Lakeland Industry & Community Association

Maskwa Monitoring Site
Ambient Air Monitoring
Data Report
For
January 2012

Prepared By:

February 22, 2012

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: January 2012

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 – January 2012

LICA MASKWA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO2 (PPB)	172	48	0	0	0.63	15	11	0	6.8	307(NW)	1.9	11	100.0
H2S (PPB)	10	3	0	0	0.14	1	VAR	VAR	VAR	VAR	0.7	11, 12	99.9
THC (PPM)	-	-	-	-	2.26	3.1	5, 31	2, 23	0.6, 5.6	305(WNW), 218(SW)	2.7	24	99.9
NOx (PPB)	-	-	-	-	5.57	32	25	8	0.8	275(W)	11.6	31	99.7
NO (PPB)	-	-	-	-	0.73	8	VAR	VAR	VAR	VAR	2.3	30	99.7
NO_2 (PPB)	159	-	0	-	4.80	23	25, 31	8, 22	0.8, 4.7	275(W), 220(SW)	9.6	31	99.7
VECTOR WS (KPH)	-	-	-	-	5.04	15.0	14	23	-	17(NNE)	9.9	10	100.0
VECTOR WD (DEGREES)	-	-	-	-	261(W)	-	-	-	-	-	-	-	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	68.42	90	5	8	4.7	253(WSW)	84.5	5	100.0
TEMPERATURE (DEG C)	-	-	-	-	-9.98	9.3	8	13	11.5	281(W)	2.8	8	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	935	957	1	VAR	VAR	VAR	954.7	1	100.0
PRECIPITATION (MM)	-	-	-	-	0.02	1.3	5	10	6.3	294(WNW)	5.1	5	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 on January 4th. 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 on January 3rd. Data was corrected using daily zero information.

Total HydroCarbon (PPM)

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

No operational issue was observed during the month. The inlet filter was changed before the monthly calibration was started on January 4th. Both the H2 and CH4 gas cylinders were replaced on January 12th following a daily zero/span check. 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. It was noticed that the analyzer spanned low on December 29th. Following the as found points check on January 1st, the permeation tube was replaced. The expected span value was adjusted after the perm tube was stabilized on January 5th. The inlet filter was changed before the monthly calibration was started on January 3rd. Data was corrected using daily zero information.

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

- System make / model - RM Young 5103 VK, S/N: 56589

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

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 January 4th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2012

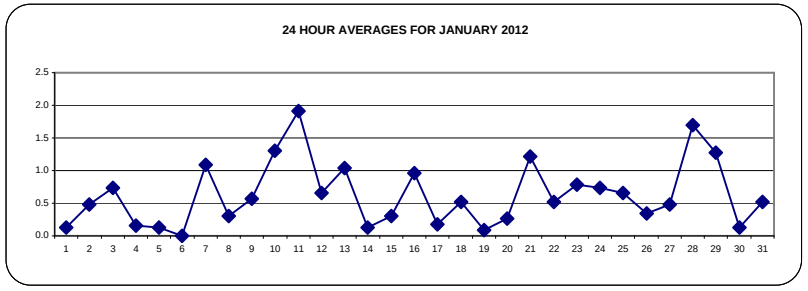
SULPHUR DIOXIDE (SO_2) hourly averages in ppb

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	**IZS**	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24
2	0	0	0	0	**IZS**	0	1	0	0	0	0	1	1	1	1	1	1	1	0	0	0	1	1	1	1	0.5	24
3	3	2	1	**IZS**	4	2	1	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	4	0.7	24
4	0	0	**IZS**	0	0	0	0	0	0	**C**	**C**	**C**	**C**	2	0	0	0	0	0	1	0	0	0	0	2	0.2	24
5	0	**IZS**	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
6	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0.0	24
7	0	0	1	1	2	2	2	1	1	1	1	2	2	2	1	1	1	1	0	1	1	1	**IZS**	0	2	1.1	24
8	0	0	0	0	0	1	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	1	3	0.3	24
9	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	1	1	0	2	2	**IZS**	0	1	0	2	0.6	24
10	0	0	5	6	5	6	2	0	0	0	2	0	0	0	4	0	0	0	0	**IZS**	0	0	0	0	6	1.3	24
11	**15**	12	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	1	1	1	1	**15**	**1.9**	24
12	1	1	1	2	2	0	0	1	1	0	0	1	1	1	1	1	1	**IZS**	0	0	0	0	0	0	2	0.7	24
13	1	1	1	1	1	1	0	0	0	0	0	0	2	4	6	1	**IZS**	1	0	2	0	0	1	1	6	1.0	24
14	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	1	0.1	24
15	0	0	0	0	0	0	1	1	2	2	1	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	2	0.3	24
16	0	1	2	2	2	0	0	1	1	0	0	0	0	**IZS**	1	1	1	1	1	1	1	1	3	2	3	1.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	1	0	1	1	1	1	0.2	24
18	1	1	1	1	2	1	1	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	2	0.5	24
19	0	0	0	0	0	1	1	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
20	0	0	0	0	0	0	0	0	0	**IZS**	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	0.3	24
21	1	2	1	1	0	1	1	0	**IZS**	0	2	2	2	2	1	2	2	1	3	3	1	0	0	0	3	1.2	24
22	0	0	0	0	0	0	0	**IZS**	0	0	1	1	2	2	2	2	1	1	0	0	0	0	0	0	2	0.5	24
23	0	1	1	1	1	0	**IZS**	1	0	0	0	1	1	1	0	0	0	0	0	2	2	2	2	2	2	0.8	24
24	1	0	0	1	1	**IZS**	1	1	1	1	0	0	0	0	0	1	1	2	1	1	1	1	1	1	2	0.7	24
25	1	1	1	1	**IZS**	0	0	0	0	0	2	3	2	0	0	3	1	0	0	0	0	0	0	0	3	0.7	24
26	0	0	0	**IZS**	0	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0.3	24
27	0	0	**IZS**	0	0	0	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	7	0.5	24
28	0	**IZS**	8	6	4	3	0	0	1	1	2	2	4	1	1	0	0	0	0	0	0	1	3	2	8	1.7	24
29	**IZS**	1	2	4	2	1	1	2	5	2	0	0	1	1	1	1	1	1	1	1	0	0	0	**IZS**	5	1.3	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	**IZS**	0	2	0.1	24
31	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	0	0	0	1	**IZS**	2	1	2	0.5	24
HOURLY MAX	15	12	12	6	5	6	7	3	5	2	2	3	4	4	6	3	2	2	3	3	2	2	3	2			
HOURLY AVG	0.9	0.8	1.3	1.0	0.9	0.7	0.8	0.5	0.5	0.3	0.6	0.7	0.8	0.7	0.7	0.5	0.4	0.3	0.3	0.5	0.4	0.3	0.7	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

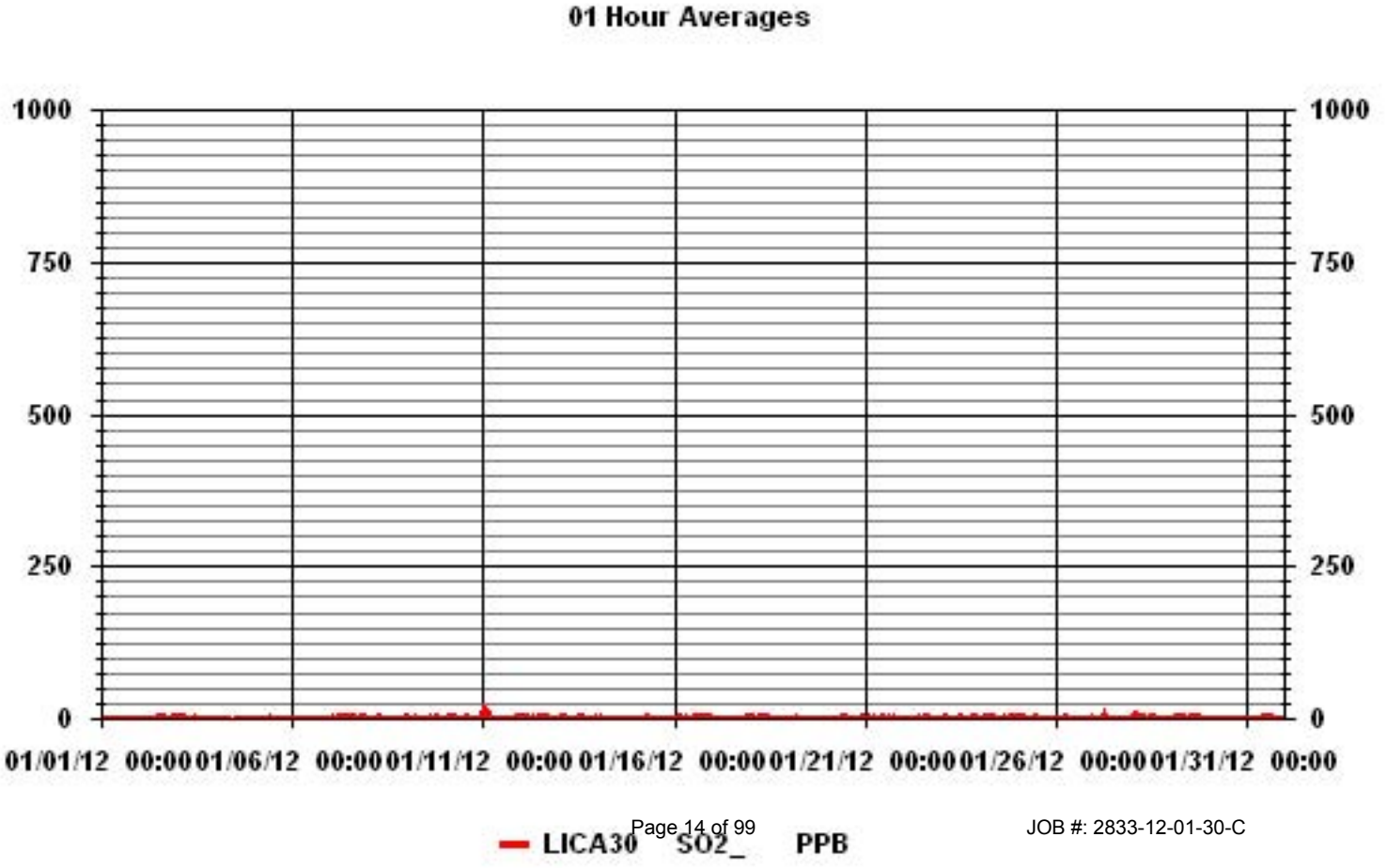


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB | 24-HR 57 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	269					
MAXIMUM 1-HR AVERAGE:	15	PPB	@ HOUR(S)	0	ON DAY(S)	11
MAXIMUM 24-HR AVERAGE:	1.9	PPB			ON DAY(S)	11
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	1.28		MONTHLY AVERAGE:		0.63	PPB

JOB #: 2833-12-01-30-C



JOB #: 2833-12-01-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JANUARY 2012

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

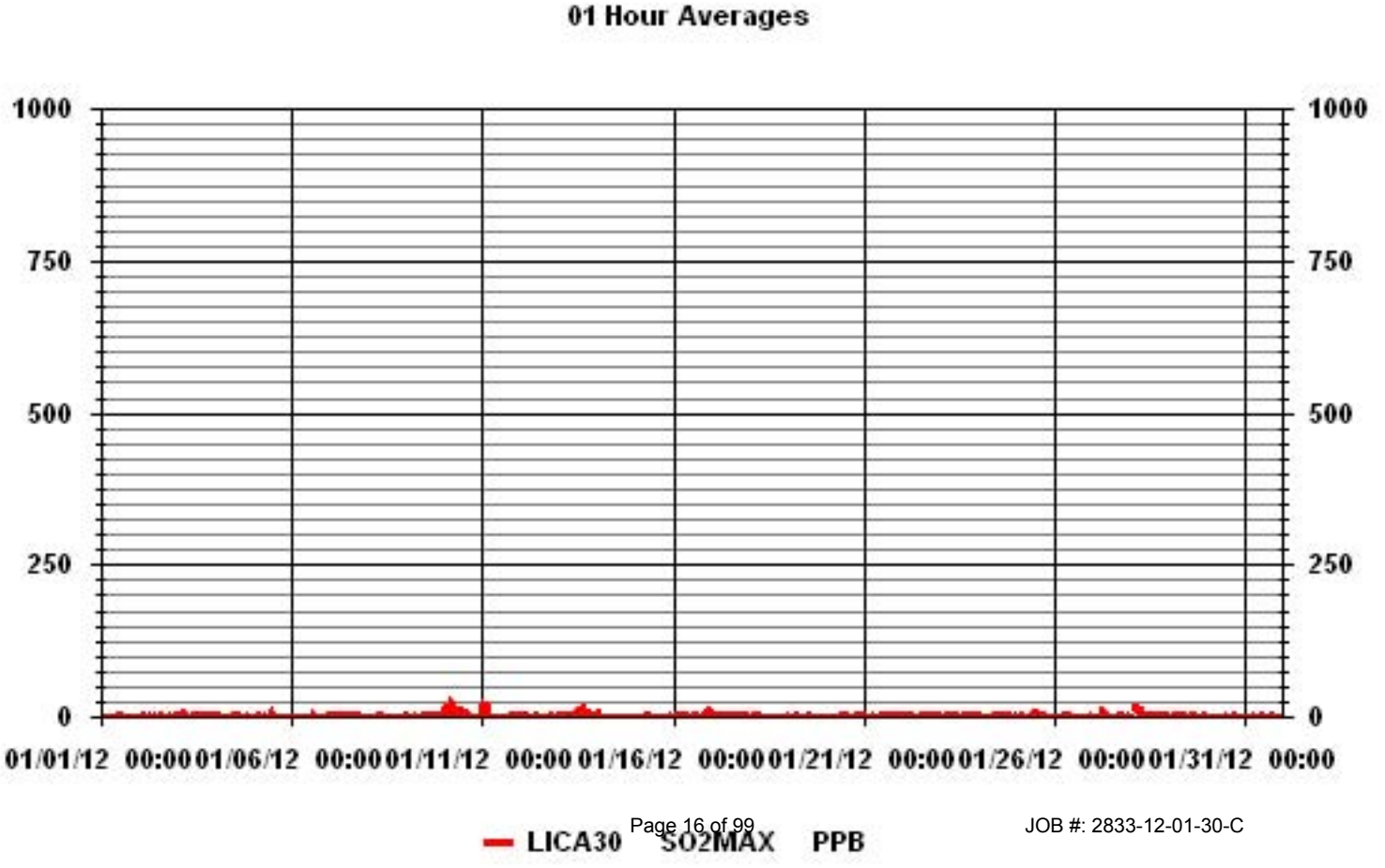
HOUR START / HOUR END	0:00 1:00	1:00 2:00	2:00 3:00	3:00 4:00	4:00 5:00	5:00 6:00	6:00 7:00	7:00 8:00	8:00 9:00	9:00 10:00	10:00 11:00	11:00 12:00	12:00 13:00	13:00 14:00	14:00 15:00	15:00 16:00	16:00 17:00	17:00 18:00	18:00 19:00	19:00 20:00	20:00 21:00	21:00 22:00	22:00 23:00	23:00 0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																											
1	0	0	0	0	1	**IZS**	1	0	0	0	2	3	2	1	1	0	0	0	0	0	0	0	0	0	3	0.5	24
2	0	1	1	1	**IZS**	0	3	0	0	1	1	1	2	2	2	2	1	3	1	1	1	2	1	5	5	1.4	24
3	7	4	1	**IZS**	8	5	2	1	2	1	2	3	2	1	1	1	1	1	1	1	1	1	1	1	8	2.1	24
4	1	1	**IZS**	1	0	0	0	1	0	**C**	**C**	**C**	**C**	5	1	1	1	0	0	1	1	1	0	1	5	0.8	24
5	0	**IZS**	0	4	1	2	1	1	1	0	2	7	0	0	0	0	0	0	0	0	0	2	0	0	7	0.9	24
6	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	6	3	0	0	0	0	0	0	0	0	**IZS**	6	0.4	24
7	1	1	2	2	2	3	3	3	2	2	2	3	2	2	2	1	1	1	1	1	1	2	**IZS**	0	3	1.7	24
8	0	0	0	0	1	2	4	3	1	1	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	2	4	0.7	24
9	3	2	0	0	1	2	2	1	2	1	1	1	1	1	1	1	1	1	5	4	**IZS**	0	6	0	6	1.6	24
10	0	0	19	14	23	18	16	0	0	0	14	3	0	4	13	0	0	2	1	**IZS**	0	0	0	16	23	6.2	24
11	22	18	**26**	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	1	1	1	**26**	3.3	24
12	2	2	2	5	5	1	1	2	1	1	1	1	1	2	1	2	1	**IZS**	0	1	1	0	0	0	5	1.4	24
13	3	3	2	1	3	2	1	1	0	0	5	1	9	13	15	3	**IZS**	9	1	4	3	2	6	4	15	4.0	24
14	7	1	2	3	0	0	0	0	0	0	1	2	1	3	0	**IZS**	0	0	0	0	0	0	0	0	7	0.9	24
15	0	0	0	0	0	0	2	2	3	3	3	1	0	1	**IZS**	0	0	0	0	0	0	0	1	1	3	0.7	24
16	0	2	3	3	3	1	1	1	1	1	1	0	0	**IZS**	2	2	2	1	2	2	2	9	10	10	10	2.6	24
17	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1	2	2	2	2	1.1	24
18	1	2	2	2	2	2	2	2	1	2	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	2	0.8	24
19	1	1	0	0	0	3	2	0	0	0	**IZS**	1	0	1	1	0	0	0	0	0	0	0	0	0	3	0.4	24
20	0	0	0	0	0	0	0	0	1	**IZS**	3	3	2	1	1	1	0	0	0	1	1	1	2	2	3	0.8	24
21	3	4	2	1	1	4	3	2	**IZS**	1	4	4	3	4	1	5	4	4	6	5	2	1	1	1	6	2.9	24
22	1	1	1	1	1	1	1	**IZS**	0	1	1	2	3	3	2	2	2	1	1	1	1	1	1	1	3	1.3	24
23	1	1	2	1	1	1	**IZS**	2	1	1	1	2	2	1	1	1	1	1	1	4	4	3	3	3	4	1.7	24
24	2	1	1	3	2	**IZS**	1	2	1	1	1	1	1	1	1	4	3	3	1	1	3	2	1	3	4	1.7	24
25	2	1	1	1	**IZS**	0	0	0	0	1	5	10	9	0	0	6	5	1	4	0	0	0	0	0	10	2.0	24
26	0	0	0	**IZS**	2	3	3	2	2	0	2	3	1	2	0	0	0	0	0	1	2	1	3	2	3	1.3	24
27	1	0	**IZS**	0	0	3	16	10	1	0	0	0	0	1	0	0	1	1	1	1	1	0	3	0	16	1.7	24
28	1	**IZS**	17	16	9	11	0	0	6	4	2	3	5	3	2	1	1	1	1	1	1	4	5	3	17	4.2	24
29	**IZS**	3	5	5	4	2	2	4	5	5	1	1	1	2	2	1	1	1	1	2	1	1	1	**IZS**	5	2.3	24
30	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	1	1	2	1	**IZS**	0	2	0.5	24
31	0	1	0	0	1	1	1	2	0	1	2	2	2	1	2	1	1	1	1	1	2	**IZS**	3	2	3	1.2	24
HOURLY MAX	22	18	26	16	23	18	16	10	6	5	14	10	9	13	15	6	5	9	6	5	4	9	10	16			
HOURLY AVG	2.1	1.8	3.1	2.4	2.5	2.3	2.3	1.4	1.1	1.0	2.0	2.0	1.7	2.1	1.9	1.2	1.0	1.1	1.0	1.2	1.1	1.3	1.8	2.1			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	474					
MAXIMUM INSTANTANEOUS VALUE:	26	PPB	@ HOUR(S)	2	ON DAY(S)	11
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	2.95					



JOB #: 2833-12-01-30-C

LICA30
SO2_ / WDR Joint Frequency Distribution (Percent)

January 2012

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	4.38	2.12	2.68	1.41	2.82	4.38	3.81	1.41	1.41	10.46	21.35	11.17	11.73	11.88	3.25	5.65	100.00
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.38	2.12	2.68	1.41	2.82	4.38	3.81	1.41	1.41	10.46	21.35	11.17	11.73	11.88	3.25	5.65	

Calm : .00 %

Total # Operational Hours : 707

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	31	15	19	10	20	31	27	10	10	74	151	79	83	84	23	40	707
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	31	15	19	10	20	31	27	10	10	74	151	79	83	84	23	40	

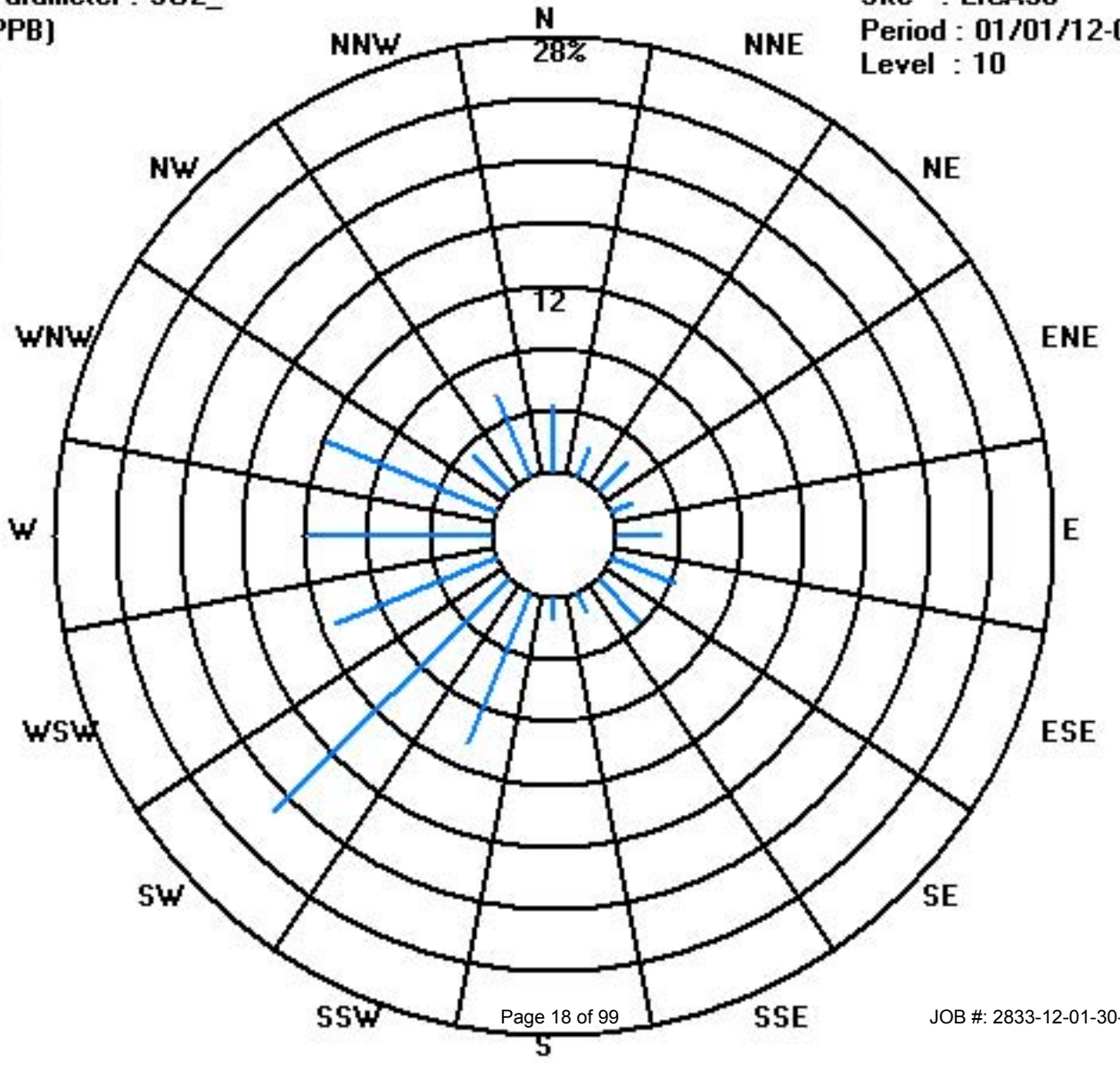
Calm : .00 %

Total # Operational Hours : 707

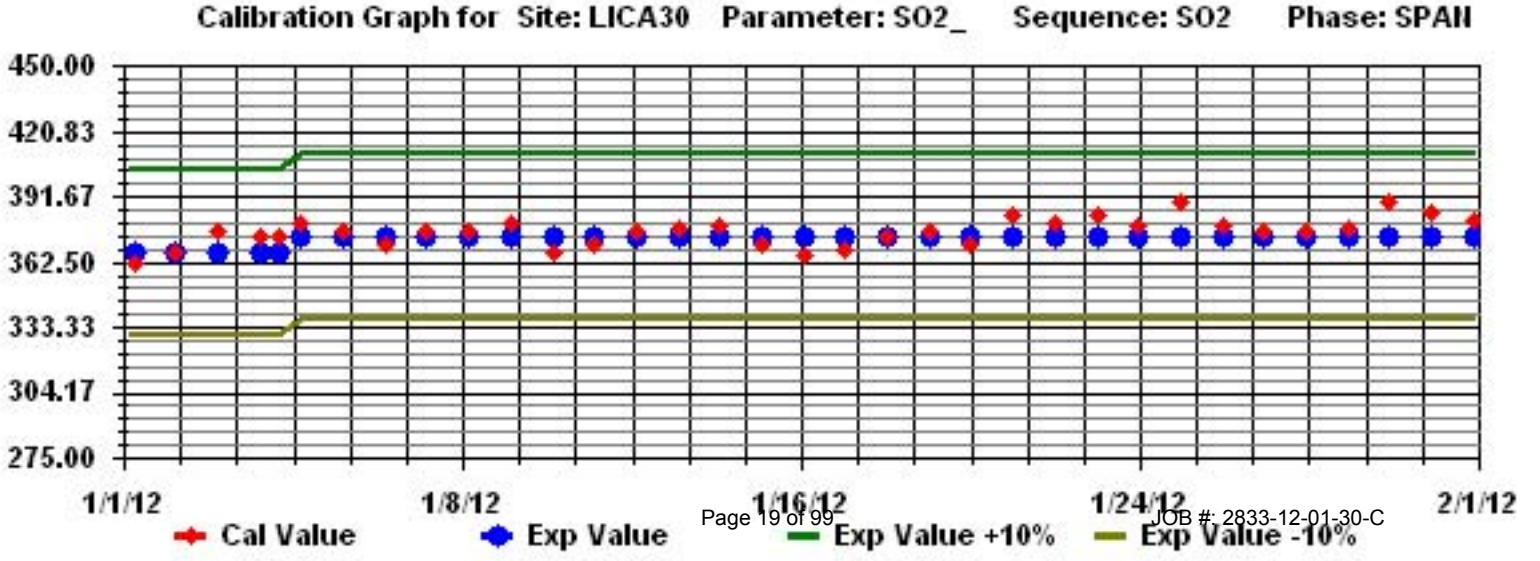
Logger : 30 Parameter : SO2_
Class Limits (PPB)

>= 340
< 340
< 170
< 110
< 60
< 20

Site : LICA30
Period : 01/01/12-01/31/12
Level : 10



JOB #: 2833-12-01-30-C


Calibration Graph for Site: LICA30 Parameter: SO2_ Sequence: SO2 Phase: SPAN
450.00
420.83
391.67
362.50
333.33
304.17
275.00
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2012

HYDROGEN SULPHIDE (H_2S) hourly averages in ppb

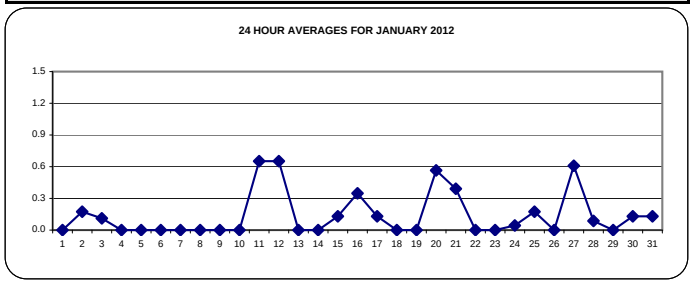
MST

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	**IZS**	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**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0.2	24
3	0	1	0	**IZS**	0	1	0	0	0	0	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0	0	1	0.1	24
4	0	0	**IZS**	0	0	0	0	0	0	0	0	0	**M**	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23
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	24
6	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0.0	24
7	0	0	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
8	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
9	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
10	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
11	0	1	0	0	0	0	1	1	0	0	1	1	1	1	1	1	1	1	**IZS**	1	0	1	1	1	1	**0.7**	24
12	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	**IZS**	0	0	0	0	0	0	1	**0.7**	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	0	0	**IZS**	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	**IZS**	1	0	0	0	0	1	0	0	1	1	0.1	24
16	0	0	0	1	0	0	0	1	0	1	1	0	0	**IZS**	0	0	0	1	1	0	1	1	0	0	1	0.3	24
17	0	0	0	0	0	0	0	0	1	1	0	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	1	0.1	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	0	0.0	24
19	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
20	0	0	0	0	0	0	0	0	0	**IZS**	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	24
21	1	1	1	1	1	1	1	1	**IZS**	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24
22	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
23	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
24	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.0	24
25	0	0	0	0	**IZS**	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	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**	1	0	1	1	1	0	0	0	1	1	1	1	1	0	1	1	0	0	1	1	1	1	0.6	24
28	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.1	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	**IZS**	0	0.0	24
30	0	1	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
31	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	**IZS**	0	0	1	0.1	24
HOURLY MAX	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
HOURLY AVG	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2	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

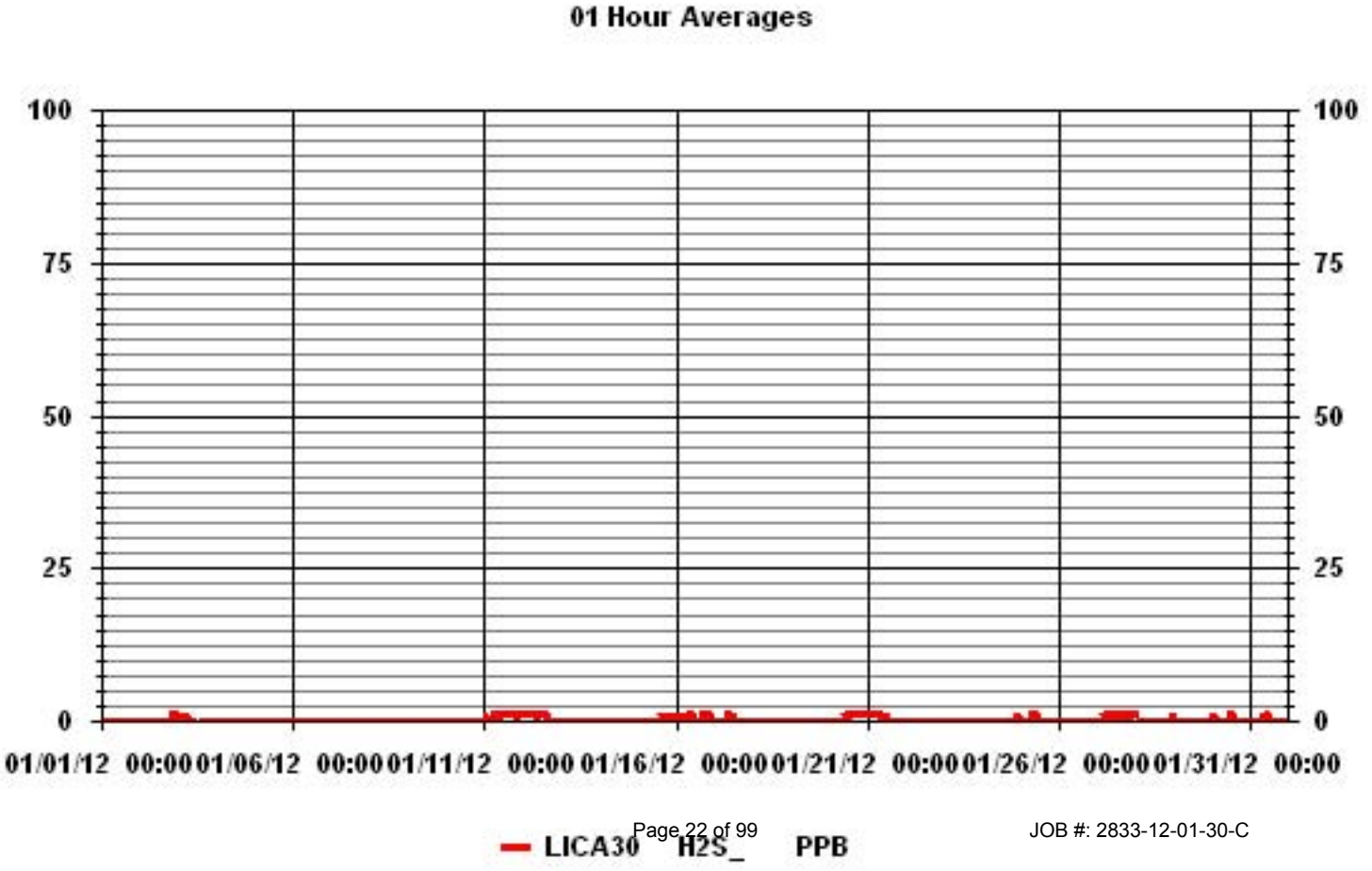
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

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:	99					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.7	PPB			ON DAY(S)	11, 12
				VAR-VARIOUS		
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		743	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:		99.9	%
STANDARD DEVIATION:	0.35		MONTHLY AVERAGE:		0.14	PPB



JOB #: 2833-12-01-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JANUARY 2012

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST

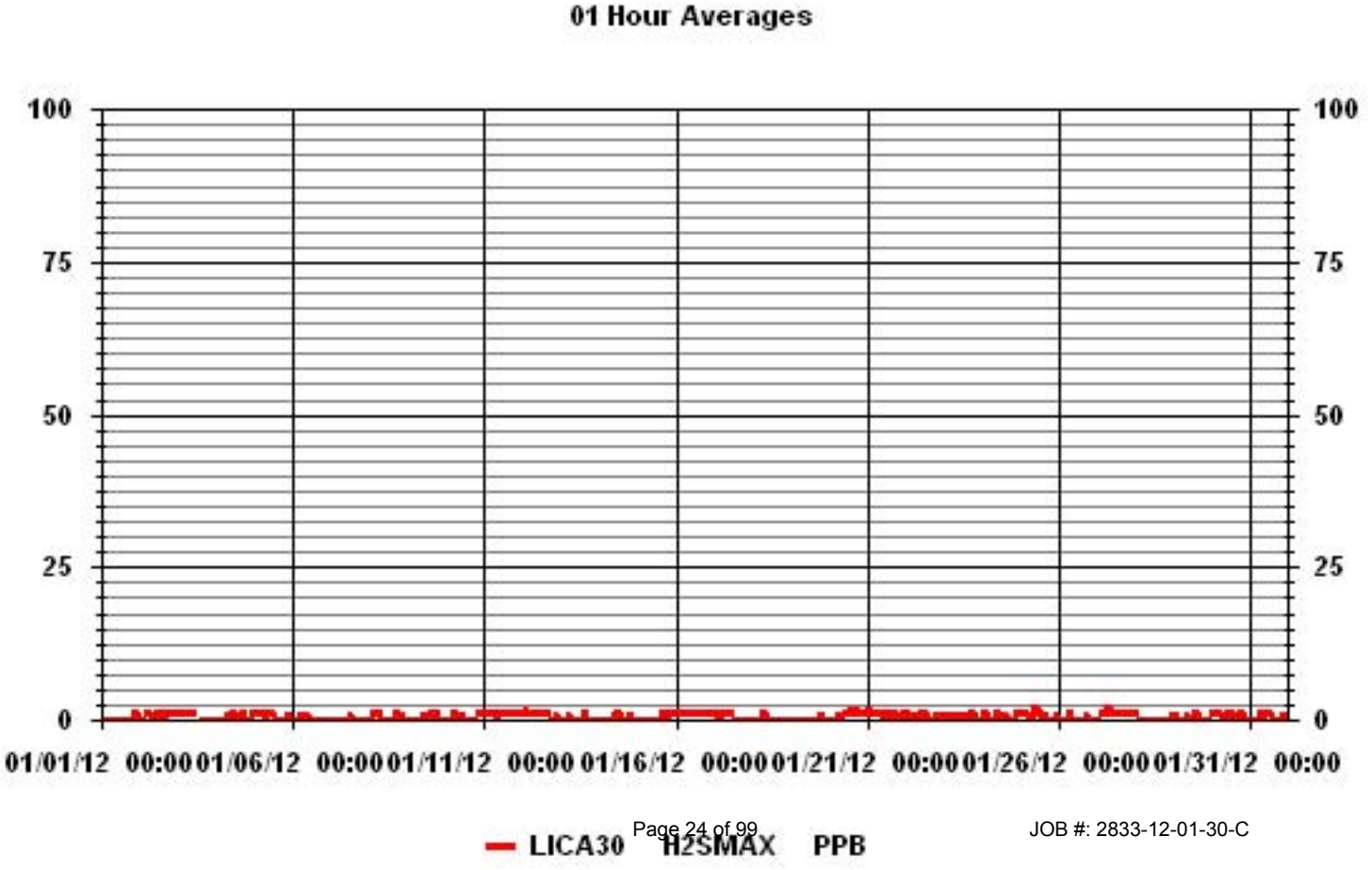
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0.1	24
2	0	0	0	0	**IZS**	1	1	0	0	0	0	1	1	0	0	0	1	1	1	1	1	1	1	1	1	0.5	24
3	1	1	1	**IZS**	1	1	1	1	1	1	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0	0	1	0.5	24
4	0	0	**IZS**	0	0	0	0	1	0	0	1	1	**M**	1	0	0	1	1	0	0	0	0	1	1	1	0.4	23
5	1	**IZS**	1	1	1	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0.4	24
6	**IZS**	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	0.1	24
7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	**IZS**	0	1	0.0	24
8	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	1	**IZS**	0	0	1	0.3	24
9	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	1	**IZS**	0	0	0	1	0.2	24
10	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	**IZS**	1	1	1	1	1	0.3	24
11	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1.0	24
12	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	0	0	0	1	0	0	2	0.8	24
13	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	**IZS**	0	0	0	0	0	0	0	1	0.1	24
14	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	**IZS**	0	0	0	1	0	0	0	0	1	0.2	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	0	0	1	1	1	1	1	1	0.3	24
16	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1.0	24
17	1	1	0	1	0	1	1	1	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24
18	0	0	0	0	0	0	1	1	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
19	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0.0	24
20	0	0	0	0	0	0	1	0	0	**IZS**	1	1	1	1	2	1	1	1	2	1	1	1	1	1	2	0.7	24
21	1	2	1	1	1	1	1	1	**IZS**	0	1	1	1	1	0	0	1	1	1	0	0	0	1	1	2	0.8	24
22	0	1	1	0	0	1	0	**IZS**	0	0	1	1	1	1	0	0	0	0	0	1	0	1	0	0	1	0.4	24
23	0	0	1	0	0	0	**IZS**	1	0	0	1	0	0	1	0	0	0	1	1	0	0	0	0	0	1	0.3	24
24	0	1	1	0	0	**IZS**	0	0	1	1	1	0	0	1	0	1	0	0	0	0	0	1	1	1	1	0.4	24
25	1	1	1	1	**IZS**	1	0	1	2	2	2	1	1	1	0	1	0	0	0	0	0	0	1	0	2	0.7	24
26	0	0	0	**IZS**	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.1	24
27	0	0	**IZS**	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
28	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.1	24
29	**IZS**	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	**IZS**	1	0.2	24
30	1	1	1	1	1	1	0	0	0	0	1	1	1	0	0	0	0	1	1	1	0	0	**IZS**	0	1	0.5	24
31	0	0	0	0	0	0	1	1	0	1	1	1	1	0	0	0	0	0	0	0	1	**IZS**	1	0	1	0.3	24
HOURLY MAX	1	2	2	1	1	1	2	2	2	2	2	1	1	1	2	1	1	1	2	1	1	1	1	1			
HOURLY AVG	0.3	0.4	0.4	0.3	0.3	0.6	0.5	0.5	0.3	0.4	0.6	0.5	0.5	0.4	0.3	0.4	0.4	0.4	0.3	0.4	0.3	0.4	0.4	0.4			

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:	276					
MAXIMUM INSTANTANEOUS VALUE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		743	HRS
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.52					



JOB #: 2833-12-01-30-C

LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

January 2012

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	4.68	2.12	2.83	1.41	2.83	4.39	3.82	1.41	1.41	10.49	20.85	11.06	11.77	11.91	3.26	5.67	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	4.68	2.12	2.83	1.41	2.83	4.39	3.82	1.41	1.41	10.49	20.85	11.06	11.77	11.91	3.26	5.67	

Calm : .00 %

Total # Operational Hours : 705

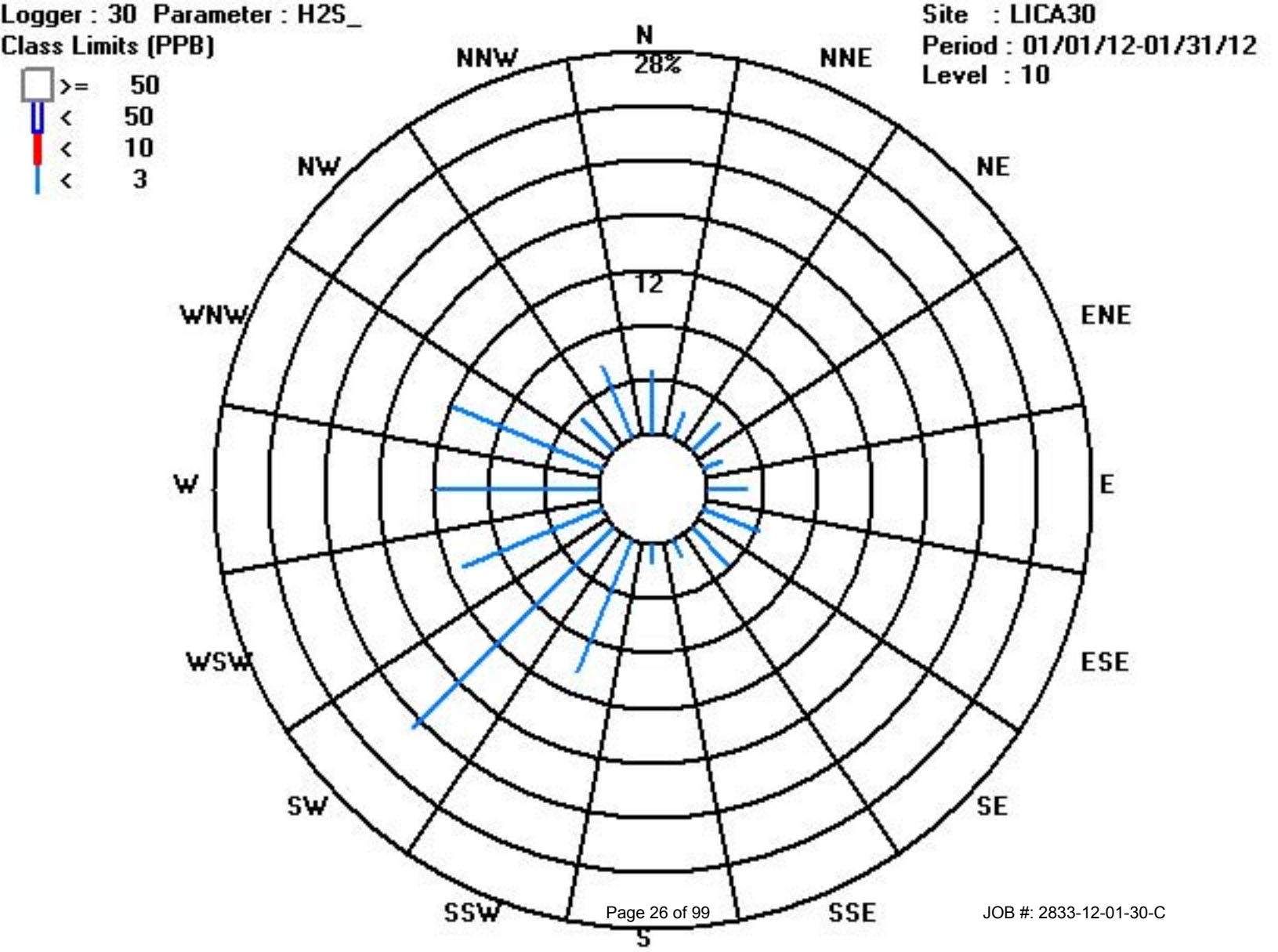
Distribution By Samples

Direction

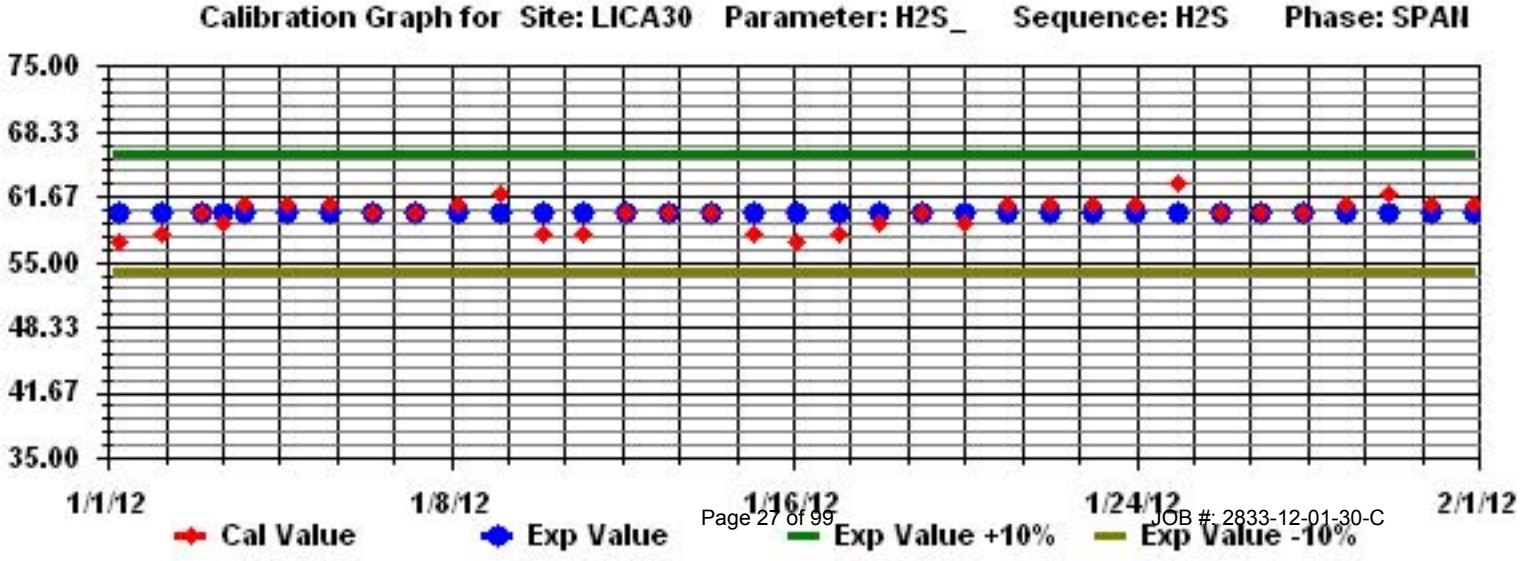
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3	33	15	20	10	20	31	27	10	10	74	147	78	83	84	23	40	705
<	10																	
<	50																	
>=	50																	
	Totals	33	15	20	10	20	31	27	10	10	74	147	78	83	84	23	40	

Calm : .00 %

Total # Operational Hours : 705



JOB #: 2833-12-01-30-C


Calibration Graph for Site: LICA30 Parameter: H2S_ Sequence: H2S Phase: SPAN
75.00
68.33
61.67
55.00
48.33
41.67
35.00
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

JANUARY 2012

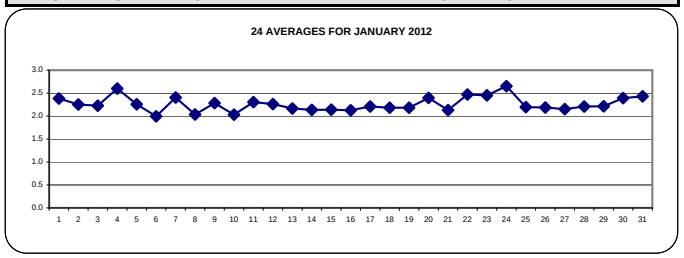
TOTAL HYDROCARBONS hourly averages in ppm

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2	2	2.1	2.1	2.1	**IZS**	2.1	2.1	2.1	2.2	2.4	2.4	2.5	2.6	2.6	2.6	2.7	2.6	2.6	2.6	2.6	2.7	2.6	2.5	2.7	2.4	24
2	2.6	2.4	2.4	2.4	**IZS**	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.6	2.3	24
3	2.4	2.4	2.2	**IZS**	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.2	2.3	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.2	24
4	2.3	2.5	**IZS**	2.8	2.7	2.7	2.6	2.4	2.5	**C**	**C**	**C**	**C**	2.5	2.4	2.5	2.6	2.8	2.8	2.8	2.7	2.6	2.7	2.5	2.8	2.6	24
5	2.6	**IZS**	**3.1**	3	2.3	2.2	2.5	2.8	2.9	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2.1	2.1	2	**3.1**	2.3	24
6	**IZS**	1.9	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	**IZS**	2.0	2.0	24
7	2	2	2.1	2.4	2.6	2.6	2.6	2.7	2.7	2.7	2.6	2.5	2.4	2.5	2.5	2.4	2.4	2.3	2.3	2.3	2.3	2.2	**IZS**	2.2	2.7	2.4	24
8	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	**IZS**	2	2.1	2.2	2.0	24
9	2.2	2.2	2.2	2.1	2.3	2.3	2.3	2.4	2.3	2.3	2.2	2.3	2.3	2.4	2.5	2.6	2.6	2.4	2.4	2.3	**IZS**	2	2	1.9	2.6	2.3	24
10	1.9	1.9	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2.0	24
11	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.4	2.4	2.4	2.3	2.3	2.4	2.5	2.5	2.5	**IZS**	2.4	2.4	2.4	2.5	2.5	2.5	2.3	24
12	2.4	2.4	2.3	2.3	2.1	2.2	2.1	2.1	2.1	**M**	**C**	2.2	2.3	2.3	2.3	2.2	2.3	**IZS**	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.3	23
13	2.4	2.4	2.5	2.4	2.4	2.3	2.1	2.1	2	2	2	2.1	2.1	2.1	2.1	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.2	24
14	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.4	2.2	2.1	2.1	2.1	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.1	24
15	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24
16	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	**IZS**	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.1	24
17	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.2	2.3	2.6	2.5	2.6	2.2	24
18	2.3	2.3	2.4	2.4	2.4	2.2	2.2	2.1	2.1	2.2	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.4	2.2	24
19	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.4	2.3	2.2	**IZS**	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.4	2.2	24
20	2.2	2.3	2.3	2.4	2.2	2.2	2.2	2.3	2.5	**IZS**	2.7	2.6	2.5	2.4	2.4	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.3	2.7	2.4	24
21	2.3	2.3	2.3	2.3	2.3	2.1	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	2.1	2.3	2.1	24
22	2.1	2.1	2.2	2.2	2.5	2.5	2.7	**IZS**	2.7	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.5	2.5	2.7	2.5	24
23	2.6	2.7	2.6	2.4	2.3	2.3	**IZS**	2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.6	2.5	2.5	2.7	2.8	2.5	24
24	2.9	2.8	2.7	2.6	2.5	**IZS**	2.4	2.3	2.5	2.5	2.5	2.6	2.7	2.8	2.9	2.8	2.8	2.7	2.7	2.6	2.7	2.7	2.7	2.6	2.9	**2.7**	24
25	2.4	2.3	2.2	2.2	**IZS**	2.2	2.2	2.3	2.4	2.4	2.4	2.4	2.3	2.2	2.2	2.2	2.1	2	2	2	2	2	2	2.1	2.4	2.2	24
26	2.1	2.1	2.1	**IZS**	2.1	2.3	2.4	2.4	2.4	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.2	24
27	2.3	2.2	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.1	2.3	2.2	24
28	2.1	**IZS**	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.4	2.3	2.4	2.2	24
29	**IZS**	2.2	2.4	2.5	2.3	2.2	2.2	2.2	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	**IZS**	2.5	2.2	24
30	2.2	2.2	2.3	2.3	2.4	2.3	2.3	2.7	2.5	2.3	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.3	2.4	2.4	2.5	2.4	**IZS**	2.3	2.7	2.4	24
31	2.2	2.3	2.2	2.1	2.2	2.2	2.3	2.5	2.5	2.4	2.3	2.3	2.3	2.3	2.4	2.5	2.5	2.6	2.6	2.5	2.6	**IZS**	3	**3.1**	**3.1**	2.4	24
HOURLY MAX	2.9	2.8	3.1	3.0	2.7	2.7	2.7	2.8	2.9	2.7	2.7	2.6	2.7	2.8	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	3.0	3.1			
HOURLY AVG	2.3	2.2	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3			

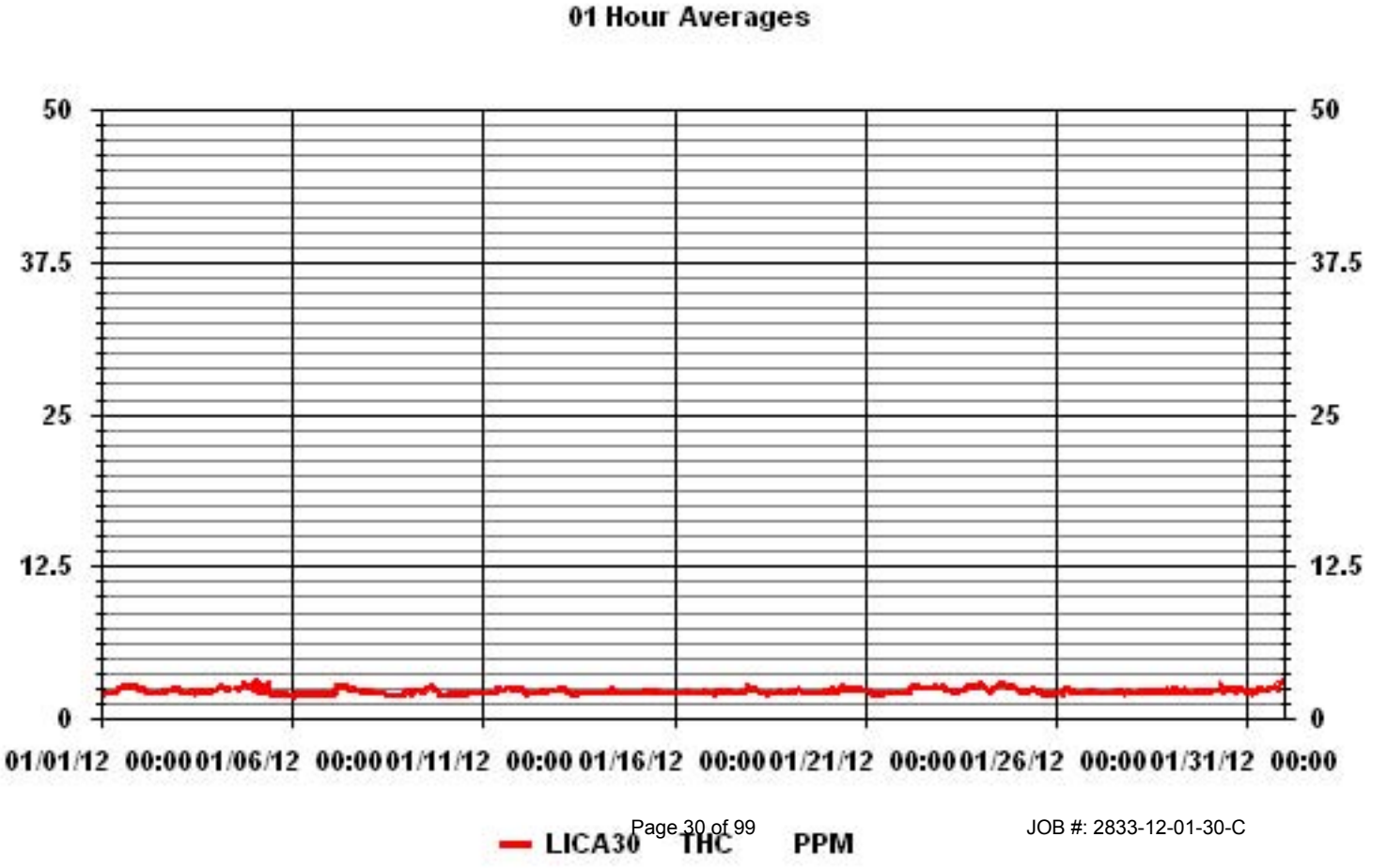
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	705					
MAXIMUM 1-HR AVERAGE:	3.1	PPM	@ HOUR(S)	2, 23	ON DAY(S)	5, 31
MAXIMUM 24-HR AVERAGE:	2.7	PPM			ON DAY(S)	24
					VAR- VARIOUS	
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		743	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:		99.9	%
STANDARD DEVIATION:	0.21		MONTHLY AVERAGE:		2.26	PPM



JOB #: 2833-12-01-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JANUARY 2012

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

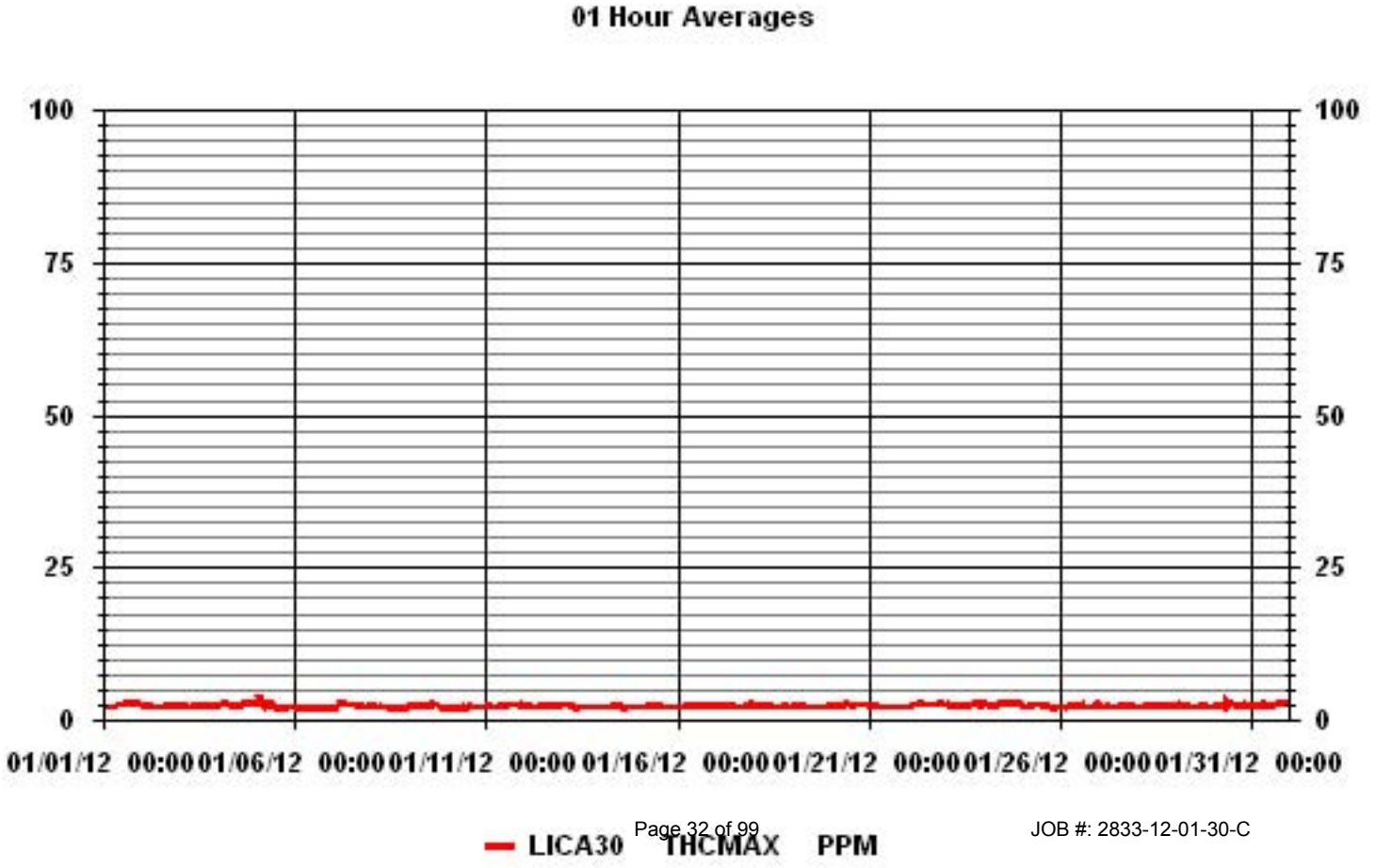
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2.1	2.1	2.1	2.1	2.1	**IZS**	2.1	2.1	2.2	2.4	2.5	2.5	2.6	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.8	2.7	2.7	2.7	2.8	2.5	24
2	2.8	2.6	2.4	2.4	**IZS**	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.8	2.3	24
3	2.4	2.5	2.4	**IZS**	2.4	2.2	2.1	2.1	2.3	2.3	2.2	2.2	2.2	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.5	2.3	24
4	2.4	2.7	**IZS**	2.9	2.8	2.7	2.7	2.6	2.5	**C**	**C**	**C**	**C**	2.7	2.5	2.6	2.7	2.8	2.9	2.8	2.7	2.8	2.9	2.8	2.9	2.7	24
5	2.8	**IZS**	**3.9**	3.4	2.9	2.3	2.7	3	3.1	2.3	2.2	2.5	2	2	2	2	2	2	2	2	2.1	2.2	2.1	2.1	**3.9**	2.4	24
6	**IZS**	2	2	2	2	2	2	2	2	2	2	2.1	2	2.1	2.1	2	2	2	2	2	2	2	2	**IZS**	2.1	2.0	24
7	2	2	2.2	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.6	2.5	2.5	2.5	2.5	2.4	2.5	2.3	2.3	2.4	2.4	2.3	**IZS**	2.3	2.7	2.4	24
8	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.1	2.1	2.1	2	2	1.9	1.9	2	2	2	2	2	2	**IZS**	2.1	2.2	2.2	2.1	24
9	2.2	2.2	2.2	2.2	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.4	2.4	2.6	2.6	2.6	2.5	2.4	2.3	**IZS**	2	2	2	2.6	2.3	24
10	2	2	2	2	2.1	2	2	2	2	2	2.4	2.1	2	2.1	2.4	2.1	2.1	2.1	2.1	**IZS**	2.1	2.1	2.1	2.2	2.4	2.1	24
11	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.5	2.5	2.4	2.4	2.4	2.3	2.4	2.5	2.5	2.6	**IZS**	2.5	2.5	2.4	2.6	2.6	2.6	2.4	24
12	2.5	2.4	2.4	2.6	2.3	2.4	2.2	2.1	2.1	**M**	**C**	2.3	2.3	2.3	2.3	2.2	2.4	**IZS**	2.3	2.3	2.3	2.3	2.4	2.4	2.6	2.3	23
13	2.5	2.5	2.5	2.5	2.6	2.4	2.2	2.2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	**IZS**	2.1	2.1	2.2	2.1	2.1	2.2	2.1	2.6	2.2	24
14	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.5	2.5	2.3	2.2	2.2	2.2	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.2	24
15	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24
16	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	**IZS**	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	24
17	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	**IZS**	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.5	2.7	2.7	2.2	24
18	2.5	2.4	2.4	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.2	**IZS**	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.5	2.2	24
19	2.2	2.3	2.2	2.3	2.3	2.4	2.4	2.4	2.4	2.3	**IZS**	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.4	2.2	24
20	2.2	2.3	2.4	2.4	2.3	2.2	2.4	2.6	2.5	**IZS**	2.8	2.7	2.6	2.5	2.4	2.5	2.5	2.5	2.5	2.5	2.7	2.5	2.5	2.4	2.8	2.5	24
21	2.3	2.3	2.4	2.3	2.3	2.2	2.1	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.4	2.2	24
22	2.1	2.1	2.2	2.4	2.5	2.6	2.8	**IZS**	2.8	2.6	2.6	2.6	2.5	2.6	2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.8	2.5	24
23	2.6	2.7	2.7	2.5	2.3	2.3	**IZS**	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.5	2.6	2.7	2.8	2.7	2.6	2.5	2.8	2.8	2.5	24
24	2.9	2.8	2.8	2.6	2.5	**IZS**	**2.5**	2.4	2.6	2.7	2.7	2.7	2.7	2.8	2.9	2.9	2.8	2.7	2.8	2.7	2.8	2.8	2.8	2.7	2.9	2.7	24
25	2.6	2.3	2.3	2.2	**IZS**	2.2	2.2	2.4	2.6	2.5	2.6	2.5	2.5	2.3	2.2	2.3	2.2	2.1	2.1	2	2	2.1	2.1	2.1	2.6	2.3	24
26	2.1	2.1	2.2	**IZS**	2.2	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.2	2.6	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.4	2.6	2.6	2.3	24
27	2.6	2.3	**IZS**	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.1	2.6	2.2	24
28	2.1	**IZS**	2.2	2.1	2.2	2.2	2.2	2.2	2.5	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.4	2.6	2.5	2.6	2.3	24
29	**IZS**	2.4	2.7	2.7	2.5	2.2	2.2	2.5	2.6	2.3	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.3	2.2	**IZS**	2.7	2.3	24
30	2.2	2.3	2.4	2.4	2.6	2.5	2.3	3.3	3	2.4	2.6	2.6	2.6	2.5	2.4	2.4	2.4	2.3	2.4	2.6	2.6	2.5	**IZS**	2.3	3.3	2.5	24
31	2.3	2.3	2.3	2.2	2.3	2.2	2.3	2.6	2.6	2.5	2.3	2.3	2.3	2.3	2.4	2.5	2.6	2.6	2.6	2.6	2.6	**IZS**	3.1	3.2	3.2	2.5	24
HOURLY MAX	3	3	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3			
HOURLY AVG	2.3	2.3	2.4	2.4	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	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
BB	- BELOW BACKGROUND OF 1.5 PPM		

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	705						
MAXIMUM INSTANTANEOUS VALUE:	3.9	PPM	@ HOUR(S)	2	ON DAY(S)	5	
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS		
MONTHLY CALIBRATION TIME:	5	HRS					
STANDARD DEVIATION:	0.24						



JOB #: 2833-12-01-30-C

LICA30
THC / WDR Joint Frequency Distribution (Percent)

January 2012

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	4.39	2.12	2.69	1.41	2.83	4.39	3.82	1.41	1.41	10.49	20.99	11.06	11.77	11.77	3.12	5.67	99.43
<	10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.28	.00	.00	.14	.14	.00	.56
<	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.39	2.12	2.69	1.41	2.83	4.39	3.82	1.41	1.41	10.49	21.27	11.06	11.77	11.91	3.26	5.67	

Calm : .00 %

Total # Operational Hours : 705

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	31	15	19	10	20	31	27	10	10	74	148	78	83	83	22	40	701
<	10.0											2			1	1		4
<	50.0																	
>=	50.0																	
	Totals	31	15	19	10	20	31	27	10	10	74	150	78	83	84	23	40	

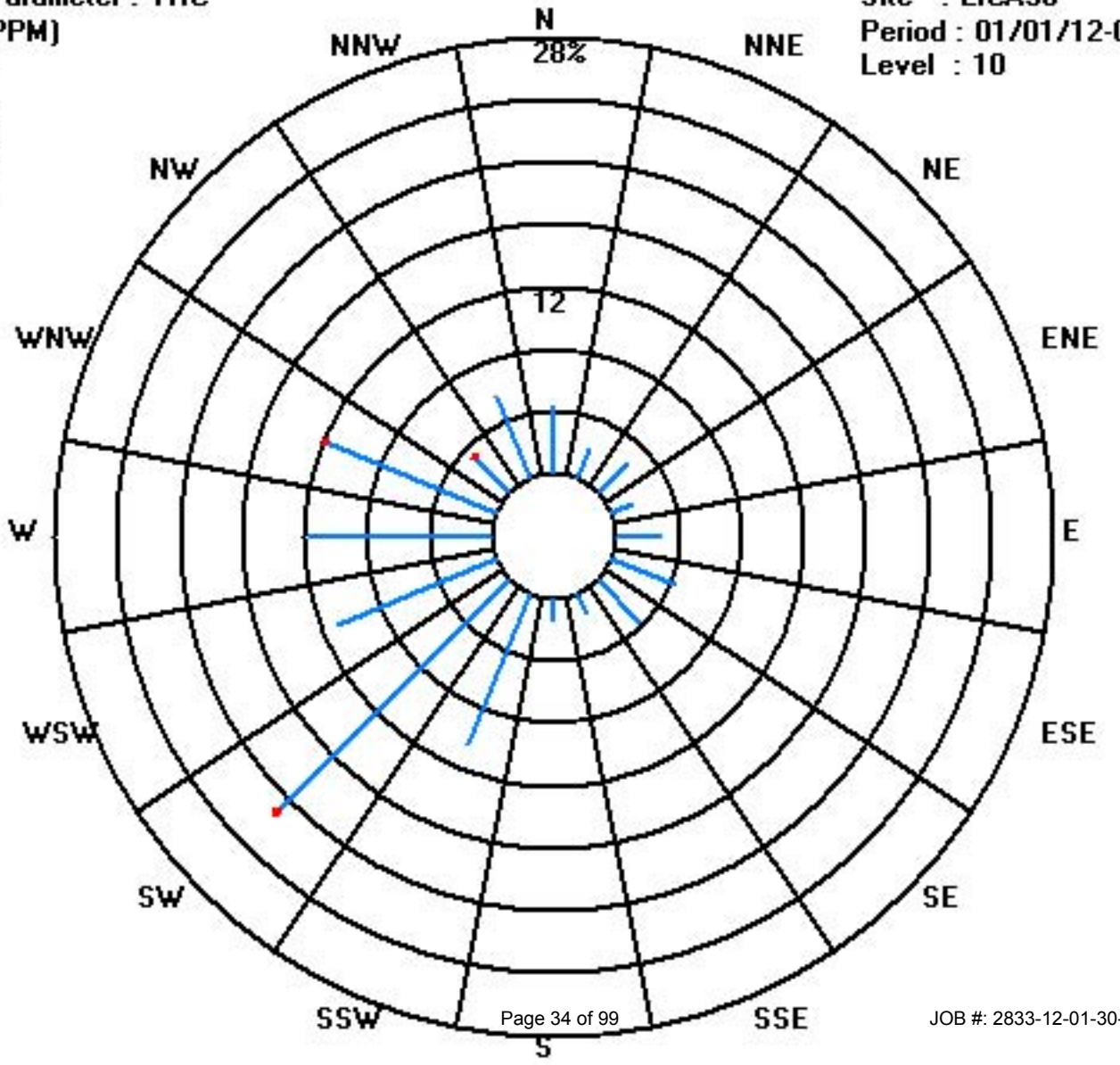
Calm : .00 %

Total # Operational Hours : 705

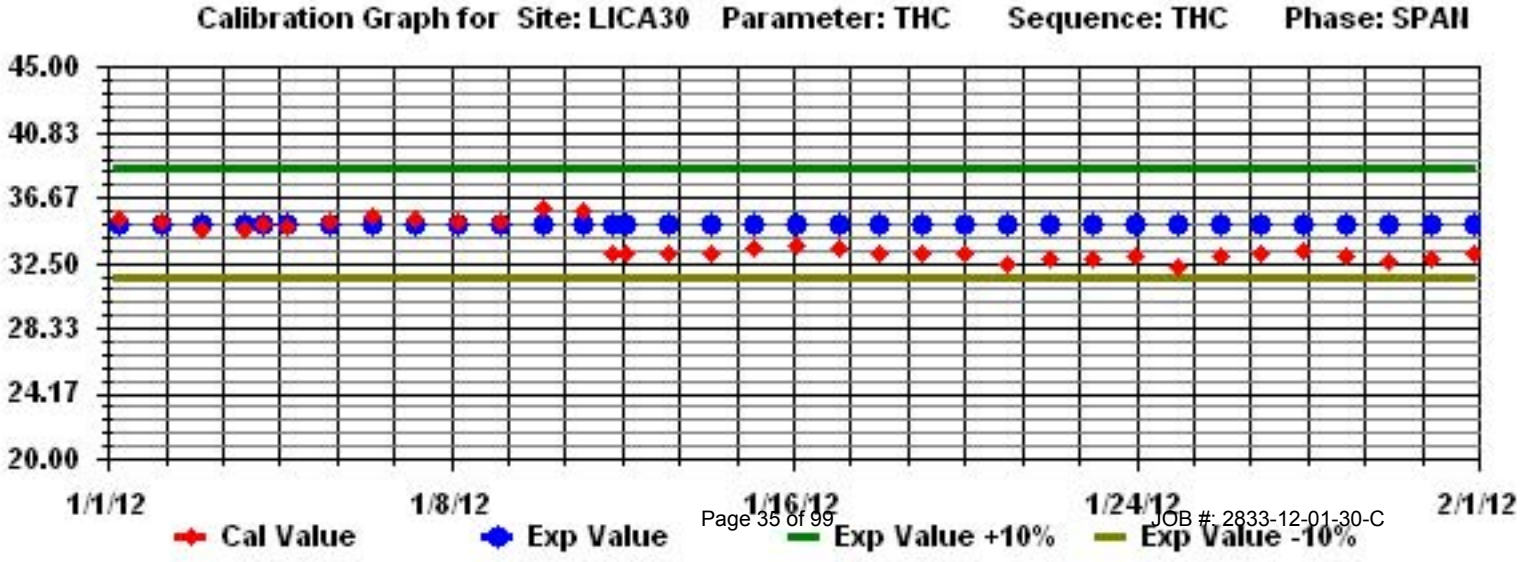
Logger : 30 Parameter : THC
Class Limits (PPM)

>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA30
Period : 01/01/12-01/31/12
Level : 10



JOB #: 2833-12-01-30-C


Calibration Graph for Site: LICA30 Parameter: THC Sequence: THC Phase: SPAN
45.00
40.83
36.67
32.50
28.33
24.17
20.00
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2012

NITROGEN DIOXIDE hourly averages in ppb

MST

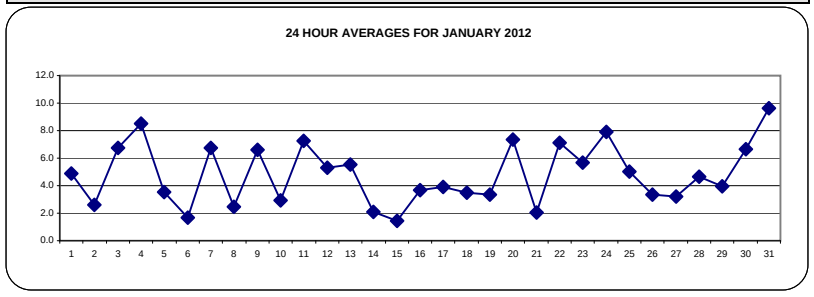
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	3	1	1	1	2	**IZS**	4	3	4	**C**	**M**	**C**	8	8	8	8	7	6	6	6	6	5	6	5	8	4.9	23
2	5	4	3	2	**IZS**	1	1	0	0	1	1	2	2	2	3	4	3	4	3	3	3	3	4	6	6	2.6	24
3	9	8	4	**IZS**	9	12	6	5	7	8	**C**	**C**	**C**	**C**	**C**	**C**	**C**	6	8	5	6	5	5	5	12	6.8	24
4	5	8	**IZS**	11	8	8	6	7	6	7	9	7	**M**	7	5	7	12	12	11	12	12	10	8	9	12	8.5	23
5	7	**IZS**	4	8	3	5	8	11	12	2	9	5	0	0	0	0	0	0	0	0	0	6	1	0	12	3.5	24
6	**IZS**	1	1	1	1	1	2	1	1	2	2	1	1	4	5	3	3	2	1	1	1	1	1	**IZS**	5	1.7	24
7	0	0	1	8	9	9	10	10	11	10	9	8	6	6	6	6	11	8	5	5	6	6	**IZS**	5	11	6.7	24
8	4	3	3	3	3	4	8	9	4	2	1	1	0	0	0	0	0	0	0	2	3	**IZS**	2	5	9	2.5	24
9	6	5	4	3	7	7	8	6	8	7	7	5	5	7	7	9	11	10	12	11	**IZS**	1	5	1	12	6.6	24
10	0	0	9	11	10	10	4	1	1	1	4	1	1	1	5	1	1	1	1	**IZS**	1	1	0	2	11	2.9	24
11	18	15	15	11	8	2	5	7	6	9	6	5	5	4	4	4	6	5	**IZS**	5	5	6	8	8	18	7.3	24
12	10	12	8	9	9	4	3	5	6	4	4	3	3	3	4	4	6	**IZS**	4	4	5	4	4	4	12	5.3	24
13	7	9	9	7	8	8	4	4	2	1	3	4	5	8	12	6	**IZS**	5	3	7	2	2	5	6	12	5.5	24
14	3	1	3	3	2	1	3	4	6	5	4	3	2	3	1	**IZS**	0	0	0	0	1	1	1	1	6	2.1	24
15	1	0	1	0	1	2	3	4	3	3	2	1	1	1	**IZS**	1	1	1	1	1	1	1	1	2	4	1.4	24
16	2	3	4	3	5	4	3	4	5	4	3	3	3	**IZS**	3	3	4	4	3	5	4	4	4	5	5	3.7	24
17	3	2	2	2	2	2	5	7	7	4	3	2	**IZS**	1	1	1	3	3	3	6	4	7	11	9	11	3.9	24
18	6	6	7	8	8	6	5	5	4	3	2	**IZS**	1	1	1	1	2	2	2	2	2	2	2	2	8	3.5	24
19	3	5	3	3	4	8	7	7	6	6	**IZS**	3	1	2	2	1	1	2	2	2	2	2	2	3	8	3.3	24
20	3	4	5	6	4	3	5	11	11	**IZS**	12	9	7	6	7	9	11	11	10	10	8	7	6	4	12	7.3	24
21	5	5	4	3	3	3	2	2	**IZS**	0	1	0	1	1	0	3	3	2	4	4	1	0	0	0	5	2.0	24
22	1	1	0	1	2	4	7	**IZS**	8	6	6	7	7	8	10	12	13	13	11	10	10	10	9	8	13	7.1	24
23	7	7	6	4	4	3	**IZS**	3	2	2	2	3	3	3	3	4	5	7	9	11	10	10	11	11	11	5.7	24
24	13	10	9	9	11	**IZS**	10	9	11	11	8	5	5	5	7	9	10	9	7	5	6	5	4	4	13	7.9	24
25	3	2	2	1	**IZS**	1	3	11	**23**	15	10	10	7	4	3	11	6	1	3	0	0	0	0	0	**23**	5.0	24
26	0	0	1	**IZS**	1	6	7	9	10	5	4	5	1	1	0	2	1	5	1	1	4	3	5	5	10	3.3	24
27	5	2	**IZS**	0	0	4	12	7	1	0	0	1	1	3	1	2	3	4	4	3	5	3	12	1	12	3.2	24
28	4	**IZS**	10	6	4	3	0	2	4	5	5	5	6	5	4	3	3	5	5	5	4	4	10	5	10	4.7	24
29	**IZS**	3	5	11	7	3	3	6	11	6	1	1	2	3	3	4	4	3	3	3	2	2	1	**IZS**	11	4.0	24
30	0	1	2	1	2	1	1	6	5	2	7	8	8	9	11	12	13	11	12	12	16	9	**IZS**	4	16	6.7	24
31	3	6	3	1	3	4	10	10	8	9	8	7	8	10	10	11	16	16	13	11	12	**IZS**	**23**	19	**23**	**9.6**	24
HOURLY MAX	18	15	15	11	11	12	12	11	23	15	12	10	8	10	12	12	16	16	13	12	16	10	23	19			
HOURLY AVG	4.7	4.3	4.4	4.7	4.8	4.4	5.2	5.9	6.4	4.8	4.8	4.1	3.6	4.0	4.3	4.9	5.5	5.3	4.9	5.1	4.7	4.1	5.2	4.8			

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

OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

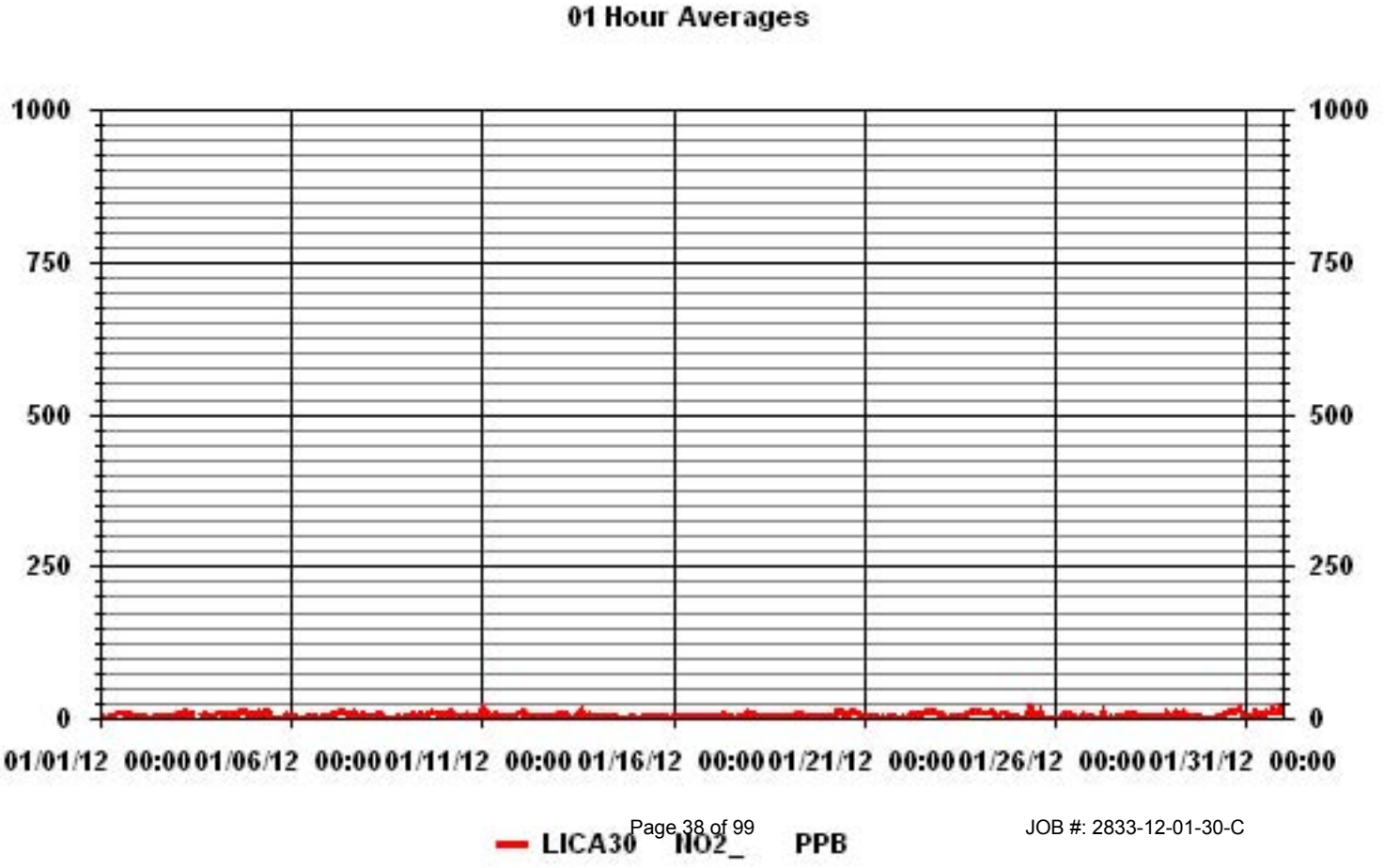


MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	649					
MAXIMUM 1-HR AVERAGE:	23	PPB	@ HOUR(S)	8, 22	ON DAY(S)	25, 31
MAXIMUM 24-HR AVERAGE:	9.6	PPB			ON DAY(S)	31

IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	742	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	99.7	%
STANDARD DEVIATION:	3.68		MONTHLY AVERAGE:	4.80	PPB

JOB #: 2833-12-01-30-C



JOB #: 2833-12-01-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JANUARY 2012

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

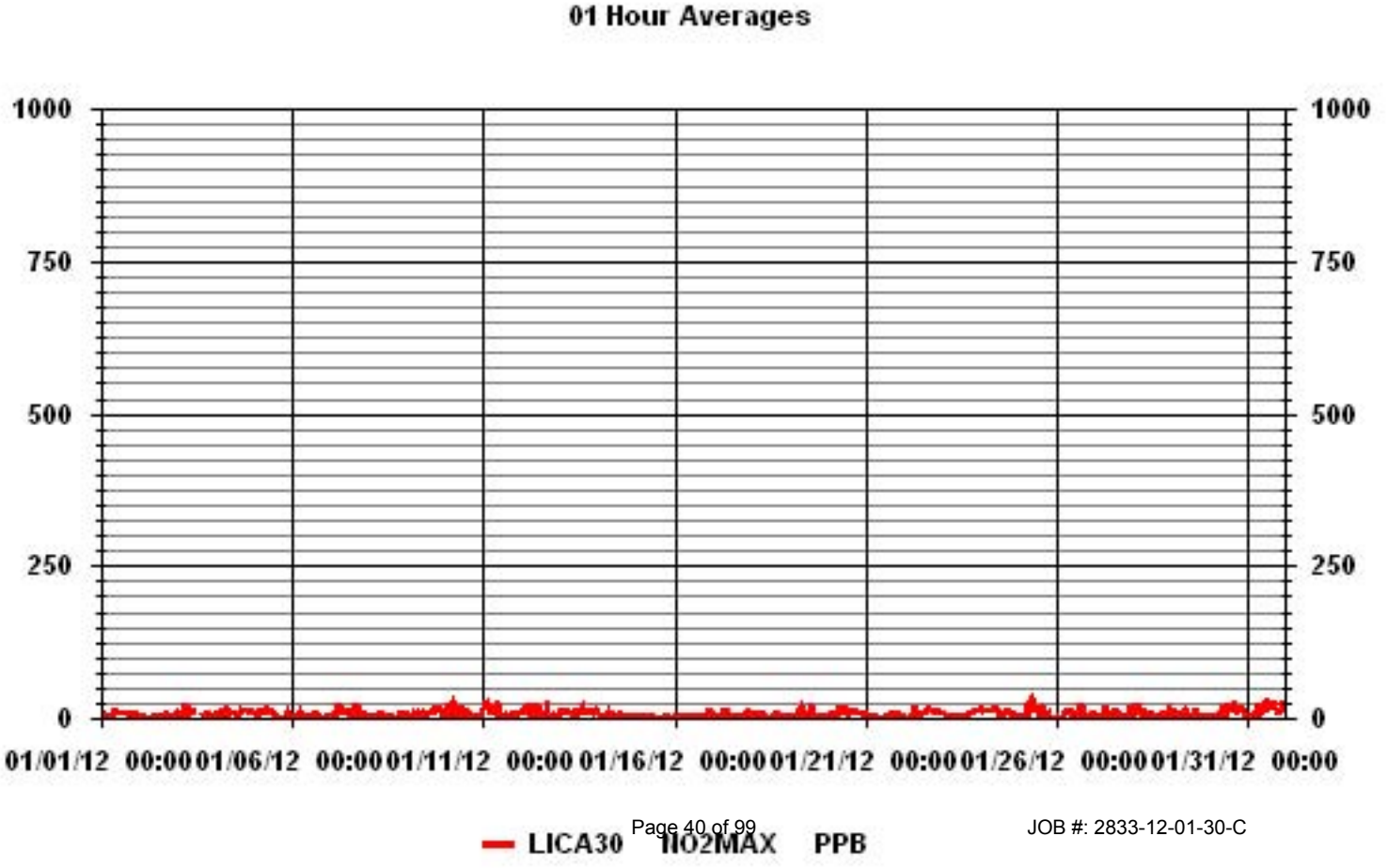
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	12	1	2	2	3	**IZS**	5	4	12	**C**	**M**	**C**	**C**	9	9	8	8	7	6	7	7	7	7	7	12	6.5	23
2	5	5	3	3	**IZS**	1	3	1	1	1	1	3	3	3	4	4	4	7	4	4	4	5	5	11	11	3.7	24
3	14	11	6	**IZS**	15	26	10	8	11	11	**C**	**C**	**C**	**C**	**C**	**C**	**C**	7	10	7	8	6	5	6	26	10.1	24
4	6	11	**IZS**	14	12	10	8	18	9	10	9	9	**M**	10	6	9	16	14	13	14	13	12	10	11	18	11.1	23
5	9	**IZS**	5	16	9	11	12	13	21	7	12	12	1	1	0	1	1	0	0	0	0	11	6	0	21	6.4	24
6	**IZS**	1	1	1	1	9	4	2	2	3	3	3	3	2	10	9	9	8	4	1	1	2	2	2	**IZS**	10	3.6	24
7	0	0	4	10	11	25	13	12	13	12	13	9	11	7	7	9	25	9	6	5	7	7	**IZS**	6	25	9.6	24
8	5	4	4	4	4	6	10	11	6	5	2	2	1	1	1	1	1	0	1	7	8	**IZS**	5	6	11	4.1	24
9	9	7	4	4	11	9	9	10	10	8	11	8	7	8	9	11	11	11	15	16	**IZS**	2	16	1	16	9.0	24
10	1	1	21	20	27	21	19	2	2	1	18	5	2	4	15	2	1	4	2	**IZS**	1	1	1	16	27	8.1	24
11	23	22	26	19	17	7	14	16	12	30	9	6	7	5	6	6	8	7	**IZS**	6	6	7	9	10	30	12.1	24
12	12	13	12	18	23	7	6	7	25	8	25	5	5	5	6	7	26	**IZS**	5	5	8	5	5	5	26	10.6	24
13	12	12	11	10	11	11	9	9	11	2	9	11	11	15	20	11	**IZS**	14	5	13	13	9	13	9	20	10.9	24
14	9	2	5	6	3	2	11	6	8	7	6	4	3	6	2	**IZS**	1	1	1	1	1	1	1	1	11	3.8	24
15	1	1	1	1	2	3	5	5	4	4	3	3	1	2	**IZS**	2	1	1	1	2	2	2	2	4	5	2.3	24
16	2	4	5	4	5	4	4	5	6	5	4	4	5	**IZS**	5	4	5	6	4	6	5	10	10	11	11	5.3	24
17	5	4	3	4	3	4	8	11	13	5	5	4	**IZS**	4	2	3	4	4	5	6	6	10	13	11	13	6.0	24
18	8	7	8	9	9	7	6	7	6	5	3	**IZS**	1	2	2	3	13	3	2	3	2	2	2	2	13	4.9	24
19	5	6	4	4	5	11	10	19	13	9	**IZS**	5	3	18	18	3	4	4	3	2	2	3	3	6	19	7.0	24
20	4	4	7	7	6	4	9	19	13	**IZS**	16	10	8	7	9	12	14	13	11	11	9	9	8	7	19	9.4	24
21	7	8	6	4	4	7	5	3	**IZS**	1	2	1	3	4	1	7	6	5	7	8	1	1	1	1	8	4.0	24
22	1	1	1	2	4	6	17	**IZS**	11	8	7	9	9	9	12	14	14	15	13	11	11	11	10	9	17	8.9	24
23	8	8	8	5	4	4	**IZS**	3	3	3	3	3	4	4	4	5	8	9	10	14	13	12	12	13	14	7.0	24
24	15	11	12	12	13	**IZS**	13	13	16	16	15	7	6	6	9	12	10	10	10	6	9	7	5	7	16	10.4	24
25	5	3	2	2	**IZS**	1	23	27	31	23	17	16	16	5	5	17	14	4	8	0	0	0	0	0	31	9.5	24
26	1	1	2	**IZS**	4	9	12	12	14	7	7	6	3	7	1	23	3	13	3	2	5	4	9	9	23	6.8	24
27	9	4	**IZS**	1	2	8	21	15	11	1	1	2	3	15	3	4	5	5	5	4	6	4	20	5	21	6.7	24
28	8	**IZS**	22	16	9	11	1	3	10	9	5	7	9	9	6	4	4	6	6	6	5	10	15	8	22	8.2	24
29	**IZS**	6	14	13	11	4	4	10	14	10	2	2	3	4	5	15	5	4	4	4	3	2	2	**IZS**	15	6.4	24
30	1	2	3	3	4	2	2	14	10	5	18	21	17	10	21	23	18	12	13	16	18	13	**IZS**	6	23	11.0	24
31	5	7	5	3	6	7	26	12	16	20	24	11	**32**	19	21	14	27	18	14	12	14	**IZS**	24	22	**32**	15.6	24
HOURLY MAX	23	22	26	20	27	26	26	27	31	30	25	21	32	19	21	23	27	18	15	16	18	13	24	22			
HOURLY AVG	7.0	5.8	7.1	7.5	8.2	8.2	10.0	9.9	11.1	8.1	8.9	6.7	6.5	7.2	7.5	8.4	9.1	7.2	6.3	6.6	6.3	6.0	7.6	7.2			

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:	685					
MAXIMUM INSTANTANEOUS VALUE:	32	PPB	@ HOUR(S)	12	ON DAY(S)	31
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		742	HRS
MONTHLY CALIBRATION TIME:	10	HRS				
STANDARD DEVIATION	5.85					



JOB #: 2833-12-01-30-C

LICA30
NO2_ / WDR Joint Frequency Distribution (Percent)

January 2012

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	4.71	2.14	2.85	1.42	2.85	4.42	3.71	1.42	1.42	10.57	20.57	11.14	11.71	12.00	3.28	5.71	100.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.71	2.14	2.85	1.42	2.85	4.42	3.71	1.42	1.42	10.57	20.57	11.14	11.71	12.00	3.28	5.71	

Calm : .00 %

Total # Operational Hours : 700

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	33	15	20	10	20	31	26	10	10	74	144	78	82	84	23	40	700
<	110																	
<	210																	
>=	210																	
	Totals	33	15	20	10	20	31	26	10	10	74	144	78	82	84	23	40	

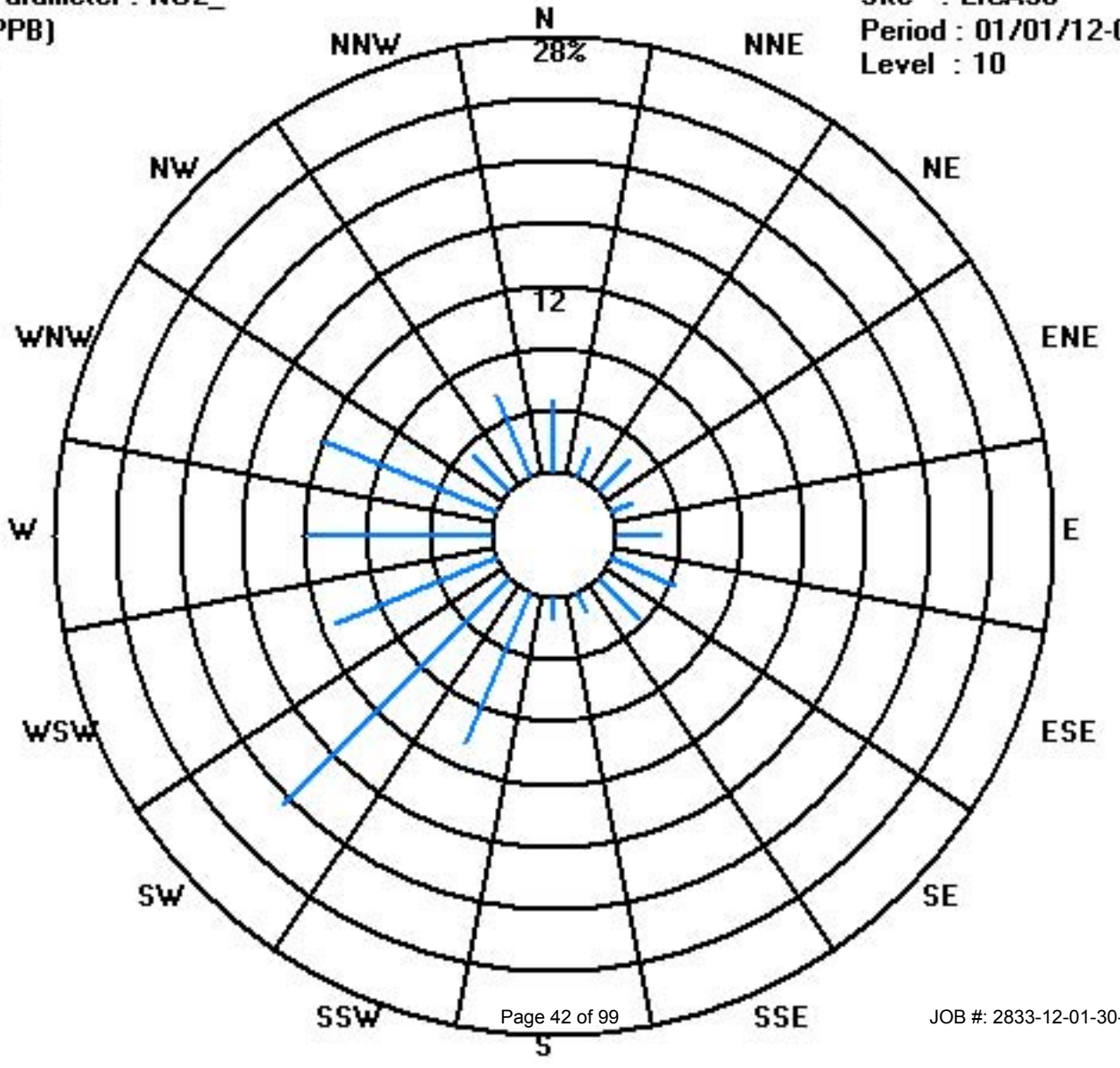
Calm : .00 %

Total # Operational Hours : 700

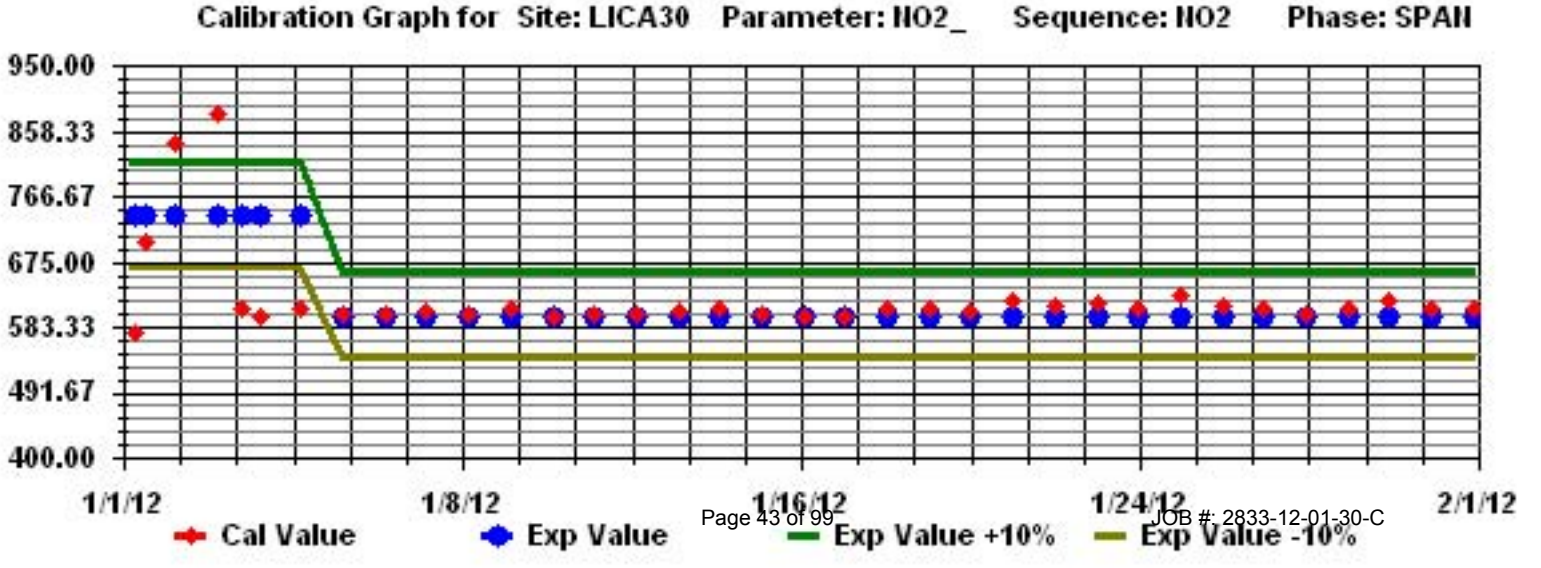
Logger : 30 Parameter : NO2_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA30
Period : 01/01/12-01/31/12
Level : 10



JOB #: 2833-12-01-30-C


Calibration Graph for Site: LICA30 Parameter: NO2_ Sequence: NO2 Phase: SPAN
950.00
858.33
766.67
675.00
583.33
491.67
400.00
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSCOICATION - MASKWA

JANUARY 2012

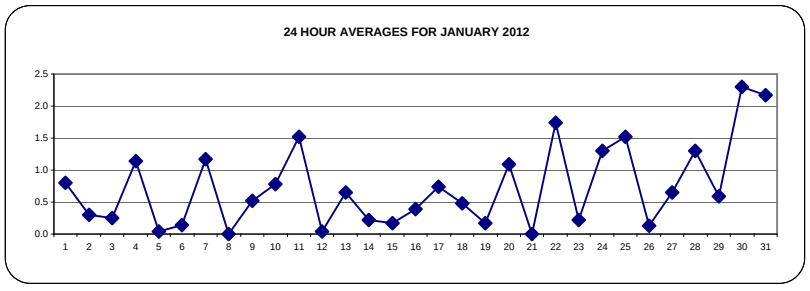
NITRIC OXIDE hourly averages in ppb

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	**IZS**	0	0	0	**C**	**M**	**C**	5	4	3	1	1	0	1	0	0	0	0	1	5	0.8	23
2	0	0	0	0	**IZS**	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0.3	24
3	1	0	0	**IZS**	1	1	0	0	0	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	1	0.3	24
4	0	0	**IZS**	0	0	0	0	4	0	2	8	7	**M**	3	0	0	1	0	0	0	0	0	0	0	8	1.1	23
5	0	**IZS**	0	0	0	0	0	0	1	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	1	1	1	0	0	0	0	0	0	0	**IZS**	1	0.1	24
7	0	0	0	0	0	1	1	1	1	2	5	4	4	3	2	1	2	0	0	0	0	0	**IZS**	0	5	1.2	24
8	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
9	0	0	0	0	0	0	0	0	1	1	1	1	0	1	2	2	1	0	1	0	**IZS**	0	1	0	2	0.5	24
10	0	0	2	2	2	3	1	0	0	0	2	1	0	0	4	0	0	0	0	**IZS**	0	0	0	1	4	0.8	24
11	8	6	6	1	0	0	1	1	1	2	2	1	2	1	1	1	1	0	**IZS**	0	0	0	0	0	8	1.5	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	1	0	0	0	1	0.0	24
13	0	0	0	0	0	0	0	0	1	0	1	1	2	3	4	1	**IZS**	1	0	1	0	0	0	0	4	0.7	24
14	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	**IZS**	0	0	1	0	0	0	0	0	1	0.2	24
15	0	0	0	0	0	0	0	0	0	1	1	1	0	1	**IZS**	0	0	0	0	0	0	0	0	0	1	0.2	24
16	0	0	0	0	0	0	0	0	0	0	0	1	0	**IZS**	2	1	1	1	0	0	0	1	1	1	2	0.4	24
17	0	1	0	0	0	1	1	1	1	1	2	2	**IZS**	1	0	1	1	0	0	1	0	1	1	1	2	0.7	24
18	1	1	1	1	1	0	1	1	2	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	2	0.5	24
19	0	0	0	0	0	0	0	0	0	1	**IZS**	1	0	1	1	0	0	0	0	0	0	0	0	0	1	0.2	24
20	0	0	0	0	0	0	0	0	0	**IZS**	7	6	4	3	2	2	1	0	0	0	0	0	0	0	7	1.1	24
21	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
22	0	0	0	0	0	0	0	**IZS**	1	2	2	4	5	6	6	5	2	1	1	1	1	1	1	1	6	1.7	24
23	0	1	1	0	0	0	**IZS**	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.2	24
24	0	0	0	0	0	**IZS**	1	1	2	5	5	3	3	3	3	2	1	0	0	1	0	0	0	0	5	1.3	24
25	0	0	0	0	**IZS**	0	0	3	8	8	6	5	3	0	0	2	0	0	0	0	0	0	0	0	8	1.5	24
26	0	0	0	**IZS**	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24
27	0	0	**IZS**	0	0	1	4	2	1	0	0	1	1	2	1	1	0	0	0	0	0	0	1	0	4	0.7	24
28	0	**IZS**	4	3	1	1	0	0	1	1	2	3	4	3	2	1	1	0	0	0	0	1	1	1	4	1.3	24
29	**IZS**	0	1	1	1	0	1	1	1	1	0	1	1	1	1	1	0	0	1	0	0	0	0	**IZS**	1	0.6	24
30	0	0	0	0	0	0	0	1	2	1	6	8	8	7	8	6	4	0	1	0	1	0	**IZS**	0	8	**2.3**	24
31	0	0	0	0	0	0	2	1	3	8	6	5	5	6	5	3	5	1	0	0	0	**IZS**	0	0	8	2.2	24
HOURLY MAX	8	6	6	3	2	3	4	4	8	8	8	8	8	7	8	6	5	1	1	1	1	1	1	1			
HOURLY AVG	0.4	0.3	0.5	0.3	0.2	0.3	0.4	0.6	0.9	1.3	2.1	2.2	1.8	1.8	1.7	1.1	0.8	0.1	0.2	0.1	0.1	0.1	0.2	0.2			

STATUS FLAG CODES

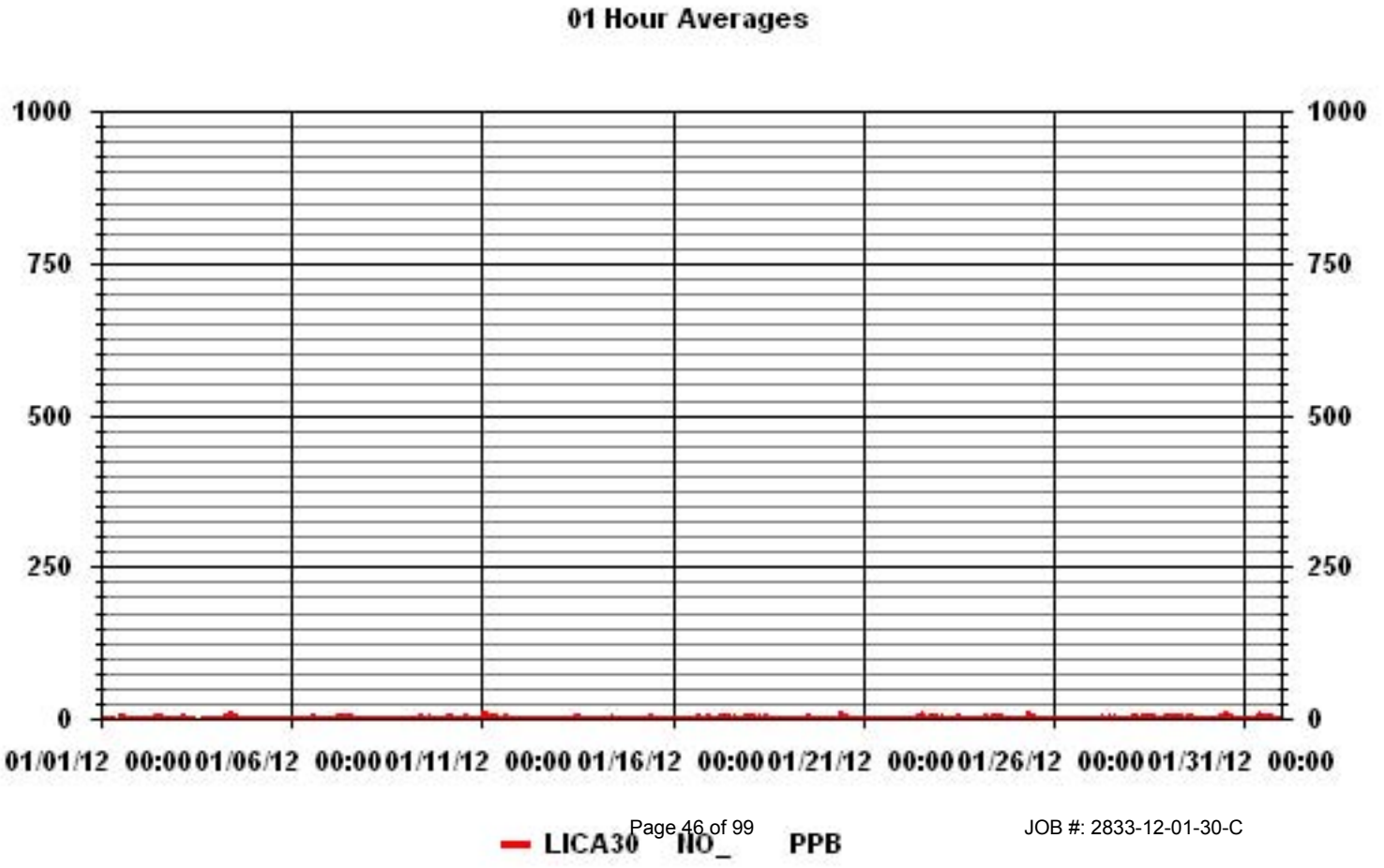
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			242				
MAXIMUM 1-HR AVERAGE:			8	PPB	@ HOUR(S)	VAR	ON DAY(S) VAR
MAXIMUM 24-HR AVERAGE:			2.3	PPB			ON DAY(S) 30
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:				742 HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:				99.7 %
STANDARD DEVIATION:	1.48		MONTHLY AVERAGE:				0.73 PPB

JOB #: 2833-12-01-30-C



JOB #: 2833-12-01-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JANUARY 2012

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

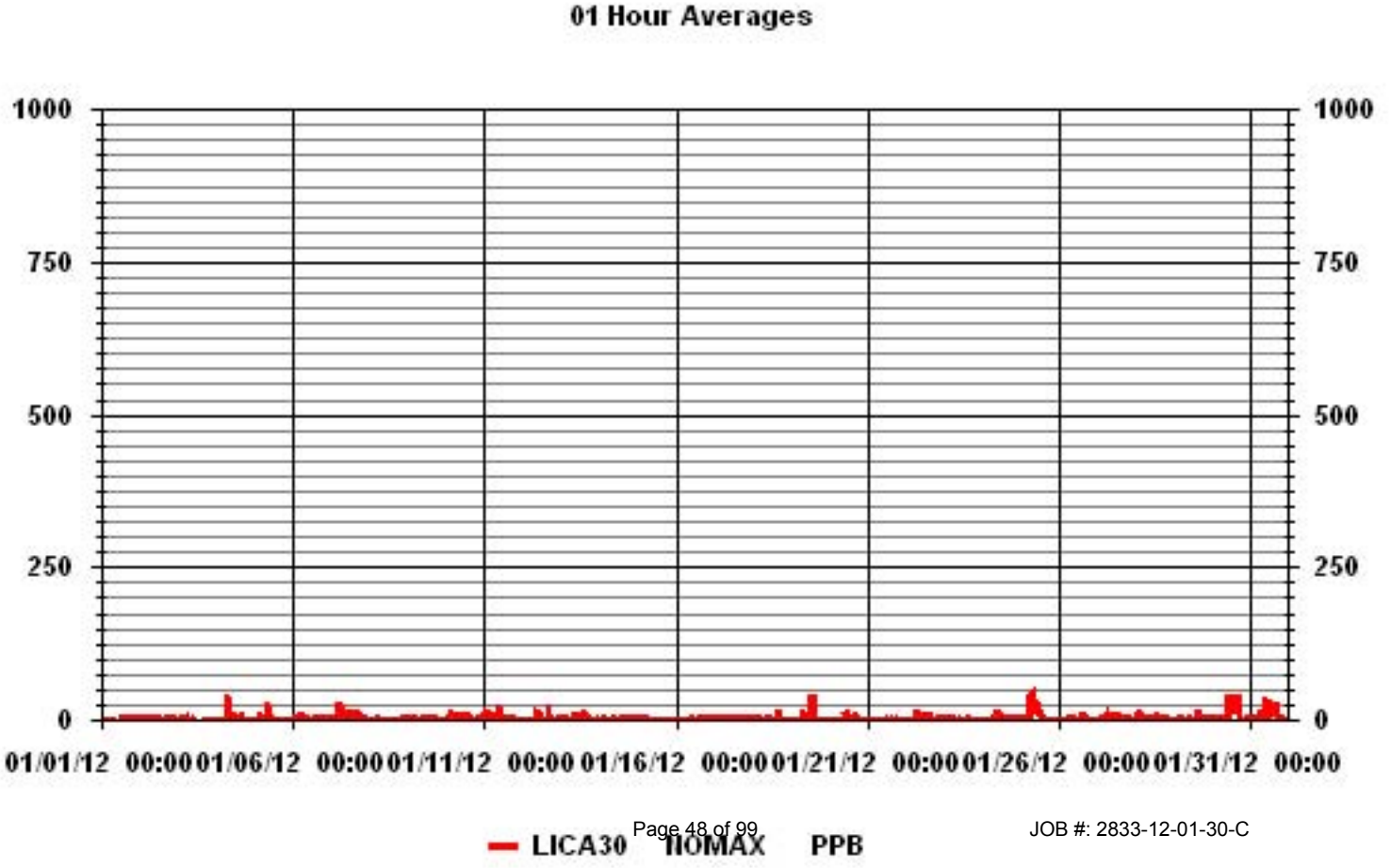
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	0	**IZS**	0	0	2	**C**	**M**	**C**	**C**	5	4	2	1	1	1	1	1	1	1	1	5	1.1	23
2	1	1	1	1	**IZS**	1	1	1	1	1	1	2	2	1	1	2	1	1	1	1	1	1	1	1	2	1.1	24
3	2	1	1	**IZS**	3	7	3	0	1	3	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	7	1.3	24
4	0	0	**IZS**	1	0	0	0	40	0	7	10	9	**M**	5	1	3	6	0	0	0	0	0	0	0	40	3.7	23
5	0	**IZS**	0	11	0	0	2	1	28	1	1	4	0	0	1	0	0	0	0	0	0	0	0	0	28	2.1	24
6	**IZS**	1	1	1	1	9	1	2	1	1	1	1	2	6	4	3	1	1	1	1	1	1	1	**IZS**	9	1.9	24
7	1	1	1	1	1	28	2	1	5	3	9	6	14	5	3	2	16	1	1	1	1	1	**IZS**	0	28	4.5	24
8	0	0	0	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	3	0.3	24
9	1	1	1	1	1	1	1	1	2	2	4	4	1	2	2	3	3	2	3	1	**IZS**	1	3	1	4	1.8	24
10	1	1	9	6	12	9	8	1	1	1	11	3	1	2	12	1	1	3	1	**IZS**	1	1	1	9	12	4.2	24
11	14	10	16	3	1	2	7	7	4	23	3	2	4	2	2	1	1	1	**IZS**	0	0	0	0	0	23	4.5	24
12	0	0	0	2	0	0	0	0	15	13	13	2	1	1	2	1	22	**IZS**	1	1	3	1	1	1	22	3.5	24
13	1	1	1	1	1	1	2	1	10	1	3	7	6	7	16	3	**IZS**	4	1	2	1	1	2	2	16	3.3	24
14	2	1	1	1	1	1	3	1	1	1	2	2	1	1	1	**IZS**	1	1	1	1	1	1	1	1	3	1.2	24
15	1	1	1	1	1	1	1	1	1	2	1	3	1	2	**IZS**	0	0	0	0	0	0	0	0	0	3	0.8	24
16	0	0	0	0	0	0	0	0	0	1	1	1	2	**IZS**	3	2	1	1	1	1	1	4	4	3	4	1.1	24
17	1	1	1	1	1	1	2	5	7	4	3	3	**IZS**	3	1	3	2	1	1	1	1	1	1	1	7	2.0	24
18	1	1	1	1	1	1	1	2	5	2	2	**IZS**	0	0	1	1	16	1	0	0	0	0	0	0	16	1.6	24
19	0	0	0	0	0	2	1	16	10	9	**IZS**	2	1	42	33	1	1	0	0	0	0	0	0	0	42	5.1	24
20	0	0	0	0	0	0	1	2	1	**IZS**	12	7	6	4	2	3	6	1	0	0	0	0	0	0	12	2.0	24
21	0	0	0	0	0	1	0	0	**IZS**	0	0	0	1	1	0	1	1	0	1	1	0	0	0	0	1	0.3	24
22	0	0	0	0	0	0	12	**IZS**	3	4	4	8	7	7	8	7	3	1	2	1	1	1	1	1	12	3.1	24
23	1	1	1	1	1	1	**IZS**	0	0	0	1	1	2	1	1	1	1	0	0	0	0	0	1	0	2	0.7	24
24	1	0	1	0	0	**IZS**	3	4	5	14	13	6	4	3	4	2	2	1	1	1	1	1	1	1	14	3.0	24
25	1	1	1	1	**IZS**	0	39	43	19	31	14	11	11	1	1	4	2	0	1	0	0	0	0	0	43	7.9	24
26	0	0	0	**IZS**	0	0	3	5	3	1	2	3	1	4	1	13	0	1	0	0	0	0	0	0	13	1.6	24
27	0	0	**IZS**	1	1	1	10	6	13	1	2	2	2	11	1	1	1	1	1	1	1	1	2	1	13	2.7	24
28	1	**IZS**	12	8	3	5	2	3	3	3	3	4	7	7	3	2	1	1	1	1	1	1	2	1	12	3.3	24
29	**IZS**	1	3	2	2	1	1	1	2	2	1	1	1	2	1	16	1	1	1	1	1	1	1	**IZS**	16	2.0	24
30	1	1	1	1	1	1	1	2	6	3	**43**	36	36	11	33	25	40	1	1	1	2	1	**IZS**	1	**43**	10.8	24
31	1	1	1	1	1	2	16	3	18	38	14	10	31	18	29	6	27	2	1	1	1	**IZS**	1	0	38	9.7	24
HOURLY MAX	14	10	16	11	12	28	39	43	28	38	43	36	36	42	33	25	40	4	3	2	3	4	4	9			
HOURLY AVG	1.1	0.9	1.9	1.6	1.1	2.7	4.1	5.0	5.6	5.9	6.2	5.0	5.4	5.3	5.9	3.8	5.4	0.9	0.8	0.6	0.7	0.7	0.9	0.9			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	518					
MAXIMUM INSTANTANEOUS VALUE:	43	PPB	@ HOUR(S)	10	ON DAY(S)	30
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		742	HRS
MONTHLY CALIBRATION TIME:	10	HRS				
STANDARD DEVIATION	6.22					



JOB #: 2833-12-01-30-C

LICA30
NO_ / WDR Joint Frequency Distribution (Percent)

January 2012

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	4.71	2.14	2.85	1.42	2.85	4.42	3.71	1.42	1.42	10.57	20.57	11.14	11.71	12.00	3.28	5.71	100.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.71	2.14	2.85	1.42	2.85	4.42	3.71	1.42	1.42	10.57	20.57	11.14	11.71	12.00	3.28	5.71	

Calm : .00 %

Total # Operational Hours : 700

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	33	15	20	10	20	31	26	10	10	74	144	78	82	84	23	40	700
<	110																	
<	210																	
>=	210																	
	Totals	33	15	20	10	20	31	26	10	10	74	144	78	82	84	23	40	

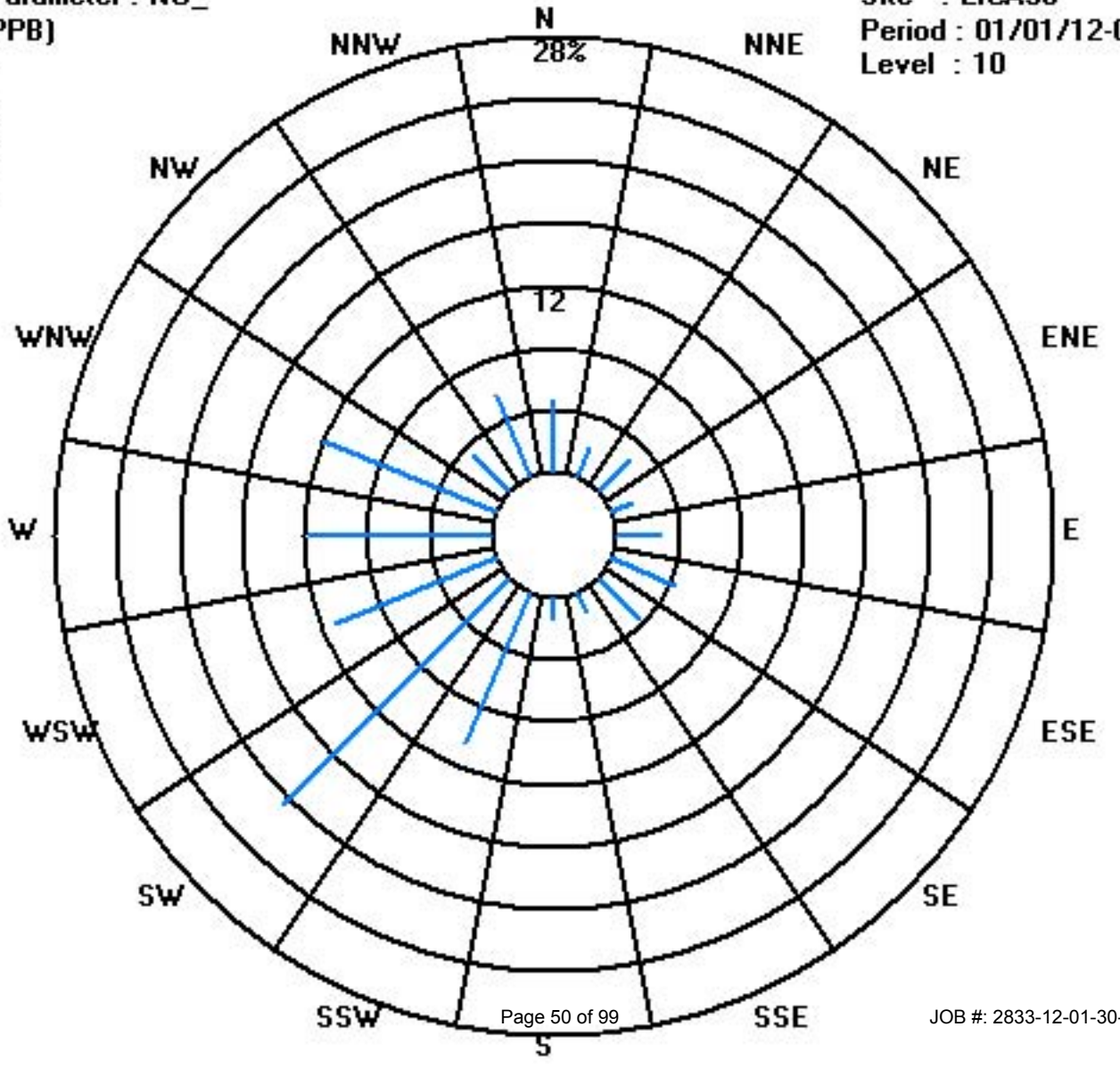
Calm : .00 %

Total # Operational Hours : 700

Logger : 30 Parameter : NO_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA30
Period : 01/01/12-01/31/12
Level : 10



JOB #: 2833-12-01-30-C

Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

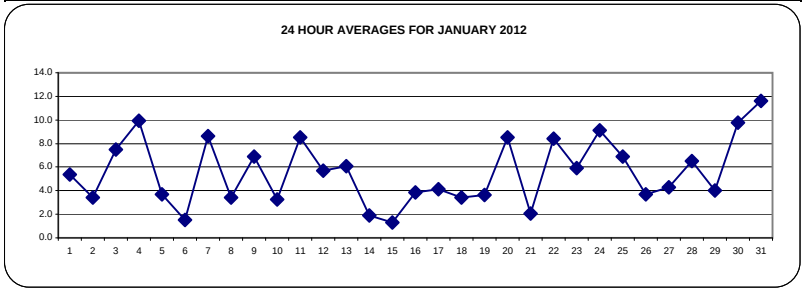
JANUARY 2012

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	3	0	1	1	1	**IZS**	4	3	4	**C**	**M**	**C**	13	11	10	9	7	6	6	6	6	5	6	5	13	5.4	23
2	5	3	2	2	**IZS**	2	2	1	1	1	2	3	4	4	5	5	4	5	4	4	4	4	5	7	7	3.4	24
3	11	9	4	**IZS**	11	14	7	5	8	10	**C**	**C**	**C**	**C**	**C**	**C**	**C**	6	8	6	6	5	5	5	14	7.5	24
4	5	8	**IZS**	12	8	9	6	12	7	10	17	14	**M**	10	6	8	14	12	11	11	12	10	8	8	17	9.9	23
5	6	**IZS**	4	9	3	5	8	11	14	2	9	6	0	0	0	0	0	0	0	0	0	7	1	0	14	3.7	24
6	**IZS**	0	0	0	1	1	2	1	1	2	2	1	1	5	6	4	3	1	0	0	1	1	1	**IZS**	6	1.5	24
7	1	0	2	9	10	10	11	11	12	13	15	13	10	11	9	8	13	9	6	6	7	7	**IZS**	6	15	8.7	24
8	5	4	4	4	4	5	9	10	5	3	3	1	1	1	1	1	1	1	1	3	4	**IZS**	3	5	10	3.4	24
9	6	5	3	3	7	7	8	6	9	8	8	6	6	7	9	10	11	10	12	11	**IZS**	1	6	0	12	6.9	24
10	0	0	11	12	12	13	5	0	0	0	6	2	0	1	9	1	0	1	0	**IZS**	0	0	0	2	13	3.3	24
11	26	20	21	11	8	2	6	8	6	11	7	6	7	4	5	5	6	5	**IZS**	5	5	6	8	8	26	8.5	24
12	10	12	8	10	9	4	3	5	7	5	5	4	4	4	4	5	7	**IZS**	4	4	5	4	4	4	12	5.7	24
13	7	8	9	7	8	8	5	4	3	1	4	5	7	11	16	7	**IZS**	5	3	7	2	2	5	6	16	6.1	24
14	3	0	3	3	1	1	3	4	7	5	5	3	2	3	1	**IZS**	0	0	0	0	0	0	0	0	7	1.9	24
15	0	0	0	0	1	2	3	4	3	3	2	1	0	1	**IZS**	1	1	1	1	1	1	1	1	2	4	1.3	24
16	1	3	4	3	5	3	3	4	5	4	4	4	4	**IZS**	5	4	4	4	3	5	4	4	4	5	5	3.9	24
17	3	2	1	1	2	2	5	8	8	5	4	3	**IZS**	2	1	2	3	3	3	5	4	7	12	9	12	4.1	24
18	6	6	7	8	8	6	5	5	5	4	3	**IZS**	1	1	1	1	2	1	1	2	2	2	1	1	8	3.4	24
19	3	4	3	4	4	8	7	7	7	8	**IZS**	4	2	3	3	1	2	2	2	1	1	2	2	3	8	3.6	24
20	2	3	5	6	4	3	5	11	11	**IZS**	19	15	12	10	10	11	13	11	10	10	8	7	6	4	19	8.5	24
21	5	5	4	3	3	3	2	2	**IZS**	0	1	0	1	2	0	3	4	1	5	4	0	0	0	0	5	2.1	24
22	1	0	0	1	2	4	8	**IZS**	9	8	8	11	12	13	15	16	14	13	11	11	10	10	9	8	16	8.4	24
23	7	7	6	4	4	3	**IZS**	3	2	2	3	4	4	4	4	4	6	7	9	11	10	10	11	11	11	5.9	24
24	13	10	9	10	11	**IZS**	11	10	12	16	12	8	8	8	10	11	10	9	7	6	6	5	4	4	16	9.1	24
25	3	2	1	1	**IZS**	1	4	15	**32**	24	17	15	10	5	4	14	7	1	3	0	0	0	0	0	**32**	6.9	24
26	0	0	1	**IZS**	1	6	7	9	11	6	5	8	2	2	0	2	1	5	1	1	4	3	5	5	11	3.7	24
27	5	2	**IZS**	1	1	5	16	9	2	1	1	2	2	5	2	3	4	5	5	4	5	4	13	2	16	4.3	24
28	4	**IZS**	15	9	6	5	1	3	5	7	7	8	11	8	7	5	5	5	6	5	5	5	12	6	15	6.5	24
29	**IZS**	3	5	11	7	3	3	6	12	6	1	1	2	3	3	4	4	3	3	3	2	2	1	**IZS**	12	4.0	24
30	1	2	3	2	2	2	2	8	8	4	14	17	17	17	20	18	18	12	13	14	17	10	**IZS**	4	20	9.8	24
31	3	6	3	1	3	4	11	11	10	17	13	12	13	16	15	13	21	16	13	11	12	**IZS**	23	20	23	**11.6**	24
HOURLY MAX	26	20	21	12	12	14	16	15	32	24	19	17	17	17	20	18	21	16	13	14	17	10	23	20			
HOURLY AVG	5.0	4.3	4.8	5.1	5.1	4.9	5.7	6.5	7.5	6.4	7.0	6.3	5.6	5.9	6.2	6.1	6.4	5.3	5.0	5.2	4.8	4.3	5.4	4.8			

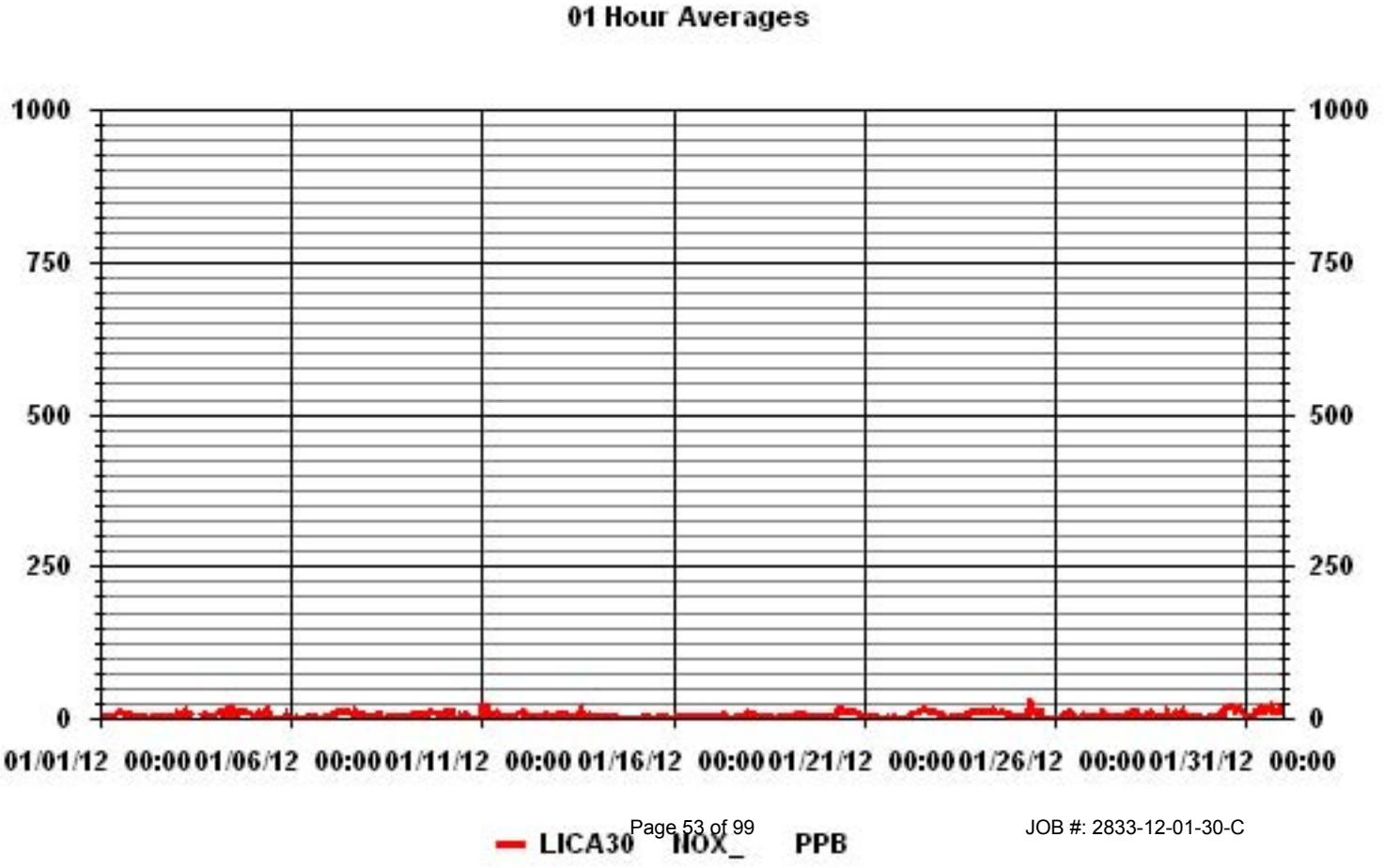
STATUS FLAG CODES

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:	640					
MAXIMUM 1-HR AVERAGE:	32	PPB	@ HOUR(S)	8	ON DAY(S)	25
MAXIMUM 24-HR AVERAGE:	11.6	PPB			ON DAY(S)	31
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		742	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		99.7	%
STANDARD DEVIATION:	4.61		MONTHLY AVERAGE:		5.57	PPB



JOB #: 2833-12-01-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

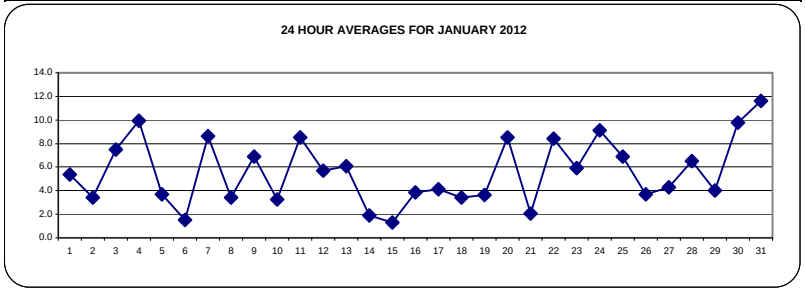
JANUARY 2012

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	3	0	1	1	1	**IZS**	4	3	4	**C**	**M**	**C**	13	11	10	9	7	6	6	6	6	5	6	5	13	5.4	23
2	5	3	2	2	**IZS**	2	2	1	1	1	2	3	4	4	5	5	4	5	4	4	4	4	5	7	7	3.4	24
3	11	9	4	**IZS**	11	14	7	5	8	10	**C**	**C**	**C**	**C**	**C**	**C**	**C**	6	8	6	6	5	5	5	14	7.5	24
4	5	8	**IZS**	12	8	9	6	12	7	10	17	14	**M**	10	6	8	14	12	11	11	12	10	8	8	17	9.9	23
5	6	**IZS**	4	9	3	5	8	11	14	2	9	6	0	0	0	0	0	0	0	0	0	7	1	0	14	3.7	24
6	**IZS**	0	0	0	1	1	2	1	1	2	2	1	1	5	6	4	3	1	0	0	1	1	1	**IZS**	6	1.5	24
7	1	0	2	9	10	10	11	11	12	13	15	13	10	11	9	8	13	9	6	6	7	7	**IZS**	6	15	8.7	24
8	5	4	4	4	4	5	9	10	5	3	3	1	1	1	1	1	1	1	1	3	4	**IZS**	3	5	10	3.4	24
9	6	5	3	3	7	7	8	6	9	8	8	6	6	7	9	10	11	10	12	11	**IZS**	1	6	0	12	6.9	24
10	0	0	11	12	12	13	5	0	0	0	6	2	0	1	9	1	0	1	0	**IZS**	0	0	0	2	13	3.3	24
11	26	20	21	11	8	2	6	8	6	11	7	6	7	4	5	5	6	5	**IZS**	5	5	6	8	8	26	8.5	24
12	10	12	8	10	9	4	3	5	7	5	5	4	4	4	4	5	7	**IZS**	4	4	5	4	4	4	12	5.7	24
13	7	8	9	7	8	8	5	4	3	1	4	5	7	11	16	7	**IZS**	5	3	7	2	2	5	6	16	6.1	24
14	3	0	3	3	1	1	3	4	7	5	5	3	2	3	1	**IZS**	0	0	0	0	0	0	0	0	7	1.9	24
15	0	0	0	0	1	2	3	4	3	3	2	1	0	1	**IZS**	1	1	1	1	1	1	1	1	2	4	1.3	24
16	1	3	4	3	5	3	3	4	5	4	4	4	4	**IZS**	5	4	4	4	3	5	4	4	4	5	5	3.9	24
17	3	2	1	1	2	2	5	8	8	5	4	3	**IZS**	2	1	2	3	3	3	5	4	7	12	9	12	4.1	24
18	6	6	7	8	8	6	5	5	5	4	3	**IZS**	1	1	1	1	2	1	1	2	2	2	1	1	8	3.4	24
19	3	4	3	4	4	8	7	7	7	8	**IZS**	4	2	3	3	1	2	2	2	1	1	2	2	3	8	3.6	24
20	2	3	5	6	4	3	5	11	11	**IZS**	19	15	12	10	10	11	13	11	10	10	8	7	6	4	19	8.5	24
21	5	5	4	3	3	3	2	2	**IZS**	0	1	0	1	2	0	3	4	1	5	4	0	0	0	0	5	2.1	24
22	1	0	0	1	2	4	8	**IZS**	9	8	8	11	12	13	15	16	14	13	11	11	10	10	9	8	16	8.4	24
23	7	7	6	4	4	3	**IZS**	3	2	2	3	4	4	4	4	4	6	7	9	11	10	10	11	11	11	5.9	24
24	13	10	9	10	11	**IZS**	11	10	12	16	12	8	8	8	10	11	10	9	7	6	6	5	4	4	16	9.1	24
25	3	2	1	1	**IZS**	1	4	15	**32**	24	17	15	10	5	4	14	7	1	3	0	0	0	0	0	**32**	6.9	24
26	0	0	1	**IZS**	1	6	7	9	11	6	5	8	2	2	0	2	1	5	1	1	4	3	5	5	11	3.7	24
27	5	2	**IZS**	1	1	5	16	9	2	1	1	2	2	5	2	3	4	5	5	4	5	4	13	2	16	4.3	24
28	4	**IZS**	15	9	6	5	1	3	5	7	7	8	11	8	7	5	5	5	6	5	5	5	12	6	15	6.5	24
29	**IZS**	3	5	11	7	3	3	6	12	6	1	1	2	3	3	4	4	3	3	3	2	2	1	**IZS**	12	4.0	24
30	1	2	3	2	2	2	2	8	8	4	14	17	17	17	20	18	18	12	13	14	17	10	**IZS**	4	20	9.8	24
31	3	6	3	1	3	4	11	11	10	17	13	12	13	16	15	13	21	16	13	11	12	**IZS**	23	20	23	**11.6**	24
HOURLY MAX	26	20	21	12	12	14	16	15	32	24	19	17	17	17	20	18	21	16	13	14	17	10	23	20			
HOURLY AVG	5.0	4.3	4.8	5.1	5.1	4.9	5.7	6.5	7.5	6.4	7.0	6.3	5.6	5.9	6.2	6.1	6.4	5.3	5.0	5.2	4.8	4.3	5.4	4.8			

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:	640					
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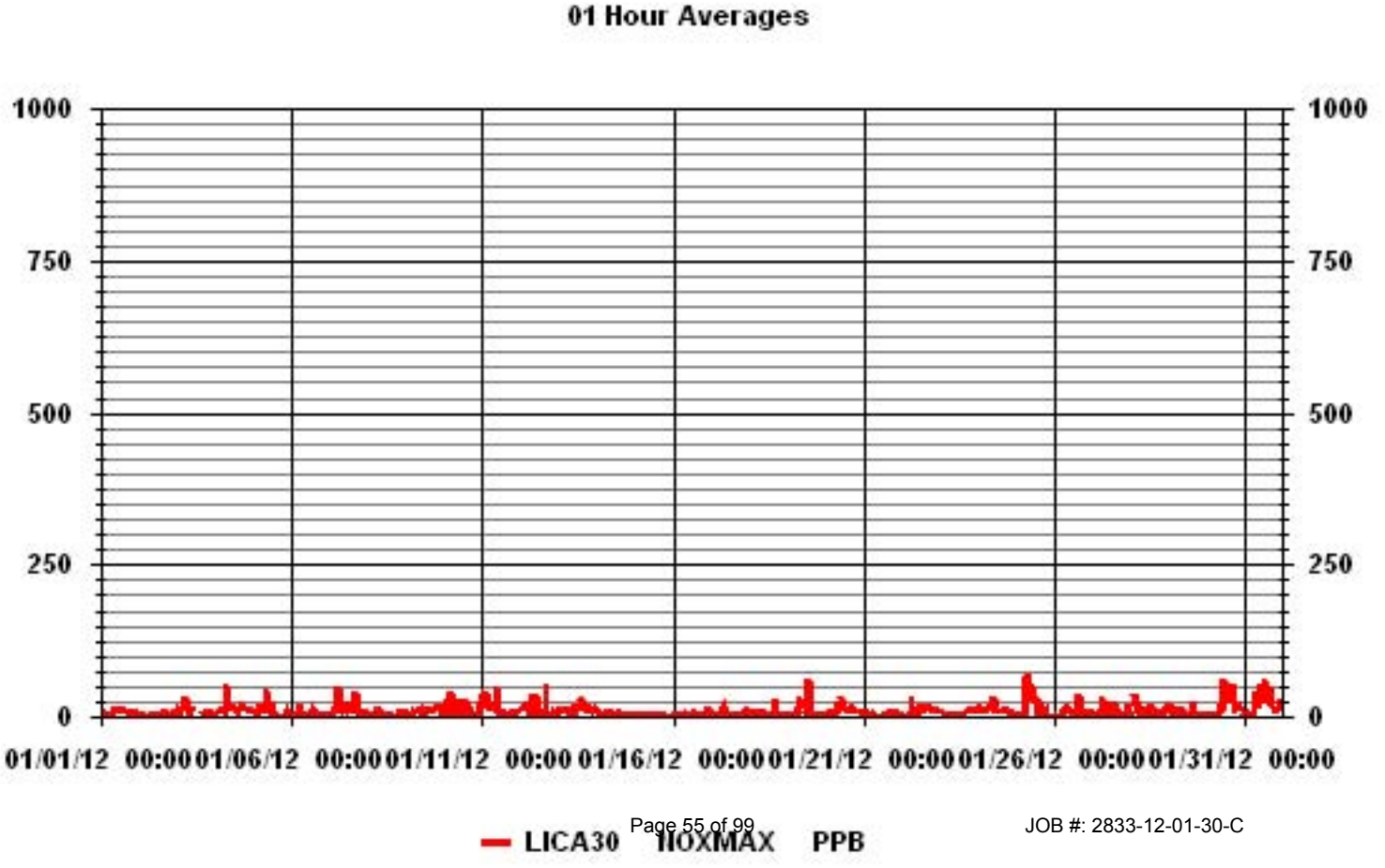
MAXIMUM 24-HR AVERAGE:	11.6	PPB			ON DAY(S)	31

IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	742	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	99.7	%
STANDARD DEVIATION:	4.61		MONTHLY AVERAGE:	5.57	PPB



JOB #: 2833-12-01-30-C

LICA30
NOX_ / WDR Joint Frequency Distribution (Percent)

January 2012

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	4.71	2.14	2.85	1.42	2.85	4.42	3.71	1.42	1.42	10.57	20.57	11.14	11.71	12.00	3.28	5.71	100.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.71	2.14	2.85	1.42	2.85	4.42	3.71	1.42	1.42	10.57	20.57	11.14	11.71	12.00	3.28	5.71	

Calm : .00 %

Total # Operational Hours : 700

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	33	15	20	10	20	31	26	10	10	74	144	78	82	84	23	40	700
<	110																	
<	210																	
>=	210																	
	Totals	33	15	20	10	20	31	26	10	10	74	144	78	82	84	23	40	

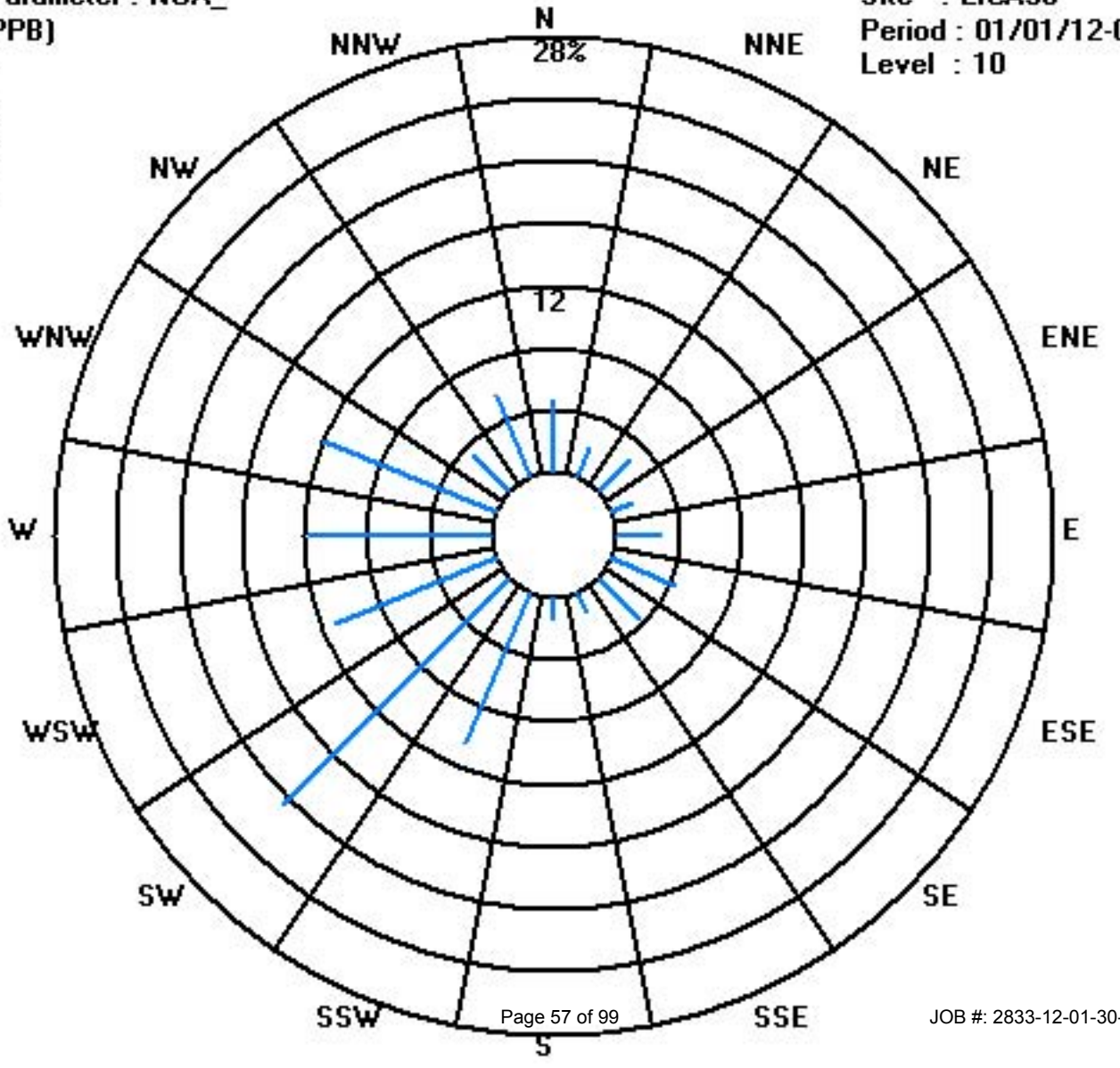
Calm : .00 %

Total # Operational Hours : 700

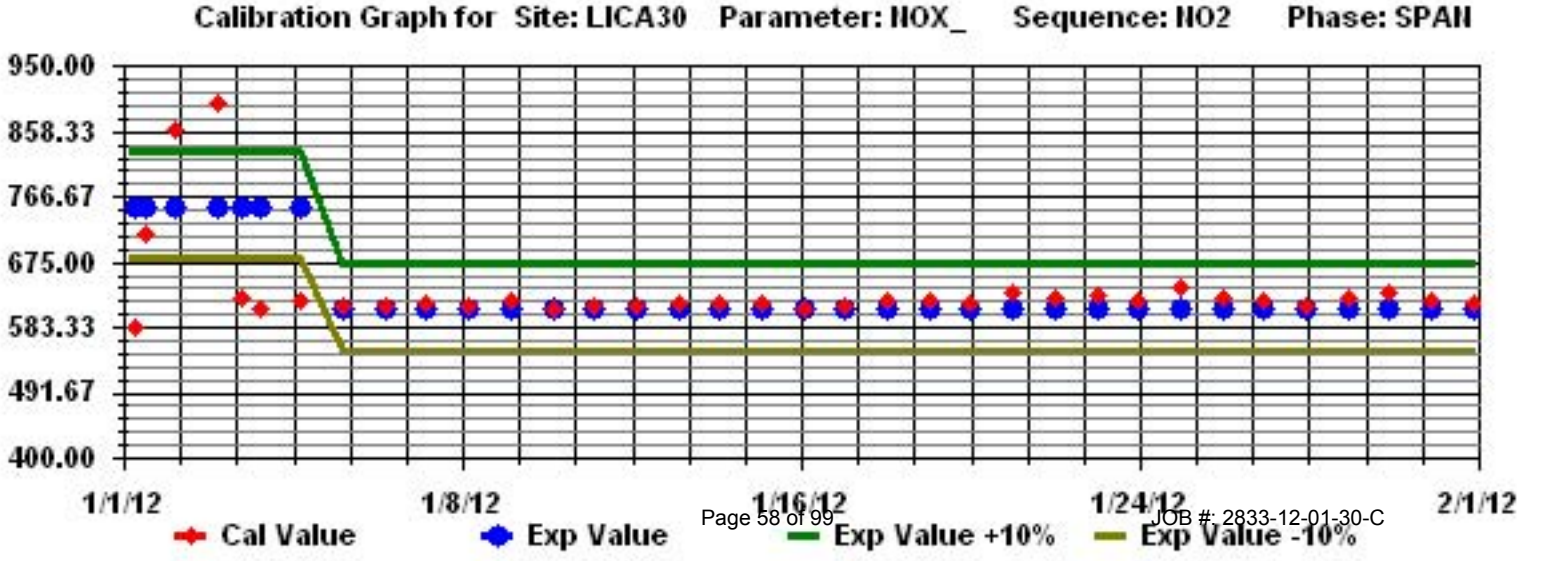
Logger : 30 Parameter : NOX_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA30
Period : 01/01/12-01/31/12
Level : 10



JOB #: 2833-12-01-30-C


Calibration Graph for Site: LICA30 Parameter: NOX_ Sequence: NO2 Phase: SPAN
950.00
858.33
766.67
675.00
583.33
491.67
400.00
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2012

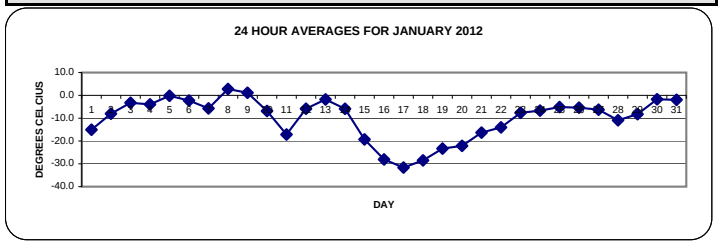
AMBIENT TEMPERATURE hourly averages (Degrees C)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
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	-12	-12.4	-12.8	-13.5	-14.4	-14.9	-15.9	-16.2	-16.3	-15.5	-13.6	-11.3	-10	-8.2	-8.5	-10.8	-14.7	-17.1	-19.1	-20	-20.5	-21.4	-21.3	-20.9	-8.2	-15.1	24
2	-21.3	-14.9	-10.6	-11.1	-10.3	-10	-9.5	-8.5	-8.5	-8.3	-7	-5.7	-4.7	-4.9	-5.1	-5.6	-5.6	-6	-6	-6.7	-6.9	-6.6	-4.7	-4.3	-4.3	-8.0	24
3	-4.9	-3.8	-2.4	-3.1	-4.8	-5	-5.6	-6.3	-7	-6.8	-4.4	-1.3	-0.6	-0.5	-0.8	-0.6	-1.4	-2.1	-2.9	-3	-3.2	-3	-2.6	-2.2	-0.5	-3.3	24
4	-2.3	-3.2	-4.1	-5	-6.7	-7.9	-8.8	-9.1	-8.9	-7.1	-5.1	-2	-0.6	2.4	1.7	-0.5	-2.1	-2.9	-3	-2.6	-3.3	-3.5	-5	-5.1	2.4	-3.9	24
5	-6.5	-5.6	-4.8	-2.8	-0.6	0.1	0.5	0.7	0.8	1.3	0.8	1.5	1.9	2.4	3.4	2.1	1.4	1.7	0.9	0.1	0	-0.2	-1.3	-2.3	3.4	-0.2	24
6	-2.4	-2.5	-2.5	-2.5	-2.2	-2.3	-2.2	-2.4	-2.7	-2.2	-0.7	1	1.1	2.2	1.8	-0.5	-1.7	-3	-3.6	-4.1	-4.6	-5.1	-6.5	-6.9	2.2	-2.3	24
7	-7.2	-5.9	-5.9	-7.7	-7.6	-6.9	-7.4	-8.4	-9	-8.6	-5.7	-3.7	-3.1	-2.3	-2.3	-3.7	-4.8	-4.8	-5	-5.9	-6	-5.6	-4.9	-4.5	-2.3	-5.7	24
8	-4.2	-3.7	-3.8	-3.1	-2.5	-1.7	-0.8	0.3	2	3.4	5.2	7.8	8.7	**9.3**	8.8	7.5	6.5	5.8	5.8	5.1	4.3	3.2	2.3	0.7	**9.3**	**2.8**	24
9	0.6	0.5	0.2	-0.5	-1.2	-1.7	-1.6	-1.7	-0.7	0.4	2.3	3.5	3.4	3.2	3	2.4	1.4	1.3	1.1	0.7	1.5	3.2	3.5	2.8	3.5	1.2	24
10	1.7	1.1	0.8	0	-0.1	0.1	0	-0.7	-1.4	-2.3	-3.1	-3.9	-4.6	-5.1	-5.9	-9	-12.1	-15.7	-16.8	-16.8	-17.1	-17.3	-17.8	-18.4	1.7	-6.9	24
11	-18.7	-19.1	-19.6	-20.4	-21.2	-21.8	-22.8	-22.9	-21.1	-19.3	-17.1	-15.8	-14.7	-13.7	-12.7	-13	-15	-15.8	-16.2	-14.2	-14.2	-13.7	-14.7	-13.8	-12.7	-17.1	24
12	-12.9	-11.6	-10.5	-7.6	-6.4	-7.9	-7.3	-8.5	-9.5	-8.2	-4.7	-2.5	-1.9	-2.1	-2.9	-3.2	-4	-3.9	-3.8	-3.8	-3.9	-4.2	-4.8	-4.7	-1.9	-5.9	24
13	-3.8	-3.2	-3.4	-3.8	-4.7	-4.6	-3.6	-3.3	-1	-0.5	-0.3	-0.3	-0.2	-0.2	0.2	0	-0.2	-0.5	-0.7	-0.8	-1.8	-1.7	-1.9	-2.3	0.2	-1.8	24
14	-2.6	-4.4	-5.2	-5	-5	-5.3	-6.2	-6.7	-7.3	-6.5	-4.5	-2.6	-2.8	-3	-3.8	-4	-4.5	-5.3	-6.2	-7.5	-8.6	-9.8	-11.7	-12.7	-2.6	-5.9	24
15	-14	-15	-15.5	-16.1	-16.3	-17	-17.5	-18.8	-19.3	-19.8	-19.4	-18.9	-19	-19.1	-19	-19.9	-20.9	-21.4	-21.6	-21.8	-22	-22.7	-23.8	-24.5	-14.0	-19.3	24
16	-25.4	-26.2	-26.9	-27.6	-28.2	-28.2	-27.9	-27.9	-28.2	-28.1	-27.7	-26.9	-26.5	-25.8	-26	-27.4	-28.6	-30	-29.9	-29.7	-29.7	-29.7	-30.1	-31.4	-25.4	-28.1	24
17	-32.5	-33	-33.9	-34.2	-34.8	-34.7	**-35.2**	-35	-35.1	-33.6	-30	-27.4	-26.1	-25.5	-25.4	-27.3	-29.3	-30.5	-30.9	-31.7	-32.1	-33	-33.8	-34.1	-25.4	-31.6	24
18	-34	-34.4	-34.9	-34.9	-34.4	-33.8	-33.4	-33	-32.4	-30.8	-28	-25.2	-22.9	-22.4	-21.7	-22.6	-24.2	-25.5	-26	-26.1	-26.3	-25.9	-25.6	-25.5	-21.7	-28.5	24
19	-26.8	-27.5	-27.1	-27	-26.6	-27.4	-28.3	-28.7	-28.4	-25.5	-22.6	-19.9	-17.3	-16.6	-16.2	-17.6	-19.7	-21.1	-21.6	-21.7	-22.5	-22.8	-23.2	-23.7	-16.2	-23.3	24
20	-23.7	-24.6	-25.4	-26.5	-25.3	-25.3	-25.5	-26.5	-25.9	-24.3	-21.4	-18.7	-16.1	-15.5	-16.7	-17.9	-20	-21.7	-23.1	-22.9	-22.9	-22.1	-20.1	-18.7	-15.5	-22.1	24
21	-18.4	-18.1	-18.5	-18.6	-18.5	-17.8	-17.2	-17.2	-17	-16.9	-16.4	-16	-15.4	-15.3	-15.2	-15.1	-15.2	-15.2	-14.9	-14.9	-14.9	-14.9	-14.9	-15	-14.9	-16.3	24
22	-15	-15.2	-16	-16.1	-15.8	-15.6	-16.1	-16.5	-16.3	-15.3	-14.3	-11.8	-8.8	-7.2	-7.4	-8.5	-11.2	-14.5	-15.8	-16.3	-16.1	-16.4	-15.6	-14.5	-7.2	-14.0	24
23	-13.5	-12.8	-10.8	-8.7	-8.5	-8.6	-9.1	-9.8	-9.8	-8	-5.3	-4.3	-3.3	-3.7	-3.6	-4.6	-6.4	-7.7	-8.2	-8.9	-8.6	-7.5	-6	-5.7	-3.3	-7.6	24
24	-6.6	-7.6	-8.2	-8.5	-8	-8.6	-10.4	-9.4	-9.5	-8.2	-5.3	-4	-2.6	-1.7	-2.9	-2.6	-4	-4.8	-7.7	-5.9	-6.6	-7.9	-10.1	-9.3	-1.7	-6.7	24
25	-8	-7.9	-7.8	-8.7	-10.9	-11.8	-12.8	-13.7	-13.7	-9.5	-6.8	-3.7	-3.2	-2.3	-0.5	1.1	1.7	1.7	1.7	-0.1	-0.4	-1.7	-2.2	-3.3	1.7	-5.1	24
26	-3.5	-4	-5	-5.8	-6.4	-7.7	-8.7	-9.8	-10.2	-7	-4.1	-2.7	0.1	0.6	0.4	-1.5	-4.2	-6.4	-6.6	-6.6	-6.9	-6.9	-7.9	-8.1	0.6	-5.4	24
27	-8.7	-8.9	-8.8	-7.4	-5.8	-6.1	-5.7	-6.8	-7.9	-7.3	-5.5	-4.2	-4.3	-4.8	-5.6	-5.3	-5.8	-5.7	-5.6	-5.7	-6.2	-6	-6.2	-6.5	-4.2	-6.3	24
28	-5.4	-5.3	-5.7	-7.2	-9.2	-10.6	-11.3	-12.1	-13.3	-12.5	-11.8	-10.8	-9.9	-8.7	-9.4	-10.8	-12.2	-14.1	-14.9	-15.3	-14.1	-13.2	-12.3	-11.8	-5.3	-10.9	24
29	-11.3	-10.7	-10.5	-10.6	-10.5	-10.8	-10.7	-10.5	-10.4	-9.7	-8.5	-7.4	-7.1	-6.3	-6.1	-6	-5.8	-5.8	-5.9	-7.1	-7.3	-7.1	-6.1	-5.5	-5.5	-8.2	24
30	-5.8	-6.9	-8.1	-6.9	-5.3	-4.7	-4.3	-3.8	-3.8	-2.9	-1.3	-0.3	0.6	1.9	2.1	1.8	1.7	0.8	0.5	0.8	1.1	1.4	0.6	-0.3	2.1	-1.7	24
31	-0.5	-1	-1.8	-2.6	-3	-3.6	-3.9	-4.3	-4.9	-4.5	-2.1	-1.6	0	1.2	0.4	-0.3	-0.6	-0.8	-1	-0.9	-1.4	-2.3	-3.5	-4	1.2	-2.0	24
HOURLY MAX	1.7	1.1	0.8	0.0	-0.1	0.1	0.5	0.7	2.0	3.4	5.2	7.8	8.7	9.3	8.8	7.5	6.5	5.8	5.8	5.1	4.3	3.2	3.5	2.8			
HOURLY AVG	-11.3	-11.2	-11.3	-11.4	-11.5	-11.7	-11.9	-12.2	-12.2	-11.1	-9.3	-7.7	-6.8	-6.2	-6.3	-7.2	-8.4	-9.4	-9.9	-10.1	-10.4	-10.5	-10.7	-10.9			

STATUS FLAG CODES

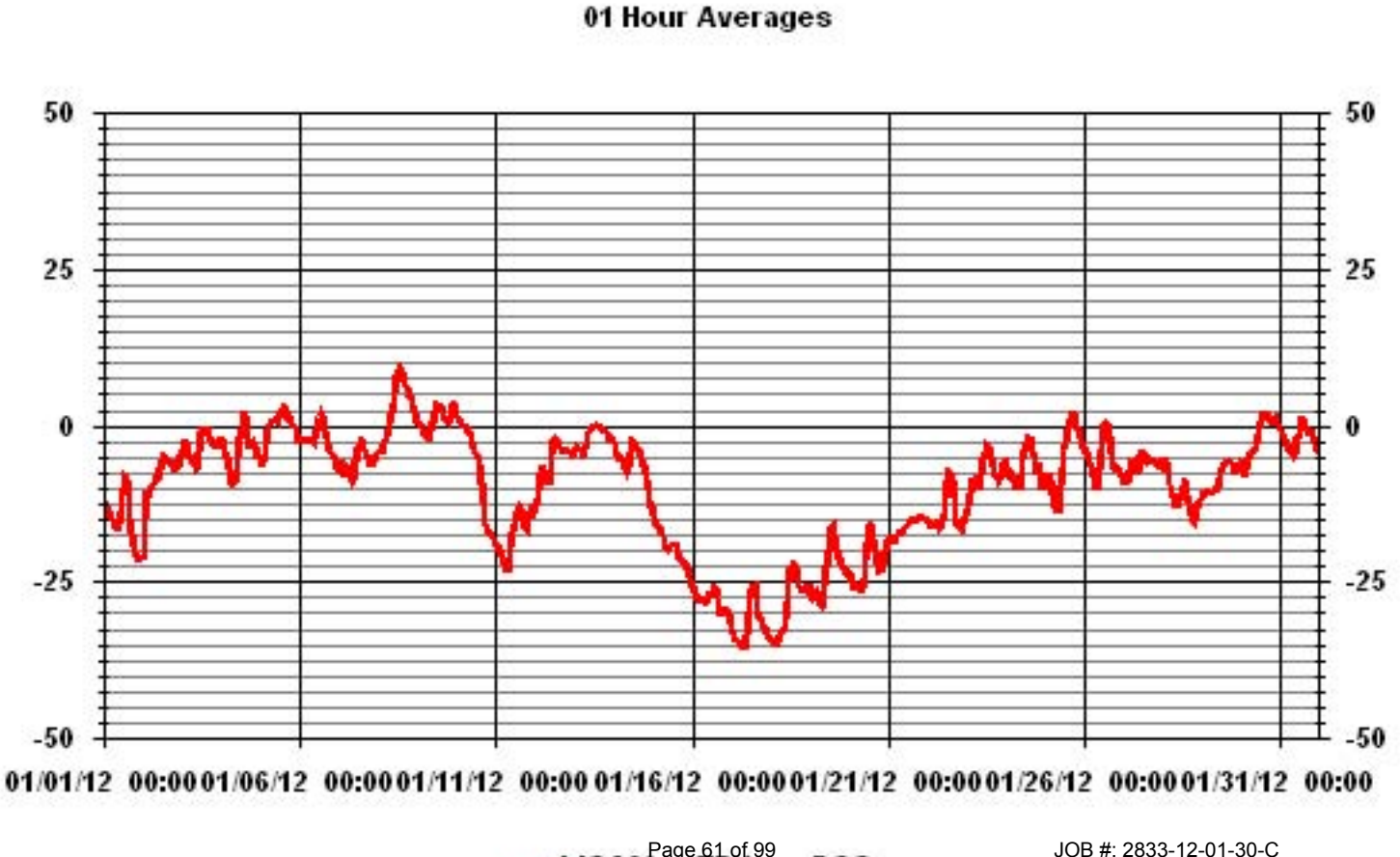
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-35.2	^{O}C	@ HOUR(S)	6	ON DAY(S)	17
MAXIMUM 1-HR AVERAGE:	9.3	^{O}C	@ HOUR(S)	13	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	2.8	^{O}C			ON DAY(S)	8

CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
			AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	9.62		MONTHLY AVERAGE:	-9.98	^{O}C



JOB #: 2833-12-01-30-C

Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2012

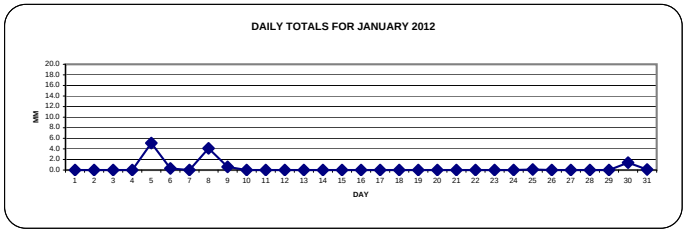
PRECIPITATION hourly averages (mm)

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	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.	TOTAL	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	24
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
5	0	0	0	0	0	0	0	0	0	0.7	**1.3**	1.2	0.5	0.4	0.3	0.2	0.1	0.2	0.1	0	0.1	0	0	0	**1.3**	**5.1**	24
6	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0.1	0.3	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
8	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4	0.6	1	0.6	0.5	0.2	0.3	0.1	0.1	0	0	0	1.0	4.1	24
9	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	0.2	0.1	0	0	0	0	0	0	0	0	0	0.2	0.6	24
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
14	0	0	0	0	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	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	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	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	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	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	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	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	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	0	0	0	0.0	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0	0	0.4	1.4	24
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
HOURLY MAX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.3	1.2	0.5	0.6	1.0	0.6	0.5	0.2	0.3	0.1	0.1	0.1	0.0	0.0			

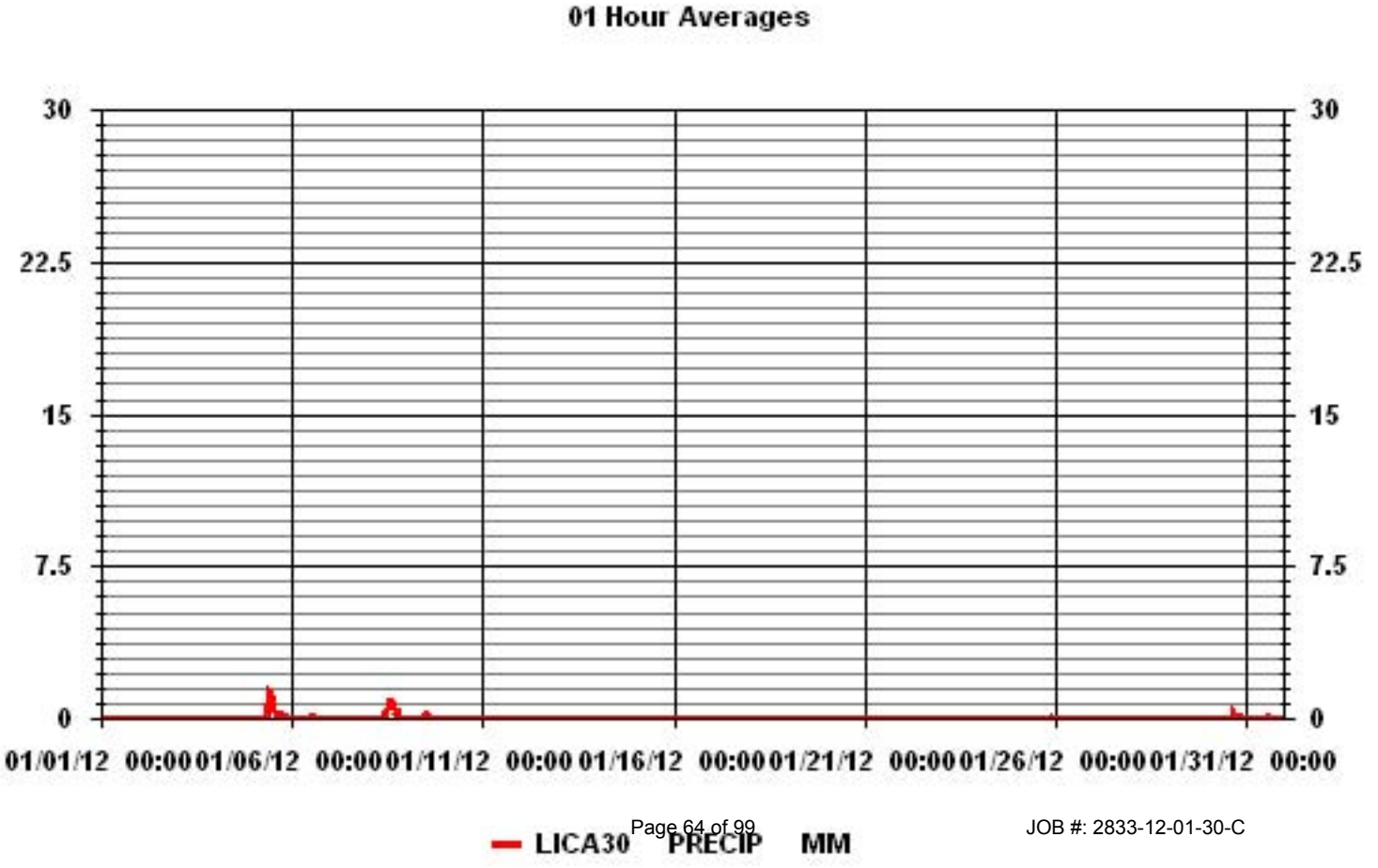
STATUS FLAG CODES

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



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	1.3	MM	HOUR(S)	10	ON DAY(S)	5
MAXIMUM DAILY TOTAL	5.1	MM			ON DAY(S)	5
MONTHLY TOTAL	11.7	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		744	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.10		MONTHLY AVERAGE:		0.02	MM



JOB #: 2833-12-01-30-C

Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2012

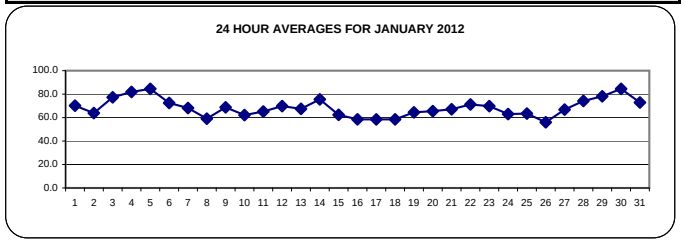
RELATIVE HUMIDITY hourly averages (%)

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	74	74	74	76	76	75	76	76	74	70	65	59	56	53	53	60	71	76	77	76	75	72	73	73	77	70.2	24
2	71	68	54	55	51	52	52	52	55	58	58	58	58	62	64	67	70	73	74	77	77	78	75	74	78	63.9	24
3	76	73	70	74	79	80	83	86	84	83	77	69	70	70	72	72	76	79	81	80	81	80	80	80	86	77.3	24
4	81	83	83	87	85	86	84	85	83	83	82	79	77	66	70	76	80	83	83	83	86	87	86	87	87	81.9	24
5	86	87	85	87	88	89	89	89	**90**	88	89	88	85	81	74	76	75	72	78	87	89	87	84	85	**90**	**84.5**	24
6	83	81	79	77	75	75	75	75	75	74	70	64	64	59	58	65	68	72	73	73	74	74	78	78	83	72.5	24
7	79	74	72	77	75	71	71	73	75	74	64	59	58	56	56	60	66	67	68	70	70	69	67	65	79	68.2	24
8	65	64	64	62	62	64	66	67	65	61	56	50	47	45	46	49	53	55	56	59	61	64	66	71	71	59.1	24
9	71	71	73	76	78	80	80	80	77	73	68	64	64	65	67	69	73	73	74	74	69	51	42	38	80	68.8	24
10	42	50	59	72	73	76	72	68	68	67	65	59	59	57	57	60	59	57	58	61	63	63	63	64	76	62.2	24
11	67	67	69	70	71	71	72	71	71	68	62	57	56	54	52	53	60	64	67	64	67	68	72	71	72	65.2	24
12	70	67	66	63	74	81	82	83	84	80	68	61	58	59	62	63	65	66	65	66	69	71	75	77	84	69.8	24
13	80	79	78	75	76	73	68	68	63	60	58	60	66	70	68	69	67	65	60	60	62	62	64	68	80	67.5	24
14	71	75	78	78	77	78	81	82	82	79	74	66	66	67	73	73	75	79	79	80	79	76	74	71	82	75.5	24
15	71	72	70	69	68	65	65	63	64	63	60	57	56	55	56	56	59	59	60	62	62	61	61	63	72	62.4	24
16	65	65	62	61	61	60	59	59	58	56	54	52	52	49	49	52	56	62	63	62	62	62	61	62	65	58.5	24
17	62	62	61	61	60	60	60	60	59	59	57	54	50	49	48	53	58	61	61	62	62	62	61	61	62	58.5	24
18	61	60	60	60	60	60	61	61	61	59	56	52	49	47	46	50	55	59	61	62	65	66	66	67	67	58.5	24
19	67	67	67	67	67	66	66	66	66	66	63	60	55	53	52	56	60	64	68	69	70	71	71	71	71	64.5	24
20	70	70	69	69	69	69	68	68	67	66	63	60	56	53	55	58	64	68	70	70	69	69	68	64	70	65.5	24
21	62	60	65	67	67	64	60	56	56	66	70	70	70	69	70	71	72	72	71	71	70	70	70	71	72	67.1	24
22	71	72	74	75	75	74	75	75	74	73	70	64	58	55	56	59	69	78	78	77	76	77	77	77	78	71.2	24
23	78	78	76	69	69	71	74	77	77	71	62	59	56	57	57	61	66	70	71	74	76	77	75	73	78	69.8	24
24	75	76	76	75	72	72	74	69	69	63	54	49	46	43	47	47	51	56	65	58	62	66	73	74	76	63.0	24
25	72	73	74	77	82	82	80	80	79	79	74	68	70	78	75	60	47	38	32	38	39	39	42	44	82	63.4	24
26	47	48	51	54	57	61	66	71	74	64	55	51	43	39	38	43	50	55	55	56	60	66	71	69	74	56.0	24
27	69	65	61	63	68	73	67	69	71	60	52	47	47	50	52	56	66	73	77	82	84	84	84	84	84	66.8	24
28	82	81	79	74	77	78	78	77	78	75	71	67	63	58	61	67	71	77	79	78	77	78	78	76	82	74.2	24
29	75	71	69	70	70	76	76	77	78	78	75	74	75	78	80	82	83	84	85	85	84	84	84	83	85	78.2	24
30	84	85	85	84	85	84	85	86	86	84	84	84	84	83	84	88	87	88	88	86	84	80	79	81	88	84.5	24
31	80	81	81	82	81	82	81	81	81	77	68	66	62	61	65	65	65	65	65	66	69	72	76	77	82	72.9	24
HOURLY MAX	86	87	85	87	88	89	89	89	90	88	89	88	85	83	84	88	87	88	88	87	89	87	86	87			
HOURLY AVG	71.2	70.9	70.5	71.2	71.9	72.5	72.5	72.6	72.4	70.2	65.9	62.2	60.5	59.4	60.1	62.5	65.7	68.1	69.1	69.9	70.7	70.5	70.8	70.9			

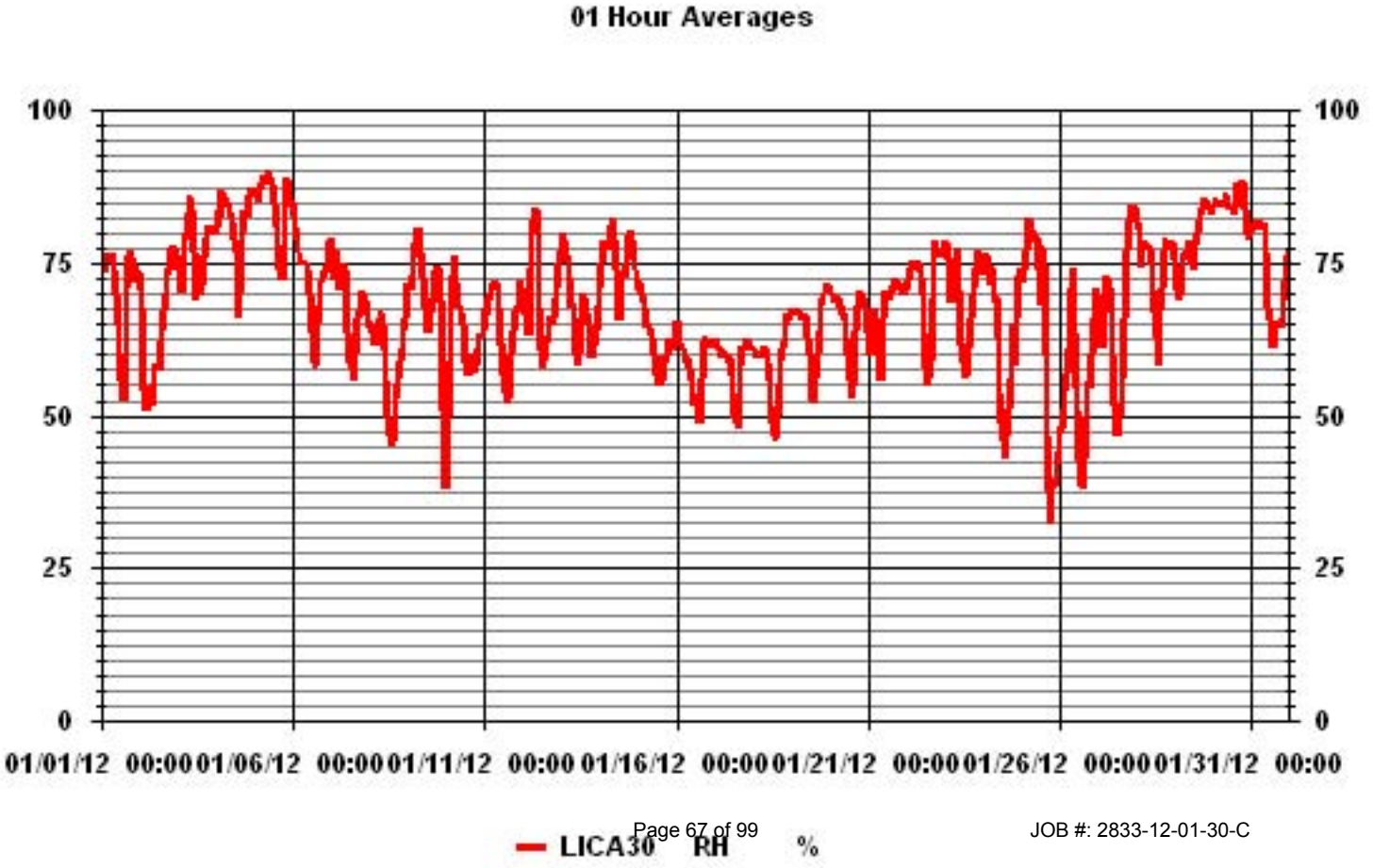
STATUS FLAG CODES

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

MAXIMUM 1-HR AVERAGE:		90	%	@ HOUR(S)	8	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:		84.5	%			ON DAY(S)	5
						VAR-VARIOUS	
CALIBRATION TIME:	0	HRS		OPERATIONAL TIME:		744	HRS
				AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	10.62			MONTHLY AVERAGE:		68.42	%



JOB #: 2833-12-01-30-C

Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JANUARY 2012

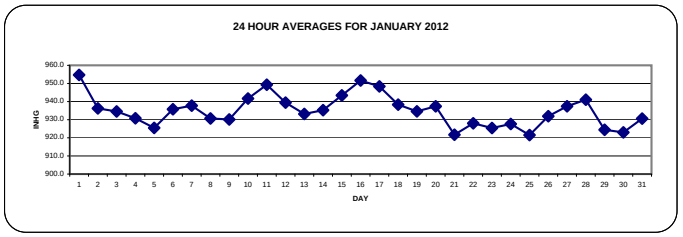
BAROMETRIC PRESSURE hourly averages (millibar)

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	950	951	952	953	952	953	953	954	954	955	956	956	957	957	957	957	957	957	957	957	956	955	954	953	**957**	**954.7**	24
2	952	950	949	948	945	944	942	941	939	937	936	935	934	932	932	931	930	928	928	928	928	927	927	927	952	936.3	24
3	927	928	929	930	931	932	933	934	935	936	937	938	938	938	937	937	937	937	936	935	936	936	936	936	938	934.5	24
4	935	935	935	936	935	935	934	933	933	933	933	931	930	930	929	928	928	928	927	927	927	926	926	925	936	930.8	24
5	924	924	924	924	923	923	923	922	923	924	925	925	924	925	926	926	927	927	927	928	928	929	930	930	930	925.5	24
6	931	931	932	932	933	933	934	934	935	935	936	937	937	937	937	937	938	938	938	938	938	939	939	939	939	935.8	24
7	939	939	939	939	939	939	939	938	938	939	939	939	939	939	939	938	937	937	937	936	936	935	934	933	939	937.8	24
8	933	931	930	930	929	929	929	928	928	929	929	930	930	930	930	931	932	932	932	932	933	933	933	933	933	930.7	24
9	933	934	934	933	933	933	933	932	931	931	930	929	928	927	928	928	928	928	928	928	928	928	929	929	934	930.1	24
10	930	930	930	931	932	933	934	935	936	938	940	941	942	943	944	946	948	950	952	952	953	953	953	954	954	941.7	24
11	954	954	954	954	954	954	954	953	953	953	952	951	949	949	948	947	946	945	945	944	943	943	942	942	954	949.3	24
12	942	942	942	941	942	941	942	941	941	941	942	941	941	940	940	939	939	938	937	936	936	935	934	933	942	939.4	24
13	932	932	931	931	931	931	931	931	931	931	931	931	932	933	933	934	935	936	936	936	936	937	937	937	937	933.2	24
14	937	937	937	937	937	936	936	936	936	935	935	935	934	934	934	934	934	934	934	934	934	935	935	936	937	935.3	24
15	937	937	938	939	940	940	941	942	942	943	944	944	944	944	945	945	946	946	947	947	947	948	948	948	948	943.4	24
16	949	949	950	950	950	950	951	951	951	952	952	952	952	951	951	952	953	953	953	953	953	953	954	954	954	951.6	24
17	954	954	954	953	953	953	952	952	951	951	949	948	947	946	945	945	945	945	945	944	944	944	944	943	954	948.4	24
18	943	943	943	943	942	942	941	940	940	940	938	937	936	935	935	935	936	936	936	936	936	936	935	935	943	938.3	24
19	935	935	935	935	934	935	935	935	935	934	935	934	934	933	933	934	934	934	934	934	935	935	936	937	937	934.6	24
20	937	938	938	939	939	939	939	940	940	940	940	940	939	938	938	937	937	937	936	935	935	933	932	931	940	937.4	24
21	930	928	928	927	925	924	923	922	922	921	921	919	919	918	917	918	918	919	919	919	920	921	921	922	930	921.7	24
22	923	924	924	925	926	927	927	928	928	929	930	930	930	930	930	930	930	930	929	929	929	928	928	928	930	928.0	24
23	927	927	926	925	925	924	924	923	923	924	924	924	924	924	924	925	926	926	926	927	927	928	928	929	929	925.4	24
24	929	930	930	931	931	931	931	930	931	931	931	930	930	929	929	928	927	926	924	923	922	921	919	919	931	927.6	24
25	917	916	916	915	915	915	915	915	916	917	918	920	921	922	923	924	926	927	929	929	929	930	930	931	931	921.5	24
26	931	932	932	932	932	932	931	931	931	931	932	931	931	931	931	932	931	932	932	932	933	934	934	935	935	931.9	24
27	935	935	935	936	936	937	938	939	939	940	940	940	940	939	938	938	938	937	937	936	936	936	936	937	940	937.4	24
28	938	938	939	940	941	942	943	943	944	944	945	945	944	944	943	943	942	941	940	940	938	937	936	935	945	941.0	24
29	934	932	931	930	929	927	926	925	924	923	923	923	923	922	922	922	922	922	921	921	921	921	921	921	934	924.4	24
30	921	920	920	920	921	921	921	921	922	922	923	923	922	923	923	923	924	925	925	926	926	926	927	927	927	923.0	24
31	927	928	928	928	929	929	929	930	930	930	931	931	931	931	931	931	931	932	932	933	933	933	933	933	933	930.6	24
HOURLY MAX	954	954	954	954	954	954	954	954	954	955	956	956	957	957	957	957	957	957	957	957	956	955	954	954			
HOURLY AVG	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935			

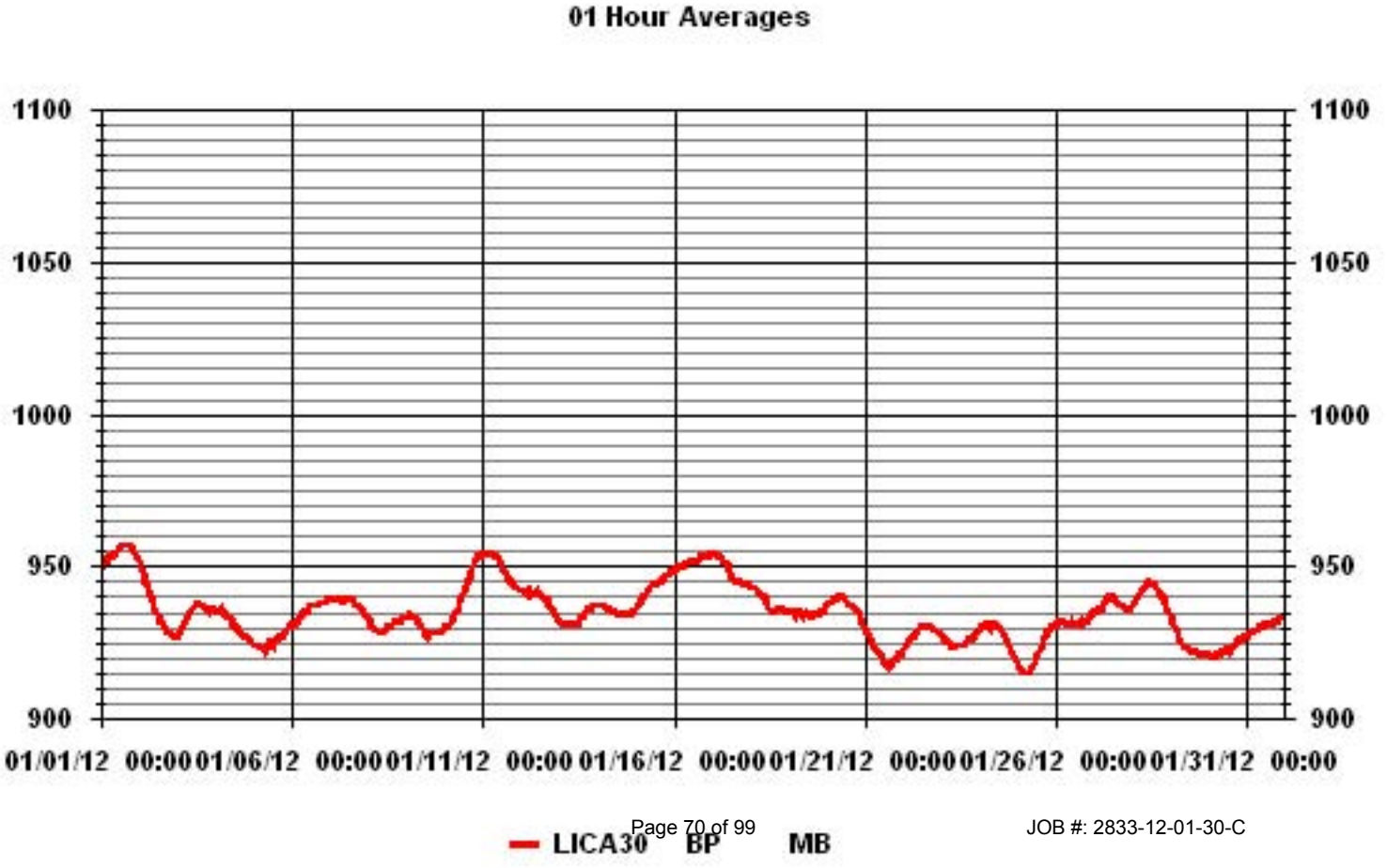
STATUS FLAG CODES

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:	957	MB	@ HOUR(S)	VAR	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	954.7	MB			ON DAY(S)	1
				VAR-VARIOUS		
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		744	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	9.19		MONTHLY AVERAGE:		935	MB



JOB #: 2833-12-01-30-C

Vector Wind Speed

IMPERIAL OIL RESOURCES LTD. - *COLD LAKE - MASKWA*

JANUARY 2012

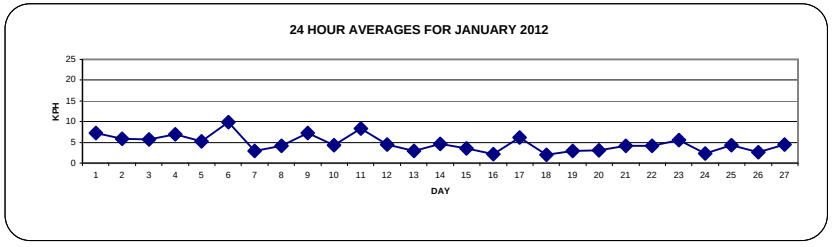
WIND SPEED hourly averages (km/hr)

MST

HOUR START / HOUR END	0:00 1:00	1:00 2:00	2:00 3:00	3:00 4:00	4:00 5:00	5:00 6:00	6:00 7:00	7:00 8:00	8:00 9:00	9:00 10:00	10:00 11:00	11:00 12:00	12:00 13:00	13:00 14:00	14:00 15:00	15:00 16:00	16:00 17:00	17:00 18:00	18:00 19:00	19:00 20:00	20:00 21:00	21:00 22:00	22:00 23:00	23:00 0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																											
1	5.5	5.6	4	2.1	4.3	4.6	1.7	1.6	2.9	5.4	5.3	5.6	4.9	4.3	5.3	4.9	0.6	2.1	0	0	0.3	1.3	0.3	0.5	5.6	2.6	24
2	1.1	7.4	7.8	6.9	8.6	7	8	8.4	8.1	5.3	5.4	4	3.2	4.2	1.9	1.8	2.3	1.5	1.2	0.8	0.5	0.9	5.2	4.7	8.6	3.8	24
3	2.7	6.6	4.5	6.5	3.1	3.2	2	2.9	4.6	2.5	4.4	3.1	2.3	3.2	2.3	0.1	0.3	0.1	2.1	0.9	0.4	0.7	0.2	0.9	6.6	2.1	24
4	0.2	3.7	1	1.7	0.2	0.5	1.2	0.3	0.5	0.6	0.3	0.5	2.3	3.2	3.8	2.4	1.1	2.3	2	1.2	0.8	1.7	0.3	1.1	3.8	0.5	24
5	0.8	2.4	0.6	1.2	3.6	3.3	4	4.9	4.7	12.2	12.8	10.4	11.2	11.8	12.9	11.2	10.1	12.9	11.9	11.6	12.7	9.7	7	3.2	12.9	7.2	24
6	4.1	4.8	5.9	7.4	8.6	7.5	7.2	6	5	6.9	7.6	9.2	9.4	11.7	9.5	4.5	4.3	3.7	3.8	3.9	3.3	3.2	1.9	2.3	11.7	5.9	24
7	2.8	2.7	4	4.7	4	4.4	5.3	4.2	4.1	3.9	4.2	5.7	6.7	6.9	7.1	6.2	6.6	8.2	7.6	6.3	7.2	7.8	9	10.6	10.6	5.7	24
8	7	10.2	8.1	8.6	8.4	6.1	6.2	6.4	5.5	6.2	6.3	7.6	9.9	11.5	12.7	13.1	10.3	8.9	10.6	9.6	8.4	4.6	5.5	6	13.1	6.9	24
9	7	6.1	3.8	3.7	5.8	5.6	6.1	6.4	4.8	7	3.3	3.5	4.9	5.4	7.9	6.5	7.5	7.4	5.1	4.1	4.8	7.3	10.9	12.3	12.3	5.3	24
10	10.3	11.8	12.8	11	8.5	10.4	10.6	10.3	11.5	13.3	12.5	12.7	10.8	12.4	12	12.5	12	12.4	8.7	8.4	6.6	6.9	6.3	5.4	13.3	**9.9**	24
11	6.8	6.5	5.9	3.8	2.5	1.7	2.2	2.8	5.1	4.5	6	6.8	6.6	5.8	3.6	2.3	1.1	2	2.2	5.6	4.8	2.6	2.1	4.1	6.8	3	24
12	4.3	1.9	3.4	6.5	4.8	3.8	4.5	5	3.7	4.2	3.8	3.9	4.2	4.6	4.7	3.7	5.5	4.6	6.7	5.2	4.9	5.2	5	4.7	6.7	4.2	24
13	4	4.3	3.8	2.8	6.4	5.2	4.8	5.4	7.8	11.9	12.8	12.1	12.7	13	12.8	10.7	11.1	9.5	9.5	8.3	5.3	6	4.4	4.3	13	7.3	24
14	5.2	2.3	0.5	0.4	1.2	0.9	1	1.3	0.2	0.6	1.2	2.3	3.3	3.2	6.1	5.1	7.1	8.6	9.7	9.4	11.9	13.8	14.1	**15**	**15**	4.3	24
15	14.6	11.1	11.6	10.8	9.3	11.3	10.1	10.5	8.8	9.1	8.3	8.8	9.4	8.3	8	8.1	7.2	6.9	7	5.9	5.8	6.3	5.3	3.7	14.6	8.3	24
16	3.6	4.8	7.4	7	4.4	4.9	5.7	7.2	6.3	7.3	7.2	7	5.6	6.4	5.5	5.1	2.4	1.4	0.5	1.1	1.8	2.1	4.4	1.9	7.4	4.4	24
17	0.6	0.9	0.4	0.8	0.7	1.5	1.6	1.6	3	2	3.9	4.6	9.5	8	5.2	4.1	2	2.1	3.4	2.8	3.9	4.3	4.5	3.8	9.5	2.9	24
18	4.1	4.6	5.4	5.4	4.8	5.1	4.2	4.8	5.3	4.9	5.6	6	6.4	7.2	6.2	5.9	4.9	2.4	2.6	2.8	4.1	4.2	5.4	4.6	7.2	4.6	24
19	4	4.4	4.9	3.2	3.5	5.2	4.4	4.1	3.6	3.3	4.7	4.4	5.4	8.4	6.7	5.2	3.5	2	2.7	2.8	3	2.6	1.9	1.9	8.4	3.6	24
20	2.7	3.9	3.4	1.8	2.2	3.2	1.5	2.2	4.3	4.9	3.2	3.1	4.5	6.2	6.1	5.7	3.2	0.4	0.1	0.1	0.4	2.1	1	4.6	6.2	2.2	24
21	5.2	4.9	4.3	5.9	6.9	7.6	7.2	8	8.7	8.3	8.2	9.5	9.3	9.6	9.7	8.5	6.4	6	6.2	3.7	3.8	2.2	1.2	1.7	9.7	6.2	24
22	2.2	1.9	1.6	0.7	1.2	3	3.5	5.4	5.6	3.4	4.8	3.5	3.1	4.6	6.2	5.4	1.7	0.3	0.6	0.6	1	1.8	2.1	1.9	6.2	2	24
23	3.8	3.3	5.1	8.4	6.2	4.9	4.9	5.6	6.4	4.6	4.5	5.9	4.1	4.8	4.1	5.4	3.6	4.4	5.8	4.3	4	4.4	3.5	3.8	8.4	2.9	24
24	5.1	5.9	5.5	6.3	6.2	5.1	2.6	6.5	5	2.5	5.2	6.5	5.8	5.6	5.1	2.6	2.8	0.9	2	4.8	3.8	3.1	2.4	3	6.5	3.1	24
25	4.2	3.3	2.1	1.5	1	0.3	0.2	0.6	0.8	1.6	4	3.7	4.5	5.7	7.7	9.2	10.1	14.4	13.4	8.5	8.6	5.6	5.2	3.8	14.4	4.2	24
26	4.3	5.1	4.2	3.5	4	5.5	6.3	4.4	3.8	4	5.8	4.9	3.8	6.8	7.1	4.6	2.3	1.6	3.1	3.3	3.7	3.5	5.5	6.2	7.1	4.2	24
27	5.7	4.5	5.2	6.3	13.6	14.1	13.5	10	9.1	8.6	7.9	3.9	5.3	5.2	6.9	8.1	6.8	6	6.4	5.2	2.3	2.8	3.2	4.9	14.1	5.6	24
28	7.5	9.2	8.9	8.4	7.9	6.6	4.2	5.3	3.8	4.2	3.4	1.3	1.6	1.5	3.1	5.4	0.8	1.7	0.8	1.2	2.1	1.9	4.9	4	9.2	2.3	24
29	5.3	7.7	7.6	6.9	8.3	8.3	8.6	7.8	6.7	6.1	5.9	5.6	6.4	4	3.4	2.6	2.5	1.7	1.4	0.7	0.4	0.9	0.1	0.2	8.6	4.3	24
30	0.9	1.3	0.9	0.6	0.6	0.9	0.3	2.9	0.7	0.4	1.1	4.5	3.9	3.5	3.4	4.3	5.6	4.8	5.5	5.5	5.9	5.1	4.3	3.5	5.9	2.6	24
31	3.8	5.3	3.3	3	5.7	4.3	4.9	6.3	7.7	5.4	6.3	4.9	3.3	3.4	6.7	5.4	1.9	2.8	3	3.3	3.5	5.5	4.7	5.6	7.7	4.5	24
HOURLY MAX	14.6	11.8	12.8	11.0	13.6	14.1	13.5	10.5	11.5	13.3	12.8	12.7	12.7	13.0	12.9	13.1	12.0	14.4	13.4	11.6	12.7	13.8	14.1	15.0			
HOURLY AVG	4.5	5.1	4.8	4.8	5.0	5.0	4.8	5.1	5.1	5.3	5.7	5.7	5.9	6.5	6.6	5.8	4.8	4.6	4.7	4.3	4.2	4.2	4.3	4.3			

STATUS FLAG CODES

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

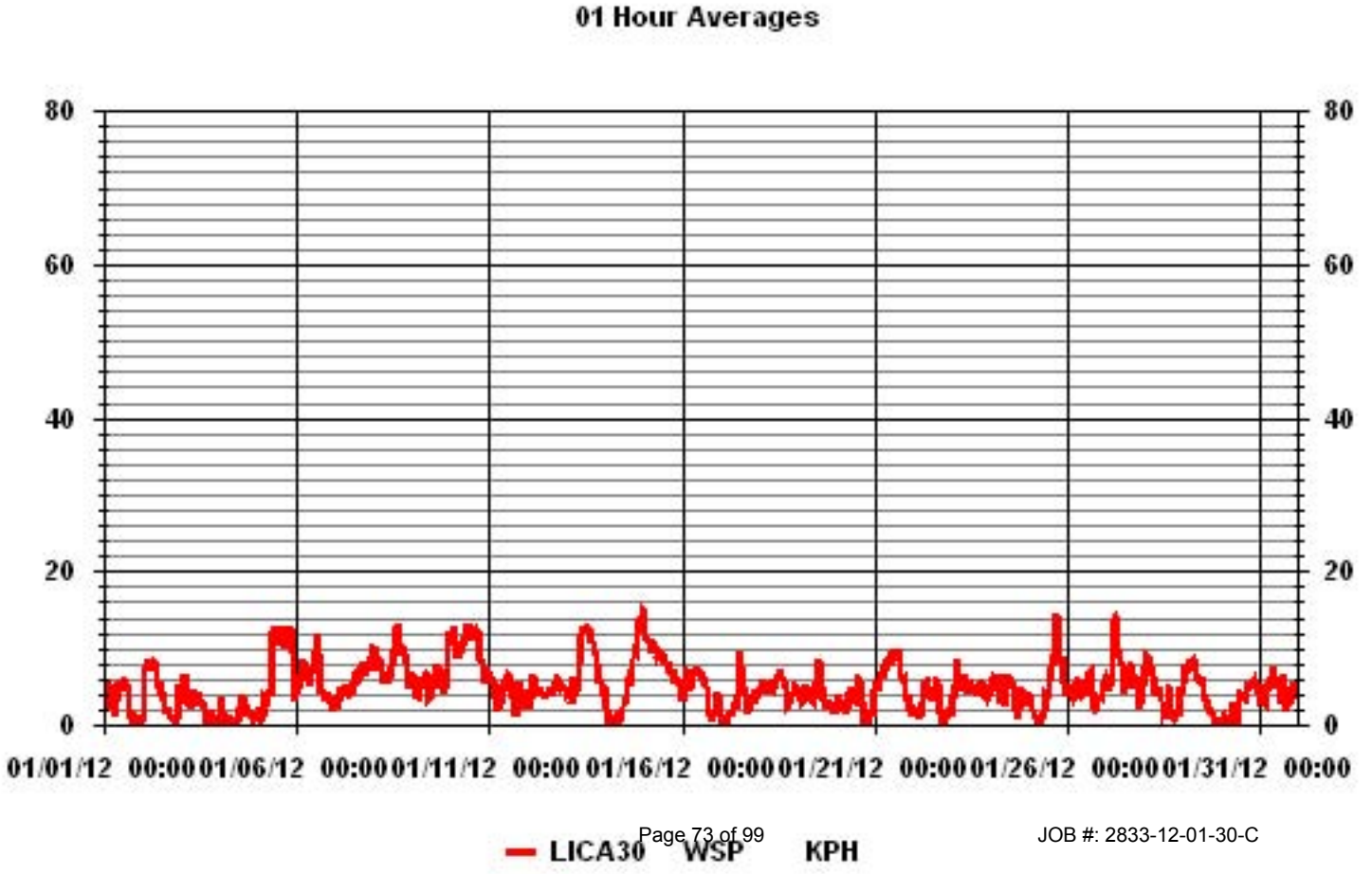


LAST CALIBRATION: November 7, 2011

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:		15.0	KPH	@ HOUR(S)	23	ON DAY(S)	14
MAXIMUM 24-HR AVERAGE:		9.9	KPH			ON DAY(S)	10
CALMS (≤ 1 KPH)	7.80 %			OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	0 HRS			AMD OPERATION UPTIME		100.0	%
STANDARD DEVIATION	3.15			MONTHLY AVERAGE		5.04	KPH

JOB #: 2833-12-01-30-C



JOB #: 2833-12-01-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JANUARY 2012

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

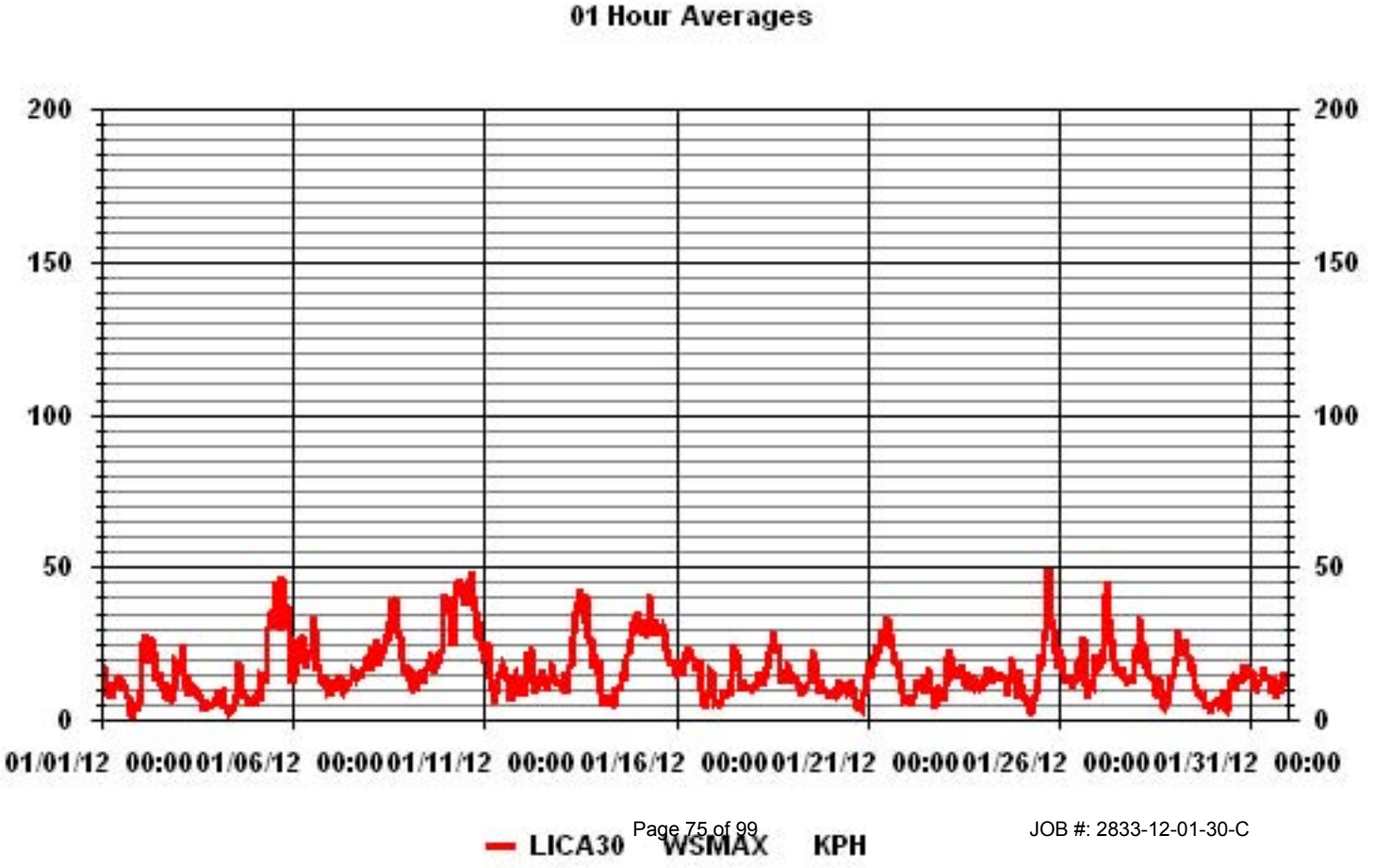
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.
DAY																									
1	17.7	17.3	15.4	7.7	11.9	10.6	7	8.4	10.4	12.1	13.2	13.9	13.5	9.5	11.8	11.1	7.8	7.4	2.2	1.6	5	4.3	3	5.2	17.7
2	10	25.7	25	21.5	28.1	18.5	20.3	27.4	24.6	22.9	14.3	14.5	10.9	15.7	10.5	8.6	9.1	12.2	7.5	6.9	5.8	9.7	19.4	18.7	28.1
3	15.3	18.5	20	24.3	12.8	13.4	9.3	9.1	12	8.9	11	9.2	7.9	8.5	6.4	2.8	4.2	2.6	6.2	5.2	3.6	5.9	4.6	6.5	24.3
4	6	8.6	8.6	9.1	3.3	5.1	4.5	2.5	3.4	2.9	3.2	5.1	8.4	10.7	18.6	9.5	7.1	9.8	7.7	7.4	4.6	7.6	4.7	7.1	18.6
5	4	8.4	9.7	5.6	14.7	14.1	14.8	12.1	30.7	34.4	34.3	30	36.4	45.5	40.3	35	28.9	46.8	41.7	38.3	37.4	30.7	27.6	11.8	46.8
6	16.2	15.9	17.8	18.3	25.7	26.4	27.6	19.2	17	22.4	21.9	22.9	32.3	33.6	30.1	15.8	17.8	12.6	11.8	12.6	14.4	12.2	9	9.7	33.6
7	9.1	9.9	13.1	10.4	9.4	14.8	10.5	9.4	10.8	10.6	11.4	12.6	13.4	15.8	15	13.5	14.4	15.9	16.1	13.6	16.1	16.8	20.1	21.5	21.5
8	15.8	23.7	22.5	21.2	26.6	18.8	17.3	20.6	21.9	24.9	27.6	25.4	32.1	39.4	36.8	38.2	40.2	28	29.6	27.5	20.9	16.9	15.9	14.8	40.2
9	16.8	16.4	10.7	8.9	12.6	11.8	13.6	15.7	13.3	16.3	12	15.7	17.1	19.7	22.1	19.7	15.4	16.6	17.1	18.2	22.1	23.1	37.4	41.1	41.1
10	38	34.4	40.7	30.6	23.8	36	45.2	40.5	46.2	44.6	42.9	44.2	36.9	43.4	46.3	42.4	48.8	41.3	36.3	27.6	26.4	32.1	23.2	20.8	48.8
11	21.6	23	25.8	14.2	10.2	10.3	5.3	8.6	12.8	13.8	15.8	18.3	17.5	15.8	13.6	7.8	6.3	9.4	13.7	14.8	13	12.8	7.5	11.3	25.8
12	13.9	7.9	11.3	22.4	17.3	23.5	20.8	11.5	8.9	13.9	11.7	11.7	16.5	10.8	13.1	9.6	13.6	12	18.5	14.1	14	11.9	12	12.4	23.5
13	9.6	11.1	15.3	8.4	13.6	17.2	17.8	26.7	28.1	35.1	38.7	35.6	43.1	41.6	39.7	31.2	40.9	27.4	26.1	27.3	17	21.2	17.6	14.8	43.1
14	20	9	5.5	5.4	6.3	6.3	5.2	8.2	5.2	4.1	10.6	9.2	10.8	9.7	15.9	12.8	19.5	21.1	24.8	24.1	27.5	32	33.6	32.6	33.6
15	35	33	29.6	29.2	28.7	32.8	31.5	41.4	32.3	29.4	27.6	32.5	30.7	27.7	28.7	30.5	29.3	22.2	24.1	20.3	18.5	18.4	19.4	15.2	41.4
16	14.7	15.4	20.1	19.2	14.3	18	21.5	21.6	23.7	19.6	21.5	19.7	16.2	19.1	17.8	19.9	10.1	5	3.9	7.4	8.9	16.6	16.2	7.8	23.7
17	5.8	6.5	6	5.5	6.4	7.2	9.9	7.2	8.6	7.7	13.2	17.1	25	23.7	22.4	17	10.5	10.6	13.2	9.2	10.3	11.1	11	9.8	25
18	10.1	11.9	11.6	15	14.9	12.9	11.3	13.2	16.6	17	21.8	23.6	24.6	28.4	25.6	21.5	24.4	14.2	11.5	13.5	14.5	16.2	19.1	15.5	28.4
19	11.8	12.9	14.5	14	13.1	10.8	7.7	8.7	11.6	10.2	12	12.5	19.6	22.4	22.2	19.9	12.6	8.4	11.1	12.9	10	9.8	9.9	8.3	22.4
20	8.2	9.2	8.8	8.3	10.6	12.2	12.1	9.4	10.3	11.5	11.5	9.4	10.3	12.8	13	11.7	7.6	4.7	2.6	4.6	3.9	7.7	8.8	15.1	15.1
21	17.7	18.7	13.2	17.6	20.4	20.3	25	21.6	26.4	29.3	23.9	33.4	30.8	33.5	28.5	24.6	23.2	19.3	17.8	18	14.3	9.2	6	6.3	33.5
22	6.9	7.2	5.8	4.4	6.8	8.1	9.2	12.9	11.7	11.2	13.2	14.9	8.7	12.2	17.5	10.8	10.1	5	4.6	5.5	11.1	8	7.5	7.3	17.5
23	9.8	11.3	20.3	22.5	21	15.2	15.8	14.5	16.8	13.5	16	17.7	13.5	12.2	10.7	15.2	10.8	9.8	14.7	11.1	11.9	11	13.1	9.2	22.5
24	10.7	13.4	13.3	16.1	16.2	14.2	11.7	15.1	14.4	13	14.7	15.1	14.4	13.8	13.3	7.9	13.5	12.2	20.8	15.5	15.5	10.4	6.9	16.1	20.8
25	12.3	10.2	5.7	8.3	5.5	3.4	2.9	3.8	6.4	8.4	13.4	16.2	21.6	17.6	27.8	27.4	30.8	**49.8**	46.6	33.7	30.4	22.7	22.2	16.3	**49.8**
26	24.1	21.1	15.5	13.6	12	14.3	14.4	12.3	10.2	12	12.7	12.9	18.5	20.1	23.1	27.4	11.9	6.7	9.3	10.4	11.8	11.1	13.9	21.4	27.4
27	17	17.3	18.4	23.1	40.7	40.9	45.3	33.4	25.2	27.2	19.7	16.9	15.6	15.8	16.1	15.3	17.2	14.5	12.4	12.7	13.7	11.5	13.5	23.4	45.3
28	18.3	24.4	33.7	28.1	26.1	24.4	16.7	19.9	14.8	13.6	13.9	13.3	8.7	7.4	11	13.8	10.1	4.9	4.2	5.6	7.9	10.1	15	13.4	33.7
29	17.4	20.9	29.7	20.4	23.9	25.5	25.4	25.4	20.4	21.5	17.3	17.5	14.8	12.3	10.4	8.8	8	7.4	8.1	4.9	4.7	4.7	2.9	2.9	29.7
30	5.2	5.4	5.5	6	4.8	5.7	4.9	10	3.9	3.2	5.5	12.1	13.5	12.1	9.4	13.4	14.6	12	13.4	13.4	18.3	17.3	13.6	17.1	18.3
31	14.2	16.4	10.3	10	11.7	12.3	12.7	14.3	16.8	15.1	13.5	13.3	8.7	9.9	13	14.3	6.6	8.4	10.8	8.7	11.4	15.6	12.3	12.2	16.8
PEAK	38.0	34.4	40.7	30.6	40.7	40.9	45.3	41.4	46.2	44.6	42.9	44.2	43.1	45.5	46.3	42.4	48.8	49.8	46.6	38.3	37.4	32.1	37.4	41.1	

STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	49.8	KPH	@ HOUR(S)	17
			ON DAY(S)	25



JOB #: 2833-12-01-30-C

LICA30
WSP / WDR Joint Frequency Distribution (Percent)

January 2012

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	2.55	1.34	2.28	1.20	.94	2.55	2.95	1.20	1.34	6.04	18.54	10.48	9.54	2.68	1.47	2.55	67.74
<	12.0	1.88	.26	.53	.13	2.01	1.74	.80	.13	.00	4.43	2.68	.53	2.28	6.58	1.34	2.41	27.82
<	20.0	.13	.53	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.55	.53	.40	4.16
<	29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.56	2.15	2.82	1.34	2.95	4.30	3.76	1.34	1.34	10.48	21.23	11.02	11.82	11.82	3.36	5.37	

Calm : .26 %

Total # Operational Hours : 744

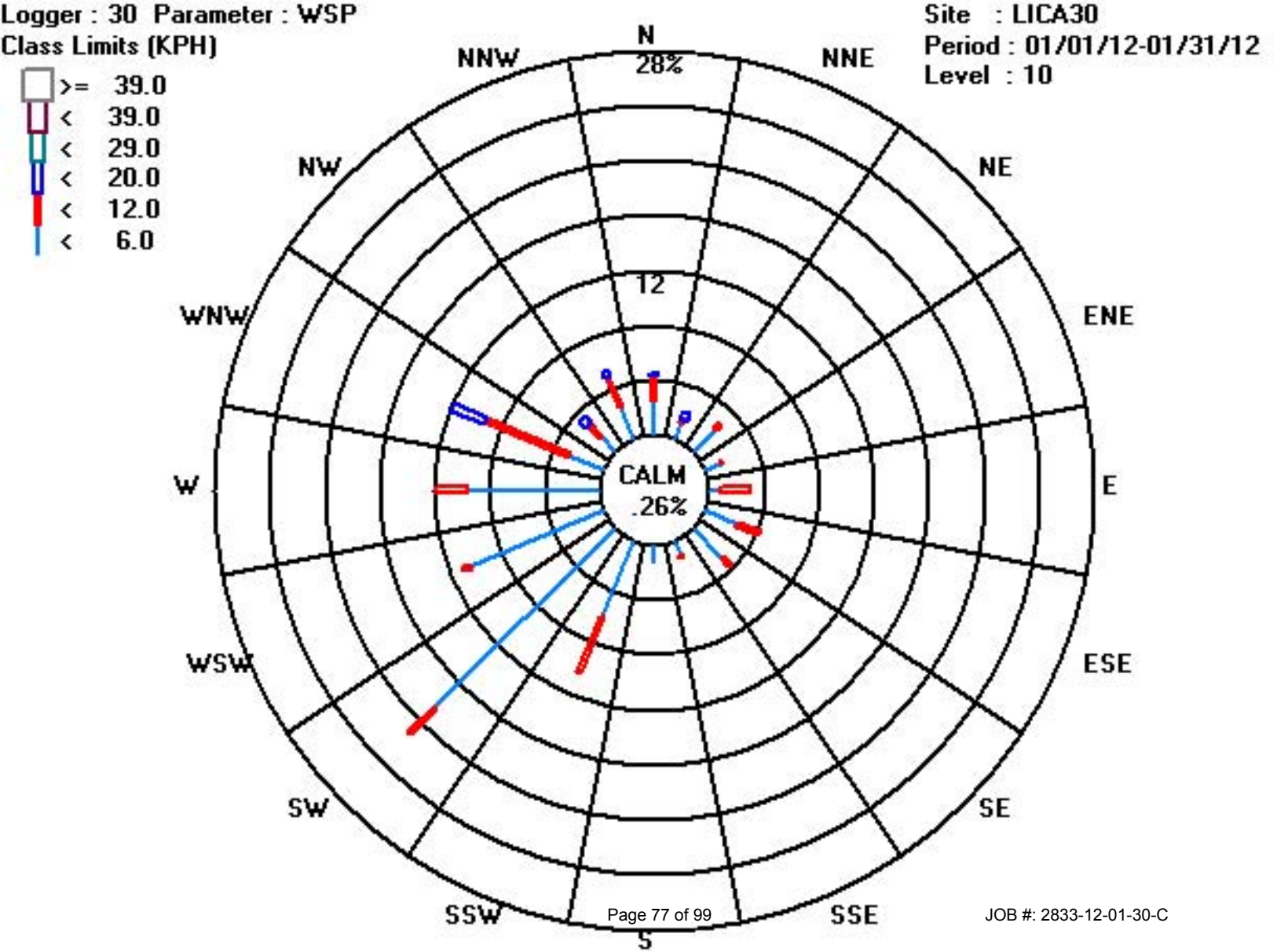
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	19	10	17	9	7	19	22	9	10	45	138	78	71	20	11	19	504
<	12.0	14	2	4	1	15	13	6	1		33	20	4	17	49	10	18	207
<	20.0	1	4												19	4	3	31
<	29.0																	
<	39.0																	
>=	39.0																	
	Totals	34	16	21	10	22	32	28	10	10	78	158	82	88	88	25	40	

Calm : .26 %

Total # Operational Hours : 744



JOB #: 2833-12-01-30-C

Vector Wind Direction

IMPERIAL OIL RESOURCES LTD. - *COLD LAKE - MASKWA*

JANUARY 2012

WIND DIRECTION hourly averages in degrees

MST

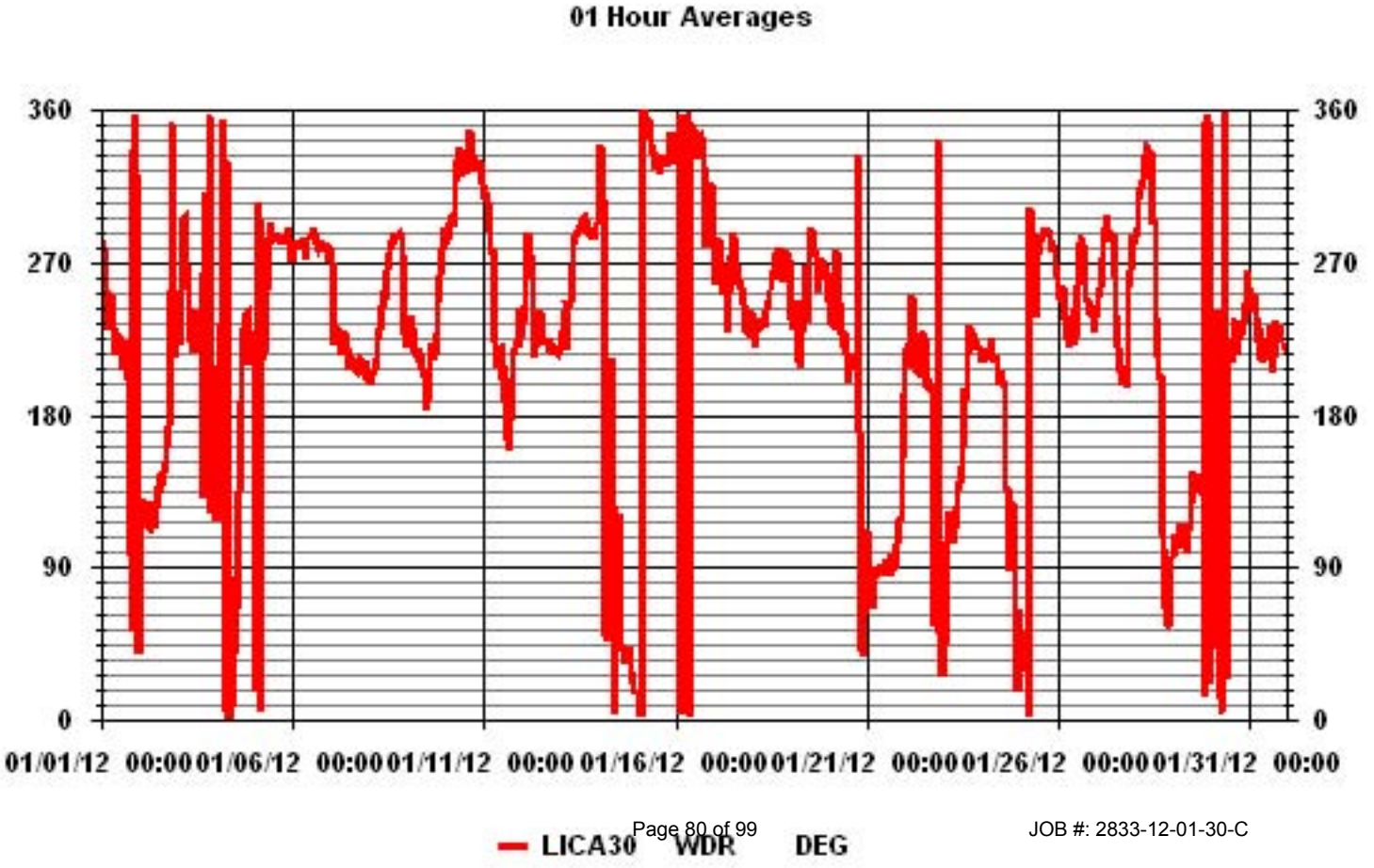
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	282	280	278	254	230	232	251	250	233	216	220	228	225	207	212	210	224	201	96	336	52	358	323	39	236	SW	24
2	100	125	130	122	127	115	114	129	127	113	125	136	136	145	138	146	153	160	173	253	353	216	216	226	135	SE	24
3	238	221	253	296	297	269	259	245	222	234	217	232	242	230	222	264	130	311	206	192	358	122	167	199	240	WSW	24
4	117	208	210	235	355	190	5	330	1	2	7	39	85	66	135	188	230	230	240	241	209	221	230	221	197	SSW	24
5	16	201	305	296	5	212	231	216	253	284	294	289	284	285	286	284	281	284	284	280	284	290	284	270	282	W	24
6	275	278	281	281	282	279	284	279	272	284	285	286	286	291	288	282	279	281	281	281	279	282	271	275	283	W	24
7	279	271	222	224	233	226	215	225	228	230	221	206	209	214	212	207	206	209	214	213	208	209	203	202	215	SSW	24
8	203	198	204	206	214	231	229	231	244	253	248	266	276	281	284	282	285	285	287	288	285	275	228	219	255	WSW	24
9	227	232	238	232	218	216	217	211	218	208	203	182	188	201	214	222	213	215	228	246	262	278	290	284	231	SW	24
10	282	284	293	297	291	300	318	330	336	336	320	325	334	326	323	349	332	335	332	323	330	328	331	317	320	NW	24
11	307	312	307	289	274	279	224	208	211	218	219	205	206	188	167	159	176	201	220	216	222	222	243	226	231	SW	24
12	235	245	268	288	277	259	275	213	229	219	240	242	236	226	222	225	217	225	216	222	219	217	216	218	234	SW	24
13	225	230	242	247	218	243	247	269	280	285	288	289	292	296	297	289	296	288	286	291	284	287	293	294	281	W	24
14	318	339	307	307	50	46	181	214	212	3	126	108	118	121	41	44	33	40	40	43	30	22	18	17	31	NNE	24
15	16	10	2	360	357	358	356	355	345	340	336	325	331	334	322	331	334	328	328	331	342	347	341	328	346	NNW	24
16	330	347	357	3	352	349	356	357	353	1	353	349	348	347	331	342	344	341	328	280	283	297	317	290	346	NNW	24
17	268	256	274	284	272	251	267	267	228	252	274	257	288	286	266	266	261	256	247	245	230	229	231	239	260	WSW	24
18	239	232	219	229	237	230	233	233	241	248	242	254	263	263	261	275	278	266	262	259	276	275	277	272	252	WSW	24
19	237	230	238	247	243	212	208	229	247	269	234	240	274	290	284	279	274	253	263	261	273	269	261	266	255	WSW	24
20	248	235	234	256	267	277	272	248	228	220	229	217	199	208	211	213	217	207	333	171	42	37	62	111	221	SW	24
21	111	108	75	66	77	90	87	89	91	85	87	87	93	93	85	98	91	89	103	104	118	120	155	193	92	E	24
22	219	208	222	237	250	223	217	207	206	228	225	229	226	198	197	199	197	149	57	57	342	52	47	26	212	SSW	24
23	36	44	105	123	117	108	105	113	126	136	140	150	161	195	188	215	233	224	219	228	223	219	221	219	160	SSE	24
24	211	216	219	215	212	218	225	211	215	213	197	201	206	196	200	135	138	88	127	127	101	49	16	66	194	SSW	24
25	54	35	32	33	31	2	303	243	275	288	238	286	274	283	285	291	287	289	288	280	281	278	270	263	287	WNW	24
26	257	250	247	256	238	225	220	233	238	243	222	225	256	281	286	270	280	247	249	241	240	245	229	238	246	WSW	24
27	242	249	255	272	285	290	298	291	284	284	288	263	240	221	207	198	209	200	196	209	255	265	286	281	261	W	24
28	285	290	307	313	314	319	333	341	326	319	336	293	295	238	215	201	205	110	102	67	57	55	94	96	312	NW	24
29	97	109	107	101	114	114	114	110	98	112	116	127	147	143	141	145	133	141	134	14	353	358	21	353	115	ESE	24
30	41	229	228	240	242	13	4	202	359	24	224	217	226	211	237	215	223	232	225	228	235	246	266	256	232	SW	24
31	252	240	252	247	222	237	233	214	211	218	213	225	232	221	205	213	235	227	231	233	224	221	220	218	224	SW	24
HOURLY AVG	330	347	357	360	357	358	356	357	359	340	353	349	348	347	331	349	344	341	333	336	358	358	341	353			

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:	November 7, 2011
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION	82.06		AMD OPERATION UPTIME	100.0	%
			MONTHLY AVERAGE	261	DEG



JOB #: 2833-12-01-30-C

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JANUARY 2012

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

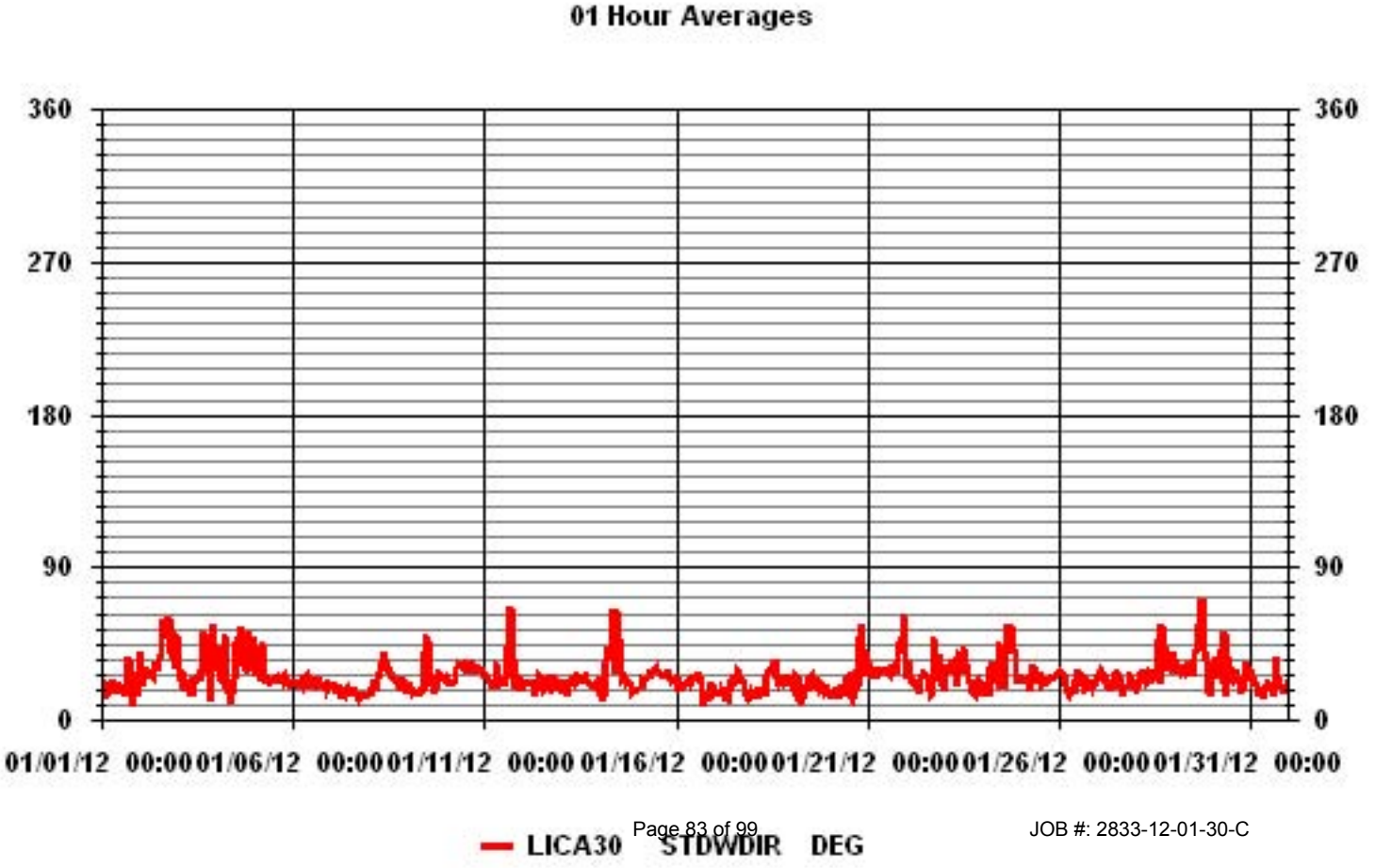
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY									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

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 7, 2011

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS



JOB #: 2833-12-01-30-C

Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	January 4, 2012		Previous Calibration	December 12, 2011	
Company	Lakeland Industry & Community Association				
Plant / Location	Cold Lake - Maskwa				
Start Time (MST)	9:06		End Time (MST)	12:43	
Reason:			Monthly Calibration		
Barometric Pressure	933	mmHg	Station Temperature	20	Deg C
Cal Gas	48.3 ppm	Gas Cyl. #	LL103831	Cal Gas Expiry date	February 28, 2013
DAS Output Voltage	0 - 1	Volts	Chart Rec. Output	NA	Volts

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	508	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	Environics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Environics 6100	S/N :	4760		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range	0 - 1000 ppb							
Sample Flow / Box Temp	591	ccm	28.6	Deg C	591	ccm	28	Deg C
HVPS / Lamp Setting	494		2696		494		2695	
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	38.6		1.239		39.5		1.24	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4993	0	0	1	N/A
4993	0	0	0	N/A
4917	77.4	749	750	0.9980
	No Span Adj.			
4954	41.3	399	396	1.0084
4978	17.5	169	168	1.0072
4997	0	0	0	N/A
			Sum of Least Squares	1.0006
			New Correction Factor	0.9980

	Before Calibration	After Calibration
Auto Zero	1.3	0.8
Auto Span	374.0	374.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9980
Current Correction Factor Before Span Adjust:	0.9980
Percent Change:	0.0%

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

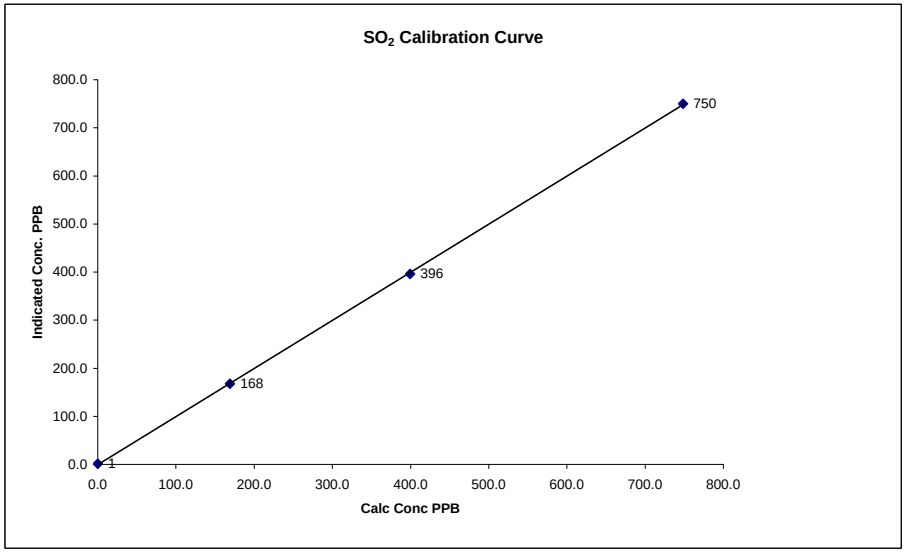
Calibration Performed by: Ting Xu

SO_2 Calibration Curve

Calibration Date	January 4, 2012		
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	9:06	End Time (MST)	12:43

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	1	n/a
169	168	1.0072
399	396	1.0084
749	750	0.9980

Correlation Coefficient	(≥ 0.995)	0.999954
Slope	(0.85 to 1.15)	1.000792
Intercept	(± 3% F.S.)	-0.775140



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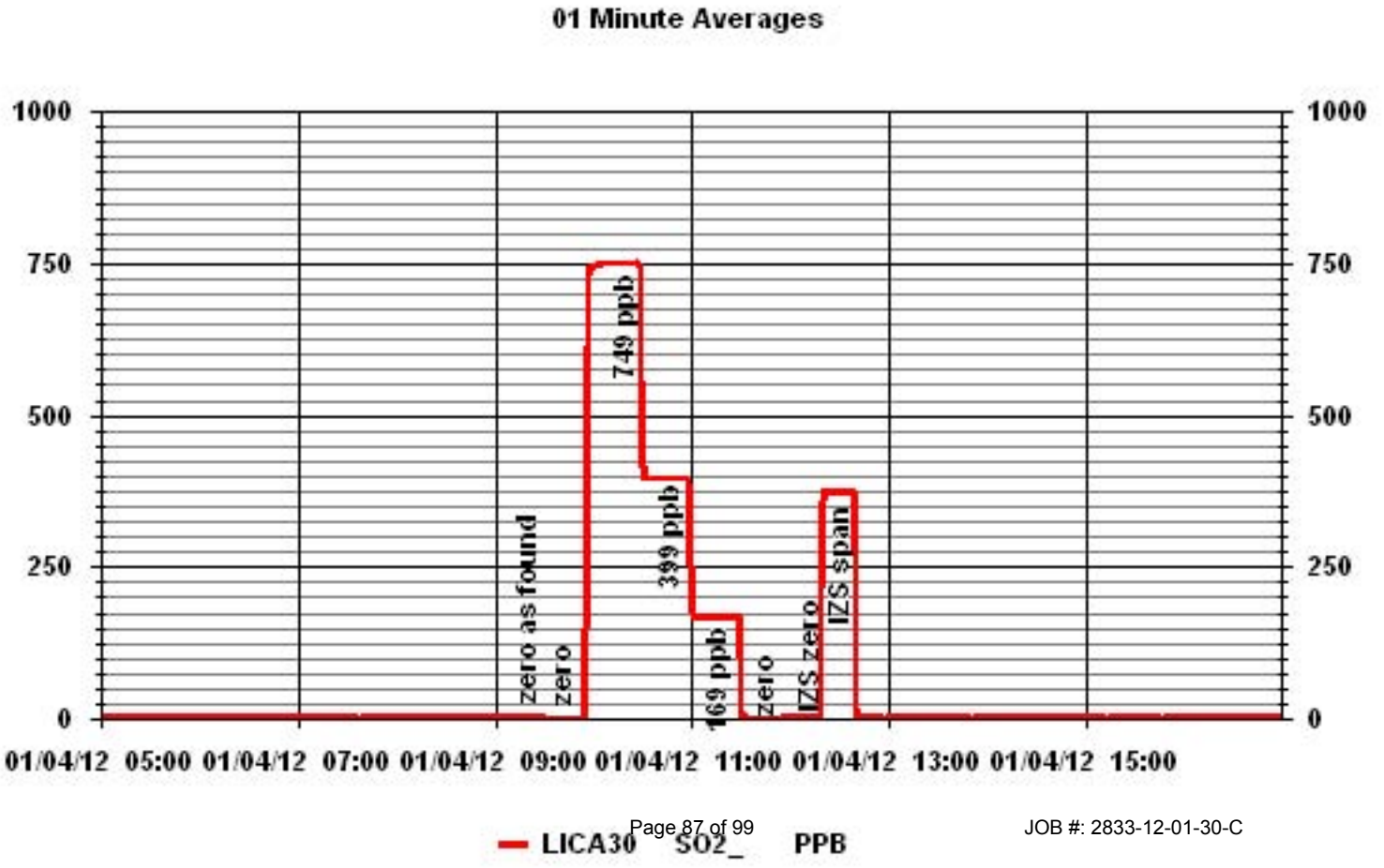


JOB #: 2833-12-01-30-C

Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	January 3, 2012		Previous Calibration	December 9, 2011	
Company	Lakelnad Industry & Community Association				
Plant / Location	Cold Lake - Maskwa				
Start Time (MST)	10:40		End Time (MST)	14:51	
Reason:	Monthly Calibration				
Barometric Pressure	937	mBar	Station Temperature	20	Deg C
Cal Gas	10.2 ppm		Gas Cyl. #	BLM00080	Cal Gas Expiry date: February 22, 2012
DAS Output Voltage	0 - 1	Volts	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	478	ccm	29.3	Deg C	479	ccm	29.5	Deg C
HVPS / Lamp Setting	552		2579		552		2579	
PMT / RxCell Temp	7.9	Deg C	50	Deg C	7.9	Deg C	50	Deg C
Converter / IZS Temp	314.5	Deg C	45	Deg C	315.8	Deg C	45.0	Deg C
Offset / Slope	36.4		0.822		37.6		0.834	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	1	NA
4996	0	0	0	NA
4960	39.2	80	79	1.0124
4960	39.2	80	80	1.0000
4976	19.6	40	40	1.0000
4986	11.2	23	24	0.9525
4996	0	0	0	NA
			Sum of Least Squares	0.9969
			New Correction Factor	1.0000

	Before Calibration	After Calibration
Auto Zero	0.2	-0.2
Auto Span	60.3	59.4
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0124
Percent Change:	-1.2%

Notes: **NA : Not Applicable**

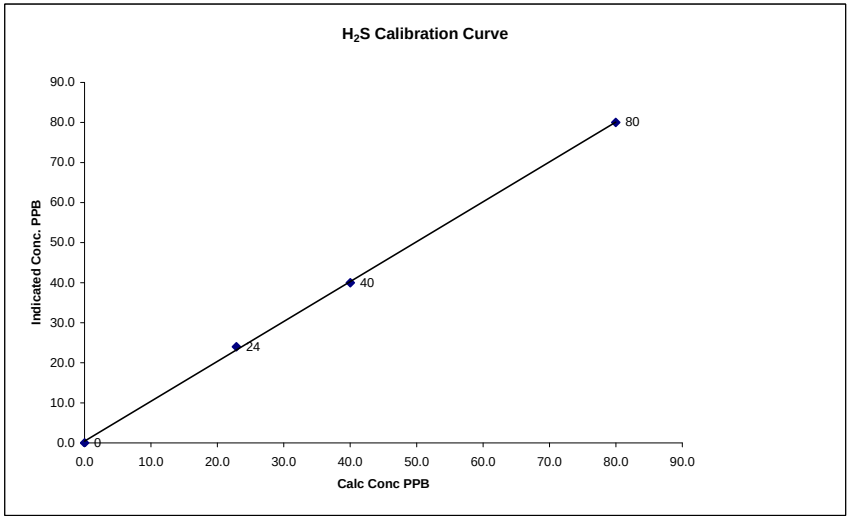
Calibration Performed by: Ting Xu

H_2S Calibration Curve

Calibration Date	January 3, 2012		
Company	Lakelnad Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	10:40	End Time (MST)	14:51

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	
23	24	0.9525
40	40	1.0005
80	80	0.9998

Correlation Coefficient	(≥ 0.995)	0.999729
Slope	(0.85 to 1.15)	0.995941
Intercept	(± 3% F.S.)	0.429759



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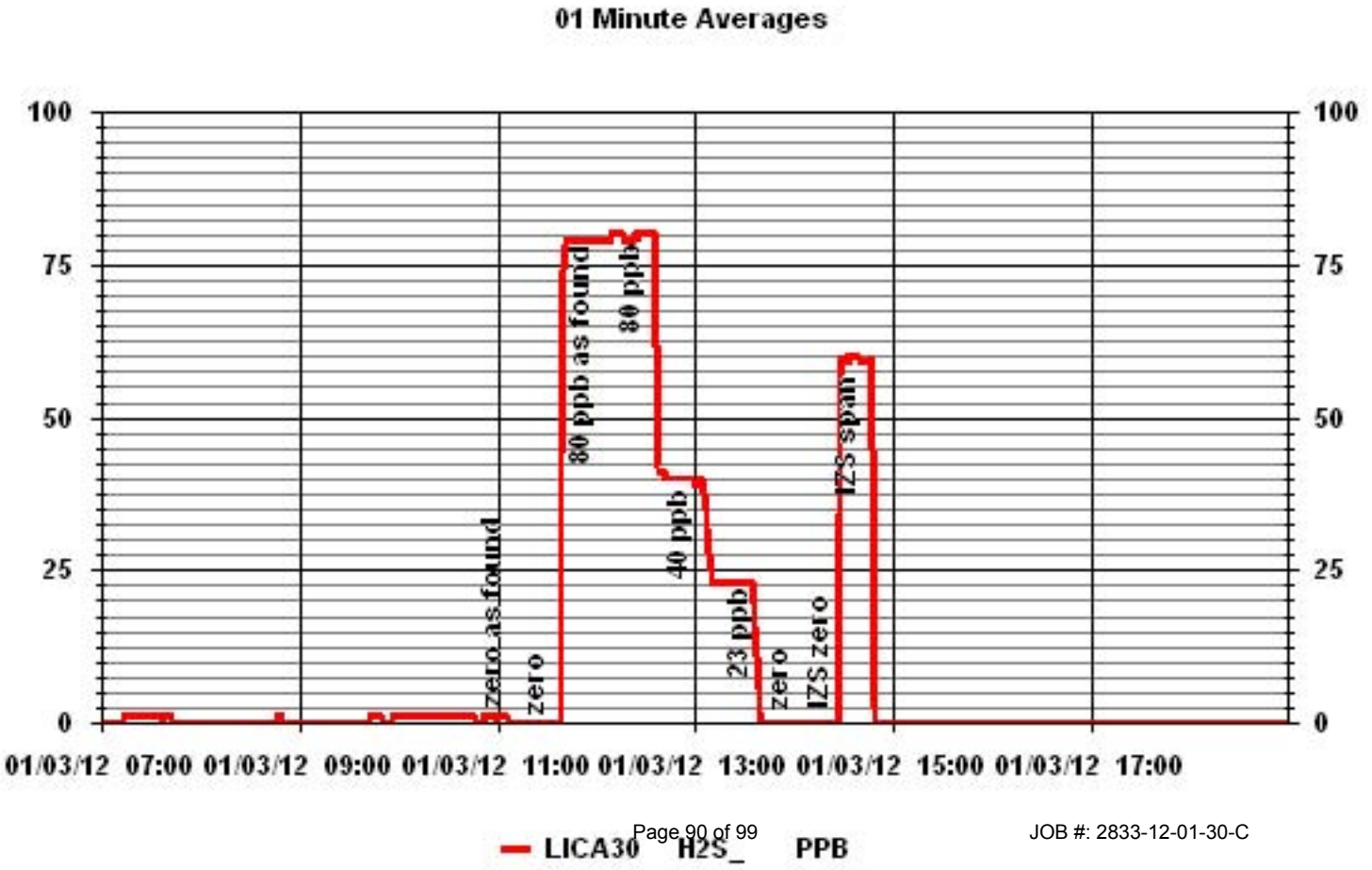


JOB #: 2833-12-01-30-C

Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	January 4, 2012		Previous Calibration	December 12, 2011	
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location:	Maskwa				
Start Time (MST)	9:31		End Time (MST)	12:49	
Reason:	Monthly Calibration				
Barometric Pressure:	933	mmHg	Station Temperature:	20	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 - 1	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.			
3000	70.0	41.4	41.0	1.0099
3000	70.0	41.4	41.6	0.9954
3000	35.0	20.9	20.9	1.0000
3000	20.0	12.0	12.0	1.0000
3000	0.0	0.0	-0.1	NA
			New Correction Factor:	0.9954

Percent Change

Previous Calibration Correction Factor:	0.9954
Current Correction Factor Before Span Adjust:	1.0099
Percent Change:	-1.4%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	34.7	35.0
Sample Lines Connected		YES

Cylinder Pressures

Span 600 psi Hydrogen 650 psi Zero Air 32 psi

Notes: **NA : Not Applicable**

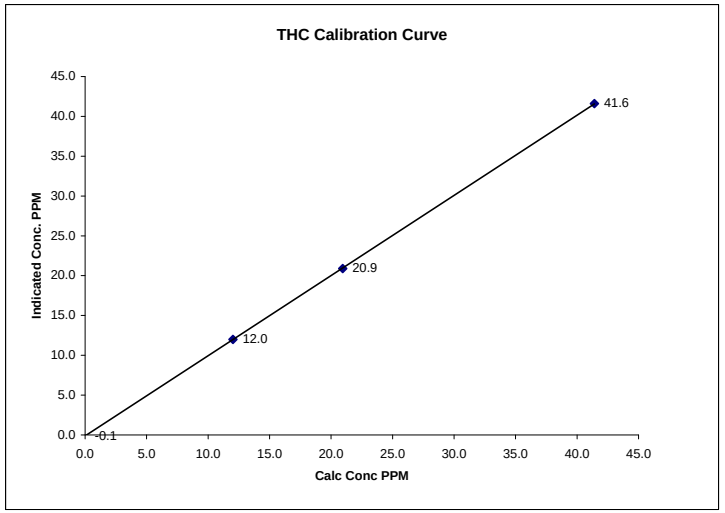
Calibration Performed by: Ting Xu

THC Calibration Curve

Calibration Date	January 4, 2012			
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION			
Plant / Location	Maskwa			
Start Time (MST)	9:31	End Time (MST)	12:49	

Calculated Conc. ppm	Indicated Response ppm	Correction Factor
0.0	-0.1	NA
12.0	12.0	1.0022
20.9	20.9	1.0020
41.4	41.6	0.9954

Correlation Coefficient	(≥ 0.995)	0.999994
Slope	(0.85 to 1.15)	1.006923
Intercept	(± 3% F.S.)	-0.12272



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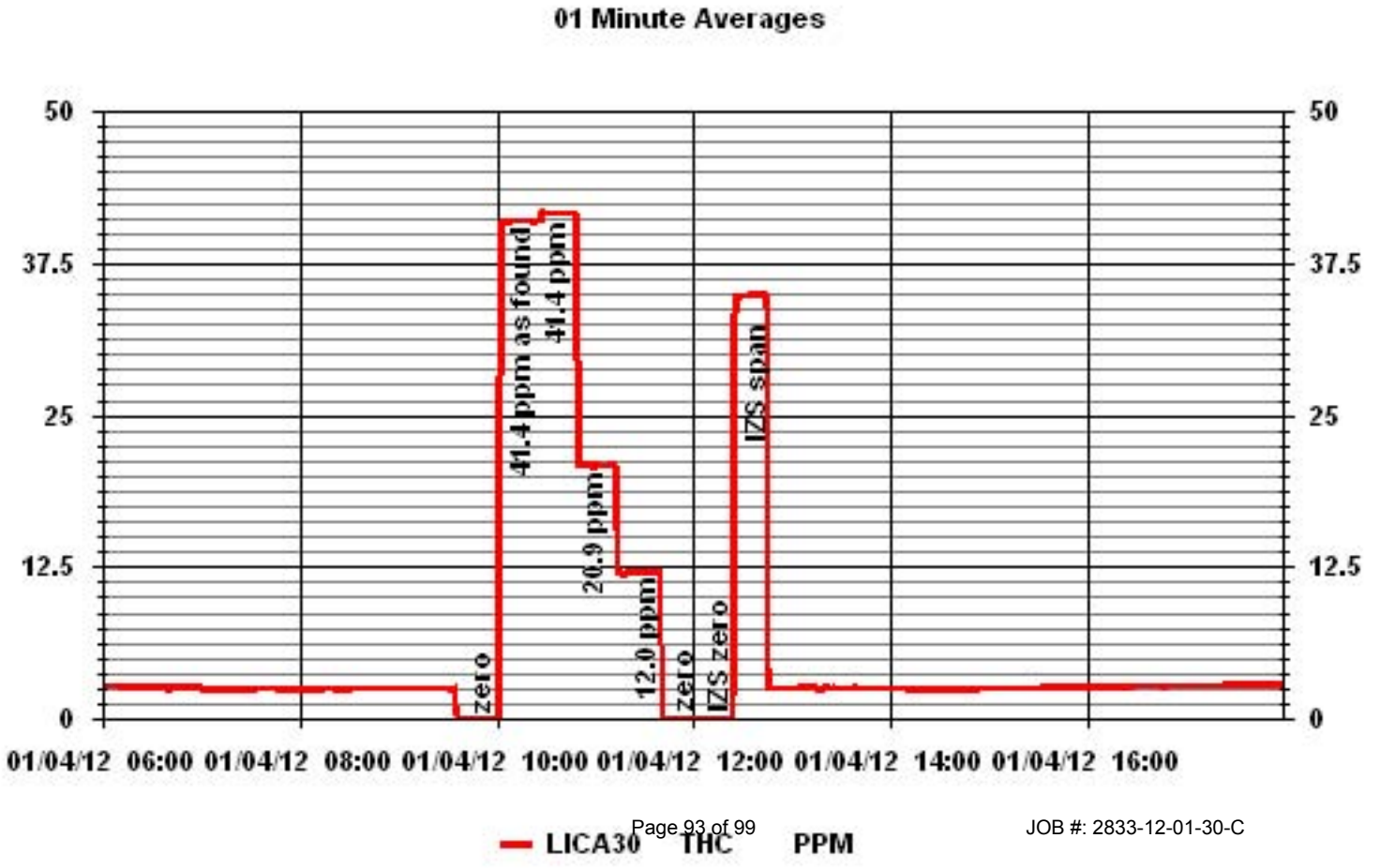


JOB #: 2833-12-01-30-C

Nitrogen Dioxide

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	January 1, 2012	Previous Calibration	December 9, 2011
Company	LICA	Plant/Location	Maskwa
Start Time (MST)	9:43	End Time (MST)	17:05
Reason:	As Found		
Barometric Pressure	955 mBar	Station Temperature	19 Deg C
MFCF	1		
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:	API 200E	S/N :	594	Method:	Chemiluminescent
Calibrator Make / Model:	Environics 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

Concentration Range: 0 - 1000 ppb

	Before Calibration				After Calibration			
Sample Flow/Conv. Temp	464	ccm	316.2	Deg C	464	ccm	315	Deg C
Ozone Flow / Vacuum	80	ccm	5.4	"Hg-A	80	ccm	5.3	"Hg-A
HVPS / A ZERO	767	Volts	16.3	MV	767	Volts	16.4	MV
Rx/ Temp / PMT Temp	50.0	Deg C	6.5	Deg C	50.1	Deg C	6.5	Deg C
Box Temp / IZS Temp	25.3	Deg C	45.2	Deg C	27.5	Deg C	45	Deg C
Offset	0.9	NOx	0.8	NO	0.9	NOx	0.8	NO
Slope	1.196	NOx	1.182	NO	1.196	NOx	1.182	NO
NO_2 COEF / Conv Efficency	NA	NO2	0.994		NA	NO2	0.994	

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration NOx	Calculated Concentration NO	Calculated Concentration NO2	Indicated Concentration NOx	Indicated Concentration NO	Indicated Concentration NO2	Correction Factor NOx	Correction Factor NO
4994	0.0	NA	0	0	NA	1	1	1	NA	NA
4921	75.7	NA	753	748	NA	754	745	10	0.9999	1.0059

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration NOx	Calculated Concentration NO	Calculated Concentration NO2	Indicated Concentration NOx	Indicated Concentration NO	Indicated Concentration NO2	NO_2 Correction Factor	NO2 Conv Efficency

Linearity OK?	Yes	No	Sum of Least Squares	NOx=	NO=	NO2=
			Correction Factors:	NOx= 0.9999	NO= 1.0059	NO2=

Average Converter Efficiency=

	Before Calibration				After Calibration			
Auto Zero	1.2	NOx	1.3	NO2	-	NOx	-	NO2
Auto Span	585	NOx	575	NO2	-	NOx	-	NO2

Sample Lines Connected: YES

Percent Change from Previous Calibration: NOx 0.0% NO -0.6% NO2 #REF!

Notes
NA : Not Applicable
Following the as found points, the perm tube was replaced.

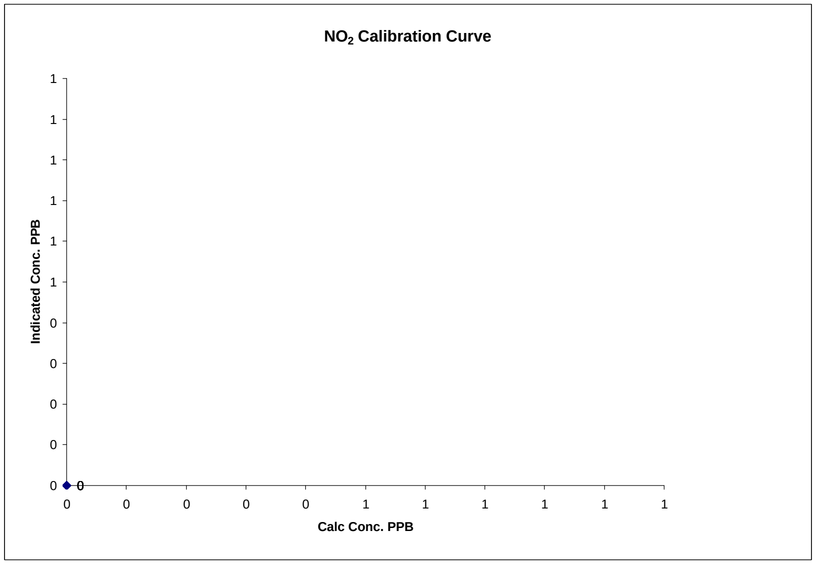
Calibration Performed by: Ting Xu.

NO_2 Calibration Curve

Calibration Date	January 1, 2012		
Company	LICA		
Plant / Location	Maskwa		
Start Time (MST)	9:43	End Time (MST)	17:05

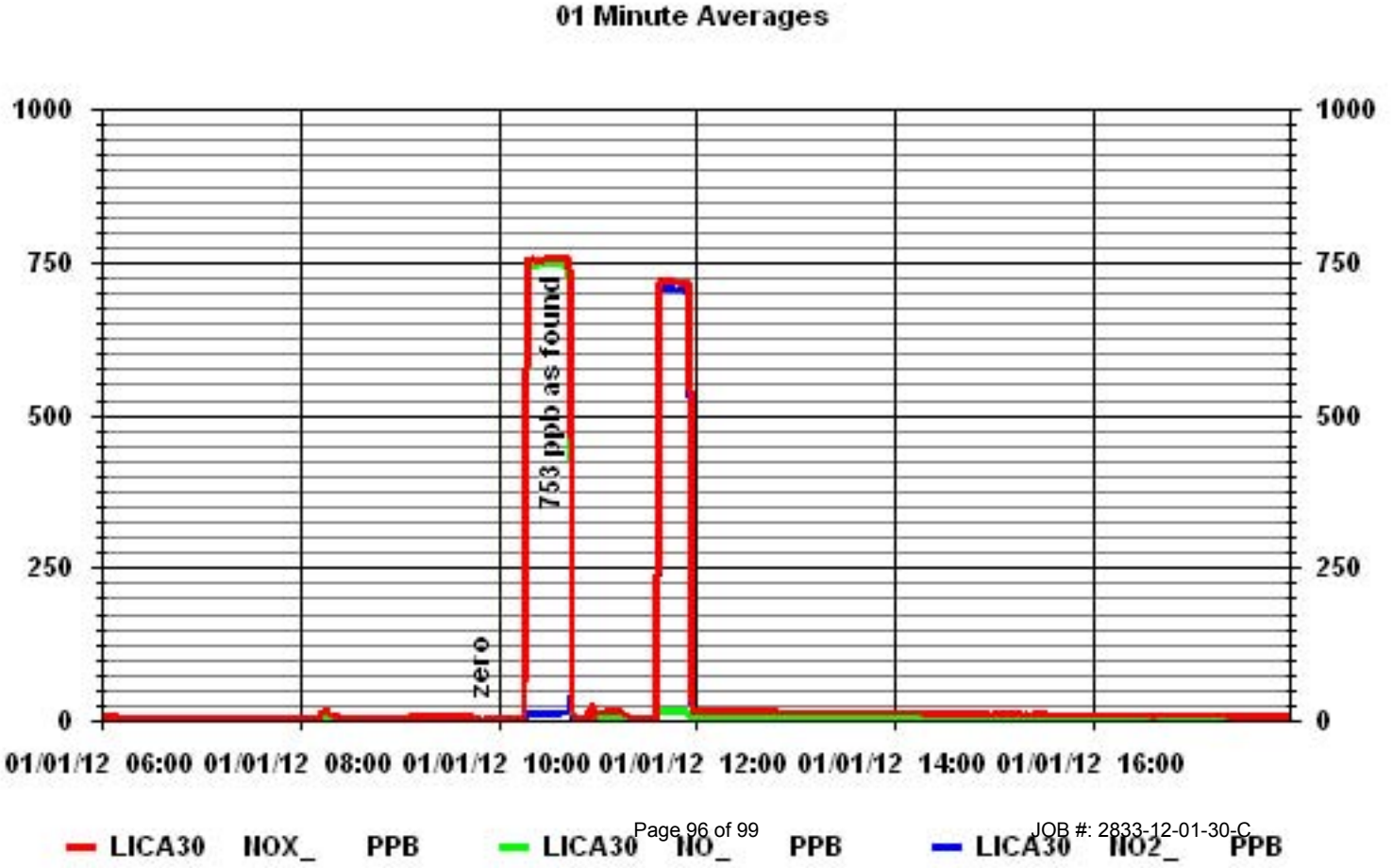
Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	N/A
0	0	#DIV/0!
0	0	#DIV/0!
0	0	#DIV/0!

Correlation Coefficient	(≥ 0.995)	#DIV/0!
Slope	(0.85 to 1.15)	#DIV/0!
Intercept	(± 3% F.S.)	#DIV/0!



Notes:

JOB #: 2833-12-01-30-C


01 Minute Averages
1000
750
500
250
0
zero
753 ppb as found
01/01/12 06:00
01/01/12 08:00
01/01/12 10:00
01/01/12 12:00
01/01/12 14:00
01/01/12 16:00
LICA30 NOX_ PPB
LICA30 NO_ PPB
LICA30 NO2_ PPB

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	January 3, 2012		Previous Calibration	January 1, 2012	
Company	LICA		Plant/Location	Maskwa	
Start Time (MST)	10:40		End Time (MST)	16:38	
Reason:	Monthly Calibration				
Barometric Pressure	937 mBar	Station Temperature	20 Deg C	MFCF	1
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:	API 200E	S/N :	594	Method:	Chemiluminescent
Calibrator Make / Model:	Environics 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			ppb		
Sample Flow/Conv. Temp	454	ccm	314.5	Deg C		452	ccm	315	Deg C
Ozone Flow / Vacuum	78	ccm	5.2	"Hg-A		79	ccm	5.3	"Hg-A
HVPS / A ZERO	767	Volts	16.5	MV		767	Volts	16.2	MV
Rx/ Temp / PMT Temp	49.9	Deg C	6.5	Deg C		50.0	Deg C	6.5	Deg C
Box Temp / IZS Temp	28.7	Deg C	45.2	Deg C		29.7	Deg C	40.2	Deg C
Offset	0.9	NOx	0.3	NO		0.9	NOx	0.8	NO
Slope	1.196	NOx	1.182	NO		1.191	NOx	1.185	NO
NO_2 COEF / Conv Efficency	NA	NO2	0.994			NA	NO2	0.994	

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	0	1	1	NA	NA
	No Zero Adj.									
4921	75.7	NA	753	748	NA	756	745	11	0.9960	1.0059
4921	75.7	NA	753	748	NA	754	748	7	0.9986	1.0000
4961	35.3	NA	351	349	NA	351	348	3	1.0000	1.0058
4975	20.2	NA	201	200	NA	200	199	2	1.0049	1.0089
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			NO_2 Correction Factor	NO2 Conv Efficency
			NOx	NO	NO2	NOx	NO	NO2		
4921	75.7	NA	753	748	NA	753	748	5	NA	NA
	No Adj.									
4921	75.7	600	753	NA	540	752	213	540	1.0019	100.00%
4921	75.7	250	753	NA	230	752	523	230	1.0044	100.00%
4921	75.7	140	753	NA	131	753	622	132	1.0000	100.79%

Linearity OK?	Yes	No	Sum of Least Squares	NOx= 0.997	NO= 1.004	NO2= 1.000		
			Correction Factors:	NOx= 0.9986	NO= 1.0000	NO2= 1.0019		
				Average Converter Efficiency= 100.26%				

	Before Calibration					After Calibration			
Auto Zero	1.3	NOx	1.4	NO2		1.2	NOx	1.0	NO2
Auto Span	900	NOx	884	NO2		623	NOx	611	NO2
					Sample Lines Connected	YES			

Percent Change from Previous Calibration	NOx	0.4%	NO	0.0%	NO2	0.0%

Notes **NA : Not Applicable**

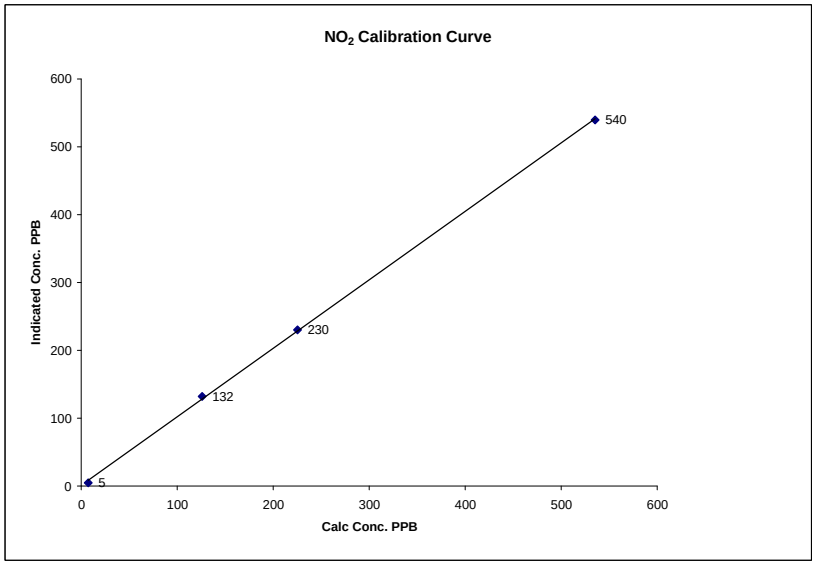
Calibration Performed by: Ting Xu.

NO_2 Calibration Curve

Calibration Date	January 3, 2012		
Company	LICA		
Plant / Location	Maskwa		
Start Time (MST)	10:40	End Time (MST)	16:38

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
7	5	N/A
126	132	0.9545
225	230	0.9783
535	540	0.9907

Correlation Coefficient	(≥ 0.995)	0.999821
Slope	(0.85 to 1.15)	1.009233
Intercept	(± 3% F.S.)	1.43867

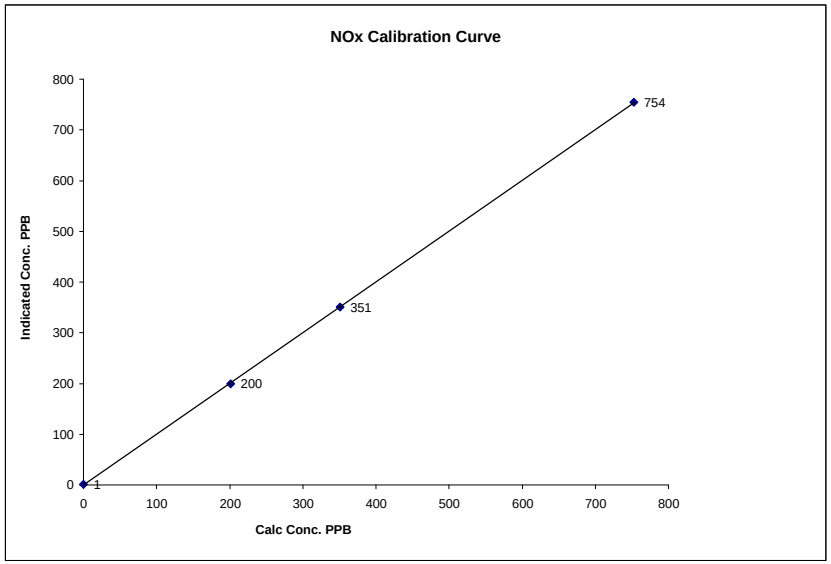


Notes:

NOx Calibration Curve

Calibration Date	January 3, 2012				
Company	LICA				
Plant / Location	Maskwa				
Start Time (MST)	10:40	End Time (MST)	16:38		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999991
			Slope	(0.85 to 1.15)	1.000784
0	1	N/A	Intercept	(± 3% F.S.)	-0.02526
201	200	1.0049			
351	351	1.0004			
753	754	0.9986			

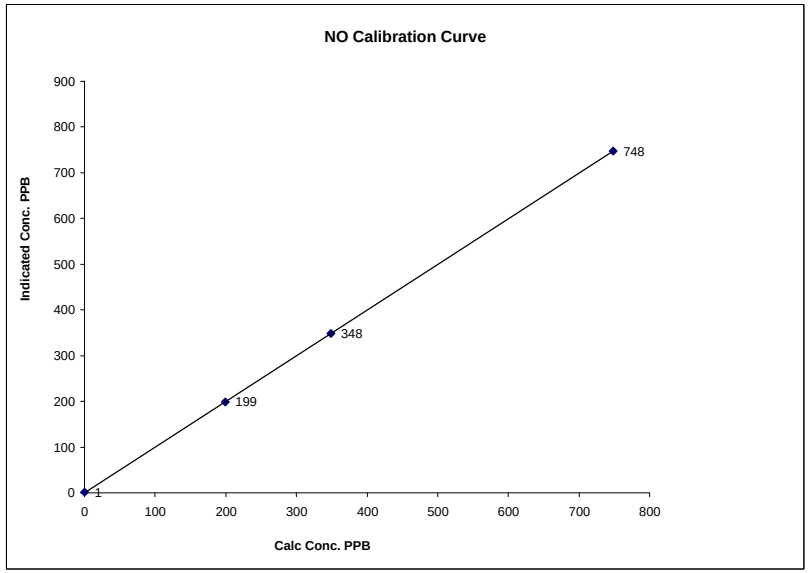


Notes:

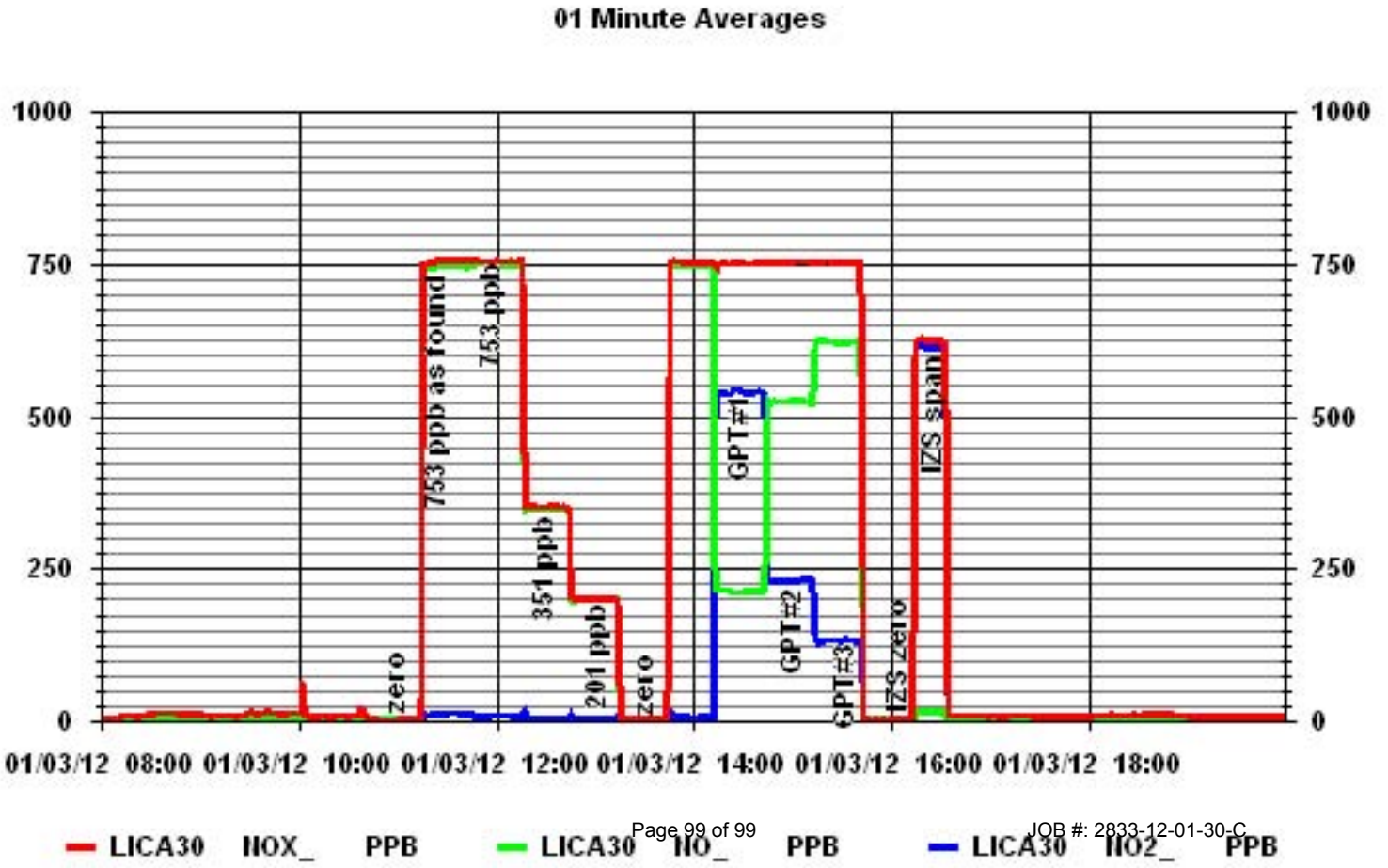
NO Calibration Curve

Calibration Date	January 3, 2012				
Company	LICA				
Plant / Location	Maskwa				
Start Time (MST)	10:40	End Time (MST)	16:38		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999994
			Slope	(0.85 to 1.15)	1.000834
0	1	N/A	Intercept	(± 3% F.S.)	-1.5574
200	199	1.0039			
349	348	1.0029			
748	748	1.0005			



Notes:


01 Minute Averages
1000
750
500
250
0
753 ppb as found
753 ppb
351 ppb
201 ppb
zero
zero
GPT#1
GPT#2
GPT#3
IZS zero
IZS span
01/03/12 08:00
01/03/12 10:00
01/03/12 12:00
01/03/12 14:00
01/03/12 16:00
01/03/12 18:00
LICA30 NOX_ PPB
LICA30 NO_ PPB
LICA30 NO2_ PPB

Lakeland Industry & Community Association

St. Lina Monitoring Site
Ambient Air Monitoring
Data Report
For
January 2012

Prepared By:

February 22, 2012

Lakeland Industry & Community Association
St. Lina
Ambient Air Monitoring

Table of Contents

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: January 2012

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 – January 2012

LICA ST. LINA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO2 (PPB)	172	48	0	0	0.31	3	VAR	VAR	VAR	VAR	1.1	22	99.6
H2S (PPB)	10	3	0	0	0.17	1	VAR	VAR	VAR	VAR	0.9	29	99.6
THC (PPM)	-	-	-	-	2.17	3.1	1	22	9.6	87(E)	2.5	1	95.4
OZONE (PPB)	82	-	0	-	26.0	38	9, 25	21, 18	25.3, 14.8	262(W), 286(WNW)	33.7	27	99.7
NOx (PPB)	-	-	-	-	3.80	40	20	10	7.9	218(SW)	10.4	20	99.6
NO (PPB)	-	-	-	-	0.72	21	20	10	7.9	218(SW)	2.8	30	99.6
NO_2 (PPB)	159	-	0	-	3.02	19	20	10	7.9	218(SW)	7.7	20	99.6
PM2.5 (ug/m3)	-	30	-	0	4.73	47.1	18	17	15.1	255(WSW)	11.5	22	77.3
TEMPERATURE (DEGREE C)	-	-	-	-	-9.09	9.7	8	14	6.8	324(NW)	3.3	8	99.7
BP (MILLIBAR)	-	-	-	-	921	943	1	VAR	VAR	VAR	940.3	1	99.7
RH (%)	-	-	-	-	65.70	89	5	8	13.7	305(WNW)	81.5	29	99.7
PRECIPITATION (MM)	-	-	-	-	0.01	1.4	5	9	22.9	306(NW)	2.8	5	100.0
VECTOR WS (KPH)	-	-	-	-	10.21	25.3	9	21	-	262(W)	15.7	18	99.7
VECTOR WD (DEGREES)	-	-	-	-	295(WNW)	-	-	-	-	-	-	-	99.7

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 on January 10th. One hour of maximum data was invalidated due to a small power outage on January 5th. Two hourly average data were invalidated on January 13th due to a power failure. 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 on January 6th. One hour of maximum data was invalidated due to a small power outage on January 5th. Two hourly average data were invalidated on January 13th due to a power failure. Data was corrected using daily zero information.

Total HydroCarbon (PPM)
Analyzer make / model –TECO 51C, S/N: 77021-384
The sample pump failed after a small power outage on January 5th. The pump was restarted on January 5th. Nine hours of data was invalidated due to this event. The inlet filter was changed before the monthly calibration was started on January 6th. The H2 gas cylinder was changed on January 6th. The analyzer famed out due to a power failure on January 13th. It was re-lit on January 14th at hour of 15. 24 hours of data were invalidated due to this power failure. The sample pump was replaced following the as found point check on January 17th. A post-repair calibration was performed. 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
The analyzer was working well throughout the month. The inlet filter was changed before the monthly calibration was started on January 10th. One hour of maximum data was invalidated due to a small power outage on January 5th. Two hourly average data were invalidated on January 13th due to a power failure. The Cell A and Cell B flow sensors were replaced following the as found point check on January 17th. A post-repair calibration was performed after that. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)
Analyzer make / model - API 200E, S/N: 592
The analyzer was working well throughout the month. The exhaust pump was replaced following the as found point check on January 6th. The inlet filter was changed before the monthly calibration was started on January 6th. One hour of maximum data was invalidated due to a small power outage on January 5th. Two hourly average data were invalidated on January 13th due to a power failure. Data was corrected using daily zero information.

Particulate Matter 2.5 (UG/M3)
Analyzer make / model – Thermo Scientific Series 1405F, S/N: 1405A208301003 replaced to Thermo Scientific Series 1405F, S/N: 1405A207691003
A routine Teom audit was performed on January 6th. Following the audit, the Teom filter and FDMS filter were replaced. It was noticed that the Teom noise level was high during the site visit on January 10th. A new filter was put into the Teom box for conditioning on January 10th, and it was installed on January 11th. It was found that the V-ring seal for the mass transducer was cracked on January 11th. Temporary fixed the crack and then performed a leak check. The result was good. Another Teom audit was performed on January 13th due to many negative readings. The audit result was fine. The V-ring seal was replaced on January 17th, and a post-repair Teom audit was performed. Due to the poor stability of the Teom unit, it was replaced and brought back to Calgary shop for repair on January 19th. The Teom unit used at Portable station was installed. An installation audit was performed on January 19th. 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. 162 hours of data were invalidated as the data were above –3 ug/m3. The operational time was 77.3%. The AENV reference #: 255191.

General Monthly Summary

AQM STATION – LICA – St. Lina

Temperature (Degree C)
Analyzer make / model – Met One 060
No operational issue was observed during the month. Two hourly average data were invalidated on January 13th due to a power failure.

Barometric Pressure (Millibar)
Analyzer make / model - Met One 092
No operational issue was observed during this month. Two hourly average data were invalidated on January 13th due to a power failure.

Relative Humidity (%)
Analyzer make / model - Met One 083
No operational issue was observed during this month. Two hourly average data were invalidated on January 13th due to a power failure.

Precipitation (MM)
Analyzer make / model - Met One 387
During the site visit on February 8th, it was found that the heater for the tipping bucket was not working. We are not sure when the heater failed. Although we still recorded some precipitation readings, we are not sure how accurate the readings were. Data should be used with caution.

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.
The wind system was working well throughout the month. One hour of maximum data was invalidated due to a small power outage on January 5th. Two hourly average data were invalidated on January 13th due to a power failure.

General Monthly Summary

AQM STATION – LICA – St. Lina
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.

Trailer
No issue was observed this month. The manifold was cleaned on January 10th.

