Lakeland Industry & Community Association

Maskwa Monitoring Site
Ambient Air Monitoring
Data Report
For
July 2012

Prepared By:

August 30, 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
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T9N 2J5

Monitoring Location: Maskwa
Data Period: July 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 – July 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	0.30	7	VAR	VAR	VAR	VAR	1.3	31	100.0
H2S (PPB)	10	3	0	0	0.23	4	15	4	4.2	129(SE)	0.7	15	100.0
THC (PPM)	-	-	-	-	2.08	2.9	VAR	VAR	VAR	VAR	2.3	12	100.0
NOx (PPB)	-	-	-	-	1.98	23	31	7	6.3	298(WNW)	5.0	31	100.0
NO (PPB)	-	-	-	-	0.37	10	29	6	1.6	310(NNW)	1.4	29	100.0
NO_2 (PPB)	159	-	0	-	1.61	14	31	7	6.3	298(WNW)	3.6	31	100.0
VECTOR WS (KPH)	-	-	-	-	4.40	13.6	25	15	-	22(NNE)	5.9	17	100.0
VECTOR WD (DEGREES)	-	-	-	-	186(S)	-	-	-	-	-	-	-	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	72.57	94	10, 11	4, 3	2.7, 4.2	52(NE), 212(SSW)	86.6	15	100.0
TEMPERATURE (DEG C)	-	-	-	-	18.99	32.3	10	15	8.7	189(S)	24.6	10	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	942	952	7, 8	VAR	VAR	VAR	950.5	7, 8	100.0
PRECIPITATION (MM)	-	-	-	-	0.11	9.0	3	16	4	53(NE)	27.3	3	100.0

NA-NOT APPLICABLE VAR-VARIOUS

General Monthly Summary

Equipment Operation

The following summary outlines the analyzer performance. Any non-conformances, problems encountered 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 issues were observed during the month. The inlet filter was changed before the monthly calibration was started on July 10th. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

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

No operational issues were observed during the month. The inlet filter was changed before the monthly calibration was started on July 10th. Data was corrected using daily zero information.

Total Hydrocarbon (PPM)

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

No operational issues were observed during the month. The inlet filter was changed before the monthly calibration was started on July 10th. The H2 gas cylinder was replaced on July 10th. 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 issues were observed during the month. The inlet filter was changed before the monthly calibration was started on July 10th. Data was corrected using daily zero information.

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

- System make / model - MetOne 50.5H Sonic, S/N: H10703

The wind system is reported as vector wind speed and vector wind direction.
No operational issues were observed this month.
WS maximum data on July 9th at hour 2 was invalidated as the reading went above the full scale.

Relative Humidity (PERCENT)

- System make / model - Met One 083

No operational issues were observed during the month.

Precipitation (MM)

- System make / model - Met One 387

No operational issues were observed during the month.

General Monthly Summary

AQM STATION – LICA – Maskwa

Barometric Pressure (MILLIBAR)

- System make / model - Met One 092

No operation issues were observed during the month.

Ambient Temperature (DEGC)

- System make / model - Met One 060

No operational issues were observed during the month.

Trailer Temperature (DEG C)

- System make / model – R&R 61

No operational issues were observed during the month.

Standard Deviation Wind Direction (DEG)

- System make / model –Met One 50.5H

No operational issues were 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 issues were observed during the month.

Trailer

The manifold was cleaned on July 10th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 2012

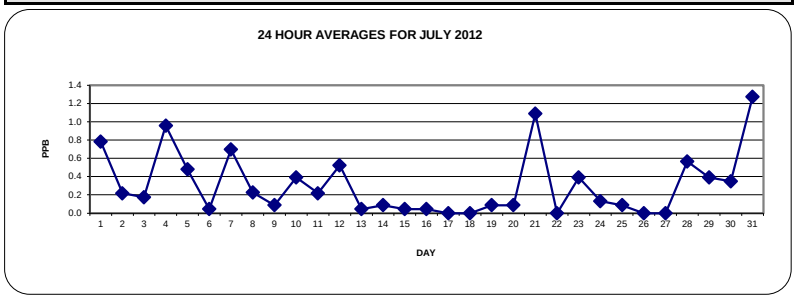
SULPHUR DIOXIDE (SO_2) hourly averages in ppb

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

STATUS FLAG CODES

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

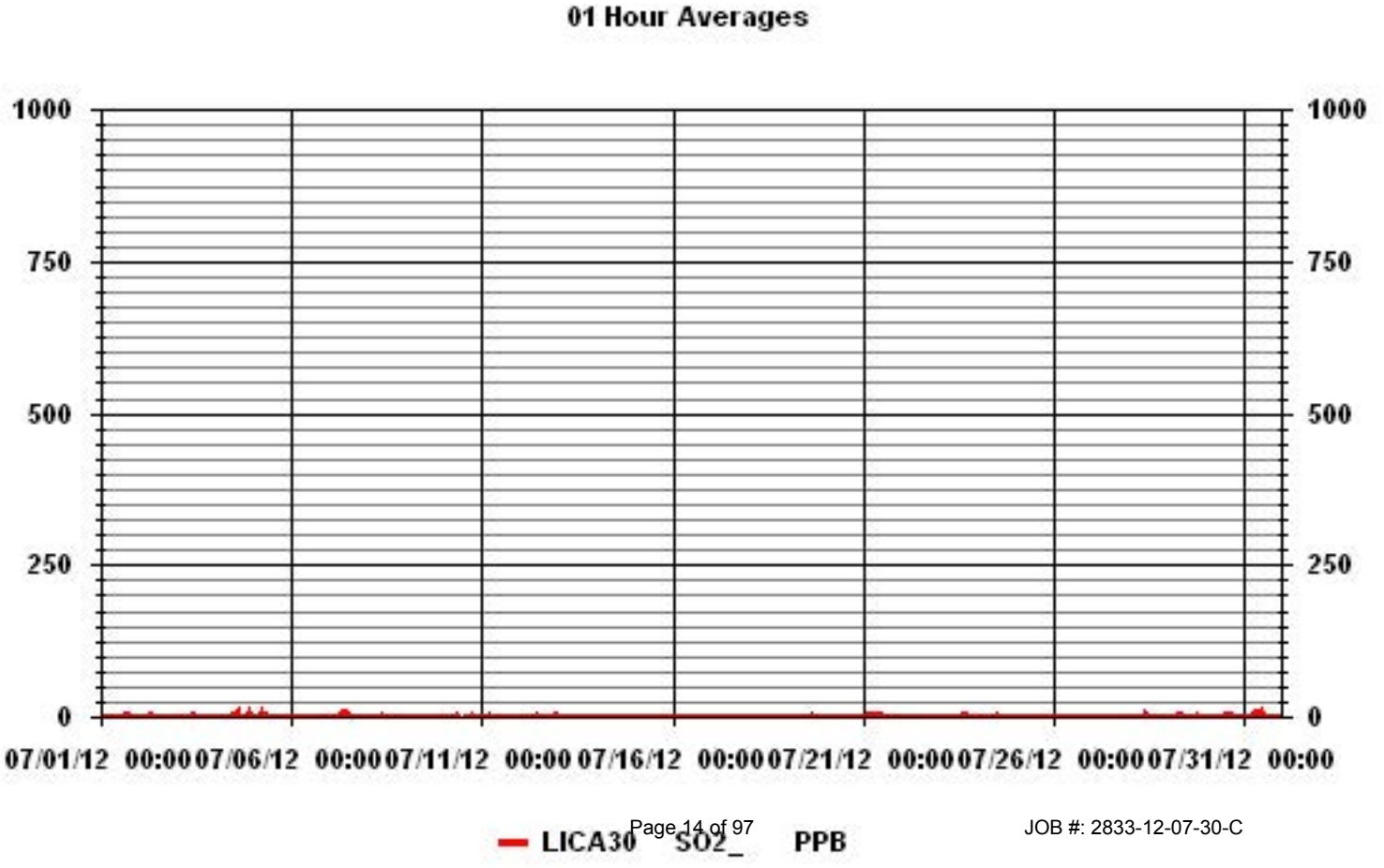


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB | 24-HR 48 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	99					
MAXIMUM 1-HR AVERAGE:	7	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	1.3	PPB			ON DAY(S)	31
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.99		MONTHLY AVERAGE:		0.30	PPB

JOB #: 2833-12-07-30-C



JOB #: 2833-12-07-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JULY 2012

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

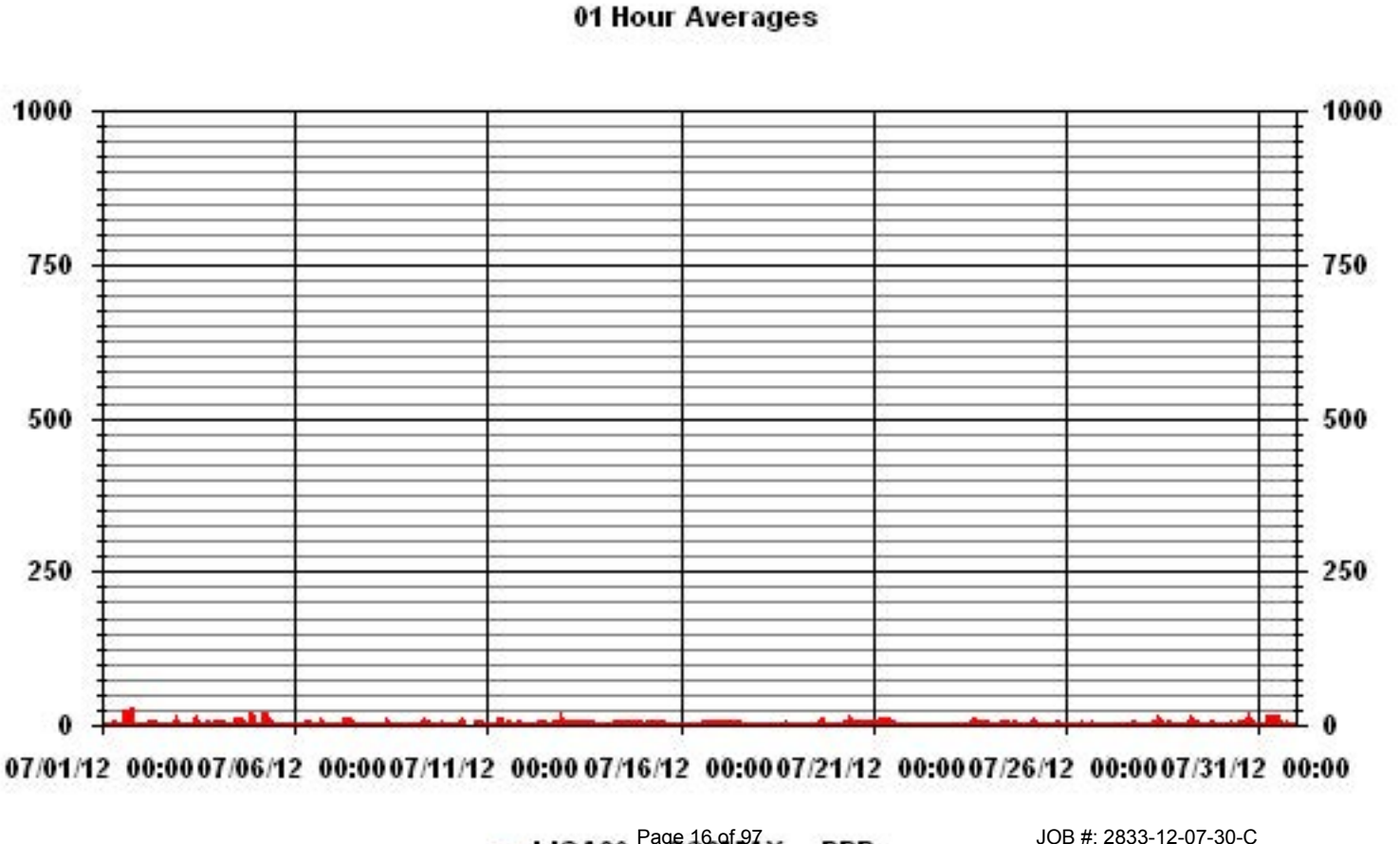
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	1	1	0	0	0	0	**IZS**	4	3	1	0	0	1	1	19	20	**22**	11	5	0	0	0	0	**22**	3.9	24
2	0	0	0	0	0	0	**IZS**	4	4	4	1	0	0	0	0	0	0	0	0	0	0	0	7	0	7	0.9	24
3	1	1	0	0	0	**IZS**	1	0	0	1	7	1	4	0	0	1	0	1	1	1	1	2	1	1	7	1.1	24
4	1	1	1	1	**IZS**	0	0	0	0	0	0	10	9	4	13	4	0	0	0	0	0	**22**	3	0	**22**	3.0	24
5	0	0	0	**IZS**	0	21	15	4	5	6	0	0	0	0	0	0	0	0	1	0	1	0	0	0	21	2.3	24
6	0	0	**IZS**	0	0	0	0	2	2	1	1	0	0	0	0	1	5	0	1	0	0	0	0	0	5	0.6	24
7	0	**IZS**	0	0	0	0	0	7	4	11	10	2	0	0	0	0	0	0	0	0	0	0	0	0	11	1.5	24
8	**IZS**	0	0	0	0	0	0	0	2	6	3	1	0	1	0	0	1	0	0	0	0	0	0	**IZS**	6	0.6	24
9	1	0	0	0	0	1	2	6	1	1	1	1	1	0	0	0	0	0	0	1	1	0	**IZS**	0	6	0.7	24
10	0	0	0	0	0	0	1	4	8	**C**	**C**	**C**	**C**	**C**	1	**M**	**M**	1	1	1	1	**IZS**	0	0	8	1.1	22
11	0	0	0	0	1	2	1	1	13	3	0	0	1	1	1	0	0	0	1	1	**IZS**	0	0	0	13	1.1	24
12	0	0	0	0	0	0	3	1	1	1	3	4	3	0	0	2	1	1	1	**IZS**	1	1	10	6	10	1.7	24
13	3	1	1	1	1	1	1	1	1	1	0	2	3	1	1	1	1	1	**IZS**	1	0	0	0	1	3	1.0	24
14	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	3	**IZS**	3	1	1	1	1	1	3	0.9	24
15	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	0	**IZS**	0	0	0	0	0	0	0	2	0.7	24
16	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	**IZS**	1	1	1	1	1	1	1	1	2	0.4	24
17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	0	1	0.6	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	1	1	0	0	0	0	1	0.1	24
19	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	7	9	1	1	0	0	0	0	0	9	0.8	24
20	0	0	0	0	0	1	4	0	0	7	2	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	7	1.1	24
21	1	1	1	3	5	7	8	10	7	7	**IZS**	3	3	2	0	0	0	0	0	0	0	0	0	0	10	2.5	24
22	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0.0	24
23	0	0	0	0	0	0	0	1	**IZS**	0	0	0	3	7	3	7	8	5	1	0	3	3	4	0	8	2.0	24
24	0	1	0	0	0	0	0	**IZS**	3	1	1	1	2	2	1	1	1	1	1	0	1	0	0	0	3	0.7	24
25	0	0	2	6	2	1	**IZS**	1	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	6	0.7	24
26	0	0	0	0	0	**IZS**	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0.2	24
27	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	1	0.2	24
28	0	0	0	**IZS**	0	0	3	4	5	10	4	2	1	1	0	2	9	0	1	0	0	0	0	0	10	1.8	24
29	0	0	**IZS**	0	2	2	9	4	4	6	3	0	1	0	0	0	1	0	2	3	2	0	0	0	9	1.7	24
30	0	**IZS**	0	0	0	0	0	1	1	0	0	2	2	3	1	1	1	8	1	9	1	1	1	0	9	1.4	24
31	**IZS**	1	0	0	0	3	11	11	7	3	2	17	10	5	2	1	0	1	1	0	0	0	1	**IZS**	17	3.5	24
HOURLY MAX	3	1	2	6	5	21	15	11	13	11	10	17	10	7	13	19	20	22	11	9	3	22	10	6			
HOURLY AVG	0.3	0.3	0.3	0.4	0.4	1.4	2.1	2.2	2.5	2.6	1.5	1.7	1.7	1.1	0.9	1.7	2.2	1.5	1.2	1.0	0.5	1.1	1.0	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:	313					
MAXIMUM INSTANTANEOUS VALUE:	22	PPB	@ HOUR(S)	17, 21	ON DAY(S)	1, 4
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		742	HRS
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	2.77					



JOB #: 2833-12-07-30-C

LICA30
SO2_ / WDR Joint Frequency Distribution (Percent)

July 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	1.98	6.79	5.24	3.68	4.95	4.95	7.22	11.33	10.90	13.17	8.78	6.65	5.09	6.37	1.13	1.69	100.00
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	1.98	6.79	5.24	3.68	4.95	4.95	7.22	11.33	10.90	13.17	8.78	6.65	5.09	6.37	1.13	1.69	

Calm : .00 %

Total # Operational Hours : 706

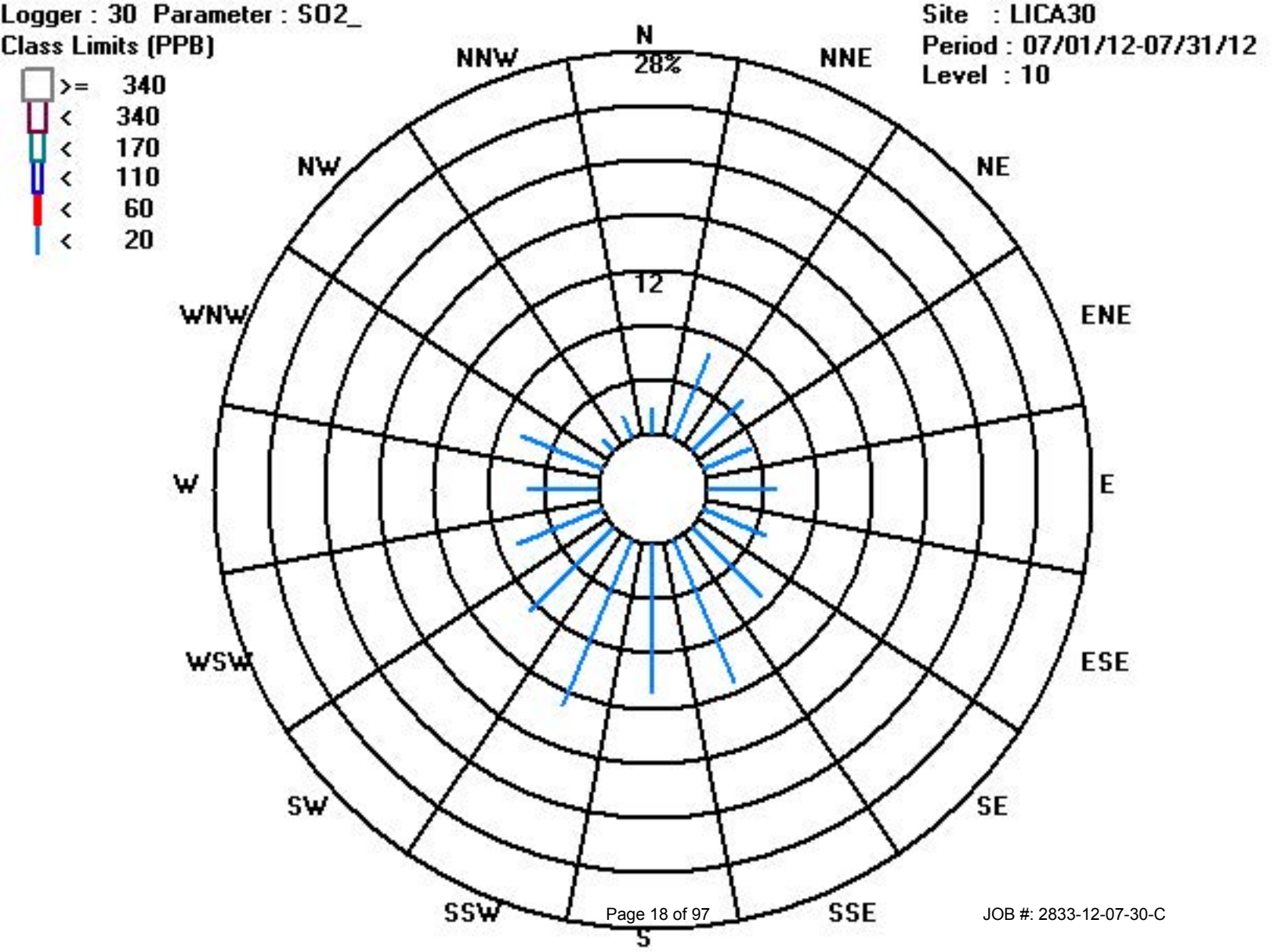
Distribution By Samples

Direction

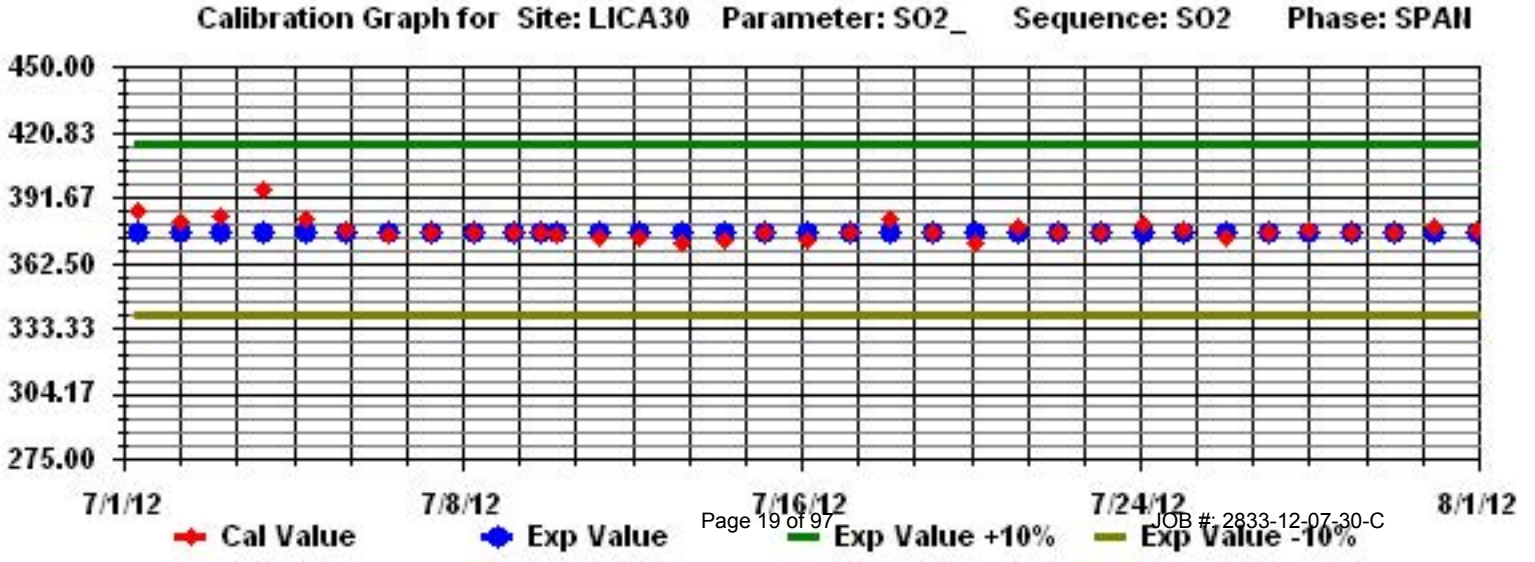
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	14	48	37	26	35	35	51	80	77	93	62	47	36	45	8	12	706
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	14	48	37	26	35	35	51	80	77	93	62	47	36	45	8	12	

Calm : .00 %

Total # Operational Hours : 706



JOB #: 2833-12-07-30-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
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 2012

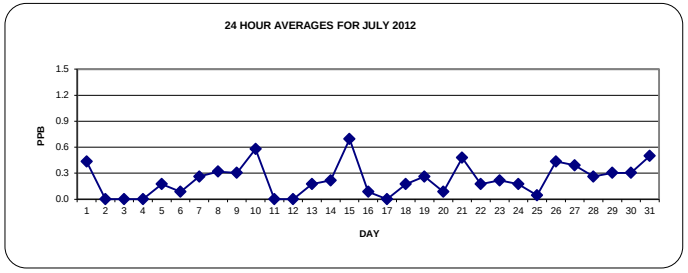
HYDROGEN SULPHIDE (H_2S) hourly averages in ppb

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

STATUS FLAG CODES

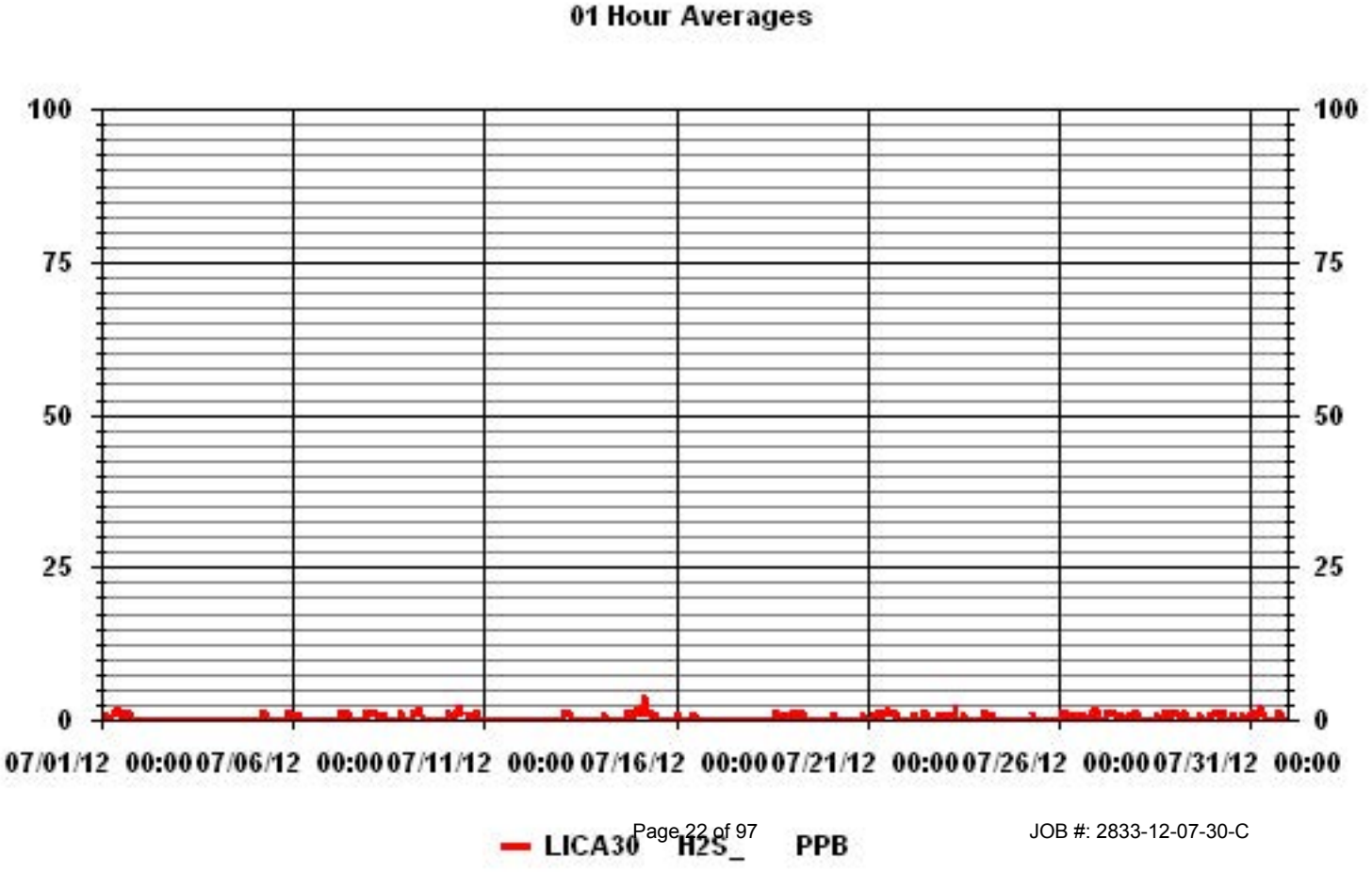
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



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:	147						
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	4	ON DAY(S)	15	
MAXIMUM 24-HR AVERAGE:	0.7	PPB			ON DAY(S)	15	
					VAR-VARIOUS		
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		744	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	0.47		MONTHLY AVERAGE:		0.23	PPB	



JOB #: 2833-12-07-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JULY 2012

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST

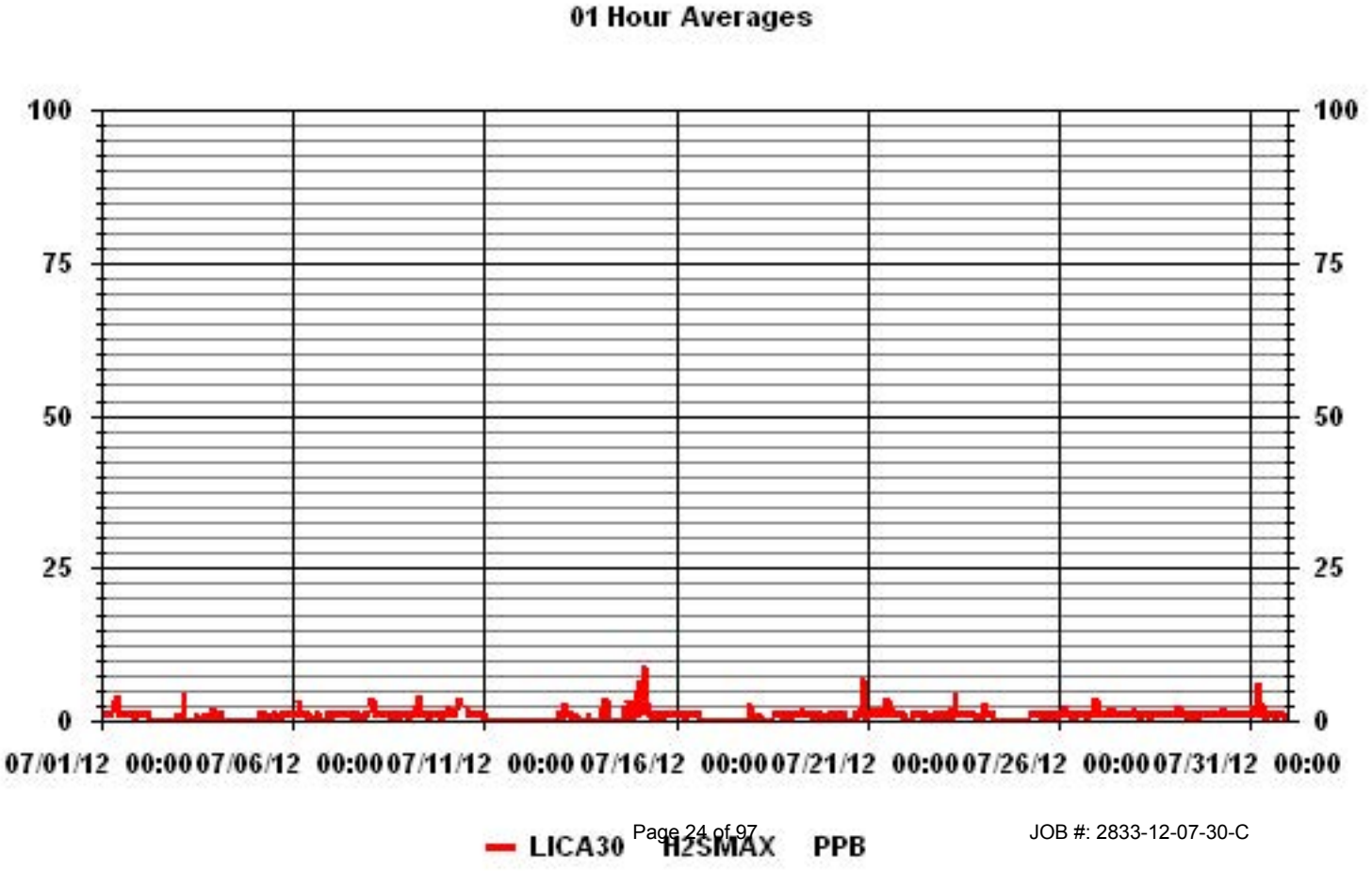
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	1	1	1	1	1	1	**IZS**	2	3	4	1	1	1	1	1	1	1	1	1	0	0	1	1	4	1.2	24
2	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
3	1	0	0	0	4	**IZS**	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	1	2	0	4	0.5	24
4	0	0	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
5	0	0	0	**IZS**	1	1	1	0	0	1	0	0	1	1	0	0	0	1	1	1	1	1	1	1	1	0.6	24
6	1	1	**IZS**	3	1	1	1	1	1	1	0	1	0	0	0	1	1	0	0	0	0	1	1	0	3	0.7	24
7	0	**IZS**	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	0.7	24
8	**IZS**	3	3	2	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	1	1	1	1	**IZS**	3	1.1	24
9	0	1	1	1	1	2	2	4	1	1	1	1	0	0	1	1	1	1	1	1	1	0	**IZS**	1	4	1.0	24
10	1	2	2	1	1	1	2	3	3	**C**	**C**	**C**	**C**	2	1	**M**	**M**	1	1	1	1	**IZS**	1	1	3	1.5	22
11	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
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	1	1	1	0.1	24
13	0	1	3	1	1	1	1	0	0	1	0	0	0	0	0	0	0	1	**IZS**	0	0	0	0	0	3	0.4	24
14	0	0	2	3	3	0	0	0	0	0	0	0	0	0	0	0	2	**IZS**	3	2	1	0	1	1	3	0.8	24
15	5	1	6	6	**9**	1	3	1	1	0	1	1	0	1	1	0	**IZS**	1	1	1	1	1	1	1	**9**	1.9	24
16	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	1	0.6	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	3	1	3	0.2	24
18	0	0	0	0	1	0	0	0	0	0	0	0	0	**IZS**	1	1	1	1	1	1	0	1	1	0	1	0.4	24
19	1	1	1	1	1	1	1	2	1	1	1	1	**IZS**	1	0	1	1	1	1	1	0	0	0	1	0	2	0.8	24
20	1	1	0	1	1	1	1	0	0	1	1	**IZS**	0	0	0	0	0	1	1	1	2	7	1	0	7	0.9	24
21	1	1	1	1	2	1	1	1	2	1	**IZS**	1	3	3	1	1	2	1	1	1	1	1	1	0	3	1.3	24
22	0	0	0	0	1	1	1	1	1	**IZS**	0	1	1	1	0	1	0	0	1	1	1	1	0	0	1	0.6	24
23	1	1	1	1	0	2	1	4	**IZS**	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	4	1.0	24
24	1	3	1	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.4	24
25	0	0	0	0	0	0	**IZS**	1	1	1	1	1	1	0	1	1	1	0	1	1	1	0	0	1	1	0.6	24
26	1	1	1	2	2	**IZS**	1	1	0	0	0	1	1	1	1	1	1	1	0	1	1	1	3	3	3	1.1	24
27	1	1	1	1	**IZS**	1	1	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1.1	24
28	1	1	0	**IZS**	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24
29	1	2	**IZS**	2	1	1	1	1	0	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	2	1.0	24
30	1	**IZS**	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
31	**IZS**	2	2	1	1	6	3	2	2	0	1	1	1	1	1	1	0	1	1	1	1	0	0	**IZS**	6	1.3	24
HOURLY MAX	5	3	6	6	9	6	3	4	3	3	4	1	3	3	1	1	2	1	3	2	2	7	3	3			
HOURLY AVG	0.7	0.9	1.1	1.2	1.3	1.0	0.9	1.0	0.7	0.6	0.7	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.7	0.7	0.6	0.7	0.8	0.6			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	428					
MAXIMUM INSTANTANEOUS VALUE:	9	PPB	@ HOUR(S)	4	ON DAY(S)	15
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		742	HRS
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	0.90					



