o Factor			
Measured	NA		
K _o Difference (± 2.5%)	NA		

Start Time: 11:21 **Finish Time:** 13:37

Sample Inlet Cleaned: Yes **New Filters Installed:** Yes
New Filter Loading %: 17.8%

Comments: _____

Auditor/s: Ting Xu