Air Quality Index (AQI)
The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. One hour of AQI value for PM2.5 recorded in January 2012 was within the Fair range, and others were within the Good range. The highest hourly concentration of Ozone was 38 ppb and an AQI value of 19, on January 9th and 25th, in various hours. The highest hourly concentration of PM2.5 was 47.1 ug/m3 and an AQI value of 34, on January 18, hour of 17.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST. LINA*

JANUARY 2012

AIR QUALITY INDEX (AQI)

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	-	16	-	-	-	14	-	-	-	12	10	11	11	-	12	11	12	14	14	-	14	14	13	13	16
	NA	O3_	**NA**	**NA**	**NA**	O3_	**NA**	**NA**	**NA**	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_
2	13	14	14	14	-	15	-	-	15	14	-	-	12	12	12	11	11	-	10	10	9	9	8	8	15
	O3_	O3_	O3_	O3_	**NA**	O3_	**NA**	**NA**	O3_	O3_	**NA**	**NA**	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_
3	-	11	12	12	13	-	11	10	10	10	10	9	9	10	10	10	10	11	11	10	9	8	8	8	13
	NA	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	O3_	O3_	O3_
4	8	8	12	11	-	8	8	8	9	9	10	11	-	-	10	9	8	8	8	8	-	8	9	11	12
	O3_	PM2	PM2	PM2	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	PM2
5	10	10	10	-	10	10	10	10	15	17	-	-	15	16	-	-	-	16	-	17	17	18	18	-	18
	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	**NA**	O3_	O3_	**NA**	**NA**	**NA**	O3_	**NA**	O3_	O3_	O3_	O3_	**NA**	O3_
6	-	-	-	-	16	16	16	16	-	15	-	-	-	-	-	-	-	-	16	-	-	16	-	15	27
	NA	**NA**	**NA**	**NA**	O3_	O3_	O3_	O3_	**NA**	O3_	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	O3_	**NA**	**NA**	O3_	**NA**	O3_	PM2
7	-	-	-	-	-	11	11	10	9	10	10	12	13	14	15	14	-	12	11	11	11	10	10	-	15
	NA	**NA**	**NA**	**NA**	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_
8	-	-	-	11	-	13	13	14	14	15	-	-	16	-	18	17	17	17	16	-	15	-	13	-	18
	NA	**NA**	**NA**	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	**NA**	**NA**	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	**NA**	O3_	**NA**	O3_
9	9	11	9	8	8	7	8	9	9	9	-	9	9	8	-	-	11	-	-	-	18	**19**	-	18	19
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	**NA**	**NA**	O3_	**NA**	**NA**	**NA**	O3_	**O3_**	**NA**	O3_	O3_
10	18	18	18	17	17	16	-	-	16	-	-	18	18	18	17	-	-	-	-	15	15	-	16	16	31
	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	**NA**	O3_	**NA**	**NA**	O3_	O3_	O3_	O3_	**NA**	**NA**	**NA**	**NA**	O3_	O3_	**NA**	O3_	O3_	PM2
11	16	-	-	-	-	-	-	14	-	13	-	-	15	-	14	14	13	-	-	10	-	9	10	10	16
	O3_	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	O3_	**NA**	O3_	**NA**	**NA**	O3_	**NA**	O3_	O3_	O3_	**NA**	**NA**	O3_	**NA**	O3_	O3_	O3_	O3_
12	-	12	15	16	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-	-	-	-	-	12	17
	NA	O3_	O3_	O3_	**NA**	**NA**	**NA**	**NA**	**NA**	O3_	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	O3_	O3_
13	11	-	10	10	11	12	-	16	-	-	-	17	-	-	17	-	-	17	-	17	-	-	-	-	17
	O3_	**NA**	O3_	O3_	O3_	O3_	NA	O3_	**NA**	**NA**	**NA**	O3_	**NA**	**NA**	O3_	**NA**	**NA**	O3_	**NA**	O3_	**NA**	**NA**	**NA**	**NA**	O3_
14	-	-	15	-	-	-	-	-	13	-	-	-	-	14	-	11	-	-	-	-	-	13	12	12	16
	NA	**NA**	O3_	**NA**	**NA**	**NA**	**NA**	**NA**	O3_	**NA**	**NA**	**NA**	**NA**	O3_	**NA**	O3_	**NA**	**NA**	**NA**	**NA**	**NA**	O3_	O3_	O3_	O3_
15	12	13	13	13	12	12	-	-	-	13	-	-	-	-	14	14	-	-	-	-	-	13	-	13	14
	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	**NA**	**NA**	O3_	**NA**	**NA**	**NA**	**NA**	O3_	O3_	**NA**	**NA**	**NA**	**NA**	**NA**	O3_	**NA**	O3_	O3_
16	13	-	13	13	-	13	13	13	13	13	13	-	-	-	-	-	-	-	14	-	13	13	-	-	14
	O3_	**NA**	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	O3_	**NA**	O3_	O3_	**NA**	**NA**	O3_
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	12	11	-	12	-	14
	NA	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	PM2	O3_	O3_	**NA**	O3_	**NA**	PM2
18	-	12	12	-	11	-	-	-	-	13	-	14	15	-	-	-	15	**34**	14	14	14	14	14	14	34
	NA	O3_	O3_	NA	O3_	NA	NA	NA	NA	O3_	NA	O3_	O3_	**NA**	**NA**	**NA**	O3_	**PM2**	O3_	O3_	O3_	O3_	O3_	O3_	PM2
19	14	14	14	14	14	14	14	14	14	14	14	15	-	-	16	16	15	19	15	15	15	15	14	14	19
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	**NA**	O3_	O3_	O3_	PM2	O3_	O3_	O3_	O3_	O3_	O3_	PM2
20	14	14	13	12	13	12	16	13	16	14	22	-	16	14	16	16	16	15	12	12	13	13	12	11	22
	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	PM2	PM2	**NA**	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2
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22	14	13	13	12	12	12	13	13	16	-	12	15	11	10	10	10	11	9	10	10	11	11	12	13	20
	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	PM2	**NA**	PM2	PM2	PM2	PM2	O3_	O3_	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2
23	13	13	13	13	13	14	14	13	-	13	13	14	14	14	13	13	14	14	13	13	14	13	13	8	14
	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_
24	8	9	11	12	12	12	12	-	12	13	14	14	14	15	15	15	12	11	11	12	12	12	12	13	15
	PM2	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
25	14	12	13	13	13	13	-	12	12	12	12	12	13	14	17	17	17	18	**19**	**19**	**19**	18	18	18	19
	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**O3_**	**O3_**	**O3_**	O3_	O3_	O3_	O3_
26	18	17	17	17	17	-	17	17	17	17	17	16	15	16	17	18	18	18	16	14	14	15	16	17	18
	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_
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	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_
28	16	16	16	-	15	15	15	15	15	15	15	15	15	16	16	16	16	16	16	16	16	15	15	15	16
	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_
29	15	15	-	15	15	15	15	14	14	14	14	14	14	13	12	11	12	12	12	11	12	9	8	11	15
	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	O3_
30	9	-	9	9	8	12	14	12	11	13	11	12	9	10	9	9	9	9	9	8	9	11	13	14	14
	PM2	**NA**	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3_	PM2	O3_	O3_	PM2	O3_	O3_	O3_	O3_	PM2
31	-	13	13	14	13	13	13	12	12	12	12	12	12	13	13	13	13	12	12	11	12	11	13	-	14
	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	**NA**	O3_
PEAK	18	18	19	18	17	18	18	18	18	18	22	18	18	18	18	18	18	34	19	19	19	19	18	18	
	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 (PM2)					NITROGEN DIOXIDE (NO_2)					SULPHUR DIOXIDE (SO_2)					FREQUENCY	
	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%
VERY POOR (101-255)	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%
POOR (51-100)	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%
FAIR (26-50)	0	0.0%	-	-	-	1	0.1%	34	17	18	0	0.0%	-	-	-	0	0.0%	-	-	-	1	0.1%
GOOD (1-25)	490	65.9%	19	VAR	9, 25	42	5.6%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	532	71.5%
OVERALL	669	65.9%	-	-	-	43	5.8%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	533	71.6%
UNAVAILABLE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	211	28.4%

JOB #: 2833-12-01-31-C

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2012

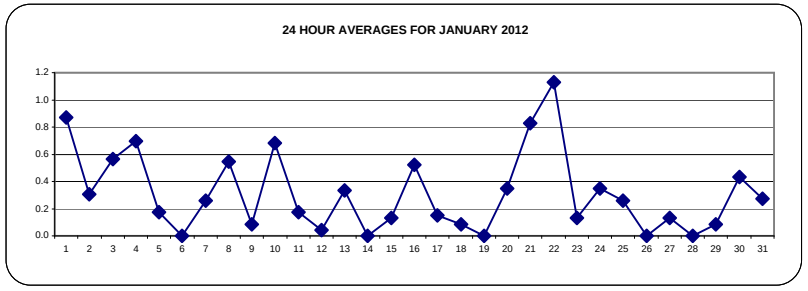
SULPHUR DIOXIDE (SO_2) hourly averages in ppb

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	0	**IZS**	0	1	1	2	2	2	1	1	2	3	2	1	1	0	1	0	3	0.9	24
2	0	0	0	1	1	1	**IZS**	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	0.3	24
3	1	1	0	0	0	**IZS**	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	1	1	0	1	0.6	24
4	0	0	0	0	**IZS**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2	2	2	0.7	24
5	2	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24
6	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
7	0	**IZS**	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0.3	24
8	**IZS**	0	1	1	1	2	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	**IZS**	2	0.5	24
9	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	0.1	24
10	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	**C**	**C**	**C**	**C**	0	0	**IZS**	0	0	1	0.7	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	**IZS**	0	0	0	1	0.2	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	1	1	0.0	24
13	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	**P**	**P**	0	**IZS**	0	0	0	0	0	2	0.3	22
14	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
15	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	2	0.1	24
16	0	0	0	0	0	0	0	1	0	0	0	1	1	2	2	**IZS**	3	1	1	0	0	0	0	0	3	0.5	24
17	0	0	0	0	0	0	0	0	0	0	0	1	1	**C**	**IZS**	1	**C**	**M**	0	0	0	0	0	0	1	0.2	23
18	0	0	0	0	0	0	0	0	0	0	1	1	0	**IZS**	0	0	0	0	0	0	0	0	0	0	1	0.1	24
19	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
20	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	0	0	0	0	0	0	1	1	2	2	2	0.3	24
21	1	1	1	1	1	1	1	1	1	1	**IZS**	1	2	3	2	1	0	0	0	0	0	0	0	0	3	0.8	24
22	0	0	0	0	0	1	1	1	2	**IZS**	3	3	3	3	3	2	1	1	0	1	0	0	0	1	3	**1.1**	24
23	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0.1	24
24	1	2	1	1	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	0.3	24
25	1	1	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
26	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
27	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	1	0.1	24
28	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
29	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0.1	24
30	0	**IZS**	0	0	0	0	0	0	1	1	1	1	1	1	2	1	1	0	0	0	0	0	0	0	2	0.4	24
31	**IZS**	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	**IZS**	1	0.3	24
HOURLY MAX	2	2	2	1	1	2	2	1	2	1	3	3	3	3	3	2	3	3	2	1	2	2	2	2			
HOURLY AVG	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.5	0.5	0.6	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.3	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

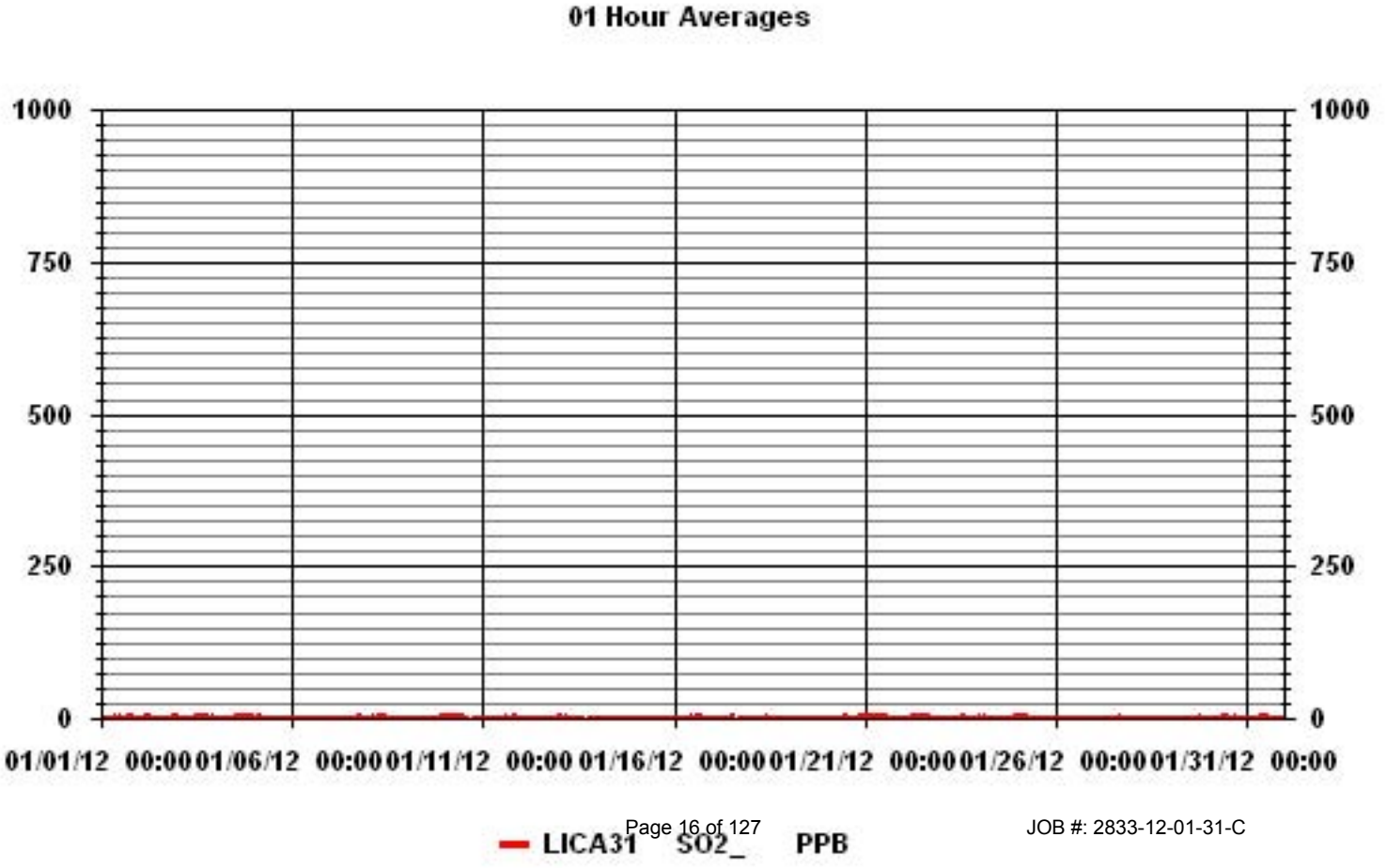


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB | 24-HR 57 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	175					
MAXIMUM 1-HR AVERAGE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	1.1	PPB			ON DAY(S)	22
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		741	HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:		99.6	%
STANDARD DEVIATION:	0.59		MONTHLY AVERAGE:		0.31	PPB

JOB #: 2833-12-01-31-C



JOB #: 2833-12-01-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2012

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

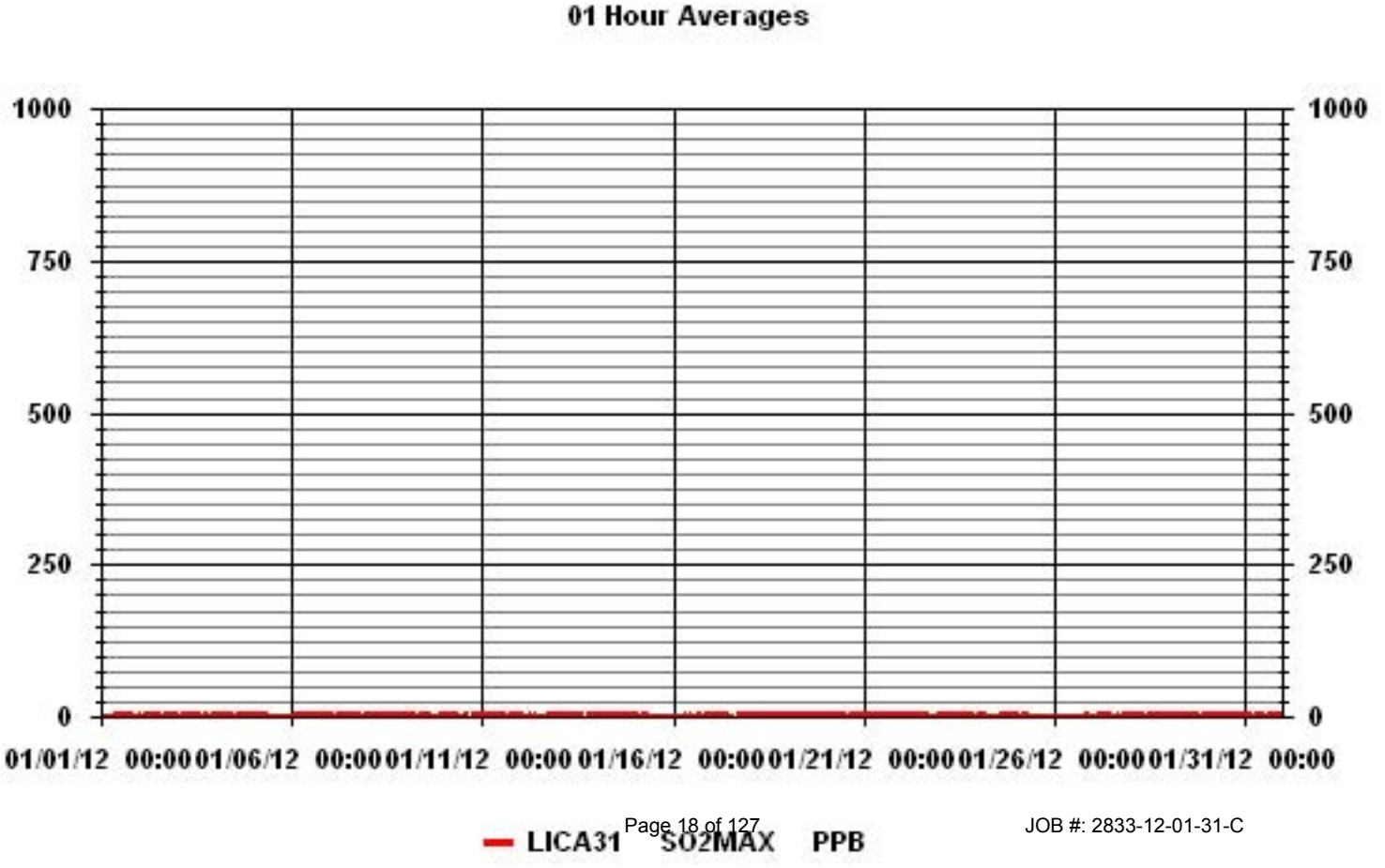
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	0	0	0	**IZS**	1	2	2	3	3	3	2	2	3	**5**	3	2	2	1	2	1	**5**	1.6	24
2	1	1	1	2	2	1	**IZS**	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	3	2	3	1.3	24
3	2	2	1	1	1	**IZS**	1	1	1	1	1	2	2	2	2	2	1	2	2	2	1	2	1	1	2	1.5	24
4	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	2	3	1.6	24
5	3	2	2	**IZS**	1	1	1	1	**P**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.5	23
6	0	0	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24
7	1	**IZS**	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	2	1.3	24
8	**IZS**	1	1	2	2	3	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	3	1.5	24
9	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	0	0	0	0	0	**IZS**	2	2	0.9	24
10	2	2	2	2	2	2	2	2	2	2	1	2	1	1	1	**C**	**C**	**C**	**C**	1	1	**IZS**	1	1	2	1.6	24
11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	2	**IZS**	1	1	1	2	1.1	24
12	1	1	1	0	0	1	1	1	0	1	1	0	0	0	0	0	1	1	1	**IZS**	1	1	2	2	2	0.7	24
13	2	3	3	2	2	1	1	1	1	1	1	1	1	1	1	**P**	**P**	3	**IZS**	1	1	1	1	1	3	1.4	22
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1.0	24
15	1	1	1	1	3	3	2	1	1	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	3	0.6	24
16	0	0	0	0	0	0	1	3	2	1	2	2	1	4	3	**IZS**	4	2	2	1	1	1	1	1	4	1.4	24
17	1	1	1	1	1	1	1	1	1	1	1	1	2	**C**	**IZS**	2	**M**	**C**	1	1	1	1	1	1	2	1.1	23
18	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1.0	24
19	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
20	1	1	1	1	1	1	1	1	1	1	1	**IZS**	2	2	1	1	1	1	1	1	2	2	2	3	3	1.3	24
21	2	2	2	2	2	2	2	2	2	2	**IZS**	2	3	4	3	2	1	1	1	1	1	1	1	1	4	1.8	24
22	1	1	1	1	1	2	2	2	3	**IZS**	4	4	4	4	4	3	2	2	1	2	1	1	2	2	4	2.2	24
23	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	2	2	1	1	1	1	1	1	1	1	2	2	1.1	24
24	3	3	2	2	1	1	0	**IZS**	0	1	0	1	0	1	1	1	1	1	1	1	1	1	2	2	3	1.2	24
25	2	2	2	1	1	1	**IZS**	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.5	24
26	0	0	0	0	0	**IZS**	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0	1	0.2	24
27	0	0	0	0	**IZS**	1	1	1	1	1	1	1	1	2	1	2	2	2	1	1	1	1	1	1	2	1.0	24
28	1	1	1	**IZS**	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24
29	1	1	**IZS**	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	2	1.0	24
30	1	**IZS**	1	1	1	1	1	1	2	2	2	2	3	2	3	2	2	1	1	1	1	1	1	1	3	1.5	24
31	**IZS**	1	1	1	0	0	1	1	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	**IZS**	2	1.1	24
HOURLY MAX	3	3	3	2	3	3	3	3	3	2	4	4	4	4	4	3	4	5	3	2	3	3	3	3			
HOURLY AVG	1.1	1.1	1.1	1.0	1.1	1.2	1.1	1.2	1.2	1.0	1.0	1.2	1.3	1.4	1.3	1.2	1.2	1.3	1.1	1.1	1.0	1.0	1.2	1.2			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	597					
MAXIMUM INSTANTANEOUS VALUE:	5	PPB	@ HOUR(S)	17	ON DAY(S)	1
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		740	HRS
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	0.77					



JOB #: 2833-12-01-31-C

LICA31
SO2_ / WDR Joint Frequency Distribution (Percent)

January 2012

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
Parameter : SO2_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	6.83	3.13	5.41	6.12	5.27	5.41	7.12	2.13	.85	3.84	8.11	13.39	8.54	4.27	9.11	10.39	100.00
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	6.83	3.13	5.41	6.12	5.27	5.41	7.12	2.13	.85	3.84	8.11	13.39	8.54	4.27	9.11	10.39	

Calm : .00 %

Total # Operational Hours : 702

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	48	22	38	43	37	38	50	15	6	27	57	94	60	30	64	73	702
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	48	22	38	43	37	38	50	15	6	27	57	94	60	30	64	73	

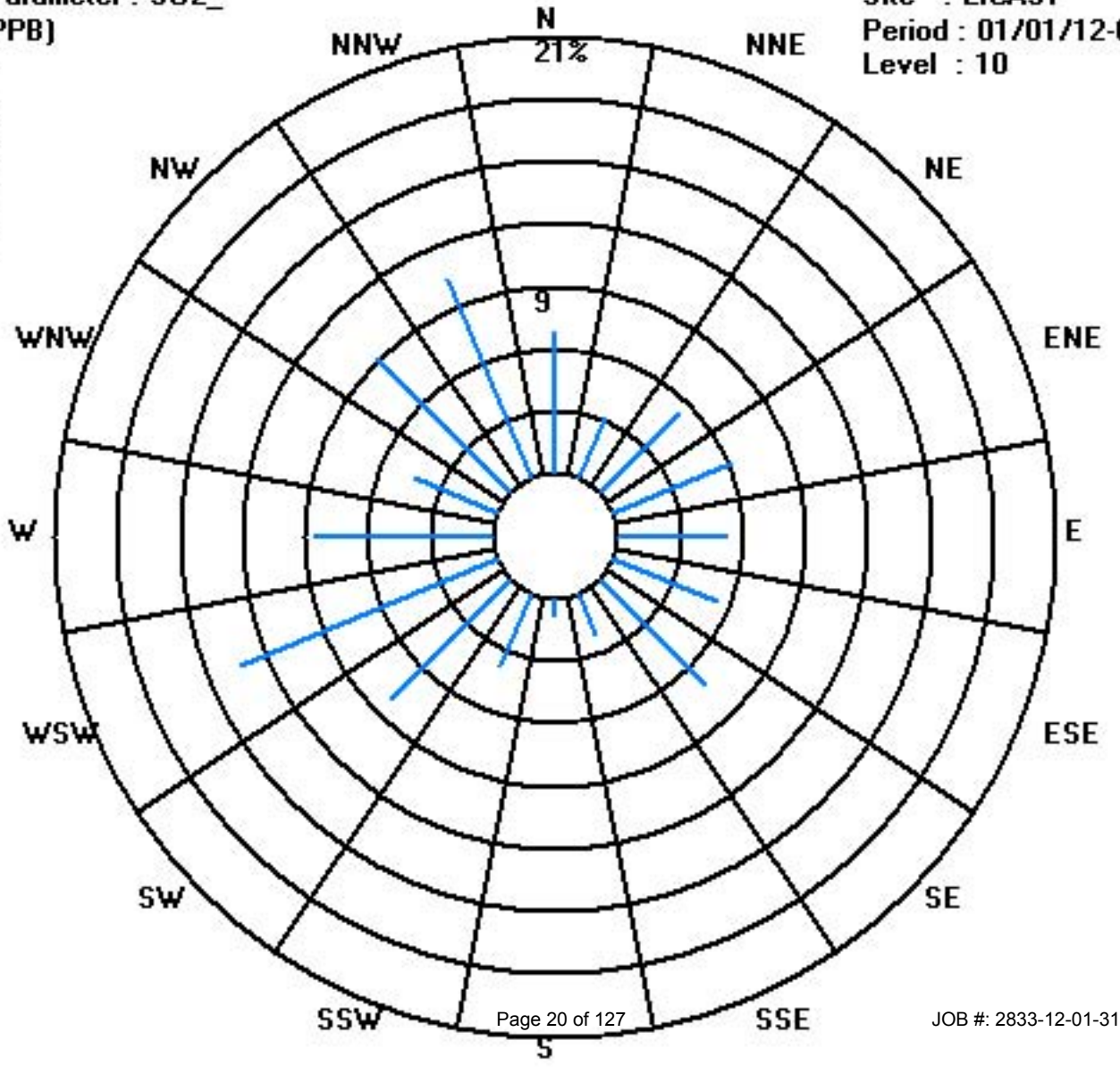
Calm : .00 %

Total # Operational Hours : 702

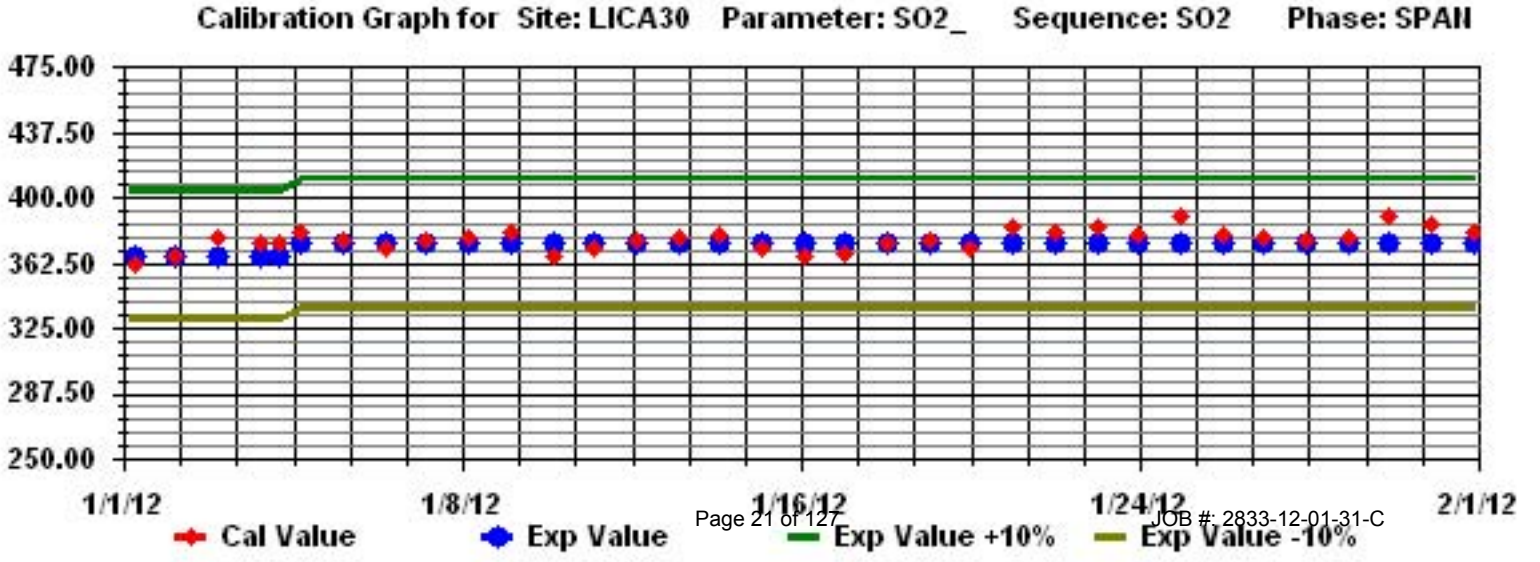
Logger : 31 Parameter : SO2_
Class Limits (PPB)

>= 340
< 340
< 170
< 110
< 60
< 20

Site : LICA31
Period : 01/01/12-01/31/12
Level : 10



JOB #: 2833-12-01-31-C


Calibration Graph for Site: LICA30 Parameter: SO2_ Sequence: SO2 Phase: SPAN
475.00
437.50
400.00
362.50
325.00
287.50
250.00
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSCOIATION - ST. LINA

JANUARY 2012

HYDROGEN SULPHIDE (H_2S) hourly averages in ppb

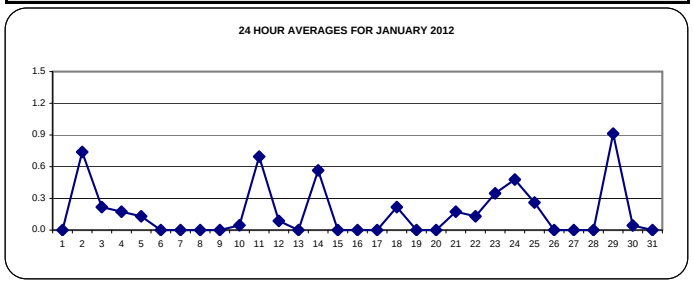
MST

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	0	IZS	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	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	24
3	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
4	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0.2	24
5	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
6	0	0	IZS	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0.0	24
7	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
8	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.0	24
9	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
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	M	0	0	IZS	0	1	1	0.0	23
11	0	1	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	1	0.7	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	IZS	0	0	0	0	1	0.1	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	P	P	0	IZS	0	0	0	0	0	0	0.0	22
14	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	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	0	0	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	C	IZS	0	0	0	0	0	0	0	0	0	0	0.0	24
18	0	0	0	0	0	1	0	0	1	0	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	1	0.2	24
19	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
20	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
21	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
22	0	0	0	0	0	0	0	0	0	IZS	0	0	1	0	0	0	0	0	0	0	1	0	0	1	1	0.1	24
23	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
24	0	0	0	0	0	0	0	IZS	0	0	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0.5	24
25	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
26	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
27	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
28	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
29	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**0.9**	24
30	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
31	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.0	24
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			
HOURLY AVG	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2			

STATUS FLAG CODES

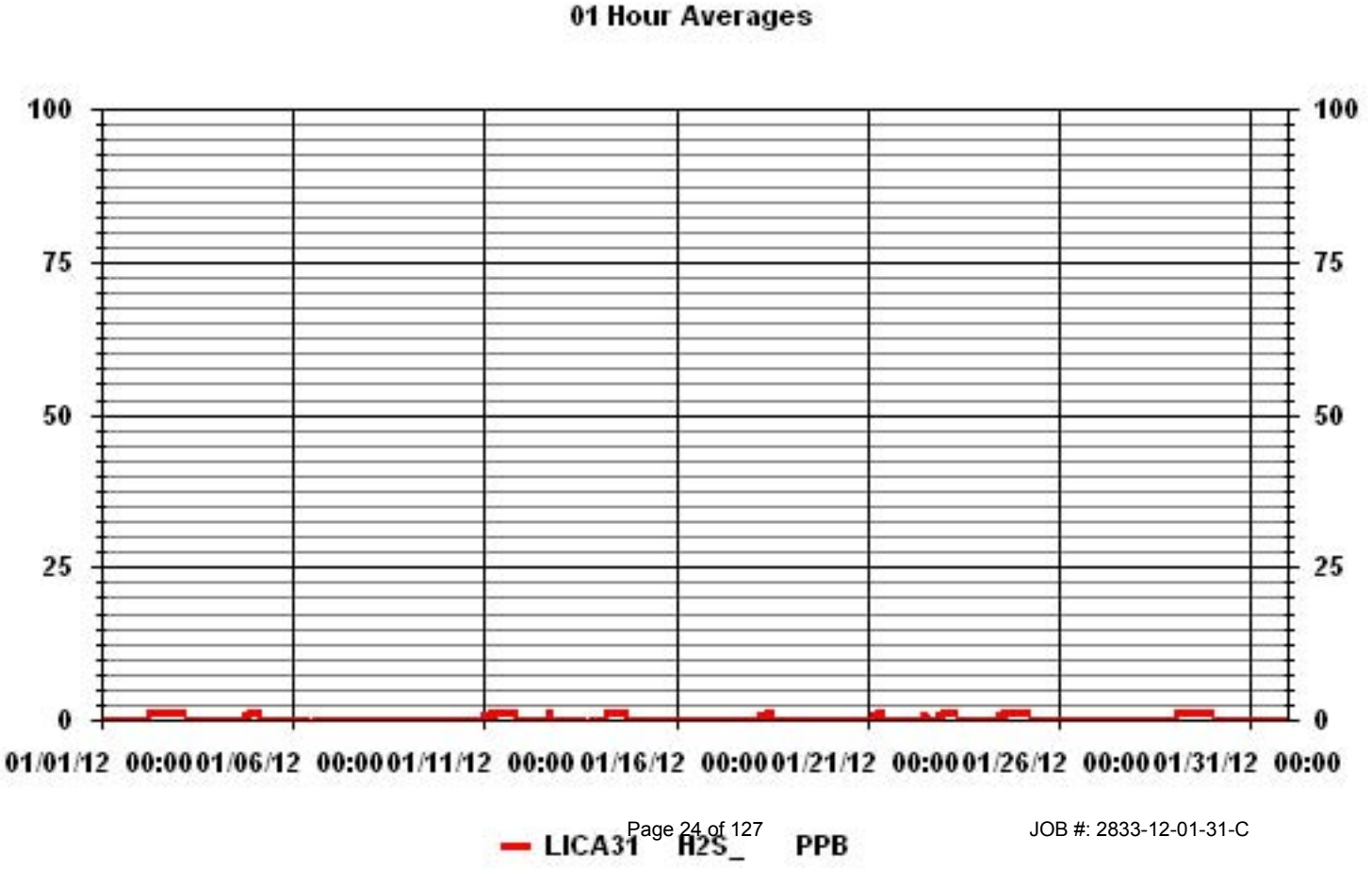
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 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:	120					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.9	PPB			ON DAY(S)	29
				VAR-VARIOUS		
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		741	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:		99.6	%
STANDARD DEVIATION:	0.38		MONTHLY AVERAGE:		0.17	PPB



JOB #: 2833-12-01-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2012

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST

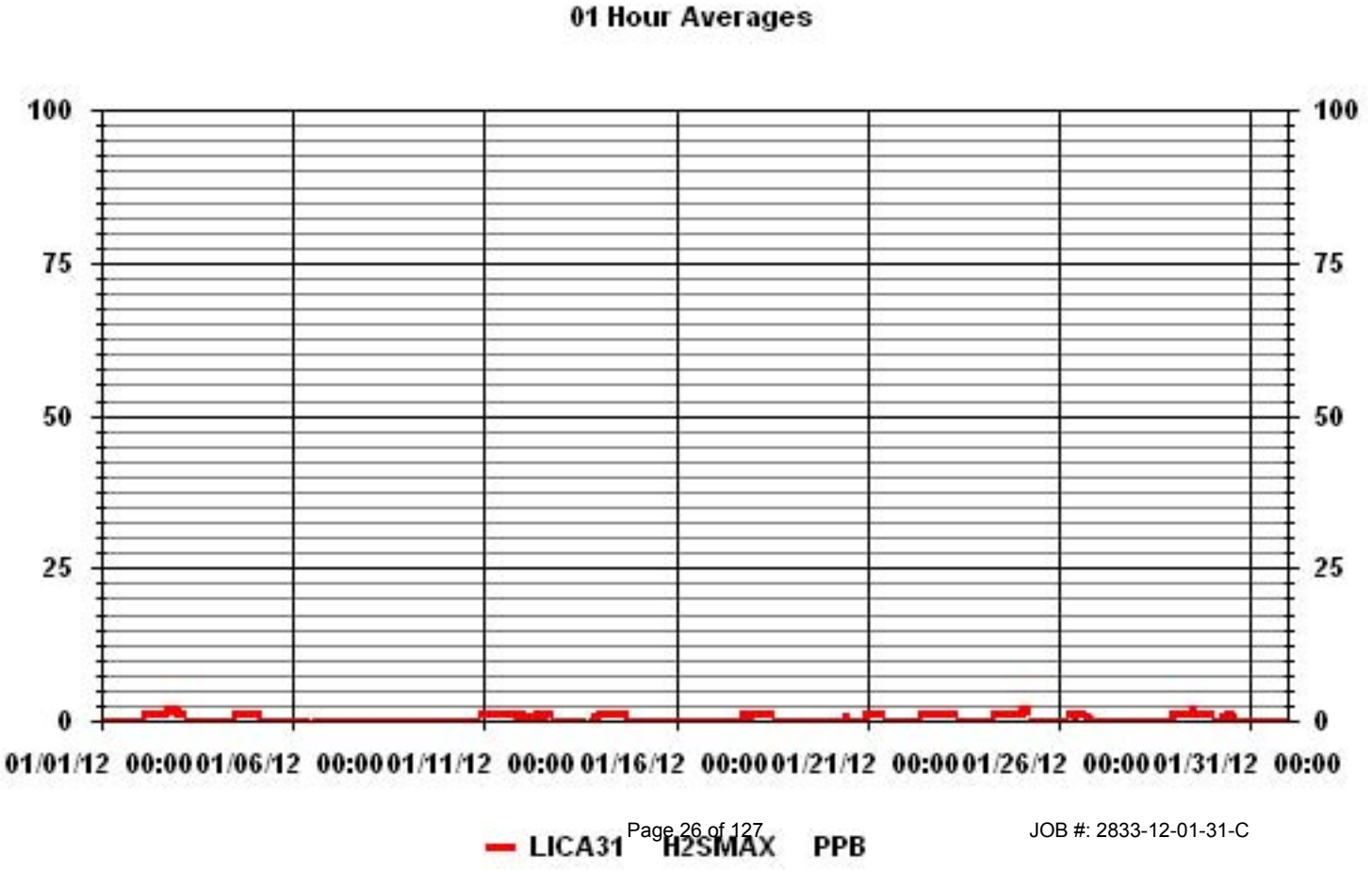
HOUR START / HOUR END	0:00 1:00	1:00 2:00	2:00 3:00	3:00 4:00	4:00 5:00	5:00 6:00	6:00 7:00	7:00 8:00	8:00 9:00	9:00 10:00	10:00 11:00	11:00 12:00	12:00 13:00	13:00 14:00	14:00 15:00	15:00 16:00	16:00 17:00	17:00 18:00	18:00 19:00	19:00 20:00	20:00 21:00	21:00 22:00	22:00 23:00	23:00 0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																											
1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
2	0	0	0	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	2	2	1	2	2	2	2	2	1.1	24
3	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
4	0	0	0	0	IZS	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	24
5	1	1	1	IZS	0	0	0	0	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	23
6	0	0	IZS	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0.0	24
7	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
8	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.0	24
9	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
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	M	0	0	IZS	1	1	1	0.1	23
11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	1	1	0.9	24
12	1	1	0	0	0	1	0	0	0	1	1	0	1	1	0	1	1	1	1	IZS	0	0	0	0	1	0.5	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	P	P	5	IZS	0	0	1	0	1	5	0.3	22
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	1	0.7	24
15	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
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	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	C	IZS	0	0	0	1	1	1	1	1	0	1	0.2	24
18	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
19	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
20	0	0	0	0	0	0	0	0	0	0	1	IZS	0	0	0	0	0	0	0	0	0	0	0	1	1	0.1	24
21	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24
22	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	24
23	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
24	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	0.7	24
25	1	2	2	1	2	2	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.4	24
26	0	0	0	0	0	IZS	1	1	1	0	1	1	1	1	1	1	1	0	0	1	0	0	0	0	1	0.5	24
27	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
28	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.0	24
29	1	1	IZS	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
30	1	IZS	0	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
31	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.0	24
HOURLY MAX	1	2	2	1	2	2	1	1	1	1	1	2	2	1	1	1	1	5	2	1	2	2	2	2			
HOURLY AVG	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.2	0.3	0.3	0.4			

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:	210					
MAXIMUM INSTANTANEOUS VALUE:	5	PPB	@ HOUR(S)	17	ON DAY(S)	13
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		740	HRS
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.53					



JOB #: 2833-12-01-31-C

LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

January 2012

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	7.25	2.98	5.26	5.97	5.12	5.40	7.11	2.13	.85	3.84	8.10	13.37	8.53	4.26	9.24	10.52	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	7.25	2.98	5.26	5.97	5.12	5.40	7.11	2.13	.85	3.84	8.10	13.37	8.53	4.26	9.24	10.52	

Calm : .00 %

Total # Operational Hours : 703

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3	51	21	37	42	36	38	50	15	6	27	57	94	60	30	65	74	703
<	10																	
<	50																	
>=	50																	
	Totals	51	21	37	42	36	38	50	15	6	27	57	94	60	30	65	74	

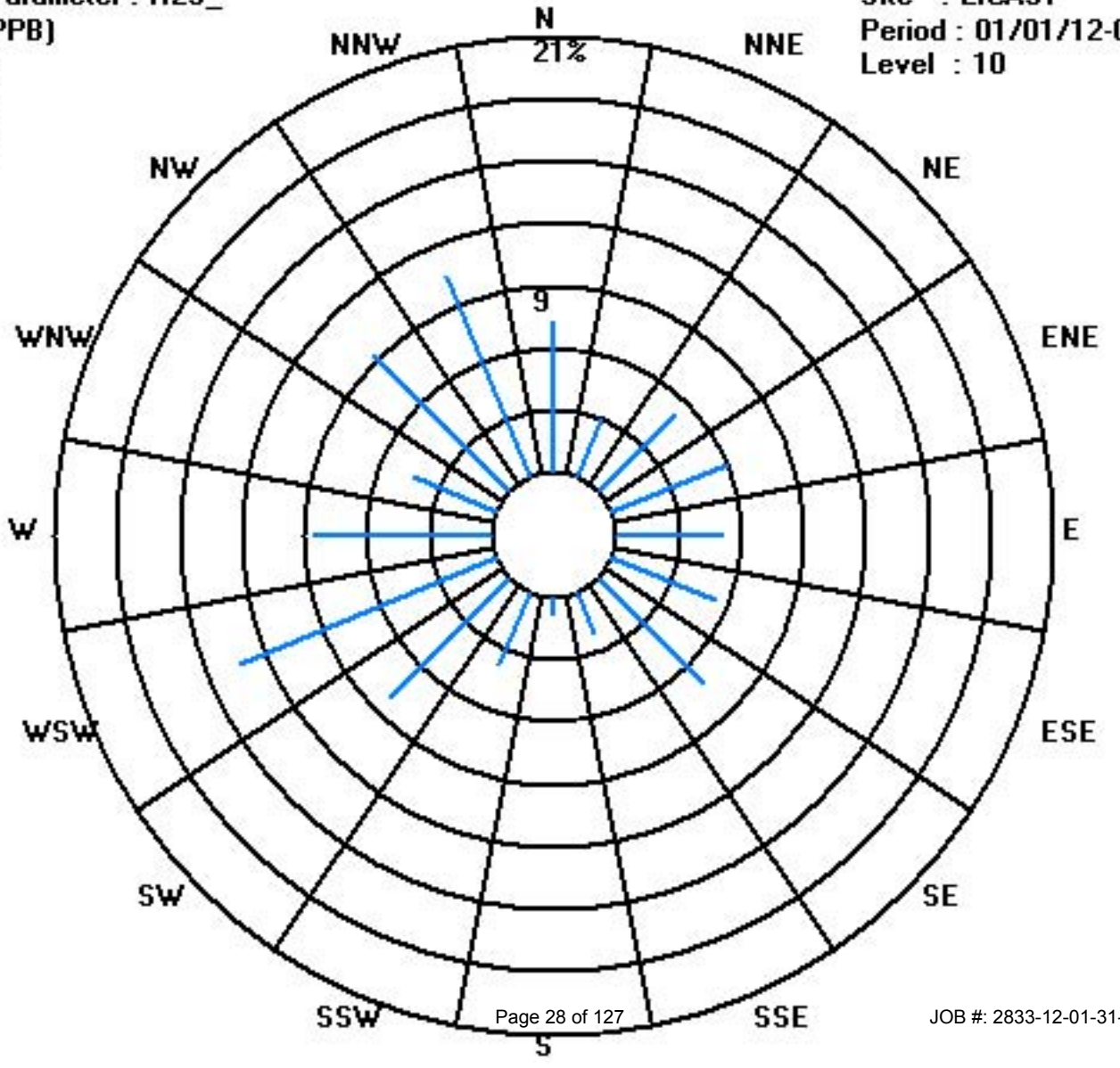
Calm : .00 %

Total # Operational Hours : 703

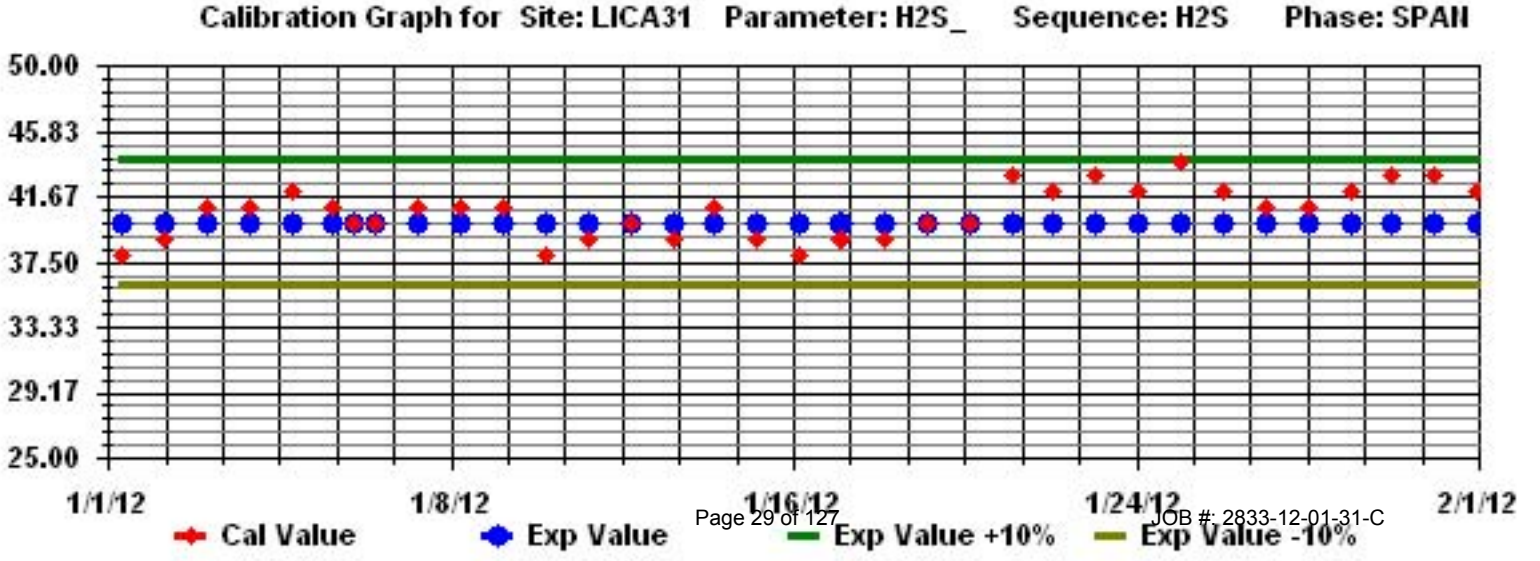
Logger : 31 Parameter : H2S_
Class Limits (PPB)

>= 50
< 50
< 10
< 3

Site : LICA31
Period : 01/01/12-01/31/12
Level : 10



JOB #: 2833-12-01-31-C


Calibration Graph for Site: LICA31 Parameter: H2S_ Sequence: H2S Phase: SPAN
50.00
45.83
41.67
37.50
33.33
29.17
25.00
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2012

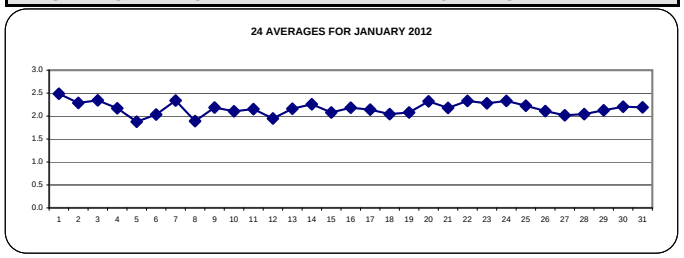
TOTAL HYDROCARBONS hourly averages in ppm

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2.3	2.3	2.4	2.5	2.4	2.5	2.5	**IZS**	2.4	2.4	2.5	2.5	2.5	2.4	2.4	2.5	2.5	2.3	2.3	2.4	2.6	2.6	**3.1**	2.9	**3.1**	**2.5**	24
2	2.7	2.6	2.5	2.4	2.4	2.2	**IZS**	2.2	2.2	2.3	2.3	2.2	2.2	2.1	2.2	2.3	2.4	2.4	2.2	2.2	2.2	2.1	2.1	2.2	2.7	2.3	24
3	2.2	2	2	2	2	**IZS**	2.3	2.6	2.5	2.4	2.5	2.5	2.5	2.4	2.3	2.4	2.4	2.4	2.3	2.5	2.4	2.4	2.5	2.4	2.6	2.3	24
4	2.4	2.5	2.5	2.6	**IZS**	2.2	2.2	2.2	2.2	2.1	2.1	2	2	2	2.1	2	2	2	2.1	2.3	2.2	2.2	2.1	1.9	2.6	2.2	24
5	1.8	1.9	1.8	**IZS**	1.8	1.8	1.9	1.9	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**C**	1.6	1.9	2	2	2	2	2.0	1.9	15
6	2	2	**IZS**	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	**C**	**C**	**C**	**C**	**C**	2	2	2	2	2	2.1	2.1	2.0	24
7	2.1	**IZS**	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.6	2.5	2.4	2.4	2.3	2.3	2.4	2.4	2.3	2.2	2.3	2.5	2.4	2.3	2.6	2.3	24
8	**IZS**	2.1	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	1.8	1.8	1.9	1.9	**IZS**	2.1	1.9	24
9	2.3	2.2	2.3	2.3	2.4	2.4	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2	1.9	1.9	1.9	**IZS**	2	2.4	2.2	24
10	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	**M**	2.3	2.3	**IZS**	2.1	2.1	2.3	2.1	23
11	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	**IZS**	2.3	2.2	2.2	2.3	2.2	24
12	2.2	2.1	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	**IZS**	2.3	2.1	2.2	2.2	2.3	1.9	24
13	2.2	2.3	2.4	2.4	2.5	2.4	2.2	2.1	2	2	2	2	1.9	2	2	**P**	**P**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	2.5	2.2	15
14	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**C**	2.5	**IZS**	2.4	2.3	2.4	2.1	2	2.1	2.5	2.3	9
15	2.1	2	2	2	2.1	2.1	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24
16	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	**IZS**	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	24
17	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.3	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2	2	2	2	1.9	2.3	2.1	24
18	1.9	2	2	2.1	2.1	2.1	2	2	2	2	2	1.9	1.9	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	24
19	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**IZS**	2	2	2	2	2.1	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	24
20	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.4	**IZS**	2.2	2.1	2.1	2.1	2.1	2.1	2.6	2.8	2.5	2.5	2.7	3	3.0	2.3	24
21	2.8	2.5	2.2	2.2	2.2	2.2	2.2	2.1	2	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.2	2.1	2.8	2.2	24
22	2.1	2.2	2.3	2.2	2.2	2.3	2.3	2.3	2.3	**IZS**	2.3	2.4	2.4	2.4	2.4	2.3	2.4	2.3	2.3	2.3	2.4	2.5	2.5	2.5	2.5	2.3	24
23	2.5	2.7	2.6	2.6	2.5	2.3	2.3	2.3	**IZS**	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.7	2.3	24
24	2.3	2.2	2.2	2.2	2.2	2.2	2.3	**IZS**	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.6	2.8	2.7	2.7	2.6	2.5	2.4	2.3	2.8	2.3	24
25	2.2	2.6	2.6	2.5	2.4	2.3	**IZS**	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.2	24
26	2.1	2.2	2.2	2.2	2.2	**IZS**	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.1	24
27	2.1	2.1	2.1	2.1	**IZS**	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.0	24
28	2	2	2	**IZS**	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2.3	2.3	2.2	2.3	2.0	24
29	2.3	2.3	**IZS**	2.3	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2.1	2.1	2.3	2.1	24
30	2.1	**IZS**	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.1	2	2.4	2.2	24
31	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	**IZS**	2.3	2.2	24
HOURLY MAX	2.8	2.7	2.6	2.6	2.5	2.5	2.5	2.6	2.5	2.5	2.6	2.5	2.5	2.4	2.4	2.5	2.6	2.8	2.7	2.8	2.6	2.6	3.1	3.0			
HOURLY AVG	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2			

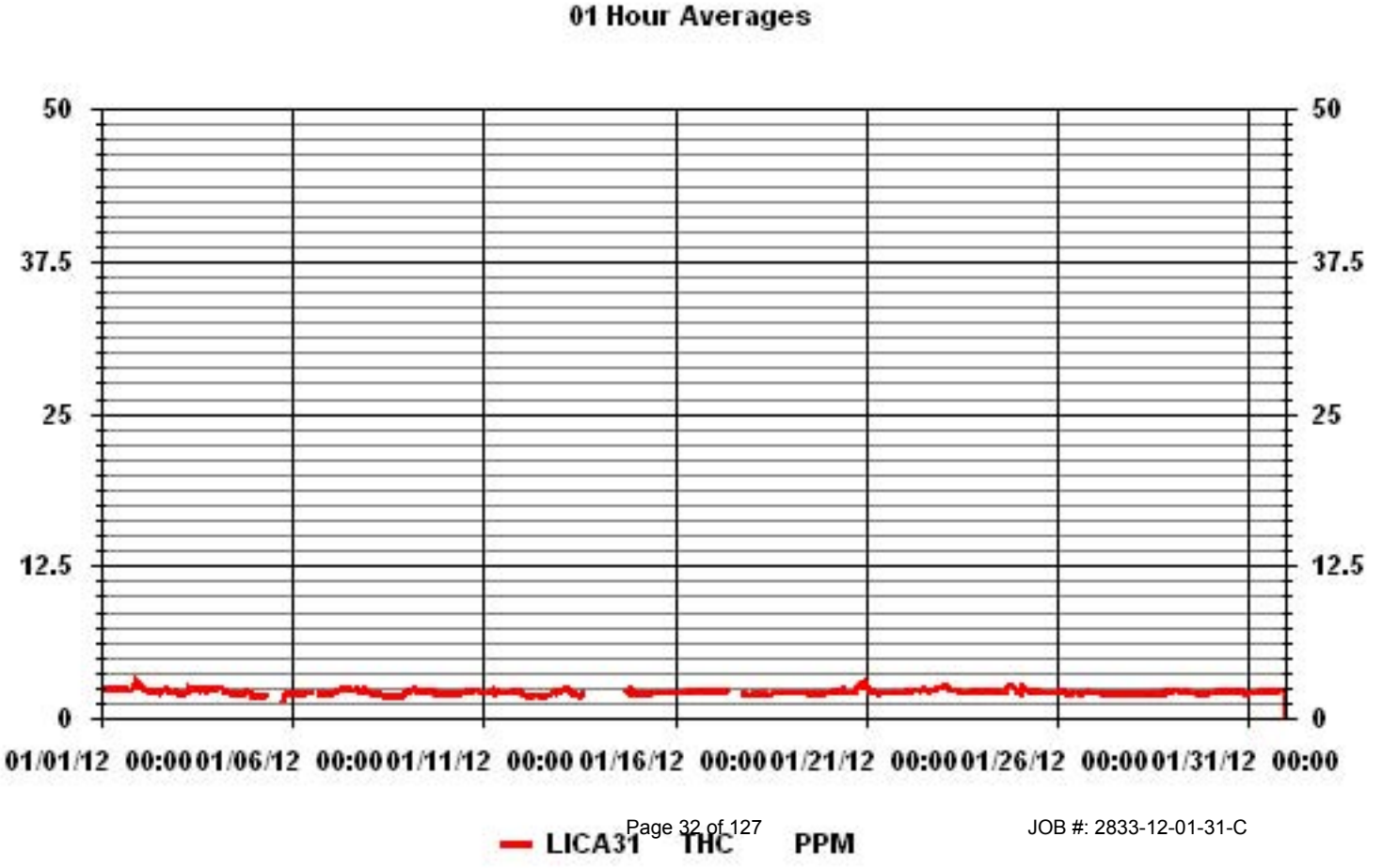
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	663						
MAXIMUM 1-HR AVERAGE:	3.1	PPM	@ HOUR(S)	22	ON DAY(S)	1	
MAXIMUM 24-HR AVERAGE:	2.5	PPM			ON DAY(S)	1	
					VAR- VARIOUS		
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:			710	HRS
MONTHLY CALIBRATION TIME:	16	HRS	AMD OPERATION UPTIME:			95.4	%
STANDARD DEVIATION:	0.19		MONTHLY AVERAGE:			2.17	PPM



JOB #: 2833-12-01-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2012

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

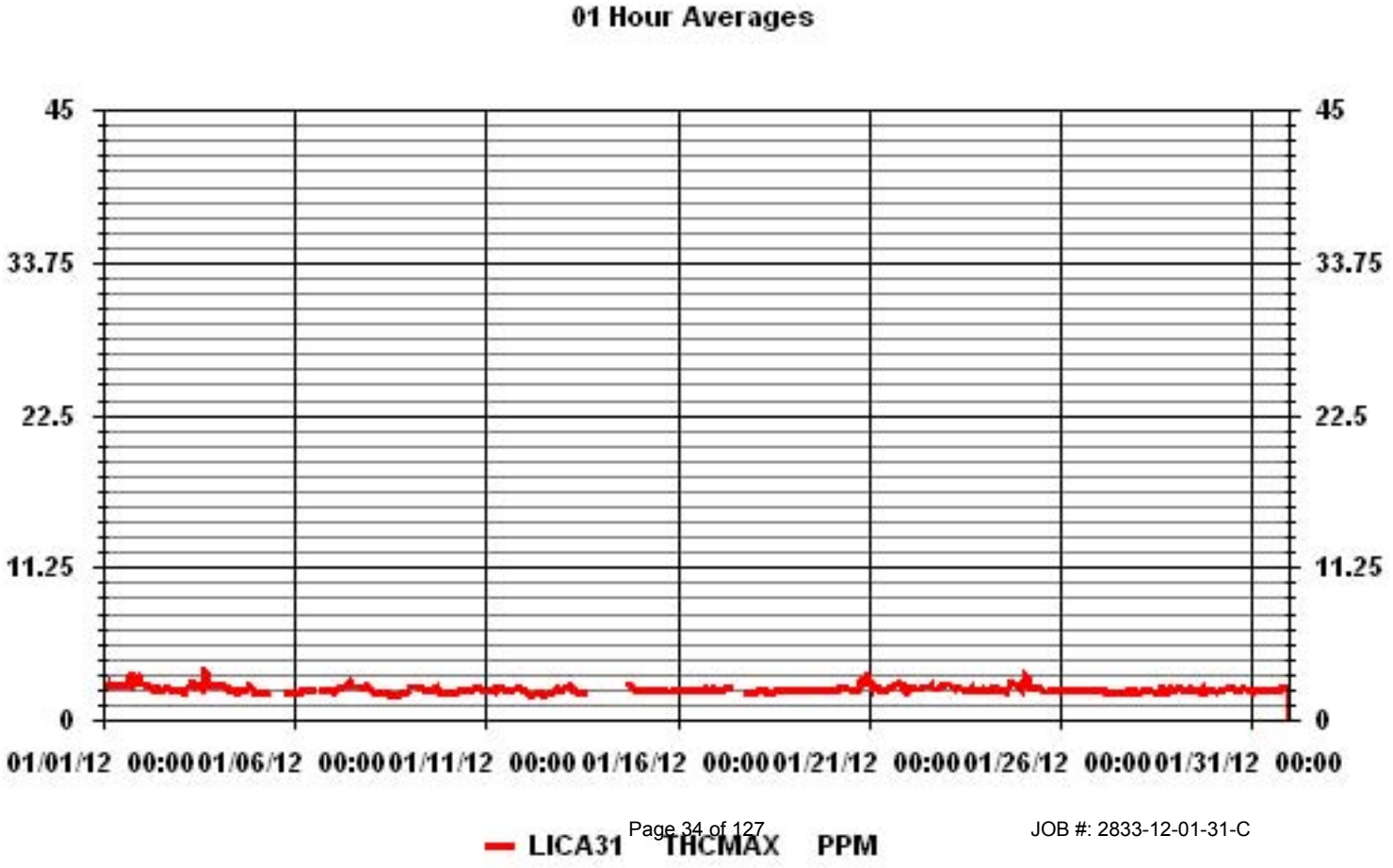
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2.4	2.4	2.4	2.7	2.5	2.5	2.6	**IZS**	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.2	3.5	2.6	2.7	2.9	3.2	3	3.5	2.7	24
2	2.8	2.7	2.5	2.5	2.5	2.3	**IZS**	2.3	2.2	2.3	2.3	2.3	2.2	2.2	2.3	2.4	2.5	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.8	2.3	24
3	2.2	2.2	2	2	2	**IZS**	2.5	2.7	2.7	2.5	2.7	2.6	2.6	2.5	2.4	**3.6**	**3.6**	3.4	2.4	2.6	2.6	2.5	2.5	2.5	**3.6**	2.6	24
4	2.5	2.5	2.6	2.6	**IZS**	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2	2.1	2.1	2.1	2.1	2.1	2.3	2.5	2.5	2.3	2.2	2	2.6	2.3	24
5	1.9	1.9	1.9	**IZS**	1.9	1.9	2.1	2	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**C**	**C**	2	2	2	2	2	2.1	2.0	15
6	2	2	**IZS**	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**C**	**C**	**C**	**C**	**C**	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	24
7	2.1	**IZS**	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.6	2.8	2.6	2.5	2.4	2.4	2.4	2.4	2.5	2.4	2.3	2.4	2.5	2.5	2.4	2.8	2.4	24
8	**IZS**	2.1	2.1	2	2.1	2	2	2	2	2	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	2	**IZS**	2.1	1.9	24
9	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.3	2.3	2.5	2.2	1.9	1.9	1.9	**IZS**	2	2.5	2.3	24
10	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.4	M	2.3	2.3	**IZS**	2.1	2.1	2.4	2.1	23
11	2.1	2.2	2.2	2.1	2.2	2.2	2.6	2.2	2.3	2.3	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.4	**IZS**	2.4	2.2	2.2	2.6	2.2	24
12	2.2	2.2	2	1.9	1.8	1.8	1.9	2	2	1.9	1.9	1.9	1.9	1.8	1.9	2	2	2	2	**IZS**	2.4	2.2	2.2	2.2	2.4	2.0	24
13	2.3	2.4	2.4	2.5	2.6	2.4	2.4	2.1	2.1	2.1	2	2.1	2	2	2	**P**	**P**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	2.6	2.2	15
14	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**C**	**C**	**C**	2.6	2.6	2.5	2.3	2.1	2.1	2.6	2.4	9
15	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	**IZS**	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1	24
16	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	**IZS**	2.2	2.3	2.3	2.3	2.2	2.3	2.4	2.4	2.4	2.2	24
17	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2	2	2	2	2.3	2.2	24
18	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24
19	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**IZS**	2.2	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
20	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.5	**IZS**	2.3	2.2	2.1	2.1	2.1	2.3	2.9	3	2.7	2.8	3.3	3.3	3.3	2.4	24
21	3.1	2.7	2.3	2.5	2.5	2.4	2.5	2.3	2.2	2.3	**IZS**	2.3	2.4	2.3	2.4	2.6	2.6	2.6	2.6	2.8	2.7	2.1	2.7	2.2	3.1	2.5	24
22	2.1	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.3	**IZS**	2.4	2.4	2.5	2.4	2.4	2.6	2.4	2.4	2.3	2.3	2.4	2.6	2.5	2.5	2.6	2.4	24
23	2.6	2.7	2.6	2.6	2.6	2.5	2.3	2.4	**IZS**	2.4	2.3	2.2	2.1	2.2	2.2	2.2	2.4	2.2	2.3	2.2	2.2	2.2	2.2	2.4	2.7	2.3	24
24	2.3	2.2	2.2	2.2	2.2	2.3	2.3	**IZS**	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.3	2.8	2.8	2.8	2.8	2.7	2.5	2.5	2.3	2.8	2.4	24
25	3	3.4	3.3	3.2	2.6	2.4	**IZS**	2.3	2.3	2.3	2.3	2.4	2.3	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	3.4	2.4	24
26	2.2	2.2	2.2	2.2	2.2	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.1	24
27	2.1	2.1	2.1	2.1	**IZS**	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2	2.1	2.1	2	2	2.1	2.2	2.0	24
28	2.1	2	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2	2	2	2.1	2.6	2.1	2	2.1	2.3	2.4	2.4	2.2	2.6	2.1	24
29	2.3	2.4	**IZS**	2.4	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2	2.3	2	2	2.1	2.1	2.1	2.1	2.4	2.2	24
30	2.1	**IZS**	2.1	2.2	2.2	2.2	2.2	2.3	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.1	2.1	2.4	2.2	24
31	**IZS**	2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.4	**IZS**	2.4	2.2	24
HOURLY MAX	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	3	4	3	3	3	3	3			
HOURLY AVG	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	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:	660						
MAXIMUM INSTANTANEOUS VALUE:	3.6	PPM	@ HOUR(S)	15, 16	ON DAY(S)	3	
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:			710	HRS
MONTHLY CALIBRATION TIME:	20	HRS					
STANDARD DEVIATION:	0.25						



JOB #: 2833-12-01-31-C

LICA31
THC / WDR Joint Frequency Distribution (Percent)

January 2012

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
Parameter : THC
Units : PPM

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	6.93	2.71	5.42	6.33	4.67	5.27	7.39	2.26	.90	4.07	8.44	13.12	8.59	3.61	9.20	10.70	99.69
<	10.0	.00	.00	.00	.00	.30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.30
<	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	6.93	2.71	5.42	6.33	4.97	5.27	7.39	2.26	.90	4.07	8.44	13.12	8.59	3.61	9.20	10.70	

Calm : .00 %

Total # Operational Hours : 663

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	46	18	36	42	31	35	49	15	6	27	56	87	57	24	61	71	661
<	10.0					2												2
<	50.0																	
>=	50.0																	
	Totals	46	18	36	42	33	35	49	15	6	27	56	87	57	24	61	71	

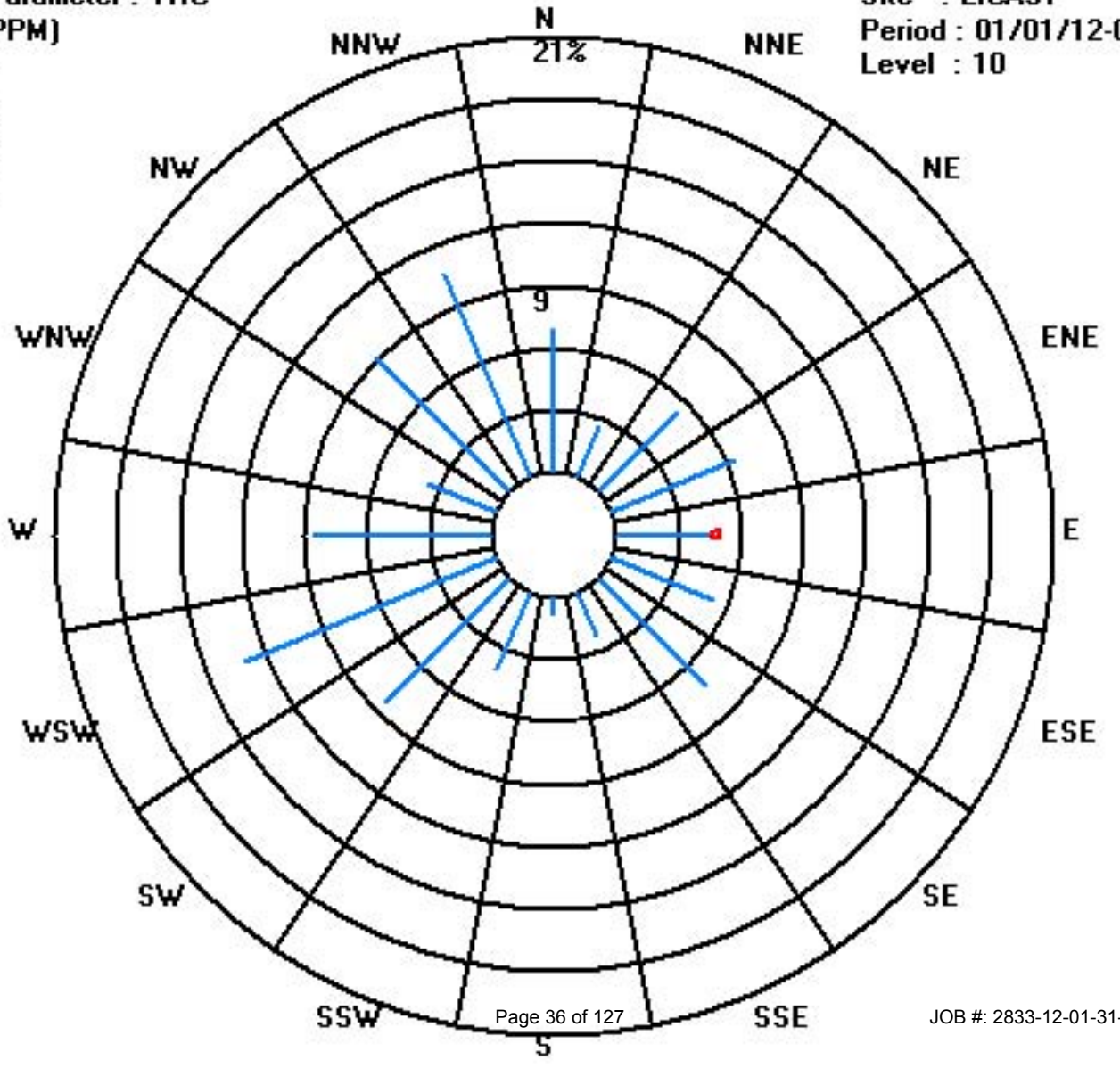
Calm : .00 %

Total # Operational Hours : 663

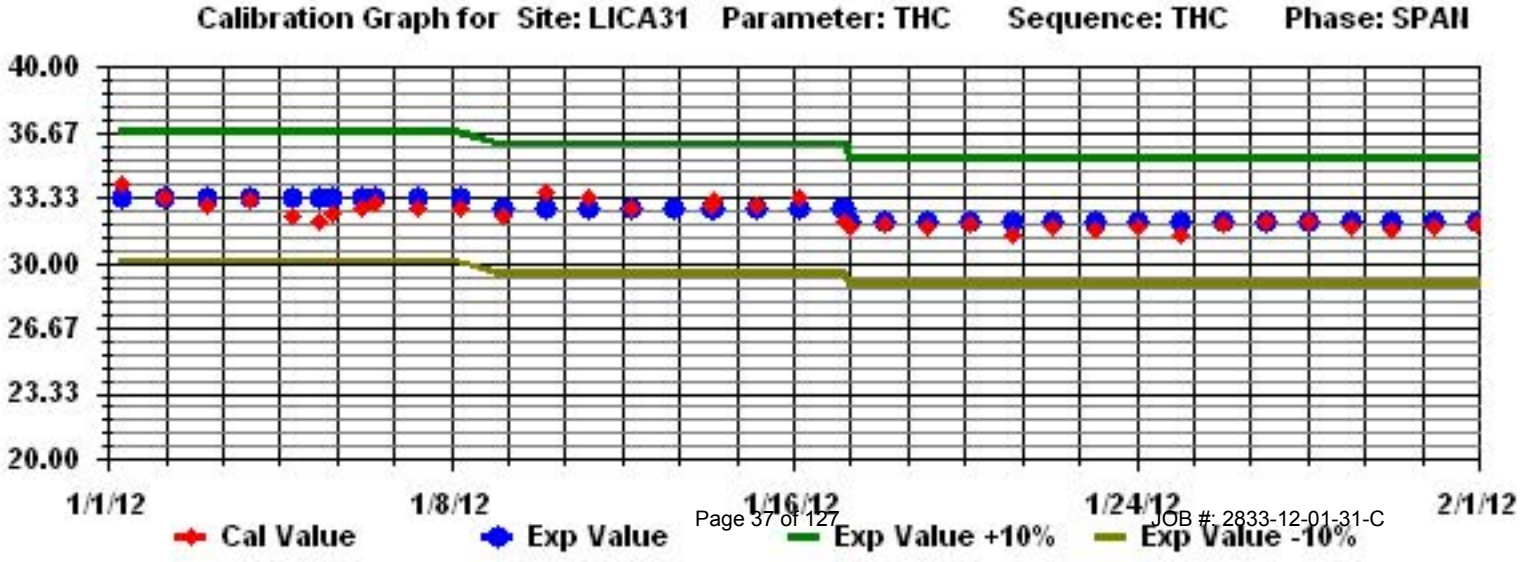
Logger : 31 Parameter : THC
Class Limits (PPM)

>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA31
Period : 01/01/12-01/31/12
Level : 10



JOB #: 2833-12-01-31-C


Calibration Graph for Site: LICA31 Parameter: THC Sequence: THC Phase: SPAN
40.00
36.67
33.33
30.00
26.67
23.33
20.00
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST. LINA*

JANUARY 2012

OZONE (O_3) hourly averages in ppb

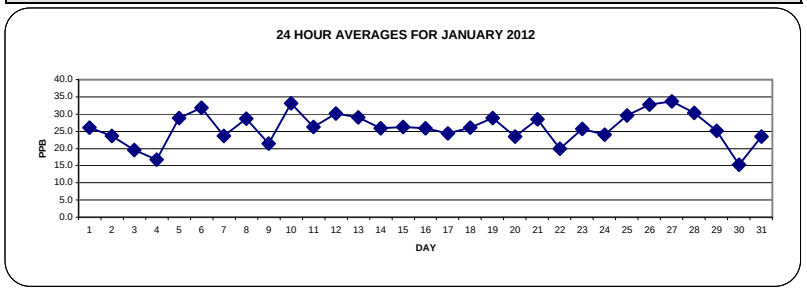
MST

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	32	32	31	30	29	28	29	**IZS**	26	23	20	21	22	23	23	22	23	28	27	27	27	27	25	25	32	26.1	24
2	25	27	28	28	28	29	**IZS**	29	29	27	26	25	24	24	23	22	21	21	20	19	18	17	16	16	29	23.6	24
3	15	22	23	24	26	**IZS**	21	19	20	20	20	18	18	19	19	20	19	21	22	20	18	16	15	15	26	19.6	24
4	15	13	12	10	**IZS**	16	15	16	17	18	19	22	22	22	19	18	16	16	15	15	15	16	18	21	22	16.8	24
5	20	19	20	**IZS**	20	20	20	20	30	34	33	31	30	31	31	32	33	32	34	34	34	35	35	34	35	28.8	24
6	33	33	**IZS**	31	32	31	32	31	31	30	31	32	33	33	34	33	33	32	31	31	31	32	32	30	34	31.8	24
7	30	**IZS**	30	28	28	22	21	20	18	19	19	23	26	27	29	28	26	23	22	22	22	22	20	20	21	30	23.7	24
8	**IZS**	22	21	22	21	26	26	27	28	29	30	32	32	34	35	34	33	33	32	31	30	28	26	**IZS**	35	28.7	24
9	18	21	18	16	15	14	15	17	18	18	18	18	17	15	18	20	21	21	30	33	35	**38**	**IZS**	36	**38**	21.3	24
10	36	35	35	34	33	32	31	32	32	34	34	35	35	35	34	**C**	**C**	**C**	**C**	29	30	**IZS**	32	32	36	33.2	24
11	31	31	30	30	30	31	29	27	26	25	26	29	29	28	28	27	26	24	22	19	**IZS**	17	19	19	31	26.2	24
12	20	23	30	31	33	33	32	30	31	32	32	32	33	34	34	32	31	30	29	**IZS**	30	29	27	24	34	30.1	24
13	21	21	19	19	22	24	28	32	32	33	33	33	34	34	34	**P**	**P**	33	**IZS**	33	32	32	31	31	34	29.1	22
14	31	30	29	28	27	26	26	25	25	27	29	29	28	28	25	22	19	**IZS**	21	21	25	25	24	23	31	25.8	24
15	23	26	25	25	24	24	26	28	28	26	26	27	27	28	28	28	**IZS**	27	27	27	26	26	26	25	28	26.2	24
16	25	25	25	26	26	26	26	25	25	25	25	26	27	27	27	**IZS**	27	27	27	27	26	26	25	25	27	25.9	24
17	25	25	25	26	25	25	24	24	25	25	**C**	**C**	**C**	**C**	**C**	**C**	**C**	24	24	23	22	23	24	25	26	24.4	24
18	25	24	23	22	21	21	23	25	25	26	27	28	29	**IZS**	29	29	29	28	28	28	28	27	28	28	29	26.1	24
19	27	28	27	28	28	28	28	28	27	28	28	29	**IZS**	32	32	31	30	30	29	29	30	29	28	28	32	28.8	24
20	27	27	26	24	25	24	17	13	12	13	13	**IZS**	21	27	32	31	31	30	24	23	26	26	24	22	32	23.4	24
21	24	28	30	30	31	30	29	30	31	31	**IZS**	30	30	29	28	28	27	27	27	27	27	27	27	26	31	28.4	24
22	27	26	25	24	23	21	17	12	10	**IZS**	17	18	18	19	19	19	17	18	20	19	21	22	23	25	27	20.0	24
23	26	25	25	25	26	27	27	26	**IZS**	25	26	27	27	27	26	26	27	27	25	25	27	26	25	16	27	25.6	24
24	13	17	22	24	24	24	24	**IZS**	24	25	27	27	28	29	29	29	23	22	22	23	24	24	24	26	29	24.1	24
25	27	24	25	26	26	26	**IZS**	24	24	23	23	24	26	28	33	33	34	36	**38**	37	37	36	35	35	**38**	29.6	24
26	35	34	34	34	34	**IZS**	34	34	34	34	33	31	30	32	34	35	35	35	31	28	28	29	31	33	35	32.7	24
27	34	35	37	36	**IZS**	36	36	35	35	35	34	34	34	33	33	33	33	33	34	33	32	32	29	29	37	**33.7**	24
28	31	31	31	**IZS**	29	29	29	30	30	29	29	30	30	31	32	32	31	31	31	31	31	29	30	29	32	30.3	24
29	29	29	**IZS**	29	30	29	29	28	28	28	28	27	27	26	24	22	23	24	23	21	23	18	16	16	30	25.1	24
30	15	**IZS**	16	15	14	13	11	8	6	6	10	12	16	17	17	18	17	17	17	15	18	21	26	27	27	15.3	24
31	**IZS**	25	25	27	25	26	26	24	23	24	24	24	24	25	26	26	25	24	23	21	19	17	13	**IZS**	27	23.5	24
HOURLY MAX	36	35	37	36	34	36	36	35	35	35	34	35	35	35	35	35	35	36	38	37	37	38	35	36			
HOURLY AVG	25.5	26.1	25.8	25.9	26.0	25.6	25.2	24.8	25.0	25.7	25.5	26.7	26.8	27.5	27.8	27.0	26.3	26.7	26.0	25.7	26.4	25.7	25.1	25.6			

STATUS FLAG CODES

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

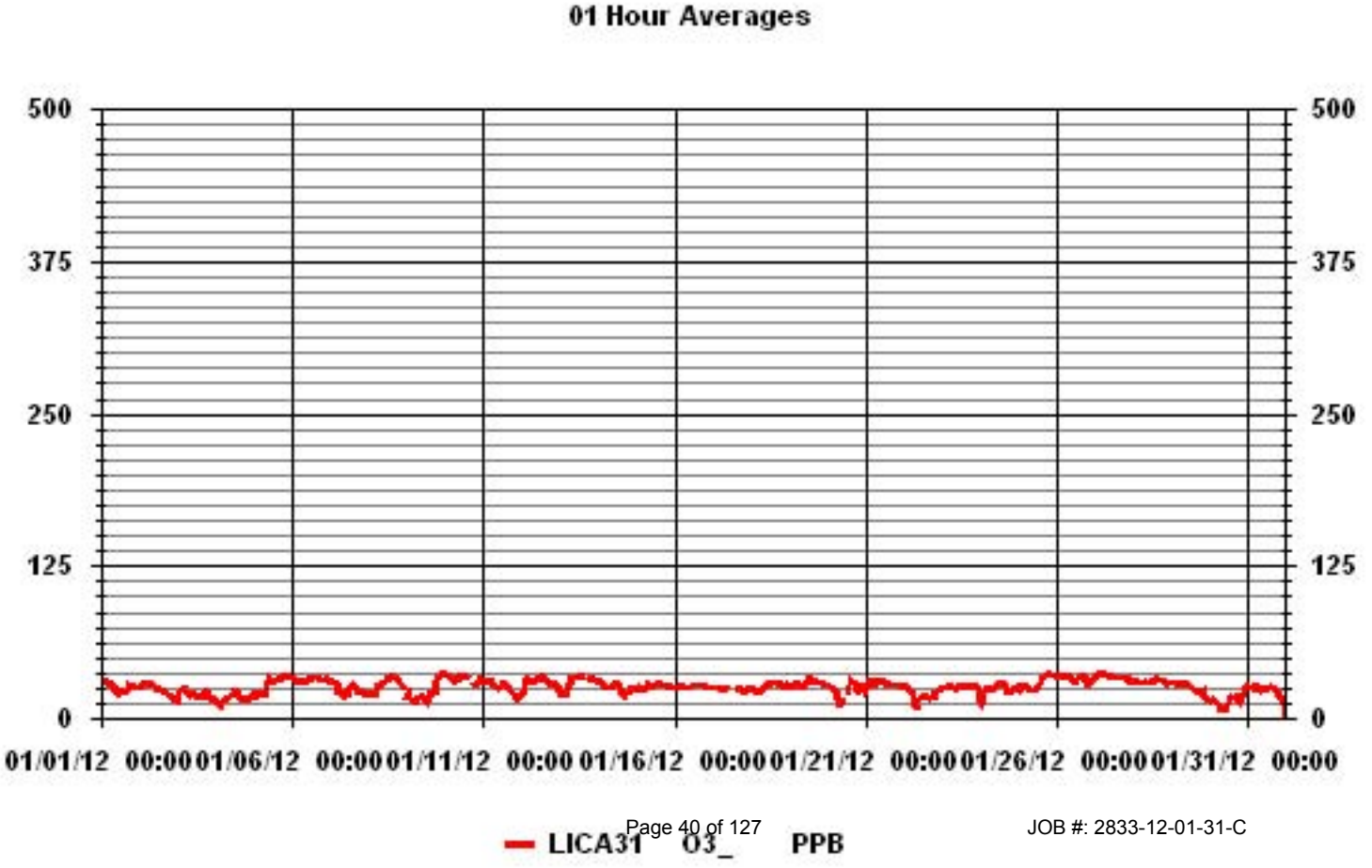
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 82 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	699					
MAXIMUM 1-HR AVERAGE:	38	PPB	@ HOUR(S)	21, 18	ON DAY(S)	9, 25
MAXIMUM 24-HR AVERAGE:	33.7	PPB			ON DAY(S)	27
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		742	HRS
MONTHLY CALIBRATION TIME:	11	HRS	AMD OPERATION UPTIME		99.7	%
STANDARD DEVIATION	5.76		MONTHLY AVERAGE		26.0	PPB

JOB #: 2833-12-01-31-C



JOB #: 2833-12-01-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST. LINA*

JANUARY 2012

OZONE MAX instantaneous maximum in ppb

MST

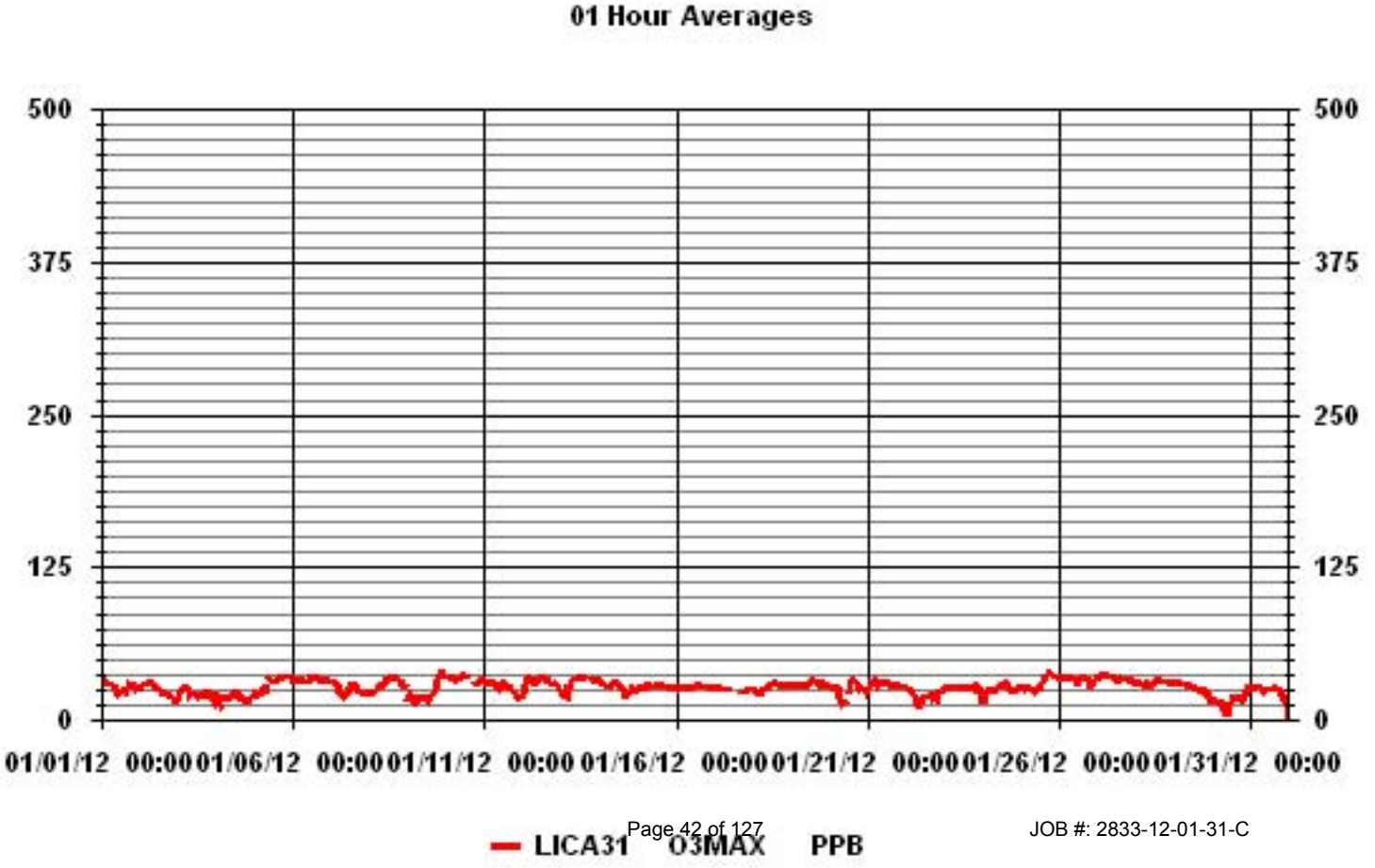
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	32	32	32	31	30	29	29	**IZS**	28	25	21	22	23	24	24	23	26	30	29	28	28	28	25	26	32	27.2	24
2	26	28	29	29	29	30	**IZS**	30	30	28	27	26	25	24	23	22	22	21	21	20	19	18	17	16	30	24.3	24
3	18	23	25	25	28	**IZS**	26	19	20	21	21	20	19	20	20	21	20	22	23	22	20	17	15	21	28	21.1	24
4	21	14	13	11	**IZS**	17	17	18	18	19	21	23	23	23	21	19	17	17	16	16	16	18	20	22	23	18.3	24
5	22	20	21	**IZS**	21	26	22	27	P	35	34	32	31	31	32	33	34	35	35	35	35	36	35	35	36	30.3	23
6	34	33	**IZS**	32	32	32	33	32	31	31	32	34	34	34	34	34	34	33	32	32	32	33	33	31	34	32.7	24
7	31	**IZS**	31	29	29	24	23	21	19	20	22	25	28	28	30	29	27	25	23	23	23	21	21	22	31	25.0	24
8	**IZS**	24	22	23	24	27	27	28	29	29	32	32	33	35	36	35	34	34	33	33	31	29	28	**IZS**	36	29.9	24
9	19	23	22	18	16	15	17	19	20	19	18	19	19	17	20	21	22	25	32	35	35	**39**	**IZS**	37	**39**	22.9	24
10	36	35	35	35	34	33	32	33	33	35	36	36	36	35	35	**C**	**C**	**C**	**C**	30	31	**IZS**	33	32	36	33.9	20
11	32	31	30	31	31	31	30	29	28	26	29	30	30	29	28	28	27	25	24	21	**IZS**	18	19	19	32	27.2	24
12	21	28	32	32	34	34	33	31	32	32	32	33	34	35	35	33	32	31	30	**IZS**	31	30	28	26	35	31.3	24
13	22	21	20	19	27	27	32	33	33	33	33	34	34	34	35	**P**	**P**	34	**IZS**	33	33	33	32	32	35	30.2	22
14	32	31	30	29	29	27	27	27	29	30	30	30	29	28	27	25	21	**IZS**	22	24	26	26	25	24	32	27.3	24
15	26	27	26	27	25	25	28	28	28	27	27	27	28	29	29	29	**IZS**	28	27	27	27	26	26	26	29	27.1	24
16	26	25	26	26	26	26	26	26	26	26	26	27	27	28	28	**IZS**	28	27	27	28	27	27	26	26	28	26.6	24
17	26	26	26	26	26	25	25	25	25	26	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	24	23	23	24	25	25	26	25.0	24
18	25	25	23	22	21	21	25	25	25	26	27	29	29	**IZS**	30	30	29	28	28	28	28	28	28	28	30	26.4	24
19	28	28	28	28	28	28	28	28	28	28	29	30	**IZS**	32	33	32	30	31	30	29	30	30	28	28	33	29.2	24
20	28	27	27	26	26	26	19	15	13	14	15	**IZS**	25	31	33	32	31	31	27	25	26	26	25	23	33	24.8	24
21	26	30	30	31	32	32	29	31	32	31	**IZS**	31	31	30	29	28	28	28	28	28	28	27	27	27	32	29.3	24
22	27	27	26	24	24	22	19	14	11	**IZS**	17	19	19	19	20	20	18	20	21	19	23	23	23	26	27	20.9	24
23	27	25	25	25	26	27	27	27	**IZS**	26	27	27	27	27	27	26	28	27	26	25	28	28	26	22	28	26.3	24
24	14	18	23	24	24	24	24	**IZS**	24	26	27	28	28	29	30	30	26	23	23	24	24	25	25	26	30	24.7	24
25	27	26	25	26	27	26	**IZS**	25	25	23	24	25	27	30	34	34	36	38	38	37	37	36	35	35	38	30.3	24
26	35	34	34	34	35	**IZS**	34	35	34	34	33	32	31	33	35	35	35	35	34	29	28	30	32	34	35	33.3	24
27	34	36	37	37	**IZS**	36	36	36	35	35	35	34	34	33	34	34	33	33	34	33	33	32	31	30	37	34.1	24
28	31	31	31	**IZS**	30	29	30	30	30	29	30	30	31	32	33	32	32	31	31	31	31	30	30	30	33	30.7	24
29	29	29	**IZS**	30	30	29	29	29	29	28	28	28	27	26	26	24	24	24	24	22	25	24	17	16	30	26.0	24
30	16	**IZS**	16	15	14	13	13	10	7	6	11	14	18	18	18	18	17	18	19	17	19	24	27	28	28	16.3	24
31	**IZS**	26	26	27	27	27	27	24	23	24	25	25	25	25	26	26	26	25	24	22	21	18	15	**IZS**	27	24.3	24
HOURLY MAX	36	36	37	37	35	36	36	36	35	35	36	36	36	35	36	35	36	38	38	37	37	39	35	37			
HOURLY AVG	26.6	27.0	26.6	26.6	27.1	26.5	26.4	26.0	25.7	26.4	26.5	27.7	27.8	28.2	28.8	27.9	27.3	27.8	27.1	26.6	27.3	26.8	25.9	26.7			

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:	697					
MAXIMUM INSTANTANEOUS VALUE:	39	PPB	@ HOUR(S)	21	ON DAY(S)	9
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		737	HRS
MONTHLY CALIBRATION TIME:	12	HRS				
STANDARD DEVIATION	5.56					



JOB #: 2833-12-01-31-C

LICA31
O3_ / WDR Joint Frequency Distribution (Percent)

January 2012

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	6.86	3.14	5.43	6.15	5.29	5.43	7.15	2.14	.85	3.86	8.15	13.01	8.58	4.29	9.29	10.30	100.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	6.86	3.14	5.43	6.15	5.29	5.43	7.15	2.14	.85	3.86	8.15	13.01	8.58	4.29	9.29	10.30	

Calm : .00 %

Total # Operational Hours : 699

Distribution By Samples

Direction

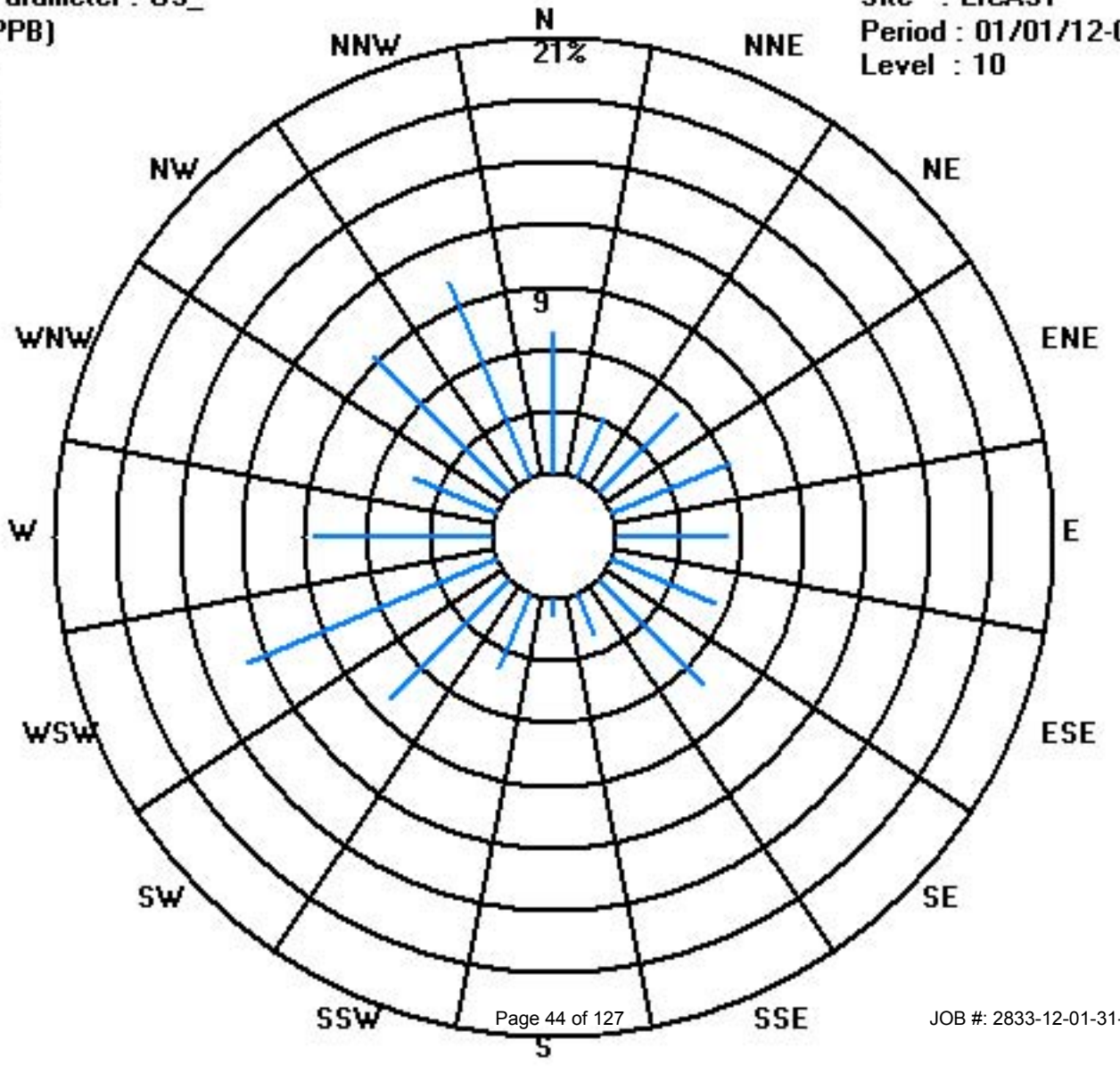
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	48	22	38	43	37	38	50	15	6	27	57	91	60	30	65	72	699
<	110																	
<	210																	
>=	210																	
	Totals	48	22	38	43	37	38	50	15	6	27	57	91	60	30	65	72	

Calm : .00 %

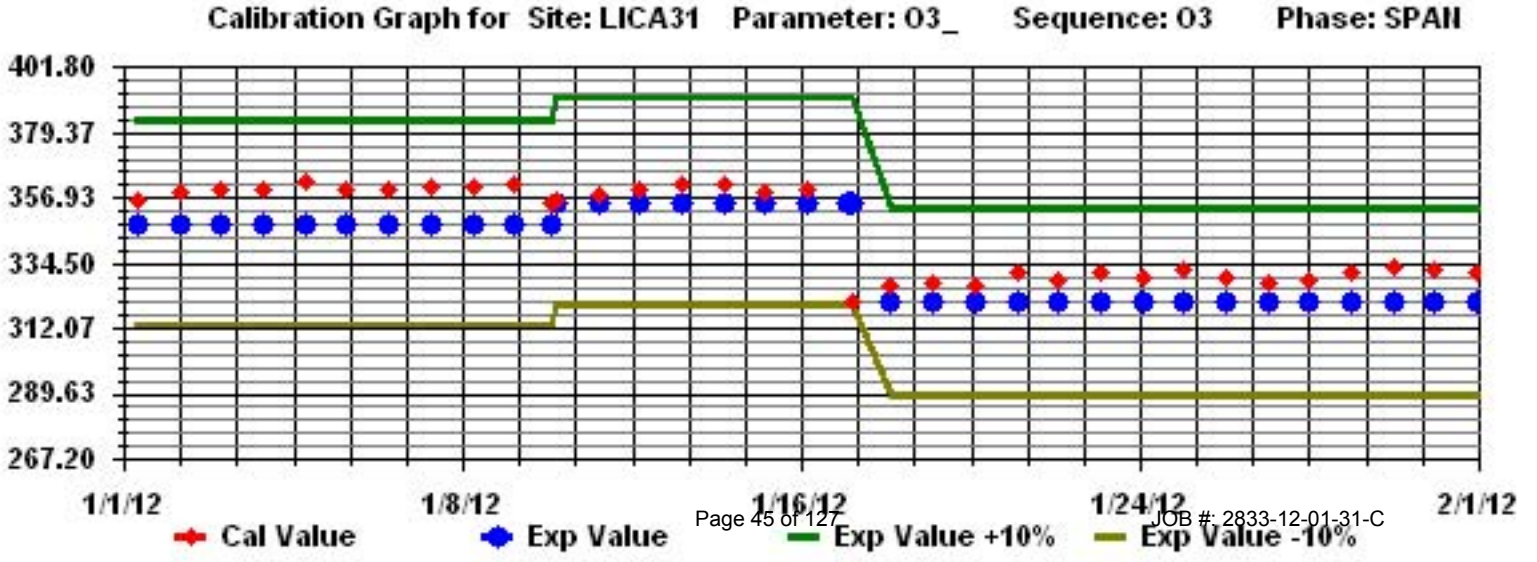
Total # Operational Hours : 699

Logger : 31 Parameter : 03_
Class Limits (PPB)
>= 210
< 210
< 110
< 50

Site : LICA31
Period : 01/01/12-01/31/12
Level : 10



JOB #: 2833-12-01-31-C


Calibration Graph for Site: LICA31 Parameter: O3_ Sequence: O3 Phase: SPAN
401.80
379.37
356.93
334.50
312.07
289.63
267.20
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2012

NITROGEN DIOXIDE hourly averages in ppb

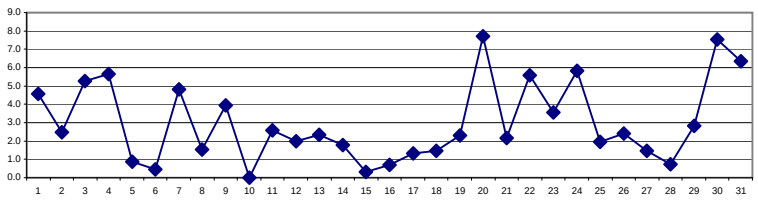
MST

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	0	0	0	1	1	1	1	**IZS**	3	5	9	9	9	8	8	8	7	6	5	5	5	4	5	5	9	4.6	24
2	4	3	3	3	3	2	**IZS**	1	1	1	1	1	1	2	2	2	3	3	3	3	3	3	5	4	5	2.5	24
3	5	3	3	2	2	**IZS**	3	4	3	3	4	7	8	9	9	7	8	6	4	5	5	7	7	7	9	5.3	24
4	7	8	8	10	**IZS**	5	5	5	4	5	4	3	3	3	4	4	5	6	7	8	8	8	6	4	10	5.7	24
5	4	4	3	**IZS**	2	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.9	24
6	0	0	**IZS**	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	1	1	1	1	2	2	0.5	24
7	2	**IZS**	0	1	2	6	7	8	9	8	8	6	4	3	3	3	4	6	7	6	5	5	4	4	9	4.8	24
8	**IZS**	3	4	4	4	3	4	3	2	2	1	1	0	0	0	0	0	0	0	0	1	1	1	**IZS**	4	1.5	24
9	5	4	5	7	6	6	6	5	4	4	5	4	4	4	4	5	5	5	2	1	0	0	**IZS**	0	7	4.0	24
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**M**	0	0	**IZS**	0	0	0	0.0	23
11	0	0	1	0	0	0	1	1	1	2	2	1	1	2	2	3	3	4	5	6	**IZS**	8	8	8	8	2.6	24
12	7	5	2	1	1	1	1	1	1	1	1	1	1	1	1	2	3	2	2	**IZS**	2	2	3	4	7	2.0	24
13	6	7	9	9	7	5	3	1	1	1	0	0	0	0	0	**P**	**P**	0	**IZS**	0	0	0	0	0	9	2.3	22
14	0	1	1	1	1	1	1	1	2	2	1	1	1	1	2	4	5	**IZS**	6	6	2	1	0	0	6	1.8	24
15	1	0	1	1	1	2	1	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	2	0.3	24
16	0	0	0	0	0	0	0	1	0	1	1	1	0	1	1	**IZS**	1	1	1	1	1	1	2	2	2	0.7	24
17	1	1	1	1	2	2	2	2	2	2	2	2	2	**C**	**IZS**	0	0	1	1	2	2	1	0	0	2	1.3	24
18	0	1	1	2	2	2	1	0	0	0	0	0	0	**IZS**	2	2	2	3	3	3	3	3	2	2	3	1.5	24
19	2	2	3	2	2	2	2	2	2	2	2	2	**IZS**	1	1	2	2	3	3	3	3	3	4	3	4	2.3	24
20	4	4	4	6	5	6	12	15	17	17	**19**	**IZS**	11	6	3	3	3	3	7	8	6	5	6	7	**19**	**7.7**	24
21	6	4	2	2	2	2	2	1	1	1	**IZS**	2	2	2	2	2	3	2	2	2	2	2	2	2	6	2.2	24
22	2	2	3	3	3	4	7	11	13	**IZS**	6	5	5	5	6	6	7	7	6	6	6	6	5	4	13	5.6	24
23	3	4	3	3	3	2	2	2	**IZS**	2	2	1	2	3	4	4	3	3	4	4	4	4	6	14	14	3.6	24
24	16	12	7	4	4	4	3	**IZS**	4	5	4	5	3	3	4	4	8	9	8	7	6	5	5	4	16	5.8	24
25	3	3	3	3	3	3	**IZS**	3	3	4	4	4	3	3	1	1	1	0	0	0	0	0	0	0	4	2.0	24
26	0	0	1	1	0	**IZS**	1	2	2	2	2	3	4	3	2	2	2	2	4	6	6	5	3	2	6	2.4	24
27	2	1	1	1	**IZS**	0	0	0	0	0	0	1	1	2	3	2	3	3	2	2	2	2	3	3	3	1.5	24
28	2	1	1	**IZS**	0	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2	2	2	0.7	24
29	2	1	**IZS**	2	2	2	2	2	2	2	2	2	2	2	4	5	4	3	4	4	3	4	4	5	5	2.8	24
30	5	**IZS**	3	4	4	5	6	9	11	14	12	9	7	7	7	9	10	9	9	11	9	7	4	2	14	7.5	24
31	**IZS**	3	3	2	3	2	3	4	5	5	5	5	5	5	5	6	7	8	10	11	12	13	18	**IZS**	18	6.4	24
HOURLY MAX	16	12	9	10	7	6	12	15	17	17	19	9	11	9	9	9	10	9	10	11	12	13	18	14			
HOURLY AVG	3.1	2.7	2.6	2.6	2.2	2.5	2.7	3.0	3.1	3.0	3.3	2.6	2.7	2.7	2.8	3.1	3.6	3.3	3.7	3.7	3.3	3.4	3.5	3.1			

STATUS FLAG CODES

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

24 HOUR AVERAGES FOR JANUARY 2012



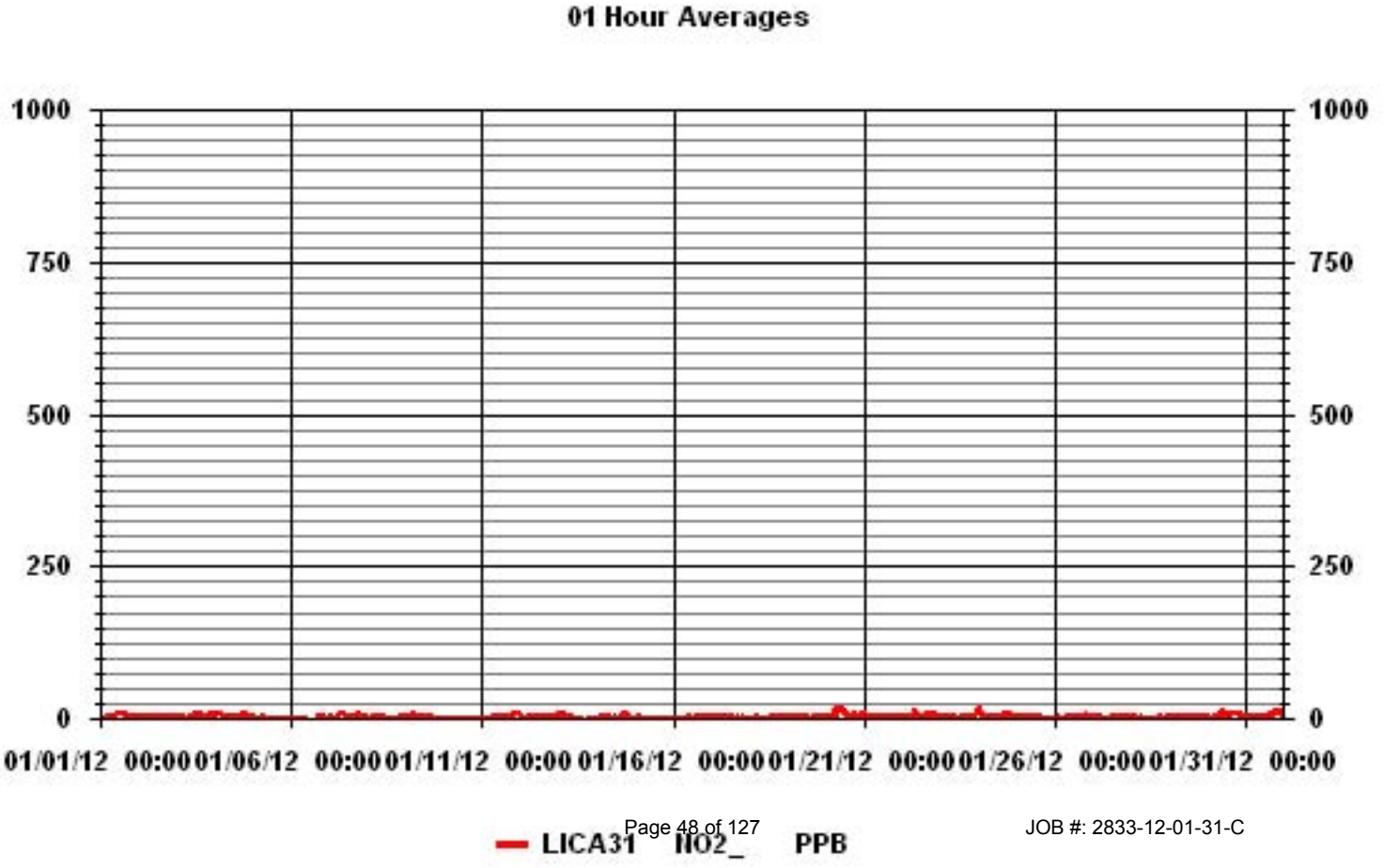
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	555					
MAXIMUM 1-HR AVERAGE:	19	PPB	@ HOUR(S)	10	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:	7.7	PPB			ON DAY(S)	20
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		741	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		99.6	%
STANDARD DEVIATION:	3.00		MONTHLY AVERAGE:		3.02	PPB

JOB #: 2833-12-01-31-C



JOB #: 2833-12-01-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST.LINA*

JANUARY 2012

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

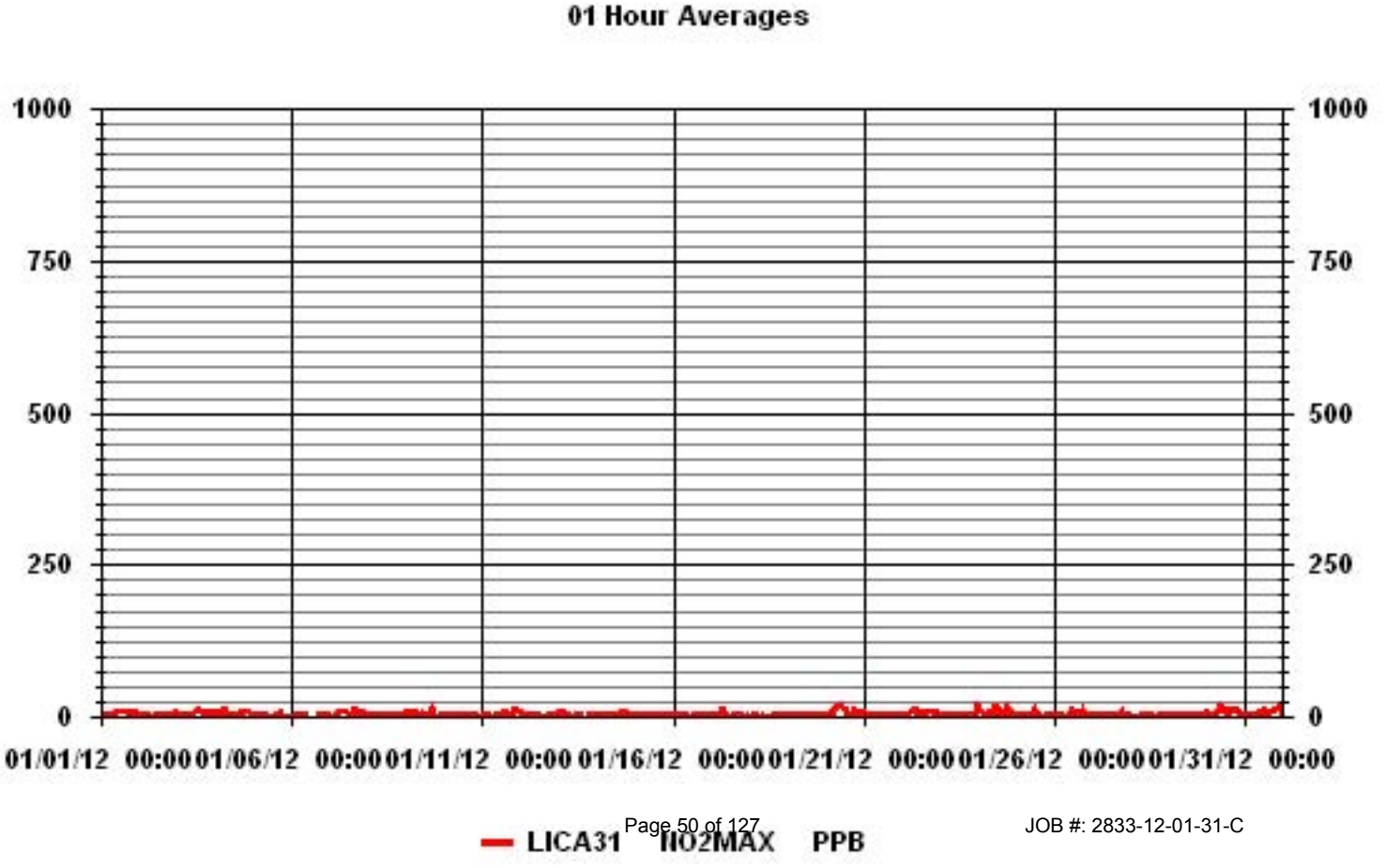
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	1	1	1	2	2	2	**IZS**	4	9	10	9	10	9	9	9	8	7	6	6	6	6	6	6	10	5.7	24
2	5	4	3	3	3	3	**IZS**	1	1	2	2	2	2	2	3	3	3	3	3	3	3	4	7	6	7	3.1	24
3	6	5	4	3	2	**IZS**	4	5	4	4	6	9	9	10	10	9	9	8	5	6	6	8	8	8	10	6.4	24
4	7	8	9	11	**IZS**	6	14	6	5	5	6	4	4	4	4	5	6	7	9	10	9	9	8	6	14	7.0	24
5	5	5	4	**IZS**	3	3	3	3	**P**	0	0	0	0	0	0	5	7	0	0	0	0	0	0	0	7	1.7	23
6	0	0	**IZS**	1	1	1	1	1	1	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2	2	2	2	2	2	2	1.3	24
7	3	**IZS**	1	2	5	8	8	9	10	9	9	7	5	4	4	10	17	8	8	7	6	6	6	5	17	6.8	24
8	**IZS**	4	4	4	5	4	4	4	3	3	2	2	1	1	1	1	1	1	1	1	2	2	3	**IZS**	5	2.5	24
9	6	6	8	8	7	7	7	6	5	5	6	6	5	5	5	6	13	7	4	2	1	1	**IZS**	1	13	5.5	24
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**M**	1	1	**IZS**	0	1	1	1.0	23
11	1	1	1	1	1	1	1	3	2	3	3	3	3	3	11	4	4	5	6	8	**IZS**	10	10	9	11	4.1	24
12	9	7	3	2	2	2	2	2	2	2	2	2	4	2	1	2	4	3	3	**IZS**	3	3	4	6	9	3.1	24
13	7	9	9	10	9	6	5	2	2	1	1	1	1	1	1	**P**	**P**	1	**IZS**	1	1	1	1	1	10	3.4	22
14	1	1	2	2	2	2	2	2	3	3	2	2	2	2	3	7	7	**IZS**	7	7	4	2	1	1	7	2.9	24
15	1	1	2	2	2	3	2	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	3	1.3	24
16	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	**IZS**	2	3	2	2	2	3	2	3	3	1.5	24
17	2	2	2	2	2	3	3	16	3	3	4	4	3	**C**	**IZS**	1	1	2	3	3	2	2	1	1	16	3.0	24
18	1	2	2	3	3	3	3	1	1	1	0	0	0	**IZS**	2	3	3	4	4	4	3	3	3	3	4	2.3	24
19	3	3	4	3	3	3	3	3	4	3	3	3	**IZS**	2	2	3	3	4	3	4	3	3	4	4	4	3.2	24
20	6	5	5	7	7	10	13	16	18	**20**	**20**	**IZS**	13	8	4	4	4	5	10	10	7	6	7	8	**20**	9.3	24
21	7	5	3	4	3	3	3	2	2	2	**IZS**	2	3	3	3	3	4	3	3	3	3	3	3	3	7	3.2	24
22	3	3	4	4	3	6	10	13	14	**IZS**	7	6	6	7	7	7	8	8	8	8	7	7	6	6	14	6.9	24
23	4	5	4	4	3	3	3	3	**IZS**	2	2	2	3	5	5	5	4	4	5	5	5	6	9	18	18	4.7	24
24	18	15	10	6	4	4	4	**IZS**	6	6	7	19	4	4	4	5	9	9	15	8	7	6	6	4	19	7.8	24
25	4	5	4	4	4	4	**IZS**	4	4	5	5	11	4	4	3	2	2	1	1	1	1	1	1	1	11	3.3	24
26	1	1	1	1	1	**IZS**	2	3	2	3	3	14	5	4	3	11	3	3	12	7	8	6	4	3	14	4.4	24
27	2	2	2	2	**IZS**	0	1	1	1	1	1	2	2	3	3	3	4	4	8	2	3	3	4	3	8	2.5	24
28	2	2	1	**IZS**	1	2	2	1	1	1	1	1	1	1	1	1	2	2	1	2	2	3	3	2	3	1.6	24
29	2	2	**IZS**	3	2	3	3	3	2	3	3	3	3	3	5	7	5	4	4	5	4	4	5	6	7	3.7	24
30	6	**IZS**	4	5	5	6	8	12	19	16	14	11	9	16	8	11	11	11	11	12	11	9	5	3	19	9.7	24
31	**IZS**	4	4	3	4	3	5	5	9	6	6	6	15	6	7	7	8	9	11	12	13	17	19	**IZS**	19	8.1	24
HOURLY MAX	18	15	10	11	9	10	14	16	19	20	20	19	15	16	11	11	17	11	15	12	13	17	19	18			
HOURLY AVG	4.0	3.8	3.6	3.6	3.1	3.6	4.1	4.5	4.5	4.1	4.4	4.7	4.1	4.0	3.9	4.9	5.5	4.4	5.4	4.8	4.2	4.6	4.6	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:	678					
MAXIMUM INSTANTANEOUS VALUE:	20	PPB	@ HOUR(S)	9, 10	ON DAY(S)	20
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		740	HRS
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION	3.57					



JOB #: 2833-12-01-31-C

LICA31
NO2_ / WDR Joint Frequency Distribution (Percent)

January 2012

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	7.29	2.86	5.15	6.00	5.00	5.43	7.01	2.14	.85	3.86	8.15	13.44	8.58	4.29	9.29	10.58	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	7.29	2.86	5.15	6.00	5.00	5.43	7.01	2.14	.85	3.86	8.15	13.44	8.58	4.29	9.29	10.58	

Calm : .00 %

Total # Operational Hours : 699

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	51	20	36	42	35	38	49	15	6	27	57	94	60	30	65	74	699
<	110																	
<	210																	
>=	210																	
	Totals	51	20	36	42	35	38	49	15	6	27	57	94	60	30	65	74	

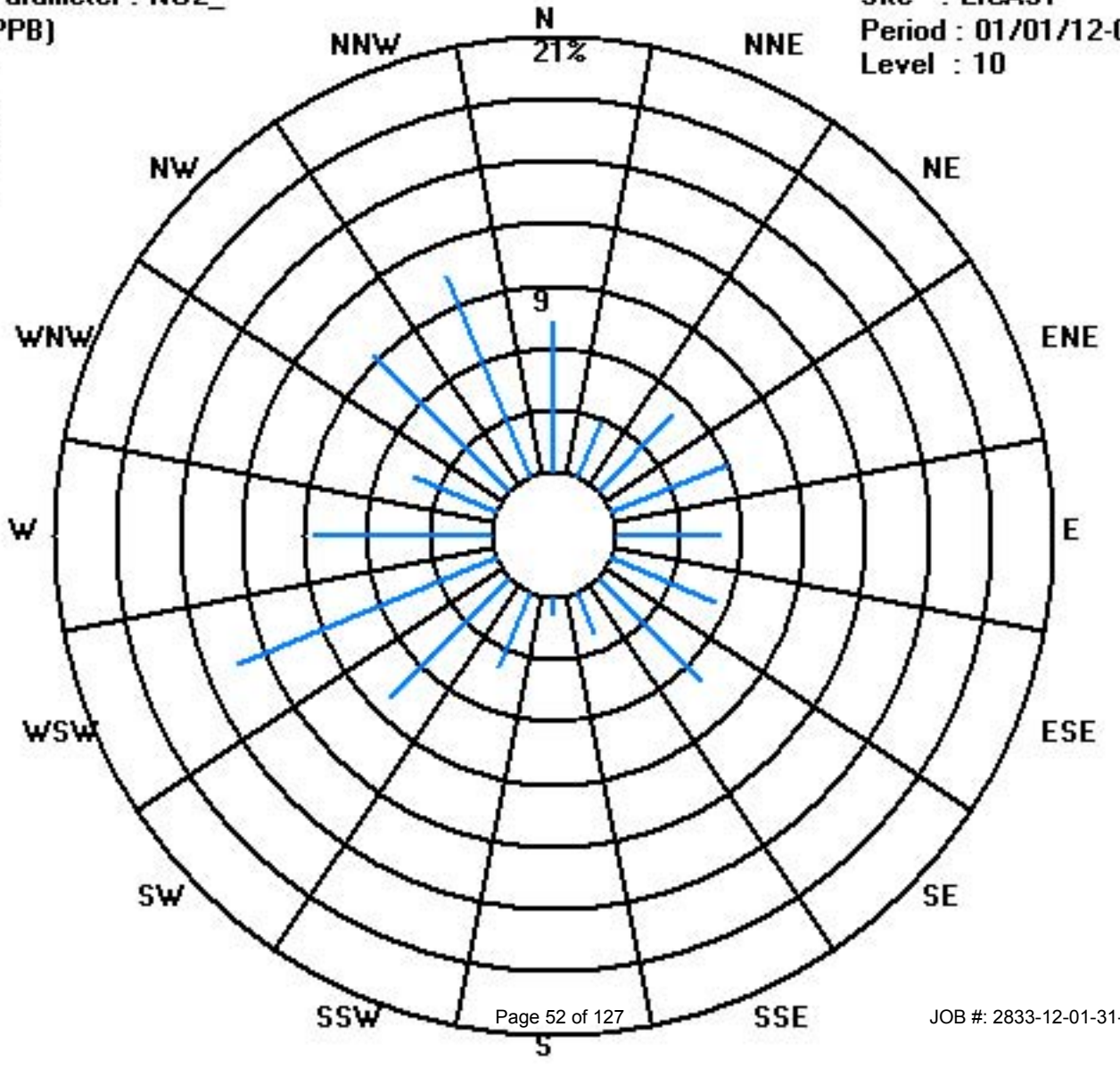
Calm : .00 %

Total # Operational Hours : 699

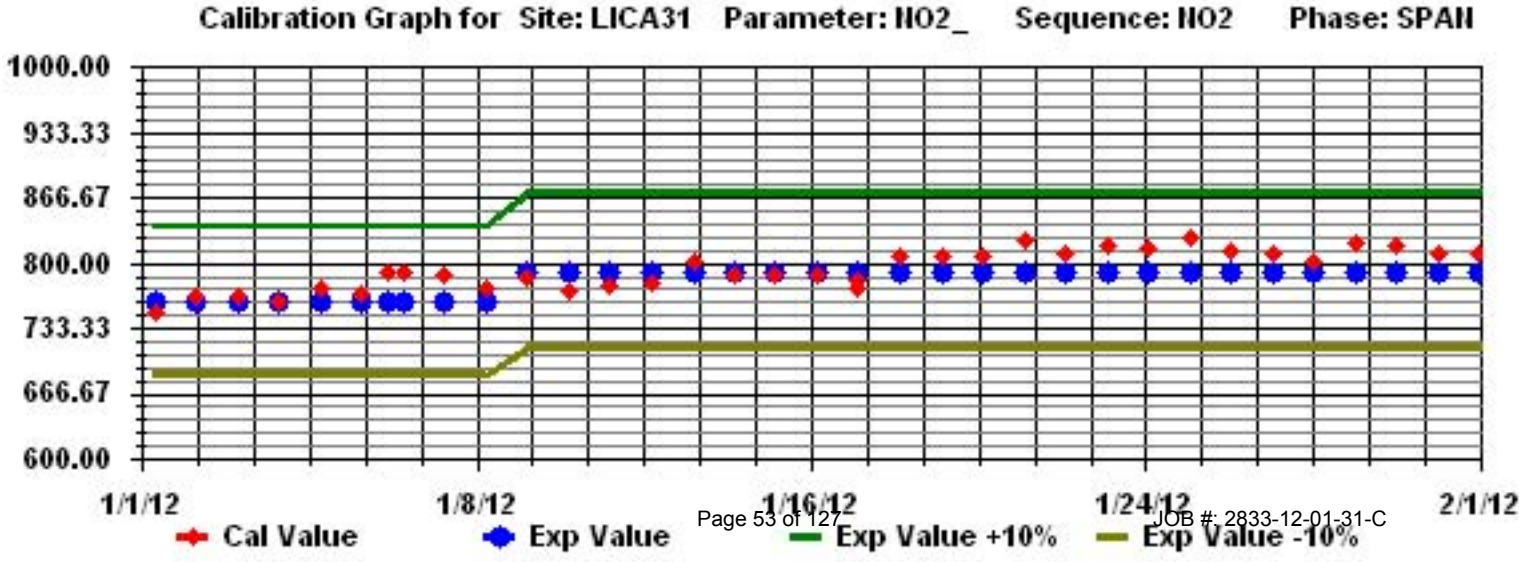
Logger : 31 Parameter : NO2_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA31
Period : 01/01/12-01/31/12
Level : 10



JOB #: 2833-12-01-31-C


Calibration Graph for Site: LICA31 Parameter: NO2_ Sequence: NO2 Phase: SPAN
1000.00
933.33
866.67
800.00
733.33
666.67
600.00
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2012

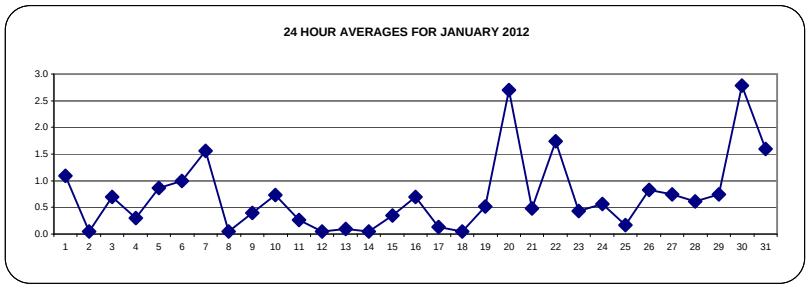
NITRIC OXIDE hourly averages in ppb

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	0	**IZS**	1	1	4	5	5	4	3	1	1	0	0	0	0	0	0	0	5	1.1	24
2	0	0	0	0	0	0	**IZS**	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
3	0	0	0	0	0	**IZS**	1	0	0	0	2	3	3	3	3	1	0	0	0	0	0	0	0	0	3	0.7	24
4	0	0	0	0	**IZS**	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0.3	24
5	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
6	1	1	**IZS**	1	1	1	1	1	1	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	1	1	1	1	1	1	1.0	24
7	1	**IZS**	1	1	1	1	1	1	2	3	4	4	3	2	2	1	1	1	1	1	1	1	1	1	4	1.6	24
8	**IZS**	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	0.0	24
9	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	**IZS**	2	2	0.4	24
10	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	**M**	0	0	**IZS**	1	0	1	0.7	23
11	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	**IZS**	2	1	1	2	0.3	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	0	0	0	1	0.0	24
13	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**P**	**P**	0	**IZS**	1	0	0	0	0	1	0.1	22
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	0	0	0	0	0	1	0.0	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	2	1	1	1	1	1	1	2	0.3	24
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	0	0	0	0	0	0	0	1	0.7	24
17	0	0	0	0	0	0	0	0	0	0	1	1	0	**C**	**IZS**	1	0	0	0	0	0	0	0	0	1	0.1	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	0	0	0	0	0	0	0	0	0	1	0.0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	2	1	1	1	1	1	1	1	1	1	1	2	0.5	24
20	1	1	1	1	1	1	2	3	4	10	**21**	**IZS**	11	4	1	0	0	0	0	0	0	0	0	0	**21**	2.7	24
21	0	0	0	0	0	0	0	0	0	0	**IZS**	2	1	1	1	1	1	1	0	0	1	0	1	1	2	0.5	24
22	1	1	0	1	1	1	1	2	3	**IZS**	6	5	5	5	5	2	1	0	0	0	0	0	0	0	6	1.7	24
23	0	0	0	0	0	0	0	0	**IZS**	1	1	1	1	2	2	1	0	0	0	0	0	0	0	1	2	0.4	24
24	1	1	0	0	0	0	0	**IZS**	1	1	2	3	1	1	1	0	1	0	0	0	0	0	0	0	3	0.6	24
25	0	0	0	0	0	0	**IZS**	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
26	0	0	0	0	0	**IZS**	1	1	1	1	1	2	2	1	1	1	1	0	1	1	1	1	1	1	2	0.8	24
27	0	0	0	0	**IZS**	1	1	0	1	1	1	1	1	2	1	1	1	1	1	0	1	1	1	0	2	0.7	24
28	0	0	0	**IZS**	2	1	1	0	1	1	1	1	1	0	1	0	0	0	0	0	1	1	1	1	2	0.6	24
29	0	1	**IZS**	1	1	1	1	0	0	0	1	1	1	1	2	1	1	0	1	1	0	1	1	0	2	0.7	24
30	1	**IZS**	2	1	1	1	1	1	3	8	9	8	6	6	4	4	2	1	1	1	1	1	1	0	9	**2.8**	24
31	**IZS**	1	1	1	0	1	1	1	1	2	2	3	4	3	2	2	2	1	1	1	1	2	2	**IZS**	4	1.6	24
HOURLY MAX	1	1	2	1	2	1	2	3	4	10	21	8	11	6	5	4	2	2	1	1	1	2	2	2			
HOURLY AVG	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.7	1.1	2.1	1.6	1.8	1.5	1.3	0.8	0.6	0.3	0.4	0.3	0.4	0.5	0.5	0.4			

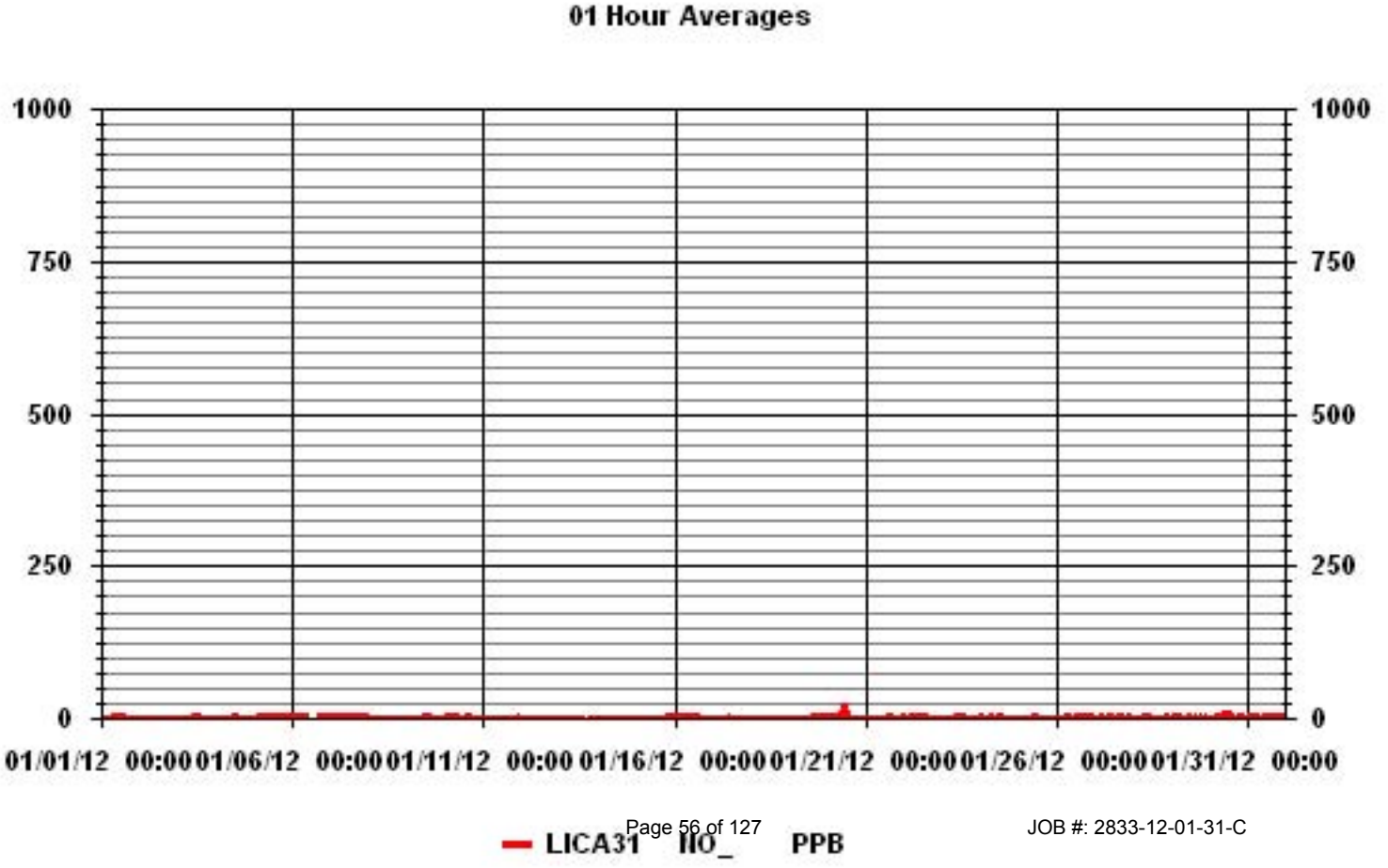
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	320						
MAXIMUM 1-HR AVERAGE:	21	PPB	@ HOUR(S)	10	ON DAY(S)	20	
MAXIMUM 24-HR AVERAGE:	2.8	PPB			ON DAY(S)	30	
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		741	HRS	
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		99.6	%	
STANDARD DEVIATION:	1.41		MONTHLY AVERAGE:		0.72	PPB	



JOB #: 2833-12-01-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST. LINA*

JANUARY 2012

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

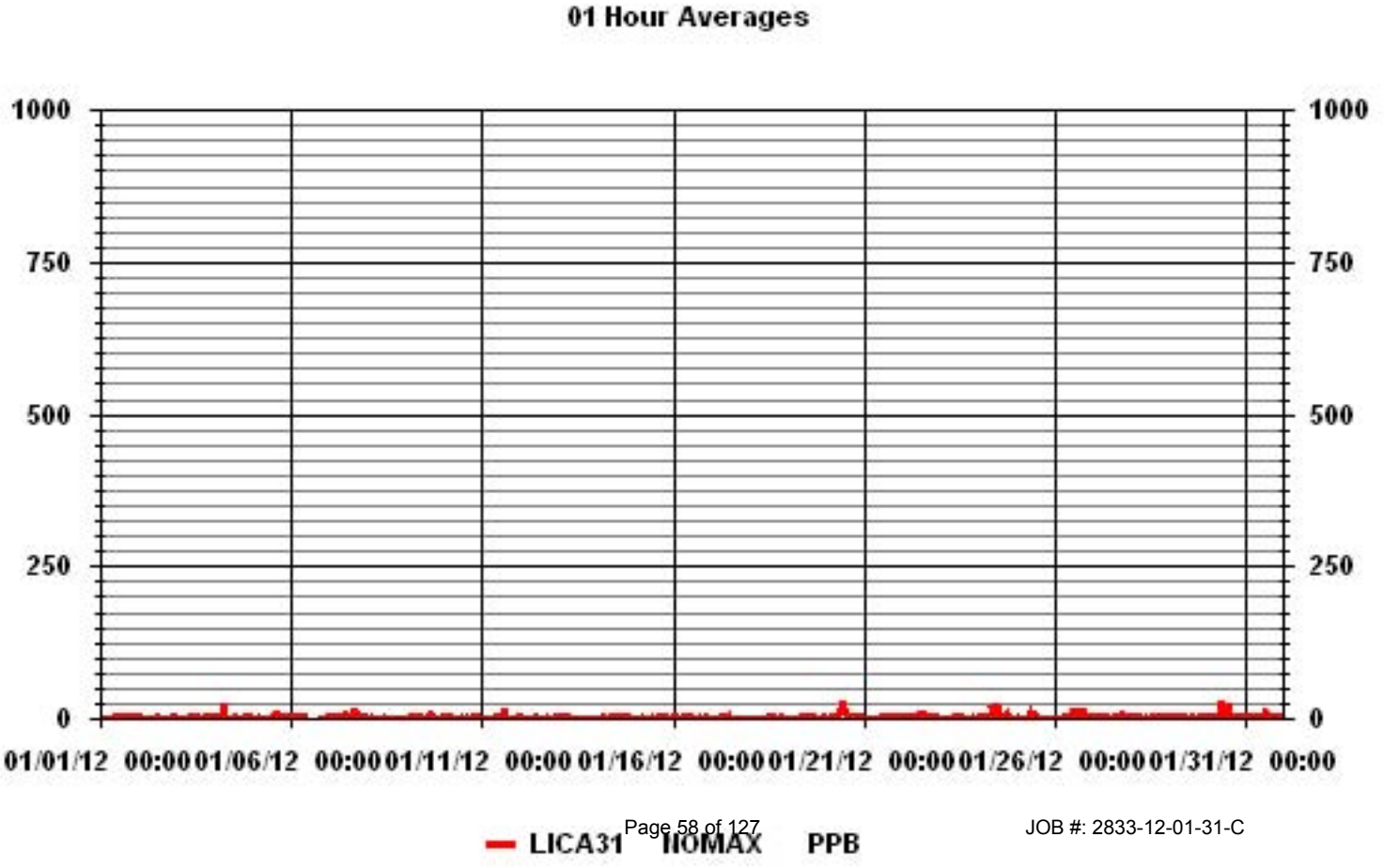
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	0	0	0	**IZS**	2	3	5	5	6	5	4	2	1	1	1	1	1	1	1	1	6	1.7	24
2	1	1	1	0	0	1	**IZS**	2	1	0	0	1	1	1	1	0	0	0	1	0	1	1	1	1	2	0.7	24
3	1	0	1	0	0	**IZS**	2	1	1	1	3	4	4	4	4	2	1	1	1	1	1	1	1	1	4	1.6	24
4	1	1	1	1	**IZS**	2	23	1	1	1	2	1	2	2	2	1	2	1	1	1	1	1	1	1	23	2.2	24
5	0	0	0	**IZS**	3	1	2	1	**P**	1	2	1	1	2	1	10	2	1	1	1	1	1	1	1	10	1.5	23
6	1	1	**IZS**	3	2	1	1	1	2	2	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2	1	2	1	1	1	3	1.5	24
7	1	**IZS**	3	2	2	2	2	2	4	4	6	6	3	3	3	7	17	4	2	2	2	2	2	2	17	3.6	24
8	**IZS**	2	1	1	1	0	1	0	0	0	1	1	0	0	0	1	0	0	0	0	1	0	0	**IZS**	2	0.5	24
9	2	1	1	1	1	1	1	1	1	1	3	3	1	2	2	2	12	2	1	0	1	0	**IZS**	3	12	1.9	24
10	2	2	1	1	1	2	2	1	1	2	1	1	1	2	1	1	2	1	**M**	1	1	**IZS**	3	0	3	1.4	23
11	1	0	0	0	1	0	1	0	1	1	1	3	2	1	15	1	1	1	2	1	**IZS**	3	1	1	15	1.7	24
12	1	1	0	0	0	0	0	0	0	1	1	1	2	1	0	2	1	1	0	**IZS**	2	1	1	1	2	0.7	24
13	1	1	1	1	1	1	1	1	0	0	0	0	0	1	0	**P**	**P**	9	**IZS**	2	1	0	0	1	9	1.0	22
14	0	0	1	0	1	1	0	0	1	1	1	1	1	1	1	1	1	**IZS**	2	1	1	1	1	0	2	0.8	24
15	0	0	0	0	0	1	1	0	0	1	0	1	1	0	1	1	**IZS**	5	2	2	1	1	2	1	5	0.9	24
16	1	1	1	1	1	2	2	2	2	2	2	3	2	2	1	**IZS**	3	1	1	0	1	1	1	0	3	1.4	24
17	1	0	0	0	0	1	1	4	1	1	3	7	1	**C**	**IZS**	2	0	0	0	0	0	0	0	0	7	1.0	24
18	0	0	0	0	0	0	0	0	0	2	0	1	1	**IZS**	4	1	1	0	2	1	1	1	1	0	4	0.7	24
19	0	0	1	0	0	0	0	0	1	1	1	1	**IZS**	3	2	2	2	2	2	1	2	1	1	1	3	1.0	24
20	1	2	1	2	2	2	3	3	6	17	24	**IZS**	15	7	3	1	1	1	1	1	1	1	1	1	24	4.2	24
21	1	0	0	0	1	0	0	0	0	0	**IZS**	4	2	2	2	1	1	1	1	1	1	1	1	1	4	0.9	24
22	1	1	1	1	2	2	2	2	4	**IZS**	8	7	6	7	6	4	3	1	1	1	1	1	1	1	8	2.8	24
23	0	1	0	0	1	0	0	0	**IZS**	2	2	2	2	4	3	2	1	1	0	0	1	1	1	2	4	1.1	24
24	2	2	1	1	1	1	1	**IZS**	15	3	6	24	2	2	2	1	1	1	7	1	1	1	0	0	24	3.3	24
25	0	1	1	0	1	0	**IZS**	2	9	2	2	10	1	2	1	0	0	0	0	0	0	0	0	0	10	1.4	24
26	0	0	0	0	0	**IZS**	3	2	1	1	2	14	3	2	2	16	1	2	14	2	2	2	1	1	16	3.1	24
27	1	1	1	1	**IZS**	3	1	1	1	1	1	1	2	3	2	2	2	2	9	1	2	1	1	1	9	1.8	24
28	1	1	1	**IZS**	3	2	1	1	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	3	1.2	24
29	1	1	**IZS**	2	1	1	1	1	1	1	1	1	1	2	4	2	3	1	1	1	1	1	1	1	4	1.3	24
30	1	**IZS**	3	2	2	2	2	2	**27**	12	12	9	7	26	5	5	4	2	2	2	2	2	1	1	**27**	5.8	24
31	**IZS**	3	1	1	1	1	1	1	3	3	3	4	14	6	6	2	5	2	2	2	2	2	3	**IZS**	14	3.1	24
HOURLY MAX	2	3	3	3	3	3	23	4	27	17	24	24	15	26	15	16	17	9	14	2	2	3	3	3			
HOURLY AVG	0.8	0.8	0.8	0.7	1.0	1.0	1.9	1.1	3.0	2.3	3.2	4.1	2.9	3.4	2.7	2.6	2.5	1.6	2.1	1.0	1.2	1.0	1.0	0.9			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	556					
MAXIMUM INSTANTANEOUS VALUE:	27	PPB	@ HOUR(S)	8	ON DAY(S)	30
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		740	HRS
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION	2.98					



JOB #: 2833-12-01-31-C

LICA31
NO_ / WDR Joint Frequency Distribution (Percent)

January 2012

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	7.29	2.86	5.15	6.00	5.00	5.43	7.01	2.14	.85	3.86	8.15	13.44	8.58	4.29	9.29	10.58	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	7.29	2.86	5.15	6.00	5.00	5.43	7.01	2.14	.85	3.86	8.15	13.44	8.58	4.29	9.29	10.58	

Calm : .00 %

Total # Operational Hours : 699

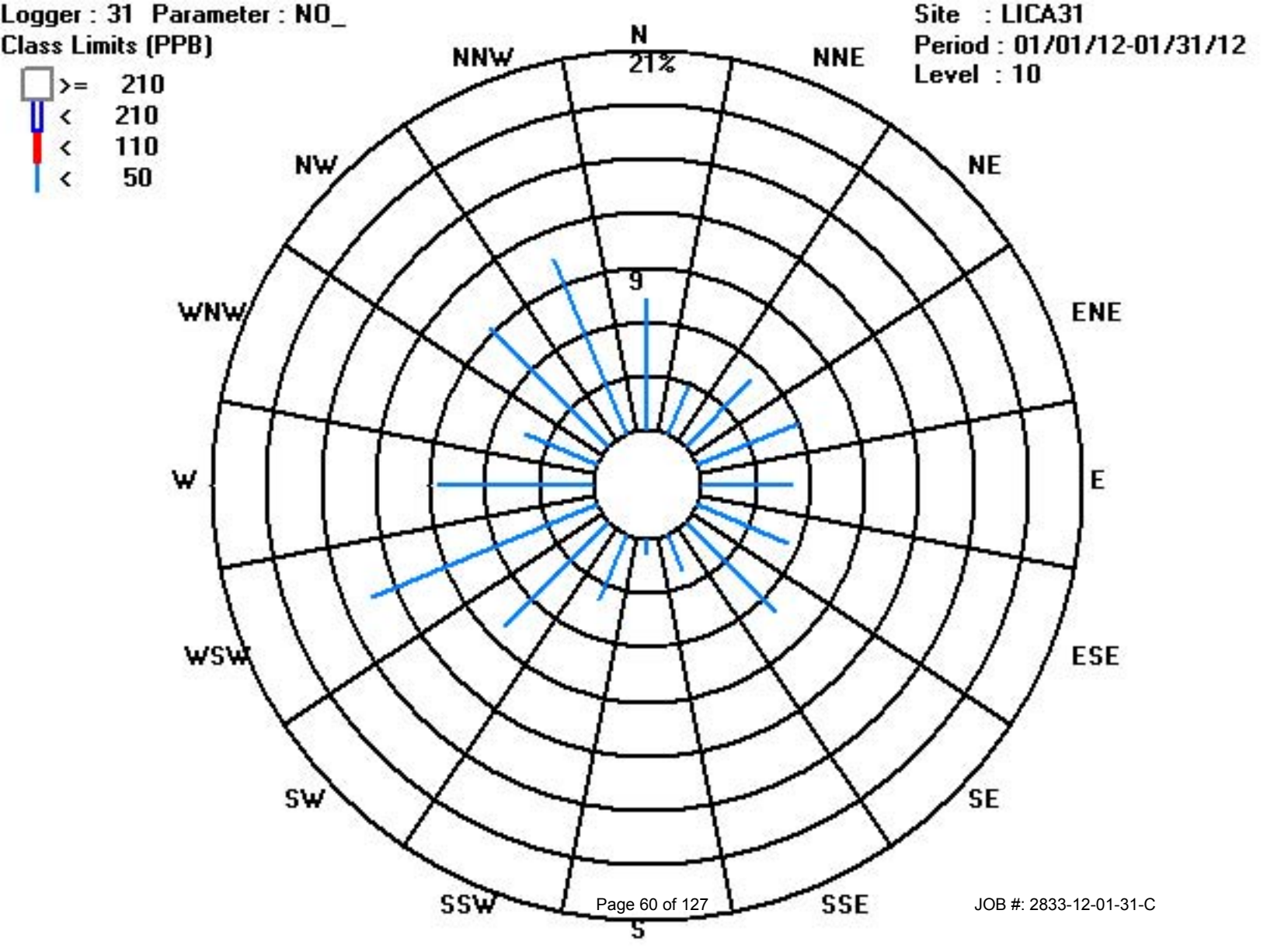
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	51	20	36	42	35	38	49	15	6	27	57	94	60	30	65	74	699
<	110																	
<	210																	
>=	210																	
	Totals	51	20	36	42	35	38	49	15	6	27	57	94	60	30	65	74	