JOB #: 2833-12-07-30-C

LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

July 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	1.98	6.78	5.23	3.67	4.95	5.09	7.07	11.31	10.89	13.15	8.76	6.64	5.09	6.36	1.13	1.69	99.85
< 10	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.98	6.78	5.23	3.67	4.95	5.09	7.21	11.31	10.89	13.15	8.76	6.64	5.09	6.36	1.13	1.69	

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	14	48	37	26	35	36	50	80	77	93	62	47	36	45	8	12	706
< 10							1										1
< 50																	
>= 50																	
Totals	14	48	37	26	35	36	51	80	77	93	62	47	36	45	8	12	

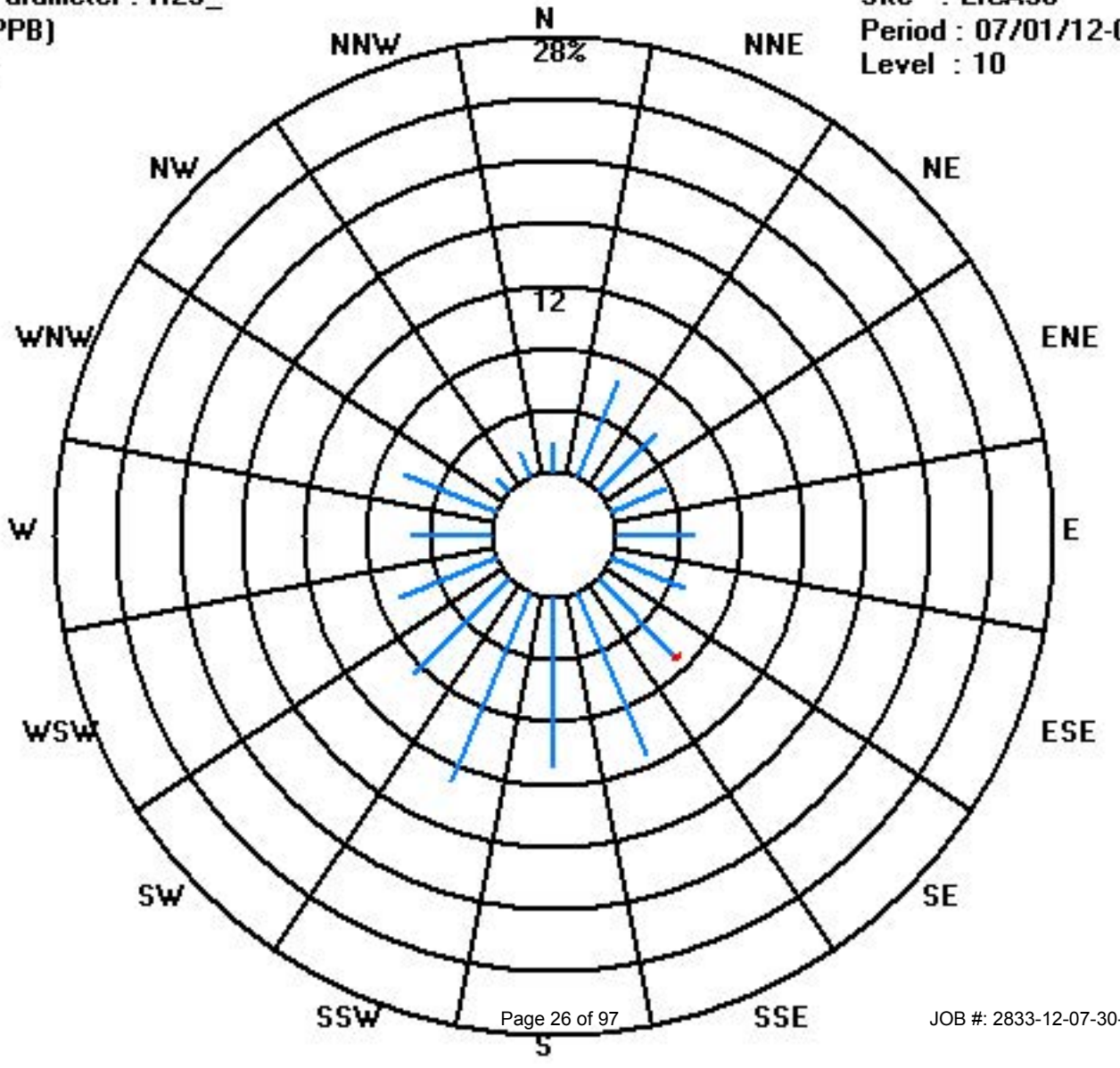
Calm : .00 %

Total # Operational Hours : 707

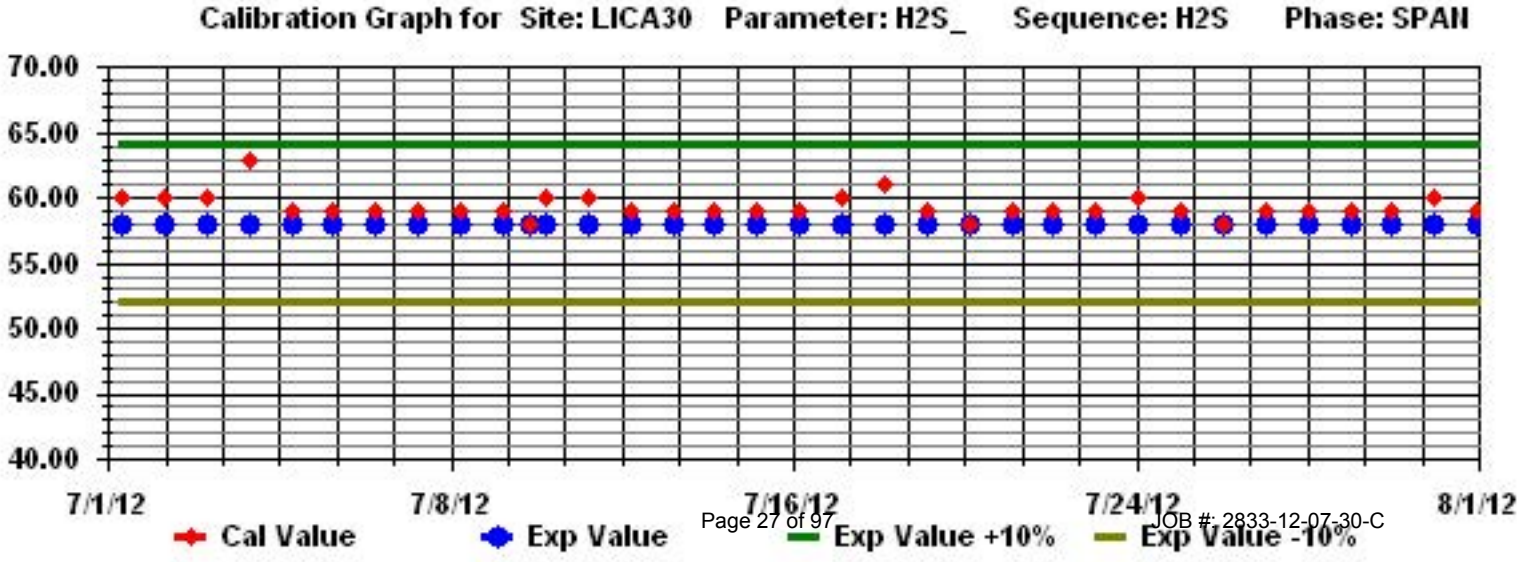
Logger : 30 Parameter : H2S_
Class Limits (PPB)

>= 50
< 50
< 10
< 3

Site : LICA30
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-30-C


Calibration Graph for Site: LICA30 Parameter: H2S_ Sequence: H2S Phase: SPAN
70.00
65.00
60.00
55.00
50.00
45.00
40.00
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

JULY 2012

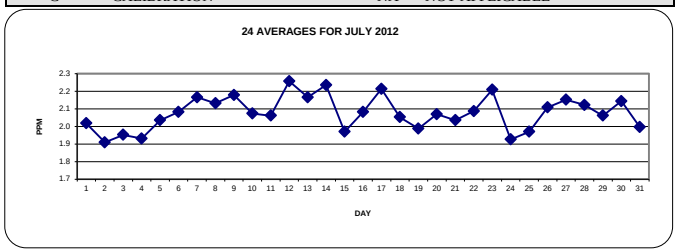
TOTAL HYDROCARBONS hourly averages in ppm

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

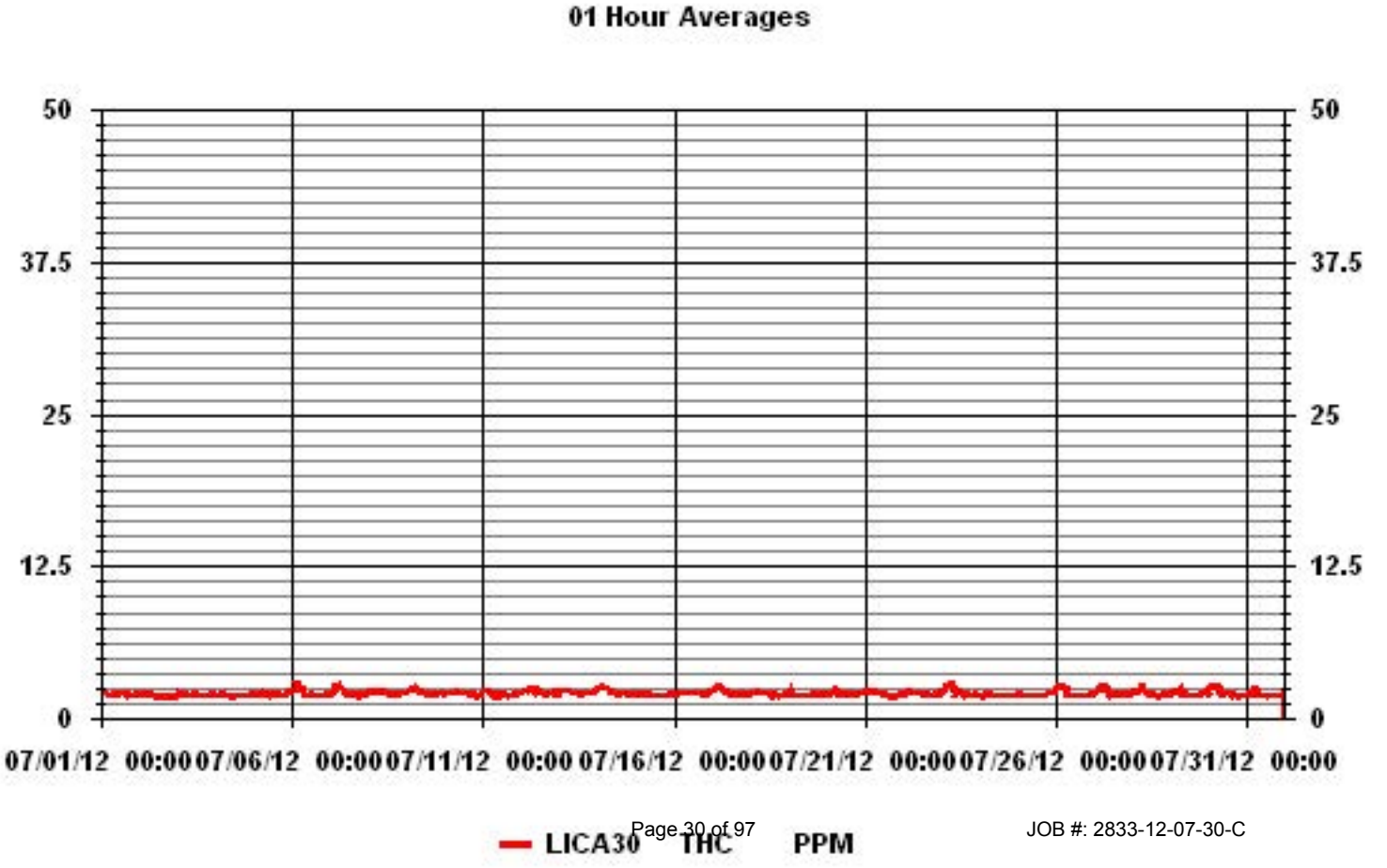
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM 1-HR AVERAGE:	2.9	PPM	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	2.3	PPM			ON DAY(S)	12
				VAR- VARIOUS		
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.19		MONTHLY AVERAGE:		2.08	PPM



JOB #: 2833-12-07-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JULY 2012

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

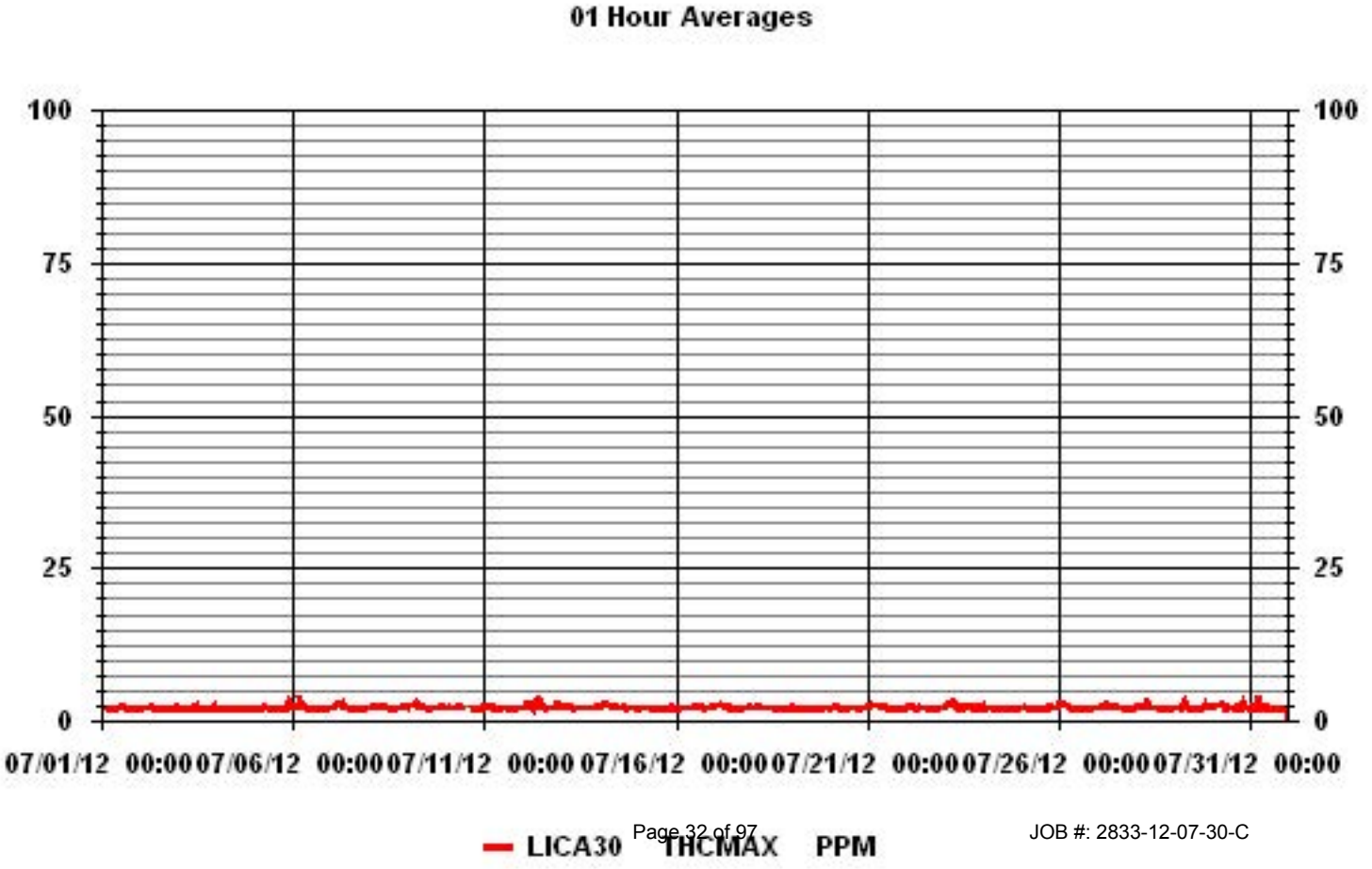
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2.1	2.1	2.2	2.1	2.1	2	2	**IZS**	2.3	2	2	2.1	2.2	2.2	2.3	2.3	2	2.1	2.1	2.1	1.9	2	2	2	2.3	2.1	24
2	2	2	2.1	2.1	2.1	2.1	**IZS**	2.5	2.1	2	1.9	1.8	1.8	1.9	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	2	2.2	2.5	2.0	24
3	2.2	2	1.9	2.1	2.1	**IZS**	2	2	1.9	2.1	2.4	2.1	2.5	1.9	2	2.1	2.1	1.9	1.9	1.9	2	2.3	2.6	2	2.6	2.1	24
4	2	1.9	1.9	2	**IZS**	2	1.9	1.9	1.9	1.9	1.9	2.1	2.1	2	2.1	2.1	2.1	1.9	1.9	1.9	2.1	2.2	2.1	2	2.2	2.0	24
5	2	2	2.2	**IZS**	2.1	2.4	2.2	2.2	2.2	2.1	2	2	2	2	2	2	2	2	2	2	2.5	3.4	3	2.3	3.4	2.2	24
6	2.4	2.4	**IZS**	3.8	2.6	2.7	2.8	2.3	2	2	1.9	1.9	2	2	2	1.9	1.9	1.9	1.9	2	1.9	2.2	2.1	2.1	3.8	2.2	24
7	2.3	**IZS**	2.6	2.9	2.8	3	2.7	3	2.4	2.4	2.2	2	1.9	2	2	2	2	2	2	2	2	2	2.1	2.2	3	2.3	24
8	**IZS**	2.4	2.3	2.3	2.3	2.3	2.5	2.3	2.3	2.6	2.2	2.1	2.1	2.1	2	2	2	2.1	2.1	2.1	2.2	2.2	2.2	**IZS**	2.6	2.2	24
9	2.2	2.4	2.7	2.6	2.6	3	2.5	2.3	2.2	2.2	2.2	2.3	2.2	2	2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	**IZS**	2.1	3	2.3	24
10	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.4	2.6	2.1	2.1	**C**	**C**	**C**	**C**	**C**	**C**	2	2.1	2.1	2	**IZS**	2	2.2	2.6	2.1	24
11	2.2	2.4	2.5	2.3	2.3	2.5	2.1	2	2.1	2.2	1.9	2.2	2.1	2.1	2.1	2	2.2	2	1.9	2	**IZS**	2.1	2.1	2.1	2.5	2.1	24
12	2.1	2.3	2.7	2.7	2.5	2.7	2.9	2.4	3.1	2.8	**4.2**	2.6	2.3	2.2	2.2	2	2.1	2.1	2.1	**IZS**	2.2	2.8	2.8	2.7	**4.2**	2.5	24
13	2.3	2.3	2.3	2.4	2.3	2.4	2.4	2.4	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**IZS**	2.1	2.1	2.2	2.3	2.4	2.4	2.2	24
14	2.6	2.5	2.8	2.9	2.7	2.6	2.6	2.4	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.4	2.2	**IZS**	2.1	2.1	2.1	2.1	2.1	2	2.9	2.3	24
15	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	1.9	1.9	1.9	1.9	1.9	**IZS**	2	2	2	2	2.3	2	2	2.3	2.0	24
16	2.1	2	2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.4	2.4	2.3	**IZS**	2.2	2.2	2	2.1	2.1	2.2	2.2	2.4	2.4	2.2	24
17	2.3	2.4	2.6	2.7	2.7	2.6	2.7	2.6	2.3	2.2	2.2	2	2	2	**IZS**	2.2	2	2	2	2.1	2.1	2.1	2.4	2.1	2.7	2.3	24
18	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.1	2.3	2.1	2.1	2.1	**IZS**	2	2	2.1	1.9	2.2	2.1	1.9	2	2	2	2.3	2.1	24
19	2.3	2.5	2.4	2.1	1.9	2	2	1.9	1.9	1.9	2.1	2.1	**IZS**	2	2	2.2	2.1	2.1	2.2	2	2	2.1	2.1	2.1	2.5	2.1	24
20	2	2.1	2.1	2.2	2.6	2.7	2.6	2.1	2	2	2	**IZS**	2	2.1	2.1	2.1	2.1	2.1	2	2	2.2	2.1	2.1	2.2	2.7	2.2	24
21	2.2	2.2	2.4	2.6	2.6	2.7	2.6	2.5	2.3	2.4	**IZS**	2.3	2.2	2.1	1.9	1.9	1.9	1.9	1.8	1.9	1.9	2	2	2	2.7	2.2	24
22	2.1	2.3	2.3	2.5	2.5	2.4	2.2	2.1	2.4	**IZS**	2.3	2.1	2.1	2.1	2	2	2	2	2	2	2	2.2	2.1	2.1	2.5	2.2	24
23	2.3	2.5	2.8	2.8	2.9	3.1	3.1	2.7	**IZS**	2.1	2.5	2.5	2.2	2.4	2.3	2.3	2.4	2.3	1.9	1.9	2.4	2.3	2.4	2	3.1	2.4	24
24	1.9	2.4	1.9	2	2.1	2.1	2.1	**IZS**	2	2	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	2	2	2.4	2.0	24
25	2.1	2.1	2.3	2.3	2.1	1.9	**IZS**	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.4	2.5	2.2	2.1	2.1	2.3	2.5	2.1	24
26	2.9	3	2.8	2.7	2.8	**IZS**	2.7	2.3	1.9	1.9	1.9	1.9	1.9	2	2	2	1.9	2	1.9	1.9	1.9	2.2	2.1	2.1	3	2.2	24
27	2.2	2.4	2.4	2.4	**IZS**	2.8	2.7	2.8	2.5	2.2	2.2	2.5	2.4	2.1	2.1	2.1	2.1	2	2	2.1	2.1	2	2	2.2	2.8	2.3	24
28	2.2	2.3	2.4	**IZS**	2.6	2.5	3.2	3.2	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2	2.1	2	2.2	2	2	2	2	2.1	3.2	2.3	24
29	2.1	2.3	**IZS**	2.3	2.6	2.3	2.9	2.2	2.1	2.1	2	2	1.9	2	1.9	2	2.1	1.9	2	2.7	2.2	2.2	2.4	2.3	2.9	2.2	24
30	2.2	**IZS**	2.6	2.7	2.6	2.7	2.7	2.4	2.2	2	2.4	2.2	2.1	2.1	2	2.2	2.2	2.2	2	2.9	2.3	2.1	2	1.9	2.9	2.3	24
31	**IZS**	2.2	2.2	2	2.1	4	3	2.3	2.5	2	2.2	2.2	2.1	2.3	2.2	2	2.1	1.9	1.9	1.9	1.9	1.9	2	**IZS**	4	2.2	24
HOURLY MAX	3	3	3	4	3	4	3	3	3	3	4	3	3	2	2	2	2	2	2	3	3	3	3	3			
HOURLY AVG	2.2	2.3	2.3	2.4	2.4	2.5	2.5	2.3	2.2	2.1	2.2	2.1	2.1	2.1	2.0	2.1	2.1	2.0	2.0	2.1	2.1	2.2	2.2	2.1			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	705					
MAXIMUM INSTANTANEOUS VALUE:	4.2	PPM	@ HOUR(S)	10	ON DAY(S)	12
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	0.28					



JOB #: 2833-12-07-30-C

LICA30
THC / WDR Joint Frequency Distribution (Percent)

July 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	1.98	6.78	5.37	3.67	4.95	4.95	7.49	11.17	10.74	13.15	8.76	6.64	5.09	6.36	1.13	1.69	100.00
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.98	6.78	5.37	3.67	4.95	4.95	7.49	11.17	10.74	13.15	8.76	6.64	5.09	6.36	1.13	1.69	

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
< 3.0	14	48	38	26	35	35	53	79	76	93	62	47	36	45	8	12	707
< 10.0																	
< 50.0																	
>= 50.0																	
Totals	14	48	38	26	35	35	53	79	76	93	62	47	36	45	8	12	

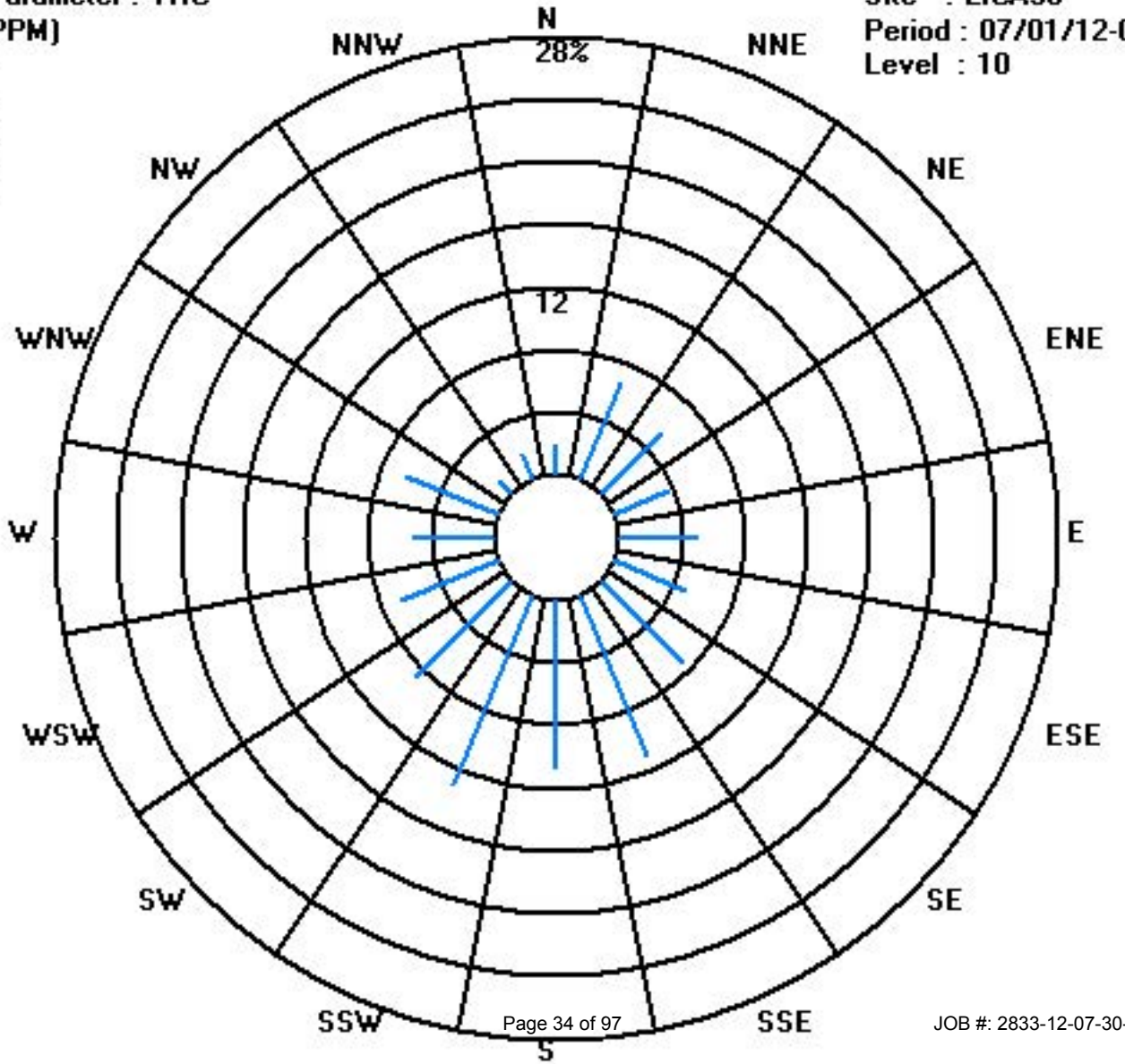
Calm : .00 %

Total # Operational Hours : 707

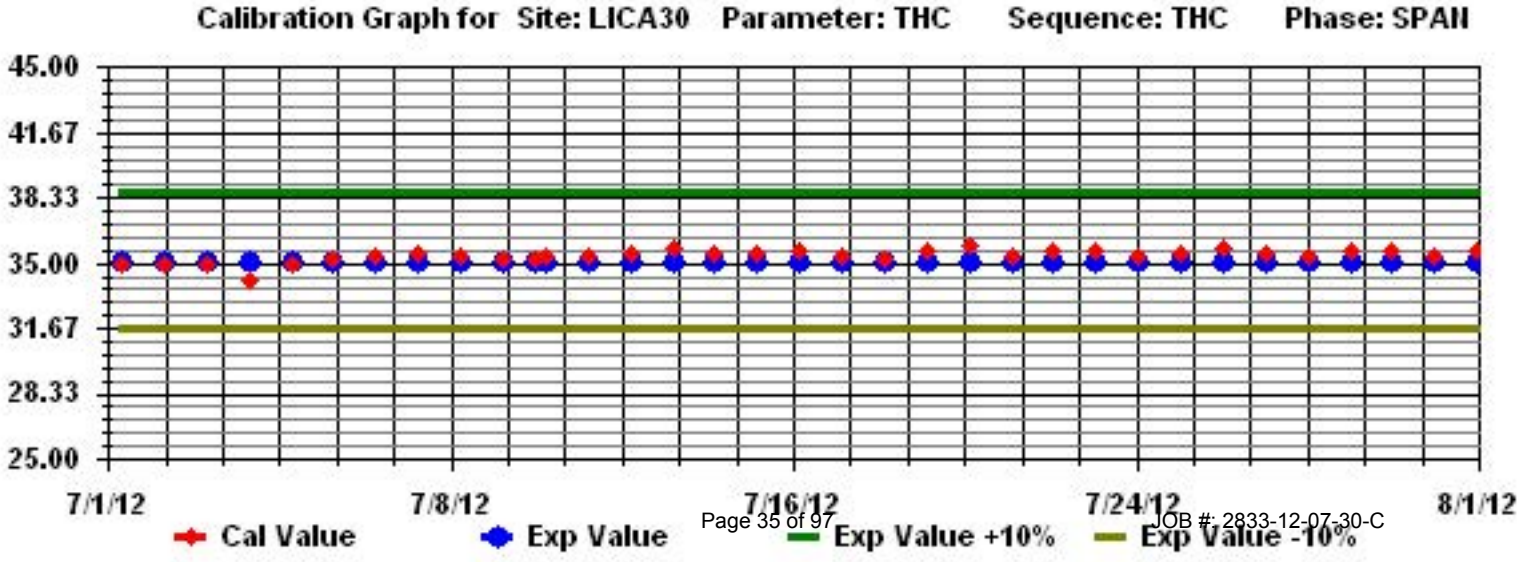
Logger : 30 Parameter : THC
Class Limits (PPM)

>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA30
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-30-C


Calibration Graph for Site: LICA30 Parameter: THC Sequence: THC Phase: SPAN
45.00
41.67
38.33
35.00
31.67
28.33
25.00
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 2012

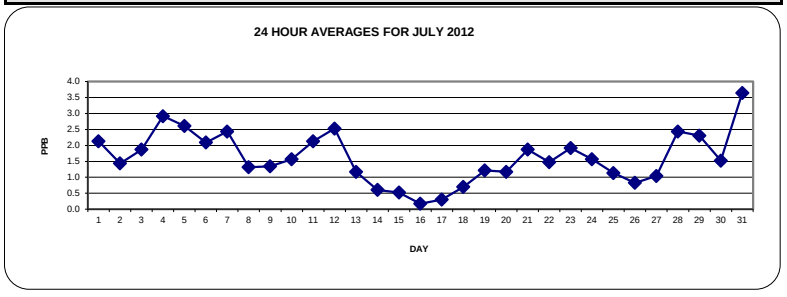
NITROGEN DIOXIDE hourly averages in ppb

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	1	2	2	1	0	1	1	**IZS**	6	2	2	1	1	1	1	6	4	8	6	3	0	0	0	0	8	2.1	24
2	0	1	1	1	0	1	**IZS**	6	1	3	1	0	1	1	1	0	0	0	1	0	1	1	9	3	9	1.4	24
3	5	4	3	1	1	**IZS**	4	1	1	1	4	1	4	1	1	1	0	1	1	1	1	3	2	1	5	1.9	24
4	1	2	2	2	**IZS**	2	1	1	1	1	0	7	9	9	10	4	1	0	0	0	1	9	3	1	10	2.9	24
5	2	1	0	**IZS**	1	12	6	3	4	4	1	1	1	1	1	1	0	0	0	1	3	6	6	5	12	2.6	24
6	4	4	**IZS**	3	3	2	3	5	4	3	2	1	1	1	1	1	2	1	2	1	1	1	1	1	5	2.1	24
7	1	**IZS**	1	1	1	1	3	9	8	9	8	2	1	1	1	1	1	1	1	1	1	1	1	1	9	2.4	24
8	**IZS**	0	0	0	0	1	2	2	2	6	4	3	1	1	1	1	1	0	0	1	1	1	1	**IZS**	6	1.3	24
9	2	2	2	1	1	2	2	4	2	2	2	1	1	0	1	1	1	0	0	1	1	1	**IZS**	1	4	1.3	24
10	1	1	1	0	0	1	1	3	6	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	2	2	2	1	**IZS**	2	1	6	1.6	24
11	1	1	1	1	4	11	5	2	5	5	1	2	3	3	2	1	1	0	0	0	**IZS**	0	0	0	11	2.1	24
12	0	0	0	0	1	3	6	6	4	4	6	12	2	1	1	1	0	0	0	**IZS**	0	0	5	6	12	2.5	24
13	1	1	2	1	1	2	2	2	1	2	1	1	1	1	1	1	1	1	**IZS**	1	1	0	1	1	2	1.2	24
14	0	0	0	0	0	0	0	2	1	0	1	0	1	0	0	1	1	**IZS**	2	1	1	1	1	1	2	0.6	24
15	1	1	2	1	1	1	2	0	1	0	1	0	1	0	0	0	**IZS**	0	0	0	0	0	0	0	2	0.5	24
16	0	1	0	0	0	0	1	0	0	0	0	0	1	0	1	**IZS**	0	0	0	0	0	0	0	0	1	0.2	24
17	0	0	1	1	1	1	1	1	0	0	1	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	1	0.3	24
18	0	1	0	1	1	0	0	0	0	0	0	1	1	**IZS**	0	0	0	1	4	2	1	0	2	1	4	0.7	24
19	3	5	4	0	0	0	0	0	0	0	0	0	**IZS**	1	0	3	2	1	3	0	0	1	4	1	5	1.2	24
20	1	1	0	0	3	4	5	2	1	2	2	**IZS**	1	1	1	1	1	0	0	0	0	0	0	1	5	1.2	24
21	1	1	1	1	6	3	7	4	2	2	**IZS**	1	3	2	0	0	1	1	1	1	1	1	2	1	7	1.9	24
22	1	2	2	2	2	2	3	3	2	**IZS**	2	2	2	2	1	1	1	1	1	1	0	1	0	0	3	1.5	24
23	1	1	2	2	1	1	1	4	**IZS**	2	1	2	3	3	1	3	4	4	0	0	1	2	5	0	5	1.9	24
24	0	4	0	0	1	1	3	**IZS**	6	2	1	1	2	3	2	2	2	1	0	1	2	1	1	0	6	1.6	24
25	0	1	3	7	2	2	**IZS**	4	2	1	0	0	0	0	0	0	1	0	1	1	0	0	1	0	7	1.1	24
26	0	0	0	0	0	**IZS**	1	1	1	1	1	0	1	1	1	2	2	1	1	1	1	2	1	0	2	0.8	24
27	0	0	0	1	**IZS**	1	2	3	2	1	1	1	1	1	1	1	1	1	1	1	1	0	1	2	3	1.0	24
28	1	2	2	**IZS**	2	1	2	9	5	10	5	2	2	1	1	1	3	0	1	1	1	2	1	1	10	2.4	24
29	2	2	**IZS**	1	3	5	11	1	2	2	3	0	0	0	0	0	0	0	2	7	5	3	3	1	11	2.3	24
30	1	**IZS**	4	3	5	5	5	2	1	0	1	2	0	0	0	0	0	3	0	3	0	0	0	0	5	1.5	24
31	**IZS**	3	4	1	1	11	11	**14**	9	6	5	6	3	4	1	0	0	0	0	0	1	0	0	**IZS**	**14**	**3.6**	24
HOURLY MAX	5	5	4	7	6	12	11	14	9	10	8	12	9	9	10	6	4	8	6	7	5	9	9	6			
HOURLY AVG	1.1	1.5	1.4	1.1	1.4	2.7	3.1	3.2	2.7	2.4	2.0	1.7	1.7	1.4	1.1	1.2	1.1	0.9	1.0	1.1	0.9	1.2	1.8	1.0			