Calm : .00 %

Total # Operational Hours : 699



JOB #: 2833-12-01-31-C

Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

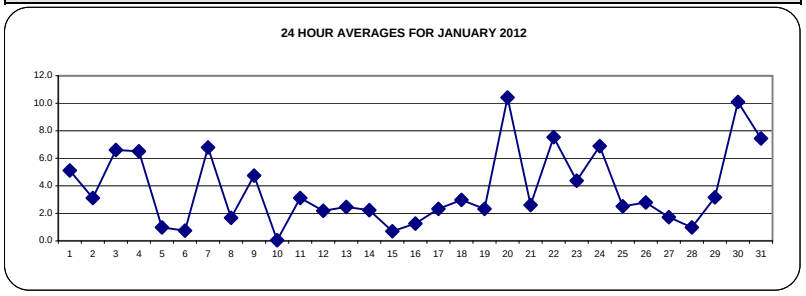
JANUARY 2012

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	0	0	1	1	1	1	**IZS**	3	6	12	13	13	11	10	8	7	5	5	4	4	4	5	4	13	5.1	24
2	3	2	2	2	1	1	**IZS**	2	2	2	3	3	3	3	3	4	4	4	4	4	4	4	6	6	6	3.1	24
3	6	5	4	4	3	**IZS**	4	5	4	4	6	10	12	12	12	8	8	6	5	5	6	7	8	8	12	6.6	24
4	7	8	9	10	**IZS**	7	6	5	5	5	6	4	4	5	5	5	6	6	8	9	9	9	7	5	10	6.5	24
5	4	5	3	**IZS**	3	3	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1.0	24
6	0	0	**IZS**	1	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2	2	2	1	1	2	2	0.7	24
7	2	**IZS**	2	2	3	8	8	10	11	11	13	10	7	5	5	5	6	8	8	8	7	6	6	5	13	6.8	24
8	**IZS**	4	4	4	4	4	4	3	2	2	1	1	1	0	0	0	0	0	0	0	1	1	1	**IZS**	4	1.7	24
9	6	4	5	7	7	7	6	5	4	5	6	6	5	6	6	6	6	6	3	1	1	0	**IZS**	1	7	4.7	24
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**M**	0	0	**IZS**	1	0	1	0.0	23
11	0	0	1	0	1	0	1	2	1	2	3	2	2	2	3	4	4	4	5	7	**IZS**	10	9	9	10	3.1	24
12	8	5	2	1	1	0	1	1	1	1	1	1	1	1	1	2	3	3	2	**IZS**	3	3	3	5	8	2.2	24
13	6	8	9	9	7	5	3	1	1	1	0	0	0	0	0	**P**	**P**	1	**IZS**	1	0	0	0	0	9	2.5	22
14	0	1	1	1	1	1	1	2	2	2	2	2	2	2	2	4	6	**IZS**	7	6	3	1	1	1	7	2.2	24
15	1	0	1	1	2	2	1	0	0	0	0	0	0	0	0	0	**IZS**	2	1	1	1	1	1	1	2	0.7	24
16	1	1	1	1	1	1	1	2	1	2	2	2	2	2	2	**IZS**	2	1	1	0	0	1	1	1	2	1.3	24
17	1	1	0	1	1	1	2	2	2	2	2	2	2	**C**	**IZS**	3	3	4	4	4	4	4	3	3	4	2.3	24
18	3	3	4	4	5	5	4	3	3	3	3	3	3	**IZS**	3	2	2	2	3	2	2	2	2	2	5	3.0	24
19	2	2	2	2	1	1	1	2	2	2	2	2	**IZS**	2	2	2	3	3	3	3	3	3	4	4	4	2.3	24
20	4	5	5	6	6	6	13	17	20	26	**40**	**IZS**	22	11	4	4	3	4	7	9	7	6	7	8	**40**	**10.4**	24
21	6	4	3	3	3	2	2	2	1	1	**IZS**	3	3	3	3	3	3	3	2	2	2	2	2	2	6	2.6	24
22	2	2	3	3	3	4	8	12	15	**IZS**	13	11	11	11	11	9	9	8	6	7	7	7	6	5	15	7.5	24
23	4	4	4	3	3	2	2	2	**IZS**	3	3	3	4	5	6	6	4	4	4	4	4	5	7	15	15	4.4	24
24	18	13	7	5	4	4	4	**IZS**	6	7	6	8	5	5	5	5	9	9	9	8	6	6	5	4	18	6.9	24
25	3	4	4	3	3	3	**IZS**	4	4	6	6	6	4	4	2	1	1	0	0	0	0	0	0	0	6	2.5	24
26	1	1	1	1	0	**IZS**	2	2	2	2	3	5	5	3	3	2	2	2	4	6	6	5	3	3	6	2.8	24
27	2	2	1	1	**IZS**	1	0	0	0	0	1	1	2	3	3	3	3	3	2	2	2	2	3	3	3	1.7	24
28	2	1	1	**IZS**	1	2	1	0	0	1	1	0	0	0	0	0	1	1	1	1	2	2	2	2	2	1.0	24
29	2	2	**IZS**	3	2	2	2	2	2	2	3	3	3	3	5	5	4	4	4	4	3	4	4	5	5	3.2	24
30	5	**IZS**	5	5	5	5	7	10	14	22	20	17	13	12	11	13	12	10	10	12	10	7	4	3	22	10.1	24
31	**IZS**	3	3	3	3	3	3	5	6	6	7	8	8	8	7	7	8	8	10	12	13	14	19	**IZS**	19	7.5	24
HOURLY MAX	18	13	9	10	7	8	13	17	20	26	40	17	22	12	12	13	12	10	10	12	13	14	19	15			
HOURLY AVG	3.4	3.1	3.0	3.0	2.6	2.8	3.1	3.6	3.8	4.2	5.7	4.3	4.7	4.3	3.9	4.0	4.3	3.8	4.1	4.1	3.7	3.9	4.0	3.7			

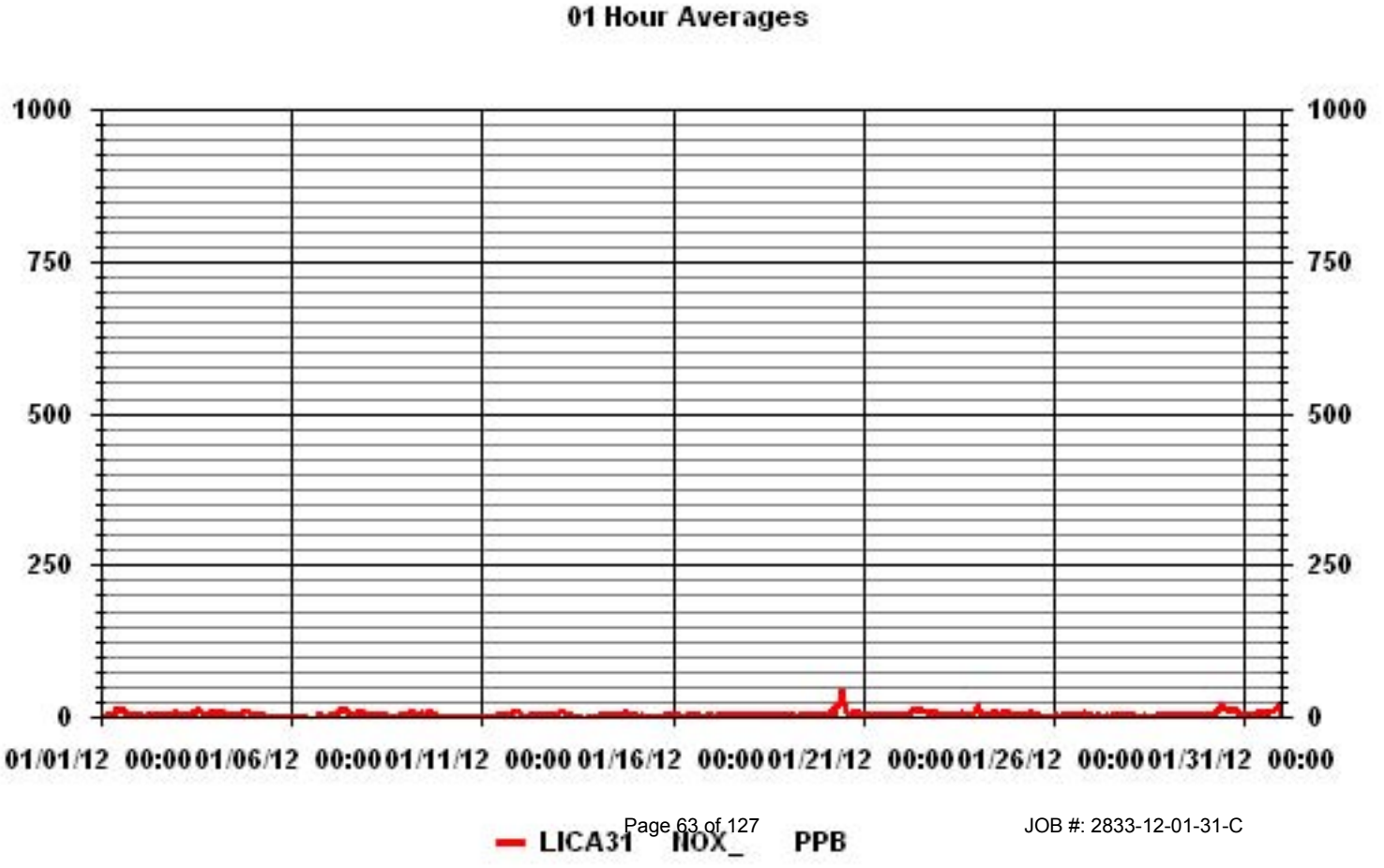
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		596					
MAXIMUM 1-HR AVERAGE:		40	PPB	@ HOUR(S)	10	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:		10.4	PPB			ON DAY(S)	20
IZS CALIBRATION TIME:	33	HRS		OPERATIONAL TIME:		741	HRS
MONTHLY CALIBRATION TIME:	9	HRS		AMD OPERATION UPTIME:		99.6	%
STANDARD DEVIATION:	3.89			MONTHLY AVERAGE:		3.80	PPB



JOB #: 2833-12-01-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2012

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	1	1	1	2	2	2	**IZS**	4	10	13	13	14	14	12	10	8	7	6	5	5	5	6	5	14	6.4	24
2	4	3	3	2	2	2	**IZS**	4	3	3	3	3	3	4	4	4	4	4	4	5	5	8	8	8	8	3.9	24
3	7	6	5	5	4	**IZS**	5	6	4	5	8	13	13	14	13	10	9	8	5	6	7	9	9	9	14	7.8	24
4	8	9	10	12	**IZS**	9	34	6	6	6	7	5	5	5	6	6	8	8	10	10	10	10	8	6	34	8.9	24
5	5	6	5	**IZS**	4	3	3	3	**P**	0	0	0	0	0	0	14	8	0	0	0	0	0	0	0	14	2.3	23
6	0	0	**IZS**	2	1	1	1	1	1	2	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2	2	3	2	2	2	3	1.5	24
7	2	**IZS**	3	3	6	10	10	11	13	12	14	13	8	6	6	14	31	12	10	9	8	7	7	6	31	9.6	24
8	**IZS**	5	4	5	5	4	5	4	3	3	3	2	1	1	1	1	1	1	1	2	2	2	3	**IZS**	5	2.7	24
9	7	6	8	8	8	8	7	6	5	6	9	9	6	7	7	6	21	9	5	2	1	1	**IZS**	2	21	6.7	24
10	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	2	0	**M**	1	1	**IZS**	2	1	2	1.0	23
11	1	1	1	1	1	1	2	3	3	4	4	6	4	3	23	5	5	6	7	8	**IZS**	11	10	10	23	5.2	24
12	10	7	4	2	2	1	2	2	2	2	2	4	6	2	1	4	5	4	3	**IZS**	4	3	4	7	10	3.6	24
13	7	9	10	10	10	7	5	2	2	1	2	1	1	1	1	**P**	**P**	9	**IZS**	2	1	1	1	1	10	4.0	22
14	1	1	2	2	3	3	2	2	3	3	2	2	2	3	3	8	8	**IZS**	8	8	4	3	1	2	8	3.3	24
15	1	1	2	2	3	3	2	1	0	1	1	2	1	1	1	1	**IZS**	5	2	2	2	2	2	2	5	1.7	24
16	2	2	2	2	2	2	2	3	3	3	3	5	3	3	3	**IZS**	3	3	2	1	1	2	2	2	5	2.4	24
17	2	1	1	1	1	2	2	18	3	3	5	4	3	**C**	**IZS**	7	5	5	6	5	5	5	4	3	18	4.1	24
18	4	4	5	5	6	6	6	4	4	5	4	4	3	**IZS**	4	2	2	3	5	3	3	2	3	2	6	3.9	24
19	2	2	3	2	2	2	2	2	3	2	2	3	**IZS**	3	3	4	3	5	4	4	3	4	5	4	5	3.0	24
20	6	5	5	8	7	11	15	18	22	36	**43**	**IZS**	28	16	6	5	5	5	11	11	8	6	8	9	**43**	12.8	24
21	7	6	4	4	4	3	3	3	2	2	**IZS**	4	3	4	4	4	4	4	3	3	3	3	3	3	7	3.6	24
22	3	3	5	4	4	6	10	14	16	**IZS**	15	13	11	13	13	11	11	9	9	8	8	8	7	6	16	9.0	24
23	5	5	4	4	4	3	3	3	**IZS**	4	4	4	5	8	8	7	5	5	5	5	5	7	10	20	20	5.8	24
24	19	16	11	6	5	5	5	**IZS**	16	9	13	41	6	6	6	7	11	11	23	8	7	6	6	5	41	10.8	24
25	4	5	5	4	4	4	**IZS**	6	14	7	7	20	6	5	4	2	2	1	1	2	1	1	1	1	20	4.7	24
26	2	1	1	2	1	**IZS**	4	3	3	3	4	27	6	5	4	25	3	3	21	7	8	6	4	3	27	6.3	24
27	3	2	2	2	**IZS**	2	1	0	1	1	2	3	3	5	4	4	5	4	13	3	3	3	4	4	13	3.2	24
28	2	2	1	**IZS**	3	2	2	1	1	2	1	1	2	2	1	1	1	1	1	2	3	3	3	2	3	1.7	24
29	2	2	**IZS**	4	3	3	3	3	3	3	3	3	3	5	8	8	7	4	5	5	5	5	5	6	8	4.3	24
30	6	**IZS**	6	6	6	6	8	13	42	25	25	18	15	32	12	14	13	12	12	13	12	9	5	3	42	13.6	24
31	**IZS**	4	4	3	4	3	5	6	10	8	9	9	23	12	12	8	12	10	12	13	15	18	21	**IZS**	23	10.0	24
HOURLY MAX	19	16	11	12	10	11	34	18	42	36	43	41	28	32	23	25	31	12	23	13	15	18	21	20			
HOURLY AVG	4.3	4.0	4.1	3.9	3.7	4.0	5.2	5.1	6.7	5.7	7.2	8.0	6.4	6.5	5.9	6.9	7.2	5.4	6.8	5.1	4.8	5.0	5.1	4.6			

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

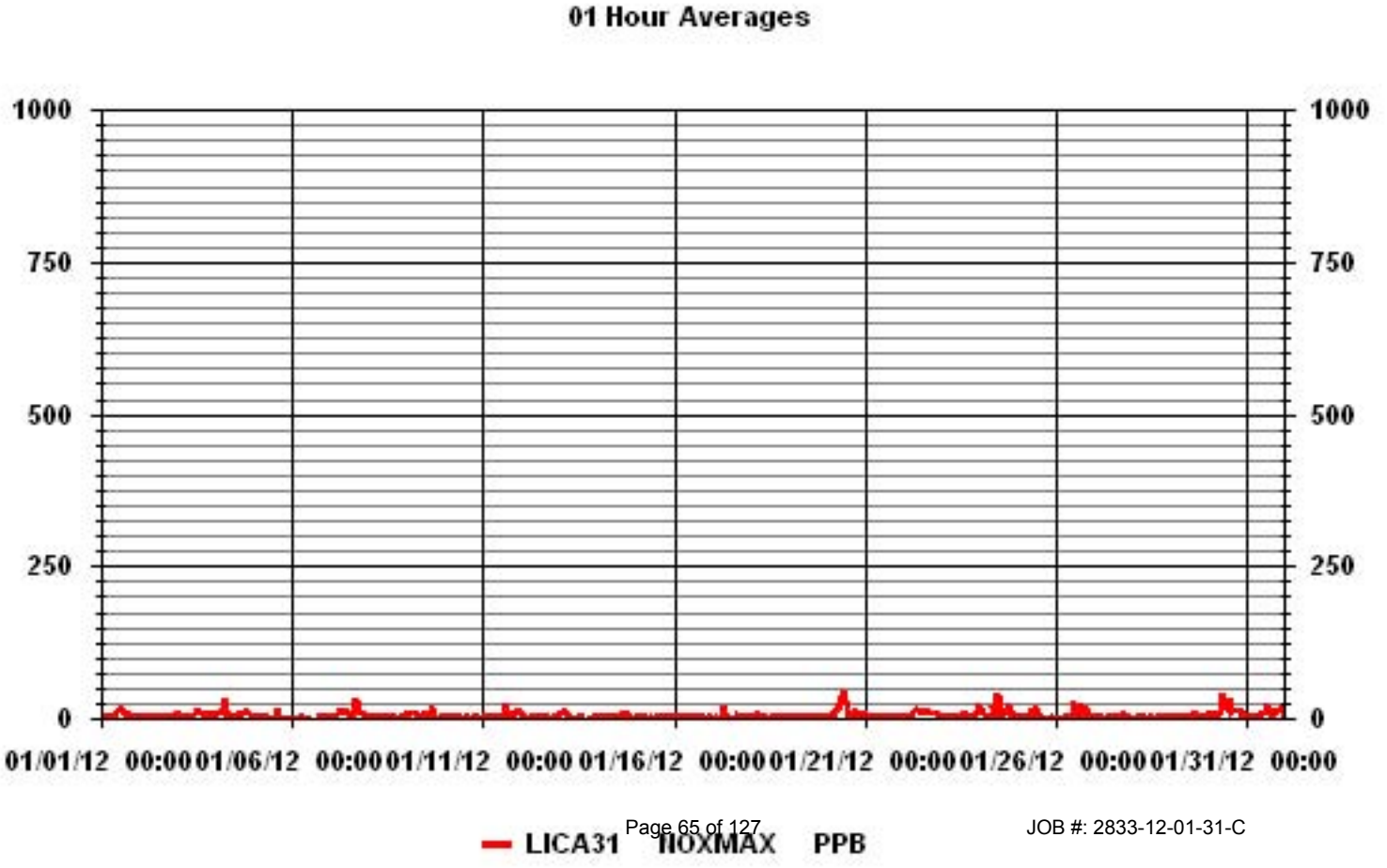
NUMBER OF NON-ZERO READINGS: 678

MAXIMUM INSTANTANEOUS VALUE: 43 PPB @ HOUR(S) 10 ON DAY(S) 20

IZS CALIBRATION TIME: 33 HRS OPERATIONAL TIME: 740 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 5.49



JOB #: 2833-12-01-31-C

LICA31
NOX_ / WDR Joint Frequency Distribution (Percent)

January 2012

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	7.29	2.86	5.15	6.00	5.00	5.43	7.01	2.14	.85	3.86	8.15	13.44	8.58	4.29	9.29	10.58	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	7.29	2.86	5.15	6.00	5.00	5.43	7.01	2.14	.85	3.86	8.15	13.44	8.58	4.29	9.29	10.58	

Calm : .00 %

Total # Operational Hours : 699

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	51	20	36	42	35	38	49	15	6	27	57	94	60	30	65	74	699
<	110																	
<	210																	
>=	210																	
	Totals	51	20	36	42	35	38	49	15	6	27	57	94	60	30	65	74	

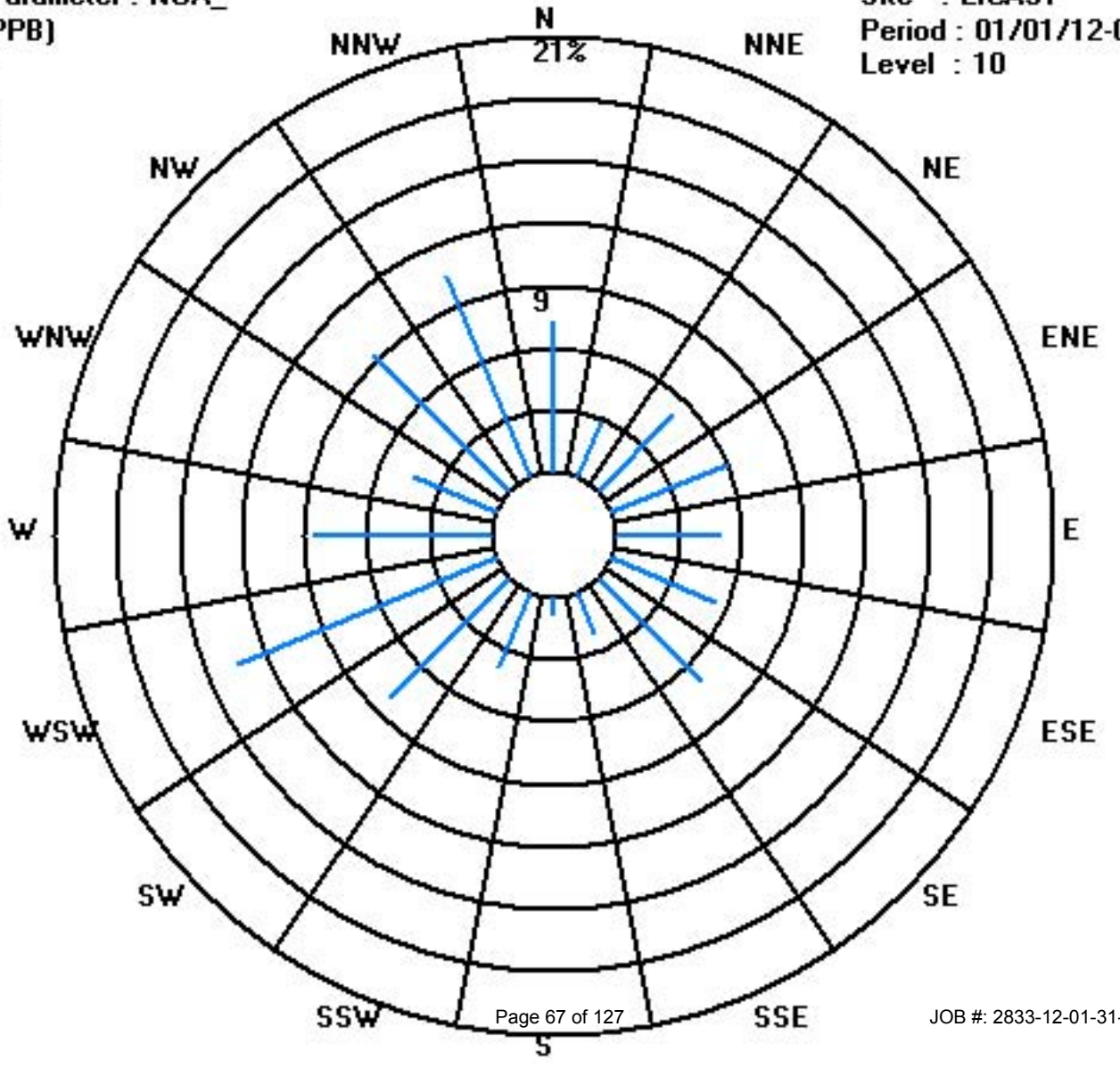
Calm : .00 %

Total # Operational Hours : 699

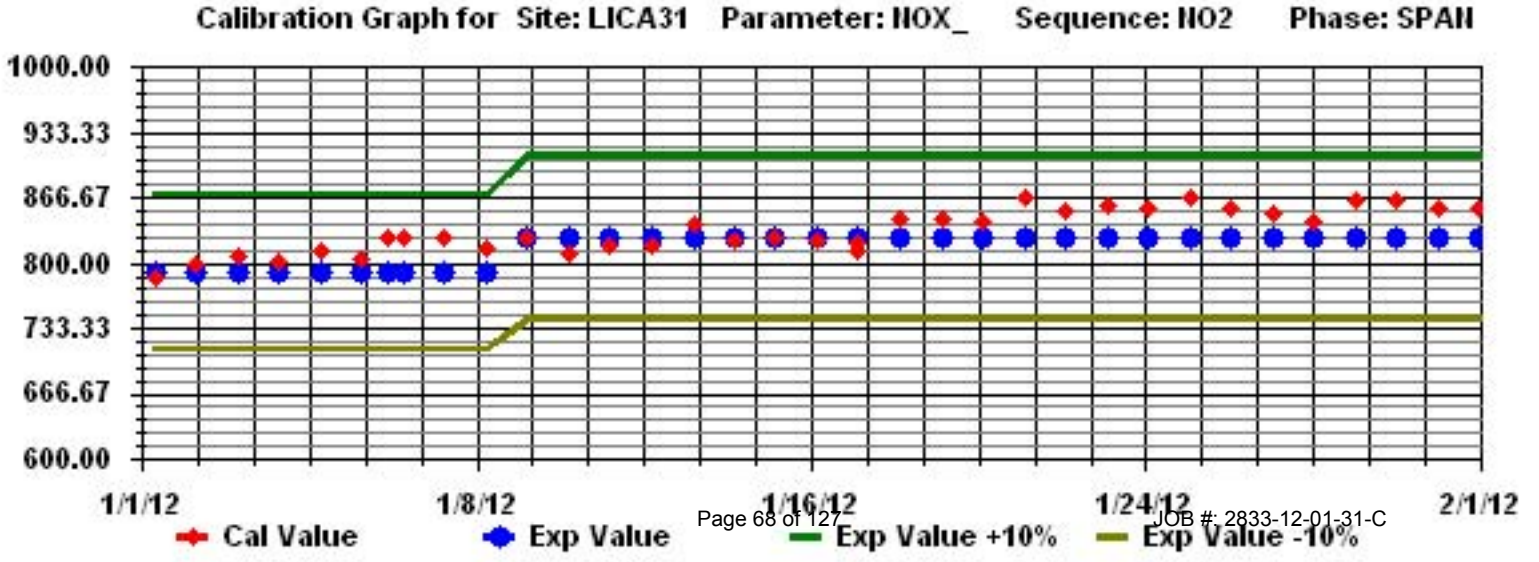
Logger : 31 Parameter : NOX_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA31
Period : 01/01/12-01/31/12
Level : 10



JOB #: 2833-12-01-31-C


Calibration Graph for Site: LICA31 Parameter: NOX_ Sequence: NO2 Phase: SPAN
1000.00
933.33
866.67
800.00
733.33
666.67
600.00
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2012

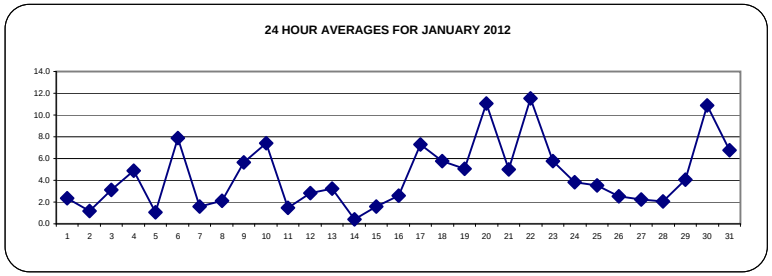
PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m^3

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	**N**	1	**N**	**N**	**N**	1.5	**N**	0	**N**	6	8.5	5.5	0	**N**	6.5	5.1	1.5	1	1	**N**	0	0	0	0	8.5	2.4	16
2	0	0	0	0	**N**	0.5	**N**	**N**	0	0.5	**N**	**N**	3	0	0	0	4	**N**	0	0	5.1	2	3.5	2.5	5.1	1.2	18
3	**N**	2.5	0	0.5	2.5	2.5	0	4.5	4	8	4.5	4.1	0	3.5	0	7	1	4	1.5	3	1.5	9.6	2.5	4.5	9.6	3.1	23
4	4.5	9.1	14.6	13	9.6	8.5	5.1	5.5	3.5	3.6	1.5	4.5	**N**	**N**	1.5	0	0	0	3.5	1	**N**	6	3.5	3.5	14.6	4.9	21
5	5.5	0	2	0	1.5	0	0	1.5	0	2.6	**N**	**N**	0	0	**N**	**N**	**N**	4	**N**	0	1.3	0	0	**N**	5.5	1.1	17
6	**N**	**N**	**N**	**N**	0	2.1	0	0	**N**	0	15.6	16	0	25.3	**C**	12.3	14.9	31.8	0.3	**N**	**N**	0	**N**	0	31.8	7.9	16
7	**N**	**N**	**N**	**N**	**N**	0	2.3	4.1	7.3	0	1.8	0	5.7	0.3	0.8	0	**N**	0	0.6	2.1	0	0	1.5	**N**	7.3	1.6	17
8	7	**N**	**N**	2.5	**N**	0	6.1	0	1.5	5.5	**N**	**N**	1	**N**	0	0	0	0	0	**N**	0	**N**	10	0	10.0	2.1	16
9	9.6	8	2.5	6.5	5.1	8	4.5	0.5	2.5	2.5	**N**	5.5	2	3.5	**N**	**N**	6.5	**N**	**N**	**N**	14.6	0	18.5	1.5	18.5	5.7	18
10	0.5	7	0	2.5	8	1	**N**	**N**	0	**N**	**N**	0	1.5	5	0	40	**M**	25.5	35.5	0	5	2	6.5	1	40.0	7.4	19
11	0	**N**	**N**	**N**	**N**	**N**	**N**	1	**N**	0.5	**N**	**N**	2.5	**N**	0	0	0	**M**	**M**	10.9	0	2.5	0	0	10.9	1.5	12
12	**N**	0	9	5	**N**	**N**	**N**	**N**	**N**	0	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	0	9.0	2.8	5
13	0.5	**N**	0.5	0	**N**	0	**N**	0	**N**	**N**	**C**	8.5	**N**	**N**	16	**P**	**P**	5.8	0	1	**N**	**N**	**N**	**N**	16.0	3.2	11
14	**N**	**N**	0	**N**	**N**	**N**	**N**	**N**	0	**N**	**N**	**N**	**N**	0	**N**	0	**N**	0	**N**	**N**	**N**	0.4	2.7	0	2.7	0.4	8
15	0	3.1	0.1	0	0	0	**N**	**N**	**N**	0	**N**	**N**	**N**	**N**	3.9	4	**N**	**N**	**N**	**N**	**N**	6.3	**N**	0	6.3	1.6	11
16	1.3	**N**	2.5	0	**N**	3.1	0.6	5.8	2.3	6.1	5.2	**N**	**N**	**N**	**N**	**N**	**N**	**N**	0	**N**	4.4	0	**N**	**N**	6.1	2.6	12
17	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**M**	**M**	**C**	**C**	6.2	3.9	**N**	**N**	16.9	7.9	3.7	**N**	5.2	**N**	16.9	7.3	8
18	**N**	2.1	1.5	**N**	0	**N**	**N**	**N**	**N**	0	**N**	0	0	0.5	**N**	**N**	12.6	**47.1**	4	3.1	4.6	3.1	4.6	3.1	**47.1**	5.8	15
19	3.6	3.6	5.1	3.6	0.6	3.6	2.6	2.6	4.6	2.6	1.5	4	4.6	**C**	2.6	3.6	7.1	22.6	8.6	4.6	6.1	3.6	6.6	8.6	22.6	5.1	24
20	7.6	6.1	6.6	12.6	11.6	9.6	18.6	15.1	19.6	16.6	26.6	25.1	19.6	9.1	4.6	4	4.6	4.6	5.5	8.1	7.6	5.5	9.6	7.1	26.6	11.1	24
21	4	4.6	3.6	4	4.6	6.1	8.6	6.1	5.1	6.1	5.5	5.1	2.6	5.1	4	3.6	6.6	6.1	9.6	2.1	4	4	4.6	4	9.6	5.0	24
22	7.6	6.6	7.1	11.1	10.1	14.1	15.6	15.6	18.6	23.6	14.6	17.5	13.1	12.1	10	10.5	13.1	8	4.6	7.1	6.6	12.1	10.1	7.1	23.6	**11.5**	24
23	6.1	7.6	7.1	8.1	5.5	4.6	5.1	4.6	6.1	4.6	7.6	3.6	4.6	2.1	6.1	5.5	7.6	3	8.1	7.1	5.5	4.6	7.1	6.6	8.1	5.8	24
24	9.1	5.5	6.1	4	4.6	5.1	3	2.6	5.1	1.1	2.1	3.6	1.5	4	0	3.1	2.1	3.1	3.6	6.1	0	3.6	8.6	4.6	9.1	3.8	24
25	6.1	3	4.6	3.6	1.5	3.6	3.6	7.6	8.6	3	6.6	6.1	7.1	5.1	3	3	1.5	0	0	1.5	0.5	1.5	0	3.1	8.6	3.5	24
26	2.6	1.1	2.6	4.6	0	3	3	0	0	2.6	2.6	2.1	5.1	5.1	1.5	2.1	2.6	0	0	5.1	5.1	3	2.6	4	5.1	2.5	24
27	1.5	1.1	1.1	3.6	1.5	3.1	1.5	1.5	1.5	1.5	3.6	2.6	4	2.6	2.6	0	0.5	0	0	4.6	2.1	4.6	3	5.5	5.5	2.2	24
28	3.6	3.1	1.1	3.6	0	2.1	0	2.1	3	1.1	3.5	3.1	2.1	2.1	0.1	4.5	1.1	3	0.5	2.1	1.5	3.1	0.5	3	4.5	2.1	24
29	2.1	3.6	3.6	3.1	0.2	4	1.1	1.6	4.9	4	0.1	1.5	1.9	5.5	4.4	5.1	2.1	5.9	4.4	4.3	3	9.4	8.2	12.9	12.9	4.0	24
30	10.2	12	10.5	11.1	9.9	14.1	16.9	14.7	12.9	15.8	12.8	14.4	11.1	12.2	11.4	10.2	10.5	6.8	8.4	9.6	9.6	7.6	6.1	1.7	16.9	10.9	24
31	3.1	3.2	3.8	2.1	4.9	1.2	2.4	5.2	8.7	9.4	7.3	6.6	5.7	7.6	4.2	5.1	3	4.6	7.3	9.5	14.8	12.8	16	13.6	16.0	6.8	24
HOURLY MAX	10	12	15	13	12	14	19	16	20	24	27	25	20	25	16	40	15	47	36	11	15	13	19	14			
HOURLY AVG	4.2	4.1	3.8	4.4	3.9	3.9	4.8	4.3	5.2	4.7	6.9	6.3	4.1	5.3	3.7	5.3	4.7	7.8	5.0	4.4	4.3	4.0	5.4	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

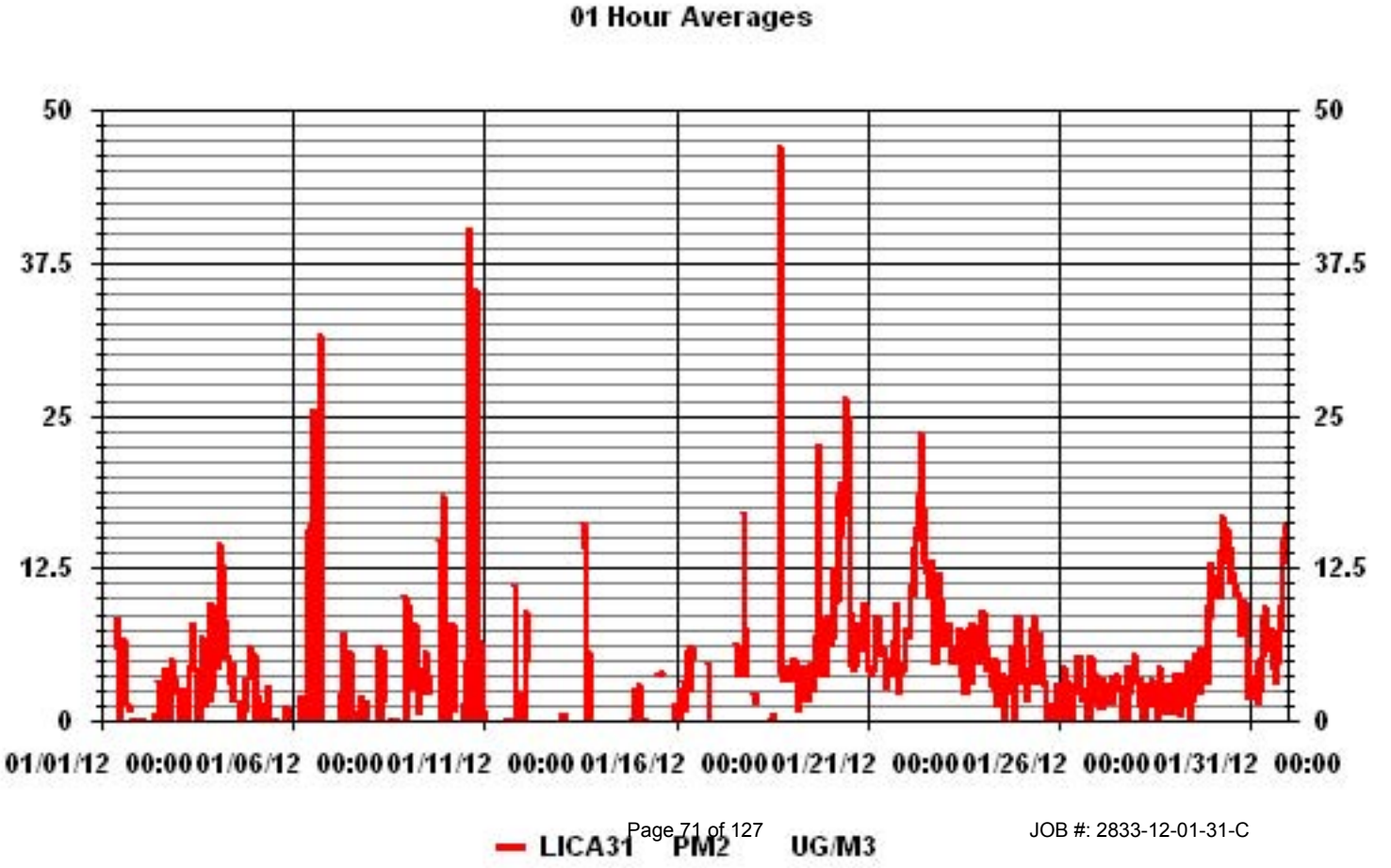


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR - ug/m3 | 24-HR 30 ug/m3

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-					
NUMBER OF 24-HR EXCEEDENCES:	0	PROPOSED CANADA WIDE GUIDELINE				
NUMBER OF NON-ZERO READINGS:	460					
MAXIMUM 1-HR AVERAGE:	47.1	UG/M^3	@ HOUR(S)	17	ON DAY(S)	18
MAXIMUM 24-HR AVERAGE:	11.5	UG/M^3			ON DAY(S)	22
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		575	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:		77.3	%
STANDARD DEVIATION:	5.45		MONTHLY AVERAGE:		4.73	UG/M^3

JOB #: 2833-12-01-31-C



JOB #: 2833-12-01-31-C

LICA31
PM2 / WDR Joint Frequency Distribution (Percent)

January 2012

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
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	6.66	3.50	6.31	7.36	5.26	4.03	6.14	2.10	.70	3.15	7.36	12.98	7.19	4.91	9.47	12.10	99.29
<	60.0	.17	.17	.00	.00	.00	.00	.17	.00	.00	.00	.00	.17	.00	.00	.00	.00	.70
<	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	6.84	3.68	6.31	7.36	5.26	4.03	6.31	2.10	.70	3.15	7.36	13.15	7.19	4.91	9.47	12.10	

Calm : .00 %

Total # Operational Hours : 570

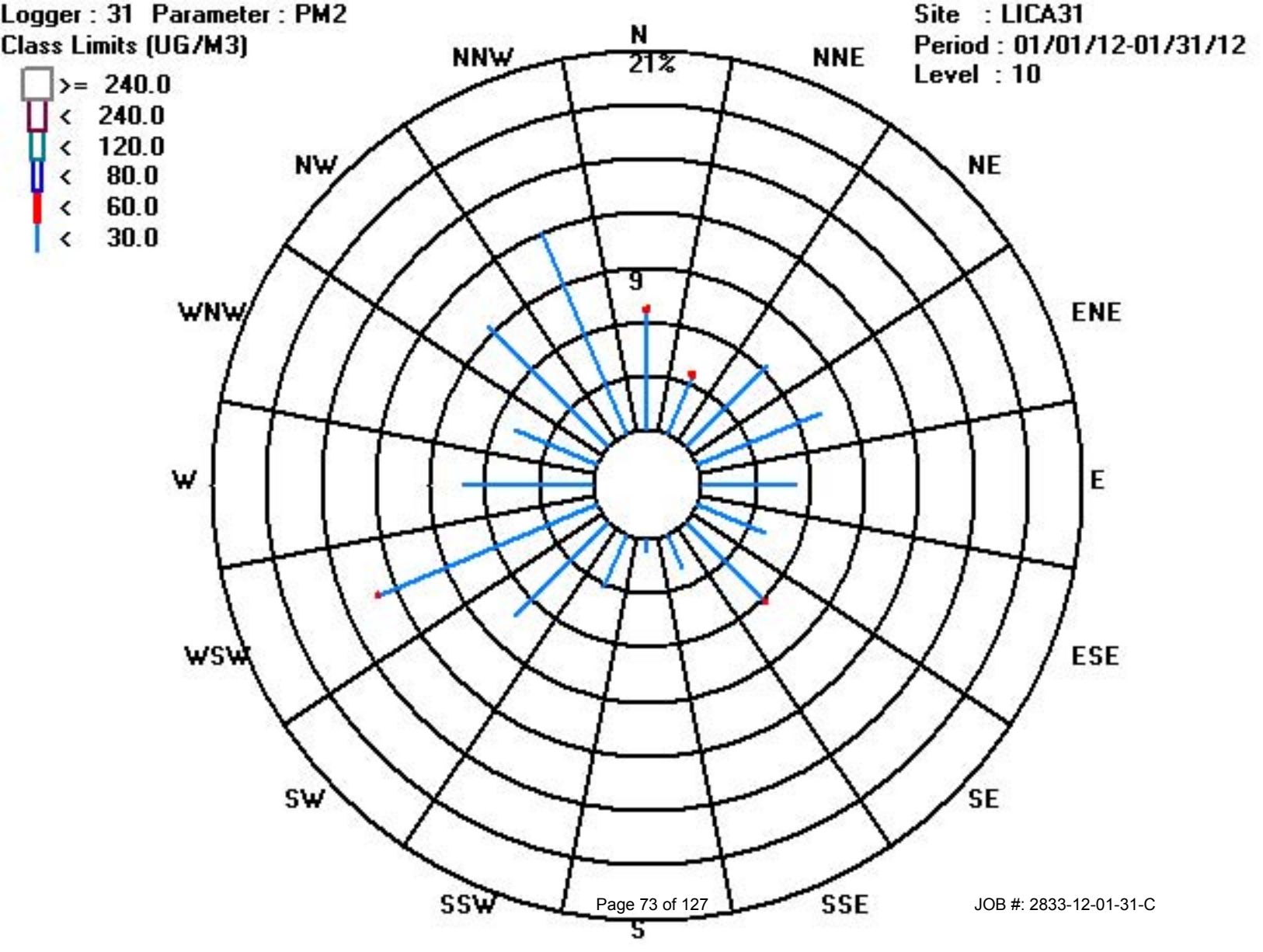
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30.0	38	20	36	42	30	23	35	12	4	18	42	74	41	28	54	69	566
<	60.0	1	1					1					1					4
<	80.0																	
<	120.0																	
<	240.0																	
>=	240.0																	
	Totals	39	21	36	42	30	23	36	12	4	18	42	75	41	28	54	69	

Calm : .00 %

Total # Operational Hours : 570



JOB #: 2833-12-01-31-C

Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2012

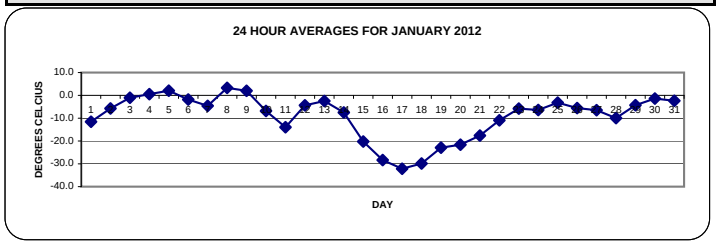
AMBIENT TEMPERATURE hourly averages (Degrees C)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
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	-10.6	-11.4	-12.2	-13.6	-14.3	-14.9	-14.8	-15.3	-15.7	-14.8	-13.4	-11.1	-9.1	-7.7	-7.3	-8.9	-10.7	-9.9	-10.6	-10.4	-9.6	-9.9	-10.9	-10.5	-7.3	-11.6	24
2	-10.1	-9.5	-8.5	-8.1	-8	-7.1	-6.7	-6.7	-6.7	-6.6	-6.2	-5.5	-4.8	-4.4	-4.5	-4.6	-4.7	-4.7	-4.3	-4	-3.9	-3.5	-1.9	-2.5	-1.9	-5.7	24
3	-2.6	0	-0.6	-1.1	-1.3	-2.6	-4.2	-4.7	-5	-3.8	-2.2	-0.8	0.6	1.9	2	1.2	0.3	0.1	0.3	-0.5	-0.9	-0.1	-0.3	-0.6	2.0	-1.0	24
4	-1.3	-1.9	-2.4	-2.8	-2.5	-2.3	-2.5	-2.4	-2.2	-1.3	-0.5	0.6	1.6	3.5	3.1	2.7	2.4	2.1	2.8	3	3	3.5	3.4	3	3.5	0.5	24
5	2.1	1.7	1.6	1.5	1.1	1	0.9	1.2	0.5	1.3	1.6	2.2	2.9	4.2	4.2	4	3.2	2.1	2.6	2.5	2.2	2	1.7	0.8	4.2	2.0	24
6	-0.4	-1.7	-2.4	-3	-2.7	-2.5	-1.9	-2.9	-3.3	-2.2	-1.1	1.4	1.8	2.3	1.8	0.9	-0.7	-2.3	-2.7	-2.7	-3.1	-4	-5.2	-7	2.3	-1.8	24
7	-7.7	-7.3	-6.7	-7.4	-6	-5.8	-6.6	-6	-6.5	-5.7	-4.8	-3	-1.6	-0.3	-0.3	-1.5	-2.9	-3.4	-3.8	-4.1	-4.9	-5.2	-4.8	-4.2	-0.3	-4.6	24
8	-3.3	-3.2	-2.9	-2.1	-2	0.9	2.1	3.3	3.6	4.3	5.8	7.2	8.1	9.3	**9.7**	8.7	6.9	6.1	4.9	3.9	3.3	2.5	1.4	0.4	**9.7**	**3.3**	24
9	0.3	1.3	0.3	-0.5	-1.1	-1.5	-0.7	0	0	-0.2	0.4	1	1.6	1.7	4.2	5.4	4.3	3.4	4.6	5.4	5.6	5.5	4.4	3	5.6	2.0	24
10	1.3	0	0.3	-0.1	-0.5	-1.3	-1.4	-2	-2.5	-3.5	-4.2	-4.7	-5.2	-5.5	-6.6	-7.8	-11.4	-14	-15.2	-15.6	-15.7	-15.6	-16	-16.6	1.3	-6.8	24
11	-17.1	-17.9	-18	-18.3	-17.7	-18.1	-19	-19.5	-20.1	-18.5	-16.1	-13.3	-11.7	-10.6	-8.9	-8.7	-9.7	-10.4	-10.8	-11.3	-11.4	-10.4	-9.2	-8.5	-8.5	-14.0	24
12	-7.5	-6.7	-5.4	-5.5	-5.1	-5.3	-6.6	-7.6	-7.9	-6.1	-5.2	-3.9	-2.6	-0.6	-1.8	-2.8	-3.6	-3.6	-3.2	-2.7	-2.9	-3	-2.6	-2.6	-0.6	-4.4	24
13	-2.4	-1.8	-2.3	-3.2	-3.6	-3.8	-3.5	-2.6	-2.6	-2.4	-1.9	-1.3	-0.2	0.5	1	**P**	**P**	-1.6	-2	-2.6	-3.2	-4.1	-5.3	-5.4	1.0	-2.5	22
14	-5.9	-7.8	-7.7	-8.6	-8.8	-9.9	-9.8	-9.5	-9	-7.9	-7.5	-6.2	-5.3	-5	-5.6	-6.2	-6.8	-6.7	-6.3	-6.1	-6	-6.8	-9.4	-11.3	-5.0	-7.5	24
15	-13	-14.7	-15.7	-17	-17.1	-17.1	-17.4	-18.4	-19.7	-20.6	-21	-19.9	-19.6	-19.4	-19.6	-20.7	-22	-22.6	-23.2	-24	-24.7	-25.4	-26	-26.7	-13.0	-20.2	24
16	-27.1	-27.6	-27.8	-27.7	-27.6	-27.7	-28.3	-28.5	-28.5	-28.3	-28	-27.3	-26.7	-26.6	-27	-27.4	-28.5	-29.5	-29.5	-29.6	-30.1	-30	-30.3	-30.9	-26.6	-28.4	24
17	-31.6	-31.9	-32.7	-32.9	-33.3	-34	-34.5	-34.8	-34.6	-33.2	-31.6	-29.4	-28.3	-27	-28	-29.4	-30.8	-32	-32.9	-33.4	-33.8	-33.9	-33.7	-34	-27.0	-32.2	24
18	-34	-34.2	-34.6	-34.8	-34.8	**-35.2**	-35.1	-34.7	-34.5	-32.4	-30	-27.7	-26.6	-25.8	-25	-24.8	-25.6	-26.4	-26.7	-26.8	-26.7	-26.8	-26.7	-26.8	-24.8	-29.9	24
19	-27.2	-26.8	-27.3	-26.8	-26.4	-26.3	-26.5	-26.6	-26.6	-25	-22.9	-20.5	-18.3	-16.5	-16.1	-17.2	-19.1	-20.6	-21.5	-21.9	-21.8	-22.2	-23	-22.8	-16.1	-22.9	24
20	-23.9	-23.9	-24	-25.2	-24.6	-24.6	-26.3	-26.9	-26.1	-25.2	-23.1	-19.4	-18.2	-16.6	-16.7	-17.9	-18.7	-19	-19.7	-19.5	-19.5	-19.3	-19.9	-20.5	-16.6	-21.6	24
21	-19.9	-18.9	-18.5	-18.3	-18.3	-18.6	-19.1	-19	-18.7	-18.4	-17.9	-17.6	-17.2	-16.8	-16.5	-16.5	-16.7	-16.8	-16.6	-16.6	-16.5	-16.5	-16.4	-16.3	-16.3	-17.6	24
22	-16.1	-16.6	-16.4	-16.2	-15.8	-15.5	-15.4	-15.5	-15.6	-15.4	-12.5	-10.6	-9.1	-7.4	-5	-6.4	-8.5	-7.4	-6.9	-7	-6.5	-5.8	-5.6	-5.2	-5.0	-10.9	24
23	-5.6	-7	-6.9	-7.4	-7.5	-7.4	-8.4	-9.7	-10.2	-8.3	-7.4	-5.3	-4.8	-3.3	-2.4	-1.5	-2	-3.5	-4.6	-5.1	-4.4	-5.2	-5.3	-5.8	-1.5	-5.8	24
24	-6.6	-6.8	-8.1	-8.6	-9.9	-9.8	-10.6	-10.5	-9.7	-8.2	-6.2	-3.9	-3.4	-3.5	-1.8	-1.8	-3.6	-5.1	-5.9	-6	-5.8	-6.2	-6.4	-5.6	-1.8	-6.4	24
25	-5.2	-7.3	-7.7	-8.1	-7.8	-8	-7	-6.3	-6.4	-5.5	-5.1	-2.8	-1.1	1.2	3.2	3.8	2.2	1.7	0.9	-0.9	-1.4	-2.1	-3.5	-3.4	3.8	-3.2	24
26	-4.1	-4.6	-5.1	-5.5	-5.7	-6.8	-7	-7.5	-7.8	-5.8	-5.6	-5.2	-4.1	-2	-2	-2.5	-3.6	-5.1	-6.9	-7.6	-7.2	-7.5	-7.2	-7	-2.0	-5.6	24
27	-7.8	-8	-6.6	-6.1	-6.6	-7.1	-7.8	-8.5	-9.3	-8.9	-7.8	-6.9	-6	-4.9	-4.6	-4.8	-5	-5.3	-4.9	-5.3	-5.1	-5.8	-6.3	-6.6	-4.6	-6.5	24
28	-6.9	-7.4	-8.1	-9.2	-10.4	-11.2	-12	-12.3	-12.4	-12.2	-10.6	-9.3	-8.9	-8.5	-9.1	-9.6	-10.8	-11.3	-10.7	-10.1	-9.7	-9.8	-9.4	-9.1	-6.9	-10.0	24
29	-8.9	-8.4	-8.2	-8.4	-8.3	-8.1	-7.9	-7.8	-7.8	-7.4	-6.8	-5.5	-3.8	-2.5	-1.5	-0.8	0.1	0.3	0.1	0.3	0.8	0	-1	-1.9	0.8	-4.3	24
30	-3.1	-3.9	-3.6	-3.7	-3.8	-3.9	-4.3	-4.2	-4	-2.7	-1.5	-0.5	1.5	0.9	0.8	1.5	0.9	0.7	0.6	-0.3	-0.4	0.1	0	-0.6	1.5	-1.4	24
31	-1.6	-2.1	-2.9	-2.5	-4	-5	-5.6	-6.1	-6.4	-5.5	-4.9	-2.6	-0.9	0.7	1.1	1.2	1.2	0.7	-0.2	-0.9	-1.7	-2.1	-2.7	-3.8	1.2	-2.4	24
HOURLY MAX	2.1	1.7	1.6	1.5	1.1	1.0	2.1	3.3	3.6	4.3	5.8	7.2	8.1	9.3	9.7	8.7	6.9	6.1	4.9	5.4	5.6	5.5	4.4	3.0			
HOURLY AVG	-9.9	-10.2	-10.4	-10.7	-10.8	-11.0	-11.2	-11.4	-11.5	-10.7	-9.6	-8.1	-7.1	-6.1	-5.8	-6.4	-7.5	-7.9	-8.1	-8.4	-8.5	-8.6	-9.0	-9.3			

STATUS FLAG CODES

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

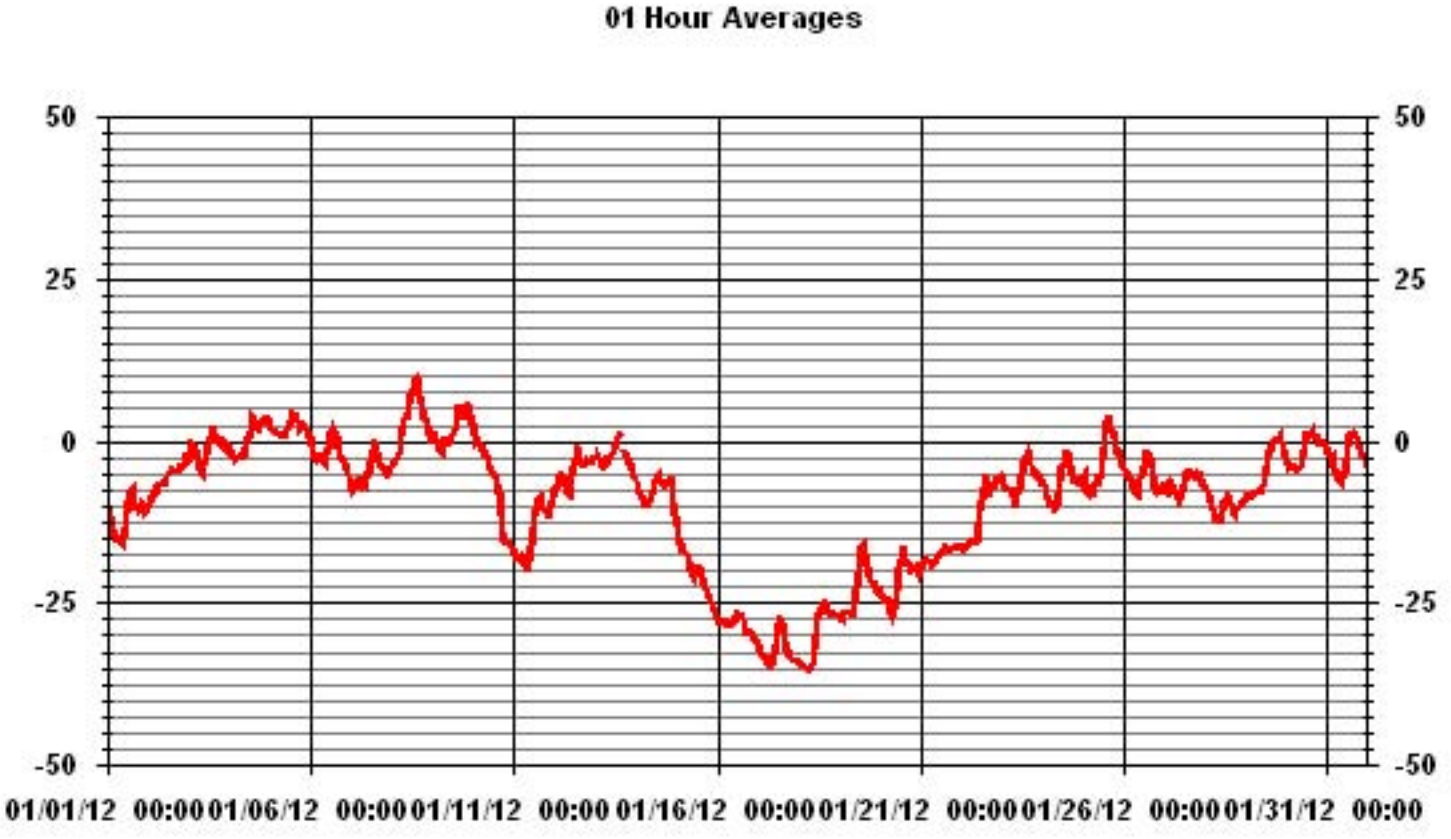


MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-35.2	°C	@ HOUR(S)	5	ON DAY(S)	18
MAXIMUM 1-HR AVERAGE:	9.7	°C	@ HOUR(S)	14	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	3.3	°C			ON DAY(S)	8

CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	742	HRS
			AMD OPERATION UPTIME:	99.7	%
STANDARD DEVIATION:	9.97		MONTHLY AVERAGE:	-9.09	°C

JOB #: 2833-12-01-31-C



JOB #: 2833-12-01-31-C

Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2012

BAROMETRIC PRESSURE hourly averages (millibar)

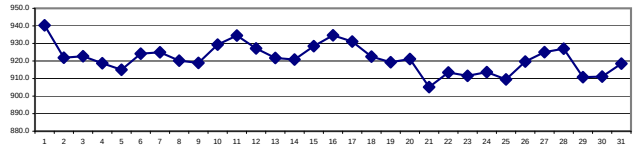
MST

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	937	938	939	939	939	939	939	940	940	941	942	942	942	942	943	943	943	942	942	941	940	940	938	937	**943**	**940.3**	24
2	935	934	933	931	929	928	927	925	924	922	921	921	920	918	918	917	916	915	915	915	915	915	915	916	935	921.9	24
3	916	918	918	919	920	921	922	922	923	924	925	925	926	925	925	925	925	924	924	923	924	924	924	923	926	922.7	24
4	922	922	922	923	922	922	922	921	920	920	920	918	917	917	916	917	917	917	917	916	916	916	915	914	923	918.7	24
5	913	913	912	912	912	912	911	912	913	913	914	915	915	915	916	916	917	917	917	918	919	919	919	920	920	915.0	24
6	920	920	921	921	921	922	923	923	923	924	925	925	925	925	926	926	926	926	926	926	927	927	926	926	927	924.2	24
7	926	926	926	926	926	926	926	926	926	926	926	926	926	926	926	926	925	925	924	923	923	922	921	920	926	925.0	24
8	920	919	918	918	918	918	919	919	919	919	919	920	920	920	921	922	922	922	922	922	922	922	922	922	922	920.2	24
9	922	922	922	922	922	921	921	920	919	918	917	916	916	916	916	917	917	917	918	918	919	919	919	920	922	918.9	24
10	919	919	920	920	921	922	923	924	925	927	928	929	930	931	932	933	935	936	937	938	938	939	939	939	939	929.3	24
11	939	939	939	939	939	939	938	938	937	937	936	935	934	934	933	932	931	931	931	930	930	929	929	929	939	934.5	24
12	929	929	930	930	930	930	930	929	929	929	929	928	928	928	928	927	926	926	925	924	923	922	922	921	930	927.2	24
13	920	920	920	920	920	920	919	920	919	920	920	921	921	922	923	**P**	**P**	924	925	925	925	925	925	924	925	921.7	22
14	924	924	924	923	922	922	921	921	921	921	921	920	920	920	919	919	919	919	919	919	920	920	921	921	924	920.8	24
15	922	923	923	924	925	926	926	927	928	929	929	929	930	930	930	930	931	931	931	931	932	932	932	932	932	928.5	24
16	932	933	933	933	933	933	934	934	934	935	935	935	935	935	935	935	935	936	936	936	936	936	936	936	936	934.6	24
17	936	936	935	935	935	935	934	934	933	933	932	932	931	930	929	929	928	928	928	927	927	927	926	926	936	931.1	24
18	926	926	926	926	926	925	925	925	924	924	923	922	921	921	920	920	920	920	920	920	920	920	920	920	926	922.5	24
19	920	919	919	919	919	919	919	919	919	919	919	919	919	919	919	919	919	919	919	919	920	920	921	921	921	919.3	24
20	922	922	922	923	923	923	923	923	924	924	924	924	923	923	922	922	921	920	919	918	917	916	915	914	924	921.1	24
21	912	911	910	909	908	907	906	905	904	904	903	902	902	901	901	902	902	903	903	904	905	906	906	907	912	905.1	24
22	908	909	909	910	911	912	912	913	913	914	915	915	916	916	916	917	916	916	915	915	914	914	914	913	917	913.5	24
23	912	911	910	910	909	909	908	908	908	909	909	909	910	910	911	913	914	914	915	915	915	916	916	916	916	911.5	24
24	917	917	917	917	917	917	917	917	916	917	917	916	916	915	915	914	913	912	910	909	907	906	905	904	917	913.7	24
25	902	902	901	901	901	901	902	902	903	905	906	908	910	912	913	915	916	917	918	918	918	919	919	919	919	909.5	24
26	920	920	920	920	920	919	919	918	918	918	919	919	918	919	919	919	920	920	920	920	921	921	922	923	923	919.7	24
27	923	923	924	924	925	926	926	927	927	927	927	927	926	926	925	925	924	924	924	924	924	924	924	925	927	925.0	24
28	926	927	927	928	928	929	929	930	930	930	931	931	930	930	929	928	927	926	925	924	923	921	920	919	931	927.0	24
29	918	917	916	914	913	912	910	910	909	909	909	909	909	909	909	909	910	910	910	910	910	909	909	909	918	910.8	24
30	908	908	908	908	909	908	909	909	909	910	910	911	911	911	911	912	913	913	914	914	915	915	915	916	916	911.1	24
31	916	916	916	916	917	917	917	917	917	917	918	918	919	919	919	920	920	920	920	921	921	921	921	921	921	918.5	24
HOURLY MAX	939	939	939	939	939	939	939	940	940	941	942	942	942	942	943	943	943	942	942	941	940	940	939	939			
HOURLY AVG	921	921	921	921	921	921	921	921	921	921	922	922	921	921	921	922	922	922	922	921	921	921	921	921			

STATUS FLAG CODES

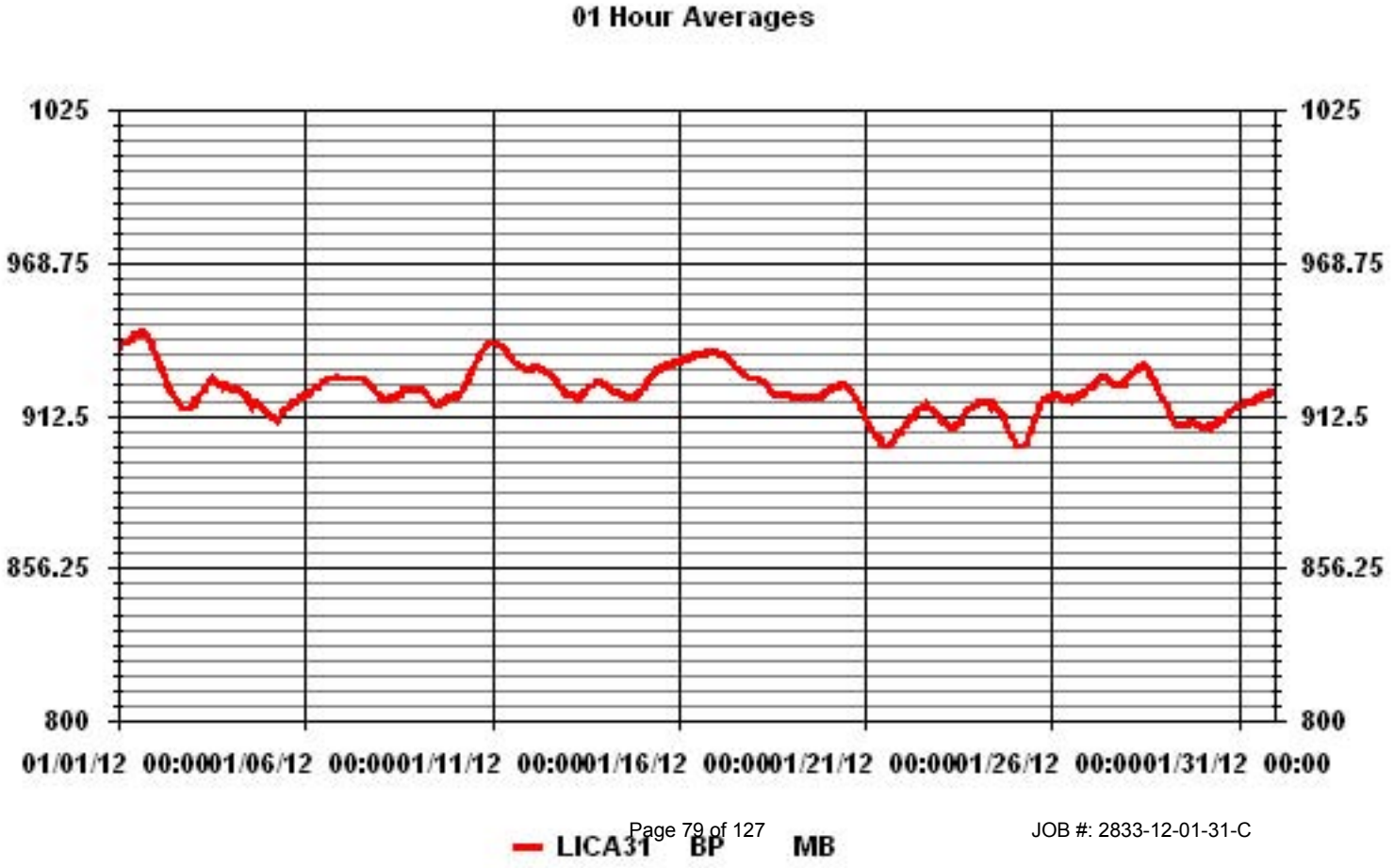
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

24 HOUR AVERAGES FOR JANUARY 2012



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	943	MB	@ HOUR(S)	VAR	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	940.3	MB			ON DAY(S)	1
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		742	HRS
			AMD OPERATION UPTIME:		99.7	%
STANDARD DEVIATION:	8.54		MONTHLY AVERAGE:		921	MB



JOB #: 2833-12-01-31-C

Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2012

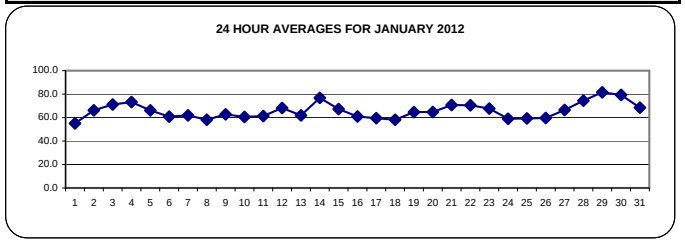
RELATIVE HUMIDITY hourly averages (%)

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	61	62	62	65	68	68	65	66	65	60	57	50	46	42	41	45	50	41	45	47	48	51	57	60	68	55.1	24
2	61	60	58	58	59	57	57	59	61	64	65	66	66	67	69	71	73	74	75	76	77	76	69	71	77	66.2	24
3	72	65	67	68	68	72	75	77	78	73	69	69	68	67	67	69	73	73	71	73	74	71	73	76	78	71.2	24
4	79	82	84	86	86	83	81	80	78	73	71	68	66	62	66	69	70	71	69	68	67	66	66	67	86	73.3	24
5	70	71	70	71	72	73	73	78	**89**	88	86	79	70	61	58	55	55	60	52	50	50	50	52	55	**89**	66.2	24
6	58	61	63	65	63	64	68	69	68	66	66	57	52	50	51	53	57	60	61	61	60	60	61	65	69	60.8	24
7	66	64	64	68	66	65	67	65	67	64	60	56	53	51	51	55	59	61	62	61	64	67	66	64	68	61.9	24
8	60	59	60	59	64	67	64	60	60	59	55	51	49	45	42	46	51	53	57	60	63	66	71	74	74	58.1	24
9	74	71	74	76	77	77	74	71	72	73	71	70	70	70	62	57	60	63	55	50	46	31	30	32	77	62.8	24
10	39	45	55	65	73	86	86	81	79	69	61	54	51	49	51	56	59	56	57	60	58	53	54	56	86	60.5	24
11	57	60	63	64	61	62	64	64	67	66	64	56	55	57	56	56	60	62	64	66	66	62	60	60	67	61.3	24
12	58	58	71	84	85	81	79	77	74	67	65	62	58	51	56	60	63	65	64	69	72	73	73	71	85	68.2	24
13	68	61	61	64	64	65	62	60	59	59	64	77	65	61	53	**P**	**P**	54	55	58	59	62	65	66	77	61.9	22
14	68	73	73	75	75	79	79	77	76	73	72	71	71	70	73	78	82	83	84	84	84	83	81	79	84	76.8	24
15	77	76	75	74	73	72	72	71	70	69	67	63	60	58	58	59	61	63	65	65	66	66	67	67	77	67.3	24
16	67	67	66	65	64	64	64	63	62	60	57	55	53	51	53	55	57	60	61	62	64	64	64	64	67	60.9	24
17	63	63	63	62	62	62	61	61	60	59	57	56	54	51	52	55	58	61	62	62	62	62	60	60	63	59.5	24
18	59	60	60	60	60	60	60	60	60	58	56	53	51	50	50	51	54	56	58	61	63	64	65	66	66	58.1	24
19	67	67	67	67	67	67	67	67	67	65	63	59	58	57	55	56	60	65	67	69	69	69	69	69	69	64.7	24
20	70	69	69	70	69	69	69	69	69	66	64	62	61	55	53	57	61	63	64	64	64	64	66	67	70	64.8	24
21	66	63	61	63	65	69	71	72	72	72	72	72	72	72	72	72	73	74	74	74	74	74	74	74	74	70.7	24
22	74	75	75	75	75	74	74	74	74	73	70	68	66	64	59	62	67	72	74	72	72	71	67	65	75	70.5	24
23	68	71	72	73	73	73	76	78	78	71	69	62	61	57	55	56	61	68	70	70	67	68	63	64	78	67.7	24
24	67	66	67	65	66	64	65	64	60	55	51	46	46	49	46	46	52	57	61	61	63	65	67	67	67	59.0	24
25	68	74	76	77	77	78	74	71	71	68	69	66	67	61	45	44	45	43	37	42	40	40	45	45	78	59.3	24
26	47	52	55	58	60	65	67	69	70	62	61	58	54	47	48	48	52	62	69	71	71	69	61	56	71	59.7	24
27	55	56	54	53	54	54	56	57	59	57	54	55	60	65	75	81	82	83	82	82	80	81	81	80	83	66.5	24
28	81	81	81	82	82	81	80	79	79	78	74	68	66	64	64	67	70	73	72	72	73	74	70	75	82	74.4	24
29	78	74	71	77	80	81	80	81	82	81	82	80	79	80	82	86	86	84	84	84	85	87	87	86	87	**81.5**	24
30	84	85	82	83	83	83	83	83	84	84	82	80	76	76	75	75	80	79	77	77	76	74	71	71	85	79.3	24
31	74	74	76	72	77	79	77	76	74	71	68	63	60	58	57	58	58	61	63	64	68	69	71	75	79	68.5	24
HOURLY MAX	84	85	84	86	86	86	86	83	89	88	86	80	79	80	82	86	86	84	84	84	85	87	87	86			
HOURLY AVG	66.3	66.6	67.6	69.2	69.9	70.8	70.6	70.3	70.5	67.8	65.9	63.0	60.8	58.6	57.9	59.9	63.0	64.5	64.9	65.6	66.0	65.5	65.4	66.0			

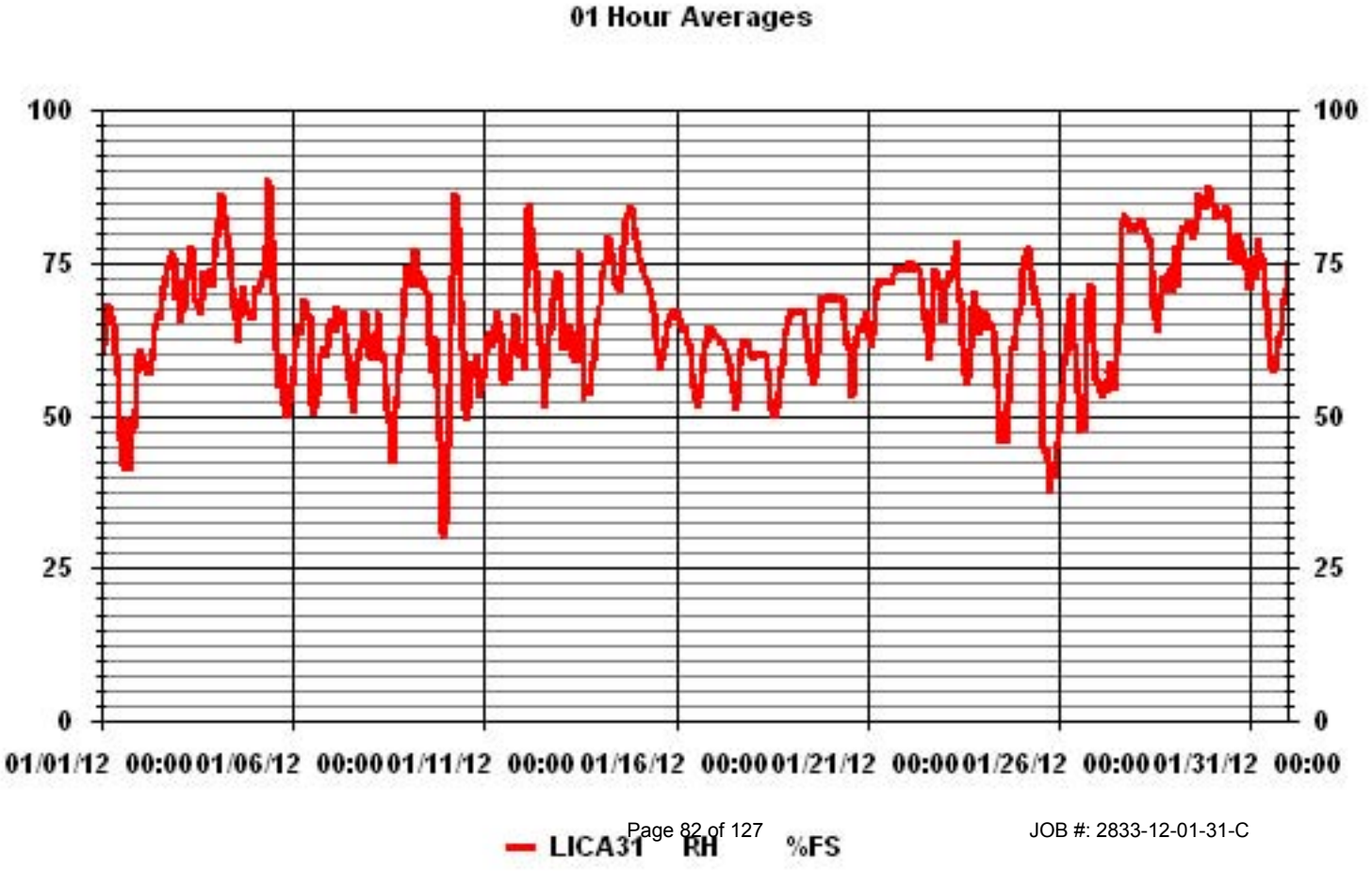
STATUS FLAG CODES

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

MAXIMUM 1-HR AVERAGE:		89	%	@ HOUR(S)	8	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:		81.5	%			ON DAY(S)	29
						VAR-VARIOUS	
CALIBRATION TIME:	0	HRS		OPERATIONAL TIME:		742	HRS
				AMD OPERATION UPTIME:		99.7	%
STANDARD DEVIATION:	9.98			MONTHLY AVERAGE:		65.70	%



JOB #: 2833-12-01-31-C

Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2012

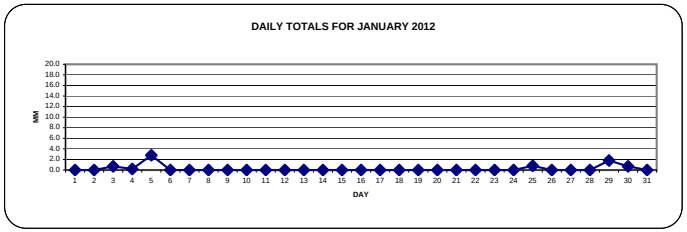
PRECIPITATION hourly averages (mm)

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	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.	TOTAL	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	24
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.2	0.1	0.1	0	0	0	0	0	0	0	0.3	0.7	24
4	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	0	0.1	0.2	24
5	0	0	0	0	0	0	0	1.2	0.1	**1.4**	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	**1.4**	**2.8**	24
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	24
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
14	0	0	0	0	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	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	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	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	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	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	0.2	0	0	0	0	0	0	0	0.4	0.8	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.9	0.6	0.1	0.1	0.9	1.8	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	0.1	0.1	0	0.1	0	0	0	0	0	0	0.2	0.7	24
31	0	0	0	0	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	0.0	0.0	0.0	0.0	0.0	1.2	0.1	1.4	0.0	0.0	0.2	0.3	0.2	0.4	0.2	0.1	0.0	0.1	0.9	0.6	0.1	0.1			

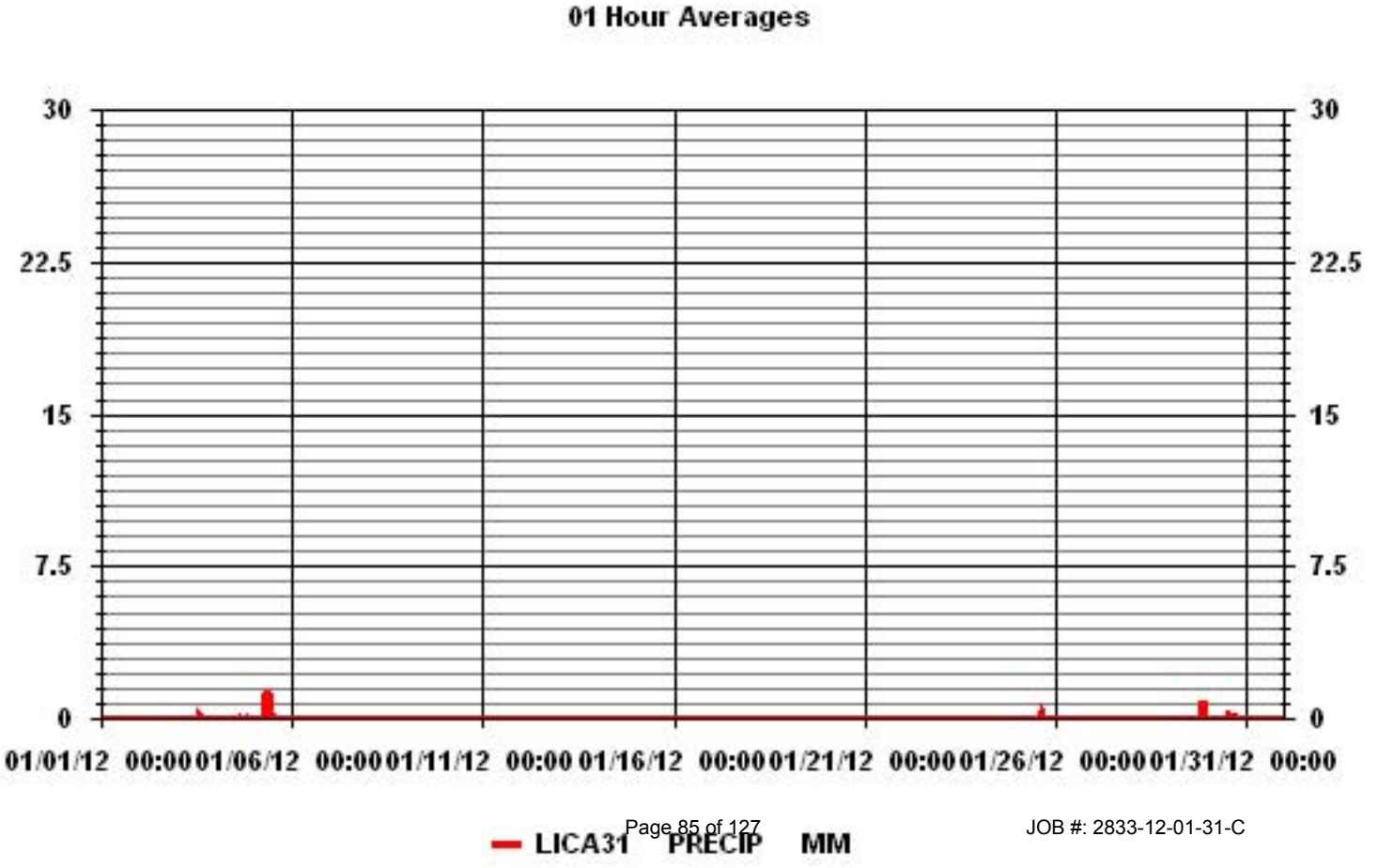
STATUS FLAG CODES

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



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	1.4	MM	HOUR(S)	9	ON DAY(S)	5
MAXIMUM DAILY TOTAL	2.8	MM			ON DAY(S)	5
MONTHLY TOTAL	7.0	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		744	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.08		MONTHLY AVERAGE:		0.01	MM



JOB #: 2833-12-01-31-C

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2012

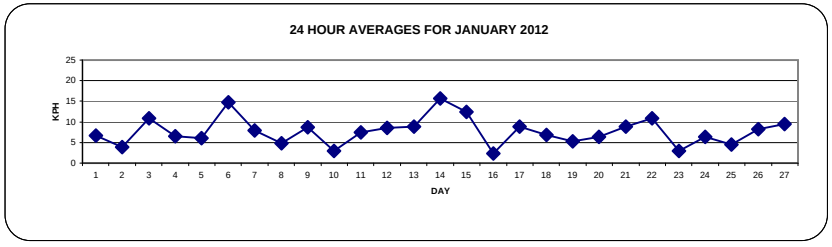
WIND SPEED hourly averages (km/hr)

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	5.2	12.3	12.1	11.7	11.8	12.5	13.4	13.9	12.9	12.5	12.5	9.6	8.2	8	6	10.7	10.8	11.2	7.9	11.1	14.9	8.3	9.6	10.6	14.9	3.4	24
2	13.3	10.1	11.5	11.6	7.8	8.7	7.4	7.8	6.3	5.3	6.1	6.7	5.6	7.1	10.5	11.1	8.2	7	7.8	8.7	10.4	10.2	10.3	5	13.3	5.1	24
3	10.7	11.5	11.1	11.5	12.8	11.1	12.1	10.9	9.2	8.8	8.3	5.7	5.4	5.8	4.5	4.3	5.5	8.9	9.6	8.8	11.5	10	6.3	1.2	12.8	5.6	24
4	8.1	10.4	10.9	11.1	5.9	8.8	8.5	9.2	8.4	8	8.8	4.5	3.5	6.8	7.5	11.8	11.1	11.1	14.4	14.4	12.5	15.3	12	12.4	15.3	6.9	24
5	10.9	10.9	12.4	12.1	4.4	6.6	6.9	7.4	13.7	22.9	12.5	1.1	2.4	1.9	3.3	4.5	3.3	3.2	5.9	7.5	8.5	10.3	9	4.7	22.9	6.7	24
6	2.8	4.4	3.7	3.1	2	2	5.2	4.1	3.9	3.6	4.6	3.5	7.5	5.2	3.8	6.6	6.6	5.1	3.7	6.3	6.1	6.9	6	5.6	7.5	3.9	24
7	6.1	8.8	11.3	13.4	8.9	6.3	6	5.2	5.9	9.2	10.1	6.7	7	11.5	9.7	11.3	12.5	14.7	17	14.9	16.5	17.1	16.5	15.6	17.1	10.8	24
8	16.5	16.1	14.7	16.5	15	13.4	10.1	6.9	6.1	8.8	11.2	14.1	10	4.5	6.8	2.1	3.7	5.2	5.1	6.2	5.7	7.5	13.5	14.9	16.5	6.5	24
9	11.7	8.3	14.1	14.2	4.8	9.2	10.9	10.3	6.2	3.4	4.6	3.8	8.3	11.1	14.1	12.5	15.2	14.1	18.8	16.9	17.1	**25.3**	23.4	17.7	**25.3**	6.1	24
10	1.3	0.9	9.1	10.3	11.2	11.2	15.2	17.7	17.7	23.1	23.2	19.5	20	17.1	16.8	18.6	25.2	23.9	17.2	14.7	13.8	14.8	13.3	11.1	25.2	14.8	24
11	10	4.5	8.5	6.2	7.1	4.6	7.8	3.6	9.5	7.6	6.8	5.7	7.3	6	7	7.9	9	9.8	11.3	13.6	13.4	16.6	17	16.6	17	7.9	24
12	15.1	13.9	12.4	1.8	4.8	4.3	4.3	5.5	4.4	3.3	4.7	4.6	5.7	7.3	9.3	12.2	11.2	9.4	12.1	8.1	12.6	15.8	14.6	11.3	15.8	4.8	24
13	11.3	16.3	9.4	9.7	11.2	12.8	14	15.1	13	4.1	0.8	7.2	10.8	12	11.4	**P**	**P**	12.9	12.2	12.4	11.7	11.1	10.3	9.9	16.3	8.7	22
14	8.4	10.2	10.6	9.6	6.6	11	12.9	11.8	14.1	7.9	9.3	9.9	8.7	9.8	8.4	6.9	9.7	6.9	9.9	9.4	8.9	7.5	9.9	6.2	14.1	2.9	24
15	2.6	3.3	2.3	3.9	5.9	4.7	6.2	7.4	10.2	10.7	9.6	9.2	10.7	8.5	11	9.7	9.7	10	9.7	10.5	11.4	11.5	9.7	9.6	11.5	7.4	24
16	10.7	8.1	10.6	9.5	8.9	8.9	9.8	9.7	8.4	7.6	5.4	5.6	8.9	7.9	8.5	9.8	11.1	12.1	12.7	7.3	6.9	6.3	10	12.7	12.7	8.5	24
17	7.4	8.6	9.1	9.6	10.3	8.6	9.2	9.5	9.7	9.9	9.5	10.4	10.9	9.6	7	12.9	12.3	12.3	10.1	10.3	9.1	8.9	10.5	11	12.9	8.9	24
18	10.8	12.7	12.8	15.5	15.1	13.5	14.8	15.4	16.5	18	18.3	19.7	22.3	23	22.5	20	17.1	15.1	14.1	13.3	11.3	11.7	14.6	13.4	23	**15.7**	24
19	13.7	12.2	12	13.3	12.9	13.5	12	12.9	13.5	14.5	14.9	15.6	15	13.9	15	12.6	10.2	10.4	10.9	10.3	10.7	10.8	11.9	11.3	15.6	12.5	24
20	10.7	12.1	11.1	9.9	12.6	10.4	9.7	9.7	10	8.7	7.9	5.8	12	10.9	10.4	13.2	12.2	13.5	12	11.3	12.9	11.2	11.7	14	14	2.3	24
21	14.8	16.3	17.3	8.4	4.9	2.7	15.9	20.2	13.4	6.2	5.7	6.8	3.4	5.8	12.1	12.4	11.5	12.6	11	9.6	6.6	10.5	6.9	13.7	20.2	8.8	24
22	2.7	5.9	3.6	12	13.2	12.9	13	12	12.2	11.4	11.6	11	11	12.2	11.1	10.4	8.6	8.5	6.4	5.6	7.3	7.6	8.1	11.1	13.2	6.8	24
23	13.6	12.8	8.7	7.8	8	6.4	7.2	9.9	7.4	8.4	6.1	9.2	13.5	13.6	18.2	15.1	8.5	8.4	9.8	9.2	9	12	14.7	12.9	18.2	5.3	24
24	10.1	10.5	9.6	9.2	9.3	8.9	7.7	7.3	8.3	9.5	9	9.9	9.9	9.3	9.7	6.8	6.8	5.4	5.2	4	4.7	6.6	5.9	6.2	10.5	6.3	24
25	6.9	9.8	9.4	7.6	2.7	14.2	15.9	13.8	11.9	13.1	9.9	9.3	9.5	14.3	17.2	13.1	15.3	17.5	14.8	11.4	13.7	15.8	13.6	14.8	17.5	8.8	24
26	14.7	15.9	13.9	11.9	12.7	9.2	10.5	8	10.2	10.6	9.1	7.5	5.4	13.6	16.6	14.6	13.3	12.4	11.3	12.7	9.6	11	16.8	15.9	16.8	10.8	24
27	12.6	17.5	3.6	4.9	6	5.9	3.6	3.3	4.9	5.2	5.3	10.3	12.7	10.9	9	9.7	8.1	5.9	4.5	8.4	10.2	8.4	6.9	8.7	17.5	3	24
28	8.5	8.1	8.1	8	8.6	9.4	10.6	10.8	13.5	12.5	3.1	4.8	8.2	5.4	14.9	14.1	9.3	10.7	12.4	12.6	12.3	13.3	13.6	15.2	15.2	6.4	24
29	15.1	12.2	11.5	11.7	10.9	9.7	9.6	10.5	11.3	8.3	8.2	6.9	11.5	11.5	10.5	11	9.5	9.8	8	11.6	4.7	8.1	6.3	9.8	15.1	4.5	24
30	9.4	9.6	11	7.5	8.4	7.5	11.4	11.2	11	11.3	11.7	12.6	10.3	9.7	14.4	15.2	13.9	15	12.7	12.2	12.5	14.4	9.5	9.6	15.2	8.2	24
31	9	9	9.1	8.4	7.4	9.8	9.7	8.5	11.6	11.1	11.9	11.6	12.3	12	12.7	10.9	12.2	14.2	14.2	15.2	13.8	14.2	14.4	11.1	15.2	9.4	24
HOURLY MAX	16.5	17.5	17.3	16.5	15.1	14.2	15.9	20.2	17.7	23.1	23.2	19.7	22.3	23.0	22.5	20.0	25.2	23.9	18.8	16.9	17.1	25.3	23.4	17.7			
HOURLY AVG	9.8	10.4	10.2	9.7	8.8	9.0	10.0	10.0	10.2	9.9	9.1	8.7	9.6	9.9	11.0	11.1	10.7	10.9	10.7	10.6	10.7	11.6	11.5	11.1			

STATUS FLAG CODES

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

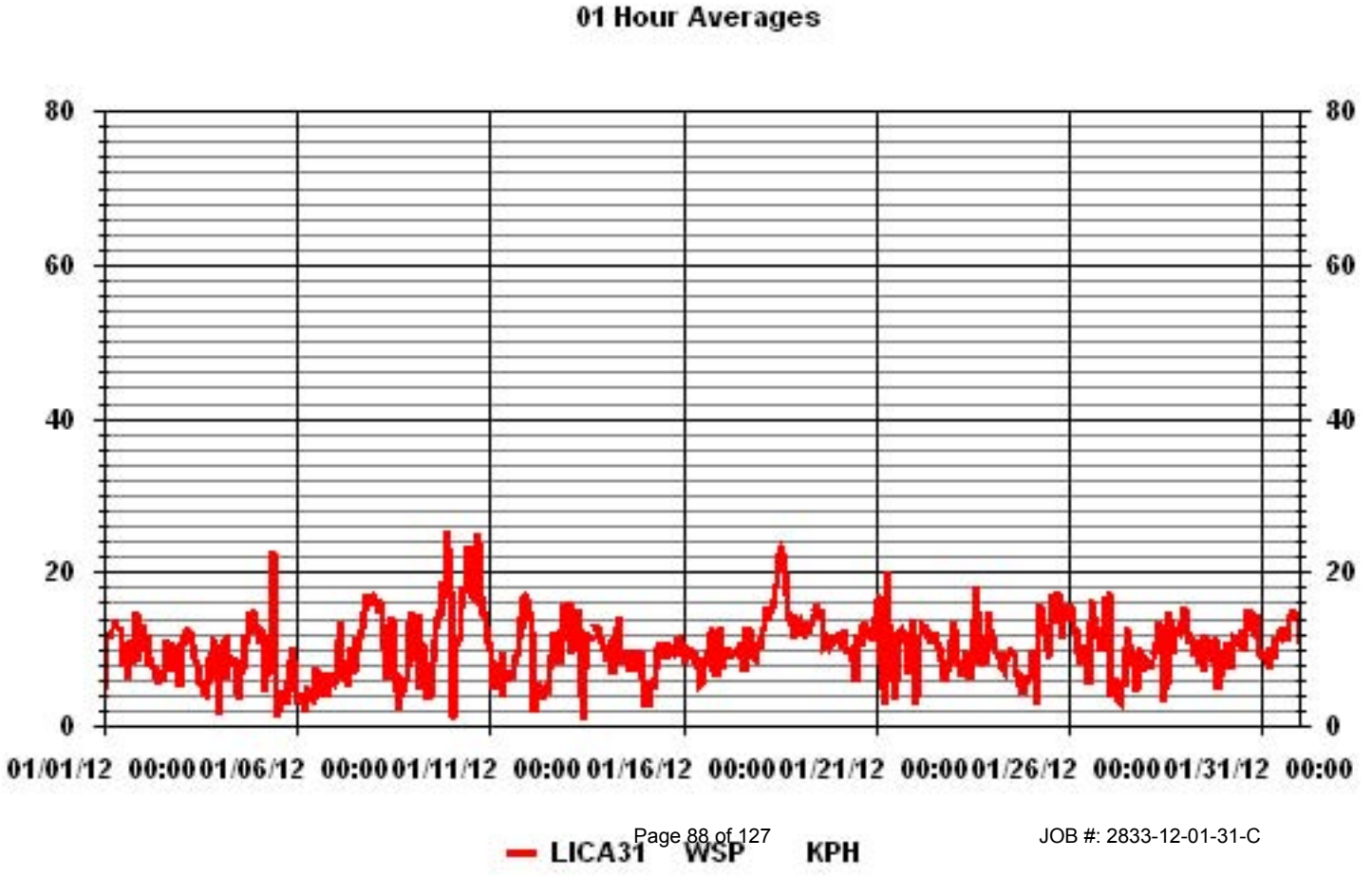


LAST CALIBRATION: June 17, 2010

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:		25.3	KPH	@ HOUR(S)	21	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:		15.7	KPH			ON DAY(S)	18
CALMS (≤ 0 KPH)	0.13	%		OPERATIONAL TIME:		742	HRS
MONTHLY CALIBRATION TIME:	0	HRS		AMD OPERATION UPTIME		99.7	%
STANDARD DEVIATION	3.95			MONTHLY AVERAGE		10.21	KPH

JOB #: 2833-12-01-31-C



JOB #: 2833-12-01-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2012

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

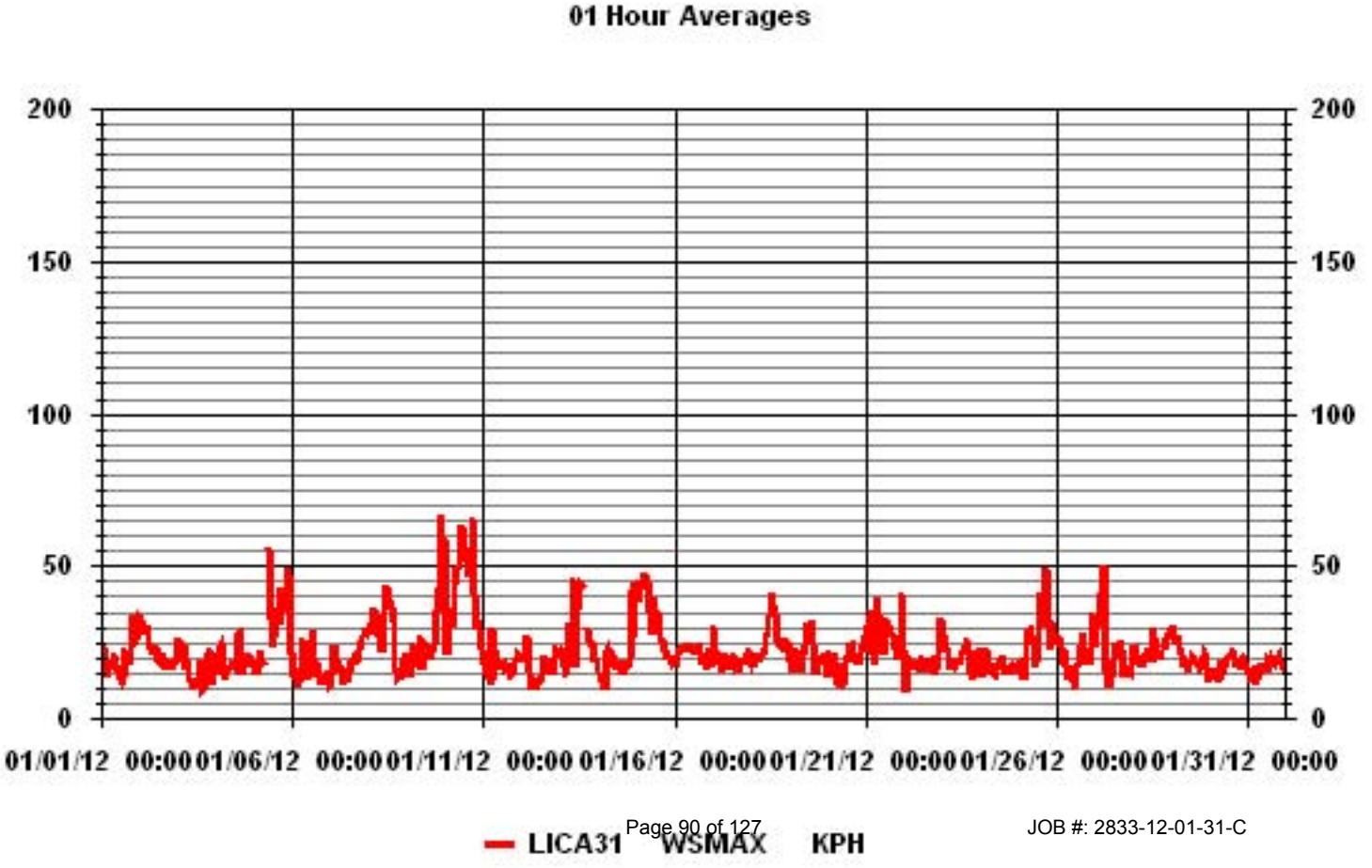
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.
DAY																									
1	23.4	23	15.8	14.5	14.7	16	18.6	19.1	21.7	17.6	15.8	15.8	13.2	12.1	13.8	21.7	21.3	18	19.1	24.1	33.8	29.2	26.5	27.4	33.8
2	33.3	32.7	31.1	29.8	27.4	30.3	22.1	24.8	22.1	21.9	24.1	19.1	18.6	18.2	21.7	18.6	19.5	19.1	16.2	18.6	17.1	17.3	18.8	18.9	33.3
3	26.5	23.9	25.2	23.4	24.8	16	16.9	13.6	12.7	11.7	11	11.8	10.1	12.9	18.9	9	9.4	16.2	18.8	17.8	23.2	17.5	11.2	21	26.5
4	14.2	19.7	23.2	24.5	22.8	13.6	13.8	16.2	16.4	17.1	19.1	17.1	16.6	27.4	28	19.9	14.7	16.3	19.3	21	16.4	21.2	18.9	18.2	28
5	16.4	14.7	16.2	18.4	22.1	18.2	18.6	0	0	55.2	32.9	23.4	26.5	36.3	35.5	34.6	30.7	43.1	36.6	36.6	36.2	49.2	47.3	21.9	55.2
6	14.2	13	16.4	9.9	11.8	15.6	26.5	14.2	14.9	14	12.9	25.6	28.3	28.5	19.5	18.8	14.2	12.8	11.4	15.1	13.6	14.7	14.9	10.5	28.5
7	11	14.1	22.8	22.8	16	17.1	15.8	13.6	11	15.4	15.8	11.8	14.7	18.4	19.5	17.4	19.3	19.3	25.6	22.6	26.7	28.5	27.8	29.1	29.1
8	29.6	31.6	27.6	36.4	28.7	27.4	26.7	28.7	21.2	34	40.7	43.6	37.4	39.2	36.8	31.8	17.1	16	13.4	14	12.5	15.8	19.7	21.7	43.6
9	15.9	13.6	20.8	23.7	23.2	16.5	18.6	18.2	27.2	15.8	25.8	18.8	24.7	19.1	22.5	23.2	22.2	23.9	34.6	35	42.9	**67**	53	59.1	**67**
10	36.1	21	34.4	34.8	30	32.2	43.4	49.3	49.9	58.9	63.1	53.4	51.4	55.6	52.5	46	55	66.3	41.2	30.5	30.1	32	29.6	23	66.3
11	18.7	14.9	14.9	13.2	11	29.8	12.7	19.7	20.4	17.6	19.1	16.2	18.6	16.9	18	16.7	16.2	14.3	14.7	18	19.3	21.9	21.3	21	29.8
12	18.4	20.6	25.8	25.8	15.8	14.5	9.7	12.7	11.8	9.3	11.8	12.5	14.2	17.6	20.6	16.4	15.8	14	20	14	16.9	24.1	21.2	22.1	25.8
13	20.2	22.8	17.1	13.8	18.6	21.9	31.3	29.8	46.2	16.9	37.4	35.7	41.4	44.4	43.8	P	P	28.7	25.6	24.8	25.8	18.2	19.5	19.3	46.2
14	15.6	13.6	13.2	12.3	9.5	21.7	23	21.3	20.9	16.7	20.2	19.5	16.3	18	16.2	14	19.1	18.2	16.9	17.3	20.2	41.8	26.1	43.4	43.4
15	43.6	38.1	44.9	43.8	44	48	44.7	44.5	35.7	27.8	30.9	39.2	27.4	35.3	28.9	25.9	25.7	22.8	22.6	20	19.8	18.3	19.3	20.4	48
16	17.8	17.8	23.3	21.1	22.8	22.8	23.7	23.3	22.2	24.4	22.6	22.2	22.6	23.1	22.4	24.8	21.8	18.3	18.2	18.5	15.6	23.1	17.8	17.8	24.8
17	30.1	19.6	17.6	20.7	19.8	15.6	16.5	20.7	20.7	17.2	17	18.3	18.3	21.7	16.7	17.2	15.4	18.3	19.8	17.8	19.6	21.4	23.3	19.4	30.1
18	17.6	18.5	16.5	20.5	20.2	18.3	20.2	20.9	22.6	26.6	27.9	33.2	34.7	41	37.5	34.9	25.9	25	25.3	23.5	23.3	22.2	26.1	25	41
19	18.2	19.6	15.4	17.1	22.9	18	16.5	16.3	18.7	20.9	24.1	30.3	30.3	30.7	32.5	24.8	14.3	17.4	17.8	19.8	20.2	18.9	20.2	20.6	32.5
20	13.2	18.9	18.1	13.4	21.7	18.9	12.3	11.7	12.1	11	11.4	18.2	20.6	22.2	23.9	24.4	18.2	19.5	18.7	18.5	20.9	23.3	23	27.4	27.4
21	29.8	30.3	33.4	35.5	21.5	17.4	33.1	39.3	34.9	20.4	24.6	22.6	21.3	32.7	26.5	30.7	27.2	28.1	23.7	21.5	18.9	23	41	31	41
22	23.3	8.4	20.2	17.6	17.8	18.7	17.6	17.1	18.7	15.4	17.4	20.2	16.3	15.8	15.8	17.8	18.9	19.4	16.5	14.7	17	17.1	21.9	33.1	33.1
23	28.3	27.8	22.6	22.6	20.4	16.5	17.8	16.7	17.4	18.7	18.7	17.6	21.3	21.7	23.9	26.3	23	14.7	15.8	12.8	16.5	20.4	21.9	23.2	28.3
24	13.6	15.4	17.1	22.8	14.3	16.5	16.3	15.2	14.7	17.6	17.4	18.9	18.4	19.3	19.3	15.8	16.2	15.4	15.4	17.1	17.8	17.8	17.4	16.3	22.8
25	18	17.8	20	12.3	16.5	27.9	28.6	23.9	26.5	25.7	16.7	18.7	22.6	40.5	40.8	29.6	40.3	49.1	38.6	22.4	32.2	26.8	28.1	27.6	49.1
26	24.1	26.8	24.4	17.6	22.8	16.7	18.2	13	15.6	15.6	12.3	9.7	17.1	18.4	21.9	24.1	28.1	21.5	17.6	23.3	17.8	19.1	34.4	29.4	34.4
27	23.2	33.1	33.6	41	30.1	50.6	22.2	15.4	11.2	11.2	13.6	18.4	20.2	24.3	19.3	25.9	23	14.3	14.3	14.3	17.4	15.2	14.8	23.5	50.6
28	21.9	22.8	19.7	18.2	16.7	20.5	19.5	20.9	22.6	22.8	21.3	18	29.6	24.8	25.2	21.5	20.2	20.2	22.4	24.1	23	25.5	27.8	29.4	29.6
29	28.7	30.1	25.2	24.8	26.7	23.3	21.3	18.2	17.6	17.8	15.4	18.9	21.3	21	19.1	18.7	18	16.7	17.8	19.6	21.3	20	11.9	14.5	30.1
30	13.3	13.8	16.5	12.5	14.3	11.7	19.1	17.3	15.6	16.9	19.5	20	20.6	19.1	22.6	20.4	16.7	18.2	18.9	19.5	15.8	20.4	18.4	16.5	22.6
31	14.3	16	13	12.7	17.5	14	13	14.1	16.9	16.9	15.6	15.6	18.9	18	19.7	18.4	17.8	19.7	19.7	20.8	18.9	17.8	18.4	15.6	20.8
PEAK	43.6	38.1	44.9	43.8	44.0	50.6	44.7	49.3	49.9	58.9	63.1	53.4	51.4	55.6	52.5	46.0	55.0	66.3	41.2	36.6	42.9	67.0	53.0	59.1	

STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	67	KPH	@ HOUR(S)	21
			ON DAY(S)	9



JOB #: 2833-12-01-31-C

LICA31
WSP / WDR Joint Frequency Distribution (Percent)

January 2012

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
Parameter : WSP
Units : KPH

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	1.34	.67	1.07	2.02	1.07	1.21	1.61	.53	.40	.67	.53	.80	.80	.67	.67	.53	14.69
<	12.0	3.36	1.88	3.50	2.83	3.36	2.56	2.83	1.21	.26	2.69	6.06	6.60	4.58	1.48	3.77	6.87	53.90
<	20.0	1.48	.80	.80	.94	.67	1.48	2.96	.26	.13	.40	1.48	5.66	2.42	2.42	4.58	2.96	29.51
<	29.0	.67	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00	.53	.26	.00	.13	.00	1.75
<	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	6.87	3.36	5.39	5.92	5.12	5.25	7.41	2.02	.80	3.77	8.08	13.61	8.08	4.58	9.16	10.37	

Calm : .13 %

Total # Operational Hours : 742

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	10	5	8	15	8	9	12	4	3	5	4	6	6	5	5	4	109
<	12.0	25	14	26	21	25	19	21	9	2	20	45	49	34	11	28	51	400
<	20.0	11	6	6	7	5	11	22	2	1	3	11	42	18	18	34	22	219
<	29.0	5			1								4	2		1		13
<	39.0																	
>=	39.0																	
	Totals	51	25	40	44	38	39	55	15	6	28	60	101	60	34	68	77	

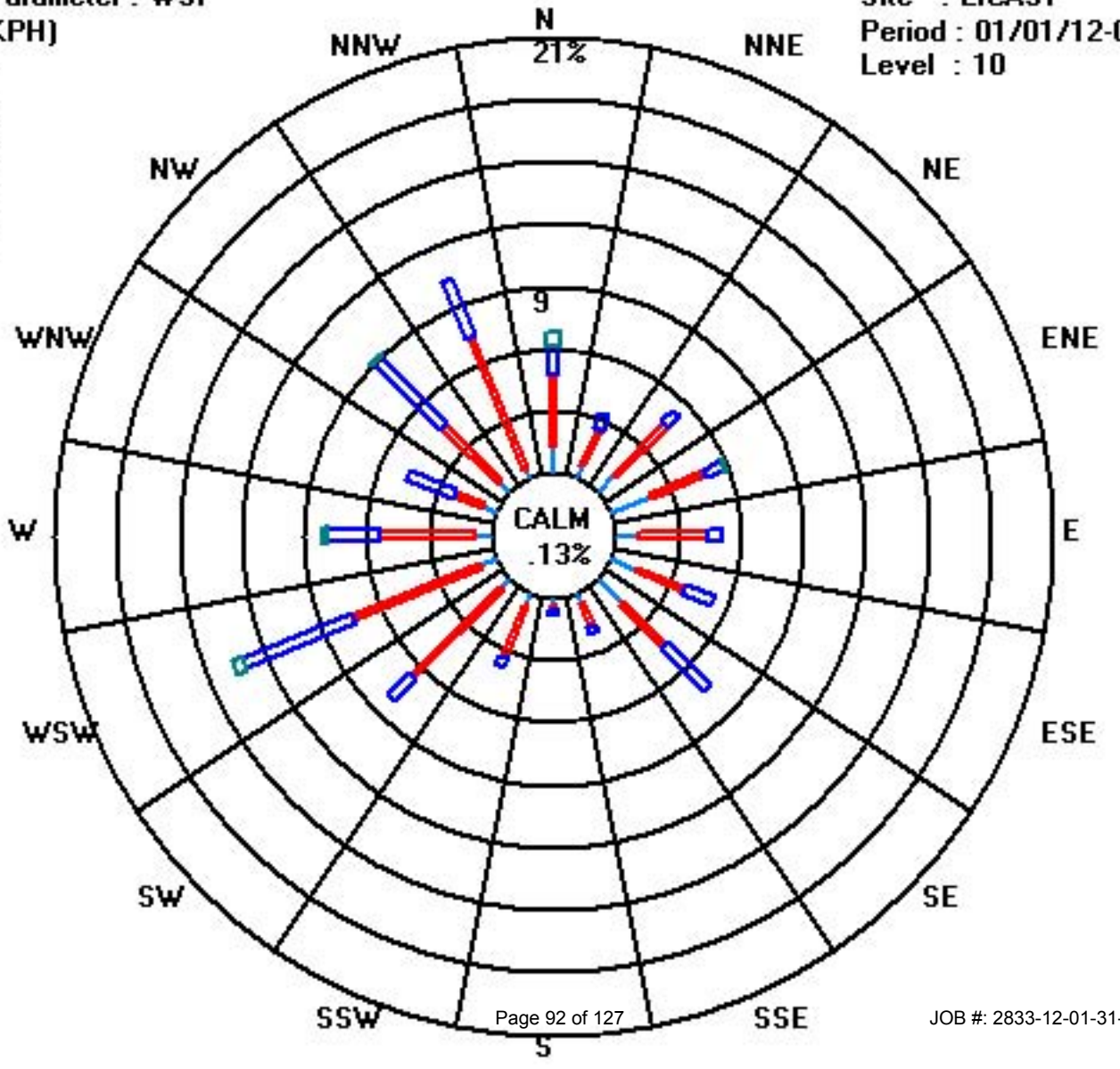
Calm : .13 %

Total # Operational Hours : 742

Logger : 31 Parameter : WSP
Class Limits (KPH)

>= 39.0
< 39.0
< 29.0
< 20.0
< 12.0
< 6.0

Site : LICA31
Period : 01/01/12-01/31/12
Level : 10



JOB #: 2833-12-01-31-C

Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

JANUARY 2012

WIND DIRECTION hourly averages in degrees

MST

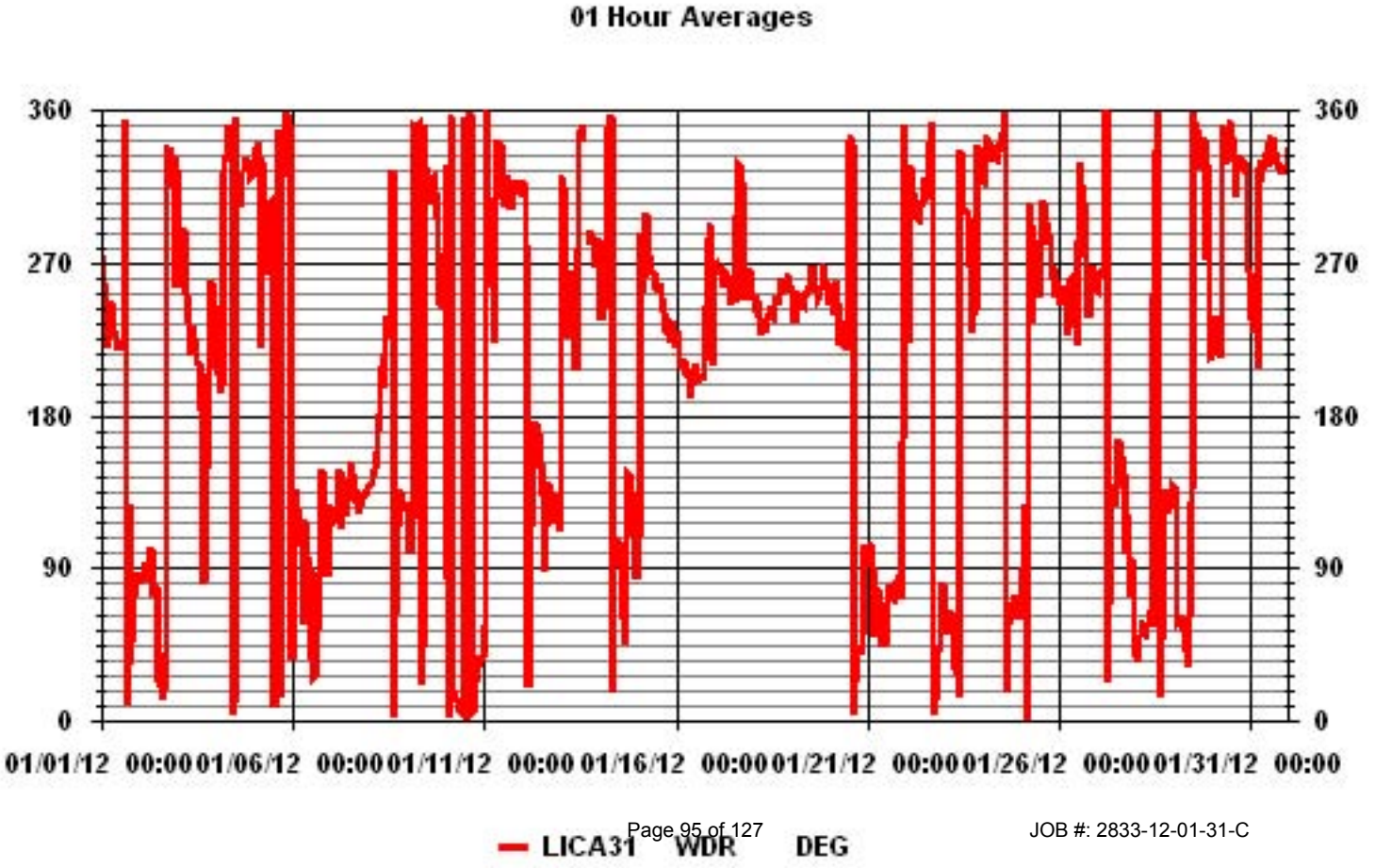
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	274	260	247	229	220	226	248	243	231	222	223	222	218	223	226	355	9	33	127	46	80	73	87	81	355	N	24
2	86	87	82	93	83	86	82	102	74	76	80	23	42	21	12	19	21	340	314	338	329	333	302	255	340	NNW	24
3	325	277	268	273	291	252	236	230	215	233	227	223	210	212	184	89	81	115	148	204	238	260	224	246	325	NW	24
4	209	205	194	197	323	333	330	349	349	346	3	11	356	314	304	304	323	328	327	331	327	320	321	326	356	N	24
5	336	338	341	333	220	330	304	263	305	306	287	48	7	293	336	349	13	320	332	349	358	341	353	36	358	N	24
6	78	102	136	126	104	106	57	119	98	97	92	66	37	25	26	53	88	134	149	101	112	85	102	128	149	SSE	24
7	116	117	120	122	127	149	113	142	134	121	129	142	152	129	145	138	129	122	127	134	132	135	133	138	152	SSE	24
8	139	140	144	148	158	171	181	209	196	216	225	238	235	292	324	1	62	79	114	136	134	127	126	125	324	NW	24
9	129	98	121	119	351	350	352	353	21	43	352	327	309	305	309	320	321	313	297	247	246	262	263	276	353	N	24
10	328	84	2	357	13	17	11	13	5	7	5	4	356	348	3	359	5	6	22	39	37	31	35	37	359	N	24
11	57	360	301	304	309	257	223	307	343	331	341	311	302	317	322	316	301	317	314	319	317	313	312	314	360	N	24
12	318	312	281	20	61	115	140	151	176	148	171	153	134	87	114	130	140	138	116	135	123	122	128	111	318	NW	24
13	322	316	250	226	237	251	266	259	252	206	279	349	341	349	349	P	P	282	289	287	283	268	270	284	349	NNW	22
14	268	236	250	249	243	350	355	355	16	110	95	104	106	91	93	61	45	128	146	145	136	110	87	83	355	N	24
15	123	109	288	253	261	300	271	271	272	263	265	254	257	252	257	251	242	233	234	229	225	223	236	231	300	WNW	24
16	219	230	212	208	211	211	205	204	205	190	198	201	211	199	202	204	200	205	212	245	284	293	215	209	293	WNW	24
17	269	270	264	266	267	256	259	264	263	256	245	247	248	248	298	329	328	319	250	250	258	264	267	253	329	NNW	24
18	250	252	240	249	239	227	236	232	229	238	241	239	238	245	251	249	246	255	261	259	255	256	264	257	264	W	24
19	254	249	234	249	253	247	242	246	245	249	253	256	258	267	267	254	248	249	255	257	269	257	257	257	269	W	24
20	245	255	254	239	260	248	222	225	236	221	218	232	342	345	341	3	23	35	42	42	40	51	104	94	345	NNW	24
21	102	103	105	92	49	78	78	77	71	44	47	58	45	70	80	74	73	81	83	80	72	164	166	351	351	N	24
22	242	222	276	327	312	306	297	297	296	303	307	320	308	309	330	341	353	4	12	42	43	40	62	82	353	N	24
23	65	58	51	60	65	54	35	36	29	14	336	308	299	301	301	298	269	228	240	243	243	339	325	320	339	NNW	24
24	319	331	346	334	333	341	338	333	332	338	336	340	346	353	359	17	56	68	69	60	74	66	70	60	359	N	24
25	78	91	106	127	0	306	293	234	268	281	254	249	283	297	307	290	291	281	286	260	269	250	256	259	307	NW	24
26	251	245	254	249	256	227	260	261	245	259	233	221	283	329	317	307	275	251	237	250	269	259	259	255	329	NNW	24
27	254	262	265	267	323	360	23	68	119	138	138	126	137	166	154	157	147	146	98	122	73	97	77	40	360	N	24
28	39	34	50	51	59	52	51	56	62	61	60	252	337	322	359	13	47	122	134	137	123	125	134	140	359	N	24
29	139	127	59	60	61	61	54	42	32	61	129	136	359	354	349	341	335	325	335	344	271	328	216	217	359	N	24
30	216	218	238	230	224	214	351	345	328	333	347	354	346	330	308	324	331	331	329	328	330	323	268	265	354	N	24
31	237	240	228	235	207	326	318	331	325	332	331	340	345	341	343	336	330	328	326	322	326	325	323	336	345	NNW	24
HOURLY AVG	336	360	346	357	351	360	355	355	349	346	352	354	359	354	359	359	353	340	335	349	358	341	353	351			

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:	742	HRS
STANDARD DEVIATION	105.24		AMD OPERATION UPTIME	99.7	%
			MONTHLY AVERAGE	295	DEG



JOB #: 2833-12-01-31-C

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

JANUARY 2012

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

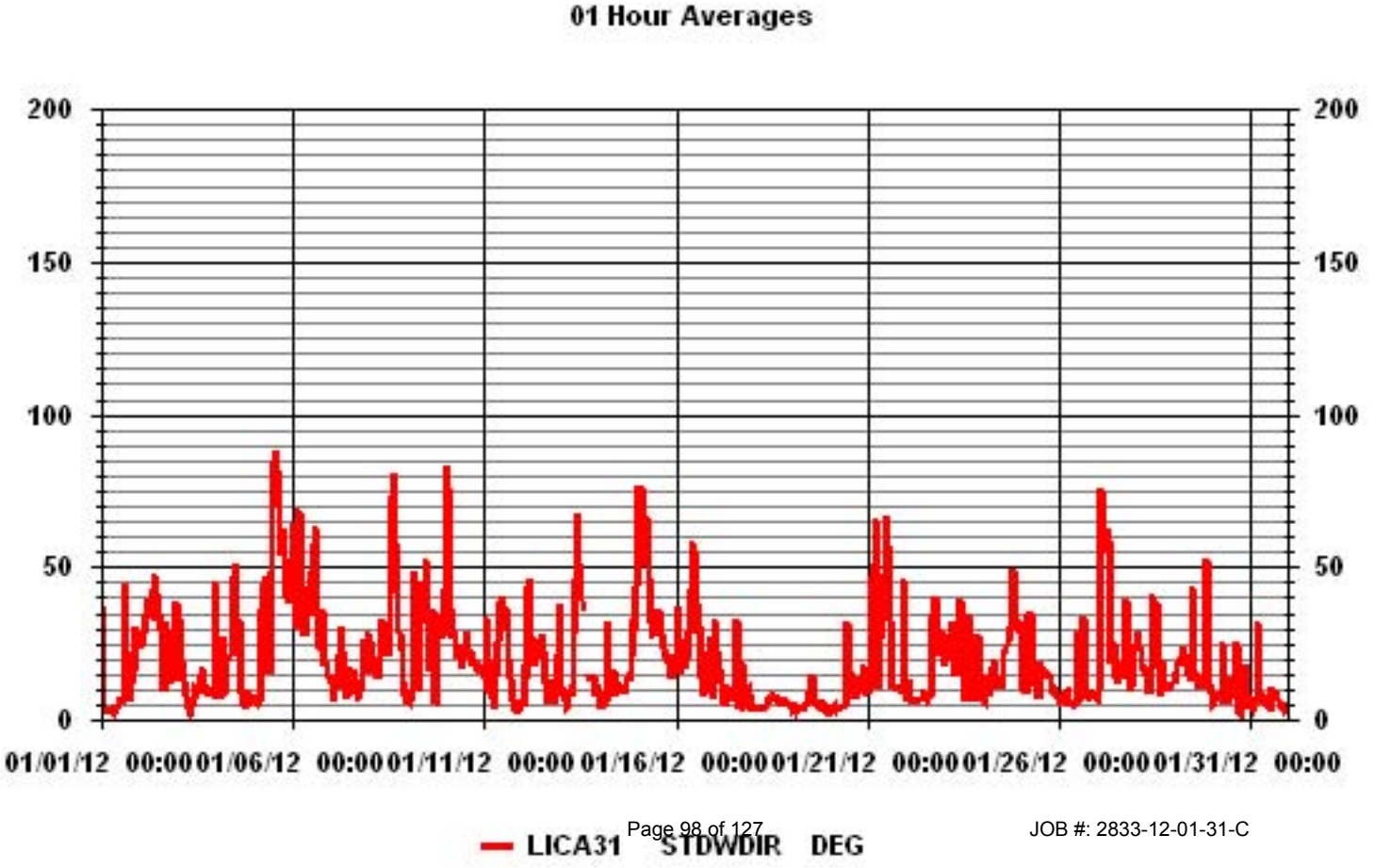
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	37	5	5	3	3	3	4	3	5	3	4	5	7	5	8	44	11	6	22	12	16	30	28	26
2	23	29	24	28	35	40	35	34	42	48	42	38	35	30	22	9	32	31	20	15	12	21	13	39
3	27	34	13	19	13	8	4	3	4	5	7	11	10	12	11	17	8	11	10	10	10	7	11	45
4	8	7	10	7	28	9	10	19	21	22	22	47	51	33	32	9	7	5	4	10	4	6	7	6
5	7	7	6	6	36	16	44	46	44	15	49	85	82	88	82	71	63	54	63	50	41	38	43	53
6	64	36	29	42	68	67	44	28	36	40	34	49	34	58	64	36	24	23	36	19	19	18	14	14
7	13	6	15	13	10	22	30	23	15	8	8	15	17	9	17	9	7	7	13	9	26	24	21	29
8	15	26	18	21	15	13	20	29	33	25	24	20	29	73	61	81	59	43	29	29	23	13	8	6
9	8	7	10	12	49	21	9	16	33	46	39	53	32	15	31	36	6	6	25	33	32	26	28	43
10	83	76	41	37	28	28	23	20	24	18	18	21	22	29	24	23	18	21	19	16	18	16	17	17
11	14	34	10	10	7	20	3	26	14	26	38	40	29	37	30	21	14	7	5	4	3	4	6	6
12	4	18	14	44	46	24	27	17	20	27	21	26	28	23	13	5	8	11	7	13	5	21	8	38
13	11	10	7	5	6	7	10	10	28	46	68	52	43	39	37	**P**	**P**	14	14	14	14	9	9	11
14	10	4	5	5	6	32	11	11	10	16	8	11	12	11	10	10	9	14	13	16	20	33	29	44
15	76	68	77	68	51	67	51	47	32	27	34	33	28	36	27	29	24	21	21	19	15	14	21	19
16	16	37	15	20	26	24	17	20	29	43	59	56	28	39	32	20	14	8	9	23	16	15	27	7
17	33	23	18	17	12	6	5	10	11	7	7	7	8	10	33	5	4	19	5	5	10	11	9	4
18	4	4	4	4	4	4	4	4	4	6	7	8	8	8	7	8	6	6	7	5	7	7	6	5
19	4	5	5	3	4	4	4	4	4	5	6	9	11	15	13	8	5	5	4	5	6	3	3	4
20	3	3	4	3	5	4	4	4	4	5	4	32	8	16	15	11	7	8	12	14	12	18	10	10
21	10	10	10	47	51	66	21	10	26	45	47	43	67	58	33	11	12	11	10	10	12	8	46	28
22	12	6	13	6	6	6	6	7	7	7	9	9	8	7	7	8	35	35	40	28	21	24	29	28
23	18	19	27	28	26	32	27	14	25	33	40	19	9	7	7	34	22	9	7	8	11	28	8	9
24	7	6	14	14	8	11	18	20	14	11	14	11	14	23	21	24	26	30	36	49	43	29	33	29
25	26	10	10	9	35	12	35	14	18	12	9	8	19	16	13	16	15	15	14	9	12	9	8	8
26	6	7	7	6	8	9	7	6	6	5	6	5	29	6	8	34	30	8	7	8	10	8	8	7
27	7	10	75	62	60	54	63	59	18	21	26	14	12	17	15	14	19	22	40	15	9	11	19	22
28	25	28	23	23	17	17	15	14	9	10	41	23	21	39	17	8	20	10	11	11	12	11	12	12
29	13	16	18	19	20	24	22	18	14	18	13	44	19	13	15	10	14	13	15	10	53	29	12	9
30	6	6	7	8	8	8	26	6	8	7	5	7	14	12	26	24	3	3	7	5	3	18	9	8
31	5	4	5	7	32	8	6	9	6	6	5	6	5	10	7	10	8	7	5	4	5	3	4	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

LAST CALIBRATION: June 17, 2010

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 742 HRS



JOB #: 2833-12-01-31-C

Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	January 10, 2012		Previous Calibration	December 14, 2011	
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	ST. LINA				
Start Time (MST)	15:27		End Time (MST)	18:51	
Reason:			Monthly Calibration		
Barometric Pressure	933	mBar	Station Temperature	21	Deg C
Cal Gas	48.3 ppm	Gas Cyl. #	LL103831	Cal Gas Expiry date	February 28, 2013
DAS Output Voltage	0 - 1	Volts	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	28.3	Deg C	534	ccm	28.1	Deg C
HVPS / Lamp Setting	540		2339		540		2338	
PMT / RxCell Temp	7.8	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	78.4		1.038		78.4		1.038	

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.			
4919	77.6	750	747	1.0042
	No Span Adj.			
4954	41.4	400	401	0.9982
4981	17.6	170	170	1.0000
4997	0	0	0	N/A
			Sum of Least Squares	1.0028
			New Correction Factor	1.0042

	Before Calibration	After Calibration
Auto Zero	1.6	0.4
Auto Span	278.0	267.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0015
Current Correction Factor Before Span Adjust:	1.0042
Percent Change:	-0.3%

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

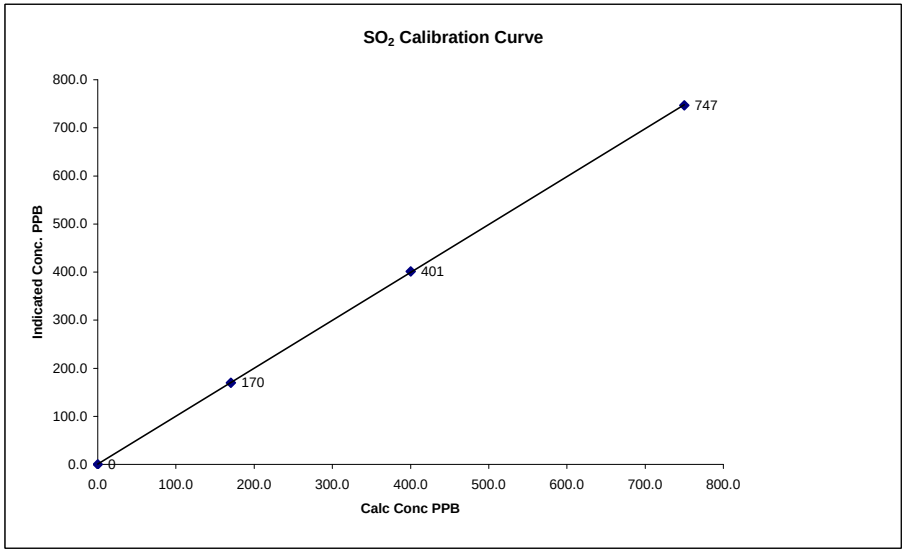
Calibration Performed by: Ting Xu

SO_2 Calibration Curve

Calibration Date	January 10, 2012		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	15:27	End Time (MST)	18:51

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
170	170	1.0004
400	401	0.9982
750	747	1.0042

Correlation Coefficient	(≥ 0.995)	0.999988
Slope	(0.85 to 1.15)	0.996033
Intercept	(± 3% F.S.)	0.688936



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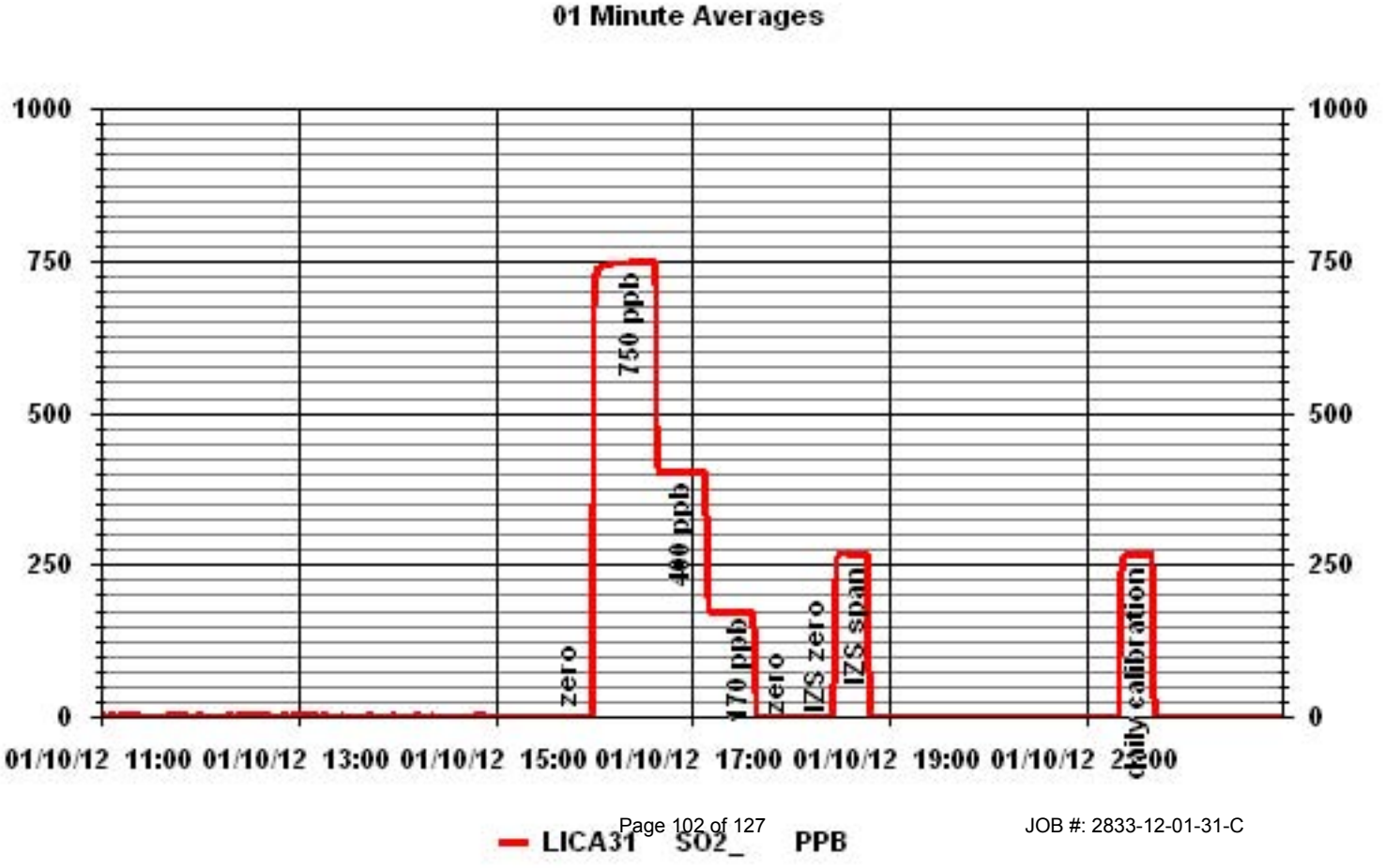


JOB #: 2833-12-01-31-C

Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	January 6, 2012		Previous Calibration	December 13, 2011	
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	ST.LINA				
Start Time (MST)	10:07		End Time (MST)	13:40	
Reason:			Monthly Calibration		
Barometric Pressure	924	mmHg	Station Temperature	20	Deg C
Cal Gas	10.2 ppm	Gas Cyl. #	blm000804	Cal Gas Expiry date	February 2, 2012
DAS Output Voltage	0 - 1	Volts	Chart Rec. Output	NA	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 :	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	537	ccm	31.3	Deg C	538	ccm	31.3	Deg C
HVPS / Lamp Setting	518		2447		518		2448	
PMT / RxCell Temp	8.4	Deg C	50	Deg C	8.4	Deg C	50	Deg C
Converter / IZS Temp	315.1	Deg C	45	Deg C	315.2	Deg C	45.0	Deg C
Offset / Slope	73.4		1.037		74.2		1.043	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	1	NA
4996	0	0	0	1.0000
4959	39.2	80	80	1.0000
	No Span Adj.			
4980	19.6	40	41	0.9753
4986	11.2	23	24	0.9525
4996	0	0	0	NA
			Sum of Least Squares	0.9922
			New Correction Factor	

	Before Calibration	After Calibration
Auto Zero	1.1	0.6
Auto Span	40.9	40.0
Sample Lines Connected		YES

Percent Change

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

Notes: **NA : Not Applicable**

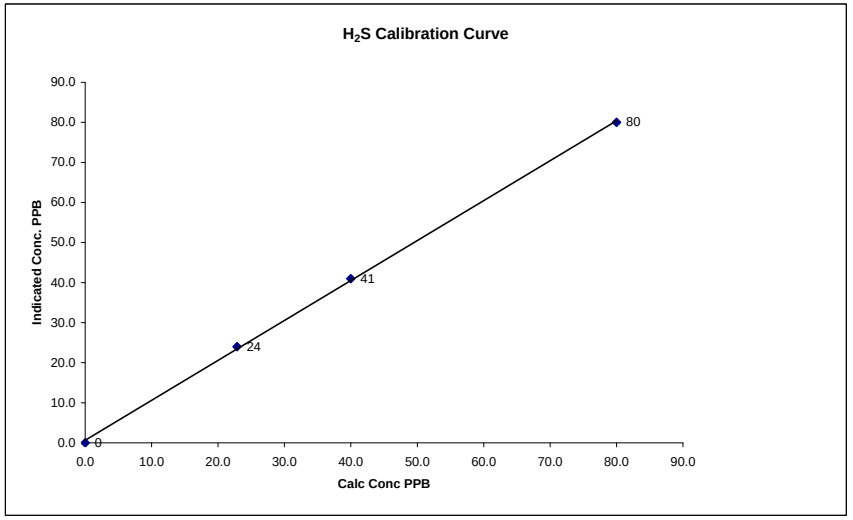
Calibration Performed by: Ting Xu

H_2S Calibration Curve

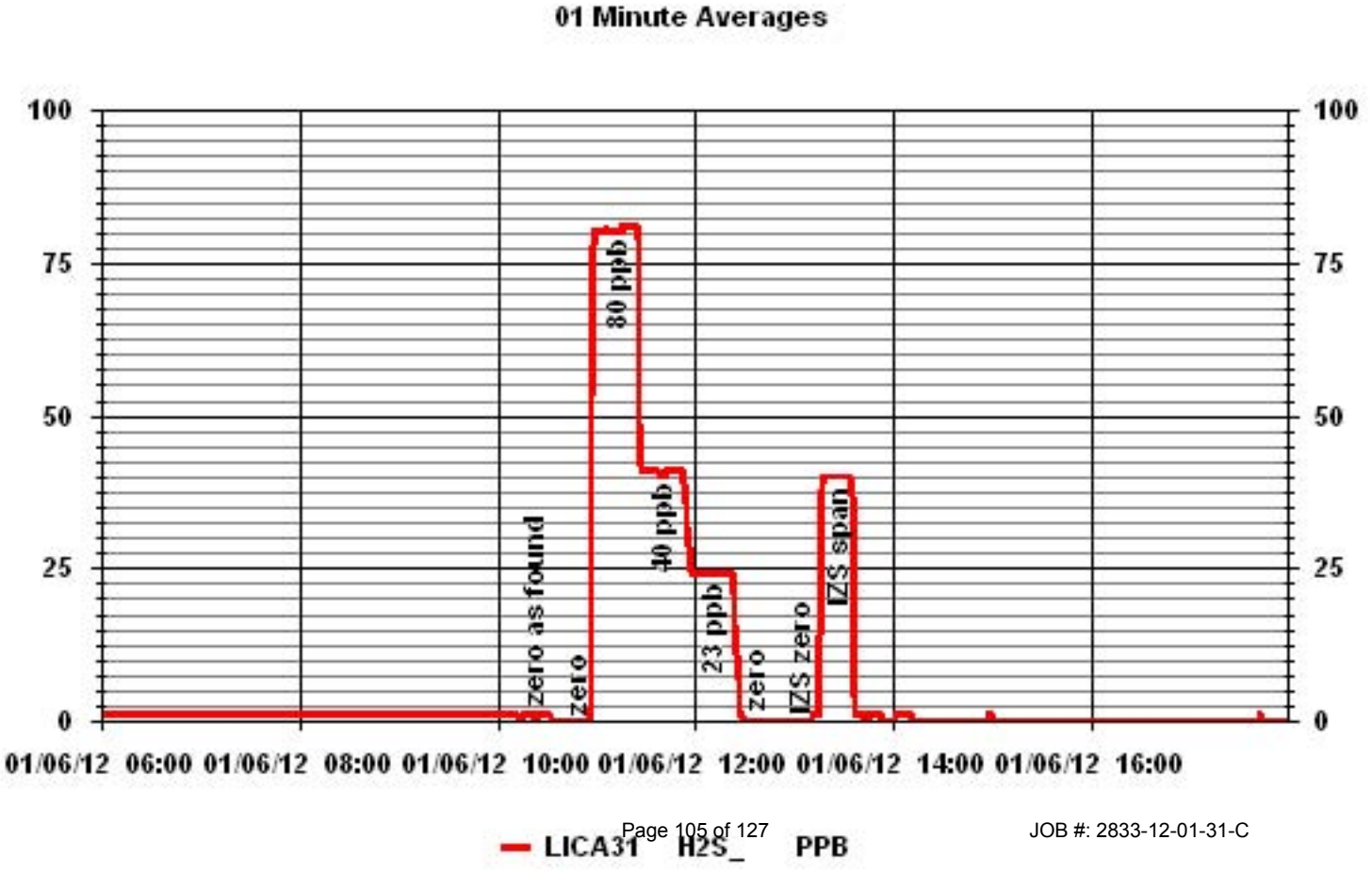
Calibration Date	January 6, 2012				
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	ST.LINA				
Start Time (MST)	10:07	End Time (MST)	13:40		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	
23	24	0.9525
40	41	0.9753
80	80	1.0000

Correlation Coefficient	(≥ 0.995)	0.999667
Slope	(0.85 to 1.15)	0.997027
Intercept	(± 3% F.S.)	0.644961



Notes:



JOB #: 2833-12-01-31-C

Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	January 6, 2012		Previous Calibration	December 14, 2011	
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location:	ST. LINA				
Start Time (MST)	13:03		End Time (MST)	17:23	
Reason:	Monthly Calibration				
Barometric Pressure:	924	mBar	Station Temperature:	20	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	TECO 51C	S/N :	77021-384	Method	Flame Ionization

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	-1.4	NA
3000	0.0	0.0	0.0	1.0000
3000	70.0	41.4	39.9	1.0378
3000	70.0	41.4	41.7	0.9930
3000	35.0	20.9	20.9	1.0000
3000	20.0	12.0	12.2	0.9858
3000	0.0	0.0	0.0	NA
			New Correction Factor:	0.9930

Percent Change

Previous Calibration Correction Factor:	0.9930
Current Correction Factor Before Span Adjust:	1.0378
Percent Change:	-4.3%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.3	-0.1
Auto Span	32.5	32.8
Sample Lines Connected		YES

Cylinder Pressures

Span 1600 psi Hydrogen 1900 psi Zero Air 34 psi

Notes: **NA : Not Applicable**

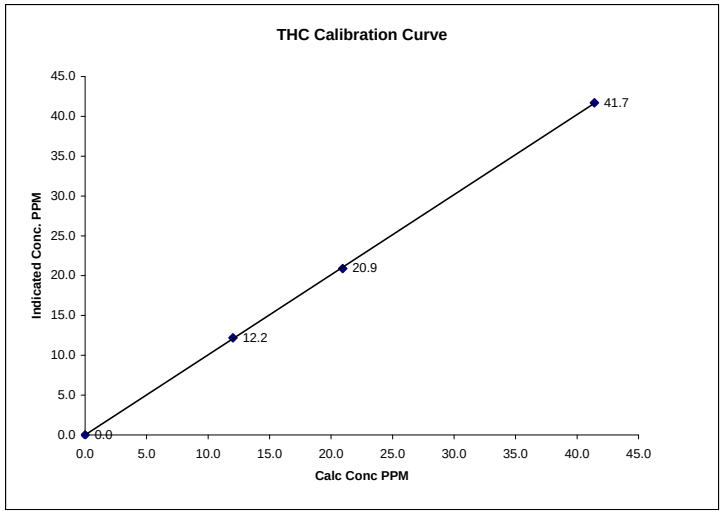
Calibration Performed by: Ting Xu

THC Calibration Curve

Calibration Date	January 6, 2012				
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	ST. LINA				
Start Time (MST)	13:03	End Time	(MST)	17:23	

Calculated Conc. ppm	Indicated Response ppm	Correction Factor
0.0	0.0	NA
12.0	12.2	0.9858
20.9	20.9	1.0020
41.4	41.7	0.9930

Correlation Coefficient	(≥ 0.995)	0.999956
Slope	(0.85 to 1.15)	1.005948
Intercept	(± 3% F.S.)	-0.00460



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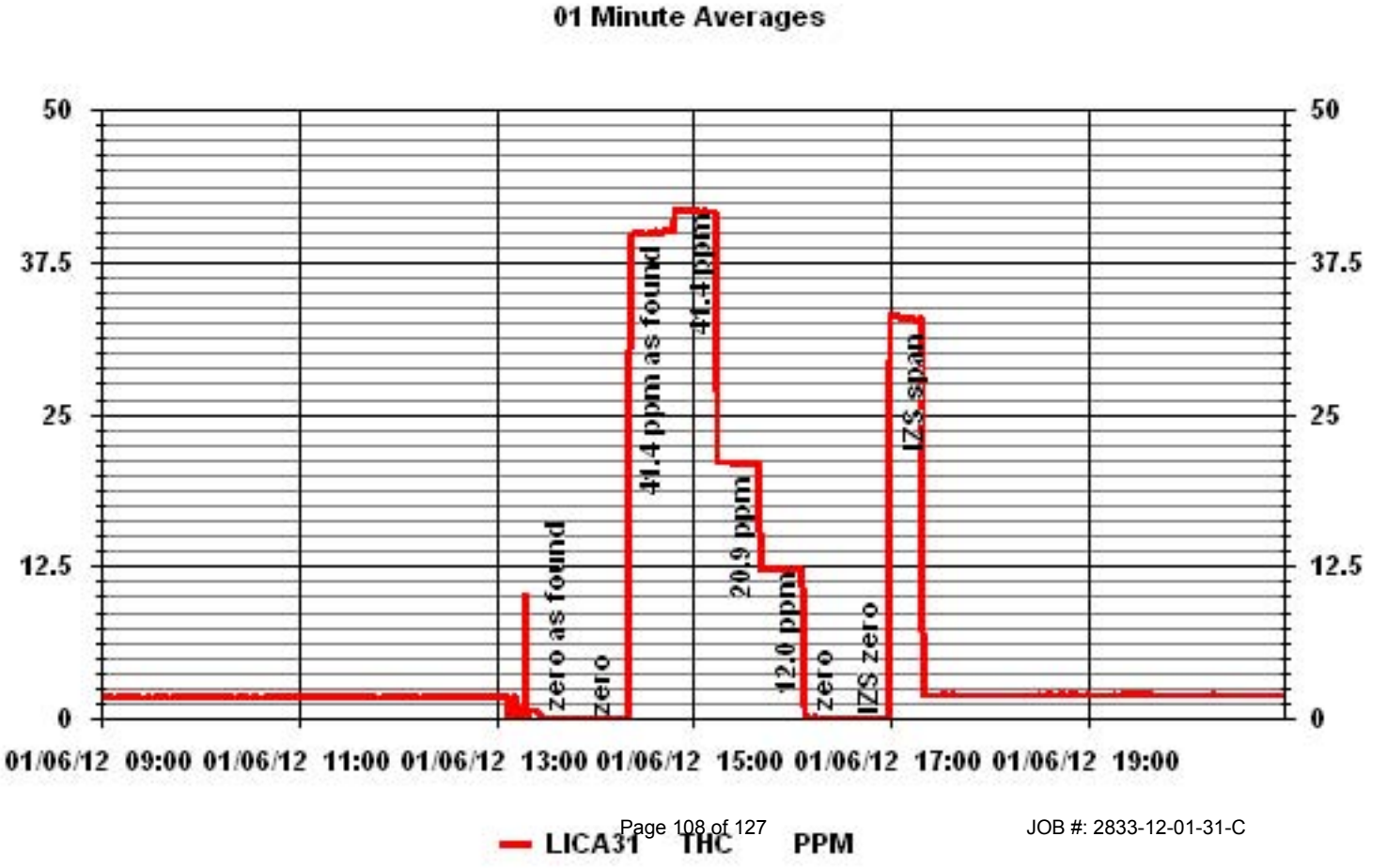


JOB #: 2833-12-01-31-C

THC Calibration Report

Station Information

Calibration Date:	January 17, 2012		Previous Calibration	January 6, 2012	
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location:	ST. LINA				
Start Time (MST)	10:50		End Time (MST)	12:15	
Reason:	As Found				
Barometric Pressure:	705.13	mmHg	Station Temperature:	21	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	TECO 51C	S/N :	77021-384	Method	Flame Ionization

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	-0.4	NA
	No Zero Adj.			
3000	70.0	41.4	41.0	1.0099
			New Correction Factor:	1.0099

Percent Change

Previous Calibration Correction Factor:	0.9930
Current Correction Factor Before Span Adjust:	1.0099
Percent Change:	-1.7%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.1	-
Auto Span	32.8	-
Sample Lines Connected		YES

Cylinder Pressures

Span 1500 psi Hydrogen 1800 psi Zero Air 34 psi

Notes: **NA : Not Applicable**

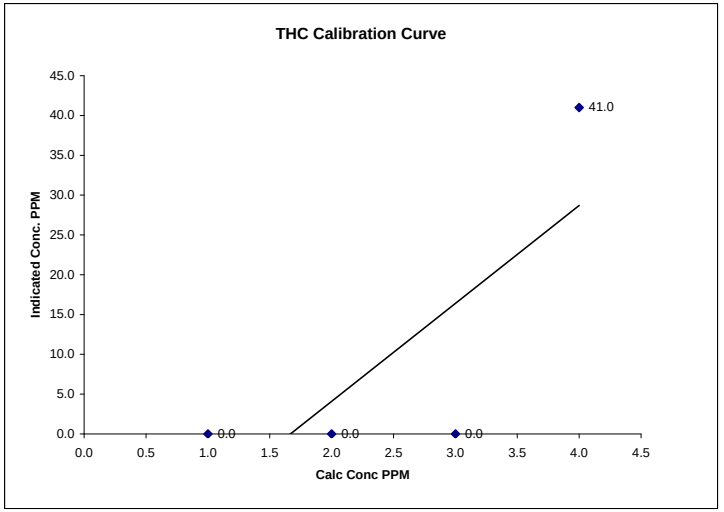
Following the as found points, the Sample pump was replaced.

Calibration Performed by: Limin Li / Theo Mclaren

THC Calibration Curve

Calibration Date	January 17, 2012		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	10:50	End Time (MST)	12:15

Calculated Conc. ppm	Indicated Response ppm	Correction Factor		
	0.0	NA	Correlation Coefficient (≥ 0.995)	#DIV/0!
	0.0	#VALUE!	Slope (0.85 to 1.15)	#DIV/0!
	0.0	#VALUE!	Intercept (± 3% F.S.)	#DIV/0!
41.4	41.0	1.0099		



Notes:

THC Calibration Report

Station Information

Calibration Date:	January 17, 2012		Previous Calibration	January 6, 2012	
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location:	ST. LINA				
Start Time (MST)	14:10		End Time (MST)	17:00	
Reason:	Monthly Calibration				
Barometric Pressure:	705.13	mmHg	Station Temperature:	23	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	TECO 51C	S/N :	77021-384	Method	Flame Ionization

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	10	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.			
3000	70.0	41.4	41.7	0.9930
	No Span Adj.			
3000	35.0	20.9	20.9	1.0000
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:	0.9930
Current Correction Factor Before Span Adjust:	0.9930
Percent Change:	0.0%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.1	-0.1
Auto Span	32.8	32.1
Sample Lines Connected		YES

Cylinder Pressures

Span 1500 psi Hydrogen 1800 psi Zero Air 34 psi

Notes: **NA : Not Applicable**

Replaced the Sample pump following a post-repair calibration

Changed H2 pressure from 8 psi to 10psi.

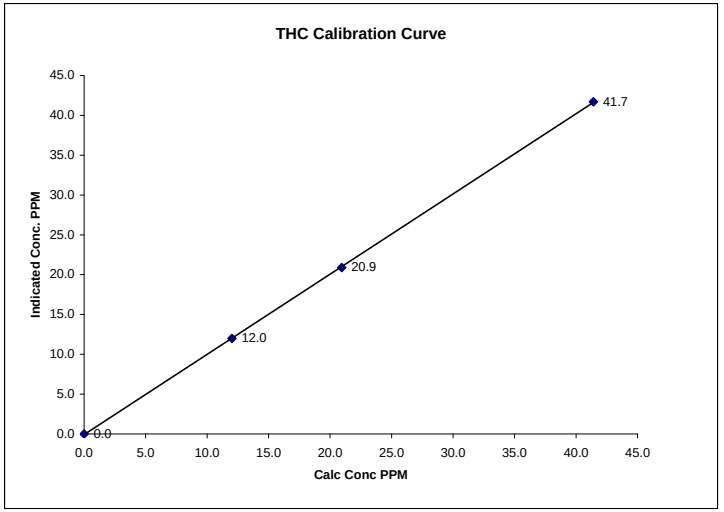
Calibration Performed by: Limin Li / Theo Mclaren

THC Calibration Curve

Calibration Date	January 17, 2012			
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION			
Plant / Location	ST. LINA			
Start Time (MST)	14:10	End Time (MST)	17:00	

Calculated Conc. ppm	Indicated Response ppm	Correction Factor
0.0	0.0	NA
12.0	12.0	1.0022
20.9	20.9	1.0020
41.4	41.7	0.9930

Correlation Coefficient	(≥ 0.995)	0.999972
Slope	(0.85 to 1.15)	1.007384
Intercept	(± 3% F.S.)	-0.08130



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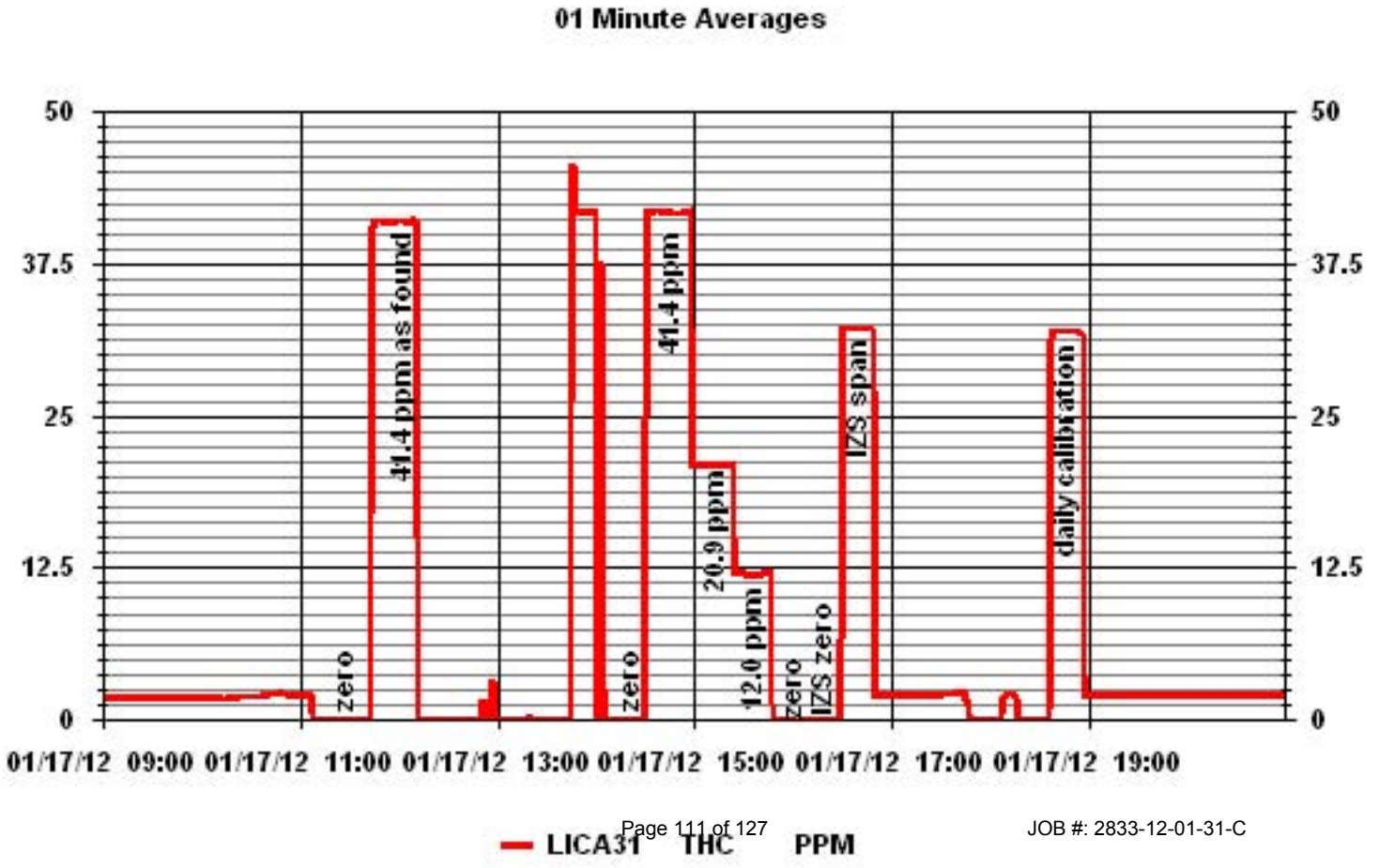


JOB #: 2833-12-01-31-C

Nitrogen Dioxide

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	January 6, 2012		Previous Calibration	December 13, 2011	
Company	LICA		Plant/Location	St. Lina	
Start Time (MST)	10:07		End Time (MST)	11:15	
Reason:	As Found				
Barometric Pressure	924 mmHg	Station Temperature	20 Deg C	MFCF	1
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 :	592	Method:	Chemiluminescent
Calibrator Make / Model:	Environics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Environics 6100	S/N :	4760		

Analyzer Settings

	Before Calibration					After Calibration			
Concentration Range				0 - 1000			ppb		
Sample Flow/Conv. Temp	477	ccm	316	Deg C		477	ccm	316	Deg C
Ozone Flow / Vacuum	72	ccm	4.0	"Hg-A		72	ccm	4	"Hg-A
HVPS / A ZERO	662	Volts	18.9	MV		662	Volts	18.9	MV
Rx/ Temp / PMT Temp	50.0	Deg C	6.8	Deg C		50.0	Deg C	6.8	Deg C
Box Temp / IZS Temp	28.0	Deg C	45.0	Deg C		28	Deg C	45	Deg C
Offset	0.9	NOx	0.5	NO		0.9	NOx	0.5	NO
Slope	1.282	NOx	1.264	NO		1.282	NOx	1.264	NO
NO_2 COEF / Conv Efficency	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	1	NA	NA
	No Zero Adj.									
4920	75.7	NA	753	749	NA	715	710	5	1.0533	1.0543
	No Span Adj.									

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO_2 Correction Factor	NO2 Conv Efficency
			NOx	NO	NO2	NOx	NO	NO2		

Linearity OK? Yes No — Sum of Least Squares Correction Factors: NOx= #VALUE! NO= #VALUE! NO2= NOx= 1.0533 NO= 1.0543 NO2= Average Converter Efficiency=

	Before Calibration					After Calibration			
Auto Zero	0.8	NOx	1.1	NO2		-	NOx	-	NO2
Auto Span	804	NOx	768	NO2		-	NOx	-	NO2
Sample Lines Connected						YES			
Percent Change from Previous Calibration			NOx	-5.2%	NO	-5.2%	NO2	#REF!	

Notes

NA : Not Applicable

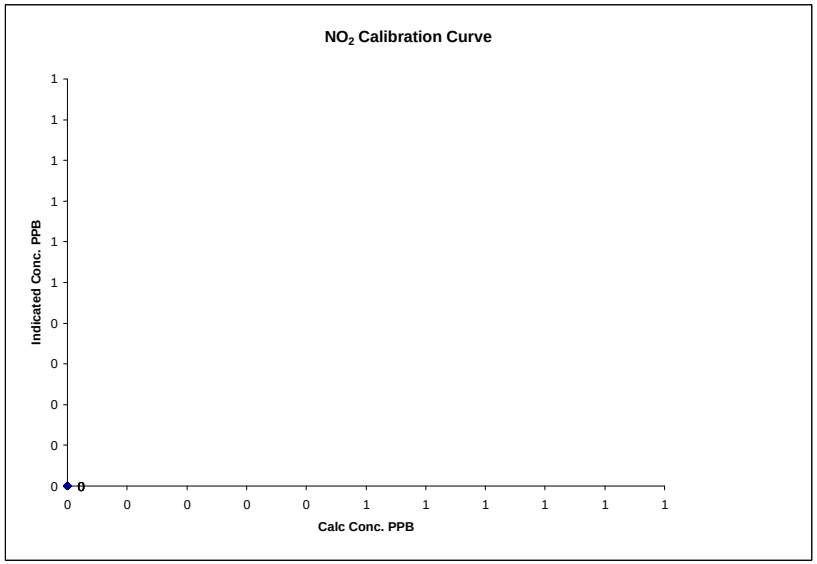
Following the as found points, the exhausting pump was rebuilt.

Calibration Performed by: Ting Xu

NO_2 Calibration Curve

Calibration Date	January 6, 2012		
Company	LICA		
Plant / Location	St. Lina		
Start Time (MST)	10:07	End Time (MST)	11:15

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



Notes:

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	January 6, 2012		Previous Calibration	December 13, 2011	
Company	LICA		Plant/Location	St. Lina	
Start Time (MST)	11:40		End Time (MST)	17:40	
Reason:	As Found				
Barometric Pressure	924 mmHg	Station Temperature	20 Deg C	MFCF	1
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 :	592	Method:	Chemiluminescent
Calibrator Make / Model:	Environics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Environics 6100	S/N :	4760		

Analyzer Settings

	Before Calibration					After Calibration			
Concentration Range					0 - 1000			ppb	
Sample Flow/Conv. Temp	474	ccm	316.5	Deg C		475	ccm	316	Deg C
Ozone Flow / Vacuum	73	ccm	5.7	"Hg-A		73	ccm	5	"Hg-A
HVPS / A ZERO	662	Volts	18.9	MV		662	Volts	18.5	MV
Rx/ Temp / PMT Temp	50.0	Deg C	6.8	Deg C		50.0	Deg C	6.9	Deg C
Box Temp / IZS Temp	27.3	Deg C	45.0	Deg C		28.1	Deg C	45.3	Deg C
Offset	0.9	NOx	0.5	NO		0.9	NOx	0.5	NO
Slope	1.111	NOx	1.096	NO		1.235	NOx	1.222	NO
NO_2 COEF / Conv Efficency	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	1	0	NA	NA
	No Zero Adj.									
4920	75.7	NA	753	749	NA	755	748	5	0.9975	1.0021
	No Span Adj.									
4960	35.3	NA	351	349	NA	351	349	2	1.0000	1.0000
4977	17.2	NA	171	170	NA	171	170	2	1.0000	1.0000
4994	0.0	NA	0	0	NA	0	1	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	NO2 Conv Efficency
			NOx	NO	NO2	NOx	NO	NO2		
4920	75.7	NA	753	749	NA	756	750	6	NA	NA
4920	75.7	600	753	NA	534	756	222	534	1.0000	100.00%
	No Span Adj.									
4920	75.7	300	753	NA	271	756	485	271	1.0000	100.00%
4920	75.7	120	753	NA	112	756	644	112	1.0000	100.00%

Linearity			Sum of Least Squares	NOx=	0.998	NO=	1.001	NO2= 1.000
OK?	Yes	No	Correction Factors:	NOx=	0.9975	NO=	1.0021	NO2= 1.0000
				Average Converter Efficiency=				

	Before Calibration					After Calibration			
Auto Zero	0.8	NOx	1.1	NO2		-0.1	NOx	0.2	NO2
Auto Span	804	NOx	768	NO2		827	NOx	793	NO2
					Sample Lines Connected	YES			
Percent Change from Previous Calibration				NOx	0.1%	NO	-0.2%	NO2	0.2%

Notes

NA : Not Applicable

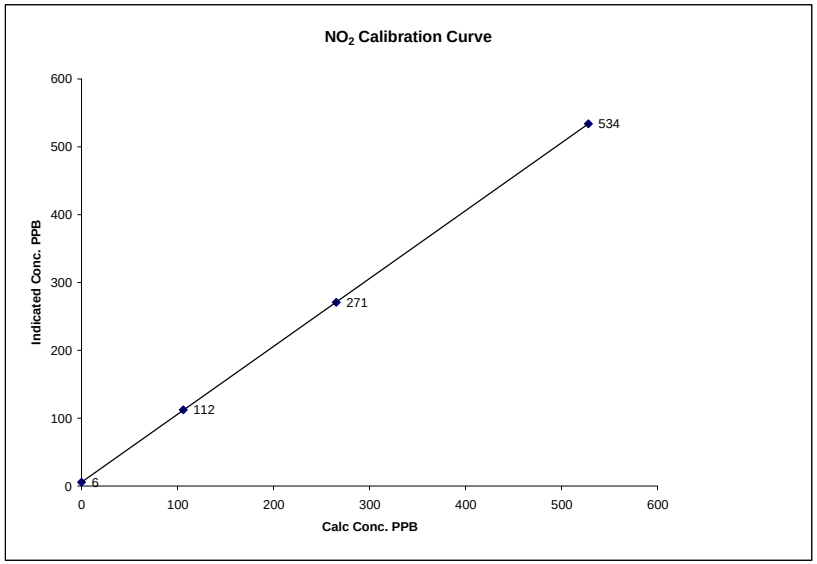
Additional GPT was done for O3 claibration. O3 set point 450, NO=351, NO2=404, NOx=755

Calibration Performed by: Ting Xu

NO_2 Calibration Curve

Calibration Date	January 6, 2012		
Company	LICA		
Plant / Location	St. Lina		
Start Time (MST)	11:40	End Time (MST)	17:40

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	1.000000
			Slope (0.85 to 1.15)	1.000000
0	6	N/A	Intercept (± 3% F.S.)	6.00000
106	112	0.9464		
265	271	0.9779		
528	534	0.9888		

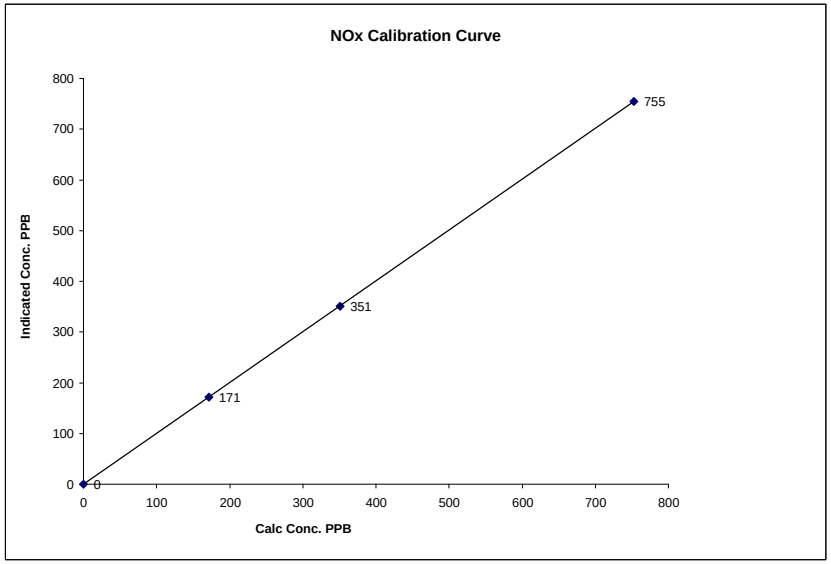


Notes:

NOx Calibration Curve

Calibration Date	January 6, 2012		
Company	LICA		
Plant / Location	St. Lina		
Start Time (MST)	11:40	End Time (MST)	17:40

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999997
			Slope (0.85 to 1.15)	1.002684
0	0	N/A	Intercept (± 3% F.S.)	-0.47690
171	171	1.0010		
351	351	1.0006		
753	755	0.9975		

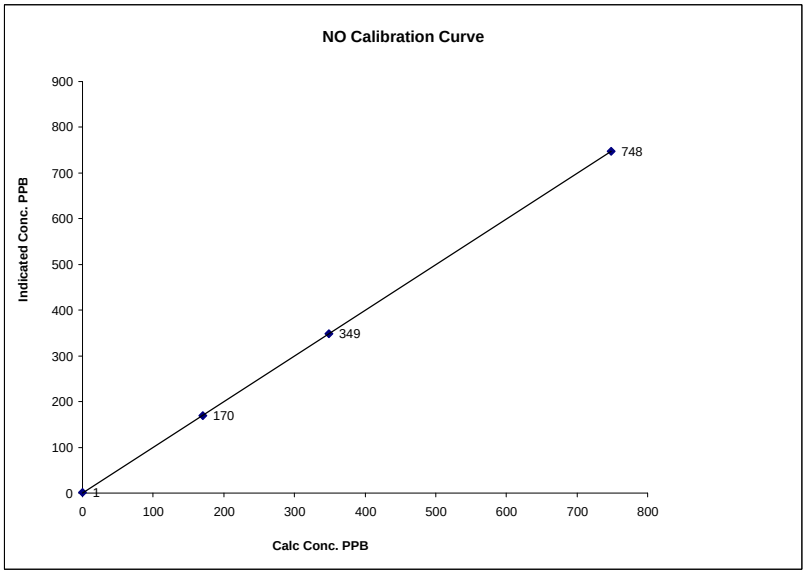


Notes:

NO Calibration Curve

Calibration Date	January 6, 2012		
Company	LICA		
Plant / Location	St. Lina		
Start Time (MST)	11:40	End Time (MST)	17:40

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999999
			Slope (0.85 to 1.15)	0.999190
0	1	N/A	Intercept (± 3% F.S.)	0.3165
170	170	1.0008		
349	349	1.0003		
749	748	1.0007		



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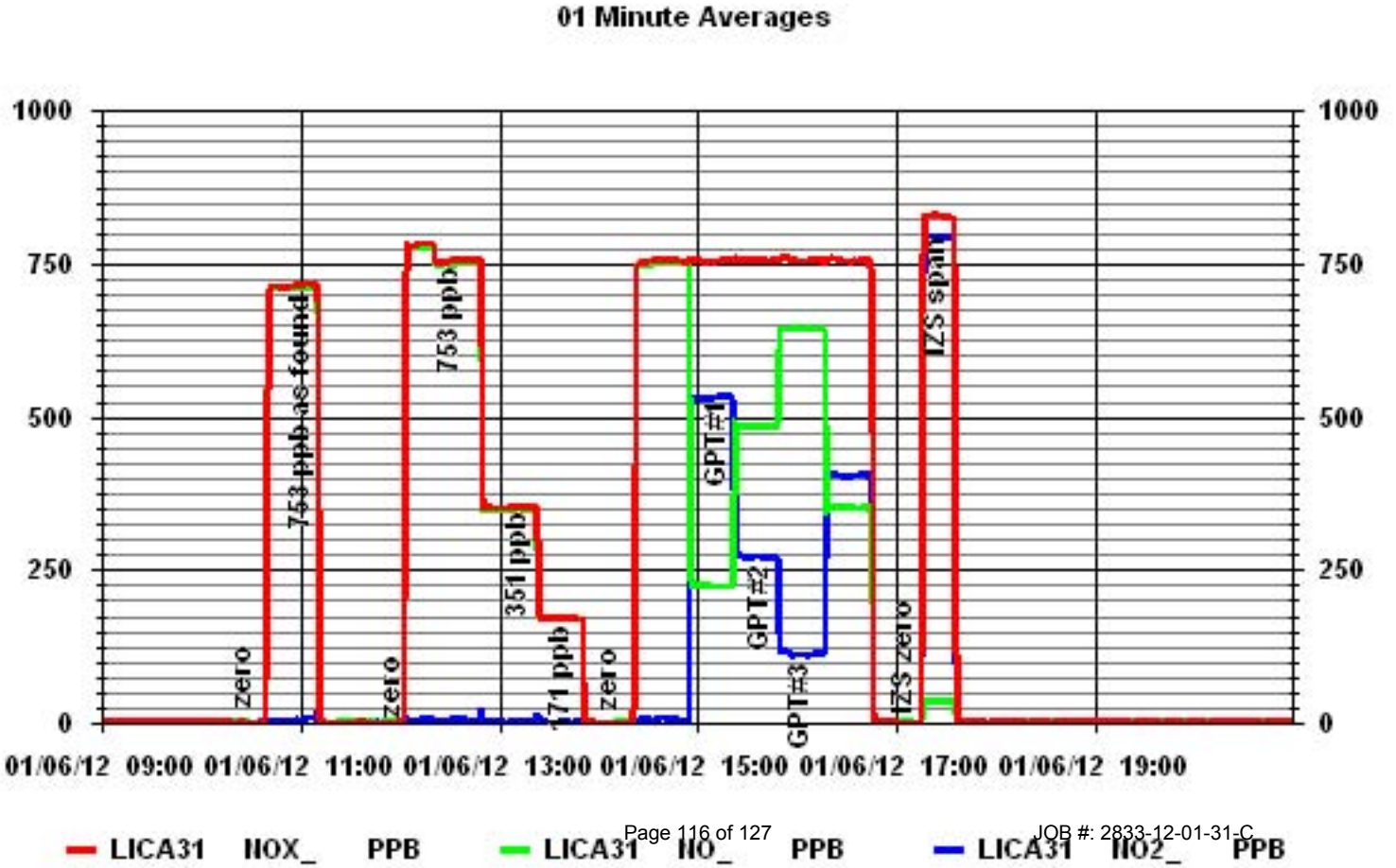

01 Minute Averages
1000
750
500
250
0
zero
753 ppb as found
zero
753 ppb
351 ppb
171 ppb
zero
GPT#1
GPT#2
GPT#3
IZS zero
IZS span
01/06/12 09:00
01/06/12 11:00
01/06/12 13:00
01/06/12 15:00
01/06/12 17:00
01/06/12 19:00
LICA31 NOX_ PPB
LICA31 NO_ PPB
LICA31 NO2_ PPB

Ozone

O_3 Calibration Report

Station Information

Calibration Date	January 10, 2012		Previous Calibration	December 14, 2011	
Company	Lakeland Industry & Community Association				
Plant / Location	St. Lina				
Start Time (MST)	15:27		End Time (MST)	18:51	
Reason:	Monthly Calibration				
Barometric Pressure	933	mBar	Station Temperature	21	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:	Environics 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO 717		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range	0 - 500 ppb							
CellA Flow / Cell B Flow	NA	ccm	759	ccm	NA	ccm	765	ccm
Pressure	702.8	mmHg			711	mmHg		
Bench Temp	55.3	Deg C			55.2	Deg C		
O3 Lamp / Box Temp	80	Deg C	29.5	Deg C	80	Deg C	28.4	Deg C
Offset / Slope	0.1		0.986		0.1		0.986	

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	NA
	No Zero Adj			
4994	450	399	399	1.0000
	No Span Adj.			
4994	300	265	270	0.9815
4994	120	106	110	0.9636
4994	0	0	0	N/A
			Sum of Least Squares	N/A
			New Correction Factor	0.0000

	Before Calibration	After Calibration
Auto Zero	1.3	1.1
Auto Span	362	355
Sample Lines Connected		YES
Percent Change from Previous Calibration		-0.2%

Note: Cell A flow sensor was damaged, will replace it when the part is available.

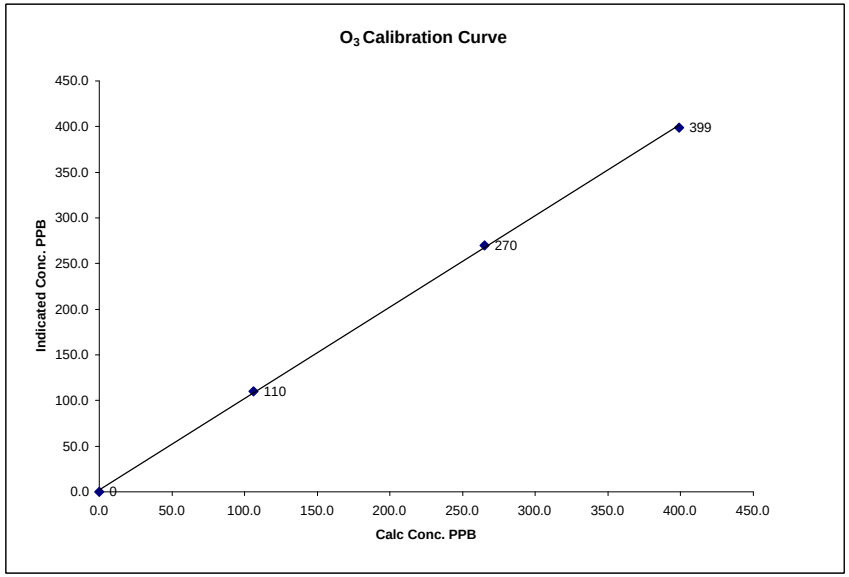
Calibration Performed by: Ting Xu

O_3 Calibration Curve

Calibration Date	January 10, 2012			
Company	Lakeland Industry & Community Association			
Plant / Location	St. Lina			
Start Time (MST)	15:27	End Time (MST)	18:51	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
106	110	0.9636
265	270	0.9815
399	399	1.0000

Correlation Coefficient	(≥ 0.995)	0.999776
Slope	(0.85 to 1.15)	1.000178
Intercept	(± 3% F.S.)	2.215639



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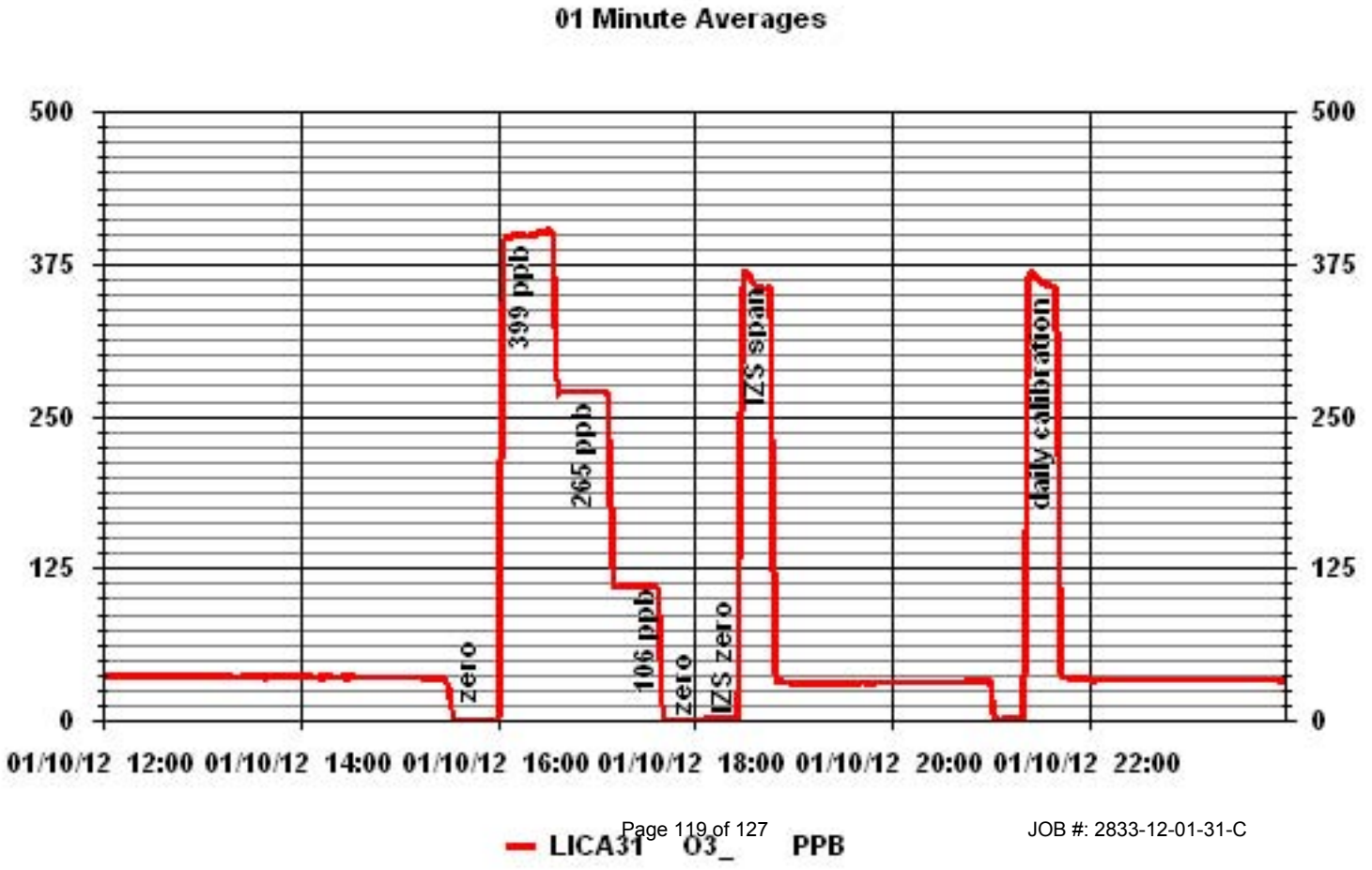


JOB #: 2833-12-01-31-C

O_3 Calibration Report

Station Information

Calibration Date	January 17, 2012		Previous Calibration	January 10, 2012	
Company	Lakeland Industry & Community Association				
Plant / Location	St. Lina				
Start Time (MST)	10:50		End Time (MST)	12:30	
Reason:	As Found				
Barometric Pressure	705.13	mmHg	Station Temperature	21	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:	Environics 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO 717		

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 500 ppb			
CellA Flow / Cell B Flow	1446 ccm	763 ccm	1446 ccm	763 ccm
Pressure	705.6 mmHg		705.6 mmHg	
Bench Temp	55.2 Deg C		55.2 Deg C	
O3 Lamp / Box Temp	80 Deg C	29.6 Deg C	80 Deg C	29.6 Deg C
Offset / Slope	0.1	0.986	0.1	0.986

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	NA
	No Zero Adj			
4994	450	396	410	0.9659
				#DIV/0!
				#DIV/0!
				N/A
			Sum of Least Squares	N/A
			New Correction Factor	0.0000

	Before Calibration	After Calibration
Auto Zero	1.1	-
Auto Span	355	-
Sample Lines Connected		YES
Percent Change from Previous Calibration		3.5%

Note: Following the as found poitns, the Flow A/B sensors were replaced.

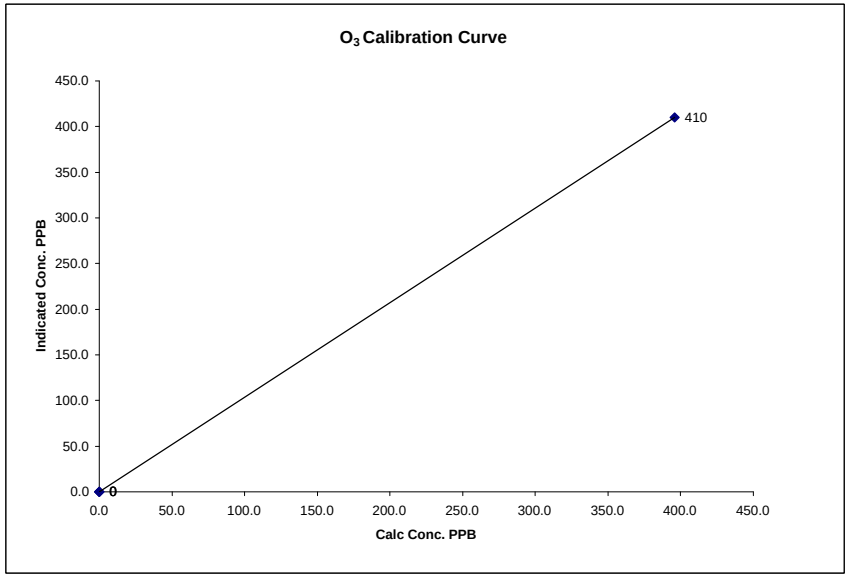
Calibration Performed by: Limin Li / theo Mclaren

O_3 Calibration Curve

Calibration Date	January 17, 2012		
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	10:50	End Time (MST)	12:30

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
0	0	#DIV/0!
0	0	#DIV/0!
396	410	0.9659

Correlation Coefficient	(≥ 0.995)	1.000000
Slope	(0.85 to 1.15)	1.035354
Intercept	(± 3% F.S.)	0.000000



Notes:

O_3 Calibration Report

Station Information

Calibration Date	January 17, 2012	Previous Calibration	January 10, 2012	
Company	**Lakeland Industry & Community Association**			
Plant / Location	**St. Lina**			
Start Time (MST)	14:10	End Time (MST)	17:30	
Reason:	Post-Repair Calibration			
Barometric Pressure	705.13 mmHg	Station Temperature	23	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:	Environics 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO 717		

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 500 ppb			
CellA Flow / Cell B Flow	NA ccm	759 ccm	842 ccm	872 ccm
Pressure	702.8 mmHg		710.3 mmHg	
Bench Temp	55.3 Deg C		56.8 Deg C	
O3 Lamp / Box Temp	80 Deg C	29.5 Deg C	80 Deg C	31.9 Deg C
Offset / Slope	0.1	0.986	0.1	0.986

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	NA
	No Zero Adj			
4994	460	405	409	0.9902
	No Span Adj.			
4994	300	265	268	0.9888
4994	120	106	108	0.9815
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	0.0
Auto Span	355	321
Sample Lines Connected		YES
Percent Change from Previous Calibration		1.0%

Note: Replaced the Flow A/B sensors

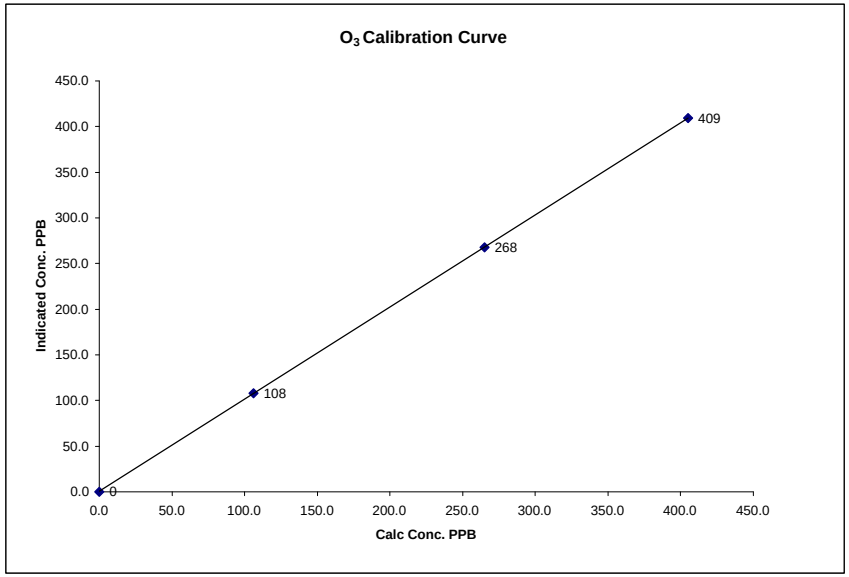
Calibration Performed by: Limin Li / theo Mclaren

O_3 Calibration Curve

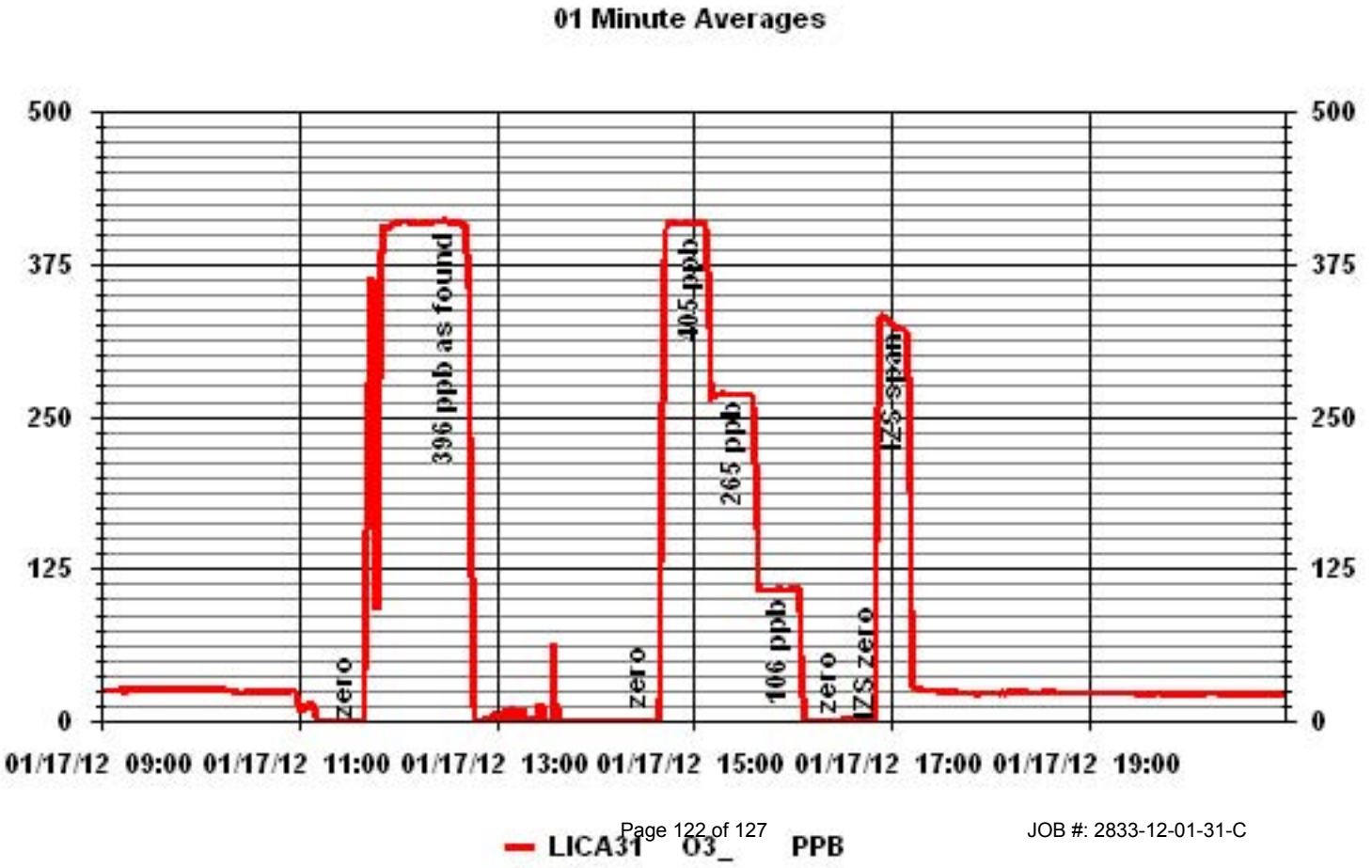
Calibration Date	January 17, 2012		
Company	**Lakeland Industry & Community Association**		
Plant / Location	**St. Lina**		
Start Time (MST)	14:10	End Time (MST)	17:30

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
106	108	0.9815
265	268	0.9888
405	409	0.9902

Correlation Coefficient	(≥ 0.995)	0.999994
Slope	(0.85 to 1.15)	1.009279
Intercept	(± 3% F.S.)	0.449806



Notes:



JOB #: 2833-12-01-31-C

Particulate Matter 2.5

TEOMÒ 1405F Audit

Station		Audit Transfer Standard	
Date:	January 6, 2012	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

Sampler		Set-up and current Sampler readings	
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 (%)	26.3%
Firmware Ver.	1.52	K_o Factor	13125.0
Parameter	PM 2.5 (with FDMS)	Temp (^oC)	2.0
		Press (ATM)	0.919

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 **<0.10*u* g**	0.012	Warnings	None
Pump Vacuum **<0.4atm**	0.36	Pump Gauge (inHg)	19

Temperature/Pressure

Measured Temp **(± 2 ^oC)**	2.3	**D ^oC**	-0.3
Measured Press **(± 0.01atm)**	0.913	**DATM**	0.006

Flow Audit

Indicated Main Flow (l/min)	3.00	Main Flow Drift **(±10.0%)**	0.22%
Measured Main Flow (l/min)	3.01	Flow Adjusted to Measured?	YES
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift **(±10.0%)**	2.46%
Measured Bypass Flow (l/min)	13.75	Flow Adjusted to Measured?	YES

Leak Check

Main **(< 0.15 l/min)**	NA
Aux **(< 0.6 l/min)**	NA

Instrument Setup

Flow Control = Active

Report Conditions = Actual

K_o Factor

Measured	NA
K_o Difference **(± 2.5%)**	NA

Start Time: 14:10 **Finish Time:** 15:48

Sample Inlet Cleaned: Yes **New Filters Installed:** Yes

New Filter Loading %: 20.2%

Comments:

JOB #: 2833-12-01-31-C

Auditor/s: Ting Xu

TEOMÒ 1405F Audit

Station		Audit Transfer Standard	
Date:	January 13, 2012	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

Sampler		Set-up and current Sampler readings	
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 (%)	31.0%
Firmware Ver.	1.52	K_o Factor	13125.0
Parameter	PM 2.5 (with FDMS)	Temp (^oC)	-1.3
		Press (ATM)	0.915

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 **<0.10*u* g**	0.005	Warnings	None
Pump Vacuum **<0.4atm**	0.36	Pump Gauge (inHg)	19

Temperature/Pressure

Measured Temp **(± 2 ^oC)**	-1.5	**D ^oC**	0.2
Measured Press **(± 0.01atm)**	0.908	**DATM**	0.007

Flow Audit

Indicated Main Flow (l/min)	3.00	Main Flow Drift **(±10.0%)**	0.38%
Measured Main Flow (l/min)	3.02	Flow Adjusted to Measured?	YES
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift **(±10.0%)**	3.47%
Measured Bypass Flow (l/min)	13.85	Flow Adjusted to Measured?	YES

Leak Check

Main **(< 0.15 l/min)**	Base=-0.02 Ref=-0.01
Aux **(< 0.6 l/min)**	Base=0.00 Ref=0.00

Instrument Setup

Flow Control = Active
Report Conditions = Actual

K_o Factor

Measured	NA
K_o Difference **(± 2.5%)**	NA

Start Time: 10:45 **Finish Time:** 11:35

Sample Inlet Cleaned: Yes **New Filters Installed:** No

New Filter Loading %: 31.0%

Comments: Performed another Teom audit due to many negative readings.

JOB #: 2833-12-01-31-C

Auditor/s: Ting Xu

TEOMÒ 1405F Audit

Station		Audit Transfer Standard	
Date:	January 17, 2012	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

Sampler		Set-up and current Sampler readings	
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 (%)	39.7%
Firmware Ver.	1.52	K_o Factor	13125.0
Parameter	PM 2.5 (with FDMS)	Temp (^oC)	-31.2
		Press (ATM)	0.928

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 **<0.10*u* g**	0.010	Warnings	None
Pump Vacuum **<0.4atm**	0.37	Pump Gauge (inHg)	19

Temperature/Pressure

Measured Temp **(± 2 ^oC)**	-30.7	**D ^oC**	-0.5
Measured Press **(± 0.01atm)**	0.925	**DATM**	0.003

Flow Audit

Indicated Main Flow (l/min)	3.00	Main Flow Drift **(±10.0%)**	1.33%
Measured Main Flow (l/min)	3.04	Flow Adjusted to Measured?	YES
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift **(±10.0%)**	3.09%
Measured Bypass Flow (l/min)	14.09	Flow Adjusted to Measured?	YES

Leak Check

Main **(< 0.15 l/min)**	NA
Aux **(< 0.6 l/min)**	NA

Instrument Setup

Flow Control = Active

Report Conditions = Actual

K_o Factor

Measured	NA
K_o Difference **(± 2.5%)**	NA

Start Time: 16:50 **Finish Time:** 18:00

Sample Inlet Cleaned: Yes **New Filters Installed:** No

New Filter Loading %: 31.0%

Comments: Replaced the V-seal O-ring following a Teom audit.

JOB #: 2833-12-01-31-C

Auditor/s: Limin Li / Theo Mclaren

TEOMÒ 1405F Audit

Station		Audit Transfer Standard	
Date:	January 19, 2012	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

Sampler		Set-up and current Sampler readings	
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	1405A207691003	Filter Load (%)	21.4%
Firmware Ver.	1.51	K_o Factor	15634.0
Parameter	PM 2.5 (with FDMS)	Temp (^oC)	-17.0
		Press (ATM)	0.919

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 **<0.10*u* g**	0.002	Warnings	None
Pump Vacuum **<0.4atm**	0.29	Pump Gauge (inHg)	19

Temperature/Pressure

Measured Temp **(± 2 ^oC)**	-16.9	**D ^oC**	-0.1
Measured Press **(± 0.01atm)**	0.918	**DATM**	0.001

Flow Audit

Indicated Main Flow (l/min)	3.00	Main Flow Drift **(±10.0%)**	1.80%
Measured Main Flow (l/min)	3.05	Flow Adjusted to Measured?	YES
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift **(±10.0%)**	4.43%
Measured Bypass Flow (l/min)	13.90	Flow Adjusted to Measured?	YES

Leak Check

Main **(< 0.15 l/min)**	Base=-0.01 Ref=-0.01
Aux **(< 0.6 l/min)**	Base=0.00 Ref= 0.00

Instrument Setup

Flow Control = Active

Report Conditions = Actual

K_o Factor

Measured	NA
K_o Difference **(± 2.5%)**	NA

Start Time: 13:15 **Finish Time:** 14:00

Sample Inlet Cleaned: No **New Filters Installed:** No

New Filter Loading %: 21.4%

Comments: Teom installation. Removed the existing one due to keeping recording negative readings

JOB #: 2833-12-01-31-C

Auditor/s: Limin Li / Theo Mclaren

Lakeland Industry & Community Association

Cold Lake Monitoring Site
Ambient Air Monitoring
Data Report
For
January 2012

Prepared By:

January 12, 2012

JOB #: 2833-12-01-01-C

Lakeland Industry & Community Association
Cold Lake Monitoring Site
Ambient Air Monitoring

Table of Contents

Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: Cold Lake
Data Period: January 2012

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 – January 2012

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION COLD LAKE SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO_2 (PPB)	172	48	0	0	0.22	5	16	2	10.4	345(NNW)	1.2	16	99.9
TRS (PPB)	-	-	-	-	0.00	0	ALL	ALL	VAR	VAR	0.0	ALL	99.9
NO_2 (PPB)	159	-	0	-	7.02	37	20	19	0.9	65(ENE)	14.2	3	99.9
NO (PPB)	-	-	-	-	2.25	100	9	9	1.7	74(ENE)	16.6	4	99.9
NOx (PPB)	-	-	-	-	9.29	134	9	9	1.7	74(ENE)	29.4	4	99.9
O_3 (PPB)	82	-	0	-	22.93	39	9	22	16.3	269(W)	33.7	27	99.9
THC (PPM)	-	-	-	-	2.27	3.8	5	0, 1	0.8, 1	150(SSE), 76(ENE)	3.0	4	100.0
PM 2.5 (UG/M^3)	-	30	-	0	5.36	22.9	4	20	1.3	111(ESE)	11.5	4	99.5
TEMPERATURE (DEG C)	-	-	-	-	-9.89	8.7	8	14	13.3	263(W)	3.1	8	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	71.11	96	5	20	17.7	270(W)	87.5	30	100.0
VECTOR WS (KPH)	-	-	-	-	6.14	21.6	10	10	-	317(NW)	15.5	10	100.0
VECTOR WD (DEGREES)	-	-	-	-	251(WSW)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS NA: NOT AVAILABLE

Monthly Non-Continuous Data Summary
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Passive Ambient Monitoring Network – January 2012

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO_2	#27	1.3	0.57
H_2S	#26	0.17	0.11
NO_2	#28	7.0	2.8
O_3	#4	33.5	26.7

Volatile Organics Data Summary
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

Xontech Model 910A – January 4, 2012

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

Xontech Model 910A – January 10, 2012

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

Xontech Model 910A – January 16, 2012

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

Xontech Model 910A – January 22, 2012

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

Xontech Model 910A – January 28, 2012

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

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

PUF cartridge – December 29, 2011

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

PUF cartridge – January 4, 2012

Maximum reading (ng/m3)	Semi-Volatile Organic
23.036	2-Methylnaphthalene

PUF cartridge – January 10, 2012

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

PUF cartridge – January 16, 2012

Maximum reading (ng/m3)	Semi-Volatile Organic
8.264	Naphthalene

PUF cartridge – January 22, 2012

Maximum reading (ng/m3)	Semi-Volatile Organic
9.263	Naphthalene

PUF cartridge – January 28, 2012

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 on January 5th. 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 on January 4th. The external zero/span oven flow rate was increased to lower the span value after the monthly calibration was completed. The analyzer spanned high on January 13th due to flow rate instability. The zero/span oven flow rate was adjusted following the as found points on January 18th. 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 and a leak check were performed on January 4th. Both the Teom filter and the FDMS filter were changed on January 4th. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. Four hours of data were invalidated as the data were below –3 ug/m3.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

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

- System make / model –Met One 50.5H

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

Relative Humidity (PERCENT)

- System make / model - Rotronic Hygroclip-S3

No operational issue was observed during the month.

Ambient Temperature (DEGC)

- System make / model - Rotronic Hygroclip-S3

No operational issues observed during the month.

Trailer Temperature (DEGC)

- System make / model - R&R 61

No operational issues observed during the month.

Datalogger

- System make / model - ESC 8832, S/N: 263
- Software make / version - ESC v 5.51a

The ESC 8832 is connected to a modem with DSL for continuous connection with the base computer.

Trailer

No issue was observed during this month.
The manifold was cleaned on January 5th.

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. All AQI values were within the Good range. The highest hourly concentration of ozone was 39 ppb and an AQI value of 20 on January 9th, hour of 22. The highest hourly concentration of PM2.5 was 22.9 ug/m3 and an AQI value of 19 on January 4th, hour of 20.

Passive Network
The 10% duplicate sampling program was run this month.
The H2S sample at station #17 is missing.

Volatile Organics (VOCs)
The volatile organics were sampled from January 4th to January 28th. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the VOCs in this report were reported as ug/m3 in 3 significant figures.

Polycyclic Aromatic Hydrocarbons (PAHs)
The PAHs scheduled to be sampled on January 4th to January 28th. 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.
Sample result for December 29th, 2011 is also included in this monthly report.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

AIR QUALITY INDEX (AQI)

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	15	13	14	14	13	13	14	13	-	13	13	13	13	13	13	11	6	5	-	9	10	13	6	7	15
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	**NA**	PM2	PM2	PM2	PM2	PM2	O3_
2	13	14	14	14	15	15	15	15	15	15	15	13	14	13	13	12	10	-	8	9	7	6	6	6	15
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	PM2	O3_	PM2	O3_	O3_	O3_
3	6	5	7	8	7	8	8	7	7	7	8	9	10	14	11	14	-	16	17	10	8	6	8	9	17
	O3_	O3_	PM2	PM2	PM2	O3_	O3_	O3_	PM2	PM2	O3_	O3_	O3_	PM2	PM2	PM2	**NA**	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3_
4	8	6	8	9	5	9	11	7	8	10	8	12	12	12	-	-	-	-	-	-	**19**	18	12	15	19
	O3_	O3_	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**PM2**	PM2	PM2	PM2	PM2
5	15	18	8	12	18	15	10	8	6	-	-	-	-	16	-	-	15	16	17	17	16	16	16	15	18
	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	**NA**	**NA**	**NA**	**NA**	O3_	**NA**	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
6	15	15	16	16	15	14	14	15	13	14	14	14	15	-	16	14	14	15	14	14	14	13	11	10	16
	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_
7	9	11	-	14	14	14	14	13	13	11	11	11	-	12	12	12	9	11	10	8	4	6	8	8	14
	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	O3_	PM2	O3_	O3_
8	9	10	11	11	11	12	13	14	14	14	15	-	17	17	18	18	18	18	17	16	15	14	14	13	18
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2
9	14	12	12	9	10	11	5	5	8	8	-	10	11	8	9	8	8	8	8	10	11	17	**20**	19	20
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**O3_**	O3_	O3_
10	19	18	13	14	18	18	17	17	-	-	18	-	18	18	17	16	15	15	15	15	15	15	16	15	19
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	**NA**	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
11	15	15	15	13	11	10	8	3	-	8	13	14	15	-	15	15	12	7	7	7	5	4	8	4	15
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	PM2	PM2	O3_	O3_	PM2	PM2	PM2	O3_
12	4	3	4	5	5	10	13	-	13	14	15	16	16	16	17	16	15	16	16	16	16	16	15	14	17
	O3_	O3_	O3_	PM2	PM2	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2
13	10	9	11	11	10	13	-	13	13	15	15	16	17	18	18	18	18	18	17	16	16	15	15	16	18
	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2
14	16	14	13	11	9	-	12	11	-	-	10	14	15	15	15	14	14	14	14	14	14	14	14	13	16
	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	**NA**	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2
15	13	13	14	15	-	14	14	14	13	13	14	15	15	15	15	14	14	14	14	14	14	15	14	14	15
	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_
16	14	14	13	-	14	14	13	13	13	13	14	14	14	14	15	14	13	13	12	9	9	11	11	11	15
	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_
17	10	9	-	8	7	8	8	7	8	10	11	12	13	14	14	14	13	12	11	12	11	11	11	11	14
	O3_	O3_	**NA**	O3_	O3_	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
18	11	-	11	12	13	13	12	12	12	-	-	-	15	16	15	15	15	15	14	14	14	14	14	14	16
	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	**NA**	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
19	-	13	13	14	14	14	13	12	13	13	14	15	16	16	17	16	16	16	14	13	11	12	13	-	17
	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_
20	13	12	12	11	11	12	12	10	10	11	11	12	13	14	14	12	8	8	5	11	10	11	-	12	14
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	PM2	O3_	O3_	**NA**	O3_	O3_
21	12	12	13	13	14	15	15	15	16	16	15	16	16	16	16	16	15	15	15	16	16	-	16	15	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_
22	15	15	14	12	11	12	12	10	10	11	14	12	12	13	13	12	9	14	13	15	-	15	14	11	15
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	**NA**	PM2	PM2	PM2	O3_
23	11	11	12	13	14	14	14	13	7	9	14	15	15	15	15	14	12	11	6	-	7	10	7	7	15
	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	**NA**	PM2	PM2	O3_	PM2	O3_
24	9	10	9	6	5	8	10	9	10	6	10	13	14	14	15	14	10	7	-	13	13	13	14	14	15
	PM2	O3_	O3_	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_
25	13	13	14	13	10	7	7	5	7	7	9	9	10	12	11	11	17	-	18	17	18	18	18	18	18
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	O3_	O3_	O3_	PM2	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_
26	18	17	17	17	17	16	17	16	14	15	16	17	17	18	16	16	-	14	12	14	16	15	14	14	18
	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_
27	15	16	17	18	18	19	19	19	18	18	17	18	17	17	18	-	17	16	17	17	16	16	15	15	19
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
28	14	15	16	17	17	15	15	15	15	14	13	13	13	14	-	14	13	8	8	10	10	12	14	14	17
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	PM2	O3_	O3_	O3_	O3_	O3_	O3_
29	14	15	15	15	15	15	15	16	15	16	16	16	16	-	15	14	14	13	13	13	9	12	6	8	16
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	O3_	PM2	O3_
30	9	6	6	6	7	10	10	12	8	10	9	12	-	11	14	11	9	10	14	8	9	11	11	12	14
	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	**NA**	O3_	O3_	O3_	O3_	PM2	PM2	PM2	O3_	O3_	O3_	O3_	O3_
31	11	12	12	12	12	12	13	11	11	11	10	-	11	13	14	14	8	8	6	7	11	11	11	10	14
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	PM2	PM2	O3_	O3_	O3_	O3_	O3_	O3_
PEAK	19	18	17	18	18	19	19	19	18	18	18	18	18	18	18	18	18	18	18	17	19	18	20	19	
	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 (PM2)					NITROGEN DIOXIDE (NO_2)					SULPHUR DIOXIDE (SO_2)					FREQUENCY	
	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%
VERY POOR (101-255)	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%
POOR (51-100)	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%
FAIR (26-50)	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%
GOOD (1-25)	577	77.6%	20	22	9	115	15.5%	19	20	4	0	0.0%	-	-	-	0	0.0%	-	-	-	692	93.0%
OVERALL	577	77.6%	-	-	-	115	15.5%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	692	93.0%
UNAVAILABLE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52	7.0%

JOB #: 2833-12-01-01-C

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

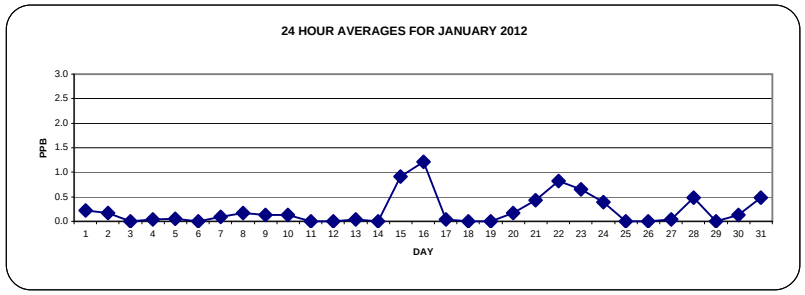
SULPHUR DIOXIDE (SO_2) hourly averages in ppb

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	0	0	0	0	0	1	1	1	1	1	0	0	**IZS**	0	0	0	0	0	1	0.2	24
2	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	**IZS**	0	0	0	0	0	0	1	0.2	24
3	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
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	1	0	0	0	1	0.0	24
5	1	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	0	**IZS**	**M**	0	0	0	0	0	0	0	0	1	0.1	23
6	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
7	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	0	0	0	0	0	0	0	0	0	1	0.1	24
8	0	0	0	0	0	0	1	1	1	1	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
9	0	0	0	0	0	0	0	0	1	1	**IZS**	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.1	24
10	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0.1	24
11	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
12	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
13	0	0	0	1	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
14	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
15	0	0	0	0	**IZS**	0	0	1	1	3	3	2	1	1	1	1	1	1	1	1	1	1	0	1	3	0.9	24
16	1	2	**5**	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**5**	**1.2**	24
17	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.0	24
18	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
19	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0.0	24
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	**IZS**	1	2	0.2	24
21	1	1	1	1	1	0	0	0	0	1	3	1	0	0	0	0	0	0	0	0	0	**IZS**	0	0	3	0.4	24
22	0	0	0	0	0	0	0	0	0	0	1	2	3	3	3	2	1	0	0	1	**IZS**	1	1	1	3	0.8	24
23	1	2	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	0	0	**IZS**	0	0	0	0	2	0.7	24
24	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	**IZS**	1	1	1	1	1	1	0.4	24
25	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
26	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
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	1	0	0	0	0	1	0.0	24
28	0	0	0	0	0	0	0	1	1	1	2	2	2	1	**IZS**	1	0	0	0	0	0	0	0	0	2	0.5	24
29	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
30	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	1	1	1	0	0	0	0	1	0.1	24
31	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	2	2	1	1	0	0	1	1	1	1	0	2	0.5	24
HOURLY MAX	1	2	5	1	1	1	1	1	1	3	3	2	3	3	3	2	1	1	1	1	1	2	1	1			
HOURLY AVG	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.2			

STATUS FLAG CODES

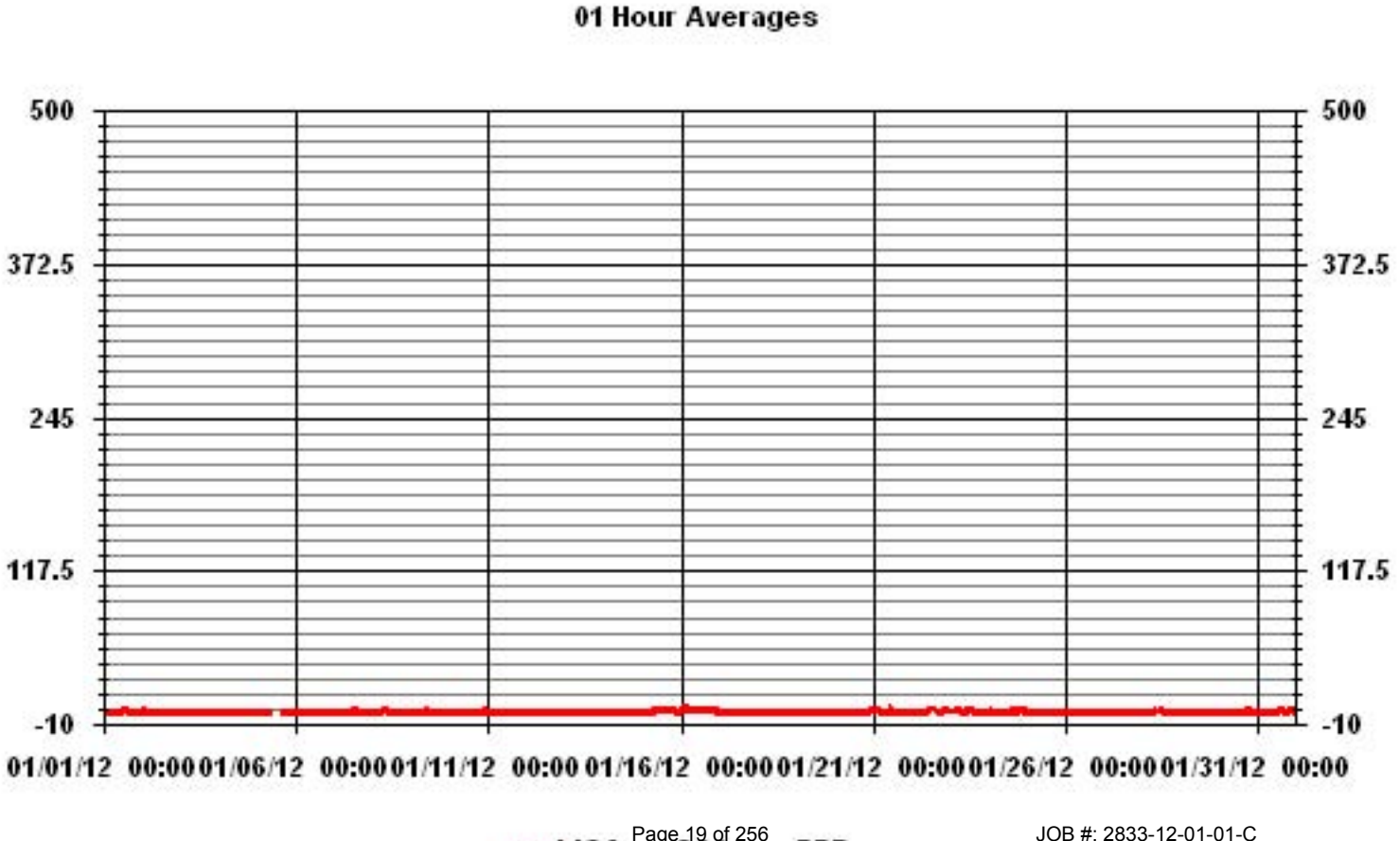
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB | 24-HR 48 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	130					
MAXIMUM 1-HR AVERAGE:	5	PPB	@ HOUR(S)	2	ON DAY(S)	16
MAXIMUM 24-HR AVERAGE:	1.2	PPB			ON DAY(S)	16
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		743	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		99.9	%
STANDARD DEVIATION:	0.53		MONTHLY AVERAGE:		0.22	PPB



JOB #: 2833-12-01-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

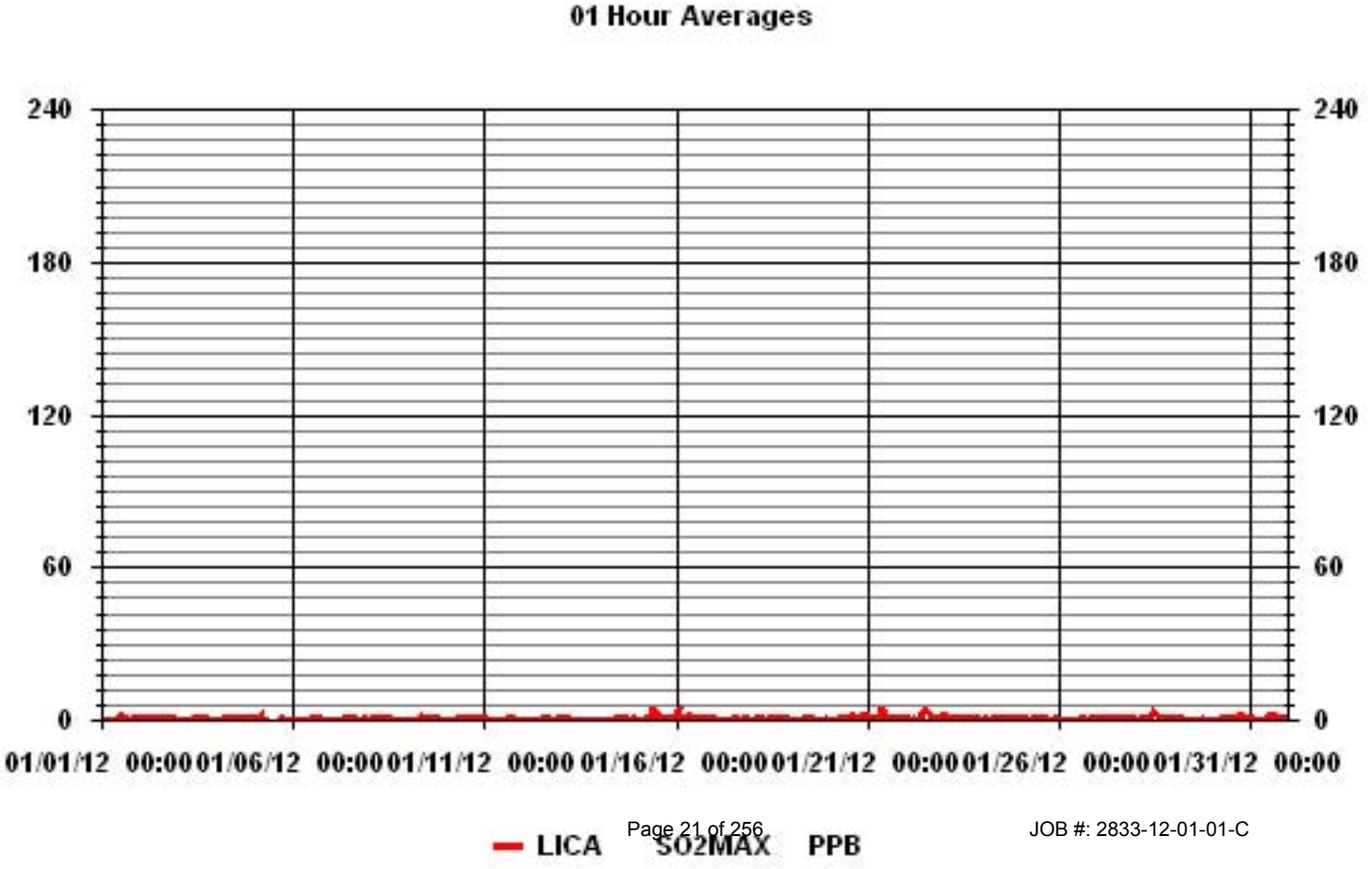
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	1	0	**IZS**	0	1	1	1	0	2	0.5	24
2	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	**IZS**	1	0	0	1	0	0	1	0.8	24
3	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	**IZS**	1	1	1	0	0	0	0	1	0.3	24
4	0	0	0	0	0	1	1	0	1	1	1	1	1	1	1	**IZS**	1	0	1	1	1	1	1	1	1	0.7	24
5	1	1	1	1	2	0	0	0	**C**	**C**	**C**	**C**	**C**	0	**IZS**	**M**	0	1	1	0	0	0	0	0	2	0.5	23
6	0	0	0	0	0	0	0	0	0	0	0	0	1	**IZS**	0	1	1	1	0	0	0	0	0	0	1	0.2	24
7	0	0	0	0	0	0	0	0	0	1	1	1	**IZS**	1	1	1	1	0	0	0	0	1	0	0	1	0.3	24
8	0	1	1	1	1	1	1	1	1	1	1	**IZS**	1	0	0	0	0	0	0	0	0	0	0	0	1	0.5	24
9	0	0	0	0	0	0	0	1	1	2	**IZS**	1	0	1	1	1	1	1	1	1	1	0	0	0	2	0.6	24
10	0	0	0	0	0	0	0	1	1	**IZS**	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0.6	24
11	1	1	0	0	0	0	0	0	**IZS**	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	1	0.3	24
12	0	0	0	0	0	0	0	**IZS**	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	0	1	0.2	24
13	0	1	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
14	0	0	0	0	0	**IZS**	0	0	0	0	0	1	0	0	1	0	1	1	0	0	0	1	0	0	1	0.2	24
15	0	0	0	0	**IZS**	0	1	1	2	4	4	3	2	1	2	1	1	1	1	1	1	1	1	1	4	1.3	24
16	1	4	**5**	**IZS**	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**5**	1.4	24
17	1	0	**IZS**	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	1	0	0	0	1	0.3	24
18	0	**IZS**	0	1	1	0	1	1	0	0	1	1	1	1	1	1	1	1	0	1	0	0	1	0	1	0.6	24
19	**IZS**	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	1	**IZS**	1	0.2	24
20	0	0	0	0	0	0	1	0	1	0	1	1	1	1	1	2	1	1	1	1	1	2	**IZS**	2	2	0.8	24
21	1	1	1	1	1	1	1	1	0	4	4	2	1	1	1	1	1	0	1	1	1	**IZS**	1	1	4	1.2	24
22	1	1	1	0	0	1	0	0	0	1	2	3	4	4	3	3	2	1	1	1	**IZS**	1	1	2	4	1.4	24
23	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	0	2	1.1	24
24	0	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	0.9	24
25	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	**IZS**	0	0	0	0	1	0	1	0.7	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	**IZS**	0	0	0	1	1	1	1	1	0.3	24
27	1	1	1	1	0	1	1	1	0	1	1	1	1	0	0	**IZS**	1	1	1	1	1	1	1	1	1	0.8	24
28	0	0	0	0	1	1	1	1	1	1	3	2	2	2	**IZS**	1	1	1	0	1	1	1	1	1	3	1.0	24
29	1	0	1	1	1	1	0	0	0	0	0	0	0	**IZS**	0	0	0	0	1	0	0	0	0	0	1	0.3	24
30	0	0	0	0	0	1	0	0	1	1	1	1	**IZS**	1	1	1	1	2	1	2	1	1	1	0	2	0.7	24
31	0	1	0	0	0	0	0	0	0	0	1	**IZS**	2	2	2	2	2	1	1	1	1	1	1	1	2	0.8	24
HOURLY MAX	2	4	5	1	2	1	1	1	2	4	4	3	4	4	3	3	2	2	1	2	1	2	1	2			
HOURLY AVG	0.4	0.6	0.6	0.4	0.4	0.4	0.4	0.4	0.5	0.8	1.0	0.9	1.0	0.9	0.9	0.9	0.9	0.6	0.6	0.5	0.5	0.6	0.6	0.5			

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:	383					
MAXIMUM INSTANTANEOUS VALUE:	5	PPB	@ HOUR(S)	2	ON DAY(S)	16
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:			743 HRS
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.71					



JOB #: 2833-12-01-01-C

LICA
SO2_ / WDR Joint Frequency Distribution (Percent)

January 2012

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	.56	1.13	1.55	1.83	4.95	5.94	9.33	4.10	1.83	2.40	23.33	23.47	7.77	3.11	5.23	3.39	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	.56	1.13	1.55	1.83	4.95	5.94	9.33	4.10	1.83	2.40	23.33	23.47	7.77	3.11	5.23	3.39	

Calm : .00 %

Total # Operational Hours : 707

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	4	8	11	13	35	42	66	29	13	17	165	166	55	22	37	24	707
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	4	8	11	13	35	42	66	29	13	17	165	166	55	22	37	24	

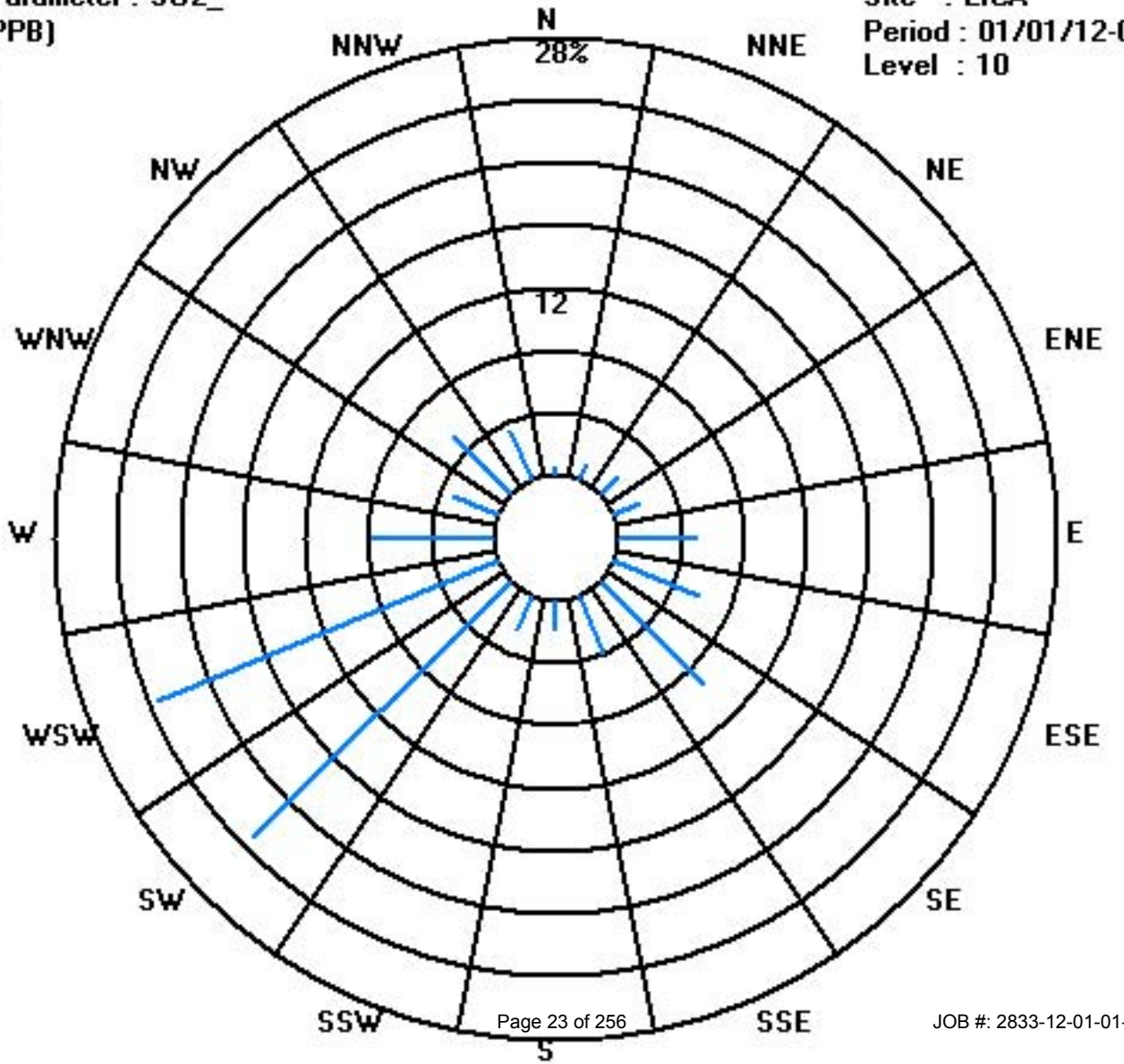
Calm : .00 %

Total # Operational Hours : 707

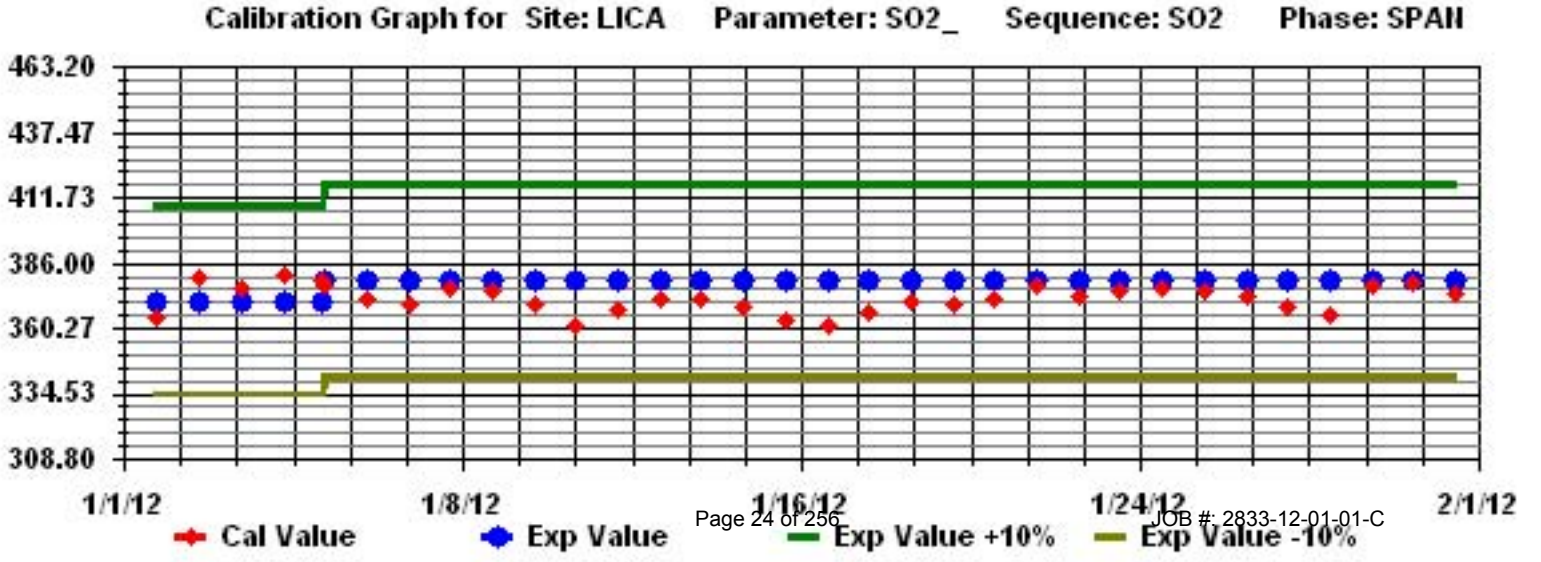
Logger : 01 Parameter : SO2_
Class Limits (PPB)

>= 340
< 340
< 170
< 110
< 60
< 20

Site : LICA
Period : 01/01/12-01/31/12
Level : 10



JOB #: 2833-12-01-01-C


Calibration Graph for Site: LICA Parameter: SO2_ Sequence: SO2 Phase: SPAN
463.20
437.47
411.73
386.00
360.27
334.53
308.80
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Reduced Sulphur

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

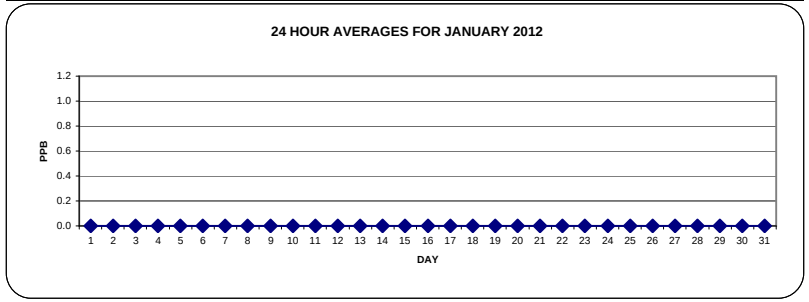
TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	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	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	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	**IZS**	0	0	0	0	0	0	0	0	0.0	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0.0	24
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	**M**	0	0	0	0	0	0	0	0	0	0.0	23
6	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
7	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
8	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
9	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
10	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
11	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
12	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
13	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
14	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
15	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
16	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
17	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
18	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
19	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0.0	24
20	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
21	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
22	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
23	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
24	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
25	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
26	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
27	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
28	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
29	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
30	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
31	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
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			
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			

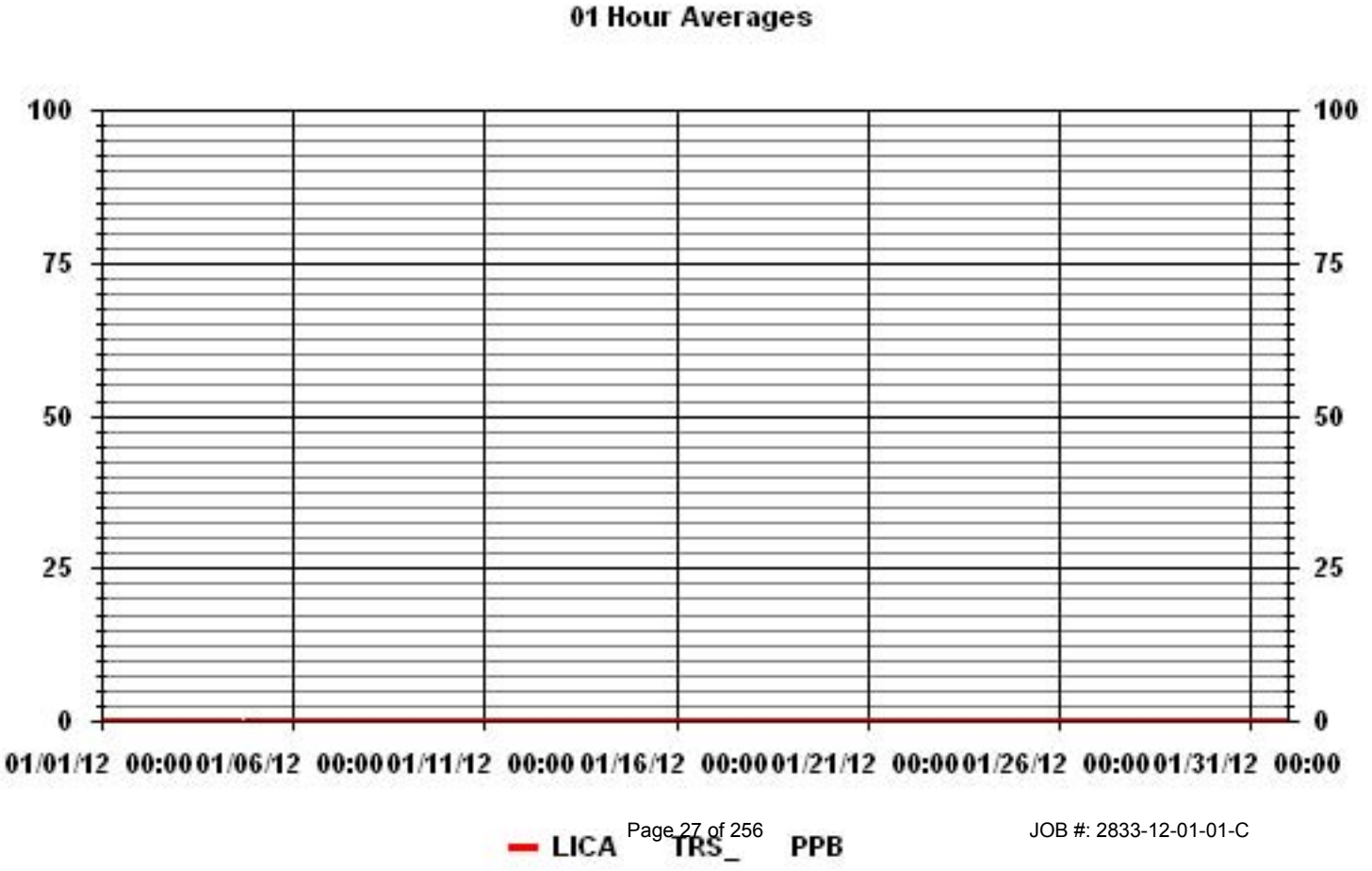
STATUS FLAG CODES

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 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:	31	HRS		OPERATIONAL TIME:		743	HRS
MONTHLY CALIBRATION TIME:	5	HRS		AMD OPERATION UPTIME:		99.9	%
STANDARD DEVIATION:	0.00			MONTHLY AVERAGE:		0.00	PPB



JOB #: 2833-12-01-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

TOTAL REDUCED SULPHUR MAX instantaneous maximum in ppb

MST

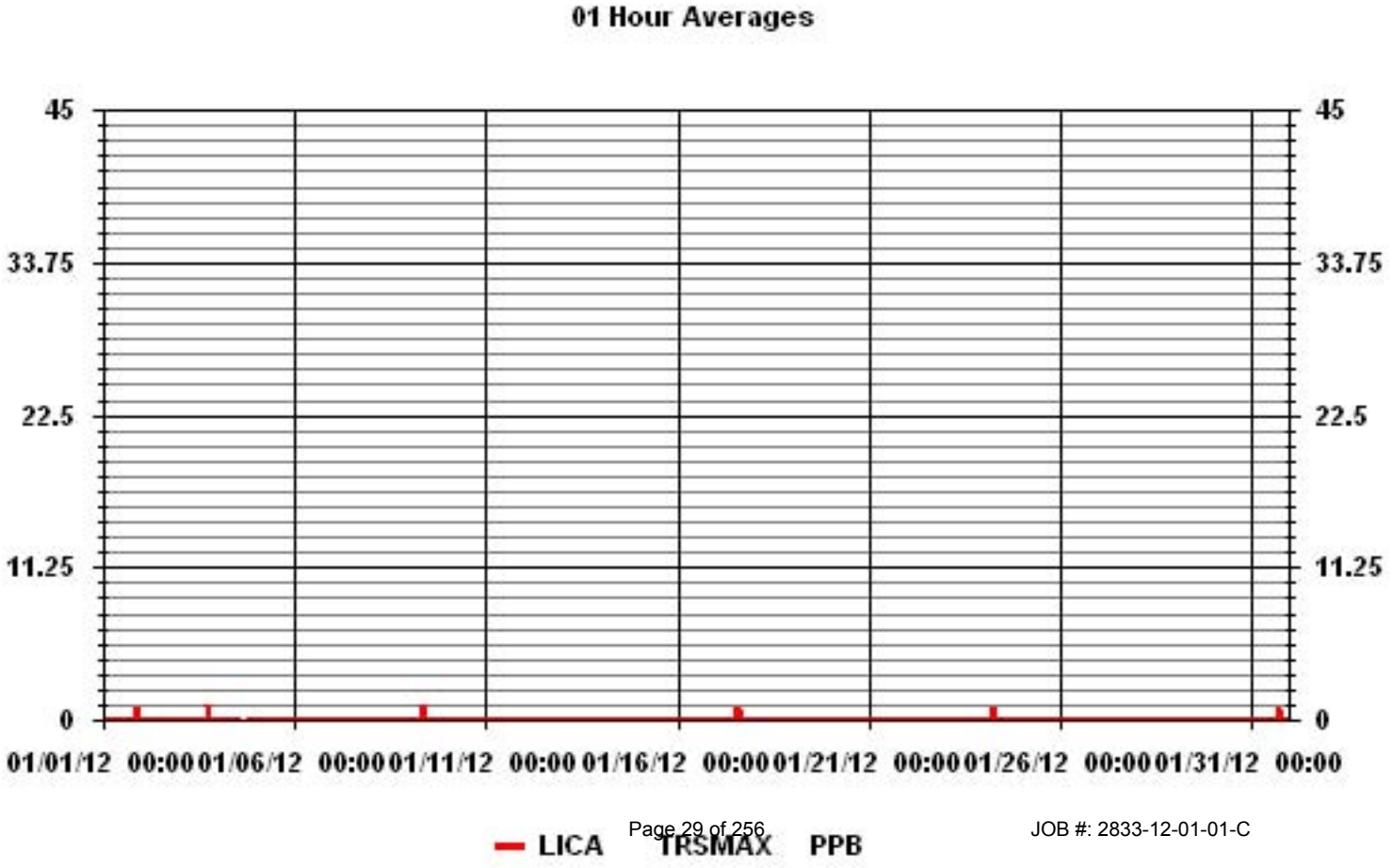
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	0	0	1	0.0	24
2	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
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	1	0.0	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	0.0	24
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	M	0	0	0	0	0	0	0	0	0	0.0	23
6	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
7	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
8	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
9	0	0	0	0	0	0	0	0	0	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
10	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
11	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
12	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
13	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
14	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
15	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
16	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
17	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.0	24
18	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
19	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.0	24
20	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
21	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
22	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
23	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
24	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	1	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0.0	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	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	IZS	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	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
31	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	1	0	0	0	0	0	0	1	0.0	24
HOURLY MAX	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0			

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:	6					
MAXIMUM INSTANTANEOUS VALUE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
				VAR - VARIOUS		
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		743	HRS
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	0.09					



JOB #: 2833-12-01-01-C

LICA
TRS_ / WDR Joint Frequency Distribution (Percent)

January 2012

Distribution By % Of Samples

Logger Id : 01
Site Name : LICA
Parameter : TRS_
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	.56	1.13	1.55	1.83	4.95	5.94	9.33	3.81	1.83	2.40	23.33	23.33	8.20	3.11	5.23	3.39	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		.56	1.13	1.55	1.83	4.95	5.94	9.33	3.81	1.83	2.40	23.33	23.33	8.20	3.11	5.23	3.39	

Calm : .00 %

Total # Operational Hours : 707

Distribution By Samples

Direction

Limit		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3	4	8	11	13	35	42	66	27	13	17	165	165	58	22	37	24	707
<	10																	
<	50																	
>=	50																	
Totals		4	8	11	13	35	42	66	27	13	17	165	165	58	22	37	24	

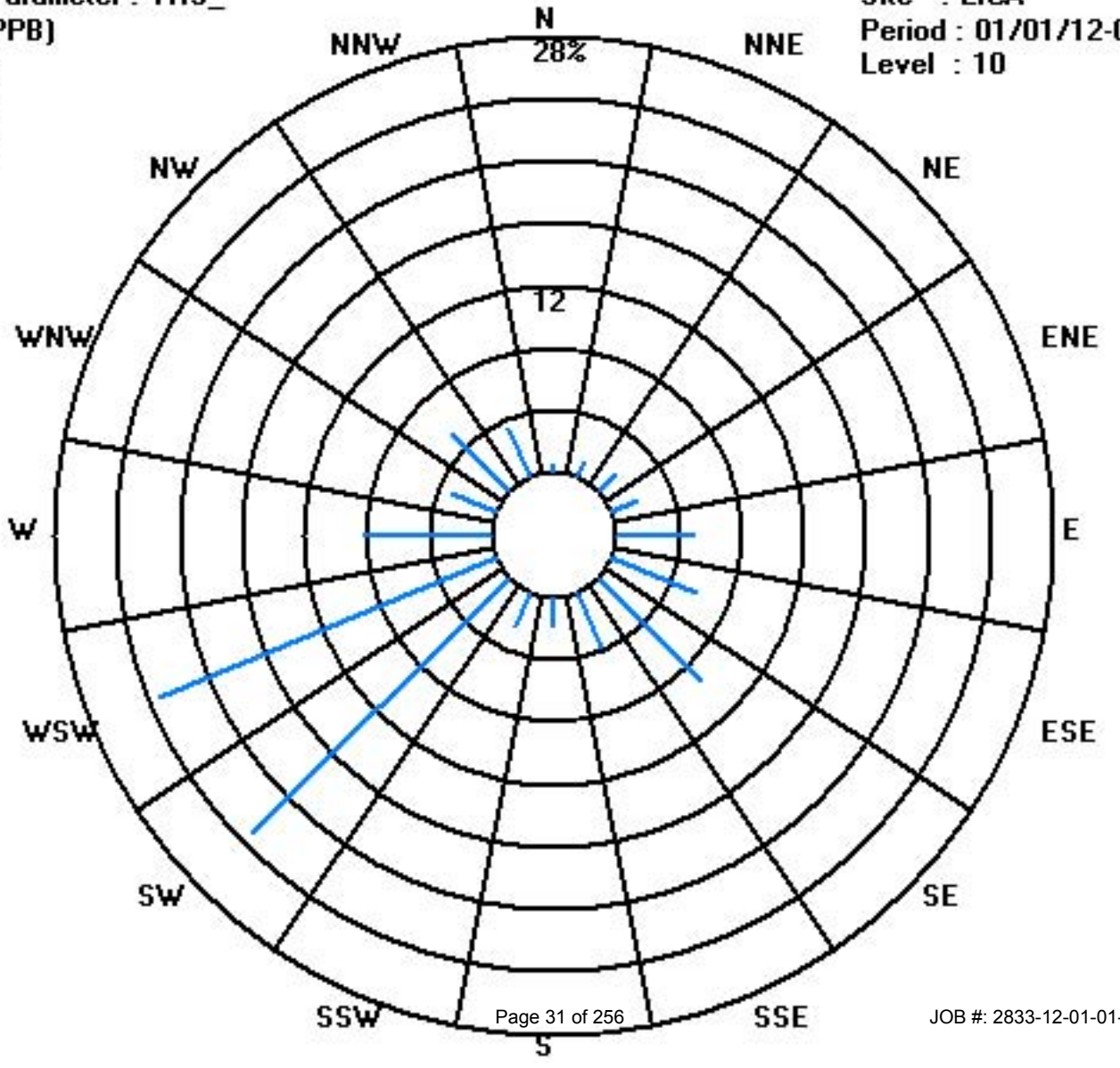
Calm : .00 %

Total # Operational Hours : 707

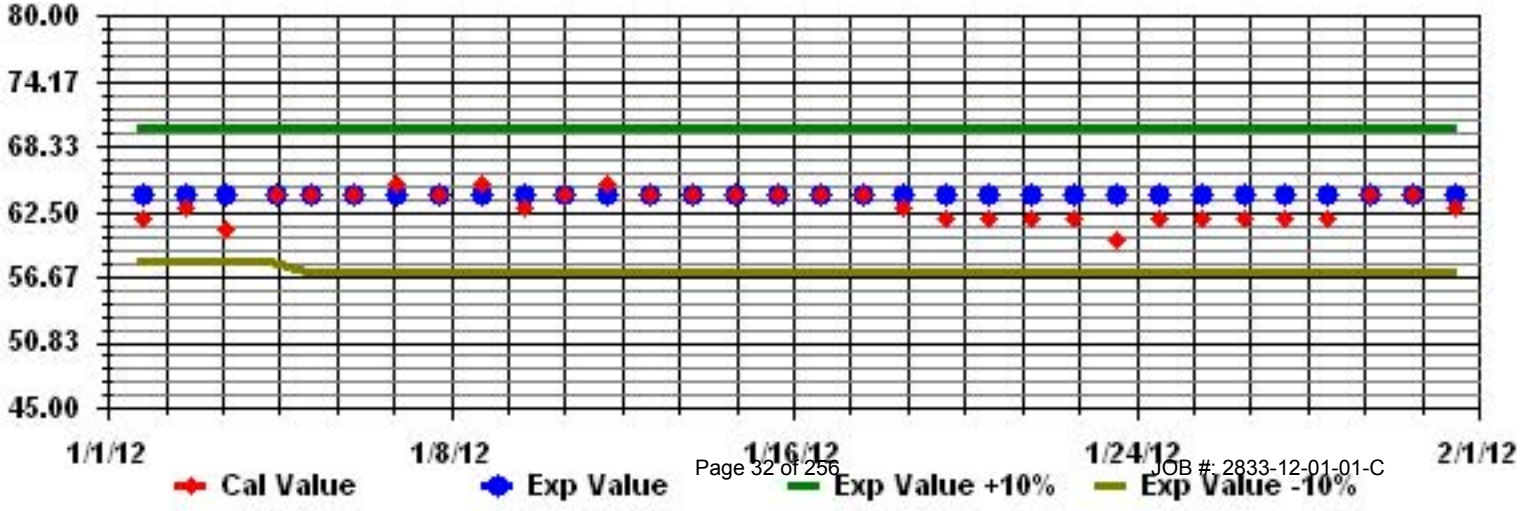
Logger : 01 Parameter : TRS_
Class Limits (PPB)

>= 50
< 50
< 10
< 3

Site : LICA
Period : 01/01/12-01/31/12
Level : 10



JOB #: 2833-12-01-01-C


Calibration Graph for Site: LICA Parameter: TRS_ Sequence: TRS Phase: SPAN
80.00
74.17
68.33
62.50
56.67
50.83
45.00
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

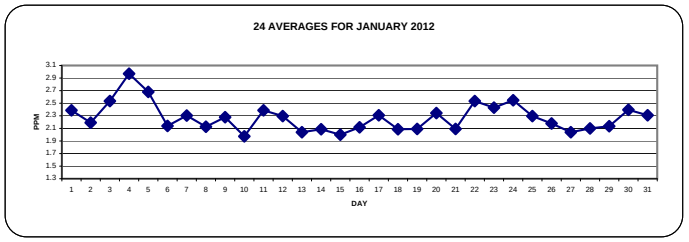
TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2.2	2.3	2.2	2.3	2.4	2.7	2.2	2.2	2.2	2.4	2.4	2.3	2.2	2.2	2.3	2.4	2.4	2.5	**IZS**	2.6	2.8	2.7	2.5	2.5	2.8	2.4	24
2	2.3	2.3	2.4	2.3	2.2	2.1	2	2	2	2	1.9	2	2	2.1	2.2	2.3	2.3	**IZS**	2.3	2.3	2.3	2.3	2.3	2.5	2.5	2.2	24
3	2.9	3.2	3	3	3	2.7	2.5	2.4	2.4	2.3	2.1	2.1	2.2	2.2	2.3	2.4	**IZS**	2.6	2.7	2.5	2.4	2.5	2.4	2.5	3.2	2.5	24
4	2.7	2.6	2.8	2.8	3.2	3.1	2.9	2.9	2.9	2.9	2.7	2.5	2.5	2.6	2.6	**IZS**	2.9	3	3.1	3.1	3.7	3.5	3.6	3.7	3.7	**3.0**	24
5	**3.8**	**3.8**	3.6	3.4	3.6	3.5	3.4	3.3	2.8	2.4	1.9	1.8	**C**	**C**	**C**	**C**	2	2	2	2	2	2	2.1	2.2	**3.8**	2.7	24
6	2.1	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.2	**IZS**	2	2	2	2.1	2.2	2.2	2.1	2.3	2.1	2.1	2.3	2.1	24
7	2.2	2.5	2.5	2.3	2.3	2.4	2.4	2.4	2.3	2.2	2.3	2.3	**IZS**	2.2	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.5	2.3	24
8	2.5	2.5	2.4	2.3	2.3	2.2	2	2	2	2	2	**IZS**	2	2	2	2	2	2	2.1	2.1	2.2	2.1	2.1	2.1	2.5	2.1	24
9	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.4	2.8	3.1	**IZS**	2.2	2.3	2.5	2.5	2.5	2.3	2.2	2.3	2.2	2.1	2	1.9	1.9	3.1	2.3	24
10	1.9	2	2	1.9	1.9	1.9	1.9	1.9	1.9	**IZS**	1.9	2	1.9	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.0	24
11	2.1	2.1	2.1	2.1	2.2	2.3	2.5	2.6	**IZS**	2.5	2.1	2.1	2.2	2.3	2.4	2.2	2.2	2.2	2.3	2.3	2.6	3.1	3.5	2.9	3.5	2.4	24
12	2.6	2.7	2.6	2.6	2.7	2.7	2.4	**IZS**	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.3	2.2	2.2	2	2.1	2.2	2.2	2.2	2.7	2.3	24
13	2.2	2.2	2.3	2.1	2.2	2.1	**IZS**	2.1	2.1	2.1	2	2	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2.1	2	2.3	2.0	24
14	2	2.1	2.2	2.3	2.3	**IZS**	2.2	2.2	2.3	2.3	2.4	2.1	2	2	2	2	2	1.9	1.9	1.9	1.9	2	2	2	2.4	2.1	24
15	2	2	2	2	**IZS**	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	2.0	24
16	2.1	2.1	2.1	**IZS**	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.2	2.1	2.1	2.2	2.3	2.1	24
17	2.2	2.3	**IZS**	2.5	2.5	2.7	2.7	2.5	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.2	2.3	2.4	2.2	2.2	2.2	2.2	2.2	2.7	2.3	24
18	2.2	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24
19	**IZS**	2.1	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2.1	2.2	2.1	2.1	2.2	**IZS**	2.2	2.1	24
20	2.2	2.1	2.2	2.2	2.2	2.2	2.3	2.4	2.5	2.7	2.5	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.3	2.5	2.5	2.6	**IZS**	2.7	2.7	2.3	24
21	2.7	2.6	2.5	2.4	2.3	2.2	2.1	2.1	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	**IZS**	2	2.1	2.7	2.1	24
22	2.1	2.1	2.1	2.1	2.2	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.6	2.6	2.9	3.1	3.2	**IZS**	2.7	2.7	2.8	3.2	2.5	24
23	2.7	2.5	2.4	2.3	2.2	2.2	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.3	2.4	2.7	2.8	**IZS**	3.1	3.2	2.9	2.9	3.2	2.4	24
24	3	2.3	2.2	2.5	2.6	2.6	2.8	2.7	2.8	2.8	2.8	2.6	2.5	2.4	2.4	2.4	2.5	2.5	**IZS**	2.7	2.6	2.4	2.3	2.2	3.0	2.5	24
25	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.3	3	3	2.8	2.9	2.6	2.3	2	**IZS**	2	2.2	2.1	2.1	2.1	2.1	3.0	2.3	24
26	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.1	2.1	2.1	**IZS**	2.3	2.4	2.1	2.1	2.1	2.2	2.3	2.4	2.2	24
27	2.1	2.1	2	2	2.1	1.9	1.9	1.9	2	2.1	2.1	2.1	2	2	2.1	**IZS**	2	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2.0	24
28	2.2	2.1	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	**IZS**	2.1	2.2	2.3	2.2	2.2	2.1	2.1	2.2	2.1	2.3	2.1	24
29	2.1	2.2	2.2	2.1	2.1	2	2	2	2	2	2	1.9	2	**IZS**	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.4	2.1	24
30	2.5	2.4	2.4	2.4	2.5	2.4	2.5	2.6	2.6	2.7	2.8	2.5	**IZS**	2.3	2.1	2.2	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.8	2.4	24
31	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.5	2.6	2.6	**IZS**	2.3	2.2	2.1	2.2	2.4	2.4	2.4	2.5	2.5	2.5	2.4	2.4	2.6	2.3	24
HOURLY MAX	3.8	3.8	3.6	3.4	3.6	3.5	3.4	3.3	2.9	3.1	3.0	3.0	2.8	2.9	2.6	2.6	2.9	3.0	3.1	3.2	3.7	3.5	3.6	3.7			
HOURLY AVG	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3			

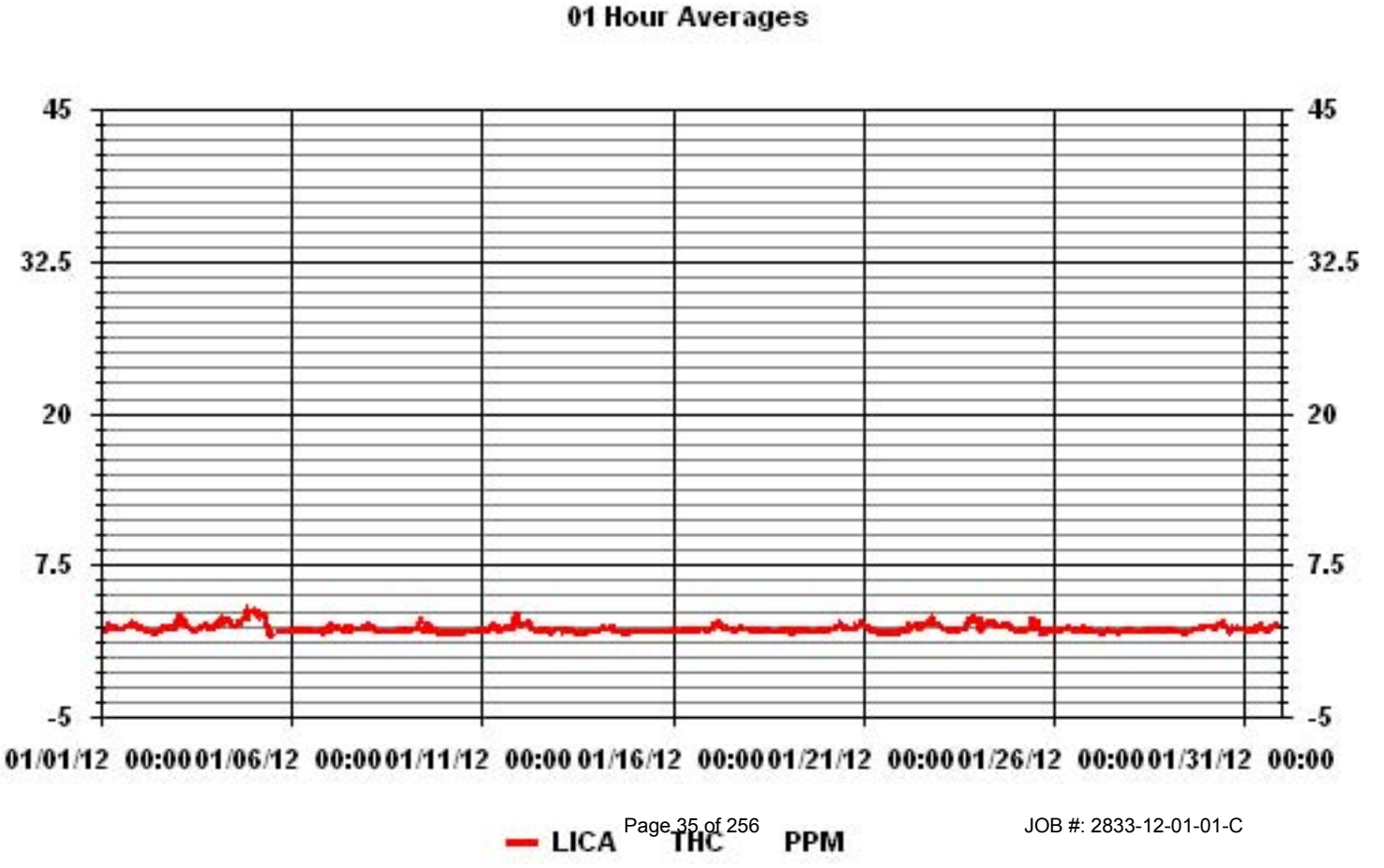
STATUS FLAG CODES

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
BB	- BELOW BACKGROUND OF 1.5 PPM		



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	709					
MAXIMUM 1-HR AVERAGE:	3.8	PPM	@ HOUR(S)	0, 1	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	3.0	PPM			ON DAY(S)	4
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.32		MONTHLY AVERAGE:		2.27	PPM



JOB #: 2833-12-01-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

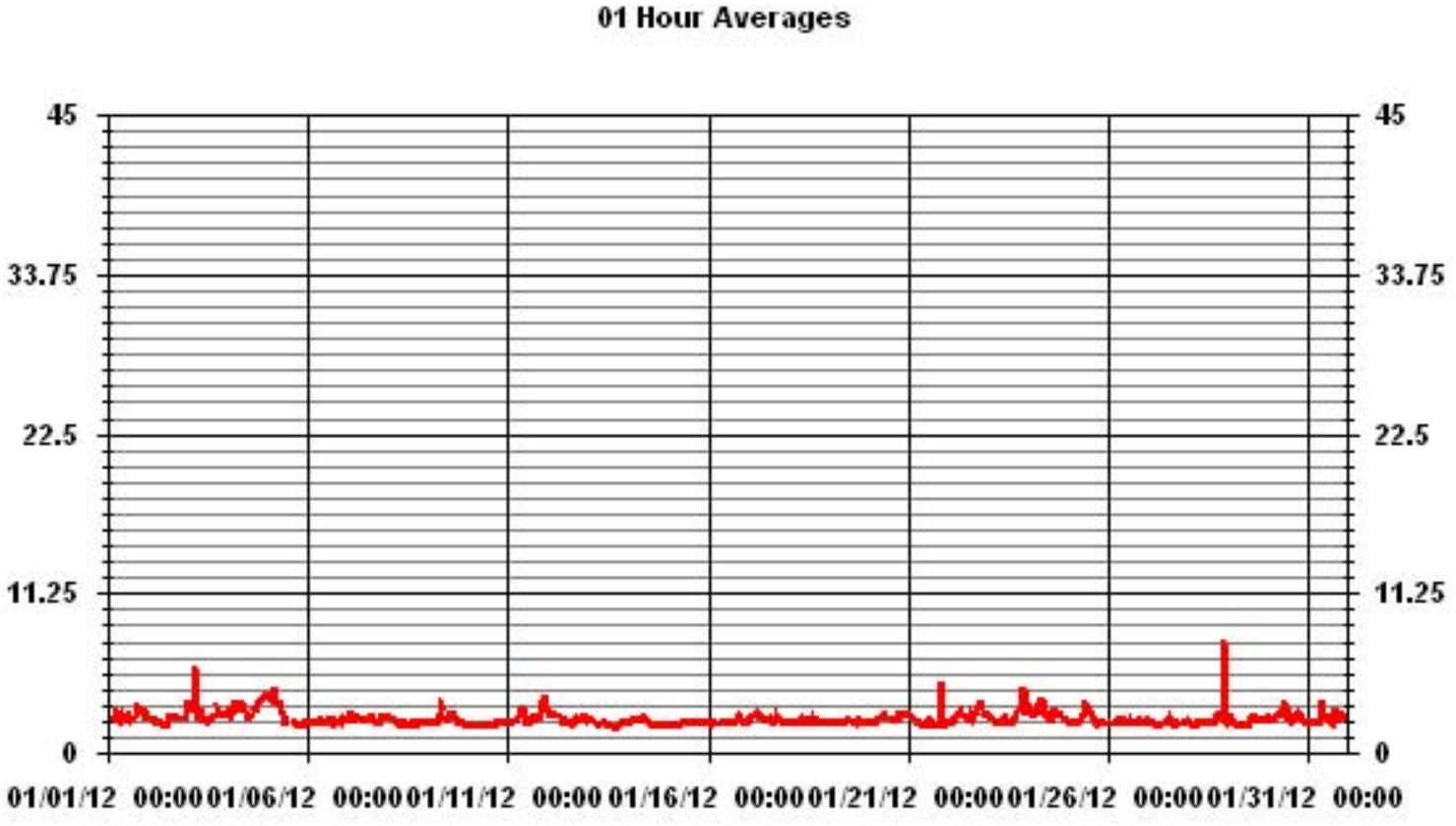
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2.4	2.4	2.3	2.4	2.6	3.1	2.3	2.2	2.4	2.7	2.5	2.6	2.7	2.3	2.4	2.5	2.6	3.3	**IZS**	2.9	3.1	3	3	2.6	3.3	2.6	24
2	2.5	2.4	2.4	2.3	2.4	2.2	2.1	2.1	2.1	2.1	2	2	2.3	2.7	2.3	2.8	2.5	**IZS**	2.4	2.4	2.4	2.4	2.4	2.8	2.8	2.3	24
3	3.5	3.5	3.1	3.1	6.1	3	2.6	2.5	3.1	2.5	2.4	2.2	2.3	2.5	2.6	2.5	**IZS**	3.3	2.9	2.9	2.6	2.6	2.6	2.9	6.1	2.9	24
4	2.8	2.7	3.1	3	3.5	3.4	3.1	3.1	3.6	3.1	3	2.7	2.7	2.6	2.7	**IZS**	3.1	3.2	3.6	3.7	3.9	3.9	3.9	4	4	3.2	24
5	4.1	3.9	3.8	3.5	4.6	3.7	3.6	3.5	3.1	2.8	2.1	**C**	**C**	**C**	**C**	**C**	2.1	2.1	2	2	2	2	2.2	2.3	4.6	2.9	24
6	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.4	**IZS**	2.1	2.3	2.3	2.2	2.3	2.4	2.2	2.5	2.3	2.3	2.5	2.3	24
7	2.4	2.8	2.8	2.5	2.4	2.5	2.5	2.5	2.4	2.4	2.3	2.4	**IZS**	2.4	2.8	2.4	2.3	2.2	2.2	2.3	2.5	2.5	2.5	2.5	2.8	2.5	24
8	2.6	2.6	2.5	2.4	2.4	2.3	2.2	2	2	2.1	2.1	**IZS**	2	2	2.1	2.1	2	2	2.2	2.2	2.3	2.2	2.1	2.1	2.6	2.2	24
9	2.1	2.2	2.2	2.2	2.2	2.2	2.6	2.8	3.4	3.2	**IZS**	2.4	2.5	2.7	2.7	2.8	2.5	2.3	2.4	2.3	2.2	2.2	1.9	1.9	3.4	2.4	24
10	2	2	2	1.9	1.9	1.9	2	2	2	**IZS**	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.0	24
11	2.2	2.1	2.1	2.2	2.3	2.5	2.6	3	**IZS**	3.1	2.2	2.2	2.2	2.5	2.6	2.5	2.4	2.8	2.4	2.7	2.9	3.7	4	3.2	4	2.6	24
12	2.9	2.8	2.7	2.7	2.8	2.8	2.7	**IZS**	2.3	2.4	2.4	2.3	2.2	2.2	2.1	2.3	2.5	2.3	2.4	2.1	2.5	2.2	2.7	2.3	2.9	2.5	24
13	2.4	2.4	2.4	2.3	2.2	2.1	**IZS**	2.1	2.2	2.2	2.1	2.1	2	2	2	1.9	2	1.9	2	2	2.1	2.1	2.1	2.1	2.4	2.1	24
14	2.1	2.2	2.3	2.3	2.4	**IZS**	2.3	2.3	2.4	2.5	2.5	2.3	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2.5	2.2	24
15	2	2	2	2	**IZS**	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24
16	2.2	2.3	2.1	**IZS**	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.6	2.4	2.3	2.2	2.2	2.2	2.6	2.2	24
17	2.3	2.3	**IZS**	2.6	2.6	2.9	2.8	2.6	2.5	2.4	2.4	2.3	2.3	2.5	2.3	2.2	2.4	2.7	2.5	2.3	2.3	2.2	2.2	2.2	2.9	2.4	24
18	2.2	**IZS**	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.2	2.3	2.3	2.1	2.1	2.4	2.1	2.1	2.3	2.1	2.1	2.2	2.2	2.2	2.2	2.4	2.2	24
19	**IZS**	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.1	2.1	2.3	2.1	2.3	2.3	2.2	2.2	2.2	**IZS**	2.3	2.2	24
20	2.3	2.2	2.2	2.2	2.2	2.4	2.4	2.5	2.7	2.8	2.6	2.5	2.4	2.4	2.5	2.4	2.3	2.3	2.7	2.6	2.7	2.7	**IZS**	2.8	2.8	2.5	24
21	2.8	2.6	2.6	2.4	2.4	2.3	2.2	2.2	2.1	2	2	2	2.3	2.6	2	2	2	2.2	2	2	4.8	**IZS**	2.1	2.2	4.8	2.3	24
22	2.2	2.1	2.1	2.2	2.5	2.7	2.7	2.9	2.6	2.6	2.6	2.6	2.5	2.8	2.5	2.7	2.8	3.1	3.2	3.6	**IZS**	2.9	2.8	2.9	3.6	2.7	24
23	2.8	2.6	2.5	2.3	2.3	2.2	2.2	2.3	2.4	2.5	2.2	2.2	2.2	2.2	2.2	2.4	2.6	2.9	3.1	**IZS**	3.3	4.7	3.1	3.2	4.7	2.6	24
24	3.3	2.9	2.5	2.9	2.9	2.9	3.5	2.9	3.8	3	3	2.8	2.6	2.5	2.4	2.5	3.1	2.8	**IZS**	2.8	2.7	2.5	2.4	2.3	3.8	2.8	24
25	2.3	2.2	2.2	2.1	2.2	2.2	2.2	2.4	2.7	2.8	3.4	3.3	3	3	2.7	2.5	2.2	**IZS**	2.1	2.2	2.2	2.2	2.2	2.1	3.4	2.5	24
26	2.2	2.1	2.1	2.2	2.2	2.4	2.4	2.2	2.3	2.5	2.4	2.3	2.2	2.4	2.2	2.3	**IZS**	2.4	2.5	2.3	2.2	2.2	2.3	2.4	2.5	2.3	24
27	2.2	2.1	2.1	2.1	2.1	2	2	2	2.1	2.2	2.1	2.2	2.5	2.2	2.3	**IZS**	2	2.2	2.2	2.1	2.2	2.1	2.2	2.4	2.5	2.2	24
28	2.3	2.2	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	**IZS**	2.2	2.6	2.6	2.3	3	2.3	**7.9**	2.3	2.1	**7.9**	2.5	24
29	2.2	2.8	2.2	2.2	2.2	2.1	2	2	2	2	2	2	2.3	**IZS**	2.7	2.6	2.3	2.3	2.3	2.4	2.5	2.4	2.5	2.6	2.8	2.3	24
30	2.6	2.5	2.4	2.5	2.6	2.7	2.9	2.7	2.7	3.6	3.3	2.6	**IZS**	2.4	2.3	2.5	2.5	2.7	2.3	2.9	2.3	2.3	2.2	2.2	3.6	2.6	24
31	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.4	3.7	2.8	2.7	**IZS**	2.7	2.3	2.2	2.6	3.1	2.6	2.5	2.7	2.7	2.6	2.6	2.5	3.7	2.5	24
HOURLY MAX	4	4	4	4	6	4	4	4	4	4	3	3	3	3	3	3	3	3	4	4	5	8	4	4			
HOURLY AVG	2.5	2.5	2.4	2.4	2.6	2.4	2.4	2.4	2.5	2.5	2.4	2.3	2.3	2.4	2.3	2.3	2.4	2.5	2.4	2.5	2.5	2.7	2.4	2.5			

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:	708						
MAXIMUM INSTANTANEOUS VALUE:	7.9	PPM	@ HOUR(S)	21	ON DAY(S)	28	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS		
MONTHLY CALIBRATION TIME:	5	HRS					
STANDARD DEVIATION:	0.48						



JOB #: 2833-12-01-01-C

LICA
THC / WD Joint Frequency Distribution (Percent)

January 2012

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	.56	1.12	1.55	1.26	4.79	5.21	9.02	3.66	1.69	2.39	22.70	22.14	7.75	3.10	5.21	3.38	95.62
<	10.0	.00	.00	.00	.56	.14	.70	.28	.42	.14	.00	.56	1.26	.28	.00	.00	.00	4.37
<	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	.56	1.12	1.55	1.83	4.93	5.92	9.30	4.09	1.83	2.39	23.27	23.41	8.03	3.10	5.21	3.38	

Calm : .00 %

Total # Operational Hours : 709

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	4	8	11	9	34	37	64	26	12	17	161	157	55	22	37	24	678
<	10.0				4	1	5	2	3	1		4	9	2				31
<	50.0																	
>=	50.0																	
	Totals	4	8	11	13	35	42	66	29	13	17	165	166	57	22	37	24	

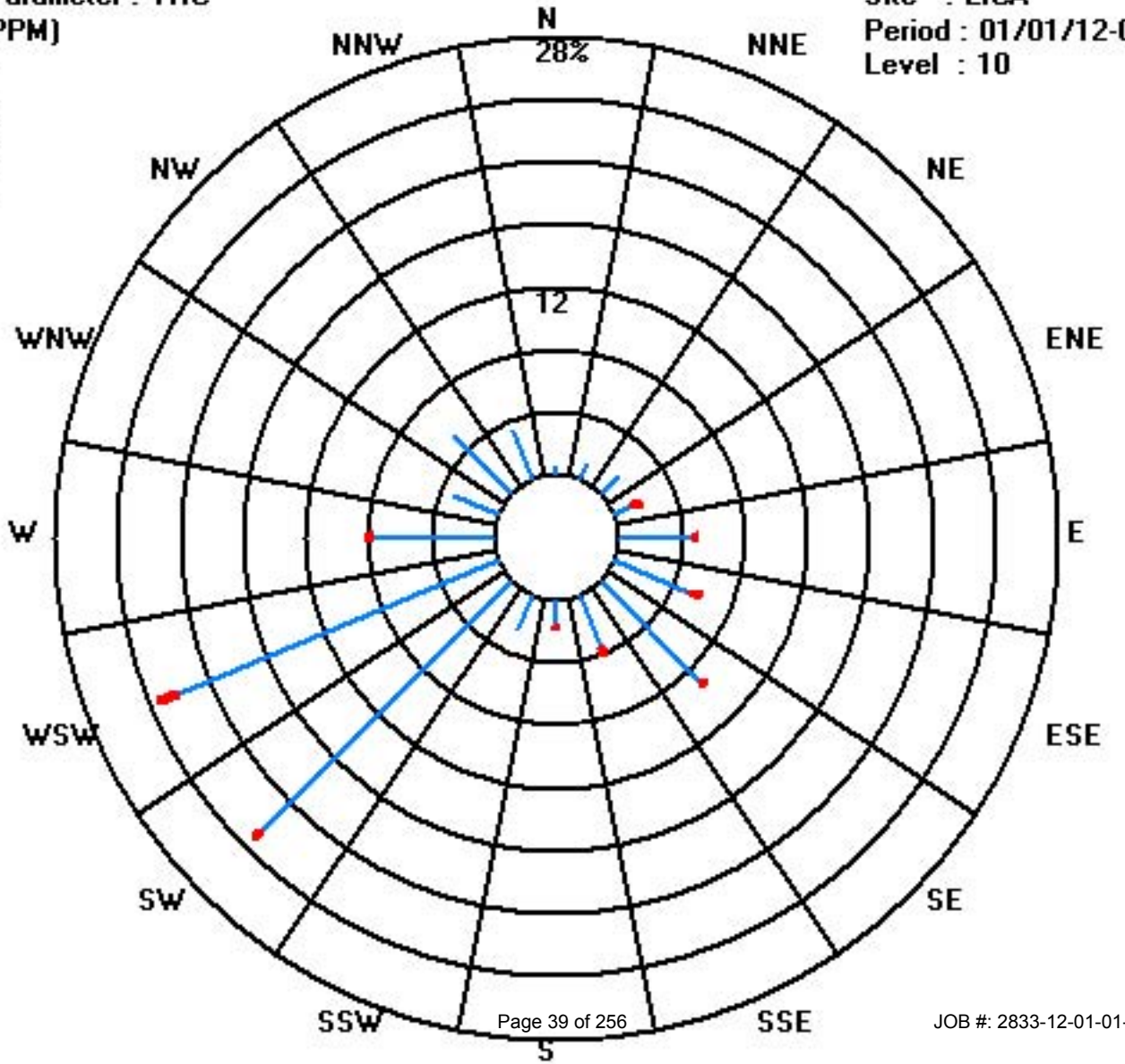
Calm : .00 %

Total # Operational Hours : 709

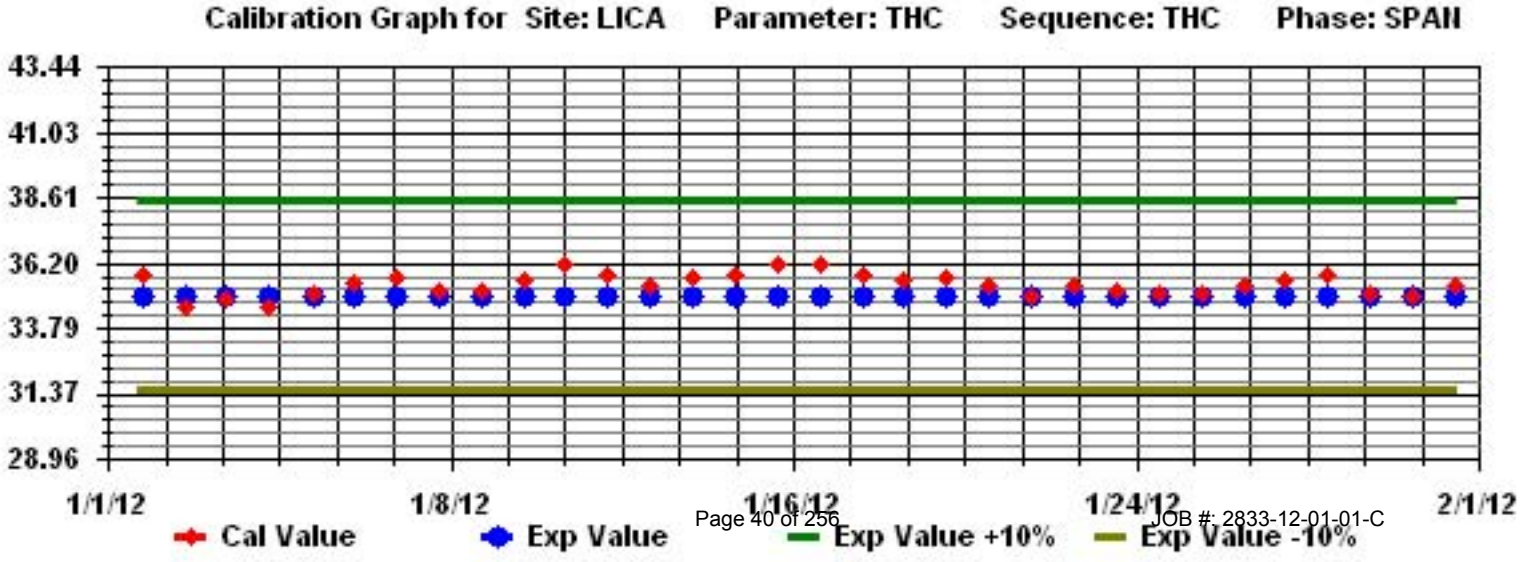
Logger : 01 Parameter : THC
Class Limits (PPM)

>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA
Period : 01/01/12-01/31/12
Level : 10



JOB #: 2833-12-01-01-C


Calibration Graph for Site: LICA Parameter: THC Sequence: THC Phase: SPAN
43.44
41.03
38.61
36.20
33.79
31.37
28.96
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

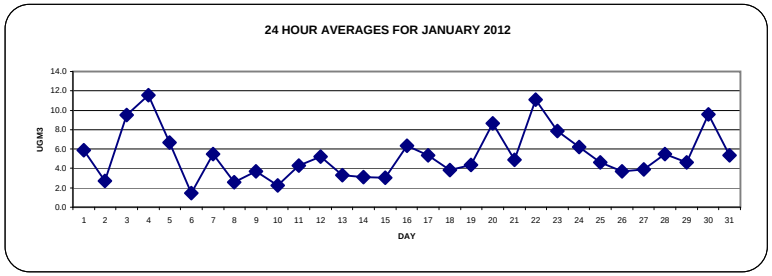
PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m^3

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	3.8	2.5	1.1	6	3.5	0	1.3	**N**	1.7	1	6.5	10.5	9.3	9	7.9	3.4	6.1	8.1	10.9	11.9	15.5	6.9	8.8	15.5	5.9	23
2	0.1	3.4	1.4	3.5	0	3.4	0	0	0	5.4	0	0.4	2.6	1.4	5.6	3.4	4.4	2.9	1.4	10.6	4.4	7.4	1.4	1.4	10.6	2.7	24
3	0.9	5	7.9	9.9	8.3	2.9	0	6	8.4	7.9	7	3.4	9	17	13.5	17	16.5	19	19.9	12	9	7.5	9.4	10.9	19.9	9.5	24
4	4.4	3.4	9	11	6.5	10.9	13	7.9	9.4	11.5	9.4	14.9	13.9	13.9	12.5	13.5	**C**	7.5	11	5	**22.9**	22	14.5	17.5	**22.9**	**11.5**	24
5	18	22	9.9	14.4	21	18.5	12.4	9	7.5	3.4	1	1.9	0	1.9	4	2.9	0	0	1.4	1	3.4	2.5	0	3.4	22.0	6.6	24
6	0	0	0	1.9	1	1	0	1.4	1.9	0	1.4	0	1.4	4.4	1	0	1.9	4.4	0	1	0	2.5	4.4	5	5.0	1.4	24
7	0	0.5	**N**	1	5.5	2.9	7.9	2.5	4	5.5	7	11.5	12	11.5	5	8.4	5	7.9	1	2.5	4.4	6	9	5.5	12.0	5.5	23
8	4.4	3.4	5	10.9	2.5	0.4	1.9	1.4	6.9	1.9	2.9	0.5	1.9	1	2.9	1.4	2.9	0.4	0.4	1	5	0	2.5	0	10.9	2.6	24
9	0	5.5	1.9	1.4	3.4	1.9	0	5.5	9.9	9	9.4	6	3.4	0	7.9	5	5	1.9	1.9	2.5	6.5	0	0	0.4	9.9	3.7	24
10	0	1	1	2.5	0	0	1.4	6	6.5	5	6	**N**	0.5	3.4	1	3.4	0.5	1.9	2.5	0.4	2.9	0.5	2.5	2.9	6.5	2.3	23
11	2.9	1	0.5	1.4	8.4	1.9	0	3.4	7.5	5.9	1.4	4.4	4.4	**N**	7.5	5	1	8.4	8.4	2.9	3.4	5	9	4.4	9.0	4.3	23
12	1.9	1.9	2.9	5.5	6.5	6	6	6.5	2.5	5.5	7.9	4.4	5	5	0.5	5.5	10.5	4	7.5	4	2.5	5.5	9.9	7.5	10.5	5.2	24
13	4	6.5	7.5	6.5	3.4	5.5	5	7.5	6	4	0	4.4	1	2.9	2.9	0	0	0.9	0	1.9	1	0.5	3.4	4	7.5	3.3	24
14	3.4	1.9	4.4	4	1	6	2.9	0	5.5	0.5	4	2.5	0	5	3.4	6	1.9	0	5.5	0	2.5	5	2.9	5.5	6.0	3.1	24
15	3.4	5	2.9	3.4	4.4	5	9.9	4.4	2.9	0	0.5	0	0.4	6	3.4	6.5	1	0	5	0	1.4	1	2.5	3.4	9.9	3.0	24
16	1	4	7.5	7.9	3.4	6.5	10.5	6.5	5.5	9.4	5.5	4.4	7	9.9	2.9	4.4	9.4	9.9	6.5	7	9.4	2.5	7.9	2.9	10.5	6.3	24
17	5.5	7.9	9	1.4	4.4	9.4	5.5	7	4	1	3.4	5.5	9	5.5	1.4	3.4	7.9	3.4	4	6	6.5	5	2.5	10.5	10.5	5.4	24
18	7	7.5	5	2.5	2.9	5	5.5	9	5.5	2.9	3.4	0.5	2.9	1.4	0	2.9	2.9	5	7.9	1.9	2.5	0	3.4	4	9.0	3.8	24
19	5.5	1.9	4.4	4.4	2.5	4	7	5	6	5	5	2.9	6.5	2.5	5.5	5	0	2.9	4.4	4	3.4	4	6	6.5	7.0	4.3	24
20	2.5	4	3.4	6.5	4.4	6	6.5	10.9	9.9	9.4	11.5	13.9	15.5	10.9	11.5	11.5	9.9	9.4	6	13	6.5	7.5	7.9	9.4	15.5	8.7	24
21	4.4	4.4	7.5	9.4	7	6.9	9	6	5.5	7.5	5	5.5	1.9	3.4	5	1.9	4	1.9	1	0	3.4	6.5	4.4	6	9.4	4.9	24
22	4.4	4	4	5	3.4	2.9	4.4	9.9	5.5	6	16.5	13.9	14.9	16	16	14.9	10.5	17	15.5	17.5	15.5	18.5	17	13	18.5	11.1	24
23	13.4	9.4	9	10.9	4	6.5	7.5	5	6.5	7.5	6.5	10.5	6	5.5	4.4	5	7.5	11.5	7.5	9.4	8.4	12.5	6.5	7.9	13.4	7.9	24
24	10.5	8.4	6.9	6.9	5.5	9.9	12.5	10.5	11.5	7	9	9.9	7.9	6	1	0	3.4	4.4	2.9	6.5	1.9	2.9	1.9	1	12.5	6.2	24
25	3.4	4.4	1.9	1	2.9	3.4	2.9	1	7.9	7.9	8.4	9.9	9.4	14.4	7	5	2.5	4	5.5	3.4	1.9	1.4	0.5	0.5	14.4	4.6	24
26	5	5	5	2.9	1	2.5	4.4	4	5	4.4	0	4.4	1	0	4.4	2.5	6	1	5.5	6.5	4.4	2.5	6	5.5	6.5	3.7	24
27	5.5	3.4	6	1.9	0	2.9	1.9	6	2.5	1.4	2.9	0	1	5.5	4.4	5	2.9	7.5	7.5	4.4	2.5	5.5	5	7.9	7.9	3.9	24
28	6.5	7.9	6	5.5	1.9	1.9	6.5	2.5	0	6.5	5.5	6	7.5	6.5	7	5	3.4	7.9	9	4.4	6	5	6.5	6	9.0	5.5	24
29	4	6	5	6	0	1.4	5	1.9	3.4	2.5	2.9	1.4	1.9	6.5	5.5	7	1.4	0	2.5	6	10.9	13.9	6.5	9	13.9	4.6	24
30	10.5	7.5	7	7	8.4	12.5	11.5	14.9	9	12	10.5	13.9	15	9.9	6.5	4	7.5	12.4	16.5	9.4	2.9	7.5	6	7.9	16.5	9.6	24
31	7	4.4	2.5	6	0	1.4	7	4	0	4	4	5	6.5	7.9	7.9	5	7	9	7	5.5	3.4	6	7.5	9.9	9.9	5.3	24
HOURLY MAX	18	22	10	14	21	19	13	15	12	12	17	15	16	17	16	17	17	19	20	18	23	22	17	18			
HOURLY AVG	4.5	5.0	4.9	5.3	4.2	4.9	5.4	5.4	5.6	5.2	5.1	5.6	5.8	6.5	5.5	5.4	4.7	5.6	5.9	5.2	5.5	5.9	5.6	6.1			