STATUS FLAG CODES

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



OBJECTIVE LIMIT:

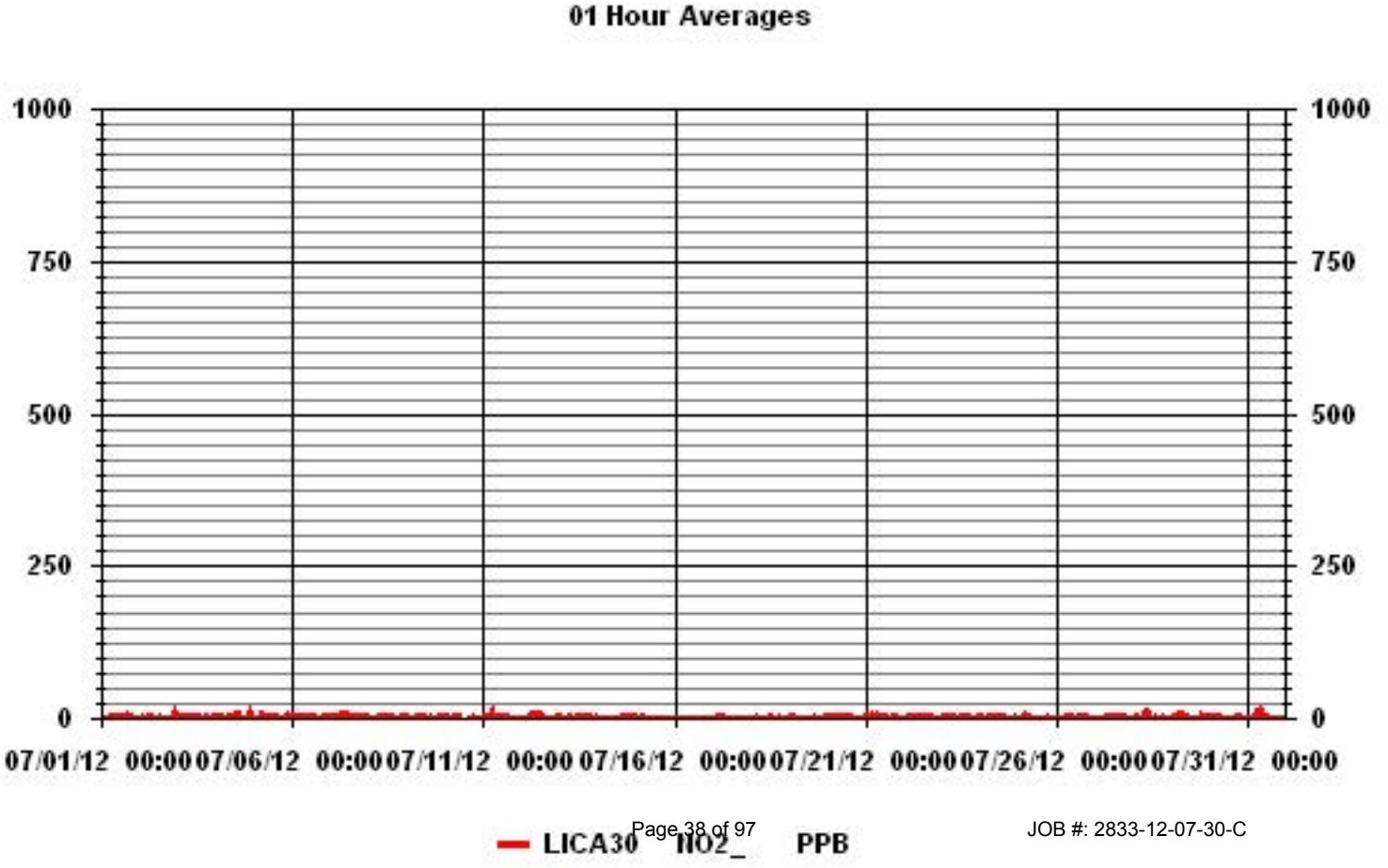
ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	504					
MAXIMUM 1-HR AVERAGE:	14	PPB	@ HOUR(S)	7	ON DAY(S)	31
MAXIMUM 24-HR AVERAGE:	3.6	PPB			ON DAY(S)	31

IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	2.05		MONTHLY AVERAGE:	1.61	PPB

JOB #: 2833-12-07-30-C



JOB #: 2833-12-07-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JULY 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	2	2	1	1	1	1	**IZS**	9	5	2	1	1	1	1	15	20	24	12	8	1	0	0	1	24	4.8	24
2	1	2	2	1	0	3	**IZS**	7	4	4	4	1	1	1	1	1	0	0	1	1	1	2	**29**	6	**29**	3.2	24
3	7	5	5	2	1	**IZS**	11	1	1	2	7	1	8	1	1	3	0	2	1	2	3	9	8	1	11	3.6	24
4	2	2	2	3	**IZS**	2	1	3	1	1	1	17	13	12	12	5	2	0	0	0	2	18	6	2	18	4.7	24
5	5	1	1	**IZS**	9	16	16	6	7	5	2	2	1	1	1	2	1	0	2	1	5	10	8	6	16	4.7	24
6	6	5	**IZS**	5	5	3	5	6	4	3	3	1	2	1	7	1	6	2	4	1	1	1	1	1	7	3.2	24
7	1	**IZS**	1	1	1	1	4	13	12	13	12	4	2	1	1	1	1	1	1	1	1	1	2	1	13	3.3	24
8	**IZS**	2	2	2	2	2	2	3	4	10	6	5	2	2	2	2	2	2	2	2	2	2	2	**IZS**	10	2.8	24
9	2	2	2	1	1	2	3	7	2	2	2	2	1	1	1	1	1	1	1	2	2	1	**IZS**	1	7	1.8	24
10	2	1	2	0	1	1	2	6	12	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2	2	3	1	**IZS**	3	1	12	2.6	24
11	1	1	1	1	11	15	8	3	12	7	1	3	3	3	3	2	1	1	1	0	**IZS**	1	1	2	15	3.6	24
12	1	1	1	1	3	7	14	9	8	6	10	17	8	2	3	3	2	2	1	**IZS**	1	2	18	12	18	5.7	24
13	6	2	3	2	2	7	6	3	2	3	3	3	4	2	2	2	3	2	**IZS**	2	1	2	2	2	7	2.9	24
14	2	2	1	1	1	2	3	3	3	2	2	1	17	1	1	4	4	**IZS**	3	1	1	1	2	1	17	2.6	24
15	2	1	3	2	1	1	5	1	1	1	1	1	1	1	0	0	**IZS**	0	0	0	0	0	1	1	5	1.0	24
16	2	2	1	1	1	1	2	1	1	1	1	1	4	1	2	**IZS**	1	1	1	1	1	1	1	1	4	1.3	24
17	2	2	2	2	2	2	2	2	2	1	2	1	10	1	**IZS**	1	1	1	1	1	1	1	1	1	10	1.8	24
18	1	1	1	1	1	1	1	1	2	1	1	1	1	**IZS**	1	1	1	1	9	6	2	2	3	1	9	1.8	24
19	7	7	6	1	1	2	1	1	1	0	1	0	**IZS**	2	2	9	10	4	6	2	2	3	10	6	10	3.7	24
20	4	5	2	2	6	6	8	3	2	6	4	**IZS**	1	1	2	1	1	1	0	0	1	1	1	1	8	2.6	24
21	1	1	3	6	12	9	8	6	4	4	**IZS**	2	4	2	1	0	1	1	1	1	1	3	3	2	12	3.3	24
22	1	4	3	2	2	3	4	4	3	**IZS**	2	2	3	2	2	1	1	1	2	1	1	1	1	1	4	2.0	24
23	2	2	3	2	2	1	2	6	**IZS**	3	2	2	4	7	5	6	9	6	1	1	7	9	12	1	12	4.1	24
24	1	10	1	1	1	2	7	**IZS**	10	2	1	1	3	5	3	3	2	1	1	1	3	1	2	1	10	2.7	24
25	1	2	9	21	7	3	**IZS**	5	2	1	1	0	1	1	1	1	1	0	2	2	1	1	1	1	21	2.8	24
26	0	1	1	0	1	**IZS**	1	1	1	1	1	1	1	1	1	3	4	2	1	1	1	3	2	1	4	1.3	24
27	0	0	1	2	**IZS**	1	4	3	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	4	4	1.4	24
28	1	2	2	**IZS**	2	2	8	10	8	14	6	4	2	2	1	3	10	1	2	1	2	2	1	2	14	3.8	24
29	3	4	**IZS**	2	11	18	15	9	4	5	6	2	1	1	1	1	1	0	4	14	8	4	4	3	18	5.3	24
30	2	**IZS**	5	5	6	9	7	4	3	2	4	3	2	2	2	2	3	**29**	2	16	5	5	4	1	**29**	5.3	24
31	**IZS**	7	7	3	7	16	20	19	13	12	7	10	7	8	5	1	0	0	1	1	1	1	1	**IZS**	20	6.7	24
HOURLY MAX	7	10	9	21	12	18	20	19	13	14	12	17	17	12	12	15	20	29	12	16	8	18	29	12			
HOURLY AVG	2.3	2.7	2.6	2.6	3.5	4.8	5.9	5.0	4.7	4.1	3.3	3.1	3.8	2.3	2.3	2.6	3.1	3.0	2.2	2.5	2.0	3.0	4.4	2.2			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 670

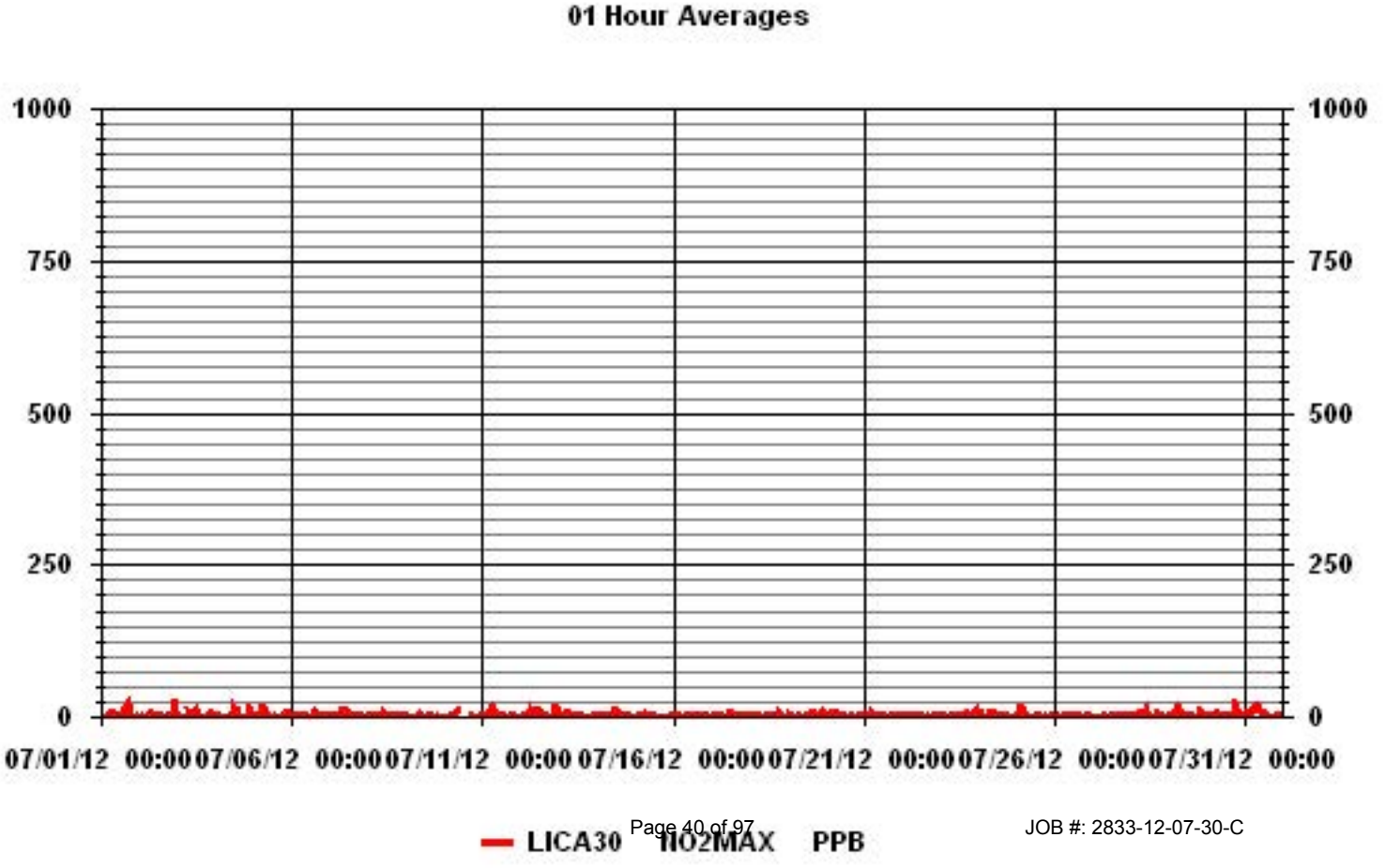
MAXIMUM INSTANTANEOUS VALUE: 29 PPB @ HOUR(S) 17, 22 ON DAY(S) 2, 30

IZS CALIBRATION TIME: 33 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 8 HRS

STANDARD DEVIATION: 3.90

JOB #: 2833-12-07-30-C



JOB #: 2833-12-07-30-C

LICA30
NO2_ / WDR Joint Frequency Distribution (Percent)

July 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	1.98	6.81	5.25	3.69	4.97	4.97	7.24	11.22	10.79	13.21	8.80	6.67	5.11	6.39	1.13	1.70	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.98	6.81	5.25	3.69	4.97	4.97	7.24	11.22	10.79	13.21	8.80	6.67	5.11	6.39	1.13	1.70	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	14	48	37	26	35	35	51	79	76	93	62	47	36	45	8	12	704
< 110																	
< 210																	
>= 210																	
Totals	14	48	37	26	35	35	51	79	76	93	62	47	36	45	8	12	

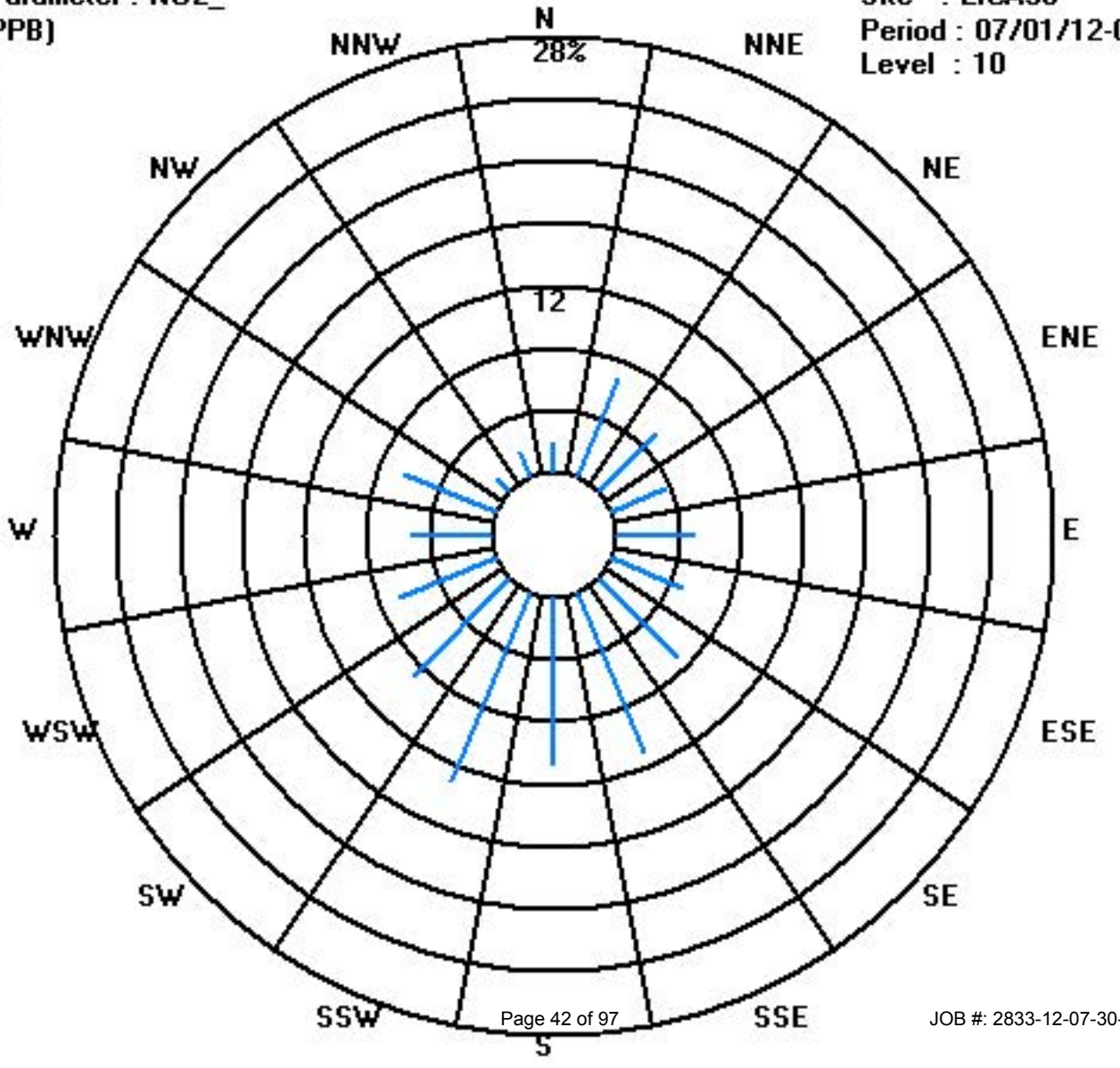
Calm : .00 %

Total # Operational Hours : 704

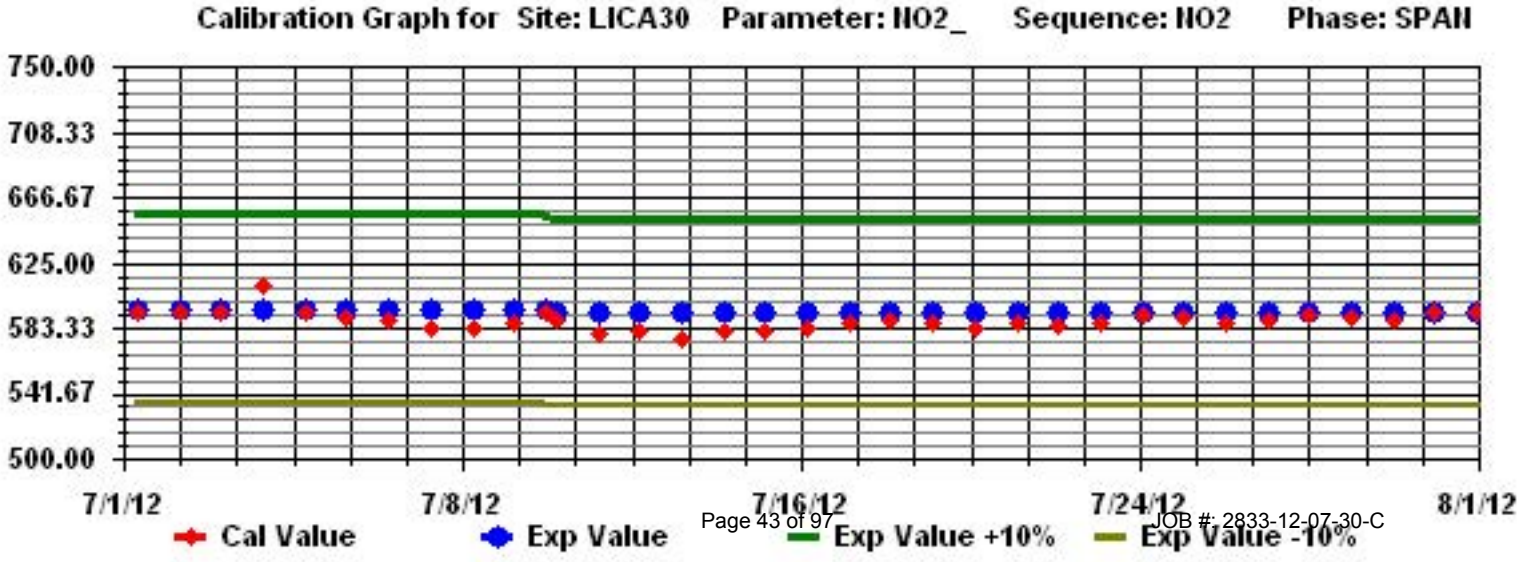
Logger : 30 Parameter : NO2_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA30
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-30-C


Calibration Graph for Site: LICA30 Parameter: NO2_ Sequence: NO2 Phase: SPAN
750.00
708.33
666.67
625.00
583.33
541.67
500.00
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSCOICATION - MASKWA

JULY 2012

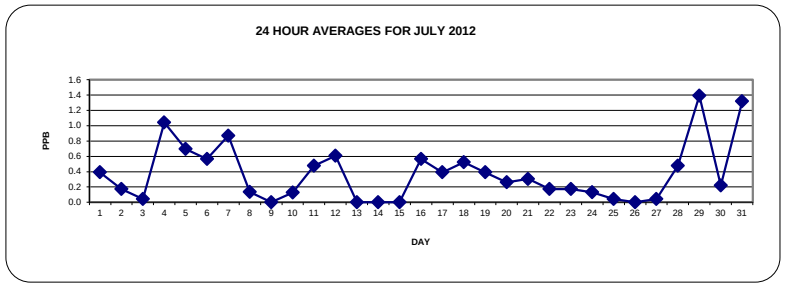
NITRIC OXIDE hourly averages in ppb

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**	2	0	0	0	0	0	0	3	1	2	1	0	0	0	0	0	3	0.4	24
2	0	0	0	0	0	0	**IZS**	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.2	24
3	0	0	0	0	0	**IZS**	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
4	0	0	0	0	**IZS**	0	0	0	0	0	0	4	3	3	9	2	0	0	0	0	0	3	0	0	9	1.0	24
5	0	0	0	**IZS**	0	7	3	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0.7	24
6	0	0	**IZS**	1	2	2	2	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.6	24
7	0	**IZS**	0	0	0	0	1	7	5	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0.9	24
8	**IZS**	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	2	0.1	24
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0.0	24
10	0	0	0	0	0	0	0	0	2	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	**IZS**	0	0	2	0.1	24
11	0	0	0	0	0	6	2	0	2	1	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	6	0.5	24
12	0	0	0	0	0	1	2	2	2	1	1	4	0	0	0	0	0	0	0	**IZS**	0	0	1	0	4	0.6	24
13	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
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	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0.0	24
16	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	1	0.6	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	1	1	1	1	1	1	1	1	0.4	24
18	0	0	1	0	0	1	1	1	1	1	1	0	0	**IZS**	1	1	1	0	1	0	0	1	0	0	1	0.5	24
19	1	1	0	1	0	1	1	1	1	0	0	0	**IZS**	0	0	1	1	0	0	0	0	0	0	0	1	0.4	24
20	0	0	0	0	0	2	3	1	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24
21	0	0	0	0	0	1	2	2	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
22	0	0	0	0	0	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
23	0	0	0	0	0	0	1	1	**IZS**	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0.2	24
24	0	0	0	0	0	0	0	**IZS**	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.1	24
25	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
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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
28	0	0	0	**IZS**	0	1	1	3	1	3	1	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0.5	24
29	0	0	**IZS**	1	1	5	**10**	1	1	1	2	1	1	1	1	0	1	0	1	1	1	0	1	1	**10**	**1.4**	24
30	0	**IZS**	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24
31	**IZS**	0	0	0	0	2	7	9	3	1	2	3	1	1	0	0	0	0	0	0	0	0	0	**IZS**	9	1.3	24
HOURLY MAX	1	1	1	1	2	7	10	9	5	4	3	4	3	3	9	3	1	2	1	1	1	3	1	1			
HOURLY AVG	0.1	0.1	0.1	0.2	0.1	1.1	1.4	1.4	1.0	0.6	0.4	0.4	0.2	0.2	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1			

STATUS FLAG CODES

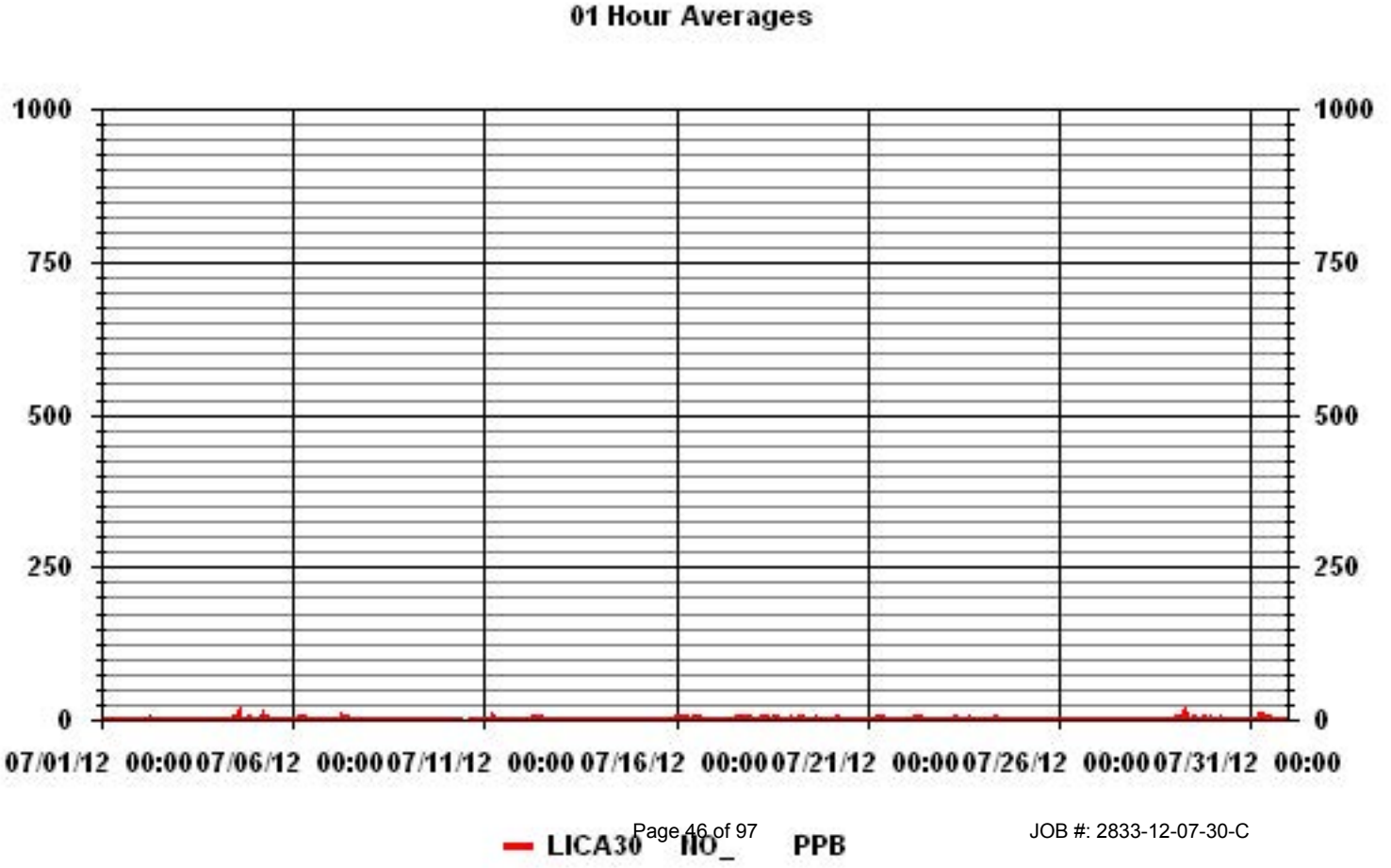
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	144					
MAXIMUM 1-HR AVERAGE:	10	PPB	@ HOUR(S)	6	ON DAY(S)	29
MAXIMUM 24-HR AVERAGE:	1.4	PPB			ON DAY(S)	29

IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	1.05		MONTHLY AVERAGE:	0.37	PPB



JOB #: 2833-12-07-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JULY 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	1	0	**IZS**	4	1	1	0	1	1	1	15	12	14	3	2	0	0	0	0	15	2.4	24
2	1	0	1	1	0	2	**IZS**	6	3	1	1	1	1	1	1	1	0	0	1	0	0	0	3	0	6	1.1	24
3	0	1	1	0	1	**IZS**	2	1	1	1	3	0	3	0	1	0	1	0	0	0	0	0	0	1	3	0.7	24
4	0	1	1	1	**IZS**	1	1	2	0	1	1	12	7	8	14	6	1	0	0	0	0	15	0	0	15	3.1	24
5	1	0	1	**IZS**	2	17	20	5	6	4	1	1	1	1	1	1	0	0	0	0	0	0	1	1	20	2.8	24
6	1	0	**IZS**	2	7	4	7	5	3	2	1	0	0	1	7	1	1	0	1	1	0	0	0	1	7	2.0	24
7	1	**IZS**	1	1	1	1	3	13	11	8	5	1	1	1	1	1	1	0	1	0	0	0	0	0	13	2.3	24
8	**IZS**	0	0	1	1	1	2	1	1	3	2	1	0	0	0	1	0	0	0	0	0	0	0	**IZS**	3	0.6	24
9	0	1	0	0	1	1	1	2	1	0	0	1	0	1	0	0	0	0	0	0	0	0	**IZS**	0	2	0.4	24
10	0	0	0	0	0	0	0	3	6	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	1	0	0	**IZS**	0	1	6	0.8	24
11	1	0	0	0	3	11	4	2	11	3	1	2	2	1	1	1	0	0	1	1	**IZS**	1	0	0	11	2.0	24
12	0	0	1	1	1	3	9	3	4	2	2	8	2	1	1	1	1	0	0	**IZS**	0	0	5	1	9	2.0	24
13	0	0	0	0	0	3	3	1	0	0	0	1	1	1	1	1	0	1	**IZS**	1	0	0	1	0	3	0.7	24
14	1	0	1	0	0	1	1	1	1	1	1	1	18	0	1	1	1	**IZS**	1	1	1	0	0	0	18	1.4	24
15	1	0	0	1	0	1	1	0	1	0	1	0	0	0	0	1	**IZS**	2	2	2	1	1	1	1	2	0.7	24
16	1	2	1	2	1	2	2	1	2	1	1	2	2	2	2	**IZS**	0	0	0	0	0	0	0	0	2	1.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	13	0	**IZS**	2	2	1	1	2	1	1	1	1	13	1.1	24
18	1	1	1	1	1	1	1	1	1	1	2	1	1	**IZS**	2	1	1	1	2	1	1	1	1	1	2	1.1	24
19	1	1	1	1	1	3	2	4	2	2	1	1	**IZS**	1	1	5	8	2	1	1	1	2	1	0	8	1.9	24
20	1	3	0	0	1	4	6	1	1	3	1	**IZS**	1	1	1	0	1	0	0	0	0	1	0	0	6	1.1	24
21	0	0	1	1	1	3	4	4	2	2	**IZS**	1	1	1	0	0	0	0	0	0	0	0	0	0	4	0.9	24
22	0	0	0	1	1	3	2	2	2	**IZS**	1	1	1	2	1	0	1	0	0	0	0	0	0	0	3	0.8	24
23	0	0	0	1	1	1	2	2	**IZS**	3	1	0	1	4	2	3	3	2	0	0	1	1	1	1	4	1.3	24
24	0	1	0	0	0	0	3	**IZS**	6	1	0	1	1	1	1	1	1	0	0	0	0	1	1	0	6	0.8	24
25	0	0	1	8	1	1	**IZS**	2	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	8	0.7	24
26	0	0	0	0	0	**IZS**	1	2	1	1	0	0	0	1	0	1	1	0	0	0	0	0	0	1	2	0.4	24
27	0	0	0	0	**IZS**	1	2	2	1	1	2	1	0	0	0	0	0	1	0	0	1	0	0	0	2	0.5	24
28	0	0	0	**IZS**	0	2	4	7	4	5	2	1	1	1	0	1	3	0	1	0	0	0	0	0	7	1.4	24
29	0	1	**IZS**	2	4	**60**	15	5	3	3	3	1	1	2	2	1	1	1	1	2	1	1	2	2	**60**	5.0	24
30	1	**IZS**	1	1	1	7	4	2	1	0	1	1	0	0	1	1	0	9	0	1	0	1	0	1	9	1.5	24
31	**IZS**	1	1	0	0	4	18	16	7	6	4	7	4	4	2	1	0	0	0	0	1	0	0	**IZS**	18	3.5	24
HOURLY MAX	1	3	1	8	7	60	20	16	11	8	5	12	18	8	14	15	12	14	3	2	1	15	5	2			
HOURLY AVG	0.4	0.4	0.5	0.9	1.0	4.8	4.1	3.3	2.9	1.9	1.3	1.7	2.2	1.3	1.6	1.7	1.4	1.2	0.6	0.5	0.3	0.9	0.6	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