STATUS FLAG CODES

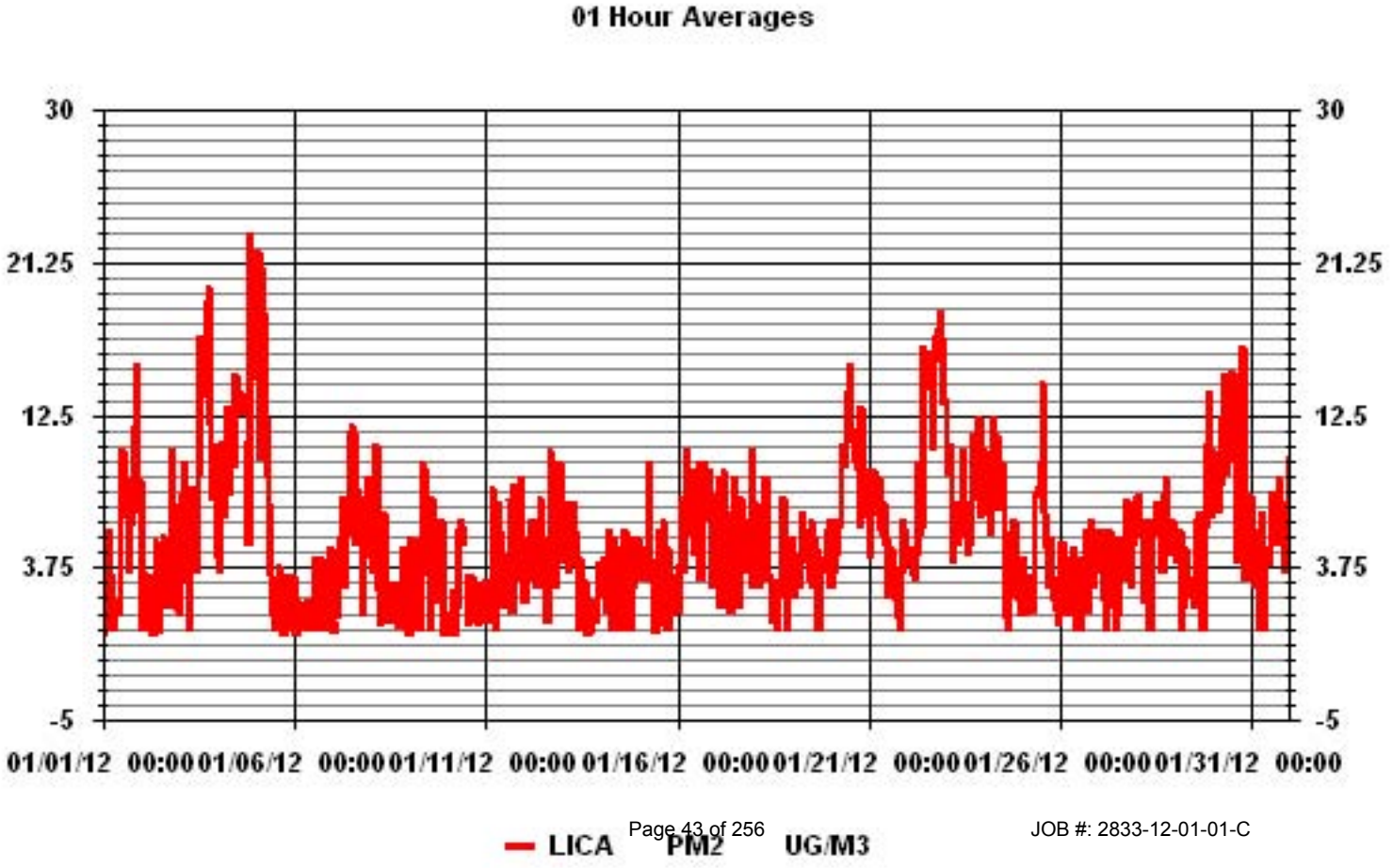
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR - 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:	680					
MAXIMUM 1-HR AVERAGE:	22.9	UG/M^3	@ HOUR(S)	20	ON DAY(S)	4
MAXIMUM 24-HR AVERAGE:	11.5	UG/M^3			ON DAY(S)	4
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		740	HRS
MONTHLY CALIBRATION TIME:	1	HRS	AMD OPERATION UPTIME:		99.5	%
STANDARD DEVIATION:	4.13		MONTHLY AVERAGE:		5.36	UG/M^3



JOB #: 2833-12-01-01-C

LICA
PM2 / WD Joint Frequency Distribution (Percent)

January 2012

Distribution By % Of Samples

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

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
<	30.0	.54	1.08	1.48	1.89	4.73	5.95	9.74	3.92	1.75	2.30	23.54	22.86	8.52	3.11	4.87	3.65	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	.54	1.08	1.48	1.89	4.73	5.95	9.74	3.92	1.75	2.30	23.54	22.86	8.52	3.11	4.87	3.65	

Calm : .00 %

Total # Operational Hours : 739

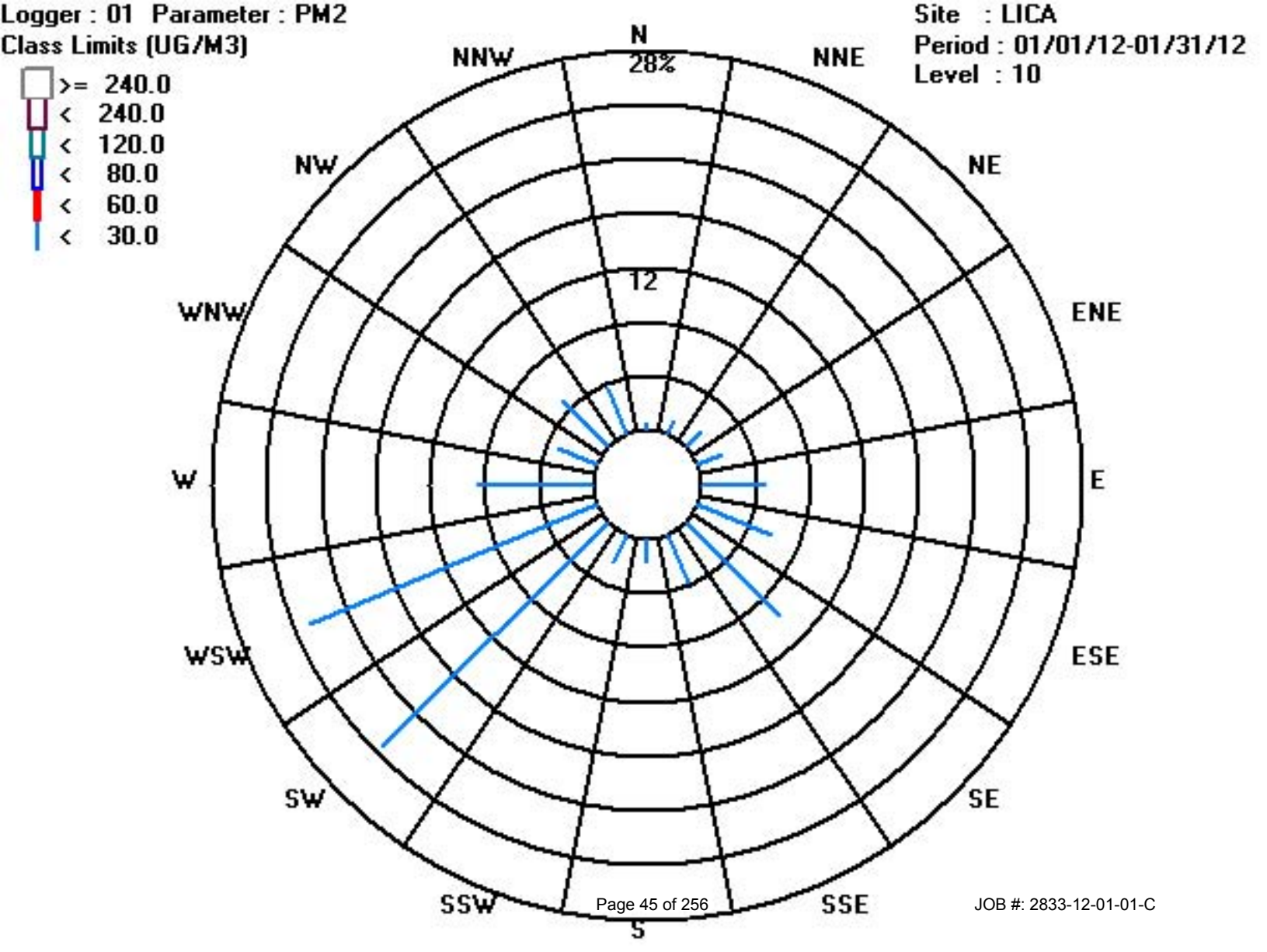
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30.0	4	8	11	14	35	44	72	29	13	17	174	169	63	23	36	27	739
<	60.0																	
<	80.0																	
<	120.0																	
<	240.0																	
>=	240.0																	
	Totals	4	8	11	14	35	44	72	29	13	17	174	169	63	23	36	27	

Calm : .00 %

Total # Operational Hours : 739


Logger : 01 Parameter : PM2
Class Limits (UG/M3)
>= 240.0
< 240.0
< 120.0
< 80.0
< 60.0
< 30.0
Site : LICA
Period : 01/01/12-01/31/12
Level : 10
N
28%
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
12

Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

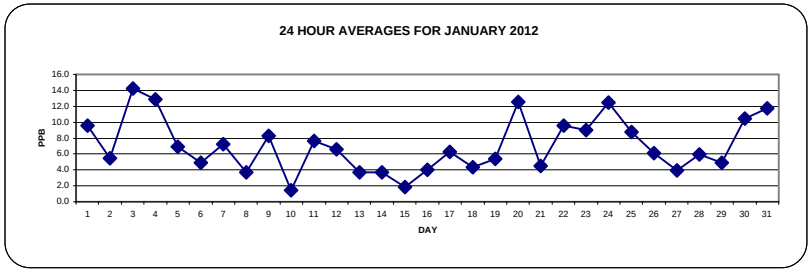
NITROGEN DIOXIDE hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	5	7	4	4	5	4	3	5	5	5	5	5	6	7	7	10	16	15	**IZS**	20	21	22	20	19	22	9.6	24
2	5	4	4	3	2	3	4	3	2	2	3	5	4	4	4	5	6	**IZS**	9	10	9	13	11	10	13	5.4	24
3	9	11	9	11	11	8	8	10	14	12	13	10	10	9	12	21	**IZS**	31	30	19	20	18	18	13	31	**14.2**	24
4	7	6	6	10	14	21	19	16	17	17	12	6	7	9	**C**	**C**	**C**	**C**	**C**	**C**	16	16	17	15	21	12.8	24
5	13	14	12	12	14	15	16	16	12	**C**	2	1	2	2	**IZS**	**M**	3	1	1	1	1	1	2	4	16	6.9	23
6	3	4	3	3	3	4	4	4	6	4	4	4	4	**IZS**	6	10	6	5	6	6	5	5	6	7	10	4.9	24
7	8	6	3	3	3	3	4	4	5	7	10	8	**IZS**	8	8	8	11	8	9	10	14	11	8	7	14	7.2	24
8	7	6	5	5	5	5	5	4	4	4	3	**IZS**	2	2	2	2	2	1	2	4	4	4	3	4	7	3.7	24
9	3	4	4	5	4	4	10	15	30	34	**IZS**	7	5	11	5	7	9	8	9	7	6	2	1	1	34	8.3	24
10	1	1	1	1	1	1	1	2	**C**	**IZS**	2	2	1	1	1	1	1	1	1	2	2	2	2	3	3	1.4	24
11	3	2	2	2	2	3	9	19	**IZS**	10	4	3	4	3	4	4	8	16	13	10	13	16	14	11	19	7.6	24
12	11	13	12	15	14	10	6	**IZS**	7	6	5	5	4	4	4	5	6	4	3	3	3	3	4	4	15	6.6	24
13	5	4	4	7	9	6	**IZS**	7	6	6	5	3	1	1	1	1	1	1	2	2	3	3	4	3	9	3.7	24
14	3	3	5	6	9	**IZS**	4	4	**C**	**C**	11	5	3	3	3	4	4	3	3	1	1	1	1	1	11	3.7	24
15	1	1	0	0	**IZS**	1	2	3	4	4	3	2	2	2	2	2	2	2	2	2	2	1	1	2	4	1.9	24
16	2	3	4	**IZS**	1	2	2	3	3	4	3	2	2	2	2	3	5	5	6	9	10	7	6	6	10	4.0	24
17	6	6	**IZS**	8	7	8	9	12	11	8	5	4	3	3	2	3	5	6	7	6	7	7	6	6	12	6.3	24
18	6	**IZS**	6	5	4	4	5	5	5	**C**	**C**	**C**	3	2	2	3	4	4	4	6	5	5	4	5	6	4.4	24
19	**IZS**	5	5	4	4	4	5	7	7	6	5	4	3	3	2	3	5	5	8	8	10	10	6	**IZS**	10	5.4	24
20	7	8	8	9	10	9	7	11	11	10	10	10	8	8	10	12	23	21	24	**37**	16	12	**IZS**	8	**37**	12.6	24
21	8	8	7	6	6	5	5	5	4	4	5	3	3	3	4	4	5	5	4	3	3	**IZS**	2	2	8	4.5	24
22	2	2	2	3	3	4	5	5	6	4	6	6	6	7	7	8	15	23	24	24	**IZS**	23	23	12	24	9.6	24
23	9	7	5	5	4	4	4	7	19	15	5	3	3	3	4	5	10	11	17	**IZS**	16	22	13	16	22	9.0	24
24	21	11	13	16	18	19	22	19	20	18	10	6	6	6	6	8	16	20	**IZS**	8	7	6	5	5	22	12.4	24
25	6	6	5	7	10	13	10	14	23	17	12	13	10	10	9	10	4	**IZS**	4	4	4	4	3	3	23	8.7	24
26	3	4	4	3	4	4	3	6	9	7	7	6	4	4	9	8	**IZS**	10	11	8	6	7	7	7	11	6.1	24
27	6	5	4	3	2	1	1	2	3	4	4	3	4	4	4	**IZS**	5	6	5	4	5	5	5	6	6	4.0	24
28	6	5	2	2	3	4	4	4	3	4	6	6	5	5	**IZS**	4	6	15	16	10	11	7	5	4	16	6.0	24
29	4	4	3	3	3	3	2	2	3	3	2	2	2	**IZS**	3	3	4	4	4	4	10	11	14	19	19	4.9	24
30	16	13	11	10	13	10	15	16	14	10	6	6	**IZS**	6	5	10	10	11	13	13	10	9	8	6	16	10.5	24
31	9	7	7	7	7	6	6	9	9	8	11	**IZS**	13	10	10	10	20	30	28	19	12	10	11	11	30	11.7	24
HOURLY MAX	21	14	13	16	18	21	22	19	30	34	13	13	13	11	12	21	23	31	30	37	21	23	23	19			
HOURLY AVG	6.5	6.0	5.3	5.9	6.5	6.3	6.7	8.0	9.4	8.6	6.2	5.0	4.5	4.9	4.9	6.2	7.6	9.7	9.5	9.0	8.4	8.8	7.7	7.3			

STATUS FLAG CODES

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



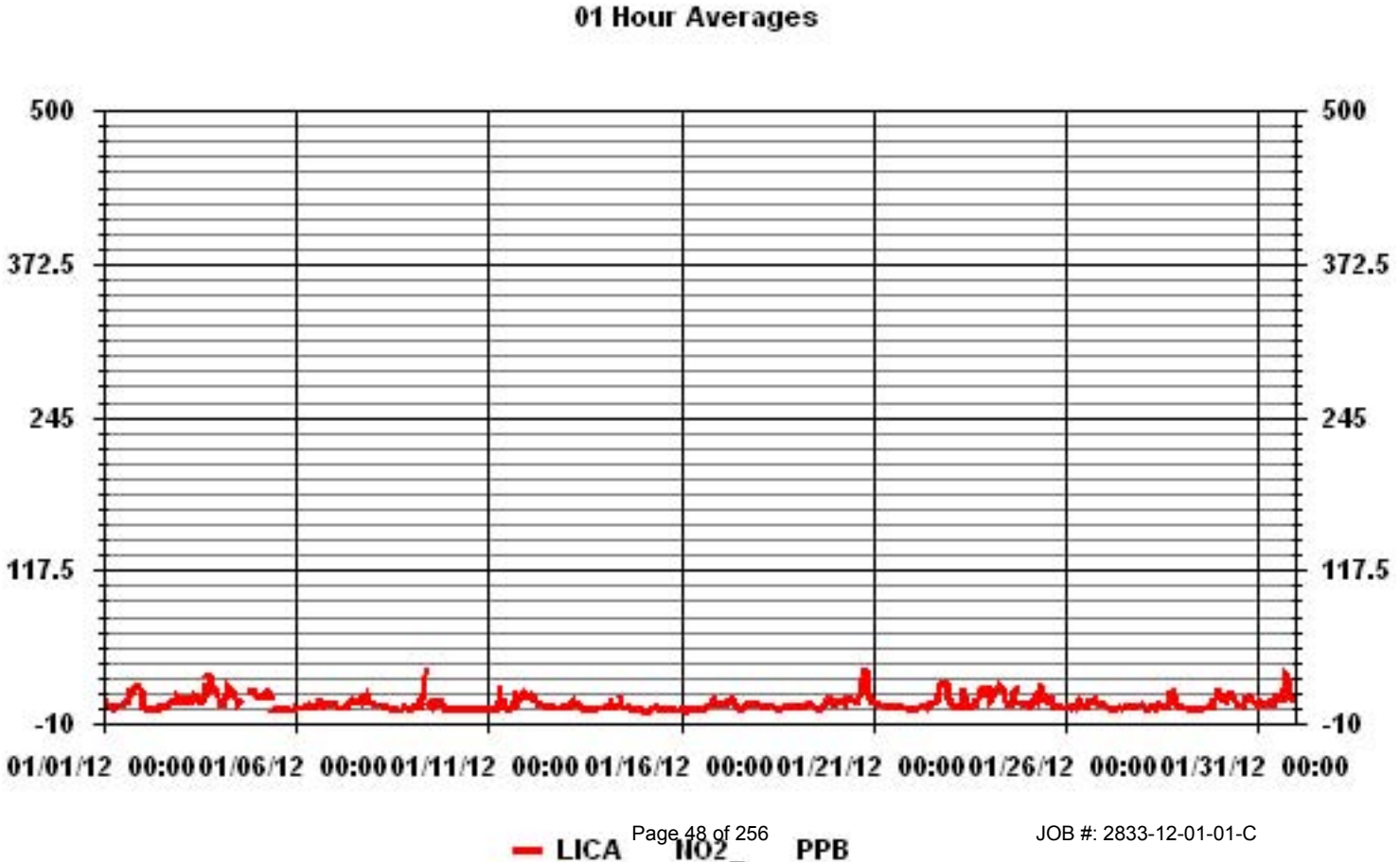
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	697					
MAXIMUM 1-HR AVERAGE:	37	PPB	@ HOUR(S)	19	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:	14.2	PPB			ON DAY(S)	3

IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	13	HRS	AMD OPERATION UPTIME:	99.9	%
STANDARD DEVIATION:	5.51		MONTHLY AVERAGE:	7.02	PPB

JOB #: 2833-12-01-01-C



JOB #: 2833-12-01-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

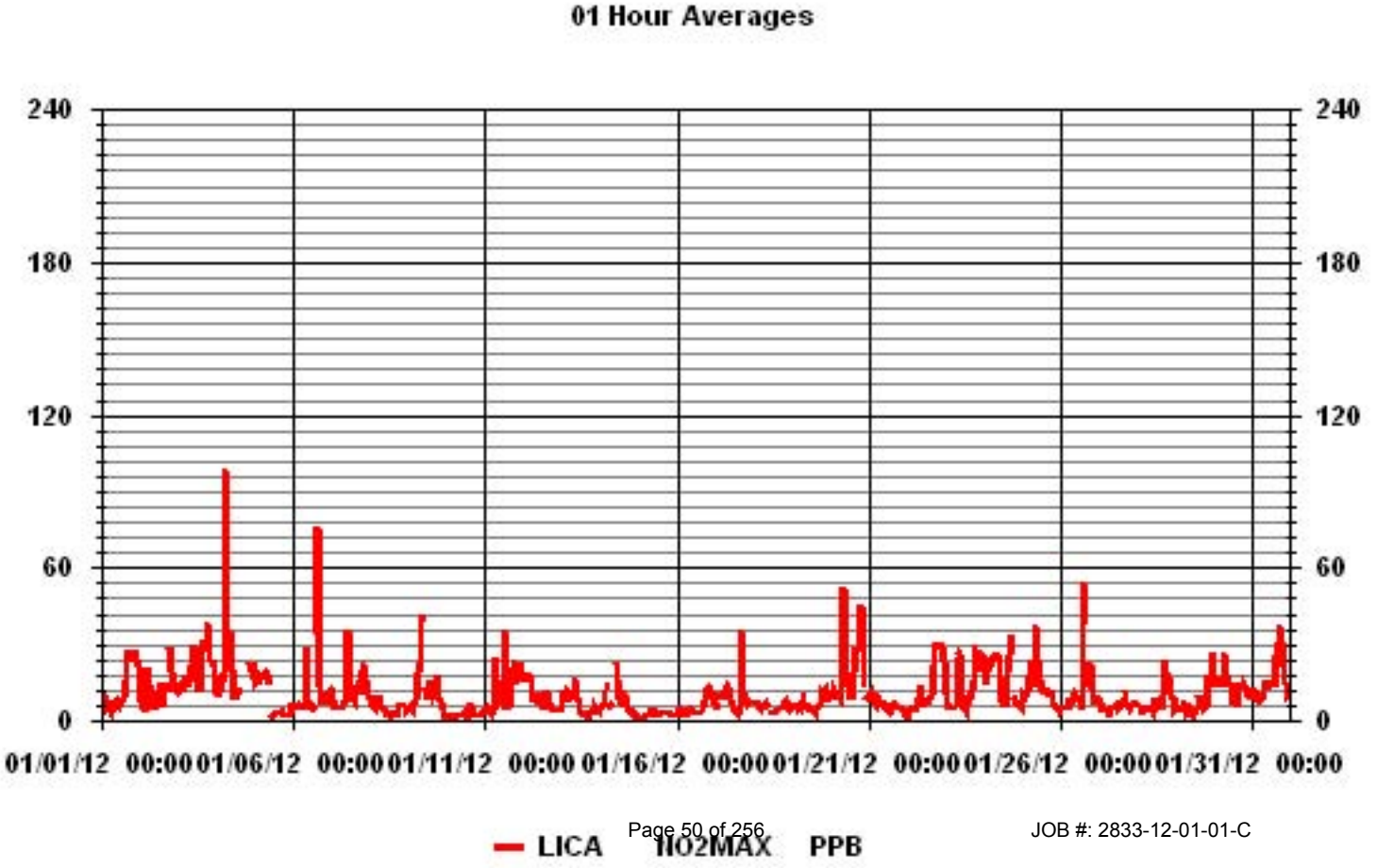
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	10	10	5	6	6	5	4	7	7	8	7	6	8	8	9	16	28	27	**IZS**	24	24	27	24	22	28	13.0	24
2	8	5	5	5	4	21	15	4	12	4	10	7	7	15	5	11	14	**IZS**	28	20	15	16	12	11	28	11.0	24
3	12	13	11	16	18	13	17	15	22	20	30	17	12	12	21	30	**IZS**	35	39	28	24	22	22	19	39	20.3	24
4	11	9	11	15	19	**99**	92	19	36	25	21	8	10	12	**C**	**C**	**C**	**C**	**C**	**C**	**C**	22	19	20	**99**	26.4	24
5	16	17	14	17	18	18	19	18	16	**C**	**C**	2	3	3	**IZS**	**M**	4	3	2	2	2	2	3	7	19	9.3	23
6	5	5	5	6	5	5	7	6	29	5	5	6	5	**IZS**	35	76	14	6	10	9	7	7	11	12	76	12.2	24
7	11	9	6	5	5	5	5	7	7	9	36	8	**IZS**	9	8	13	14	10	13	20	23	17	11	10	36	11.3	24
8	9	7	6	10	6	6	10	5	5	5	4	**IZS**	2	3	3	3	2	2	6	6	6	6	4	5	10	5.3	24
9	5	6	5	8	6	8	19	23	42	40	**IZS**	12	8	16	14	10	11	9	18	10	8	5	1	1	42	12.4	24
10	2	2	2	1	2	1	2	2	**C**	**IZS**	3	4	1	2	2	7	2	2	2	2	2	3	3	4	7	2.4	24
11	4	5	4	4	3	4	25	24	**IZS**	15	6	8	36	4	8	5	15	21	24	14	16	18	23	16	36	13.1	24
12	16	16	16	18	16	12	9	**IZS**	10	7	7	7	4	6	11	11	8	5	5	4	4	4	4	5	18	8.9	24
13	7	12	7	11	10	9	**IZS**	12	17	10	8	5	3	1	3	3	2	3	3	3	6	5	5	4	17	6.5	24
14	5	6	7	12	14	**IZS**	6	7	**C**	**C**	22	17	9	7	5	9	8	5	4	2	5	1	2	2	22	7.4	24
15	1	1	1	1	**IZS**	2	2	4	4	4	4	3	2	2	3	3	3	3	3	3	3	2	2	2	4	2.5	24
16	3	4	5	**IZS**	2	2	3	4	5	5	4	3	3	3	3	4	6	7	8	12	13	12	9	7	13	5.5	24
17	8	6	**IZS**	10	8	10	12	14	13	9	7	5	5	4	3	5	36	8	9	7	8	8	7	7	36	9.1	24
18	7	**IZS**	7	6	5	6	6	7	6	**C**	**C**	**C**	3	3	4	4	5	5	5	7	8	6	5	6	8	5.6	24
19	**IZS**	6	6	5	6	5	7	10	**M**	**M**	6	5	4	4	3	5	6	6	11	10	11	12	9	**IZS**	12	6.9	22
20	9	13	12	10	12	10	9	14	52	14	15	14	9	9	18	19	29	27	37	45	34	14	**IZS**	9	52	18.9	24
21	10	11	8	8	7	11	7	6	6	8	6	5	5	4	5	6	7	7	6	5	5	**IZS**	4	3	11	6.5	24
22	2	4	4	6	3	5	7	9	14	5	7	7	7	8	9	10	22	29	29	30	**IZS**	30	29	24	30	13.0	24
23	11	8	6	5	5	5	6	25	27	26	11	5	4	7	7	8	12	16	28	**IZS**	24	28	20	21	28	13.7	24
24	26	14	19	22	22	23	25	23	26	24	18	8	6	6	8	19	26	32	**IZS**	9	8	7	7	6	32	16.7	24
25	10	9	10	11	18	24	13	24	38	25	15	17	12	11	11	13	11	**IZS**	11	6	6	6	5	4	38	13.5	24
26	5	5	5	5	8	8	7	9	11	10	10	8	6	5	54	39	**IZS**	14	23	13	7	8	9	9	54	12.1	24
27	7	7	5	4	4	2	2	5	5	5	6	5	6	7	6	**IZS**	11	7	6	5	6	7	7	7	11	5.7	24
28	7	6	4	2	4	5	5	5	5	4	8	8	6	7	**IZS**	6	10	24	20	15	17	9	9	5	24	8.3	24
29	6	6	4	4	5	8	3	4	5	4	3	2	4	**IZS**	9	4	7	5	6	5	18	13	19	27	27	7.4	24
30	19	15	14	14	14	17	27	21	19	15	14	7	**IZS**	7	5	14	14	12	15	14	13	10	10	8	27	13.8	24
31	13	11	11	9	8	9	9	13	15	13	13	**IZS**	15	13	26	21	31	37	31	28	15	11	12	14	37	16.4	24
HOURLY MAX	26	17	19	22	22	99	92	25	52	40	36	17	36	16	54	76	36	37	39	45	34	30	29	27			
HOURLY AVG	8.8	8.3	7.5	8.5	8.8	11.9	12.7	11.5	16.8	12.3	10.9	7.5	7.1	6.8	10.6	13.4	12.8	13.1	14.4	12.3	11.7	11.3	10.2	9.9			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	695					
MAXIMUM INSTANTANEOUS VALUE:	99	PPB	@ HOUR(S)	5	ON DAY(S)	4
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		741	HRS
MONTHLY CALIBRATION TIME:	15	HRS				
STANDARD DEVIATION	9.71					



JOB #: 2833-12-01-01-C

LICA
NO2_ / WD Joint Frequency Distribution (Percent)

January 2012

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	.57	1.14	1.43	1.85	5.00	5.86	9.44	3.86	1.71	2.43	23.46	23.31	8.15	3.14	5.15	3.43	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	.57	1.14	1.43	1.85	5.00	5.86	9.44	3.86	1.71	2.43	23.46	23.31	8.15	3.14	5.15	3.43	

Calm : .00 %

Total # Operational Hours : 699

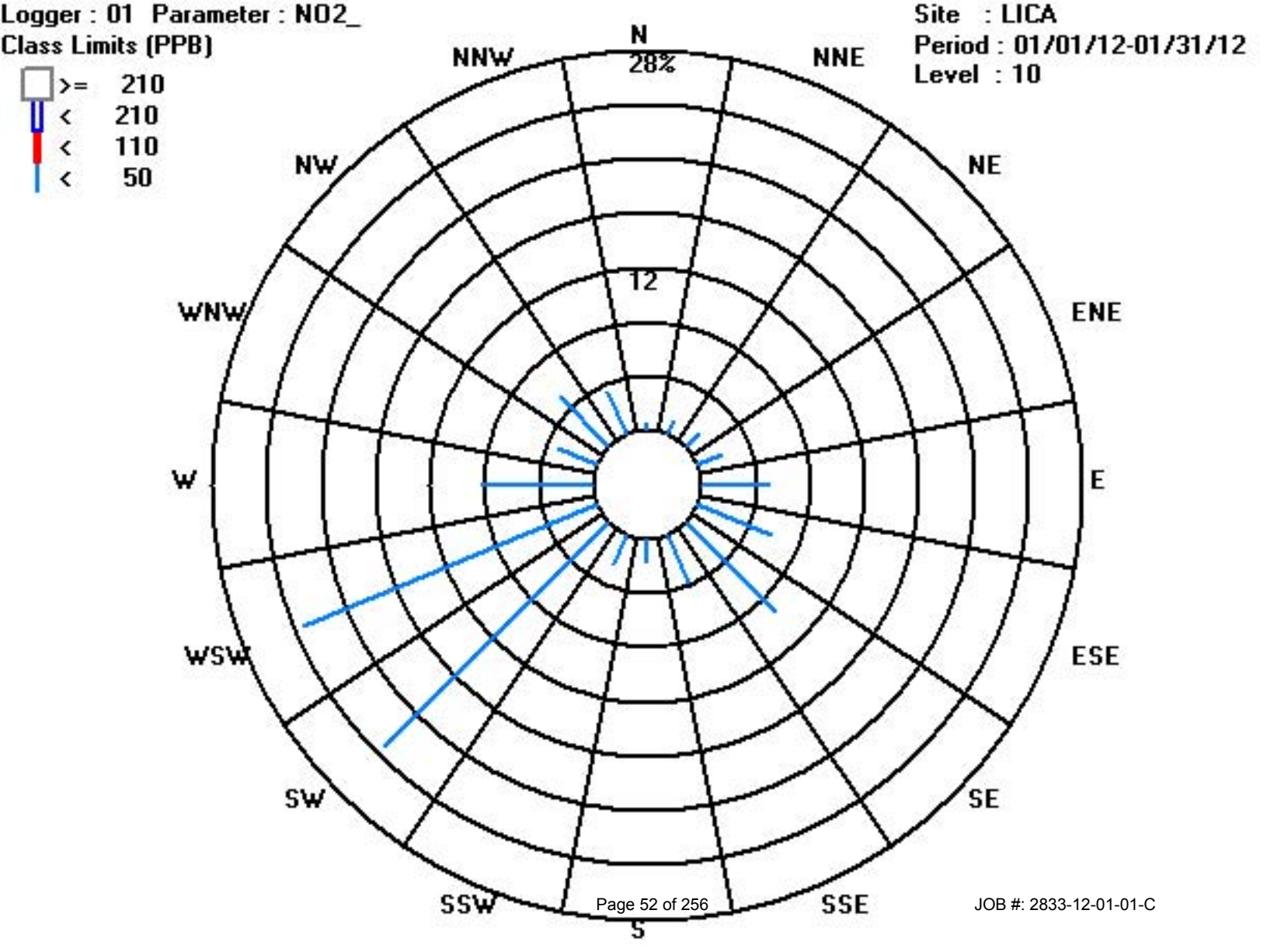
Distribution By Samples

Direction

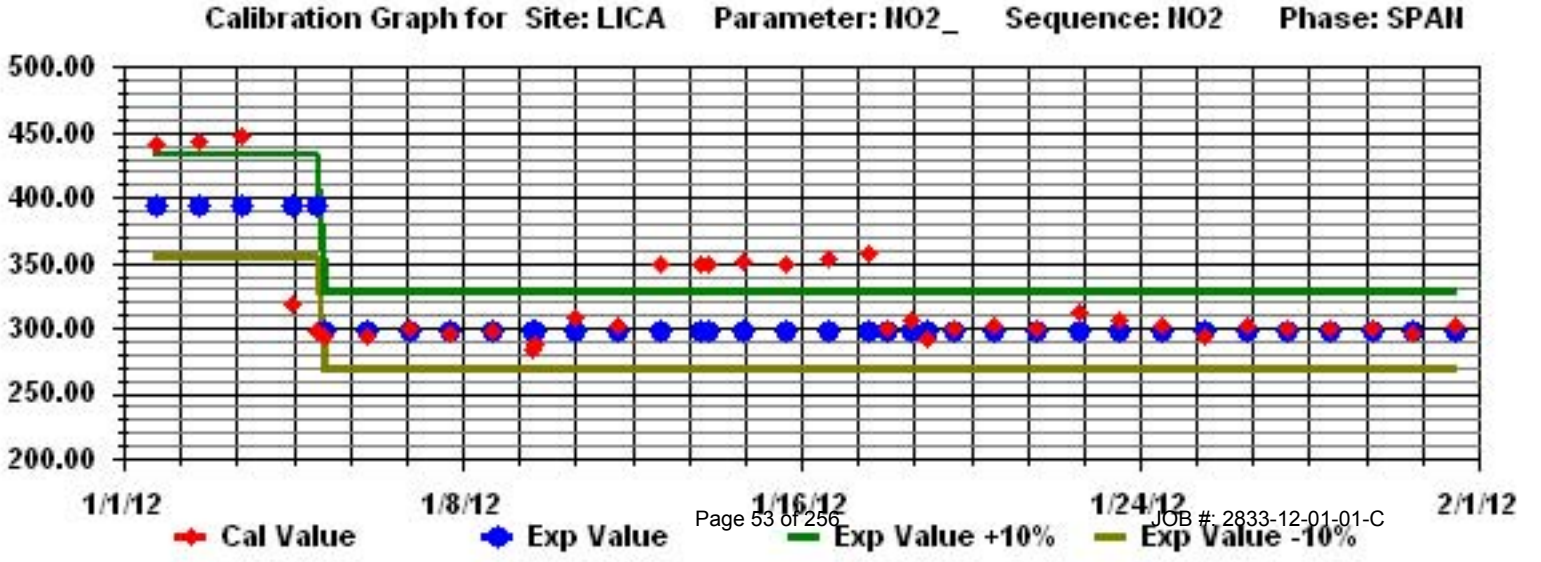
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	4	8	10	13	35	41	66	27	12	17	164	163	57	22	36	24	699
<	110																	
<	210																	
>=	210																	
	Totals	4	8	10	13	35	41	66	27	12	17	164	163	57	22	36	24	

Calm : .00 %

Total # Operational Hours : 699



JOB #: 2833-12-01-01-C


Calibration Graph for Site: LICA Parameter: NO2_ Sequence: NO2 Phase: SPAN
500.00
450.00
400.00
350.00
300.00
250.00
200.00
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

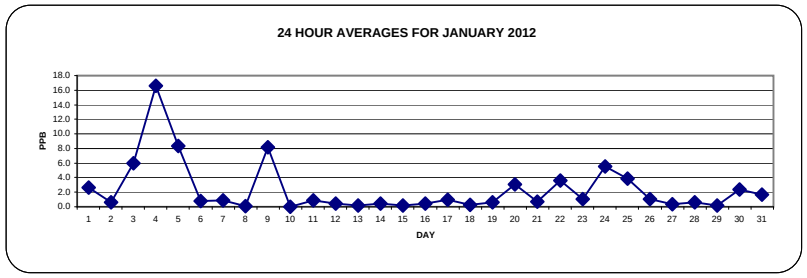
NITRIC OXIDE hourly averages in ppb

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	0	0	0	1	2	2	3	3	2	1	1	1	**IZS**	5	10	20	8	2	20	2.7	24
2	1	0	0	0	0	1	1	0	1	0	1	2	1	2	1	1	0	**IZS**	2	1	0	0	0	0	2	0.7	24
3	0	0	0	1	2	1	1	1	2	4	5	5	3	2	3	4	**IZS**	36	45	10	2	3	5	2	45	6.0	24
4	0	0	0	1	3	16	22	11	30	38	14	2	3	6	**C**	**C**	**C**	**C**	**C**	**C**	28	36	43	46	46	**16.6**	24
5	37	41	35	23	28	8	2	1	0	**C**	0	0	0	0	**IZS**	**M**	0	0	0	0	0	0	0	0	41	8.3	23
6	0	0	0	0	0	0	0	0	1	0	1	1	1	**IZS**	6	8	0	0	0	0	0	0	0	0	8	0.8	24
7	0	0	0	0	0	0	0	0	0	1	5	3	**IZS**	3	2	1	1	0	0	0	3	1	0	0	5	0.9	24
8	0	0	0	0	0	0	0	0	0	0	1	**IZS**	0	1	0	0	0	0	0	0	0	0	0	0	1	0.1	24
9	0	0	0	0	0	0	1	10	67	**100**	**IZS**	2	1	3	1	2	1	0	0	0	0	0	0	0	**100**	8.2	24
10	0	0	0	0	0	0	0	0	**C**	**IZS**	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	1	4	**IZS**	2	1	1	2	1	1	1	1	1	1	0	1	1	1	0	4	0.9	24
12	1	1	0	1	1	0	0	**IZS**	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0.4	24
13	0	0	0	0	0	0	**IZS**	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
14	0	0	0	0	0	**IZS**	0	0	**C**	**C**	3	2	1	1	1	1	0	1	0	0	0	0	0	0	3	0.5	24
15	0	0	0	0	**IZS**	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.2	24
16	0	0	0	**IZS**	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	1	1	1	1	0	1	0.5	24
17	0	0	**IZS**	0	0	0	1	1	1	3	3	3	3	2	1	1	1	0	1	1	0	0	0	0	3	1.0	24
18	0	**IZS**	0	0	0	0	0	0	1	**C**	**C**	**C**	2	1	1	1	0	0	0	0	0	0	0	0	2	0.3	24
19	**IZS**	0	0	0	0	0	0	0	1	2	2	2	2	2	1	1	0	0	0	0	0	0	0	**IZS**	2	0.6	24
20	0	0	0	1	1	0	1	0	4	3	5	6	5	4	4	3	3	2	5	19	4	1	**IZS**	0	19	3.1	24
21	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	**IZS**	0	0	1	0.7	24
22	0	0	0	0	0	0	0	0	1	1	2	4	5	4	4	2	3	8	13	21	**IZS**	6	7	1	21	3.6	24
23	0	0	0	0	0	0	0	1	4	5	2	1	1	1	1	1	1	0	1	**IZS**	1	3	0	1	5	1.0	24
24	3	0	0	1	3	6	23	18	23	28	7	3	3	3	2	1	1	3	**IZS**	0	0	0	0	0	28	5.6	24
25	0	0	0	0	0	2	0	4	34	21	7	8	4	4	3	2	0	**IZS**	0	0	0	0	0	0	34	3.9	24
26	0	0	0	0	0	0	1	0	1	1	2	2	2	1	9	6	**IZS**	0	0	0	0	0	0	0	9	1.1	24
27	0	0	0	0	0	0	0	0	1	1	2	1	1	1	1	**IZS**	1	0	0	0	0	0	0	0	2	0.4	24
28	0	0	0	0	0	0	0	0	0	1	2	2	3	2	**IZS**	1	0	1	0	0	1	1	1	0	3	0.7	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	0	0	0	0	1	0	0	1	1	0.2	24
30	0	0	0	0	1	2	4	13	16	8	3	2	**IZS**	2	1	2	1	0	0	0	0	0	0	0	16	2.4	24
31	0	0	0	0	0	0	0	0	1	2	5	**IZS**	7	4	3	4	2	6	3	1	0	0	0	0	7	1.7	24
HOURLY MAX	37	41	35	23	28	16	23	18	67	100	14	8	7	6	9	8	3	36	45	21	28	36	43	46			
HOURLY AVG	1.4	1.4	1.2	1.0	1.3	1.2	2.0	2.2	6.8	8.4	2.8	2.1	2.0	2.0	1.9	1.7	0.6	2.1	2.5	2.0	1.7	2.4	2.2	1.8			

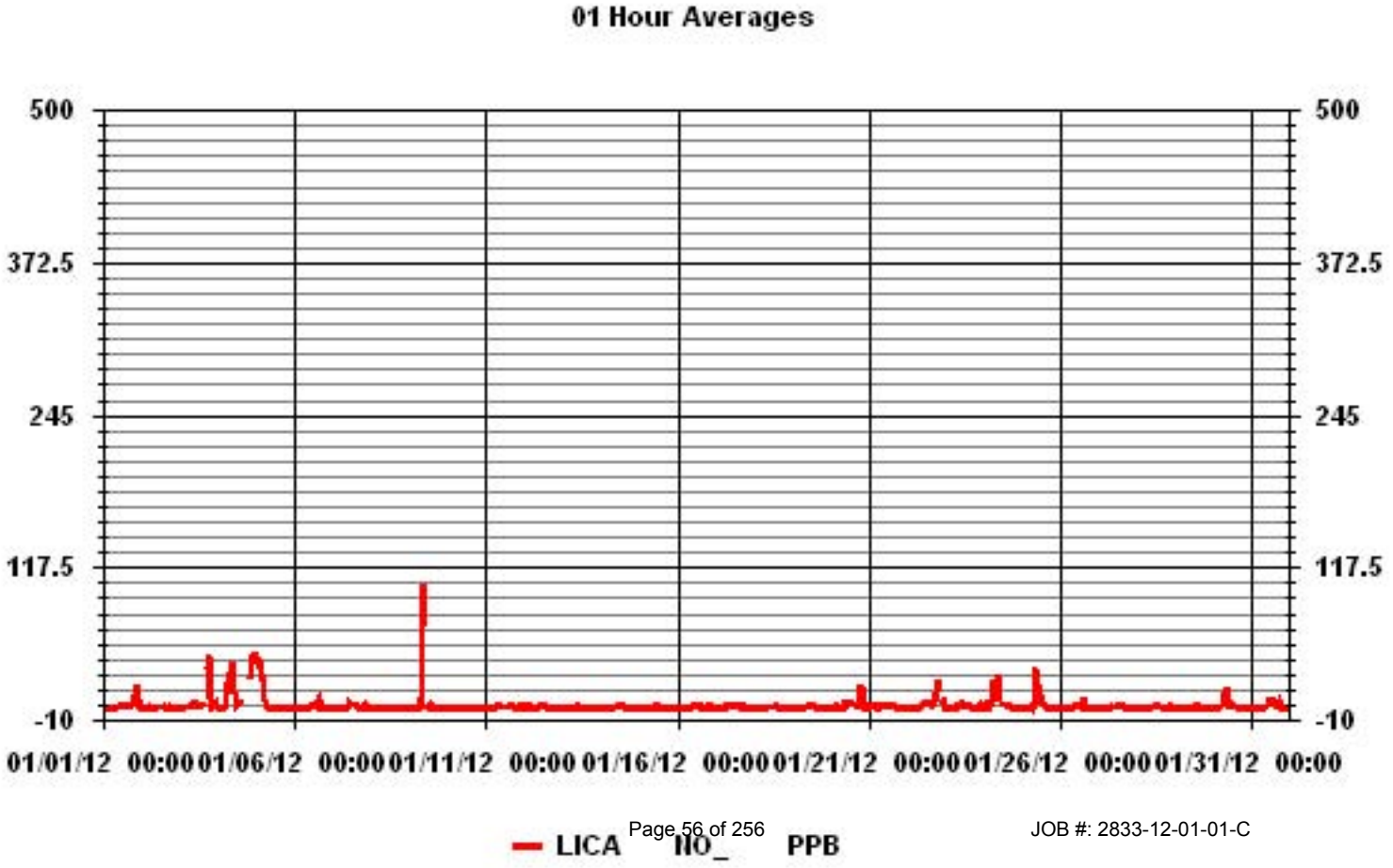
STATUS FLAG CODES

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:		316					
MAXIMUM 1-HR AVERAGE:		100	PPB	@ HOUR(S)	9	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:		16.6	PPB			ON DAY(S)	4
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:			743	HRS
MONTHLY CALIBRATION TIME:	13	HRS	AMD OPERATION UPTIME:			99.9	%
STANDARD DEVIATION:	7.30		MONTHLY AVERAGE:			2.25	PPB



JOB #: 2833-12-01-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

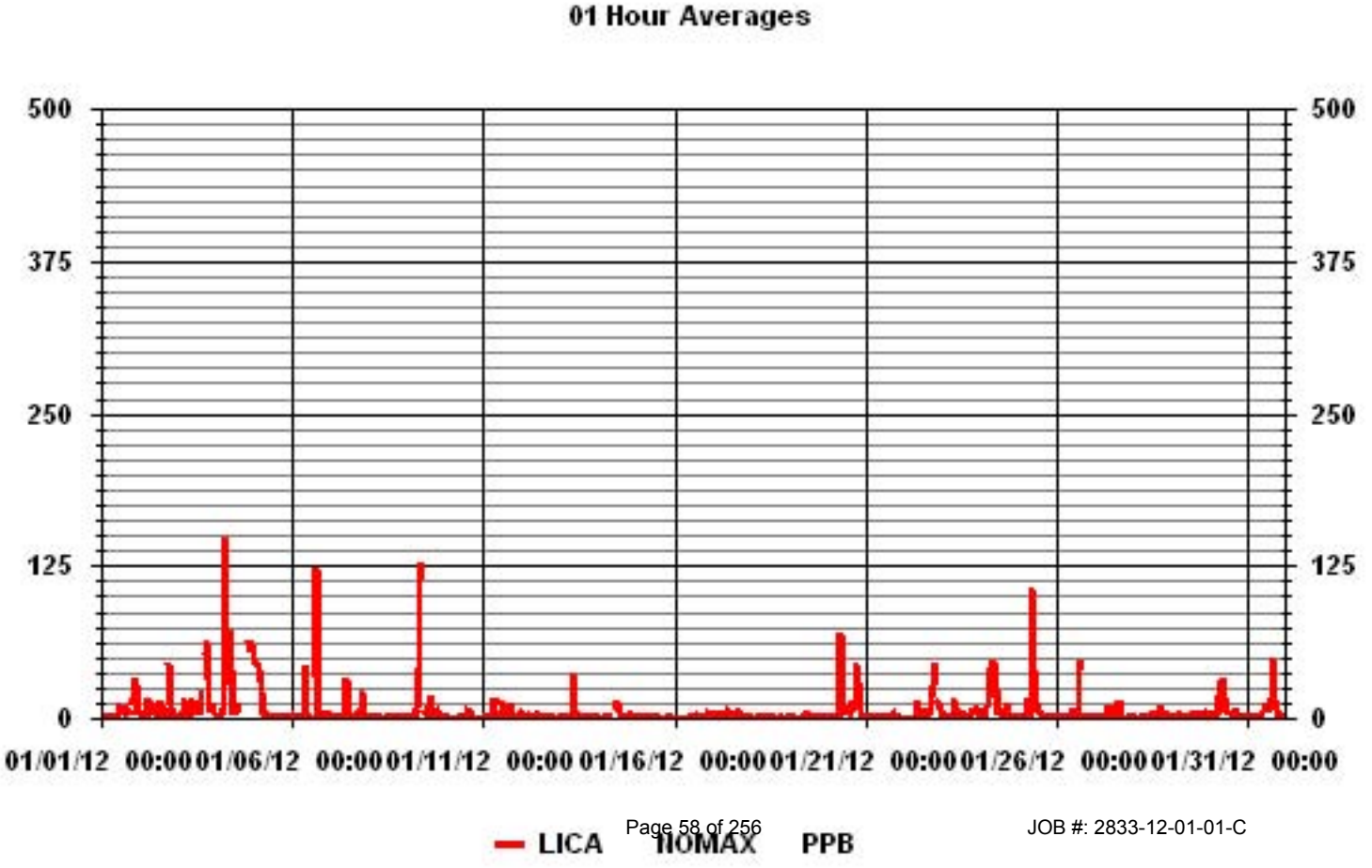
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	1	1	1	1	1	1	2	1	3	4	12	4	4	6	4	9	6	**IZS**	14	17	33	28	5	33	6.9	24
2	5	1	1	1	1	14	14	3	8	2	12	4	6	14	7	7	1	**IZS**	43	12	1	4	1	1	43	7.1	24
3	1	3	4	4	16	4	4	3	7	16	11	12	6	3	12	21	**IZS**	55	63	34	5	8	12	5	63	13.4	24
4	1	1	1	4	9	**146**	**146**	27	73	69	42	4	6	10	**C**	**C**	**C**	**C**	**C**	**C**	**C**	62	55	60	**146**	42.1	24
5	46	46	44	31	33	23	6	4	3	**C**	**C**	1	1	1	**IZS**	**M**	1	1	1	1	1	1	1	3	46	12.5	23
6	1	1	1	1	1	1	1	1	44	2	2	2	1	**IZS**	35	124	2	1	1	2	4	3	4	2	124	10.3	24
7	1	2	2	2	1	1	1	1	1	2	33	4	**IZS**	4	3	2	4	3	1	8	22	3	4	3	33	4.7	24
8	1	1	1	2	0	2	1	1	1	1	2	**IZS**	1	1	1	1	1	1	1	2	1	1	1	1	2	1.1	24
9	2	1	1	1	2	1	8	42	113	126	**IZS**	5	3	7	7	18	4	2	5	1	5	1	1	1	126	15.5	24
10	1	1	1	0	0	0	0	0	**C**	**IZS**	1	1	0	4	1	7	0	0	0	0	0	0	0	0	7	0.8	24
11	1	1	1	1	0	1	17	13	**IZS**	4	2	3	14	1	6	1	4	11	6	1	1	3	5	2	17	4.3	24
12	3	3	1	3	1	1	1	**IZS**	2	1	3	3	2	2	2	2	1	1	1	0	1	1	0	1	3	1.6	24
13	1	2	1	2	2	2	**IZS**	1	38	1	6	2	1	2	1	1	1	0	1	1	1	1	1	1	38	3.0	24
14	1	1	0	1	1	**IZS**	1	1	**C**	**C**	9	13	12	8	4	2	2	2	2	1	6	1	2	1	13	3.4	24
15	1	1	0	1	**IZS**	1	1	0	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	0	1	0.7	24
16	0	0	1	**IZS**	0	0	0	1	0	1	1	1	1	3	1	1	0	1	1	2	5	3	3	3	5	1.3	24
17	3	1	**IZS**	5	1	1	3	4	3	6	4	3	4	3	4	2	7	1	3	2	1	1	2	1	7	2.8	24
18	2	**IZS**	1	2	2	2	1	1	2	**C**	**C**	**C**	2	2	3	1	1	2	1	1	1	1	2	0	3	1.5	24
19	**IZS**	2	1	1	1	0	0	1	**M**	**M**	4	3	3	3	1	2	1	2	3	1	1	1	1	**IZS**	4	1.6	22
20	1	1	1	2	1	2	1	2	71	6	6	8	6	5	9	6	7	15	46	30	19	3	**IZS**	2	71	10.9	24
21	1	1	2	1	1	1	1	1	1	3	2	2	2	1	2	1	1	4	1	1	1	**IZS**	1	0	4	1.4	24
22	0	1	0	0	1	0	1	2	14	1	4	5	5	6	5	4	7	17	27	43	**IZS**	15	14	8	43	7.8	24
23	1	1	1	1	1	1	1	16	10	9	6	2	3	4	3	2	3	1	6	**IZS**	6	9	3	4	16	4.1	24
24	7	1	1	6	10	16	41	31	47	44	25	5	4	6	5	5	4	11	**IZS**	1	1	1	1	1	47	11.9	24
25	1	2	2	2	1	17	1	16	108	42	12	12	6	6	5	3	2	**IZS**	1	1	1	1	1	1	108	10.6	24
26	1	1	1	1	1	2	3	1	2	3	7	3	3	2	48	42	**IZS**	1	1	1	1	1	1	1	48	5.6	24
27	1	0	1	1	1	1	1	1	10	1	10	2	4	3	13	**IZS**	12	1	0	0	1	1	1	1	13	2.9	24
28	1	1	1	0	1	1	1	1	1	1	3	4	5	3	**IZS**	1	1	10	2	1	4	3	3	1	10	2.2	24
29	1	1	1	1	1	5	1	1	1	1	1	1	2	**IZS**	5	1	1	1	3	1	4	1	2	6	6	1.9	24
30	1	1	3	1	3	17	18	30	32	18	8	5	**IZS**	4	2	4	8	3	2	1	2	2	1	1	32	7.3	24
31	1	1	1	1	2	1	1	1	3	5	9	**IZS**	10	6	17	50	8	17	6	4	0	3	2	2	50	6.6	24
HOURLY MAX	46	46	44	31	33	146	146	42	113	126	42	13	14	14	48	124	12	55	63	43	22	62	55	60			
HOURLY AVG	3.0	2.7	2.6	2.7	3.2	8.8	9.2	7.0	22.1	14.2	8.2	4.4	4.1	4.1	7.5	11.3	3.3	6.1	8.1	5.8	3.9	5.6	5.1	3.9			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	648					
MAXIMUM INSTANTANEOUS VALUE:	146	PPB	@ HOUR(S)	5, 6	ON DAY(S)	4
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		741	HRS
MONTHLY CALIBRATION TIME:	15	HRS				
STANDARD DEVIATION	15.38					



JOB #: 2833-12-01-01-C

LICA
NO_ / WD Joint Frequency Distribution (Percent)

January 2012

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	.57	1.14	1.43	1.71	4.86	5.86	9.44	3.86	1.71	2.43	23.46	23.31	8.15	3.14	5.15	3.43	99.71
<	110	.00	.00	.00	.14	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.28
<	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	.57	1.14	1.43	1.85	5.00	5.86	9.44	3.86	1.71	2.43	23.46	23.31	8.15	3.14	5.15	3.43	

Calm : .00 %

Total # Operational Hours : 699

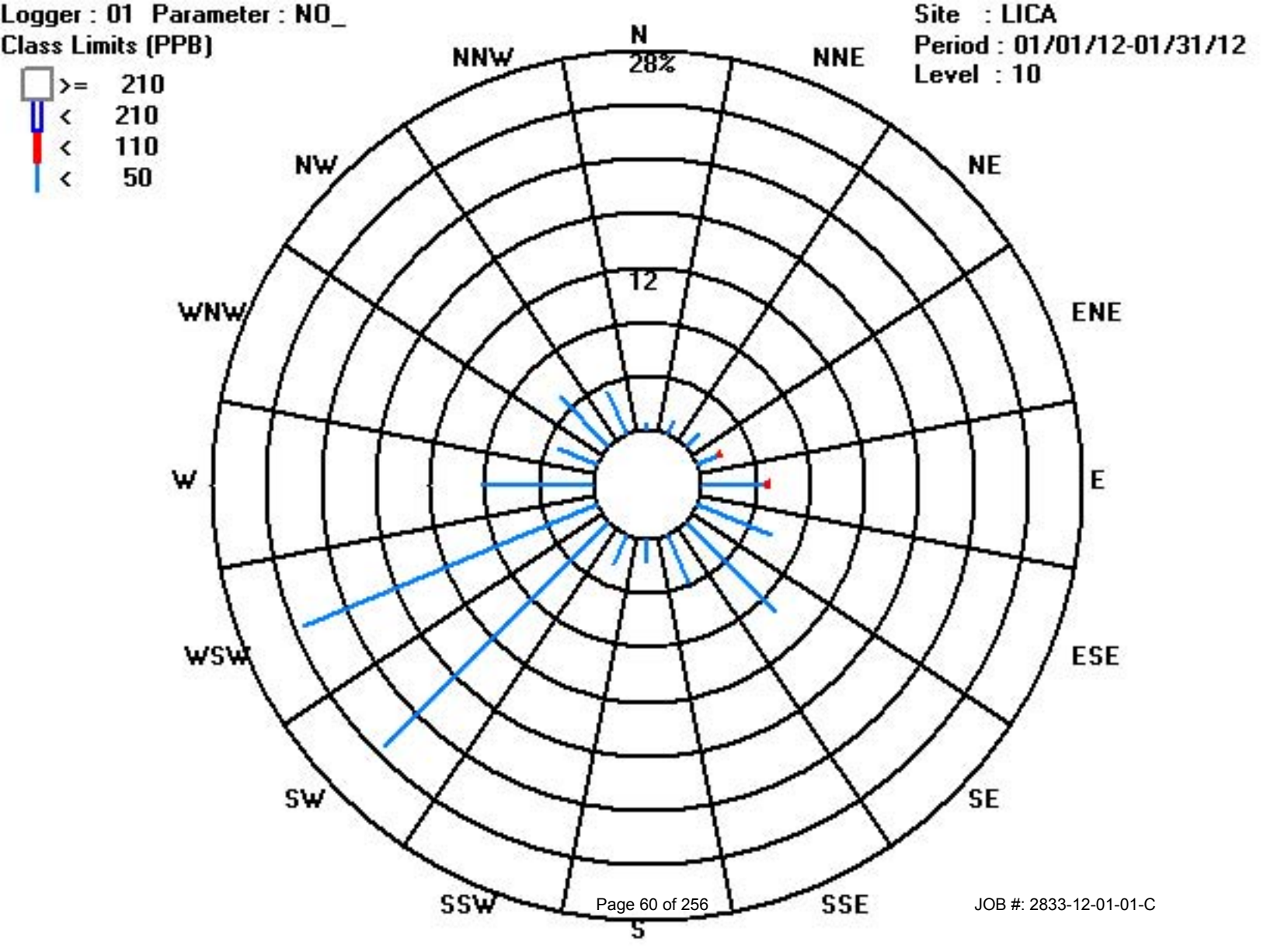
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	4	8	10	12	34	41	66	27	12	17	164	163	57	22	36	24	697
<	110				1	1												2
<	210																	
>=	210																	
	Totals	4	8	10	13	35	41	66	27	12	17	164	163	57	22	36	24	

Calm : .00 %

Total # Operational Hours : 699



JOB #: 2833-12-01-01-C

Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

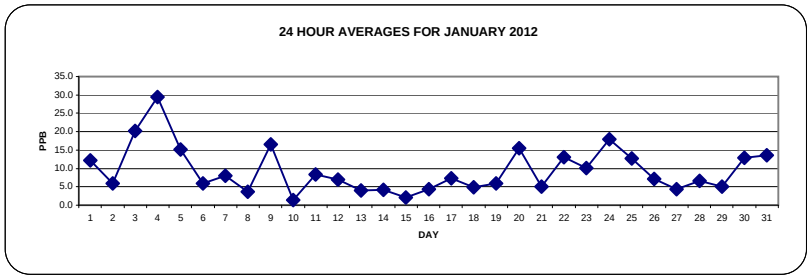
OXIDES OF NITROGEN hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	5	8	4	4	5	4	3	5	5	6	6	7	9	9	9	11	17	17	**IZS**	25	31	42	28	21	42	12.2	24
2	6	4	4	4	3	4	5	3	3	2	3	7	5	5	4	5	6	**IZS**	11	10	9	14	11	10	14	6.0	24
3	9	11	10	12	13	9	9	11	17	16	18	15	13	11	15	25	**IZS**	67	75	28	22	21	23	15	75	20.2	24
4	7	6	7	11	17	37	41	27	47	54	26	8	10	15	**C**	**C**	**C**	**C**	**C**	**C**	44	52	60	61	61	**29.4**	24
5	50	54	46	35	42	24	18	17	12	**C**	2	1	2	2	**IZS**	**M**	3	1	1	1	1	1	2	4	54	15.2	23
6	4	4	4	4	3	4	4	4	7	5	5	6	5	**IZS**	12	18	6	5	6	6	5	6	6	7	18	5.9	24
7	8	6	3	3	4	3	4	4	5	8	14	11	**IZS**	11	10	9	11	8	9	10	17	11	9	7	17	8.0	24
8	7	6	5	5	5	5	5	4	4	4	4	**IZS**	2	2	2	2	2	1	2	4	4	4	3	4	7	3.7	24
9	3	4	4	5	4	5	12	25	97	**134**	**IZS**	9	6	14	6	8	9	8	10	8	6	3	1	1	**134**	16.6	24
10	1	1	1	1	1	1	1	1	**C**	**IZS**	2	2	1	1	1	2	1	1	1	2	2	2	2	3	3	1.4	24
11	3	2	2	2	2	3	10	23	**IZS**	12	5	4	6	4	5	4	8	17	13	10	14	17	14	12	23	8.3	24
12	11	14	12	16	15	11	6	**IZS**	7	6	7	6	5	5	5	6	6	4	3	3	3	3	4	4	16	7.0	24
13	5	4	5	8	9	6	**IZS**	7	8	6	5	4	2	1	1	1	1	1	2	2	3	4	4	3	9	4.0	24
14	3	3	5	6	9	**IZS**	4	4	**C**	**C**	14	7	4	4	4	5	5	3	3	1	1	1	1	1	14	4.2	24
15	1	1	0	1	**IZS**	1	2	3	4	4	3	3	3	2	2	3	2	2	2	2	2	1	2	2	4	2.1	24
16	2	3	4	**IZS**	1	2	2	3	4	5	3	3	3	3	2	3	5	5	6	10	11	7	7	6	11	4.3	24
17	6	6	**IZS**	8	7	9	10	14	12	11	8	6	6	5	4	4	6	6	8	6	8	7	6	6	14	7.3	24
18	6	**IZS**	6	5	4	5	5	6	6	**C**	**C**	**C**	4	3	3	4	4	4	5	6	6	5	4	5	6	4.8	24
19	**IZS**	5	6	4	4	4	5	7	8	8	7	5	5	4	3	4	5	5	8	8	10	10	7	**IZS**	10	6.0	24
20	8	9	9	9	10	9	7	11	15	13	15	16	13	11	14	15	26	23	28	56	20	13	**IZS**	8	56	15.6	24
21	9	9	8	7	6	6	6	5	4	5	6	4	4	4	5	5	6	5	4	3	3	**IZS**	2	2	9	5.1	24
22	2	2	2	3	3	4	5	6	8	5	8	10	11	11	11	10	17	31	36	45	**IZS**	29	30	13	45	13.1	24
23	9	7	5	5	4	4	4	8	23	20	7	5	4	5	5	6	11	11	18	**IZS**	17	25	14	17	25	10.2	24
24	24	11	13	17	21	24	45	37	43	46	16	9	8	8	8	9	18	23	**IZS**	8	7	6	6	5	46	17.9	24
25	6	6	6	7	10	15	10	17	57	39	19	21	14	14	12	12	5	**IZS**	4	4	4	4	3	3	57	12.7	24
26	3	4	4	3	4	4	4	6	9	8	9	8	5	5	19	14	**IZS**	10	11	8	6	7	8	7	19	7.2	24
27	6	5	4	3	3	1	1	2	4	4	6	4	5	5	5	**IZS**	6	6	5	4	5	5	6	6	6	4.4	24
28	6	5	3	2	3	4	4	4	3	5	8	8	8	7	**IZS**	5	6	16	16	10	12	7	6	4	16	6.6	24
29	5	4	3	3	4	4	2	2	3	3	2	2	2	**IZS**	3	4	4	4	4	4	11	11	14	20	20	5.1	24
30	16	13	12	10	14	12	19	30	30	18	9	8	**IZS**	8	6	11	11	11	14	13	10	9	8	6	30	13.0	24
31	9	7	7	7	7	6	6	9	10	11	16	**IZS**	20	14	14	14	22	37	31	20	12	11	11	11	37	13.6	24
HOURLY MAX	50	54	46	35	42	37	45	37	97	134	26	21	20	15	19	25	26	67	75	56	44	52	60	61			
HOURLY AVG	8.0	7.5	6.8	7.0	7.9	7.7	8.6	10.2	16.3	17.0	8.7	7.1	6.4	6.7	6.8	7.8	8.2	11.9	12.0	10.9	10.2	11.3	10.1	9.1			

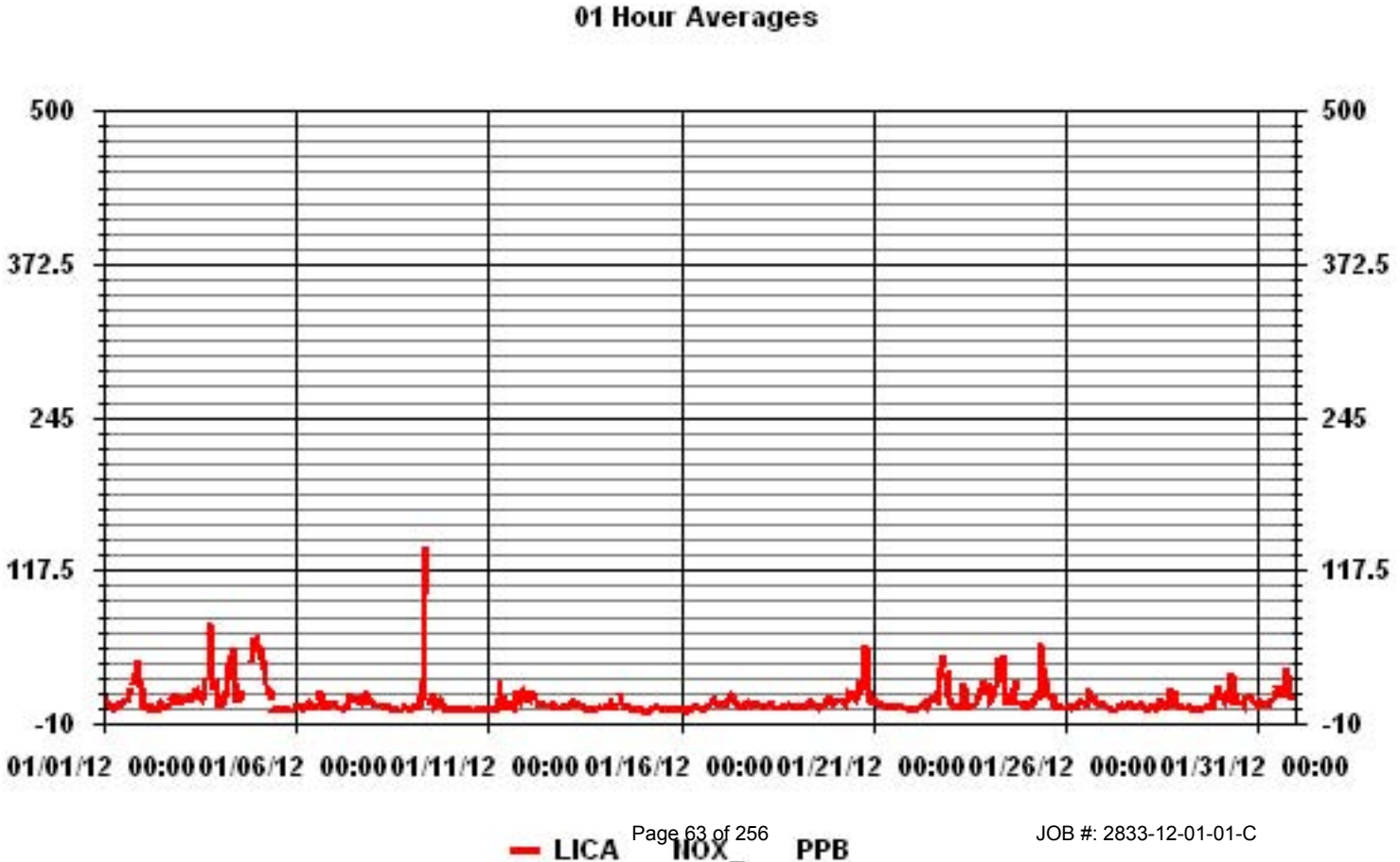
STATUS FLAG CODES

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:	698						
MAXIMUM 1-HR AVERAGE:	134	PPB	@ HOUR(S)	9	ON DAY(S)	9	
MAXIMUM 24-HR AVERAGE:	29.4	PPB			ON DAY(S)	4	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		743	HRS	
MONTHLY CALIBRATION TIME:	13	HRS	AMD OPERATION UPTIME:		99.9	%	
STANDARD DEVIATION:	11.34		MONTHLY AVERAGE:		9.29	PPB	



JOB #: 2833-12-01-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

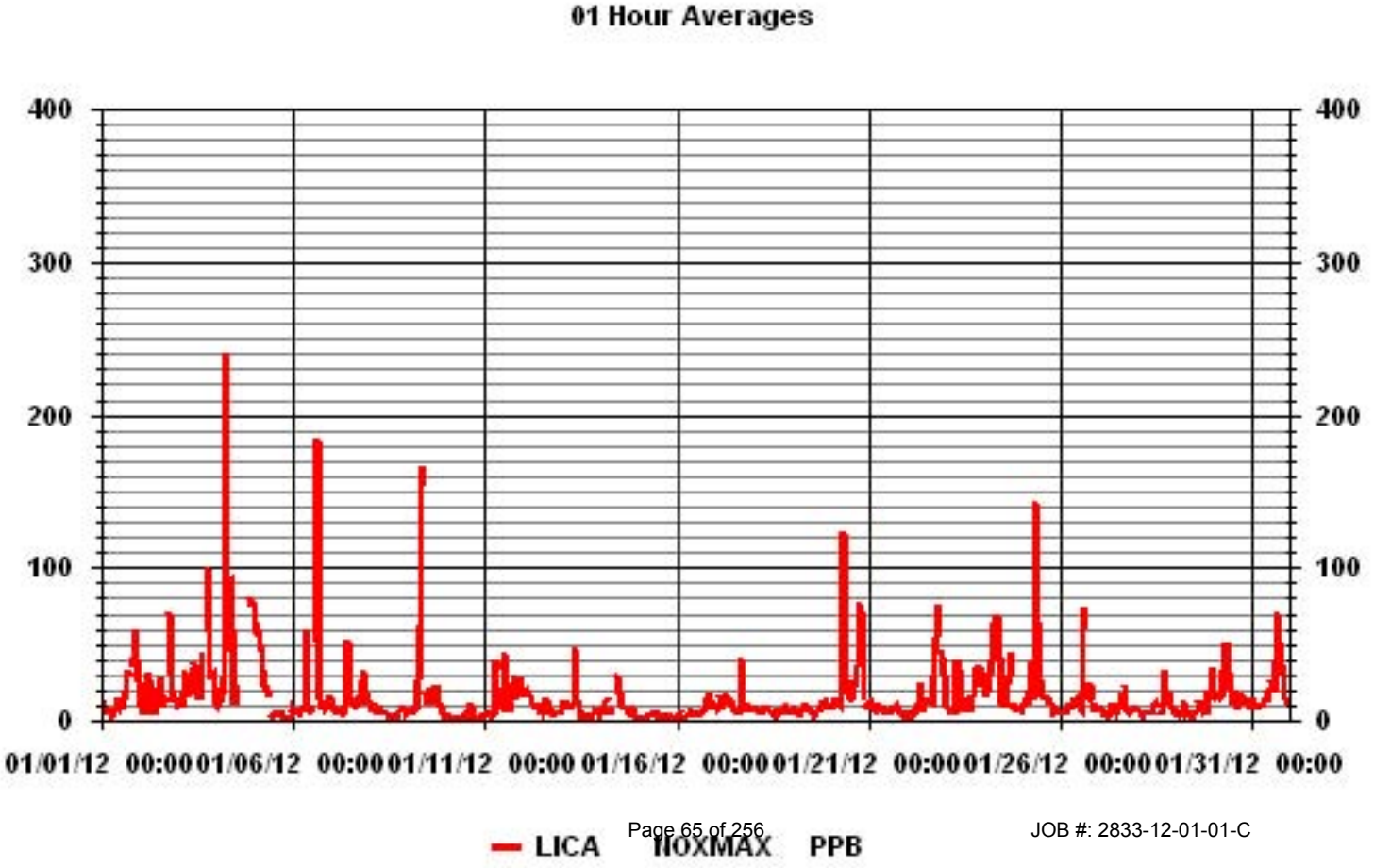
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	10	11	6	6	7	6	4	7	8	11	9	12	12	11	14	20	33	31	**IZS**	37	41	60	41	26	60	18.4	24
2	10	5	5	6	4	31	27	7	17	4	21	10	10	28	9	14	15	**IZS**	69	31	16	17	14	11	69	16.6	24
3	12	14	13	19	33	16	20	17	27	34	38	29	18	14	29	43	**IZS**	89	100	60	27	30	31	23	100	32.0	24
4	12	10	12	17	28	**238**	**238**	45	92	93	61	11	15	22	**C**	**C**	**C**	**C**	**C**	**C**	**C**	79	74	78	**238**	66.2	24
5	61	62	56	46	49	34	24	21	18	**C**	**C**	3	4	4	**IZS**	**M**	5	3	2	2	2	2	3	8	62	20.5	23
6	6	6	6	6	5	6	8	6	59	7	6	7	7	**IZS**	53	185	15	7	10	11	8	9	14	14	185	20.0	24
7	11	9	8	5	5	6	5	8	7	11	52	12	**IZS**	12	11	14	15	12	13	27	33	20	12	12	52	13.9	24
8	10	8	6	12	6	6	10	5	5	5	5	**IZS**	3	3	3	3	3	3	6	7	7	7	4	5	12	5.7	24
9	5	6	6	8	7	8	27	63	154	165	**IZS**	16	10	22	20	21	13	10	23	11	10	6	1	1	165	26.7	24
10	2	3	3	1	2	2	2	2	**C**	**IZS**	4	5	1	4	2	12	2	2	2	2	2	3	3	4	12	3.0	24
11	5	6	5	5	3	4	39	35	**IZS**	19	7	11	44	5	11	5	18	25	30	14	17	20	28	17	44	16.2	24
12	17	19	16	19	17	12	10	**IZS**	11	8	9	9	6	8	13	13	9	5	5	4	5	5	5	5	19	10.0	24
13	7	13	7	11	11	9	**IZS**	13	47	11	13	6	3	2	4	3	3	3	3	4	7	6	6	4	47	8.5	24
14	7	6	7	12	14	**IZS**	6	8	**C**	**C**	30	29	19	11	7	10	9	7	6	2	10	2	3	2	30	9.9	24
15	1	2	1	1	**IZS**	2	3	4	5	5	5	4	4	3	3	3	3	3	3	3	3	2	2	2	5	2.9	24
16	3	4	6	**IZS**	2	2	3	4	6	6	5	4	4	4	4	5	6	7	8	14	17	14	11	9	17	6.4	24
17	9	7	**IZS**	15	8	11	15	17	16	14	11	8	8	6	6	6	41	9	10	8	9	9	8	8	41	11.3	24
18	8	**IZS**	8	7	6	6	7	7	7	**C**	**C**	**C**	5	4	6	6	5	6	6	8	9	6	6	6	9	6.5	24
19	**IZS**	7	7	5	6	5	7	10	**M**	**M**	8	8	7	6	4	6	7	7	11	10	12	13	9	**IZS**	13	7.8	22
20	9	13	12	12	13	11	10	16	123	19	21	21	15	13	26	23	36	37	77	73	53	16	**IZS**	10	123	28.7	24
21	11	12	9	8	7	12	8	8	7	10	7	7	6	6	7	7	8	10	7	5	6	**IZS**	5	3	12	7.7	24
22	2	5	4	6	4	5	8	12	24	6	11	12	13	13	14	13	29	43	54	73	**IZS**	45	43	31	73	20.4	24
23	11	9	7	6	5	5	6	40	38	35	17	7	7	10	10	9	15	16	32	**IZS**	29	36	22	24	40	17.2	24
24	32	15	19	28	31	39	65	51	69	67	43	12	10	10	12	24	29	43	**IZS**	9	9	8	8	7	69	27.8	24
25	10	10	12	12	20	38	13	39	143	66	26	28	17	16	16	15	12	**IZS**	11	6	7	7	5	5	143	23.2	24
26	5	5	6	6	9	9	9	10	12	12	14	11	8	7	75	61	**IZS**	15	24	13	8	8	10	9	75	15.0	24
27	7	7	5	4	4	2	3	5	11	6	11	6	8	10	17	**IZS**	21	8	6	5	6	7	7	8	21	7.6	24
28	8	7	4	2	5	5	5	6	5	5	10	12	10	10	**IZS**	7	10	33	21	16	18	10	9	6	33	9.7	24
29	7	6	4	5	5	13	4	5	6	5	4	3	5	**IZS**	12	5	8	5	6	6	19	14	21	34	34	8.8	24
30	19	16	17	15	16	33	45	51	49	33	22	12	**IZS**	11	7	17	16	14	16	15	13	10	10	8	51	20.2	24
31	14	11	11	9	9	10	10	14	17	16	20	**IZS**	25	19	39	71	38	53	37	31	15	13	13	14	71	22.1	24
HOURLY MAX	61	62	56	46	49	238	238	63	154	165	61	29	44	28	75	185	41	89	100	73	53	79	74	78			
HOURLY AVG	11.0	10.5	9.6	10.5	11.4	19.5	21.4	17.9	36.4	25.9	17.5	11.3	10.5	10.1	15.5	22.2	15.1	18.1	21.4	17.5	14.4	16.1	14.3	13.1			

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:	695					
MAXIMUM INSTANTANEOUS VALUE:	238	PPB	@ HOUR(S)	5, 6	ON DAY(S)	4
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		741	HRS
MONTHLY CALIBRATION TIME:	15	HRS				
STANDARD DEVIATION	22.77					



JOB #: 2833-12-01-01-C

LICA
NOX_ / WD Joint Frequency Distribution (Percent)

January 2012

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	.57	1.14	1.43	1.00	4.72	5.86	9.29	3.57	1.57	2.43	23.46	23.31	8.15	3.14	5.15	3.43	98.28
<	110	.00	.00	.00	.71	.28	.00	.14	.28	.14	.00	.00	.00	.00	.00	.00	.00	1.57
<	210	.00	.00	.00	.14	.00	.00	.00	.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
	Totals	.57	1.14	1.43	1.85	5.00	5.86	9.44	3.86	1.71	2.43	23.46	23.31	8.15	3.14	5.15	3.43	

Calm : .00 %

Total # Operational Hours : 699

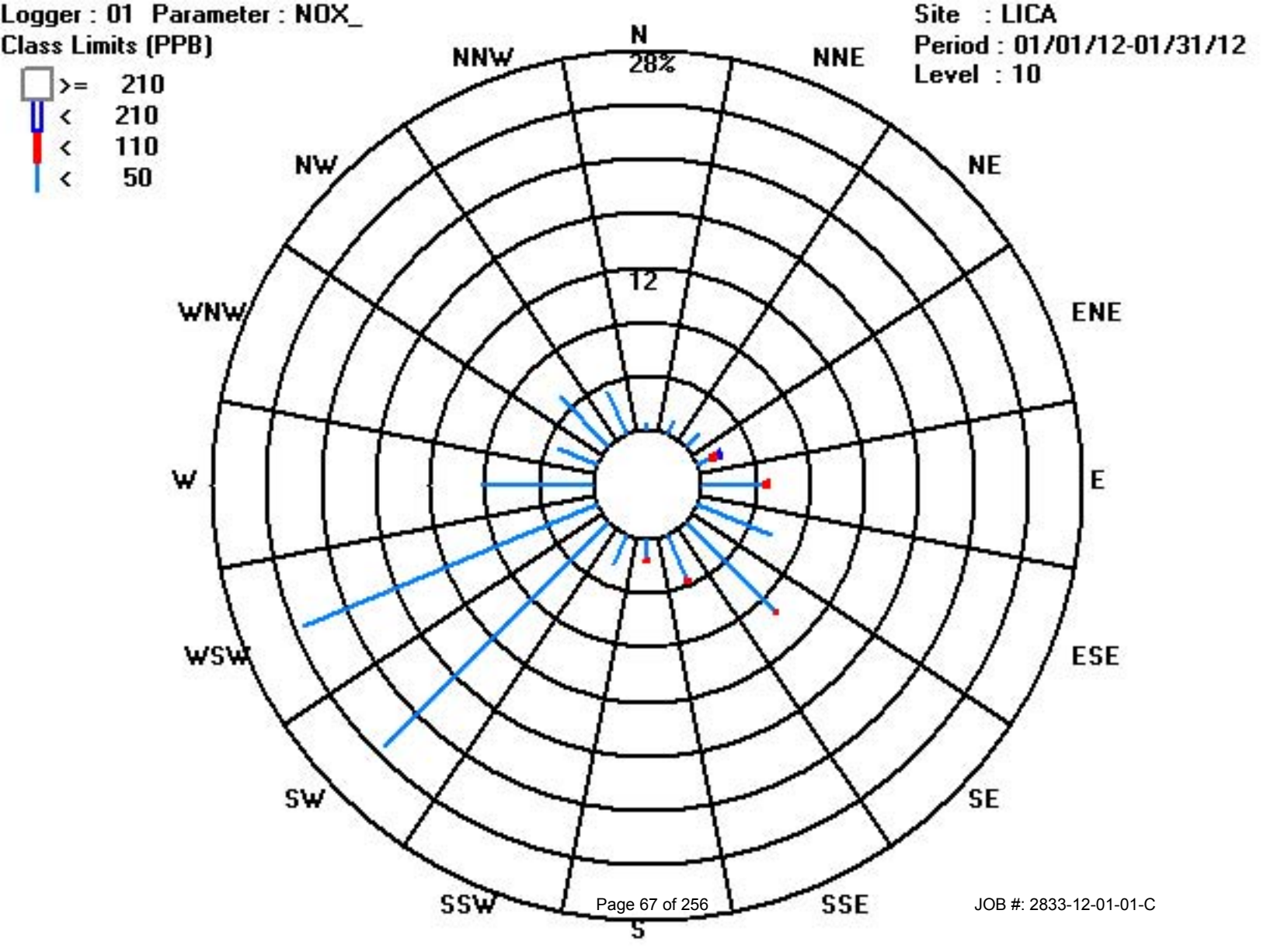
Distribution By Samples

Direction

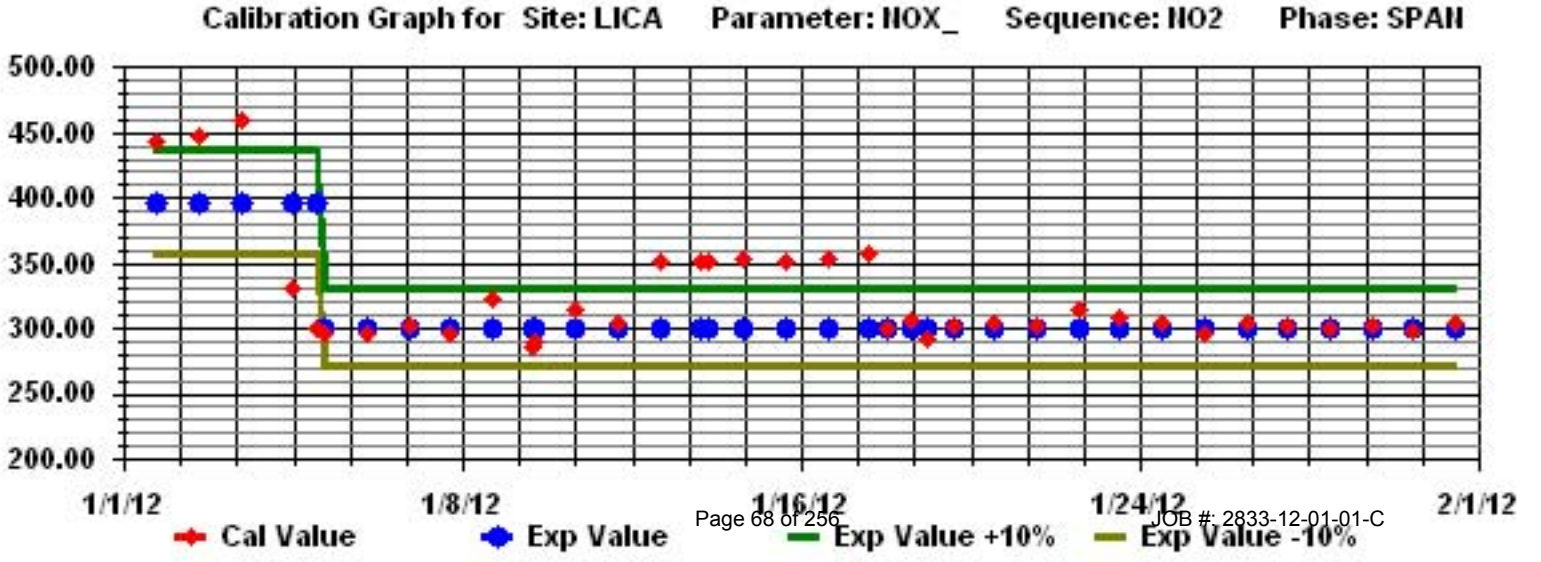
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	4	8	10	7	33	41	65	25	11	17	164	163	57	22	36	24	687
<	110				5	2		1	2	1								11
<	210				1													1
>=	210																	
	Totals	4	8	10	13	35	41	66	27	12	17	164	163	57	22	36	24	

Calm : .00 %

Total # Operational Hours : 699



JOB #: 2833-12-01-01-C


Calibration Graph for Site: LICA Parameter: NOX_ Sequence: NO2 Phase: SPAN
500.00
450.00
400.00
350.00
300.00
250.00
200.00
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

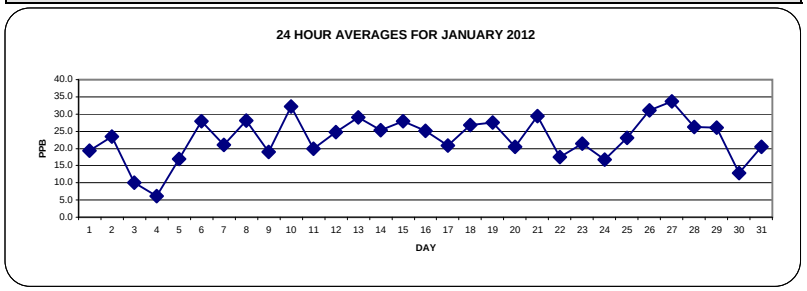
OZONE (O_3) hourly averages in ppb

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	29	26	28	27	25	26	28	25	22	25	26	26	25	25	25	22	12	10	**IZS**	2	1	2	2	4	29	19.3	24
2	26	27	27	27	29	29	29	30	30	30	30	26	27	26	25	23	20	**IZS**	16	15	13	11	12	12	30	23.5	24
3	11	9	10	6	7	15	15	14	10	11	16	18	19	21	18	10	**IZS**	1	1	7	4	2	1	5	21	10.0	24
4	15	12	10	5	2	1	2	0	0	1	9	16	16	14	14	**IZS**	8	5	3	2	2	1	2	1	16	6.1	24
5	1	1	1	1	1	2	2	5	9	**C**	**C**	**C**	**C**	31	**IZS**	**M**	29	32	33	33	32	32	32	29	33	17.0	23
6	30	30	31	31	30	28	28	29	26	27	28	28	30	**IZS**	31	28	28	30	27	27	27	26	22	19	31	27.9	24
7	17	21	27	28	28	28	27	26	25	21	21	22	**IZS**	23	23	24	17	22	19	15	7	12	14	15	28	21.0	24
8	18	20	21	21	22	23	25	28	27	28	29	**IZS**	33	34	35	35	36	35	34	31	29	27	28	26	36	28.0	24
9	27	24	23	17	20	21	9	5	2	2	**IZS**	20	21	15	18	16	15	16	15	19	22	34	**39**	38	**39**	19.0	24
10	37	36	26	27	36	35	33	33	33	**IZS**	35	34	35	35	34	32	30	29	30	30	30	30	31	30	37	32.2	24
11	30	30	29	26	22	20	15	6	**IZS**	16	26	28	30	30	29	29	24	12	13	14	9	5	8	6	30	19.9	24
12	8	5	7	7	10	19	25	**IZS**	25	27	29	31	32	32	33	31	30	31	32	32	32	31	30	28	33	24.7	24
13	20	17	21	22	20	25	**IZS**	25	26	29	30	32	34	36	36	36	35	35	33	32	31	30	30	31	36	29.0	24
14	31	28	25	21	18	**IZS**	23	22	16	17	19	27	30	29	29	28	28	28	28	27	27	27	27	26	31	25.3	24
15	26	26	28	29	**IZS**	28	28	27	26	26	28	29	29	29	29	28	28	28	28	28	27	29	28	28	29	27.8	24
16	27	27	26	**IZS**	28	27	26	26	25	25	27	27	28	28	29	28	26	25	23	18	17	21	21	21	29	25.0	24
17	20	18	**IZS**	16	13	11	15	13	16	19	22	24	26	27	28	28	26	24	22	23	22	22	22	22	28	20.8	24
18	22	**IZS**	22	24	25	25	24	24	24	27	28	28	29	31	30	30	29	29	28	27	27	27	28	27	31	26.7	24
19	**IZS**	26	26	27	28	27	26	24	25	25	27	30	31	32	33	32	31	31	27	25	22	23	26	IZS	33	27.5	24
20	25	24	23	22	21	23	24	19	20	21	22	24	26	27	27	24	12	12	9	2	19	21	**IZS**	24	27	20.5	24
21	24	24	25	26	27	29	29	29	31	32	30	32	32	32	31	31	29	30	30	31	31	**IZS**	31	30	32	29.4	24
22	30	30	27	23	22	23	23	20	19	22	21	20	20	20	20	20	11	3	3	4	**IZS**	4	3	14	30	17.5	24
23	18	22	24	25	27	27	27	25	14	18	27	29	29	29	29	28	23	21	12	**IZS**	12	5	13	9	29	21.4	24
24	5	19	17	9	4	2	1	1	2	4	20	26	27	28	29	28	19	14	**IZS**	26	25	26	27	27	29	16.8	24
25	26	26	27	25	20	13	13	9	3	7	18	17	19	19	21	22	33	**IZS**	36	34	36	36	36	36	36	23.1	24
26	35	34	34	34	33	32	33	31	27	30	32	33	34	35	32	32	**IZS**	27	24	27	31	29	27	27	35	31.0	24
27	29	31	33	36	36	38	38	37	36	35	34	35	34	34	35	**IZS**	33	32	33	33	32	32	30	29	38	**33.7**	24
28	28	29	31	33	33	30	29	29	29	28	26	26	26	27	**IZS**	28	26	15	11	20	20	24	27	28	33	26.2	24
29	28	29	30	30	29	29	30	31	30	31	32	32	31	**IZS**	29	28	27	26	25	25	17	13	11	7	32	26.1	24
30	8	9	7	7	5	6	2	1	2	6	12	15	**IZS**	22	28	21	18	16	13	14	18	21	22	23	28	12.9	24
31	21	23	23	23	24	23	25	22	22	21	20	**IZS**	22	26	28	27	16	4	3	14	21	22	22	19	28	20.5	24
HOURLY MAX	37	36	34	36	36	38	38	37	36	35	35	35	35	36	36	36	36	35	36	34	36	36	39	38			
HOURLY AVG	22.4	22.8	23.0	21.8	21.5	22.2	21.8	20.5	20.1	21.1	25.0	26.3	27.7	27.5	27.9	26.8	24.1	21.5	21.1	21.2	21.4	20.8	21.7	21.4			

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



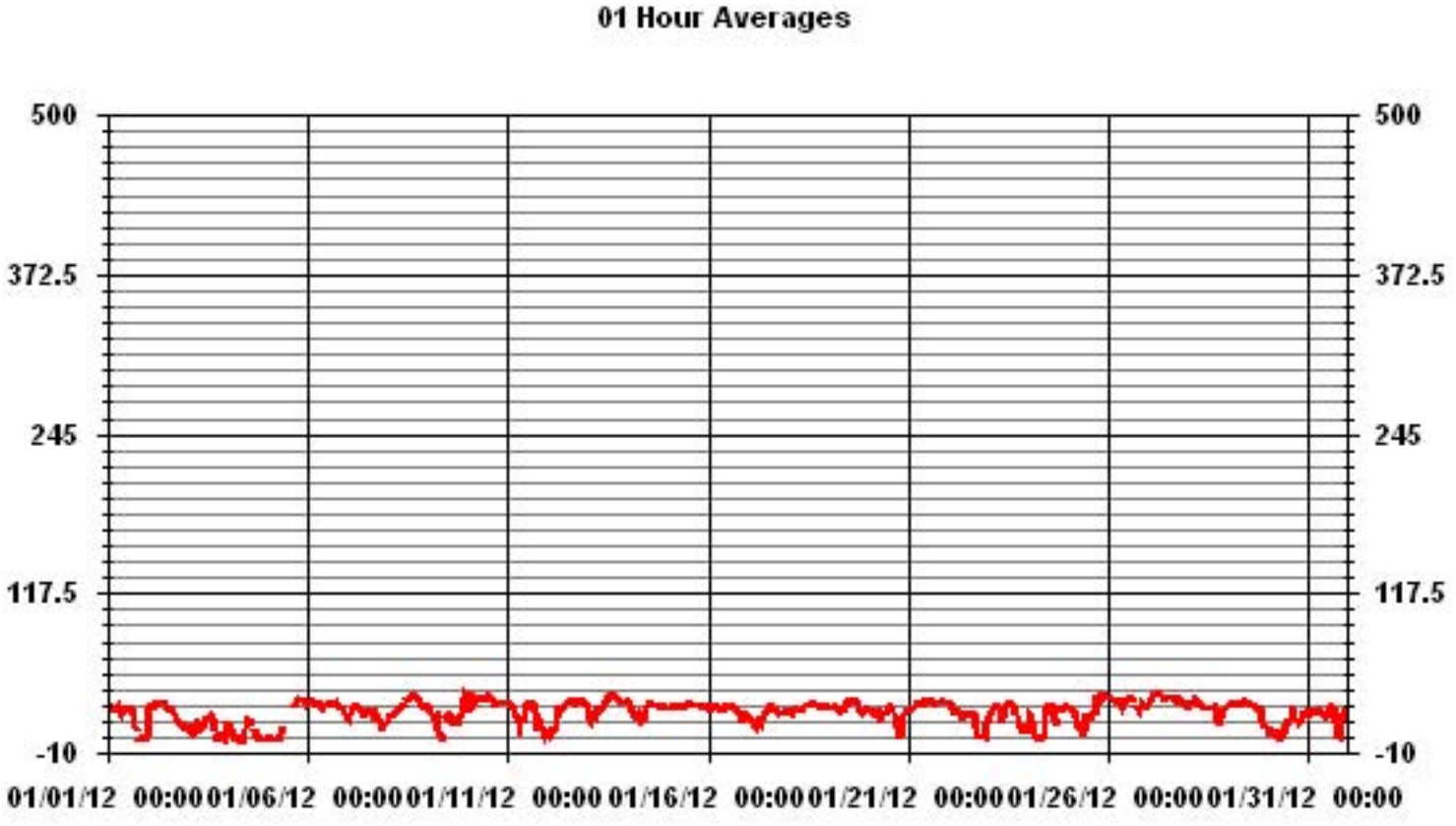
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	705					
MAXIMUM 1-HR AVERAGE:	39	PPB	@ HOUR(S)	22	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:	33.7	PPB			ON DAY(S)	27
					VAR-VARIOUS	

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME	99.9	%
STANDARD DEVIATION	9.14		MONTHLY AVERAGE	22.93	PPB

JOB #: 2833-12-01-01-C



JOB #: 2833-12-01-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

OZONE MAX instantaneous maximum in ppb

MST

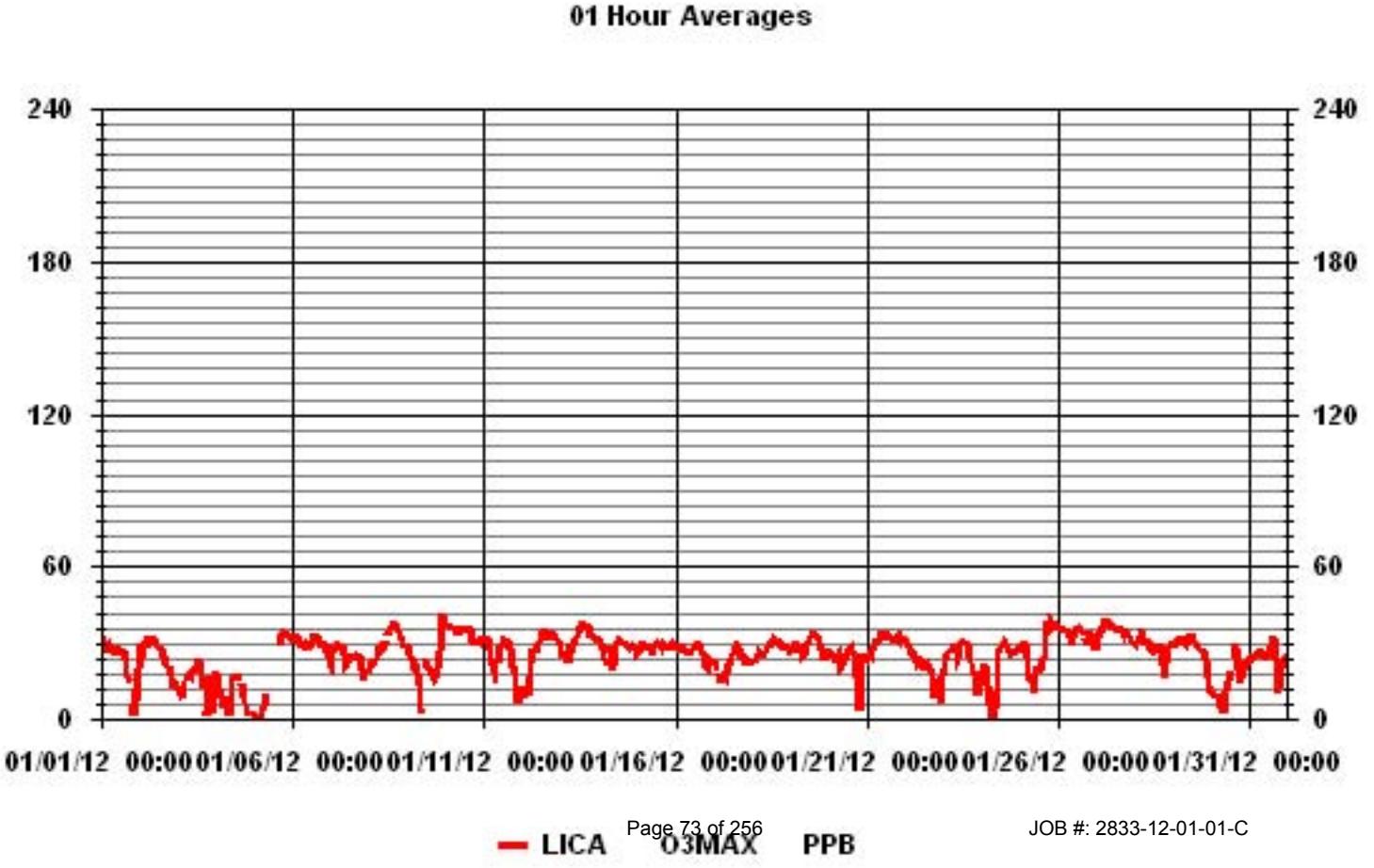
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	32	29	28	29	26	28	28	28	26	26	27	27	26	26	26	24	17	16	**IZS**	5	1	12	7	20	32	22.3	24
2	28	28	27	29	29	31	31	31	31	31	30	29	28	27	27	25	22	**IZS**	20	18	16	12	14	13	31	25.1	24
3	12	10	11	8	15	17	17	18	17	19	19	20	21	23	21	13	**IZS**	2	2	17	10	4	3	18	23	13.8	24
4	18	15	13	9	4	6	9	2	2	3	16	17	17	15	17	**IZS**	13	9	7	3	3	2	2	2	18	8.9	24
5	2	2	1	1	2	4	5	9	**C**	**C**	**C**	**C**	**C**	**C**	**IZS**	**M**	30	33	34	33	33	33	32	31	34	17.8	23
6	31	32	32	32	31	29	29	30	28	28	29	29	32	**IZS**	33	31	30	31	29	29	29	27	25	22	33	29.5	24
7	21	26	28	29	29	29	28	28	26	22	23	24	**IZS**	24	24	25	24	24	24	20	15	19	19	19	29	23.9	24
8	21	21	22	22	23	25	28	29	28	29	30	**IZS**	34	35	36	37	37	36	35	33	32	29	29	28	37	29.5	24
9	28	26	24	22	23	22	19	14	3	3	**IZS**	22	22	21	20	18	16	17	17	20	27	40	40	39	**40**	21.9	24
10	38	37	36	36	36	35	35	33	35	**IZS**	35	35	35	35	35	35	31	30	30	30	31	30	31	31	38	33.7	24
11	31	31	31	28	24	22	19	15	**IZS**	23	28	29	31	31	30	30	28	20	22	19	13	6	12	8	31	23.1	24
12	13	8	10	10	17	22	27	**IZS**	27	29	30	33	33	33	35	32	32	32	33	33	33	32	31	30	35	26.7	24
13	25	25	25	24	22	29	**IZS**	27	29	31	32	34	36	37	37	37	36	36	33	33	32	32	31	31	37	31.0	24
14	31	30	28	24	22	**IZS**	27	27	19	21	25	30	31	31	30	30	29	29	29	28	29	28	28	26	31	27.5	24
15	27	27	29	29	**IZS**	28	28	28	26	26	28	29	30	29	30	28	29	29	28	28	29	30	29	28	30	28.3	24
16	28	27	27	**IZS**	29	28	27	26	26	26	27	28	28	29	29	29	27	26	25	21	20	23	22	22	29	26.1	24
17	22	20	**IZS**	17	15	15	17	16	18	21	23	25	27	27	29	29	28	25	24	24	23	22	22	22	29	22.2	24
18	23	**IZS**	24	25	27	26	25	25	26	28	29	29	30	32	31	30	30	30	29	28	28	28	28	27	32	27.7	24
19	**IZS**	27	27	29	29	28	28	25	26	26	29	30	32	33	33	33	32	32	30	28	24	24	27	**IZS**	33	28.7	24
20	26	26	25	23	23	25	26	21	22	22	23	25	27	28	29	27	17	17	14	3	26	25	**IZS**	25	29	22.8	24
21	24	26	25	27	28	30	30	31	33	33	31	33	33	33	32	32	31	31	32	31	34	**IZS**	31	31	34	30.5	24
22	31	30	29	26	25	26	25	22	23	23	22	20	20	21	22	20	19	11	8	15	**IZS**	8	6	17	31	20.4	24
23	20	23	25	26	27	28	28	27	23	24	29	30	30	30	29	29	25	23	18	**IZS**	16	9	19	17	30	24.1	24
24	15	22	21	14	7	6	2	1	4	11	26	27	28	29	31	30	27	25	**IZS**	26	26	27	28	27	31	20.0	24
25	27	27	29	29	25	19	16	15	10	18	20	18	20	20	23	25	37	**IZS**	40	36	37	37	37	37	**40**	26.2	24
26	36	35	35	35	35	34	34	33	29	32	33	35	35	36	35	34	**IZS**	31	29	33	33	30	28	28	36	33.0	24
27	30	32	34	36	38	38	38	38	37	36	36	36	35	35	36	**IZS**	35	33	34	34	33	32	31	30	38	34.7	24
28	29	30	32	34	34	32	30	30	30	28	27	28	27	28	**IZS**	28	28	22	16	23	24	28	29	29	34	28.1	24
29	29	30	31	30	30	31	31	31	30	32	32	32	32	**IZS**	30	29	28	27	26	26	24	17	14	11	32	27.5	24
30	10	10	10	9	7	8	5	2	4	11	15	18	**IZS**	25	30	28	20	18	14	16	19	22	23	24	30	15.1	24
31	23	24	24	25	25	25	26	26	25	23	25	**IZS**	25	28	31	31	24	10	12	20	23	24	23	22	31	23.7	24
HOURLY MAX	38	37	36	36	38	38	38	38	37	36	36	36	36	37	37	37	37	36	40	36	37	40	40	39			
HOURLY AVG	24.4	24.5	24.8	23.9	23.6	24.2	23.9	22.9	22.9	23.6	26.9	27.6	28.8	28.6	29.3	28.5	27.0	24.3	23.9	23.8	24.1	23.1	23.4	23.8			

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:	705					
MAXIMUM INSTANTANEOUS VALUE:	40	PPB	@ HOUR(S)	VAR	ON DAY(S)	9, 25
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		743	HRS
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION	8.27					



JOB #: 2833-12-01-01-C

LICA
O3_ / WD Joint Frequency Distribution (Percent)

January 2012

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	.56	1.13	1.55	1.83	4.95	5.94	9.33	4.10	1.83	2.40	23.33	23.47	7.77	3.11	5.23	3.39	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	.56	1.13	1.55	1.83	4.95	5.94	9.33	4.10	1.83	2.40	23.33	23.47	7.77	3.11	5.23	3.39	

Calm : .00 %

Total # Operational Hours : 707

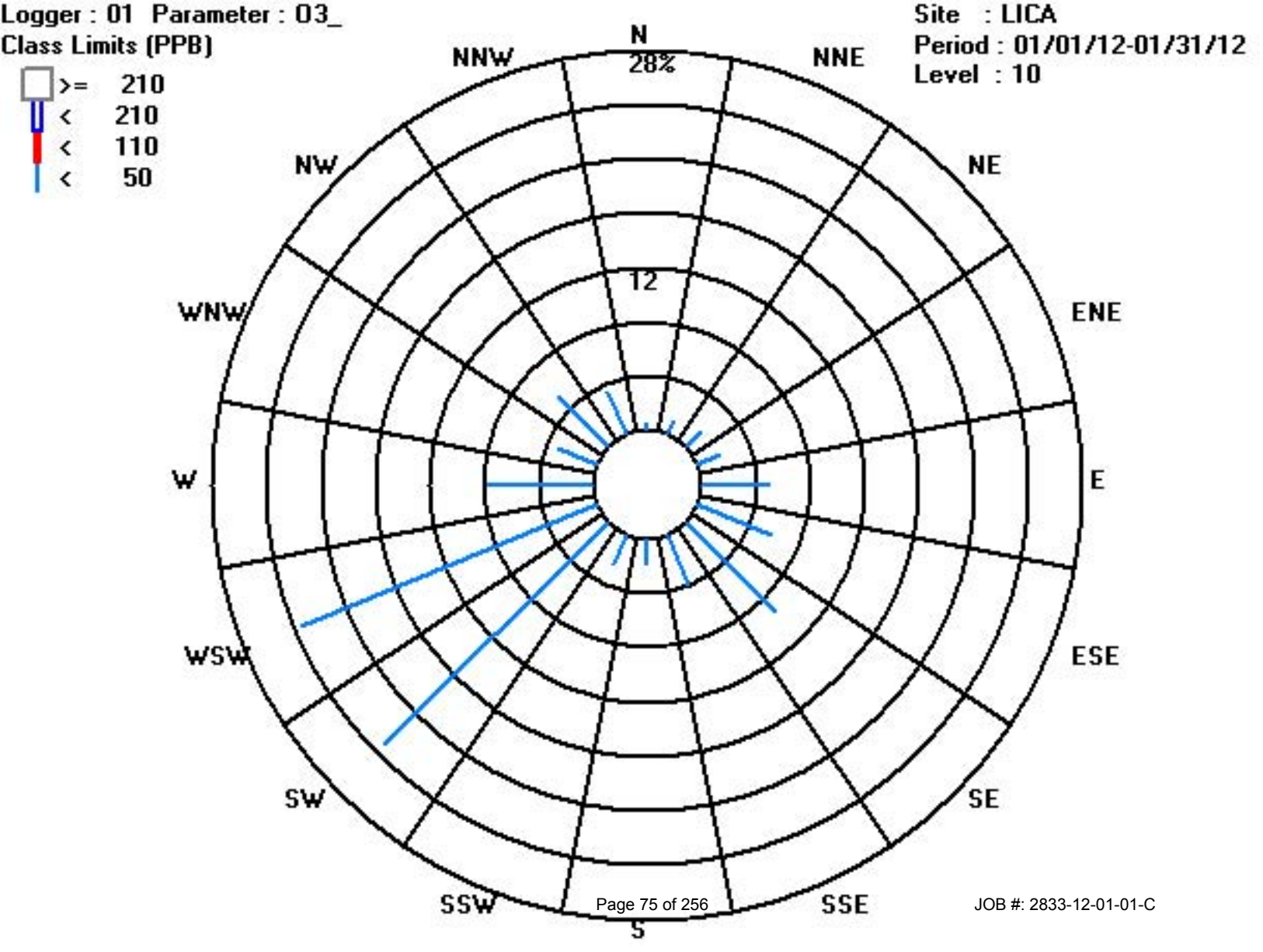
Distribution By Samples

Direction

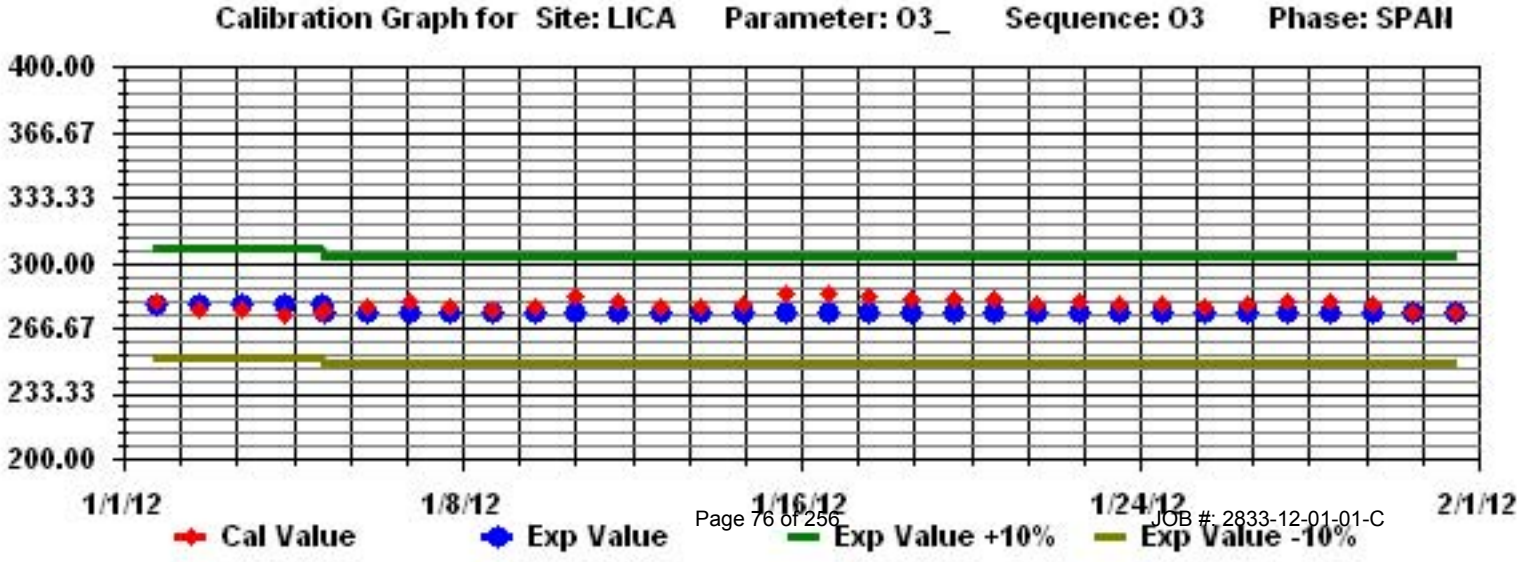
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	4	8	11	13	35	42	66	29	13	17	165	166	55	22	37	24	707
<	110																	
<	210																	
>=	210																	
	Totals	4	8	11	13	35	42	66	29	13	17	165	166	55	22	37	24	

Calm : .00 %

Total # Operational Hours : 707



JOB #: 2833-12-01-01-C


Calibration Graph for Site: LICA Parameter: O3_ Sequence: O3 Phase: SPAN
400.00
366.67
333.33
300.00
266.67
233.33
200.00
1/1/12
1/8/12
1/16/12
1/24/12
2/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ambient Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

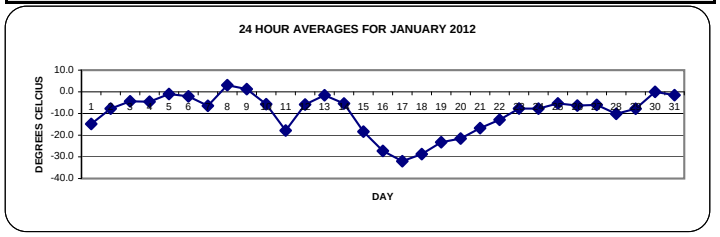
AMBIENT TEMPERATURE hourly averages (Degrees C)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
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	-10.5	-11.9	-12.9	-13.4	-14.9	-15.3	-15.2	-16.3	-18.2	-15.7	-13.7	-12.1	-10.6	-9.5	-8.8	-9.9	-13.5	-16.2	-17.8	-19.1	-20	-19.7	-20.3	-20.2	-8.8	-14.8	24
2	-13.2	-12.1	-12.1	-12.3	-11.4	-10.4	-9.4	-8.9	-8.8	-8.5	-7.3	-6.2	-4.7	-4.2	-4.2	-4.5	-5.1	-5.5	-5.7	-6.4	-6.6	-6.2	-6.2	-6.4	-4.2	-7.8	24
3	-7.1	-7.2	-7.1	-8.9	-9.4	-6.5	-6.8	-7.1	-7.7	-8.3	-4.5	-2.3	-1.3	-0.8	-0.8	-0.7	-1.2	-1.7	-2.6	-2.3	-2.3	-3	-3	-2.5	-0.7	-4.4	24
4	-1.9	-3.8	-4.2	-5.6	-7	-7.3	-7.1	-8.2	-8.6	-7	-3.3	-2.1	-1.3	-1.4	-0.3	-1	-1.9	-3.1	-4	-4.9	-5.5	-6	-6.7	-7.4	-0.3	-4.6	24
5	-8.6	-8.7	-8.4	-6.7	-6.1	-5.2	-4.6	-1.6	-0.5	0.9	1.6	2.2	2.4	3	3.8	3.5	2.7	3	2.6	1	0.2	0.2	0	-0.6	3.8	-1.0	24
6	-0.3	-0.3	-0.8	-1.7	-2.3	-2.9	-2.9	-2.2	-2.7	-2.8	-2.2	-1	0.3	1.9	1.6	0.7	-0.4	-1.2	-2.2	-2.9	-4.1	-5.3	-7.7	-8.8	1.9	-2.1	24
7	-9.1	-7.7	-6.9	-8.1	-7.6	-6.8	-6.4	-6.7	-7.6	-7.6	-6.4	-4.9	-3.2	-2.2	-1.4	-1.6	-4.3	-5.3	-7	-8.9	-10.2	-9.4	-9.1	-6.2	-1.4	-6.4	24
8	-4.7	-3.5	-2.7	-2	-1.1	-0.6	1.3	3	2.4	3	4.4	6.4	7.8	8.2	**8.7**	8.3	7.5	7.1	6.4	5.1	3.5	2.3	1.9	1.2	**8.7**	**3.1**	24
9	1.1	0.8	0.3	-2.1	-1.3	-1.1	-3.7	-4.3	-3.2	-2.2	0.3	2.1	3.1	2.7	3.3	4	3.2	3.1	2.7	3.3	2.7	5.2	5.5	4.7	5.5	1.3	24
10	3.2	1.7	0.9	1.3	0.8	0.8	0.8	0.6	-0.2	-1	-2.1	-2.7	-3.7	-4.5	-5.4	-6.7	-9.4	-13	-15.7	-16	-16.1	-16.4	-16.6	-17.4	3.2	-5.7	24
11	-18.2	-18.8	-19.5	-21.8	-22.9	-23.5	-23.5	-23.5	-23.4	-20.6	-17.4	-15.5	-13.6	-12.6	-12.1	-11.2	-12.3	-14.5	-16	-17.2	-17.8	-17.9	-17.5	-17.3	-11.2	-17.9	24
12	-15.9	-14.1	-12.9	-11	-9	-7.8	-7.4	-7.6	-7.8	-7	-5.5	-4	-3	-2.5	-1.9	-2.4	-3.1	-3	-2.8	-2.5	-2.2	-2.1	-2.3	-2.6	-1.9	-5.9	24
13	-3.1	-3.4	-3	-2.1	-2.9	-3	-3	-3.4	-3.2	-2.8	-2.4	-0.8	0	0.1	0.6	0.7	0	0.1	-0.3	-0.4	-1	-1.4	-1.6	-1.6	0.7	-1.6	24
14	-2	-2.7	-3.8	-4.3	-4.5	-4.7	-5.8	-7.6	-7.9	-7	-5.6	-4.4	-3.4	-3.2	-3.2	-3.3	-3.7	-3.9	-3.9	-5.3	-7.5	-9.5	-10.7	-11.6	-2.0	-5.4	24
15	-12.9	-13.4	-14.2	-14.9	-15.3	-15.8	-16.5	-17.3	-18.3	-18.5	-19.2	-18.7	-18.5	-18.7	-19	-19.1	-19.9	-20.4	-20.6	-20.9	-21	-21.6	-22.7	-23.4	-12.9	-18.4	24
16	-24.1	-24.8	-25.4	-26.5	-27.4	-27.4	-27.6	-27.7	-27.3	-27.3	-27.2	-26.9	-26.6	-26.3	-26.1	-26.4	-27.2	-28.2	-28.4	-28.7	-28.6	-28.8	-29.3	-30.3	-24.1	-27.3	24
17	-31.2	-32.9	-34.2	-34.3	-35.4	**-35.9**	-34.8	-34.8	-34.9	-33.6	-32.2	-30.1	-28.7	-27.7	-27.3	-27.7	-29.3	-30.4	-31.2	-31.6	-32.1	-32.5	-32.7	-32.9	-27.3	-32.0	24
18	-33.1	-33.3	-33.4	-33	-32.4	-32.3	-32.2	-32.1	-31.8	-30.6	-29.3	-28	-26.2	-24.4	-23.9	-24.5	-25.2	-25.6	-25.9	-26.3	-26.5	-26.4	-26.2	-26.8	-23.9	-28.7	24
19	-27	-27.1	-26.9	-26.5	-26	-26.2	-26.5	-26.8	-26.6	-25.6	-23.8	-21.5	-19.7	-18.5	-17.7	-17.5	-18.5	-19.7	-20.8	-22.1	-22.8	-23.3	-23.3	-23.6	-17.5	-23.3	24
20	-23.8	-24.3	-24.6	-24.8	-25.6	-24.8	-25.1	-25.8	-24.8	-23.8	-22.1	-20.1	-18.1	-17	-16.8	-16.8	-18.6	-20.4	-21.2	-21	-19.9	-19.4	-18.9	-19.4	-16.8	-21.5	24
21	-19.8	-19.4	-19.3	-19.3	-18.9	-18.3	-18	-18.1	-17.8	-17.5	-17.5	-17.1	-16.7	-16.3	-15.7	-15.3	-15	-14.8	-14.7	-14.6	-14.5	-14.5	-14.5	-14.4	-14.4	-16.8	24
22	-14.4	-14.4	-15	-16.1	-16	-15.7	-15.6	-16.6	-16.5	-15	-13.4	-11.4	-10	-8.5	-6.9	-6.8	-9.3	-13	-14.1	-13.6	-11.7	-12.2	-12.7	-10.8	-6.8	-12.9	24
23	-10.1	-9.1	-9.5	-8.9	-8.2	-7.8	-8.2	-8.6	-9.7	-9.5	-7.7	-6.6	-5.1	-4.3	-3.8	-3.1	-4.1	-6.6	-8.4	-8.6	-10	-10.7	-8.6	-8.1	-3.1	-7.7	24
24	-8.3	-7.4	-8.6	-12.4	-13.9	-14.9	-15.8	-16.4	-16.4	-13	-7	-5.6	-3.3	-1.5	-0.7	-0.9	-2.4	-3.7	-3.9	-5.1	-5.9	-6.2	-6.3	-6.7	-0.7	-7.8	24
25	-6.9	-6.9	-6.4	-6.9	-8.6	-10.2	-11.8	-13.1	-13.9	-11.9	-8.9	-7.1	-5.7	-4.9	-2.7	-0.5	2	2.9	1.8	-0.3	-0.3	-1.5	-2.8	-3.6	2.9	-5.3	24
26	-5	-5.4	-5.7	-6.5	-7.1	-8.5	-8.5	-8.3	-9.4	-8.1	-6.4	-4.2	-2.8	-1.8	-1.7	-2.6	-4.3	-6.3	-8.1	-8.6	-7.8	-7.6	-8.5	-9.1	-1.7	-6.3	24
27	-8.2	-8.2	-8.8	-7.6	-6.8	-5.5	-5.3	-6	-7.2	-7.3	-6.8	-6.2	-6.1	-6	-5.5	-4.8	-4.6	-4.4	-4.1	-4.3	-4.9	-5.4	-5.2	-5.4	-4.1	-6.0	24
28	-5.1	-5.3	-5.9	-6.4	-7.6	-9.1	-10.5	-10.4	-11.2	-10.9	-10.9	-10.7	-10	-9.5	-9.9	-10.5	-11.1	-12.5	-13.9	-13.5	-12.7	-12.7	-11.9	-11.5	-5.1	-10.2	24
29	-11.3	-10.9	-10.6	-10.4	-10.4	-10.5	-10.5	-10.2	-10.2	-9.5	-8.7	-8	-6.9	-6.4	-5.8	-5.3	-5.1	-5	-5.1	-5.3	-6.3	-6.2	-5	-3.9	-3.9	-7.8	24
30	-3.1	-3.1	-3.2	-3.1	-2.9	-2.6	-2.5	-2.7	-2.5	-1.6	-0.2	0.7	1.2	2.8	4.4	3.9	2.9	1.7	1.1	1.4	1.9	1.9	2.1	1.2	4.4	0.0	24
31	0.2	-0.7	-1.5	-2.5	-3.2	-3.8	-4	-4.3	-5.2	-5.9	-2.6	-1.6	-0.1	0.9	1.5	1.6	0.9	-0.2	-0.7	0	0.3	-0.8	-1.9	-3.4	1.6	-1.5	24
HOURLY MAX	3.2	1.7	0.9	1.3	0.8	0.8	1.3	3.0	2.4	3.0	4.4	6.4	7.8	8.2	8.7	8.3	7.5	7.1	6.4	5.1	3.5	5.2	5.5	4.7			
HOURLY AVG	-10.8	-10.9	-11.2	-11.6	-11.8	-11.7	-11.8	-12.0	-12.3	-11.5	-9.9	-8.7	-7.6	-6.9	-6.4	-6.5	-7.4	-8.4	-9.2	-9.7	-10.0	-10.2	-10.4	-10.6			

STATUS FLAG CODES

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

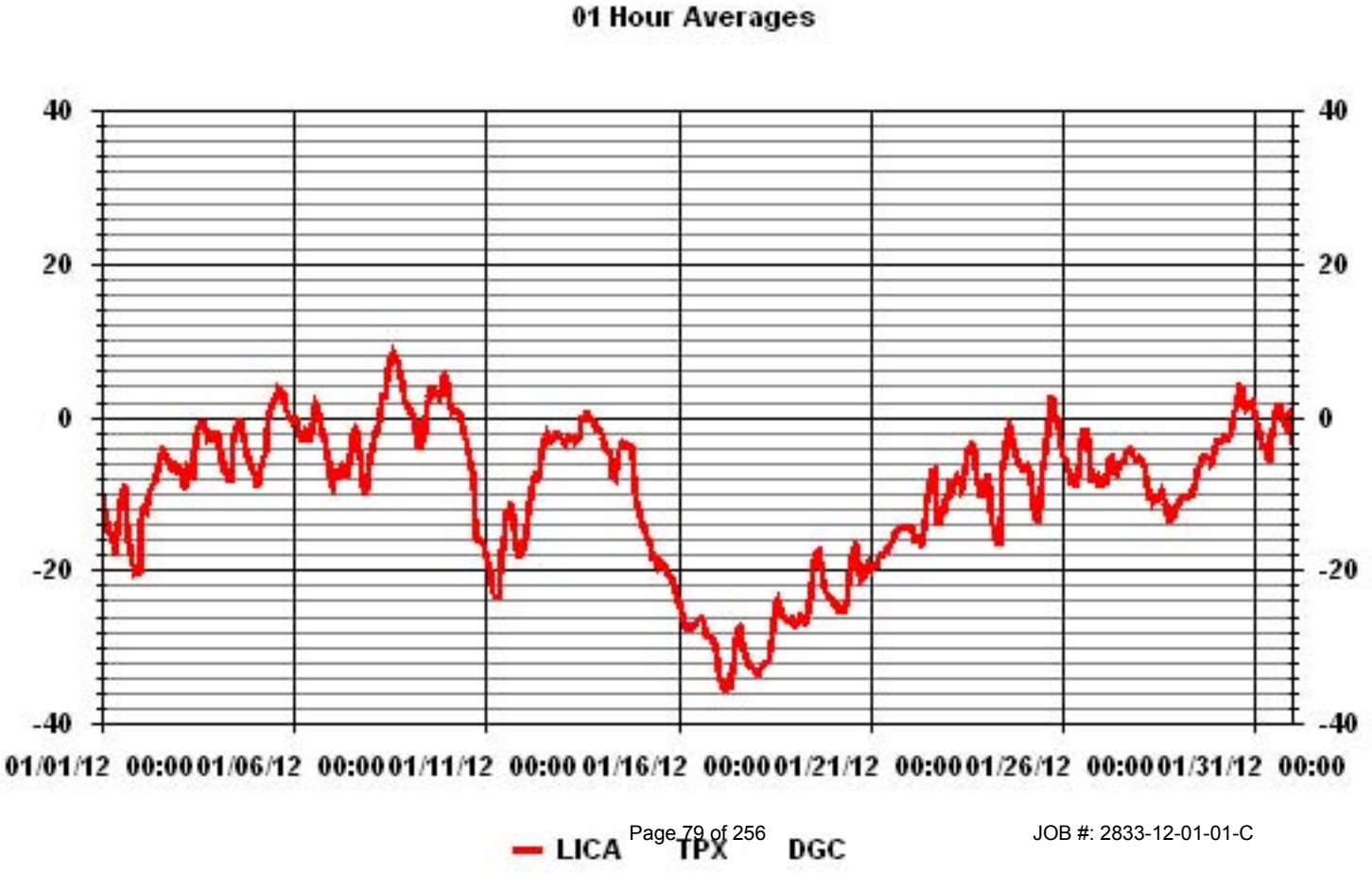


MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-35.9	^{O}C	@ HOUR(S)	5	ON DAY(S)	17
MAXIMUM 1-HR AVERAGE:	8.7	^{O}C	@ HOUR(S)	14	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	3.1	^{O}C			ON DAY(S)	8
					VAR-VARIOUS	

CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
			AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	9.60		MONTHLY AVERAGE:	-9.89	^{O}C

*** Outside detection limits of sensor.**



JOB #: 2833-12-01-01-C

Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

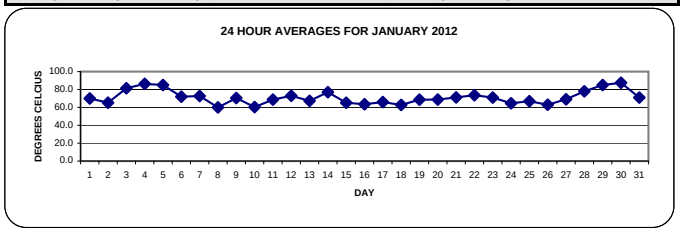
RELATIVE HUMIDITY hourly averages (%)

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	72	74	75	75	77	77	73	74	78	71	64	58	53	50	48	54	70	77	79	78	77	77	73	75	79	70.0	24
2	57	56	58	58	54	53	53	54	57	60	60	61	61	63	66	69	72	74	76	80	81	80	81	82	82	65.3	24
3	84	85	86	88	88	85	86	88	87	86	79	71	69	70	70	72	77	80	84	82	82	85	85	84	88	81.4	24
4	82	89	88	90	91	92	91	89	89	88	87	85	81	79	74	78	82	85	87	88	89	89	90	89	92	86.3	24
5	89	89	88	88	90	92	92	94	94	94	93	90	87	80	71	68	68	64	64	86	**96**	92	86	84	**96**	85.0	24
6	76	73	73	73	73	74	74	73	75	76	76	71	67	60	59	61	65	67	70	70	74	77	83	87	87	72.0	24
7	86	82	77	77	73	72	72	73	76	75	69	64	59	57	56	58	68	70	76	82	84	83	81	75	86	72.7	24
8	71	66	62	60	57	60	67	66	67	66	62	55	51	49	46	47	49	51	54	59	64	68	70	73	73	60.0	24
9	74	75	76	83	82	80	87	88	86	85	79	72	69	72	68	67	69	70	70	67	65	42	32	32	88	70.4	24
10	36	44	51	58	66	71	74	68	67	66	65	63	56	59	55	60	61	59	58	60	62	63	63	64	74	60.4	24
11	67	68	71	76	76	76	76	75	75	73	68	62	53	48	51	51	57	67	72	75	78	78	78	77	78	68.7	24
12	78	79	79	78	75	82	87	89	90	82	74	68	63	61	60	62	66	65	64	63	67	69	73	77	90	73.0	24
13	79	81	79	69	69	67	67	68	67	67	64	61	65	70	68	67	69	67	60	59	61	63	63	64	81	67.3	24
14	66	69	72	75	77	76	78	81	83	80	75	73	72	71	71	73	77	80	79	85	87	85	82	81	87	77.0	24
15	76	76	74	71	70	68	67	68	66	65	62	60	59	59	59	61	59	60	62	63	65	64	66	64	76	65.2	24
16	65	66	63	63	64	64	65	67	66	65	61	58	57	58	56	57	59	62	65	67	68	69	70	69	70	63.5	24
17	68	68	68	68	67	67	68	68	68	67	66	65	62	59	58	59	65	67	67	66	67	68	68	68	68	65.9	24
18	68	68	67	67	67	67	67	66	66	63	60	57	54	51	50	53	57	60	61	63	65	67	70	71	71	62.7	24
19	72	72	72	72	72	72	72	73	73	71	69	66	62	59	58	57	59	64	67	71	73	73	74	74	74	68.6	24
20	74	74	74	74	74	74	73	73	72	70	68	65	60	56	57	57	66	70	73	74	69	68	66	68	74	68.7	24
21	69	68	69	69	68	65	65	64	64	69	75	74	73	74	76	77	78	77	76	74	72	70	70	71	78	71.1	24
22	72	73	78	80	79	80	80	81	80	77	72	64	60	58	54	53	69	79	80	80	77	80	82	78	82	73.6	24
23	75	71	70	69	70	71	75	77	80	75	70	66	61	58	58	56	60	68	75	76	80	82	80	81	82	71.0	24
24	81	74	75	83	83	83	82	80	78	69	57	53	46	42	41	43	50	55	53	57	61	65	68	71	83	64.6	24
25	74	76	76	78	83	85	86	85	83	77	78	74	73	83	82	72	47	34	38	47	40	43	45	47	86	66.9	24
26	50	53	54	57	61	67	70	71	75	71	64	57	52	49	48	52	56	62	68	69	73	75	78	78	78	62.9	24
27	70	64	63	61	65	70	67	68	69	61	57	54	55	55	56	63	70	76	78	83	88	89	88	87	89	69.0	24
28	84	83	84	79	76	79	83	79	79	77	75	74	69	67	70	71	74	79	82	84	81	82	81	79	84	78.0	24
29	78	75	73	73	74	77	80	82	85	85	84	84	86	91	92	92	91	91	91	91	91	91	91	92	92	85.0	24
30	92	93	93	93	93	93	93	94	93	91	92	91	91	89	82	86	86	82	84	83	80	77	74	75	94	**87.5**	24
31	77	77	77	77	78	80	79	80	80	82	69	66	61	57	53	55	62	69	72	68	67	70	72	76	82	71.0	24
HOURLY MAX	92	93	93	93	93	93	93	94	94	94	93	91	91	91	92	92	91	91	91	91	96	92	91	92			
HOURLY AVG	73.0	72.9	73.1	73.6	73.9	74.8	75.8	76.0	76.4	74.3	70.8	67.2	64.1	63.0	61.7	62.9	66.4	68.7	70.5	72.6	73.7	73.7	73.6	74.0			

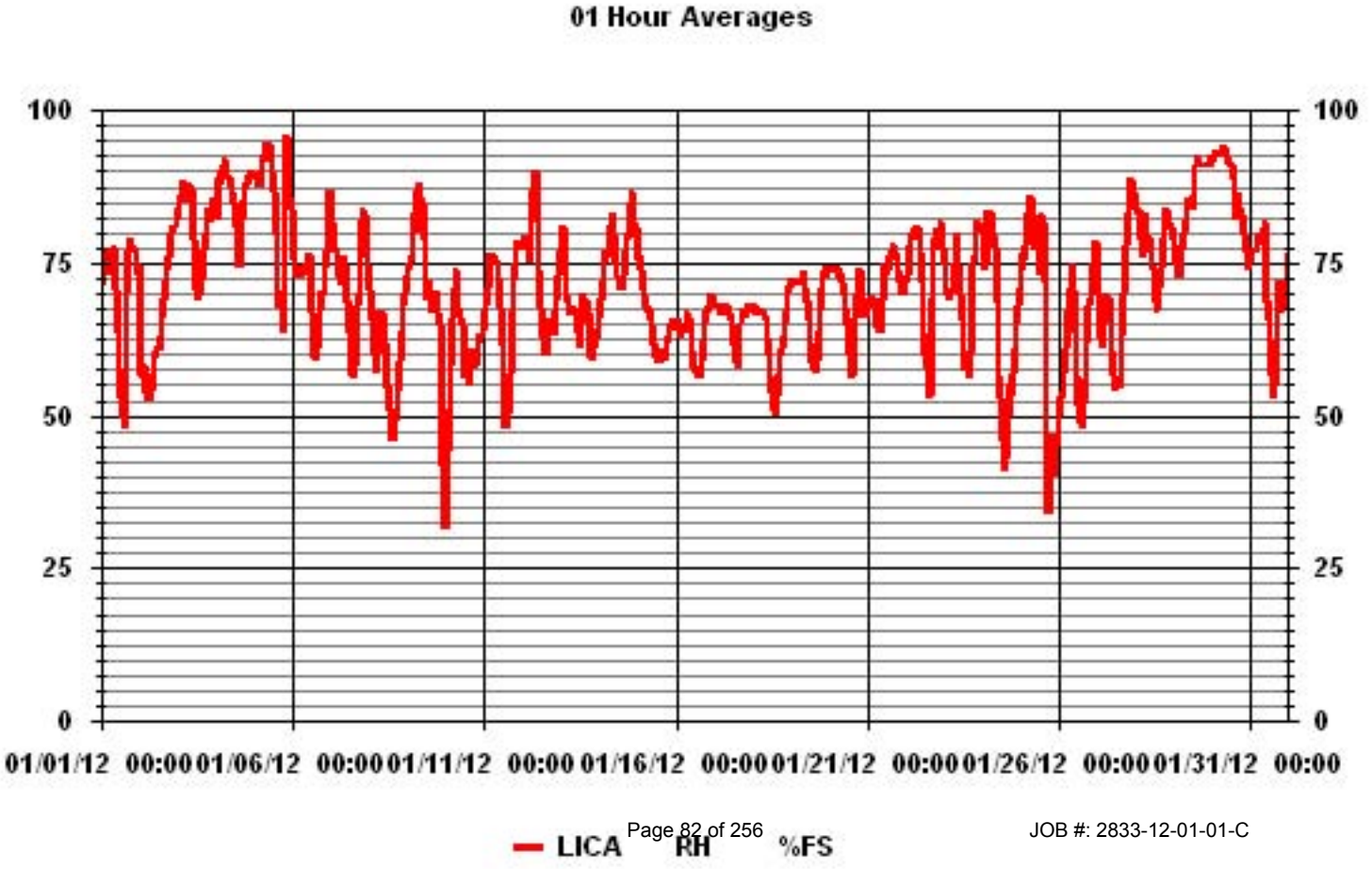
STATUS FLAG CODES

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 1-HR AVERAGE:	96	%	@ HOUR(S)	20	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	87.5	%			ON DAY(S)	30
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		744	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	11.34		MONTHLY AVERAGE:		71.11	%



JOB #: 2833-12-01-01-C

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

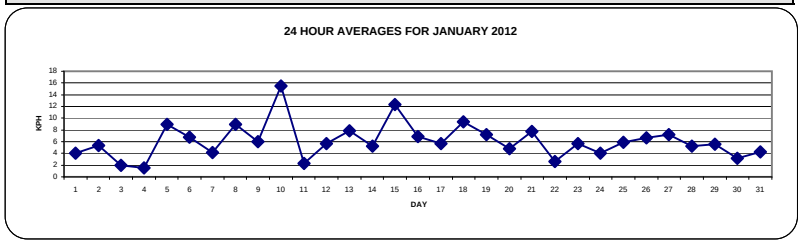
VECTOR WIND SPEED (WS) hourly averages (km/hr)

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	7.2	7	6.7	6.2	5.1	5.8	5.8	4.1	4.2	7.3	7.2	9.7	8.1	6.7	5.8	4.1	0.9	0.8	0.8	0.8	0.7	2.7	0.4	1.9	9.7	4	24
2	8.7	9.1	10	9.2	13.3	11.3	6.8	9	12.2	9.8	5.9	2.9	3.8	5.5	4.3	2.9	2.7	1.8	2	0.4	1.2	0.2	1.2	1.5	13.3	5.3	24
3	2.1	3.1	3.4	1.8	4	6.6	5.2	6.7	3	3.8	5.3	4.3	1.3	2.1	0.5	0.3	1.1	1.6	1.1	2.4	0.8	0.3	1	1.6	6.7	2	24
4	0.6	0.8	0.6	0.5	2	2.4	1.9	0.7	0.2	1.1	3.3	4.9	3.7	4.6	4.1	5.5	1.9	1.1	0.5	0.2	1.3	1.2	0.6	0.4	5.5	1.5	24
5	0.8	1	0.7	0.2	1.3	3.1	3.4	3	3.8	14.1	12.2	11.8	12.6	13.5	15.1	14.6	12.5	15.4	14.2	16.6	17.7	13	7.9	5.8	17.7	8.9	24
6	7.8	8	7.6	8.3	5.9	5.2	6.2	6.8	5.8	7.4	7.1	6.8	8.1	9.9	7.7	6	7.7	7.1	5.5	6.2	5.7	6	3.7	4.9	9.9	6.7	24
7	3.9	5.1	5.1	5.2	5.3	3.4	4.5	4.8	4.6	5.5	5.9	6.3	6.5	7	5.8	4.7	3.1	5.1	1.7	0.8	0.5	1	1	1.6	7.0	4.1	24
8	2.1	2.6	4	3.7	5.7	3.4	6.8	12.5	12.2	12.7	11.7	13.1	15.8	13.8	13.3	14.4	12.5	11.7	9	6.8	6	6.4	7.2	7.3	15.8	8.9	24
9	8.5	6.5	4.1	2.8	5.4	4.6	1.3	0.3	1	1.7	2.8	2.9	1.2	2.3	7.8	5.9	6.1	5.6	5.8	8.4	9.5	15	16.3	17.5	17.5	6.0	24
10	15.3	12.9	11.6	12.7	10.8	10.2	12.4	16.3	16.3	20.1	**21.6**	20.6	20.6	20.4	17.8	17.2	19.7	20	20.2	12.3	12.6	11	12.1	7.2	**21.6**	**15.5**	24
11	6.3	6.1	1.9	2	1.7	1	1.1	1.1	0.9	1.7	2.5	3.9	4.3	4.6	5.1	2.8	1.2	0.6	1.2	0.8	0.4	0.7	1	1.1	6.3	2.3	24
12	1.3	0.2	2.9	2.8	3	7	7.9	6.2	6.5	6.1	4.9	9.4	8.9	8.4	8.6	7	6	6.4	7.1	7	5.7	4.9	4.7	2.2	9.4	5.6	24
13	1.2	1.1	4	6.6	6	6.8	5	6	7.8	7.8	7.5	9.2	11.1	14.3	14.6	13.5	12.5	9.1	9.2	6	8.9	8.6	7	6	14.6	7.9	24
14	4.5	2.3	3.1	0.5	1.1	1.9	2.7	1.1	0.6	0.9	0.9	4.9	3.7	4	4.8	4	5.8	8.9	8	10.6	12.8	13.8	13	12	13.8	5.2	24
15	15.3	13.8	13.9	14.4	12.7	14.2	14.3	13.4	14.5	12.3	15	14	13.9	13.6	11.4	10.5	12.9	10.9	10.4	9.4	8.6	8.7	7.2	9.3	15.3	12.3	24
16	7.3	8.1	10.4	9.9	6.6	7	6.6	5.7	7.3	8.1	10.7	9.9	9.9	9	8.5	6.7	6.3	4.5	3.8	3.7	3.1	4.3	3.7	4.5	10.7	6.9	24
17	4.3	3.5	3.4	3	0.5	4.2	5	5.3	5.5	4.4	5.5	5.9	6.8	7.9	9.2	7.2	7.4	5.6	6.1	7.1	6.8	7.3	7.3	7.1	9.2	5.7	24
18	6.8	7.9	8.9	8.5	8.1	7.2	8.1	8.9	9.2	10.9	11	12.3	12.1	14	12.2	12.7	10.3	10.1	8.1	6.6	7.6	9.7	7.2	6.5	14.0	9.4	24
19	6.7	7.7	6.7	6.3	6.3	5.2	5.7	6.6	6.8	6.8	7	8.7	10	10.4	10.9	8.3	7.8	7	5.4	5.4	5.8	6.6	7.2	6.2	10.9	7.1	24
20	6.4	6.7	6	5.5	6.5	6.5	6	3.6	4.9	5.8	6.9	5.8	5.5	5.6	4.5	3.3	1.3	0.9	0.7	0.9	4.9	4.5	6.8	6.2	6.9	4.8	24
21	4.8	5.1	6.6	8.3	10	8.7	8.2	8.9	9.8	10.1	10.5	11.7	12	11.3	9.3	8.4	5.7	6.5	6.5	6.2	6.7	5.5	4	1.9	12.0	7.8	24
22	1.2	0.9	1.5	1.5	2	2.2	1.1	1.4	1.5	1.8	4.8	5.8	6.6	5.3	3.1	1.5	0.3	1.9	1.2	2.5	2	2.9	2.6	6.3	6.6	2.6	24
23	8	9.8	10.7	11	12	10.3	7.8	5.1	3.2	2.8	7	7.6	5	4.8	4.3	3.1	4.6	4.4	3	5.4	1.9	1.2	3.9	0.4	12.0	5.7	24
24	1	5.9	3	0.2	0.7	0.7	0.6	1	0.5	1.4	2	5.2	4.4	3.8	2.4	2.9	1.6	3.5	11.1	11.6	11.3	8.7	9	5.4	11.6	4.1	24
25	5.4	3.7	4.2	3.1	1.6	0.6	1.7	0.6	0.5	3	5.1	5.2	6.4	6.5	6.3	8.2	9.9	16.4	11	9.6	9.1	8.9	7.8	7	16.4	5.9	24
26	6.9	8.7	7.3	6.3	6.7	4.2	6.3	6.1	6	6.6	7.7	6.9	8.4	7.2	7.3	7.4	5.7	4.9	3.4	5.9	7.2	8.1	5.8	7.9	8.7	6.6	24
27	7.8	9.1	9.4	10.6	11.4	11.3	11.2	7.8	9	8.9	10.1	9.4	7.2	6.6	4.6	4.4	4.4	4	4.1	4.6	5.9	4.2	2.7	3.4	11.4	7.2	24
28	7	7.7	7.7	10.7	9.1	5.5	4.7	8.3	7.8	5.1	5.7	3	3	3.1	4.5	3.1	1.2	0.7	1.2	3.6	4.3	4.6	7.2	6.5	10.7	5.2	24
29	5.8	5.2	8.7	8.3	7.3	7	9.4	8.1	7	6	8.2	7.5	6.7	6.5	5.6	4.9	4.6	5	4.1	3.7	1.2	0.9	0.6	0.8	9.4	5.5	24
30	0.6	1.6	1.1	0.5	0.9	0.4	0.8	0.9	0.8	1.7	1.4	3.1	3.8	3.4	4.4	2.5	5.1	6.4	5.5	5.7	5.3	7	6.6	6.7	7.0	3.2	24
31	7.1	6.5	5.8	5.7	6	6.7	6.2	5.6	4.9	0.7	1.5	2.4	3.1	3.8	4.8	2.4	0.6	0.8	0.8	4	5.9	6.3	5.7	5.4	7.1	4.3	24
HOURLY MAX	15.3	13.8	13.9	14.4	13.3	14.2	14.3	16.3	16.3	20.1	21.6	20.6	20.6	20.4	17.8	17.2	19.7	20.0	20.2	16.6	17.7	15.0	16.3	17.5			
HOURLY AVG	5.6	5.7	5.8	5.7	5.8	5.6	5.6	5.7	5.8	6.3	7.1	7.6	7.6	7.7	7.4	6.5	5.9	6.1	5.6	5.7	5.9	5.9	5.6	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

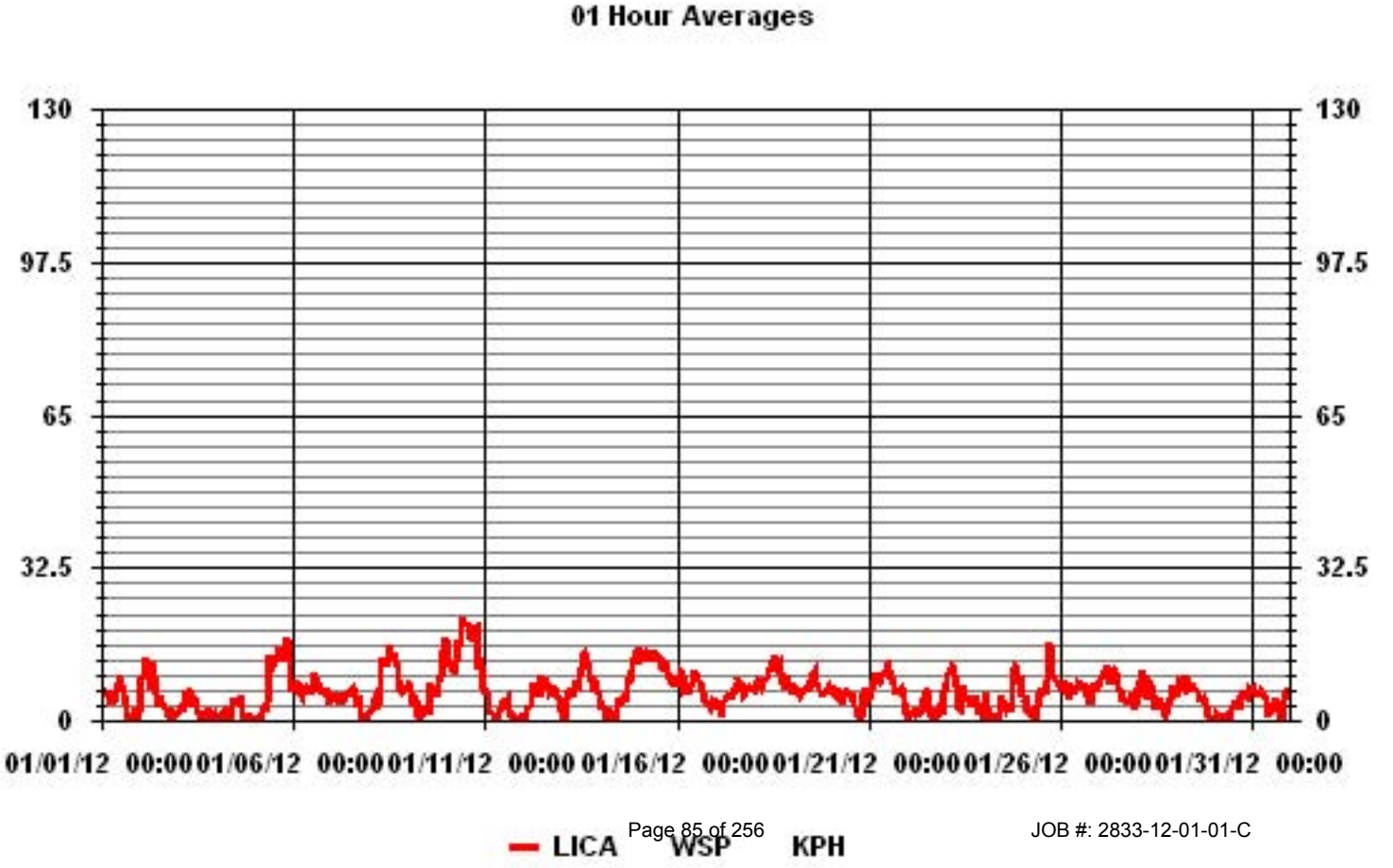


LAST CALIBRATION: December 16, 2010

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	21.6	KPH	@ HOUR(S)	10	ON DAY(S)	10
MAXIMUM 24-HR AVERAGE:	15.5	KPH			ON DAY(S)	10

CALMS (≤ 0 KPH)	1.34	%	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME	100.0	%
STANDARD DEVIATION:	4.08		MONTHLY AVERAGE:	6.14	KPH



JOB #: 2833-12-01-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

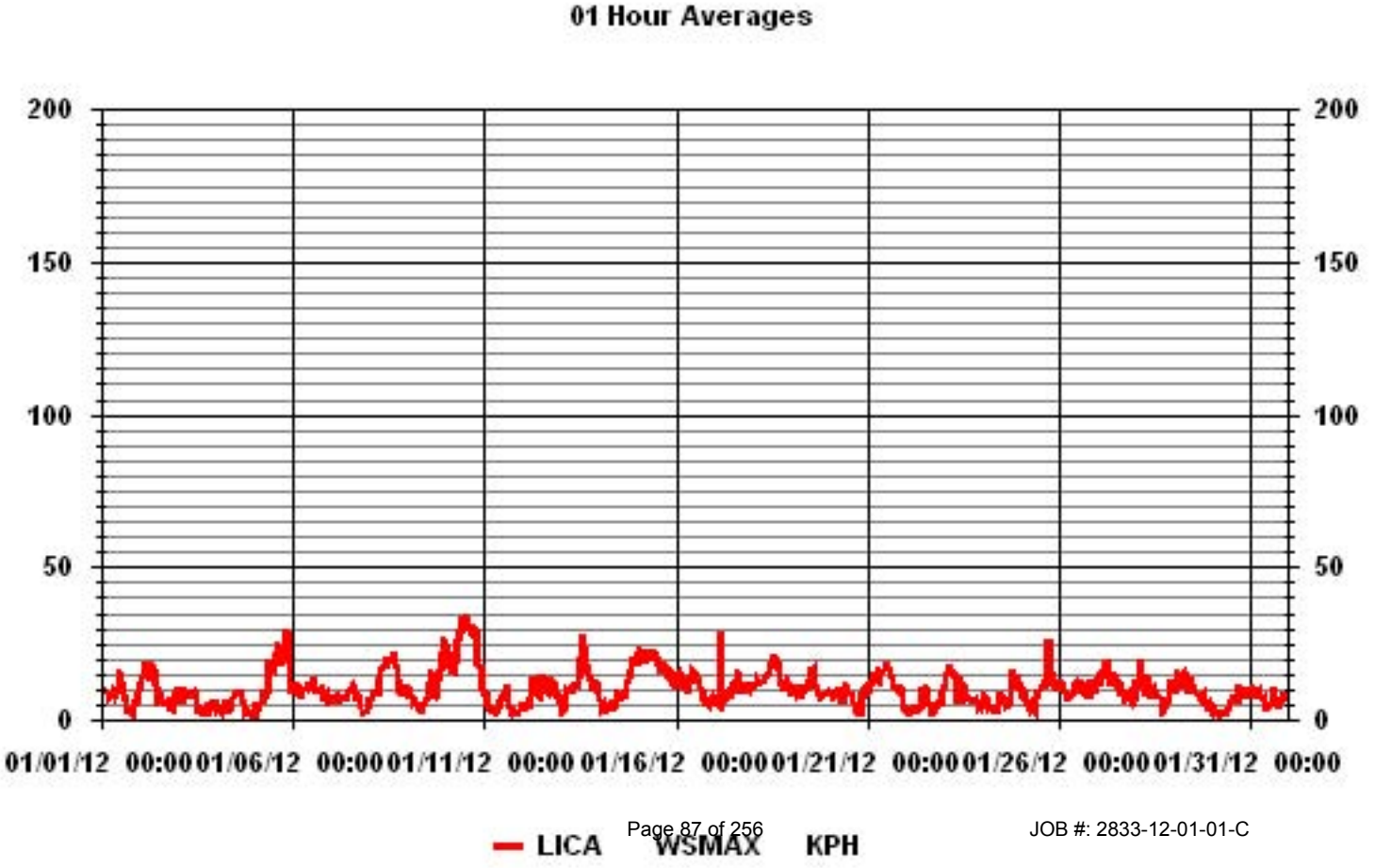
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.
DAY																									
1	10.2	9.8	9.7	9.5	7.1	7.7	7.9	9.2	8	9.6	9.7	16.5	12.8	9.4	8.3	7.1	3	2.7	3.2	2.4	4.3	6.3	5.2	9.3	16.5
2	12.5	14.1	14.6	16.2	18.4	16.8	12.8	17.8	17.9	17.3	11.4	6.4	6.8	8.7	7.3	5.9	5.5	6	4.5	5	4.4	7.4	8.6	4.8	18.4
3	10.9	6.5	6.3	5.1	9.4	9	7.3	9.3	7	8.6	9.5	8.6	3.7	4.1	2.9	2.3	2.7	4	3.4	5.7	2.9	5.9	5.8	6	10.9
4	3.3	3.8	3.9	2.8	3.9	4.7	6.1	3.1	2.9	3.7	6.8	7.8	8.3	9.1	9	9.1	6.6	6.3	2.4	2.9	3.5	2.8	2.2	2.9	9.1
5	2.2	5.6	3.1	4.9	7.1	6.7	9.4	7.9	8.4	19.4	18.1	17.3	20.2	19.4	25.6	20.2	17.3	24.7	20.5	27	29.7	19.4	13	8.9	29.7
6	10.1	10.1	11	11	8.5	7.1	9.5	10.3	9.2	12.1	10.4	10.9	12.5	14.2	10.7	8.2	10.3	10.6	7.9	7.9	7.5	8.5	5.9	6.2	14.2
7	5.1	7.7	7.5	8.2	8.1	5.4	6.7	7.1	7.4	7.3	9.4	10.2	9.9	11.1	9.3	9.1	6.3	8.1	4.3	2.3	2.6	2.7	2.9	3.5	11.1
8	7.7	5.9	9.8	7.4	10.1	7.3	13.7	16.7	17.5	18	16.5	20.2	20.4	19.5	19.5	22.3	18.7	17.5	14	9	7.8	11.2	10	9.2	22.3
9	11.5	9.5	8	6.2	7	6.5	3.8	3.7	3.4	4.4	5.6	7.1	7.4	12.2	16.2	9.9	8.9	8	8.6	12.7	16.2	22	27	25.6	27
10	23.6	17.7	17.9	21.8	16.1	15.8	18.1	26.2	28.7	29	33	32.8	**34.4**	31.9	29.8	29.1	31.3	28.3	30.7	18.3	17.5	16.5	17	10.4	**34.4**
11	8.6	8.7	5.6	4.1	3.2	3	2.8	2.5	3.5	4	6	8.1	8.7	10.4	10.4	5.7	4.1	2.1	3.2	3.1	2.3	2.6	3.3	3.4	10.4
12	5.2	2.7	4.7	4.5	7.4	13.5	13.6	12.5	9.2	9.3	8.7	15.2	12.1	13.3	13	9.6	8.9	10.5	12.9	12.6	8.9	8	8	5.9	15.2
13	2.9	3.2	6.9	9.9	9.3	9.4	9.4	10.8	11.5	11.8	11.6	13.1	20.2	28.2	24.3	22.4	18.6	15.9	13.2	9.7	11.3	11.8	11.8	9.1	28.2
14	6.7	4.2	5.2	3.5	3.7	5	5.6	3.8	2.6	4.7	3.9	9.6	7.8	7.5	8.2	6.8	9.6	12	13.4	16.1	18.7	20.7	19.1	18.8	20.7
15	22	23.6	20	22.4	18.6	19.6	22.9	20.2	22.8	19.1	22.7	18.9	21.3	18.5	16.5	16.2	18.8	16.4	18	14.6	13.6	16	12.2	12.5	23.6
16	10.1	15	15.8	14.3	11.1	10	10	8.5	12.1	14.9	16.9	16.3	14.4	13.1	13	11.3	10.4	7	5.7	5.8	5	6.1	6.1	7.4	16.9
17	6	5.7	5.9	5.4	29.2	6.7	6.4	7.8	8.6	6.7	9.2	9.3	12	12.6	15.1	14.7	10.6	8.5	9.7	12.1	10.8	11.3	10.1	11.5	29.2
18	11.2	11.6	13.2	12	12	12.2	12.5	13.5	14	15	15.1	17.1	18.9	21.1	17.3	18.3	16.8	13.8	11.7	9.4	11.7	13.7	13.1	9.2	21.1
19	9.1	10.2	10.7	8.5	9.4	7.4	7.4	11.6	9.3	9.8	10.6	12.9	17.3	15.7	16.5	12.1	10.9	8.8	7.6	7.9	8.2	8.8	9.4	7.6	17.3
20	9	9.3	7.7	8.2	8.8	9.5	9.7	6.9	6.7	9.7	12.1	8.8	8.6	8.9	8.5	6.4	4.4	3	2.3	2.1	8.4	8.1	10.2	10.8	12.1
21	8.9	9.4	10.9	12.8	15.9	13.3	12.8	16.2	15.8	15.9	16.4	19.2	18.1	17.8	14.9	13.9	11.6	10.9	10.8	10.3	11.6	8.4	5.8	3.8	19.2
22	2.8	2.3	3.2	2.8	3.5	4.8	2.9	2.8	3.3	3.8	9.7	9.8	11.1	9.2	5.9	4.9	1.2	4.8	5.6	4.5	5.7	5.7	4.4	10	11.1
23	11.8	15	15.8	18.3	16.4	16.1	13.9	8.5	6.4	5	13	12.3	11.8	7.1	7.5	7.8	7	6.7	6.3	7.1	6.2	4.6	5.6	4.2	18.3
24	5.1	8.2	7.8	4.4	5.1	4.5	3.7	3.7	2.3	4	5.4	8.8	7.1	6.4	5.2	6.2	4	7.6	16.5	15.4	14.6	12.4	13.1	10	16.5
25	8.4	8.6	10.2	6.7	5.4	3.6	4.5	4	3.2	6.9	9.2	9.8	11	10.9	10.9	12.7	15.4	26.6	24.5	16.2	11.9	11.5	11.8	9.8	26.6
26	9.8	13.1	11.9	10	9.5	6.1	8.5	8.9	8.4	9.1	12.1	12.8	12.2	13.4	10.4	10.9	8.6	8.4	6.9	11.9	11.4	12	8.1	12.6	13.4
27	10.7	14.2	13.6	16.6	18	18.8	19.8	12	11.9	13	15.3	13	10.5	13.1	7.4	9.2	8.7	6.8	7.3	9	9.4	6.9	5.3	5.9	19.8
28	12.8	11.3	12.5	19.6	15.5	9	8.7	14.5	12.4	9.5	10.2	6.8	8.1	8.9	8.4	7.9	2.5	2.7	3.7	5.6	7.4	9.5	12.3	12.5	19.6
29	8.4	9.7	16.3	12.3	11.9	14.4	15.4	13.9	10.1	8.9	14.2	12	11.3	9.8	8.8	8.5	7.5	8.4	9	7.3	5.6	3.1	4.8	3.6	16.3
30	2.5	4.3	3.8	3	2.6	1.7	2.7	2.3	2.2	3.7	3.9	6.3	7.3	7.1	8.3	5	10.6	10.7	8.4	8.1	8.9	10.6	9.1	10.1	10.7
31	11.1	11	8.4	8.1	9.7	10.3	8.8	7.4	7.8	3.1	4.7	4.7	5.3	5.7	10.3	6	7	3.3	5.5	6.6	8.2	8.1	9	7.5	11.1
PEAK	23.6	23.6	20.0	22.4	29.2	19.6	22.9	26.2	28.7	29.0	33.0	32.8	34.4	31.9	29.8	29.1	31.3	28.3	30.7	27.0	29.7	22.0	27.0	25.6	

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

MAXIMUM INSTANTANEOUS READING	34.4	KPH	@ HOUR(S)	12
			ON DAY(S)	10



JOB #: 2833-12-01-01-C

LICA
WSP / WD Joint Frequency Distribution (Percent)

January 2012

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	.13	.26	1.07	1.88	2.01	3.76	6.04	3.76	1.88	2.15	13.84	8.87	2.15	1.20	.80	.26	50.13
<	12.0	.00	.13	.26	.00	2.28	2.01	3.09	.00	.00	.00	9.13	12.76	3.62	1.07	1.61	2.28	38.30
<	20.0	.40	.67	.00	.00	.13	.00	.40	.00	.00	.00	.53	.94	2.68	.80	1.74	.94	9.27
<	29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.80	.13	.94
<	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	.53	1.07	1.34	1.88	4.43	5.77	9.54	3.76	1.88	2.15	23.52	22.58	8.46	3.09	4.97	3.62	

Calm : 1.34 %

Total # Operational Hours : 744

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	1	2	8	14	15	28	45	28	14	16	103	66	16	9	6	2	373
<	12.0		1	2		17	15	23				68	95	27	8	12	17	285
<	20.0	3	5			1		3				4	7	20	6	13	7	69
<	29.0															6	1	7
<	39.0																	
>=	39.0																	
	Totals	4	8	10	14	33	43	71	28	14	16	175	168	63	23	37	27	

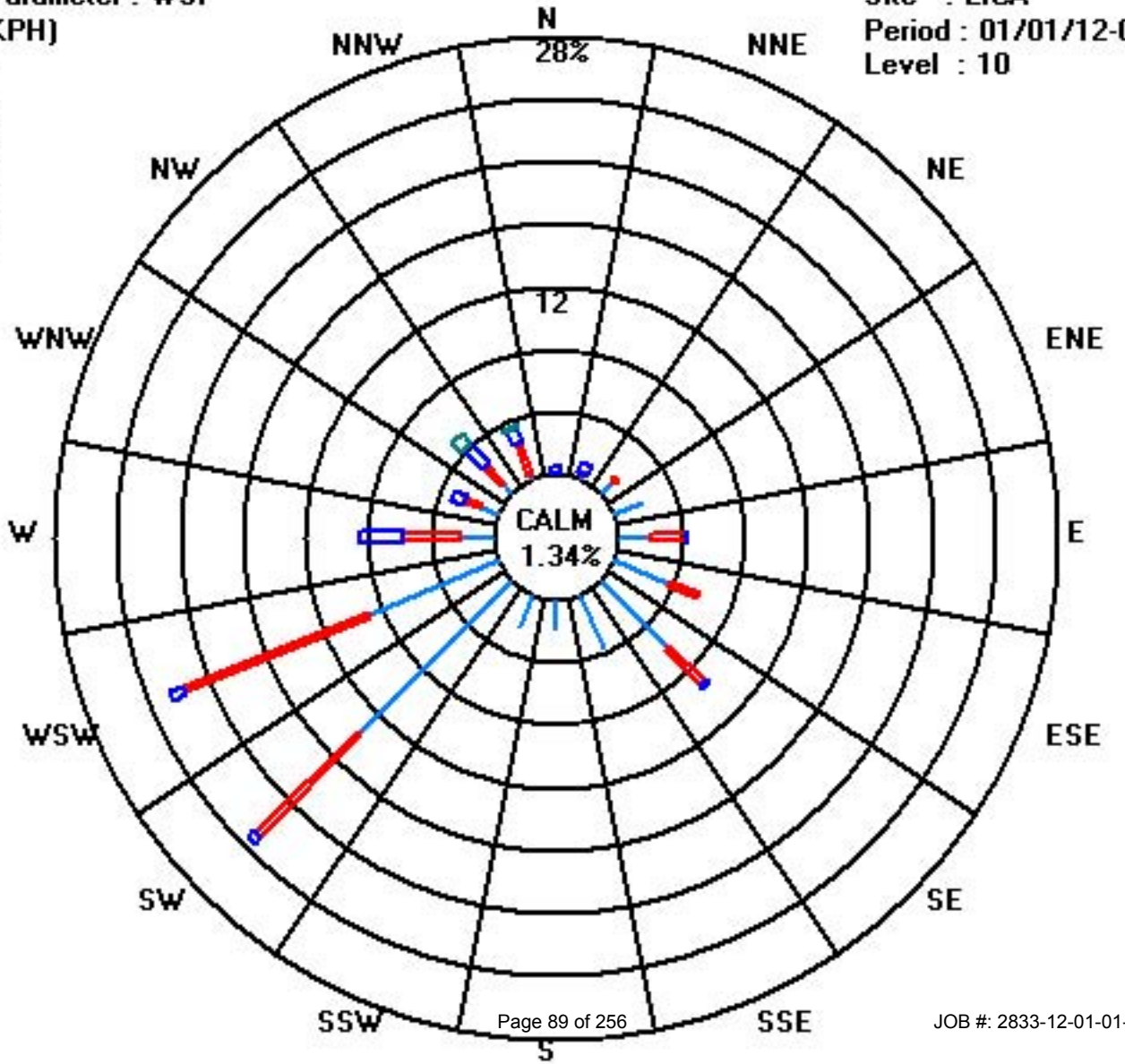
Calm : 1.34 %

Total # Operational Hours : 744

Logger : 01 Parameter : WSP
Class Limits (KPH)

>= 39.0
< 39.0
< 29.0
< 20.0
< 12.0
< 6.0

Site : LICA
Period : 01/01/12-01/31/12
Level : 10



JOB #: 2833-12-01-01-C

Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

VECTOR WIND DIRECTION (WD) hourly averages in degrees

MST

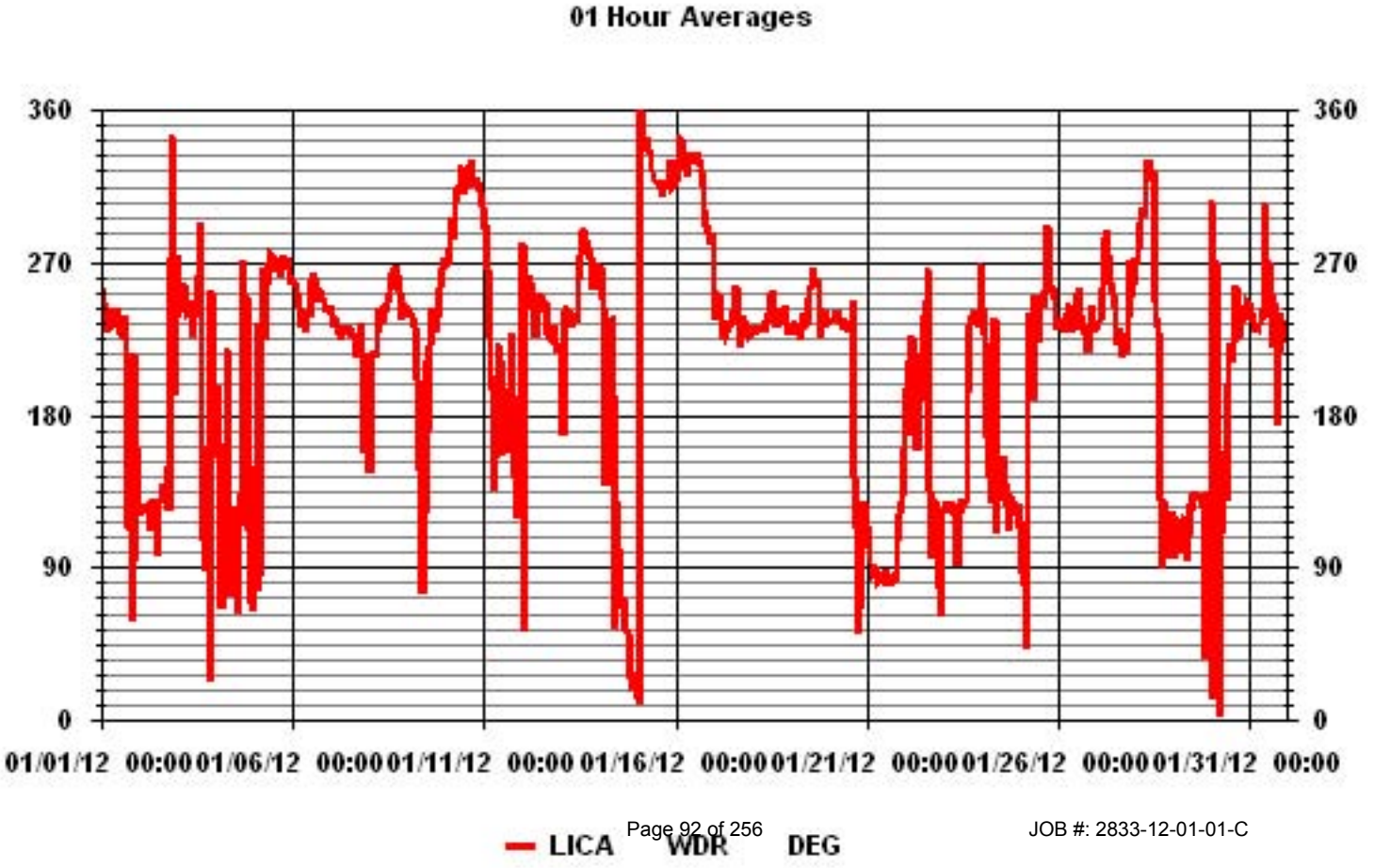
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	255	248	238	234	229	233	231	243	231	239	243	233	229	228	231	239	151	115	113	58	217	94	162	128	232	SW	24
2	124	123	124	122	126	127	111	120	128	131	124	96	131	129	136	135	139	149	123	273	346	192	251	238	126	SE	24
3	275	247	249	241	258	247	240	241	248	225	239	239	262	248	294	129	107	87	161	112	23	253	160	164	238	SW	24
4	155	197	164	66	113	104	118	219	117	73	116	126	107	62	115	134	166	272	154	251	111	130	70	64	117	ESE	24
5	150	76	235	84	167	237	267	224	256	270	276	275	265	270	273	268	261	269	274	272	270	273	263	258	268	W	24
6	260	256	258	253	245	232	241	240	228	240	238	249	259	264	262	251	247	255	249	249	244	240	244	242	249	WSW	24
7	244	232	239	234	228	231	225	227	233	227	231	231	233	226	228	220	214	221	217	235	164	157	217	205	227	SW	24
8	146	163	216	216	214	228	243	236	234	245	241	246	252	254	263	266	267	267	263	254	236	240	238	245	247	WSW	24
9	244	242	241	231	237	232	201	149	94	74	127	121	212	171	221	243	232	237	228	238	255	267	269	273	245	WSW	24
10	268	269	279	296	289	283	306	314	315	328	317	310	326	318	314	327	331	319	319	315	317	314	312	304	311	NW	24
11	290	293	267	227	204	196	135	154	181	222	213	156	172	170	158	196	162	229	142	177	125	119	191	258	203	SSW	24
12	282	52	246	252	262	242	258	247	228	226	240	250	250	248	247	229	225	228	225	226	232	219	219	223	238	SW	24
13	183	167	242	245	235	243	232	234	240	237	237	259	274	287	290	283	283	280	273	273	254	257	266	269	263	W	24
14	264	269	249	245	138	234	235	236	181	54	191	130	103	77	66	72	55	54	52	25	21	22	28	21	38	NE	24
15	14	9	360	357	346	336	344	335	335	325	320	319	318	316	318	308	314	319	315	315	320	330	314	315	332	NNW	24
16	318	331	345	343	333	335	327	321	331	335	331	332	331	330	334	332	325	316	302	293	287	289	280	287	326	NW	24
17	250	238	238	250	249	226	230	227	229	235	233	234	242	240	257	238	220	235	239	237	231	227	228	226	235	SW	24
18	231	231	228	231	231	231	232	229	236	240	237	235	251	253	237	231	237	243	237	235	235	245	236	228	237	SW	24
19	230	231	234	234	229	229	224	230	240	233	234	249	254	256	266	260	260	258	245	226	232	240	242	238	242	WSW	24
20	235	236	237	240	239	238	241	235	232	232	237	234	231	229	234	247	144	115	50	65	123	114	129	125	220	SW	24
21	115	102	93	86	87	91	87	81	82	85	84	79	89	84	84	86	82	83	88	106	122	129	132	160	91	E	24
22	195	167	212	198	227	202	167	159	162	188	216	227	239	247	267	136	95	126	131	112	78	83	61	122	191	S	24
23	124	128	125	125	124	128	125	118	93	91	127	130	127	129	131	193	233	238	242	236	235	240	242	270	138	SE	24
24	244	229	224	168	143	189	128	175	237	110	146	130	139	129	156	141	127	112	131	130	127	124	125	115	136	SE	24
25	89	88	117	80	41	228	240	215	189	251	241	222	243	248	247	254	278	292	273	252	257	250	237	230	253	WSW	24
26	235	235	233	229	237	236	246	232	229	235	230	252	253	255	240	232	230	232	217	227	239	245	228	234	237	SW	24
27	231	235	236	255	263	285	289	275	258	260	252	245	227	222	231	214	225	222	216	228	237	272	250	257	249	WSW	24
28	272	269	277	294	303	300	297	331	329	329	318	325	248	239	233	230	131	89	130	125	95	102	121	121	292	WNW	24
29	95	99	118	117	98	106	119	118	94	108	128	124	133	134	133	133	129	133	125	133	36	135	46	40	117	ESE	24
30	307	12	208	271	49	1	110	158	150	129	199	223	219	211	229	256	226	227	238	236	237	244	248	247	233	SW	24
31	243	241	236	228	234	232	234	236	243	306	237	269	269	252	219	247	237	174	217	240	223	236	231	235	237	SW	24
HOURLY AVG	318	331	360	357	346	336	344	335	335	335	331	332	331	330	334	332	331	319	319	315	346	330	314	315			

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:	December 16, 2010
DECLINATION :	NA

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION	72.81		AMD OPERATION UPTIME	100.0	%
			MONTHLY AVERAGE	251	DEG



JOB #: 2833-12-01-01-C

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JANUARY 2012

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

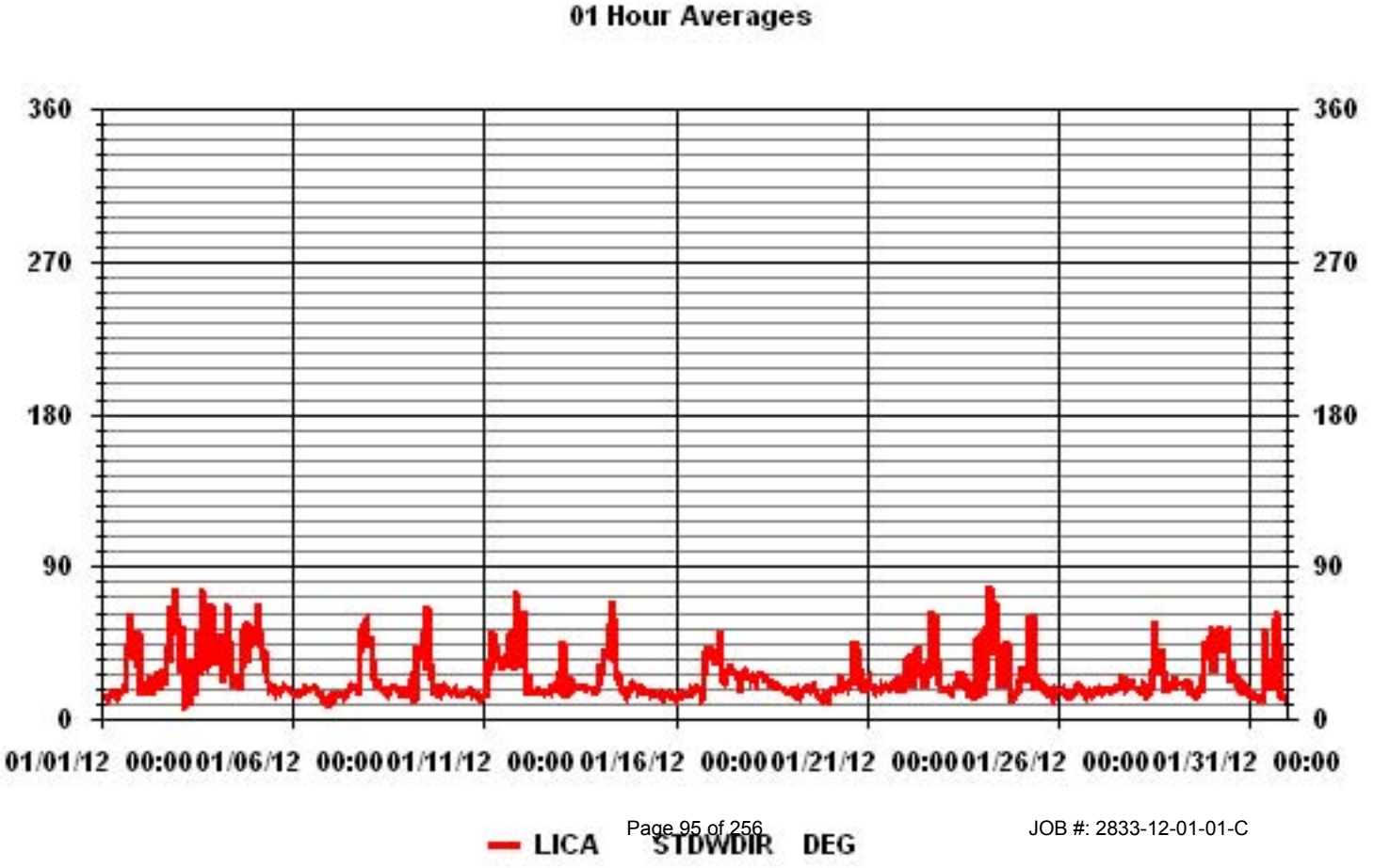
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	13	13	13	14	11	12	14	17	14	13	14	17	16	17	17	21	45	36	63	42	46	35	31	52
2	13	18	18	19	15	15	26	19	14	19	22	27	28	17	23	23	23	42	33	66	51	51	77	49
3	59	31	28	55	33	9	9	9	35	17	14	19	52	25	36	77	33	33	32	34	45	68	50	32
4	37	37	42	51	22	26	38	69	47	45	20	20	26	21	23	17	30	54	56	57	34	44	55	45
5	46	49	68	53	44	35	42	29	23	18	20	19	17	19	19	18	16	19	20	19	18	19	17	16
6	15	15	16	14	15	17	16	18	18	17	18	18	18	19	19	16	14	15	12	12	11	12	8	9
7	11	15	15	13	15	16	14	15	13	14	15	17	20	19	18	19	19	14	39	53	56	58	59	45
8	45	49	36	24	21	21	23	19	18	18	17	18	16	17	19	18	18	18	18	16	15	20	18	15
9	16	15	24	28	10	12	43	35	38	38	52	28	67	55	34	24	16	16	20	17	15	19	20	20
10	17	18	18	16	16	18	15	15	14	14	15	15	15	16	16	18	14	15	15	15	15	13	12	13
11	14	12	33	26	28	52	34	41	43	39	32	31	34	36	31	38	50	51	28	35	76	56	34	30
12	48	63	14	23	27	15	17	16	15	15	19	16	17	16	15	16	17	19	17	20	20	18	17	28
13	34	47	28	13	16	13	26	21	18	18	19	19	20	20	19	19	18	18	18	18	15	16	17	17
14	20	32	25	36	41	39	38	57	69	61	54	23	28	21	18	19	16	14	16	19	21	20	19	18
15	16	17	21	17	17	14	17	17	14	15	15	16	16	15	16	14	13	14	15	14	15	13	13	13
16	12	14	15	16	14	15	15	14	14	16	14	17	18	19	17	18	12	14	25	39	43	36	43	34
17	39	34	34	41	52	23	22	23	25	29	33	27	27	27	25	25	15	23	27	29	27	25	26	23
18	26	24	22	24	26	27	27	24	25	23	21	21	22	20	20	20	20	18	18	18	18	17	17	16
19	18	17	18	15	18	16	14	16	17	17	20	19	17	19	20	19	17	14	13	12	15	14	13	12
20	16	17	18	18	17	17	19	27	18	18	19	21	18	20	23	21	47	40	43	30	20	20	15	18
21	22	24	20	19	17	21	18	19	17	20	18	19	21	19	18	19	21	20	23	25	20	17	17	26
22	35	36	18	23	19	28	42	34	43	34	26	23	19	22	25	35	63	49	62	26	35	21	20	18
23	15	20	15	18	16	15	18	20	20	28	21	18	28	21	19	24	15	14	14	12	47	48	13	39
24	32	14	23	55	47	78	69	37	70	39	47	18	24	23	37	37	46	19	12	11	12	15	16	23
25	21	30	22	22	29	61	35	56	62	18	20	23	20	21	18	17	21	18	17	14	17	14	16	17
26	17	17	19	16	15	18	11	14	15	15	17	20	19	20	18	19	16	14	16	17	16	14	15	18
27	18	19	17	16	18	19	18	18	16	16	18	17	19	19	19	27	20	17	25	18	19	21	22	21
28	19	18	18	16	16	19	18	14	15	18	18	30	58	41	28	26	34	41	29	16	19	22	17	20
29	19	26	20	21	22	21	20	20	21	24	17	18	16	14	14	16	18	18	25	34	44	45	49	41
30	55	27	50	41	42	54	50	49	39	51	52	26	21	35	24	24	21	18	17	16	20	18	16	17
31	14	14	13	14	14	14	11	11	15	54	36	20	22	17	21	41	60	64	45	15	14	13	13	12

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: December 16, 2010

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS



JOB #: 2833-12-01-01-C

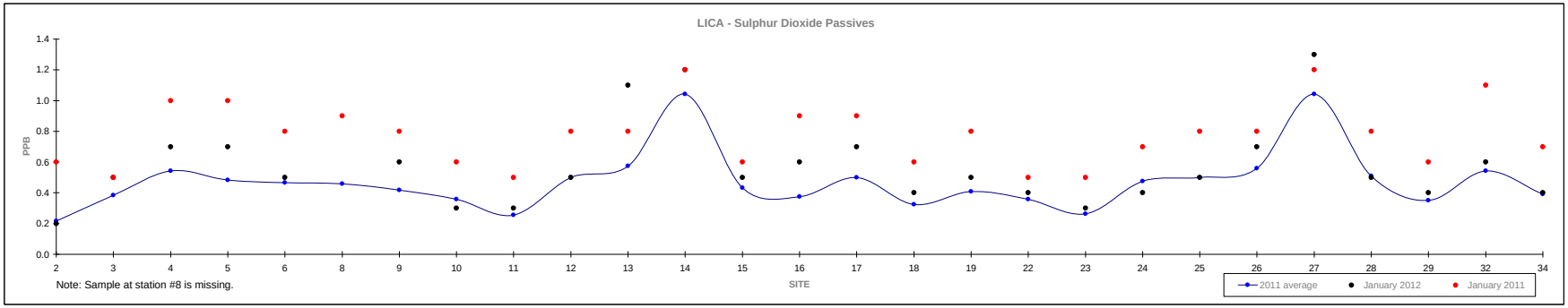
Non-Continuous Monitoring

Passive Summary Results for January 2012

Lakeland Industry & Community Association

Sulphur Dioxide
ppb

	2011																										January 2012	
	2	**3**	**4**	**5**	**6**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**32**	**34**	**Reading**	**Site**
Mean	0.2	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.5	0.6	1.0	0.4	0.4	0.5	0.3	0.4	0.4	0.3	0.5	0.5	0.6	1.0	0.5	0.4	0.5	0.4	0.6	-
Minimum	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.1	0.2	0.1	0.2	#2
Maximum	0.6	1.3	1.3	1.1	1.0	1.0	1.0	1.0	0.6	1.5	1.9	2.2	1.1	0.9	1.3	0.8	1.0	1.3	0.5	1.4	1.4	1.1	1.7	1.1	0.9	1.4	0.9	1.3	#27



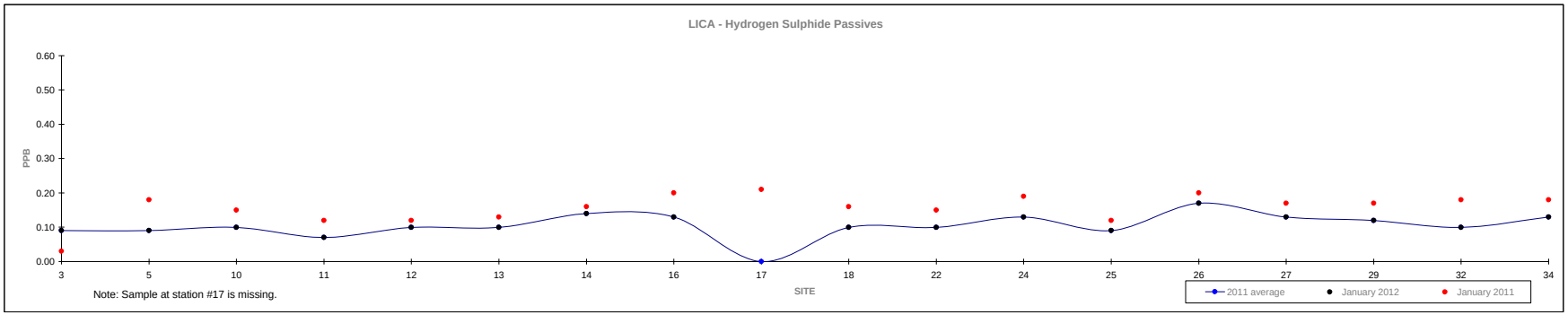
Note: Sample at station #8 is missing.

Passive Summary Results for January 2012

Lakeland Industry & Community Association

Hydrogen Sulphide
ppb

	2011																		January 2012	
	3	5	10	11	12	13	14	16	17	18	22	24	25	26	27	29	32	34	Reading	Site
Mean	0.15	0.20	0.14	0.09	0.11	0.15	0.17	0.15	0.29	0.12	0.14	0.16	0.09	0.17	0.48	0.15	0.15	0.18	0.11	-
Minimum	0.03	0.10	0.10	0.04	0.06	0.04	0.12	0.06	0.08	0.05	0.08	0.09	0.04	0.12	0.13	0.09	0.09	0.09	0.07	#11
Maximum	0.29	0.38	0.21	0.13	0.17	0.80	0.21	0.21	0.67	0.18	0.23	0.21	0.18	0.25	1.12	0.25	0.22	0.29	0.17	#26



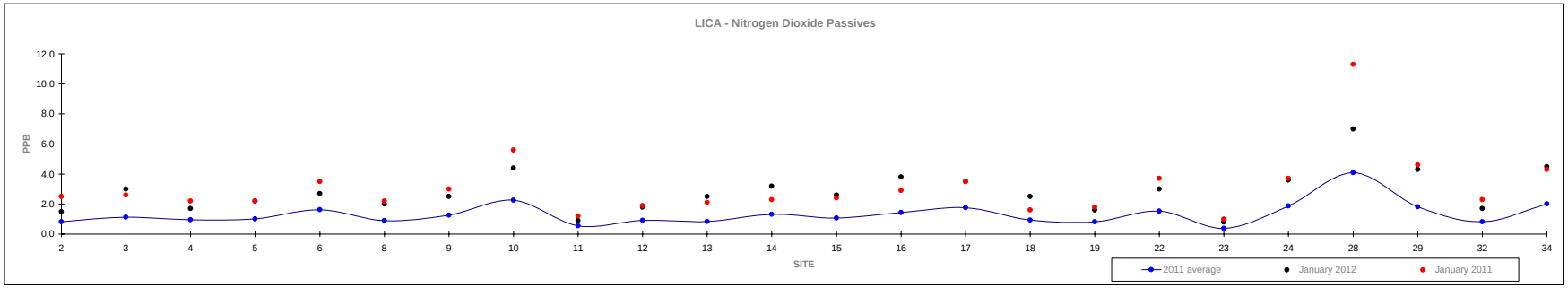
Note: Sample at station #17 is missing.

Passive Summary Results for January 2012

Lakeland Industry & Community Association

Nitrogen Dioxide
ppb

	2011																							January 2012	
	2	**3**	**4**	**5**	**6**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**22**	**23**	**24**	**28**	**29**	**32**	**34**	**Reading**	**Site**
Mean	0.8	1.1	1.0	1.0	1.6	0.9	1.3	2.3	0.5	0.9	0.9	1.3	1.1	1.4	1.8	0.9	0.8	1.5	0.4	1.9	4.1	1.8	0.8	2.0	2.8	-
Minimum	0.1	0.4	0.1	0.2	0.6	0.2	0.4	0.7	0.1	0.2	0.1	0.1	0.2	0.4	0.9	0.2	0.2	0.3	0.1	0.8	1.6	0.3	0.2	0.5	0.8	#23
Maximum	2.5	2.6	2.2	2.2	3.5	2.4	3.0	5.6	1.2	2.3	2.1	3.0	2.4	3.0	3.5	2.2	2.3	3.7	1.0	3.7	11.3	4.7	2.3	6.9	7.0	#28



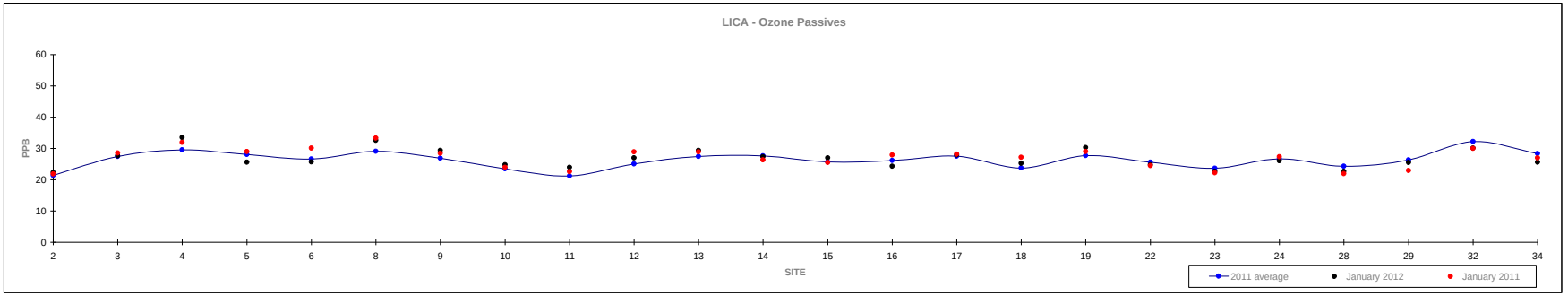
JOB #: 2833-12-01-01-C

Passive Summary Results for January 2012

Lakeland Industry & Community Association

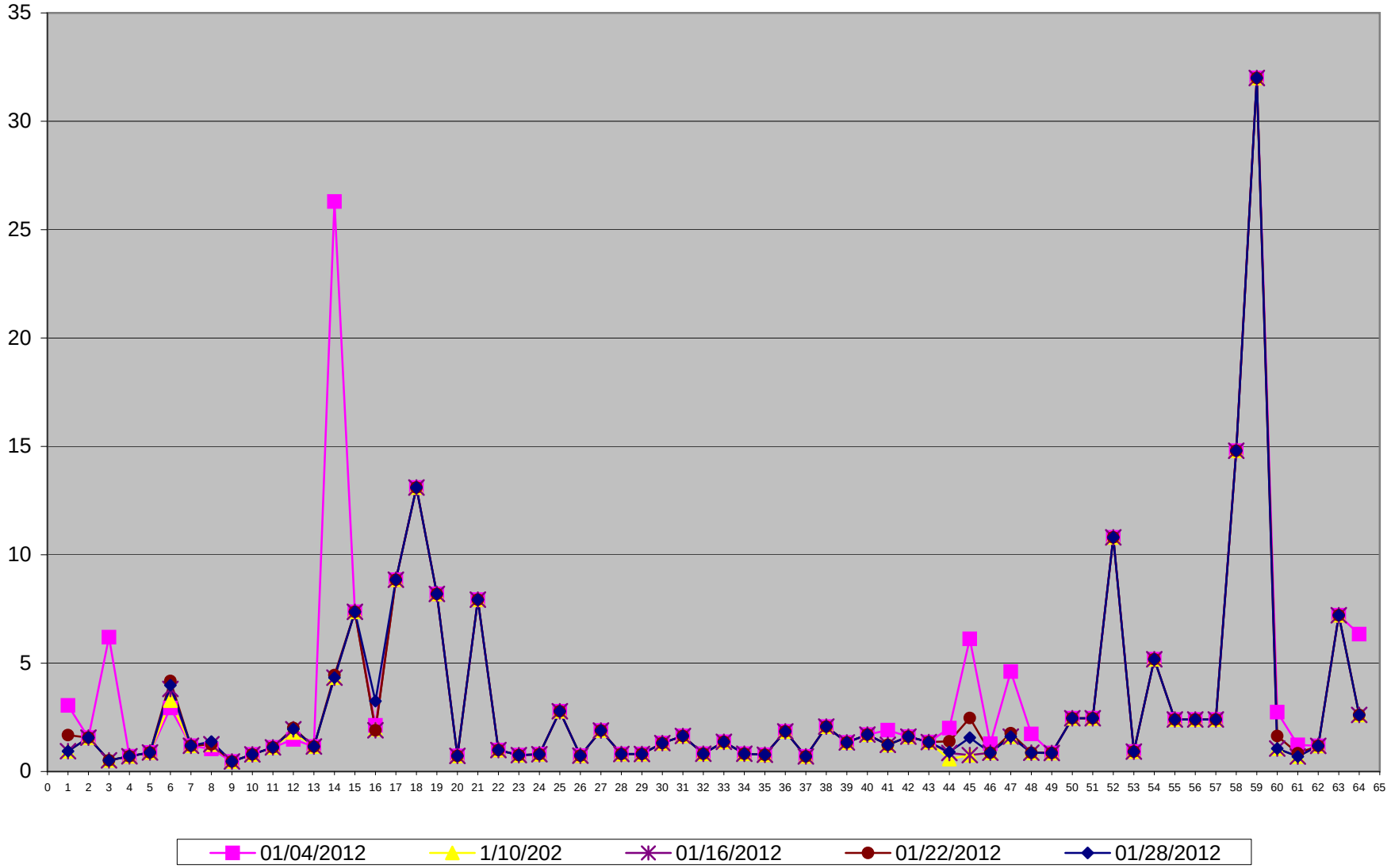
Ozone
ppb

	2011																							January 2012	
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	28	29	32	34	Reading	Site
Mean	21.4	27.5	29.6	28.0	26.6	29.1	26.9	23.5	21.2	25.1	27.5	27.6	25.7	26.1	27.5	23.8	27.7	25.6	23.7	26.7	24.3	26.3	32.2	28.3	26.7	-
Minimum	11.9	17.6	20.0	18.5	16.8	19.1	18.0	13.9	11.5	14.0	18.4	19.1	16.1	16.6	17.8	13.3	18.6	15.1	12.8	17.1	15.8	17.3	25.0	17.6	22.3	#2
Maximum	33.2	39.2	39.6	44.1	40.8	42.4	38.2	33.9	30.9	34.9	38.1	39.1	40.3	37.0	40.3	35.4	40.1	37.0	32.5	35.9	34.8	36.4	42.0	42.5	33.5	#4



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	Ethylbenzeze
15	2-Propanol	47	p+m-Xylene
16	2-Propanone	48	o-Xylene
17	Wethyl 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 December 2011

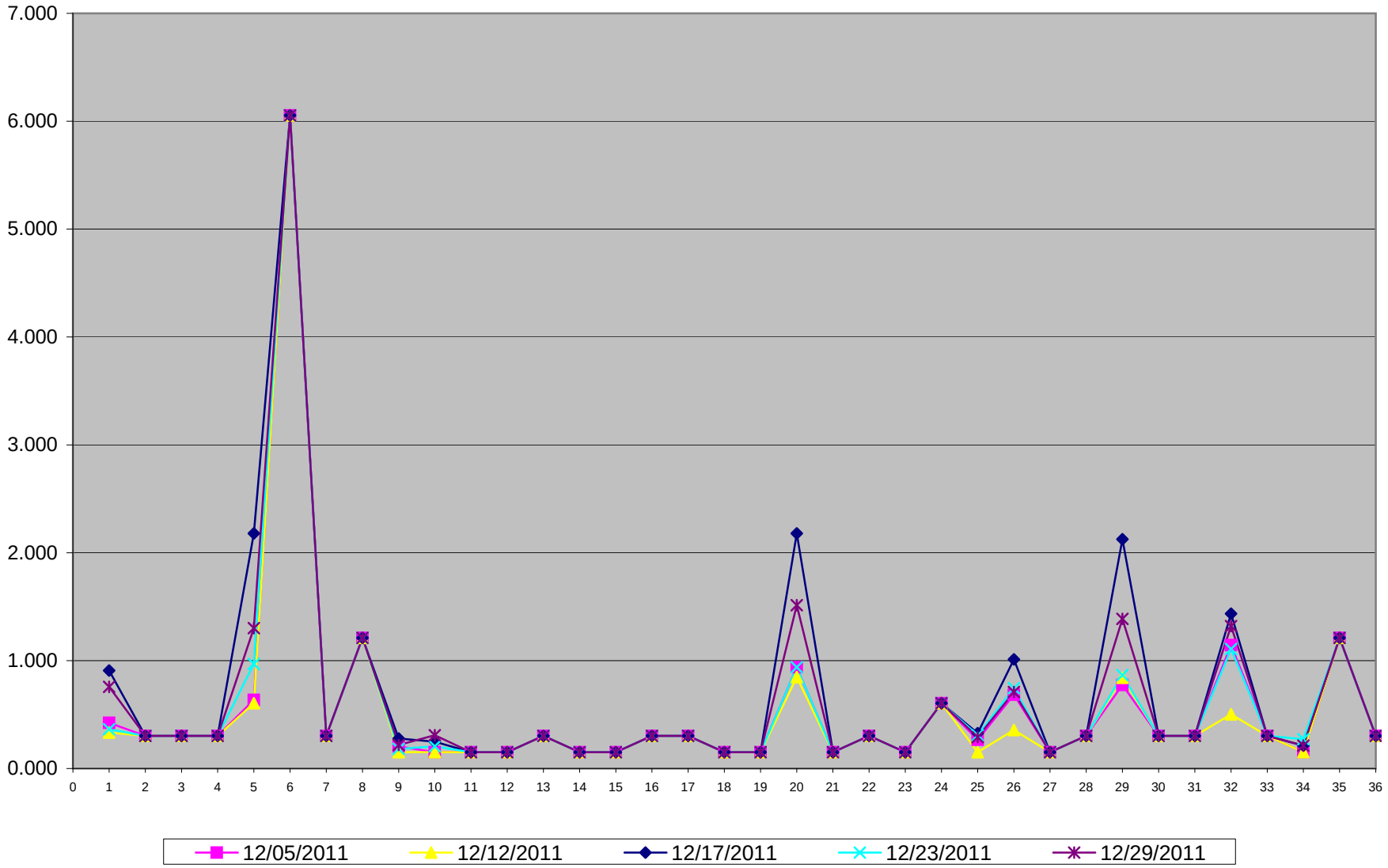
LICA- Cold Lake South Site

Unit: ng/m3

	PAHs	12/05/2011	12/12/2011	12/17/2011	12/23/2011	12/29/2011
	Sample Volume (unit: m3)	330.37	330.34	330.32	330.36	330.38
1	1-Methylnaphthalene	0.424	0.333	0.908	0.363	0.757
2	1-Methylphenanthrene	0.303	0.303	0.303	0.303	0.303
3	2-Chloronaphthalene	0.303	0.303	0.303	0.303	0.303
4	2-Methlyanthracene	0.303	0.303	0.303	0.303	0.303
5	2-Methylnaphthalene	0.636	0.605	2.180	0.969	1.302
6	3-Methylcholanthrene	6.055	6.055	6.055	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	0.206	0.151	0.279	0.182	0.218
10	Acenaphthylene	0.151	0.151	0.248	0.206	0.309
11	Anthracene	0.151	0.151	0.151	0.151	0.151
12	Benzo(a)anthracene	0.151	0.151	0.151	0.151	0.151
13	Benzo(a)fluorene	0.303	0.303	0.303	0.303	0.303
14	Benzo(a)pyrene	0.151	0.151	0.151	0.151	0.151
15	Benzo(b)fluoranthene	0.151	0.151	0.151	0.151	0.151
16	Benzo(b)fluorene	0.303	0.303	0.303	0.303	0.303
17	Benzo(e)pyrene	0.303	0.303	0.303	0.303	0.303
18	Benzo(g,h,I)perylene	0.151	0.151	0.151	0.151	0.151
19	Benzo(k)fluoranthene	0.151	0.151	0.151	0.151	0.151
20	Biphenyl	0.938	0.848	2.180	0.938	1.514
21	Chrysene	0.151	0.151	0.151	0.151	0.151
22	Coronene	0.303	0.303	0.303	0.303	0.303
23	Dibenz(a,h)anthracene	0.151	0.151	0.151	0.151	0.151
24	Dibenzo(a,e)pyrene	0.605	0.605	0.605	0.605	0.605
25	Fluoranthene	0.266	0.151	0.327	0.309	0.291
26	Fluorene	0.684	0.357	1.011	0.745	0.708
27	Indeno(1,2,3-cd)pyrene	0.151	0.151	0.151	0.151	0.151
28	m-Terphenyl	0.303	0.303	0.303	0.303	0.303
29	Naphthalene	0.775	0.842	2.125	0.866	1.387
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	1.144	0.503	1.435	1.108	1.320
33	p-Terphenyl	0.303	0.303	0.303	0.303	0.303
34	Pyrene	0.151	0.151	0.212	0.272	0.212
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.
- No sample result for Dec 29 is included in this report because it is not available when the monthly report was preparing.

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



JOB #: 2833-12-01-01-C

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,I)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

Polycyclic Aromatic Hydrocarbons (PAHs) Results for January 2012

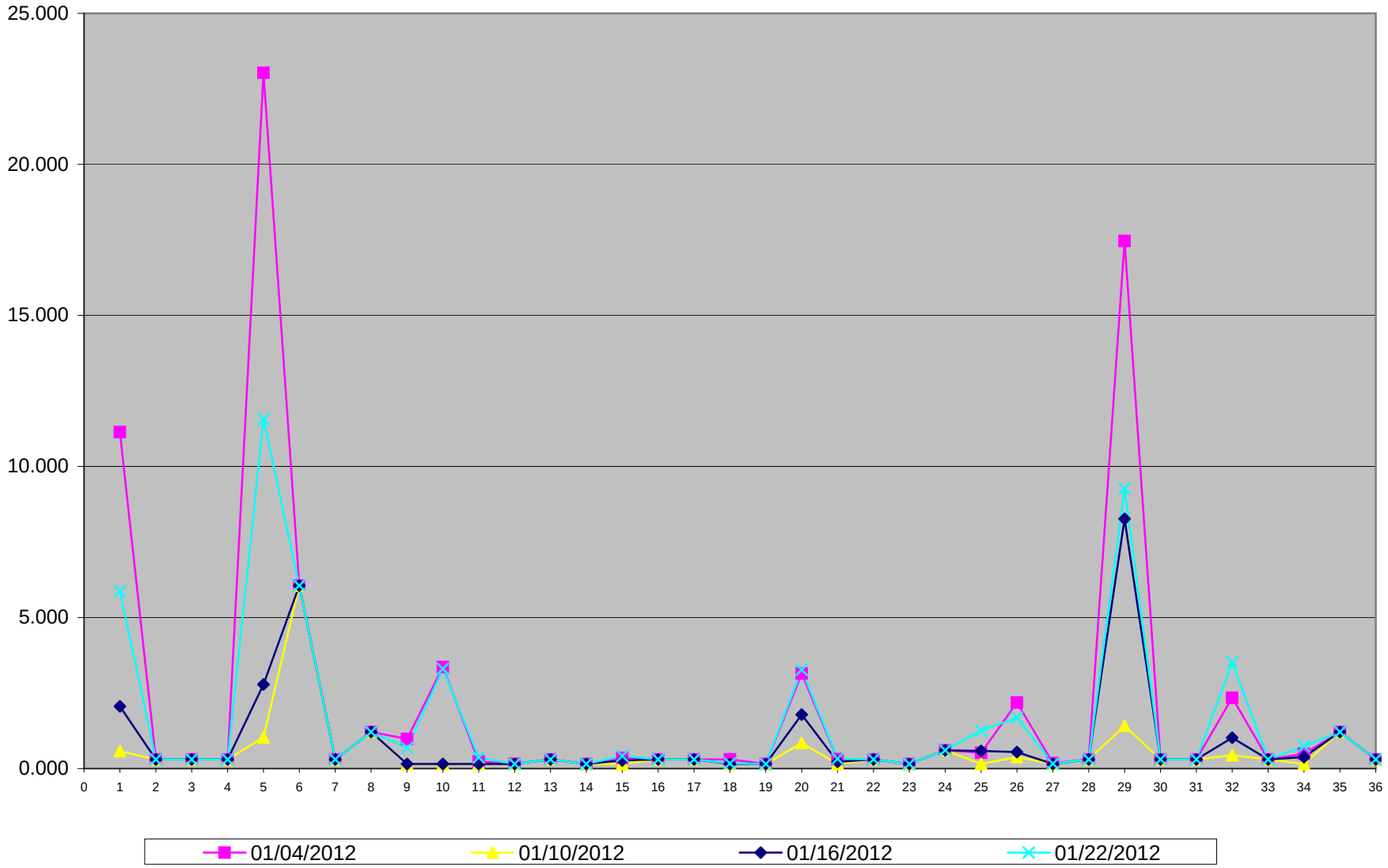
LICA- Cold Lake South Site

Unit: ng/m3

	PAHs	01/04/2012	01/10/2012	01/16/2012	01/22/2012	01/28/2012
	Sample Volume (unit: m3)	330.35	330.36	330.35	330.34	330.36
1	1-Methylnaphthalene	11.140	0.575	2.058	5.873	3.390
2	1-Methylphenanthrene	0.303	0.303	0.303	0.303	0.303
3	2-Chloronaphthalene	0.303	0.303	0.303	0.303	0.303
4	2-Methlyanthracene	0.303	0.303	0.303	0.303	0.303
5	2-Methylnaphthalene	23.036	1.029	2.785	11.563	6.781
6	3-Methylcholanthrene	6.054	6.054	6.054	6.054	6.054
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	0.981	0.151	0.151	0.678	0.315
10	Acenaphthylene	3.360	0.151	0.151	3.300	0.642
11	Anthracene	0.230	0.151	0.151	0.363	0.151
12	Benzo(a)anthracene	0.157	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	0.351	0.151	0.266	0.418	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	0.303	0.151	0.151	0.170	0.151
19	Benzo(k)fluoranthene	0.151	0.151	0.151	0.151	0.151
20	Biphenyl	3.148	0.848	1.786	3.269	1.514
21	Chrysene	0.309	0.151	0.224	0.327	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	0.521	0.151	0.581	1.253	0.363
26	Fluorene	2.186	0.381	0.545	1.683	0.708
27	Indeno(1,2,3-cd)pyrene	0.182	0.151	0.151	0.157	0.151
28	m-Terphenyl	0.303	0.303	0.303	0.303	0.303
29	Naphthalene	17.466	1.411	8.264	9.263	4.117
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	2.343	0.442	1.017	3.511	1.411
33	p-Terphenyl	0.303	0.303	0.303	0.303	0.303
34	Pyrene	0.484	0.151	0.375	0.739	0.254
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,I)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	January 5, 2012		Previous Calibration	December 8, 2011	
Company	Lakeland Community and Industry Association				
Plant / Location	LICA 1 - Cold Lake South				
Start Time (MST)	8:59		End Time (MST)	12:40	
Reason:			Monthly Calibration		
Barometric Pressure	0.913	atm	Station Temperature	22	Deg C
Cal Gas	48.3 ppm	Gas Cyl. #	LL103831	Cal Gas Expiry date	February 28, 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	440	ccm	30.2	Deg C	441	ccm	31.5	Deg C
HVPS / Lamp Setting	-632		746		-652		745	
PMT / RxCell Temp	OK	Deg C	45.1	Deg C	OK	Deg C	45.2	Deg C
Converter / IZS Temp	NA	Deg C	45	Deg C	NA	Deg C	45.0	Deg C
Offset / Slope	6.1		1.023		6		1.009	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	N/A
	No Zero Adj			
4953	41.4	400	403	0.9935
4953	41.4	400	400	1.0000
4976	23.3	225	227	0.9917
4987	12.9	125	127	0.9812
4995	0	0	0	N/A
			Sum of Least Squares	0.9975
			New Correction Factor	1.0000

	Before Calibration	After Calibration
Auto Zero	-0.1	-0.1
Auto Span	381.0	379.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9985
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	-0.1%

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

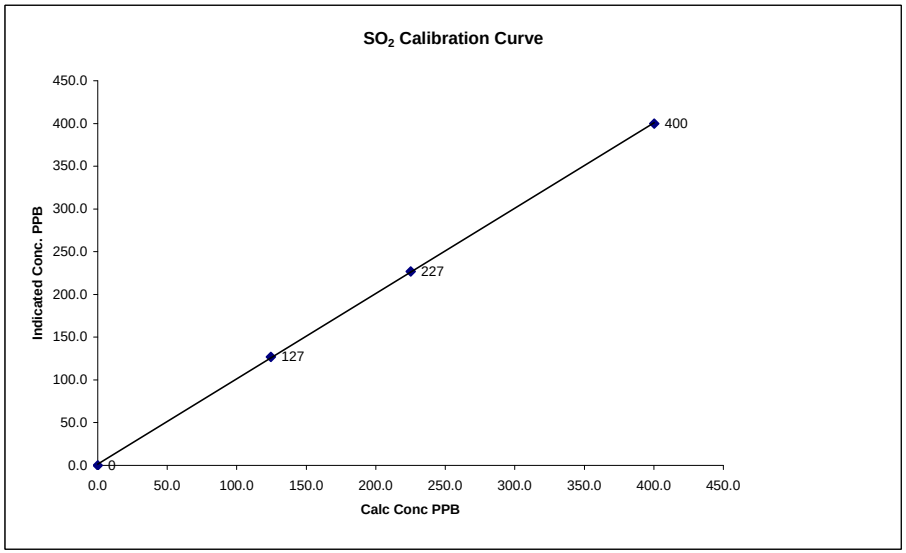
Calibration Performed by: Ting Xu

SO_2 Calibration Curve

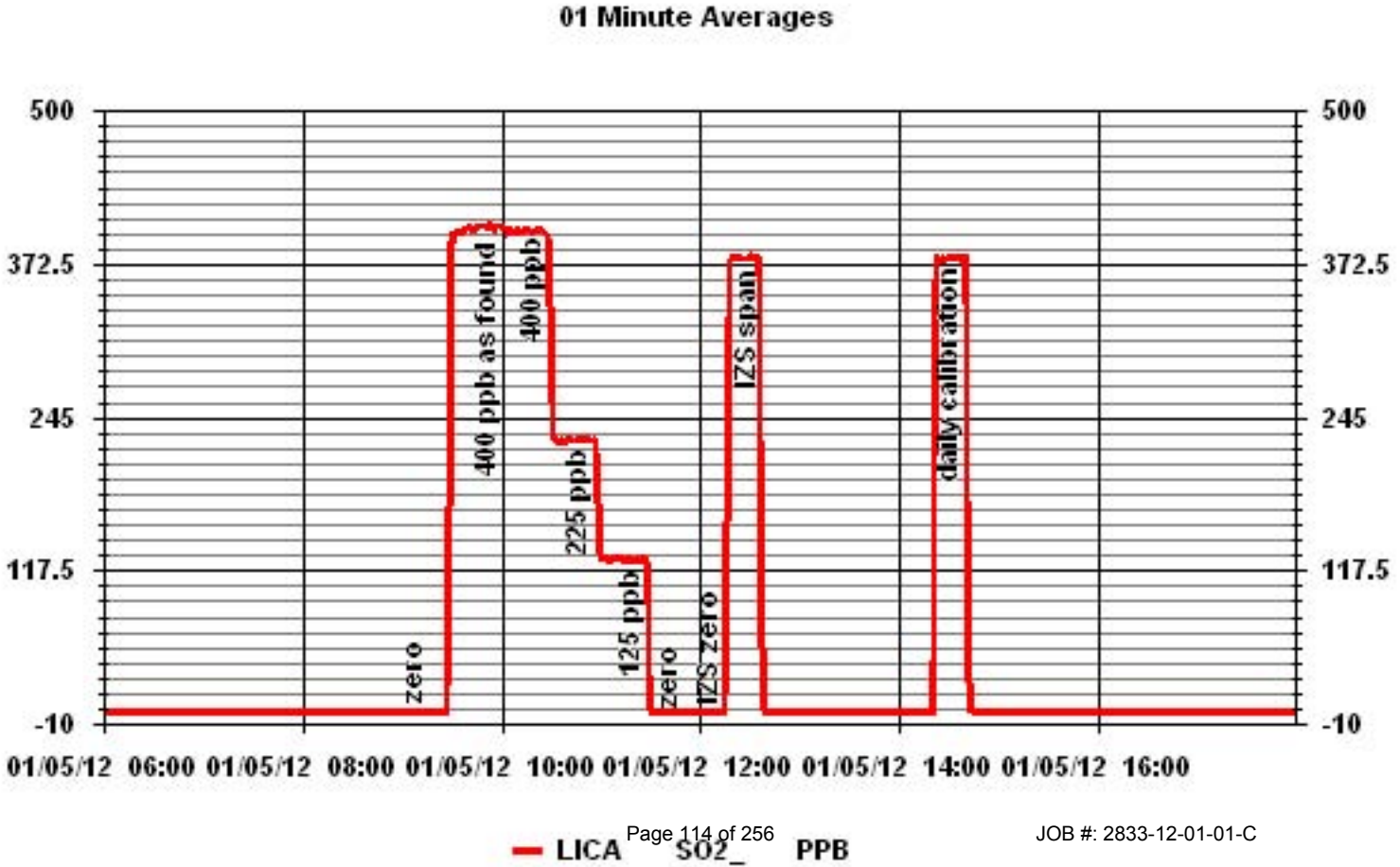
Calibration Date	January 5, 2012		
Company	Lakeland Community and Industry Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	8:59	End Time (MST)	12:40

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
125	127	0.9812
225	227	0.9917
400	400	1.0009

Correlation Coefficient	(≥ 0.995)	0.999938
Slope	(0.85 to 1.15)	0.998158
Intercept	(± 3% F.S.)	1.320901



Notes:



JOB #: 2833-12-01-01-C

Total Reduced Sulphur

TRS Calibration Report

Station Information

Calibration Date	January 4, 2012		Previous Calibration	December 7, 2011	
Company	Lakeland Industry & Community Association				
Plant / Location	LICA 1 - Cold Lake South				
Start Time (MST)	14:48		End Time (MST)	19:20	
Reason:	Monthly Calilbration				
Barometric Pressure	0.921	atm	Station Temperature	22	Deg C
Cal Gas	10.2 ppm	Gas Cyl. #	BLM00080	Cal Gas Expiry date	February 2, 2012
DAS Output Voltage	0 - 10	Volts	Chart Rec. Output	NA	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	350 ccm		32.4 Deg C		352 ccm		33.2 Deg C	
HVPS / Lamp Setting	-623.1		751		-622.7		752	
PMT / RxCell Temp	OK Deg C		45.2 Deg C		OK Deg C		45 Deg C	
Converter / IZS Temp	810 Deg C		45 Deg C		810 Deg C		45.0 Deg C	
Offset / Slope	13.1		1.261		13.5		1.308	

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	41	0.9753
4986	11.2	23	23	1.0000
4996	0.0	0	0	N/A
			Sum of Least Squares	0.9949
			New Correction Factor	1.0000

	Before Calibration	After Calibration
Auto Zero	-0.4	-0.2
Auto Span	60.1	63.8
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0389
Percent Change:	-3.7%

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

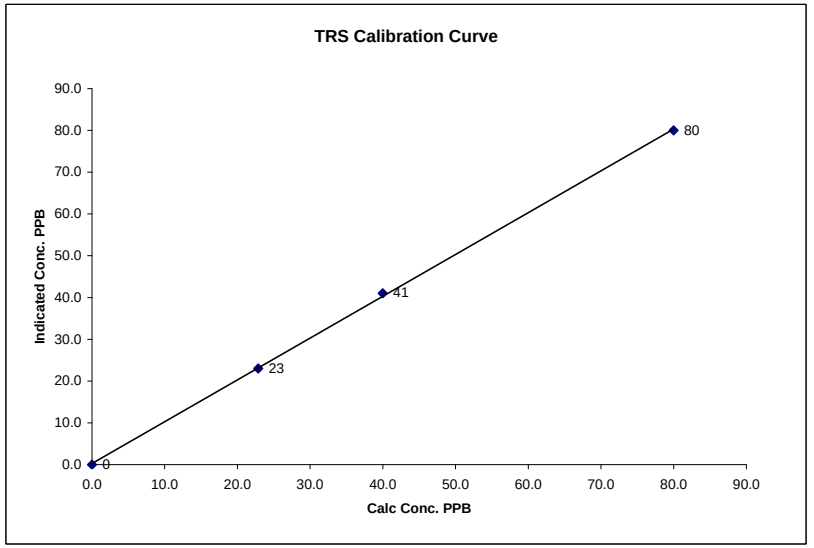
Calibration Performed by: Ting Xu

TRS Calibration Curve

Calibration Date	January 4, 2012		
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	14:48	End Time (MST)	19:20

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
23	23	0.0000
40	41	0.5576
80	80	0.4998

Correlation Coefficient	(≥ 0.995)	0.999793
Slope	(0.85 to 1.15)	1.000785
Intercept	(± 3% F.S.)	0.260776



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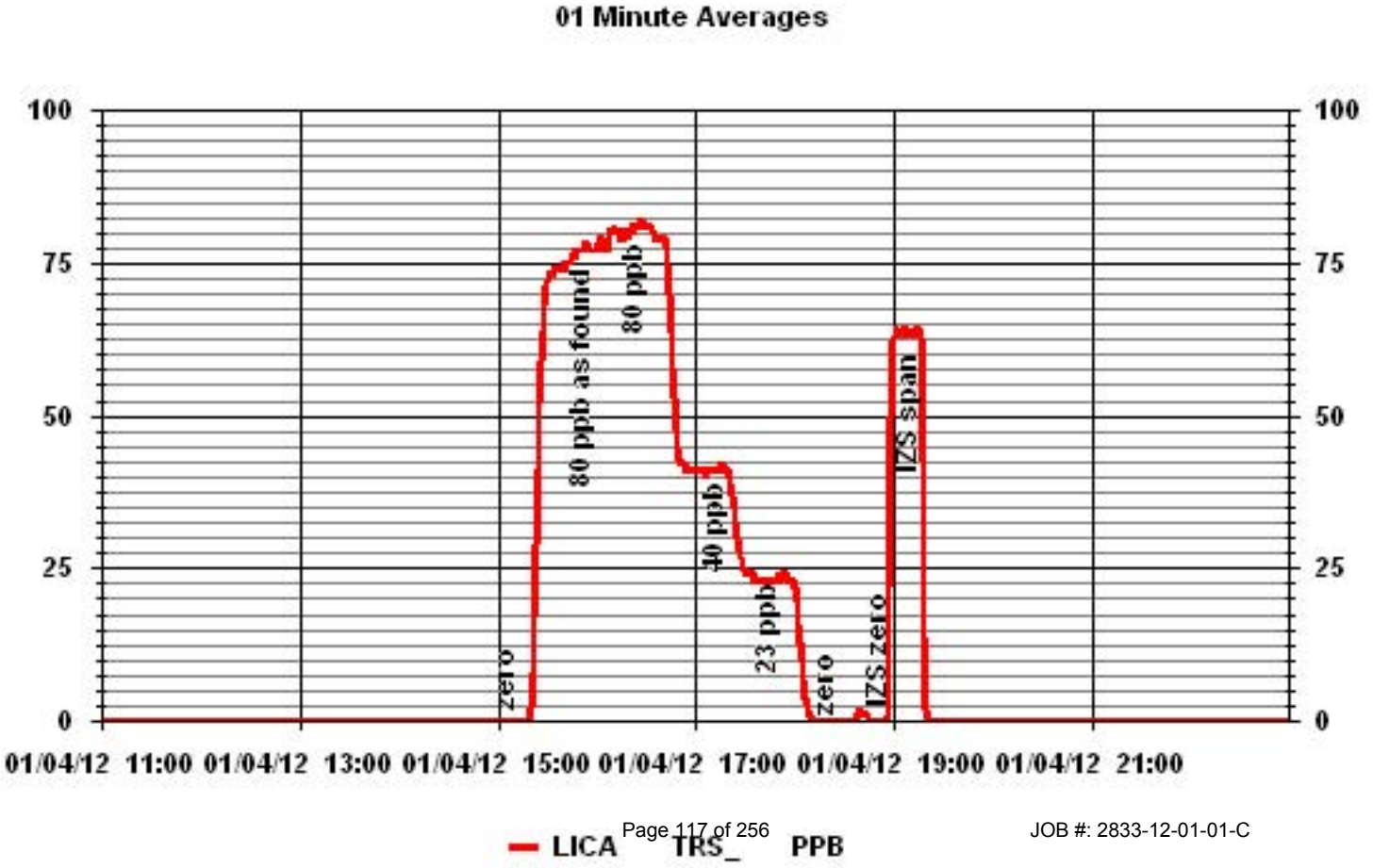


JOB #: 2833-12-01-01-C

Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	January 5, 2012		Previous Calibration	December 8, 2011	
Company:	Lakeland Industry and Community Association				
Plant / Location:	LICA1/Cold Lake				
Start Time (MST)	11:55		End Time (MST)	15:34	
Reason:	Monthly Calibration				
Barometric Pressure:	0.924	atm	Station Temperature:	21	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	-0.1	NA
3000	0.0	0.0	0.0	NA
3000	70.0	41.4	41.1	1.0075
3000	70.0	41.4	41.7	0.9930
3000	35.0	20.9	20.7	1.0117
3000	20.0	12.0	11.9	1.0106
3000	0.0	0.0	0.0	NA
			New Correction Factor:	0.9930

Percent Change

Previous Calibration Correction Factor:	0.9930
Current Correction Factor Before Span Adjust:	1.0075
Percent Change:	-1.4%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	34.6	35.1
Sample Lines Connected		YES

Cylinder Pressures

Span 1700 psi Hydrogen 1500 psi Zero Air 32 psi

Notes: **NA : Not Applicable**

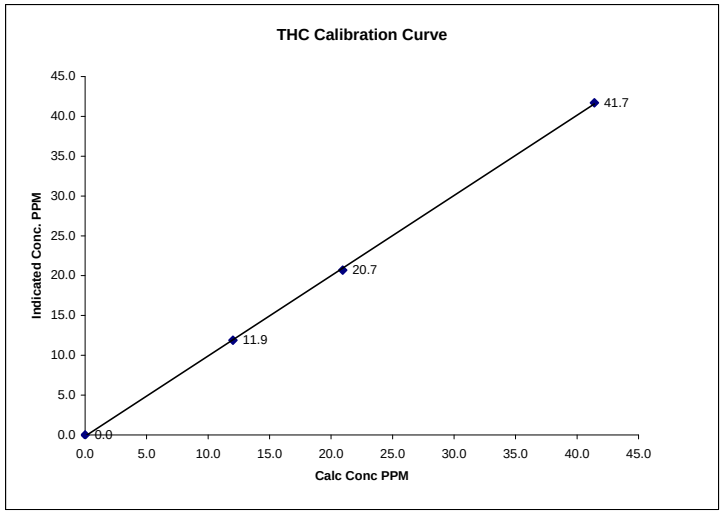
Calibration Performed by: Ting Xu

THC Calibration Curve

Calibration Date	January 5, 2012				
Company	Lakeland Industry and Community Association				
Plant / Location	LICA1/Cold Lake				
Start Time (MST)	11:55	End Time	(MST)	15:34	

Calculated Conc. ppm	Indicated Response ppm	Correction Factor
0.0	0.0	NA
12.0	11.9	1.0106
20.9	20.7	1.0117
41.4	41.7	0.9930

Correlation Coefficient	(≥ 0.995)	0.999885
Slope	(0.85 to 1.15)	1.007588
Intercept	(± 3% F.S.)	-0.16010



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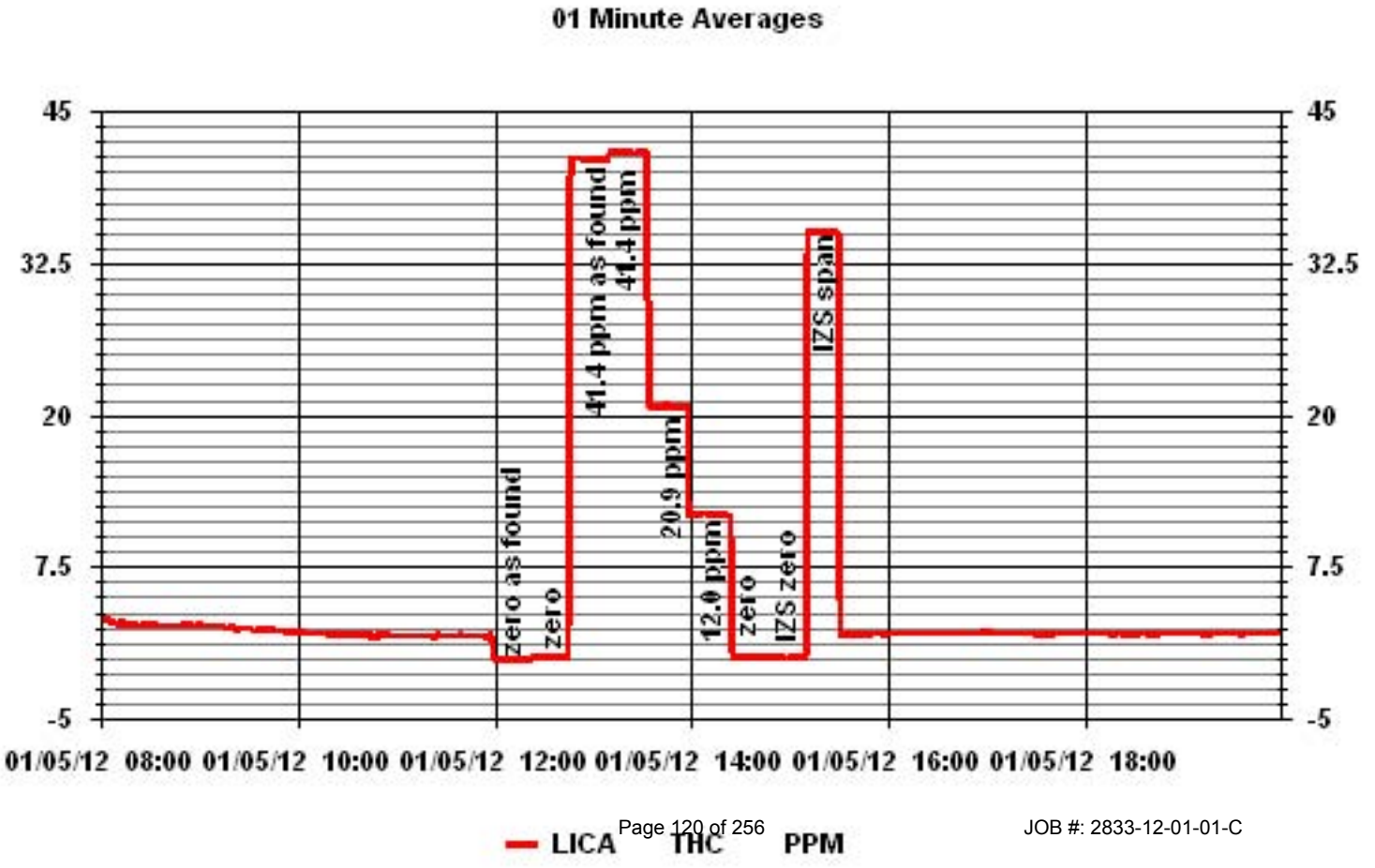


JOB #: 2833-12-01-01-C

Particulate Matter 2.5

TEOM 1405F Audit

Station		Audit Transfer Standard	
Date:	January 4, 2012	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:	Station Temp Sensor

Sampler		Set-up and current Sampler readings	
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 (%)	36.2%
Firmware Ver.	1.52	K_o Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (^oC)	-1.8
		Press (ATM)	0.920

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 **<0.10*u* g**	0.009	Warnings	None
0.36	0.33		

Temperature/Pressure

Measured Temp **(± 2 °C)**	-1.6	**Δ °C**	-0.2
Measured Press **(± 0.01atm)**	0.916	**DATM**	0.004

Flow Audit

Indicated Main Flow (l/min)	3.00	Main Flow Drift **(±10.0%)**	0.50%
Measured Main Flow (l/min)	3.00	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift **(±10.0%)**	0.37%
Measured Bypass Flow (l/min)	13.53	Flow Adjusted to Measured?	Yes

Leak Check

Main **(< 0.15 l/min)**	NA
Aux **(< 0.6 l/min)**	NA

Instrument Setup

Flow Control = Active

Report Conditions = Actual

K_o Factor

Measured	NA
K_o Difference **(± 2.5%)**	NA

Start Time: 16:27 **Finish Time:** 17:58

Sample Inlet Cleaned: Yes **New Filters Installed:** YES

New Filter Loading %: 26.3%

Comments:

Auditor/s: Ting Xu

Nitrogen Dioxide

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	January 4, 2012		Previous Calibration	December 7, 2011	
Company	LICA		Plant/Location	Cold Lake South	
Start Time (MST)	14:37		End Time (MST)	20:07	
Reason:	Monthly Calibration				
Barometric Pressure	0.921 atm	Station Temperature	22 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 - 10 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	727	ccm	316	Deg C		720	ccm	317	Deg C
Ozone Flow / Vacuum	OK	ccm	173.6	"Hg-A		OK	ccm	171.6	"Hg-A
HVPS / A ZERO	-821	Volts	NA	MV		-821	Volts	NA	MV
Rx/ Temp / PMT Temp	49.9	Deg C	-2.4	Deg C		49.9	Deg C	-2.5	Deg C
Box Temp / IZS Temp	26.7	Deg C	OK	Deg C		28.6	Deg C	OK	Deg C
Offset	3.7	NOx	4.3	NO		3.8	NOx	3.5	NO
Slope	1.007	NOx	0.878	NO		1.007	NOx	0.893	NO
NO_2 COEF / Conv Efficency	0.998	NO2	NA			0.998	NO2	NA	

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	NA	0	0	NA	0	0	0	NA	NA
	No Zero Adj									
4954	40.4	NA	402	400	NA	396	394	3	1.0152	1.0142
4954	40.4	NA	402	400	NA	403	400	3	0.9976	1.0000
4974	20.2	NA	201	200	NA	202	200	1	0.9952	1.0000
4985	10.1	NA	100	100	NA	101	100	1	0.9950	1.0000
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			NO_2 Correction Factor	NO2 Conv Efficency
			NOx	NO	NO2	NOx	NO	NO2		
4954	40.4	NA	402	400	NA	402	400	2	NA	NA
	No Adj. Required									
4954	40.4	350	402	NA	322	402	80	322	1.0000	100.00%
4954	40.4	150	402	NA	141	402	261	141	1.0000	100.00%
4954	40.4	75	402	NA	72	401	330	72	1.0000	100.00%

Linearity		Sum of Least Squares	NOx= 0.997	NO= 0.999	NO2= 1.000		
OK?	Yes No	Correction Factors:	NOx= 0.9976	NO= 1.0000	NO2= 1.0000		
				Average Converter Efficiency= 100.00%			

	Before Calibration					After Calibration			
Auto Zero	0.1	NOx	0.2	NO2		0.1	NOx	0.2	NO2
Auto Span	459	NOx	448	NO2		331	NOx	319	NO2
					Sample Lines Connected	YES			

Percent Change from Previous Calibration	NOx -1.2%	NO -1.3%	NO2 -0.3%		

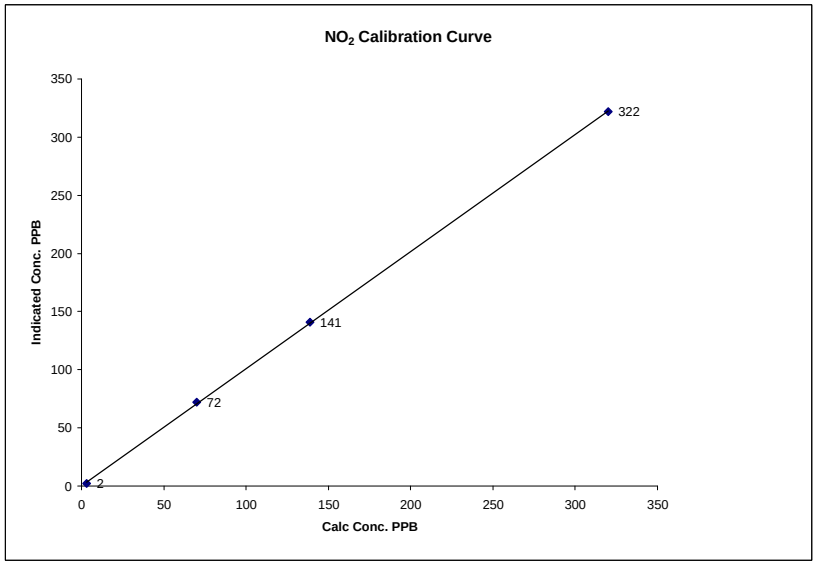
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

NO_2 Calibration Curve

Calibration Date	January 4, 2012		
Company	LICA		
Plant / Location	Cold Lake South		
Start Time (MST)	14:37	End Time (MST)	20:07

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999929
			Slope (0.85 to 1.15)	1.006980
3	2	N/A	Intercept (± 3% F.S.)	0.32166
70	72	0.9722		
139	141	0.9858		
320	322	0.9938		

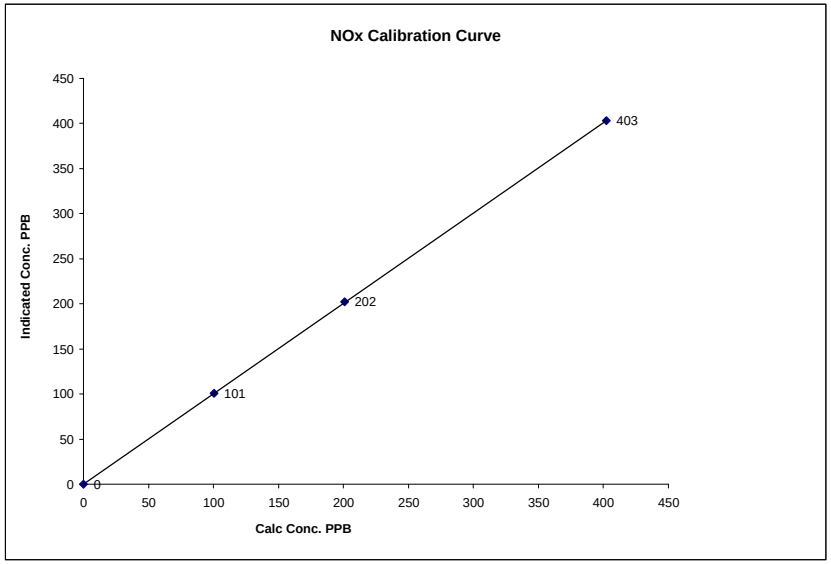


Notes:

NOx Calibration Curve

Calibration Date	January 4, 2012				
Company	LICA				
Plant / Location	Cold Lake South				
Start Time (MST)	14:37	End Time (MST)	20:07		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999998
			Slope (0.85 to 1.15)	1.002337
0	0	N/A	Intercept (± 3% F.S.)	0.20403
100	101	0.9950		
201	202	0.9952		
402	403	0.9976		

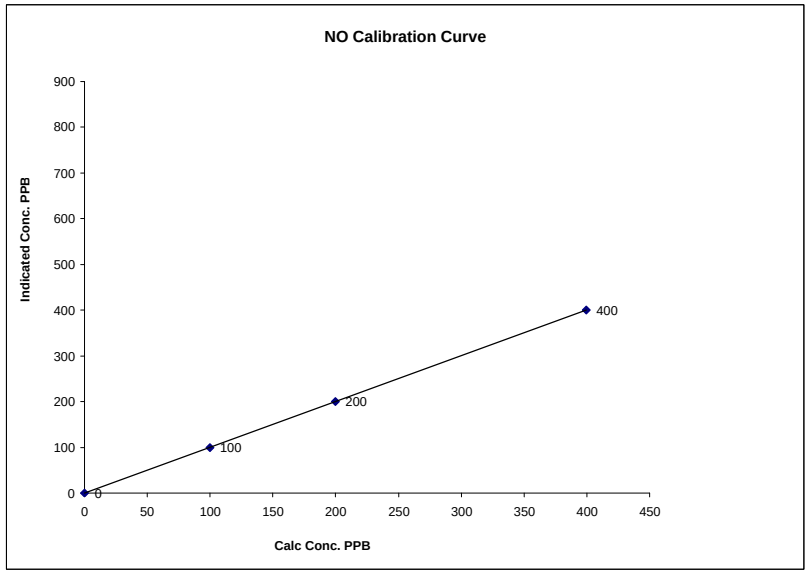


Notes:

NO Calibration Curve

Calibration Date	January 4, 2012				
Company	LICA				
Plant / Location	Cold Lake South				
Start Time (MST)	14:37	End Time (MST)	20:07		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	1.000000
			Slope (0.85 to 1.15)	1.000968
0	0	N/A	Intercept (± 3% F.S.)	-0.0160
100	100	0.9989		
200	200	0.9990		
400	400	0.9990		



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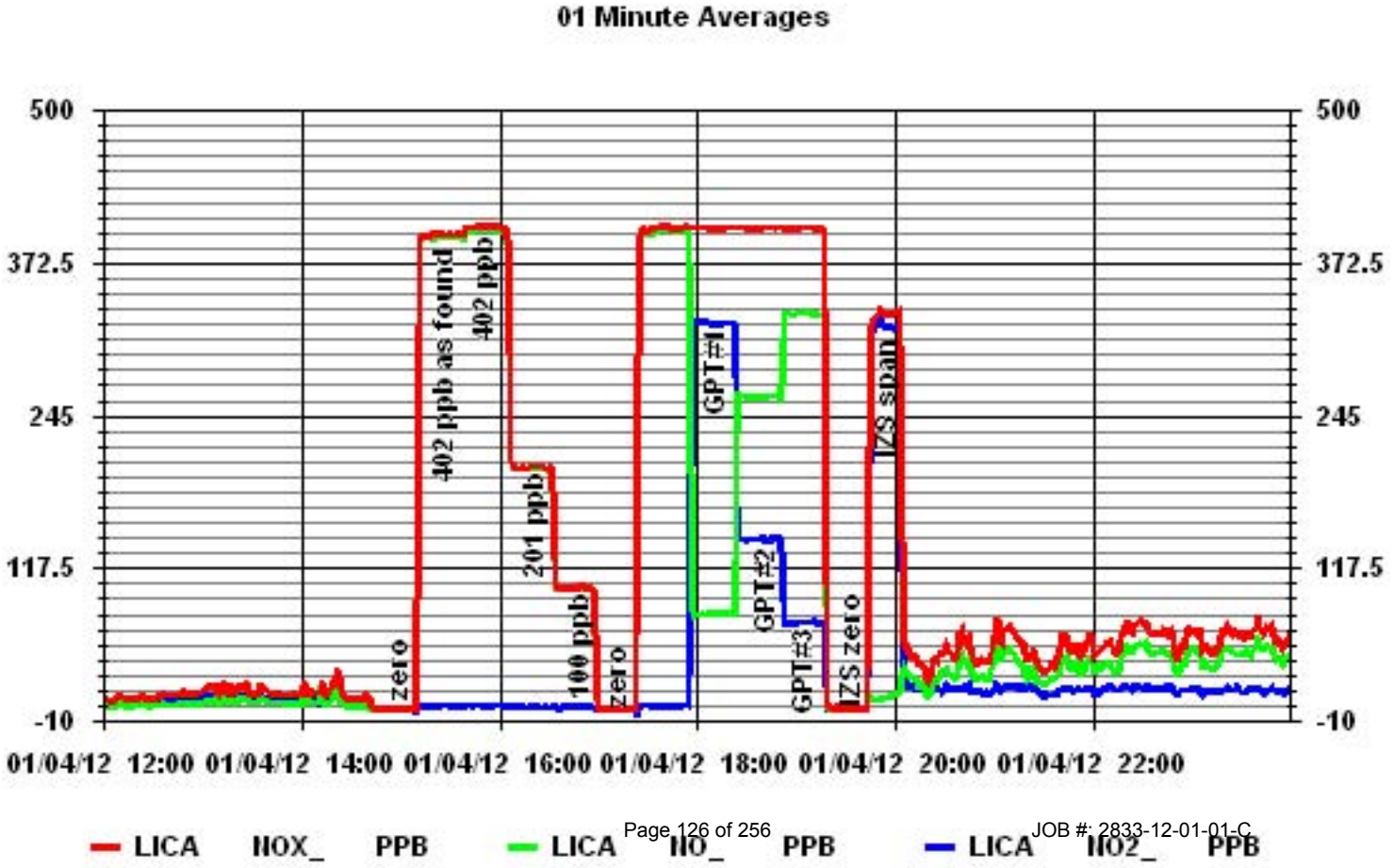

01 Minute Averages
500
372.5
245
117.5
-10
zero
402 ppb as found
402 ppb
201 ppb
100 ppb
zero
GPT#1
GPT#2
GPT#3
IZS zero
IZS span
01/04/12 12:00
01/04/12 14:00
01/04/12 16:00
01/04/12 18:00
01/04/12 20:00
01/04/12 22:00
LICA NOX_ PPB
LICA NO_ PPB
LICA NO2_ PPB

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	January 18, 2012	Previous Calibration	January 4, 2012
Company	LICA	Plant/Location	Cold Lake South
Start Time (MST)	9:10	End Time (MST)	11:30
Reason:	As Found		
Barometric Pressure	0.938 atm	Station Temperature	22 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 - 10 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	734	ccm	317	Deg C	720	ccm	317	Deg C
Ozone Flow / Vacuum	OK	ccm	176.9	"Hg-A	OK	ccm	176.9	"Hg-A
HVPS / A ZERO	-821	Volts	NA	MV	-821	Volts	NA	MV
Rx/ Temp / PMT Temp	49.5	Deg C	-2.5	Deg C	49.5	Deg C	-2.5	Deg C
Box Temp / IZS Temp	26.2	Deg C	OK	Deg C	26.2	Deg C	OK	Deg C
Offset	3.7	NOx	3.5	NO	3.7	NOx	3.5	NO
Slope	1.007	NOx	0.893	NO	1.007	NOx	0.893	NO
NO_2 COEF / Conv Efficency	0.998	NO2	NA		0.998	NO2	NA	

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration NOx	Calculated Concentration NO	Calculated Concentration NO2	Indicated Concentration NOx	Indicated Concentration NO	Indicated Concentration NO2	Correction Factor NOx	Correction Factor NO
5000	0.0	NA	0	0	NA	0	0	0	NA	NA
	No Zero Adj									
4960	40.5	NA	403	400	NA	398	396	2	1.0114	1.0104

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration NOx	Calculated Concentration NO	Calculated Concentration NO2	Indicated Concentration NOx	Indicated Concentration NO	Indicated Concentration NO2	NO_2 Correction Factor	NO2 Conv Efficency

Linearity OK?	Yes	No	Sum of Least Squares	NOx= #VALUE!	NO= #VALUE!	NO2=	
			Correction Factors:	NOx= 1.0114	NO= 1.0104	NO2=	
			Average Converter Efficiency=				

	Before Calibration				After Calibration			
Auto Zero	0.1	NOx	0.2	NO2	0.1	NOx	0.2	NO2
Auto Span	300	NOx	298	NO2	300	NOx	298	NO2
Sample Lines Connected	YES							
Percent Change from Previous Calibration	NOx	-1.4%	NO	-1.0%	NO2	NA		

Notes
NA : Not Applicable
Following the A/F point, the Z/S oven dilution flow rate was adjusted.

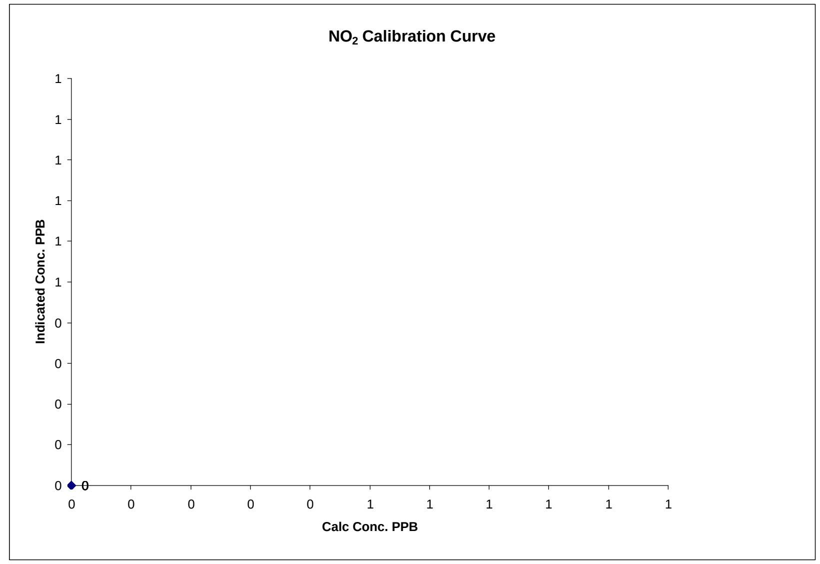
Calibration Performed by: Ting Xu

NO_2 Calibration Curve

Calibration Date	January 18, 2012		
Company	LICA		
Plant / Location	Cold Lake South		
Start Time (MST)	9:10	End Time (MST)	11:30

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	N/A
0	0	#DIV/0!
0	0	#DIV/0!
0	0	#DIV/0!

Correlation Coefficient	(≥ 0.995)	#DIV/0!
Slope	(0.85 to 1.15)	#DIV/0!
Intercept	(± 3% F.S.)	#DIV/0!



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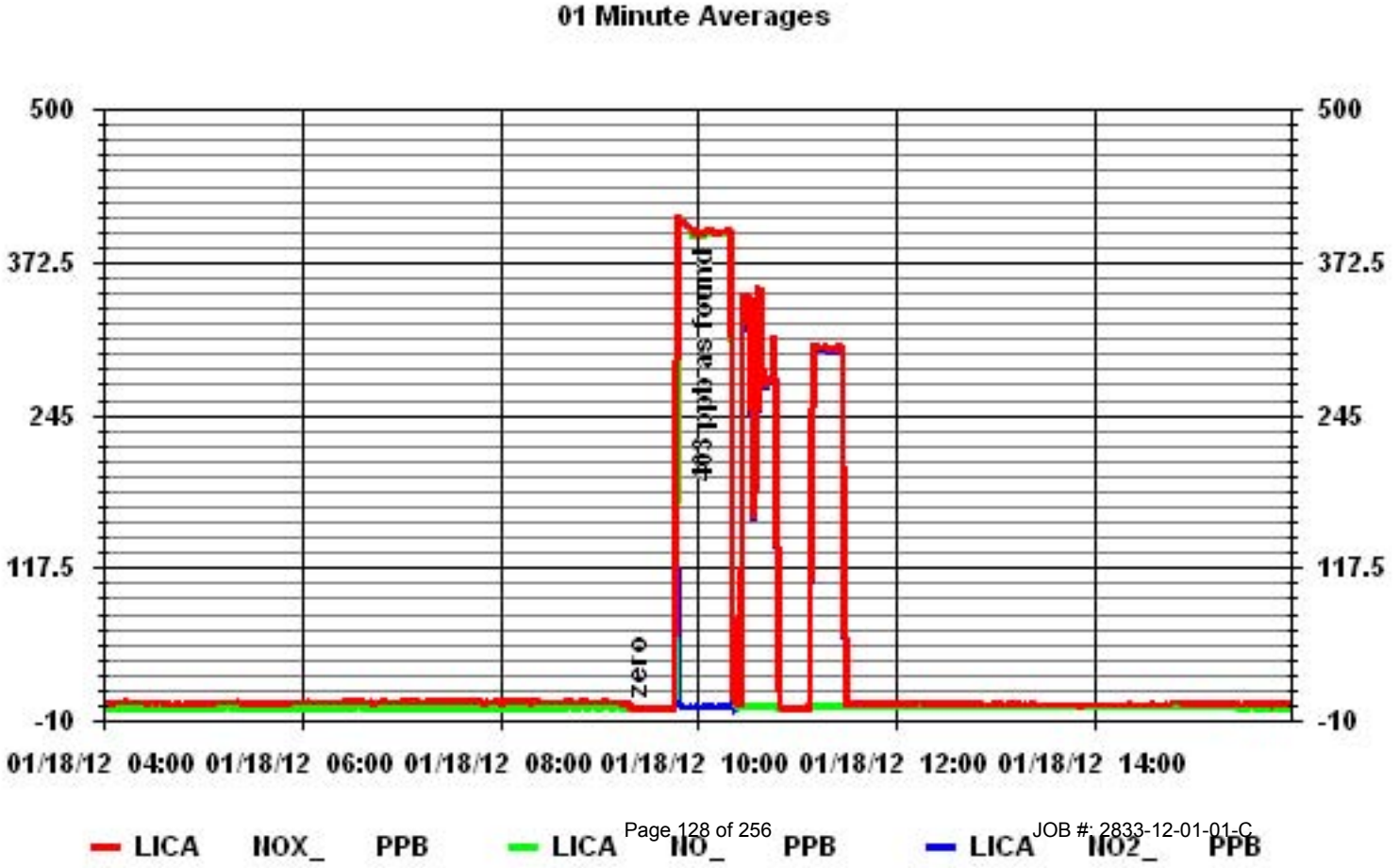

01 Minute Averages
500
372.5
245
117.5
-10
zero
405 ppb as found
01/18/12 04:00
01/18/12 06:00
01/18/12 08:00
01/18/12 10:00
01/18/12 12:00
01/18/12 14:00
LICA NOX_ PPB
LICA NO_ PPB
LICA NO2_ PPB

Ozone

O_3 Calibration Report

Station Information

Calibration Date	January 5, 2012	Previous Calibration	December 8, 2011
Company	**Lakeland Industry & Community Association**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	8:59	End Time (MST)	13:03
Reason:		Monthly Calibration	
Barometric Pressure	0.913 atm	Station Temperature	22 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	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	3485		

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 -500 ppb			
Cell A Flow / Cell B Flow	696 LPM	735 LPM	703 LPM	743 LPM
O_3 Set Level	691 mmHg		691 mmHg	
Bench Lamp	53.5 Deg C		53.5 Deg C	
O3 Lamp / Box Temp	67.6 Deg	28.5 Deg C	67.6 Deg C	29.4 Deg C
Offset / Slope	-0.5	0.994	-0.1	1.004

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4495	0	0	0	NA
	No Zero Adj			
4994	350	320	315	1.0159
4994	350	320	321	0.9969
4994	150	139	139	1.0000
4994	75	70	69	1.0145
4994	0	0	0	NA
			Sum of Least Squares	0.9980
			New Correction Factor	0.9969

	Before Calibration	After Calibration
Auto Zero	0.4	0.2
Auto Span	274.0	275.0
Sample Lines Connected		YES
Previous Calibration Correction Factor:		0.9848
Current Correctio Factor Before Span Adjust:		0.9969
Percent Change:		-1.2%

Note: **NA : Not Applicable**

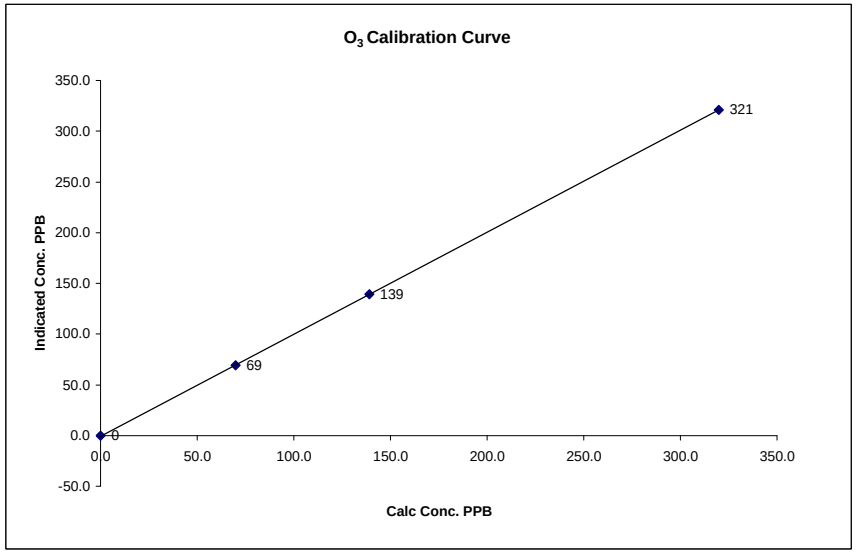
Calibration Performed by: Ting Xu

O_3 Calibration Curve

Calibration Date	January 5, 2012		
Company	**Lakeland Industry & Community Association**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	8:59	End Time (MST)	13:03

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
70	69	1.0145
139	139	1.0000
320	321	0.9969

Correlation Coefficient	(≥ 0.995)	0.999984
Slope	(0.85 to 1.15)	1.004412
Intercept	(± 3% F.S.)	-0.583517



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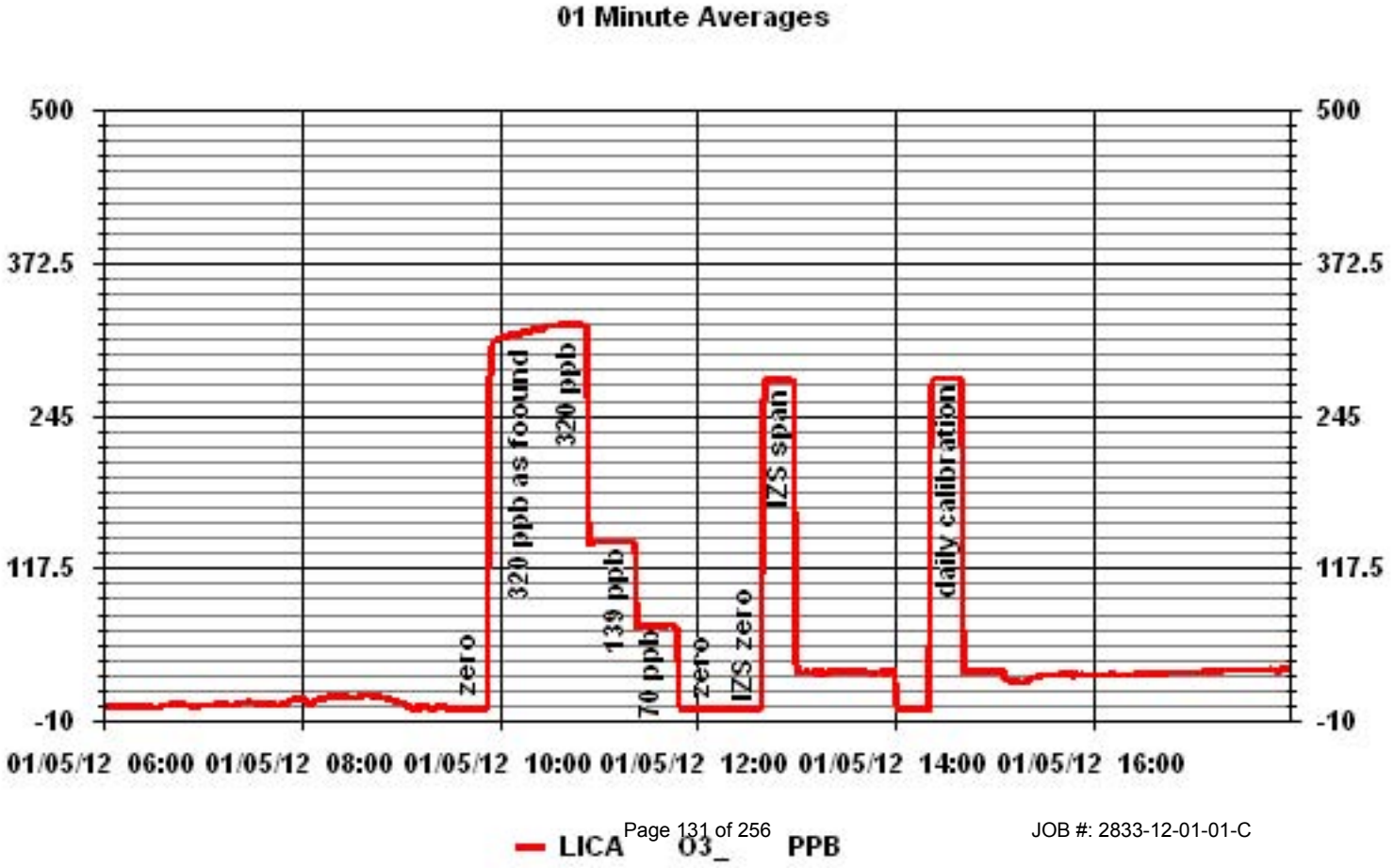


JOB #: 2833-12-01-01-C

Passive Bubble Maps

Lakeland Industry & Community Association
H_2S Passive Bubble Map

JANUARY 2012

PASSIVE STATIONS

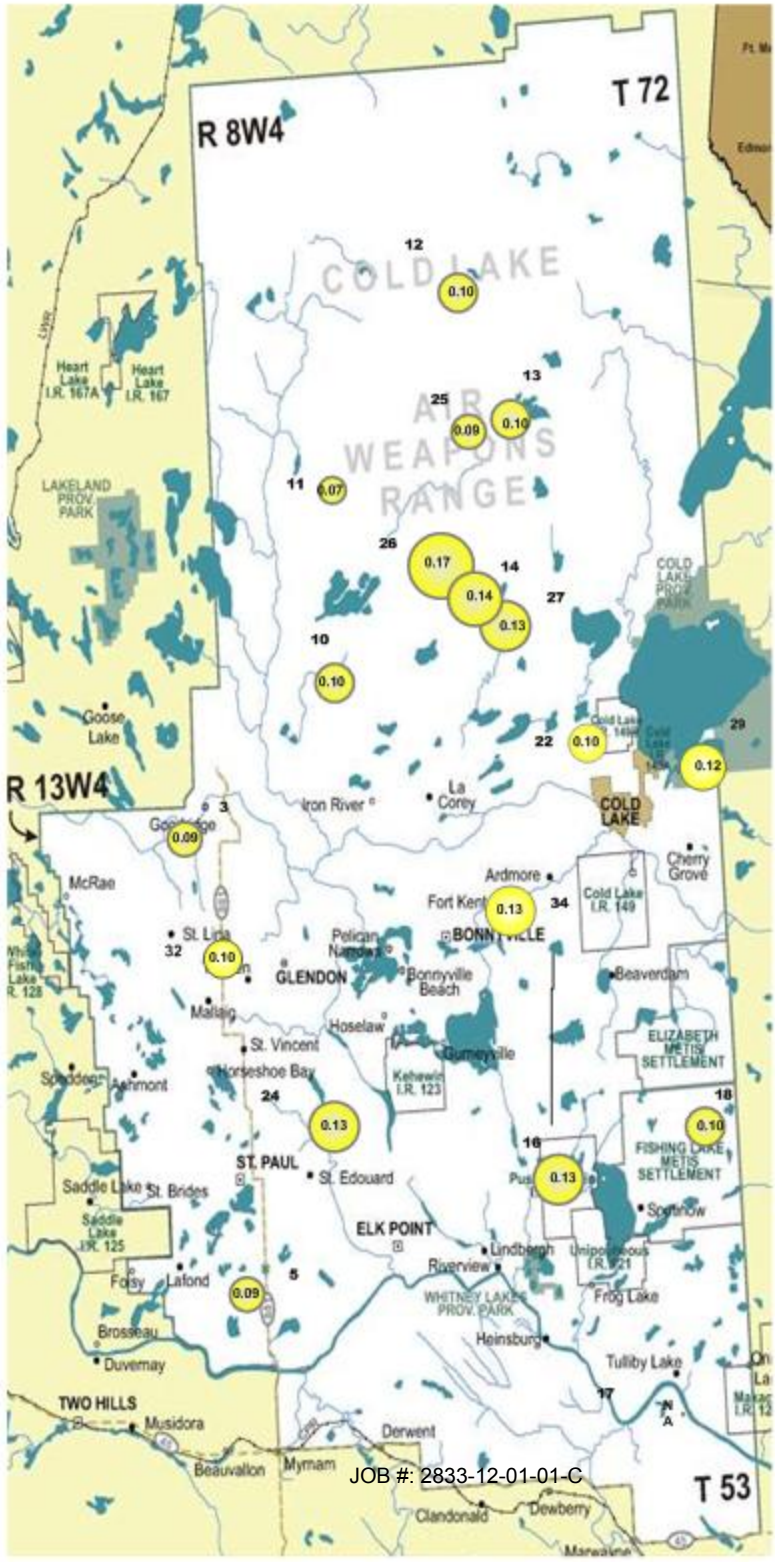
		DUPLICATE
3 – Therien	0.09 PPB	NA
5 – Lake Eliza	0.09 PPB	NA
10 – La Corey	0.10 PPB	NA
11 – Wolf Lake	0.07 PPB	NA
12 – Foster Creek	0.10 PPB	NA
13 – Primrose	0.10 PPB	NA
14 – Maskwa	0.15 PPB	0.13 PPB
16 – Frog Lake	0.12 PPB	0.14 PPB
17 – Clear Range	MISSING	NA
18 – Fishing Lake	0.10 PPB	NA
22 – Cold Lake South	0.10 PPB	NA
24 – Fort George	0.13 PPB	NA
25 – Burnt Lake	0.09 PPB	NA
26 – Mahihkan	0.17 PPB	NA
27 – Mahkeses	0.13 PPB	NA
29 – Cold Lake South 2	0.12 PPB	NA
32 – St. Lina	0.10 PPB	NA
34 – Portable	0.13 PPB	NA

H_2S

PPB

Summary

Minimum : 0.07 PPB – Wolf Lake
Maximum: 0.17 PPB – Mahihkan
Average: 0.11 PPB *Includes Duplicates



JOB #: 2833-12-01-01-C

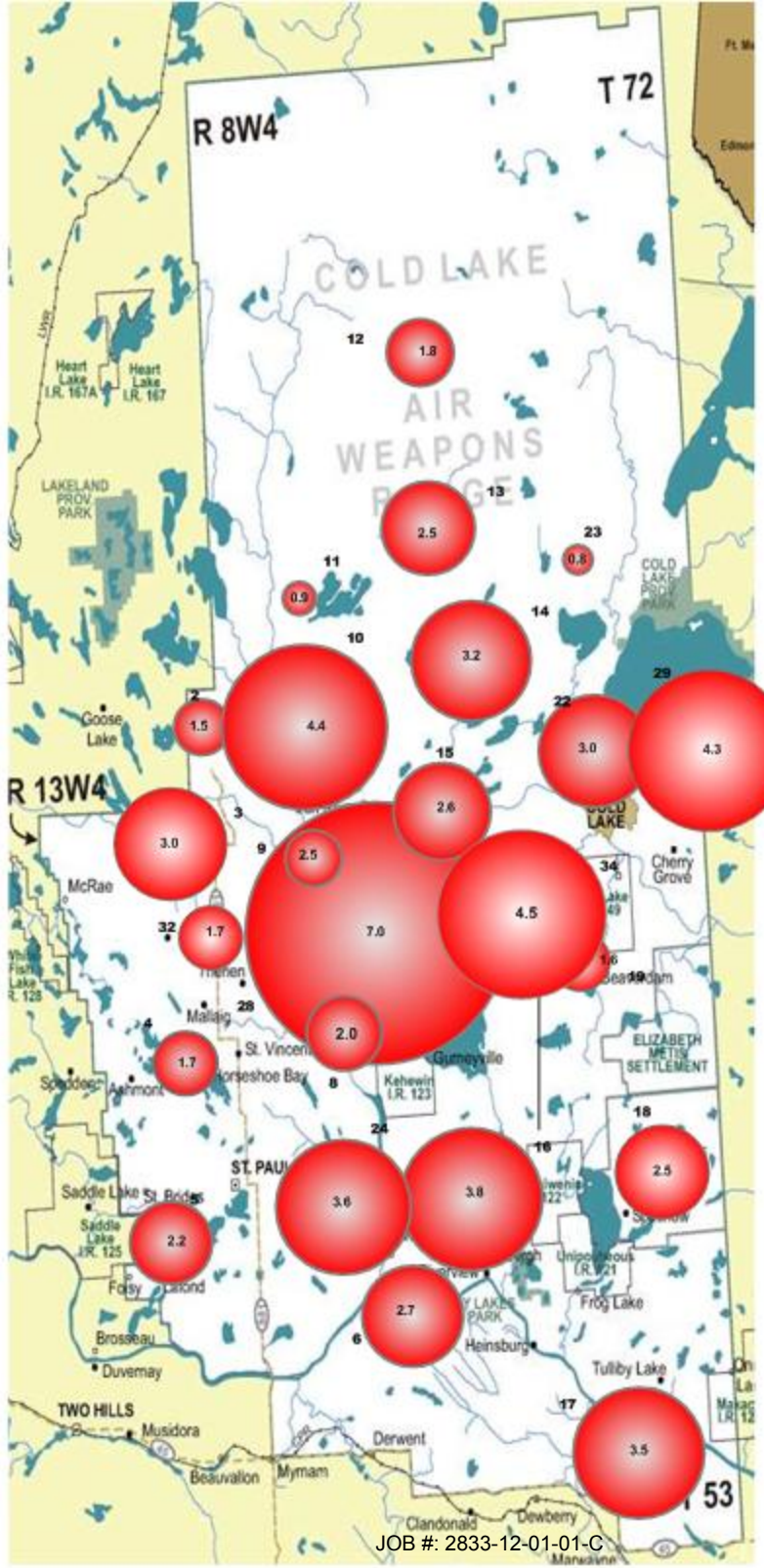
Lakeland Industry & Community Association
NO_2 Passive Bubble Map

JANUARY 2012

PASSIVE STATIONS		DUPLICATE
2 – Sand River	1.5 PPB	NA
3 – Therien	3.0 PPB	NA
4 – Flat Lake	1.7 PPB	NA
5 – Lake Eliza	2.2 PPB	NA
6 – Telegraph Creek	2.7 PPB	NA
8 – Muriel-Kehewin	2.0 PPB	NA
9 – Dupre	2.7 PPB	2.3 PPB
10 – La Corey	4.9 PPB	3.9 PPB
11 – Wolf Lake	0.9 PPB	NA
12 – Foster Creek	1.8 PPB	NA
13 – Primrose	2.5 PPB	NA
14 – Maskwa	3.2 PPB	NA
15 – Ardmore	2.6 PPB	NA
16 – Frog Lake	3.8PPB	NA
17 – Clear Range	3.5 PPB	NA
18 – Fishing Lake	2.5 PPB	NA
19 – Beaverdam	1.6 PPB	NA
22 – Cold Lake South	3.0 PPB	NA
23 – Medley-Martineau	0.8 PPB	NA
24 – Fort George	3.6 PPB	NA
28 – Town of Bonnyville	7.0 PPB	NA
29 – Cold Lake South 2	4.3 PPB	NA
32 – St. Lina	1.7 PPB	NA
34 – Portable	4.5 PPB	NA

Summary

Minimum : 0.8 PPB – Medley-Martineau
Maximum: 7.0 PPB – Town of Bonnyville
Average: 2.8 PPB *Includes Duplicates



JOB #: 2833-12-01-01-C

Lakeland Industry & Community Association
O_3 Passive Bubble Map

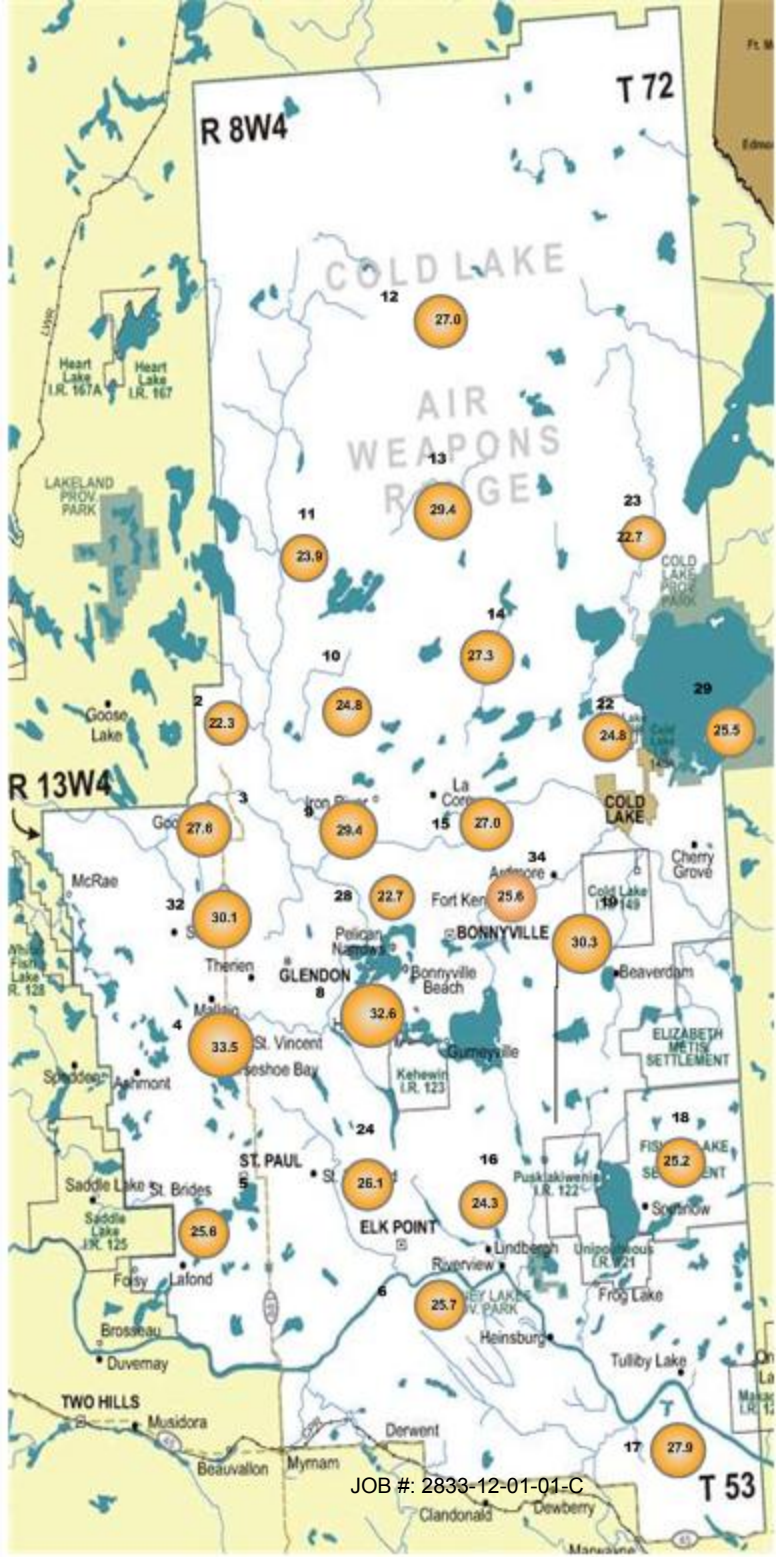
JANUARY 2012

PASSIVE STATIONS

		DUPLICATE
2 – Sand River	22.3 PPB	NA
3 – Therien	27.6 PPB	NA
4 – Flat Lake	33.5 PPB	NA
5 – Lake Eliza	25.6 PPB	NA
6 – Telegraph Creek	25.7 PPB	NA
8 – Muriel-Kehewin	32.6 PPB	NA
9 – Dupre	29.9 PPB	28.8 PPB
10 – La Corey	24.6 PPB	24.9 PPB
11 – Wolf Lake	23.9 PPB	NA
12 – Foster Creek	27.0 PPB	NA
13 – Primrose	29.4PPB	NA
14 – Maskwa	27.3 PPB	NA
15 – Ardmore	27.0 PPB	NA
16 – Frog Lake	24.3 PPB	NA
17 – Clear Range	27.9 PPB	NA
18 – Fishing Lake	25.2 PPB	NA
19 – Beaverdam	30.3 PPB	NA
22 – Cold Lake South	24.8 PPB	NA
23 – Medley-Martineau	22.7 PPB	NA
24 – Fort George	26.1 PPB	NA
28 – Town of Bonnyville	22.7 PPB	NA
29 – Cold Lake South 2	25.5 PPB	NA
32 – St. Lina	30.1 PPB	NA
34 – Portable	25.6 PPB	NA

Summary

Minimum : 22.3 PPB – Sand River
Maximum: 33.5 PPB –Flat Lake
Average: 26.7 PPB *Includes Duplicates



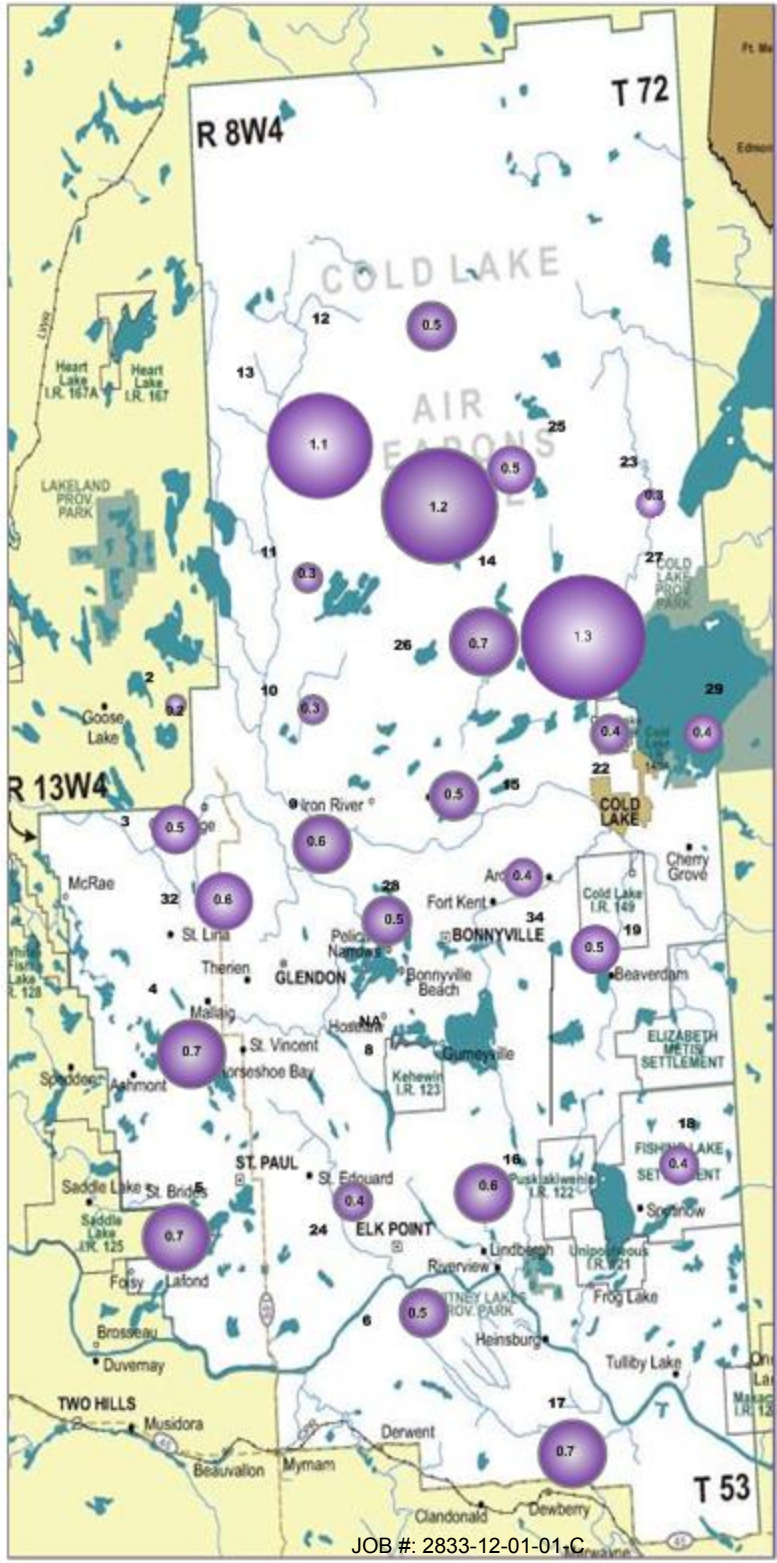
Lakeland Industry & Community Association
SO_2 Passive Bubble Map

JANUARY 2012

PASSIVE STATIONS		DUPLICATE
2 – Sand River	0.2 PPB	NA
3 – Therien	0.5 PPB	NA
4 – Flat Lake	0.7 PPB	NA
5 – Lake Eliza	0.7 PPB	NA
6 – Telegraph Creek	0.5 PPB	NA
8 – Muriel-Kehewin	MISSING	NA
9 – Dupre	0.6 PPB	NA
10 – La Corey	0.3 PPB	NA
11 – Wolf Lake	0.3 PPB	NA
12 – Foster Creek	0.5 PPB	0.5 PPB
13 – Primrose	1.0 PPB	1.1 PPB
14 – Maskwa	1.2 PPB	1.2 PPB
15 – Ardmore	0.5 PPB	NA
16 – Frog Lake	0.6 PPB	NA
17 – Clear Range	0.7 PPB	NA
18 – Fishing Lake	0.4 PPB	NA
19 – Beaverdam	0.5 PPB	NA
22 – Cold Lake South	0.4 PPB	NA
23 – Medley-Martineau	0.3 PPB	NA
24 – Fort George	0.4 PPB	NA
25 – Burnt Lake	0.5 PPB	NA
26 – Mahikan	0.7 PPB	NA
27 – Mahkeses	1.3 PPB	NA
28 – Town of Bonnyville	0.5 PPB	NA
29 – Cold Lake South 2	0.4 PPB	NA
32 – St. Lina	0.6 PPB	NA
34 – Portable	0.4 PPB	NA

Summary

Minimum : 0.2 PPB –Sand River
Maximum: 1.3 PPB –Mahkeses
Average: 0.57 PPB *Includes Duplicates



JOB #: 2833-12-01-01-C

Passive Field Data

Field Notes

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
2	$SO_2/NO_2/O_3$	12/29/2011	16:43	02/01/2012	11:35	
3	$H_2S/SO_2/NO_2/O_3$	12/29/2011	16:05	02/01/2012	11:00	
4	$SO_2/NO_2/O_3$	12/28/2011	16:00	02/02/2012	14:00	
5	$H_2S/SO_2/NO_2/O_3$	12/28/2011	15:20	02/02/2012	13;20	
6	$SO_2/NO_2/O_3$	12/28/2011	13:55	02/02/2012	11:30	
8	$SO_2/NO_2/O_3$	12/28/2011	17:01	02/02/2012	15:18	
9	$SO_2/NO_2/O_3$	12/28/2011	17:52	02/01/2012	09:55	
10	$H_2S/SO_2/NO_2/O_3$	12/29/2011	09:45	01/31/2012	13:00	
11	$H_2S/SO_2/NO_2/O_3$	12/29/2011	10:21	01/31/2012	13:45	
12	$H_2S/SO_2/NO_2/O_3$	12/29/2011	12:14	01/31/2012	15:15	
13	$H_2S/SO_2/NO_2/O_3$	12/29/2011	08:35	02/01/2012	1406	
14	$H_2S/SO_2/NO_2/O_3$	12/29/2011	07:48	02/01/2012	15:00	
15	$SO_2/NO_2/O_3$	12/28/2011	18:44	02/01/1201	09:02	
16	$H_2S/SO_2/NO_2/O_3$	12/28/2011	12:22	02/02/2012	10:00	
17	$H_2S/SO_2/NO_2/O_3$	12/28/2011	13:05	02/02/2012	10:05	
18	$H_2S/SO_2/NO_2/O_3$	12/28/2011	11:32	02/02/2012	09;15	
19	$SO_2/NO_2/O_3$	12/28/2011	10:28	02/02/2012	08:15	
22	$H_2S/SO_2/NO_2/O_3$	12/28/2011	09:05	02/01/2012	16:45	
23	$SO_2/NO_2/O_3$	12/29/2011	18:10	02/02/2012	-	
24	$H_2S/SO_2/NO_2/O_3$	12/28/2011	14:31	02/02/2012	12:35	
25	H_2S/SO_2	12/29/2011	11:07	01/31/2012	16:20	
26	H_2S/SO_2	12/29/2011	08:07	02/01/2012	14:38	
27	H_2S/SO_2	12/29/2011	07:22	02/01/2012	15:22	
28	$SO_2/NO_2/O_3$	12/28/2011	17:33	02/01/2012	10:08	
29	$H_2S/SO_2/NO_2/O_3$	12/28/2011	09:20	02/01/2012	16:45	
32	$H_2S/SO_2/NO_2/O_3$	12/29/2011	15:02	01/31/2012	11:36	
34	$H_2S/SO_2/NO_2/O_3$	12/28/2011	18:15	02/01/2012	9:32	

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
Duplicate # 12	SO_2	12/29/2011	12:14	01/31/2012	15:15	
Duplicate # 13	SO_2	12/29/2011	08:35	02/01/2012	14:06	
Duplicate # 14	SO_2	12/29/2011	07:48	20/01/2012	15:00	
Duplicate # 14	H_2S	12/29/2011	07:48	20/01/2012	15:00	
Duplicate # 16	H_2S	12/28/2011	12:22	02/02/2012	18:00	
Duplicate # 9	NO_2	12/28/2011	17:52	02/01/2012	09:55	
Duplicate # 10	NO_2	12/29/2011	09:45	01/31/2012	13:00	
Duplicate # 9	O_3	12/28/2011	17:52	02/01/2012	09:55	
Duplicate # 10	O_3	12/29/2011	09:45	01/31/2012	13:00	

Passive Network Laboratory Analysis

Maxxam

Your Project #: 2011/12/29 - 2012/01/31
Site Location: LICA

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

Report Date: 2012/02/13

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B210194
Received: 2012/02/07, 13:58

Sample Matrix: Air
Samples Received: 33

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis (1)	19	2012/02/11	2012/02/13	EINDSOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (1)	26	2012/02/13	2012/02/13	EINDSOP-00148	Tang Passive NO2 in
O3 Passive Analysis (1)	26	2012/02/10	2012/02/13	EINDSOP-00197	EPA 300 R2.1
SO2 Passive Analysis (1)	30	2012/02/13	2012/02/13	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

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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 #: B210194
Report Date: 2012/02/13

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2011/12/29 - 2012/01/31
Site Location: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		CR0460	CR0461	CR0462	CR0463	CR0464		
Sampling Date		2011/12/29 16:43	2011/12/29 16:05	2011/12/28 16:00	2011/12/28 15:20	2011/12/28 13:55		
	Units	**2**	**3**	**4**	**5**	**6**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb		0.09		0.09		0.02	5588574
Calculated NO2	ppb	1.5	3.0	1.7	2.2	2.7	0.1	5589329
Calculated O3	ppb	22.3	27.6	33.5	25.6	25.7	0.1	5585264
Calculated SO2	ppb	0.2	0.5	0.7	0.7	0.5	0.1	5589311

RDL = Reportable Detection Limit

Maxxam ID		CR0465	CR0466	CR0467	CR0468	CR0469		
Sampling Date		2011/12/28 17:01	2011/12/28 17:52	2011/12/29 09:45	2011/12/29 10:21	2011/12/29 12:14		
	Units	**8**	**9**	**10**	**11**	**12**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb			0.10	0.07	0.10	0.02	5588574
Calculated NO2	ppb	2.0	2.7	4.9	0.9	1.8	0.1	5589329
Calculated O3	ppb	32.6	29.9	24.6	23.9	27.0	0.1	5585264
Calculated SO2	ppb	MISSING	0.6	0.3	0.3	0.5	0.1	5589311

RDL = Reportable Detection Limit

Maxxam ID		CR0470	CR0471	CR0472	CR0473		
Sampling Date		2011/12/29 08:35	2011/12/29 07:48	2011/12/28 18:44	2011/12/28 12:22		
	Units	**13**	**14**	**15**	**16**	**RDL**	**QC Batch**
Passive Monitoring							
Calculated H2S	ppb	0.10	0.15		0.12	0.02	5588574
Calculated NO2	ppb	2.5	3.2	2.6	3.8	0.1	5589329
Calculated O3	ppb	29.4	27.3	27.0	24.3	0.1	5585264
Calculated SO2	ppb	1.0	1.2	0.5	0.6	0.1	5589311

RDL = Reportable Detection Limit

Maxxam Job #: B210194
Report Date: 2012/02/13

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2011/12/29 - 2012/01/31
Site Location: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		CR0474	CR0475		CR0476	CR0477		
Sampling Date		2011/12/28 13:05	2011/12/28 11:32		2011/12/28 10:28	2011/12/28 09:05		
	Units	**17**	**18**	**QC Batch**	**19**	**22**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb		0.10	5588574		0.10	0.02	5588574
Calculated NO2	ppb	3.5	2.5	5589329	1.6	3.0	0.1	5589334
Calculated O3	ppb	27.9	25.2	5585271	30.3	24.8	0.1	5585271
Calculated SO2	ppb	0.7	0.4	5589311	0.5	0.4	0.1	5589311

RDL = Reportable Detection Limit

Maxxam ID		CR0478		CR0479	CR0480	CR0481		
Sampling Date		2011/12/29 18:10		2011/12/28 14:31	2011/12/29 11:07	2011/12/29 08:07		
	Units	**23**	**QC Batch**	**24**	**25**	**26**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb		5588574	0.13	0.09	0.17	0.02	5588574
Calculated NO2	ppb	0.8	5589334	3.6			0.1	5589334
Calculated O3	ppb	22.7	5585271	26.1			0.1	5585271
Calculated SO2	ppb	0.3	5589311	0.4	0.5	0.7	0.1	5589318

RDL = Reportable Detection Limit

Maxxam ID		CR0482	CR0483	CR0484	CR0485	CR0486		
Sampling Date		2011/12/29 07:22	2011/12/28 17:33	2011/12/28 09:20	2011/12/29 15:02	2011/12/28 18:16		
	Units	**27**	**28**	**29**	**32**	**34**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb	0.13		0.12	0.10	0.13	0.02	5588574
Calculated NO2	ppb		7.0	4.3	1.7	4.5	0.1	5589334
Calculated O3	ppb		22.7	25.5	30.1	25.6	0.1	5585271
Calculated SO2	ppb	1.3	0.5	0.4	0.6	0.4	0.1	5589318

RDL = Reportable Detection Limit

Maxxam Job #: B210194
Report Date: 2012/02/13

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2011/12/29 - 2012/01/31
Site Location: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		CR0489	CR0490	CR0491	CR0492	CR0493		
Sampling Date		2011/12/28 17:52	2011/12/29 09:45	2011/12/29 12:14	2011/12/29 08:35	2011/12/29 07:48		
	Units	**9 DUP**	**10 DUP**	**12 DUP**	**13 DUP**	**14 DUP**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb					0.13	0.02	5588574
Calculated NO2	ppb	2.3	3.9				0.1	5589334
Calculated O3	ppb	28.8	24.9				0.1	5585271
Calculated SO2	ppb			0.5	1.1	1.2	0.1	5589318

RDL = Reportable Detection Limit

Maxxam ID		CR0494		
Sampling Date		2011/12/28 12:22		
	Units	**16 DUP**	**RDL**	**QC Batch**
Passive Monitoring				
Calculated H2S	ppb	0.14	0.02	5588574

RDL = Reportable Detection Limit

General Comments

H2S sample from station #11 and #26 received to the Lab with body, bag and filter wet. SS
Sample: CR0465 for SO2 parameter was not returned to the lab. - DF

Results relate only to the items tested.