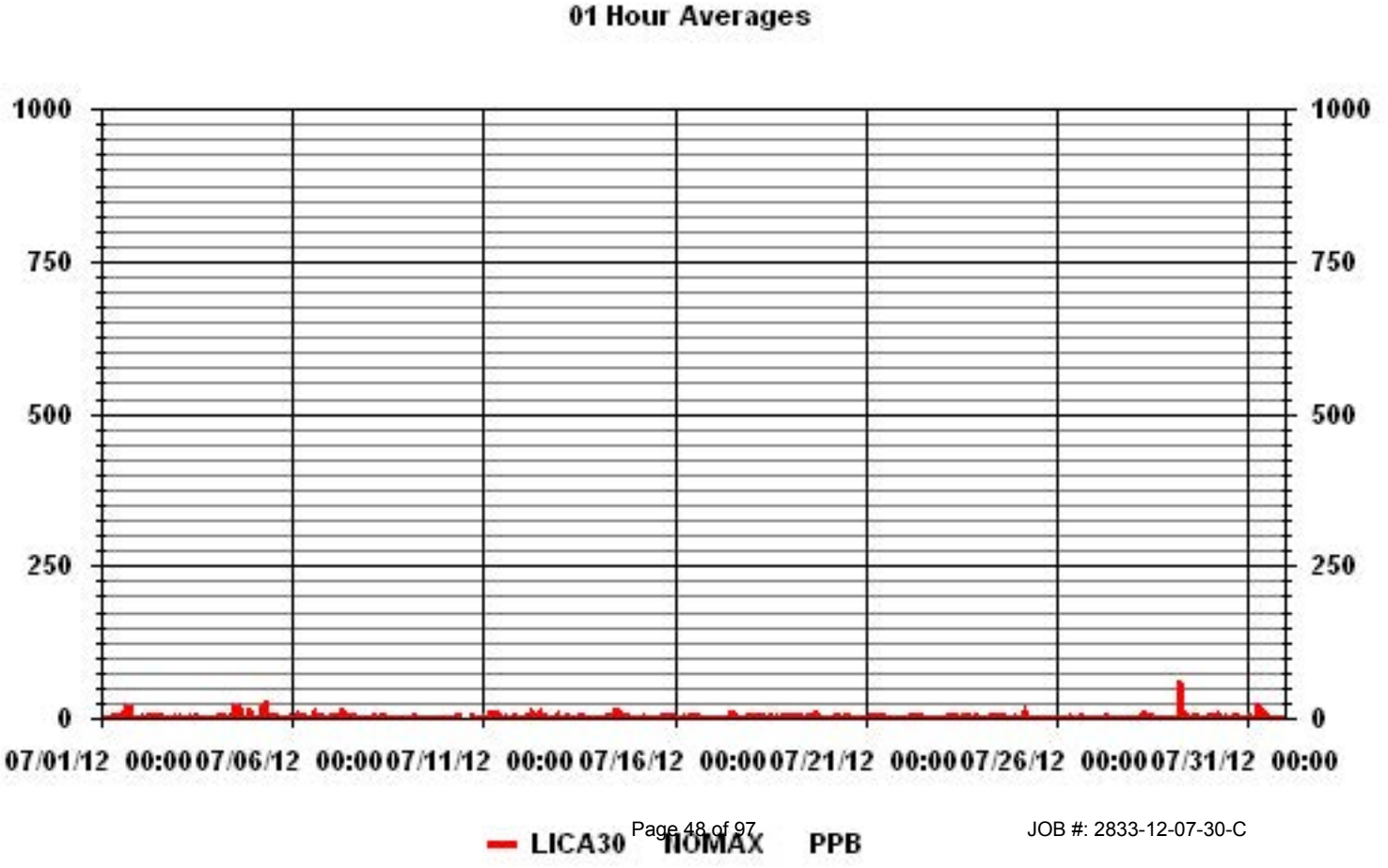
NUMBER OF NON-ZERO READINGS: 425

MAXIMUM INSTANTANEOUS VALUE: 60 PPB @ HOUR(S) 5 ON DAY(S) 29

IZS CALIBRATION TIME: 33 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 8 HRS

STANDARD DEVIATION: 3.38



JOB #: 2833-12-07-30-C

LICA30
NO_ / WDR Joint Frequency Distribution (Percent)

July 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	1.98	6.81	5.25	3.69	4.97	4.97	7.24	11.22	10.79	13.21	8.80	6.67	5.11	6.39	1.13	1.70	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.98	6.81	5.25	3.69	4.97	4.97	7.24	11.22	10.79	13.21	8.80	6.67	5.11	6.39	1.13	1.70	

Calm : .00 %

Total # Operational Hours : 704

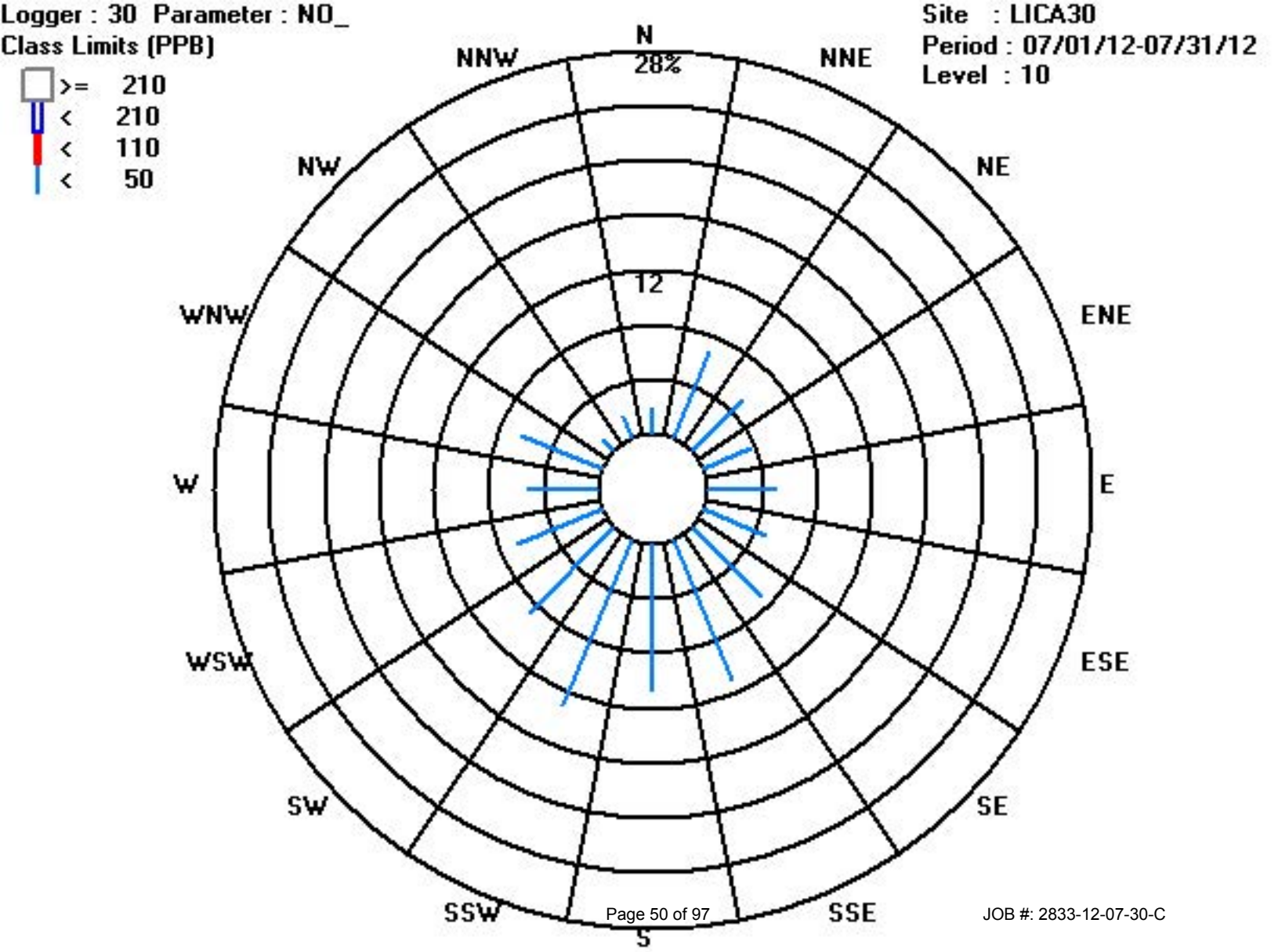
Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	14	48	37	26	35	35	51	79	76	93	62	47	36	45	8	12	704
< 110																	
< 210																	
>= 210																	
Totals	14	48	37	26	35	35	51	79	76	93	62	47	36	45	8	12	

Calm : .00 %

Total # Operational Hours : 704



JOB #: 2833-12-07-30-C

Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

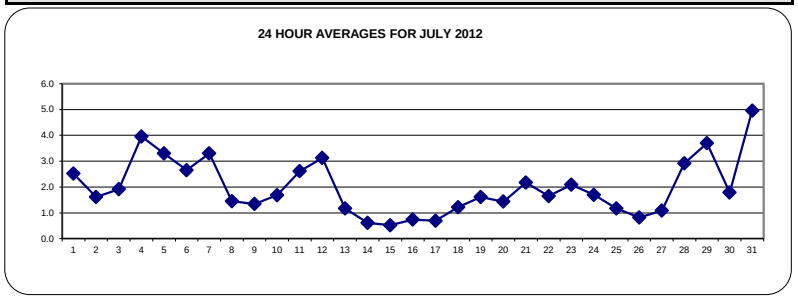
JULY 2012

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	1	2	2	1	0	1	1	**IZS**	8	2	2	1	1	1	1	9	5	10	7	3	0	0	0	0	10	2.5	24
2	0	1	1	1	0	1	**IZS**	9	2	3	1	0	1	1	1	0	0	0	1	0	1	1	9	3	9	1.6	24
3	5	4	3	1	1	**IZS**	4	1	1	1	5	1	4	1	1	1	0	1	1	1	1	3	2	1	5	1.9	24
4	1	2	2	2	**IZS**	2	1	1	1	1	0	11	12	12	19	6	1	0	0	0	1	12	3	1	19	4.0	24
5	2	1	0	**IZS**	1	19	9	5	6	6	1	1	1	1	1	1	0	0	0	1	3	6	6	5	19	3.3	24
6	4	4	**IZS**	4	5	4	5	9	6	3	2	1	1	1	1	1	2	1	2	1	1	1	1	1	9	2.7	24
7	1	**IZS**	1	1	1	1	4	16	13	13	11	2	1	1	1	1	1	1	1	1	1	1	1	1	16	3.3	24
8	**IZS**	0	0	0	0	1	2	2	2	8	5	3	1	1	1	1	1	0	0	1	1	1	1	**IZS**	8	1.5	24
9	2	2	2	1	1	2	2	4	2	2	2	1	1	0	1	1	1	0	0	1	1	1	**IZS**	1	4	1.3	24
10	1	1	1	0	0	1	1	3	8	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	2	2	2	1	**IZS**	2	1	8	1.7	24
11	1	1	1	1	4	17	7	2	7	6	1	2	3	3	2	1	1	0	0	0	**IZS**	0	0	0	17	2.6	24
12	0	0	0	0	1	4	8	8	6	5	7	16	2	1	1	1	0	0	0	**IZS**	0	0	6	6	16	3.1	24
13	1	1	2	1	1	2	2	2	1	2	1	1	1	1	1	1	1	1	**IZS**	1	1	0	1	1	2	1.2	24
14	0	0	0	0	0	0	0	2	1	0	1	0	1	0	0	1	1	**IZS**	2	1	1	1	1	1	2	0.6	24
15	1	1	2	1	1	1	2	0	1	0	1	0	1	0	0	0	**IZS**	0	0	0	0	0	0	0	2	0.5	24
16	1	2	1	1	1	1	2	1	1	0	0	1	2	1	2	**IZS**	0	0	0	0	0	0	0	0	2	0.7	24
17	0	0	1	1	1	1	1	1	0	0	1	0	0	0	**IZS**	1	1	1	1	1	1	1	1	1	1	0.7	24
18	0	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	5	2	1	1	2	1	5	1.2	24
19	4	6	4	1	0	1	1	1	1	0	0	0	**IZS**	1	0	4	3	1	3	0	0	1	4	1	6	1.6	24
20	1	1	0	0	3	6	8	3	1	2	2	**IZS**	1	1	1	1	1	0	0	0	0	0	0	1	8	1.4	24
21	1	1	1	1	6	4	9	6	3	3	**IZS**	1	3	2	0	0	1	1	1	1	1	1	2	1	9	2.2	24
22	1	2	2	2	2	3	4	4	3	**IZS**	2	2	2	2	1	1	1	1	1	1	0	1	0	0	4	1.7	24
23	1	1	2	2	1	1	2	5	**IZS**	2	1	2	3	3	1	4	5	4	0	0	1	2	5	0	5	2.1	24
24	0	4	0	0	1	1	3	**IZS**	9	2	1	1	2	3	2	2	2	1	0	1	2	1	1	0	9	1.7	24
25	0	1	3	8	2	2	**IZS**	4	2	1	0	0	0	0	0	0	1	0	1	1	0	0	1	0	8	1.2	24
26	0	0	0	0	0	**IZS**	1	1	1	1	1	0	1	1	1	2	2	1	1	1	1	2	1	0	2	0.8	24
27	0	0	0	1	**IZS**	1	2	4	2	1	1	1	1	1	1	1	1	1	1	1	1	0	1	2	4	1.1	24
28	1	2	2	**IZS**	2	2	3	12	6	13	6	2	2	1	1	1	4	0	1	1	1	2	1	1	13	2.9	24
29	2	2	**IZS**	2	4	10	21	2	3	3	5	1	1	1	1	0	1	0	3	8	6	3	4	2	21	3.7	24
30	1	**IZS**	4	3	5	7	7	3	1	0	1	2	0	0	0	0	0	3	0	3	1	0	0	0	7	1.8	24
31	**IZS**	3	4	1	1	13	18	**23**	12	7	7	9	4	5	1	0	0	0	0	0	1	0	0	**IZS**	**23**	**5.0**	24
HOURLY MAX	5	6	4	8	6	19	21	23	13	13	11	16	12	12	19	9	5	10	7	8	6	12	9	6			
HOURLY AVG	1.1	1.6	1.4	1.3	1.6	3.8	4.5	4.7	3.7	3.0	2.4	2.2	1.9	1.6	1.5	1.5	1.3	1.0	1.1	1.1	1.0	1.4	1.9	1.1			

STATUS FLAG CODES

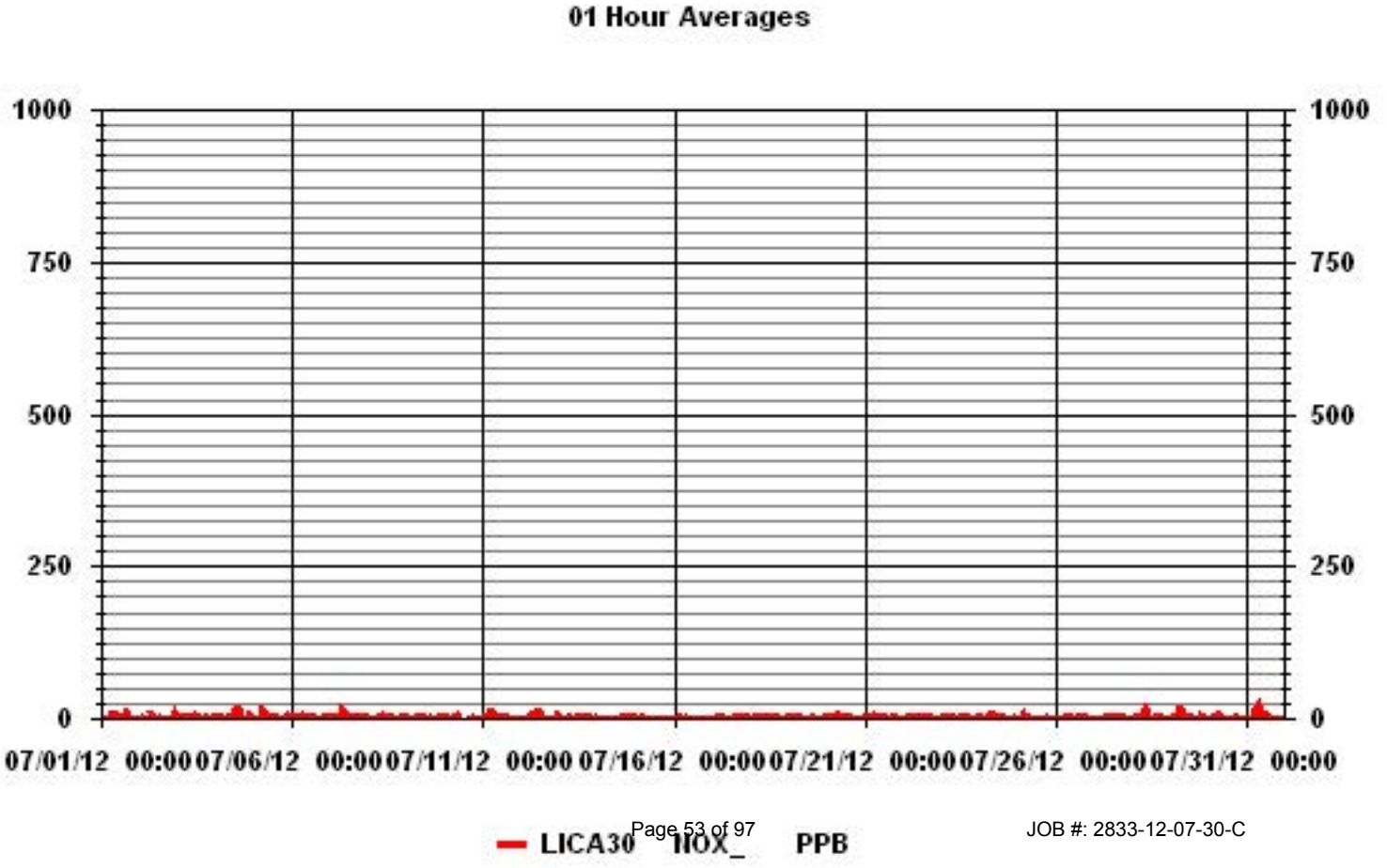
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	544					
MAXIMUM 1-HR AVERAGE:	23	PPB	@ HOUR(S)	7	ON DAY(S)	31
MAXIMUM 24-HR AVERAGE:	5.0	PPB			ON DAY(S)	31

IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	2.90		MONTHLY AVERAGE:	1.98	PPB



JOB #: 2833-12-07-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JULY 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	2	2	2	2	1	1	1	**IZS**	14	6	3	1	2	2	2	31	33	37	16	11	2	1	1	1	37	7.6	24
2	1	3	2	2	1	5	**IZS**	14	7	6	6	2	3	1	2	1	1	1	1	1	1	2	32	7	32	4.4	24
3	7	6	6	2	2	**IZS**	13	2	2	3	11	2	11	1	2	4	1	2	2	2	4	10	9	2	13	4.6	24
4	2	3	2	3	**IZS**	4	2	5	1	1	2	29	20	19	26	11	3	0	1	1	3	33	6	3	33	7.8	24
5	6	2	1	**IZS**	12	34	36	11	13	10	4	3	3	2	1	3	2	1	2	2	6	11	9	7	36	7.9	24
6	6	5	**IZS**	7	13	5	12	11	8	5	4	1	2	2	11	2	7	2	5	1	1	2	1	1	13	5.0	24
7	1	**IZS**	1	1	2	1	7	26	24	20	17	5	3	1	2	2	1	1	1	1	1	1	2	2	26	5.3	24
8	**IZS**	1	1	1	1	2	3	3	5	12	7	6	2	2	1	1	1	1	1	1	2	2	1	**IZS**	12	2.6	24
9	3	3	3	2	2	4	5	9	3	2	3	2	2	1	1	1	2	1	1	2	2	1	**IZS**	2	9	2.5	24
10	2	2	3	1	1	1	3	10	18	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2	3	3	1	**IZS**	4	2	18	3.7	24
11	1	1	1	1	14	26	13	5	24	11	2	5	5	4	4	3	2	1	1	1	**IZS**	1	1	1	26	5.6	24
12	0	0	0	1	3	10	22	11	12	7	12	24	9	2	3	3	2	1	1	**IZS**	0	2	22	13	24	7.0	24
13	6	2	2	2	1	9	9	3	2	3	2	3	4	2	2	2	3	2	**IZS**	2	1	1	2	1	9	2.9	24
14	1	1	1	1	1	1	4	4	3	1	1	1	34	1	1	5	4	**IZS**	5	2	2	2	2	1	34	3.4	24
15	2	1	4	2	2	1	5	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	5	1.4	24
16	2	2	2	2	2	2	3	2	1	1	1	2	5	2	3	**IZS**	1	0	0	0	0	1	1	1	5	1.6	24
17	1	1	1	2	1	2	3	2	1	1	1	0	20	0	**IZS**	2	1	1	1	1	1	2	1	1	20	2.0	24
18	1	1	1	1	1	1	2	2	3	2	2	2	2	**IZS**	3	2	2	2	11	6	3	2	4	2	11	2.5	24
19	8	7	7	2	1	4	2	5	3	1	1	1	**IZS**	2	1	14	18	5	6	1	1	3	10	5	18	4.7	24
20	3	7	1	1	6	10	13	4	2	8	4	**IZS**	3	2	4	2	2	1	1	1	1	1	1	2	13	3.5	24
21	1	2	3	7	13	13	12	12	7	7	**IZS**	4	5	4	1	1	2	1	2	1	2	3	3	2	13	4.7	24
22	2	4	3	2	3	7	6	6	5	**IZS**	3	4	4	5	2	2	1	1	3	1	1	1	1	1	7	3.0	24
23	2	2	3	3	2	3	5	9	**IZS**	6	2	2	6	11	7	10	13	8	2	1	8	10	13	1	13	5.6	24
24	1	12	1	1	2	2	11	**IZS**	16	4	2	2	4	6	5	5	3	2	1	1	3	2	2	1	16	3.9	24
25	1	2	10	29	8	4	**IZS**	8	3	1	1	1	1	1	1	2	2	1	3	2	1	1	1	1	29	3.7	24
26	1	1	1	1	1	**IZS**	2	4	2	2	2	1	2	1	2	4	5	2	1	2	1	3	3	1	5	2.0	24
27	1	1	1	2	**IZS**	2	7	6	3	2	4	3	1	1	2	2	2	1	1	1	2	1	2	4	7	2.3	24
28	2	2	2	**IZS**	3	4	13	18	12	20	9	5	3	3	2	5	14	1	3	2	2	3	2	2	20	5.7	24
29	3	4	**IZS**	3	15	**74**	29	14	6	7	8	2	1	2	2	1	1	1	5	15	9	4	5	4	**74**	9.3	24
30	2	**IZS**	5	4	6	15	10	6	4	1	3	3	1	1	2	2	2	35	1	17	4	4	3	1	35	5.7	24
31	**IZS**	9	8	3	7	19	38	36	21	19	12	18	12	13	8	2	1	1	1	1	2	1	1	**IZS**	38	10.6	24
HOURLY MAX	8	12	10	29	15	74	38	36	24	20	17	29	34	19	26	31	33	37	16	17	9	33	32	13			
HOURLY AVG	2.4	3.1	2.7	3.1	4.4	9.2	10.0	8.6	7.5	5.9	4.5	4.7	5.9	3.3	3.6	4.3	4.6	3.9	2.8	2.8	2.3	3.7	4.9	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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 692

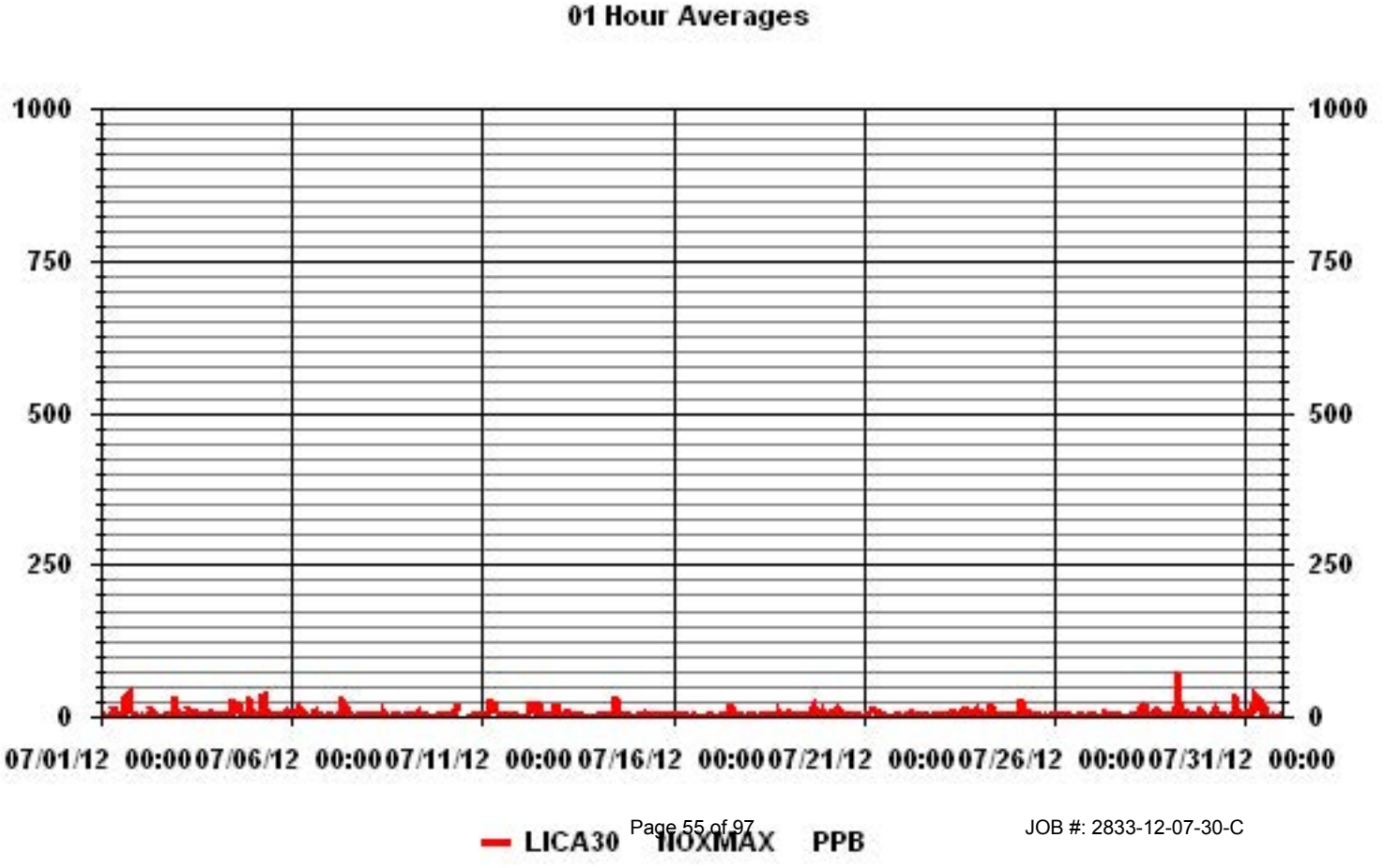
MAXIMUM INSTANTANEOUS VALUE: 74 PPB @ HOUR(S) 5 ON DAY(S) 29

IZS CALIBRATION TIME: 33 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 8 HRS

STANDARD DEVIATION: 6.61

JOB #: 2833-12-07-30-C



JOB #: 2833-12-07-30-C

LICA30
NOX_ / WDR Joint Frequency Distribution (Percent)

July 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	1.98	6.81	5.25	3.69	4.97	4.97	7.24	11.22	10.79	13.21	8.80	6.67	5.11	6.39	1.13	1.70	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.98	6.81	5.25	3.69	4.97	4.97	7.24	11.22	10.79	13.21	8.80	6.67	5.11	6.39	1.13	1.70	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	14	48	37	26	35	35	51	79	76	93	62	47	36	45	8	12	704
< 110																	
< 210																	
>= 210																	
Totals	14	48	37	26	35	35	51	79	76	93	62	47	36	45	8	12	

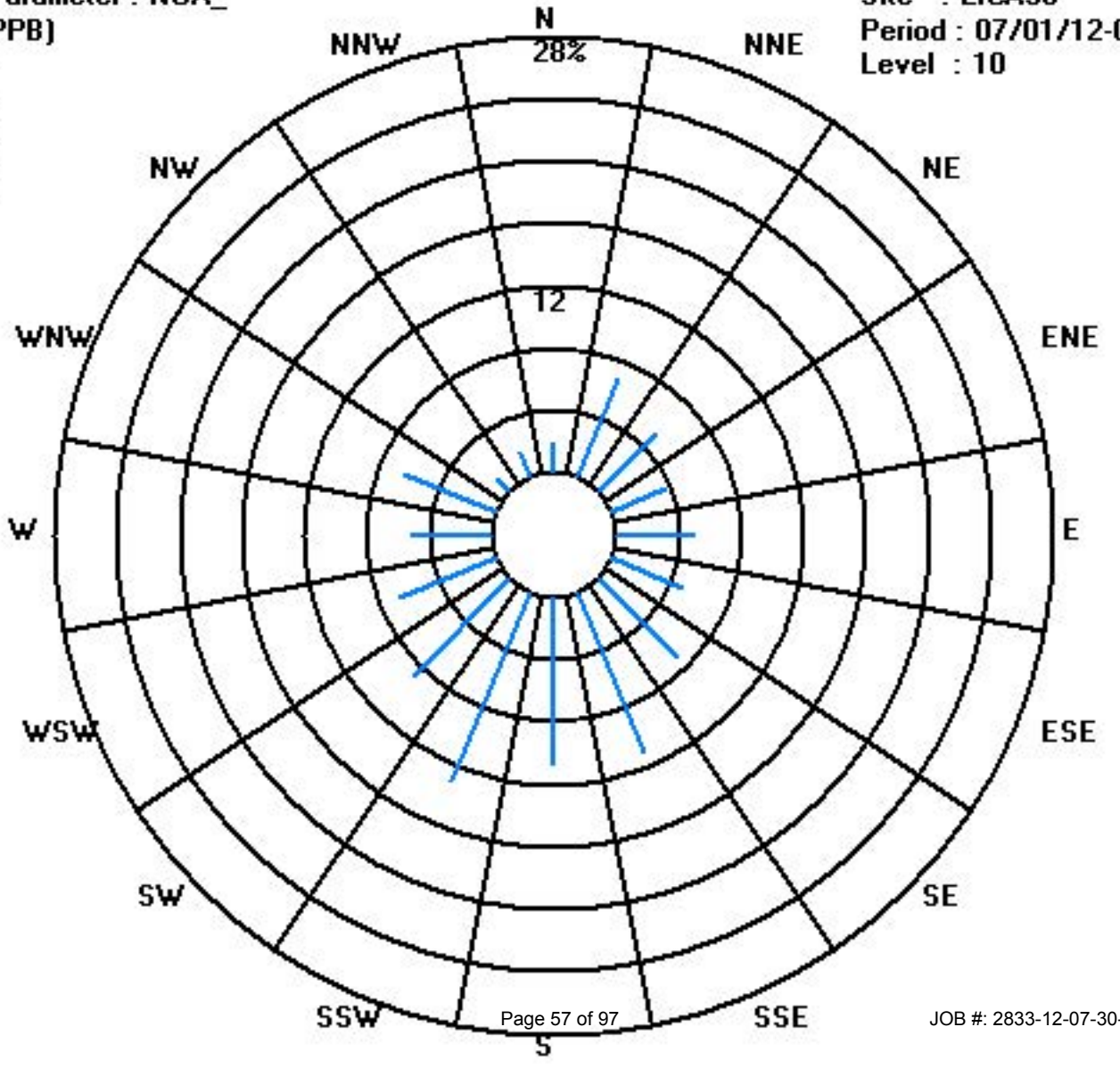
Calm : .00 %

Total # Operational Hours : 704

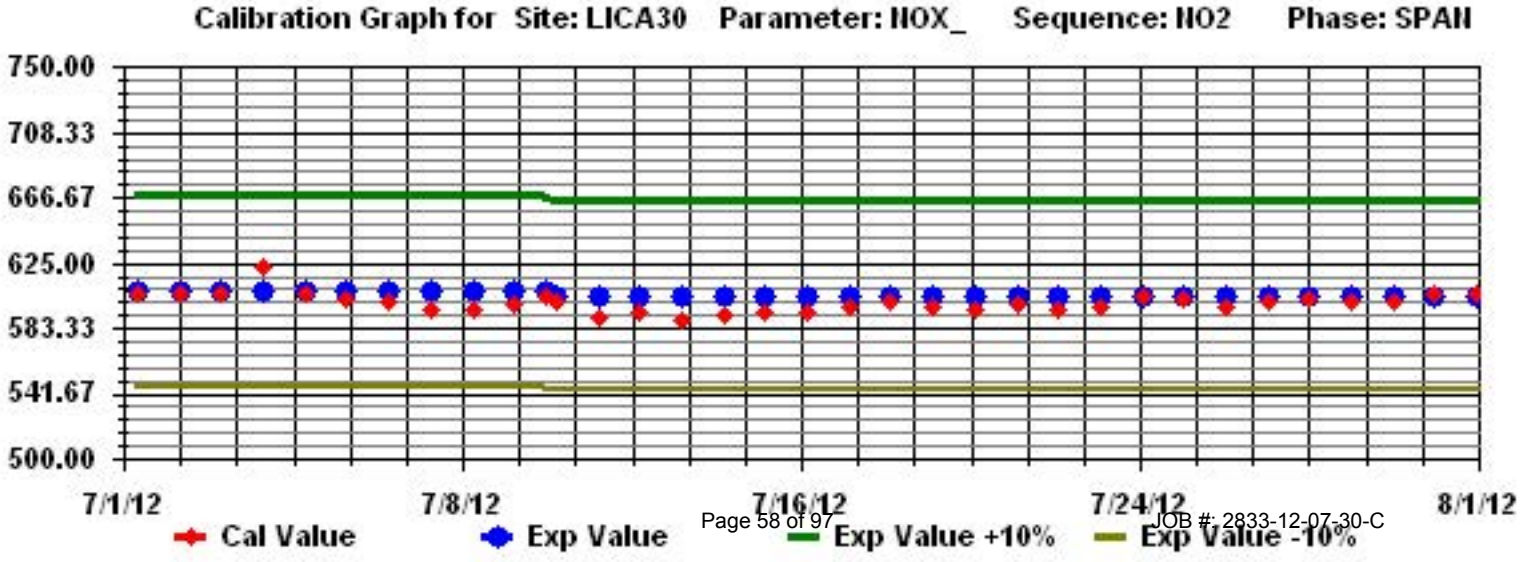
Logger : 30 Parameter : NOX_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA30
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-30-C


Calibration Graph for Site: LICA30 Parameter: NOX_ Sequence: NO2 Phase: SPAN
750.00
708.33
666.67
625.00
583.33
541.67
500.00
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 2012

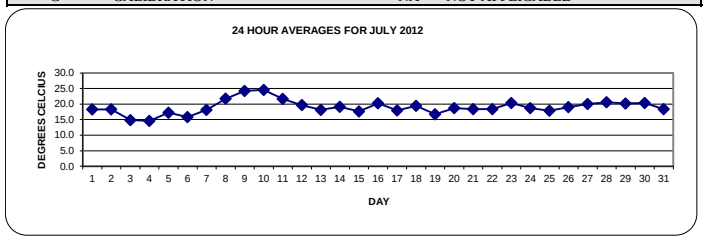
AMBIENT TEMPERATURE hourly averages (Degrees C)

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	18	17.8	17	15.7	16.6	17.8	18.2	17.6	19.4	18.6	20.1	21.7	22.1	24.1	23.4	21.5	18.8	19	18.9	18.4	15.9	13	12.7	12.3	24.1	18.3	24
2	12.6	12.5	11.1	10.9	10.3	12.4	13.6	18.7	21.5	22.8	23.4	24.5	24.8	25	24.4	23	24.4	24.1	21.8	19.6	16.5	14.6	13.7	13.1	25.0	18.3	24
3	13.2	12.9	12	11.2	11.7	12.6	13.1	15.7	18	19.6	20.1	20	19.3	17.7	16.5	16.3	15.2	15	16.7	15.6	13.8	10	9.4	10.3	20.1	14.8	24
4	11	10.9	10.7	10.8	11.2	11.9	12.5	13.1	13.2	14.1	15.2	17	16.7	14.7	16.2	18.3	18.4	18.5	18.5	17.6	16.7	15.7	14.1	12.1	18.5	14.5	24
5	12.5	12.4	12	12.2	12.3	14.6	14.7	17	19.8	21.7	22.5	23.1	22.8	24.1	24.7	25.4	25.3	19.3	16.1	15	13.5	11.9	10.9	9.7	25.4	17.2	24
6	8.8	8.9	8.4	8	7.8	9.8	14	17.4	19.4	21.8	23.5	24.2	24.4	24.6	24	24.1	18.8	15.3	15.8	16.3	13.5	11.6	9.9	8.8	24.6	15.8	24
7	8	7.2	6.5	**6**	6.1	8.9	13.3	18.5	20.7	23.5	24.9	25.5	25.8	27	27.4	27.6	27.4	25.9	19	20.1	18.8	17.8	15.5	14.2	27.6	18.2	24
8	13.1	12.3	11.9	11	10.7	13.4	18.1	21.5	23.6	25.5	26.5	27.3	28.2	28.6	29.6	29.6	29.3	28.7	27	24.4	21.7	19.7	19.3	19.7	29.6	21.7	24
9	19.8	18.4	15.3	14.5	14.9	18.3	21.5	23.2	25.7	27.2	28.5	29.5	30.4	30.8	31	31.1	30.6	30	29	26.7	22.4	21.1	21.1	20.1	31.1	24.2	24
10	19.1	18	17.3	17.4	17.2	18.6	23.1	24.4	27.4	27.2	29.5	29.2	30.8	31.4	31.7	**32.3**	31.7	30.6	29.2	26.5	22.1	19.3	18.3	17.3	**32.3**	**24.6**	24
11	16.5	15.9	15.7	16.2	14.9	16.1	19.4	21.9	24.4	26	26.5	26.1	25.1	26.1	27	28.1	29.2	28.9	27.6	24.4	19.4	17	14.9	12.5	29.2	21.7	24
12	11.7	11.6	11.2	11.2	12.1	14.8	15.7	16.5	19.7	21.3	22.7	23.6	25	24	25.2	27	27.5	26.8	26.1	24.1	21.3	19.4	17.3	15.5	27.5	19.6	24
13	15.4	13.2	10.8	10.7	9.5	10.7	14.1	16.8	19.6	21.7	22.6	24.3	24.9	25.3	25.9	24.9	24.6	24	22.6	20	15.8	13.6	12.1	12.1	25.9	18.1	24
14	11.3	11.7	10.9	10	10.9	13.3	14.9	18.4	19.7	21.4	23	23.1	23.6	24.6	24.4	26.9	26	25.2	23.8	21.4	19.4	18.5	17.5	17.5	26.9	19.1	24
15	17.9	17.8	17.2	17.8	17.5	17.6	17.1	17.4	18.2	18.6	18.7	18	16.7	16.7	17	17.5	18.3	18.8	18.7	18.3	17.6	17.1	16.7	16.5	18.8	17.7	24
16	16.4	16.4	15.9	15.7	15.4	15.8	17.1	18.8	20.5	22.4	24.2	24.9	25.8	25	25.7	25	24.5	23.6	22.4	20.3	18.1	17.8	17.3	16.5	25.8	20.2	24
17	16	15.3	14.9	14.4	13.9	14.3	15.7	17.4	19	20.7	21.2	20.1	19.9	21.8	20.7	20.7	20	19.4	18.2	17.7	17.2	17.3	17.2	17.1	21.8	17.9	24
18	17	17.3	17.3	17.2	17.2	17.7	19.4	20.1	19.8	20.3	21.6	23.1	23.2	22.7	23.4	23.6	24.3	23.9	18.3	18.3	16.4	15.6	14.6	13.8	24.3	19.4	24
19	13.6	13.5	13.2	12.5	12.1	13.1	12.6	13	13.9	18	19.8	19.8	21.1	21.4	22.6	21.3	22	22	21.4	19.2	15.8	13.6	12.7	12.5	22.6	16.7	24
20	11.8	11.1	9.8	8.9	8.4	10.9	15.4	18.5	21.2	23	24.3	24.5	24.5	24.9	25.1	25.2	25.3	24.9	23.8	21	17.1	16.3	17.1	16.1	25.3	18.7	24
21	16	15.5	16.1	16.1	16.2	16.6	17.9	20.5	21.9	22.9	21.5	22.8	23	21.7	20	19.2	19	18.7	18.3	18.1	16.5	15	13.7	12.8	23.0	18.3	24
22	12.4	12.5	11.4	10.8	11.7	13.6	14.9	16.4	19.6	21	20.5	19.7	19.9	22.9	25.5	25.1	24.9	25.1	25.4	22.6	18.5	16.5	15.1	14.2	25.5	18.3	24
23	13.6	12.7	12.2	11.8	11.4	12.7	15.6	21.1	22	23	24.1	25.1	25.8	26.8	26.6	27.2	26.2	25	23.3	22.1	21.6	21	19	18	27.2	20.3	24
24	17.6	17.7	17.4	15.8	15	14.9	15.9	17.3	19.7	21.4	22.2	23.1	21.8	21.2	22.1	23	23.5	23.2	20.2	17.1	16.6	14.8	13.6	12.7	23.5	18.7	24
25	12.4	13	13.4	13.4	13.2	14	15.1	16.8	17.2	18.7	19.8	20.9	21	22	22.3	22.6	22.4	22.5	22.1	19	17.5	16.9	16.5	15.8	22.6	17.9	24
26	14.7	13.8	13.2	12.7	12.3	13.3	16.6	19.6	21.7	23.8	24.1	25.3	25	25.3	25.5	23.5	22.9	21.7	20.9	19.7	17.5	15.3	14.1	13.4	25.5	19.0	24
27	12.8	12.6	12	13.1	13.5	12.6	15.3	17.9	21.5	23.6	23.6	25	25.9	26.8	26.7	27.2	26.3	26.4	25.5	21.6	19.4	18.5	16.7	14.9	27.2	20.0	24
28	14.4	13.7	12.7	12.2	11.7	12.5	15.6	20.3	23.5	25.6	26.2	26.5	27.3	28	27.9	28.6	27.6	25.2	23.8	22	19.2	17.3	16.3	15.5	28.6	20.6	24
29	15.1	14.8	13.9	12.7	13.2	13.8	16.5	20	22.9	24.9	26.6	26.7	27.3	27.5	27.9	28.1	25.3	21.8	20.9	20.4	17.7	15.6	14.7	16.1	28.1	20.2	24
30	15.2	14.4	14.3	13.8	13.9	14.4	17	21	23.8	25.1	24.4	26.9	28	27.9	29	28.9	27.1	22.8	20.2	19.2	14.6	15.1	15.8	14.7	29.0	20.3	24
31	14.5	14.6	14.5	14.5	14.1	15.1	16.3	17	17.9	17.9	19.3	21.3	20.6	21.8	25.1	25.6	25.8	25.2	22.8	19.6	17.1	15.2	13.2	11.9	25.8	18.4	24
HOURLY MAX	19.8	18.4	17.4	17.8	17.5	18.6	23.1	24.4	27.4	27.2	29.5	29.5	30.8	31.4	31.7	32.3	31.7	30.6	29.2	26.7	22.4	21.1	21.1	20.1			
HOURLY AVG	14.3	13.9	13.2	12.9	12.8	14.1	16.1	18.5	20.5	22.0	22.9	23.6	23.9	24.3	24.7	24.8	24.3	23.3	21.9	20.2	17.7	16.2	15.2	14.4			

STATUS FLAG CODES

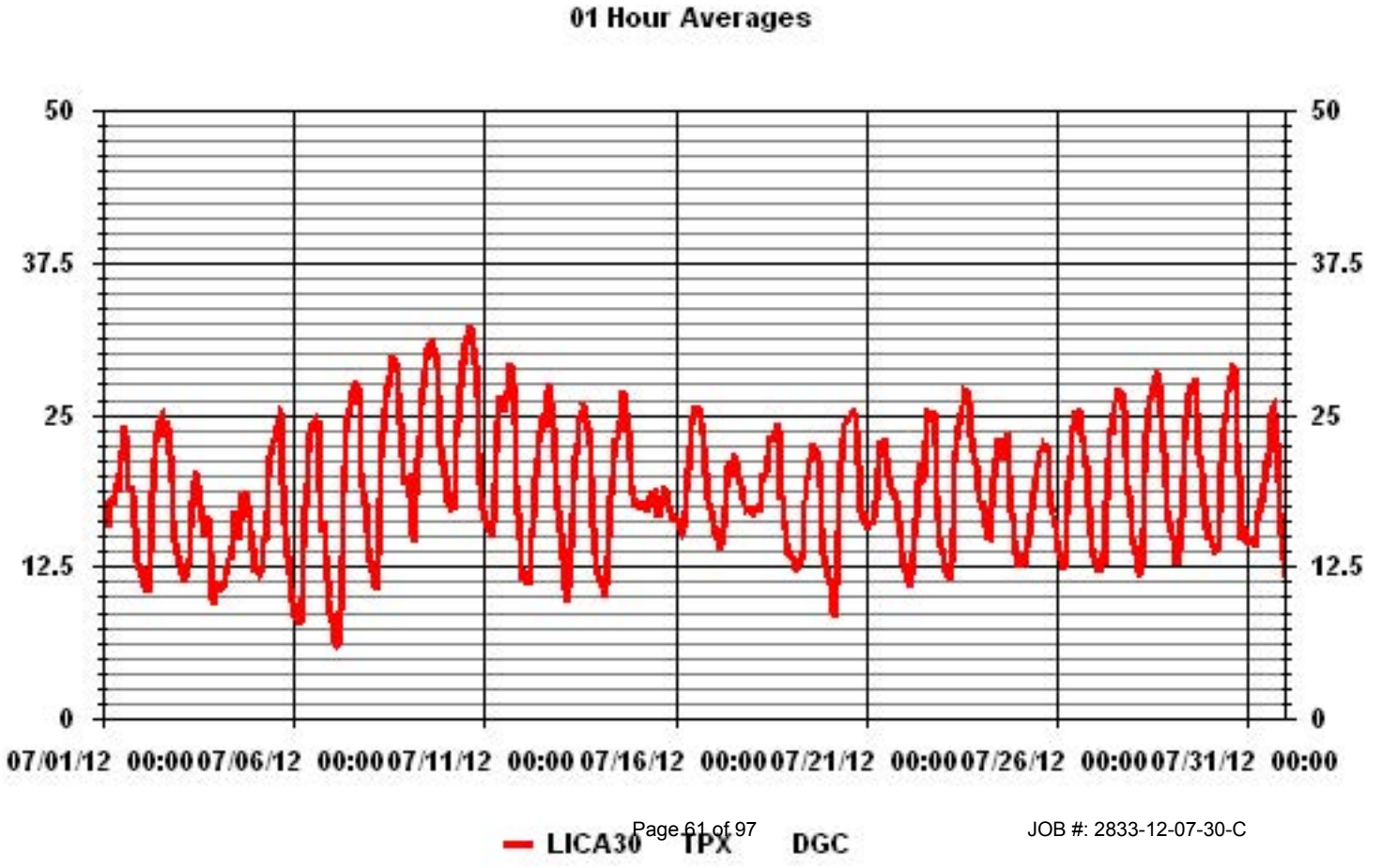
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	6	^{O}C	@ HOUR(S)	3	ON DAY(S)	7
MAXIMUM 1-HR AVERAGE:	32.3	^{O}C	@ HOUR(S)	15	ON DAY(S)	10
MAXIMUM 24-HR AVERAGE:	24.6	^{O}C			ON DAY(S)	10

CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
			AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	5.32		MONTHLY AVERAGE:	18.99	^{O}C



JOB #: 2833-12-07-30-C

Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 2012

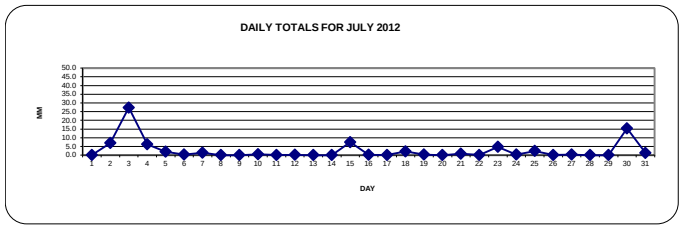
PRECIPITATION hourly averages (mm)

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	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.7	1	4.2	0.9	4.2	6.9	24
3	0.6	0.2	0	0	0	0	0.4	0	0	0	0	0	0	3.1	2.8	0.7	**9**	3.3	0	0	6.5	0.7	0	0	**9.0**	**27.3**	24
4	0	0	0.1	0	0	0.1	0.1	0.2	2.4	1.2	1.4	0.1	0.2	0.4	0	0	0	0	0	0	0	0	0	0	2.4	6.2	24
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6	1	0	0	0	1.0	1.9	24
6	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	0	0	0	0	0.2	0.4	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.4	0	0	0	0	0	1.4	1.4	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	0.4	0.1	0	0	0.4	0.5	24
11	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
12	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	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	0.2	0.6	1.3	0	0.1	0.2	1.4	1.8	1.5	0.2	0.1	0	0	0	0	0	0	0	0	1.8	7.4	24
16	0	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	24
17	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	0.1	0.1	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0.1	0	0	0	2.0	2.1	24
19	0	0.1	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	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	0.8	0	0	0	0	0	0	0	0	0	0	0	0.8	0.8	24
22	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3.7	3.7	4.7	24
24	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.3	24
25	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	2.2	0.1	0	0	0	2.2	2.4	24
26	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.1	0	0.2	0.3	24
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	1.1	6	0.7	2.2	5	6.0	15.3	24
31	0.6	0	0.1	0.2	0	0.1	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0.6	1.2	24
HOURLY MAX	0.6	0.2	0.1	0.2	0.1	0.2	0.6	1.3	2.4	1.2	1.4	1.4	1.8	3.1	2.8	0.7	9.0	3.3	2.0	2.2	6.5	1.0	4.2	5.0			

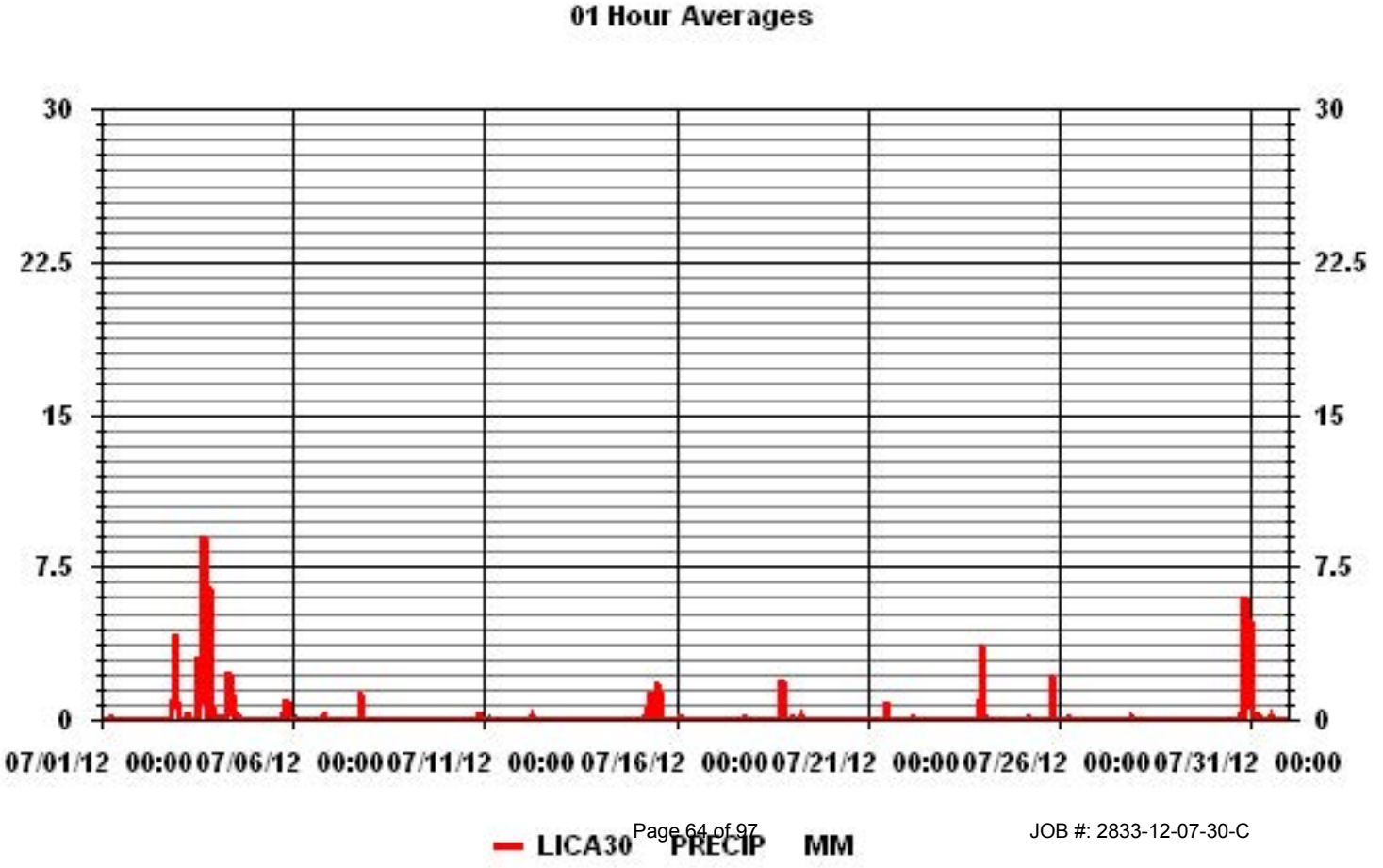
STATUS FLAG CODES

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:	9.0	MM	HOUR(S)	16	ON DAY(S)	3
MAXIMUM DAILY TOTAL	27.3	MM			ON DAY(S)	3
MONTHLY TOTAL	80.3	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		744	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.61		MONTHLY AVERAGE:		0.11	MM



JOB #: 2833-12-07-30-C

Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 2012

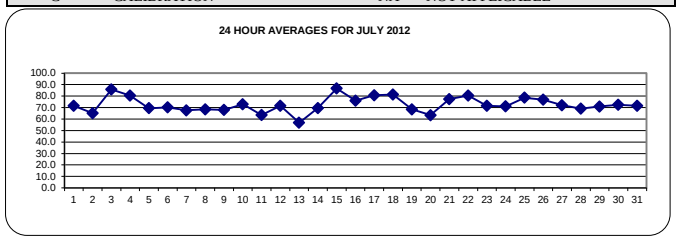
RELATIVE HUMIDITY hourly averages (%)

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	69	68	70	75	72	70	71	77	70	74	72	68	67	62	61	64	68	64	65	65	76	88	90	90	90	71.5	24
2	91	90	91	92	91	86	82	65	51	42	40	36	37	35	40	46	40	45	55	62	81	86	88	91	92	65.1	24
3	91	91	92	92	93	92	89	84	75	70	70	73	76	84	87	87	91	90	85	88	88	89	91	91	93	85.8	24
4	91	91	91	92	92	92	89	89	89	89	86	77	77	85	75	65	64	66	67	68	68	69	77	85	92	80.6	24
5	86	89	89	87	85	76	75	69	59	52	53	53	56	49	44	38	37	54	75	80	87	91	91	92	92	69.5	24
6	92	93	92	92	93	92	85	73	65	57	46	43	42	41	43	41	50	63	65	65	79	87	92	92	93	70.1	24
7	92	92	92	92	92	92	83	67	60	49	40	37	35	35	39	40	43	50	71	81	80	81	88	91	92	67.6	24
8	92	93	93	93	93	92	81	66	60	55	56	54	51	50	45	44	44	48	53	67	75	79	80	79	93	68.5	24
9	77	81	91	92	93	84	72	67	61	59	56	55	52	44	44	46	47	50	55	66	81	84	85	89	93	68.0	24
10	90	93	93	93	**94**	93	80	76	67	68	61	63	59	58	58	50	49	51	56	61	70	87	90	92	**94**	73.0	24
11	93	93	93	**94**	93	86	73	61	51	44	46	47	52	49	45	39	34	33	38	52	70	74	79	87	**94**	63.6	24
12	89	89	91	92	91	84	85	84	76	71	66	64	54	56	54	44	46	50	55	64	73	80	81	77	92	71.5	24
13	64	68	77	78	84	82	70	60	51	38	33	28	27	26	27	36	38	41	46	58	75	83	88	86	88	56.8	24
14	88	87	89	91	92	87	82	63	58	55	52	55	56	52	54	50	55	58	64	72	74	75	81	80	92	69.6	24
15	78	78	81	80	82	85	89	90	89	89	85	87	90	90	89	88	88	88	87	87	88	89	90	92	92	**86.6**	24
16	92	92	92	92	93	92	88	81	75	67	62	57	54	59	58	58	61	65	68	76	84	82	86	89	93	76.0	24
17	89	90	90	90	91	90	84	79	72	66	65	69	70	65	70	72	75	78	84	88	90	89	90	91	91	80.7	24
18	92	92	91	91	91	90	83	79	80	79	75	72	69	71	70	69	68	68	83	83	88	90	91	89	92	81.4	24
19	89	92	91	88	87	82	84	84	80	65	55	54	50	49	46	49	47	47	48	54	67	77	80	80	92	68.5	24
20	81	83	89	91	92	91	75	64	55	46	41	42	45	44	42	41	41	42	49	61	75	76	74	80	92	63.3	24
21	79	80	79	82	83	80	76	68	64	63	69	69	69	77	81	83	75	73	75	78	83	88	91	92	92	77.4	24
22	93	93	93	93	93	93	93	89	76	74	77	81	80	69	60	61	62	61	57	68	87	91	92	93	93	80.4	24
23	93	93	93	93	93	93	91	75	73	65	62	59	56	50	49	46	49	52	60	65	66	70	83	89	93	71.6	24
24	91	90	89	91	92	90	77	74	65	59	51	50	56	59	55	52	46	44	64	78	73	82	88	90	92	71.1	24
25	91	90	91	91	91	89	87	82	80	73	69	65	64	61	61	60	61	62	66	85	91	92	93	93	93	78.7	24
26	93	93	93	93	93	93	93	82	73	63	61	55	56	55	53	62	64	66	68	77	85	89	92	92	93	76.8	24
27	93	93	93	93	93	93	93	84	71	61	62	56	51	49	49	49	51	50	54	71	75	71	84	90	93	72.0	24
28	91	92	92	93	93	93	91	75	64	57	56	54	50	44	45	42	44	50	59	65	73	75	79	83	93	69.2	24
29	86	87	89	92	93	93	86	74	64	54	49	49	47	45	44	41	51	63	69	73	83	89	92	90	93	71.0	24
30	91	93	93	93	93	93	86	71	61	56	61	53	48	47	43	43	50	66	74	75	88	87	83	89	93	72.4	24
31	92	91	91	91	92	90	85	81	77	77	73	62	66	65	51	46	39	40	47	59	66	72	80	85	92	71.6	24
HOURLY MAX	93	93	93	94	94	93	93	90	89	89	86	87	90	90	89	88	91	90	87	88	91	92	93	93			
HOURLY AVG	87.7	88.4	89.5	90.1	90.4	88.3	83.2	75.3	68.1	62.5	59.7	57.6	56.8	55.6	54.3	53.3	54.1	57.4	63.3	70.7	78.7	82.6	86.1	88.0			

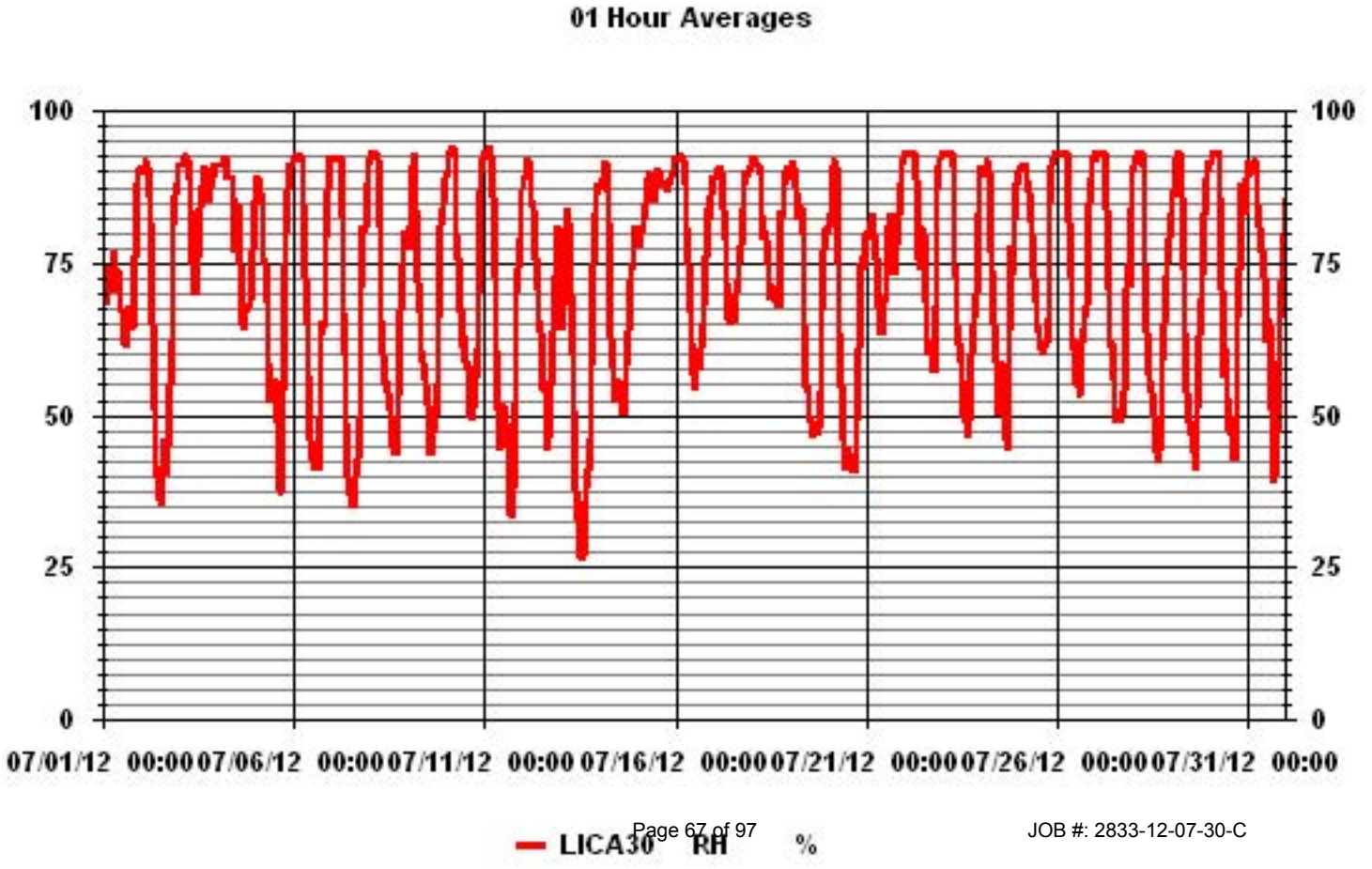
STATUS FLAG CODES

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:		94	%	@ HOUR(S)	4, 3	ON DAY(S)	10, 11
MAXIMUM 24-HR AVERAGE:		86.6	%			ON DAY(S)	15
						VAR-VARIOUS	
CALIBRATION TIME:	0	HRS		OPERATIONAL TIME:		744	HRS
				AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	17.36			MONTHLY AVERAGE:		72.57	%



JOB #: 2833-12-07-30-C

Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JULY 2012

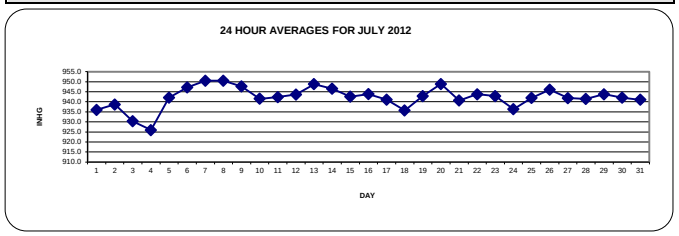
BAROMETRIC PRESSURE hourly averages (milliBar)

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	937	937	936	936	936	936	936	936	935	935	935	935	934	934	935	936	936	937	937	937	937	937	937	937	936.0	24
2	937	938	937	938	938	938	939	940	940	941	940	940	940	940	939	939	939	938	938	938	938	938	938	937	941	938.7	24
3	937	937	937	936	935	936	935	935	934	934	933	932	931	931	930	928	927	925	925	924	923	922	921	920	937	930.3	24
4	920	919	918	918	918	919	920	920	921	921	921	922	925	927	929	931	931	932	933	933	935	936	936	937	937	925.9	24
5	937	938	938	939	939	940	941	942	943	943	943	943	943	944	944	943	943	944	944	944	944	944	944	944	944	942.1	24
6	944	945	944	945	945	946	947	947	948	948	949	949	948	948	948	947	948	948	948	948	948	948	948	948	949	947.2	24
7	948	948	949	949	949	950	951	951	952	952	952	952	952	952	951	951	951	951	951	950	951	950	950	950	**952**	**950.5**	24
8	950	950	950	950	950	951	951	952	952	952	952	952	951	951	951	950	950	950	950	950	949	949	949	949	**952**	**950.5**	24
9	949	949	949	949	949	949	949	949	949	949	949	949	948	948	948	947	947	946	946	946	946	945	945	945	949	947.7	24
10	945	944	944	944	943	943	944	943	943	943	943	942	941	940	940	939	938	939	939	939	940	939	940	941	945	941.5	24
11	940	941	940	941	941	942	942	943	943	943	943	943	943	943	943	943	943	943	943	943	943	943	942	942	943	942.3	24
12	942	942	942	942	943	944	944	944	944	944	944	944	945	945	944	944	944	943	943	943	944	944	944	945	945	943.6	24
13	946	946	946	947	947	948	949	950	950	951	951	951	950	950	950	950	949	949	949	949	949	949	948	948	951	948.8	24
14	948	948	948	948	948	948	948	948	949	949	948	948	947	947	946	946	945	945	945	944	944	944	943	943	949	946.5	24
15	943	943	943	942	942	942	942	943	942	942	943	943	943	943	942	942	943	943	942	943	943	943	943	943	943	942.6	24
16	943	943	943	942	943	943	944	944	945	945	945	945	945	945	945	944	944	944	944	944	943	943	943	943	945	943.8	24
17	943	943	943	942	942	942	943	943	943	943	942	942	942	941	941	940	940	939	939	939	938	939	938	938	943	941.0	24
18	937	937	937	936	936	936	936	936	936	935	935	935	935	935	935	935	934	934	935	935	936	937	937	937	937	935.7	24
19	937	938	938	938	939	940	941	941	941	942	943	943	944	944	945	945	945	945	946	946	946	946	947	947	947	942.8	24
20	948	948	948	948	949	949	950	951	951	952	952	951	951	950	950	949	949	948	948	947	946	946	946	946	952	948.9	24
21	945	945	944	943	943	942	942	942	941	940	940	939	939	939	938	938	939	939	939	939	939	940	940	940	945	940.6	24
22	941	941	941	942	942	943	944	944	945	945	945	945	945	945	945	945	944	944	944	944	944	944	944	944	945	943.8	24
23	944	944	944	944	944	944	945	945	945	945	945	945	944	943	943	942	942	941	941	940	940	939	940	939	945	942.8	24
24	937	937	937	937	937	937	937	938	938	937	936	936	936	936	936	936	936	935	935	935	935	936	936	936	938	936.3	24
25	936	937	937	937	938	939	940	940	941	941	942	943	943	944	944	944	944	944	944	945	945	946	946	946	946	941.9	24
26	946	946	946	946	946	947	947	948	948	948	948	948	947	946	946	946	946	945	945	944	944	944	944	943	948	946.0	24
27	943	943	943	942	942	942	943	943	943	943	943	943	942	942	941	941	941	941	940	940	941	941	941	940	943	941.8	24
28	940	940	940	941	941	940	941	942	942	942	942	943	942	942	941	941	941	941	942	942	942	942	942	942	943	941.4	24
29	942	942	942	942	943	943	944	944	945	945	945	945	944	944	944	944	944	944	944	944	944	944	944	944	945	943.8	24
30	944	943	943	943	943	943	944	944	945	944	944	944	943	942	942	941	940	940	940	940	939	939	941	940	945	942.1	24
31	939	939	939	939	939	939	940	940	941	941	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	941.0	24
HOURLY MAX	950	950	950	950	950	951	951	952	952	952	952	952	952	952	951	951	951	951	951	950	951	950	950	950			
HOURLY AVG	942	942	942	941	942	942	943	943	943	943	943	943	943	943	942	942	942	942	942	942	942	942	942	942			

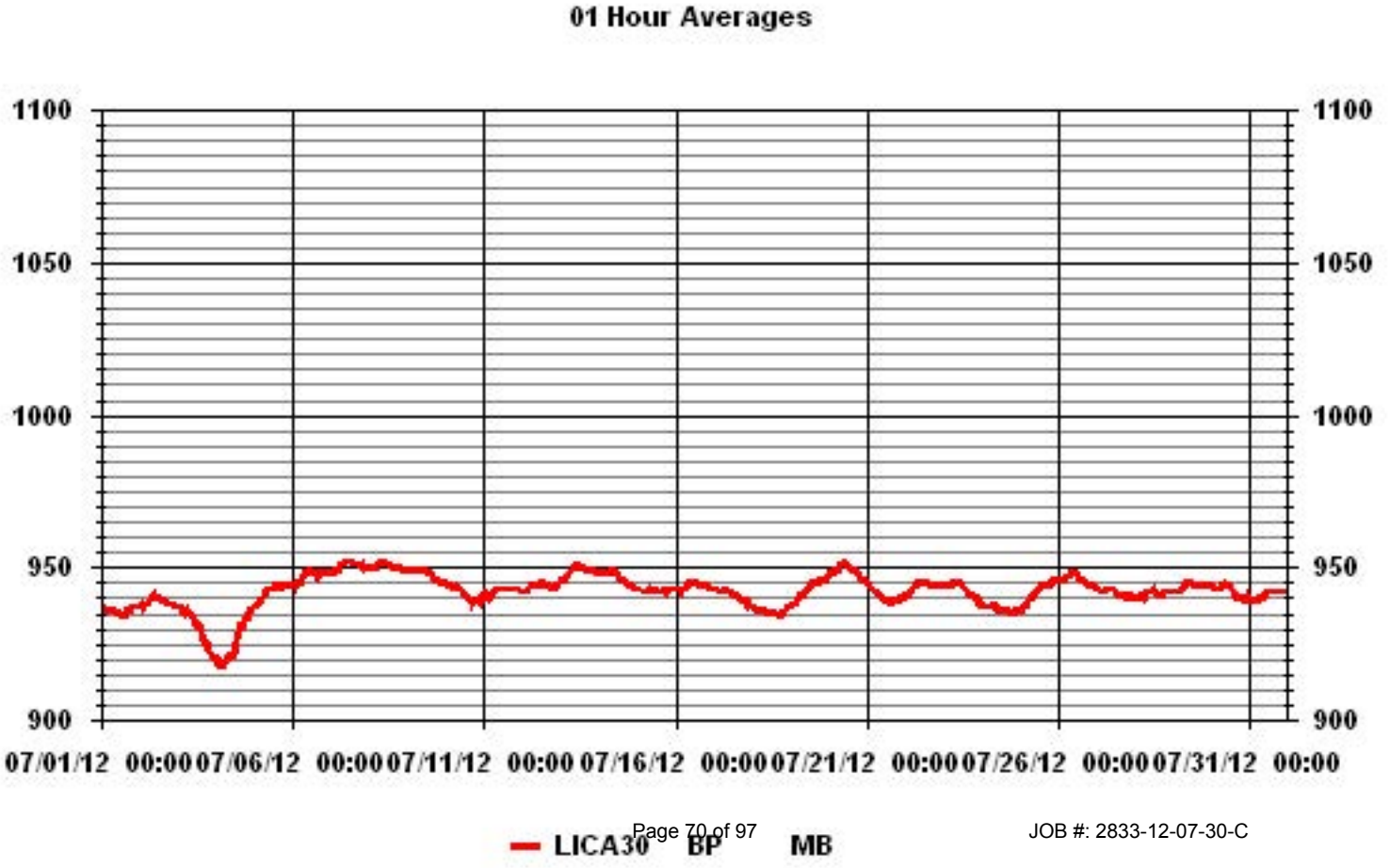
STATUS FLAG CODES

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:	952	MB	@ HOUR(S)	VAR	ON DAY(S)	7, 8
MAXIMUM 24-HR AVERAGE:	950.5	MB			ON DAY(S)	7, 8
				VAR-VARIOUS		
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		744	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	5.72		MONTHLY AVERAGE:		942	MB