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Attention: MICHAEL BISAGA
Client Project #: 2011/12/29 - 2012/01/31
P.O. #:
Site Location: LICA

Quality Assurance Report

Maxxam Job Number: PB210194

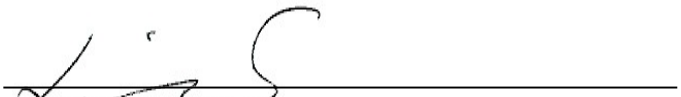
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
5585264	OZ	Calibration Check	Calculated O3	2012/02/10		98	%	91 - 107
		Spiked Blank	Calculated O3	2012/02/10		100	%	N/A
		Method Blank	Calculated O3	2012/02/10	<0.1		ppb	
5585271	OZ	Calibration Check	Calculated O3	2012/02/10		99	%	91 - 107
		Spiked Blank	Calculated O3	2012/02/10		100	%	N/A
		Method Blank	Calculated O3	2012/02/10	<0.1		ppb	
5588574	SS6	Calibration Check	Calculated H2S	2012/02/11		103	%	80 - 120
		Spiked Blank	Calculated H2S	2012/02/11		99	%	N/A
5589311	DF4	Calibration Check	Calculated SO2	2012/02/13		99	%	95 - 105
		Spiked Blank	Calculated SO2	2012/02/13		100	%	N/A
		Method Blank	Calculated SO2	2012/02/13	<0.1		ppb	
5589318	DF4	Calibration Check	Calculated SO2	2012/02/13		102	%	95 - 105
		Spiked Blank	Calculated SO2	2012/02/13		100	%	N/A
		Method Blank	Calculated SO2	2012/02/13	<0.1		ppb	
5589329	DF4	Calibration Check	Calculated NO2	2012/02/13		101	%	76 - 118
		Spiked Blank	Calculated NO2	2012/02/13		102	%	N/A
		Method Blank	Calculated NO2	2012/02/13	<0.1		ppb	
5589334	DF4	Calibration Check	Calculated NO2	2012/02/13		100	%	76 - 118
		Spiked Blank	Calculated NO2	2012/02/13		101	%	N/A
		Method Blank	Calculated NO2	2012/02/13	<0.1		ppb	

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

Validation Signature Page

Maxxam Job #: B210194

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



Linda Lin, Supervisor, Centre for Passive Sampling Technology

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Volatile Organics Laboratory Analysis

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Cold Lake South
Station ID: Lica 1
Field Sample ID: LICA VOC/ CLS /Jan 04, 2012

Sampler s/n: 6167
Canister ID: 258
Canister Installation Date/Time: Jan 03, 2011 @ 08:35 mst
Canister Removal Date/Time: Jan 05, 2011 @ 11:38 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
04-Jan-12	01/04/2012 0:00	01/05/2012 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	646	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 # 08576

Technician Signiture: Ting Xu

JOB #: 2833-12-01-01-C

Maxxam

Success Through Science®

Your C.O.C. #: 08576

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

Report Date: 2012/01/13

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B202401
Received: 2012/01/07, 10:10

Sample Matrix: AIR
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	1	N/A	2012/01/09	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	1	N/A	2012/01/09	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

Maxxam Analytics

Maxxam Job #: B202401
Report Date: 2012/01/13

RESULTS OF ANALYSES OF AIR

Maxxam ID		ME0742	
Sampling Date		2012/01/04	
COC Number		08576	
	Units	**LICA VOC/CLS/JAN 04, 2012 - 258**	**QC Batch**
Volatile Organics			
Pressure on Receipt	psig	23	2732465

QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

Maxxam Job #: B202401
Report Date: 2012/01/13

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		ME0742				
Sampling Date		2012/01/04				
COC Number		08576				
	Units	**LICA VOC/CLS/JAN 04, 2012 - 258**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	0.65	0.20	3.05	0.934	2732446
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2732446
Propene	ppbv	<3.6	3.6	<6.20	6.20	2732446
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2732446
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2732446
Dichlorodifluoromethane (FREON 12)	ppbv	0.59	0.20	2.93	0.989	2732446
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2732446
Chloromethane	ppbv	0.51	0.30	1.04	0.620	2732446
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2732446
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2732446
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2732446
Trichlorofluoromethane (FREON 11)	ppbv	0.26	0.20	1.48	1.12	2732446
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2732446
Ethanol	ppbv	14.0	2.3	26.3	4.33	2732446
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2732446
2-Propanone	ppbv	0.90	0.80	2.13	1.90	2732446
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2732446
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2732446
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2732446
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2732446
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2732446
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2732446
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2732446
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2732446
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2732446
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2732446
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2732446
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2732446
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2732446
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2732446
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2732446

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		ME0742				
Sampling Date		2012/01/04				
COC Number		08576				
	Units	**LICA VOC/CLS/JAN 04, 2012 - 258**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2732446
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2732446
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2732446
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2732446
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2732446
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2732446
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2732446
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2732446
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2732446
Heptane	ppbv	0.47	0.30	1.91	1.23	2732446
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2732446
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2732446
Benzene	ppbv	0.63	0.18	2.00	0.575	2732446
Toluene	ppbv	1.63	0.20	6.12	0.753	2732446
Ethylbenzene	ppbv	0.29	0.20	1.28	0.868	2732446
p+m-Xylene	ppbv	1.06	0.37	4.61	1.61	2732446
o-Xylene	ppbv	0.40	0.20	1.73	0.868	2732446
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2732446
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2732446
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2732446
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2732446
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2732446
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2732446
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2732446
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2732446
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2732446
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2732446
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2732446
Hexane	ppbv	0.78	0.30	2.74	1.06	2732446
Cyclohexane	ppbv	0.36	0.20	1.23	0.688	2732446
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2732446
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2732446
Xylene (Total)	ppbv	1.46	0.60	6.34	2.61	2732446

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B202401
Report Date: 2012/01/13

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		ME0742				
Sampling Date		2012/01/04				
COC Number		08576				
	Units	**LICA VOC/CLS/JAN 04, 2012 - 258**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	95		N/A	N/A	2732446
D5-Chlorobenzene	%	93		N/A	N/A	2732446
Difluorobenzene	%	94		N/A	N/A	2732446

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

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Maxxam Analytics

Maxxam Job #: B202401
Report Date: 2012/01/13

Test Summary

Maxxam ID ME0742
Sample ID LICA VOC/CLS/JAN 04, 2012 - 258
Matrix AIR

Collected 2012/01/04
Shipped
Received 2012/01/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2732465	N/A	2012/01/09	DIANE TEMNIUK
Volatile Organics in Air (TO-15)	GC/MS	2732446	N/A	2012/01/09	DIANE TEMNIUK

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Maxxam Analytics

Maxxam Job #: B202401
Report Date: 2012/01/13

GENERAL COMMENTS

WS#2732446

Benzyl Chloride exceeds 40%RSD in Continuing Calibration. No positives were found, therefore data was accepted.

Sample ME0742-01: DL raised for propene due to matrix interference.

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB202401

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2732446	DVO	Spiked Blank	Bromochloromethane	2012/01/09		99	%	60 - 140
			D5-Chlorobenzene	2012/01/09		101	%	60 - 140
			Difluorobenzene	2012/01/09		103	%	60 - 140
			2,2,4-Trimethylpentane	2012/01/09		100	%	70 - 130
			Carbon Disulfide	2012/01/09		103	%	70 - 130
			Propene	2012/01/09		91	%	70 - 130
			Vinyl Acetate	2012/01/09		116	%	70 - 130
			Vinyl Bromide	2012/01/09		107	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2012/01/09		100	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/01/09		113	%	70 - 130
			Chloromethane	2012/01/09		96	%	70 - 130
			Vinyl Chloride	2012/01/09		101	%	70 - 130
			Chloroethane	2012/01/09		101	%	70 - 130
			1,3-Butadiene	2012/01/09		100	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/01/09		105	%	70 - 130
			Trichlorotrifluoroethane	2012/01/09		101	%	70 - 130
			Ethanol	2012/01/09		99	%	70 - 130
			2-propanol	2012/01/09		120	%	70 - 130
			2-Propanone	2012/01/09		109	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/01/09		113	%	70 - 130
			Methyl Isobutyl Ketone	2012/01/09		98	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/01/09		102	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/01/09		109	%	70 - 130
			Ethyl Acetate	2012/01/09		104	%	70 - 130
			1,1-Dichloroethylene	2012/01/09		110	%	70 - 130
			cis-1,2-Dichloroethylene	2012/01/09		107	%	70 - 130
			trans-1,2-Dichloroethylene	2012/01/09		102	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/01/09		91	%	70 - 130
			Chloroform	2012/01/09		101	%	70 - 130
			Carbon Tetrachloride	2012/01/09		101	%	70 - 130
			1,1-Dichloroethane	2012/01/09		98	%	70 - 130
			1,2-Dichloroethane	2012/01/09		106	%	70 - 130
			Ethylene Dibromide	2012/01/09		107	%	70 - 130
			1,1,1-Trichloroethane	2012/01/09		103	%	70 - 130
			1,1,2-Trichloroethane	2012/01/09		100	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/01/09		103	%	70 - 130
			cis-1,3-Dichloropropene	2012/01/09		112	%	70 - 130
			trans-1,3-Dichloropropene	2012/01/09		133 (1)	%	70 - 130
			1,2-Dichloropropane	2012/01/09		97	%	70 - 130
			Bromomethane	2012/01/09		103	%	70 - 130
			Bromoform	2012/01/09		109	%	70 - 130
			Bromodichloromethane	2012/01/09		102	%	70 - 130
			Dibromochloromethane	2012/01/09		104	%	70 - 130
			Heptane	2012/01/09		94	%	70 - 130
			Trichloroethylene	2012/01/09		99	%	70 - 130
			Tetrachloroethylene	2012/01/09		99	%	70 - 130
			Benzene	2012/01/09		99	%	70 - 130
			Toluene	2012/01/09		103	%	70 - 130
			Ethylbenzene	2012/01/09		104	%	70 - 130
			p+m-Xylene	2012/01/09		102	%	70 - 130
			o-Xylene	2012/01/09		100	%	70 - 130
			Styrene	2012/01/09		97	%	70 - 130
			1,3,5-Trimethylbenzene	2012/01/09		108	%	70 - 130
			1,2,4-Trimethylbenzene	2012/01/09		112	%	70 - 130
			4-ethyltoluene	2012/01/09		104	%	70 - 130

Maxxam Analytics
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Quality Assurance Report (Continued)

Maxxam Job Number: GB202401

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2732446	DVO	Spiked Blank	Chlorobenzene	2012/01/09		102	%	70 - 130
			Benzyl chloride	2012/01/09		147 (1)	%	70 - 130
			1,3-Dichlorobenzene	2012/01/09		119	%	70 - 130
			1,4-Dichlorobenzene	2012/01/09		124	%	70 - 130
			1,2-Dichlorobenzene	2012/01/09		117	%	70 - 130
			1,2,4-Trichlorobenzene	2012/01/09		128	%	70 - 130
			Hexachlorobutadiene	2012/01/09		101	%	70 - 130
			Hexane	2012/01/09		97	%	70 - 130
			Cyclohexane	2012/01/09		99	%	70 - 130
			Tetrahydrofuran	2012/01/09		103	%	70 - 130
			1,4-Dioxane	2012/01/09		94	%	70 - 130
			Xylene (Total)	2012/01/09		101	%	70 - 130
		Method Blank	Bromochloromethane	2012/01/09		92	%	60 - 140
			D5-Chlorobenzene	2012/01/09		92	%	60 - 140
			Difluorobenzene	2012/01/09		96	%	60 - 140
			2,2,4-Trimethylpentane	2012/01/09	<0.20		ppbv	
			Carbon Disulfide	2012/01/09	<0.50		ppbv	
			Propene	2012/01/09	<0.30		ppbv	
			Vinyl Acetate	2012/01/09	<0.20		ppbv	
			Vinyl Bromide	2012/01/09	<0.20		ppbv	
			Dichlorodifluoromethane (FREON 12)	2012/01/09	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/01/09	<0.17		ppbv	
			Chloromethane	2012/01/09	<0.30		ppbv	
			Vinyl Chloride	2012/01/09	<0.18		ppbv	
			Chloroethane	2012/01/09	<0.30		ppbv	
			1,3-Butadiene	2012/01/09	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/01/09	<0.20		ppbv	
			Trichlorotrifluoroethane	2012/01/09	<0.15		ppbv	
			Ethanol	2012/01/09	<2.3		ppbv	
			2-propanol	2012/01/09	<3.0		ppbv	
			2-Propanone	2012/01/09	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/01/09	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/01/09	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/01/09	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/01/09	<0.20		ppbv	
			Ethyl Acetate	2012/01/09	<2.2		ppbv	
			1,1-Dichloroethylene	2012/01/09	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/01/09	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/01/09	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/01/09	<0.80		ppbv	
			Chloroform	2012/01/09	<0.15		ppbv	
			Carbon Tetrachloride	2012/01/09	<0.30		ppbv	
			1,1-Dichloroethane	2012/01/09	<0.20		ppbv	
			1,2-Dichloroethane	2012/01/09	<0.20		ppbv	
			Ethylene Dibromide	2012/01/09	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/01/09	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/01/09	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/01/09	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/01/09	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/01/09	<0.17		ppbv	
			1,2-Dichloropropane	2012/01/09	<0.40		ppbv	
			Bromomethane	2012/01/09	<0.18		ppbv	
			Bromoform	2012/01/09	<0.20		ppbv	
			Bromodichloromethane	2012/01/09	<0.20		ppbv	
			Dibromochloromethane	2012/01/09	<0.20		ppbv	

Maxxam Analytics
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Quality Assurance Report (Continued)

Maxxam Job Number: GB202401

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2732446	DVO	Method Blank	Heptane	2012/01/09	<0.30		ppbv	
			Trichloroethylene	2012/01/09	<0.30		ppbv	
			Tetrachloroethylene	2012/01/09	<0.20		ppbv	
			Benzene	2012/01/09	<0.18		ppbv	
			Toluene	2012/01/09	<0.20		ppbv	
			Ethylbenzene	2012/01/09	<0.20		ppbv	
			p+m-Xylene	2012/01/09	<0.37		ppbv	
			o-Xylene	2012/01/09	<0.20		ppbv	
			Styrene	2012/01/09	<0.20		ppbv	
			1,3,5-Trimethylbenzene	2012/01/09	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/01/09	<0.50		ppbv	
			4-ethyltoluene	2012/01/09	<2.2		ppbv	
			Chlorobenzene	2012/01/09	<0.20		ppbv	
			Benzyl chloride	2012/01/09	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/01/09	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/01/09	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/01/09	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/01/09	<2.0		ppbv	
			Hexachlorobutadiene	2012/01/09	<3.0		ppbv	
			Hexane	2012/01/09	<0.30		ppbv	
			Cyclohexane	2012/01/09	<0.20		ppbv	
			Tetrahydrofuran	2012/01/09	<0.40		ppbv	
			1,4-Dioxane	2012/01/09	<2.0		ppbv	
			Xylene (Total)	2012/01/09	<0.60		ppbv	
		RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2012/01/09	NC		%	25
			Carbon Disulfide	2012/01/09	NC		%	25
			Propene	2012/01/09	NC		%	25
			Vinyl Acetate	2012/01/09	NC		%	25
			Vinyl Bromide	2012/01/09	NC		%	25
			Dichlorodifluoromethane (FREON 12)	2012/01/09	NC		%	25
			1,2-Dichlorotetrafluoroethane	2012/01/09	NC		%	25
			Chloromethane	2012/01/09	NC		%	25
			Vinyl Chloride	2012/01/09	NC		%	25
			Chloroethane	2012/01/09	NC		%	25
			1,3-Butadiene	2012/01/09	NC		%	25
			Trichlorofluoromethane (FREON 11)	2012/01/09	NC		%	25
			Trichlorotrifluoroethane	2012/01/09	NC		%	25
			Ethanol	2012/01/09	14.2		%	25
			2-propanol	2012/01/09	NC		%	25
			2-Propanone	2012/01/09	19.4		%	25
			Methyl Ethyl Ketone (2-Butanone)	2012/01/09	NC		%	25
			Methyl Isobutyl Ketone	2012/01/09	NC		%	25
			Methyl Butyl Ketone (2-Hexanone)	2012/01/09	NC		%	25
			Methyl t-butyl ether (MTBE)	2012/01/09	NC		%	25
			Ethyl Acetate	2012/01/09	NC		%	25
			1,1-Dichloroethylene	2012/01/09	NC		%	25
			cis-1,2-Dichloroethylene	2012/01/09	NC		%	25
			trans-1,2-Dichloroethylene	2012/01/09	NC		%	25
			Methylene Chloride(Dichloromethane)	2012/01/09	NC		%	25
			Chloroform	2012/01/09	NC		%	25
			Carbon Tetrachloride	2012/01/09	NC		%	25
			1,1-Dichloroethane	2012/01/09	NC		%	25
			1,2-Dichloroethane	2012/01/09	NC		%	25

Maxxam Analytics
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Quality Assurance Report (Continued)

Maxxam Job Number: GB202401

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2732446	DVO	RPD - Sample/Sample Dup	Ethylene Dibromide	2012/01/09	NC		%	25
			1,1,1-Trichloroethane	2012/01/09	NC		%	25
			1,1,2-Trichloroethane	2012/01/09	NC		%	25
			1,1,2,2-Tetrachloroethane	2012/01/09	NC		%	25
			cis-1,3-Dichloropropene	2012/01/09	NC		%	25
			trans-1,3-Dichloropropene	2012/01/09	NC		%	25
			1,2-Dichloropropane	2012/01/09	NC		%	25
			Bromomethane	2012/01/09	NC		%	25
			Bromoform	2012/01/09	NC		%	25
			Bromodichloromethane	2012/01/09	NC		%	25
			Dibromochloromethane	2012/01/09	NC		%	25
			Heptane	2012/01/09	NC		%	25
			Trichloroethylene	2012/01/09	NC		%	25
			Tetrachloroethylene	2012/01/09	7.4		%	25
			Benzene	2012/01/09	NC		%	25
			Toluene	2012/01/09	7.7		%	25
			Ethylbenzene	2012/01/09	NC		%	25
			p+m-Xylene	2012/01/09	NC		%	25
			o-Xylene	2012/01/09	12.7		%	25
			Styrene	2012/01/09	11.9		%	25
			1,3,5-Trimethylbenzene	2012/01/09	NC		%	25
			1,2,4-Trimethylbenzene	2012/01/09	NC		%	25
			4-ethyltoluene	2012/01/09	NC		%	25
			Chlorobenzene	2012/01/09	NC		%	25
			Benzyl chloride	2012/01/09	NC		%	25
			1,3-Dichlorobenzene	2012/01/09	NC		%	25
			1,4-Dichlorobenzene	2012/01/09	NC		%	25
			1,2-Dichlorobenzene	2012/01/09	NC		%	25
			1,2,4-Trichlorobenzene	2012/01/09	NC		%	25
			Hexachlorobutadiene	2012/01/09	NC		%	25
			Hexane	2012/01/09	NC		%	25
			Cyclohexane	2012/01/09	NC		%	25
			Tetrahydrofuran	2012/01/09	1.0		%	25
			1,4-Dioxane	2012/01/09	NC		%	25
			Xylene (Total)	2012/01/09	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
Location: Cold Lake South
Station ID: Lica 1
Field Sample ID: LICA VOC/ CLS /Jan 10, 2012

Sampler s/n: 6167
Canister ID: 7909
Canister Installation Date/Time: Jan 09, 2011 @ 13:32 mst
Canister Removal Date/Time: Jan 11, 2011 @ 12:05 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
10-Jan-12	01/10/2012 0:00	01/11/2012 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	649	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 # 08542

Technician Signiture: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 08542

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

Report Date: 2012/01/19

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B205432
Received: 2012/01/13, 10:20

Sample Matrix: AIR
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	1	N/A	2012/01/16	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	1	N/A	2012/01/16	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.

Total cover pages: 1

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Maxxam Analytics

Maxxam Job #: B205432
Report Date: 2012/01/19

RESULTS OF ANALYSES OF AIR

Maxxam ID		MF4254	
Sampling Date		2012/01/10	
COC Number		08542	
	Units	**LICA VOC/CLS/JAN 10/12 - 7909**	**QC Batch**
Volatile Organics			
Pressure on Receipt	psig	23	2738276

QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		MF4254				
Sampling Date		2012/01/10				
COC Number		08542				
	Units	**LICA VOC/CLS/JAN 10/12 - 7909**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2738246
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2738246
Propene	ppbv	<0.30	0.30	<0.516	0.516	2738246
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2738246
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2738246
Dichlorodifluoromethane (FREON 12)	ppbv	0.66	0.20	3.27	0.989	2738246
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2738246
Chloromethane	ppbv	0.60	0.30	1.24	0.620	2738246
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2738246
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2738246
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2738246
Trichlorofluoromethane (FREON 11)	ppbv	0.32	0.20	1.80	1.12	2738246
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2738246
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2738246
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2738246
2-Propanone	ppbv	0.82	0.80	1.95	1.90	2738246
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2738246
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2738246
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2738246
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2738246
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2738246
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2738246
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2738246
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2738246
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2738246
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2738246
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2738246
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2738246
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2738246
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2738246
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2738246

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		MF4254				
Sampling Date		2012/01/10				
COC Number		08542				
	Units	**LICA VOC/CLS/JAN 10/12 - 7909**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2738246
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2738246
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2738246
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2738246
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2738246
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2738246
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2738246
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2738246
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2738246
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2738246
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2738246
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2738246
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2738246
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2738246
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2738246
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2738246
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2738246
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2738246
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2738246
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2738246
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2738246
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2738246
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2738246
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2738246
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2738246
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2738246
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2738246
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2738246
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2738246
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2738246
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2738246
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2738246
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2738246

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B205432
Report Date: 2012/01/19

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		MF4254				
Sampling Date		2012/01/10				
COC Number		08542				
	Units	**LICA VOC/CLS/JAN 10/12 - 7909**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	79		N/A	N/A	2738246
D5-Chlorobenzene	%	76		N/A	N/A	2738246
Difluorobenzene	%	79		N/A	N/A	2738246

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

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Maxxam Analytics

Maxxam Job #: B205432
Report Date: 2012/01/19

Test Summary

Maxxam ID MF4254
Sample ID LICA VOC/CLS/JAN 10/12 - 7909
Matrix AIR

Collected 2012/01/10
Shipped
Received 2012/01/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2738276	N/A	2012/01/16	DIANE TEMNIUK
Volatile Organics in Air (TO-15)	GC/MS	2738246	N/A	2012/01/16	DIANE TEMNIUK

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Maxxam Analytics

Maxxam Job #: B205432
Report Date: 2012/01/19

GENERAL COMMENTS

WS #2738246
3 parameters; Vinyl Acetate, 2-Butanone, and Benzyl Chloride, exceed 30% RSD in the continuing calibration. Benzyl Chloride exceeds 40%. No positives were found for these parameters, therefore data was accepted.

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB205432

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2738246	DVO	Spiked Blank	Bromochloromethane	2012/01/16		106	%	60 - 140
			D5-Chlorobenzene	2012/01/16		107	%	60 - 140
			Difluorobenzene	2012/01/16		108	%	60 - 140
			2,2,4-Trimethylpentane	2012/01/16		102	%	70 - 130
			Carbon Disulfide	2012/01/16		99	%	70 - 130
			Propene	2012/01/16		101	%	70 - 130
			Vinyl Acetate	2012/01/16		126	%	70 - 130
			Vinyl Bromide	2012/01/16		108	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2012/01/16		111	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/01/16		124	%	70 - 130
			Chloromethane	2012/01/16		108	%	70 - 130
			Vinyl Chloride	2012/01/16		105	%	70 - 130
			Chloroethane	2012/01/16		102	%	70 - 130
			1,3-Butadiene	2012/01/16		106	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/01/16		106	%	70 - 130
			Trichlorotrifluoroethane	2012/01/16		99	%	70 - 130
			Ethanol	2012/01/16		95	%	70 - 130
			2-propanol	2012/01/16		97	%	70 - 130
			2-Propanone	2012/01/16		89	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/01/16		116	%	70 - 130
			Methyl Isobutyl Ketone	2012/01/16		110	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/01/16		113	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/01/16		106	%	70 - 130
			Ethyl Acetate	2012/01/16		109	%	70 - 130
			1,1-Dichloroethylene	2012/01/16		114	%	70 - 130
			cis-1,2-Dichloroethylene	2012/01/16		103	%	70 - 130
			trans-1,2-Dichloroethylene	2012/01/16		101	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/01/16		96	%	70 - 130
			Chloroform	2012/01/16		100	%	70 - 130
			Carbon Tetrachloride	2012/01/16		109	%	70 - 130
			1,1-Dichloroethane	2012/01/16		96	%	70 - 130
			1,2-Dichloroethane	2012/01/16		108	%	70 - 130
			Ethylene Dibromide	2012/01/16		100	%	70 - 130
			1,1,1-Trichloroethane	2012/01/16		107	%	70 - 130
			1,1,2-Trichloroethane	2012/01/16		97	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/01/16		90	%	70 - 130
			cis-1,3-Dichloropropene	2012/01/16		108	%	70 - 130
			trans-1,3-Dichloropropene	2012/01/16		117	%	70 - 130
			1,2-Dichloropropane	2012/01/16		97	%	70 - 130
			Bromomethane	2012/01/16		106	%	70 - 130
			Bromoform	2012/01/16		110	%	70 - 130
			Bromodichloromethane	2012/01/16		109	%	70 - 130
			Dibromochloromethane	2012/01/16		106	%	70 - 130
			Heptane	2012/01/16		103	%	70 - 130
			Trichloroethylene	2012/01/16		92	%	70 - 130
			Tetrachloroethylene	2012/01/16		96	%	70 - 130
			Benzene	2012/01/16		95	%	70 - 130
			Toluene	2012/01/16		99	%	70 - 130
			Ethylbenzene	2012/01/16		101	%	70 - 130
			p+m-Xylene	2012/01/16		100	%	70 - 130
			o-Xylene	2012/01/16		101	%	70 - 130
			Styrene	2012/01/16		94	%	70 - 130
			1,3,5-Trimethylbenzene	2012/01/16		92	%	70 - 130
			1,2,4-Trimethylbenzene	2012/01/16		91	%	70 - 130
			4-ethyltoluene	2012/01/16		93	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB205432

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2738246	DVO	Spiked Blank	Chlorobenzene	2012/01/16		93	%	70 - 130
			Benzyl chloride	2012/01/16		114	%	70 - 130
			1,3-Dichlorobenzene	2012/01/16		89	%	70 - 130
			1,4-Dichlorobenzene	2012/01/16		88	%	70 - 130
			1,2-Dichlorobenzene	2012/01/16		82	%	70 - 130
			1,2,4-Trichlorobenzene	2012/01/16		122	%	70 - 130
			Hexachlorobutadiene	2012/01/16		107	%	70 - 130
			Hexane	2012/01/16		94	%	70 - 130
			Cyclohexane	2012/01/16		101	%	70 - 130
			Tetrahydrofuran	2012/01/16		109	%	70 - 130
			1,4-Dioxane	2012/01/16		106	%	70 - 130
			Xylene (Total)	2012/01/16		100	%	70 - 130
		Method Blank	Bromochloromethane	2012/01/16		89	%	60 - 140
			D5-Chlorobenzene	2012/01/16		89	%	60 - 140
			Difluorobenzene	2012/01/16		91	%	60 - 140
			2,2,4-Trimethylpentane	2012/01/16	<0.20		ppbv	
			Carbon Disulfide	2012/01/16	<0.50		ppbv	
			Propene	2012/01/16	<0.30		ppbv	
			Vinyl Acetate	2012/01/16	<0.20		ppbv	
			Vinyl Bromide	2012/01/16	<0.20		ppbv	
			Dichlorodifluoromethane (FREON 12)	2012/01/16	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/01/16	<0.17		ppbv	
			Chloromethane	2012/01/16	<0.30		ppbv	
			Vinyl Chloride	2012/01/16	<0.18		ppbv	
			Chloroethane	2012/01/16	<0.30		ppbv	
			1,3-Butadiene	2012/01/16	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/01/16	<0.20		ppbv	
			Trichlorotrifluoroethane	2012/01/16	<0.15		ppbv	
			Ethanol	2012/01/16	<2.3		ppbv	
			2-propanol	2012/01/16	<3.0		ppbv	
			2-Propanone	2012/01/16	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/01/16	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/01/16	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/01/16	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/01/16	<0.20		ppbv	
			Ethyl Acetate	2012/01/16	<2.2		ppbv	
			1,1-Dichloroethylene	2012/01/16	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/01/16	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/01/16	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/01/16	<0.80		ppbv	
			Chloroform	2012/01/16	<0.15		ppbv	
			Carbon Tetrachloride	2012/01/16	<0.30		ppbv	
			1,1-Dichloroethane	2012/01/16	<0.20		ppbv	
			1,2-Dichloroethane	2012/01/16	<0.20		ppbv	
			Ethylene Dibromide	2012/01/16	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/01/16	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/01/16	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/01/16	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/01/16	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/01/16	<0.17		ppbv	
			1,2-Dichloropropane	2012/01/16	<0.40		ppbv	
			Bromomethane	2012/01/16	<0.18		ppbv	
			Bromoform	2012/01/16	<0.20		ppbv	
			Bromodichloromethane	2012/01/16	<0.20		ppbv	
			Dibromochloromethane	2012/01/16	<0.20		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB205432

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2738246	DVO	Method Blank	Heptane	2012/01/16	<0.30		ppbv	
			Trichloroethylene	2012/01/16	<0.30		ppbv	
			Tetrachloroethylene	2012/01/16	<0.20		ppbv	
			Benzene	2012/01/16	<0.18		ppbv	
			Toluene	2012/01/16	<0.20		ppbv	
			Ethylbenzene	2012/01/16	<0.20		ppbv	
			p+m-Xylene	2012/01/16	<0.37		ppbv	
			o-Xylene	2012/01/16	<0.20		ppbv	
			Styrene	2012/01/16	<0.20		ppbv	
			1,3,5-Trimethylbenzene	2012/01/16	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/01/16	<0.50		ppbv	
			4-ethyltoluene	2012/01/16	<2.2		ppbv	
			Chlorobenzene	2012/01/16	<0.20		ppbv	
			Benzyl chloride	2012/01/16	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/01/16	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/01/16	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/01/16	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/01/16	<2.0		ppbv	
			Hexachlorobutadiene	2012/01/16	<3.0		ppbv	
			Hexane	2012/01/16	<0.30		ppbv	
			Cyclohexane	2012/01/16	<0.20		ppbv	
			Tetrahydrofuran	2012/01/16	<0.40		ppbv	
			1,4-Dioxane	2012/01/16	<2.0		ppbv	
			Xylene (Total)	2012/01/16	<0.60		ppbv	
		RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2012/01/16	NC		%	25
			Carbon Disulfide	2012/01/16	NC		%	25
			Propene	2012/01/16	NC		%	25
			Vinyl Acetate	2012/01/16	NC		%	25
			Vinyl Bromide	2012/01/16	NC		%	25
			Dichlorodifluoromethane (FREON 12)	2012/01/16	NC		%	25
			1,2-Dichlorotetrafluoroethane	2012/01/16	NC		%	25
			Chloromethane	2012/01/16	NC		%	25
			Vinyl Chloride	2012/01/16	NC		%	25
			Chloroethane	2012/01/16	NC		%	25
			1,3-Butadiene	2012/01/16	NC		%	25
			Trichlorofluoromethane (FREON 11)	2012/01/16	NC		%	25
			Trichlorotrifluoroethane	2012/01/16	NC		%	25
			Ethanol	2012/01/16	NC		%	25
			2-propanol	2012/01/16	NC		%	25
			2-Propanone	2012/01/16	NC		%	25
			Methyl Ethyl Ketone (2-Butanone)	2012/01/16	NC		%	25
			Methyl Isobutyl Ketone	2012/01/16	NC		%	25
			Methyl Butyl Ketone (2-Hexanone)	2012/01/16	NC		%	25
			Methyl t-butyl ether (MTBE)	2012/01/16	NC		%	25
			Ethyl Acetate	2012/01/16	NC		%	25
			1,1-Dichloroethylene	2012/01/16	NC		%	25
			cis-1,2-Dichloroethylene	2012/01/16	NC		%	25
			trans-1,2-Dichloroethylene	2012/01/16	NC		%	25
			Methylene Chloride(Dichloromethane)	2012/01/16	NC		%	25
			Chloroform	2012/01/16	NC		%	25
			Carbon Tetrachloride	2012/01/16	NC		%	25
			1,1-Dichloroethane	2012/01/16	NC		%	25
			1,2-Dichloroethane	2012/01/16	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB205432

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2738246	DVO	RPD - Sample/Sample Dup	Ethylene Dibromide	2012/01/16	NC		%	25
			1,1,1-Trichloroethane	2012/01/16	NC		%	25
			1,1,2-Trichloroethane	2012/01/16	NC		%	25
			1,1,2,2-Tetrachloroethane	2012/01/16	NC		%	25
			cis-1,3-Dichloropropene	2012/01/16	NC		%	25
			trans-1,3-Dichloropropene	2012/01/16	NC		%	25
			1,2-Dichloropropane	2012/01/16	NC		%	25
			Bromomethane	2012/01/16	NC		%	25
			Bromoform	2012/01/16	NC		%	25
			Bromodichloromethane	2012/01/16	NC		%	25
			Dibromochloromethane	2012/01/16	NC		%	25
			Heptane	2012/01/16	NC		%	25
			Trichloroethylene	2012/01/16	NC		%	25
			Tetrachloroethylene	2012/01/16	NC		%	25
			Benzene	2012/01/16	NC		%	25
			Toluene	2012/01/16	0.09		%	25
			Ethylbenzene	2012/01/16	NC		%	25
			p+m-Xylene	2012/01/16	NC		%	25
			o-Xylene	2012/01/16	NC		%	25
			Styrene	2012/01/16	NC		%	25
			1,3,5-Trimethylbenzene	2012/01/16	NC		%	25
			1,2,4-Trimethylbenzene	2012/01/16	NC		%	25
			4-ethyltoluene	2012/01/16	NC		%	25
			Chlorobenzene	2012/01/16	NC		%	25
			Benzyl chloride	2012/01/16	NC		%	25
			1,3-Dichlorobenzene	2012/01/16	NC		%	25
			1,4-Dichlorobenzene	2012/01/16	NC		%	25
			1,2-Dichlorobenzene	2012/01/16	NC		%	25
			1,2,4-Trichlorobenzene	2012/01/16	NC		%	25
			Hexachlorobutadiene	2012/01/16	NC		%	25
			Hexane	2012/01/16	NC		%	25
			Cyclohexane	2012/01/16	NC		%	25
			Tetrahydrofuran	2012/01/16	NC		%	25
			1,4-Dioxane	2012/01/16	NC		%	25
			Xylene (Total)	2012/01/16	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 Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Cold Lake South
Station ID: Lica 1
Field Sample ID: LICA VOC/ CLS /Jan 16, 2012

Sampler s/n: 6167
Canister ID: 7914
Canister Installation Date/Time: Jan 11, 2012 @ 13:20 mst
Canister Removal Date/Time: Jan 19, 2012 @ 8:30 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
16-Jan-12	01/16/2012 0:00	01/17/2012 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	646	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 # 08652

Technician Signiture: Theo McLaren

JOB #: 2833-12-01-01-C

Maxxam

Success Through Science®

Your C.O.C. #: 08652

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

Report Date: 2012/02/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B210494
Received: 2012/01/24, 09:50

Sample Matrix: AIR
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	1	N/A	2012/02/01	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	1	N/A	2012/02/01	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.

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B210494
Report Date: 2012/02/05

RESULTS OF ANALYSES OF AIR

Maxxam ID		MI0838	
Sampling Date		2012/01/16	
COC Number		08652	
	Units	**LICA VOC/CLS /JAN16, 2012/7914**	**QC Batch**
Volatile Organics			
Pressure on Receipt	psig	22	2753444

QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		MI0838				
Sampling Date		2012/01/16				
COC Number		08652				
	Units	**LICA VOC/CLS /JAN16, 2012/7914**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2753443
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2753443
Propene	ppbv	<0.30	0.30	<0.516	0.516	2753443
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2753443
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2753443
Dichlorodifluoromethane (FREON 12)	ppbv	0.77	0.20	3.81	0.989	2753443
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2753443
Chloromethane	ppbv	0.61	0.30	1.26	0.620	2753443
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2753443
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2753443
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2753443
Trichlorofluoromethane (FREON 11)	ppbv	0.35	0.20	1.95	1.12	2753443
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2753443
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2753443
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2753443
2-Propanone	ppbv	<0.80	0.80	<1.90	1.90	2753443
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2753443
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2753443
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2753443
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2753443
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2753443
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2753443
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2753443
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2753443
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2753443
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2753443
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2753443
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2753443
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2753443
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2753443

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B210494
Report Date: 2012/02/05

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		MI0838				
Sampling Date		2012/01/16				
COC Number		08652				
	Units	**LICA VOC/CLS /JAN16, 2012/7914**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2753443
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2753443
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2753443
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2753443
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2753443
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2753443
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2753443
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2753443
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2753443
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2753443
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2753443
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2753443
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2753443
Benzene	ppbv	0.27	0.18	0.857	0.575	2753443
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2753443
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2753443
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2753443
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2753443
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2753443
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2753443
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2753443
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2753443
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2753443
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2753443
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2753443
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2753443
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2753443
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2753443
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2753443
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2753443
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2753443
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2753443

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B210494
Report Date: 2012/02/05

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		MI0838				
Sampling Date		2012/01/16				
COC Number		08652				
	Units	**LICA VOC/CLS /JAN16, 2012/7914**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2753443
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2753443
Surrogate Recovery (%)						
Bromochloromethane	%	79		N/A	N/A	2753443
D5-Chlorobenzene	%	75		N/A	N/A	2753443
Difluorobenzene	%	80		N/A	N/A	2753443

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

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Maxxam Analytics

Maxxam Job #: B210494
Report Date: 2012/02/05

Test Summary

Maxxam ID MI0838
Sample ID LICA VOC/CLS /JAN16, 2012/7914
Matrix AIR

Collected 2012/01/16
Shipped
Received 2012/01/24

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2753444	N/A	2012/02/01	MELANIE MABINI
Volatile Organics in Air (TO-15)	GC/MS	2753443	N/A	2012/02/01	MELANIE MABINI

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Maxxam Analytics

Maxxam Job #: B210494
Report Date: 2012/02/05

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB210494

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2753443	MM2	Spiked Blank	Bromochloromethane	2012/02/01		95	%	60 - 140
			D5-Chlorobenzene	2012/02/01		99	%	60 - 140
			Difluorobenzene	2012/02/01		98	%	60 - 140
			2,2,4-Trimethylpentane	2012/02/01		107	%	70 - 130
			Carbon Disulfide	2012/02/01		93	%	70 - 130
			Propene	2012/02/01		101	%	70 - 130
			Vinyl Acetate	2012/02/01		116	%	70 - 130
			Vinyl Bromide	2012/02/01		102	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2012/02/01		110	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/02/01		119	%	70 - 130
			Chloromethane	2012/02/01		109	%	70 - 130
			Vinyl Chloride	2012/02/01		104	%	70 - 130
			Chloroethane	2012/02/01		105	%	70 - 130
			1,3-Butadiene	2012/02/01		104	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/02/01		106	%	70 - 130
			Trichlorotrifluoroethane	2012/02/01		106	%	70 - 130
			Ethanol (ethyl alcohol)	2012/02/01		90	%	70 - 130
			2-propanol	2012/02/01		102	%	70 - 130
			2-Propanone	2012/02/01		104	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/02/01		96	%	70 - 130
			Methyl Isobutyl Ketone	2012/02/01		107	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/02/01		109	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/02/01		108	%	70 - 130
			Ethyl Acetate	2012/02/01		114	%	70 - 130
			1,1-Dichloroethylene	2012/02/01		109	%	70 - 130
			cis-1,2-Dichloroethylene	2012/02/01		111	%	70 - 130
			trans-1,2-Dichloroethylene	2012/02/01		109	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/02/01		102	%	70 - 130
			Chloroform	2012/02/01		107	%	70 - 130
			Carbon Tetrachloride	2012/02/01		113	%	70 - 130
			1,1-Dichloroethane	2012/02/01		109	%	70 - 130
			1,2-Dichloroethane	2012/02/01		111	%	70 - 130
			Ethylene Dibromide	2012/02/01		108	%	70 - 130
			1,1,1-Trichloroethane	2012/02/01		109	%	70 - 130
			1,1,2-Trichloroethane	2012/02/01		109	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/02/01		106	%	70 - 130
			cis-1,3-Dichloropropene	2012/02/01		113	%	70 - 130
			trans-1,3-Dichloropropene	2012/02/01		118	%	70 - 130
			1,2-Dichloropropane	2012/02/01		110	%	70 - 130
			Bromomethane	2012/02/01		102	%	70 - 130
			Bromoform	2012/02/01		114	%	70 - 130
			Bromodichloromethane	2012/02/01		111	%	70 - 130
			Dibromochloromethane	2012/02/01		113	%	70 - 130
			Heptane	2012/02/01		115	%	70 - 130
			Trichloroethylene	2012/02/01		104	%	70 - 130
			Tetrachloroethylene	2012/02/01		105	%	70 - 130
			Benzene	2012/02/01		107	%	70 - 130
			Toluene	2012/02/01		109	%	70 - 130
			Ethylbenzene	2012/02/01		107	%	70 - 130
			p+m-Xylene	2012/02/01		104	%	70 - 130
			o-Xylene	2012/02/01		107	%	70 - 130
			Styrene	2012/02/01		99	%	70 - 130
			1,3,5-Trimethylbenzene	2012/02/01		105	%	70 - 130
			1,2,4-Trimethylbenzene	2012/02/01		104	%	70 - 130
			4-ethyltoluene	2012/02/01		112	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB210494

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2753443	MM2	Spiked Blank	Chlorobenzene	2012/02/01		102	%	70 - 130
			Benzyl chloride	2012/02/01		114	%	70 - 130
			1,3-Dichlorobenzene	2012/02/01		101	%	70 - 130
			1,4-Dichlorobenzene	2012/02/01		101	%	70 - 130
			1,2-Dichlorobenzene	2012/02/01		99	%	70 - 130
			1,2,4-Trichlorobenzene	2012/02/01		70	%	70 - 130
			Hexachlorobutadiene	2012/02/01		87	%	70 - 130
			Hexane	2012/02/01		107	%	70 - 130
			Cyclohexane	2012/02/01		110	%	70 - 130
			Tetrahydrofuran	2012/02/01		112	%	70 - 130
			1,4-Dioxane	2012/02/01		99	%	70 - 130
		Method Blank	Bromochloromethane	2012/02/01		81	%	60 - 140
			D5-Chlorobenzene	2012/02/01		80	%	60 - 140
			Difluorobenzene	2012/02/01		84	%	60 - 140
			2,2,4-Trimethylpentane	2012/02/01	<0.20		ppbv	
			Carbon Disulfide	2012/02/01	<0.50		ppbv	
			Propene	2012/02/01	<0.30		ppbv	
			Vinyl Acetate	2012/02/01	<0.20		ppbv	
			Vinyl Bromide	2012/02/01	<0.20		ppbv	
			Dichlorodifluoromethane (FREON 12)	2012/02/01	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/02/01	<0.17		ppbv	
			Chloromethane	2012/02/01	<0.30		ppbv	
			Vinyl Chloride	2012/02/01	<0.18		ppbv	
			Chloroethane	2012/02/01	<0.30		ppbv	
			1,3-Butadiene	2012/02/01	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/02/01	<0.20		ppbv	
			Trichlorotrifluoroethane	2012/02/01	<0.15		ppbv	
			Ethanol (ethyl alcohol)	2012/02/01	<2.3		ppbv	
			2-propanol	2012/02/01	<3.0		ppbv	
			2-Propanone	2012/02/01	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/02/01	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/02/01	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/02/01	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/02/01	<0.20		ppbv	
			Ethyl Acetate	2012/02/01	<2.2		ppbv	
			1,1-Dichloroethylene	2012/02/01	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/02/01	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/02/01	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/02/01	<0.80		ppbv	
			Chloroform	2012/02/01	<0.15		ppbv	
			Carbon Tetrachloride	2012/02/01	<0.30		ppbv	
			1,1-Dichloroethane	2012/02/01	<0.20		ppbv	
			1,2-Dichloroethane	2012/02/01	<0.20		ppbv	
			Ethylene Dibromide	2012/02/01	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/02/01	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/02/01	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/02/01	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/02/01	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/02/01	<0.17		ppbv	
			1,2-Dichloropropane	2012/02/01	<0.40		ppbv	
			Bromomethane	2012/02/01	<0.18		ppbv	
			Bromoform	2012/02/01	<0.20		ppbv	
			Bromodichloromethane	2012/02/01	<0.20		ppbv	
			Dibromochloromethane	2012/02/01	<0.20		ppbv	
			Heptane	2012/02/01	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB210494

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2753443	MM2	Method Blank	Trichloroethylene	2012/02/01	<0.30		ppbv	
			Tetrachloroethylene	2012/02/01	<0.20		ppbv	
			Benzene	2012/02/01	<0.18		ppbv	
			Toluene	2012/02/01	<0.20		ppbv	
			Ethylbenzene	2012/02/01	<0.20		ppbv	
			p+m-Xylene	2012/02/01	<0.37		ppbv	
			o-Xylene	2012/02/01	<0.20		ppbv	
			Styrene	2012/02/01	<0.20		ppbv	
			1,3,5-Trimethylbenzene	2012/02/01	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/02/01	<0.50		ppbv	
			4-ethyltoluene	2012/02/01	<2.2		ppbv	
			Chlorobenzene	2012/02/01	<0.20		ppbv	
			Benzyl chloride	2012/02/01	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/02/01	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/02/01	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/02/01	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/02/01	<2.0		ppbv	
			Hexachlorobutadiene	2012/02/01	<3.0		ppbv	
			Hexane	2012/02/01	<0.30		ppbv	
			Cyclohexane	2012/02/01	<0.20		ppbv	
			Tetrahydrofuran	2012/02/01	<0.40		ppbv	
			1,4-Dioxane	2012/02/01	<2.0		ppbv	
			Xylene (Total)	2012/02/01	<0.60		ppbv	
		RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2012/02/01	1.3		%	25
			Carbon Disulfide	2012/02/01	1		%	25
			Propene	2012/02/01	NC		%	25
			Vinyl Acetate	2012/02/01	NC		%	25
			Vinyl Bromide	2012/02/01	NC		%	25
			Dichlorodifluoromethane (FREON 12)	2012/02/01	NC		%	25
			1,2-Dichlorotetrafluoroethane	2012/02/01	NC		%	25
			Chloromethane	2012/02/01	4.5		%	25
			Vinyl Chloride	2012/02/01	NC		%	25
			Chloroethane	2012/02/01	NC		%	25
			1,3-Butadiene	2012/02/01	NC		%	25
			Trichlorofluoromethane (FREON 11)	2012/02/01	NC		%	25
			Trichlorotrifluoroethane	2012/02/01	NC		%	25
			Ethanol (ethyl alcohol)	2012/02/01	NC		%	25
			2-propanol	2012/02/01	NC		%	25
			2-Propanone	2012/02/01	3.4		%	25
			Methyl Ethyl Ketone (2-Butanone)	2012/02/01	NC		%	25
			Methyl Isobutyl Ketone	2012/02/01	NC		%	25
			Methyl Butyl Ketone (2-Hexanone)	2012/02/01	NC		%	25
			Methyl t-butyl ether (MTBE)	2012/02/01	NC		%	25
			Ethyl Acetate	2012/02/01	NC		%	25
			1,1-Dichloroethylene	2012/02/01	NC		%	25
			cis-1,2-Dichloroethylene	2012/02/01	NC		%	25
			trans-1,2-Dichloroethylene	2012/02/01	NC		%	25
			Methylene Chloride(Dichloromethane)	2012/02/01	NC		%	25
			Chloroform	2012/02/01	NC		%	25
			Carbon Tetrachloride	2012/02/01	NC		%	25
			1,1-Dichloroethane	2012/02/01	NC		%	25
			1,2-Dichloroethane	2012/02/01	NC		%	25
			Ethylene Dibromide	2012/02/01	NC		%	25

Maxxam Analytics
Attention: Michael Bisaga
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P.O. #:
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Quality Assurance Report (Continued)

Maxxam Job Number: GB210494

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2753443	MM2	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2012/02/01	NC		%	25
			1,1,2-Trichloroethane	2012/02/01	NC		%	25
			1,1,2,2-Tetrachloroethane	2012/02/01	NC		%	25
			cis-1,3-Dichloropropene	2012/02/01	NC		%	25
			trans-1,3-Dichloropropene	2012/02/01	NC		%	25
			1,2-Dichloropropane	2012/02/01	NC		%	25
			Bromomethane	2012/02/01	NC		%	25
			Bromoform	2012/02/01	NC		%	25
			Bromodichloromethane	2012/02/01	NC		%	25
			Dibromochloromethane	2012/02/01	NC		%	25
			Heptane	2012/02/01	1.4		%	25
			Trichloroethylene	2012/02/01	NC		%	25
			Tetrachloroethylene	2012/02/01	NC		%	25
			Benzene	2012/02/01	0.06		%	25
			Toluene	2012/02/01	2.2		%	25
			Ethylbenzene	2012/02/01	NC		%	25
			p+m-Xylene	2012/02/01	2.4		%	25
			o-Xylene	2012/02/01	NC		%	25
			Styrene	2012/02/01	NC		%	25
			1,3,5-Trimethylbenzene	2012/02/01	NC		%	25
			1,2,4-Trimethylbenzene	2012/02/01	NC		%	25
			4-ethyltoluene	2012/02/01	NC		%	25
			Chlorobenzene	2012/02/01	NC		%	25
			Benzyl chloride	2012/02/01	NC		%	25
			1,3-Dichlorobenzene	2012/02/01	NC		%	25
			1,4-Dichlorobenzene	2012/02/01	NC		%	25
			1,2-Dichlorobenzene	2012/02/01	NC		%	25
			1,2,4-Trichlorobenzene	2012/02/01	NC		%	25
			Hexachlorobutadiene	2012/02/01	NC		%	25
			Hexane	2012/02/01	3.0		%	25
			Cyclohexane	2012/02/01	NC		%	25
			Tetrahydrofuran	2012/02/01	NC		%	25
			1,4-Dioxane	2012/02/01	NC		%	25
			Xylene (Total)	2012/02/01	3.4		%	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.

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MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Cold Lake South
Station ID: Lica 1
Field Sample ID: LICA VOC/ CLS /Jan 22, 2012

Sampler s/n: 6167
Canister ID: 7842
Canister Installation Date/Time: Jan 18, 2012 @ 11:20 mst
Canister Removal Date/Time: Jan 25, 2012 @ 16:15

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
22-Jan-12	01/22/2012 0:00	01/23/2012 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	646	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 # 08701

Technician Signiture: Ting Xu

JOB #: 2833-12-01-01-C

Maxxam

Success Through Science®

Your C.O.C. #: 08701

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

Report Date: 2012/02/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B213399
Received: 2012/01/28, 10:43

Sample Matrix: AIR
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	1	N/A	2012/02/01	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	1	N/A	2012/02/01	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.

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B213399
Report Date: 2012/02/05

RESULTS OF ANALYSES OF AIR

Maxxam ID		MJ4701	
Sampling Date		2012/01/22	
COC Number		08701	
	Units	**LICA VOC/CLS/JAN22/12 - 7842**	**QC Batch**
Volatile Organics			
Pressure on Receipt	psig	22	2753444

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B213399
Report Date: 2012/02/05

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		MJ4701				
Sampling Date		2012/01/22				
COC Number		08701				
	Units	**LICA VOC/CLS/JAN22/12 - 7842**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	0.36	0.20	1.68	0.934	2753443
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2753443
Propene	ppbv	<0.30	0.30	<0.516	0.516	2753443
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2753443
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2753443
Dichlorodifluoromethane (FREON 12)	ppbv	0.84	0.20	4.18	0.989	2753443
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2753443
Chloromethane	ppbv	0.61	0.30	1.25	0.620	2753443
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2753443
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2753443
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2753443
Trichlorofluoromethane (FREON 11)	ppbv	0.36	0.20	2.01	1.12	2753443
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2753443
Ethanol (ethyl alcohol)	ppbv	2.4	2.3	4.45	4.33	2753443
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2753443
2-Propanone	ppbv	<0.80	0.80	<1.90	1.90	2753443
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2753443
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2753443
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2753443
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2753443
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2753443
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2753443
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2753443
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2753443
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2753443
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2753443
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2753443
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2753443
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2753443
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2753443
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2753443

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		MJ4701				
Sampling Date		2012/01/22				
COC Number		08701				
	Units	**LICA VOC/CLS/JAN22/12 - 7842**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2753443
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2753443
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2753443
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2753443
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2753443
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2753443
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2753443
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2753443
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2753443
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2753443
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2753443
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2753443
Benzene	ppbv	0.44	0.18	1.39	0.575	2753443
Toluene	ppbv	0.66	0.20	2.47	0.753	2753443
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2753443
p+m-Xylene	ppbv	0.41	0.37	1.77	1.61	2753443
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2753443
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2753443
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2753443
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2753443
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2753443
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2753443
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2753443
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2753443
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2753443
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2753443
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2753443
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2753443
Hexane	ppbv	0.46	0.30	1.64	1.06	2753443
Cyclohexane	ppbv	0.24	0.20	0.841	0.688	2753443
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2753443
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2753443
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2753443

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B213399
Report Date: 2012/02/05

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		MJ4701				
Sampling Date		2012/01/22				
COC Number		08701				
	Units	**LICA VOC/CLS/JAN22/12 - 7842**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	73		N/A	N/A	2753443
D5-Chlorobenzene	%	73		N/A	N/A	2753443
Difluorobenzene	%	77		N/A	N/A	2753443

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

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Maxxam Analytics

Maxxam Job #: B213399
Report Date: 2012/02/05

Test Summary

Maxxam ID MJ4701
Sample ID LICA VOC/CLS/JAN22/12 - 7842
Matrix AIR

Collected 2012/01/22
Shipped
Received 2012/01/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2753444	N/A	2012/02/01	MELANIE MABINI
Volatile Organics in Air (TO-15)	GC/MS	2753443	N/A	2012/02/01	MELANIE MABINI

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Maxxam Analytics

Maxxam Job #: B213399
Report Date: 2012/02/05

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB213399

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2753443	MM2	Spiked Blank	Bromochloromethane	2012/02/01		95	%	60 - 140
			D5-Chlorobenzene	2012/02/01		99	%	60 - 140
			Difluorobenzene	2012/02/01		98	%	60 - 140
			2,2,4-Trimethylpentane	2012/02/01		107	%	70 - 130
			Carbon Disulfide	2012/02/01		93	%	70 - 130
			Propene	2012/02/01		101	%	70 - 130
			Vinyl Acetate	2012/02/01		116	%	70 - 130
			Vinyl Bromide	2012/02/01		102	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2012/02/01		110	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/02/01		119	%	70 - 130
			Chloromethane	2012/02/01		109	%	70 - 130
			Vinyl Chloride	2012/02/01		104	%	70 - 130
			Chloroethane	2012/02/01		105	%	70 - 130
			1,3-Butadiene	2012/02/01		104	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/02/01		106	%	70 - 130
			Trichlorotrifluoroethane	2012/02/01		106	%	70 - 130
			Ethanol (ethyl alcohol)	2012/02/01		90	%	70 - 130
			2-propanol	2012/02/01		102	%	70 - 130
			2-Propanone	2012/02/01		104	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/02/01		96	%	70 - 130
			Methyl Isobutyl Ketone	2012/02/01		107	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/02/01		109	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/02/01		108	%	70 - 130
			Ethyl Acetate	2012/02/01		114	%	70 - 130
			1,1-Dichloroethylene	2012/02/01		109	%	70 - 130
			cis-1,2-Dichloroethylene	2012/02/01		111	%	70 - 130
			trans-1,2-Dichloroethylene	2012/02/01		109	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/02/01		102	%	70 - 130
			Chloroform	2012/02/01		107	%	70 - 130
			Carbon Tetrachloride	2012/02/01		113	%	70 - 130
			1,1-Dichloroethane	2012/02/01		109	%	70 - 130
			1,2-Dichloroethane	2012/02/01		111	%	70 - 130
			Ethylene Dibromide	2012/02/01		108	%	70 - 130
			1,1,1-Trichloroethane	2012/02/01		109	%	70 - 130
			1,1,2-Trichloroethane	2012/02/01		109	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/02/01		106	%	70 - 130
			cis-1,3-Dichloropropene	2012/02/01		113	%	70 - 130
			trans-1,3-Dichloropropene	2012/02/01		118	%	70 - 130
			1,2-Dichloropropane	2012/02/01		110	%	70 - 130
			Bromomethane	2012/02/01		102	%	70 - 130
			Bromoform	2012/02/01		114	%	70 - 130
			Bromodichloromethane	2012/02/01		111	%	70 - 130
			Dibromochloromethane	2012/02/01		113	%	70 - 130
			Heptane	2012/02/01		115	%	70 - 130
			Trichloroethylene	2012/02/01		104	%	70 - 130
			Tetrachloroethylene	2012/02/01		105	%	70 - 130
			Benzene	2012/02/01		107	%	70 - 130
			Toluene	2012/02/01		109	%	70 - 130
			Ethylbenzene	2012/02/01		107	%	70 - 130
			p+m-Xylene	2012/02/01		104	%	70 - 130
			o-Xylene	2012/02/01		107	%	70 - 130
			Styrene	2012/02/01		99	%	70 - 130
			1,3,5-Trimethylbenzene	2012/02/01		105	%	70 - 130
			1,2,4-Trimethylbenzene	2012/02/01		104	%	70 - 130
			4-ethyltoluene	2012/02/01		112	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB213399

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2753443	MM2	Spiked Blank	Chlorobenzene	2012/02/01		102	%	70 - 130
			Benzyl chloride	2012/02/01		114	%	70 - 130
			1,3-Dichlorobenzene	2012/02/01		101	%	70 - 130
			1,4-Dichlorobenzene	2012/02/01		101	%	70 - 130
			1,2-Dichlorobenzene	2012/02/01		99	%	70 - 130
			1,2,4-Trichlorobenzene	2012/02/01		70	%	70 - 130
			Hexachlorobutadiene	2012/02/01		87	%	70 - 130
			Hexane	2012/02/01		107	%	70 - 130
			Cyclohexane	2012/02/01		110	%	70 - 130
			Tetrahydrofuran	2012/02/01		112	%	70 - 130
			1,4-Dioxane	2012/02/01		99	%	70 - 130
		Method Blank	Bromochloromethane	2012/02/01		81	%	60 - 140
			D5-Chlorobenzene	2012/02/01		80	%	60 - 140
			Difluorobenzene	2012/02/01		84	%	60 - 140
			2,2,4-Trimethylpentane	2012/02/01	<0.20		ppbv	
			Carbon Disulfide	2012/02/01	<0.50		ppbv	
			Propene	2012/02/01	<0.30		ppbv	
			Vinyl Acetate	2012/02/01	<0.20		ppbv	
			Vinyl Bromide	2012/02/01	<0.20		ppbv	
			Dichlorodifluoromethane (FREON 12)	2012/02/01	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/02/01	<0.17		ppbv	
			Chloromethane	2012/02/01	<0.30		ppbv	
			Vinyl Chloride	2012/02/01	<0.18		ppbv	
			Chloroethane	2012/02/01	<0.30		ppbv	
			1,3-Butadiene	2012/02/01	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/02/01	<0.20		ppbv	
			Trichlorotrifluoroethane	2012/02/01	<0.15		ppbv	
			Ethanol (ethyl alcohol)	2012/02/01	<2.3		ppbv	
			2-propanol	2012/02/01	<3.0		ppbv	
			2-Propanone	2012/02/01	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/02/01	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/02/01	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/02/01	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/02/01	<0.20		ppbv	
			Ethyl Acetate	2012/02/01	<2.2		ppbv	
			1,1-Dichloroethylene	2012/02/01	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/02/01	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/02/01	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/02/01	<0.80		ppbv	
			Chloroform	2012/02/01	<0.15		ppbv	
			Carbon Tetrachloride	2012/02/01	<0.30		ppbv	
			1,1-Dichloroethane	2012/02/01	<0.20		ppbv	
			1,2-Dichloroethane	2012/02/01	<0.20		ppbv	
			Ethylene Dibromide	2012/02/01	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/02/01	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/02/01	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/02/01	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/02/01	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/02/01	<0.17		ppbv	
			1,2-Dichloropropane	2012/02/01	<0.40		ppbv	
			Bromomethane	2012/02/01	<0.18		ppbv	
			Bromoform	2012/02/01	<0.20		ppbv	
			Bromodichloromethane	2012/02/01	<0.20		ppbv	
			Dibromochloromethane	2012/02/01	<0.20		ppbv	
			Heptane	2012/02/01	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB213399

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2753443	MM2	Method Blank	Trichloroethylene	2012/02/01	<0.30		ppbv	
			Tetrachloroethylene	2012/02/01	<0.20		ppbv	
			Benzene	2012/02/01	<0.18		ppbv	
			Toluene	2012/02/01	<0.20		ppbv	
			Ethylbenzene	2012/02/01	<0.20		ppbv	
			p+m-Xylene	2012/02/01	<0.37		ppbv	
			o-Xylene	2012/02/01	<0.20		ppbv	
			Styrene	2012/02/01	<0.20		ppbv	
			1,3,5-Trimethylbenzene	2012/02/01	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/02/01	<0.50		ppbv	
			4-ethyltoluene	2012/02/01	<2.2		ppbv	
			Chlorobenzene	2012/02/01	<0.20		ppbv	
			Benzyl chloride	2012/02/01	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/02/01	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/02/01	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/02/01	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/02/01	<2.0		ppbv	
			Hexachlorobutadiene	2012/02/01	<3.0		ppbv	
			Hexane	2012/02/01	<0.30		ppbv	
			Cyclohexane	2012/02/01	<0.20		ppbv	
			Tetrahydrofuran	2012/02/01	<0.40		ppbv	
			1,4-Dioxane	2012/02/01	<2.0		ppbv	
			Xylene (Total)	2012/02/01	<0.60		ppbv	
		RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2012/02/01	1.3		%	25
			Carbon Disulfide	2012/02/01	1		%	25
			Propene	2012/02/01	NC		%	25
			Vinyl Acetate	2012/02/01	NC		%	25
			Vinyl Bromide	2012/02/01	NC		%	25
			Dichlorodifluoromethane (FREON 12)	2012/02/01	NC		%	25
			1,2-Dichlorotetrafluoroethane	2012/02/01	NC		%	25
			Chloromethane	2012/02/01	4.5		%	25
			Vinyl Chloride	2012/02/01	NC		%	25
			Chloroethane	2012/02/01	NC		%	25
			1,3-Butadiene	2012/02/01	NC		%	25
			Trichlorofluoromethane (FREON 11)	2012/02/01	NC		%	25
			Trichlorotrifluoroethane	2012/02/01	NC		%	25
			Ethanol (ethyl alcohol)	2012/02/01	NC		%	25
			2-propanol	2012/02/01	NC		%	25
			2-Propanone	2012/02/01	3.4		%	25
			Methyl Ethyl Ketone (2-Butanone)	2012/02/01	NC		%	25
			Methyl Isobutyl Ketone	2012/02/01	NC		%	25
			Methyl Butyl Ketone (2-Hexanone)	2012/02/01	NC		%	25
			Methyl t-butyl ether (MTBE)	2012/02/01	NC		%	25
			Ethyl Acetate	2012/02/01	NC		%	25
			1,1-Dichloroethylene	2012/02/01	NC		%	25
			cis-1,2-Dichloroethylene	2012/02/01	NC		%	25
			trans-1,2-Dichloroethylene	2012/02/01	NC		%	25
			Methylene Chloride(Dichloromethane)	2012/02/01	NC		%	25
			Chloroform	2012/02/01	NC		%	25
			Carbon Tetrachloride	2012/02/01	NC		%	25
			1,1-Dichloroethane	2012/02/01	NC		%	25
			1,2-Dichloroethane	2012/02/01	NC		%	25
			Ethylene Dibromide	2012/02/01	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB213399

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2753443	MM2	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2012/02/01	NC		%	25
			1,1,2-Trichloroethane	2012/02/01	NC		%	25
			1,1,2,2-Tetrachloroethane	2012/02/01	NC		%	25
			cis-1,3-Dichloropropene	2012/02/01	NC		%	25
			trans-1,3-Dichloropropene	2012/02/01	NC		%	25
			1,2-Dichloropropane	2012/02/01	NC		%	25
			Bromomethane	2012/02/01	NC		%	25
			Bromoform	2012/02/01	NC		%	25
			Bromodichloromethane	2012/02/01	NC		%	25
			Dibromochloromethane	2012/02/01	NC		%	25
			Heptane	2012/02/01	1.4		%	25
			Trichloroethylene	2012/02/01	NC		%	25
			Tetrachloroethylene	2012/02/01	NC		%	25
			Benzene	2012/02/01	0.06		%	25
			Toluene	2012/02/01	2.2		%	25
			Ethylbenzene	2012/02/01	NC		%	25
			p+m-Xylene	2012/02/01	2.4		%	25
			o-Xylene	2012/02/01	NC		%	25
			Styrene	2012/02/01	NC		%	25
			1,3,5-Trimethylbenzene	2012/02/01	NC		%	25
			1,2,4-Trimethylbenzene	2012/02/01	NC		%	25
			4-ethyltoluene	2012/02/01	NC		%	25
			Chlorobenzene	2012/02/01	NC		%	25
			Benzyl chloride	2012/02/01	NC		%	25
			1,3-Dichlorobenzene	2012/02/01	NC		%	25
			1,4-Dichlorobenzene	2012/02/01	NC		%	25
			1,2-Dichlorobenzene	2012/02/01	NC		%	25
			1,2,4-Trichlorobenzene	2012/02/01	NC		%	25
			Hexachlorobutadiene	2012/02/01	NC		%	25
			Hexane	2012/02/01	3.0		%	25
			Cyclohexane	2012/02/01	NC		%	25
			Tetrahydrofuran	2012/02/01	NC		%	25
			1,4-Dioxane	2012/02/01	NC		%	25
			Xylene (Total)	2012/02/01	3.4		%	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.

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MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Cold Lake South
Station ID: Lica 1
Field Sample ID: LICA VOC/ CLS /Jan 28, 2012

Sampler s/n: 6167
Canister ID: S2213
Canister Installation Date/Time: Jan 25, 2012 @ 15:10 mst
Canister Removal Date/Time: Feb 1, 2012 @ 14:30 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
28-Jan-12	01/28/2012 0:00	01/29/2012 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	646	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 # 08762

Technician Signiture: Theo McLaren

Maxxam

Success Through Science®

Your C.O.C. #: 08762

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

Report Date: 2012/02/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B217077
Received: 2012/02/04, 09:35

Sample Matrix: AIR
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	1	N/A	2012/02/07	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	1	N/A	2012/02/07	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.

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B217077
Report Date: 2012/02/10

RESULTS OF ANALYSES OF AIR

Maxxam ID		ML2911	
Sampling Date		2012/01/28	
COC Number		08762	
	Units	**LICA VOC/CLS/JAN 28,12 - S2213**	**QC Batch**
Volatile Organics			
Pressure on Receipt	psig	23	2758537

QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		ML2911				
Sampling Date		2012/01/28				
COC Number		08762				
	Units	**LICA VOC/CLS/JAN 28,12 - S2213**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2758596
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2758596
Propene	ppbv	<0.30	0.30	<0.516	0.516	2758596
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2758596
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2758596
Dichlorodifluoromethane (FREON 12)	ppbv	0.81	0.20	3.98	0.989	2758596
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2758596
Chloromethane	ppbv	0.67	0.30	1.38	0.620	2758596
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2758596
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2758596
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2758596
Trichlorofluoromethane (FREON 11)	ppbv	0.35	0.20	1.96	1.12	2758596
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2758596
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2758596
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2758596
2-Propanone	ppbv	1.37	0.80	3.25	1.90	2758596
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2758596
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2758596
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2758596
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2758596
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2758596
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2758596
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2758596
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2758596
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2758596
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2758596
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2758596
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2758596
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2758596
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2758596
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2758596

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B217077
Report Date: 2012/02/10

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		ML2911				
Sampling Date		2012/01/28				
COC Number		08762				
	Units	**LICA VOC/CLS/JAN 28,12 - S2213**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2758596
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2758596
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2758596
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2758596
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2758596
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2758596
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2758596
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2758596
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2758596
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2758596
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2758596
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2758596
Benzene	ppbv	0.28	0.18	0.900	0.575	2758596
Toluene	ppbv	0.42	0.20	1.56	0.753	2758596
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2758596
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2758596
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2758596
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2758596
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2758596
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2758596
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2758596
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2758596
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2758596
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2758596
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2758596
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2758596
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2758596
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2758596
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2758596
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2758596
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2758596
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2758596
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2758596

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B217077
Report Date: 2012/02/10

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		ML2911				
Sampling Date		2012/01/28				
COC Number		08762				
	Units	**LICA VOC/CLS/JAN 28,12 - S2213**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	88		N/A	N/A	2758596
D5-Chlorobenzene	%	99		N/A	N/A	2758596
Difluorobenzene	%	91		N/A	N/A	2758596

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

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Maxxam Analytics

Maxxam Job #: B217077
Report Date: 2012/02/10

Test Summary

Maxxam ID ML2911
Sample ID LICA VOC/CLS/JAN 28,12 - S2213
Matrix AIR

Collected 2012/01/28
Shipped
Received 2012/02/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2758537	N/A	2012/02/07	YAO LIANG SUN
Volatile Organics in Air (TO-15)	GC/MS	2758596	N/A	2012/02/07	YAO LIANG SUN

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Maxxam Analytics

Maxxam Job #: B217077
Report Date: 2012/02/10

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB217077

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2758596	LSY	Spiked Blank	Bromochloromethane	2012/02/07		107	%	60 - 140
			D5-Chlorobenzene	2012/02/07		108	%	60 - 140
			Difluorobenzene	2012/02/07		109	%	60 - 140
			2,2,4-Trimethylpentane	2012/02/07		102	%	70 - 130
			Carbon Disulfide	2012/02/07		99	%	70 - 130
			Propene	2012/02/07		91	%	70 - 130
			Vinyl Acetate	2012/02/07		108	%	70 - 130
			Vinyl Bromide	2012/02/07		101	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2012/02/07		107	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/02/07		120	%	70 - 130
			Chloromethane	2012/02/07		108	%	70 - 130
			Vinyl Chloride	2012/02/07		99	%	70 - 130
			Chloroethane	2012/02/07		99	%	70 - 130
			1,3-Butadiene	2012/02/07		84	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/02/07		104	%	70 - 130
			Trichlorotrifluoroethane	2012/02/07		103	%	70 - 130
			Ethanol (ethyl alcohol)	2012/02/07		85	%	70 - 130
			2-propanol	2012/02/07		97	%	70 - 130
			2-Propanone	2012/02/07		106	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/02/07		100	%	70 - 130
			Methyl Isobutyl Ketone	2012/02/07		107	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/02/07		113	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/02/07		103	%	70 - 130
			Ethyl Acetate	2012/02/07		107	%	70 - 130
			1,1-Dichloroethylene	2012/02/07		103	%	70 - 130
			cis-1,2-Dichloroethylene	2012/02/07		102	%	70 - 130
			trans-1,2-Dichloroethylene	2012/02/07		101	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/02/07		96	%	70 - 130
			Chloroform	2012/02/07		103	%	70 - 130
			Carbon Tetrachloride	2012/02/07		111	%	70 - 130
			1,1-Dichloroethane	2012/02/07		105	%	70 - 130
			1,2-Dichloroethane	2012/02/07		107	%	70 - 130
			Ethylene Dibromide	2012/02/07		102	%	70 - 130
			1,1,1-Trichloroethane	2012/02/07		107	%	70 - 130
			1,1,2-Trichloroethane	2012/02/07		102	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/02/07		100	%	70 - 130
			cis-1,3-Dichloropropene	2012/02/07		106	%	70 - 130
			trans-1,3-Dichloropropene	2012/02/07		107	%	70 - 130
			1,2-Dichloropropane	2012/02/07		99	%	70 - 130
			Bromomethane	2012/02/07		100	%	70 - 130
			Bromoform	2012/02/07		121	%	70 - 130
			Bromodichloromethane	2012/02/07		114	%	70 - 130
			Dibromochloromethane	2012/02/07		115	%	70 - 130
			Heptane	2012/02/07		105	%	70 - 130
			Trichloroethylene	2012/02/07		99	%	70 - 130
			Tetrachloroethylene	2012/02/07		100	%	70 - 130
			Benzene	2012/02/07		102	%	70 - 130
			Toluene	2012/02/07		102	%	70 - 130
			Ethylbenzene	2012/02/07		106	%	70 - 130
			p+m-Xylene	2012/02/07		105	%	70 - 130
			o-Xylene	2012/02/07		106	%	70 - 130
			Styrene	2012/02/07		88	%	70 - 130
			1,3,5-Trimethylbenzene	2012/02/07		91	%	70 - 130
			1,2,4-Trimethylbenzene	2012/02/07		84	%	70 - 130
			4-ethyltoluene	2012/02/07		95	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB217077

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2758596	LSY	Spiked Blank	Chlorobenzene	2012/02/07		105	%	70 - 130
			Benzyl chloride	2012/02/07		89	%	70 - 130
			1,3-Dichlorobenzene	2012/02/07		86	%	70 - 130
			1,4-Dichlorobenzene	2012/02/07		87	%	70 - 130
			1,2-Dichlorobenzene	2012/02/07		82	%	70 - 130
			1,2,4-Trichlorobenzene	2012/02/07		100	%	70 - 130
			Hexachlorobutadiene	2012/02/07		108	%	70 - 130
			Hexane	2012/02/07		105	%	70 - 130
			Cyclohexane	2012/02/07		99	%	70 - 130
			Tetrahydrofuran	2012/02/07		100	%	70 - 130
			1,4-Dioxane	2012/02/07		97	%	70 - 130
			Xylene (Total)	2012/02/07		105	%	70 - 130
		Method Blank	Bromochloromethane	2012/02/07		100	%	60 - 140
			D5-Chlorobenzene	2012/02/07		113	%	60 - 140
			Difluorobenzene	2012/02/07		104	%	60 - 140
			2,2,4-Trimethylpentane	2012/02/07	<0.20		ppbv	
			Carbon Disulfide	2012/02/07	<0.50		ppbv	
			Propene	2012/02/07	<0.30		ppbv	
			Vinyl Acetate	2012/02/07	<0.20		ppbv	
			Vinyl Bromide	2012/02/07	<0.20		ppbv	
			Dichlorodifluoromethane (FREON 12)	2012/02/07	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/02/07	<0.17		ppbv	
			Chloromethane	2012/02/07	<0.30		ppbv	
			Vinyl Chloride	2012/02/07	<0.18		ppbv	
			Chloroethane	2012/02/07	<0.30		ppbv	
			1,3-Butadiene	2012/02/07	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/02/07	<0.20		ppbv	
			Trichlorotrifluoroethane	2012/02/07	<0.15		ppbv	
			Ethanol (ethyl alcohol)	2012/02/07	<2.3		ppbv	
			2-propanol	2012/02/07	<3.0		ppbv	
			2-Propanone	2012/02/07	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/02/07	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/02/07	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/02/07	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/02/07	<0.20		ppbv	
			Ethyl Acetate	2012/02/07	<2.2		ppbv	
			1,1-Dichloroethylene	2012/02/07	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/02/07	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/02/07	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/02/07	1.37, RDL=0.80		ppbv	
			Chloroform	2012/02/07	<0.15		ppbv	
			Carbon Tetrachloride	2012/02/07	<0.30		ppbv	
			1,1-Dichloroethane	2012/02/07	<0.20		ppbv	
			1,2-Dichloroethane	2012/02/07	<0.20		ppbv	
			Ethylene Dibromide	2012/02/07	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/02/07	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/02/07	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/02/07	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/02/07	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/02/07	<0.17		ppbv	
			1,2-Dichloropropane	2012/02/07	<0.40		ppbv	
			Bromomethane	2012/02/07	<0.18		ppbv	
			Bromoform	2012/02/07	<0.20		ppbv	
			Bromodichloromethane	2012/02/07	<0.20		ppbv	
			Dibromochloromethane	2012/02/07	<0.20		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB217077

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2758596	LSY	Method Blank	Heptane	2012/02/07	<0.30		ppbv	
			Trichloroethylene	2012/02/07	<0.30		ppbv	
			Tetrachloroethylene	2012/02/07	<0.20		ppbv	
			Benzene	2012/02/07	<0.18		ppbv	
			Toluene	2012/02/07	<0.20		ppbv	
			Ethylbenzene	2012/02/07	<0.20		ppbv	
			p+m-Xylene	2012/02/07	<0.37		ppbv	
			o-Xylene	2012/02/07	<0.20		ppbv	
			Styrene	2012/02/07	<0.20		ppbv	
			1,3,5-Trimethylbenzene	2012/02/07	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/02/07	<0.50		ppbv	
			4-ethyltoluene	2012/02/07	<2.2		ppbv	
			Chlorobenzene	2012/02/07	<0.20		ppbv	
			Benzyl chloride	2012/02/07	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/02/07	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/02/07	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/02/07	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/02/07	<2.0		ppbv	
			Hexachlorobutadiene	2012/02/07	<3.0		ppbv	
			Hexane	2012/02/07	<0.30		ppbv	
			Cyclohexane	2012/02/07	<0.20		ppbv	
			Tetrahydrofuran	2012/02/07	<0.40		ppbv	
			1,4-Dioxane	2012/02/07	<2.0		ppbv	
			Xylene (Total)	2012/02/07	<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.

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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/Dec 29,11

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Dec 28, 2011 @ 08:54 mst
Removal Date/Time: Dec 30, 2011 @ 08:52 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
29-Dec-11	12/29/2011 0:00	12/30/2011 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
23-Dec-11	03-Jan-12	03-Jan-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
700	229	-4.1	330.38

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# 09168
GB1J2721 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Dec 29, 11

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 09168

Attention: Michael Bisaga
Lakeland Industry & Community Assoc.
P.O. Box 8237
Bonnyville, AB
CANADA T9N 2J5

Report Date: 2012/01/13

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B201227
Received: 2012/01/05, 09:08

Sample Matrix: PUF AND FILTER
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	1	2012/01/08	2012/01/12	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.

Total cover pages: 1

Lakeland Industry & Community Assoc.

Maxxam Job #: B201227
Report Date: 2012/01/13

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

Maxxam ID		MD5385		
Sampling Date		2011/12/29		
COC Number		09168		
	Units	**LICAPUFF+QFF/CLS/DEC29,11**	**RDL**	**QC Batch**
Semivolatile Organics				
1-Methylnaphthalene	ug	0.25	0.10	2731188
1-Methylphenanthrene	ug	<0.10	0.10	2731188
2-Chloronaphthalene	ug	<0.10	0.10	2731188
2-Methylanthracene	ug	<0.10	0.10	2731188
2-Methylnaphthalene	ug	0.43	0.10	2731188
3-Methylcholanthrene	ug	<2.0	2.0	2731188
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	0.10	2731188
9,10-Dimethylanthracene	ug	<0.40	0.40	2731188
Acenaphthene	ug	0.072	0.050	2731188
Acenaphthylene	ug	0.102	0.050	2731188
Anthracene	ug	<0.050	0.050	2731188
Benzo(a)anthracene	ug	<0.050	0.050	2731188
Benzo(a)fluorene	ug	<0.10	0.10	2731188
Benzo(a)pyrene	ug	<0.050	0.050	2731188
Benzo(b)fluoranthene	ug	<0.050	0.050	2731188
Benzo(b)fluorene	ug	<0.10	0.10	2731188
Benzo(e)pyrene	ug	<0.10	0.10	2731188
Benzo(g,h,i)perylene	ug	<0.050	0.050	2731188
Benzo(k)fluoranthene	ug	<0.050	0.050	2731188
Biphenyl	ug	0.50	0.10	2731188
Chrysene	ug	<0.050	0.050	2731188
Coronene	ug	<0.10	0.10	2731188
Dibenz(a,h)anthracene	ug	<0.050	0.050	2731188
Dibenzo(a,e)pyrene	ug	<0.20	0.20	2731188
Fluoranthene	ug	0.096	0.050	2731188
Fluorene	ug	0.234	0.050	2731188
Indeno(1,2,3-cd)pyrene	ug	<0.050	0.050	2731188
m-Terphenyl	ug	<0.10	0.10	2731188
Naphthalene	ug	0.458	0.072	2731188
o-Terphenyl	ug	<0.10	0.10	2731188
Perylene	ug	<0.10	0.10	2731188
Phenanthrene	ug	0.436	0.050	2731188

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Lakeland Industry & Community Assoc.

Maxxam Job #: B201227
Report Date: 2012/01/13

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

Maxxam ID		MD5385		
Sampling Date		2011/12/29		
COC Number		09168		
	Units	**LICAPUFF+QFF/CLS/DEC29,11**	**RDL**	**QC Batch**
p-Terphenyl	ug	<0.10	0.10	2731188
Pyrene	ug	0.070	0.050	2731188
Quinoline	ug	<0.40	0.40	2731188
Tetralin	ug	<0.10	0.10	2731188
Surrogate Recovery (%)				
D10-2-Methylnaphthalene	%	86		2731188
D10-Fluoranthene	%	102		2731188
D10-Fluorene (FS)	%	50		2731188
D10-Phenanthrene	%	96		2731188
D12-Benzo(a)anthracene	%	98		2731188
D12-Benzo(a)pyrene	%	92		2731188
D12-Benzo(b)fluoranthene	%	94		2731188
D12-Benzo(ghi)perylene	%	92		2731188
D12-Benzo(k)fluoranthene	%	92		2731188
D12-Chrysene	%	86		2731188
D12-Indeno(1,2,3-cd)pyrene	%	92		2731188
D12-Perylene	%	90		2731188
D14-Dibenzo(a,h)anthracene	%	90		2731188
D14-Terphenyl (FS)	%	97		2731188
D8-Acenaphthylene	%	90		2731188
D8-Naphthalene	%	86		2731188

QC Batch = Quality Control Batch

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Lakeland Industry & Community Assoc.

Maxxam Job #: B201227
Report Date: 2012/01/13

Test Summary

Maxxam ID	MD5385	**Collected**	2011/12/29
Sample ID	LICAPUFF+QFF/CLS/DEC29,11	**Shipped**	
Matrix	PUF AND FILTER	**Received**	2012/01/05

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2731188	2012/01/08	2012/01/12	JIE WU

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Lakeland Industry & Community Assoc.

Maxxam Job #: B201227
Report Date: 2012/01/13

GENERAL COMMENTS

PAHMS-F
9.10-Dimethylanthracene, 7,12-dimethylbenzo(a)anthracene are above 25% RSD in initial calibration. No positives found for these 2 compounds.

9.10-Dimethylanthracene, 7,12-dimethylbenzo(a)anthracene and 3-methylcholanthrene are above 25% RSD in continuing calibration.

Sample extracted past hold time.

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

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

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

Sample MD5385-01: Internal Std area response criteria was high. The vial was rerun with similar result. Original run reported.

Results relate only to the items tested.

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Lakeland Industry & Community Assoc.
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB201227

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2731188	JIW	Spiked Blank	D10-2-Methylnaphthalene	2012/01/12		90	%	50 - 150
			D10-Fluoranthene	2012/01/12		100	%	50 - 150
			D10-Phenanthrene	2012/01/12		96	%	50 - 150
			D12-Benzo(a)anthracene	2012/01/12		94	%	50 - 150
			D12-Benzo(a)pyrene	2012/01/12		94	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/01/12		100	%	50 - 150
			D12-Benzo(ghi)perylene	2012/01/12		90	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/01/12		98	%	50 - 150
			D12-Chrysene	2012/01/12		88	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/01/12		92	%	50 - 150
			D12-Perylene	2012/01/12		92	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/01/12		90	%	50 - 150
			D8-Acenaphthylene	2012/01/12		90	%	50 - 150
			D8-Naphthalene	2012/01/12		92	%	50 - 150
			Acenaphthene	2012/01/12		82	%	60 - 130
		RPD	Acenaphthene	2012/01/12	5.3		%	50
		Spiked Blank	Acenaphthylene	2012/01/12		85	%	60 - 130
		RPD	Acenaphthylene	2012/01/12	6.7		%	50
		Spiked Blank	Anthracene	2012/01/12		79	%	60 - 130
		RPD	Anthracene	2012/01/12	11.1		%	50
		Spiked Blank	Benzo(a)anthracene	2012/01/12		78	%	60 - 130
		RPD	Benzo(a)anthracene	2012/01/12	5.6		%	50
		Spiked Blank	Benzo(a)pyrene	2012/01/12		77	%	60 - 130
		RPD	Benzo(a)pyrene	2012/01/12	7.5		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/01/12		81	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/01/12	4.4		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/01/12		79	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/01/12	5.2		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/01/12		93	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/01/12	6.1		%	50
		Spiked Blank	Chrysene	2012/01/12		80	%	60 - 130
		RPD	Chrysene	2012/01/12	0.3		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/01/12		80	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/01/12	5.5		%	50
		Spiked Blank	Fluoranthene	2012/01/12		93	%	60 - 130
		RPD	Fluoranthene	2012/01/12	15.1		%	50
		Spiked Blank	Fluorene	2012/01/12		82	%	60 - 130
		RPD	Fluorene	2012/01/12	6.9		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/01/12		81	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/01/12	5.7		%	50
		Spiked Blank	Naphthalene	2012/01/12		88	%	60 - 130
		RPD	Naphthalene	2012/01/12	4.6		%	50
		Spiked Blank	Phenanthrene	2012/01/12		84	%	60 - 130
		RPD	Phenanthrene	2012/01/12	10.0		%	50
		Spiked Blank	Pyrene	2012/01/12		92	%	60 - 130
		RPD	Pyrene	2012/01/12	14.8		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/01/12		96	%	50 - 150
			D10-Fluoranthene	2012/01/12		82	%	50 - 150
			D10-Phenanthrene	2012/01/12		86	%	50 - 150
			D12-Benzo(a)anthracene	2012/01/12		84	%	50 - 150
			D12-Benzo(a)pyrene	2012/01/12		86	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/01/12		102	%	50 - 150
			D12-Benzo(ghi)perylene	2012/01/12		82	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/01/12		90	%	50 - 150
			D12-Chrysene	2012/01/12		92	%	50 - 150

Lakeland Industry & Community Assoc.
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB201227

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2731188	JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/01/12		80	%	50 - 150
			D12-Perylene	2012/01/12		86	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/01/12		80	%	50 - 150
			D8-Acenaphthylene	2012/01/12		88	%	50 - 150
			D8-Naphthalene	2012/01/12		98	%	50 - 150
			1-Methylnaphthalene	2012/01/12	<0.10		ug	
			1-Methylphenanthrene	2012/01/12	<0.10		ug	
			2-Chloronaphthalene	2012/01/12	<0.10		ug	
			2-Methylanthracene	2012/01/12	<0.10		ug	
			2-Methylnaphthalene	2012/01/12	<0.10		ug	
			3-Methylcholanthrene	2012/01/12	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/01/12	<0.10		ug	
			9,10-Dimethylanthracene	2012/01/12	<0.40		ug	
			Acenaphthene	2012/01/12	<0.050		ug	
			Acenaphthylene	2012/01/12	<0.050		ug	
			Anthracene	2012/01/12	<0.050		ug	
			Benzo(a)anthracene	2012/01/12	<0.050		ug	
			Benzo(a)fluorene	2012/01/12	<0.10		ug	
			Benzo(a)pyrene	2012/01/12	<0.050		ug	
			Benzo(b)fluoranthene	2012/01/12	<0.050		ug	
			Benzo(b)fluorene	2012/01/12	<0.10		ug	
			Benzo(e)pyrene	2012/01/12	<0.10		ug	
			Benzo(g,h,i)perylene	2012/01/12	<0.050		ug	
			Benzo(k)fluoranthene	2012/01/12	<0.050		ug	
			Biphenyl	2012/01/12	<0.10		ug	
			Chrysene	2012/01/12	<0.050		ug	
			Coronene	2012/01/12	<0.10		ug	
			Dibenz(a,h)anthracene	2012/01/12	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/01/12	<0.20		ug	
			Fluoranthene	2012/01/12	<0.050		ug	
			Fluorene	2012/01/12	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/01/12	<0.050		ug	
			m-Terphenyl	2012/01/12	<0.10		ug	
			Naphthalene	2012/01/12	<0.072		ug	
			o-Terphenyl	2012/01/12	<0.10		ug	
			Perylene	2012/01/12	<0.10		ug	
			Phenanthrene	2012/01/12	<0.050		ug	
			p-Terphenyl	2012/01/12	<0.10		ug	
			Pyrene	2012/01/12	<0.050		ug	
			Quinoline	2012/01/12	<0.40		ug	
			Tetralin	2012/01/12	<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/Jan 04, 2012

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Jan 03, 2011 @ 09:14 mst
Removal Date/Time: Jan 05, 2011 @ 11:45 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
04-Jan-12	01/04/2012 0:00	01/05/2012 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
30-Dec-11	05-Jan-12	10-Jan-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
706	229	-3.0	330.35

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

Comments: COC# 08577
GB1K1355 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jan 04, 2012

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 08577

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

Report Date: 2012/01/23

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B203958
Received: 2012/01/11, 10:42

Sample Matrix: PUF AND FILTER
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	1	2012/01/12	2012/01/19	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.

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B203958
Report Date: 2012/01/23

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

Maxxam ID		ME7770		
Sampling Date		2012/01/04		
COC Number		08577		
	Units	**LICAPUFF+QFF/CLS/JAN 04,12**	**RDL**	**QC Batch**
Semivolatile Organics				
1-Methylnaphthalene	ug	3.68	0.10	2735059
1-Methylphenanthrene	ug	<0.10	0.10	2735059
2-Chloronaphthalene	ug	<0.10	0.10	2735059
2-Methylanthracene	ug	<0.10	0.10	2735059
2-Methylnaphthalene	ug	7.61	0.10	2735059
3-Methylcholanthrene	ug	<2.0	2.0	2735059
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	0.10	2735059
9,10-Dimethylanthracene	ug	<0.40	0.40	2735059
Acenaphthene	ug	0.324	0.050	2735059
Acenaphthylene	ug	1.11	0.050	2735059
Anthracene	ug	0.076	0.050	2735059
Benzo(a)anthracene	ug	0.052	0.050	2735059
Benzo(a)fluorene	ug	<0.10	0.10	2735059
Benzo(a)pyrene	ug	<0.050	0.050	2735059
Benzo(b)fluoranthene	ug	0.116	0.050	2735059
Benzo(b)fluorene	ug	<0.10	0.10	2735059
Benzo(e)pyrene	ug	<0.10	0.10	2735059
Benzo(g,h,i)perylene	ug	0.100	0.050	2735059
Benzo(k)fluoranthene	ug	<0.050	0.050	2735059
Biphenyl	ug	1.04	0.10	2735059
Chrysene	ug	0.102	0.050	2735059
Coronene	ug	<0.10	0.10	2735059
Dibenz(a,h)anthracene	ug	<0.050	0.050	2735059
Dibenzo(a,e)pyrene	ug	<0.20	0.20	2735059
Fluoranthene	ug	0.172	0.050	2735059
Fluorene	ug	0.722	0.050	2735059
Indeno(1,2,3-cd)pyrene	ug	0.060	0.050	2735059
m-Terphenyl	ug	<0.10	0.10	2735059
Naphthalene	ug	5.77	0.072	2735059
o-Terphenyl	ug	<0.10	0.10	2735059
Perylene	ug	<0.10	0.10	2735059
Phenanthrene	ug	0.774	0.050	2735059

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

Maxxam ID		ME7770		
Sampling Date		2012/01/04		
COC Number		08577		
	Units	**LICAPUFF+QFF/CLS/JAN 04,12**	**RDL**	**QC Batch**
p-Terphenyl	ug	<0.10	0.10	2735059
Pyrene	ug	0.160	0.050	2735059
Quinoline	ug	<0.40	0.40	2735059
Tetralin	ug	<0.10	0.10	2735059
Surrogate Recovery (%)				
D10-2-Methylnaphthalene	%	84		2735059
D10-Fluoranthene	%	82		2735059
D10-Fluorene (FS)	%	34 (1)		2735059
D10-Phenanthrene	%	84		2735059
D12-Benzo(a)anthracene	%	86		2735059
D12-Benzo(a)pyrene	%	84		2735059
D12-Benzo(b)fluoranthene	%	90		2735059
D12-Benzo(ghi)perylene	%	88		2735059
D12-Benzo(k)fluoranthene	%	92		2735059
D12-Chrysene	%	96		2735059
D12-Indeno(1,2,3-cd)pyrene	%	86		2735059
D12-Perylene	%	94		2735059
D14-Dibenzo(a,h)anthracene	%	78		2735059
D14-Terphenyl (FS)	%	77		2735059
D8-Acenaphthylene	%	88		2735059
D8-Naphthalene	%	88		2735059

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.

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Maxxam Analytics

Maxxam Job #: B203958
Report Date: 2012/01/23

Test Summary

Maxxam ID ME7770
Sample ID LICAPUFF+QFF/CLS/JAN 04,12
Matrix PUF AND FILTER

Collected 2012/01/04
Shipped
Received 2012/01/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2735059	2012/01/12	2012/01/19	WENDY ZHAO

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

GENERAL COMMENTS

PAHMS-F
9.10-Dimethylanthracene and 7,12-Dimethylbenzo(a)anthracene and 3-Methylcholanthrene are above 25% RSD in initial calibration. No positives found for these compounds.

Sample ME7770-01: PAHMS-F

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

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 it would have a value below the estimated mdl.
Since Triphenylene co-elutes with Chrysene, the maximum possible value for this compound would be 0.102ug, which is the value reported for Chrysene.
Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chysene. Searched for ions specific to this compound in the appropriate retention time range with no possible positive detected.
Picene elutes after Dibenzo(a,h) anthracene. Searched for ions specific to this compounds in the appropriate retention time range, possible positive detected, but would fall below the mdl using Dibenzo(a,h) anthracene calibration.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

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

Quality Assurance Report

Maxxam Job Number: GB203958

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2735059	WZ	Spiked Blank	D10-2-Methylnaphthalene	2012/01/19		84	%	50 - 150
			D10-Fluoranthene	2012/01/19		80	%	50 - 150
			D10-Phenanthrene	2012/01/19		76	%	50 - 150
			D12-Benzo(a)anthracene	2012/01/19		74	%	50 - 150
			D12-Benzo(a)pyrene	2012/01/19		74	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/01/19		86	%	50 - 150
			D12-Benzo(ghi)perylene	2012/01/19		84	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/01/19		96	%	50 - 150
			D12-Chrysene	2012/01/19		86	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/01/19		78	%	50 - 150
			D12-Perylene	2012/01/19		88	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/01/19		74	%	50 - 150
			D8-Acenaphthylene	2012/01/19		82	%	50 - 150
			D8-Naphthalene	2012/01/19		90	%	50 - 150
			Acenaphthene	2012/01/19		80	%	60 - 130
		RPD	Acenaphthene	2012/01/19	2.8		%	50
		Spiked Blank	Acenaphthylene	2012/01/19		77	%	60 - 130
		RPD	Acenaphthylene	2012/01/19	5.0		%	50
		Spiked Blank	Anthracene	2012/01/19		67	%	60 - 130
		RPD	Anthracene	2012/01/19	13.2		%	50
		Spiked Blank	Benzo(a)anthracene	2012/01/19		61	%	60 - 130
		RPD	Benzo(a)anthracene	2012/01/19	12.0		%	50
		Spiked Blank	Benzo(a)pyrene	2012/01/19		63	%	60 - 130
		RPD	Benzo(a)pyrene	2012/01/19	16.7		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/01/19		70	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/01/19	8.2		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/01/19		70	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/01/19	6.9		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/01/19		95	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/01/19	1.9		%	50
		Spiked Blank	Chrysene	2012/01/19		83	%	60 - 130
		RPD	Chrysene	2012/01/19	0.9		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/01/19		64	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/01/19	10.7		%	50
		Spiked Blank	Fluoranthene	2012/01/19		73	%	60 - 130
		RPD	Fluoranthene	2012/01/19	15.5		%	50
		Spiked Blank	Fluorene	2012/01/19		74	%	60 - 130
		RPD	Fluorene	2012/01/19	8.4		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/01/19		68	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/01/19	9.1		%	50
		Spiked Blank	Naphthalene	2012/01/19		87	%	60 - 130
		RPD	Naphthalene	2012/01/19	0.3		%	50
		Spiked Blank	Phenanthrene	2012/01/19		65	%	60 - 130
		RPD	Phenanthrene	2012/01/19	16.7		%	50
		Spiked Blank	Pyrene	2012/01/19		72	%	60 - 130
		RPD	Pyrene	2012/01/19	16.9		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/01/19		84	%	50 - 150
			D10-Fluoranthene	2012/01/19		86	%	50 - 150
			D10-Phenanthrene	2012/01/19		86	%	50 - 150
			D12-Benzo(a)anthracene	2012/01/19		74	%	50 - 150
			D12-Benzo(a)pyrene	2012/01/19		76	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/01/19		88	%	50 - 150
			D12-Benzo(ghi)perylene	2012/01/19		88	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/01/19		92	%	50 - 150
			D12-Chrysene	2012/01/19		90	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB203958

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2735059	WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/01/19		80	%	50 - 150
			D12-Perylene	2012/01/19		90	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/01/19		76	%	50 - 150
			D8-Acenaphthylene	2012/01/19		84	%	50 - 150
			D8-Naphthalene	2012/01/19		90	%	50 - 150
			1-Methylnaphthalene	2012/01/19	<0.10		ug	
			1-Methylphenanthrene	2012/01/19	<0.10		ug	
			2-Chloronaphthalene	2012/01/19	<0.10		ug	
			2-Methylanthracene	2012/01/19	<0.10		ug	
			2-Methylnaphthalene	2012/01/19	<0.10		ug	
			3-Methylcholanthrene	2012/01/19	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/01/19	<0.10		ug	
			9,10-Dimethylanthracene	2012/01/19	<0.40		ug	
			Acenaphthene	2012/01/19	<0.050		ug	
			Acenaphthylene	2012/01/19	<0.050		ug	
			Anthracene	2012/01/19	<0.050		ug	
			Benzo(a)anthracene	2012/01/19	<0.050		ug	
			Benzo(a)fluorene	2012/01/19	<0.10		ug	
			Benzo(a)pyrene	2012/01/19	<0.050		ug	
			Benzo(b)fluoranthene	2012/01/19	<0.050		ug	
			Benzo(b)fluorene	2012/01/19	<0.10		ug	
			Benzo(e)pyrene	2012/01/19	<0.10		ug	
			Benzo(g,h,i)perylene	2012/01/19	<0.050		ug	
			Benzo(k)fluoranthene	2012/01/19	<0.050		ug	
			Biphenyl	2012/01/19	<0.10		ug	
			Chrysene	2012/01/19	<0.050		ug	
			Coronene	2012/01/19	<0.10		ug	
			Dibenz(a,h)anthracene	2012/01/19	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/01/19	<0.20		ug	
			Fluoranthene	2012/01/19	<0.050		ug	
			Fluorene	2012/01/19	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/01/19	<0.050		ug	
			m-Terphenyl	2012/01/19	<0.10		ug	
			Naphthalene	2012/01/19	<0.072		ug	
			o-Terphenyl	2012/01/19	<0.10		ug	
			Perylene	2012/01/19	<0.10		ug	
			Phenanthrene	2012/01/19	<0.050		ug	
			p-Terphenyl	2012/01/19	<0.10		ug	
			Pyrene	2012/01/19	<0.050		ug	
			Quinoline	2012/01/19	<0.40		ug	
			Tetralin	2012/01/19	<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.

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MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Cold Lake South
Station ID: Lica1
Field Sample ID: LICA PUF/CLS/Jan 10, 2012

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Jan 09, 2011 @ 13:50 mst
Removal Date/Time: Jan 10, 2011 @ 12:17 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
10-Jan-12	01/10/2012 0:00	01/11/2012 0:00	

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
05-Jan-12	11-Jan-12	17-Jan-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
714	229	-5.4	330.36

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# 08578
GB1K1375 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jan 10, 2012
When took out the samples by accidently finger touched the QFF filter.

Technician Signiture: Ting Xu

JOB #: 2833-12-01-01-C

Maxxam

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ACCREDITED IN ACCORDANCE WITH nelac

Your C.O.C. #: 08578

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

Report Date: 2012/01/23

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B205694
Received: 2012/01/13, 08:50

Sample Matrix: PUF AND FILTER
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	1	2012/01/17	2012/01/19	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.

Total cover pages: 1

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

Maxxam ID		MF5677		
Sampling Date		2012/01/10		
COC Number		08578		
	Units	**LICA PUFF+QFF/ CLS/ JAN 10/12**	**RDL**	**QC Batch**
Semivolatile Organics				
1-Methylnaphthalene	ug	0.19	0.10	2738198
1-Methylphenanthrene	ug	<0.10	0.10	2738198
2-Chloronaphthalene	ug	<0.10	0.10	2738198
2-Methylanthracene	ug	<0.10	0.10	2738198
2-Methylnaphthalene	ug	0.34	0.10	2738198
3-Methylcholanthrene	ug	<2.0	2.0	2738198
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	0.10	2738198
9,10-Dimethylanthracene	ug	<0.40	0.40	2738198
Acenaphthene	ug	<0.050	0.050	2738198
Acenaphthylene	ug	<0.050	0.050	2738198
Anthracene	ug	<0.050	0.050	2738198
Benzo(a)anthracene	ug	<0.050	0.050	2738198
Benzo(a)fluorene	ug	<0.10	0.10	2738198
Benzo(a)pyrene	ug	<0.050	0.050	2738198
Benzo(b)fluoranthene	ug	<0.050	0.050	2738198
Benzo(b)fluorene	ug	<0.10	0.10	2738198
Benzo(e)pyrene	ug	<0.10	0.10	2738198
Benzo(g,h,i)perylene	ug	<0.050	0.050	2738198
Benzo(k)fluoranthene	ug	<0.050	0.050	2738198
Biphenyl	ug	0.28	0.10	2738198
Chrysene	ug	<0.050	0.050	2738198
Coronene	ug	<0.10	0.10	2738198
Dibenz(a,h)anthracene	ug	<0.050	0.050	2738198
Dibenzo(a,e)pyrene	ug	<0.20	0.20	2738198
Fluoranthene	ug	<0.050	0.050	2738198
Fluorene	ug	0.126	0.050	2738198
Indeno(1,2,3-cd)pyrene	ug	<0.050	0.050	2738198
m-Terphenyl	ug	<0.10	0.10	2738198
Naphthalene	ug	0.466	0.072	2738198
o-Terphenyl	ug	<0.10	0.10	2738198

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

Maxxam ID		MF5677		
Sampling Date		2012/01/10		
COC Number		08578		
	Units	**LICA PUFF+QFF/ CLS/ JAN 10/12**	**RDL**	**QC Batch**
Perylene	ug	<0.10	0.10	2738198
Phenanthrene	ug	0.146	0.050	2738198
p-Terphenyl	ug	<0.10	0.10	2738198
Pyrene	ug	<0.050	0.050	2738198
Quinoline	ug	<0.40	0.40	2738198
Tetralin	ug	<0.10	0.10	2738198
Surrogate Recovery (%)				
D10-2-Methylnaphthalene	%	76		2738198
D10-Fluoranthene	%	96		2738198
D10-Fluorene (FS)	%	56		2738198
D10-Phenanthrene	%	88		2738198
D12-Benzo(a)anthracene	%	96		2738198
D12-Benzo(a)pyrene	%	88		2738198
D12-Benzo(b)fluoranthene	%	96		2738198
D12-Benzo(ghi)perylene	%	98		2738198
D12-Benzo(k)fluoranthene	%	88		2738198
D12-Chrysene	%	84		2738198
D12-Indeno(1,2,3-cd)pyrene	%	102		2738198
D12-Perylene	%	92		2738198
D14-Dibenzo(a,h)anthracene	%	96		2738198
D14-Terphenyl (FS)	%	91		2738198
D8-Acenaphthylene	%	78		2738198
D8-Naphthalene	%	74		2738198

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B205694
Report Date: 2012/01/23

Test Summary

Maxxam ID MF5677
Sample ID LICA PUFF+QFF/ CLS/ JAN 10/12
Matrix PUF AND FILTER

Collected 2012/01/10
Shipped
Received 2012/01/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2738198	2012/01/17	2012/01/19	WENDY ZHAO

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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.

Naphthalene ,Benzo(g,h,i)perylene are positive found in blank. Sample 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 Chysene. 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.

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB205694

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2738198	WZ	Spiked Blank	D10-2-Methylnaphthalene	2012/01/19		86	%	50 - 150
			D10-Fluoranthene	2012/01/19		82	%	50 - 150
			D10-Phenanthrene	2012/01/19		84	%	50 - 150
			D12-Benzo(a)anthracene	2012/01/19		80	%	50 - 150
			D12-Benzo(a)pyrene	2012/01/19		78	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/01/19		94	%	50 - 150
			D12-Benzo(ghi)perylene	2012/01/19		90	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/01/19		82	%	50 - 150
			D12-Chrysene	2012/01/19		76	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/01/19		90	%	50 - 150
			D12-Perylene	2012/01/19		86	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/01/19		88	%	50 - 150
			D8-Acenaphthylene	2012/01/19		84	%	50 - 150
			D8-Naphthalene	2012/01/19		86	%	50 - 150
			Acenaphthene	2012/01/19		78	%	60 - 130
		RPD	Acenaphthene	2012/01/19	0.6		%	50
		Spiked Blank	Acenaphthylene	2012/01/19		82	%	60 - 130
		RPD	Acenaphthylene	2012/01/19	0.3		%	50
		Spiked Blank	Anthracene	2012/01/19		70	%	60 - 130
		RPD	Anthracene	2012/01/19	4.9		%	50
		Spiked Blank	Benzo(a)anthracene	2012/01/19		69	%	60 - 130
		RPD	Benzo(a)anthracene	2012/01/19	11.2		%	50
		Spiked Blank	Benzo(a)pyrene	2012/01/19		70	%	60 - 130
		RPD	Benzo(a)pyrene	2012/01/19	8.9		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/01/19		80	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/01/19	0.3		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/01/19		78	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/01/19	4.7		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/01/19		73	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/01/19	21.1		%	50
		Spiked Blank	Chrysene	2012/01/19		71	%	60 - 130
		RPD	Chrysene	2012/01/19	9.1		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/01/19		79	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/01/19	5.6		%	50
		Spiked Blank	Fluoranthene	2012/01/19		77	%	60 - 130
		RPD	Fluoranthene	2012/01/19	6.9		%	50
		Spiked Blank	Fluorene	2012/01/19		75	%	60 - 130
		RPD	Fluorene	2012/01/19	1.7		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/01/19		79	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/01/19	6.4		%	50
		Spiked Blank	Naphthalene	2012/01/19		91	%	60 - 130
		RPD	Naphthalene	2012/01/19	2.5		%	50
		Spiked Blank	Phenanthrene	2012/01/19		74	%	60 - 130
		RPD	Phenanthrene	2012/01/19	3.6		%	50
		Spiked Blank	Pyrene	2012/01/19		77	%	60 - 130
		RPD	Pyrene	2012/01/19	6.9		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/01/19		88	%	50 - 150
			D10-Fluoranthene	2012/01/19		88	%	50 - 150
			D10-Phenanthrene	2012/01/19		88	%	50 - 150
			D12-Benzo(a)anthracene	2012/01/19		90	%	50 - 150
			D12-Benzo(a)pyrene	2012/01/19		84	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/01/19		104	%	50 - 150
			D12-Benzo(ghi)perylene	2012/01/19		94	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/01/19		88	%	50 - 150
			D12-Chrysene	2012/01/19		84	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB205694

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2738198	WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/01/19		96	%	50 - 150
			D12-Perylene	2012/01/19		92	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/01/19		92	%	50 - 150
			D8-Acenaphthylene	2012/01/19		90	%	50 - 150
			D8-Naphthalene	2012/01/19		88	%	50 - 150
			1-Methylnaphthalene	2012/01/19	<0.10		ug	
			1-Methylphenanthrene	2012/01/19	<0.10		ug	
			2-Chloronaphthalene	2012/01/19	<0.10		ug	
			2-Methylanthracene	2012/01/19	<0.10		ug	
			2-Methylnaphthalene	2012/01/19	<0.10		ug	
			3-Methylcholanthrene	2012/01/19	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/01/19	<0.10		ug	
			9,10-Dimethylanthracene	2012/01/19	<0.40		ug	
			Acenaphthene	2012/01/19	<0.050		ug	
			Acenaphthylene	2012/01/19	<0.050		ug	
			Anthracene	2012/01/19	<0.050		ug	
			Benzo(a)anthracene	2012/01/19	<0.050		ug	
			Benzo(a)fluorene	2012/01/19	<0.10		ug	
			Benzo(a)pyrene	2012/01/19	<0.050		ug	
			Benzo(b)fluoranthene	2012/01/19	<0.050		ug	
			Benzo(b)fluorene	2012/01/19	<0.10		ug	
			Benzo(e)pyrene	2012/01/19	<0.10		ug	
			Benzo(g,h,i)perylene	2012/01/19	0.052, RDL=0.050		ug	
			Benzo(k)fluoranthene	2012/01/19	<0.050		ug	
			Biphenyl	2012/01/19	<0.10		ug	
			Chrysene	2012/01/19	<0.050		ug	
			Coronene	2012/01/19	<0.10		ug	
			Dibenz(a,h)anthracene	2012/01/19	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/01/19	<0.20		ug	
			Fluoranthene	2012/01/19	<0.050		ug	
			Fluorene	2012/01/19	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/01/19	<0.050		ug	
			m-Terphenyl	2012/01/19	<0.10		ug	
			Naphthalene	2012/01/19	0.110, RDL=0.072		ug	
			o-Terphenyl	2012/01/19	<0.10		ug	
			Perylene	2012/01/19	<0.10		ug	
			Phenanthrene	2012/01/19	<0.050		ug	
			p-Terphenyl	2012/01/19	<0.10		ug	
			Pyrene	2012/01/19	<0.050		ug	
			Quinoline	2012/01/19	<0.40		ug	
			Tetralin	2012/01/19	<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.

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MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Cold Lake South
Station ID: Lica1
Field Sample ID: LICA PUF/CLS/Jan 16, 2012

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Jan 11, 2012 @ 13:33 mst
Removal Date/Time: Jan 19, 2012 @ 9:30 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
16-Jan-12	01/16/2012 0:00	01/17/2012 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
10-Jan-12	11-Jan-12	23-Jan-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
726	229.09	-26.3	330.35

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

Comments: COC# 08653
GB1K1656 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jan 16, 2012

Technician Signiture: Theo McLaren

Success Through Science®

Your C.O.C. #: 08653

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

Report Date: 2012/01/31

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B209722
Received: 2012/01/21, 09:49

Sample Matrix: PUF AND FILTER
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	1	2012/01/23	2012/01/30	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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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 Analytics

Maxxam Job #: B209722
Report Date: 2012/01/31

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

Maxxam ID		MH6050		
Sampling Date		2012/01/16		
COC Number		08653		
	Units	**LICA PUFF+QFF/CLS/JAN16/2012**	**RDL**	**QC Batch**
Semivolatile Organics				
1-Methylnaphthalene	ug	0.68	0.10	2743916
1-Methylphenanthrene	ug	<0.10	0.10	2743916
2-Chloronaphthalene	ug	<0.10	0.10	2743916
2-Methylanthracene	ug	<0.10	0.10	2743916
2-Methylnaphthalene	ug	0.92	0.10	2743916
3-Methylcholanthrene	ug	<2.0	2.0	2743916
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	0.10	2743916
9,10-Dimethylanthracene	ug	<0.40	0.40	2743916
Acenaphthene	ug	0.050	0.050	2743916
Acenaphthylene	ug	<0.050	0.050	2743916
Anthracene	ug	<0.050	0.050	2743916
Benzo(a)anthracene	ug	<0.050	0.050	2743916
Benzo(a)fluorene	ug	<0.10	0.10	2743916
Benzo(a)pyrene	ug	<0.050	0.050	2743916
Benzo(b)fluoranthene	ug	0.088	0.050	2743916
Benzo(b)fluorene	ug	<0.10	0.10	2743916
Benzo(e)pyrene	ug	<0.10	0.10	2743916
Benzo(g,h,i)perylene	ug	<0.050	0.050	2743916
Benzo(k)fluoranthene	ug	<0.050	0.050	2743916
Biphenyl	ug	0.59	0.10	2743916
Chrysene	ug	0.074	0.050	2743916
Coronene	ug	<0.10	0.10	2743916
Dibenz(a,h)anthracene	ug	<0.050	0.050	2743916
Dibenzo(a,e)pyrene	ug	<0.20	0.20	2743916
Fluoranthene	ug	0.192	0.050	2743916
Fluorene	ug	0.180	0.050	2743916
Indeno(1,2,3-cd)pyrene	ug	<0.050	0.050	2743916
m-Terphenyl	ug	<0.10	0.10	2743916
Naphthalene	ug	2.73	0.072	2743916
o-Terphenyl	ug	<0.10	0.10	2743916
Perylene	ug	<0.10	0.10	2743916
Phenanthrene	ug	0.336	0.050	2743916

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

Maxxam ID		MH6050		
Sampling Date		2012/01/16		
COC Number		08653		
	Units	**LICA PUFF+QFF/CLS/JAN16/2012**	**RDL**	**QC Batch**
p-Terphenyl	ug	<0.10	0.10	2743916
Pyrene	ug	0.124	0.050	2743916
Quinoline	ug	<0.40	0.40	2743916
Tetralin	ug	<0.10	0.10	2743916
Surrogate Recovery (%)				
D10-2-Methylnaphthalene	%	80		2743916
D10-Fluoranthene	%	88		2743916
D10-Fluorene (FS)	%	81		2743916
D10-Phenanthrene	%	88		2743916
D12-Benzo(a)anthracene	%	94		2743916
D12-Benzo(a)pyrene	%	92		2743916
D12-Benzo(b)fluoranthene	%	86		2743916
D12-Benzo(ghi)perylene	%	88		2743916
D12-Benzo(k)fluoranthene	%	82		2743916
D12-Chrysene	%	82		2743916
D12-Indeno(1,2,3-cd)pyrene	%	88		2743916
D12-Perylene	%	90		2743916
D14-Dibenzo(a,h)anthracene	%	88		2743916
D14-Terphenyl (FS)	%	73		2743916
D8-Acenaphthylene	%	90		2743916
D8-Naphthalene	%	76		2743916

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B209722
Report Date: 2012/01/31

Test Summary

Maxxam ID MH6050 **Collected** 2012/01/16
Sample ID LICA PUFF+QFF/CLS/JAN16/2012 **Shipped**
Matrix PUF AND FILTER **Received** 2012/01/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2743916	2012/01/23	2012/01/30	JIE WU

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Maxxam Analytics

Maxxam Job #: B209722
Report Date: 2012/01/31

GENERAL COMMENTS

PAHMS-F
9.10-Dimethylanthracene and 7,12-dimethylbenzo(a)anthracene are above 25% RSD in initial and continuing calibrations. No positives found for these 2 compounds.

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

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

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

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB209722

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2743916	JIW	Spiked Blank	D10-2-Methylnaphthalene	2012/01/30		84	%	50 - 150
			D10-Fluoranthene	2012/01/30		88	%	50 - 150
			D10-Phenanthrene	2012/01/30		90	%	50 - 150
			D12-Benzo(a)anthracene	2012/01/30		92	%	50 - 150
			D12-Benzo(a)pyrene	2012/01/30		92	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/01/30		86	%	50 - 150
			D12-Benzo(ghi)perylene	2012/01/30		90	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/01/30		84	%	50 - 150
			D12-Chrysene	2012/01/30		82	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/01/30		84	%	50 - 150
			D12-Perylene	2012/01/30		88	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/01/30		84	%	50 - 150
			D8-Acenaphthylene	2012/01/30		90	%	50 - 150
			D8-Naphthalene	2012/01/30		80	%	50 - 150
			Acenaphthene	2012/01/30		79	%	60 - 130
		RPD	Acenaphthene	2012/01/30	0.3		%	50
		Spiked Blank	Acenaphthylene	2012/01/30		82	%	60 - 130
		RPD	Acenaphthylene	2012/01/30	0.6		%	50
		Spiked Blank	Anthracene	2012/01/30		75	%	60 - 130
		RPD	Anthracene	2012/01/30	1.7		%	50
		Spiked Blank	Benzo(a)anthracene	2012/01/30		77	%	60 - 130
		RPD	Benzo(a)anthracene	2012/01/30	1.9		%	50
		Spiked Blank	Benzo(a)pyrene	2012/01/30		69	%	60 - 130
		RPD	Benzo(a)pyrene	2012/01/30	0		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/01/30		76	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/01/30	1.3		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/01/30		77	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/01/30	0.3		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/01/30		78	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/01/30	1.3		%	50
		Spiked Blank	Chrysene	2012/01/30		75	%	60 - 130
		RPD	Chrysene	2012/01/30	2.9		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/01/30		71	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/01/30	3.4		%	50
		Spiked Blank	Fluoranthene	2012/01/30		81	%	60 - 130
		RPD	Fluoranthene	2012/01/30	2.2		%	50
		Spiked Blank	Fluorene	2012/01/30		78	%	60 - 130
		RPD	Fluorene	2012/01/30	2.3		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/01/30		75	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/01/30	0.7		%	50
		Spiked Blank	Naphthalene	2012/01/30		74	%	60 - 130
		RPD	Naphthalene	2012/01/30	0.7		%	50
		Spiked Blank	Phenanthrene	2012/01/30		78	%	60 - 130
		RPD	Phenanthrene	2012/01/30	2.6		%	50
		Spiked Blank	Pyrene	2012/01/30		79	%	60 - 130
		RPD	Pyrene	2012/01/30	1.6		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/01/30		82	%	50 - 150
			D10-Fluoranthene	2012/01/30		88	%	50 - 150
			D10-Phenanthrene	2012/01/30		86	%	50 - 150
			D12-Benzo(a)anthracene	2012/01/30		92	%	50 - 150
			D12-Benzo(a)pyrene	2012/01/30		92	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/01/30		86	%	50 - 150
			D12-Benzo(ghi)perylene	2012/01/30		88	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/01/30		82	%	50 - 150
			D12-Chrysene	2012/01/30		82	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB209722

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2743916	JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/01/30		86	%	50 - 150
			D12-Perylene	2012/01/30		90	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/01/30		84	%	50 - 150
			D8-Acenaphthylene	2012/01/30		88	%	50 - 150
			D8-Naphthalene	2012/01/30		80	%	50 - 150
			1-Methylnaphthalene	2012/01/30	<0.10		ug	
			1-Methylphenanthrene	2012/01/30	<0.10		ug	
			2-Chloronaphthalene	2012/01/30	<0.10		ug	
			2-Methylanthracene	2012/01/30	<0.10		ug	
			2-Methylnaphthalene	2012/01/30	<0.10		ug	
			3-Methylcholanthrene	2012/01/30	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/01/30	<0.10		ug	
			9,10-Dimethylanthracene	2012/01/30	<0.40		ug	
			Acenaphthene	2012/01/30	<0.050		ug	
			Acenaphthylene	2012/01/30	<0.050		ug	
			Anthracene	2012/01/30	<0.050		ug	
			Benzo(a)anthracene	2012/01/30	<0.050		ug	
			Benzo(a)fluorene	2012/01/30	<0.10		ug	
			Benzo(a)pyrene	2012/01/30	<0.050		ug	
			Benzo(b)fluoranthene	2012/01/30	<0.050		ug	
			Benzo(b)fluorene	2012/01/30	<0.10		ug	
			Benzo(e)pyrene	2012/01/30	<0.10		ug	
			Benzo(g,h,i)perylene	2012/01/30	<0.050		ug	
			Benzo(k)fluoranthene	2012/01/30	<0.050		ug	
			Biphenyl	2012/01/30	<0.10		ug	
			Chrysene	2012/01/30	<0.050		ug	
			Coronene	2012/01/30	<0.10		ug	
			Dibenz(a,h)anthracene	2012/01/30	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/01/30	<0.20		ug	
			Fluoranthene	2012/01/30	<0.050		ug	
			Fluorene	2012/01/30	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/01/30	<0.050		ug	
			m-Terphenyl	2012/01/30	<0.10		ug	
			Naphthalene	2012/01/30	<0.072		ug	
			o-Terphenyl	2012/01/30	<0.10		ug	
			Perylene	2012/01/30	<0.10		ug	
			Phenanthrene	2012/01/30	<0.050		ug	
			p-Terphenyl	2012/01/30	<0.10		ug	
			Pyrene	2012/01/30	<0.050		ug	
			Quinoline	2012/01/30	<0.40		ug	
			Tetralin	2012/01/30	<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.

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MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Cold Lake South
Station ID: Lica1
Field Sample ID: LICA PUF/CLS/Jan 22, 2012

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Jan 18, 2012 @ 11:05 mst
Removal Date/Time: Jan 25, 2012 @ 5:00

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
22-Jan-12	01/23/2012 0:00	01/23/2012 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
18-Jan-12	25-Jan-12	31-Jan-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
706	229	-11.3	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# 08702
GB1K1656 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jan 22, 2012

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 08702

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

Report Date: 2012/02/07

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B213398
Received: 2012/01/28, 10:43

Sample Matrix: PUF AND FILTER
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	1	2012/01/31	2012/02/03	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

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Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B213398
Report Date: 2012/02/07

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

Maxxam ID		MJ4700		
Sampling Date		2012/01/22 00:00		
COC Number		08702		
	Units	**LICA PUFF+QFF/CLS/JAN22,12**	**RDL**	**QC Batch**
Semivolatile Organics				
1-Methylnaphthalene	ug	1.94	0.10	2750997
1-Methylphenanthrene	ug	<0.10	0.10	2750997
2-Chloronaphthalene	ug	<0.10	0.10	2750997
2-Methylanthracene	ug	<0.10	0.10	2750997
2-Methylnaphthalene	ug	3.82	0.10	2750997
3-Methylcholanthrene	ug	<2.0	2.0	2750997
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	0.10	2750997
9,10-Dimethylanthracene	ug	<0.40	0.40	2750997
Acenaphthene	ug	0.224	0.050	2750997
Acenaphthylene	ug	1.09	0.050	2750997
Anthracene	ug	0.120	0.050	2750997
Benzo(a)anthracene	ug	<0.050	0.050	2750997
Benzo(a)fluorene	ug	<0.10	0.10	2750997
Benzo(a)pyrene	ug	<0.050	0.050	2750997
Benzo(b)fluoranthene	ug	0.138	0.050	2750997
Benzo(b)fluorene	ug	<0.10	0.10	2750997
Benzo(e)pyrene	ug	<0.10	0.10	2750997
Benzo(g,h,i)perylene	ug	0.056	0.050	2750997
Benzo(k)fluoranthene	ug	<0.050	0.050	2750997
Biphenyl	ug	1.08	0.10	2750997
Chrysene	ug	0.108	0.050	2750997
Coronene	ug	<0.10	0.10	2750997
Dibenz(a,h)anthracene	ug	<0.050	0.050	2750997
Dibenzo(a,e)pyrene	ug	<0.20	0.20	2750997
Fluoranthene	ug	0.414	0.050	2750997
Fluorene	ug	0.556	0.050	2750997
Indeno(1,2,3-cd)pyrene	ug	0.052	0.050	2750997
m-Terphenyl	ug	<0.10	0.10	2750997
Naphthalene	ug	3.06	0.072	2750997
o-Terphenyl	ug	<0.10	0.10	2750997
Perylene	ug	<0.10	0.10	2750997

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B213398
Report Date: 2012/02/07

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

Maxxam ID		MJ4700		
Sampling Date		2012/01/22 00:00		
COC Number		08702		
	Units	**LICA PUFF+QFF/CLS/JAN22,12**	**RDL**	**QC Batch**
Phenanthrene	ug	1.16	0.050	2750997
p-Terphenyl	ug	<0.10	0.10	2750997
Pyrene	ug	0.244	0.050	2750997
Quinoline	ug	<0.40	0.40	2750997
Tetralin	ug	<0.10	0.10	2750997
Surrogate Recovery (%)				
D10-2-Methylnaphthalene	%	68		2750997
D10-Fluoranthene	%	92		2750997
D10-Fluorene (FS)	%	61		2750997
D10-Phenanthrene	%	86		2750997
D12-Benzo(a)anthracene	%	98		2750997
D12-Benzo(a)pyrene	%	92		2750997
D12-Benzo(b)fluoranthene	%	92		2750997
D12-Benzo(ghi)perylene	%	90		2750997
D12-Benzo(k)fluoranthene	%	86		2750997
D12-Chrysene	%	86		2750997
D12-Indeno(1,2,3-cd)pyrene	%	90		2750997
D12-Perylene	%	88		2750997
D14-Dibenzo(a,h)anthracene	%	90		2750997
D14-Terphenyl (FS)	%	86		2750997
D8-Acenaphthylene	%	80		2750997
D8-Naphthalene	%	66		2750997

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B213398
Report Date: 2012/02/07

Test Summary

Maxxam ID MJ4700 **Collected** 2012/01/22
Sample ID LICA PUFF+QFF/CLS/JAN22,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/01/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2750997	2012/01/31	2012/02/03	WENDY ZHAO

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Maxxam Analytics

Maxxam Job #: B213398
Report Date: 2012/02/07

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.

Sample MJ4700-01: PAHMS-F

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 it would have a value below the estimated mdl.
Since Triphenylene co-elutes with Chrysene, the maximum possible value for this compound would be 0.108ug, which is the value reported for Chrysene.
Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chysene. Searched for ions specific to this compound in the appropriate retention time range with no possible positive detected.
Picene elutes after Dibenzo(a,h) anthracene. Searched for ions specific to this compounds in the appropriate retention time range, possible positive detected, but would fall below the mdl using Dibenzo(a,h) anthracene calibration.

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB213398

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2750997	WZ	Spiked Blank	D10-2-Methylnaphthalene	2012/02/02		82	%	50 - 150
			D10-Fluoranthene	2012/02/02		94	%	50 - 150
			D10-Phenanthrene	2012/02/02		92	%	50 - 150
			D12-Benzo(a)anthracene	2012/02/02		94	%	50 - 150
			D12-Benzo(a)pyrene	2012/02/02		90	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/02/02		88	%	50 - 150
			D12-Benzo(ghi)perylene	2012/02/02		92	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/02/02		90	%	50 - 150
			D12-Chrysene	2012/02/02		90	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/02/02		90	%	50 - 150
			D12-Perylene	2012/02/02		86	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/02/02		90	%	50 - 150
			D8-Acenaphthylene	2012/02/02		88	%	50 - 150
			D8-Naphthalene	2012/02/02		82	%	50 - 150
			Acenaphthene	2012/02/02		81	%	60 - 130
		RPD	Acenaphthene	2012/02/02	1.9		%	50
		Spiked Blank	Acenaphthylene	2012/02/02		82	%	60 - 130
		RPD	Acenaphthylene	2012/02/02	3.4		%	50
		Spiked Blank	Anthracene	2012/02/02		81	%	60 - 130
		RPD	Anthracene	2012/02/02	4.1		%	50
		Spiked Blank	Benzo(a)anthracene	2012/02/02		80	%	60 - 130
		RPD	Benzo(a)anthracene	2012/02/02	1.3		%	50
		Spiked Blank	Benzo(a)pyrene	2012/02/02		69	%	60 - 130
		RPD	Benzo(a)pyrene	2012/02/02	2.6		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/02/02		79	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/02/02	1.9		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/02/02		77	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/02/02	0.3		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/02/02		85	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/02/02	0		%	50
		Spiked Blank	Chrysene	2012/02/02		81	%	60 - 130
		RPD	Chrysene	2012/02/02	1.2		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/02/02		76	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/02/02	1		%	50
		Spiked Blank	Fluoranthene	2012/02/02		87	%	60 - 130
		RPD	Fluoranthene	2012/02/02	2.9		%	50
		Spiked Blank	Fluorene	2012/02/02		81	%	60 - 130
		RPD	Fluorene	2012/02/02	2.8		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/02/02		79	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/02/02	1.3		%	50
		Spiked Blank	Naphthalene	2012/02/02		74	%	60 - 130
		RPD	Naphthalene	2012/02/02	2.0		%	50
		Spiked Blank	Phenanthrene	2012/02/02		82	%	60 - 130
		RPD	Phenanthrene	2012/02/02	1.8		%	50
		Spiked Blank	Pyrene	2012/02/02		86	%	60 - 130
		RPD	Pyrene	2012/02/02	2.1		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/02/02		82	%	50 - 150
			D10-Fluoranthene	2012/02/02		96	%	50 - 150
			D10-Phenanthrene	2012/02/02		92	%	50 - 150
			D12-Benzo(a)anthracene	2012/02/02		94	%	50 - 150
			D12-Benzo(a)pyrene	2012/02/02		92	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/02/02		90	%	50 - 150
			D12-Benzo(ghi)perylene	2012/02/02		90	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/02/02		86	%	50 - 150
			D12-Chrysene	2012/02/02		86	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB213398

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2750997	WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/02/02		90	%	50 - 150
			D12-Perylene	2012/02/02		88	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/02/02		90	%	50 - 150
			D8-Acenaphthylene	2012/02/02		88	%	50 - 150
			D8-Naphthalene	2012/02/02		80	%	50 - 150
			1-Methylnaphthalene	2012/02/02	<0.10		ug	
			1-Methylphenanthrene	2012/02/02	<0.10		ug	
			2-Chloronaphthalene	2012/02/02	<0.10		ug	
			2-Methylanthracene	2012/02/02	<0.10		ug	
			2-Methylnaphthalene	2012/02/02	<0.10		ug	
			3-Methylcholanthrene	2012/02/02	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/02/02	<0.10		ug	
			9,10-Dimethylanthracene	2012/02/02	<0.40		ug	
			Acenaphthene	2012/02/02	<0.050		ug	
			Acenaphthylene	2012/02/02	<0.050		ug	
			Anthracene	2012/02/02	<0.050		ug	
			Benzo(a)anthracene	2012/02/02	<0.050		ug	
			Benzo(a)fluorene	2012/02/02	<0.10		ug	
			Benzo(a)pyrene	2012/02/02	<0.050		ug	
			Benzo(b)fluoranthene	2012/02/02	<0.050		ug	
			Benzo(b)fluorene	2012/02/02	<0.10		ug	
			Benzo(e)pyrene	2012/02/02	<0.10		ug	
			Benzo(g,h,i)perylene	2012/02/02	<0.050		ug	
			Benzo(k)fluoranthene	2012/02/02	<0.050		ug	
			Biphenyl	2012/02/02	<0.10		ug	
			Chrysene	2012/02/02	<0.050		ug	
			Coronene	2012/02/02	<0.10		ug	
			Dibenz(a,h)anthracene	2012/02/02	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/02/02	<0.20		ug	
			Fluoranthene	2012/02/02	<0.050		ug	
			Fluorene	2012/02/02	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/02/02	<0.050		ug	
			m-Terphenyl	2012/02/02	<0.10		ug	
			Naphthalene	2012/02/02	<0.072		ug	
			o-Terphenyl	2012/02/02	<0.10		ug	
			Perylene	2012/02/02	<0.10		ug	
			Phenanthrene	2012/02/02	<0.050		ug	
			p-Terphenyl	2012/02/02	<0.10		ug	
			Pyrene	2012/02/02	<0.050		ug	
			Quinoline	2012/02/02	<0.40		ug	
			Tetralin	2012/02/02	<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.

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MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Cold Lake South
Station ID: Lica1
Field Sample ID: LICA PUF/CLS/Jan 28, 2012

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Jan 25, 2012 @ 15:45 mst
Removal Date/Time: Feb 1, 2012 @ 15:15 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
28-Jan-12	01/28/2012 0:00	01/29/2012 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
25-Jan-12	01-Feb-12	06-Feb-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
715	229	-8.8	330.36

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# 08763
GB1K1656 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jan 28, 2012

Technician Signiture: Theo McLaren

Success Through Science®

Your C.O.C. #: 08763

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

Report Date: 2012/02/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B216831
Received: 2012/02/04, 09:35

Sample Matrix: PUF AND FILTER
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	1	2012/02/07	2012/02/09	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.

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B216831
Report Date: 2012/02/10

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

Maxxam ID		ML1119		
Sampling Date		2012/01/28		
COC Number		08763		
	Units	**LICA PUFF+QFF/CLS/JAN 28,12**	**RDL**	**QC Batch**
Semivolatile Organics				
1-Methylnaphthalene	ug	1.12	0.10	2757532
1-Methylphenanthrene	ug	<0.10	0.10	2757532
2-Chloronaphthalene	ug	<0.10	0.10	2757532
2-Methylanthracene	ug	<0.10	0.10	2757532
2-Methylnaphthalene	ug	2.24	0.10	2757532
3-Methylcholanthrene	ug	<2.0	2.0	2757532
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	0.10	2757532
9,10-Dimethylanthracene	ug	<0.40	0.40	2757532
Acenaphthene	ug	0.104	0.050	2757532
Acenaphthylene	ug	0.212	0.050	2757532
Anthracene	ug	<0.050	0.050	2757532
Benzo(a)anthracene	ug	<0.050	0.050	2757532
Benzo(a)fluorene	ug	<0.10	0.10	2757532
Benzo(a)pyrene	ug	<0.050	0.050	2757532
Benzo(b)fluoranthene	ug	<0.050	0.050	2757532
Benzo(b)fluorene	ug	<0.10	0.10	2757532
Benzo(e)pyrene	ug	<0.10	0.10	2757532
Benzo(g,h,i)perylene	ug	<0.050	0.050	2757532
Benzo(k)fluoranthene	ug	<0.050	0.050	2757532
Biphenyl	ug	0.50	0.10	2757532
Chrysene	ug	<0.050	0.050	2757532
Coronene	ug	<0.10	0.10	2757532
Dibenz(a,h)anthracene	ug	<0.050	0.050	2757532
Dibenzo(a,e)pyrene	ug	<0.20	0.20	2757532
Fluoranthene	ug	0.120	0.050	2757532
Fluorene	ug	0.234	0.050	2757532
Indeno(1,2,3-cd)pyrene	ug	<0.050	0.050	2757532
m-Terphenyl	ug	<0.10	0.10	2757532
Naphthalene	ug	1.36	0.072	2757532
o-Terphenyl	ug	<0.10	0.10	2757532
Perylene	ug	<0.10	0.10	2757532

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

Maxxam ID		ML1119		
Sampling Date		2012/01/28		
COC Number		08763		
	Units	**LICA PUFF+QFF/CLS/JAN 28,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.466	0.050	2757532
p-Terphenyl	ug	<0.10	0.10	2757532
Pyrene	ug	0.084	0.050	2757532
Quinoline	ug	<0.40	0.40	2757532
Tetralin	ug	<0.10	0.10	2757532
Surrogate Recovery (%)				
D10-2-Methylnaphthalene	%	74		2757532
D10-Fluoranthene	%	96		2757532
D10-Fluorene (FS)	%	52		2757532
D10-Phenanthrene	%	90		2757532
D12-Benzo(a)anthracene	%	92		2757532
D12-Benzo(a)pyrene	%	92		2757532
D12-Benzo(b)fluoranthene	%	88		2757532
D12-Benzo(ghi)perylene	%	96		2757532
D12-Benzo(k)fluoranthene	%	82		2757532
D12-Chrysene	%	82		2757532
D12-Indeno(1,2,3-cd)pyrene	%	94		2757532
D12-Perylene	%	88		2757532
D14-Dibenzo(a,h)anthracene	%	94		2757532
D14-Terphenyl (FS)	%	93		2757532
D8-Acenaphthylene	%	86		2757532
D8-Naphthalene	%	70		2757532

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B216831
Report Date: 2012/02/10

Test Summary

Maxxam ID ML1119 **Collected** 2012/01/28
Sample ID LICA PUFF+QFF/CLS/JAN 28,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/02/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2757532	2012/02/07	2012/02/09	JIE WU

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Maxxam Analytics

Maxxam Job #: B216831
Report Date: 2012/02/10

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.

7,12-dimethylbenzo(a)anthracene is above 25% RSD in continuing calibration.

Samples were extracted past holdtime.

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

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

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

Sample ML1119-01: D12-benzo(e)pyrene internal standard area response criteria was high in sample. The vial was rerun with similar result. Original run reported.

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB216831

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2757532	JIW	Spiked Blank	D10-2-Methylnaphthalene	2012/02/09		80	%	50 - 150
			D10-Fluoranthene	2012/02/09		94	%	50 - 150
			D10-Phenanthrene	2012/02/09		90	%	50 - 150
			D12-Benzo(a)anthracene	2012/02/09		92	%	50 - 150
			D12-Benzo(a)pyrene	2012/02/09		94	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/02/09		90	%	50 - 150
			D12-Benzo(ghi)perylene	2012/02/09		94	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/02/09		88	%	50 - 150
			D12-Chrysene	2012/02/09		88	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/02/09		92	%	50 - 150
			D12-Perylene	2012/02/09		90	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/02/09		90	%	50 - 150
			D8-Acenaphthylene	2012/02/09		88	%	50 - 150
			D8-Naphthalene	2012/02/09		78	%	50 - 150
			Acenaphthene	2012/02/09		78	%	60 - 130
		RPD	Acenaphthene	2012/02/09	0.6		%	50
		Spiked Blank	Acenaphthylene	2012/02/09		83	%	60 - 130
		RPD	Acenaphthylene	2012/02/09	3.1		%	50
		Spiked Blank	Anthracene	2012/02/09		76	%	60 - 130
		RPD	Anthracene	2012/02/09	0.3		%	50
		Spiked Blank	Benzo(a)anthracene	2012/02/09		78	%	60 - 130
		RPD	Benzo(a)anthracene	2012/02/09	0		%	50
		Spiked Blank	Benzo(a)pyrene	2012/02/09		69	%	60 - 130
		RPD	Benzo(a)pyrene	2012/02/09	0.7		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/02/09		77	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/02/09	0		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/02/09		80	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/02/09	0.9		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/02/09		84	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/02/09	0		%	50
		Spiked Blank	Chrysene	2012/02/09		80	%	60 - 130
		RPD	Chrysene	2012/02/09	1.6		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/02/09		79	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/02/09	0.3		%	50
		Spiked Blank	Fluoranthene	2012/02/09		85	%	60 - 130
		RPD	Fluoranthene	2012/02/09	0.9		%	50
		Spiked Blank	Fluorene	2012/02/09		77	%	60 - 130
		RPD	Fluorene	2012/02/09	1.3		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/02/09		80	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/02/09	1.9		%	50
		Spiked Blank	Naphthalene	2012/02/09		74	%	60 - 130
		RPD	Naphthalene	2012/02/09	3.8		%	50
		Spiked Blank	Phenanthrene	2012/02/09		79	%	60 - 130
		RPD	Phenanthrene	2012/02/09	0.6		%	50
		Spiked Blank	Pyrene	2012/02/09		84	%	60 - 130
		RPD	Pyrene	2012/02/09	0.9		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/02/09		82	%	50 - 150
			D10-Fluoranthene	2012/02/09		88	%	50 - 150
			D10-Phenanthrene	2012/02/09		86	%	50 - 150
			D12-Benzo(a)anthracene	2012/02/09		94	%	50 - 150
			D12-Benzo(a)pyrene	2012/02/09		90	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/02/09		88	%	50 - 150
			D12-Benzo(ghi)perylene	2012/02/09		92	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/02/09		84	%	50 - 150
			D12-Chrysene	2012/02/09		88	%	50 - 150

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB216831

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2757532	JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/02/09		88	%	50 - 150
			D12-Perylene	2012/02/09		90	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/02/09		88	%	50 - 150
			D8-Acenaphthylene	2012/02/09		90	%	50 - 150
			D8-Naphthalene	2012/02/09		80	%	50 - 150
			1-Methylnaphthalene	2012/02/09	<0.10		ug	
			1-Methylphenanthrene	2012/02/09	<0.10		ug	
			2-Chloronaphthalene	2012/02/09	<0.10		ug	
			2-Methylanthracene	2012/02/09	<0.10		ug	
			2-Methylnaphthalene	2012/02/09	<0.10		ug	
			3-Methylcholanthrene	2012/02/09	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/02/09	<0.10		ug	
			9,10-Dimethylanthracene	2012/02/09	<0.40		ug	
			Acenaphthene	2012/02/09	<0.050		ug	
			Acenaphthylene	2012/02/09	<0.050		ug	
			Anthracene	2012/02/09	<0.050		ug	
			Benzo(a)anthracene	2012/02/09	<0.050		ug	
			Benzo(a)fluorene	2012/02/09	<0.10		ug	
			Benzo(a)pyrene	2012/02/09	<0.050		ug	
			Benzo(b)fluoranthene	2012/02/09	<0.050		ug	
			Benzo(b)fluorene	2012/02/09	<0.10		ug	
			Benzo(e)pyrene	2012/02/09	<0.10		ug	
			Benzo(g,h,i)perylene	2012/02/09	<0.050		ug	
			Benzo(k)fluoranthene	2012/02/09	<0.050		ug	
			Biphenyl	2012/02/09	<0.10		ug	
			Chrysene	2012/02/09	<0.050		ug	
			Coronene	2012/02/09	<0.10		ug	
			Dibenz(a,h)anthracene	2012/02/09	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/02/09	<0.20		ug	
			Fluoranthene	2012/02/09	<0.050		ug	
			Fluorene	2012/02/09	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/02/09	<0.050		ug	
			m-Terphenyl	2012/02/09	<0.10		ug	
			Naphthalene	2012/02/09	<0.072		ug	
			o-Terphenyl	2012/02/09	<0.10		ug	
			Perylene	2012/02/09	<0.10		ug	
			Phenanthrene	2012/02/09	<0.050		ug	
			p-Terphenyl	2012/02/09	<0.10		ug	
			Pyrene	2012/02/09	<0.050		ug	
			Quinoline	2012/02/09	<0.40		ug	
			Tetralin	2012/02/09	<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.

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