JOB #: 2833-12-07-30-C

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 2012

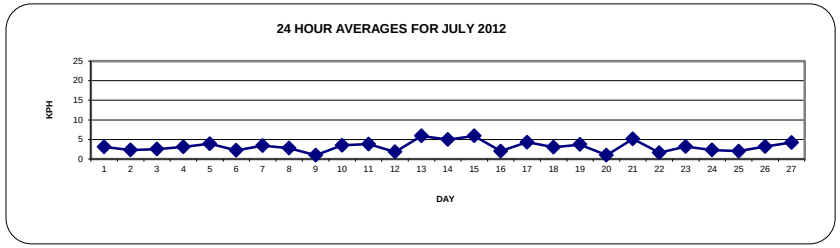
WIND SPEED hourly averages (km/hr)

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	9.8	9.6	8.7	6.4	9.7	6.8	8.3	5	6.4	6.6	7.2	7.1	6.7	7.5	4	10	8.9	10	6.5	5.8	3.2	4	3.5	3.2	10	3	24
2	5.6	5.2	3.9	3.9	3.5	3.2	3.9	6.1	5	4.7	3.8	5.5	6	4	9.4	8.3	6.5	7	4.8	4.8	1.3	5.1	2.8	1.9	9.4	3.1	24
3	1.4	0.9	1.3	2.6	2.6	3.2	2.8	6.5	7.6	9	7.1	6	9	6.9	2.8	3.9	4	7.7	4.6	4.6	1.6	2.9	2.3	3.9	9	3.1	24
4	4.9	8.4	5.1	3.5	3.5	4.4	5.3	4.8	5.4	5	6.5	7.1	10.7	11.6	12.4	12.1	9.1	8.3	8.5	6.8	4.1	3.1	2.6	4.6	12.4	5.4	24
5	5.5	3.6	5	5.4	4.6	6.7	4.2	4.1	5	4.5	4.4	6.1	9.5	6.9	7.4	3.2	5.3	8.5	2.7	3.1	0.9	1.9	1.6	1.2	9.5	3.1	24
6	1.5	1.9	1.3	1.7	1.7	1.1	1.4	3.6	5.4	4.1	3	3.6	5.8	7.3	8.7	9	8.6	6.1	1.6	3.8	5.3	0.4	2.2	2.5	9	2.3	24
7	1.1	1.4	0.2	1	1	0.7	1.7	0.7	3.3	1.7	3.2	5.1	6.2	5.1	5.5	5	5.8	4.5	8.4	3.3	5.5	4.9	2.2	1.2	8.4	2.5	24
8	0.7	1.7	1.6	1	1.5	0.8	1.5	2.8	2.1	2.5	4	5.4	5.5	5.9	5	6.4	6.1	6	3.4	3.4	3.8	4	4.2	5.5	6.4	3.1	24
9	5.4	1.7	1.5	1.7	1.9	3	3.5	3.8	4.7	4.6	6.2	5.3	6.1	7.7	7.9	6.7	6.9	6.4	5	3.1	2.9	3.7	5	3.8	7.9	3.9	24
10	1	3	2.3	3.1	2.7	3.1	2.9	3.5	3.4	4.1	4.6	5.6	5.5	7	7.8	8.7	10.8	7.1	4.5	5.3	1.7	2.7	0.2	0.4	10.8	2.2	24
11	1.5	1.9	2.8	4.2	2	3.3	2.8	4	5.8	6.1	6	5.9	5.7	6.8	6.1	5.4	4.7	4.1	2.9	2.3	3.6	4.2	3.4	2.4	6.8	3.4	24
12	2.2	2.5	1.2	1.7	1.7	2.5	1.3	1.7	0.8	3.1	1.5	3.2	8	8.8	6.3	3.4	5.4	5.3	4.7	4.1	4.6	2.9	2.5	1.8	8.8	2.8	24
13	4.1	2.9	1.2	3.3	1.3	1.1	2.3	3.7	3.2	6.3	6	2.9	4.8	1.9	1.2	6.7	6.9	5.7	4.4	2.8	1.7	2.3	1.6	2.6	6.9	1	24
14	0.9	1.5	1.8	0.7	0.3	1.6	2.1	3.4	5.5	8.3	8.3	8.4	6.5	6.3	4.9	5.6	5.8	4.6	3	3.1	3.3	3.7	3.3	3.8	8.4	3.5	24
15	5.1	3.5	2.8	3.2	4.2	4.1	2.3	3.1	4.7	5	5.6	8.8	7.9	7.3	8.2	7.5	3.7	4	4.6	4.2	3.4	2.7	1.8	1.8	8.8	3.8	24
16	2.8	3	0.6	1.7	1.8	1	3.5	5.9	6.7	6.2	4.9	4	4.1	5.9	4.5	5.9	6.1	5.3	4.3	2.3	3.9	4.8	4.8	4.5	6.7	1.8	24
17	5.2	4.8	5.4	5.6	4.6	4.3	4.9	6.1	7.5	7.6	8.6	8.2	8.4	8.1	6	7.2	7	6.8	6.5	4.8	5.9	4.8	4	4	8.6	**5.9**	24
18	4.2	4.8	6	5.2	3.6	3.4	6.7	6.1	4.5	4.5	4.8	5	7.9	8.6	8	9.7	9.4	7.5	5.8	1.2	5.4	5.7	4.4	4.1	9.7	5	24
19	6.1	5.8	4	4	5.4	5.3	6	5.2	4.4	6.5	11	12.5	10.4	9.8	9.2	8.6	8.4	8.2	7.4	4.8	3	2.6	2.5	3.2	12.5	5.9	24
20	3.1	3	1.8	1.6	1.4	1.3	1.3	4.2	3.5	2.7	2.3	4.1	6	5.8	5.2	5.6	4.9	5.3	3.6	2.9	3	4.8	4.6	3	6	2	24
21	3.2	3.5	3.8	4	4.7	5.4	7.1	8.2	8.7	9.2	9.2	8.2	7.1	4.4	3.5	5.5	2.6	5.3	6.6	4.1	3.6	3.4	4.3	3.1	9.2	4.3	24
22	2.3	1.4	0.9	1.6	1.6	1.2	1.8	4.8	4.3	6.1	6.8	6.3	4.5	3.4	2.4	6.4	7.6	5	2.1	0.5	2.8	3.2	2.9	1	7.6	3	24
23	1.6	0.9	1	1.1	1.4	0.5	2	0.9	1.2	4.6	4.4	3.9	5.5	7.4	9.5	9.6	8.5	6.4	6.2	6.1	5.8	6.5	6.2	6.9	9.6	3.7	24
24	6.9	8	5.5	5.2	4.3	2.8	3.3	1.5	2.5	0.4	2.6	2.2	4.4	3.6	4.3	4.1	2.6	3	0.9	0.2	7.4	2.1	1.8	1.2	8	1	24
25	2.5	1.9	3.1	4.4	3.8	4.4	3.4	5.9	7.8	9.9	8.7	10.6	9.8	11.6	11.4	**13.6**	9.6	6.3	2.4	1.4	0.4	1.5	0.4	0.8	**13.6**	5.1	24
26	0.7	0.7	0.6	0.7	0.5	0.8	1	4.1	4.1	1.9	4.1	4.3	4.5	6.2	6.7	6	3.8	2.4	1.8	1.8	2.7	2	0.7	0.6	6.7	1.6	24
27	0.8	0.9	1.2	4.3	1.8	1.1	1.2	3.2	2.9	5.1	7.1	7.5	6.7	7.1	8.4	5.6	5.9	5.4	5.4	2.7	3.6	3.7	3.4	2.2	8.4	3.2	24
28	1.4	1.5	1.5	1.8	0.9	0.5	0.4	2.8	1.5	0.5	3.5	6.7	5.4	5.4	4.6	4.1	6.3	5	2	2	7.5	3.3	2.2	2.7	7.5	2.3	24
29	4.2	4.4	2.1	1.5	2.1	1.7	1.6	3.2	3.7	3.1	2.8	4.8	5.5	4.5	5	6.2	6.7	6.1	1.9	0.7	0.8	2.3	3.7	6.1	6.7	2	24
30	2.5	3.2	2.5	2.6	4.1	2.9	2.7	4.4	4	4.4	3.7	3.8	7	8.3	7.8	6.7	6.9	1.2	3.3	2.7	4.5	3.8	9.3	1.6	9.3	3.2	24
31	2.9	2.4	0.4	4.6	3.8	4.4	5.7	6.3	7.4	4.5	6	7.5	4.6	4.1	5.6	6.9	7.8	5.8	4.7	3.2	2.6	2.5	2.4	2.1	7.8	4.2	24
HOURLY MAX	9.8	9.6	8.7	6.4	9.7	6.8	8.3	8.2	8.7	9.9	11.0	12.5	10.7	11.6	12.4	13.6	10.8	10.0	8.5	6.8	7.5	6.5	9.3	6.9			
HOURLY AVG	3.3	3.2	2.6	3.0	2.8	2.8	3.2	4.2	4.6	4.9	5.4	6.0	6.6	6.6	6.4	6.9	6.5	5.8	4.3	3.3	3.5	3.4	3.1	2.8			

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

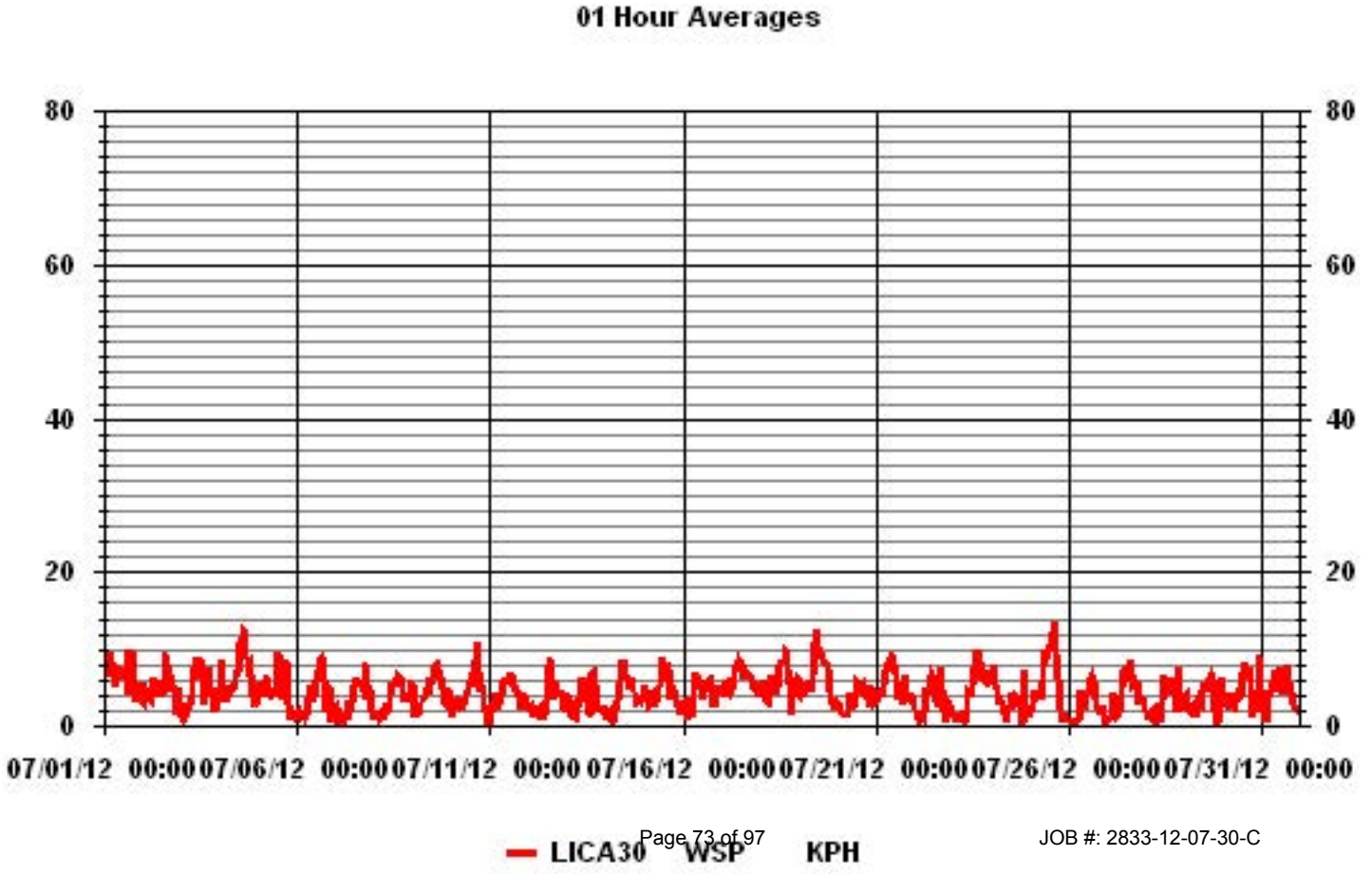


LAST CALIBRATION: December 20, 2011

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	13.6	KPH	@ HOUR(S)	15	ON DAY(S)	25	
MAXIMUM 24-HR AVERAGE:	5.9	KPH			ON DAY(S)	17	
CALMS (≤ 1 KPH)	4.57	%	OPERATIONAL TIME:		744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	2.46		MONTHLY AVERAGE:		4.40	KPH	

JOB #: 2833-12-07-30-C



JOB #: 2833-12-07-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JULY 2012

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

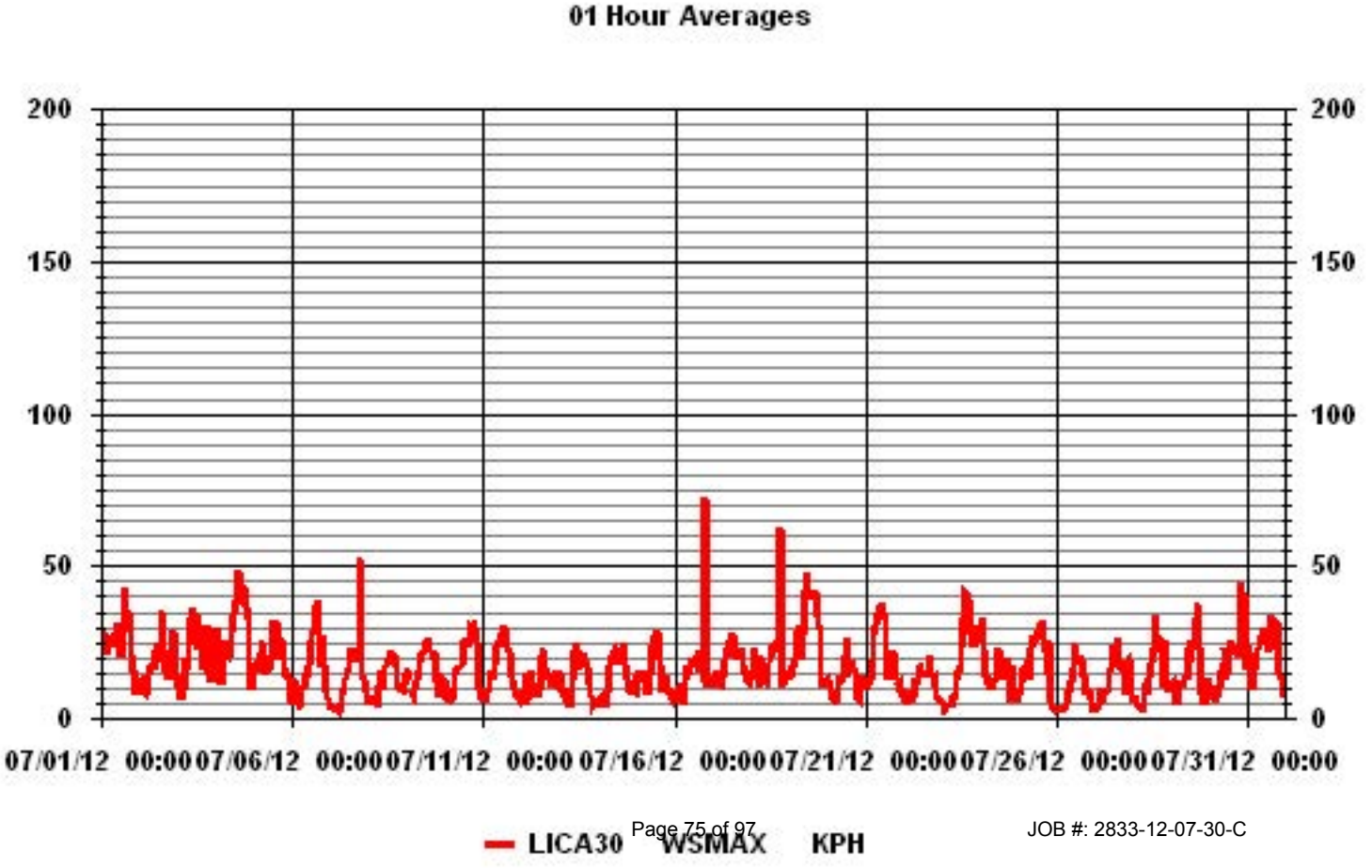
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.
DAY																									
1	25.4	27.2	23.8	21.1	27.1	26.5	25	24	27.9	26.4	31	22.2	20.1	27.9	37.1	43	34.1	34.1	28.6	21	16.1	7.8	9.2	9	43
2	12.4	12.9	8.4	10.2	8.9	10.4	17.3	16.3	17.5	16.2	21.9	24.3	21	18.7	35.6	23.1	17.6	18.1	12.4	21.1	15	28.8	21.8	11.8	35.6
3	10.9	14	5.9	8.6	9.3	19.6	15.5	24.2	32.8	36	27.5	24.4	34.7	24	23.8	29.3	16.1	30.8	20.3	13.9	30.1	12.6	12.4	12.4	36
4	20.3	29.9	13.5	11.1	12.8	20.9	25.5	22	21.1	22.9	28.4	34	39	48.8	48	42.4	38.4	38.2	43.3	36.9	33.4	17.2	9.3	12.2	48.8
5	17.9	15.2	19	21.4	19.6	25.8	15.9	14.8	19.4	15.4	20.7	24.6	32.3	29.7	32.3	19	21.8	26.2	21.8	13.3	14.4	13.1	6.7	6.3	32.3
6	6.1	13.1	7.8	7	4.6	5.1	10	10.6	13.7	13.9	17.2	25.1	27.3	28.8	36.2	36.7	38.7	20.9	17	27.1	18.3	9.5	7.1	5	38.7
7	2.8	4.1	3.6	3	3.2	2.6	4.5	7.8	10	13	15.7	16.5	18.5	22.4	23.3	18.1	20.6	19	52.5	20.8	14	13.1	9	6.4	52.5
8	4.3	5.6	7.1	5	6.5	3.6	10.9	15.2	8.9	15	17	19.4	19.6	18.3	22	18.3	16.7	20.5	9.5	11.3	10	9.5	11.3	14.6	22
9	16.6	14.1	0	8.7	7.6	9.3	12.4	15.2	18.5	21.3	22	25.7	23.5	26.4	22.4	20.7	20.9	20.9	12.8	11.3	6.5	8.9	13.3	12.8	26.4
10	6.2	7.4	5.3	9.4	7.2	8.1	14.2	15.7	16.8	17.2	19	18.9	25.5	26.6	23.1	30.8	30.5	31	24.6	29.2	25.3	10.2	7.1	6.3	31
11	6.1	6.1	10	9.1	14.6	14.6	12.8	17.6	23.3	24.6	23.5	27.5	28.1	30.5	28.8	23.1	22.2	14.6	13	10.2	8	8.2	6.7	5.6	30.5
12	6.7	6.5	4.1	15.2	6.3	10.7	16	10.7	7	11.2	6.8	9.2	20.3	23.3	16.8	14.3	14.8	13.7	13.7	10.6	12	11.3	15.2	11.7	23.3
13	15.7	10.4	6.7	9.3	6.3	5.2	5	9.8	12.6	22.5	24.4	15.7	22.5	17.4	17.4	21.3	19.4	17.4	11.7	7.8	3.9	4.7	4.7	6.7	24.4
14	3.4	6.1	6.7	7.4	4.1	5.2	8.4	17.3	20.8	19.7	22.1	23	21.4	17.9	22.2	24.4	24.2	17.9	13.5	9.3	8	10.6	9.8	9.3	24.4
15	13	13	15.9	14.1	14.4	15.9	8.7	7.8	14.1	14.4	23.8	27.5	22.5	29	19.8	18.1	8.9	11.1	11.5	13.7	8.9	8.9	7.3	6.3	29
16	8.2	9.3	7.3	6.3	5.8	4.3	11.5	17	15.1	16.3	18.8	19.1	19.7	16.6	18	22.6	15.5	17	11.7	**72.4**	10.6	11.7	11.7	11.5	**72.4**
17	12.8	12.2	14.8	14.8	11.8	11.3	13.7	19.2	22.2	21.8	25.5	27.3	27	27.9	22.9	19.8	20.9	20.9	23.1	14.6	15.5	13	12.2	11.7	27.9
18	12.6	15.9	22.9	17.9	13.3	10	20.7	17.4	12.8	12.2	15.2	18.1	19.8	23.8	24.7	24.3	22.8	22.5	62.4	10.3	13.6	12.9	13.9	12.6	62.4
19	14.6	13.5	18.8	18.5	27.1	28.4	30.6	22.3	19.4	27.3	41.9	47.6	42.1	40.8	38.9	40.8	41.7	34.1	30.6	29.7	13.7	10	11.7	12	47.6
20	13	10.9	9.5	6.9	5.6	6	8.5	13.3	13.4	12.8	13.4	20.8	26.3	19.3	16.4	17.3	15.1	16.2	11.1	6.9	6.3	11.1	13.7	11.3	26.3
21	10.9	9.5	11.1	13	19	27.3	30.3	34.3	37.3	33.6	37.8	34.7	33.2	18.3	12.2	17.4	15.7	22.2	15	13.7	11.1	12	10.2	8	37.8
22	6.5	7.1	4.3	7.1	6.7	6.5	7.4	12.4	12.2	16.6	17	15.2	15	13.5	15.5	20	19.9	14.4	12.7	13.4	7.2	6.8	6.4	5.3	20
23	4.9	2.8	3.4	4.1	4.3	4.3	7.1	5.8	7.8	12.6	15.4	17.4	23.3	32.7	41.9	41.3	39.1	28.4	26.6	24.9	24.6	26.6	30.6	29.5	41.9
24	24.7	33.2	22.9	14.1	12.4	13.5	10.6	10.6	11.7	13	14.8	23.3	19.6	12.8	14.1	15.4	16.8	19.4	5.4	6.9	17.2	8.5	6.9	6.6	33.2
25	9.4	9.2	11.6	16.6	17.9	17.9	12.8	22.5	23.6	26.8	25.7	26.4	28.6	31.4	28.1	32.3	24.9	22.5	13.9	25.7	5.6	3.9	3	3.6	32.3
26	3.2	3.4	2.8	2.8	2.8	3.6	5.4	8.9	11.7	12.4	16.1	24.4	19.2	17.6	20.7	19.6	14.6	14.1	7.6	8.9	8.9	7.1	5.8	2.1	24.4
27	3.3	3.3	4.8	10.1	7.4	5.7	7.8	9.1	9.1	15	16.5	23.5	21.6	20.7	26.2	20	17	15	17	7.6	18.3	19.4	17.4	8.2	26.2
28	5.6	7.6	3.6	4.7	4.1	3.4	3.2	10	9.5	12.6	13.7	18.3	22.7	24.6	33.6	21.8	27	25.3	12	12.4	25.3	13	9.8	8.7	33.6
29	12	12.6	10	4.6	8.5	10.3	12.1	9.9	14.2	12.3	22.9	18.5	25.9	24.4	23.1	33	37.5	24	9.1	8.7	4.3	6.9	9.1	13.3	37.5
30	8.9	7.3	7.1	6.9	10.2	6.9	9.8	15.2	18.3	23.3	12.4	14.6	21.1	25.7	24.6	20.5	22.7	23.3	20.1	44.6	20.1	40	41.3	15.5	44.6
31	23.6	15.9	9.5	17.2	17	21.2	22.8	25.8	**27.1**	24.3	29.3	26.7	25.8	22	33.6	32.1	32.5	31.4	31.4	15	13.7	13.3	8	8.2	33.6
PEAK	25.4	33.2	23.8	21.4	27.1	28.4	30.6	34.3	37.3	36.0	41.9	47.6	42.1	48.8	48.0	43.0	41.7	38.2	62.4	72.4	33.4	40.0	41.3	29.5	

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

MAXIMUM INSTANTANEOUS READING	72.4	KPH	@ HOUR(S)	19
			ON DAY(S)	16



JOB #: 2833-12-07-30-C

LICA30
WSP / WDR Joint Frequency Distribution (Percent)

July 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	1.74	4.16	4.56	2.82	3.62	3.49	6.58	6.72	9.13	7.79	8.33	5.91	4.43	2.82	.53	1.61	74.32
<	12.0	.26	2.28	.53	.80	1.34	1.74	.80	4.43	1.74	5.24	.80	.53	.94	3.09	.40	.13	25.13
<	20.0	.00	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.26	.13	.00	.53
<	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	2.01	6.58	5.10	3.62	4.97	5.24	7.39	11.15	10.88	13.03	9.13	6.45	5.37	6.18	1.07	1.74	

Calm : .00 %

Total # Operational Hours : 744

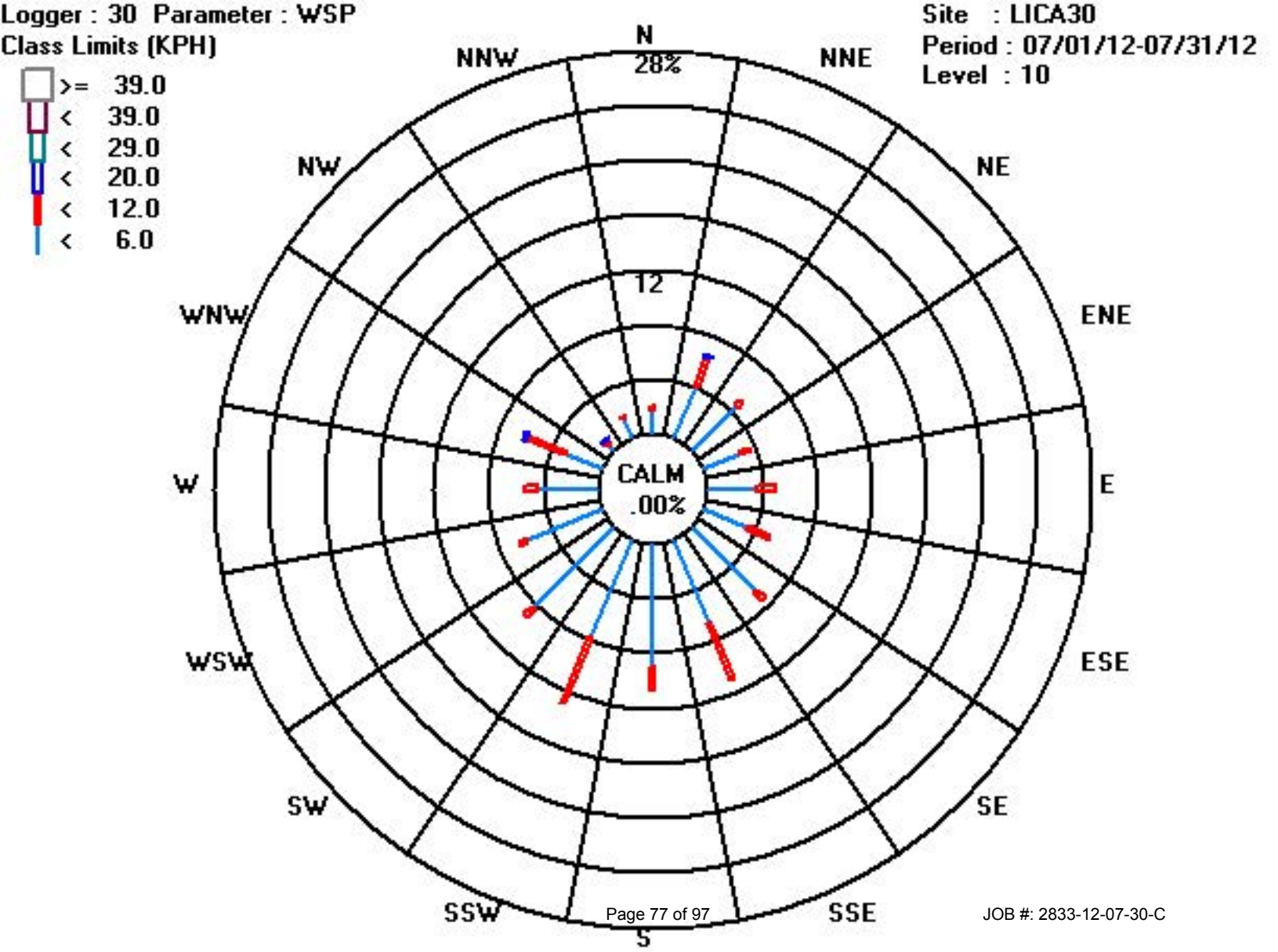
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	13	31	34	21	27	26	49	50	68	58	62	44	33	21	4	12	553
<	12.0	2	17	4	6	10	13	6	33	13	39	6	4	7	23	3	1	187
<	20.0		1												2	1		4
<	29.0																	
<	39.0																	
>=	39.0																	
	Totals	15	49	38	27	37	39	55	83	81	97	68	48	40	46	8	13	

Calm : .00 %

Total # Operational Hours : 744



JOB #: 2833-12-07-30-C

Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 2012

WIND DIRECTION hourly averages in degrees

MST

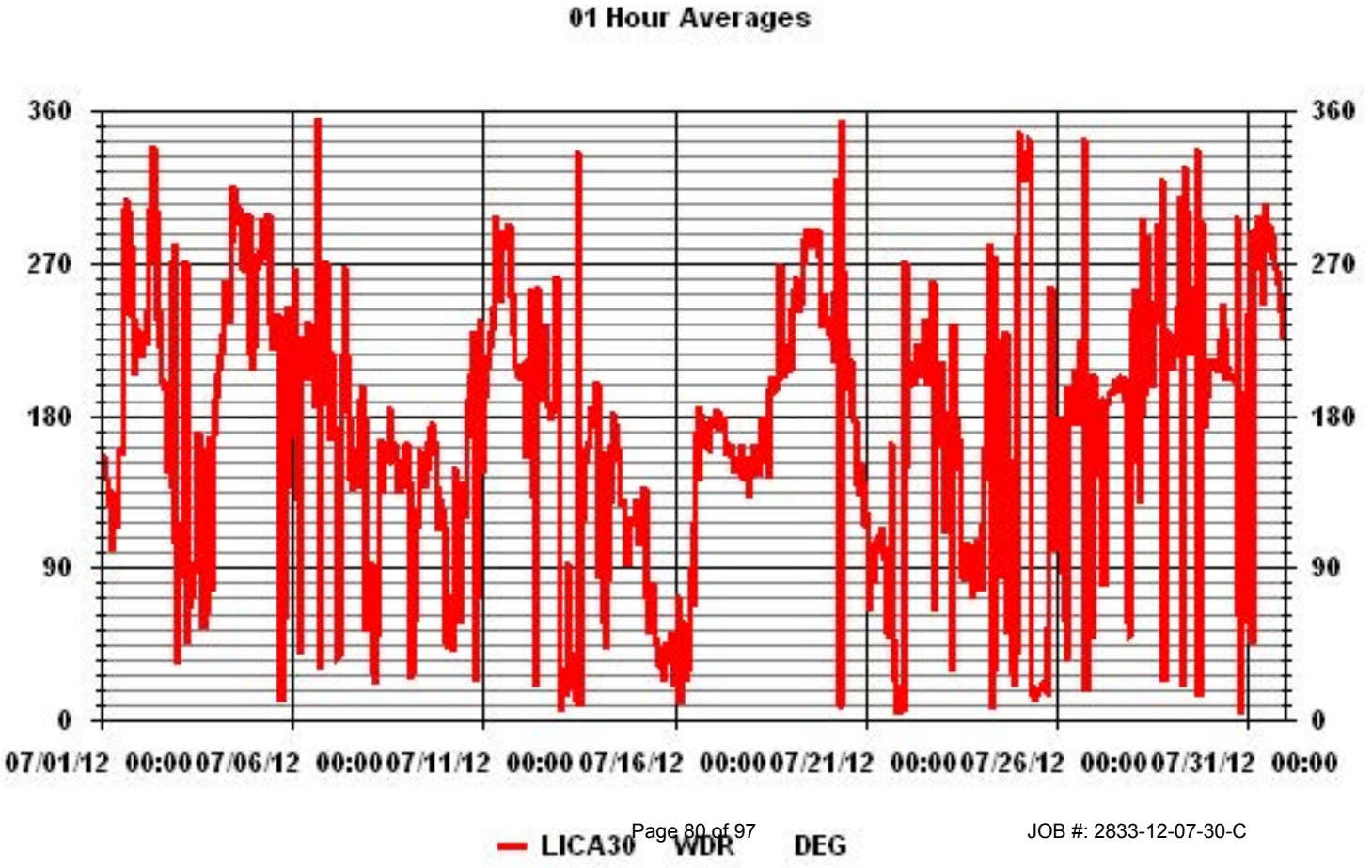
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	156	156	155	143	142	127	137	99	114	118	113	160	161	156	239	303	308	295	301	282	239	203	230	230	168	SSE	24
2	217	218	214	225	221	241	270	303	338	338	303	238	219	242	200	202	196	168	146	178	137	271	282	105	226	SW	24
3	33	84	85	117	126	272	44	66	72	76	94	87	124	170	163	83	53	160	153	62	168	75	131	167	105	ESE	24
4	190	204	207	216	228	258	258	251	235	259	282	316	299	299	304	294	283	266	270	265	297	297	216	206	269	W	24
5	219	265	275	276	268	296	271	280	295	299	235	223	218	238	223	238	238	12	12	60	136	245	209	182	259	WSW	24
6	166	178	267	129	173	39	227	212	201	219	235	227	208	202	184	202	356	30	209	210	199	271	186	188	203	SSW	24
7	164	218	168	170	174	38	39	211	216	268	216	183	181	142	135	160	136	148	185	189	199	181	52	67	171	S	24
8	94	83	94	28	21	49	88	150	166	133	161	155	154	185	152	157	164	159	156	134	146	136	145	162	149	SSE	24
9	164	143	25	27	57	58	113	124	141	158	157	136	147	164	156	173	176	166	163	140	111	131	126	115	144	SE	24
10	45	63	42	74	52	40	150	117	114	56	134	141	123	120	166	189	204	222	230	23	71	133	237	146	140	SE	24
11	189	190	213	212	220	230	244	261	298	291	246	273	278	286	285	279	293	250	253	229	210	205	204	200	256	WSW	24
12	209	210	155	191	189	226	255	131	156	20	256	189	198	198	202	234	189	186	177	181	187	224	262	247	200	SSW	24
13	5	24	31	21	14	93	32	20	40	20	10	336	8	11	117	150	152	160	164	172	183	183	198	198	73	ENE	24
14	92	84	100	56	159	41	82	127	163	182	164	176	153	160	129	128	128	117	90	113	115	119	120	122	137	SE	24
15	130	127	103	120	129	138	73	51	64	54	81	74	50	45	34	33	32	23	33	46	41	43	52	32	63	ENE	24
16	20	24	74	9	21	59	25	25	29	43	90	67	117	170	141	185	182	175	172	167	163	162	176	177	119	ESE	24
17	177	175	177	183	179	173	173	180	166	156	158	157	163	145	156	150	148	151	163	144	142	155	132	132	159	SSE	24
18	142	155	161	161	147	145	176	176	179	174	153	143	196	203	201	196	197	201	270	219	203	206	220	223	187	S	24
19	208	206	243	255	262	247	241	245	257	268	284	290	285	283	280	291	284	283	290	274	254	231	252	234	268	W	24
20	239	232	233	226	211	254	320	9	7	355	267	227	198	197	213	191	181	175	178	139	133	152	142	119	191	S	24
21	120	114	64	81	86	85	104	105	98	110	114	94	103	58	52	48	164	49	24	7	4	9	18	17	79	ENE	24
22	5	271	148	196	212	203	198	204	223	202	206	211	219	237	226	198	200	212	259	64	161	202	199	210	208	SSW	24
23	212	110	173	179	123	182	28	235	231	179	167	148	106	85	82	103	103	97	83	72	85	91	107	84	103	ESE	24
24	76	115	141	161	174	216	282	6	29	275	92	83	181	225	226	218	230	51	156	55	29	20	39	286	135	SE	24
25	348	340	338	317	329	335	342	341	14	20	12	14	18	19	21	22	19	18	55	138	257	149	100	113	11	NNE	24
26	167	180	149	161	88	60	35	197	190	193	197	208	173	193	199	224	226	344	17	61	97	97	48	205	187	S	24
27	146	147	187	184	190	79	188	187	188	193	193	196	200	201	202	195	195	199	203	189	58	51	52	152	187	S	24
28	241	255	165	184	128	180	296	191	259	286	200	196	223	235	247	258	294	280	320	22	194	230	229	224	232	SW	24
29	207	212	216	214	244	245	310	20	328	303	282	215	235	239	242	256	338	14	254	295	172	178	190	202	251	WSW	24
30	214	206	213	208	211	205	217	225	246	232	201	211	205	203	203	202	199	298	62	3	56	116	194	171	203	SSW	24
31	240	289	45	264	266	290	294	298	289	245	280	305	276	294	277	272	286	271	267	258	252	242	226	229	275	W	24
HOURLY AVG	348	340	338	317	329	335	342	341	338	355	303	336	299	299	304	303	356	344	320	295	297	297	282	286			

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:	December 20, 2011
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	82.22		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	186	DEG



JOB #: 2833-12-07-30-C

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

JULY 2012

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

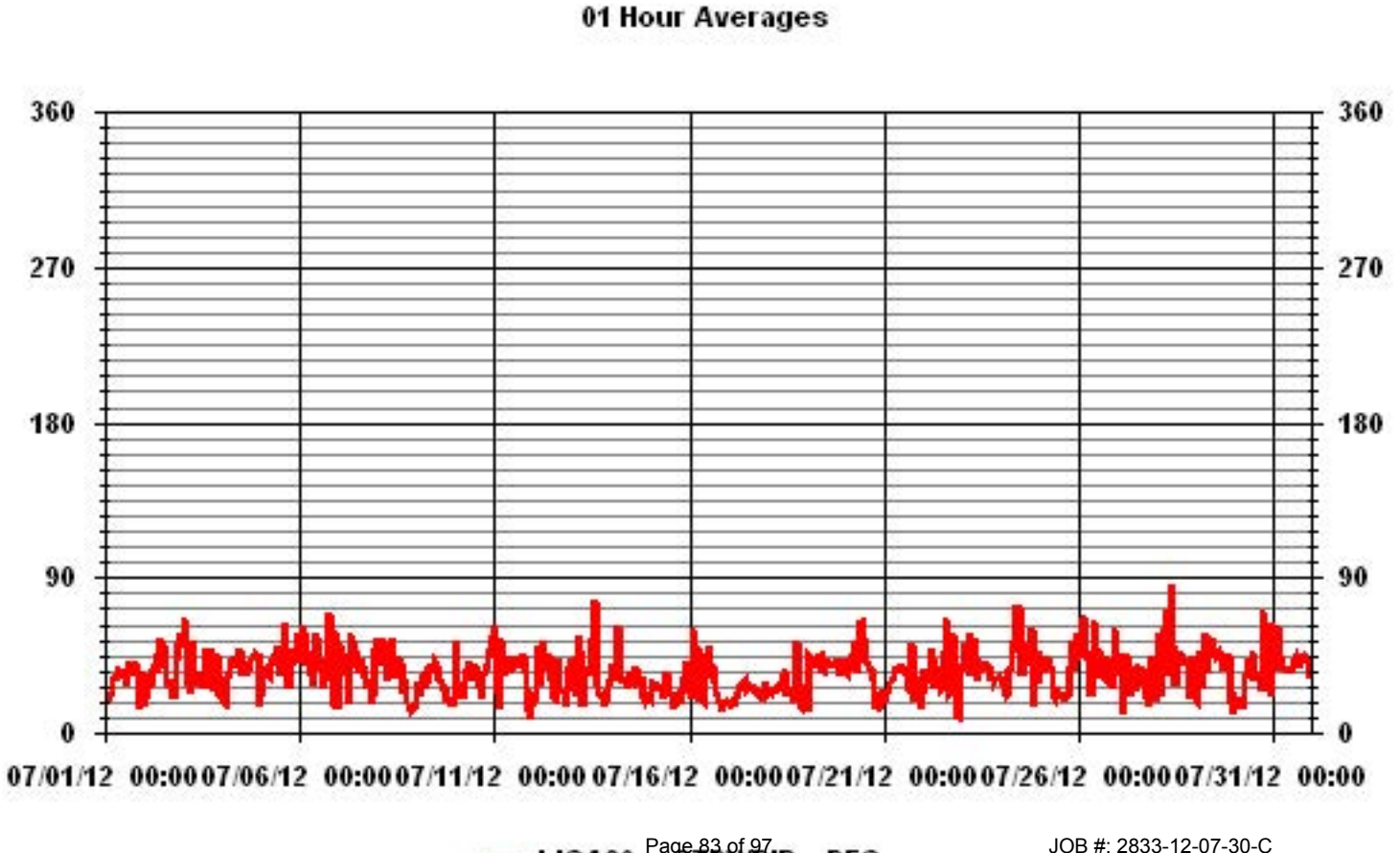
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	19	21	21	22	23	33	30	34	38	32	36	33	30	29	41	38	41	34	40	40	35	14	35	34
2	16	20	24	27	28	37	40	35	43	42	55	49	42	50	29	26	31	26	20	28	42	51	58	49
3	57	67	54	28	23	51	53	28	30	30	36	33	29	25	48	48	48	38	34	24	35	45	25	26
4	22	19	18	32	36	42	43	40	37	44	45	49	36	36	36	33	37	41	43	44	46	44	44	15
5	22	39	32	37	35	34	40	43	40	46	50	39	34	41	38	64	43	25	46	40	50	42	40	58
6	56	57	62	59	39	41	48	34	27	36	57	56	44	37	26	35	34	40	69	36	15	60	32	13
7	33	51	34	45	45	35	16	58	37	55	49	43	35	37	43	39	33	27	29	27	17	21	49	50
8	56	39	52	54	49	37	31	36	49	54	46	32	38	45	41	27	29	24	18	14	12	14	15	18
9	22	30	21	34	35	26	29	37	36	40	36	41	40	32	30	30	27	27	20	19	19	17	17	21
10	53	25	30	23	19	27	37	32	42	35	33	31	41	33	30	27	20	33	36	40	44	49	55	55
11	62	38	24	14	55	33	43	45	39	39	42	40	45	39	39	44	45	45	46	36	14	11	11	21
12	19	23	50	27	39	49	54	47	41	36	46	31	22	21	25	44	27	24	24	18	18	32	38	43
13	25	31	44	21	57	49	15	28	37	34	39	55	48	71	77	29	25	23	21	16	21	20	32	27
14	41	37	30	57	62	47	29	32	31	26	30	29	35	31	33	38	30	31	31	22	19	22	22	19
15	18	31	26	29	24	26	26	20	27	27	35	23	23	23	17	17	19	23	17	26	23	33	41	24
16	24	20	61	46	33	50	20	20	18	25	39	46	50	31	40	31	25	23	20	19	13	18	18	19
17	18	17	18	20	18	20	24	28	29	30	32	27	28	28	26	25	26	24	23	23	21	21	24	29
18	23	24	23	25	25	27	25	26	29	32	34	37	21	24	26	22	20	21	53	34	15	15	26	25
19	15	15	45	44	40	40	40	40	45	46	37	36	40	41	41	39	40	40	41	43	39	33	43	34
20	36	34	43	38	38	46	53	35	52	64	64	56	42	41	41	39	38	32	25	16	15	13	17	25
21	21	22	23	30	32	31	36	36	38	39	35	38	38	35	26	25	50	50	19	26	31	30	14	17
22	23	38	35	31	31	49	44	25	39	29	25	25	37	47	67	32	23	24	57	45	18	11	10	38
23	39	36	52	42	33	57	54	50	55	30	35	41	40	41	36	41	35	36	34	30	32	31	32	33
24	30	31	23	21	22	36	39	54	46	74	49	75	33	37	36	43	52	39	42	60	15	31	28	48
25	35	45	40	38	41	45	40	38	22	20	27	22	23	22	21	18	22	22	39	52	54	35	57	57
26	45	46	66	68	48	44	37	21	27	65	39	44	48	32	36	34	38	45	34	29	25	28	61	47
27	43	46	34	10	38	46	34	21	38	34	24	32	40	33	27	39	27	30	21	15	32	44	27	18
28	31	57	44	21	55	61	71	33	55	86	51	27	42	43	45	47	42	39	42	41	19	35	45	32
29	18	17	47	25	44	55	58	35	45	47	55	46	44	45	47	44	36	44	40	45	44	16	25	11
30	21	15	20	16	14	20	35	32	42	39	35	48	32	30	35	31	24	72	44	51	46	26	21	64
31	55	44	63	36	41	42	39	37	37	37	38	37	41	41	44	42	38	44	46	44	42	43	32	36

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 20, 2011

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS



JOB #: 2833-12-07-30-C

Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	July 10, 2012		Previous Calibration	June 11, 2012	
Company	Lakeland Industry & Community Association				
Plant / Location	Cold Lake - Maskwa				
Start Time (MST)	9:12		End Time (MST)	13:23	
Reason:			Monthly Calibration		
Barometric Pressure	944	mmHg	Station Temperature	24	Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	LL42496	Cal Gas Expiry date	January 16, 2014
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 6000	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 6000	S/N :	4760		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range			0 - 1000	ppb				
Sample Flow / Box Temp	600	ccm	31.6	Deg C	601	ccm	32	Deg C
HVPS / Lamp Setting	494		2470		494		2466	
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	43.9		1.24		45.6		1.235	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	2	N/A
4994	0	0	0	N/A
4921	75.5	749	753	0.9953
4921	75.5	749	751	0.9980
4955	40.3	400	397	1.0079
4976	20.2	201	198	1.0128
4995	0	0	1	N/A
			Sum of Least Squares	1.0008
			New Correction Factor	0.9980

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	2.0	1.1
Auto Span	377.0	376.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0012
Current Correction Factor Before Span Adjust:	0.9953
Percent Change:	0.6%

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

At beginning of the calibration, analyzer poer was cut temporarily causing the reading was high for few minutes.

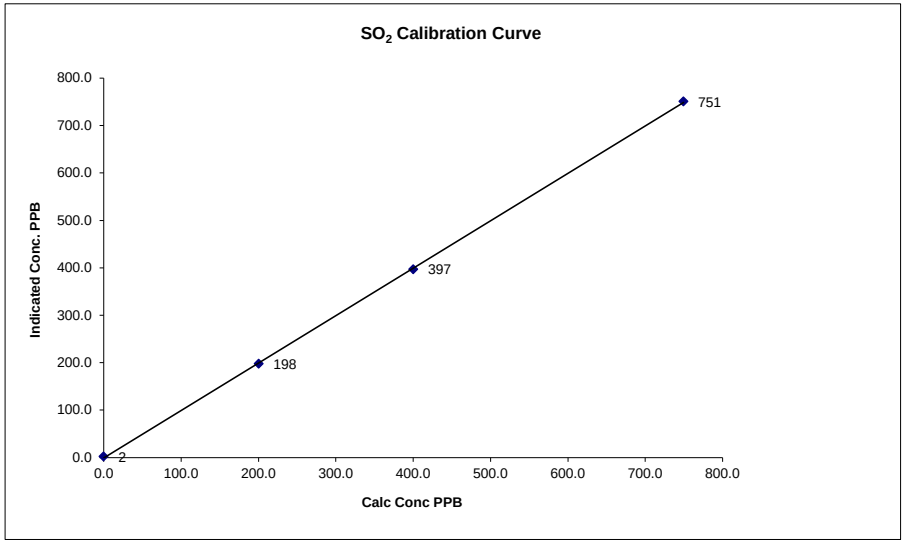
Calibration Performed by: Ting Xu

SO_2 Calibration Curve

Calibration Date	July 10, 2012				
Company	Lakeland Industry & Community Association				
Plant / Location	Cold Lake - Maskwa				
Start Time (MST)	9:12	End Time (MST)	13:23		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	2	n/a
201	198	1.0128
400	397	1.0079
749	751	0.9980

Correlation Coefficient	(≥ 0.995)	0.999930
Slope	(0.85 to 1.15)	1.000324
Intercept	(± 3% F.S.)	-0.652726



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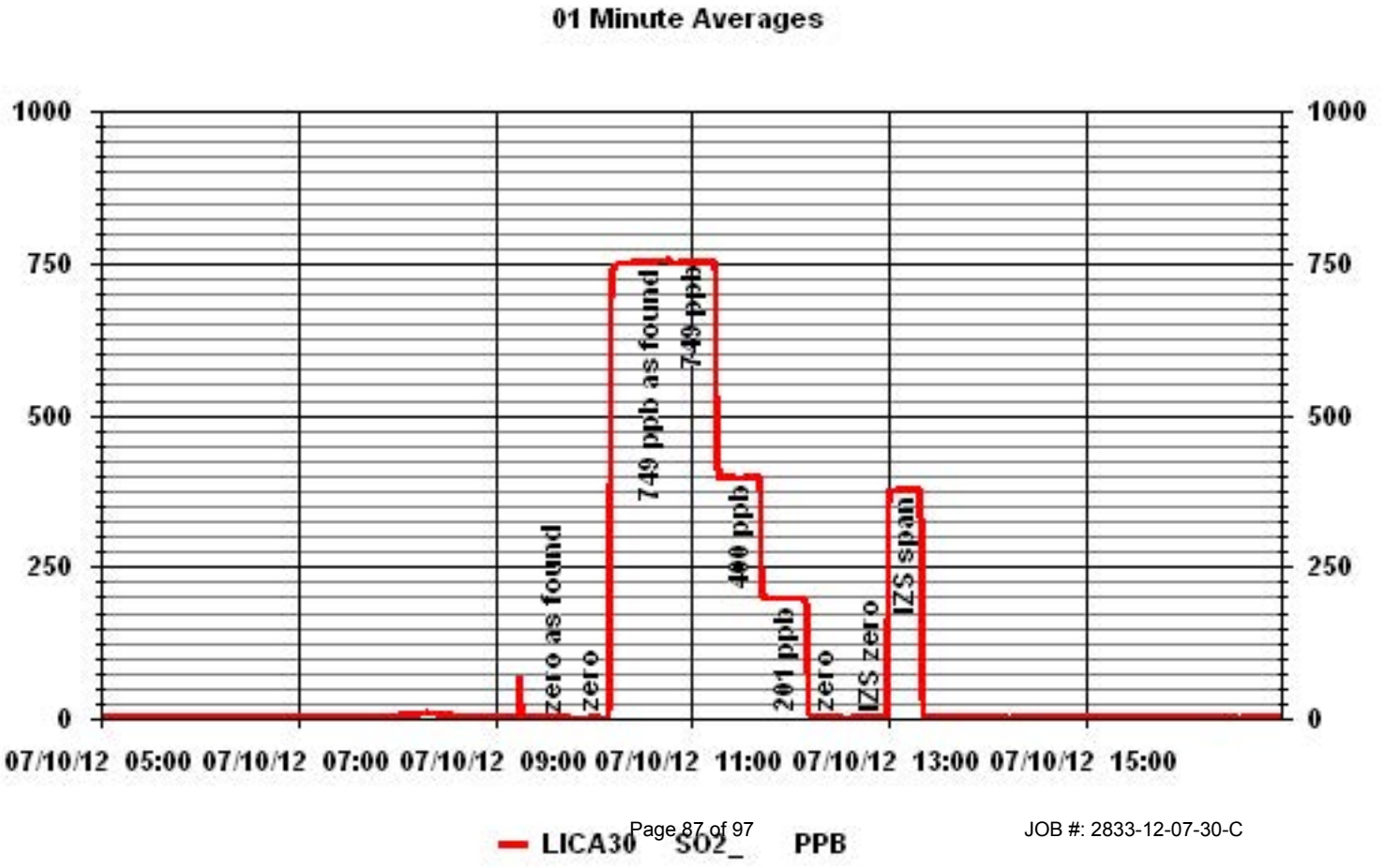


JOB #: 2833-12-07-30-C

Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	July 10, 2012		Previous Calibration	June 11, 2012	
Company	Lakelnad Industry & Community Association				
Plant / Location	Cold Lake - Maskwa				
Start Time (MST)	9:12		End Time (MST)	12:31	
Reason:			Monthly Calibration		
Barometric Pressure	943	mBar	Station Temperature	25	Deg C
Cal Gas	10 ppm		Gas Cyl. # LL42648	Cal Gas Expiry date	December 27, 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	476	ccm	32.5	Deg C	475	ccm	32.6	Deg C
HVPS / Lamp Setting	552		2388		552		2388	
PMT / RxCell Temp	7.9	Deg C	50	Deg C	7.9	Deg C	50	Deg C
Converter / IZS Temp	316	Deg C	45	Deg C	315	Deg C	45.0	Deg C
Offset / Slope	36.8		0.837		36.8		0.837	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4997	0	0	0	NA
	No Zero Adj.			
4958	40.0	80	80	1.0000
	No Span Adj.			
4977	20.0	40	40	1.0000
4986	11.5	23	24	0.9588
4998	0	0	0	NA
			Sum of Least Squares	0.9978
			New Correction Factor	

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.3
Auto Span	58.7	58.4
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%

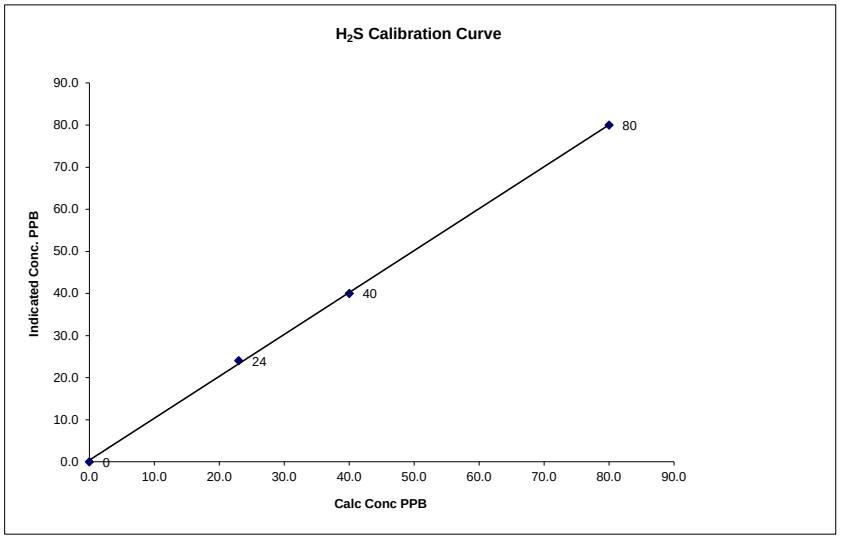
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

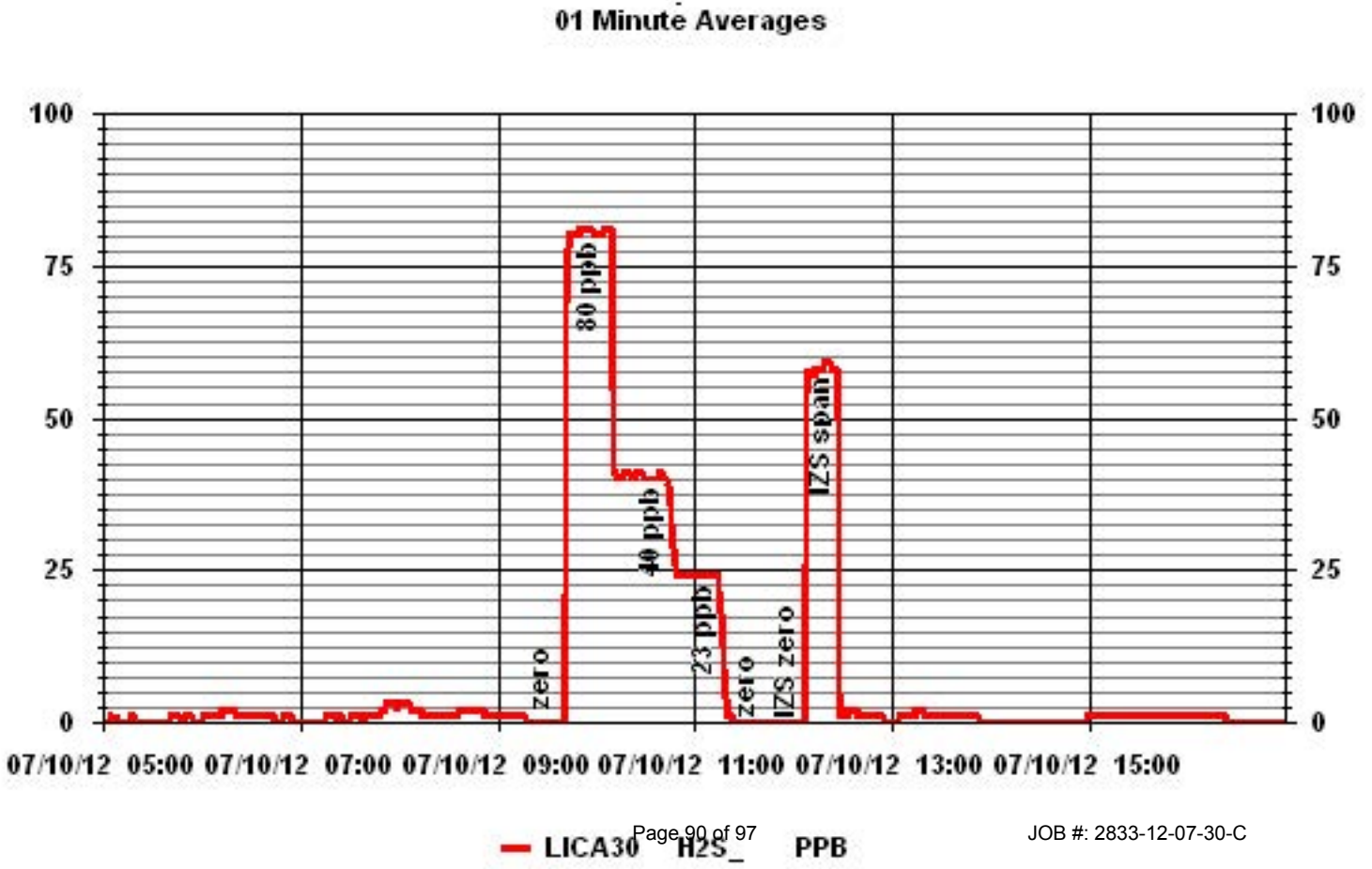
H_2S Calibration Curve

Calibration Date	July 10, 2012				
Company	Lakelnad Industry & Community Association				
Plant / Location	Cold Lake - Maskwa				
Start Time (MST)	9:12		End Time (MST)	12:31	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999793
0	0		Slope (0.85 to 1.15)	0.995868
23	24	0.9588	Intercept (± 3% F.S.)	0.380890
40	40	1.0006		
80	80	1.0004		



Notes:



JOB #: 2833-12-07-30-C

Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	July 10, 2012		Previous Calibration	June 11, 2012	
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location:	Maskwa				
Start Time (MST)	11:52		End Time (MST)	16:12	
Reason:	Monthly Calibration				
Barometric Pressure:	942	mmHg	Station Temperature:	25	Deg C
Calibrator:	API 700		S/N:	831	
Cal Gas Concentration:	CH4 600 PPM		C3H8	204 PPM	
	TOTAL CH4 1161.0 PPM		Gas Cyl. #	LL155310	Cal Gas Expiry Date: September 9, 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
2000	0.0	0.0	1.6	NA
200	0.0	0.0	0.0	NA
2000	74.0	41.4	43.2	0.9589
2000	74.0	41.4	41.7	0.9934
2000	37.0	21.1	21.2	0.9947
2000	20.0	11.5	11.7	0.9825
2000	0.0	0.0	0.0	NA
			New Correction Factor:	0.9934

Percent Change

Previous Calibration Correction Factor:	0.9958
Current Correction Factor Before Span Adjust:	0.9589
Percent Change:	3.8%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.1	0.1
Auto Span	35.2	32.5
Sample Lines Connected		**YES**

Cylinder Pressures

Span 650 psi Hydrogen 2400 psi Zero Air 32 psi

Notes: **NA : Not Applicable**

During the last zero point, the sample line tubing ws broken. Fixed issue and re-did the point.

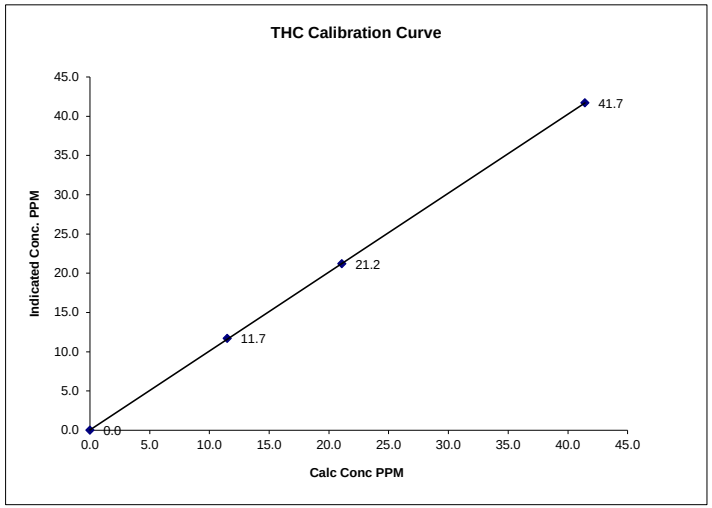
Calibration Performed by: Ting Xu

THC Calibration Curve

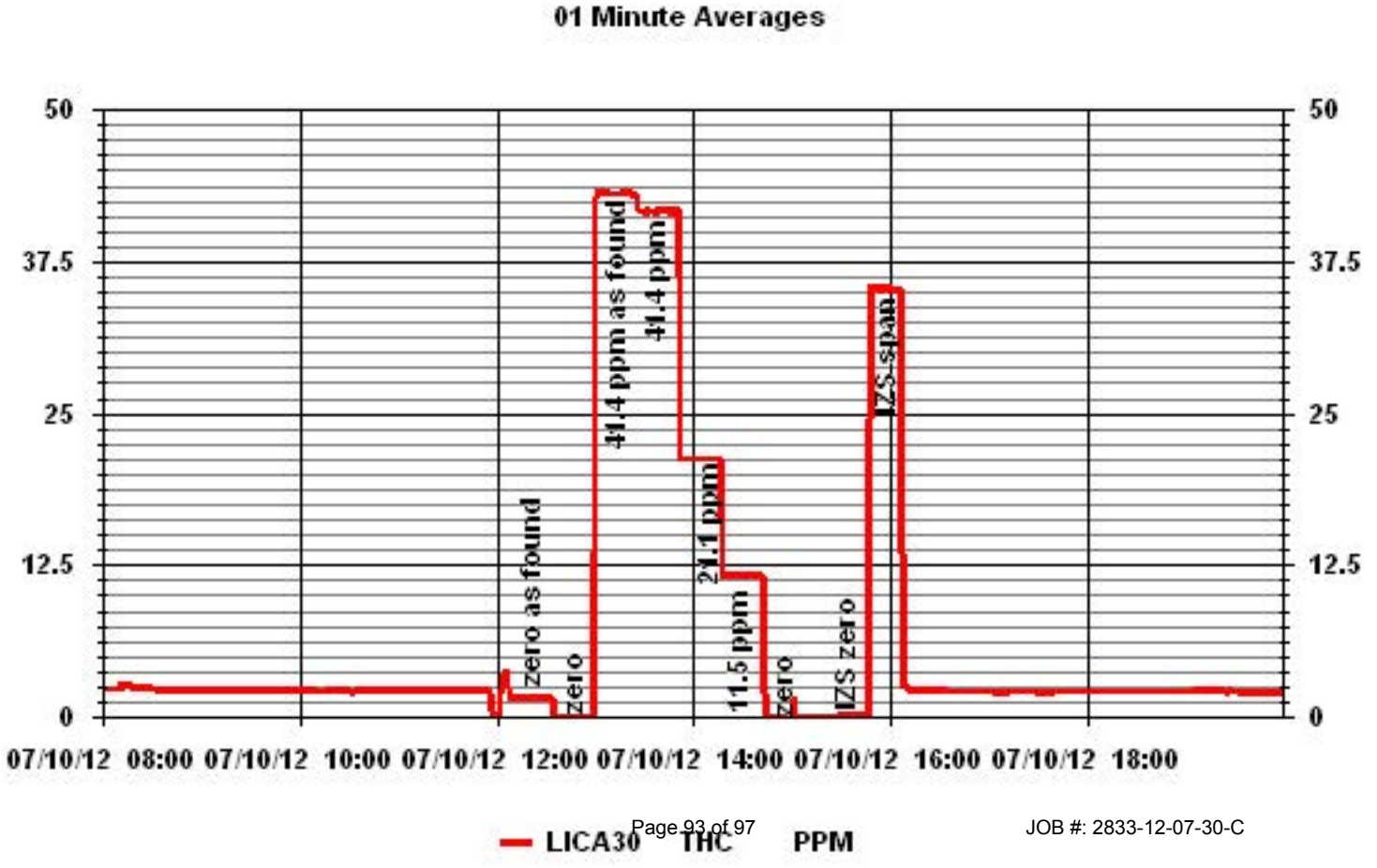
Calibration Date	July 10, 2012		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Maskwa		
Start Time (MST)	11:52	End Time (MST)	16:12

Calculated Conc. ppm	Indicated Response ppm	Correction Factor
0.0	0.0	NA
11.5	11.7	0.9825
21.1	21.2	0.9947
41.4	41.7	0.9934

Correlation Coefficient	(≥ 0.995)	0.999985
Slope	(0.85 to 1.15)	1.005601
Intercept	(± 3% F.S.)	0.04445



Notes:



JOB #: 2833-12-07-30-C

Nitrogen Dioxide

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	July 10, 2012		Previous Calibration	June 11, 2012	
Company	LICA		Plant/Location	Maskwa	
Start Time (MST)	9:12		End Time (MST)	15:43	
Reason:	Monthly Calibration				
Barometric Pressure	943 mBar	Station Temperature	25 Deg C	MFCF	1
Cal Gas Concentration	NOx 49.6 ppm	NO 49.5 ppm	Cal Gas Expiry date	January 16, 2014	
Cal Gas Cylinder #	LL42496				
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:	Environics 6100	S/N :	4760		

Analyzer Settings

	Before Calibration					After Calibration			
Concentration Range				0 - 1000		ppb			
Sample Flow/Conv. Temp	456	ccm	317	Deg C		459	ccm	316	Deg C
Ozone Flow / Vacuum	79	ccm	5.7	"Hg-A		79	ccm	5.7	"Hg-A
HVPS / A ZERO	767	Volts	17.5	MV		767	Volts	17.9	MV
Rx/ Temp / PMT Temp	50.0	Deg C	6.6	Deg C		50.0	Deg C	6.6	Deg C
Box Temp / IZS Temp	32.7	Deg C	40.1	Deg C		32.9	Deg C	40.2	Deg C
Offset	0.9	NOx	0.8	NO		0.9	NOx	0.8	NO
Slope	1.230	NOx	1.225	NO		1.225	NOx	1.213	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	0	0	NA	NA
	No Zero Adj.									
4921	75.5	NA	749	748	NA	752	753	-2	0.9967	0.9933
4921	75.5	NA	749	748	NA	751	746	5	0.9980	1.0026
4955	40.3	NA	400	399	NA	398	395	3	1.0054	1.0110
4976	20.2	NA	201	200	NA	200	198	2	1.0027	1.0108
4995	0.0	NA	0	0	NA	0	0	0	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO_2 Correction Factor	NO2 Conv Efficency
			NOx	NO	NO2	NOx	NO	NO2		
4920	75.5	NA	750	748	NA	752	746	5	NA	NA
	No Adj.									
4920	75.5	600	750	NA	536	750	215	535	1.0019	99.81%
4920	75.5	250	750	NA	230	751	521	230	1.0000	100.00%
4920	75.5	140	750	NA	130	751	621	130	1.0000	100.00%

Linearity			Sum of Least Squares	NOx= 0.999	NO= 0.998	NO2= 1.002		
OK?	Yes	No	Correction Factors:	NOx= 0.9980	NO= 1.0026	NO2= 1.0019		
					Average Converter Efficiency= 99.94%			

IZS Calibration Data

	Before Calibration					After Calibration			
Auto Zero	0.1	NOx	0.5	NO2		0.2	NOx	0.3	NO2
Auto Span	598	NOx	587	NO2		604	NOx	593	NO2
					Sample Lines Connected	YES			

Percent Change from Previous Calibration	NOx	0.2%	NO	0.7%	NO2	0.0%

Notes

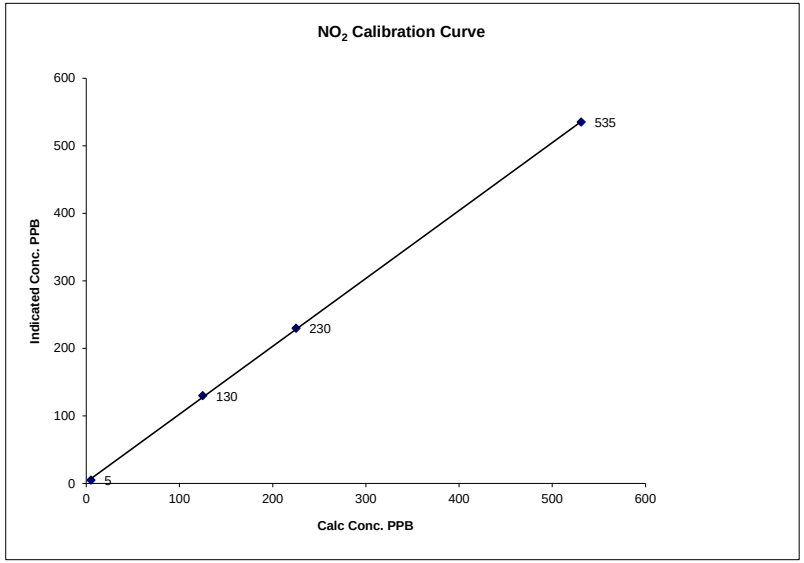
NA : Not Applicable

Calibration Performed by: Ting Xu

NO_2 Calibration Curve

Calibration Date	July 10, 2012				
Company	LICA				
Plant / Location	Maskwa				
Start Time (MST)	9:12	End Time	(MST)	15:43	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999915
			Slope (0.85 to 1.15)	1.005086
5	5	N/A	Intercept (± 3% F.S.)	2.37346
125	130	0.9615		
225	230	0.9783		
531	535	0.9925		

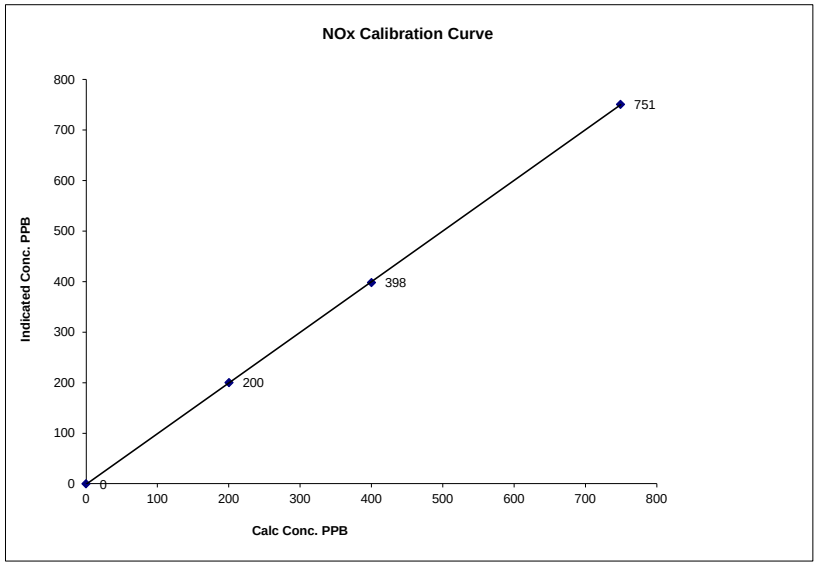


Notes:

NOx Calibration Curve

Calibration Date	July 10, 2012				
Company	LICA				
Plant / Location	Maskwa				
Start Time (MST)	9:12	End Time (MST)	15:43		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999981
			Slope	(0.85 to 1.15)	1.001838
0	0	N/A	Intercept	(± 3% F.S.)	-0.91367
201	200	1.0027			
400	398	1.0054			
749	751	0.9980			

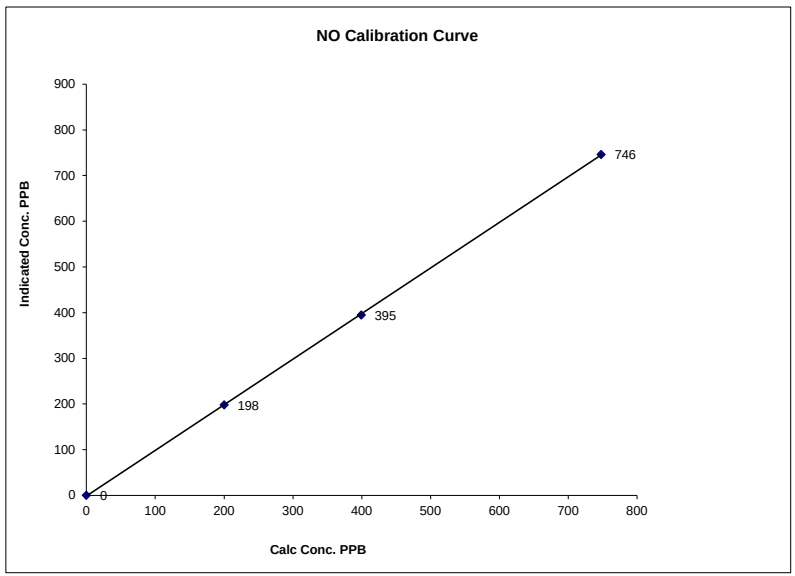


Notes:

NO Calibration Curve

Calibration Date	July 10, 2012				
Company	LICA				
Plant / Location	Maskwa				
Start Time (MST)	9:12	End Time (MST)	15:43		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999976
			Slope	(0.85 to 1.15)	1.001025
0	0	N/A	Intercept	(± 3% F.S.)	-7.0622
200	198	1.0108			
399	395	1.0110			
748	746	1.0026			



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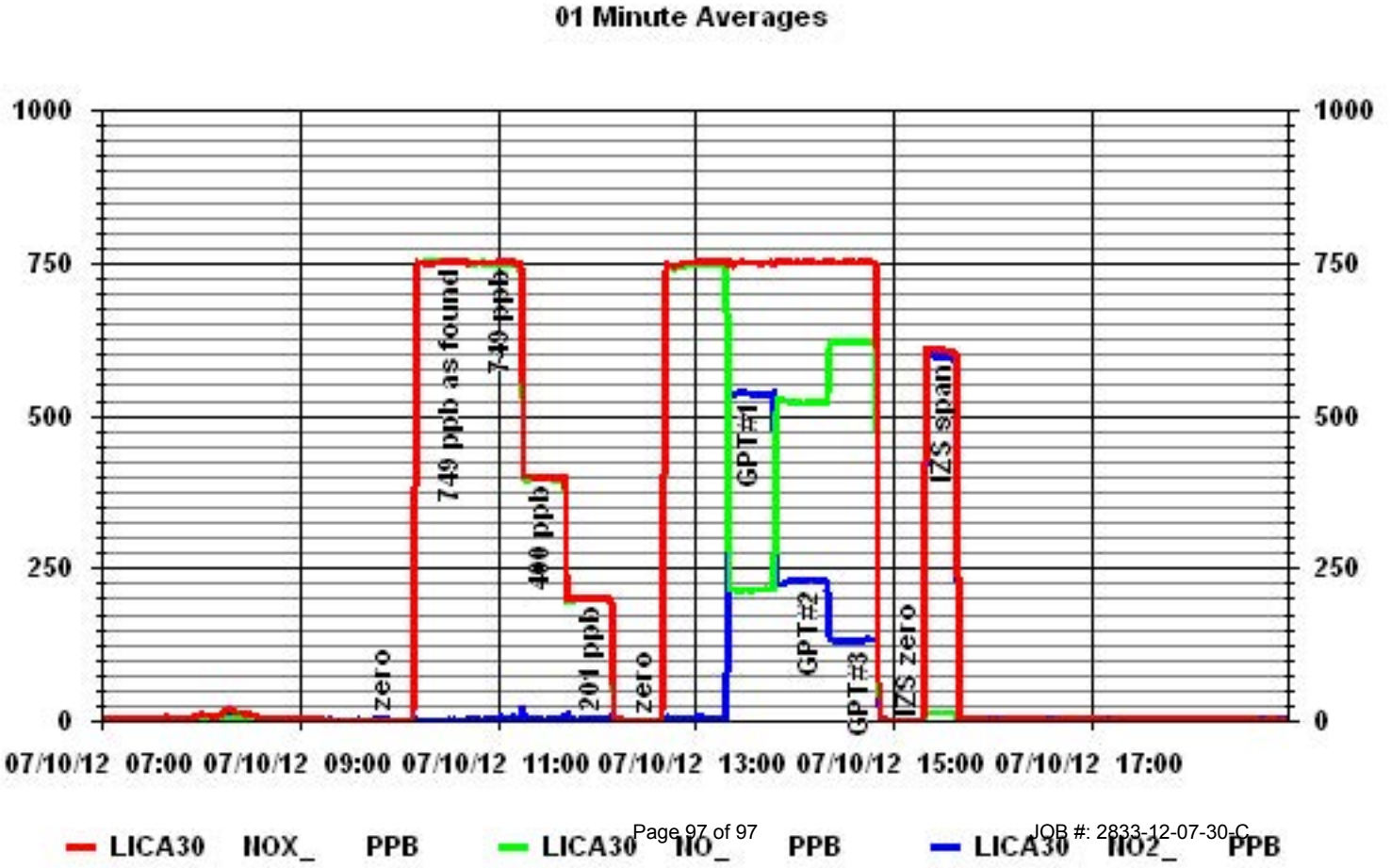

01 Minute Averages
1000
750
500
250
0
zero
749 ppb as found
740 ppb
400 ppb
201 ppb
zero
GPT#1
GPT#2
GPT#3
IZS zero
IZS span
07/10/12 07:00
07/10/12 09:00
07/10/12 11:00
07/10/12 13:00
07/10/12 15:00
07/10/12 17:00
LICA30 NOX_ PPB
LICA30 NO_ PPB
LICA30 NO2_ PPB

Lakeland Industry & Community Association

Portable / Elk Point Airport Monitoring Site
Ambient Air Monitoring Data Report
For
July 2012

Prepared By:

August 30, 2012

JOB #: 2833-12-07-35-C

Lakeland Industry & Community Association
Portable / Elk Point Airport
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: Portable / Elk Point Airport
Data Period: July 2012

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Craig Snider

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

Calibration Procedure

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

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

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

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

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

MONTHLY CONTINUOUS DATA SUMMARY
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
– PORTABLE –
- ELK POINT AIRPORT -

Continuous Ambient Monitoring – July 2012

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PORTABEL / ELK POINT AIRPORT 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	0.05	2	6	9	7.6	266(W)	0.5	10	99.9
H_2S (PPB)	10	3	0	0	0.25	6	12	5	7.8	257(WSW)	0.8	12, 30	99.9
THC (PPM)	-	-	-	-	2.57	7.2	12	1	3.3	319(NW)	3.7	12	96.4
NO_2 (PPB)	159	-	0	-	3.32	18	12	1	3.3	319(NW)	7.1	12	99.9
NO (PPB)	-	-	-	-	0.88	31	30	6	0.8	352(N)	5.9	30	99.9
NOx (PPB)	-	-	-	-	4.21	42	30	6	0.8	352(N)	11.6	12	99.9
O_3 (PPB)	82	-	0	-	26.44	83	10	17	14	277(W)	39.4	3	100.0
PM 2.5 (UG/M^3)	-	30	-	2	14.80	176.3	13	9	12.3	69(ENE)	87.4	13	91.0
VECTOR WS (KPH)	-	-	-	-	10.22	40.5	4	12	-	310(NW)	24.5	4	100.0
VECTOR WD (DEGREES)	-	-	-	-	243(WSW)	-	-	-	-	-	-	-	100.0
													VAR-VARIOUS

Volatile Organics Data Summary
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
- PORTABLE – Elk Point Airport Site

Xontech Model 910A – July 02, 2012

Maximum reading (ug/m3)	Volatile Organic
NA	NA

Note: No sample was collected on July 2nd, as the sampling period was cancelled due to the canister leak.

Xontech Model 910A – July 08, 2012

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

Xontech Model 910A – July 14, 2012

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

Xontech Model 910A – July20, 2012

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

Xontech Model 910A – July 26, 2012

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

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

- PORTABLE – Elk Point Airport Site

PUF cartridge – July 02, 2012

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

PUF cartridge – July 08, 2012

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

PUF cartridge – July 14, 2012

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

PUF cartridge – July 20, 2012

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

PUF cartridge – July 26, 2012

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

General Monthly Summary

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

AQM STATION – LICA – PORTABLE
Sulphur Dioxide (PPB)

- Analyzer make / model – API 100E, S/N: 467

The monthly calibration was performed on July 12th. The inlet filter was replaced before the monthly calibration was started. The analyzer spanned low on July 28th due to the permeation tube depleting. Following the as found points check on July 30th, the perm tube was replaced. Two hours of the maximum reading were invalidated due to power failures on July 28th. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

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

The analyzer was working well throughout the month. Following the as found points check on July 11th, the UV lamp was peaked, the offset and slope were adjusted. The analyzer was allowed time to stabilize. A 3-points calibration was then performed. The inlet filter was replaced before the monthly calibration was started. Two hours of the maximum reading were invalidated due to power failures on July 28th. Data was corrected using daily zero information.

THC (PPM)

- Analyzer make / model – TECO 51C, S/N: 04366-09739

The monthly calibration was performed on July 11th.The inlet filter and the span gas cylinder were replaced before the monthly calibration was started on July 11th. The sample pump stopped on July 13th causing the analyzer to flame out. Performed troubleshooting on July 14th by restarting the analyzer and relighting the flame. A daily calibration was ran after the troubleshooting. 25hours of the hourly data were invalidated due to this issue. Two hours of the maximum reading were invalidated due to power failures on July 28th. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Nitrogen Dioxide (PPB)

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

The analyzer was working well throughout the month. The inlet filter was replaced before the monthly calibration was started on July 11th. Two hours of the maximum reading were invalidated due to power failures on July 28th. Data was corrected using daily zero information.

Ozone (PPB)

- Analyzer make / model –Thermo 49i, S/N: 1002240372

The analyzer was working well throughout the month. The inlet filter was replaced before the monthly calibration was started on July 11th. Two hours of the maximum reading were invalidated due to power failures on July 28th. Data was corrected using daily zero information.

Particulate Matter 2.5 (ug/m^3)

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

The Teom unit was working well throughout the month. A teom audit was performed on July 12th. The Teom filter and the FDMS filter were replaced on July 12th. Data was corrected using Alberta air quality guideline for PM2.5 analyzer. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. 67 hours of data were invalidated as they were below –3.0 ug/m^3. There were two 24-Hour PM2.5 contraventions recorded this month: reading of 87.4 ug/m3 on July 13th (AE Ref# 260736), and reading of 46.0 ug/m3 on July 14th (AE Ref # 260778).

General Monthly Summary

AQM STATION – LICA – PORTABLE

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

- System make / model –RM Young 5103VK, S/N: 43708

The wind system is reported as vector wind speed and vector wind direction.
No operational issues were observed this month. Two hours of the WS maximum reading were invalidated due to power failures on July 28th.
The latest wind system calibration was done on November 24th, 2011 by manufacturer.

Datalogger

- System make / model - ESC 8832, S/N: AO717
- Software make / version - ESC v 5.51a

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

Trailer

The manifold was cleaned on July 12th.

Air Quality Index (AQI)

No AQI report is included in this report, as the AQI value is no longer used by Alberta Environment.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Volatile Organics (VOCs)
The volatile organics were sampled from July 8th to July 26th. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the VOCs in this report were reported as ug/m3 in 3 significant figures. No sample was collected on July 2nd, as the sampling period was cancelled due to the canister leak.

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

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JULY 2012

SULPHUR DIOXIDE (SO_2) hourly averages in ppb

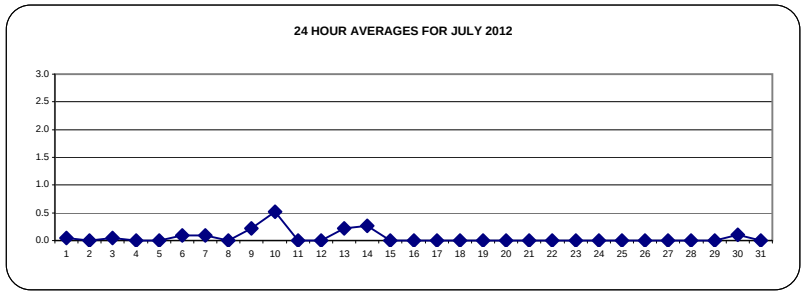
MST

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

STATUS FLAG CODES

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

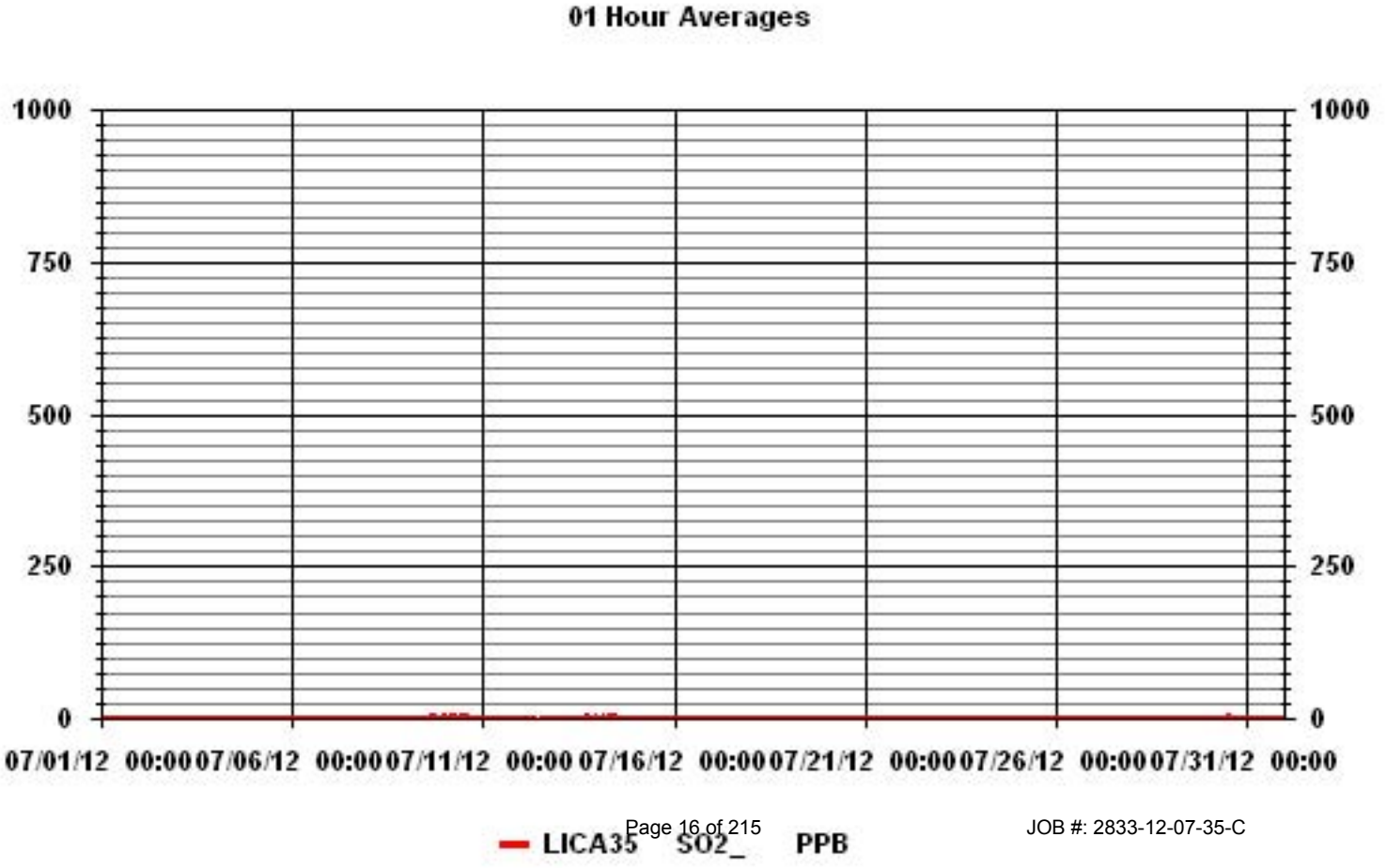
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB | 24-HR 48 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	35					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	9	ON DAY(S)	6
MAXIMUM 24-HR AVERAGE:	0.5	PPB			ON DAY(S)	10
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		743	HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:		99.9	%
STANDARD DEVIATION:	0.23		MONTHLY AVERAGE:		0.05	PPB

JOB #: 2833-12-07-35-C



JOB #: 2833-12-07-35-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *PORTABLE SITE - Elk Point Airport*

JULY 2012

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

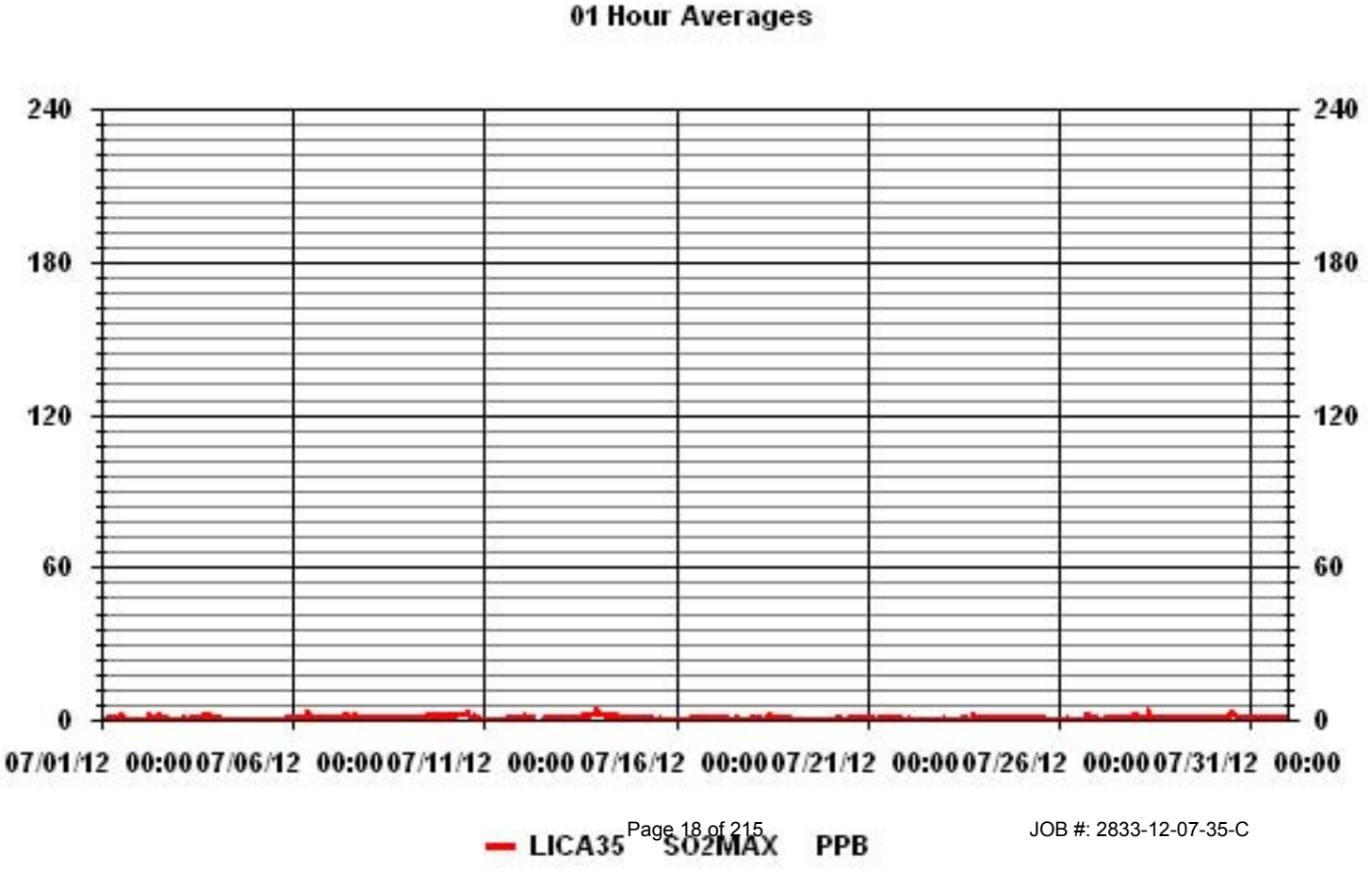
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	**IZS**	0	0	1	1	1	0	1	1	1	1	2	1	1	0	0	0	0	0	0	0	0	0	2	0.5	24
2	**IZS**	0	0	0	0	0	3	0	0	0	1	1	3	0	0	0	0	1	0	0	0	0	0	**IZS**	3	0.4	24
3	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	2	1	2	1	1	**IZS**	1	2	0.8	24
4	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	1	0.2	24
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	1	1	0.1	24
6	1	1	1	1	1	1	1	1	2	4	2	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	4	1.2	24
7	1	1	1	1	1	1	1	1	1	2	2	2	1	1	2	2	1	1	**IZS**	1	1	1	1	1	2	1.2	24
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1.0	24
9	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	**IZS**	2	2	2	1	1	2	2	2	1.3	24
10	2	2	1	1	2	1	2	2	2	2	2	2	2	3	3	**IZS**	1	2	1	1	1	1	0	0	3	1.6	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	1	0	1	1	1	1	1	1	0.3	24
12	1	2	1	1	1	1	1	1	**C**	**C**	**C**	**C**	**C**	**C**	1	0	1	1	1	1	1	1	0	1	2	0.9	24
13	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	2	1	1	2	2	2	2	2	**5**	2	**5**	1.5	24
14	2	2	2	2	2	2	1	2	2	2	2	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	2	1.4	24
15	1	1	1	1	1	1	1	1	1	1	**IZS**	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.5	24
16	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
17	1	1	1	1	1	1	1	1	**IZS**	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0.4	24
18	1	1	1	1	1	1	1	0	**IZS**	0	1	2	1	1	1	1	1	1	1	1	1	1	0	1	2	0.9	24
19	1	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
20	0	0	0	0	0	**IZS**	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0.6	24
21	1	1	1	1	**IZS**	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0.8	24
22	0	0	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
23	1	0	**IZS**	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	3	1	1	1	1	1	3	0.5	24
24	1	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
25	**IZS**	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	**IZS**	1	0.6	24
26	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	1	**IZS**	1	3	0.3	24
27	1	0	0	0	0	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	0.7	24
28	3	1	1	1	0	1	1	1	3	2	1	1	1	1	1	1	1	1	**P**	1	**IZS**	1	1	**P**	3	1.2	22
29	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	**IZS**	1	1	1	1	1	0.9	24
30	1	1	1	1	1	1	1	1	1	1	1	2	3	**C**	**C**	**M**	1	1	**IZS**	1	1	1	1	1	3	1.2	23
31	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
HOURLY MAX	3	2	2	2	2	2	3	2	3	4	2	2	3	3	3	2	1	2	3	2	2	2	5	2			
HOURLY AVG	0.9	0.7	0.7	0.7	0.7	0.7	0.8	0.7	0.8	0.9	0.9	0.8	0.8	0.8	0.9	0.6	0.6	0.8	0.9	0.8	0.7	0.8	0.8	0.8			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	463					
MAXIMUM INSTANTANEOUS VALUE:	5	PPB	@ HOUR(S)	22	ON DAY(S)	13
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		741	HRS
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	0.66					



JOB #: 2833-12-07-35-C

LICA-ELK
SO2_ / WDR Joint Frequency Distribution (Percent)

July 2012

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
Parameter : SO2_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	3.12	2.41	2.69	3.54	5.24	9.78	13.47	6.38	4.68	4.39	2.41	3.54	13.19	11.20	9.78	4.11	100.00
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.12	2.41	2.69	3.54	5.24	9.78	13.47	6.38	4.68	4.39	2.41	3.54	13.19	11.20	9.78	4.11	

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
<	20	22	17	19	25	37	69	95	45	33	31	17	25	93	79	69	29	705
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	22	17	19	25	37	69	95	45	33	31	17	25	93	79	69	29	

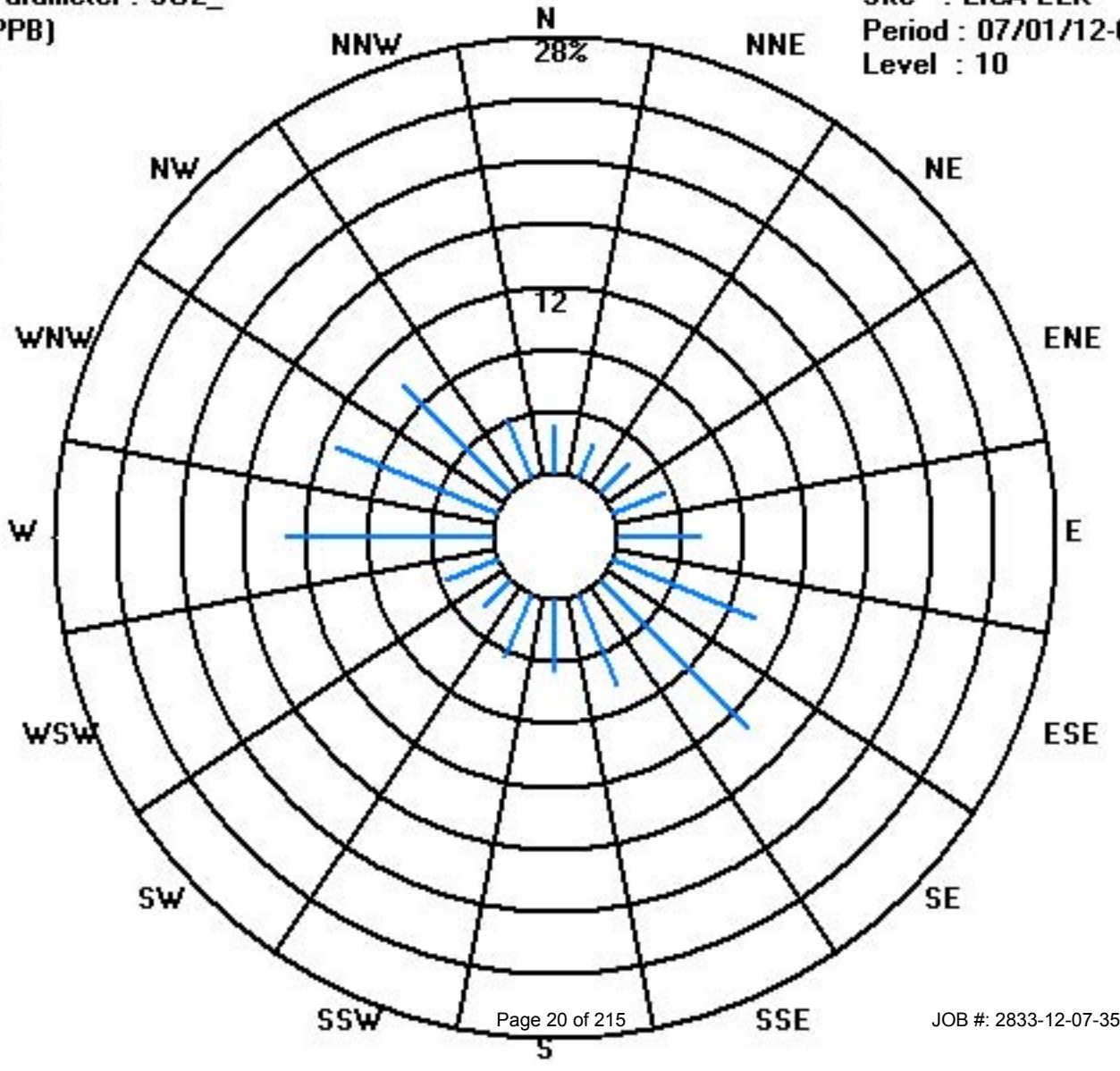
Calm : .00 %

Total # Operational Hours : 705

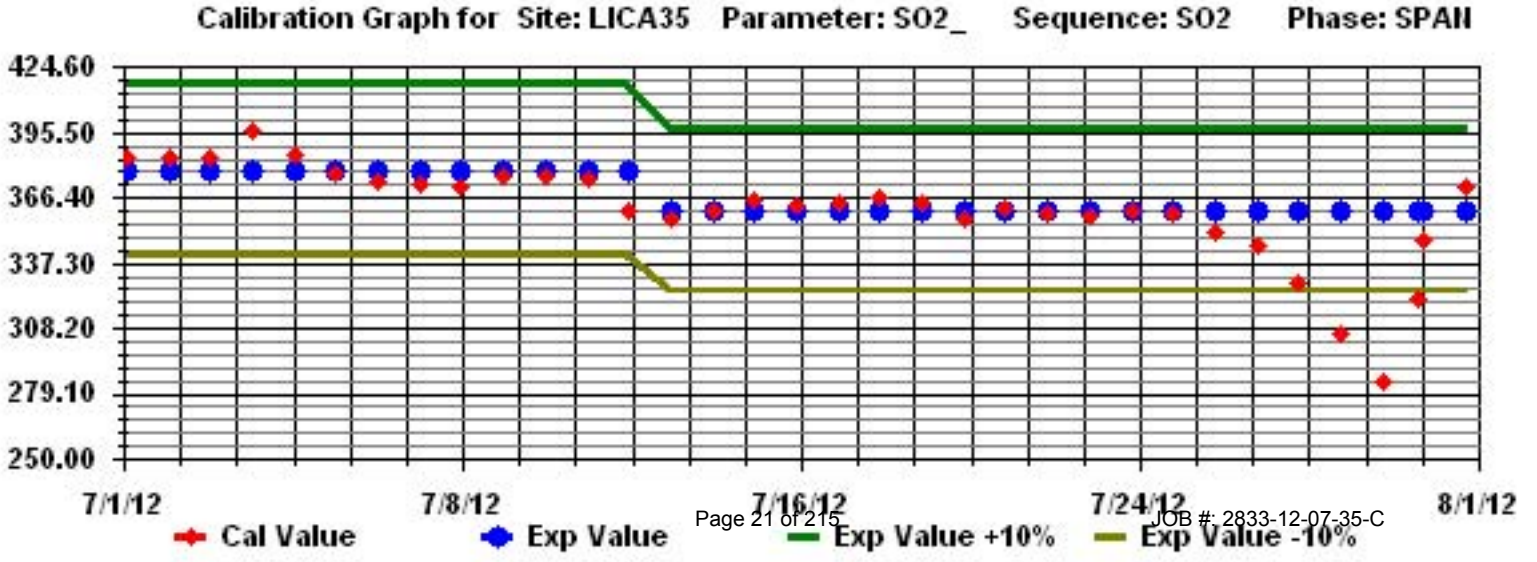
Logger : 35 Parameter : SO2_
Class Limits (PPB)

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

Site : LICA-ELK
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-35-C


Calibration Graph for Site: LICA35 Parameter: SO2_ Sequence: SO2 Phase: SPAN
424.60
395.50
366.40
337.30
308.20
279.10
250.00
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE - Elk Point Airport

JULY 2012

HYDROGEN SULPHIDE (H_2S) hourly averages in ppb

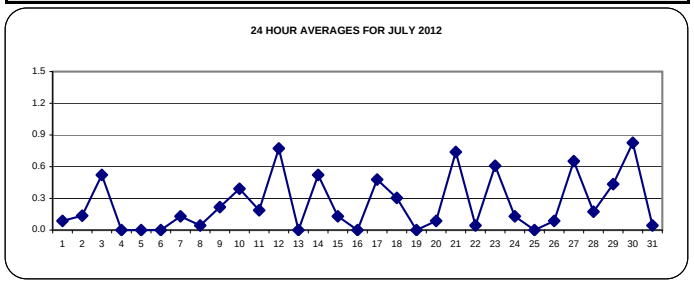
MST

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

STATUS FLAG CODES

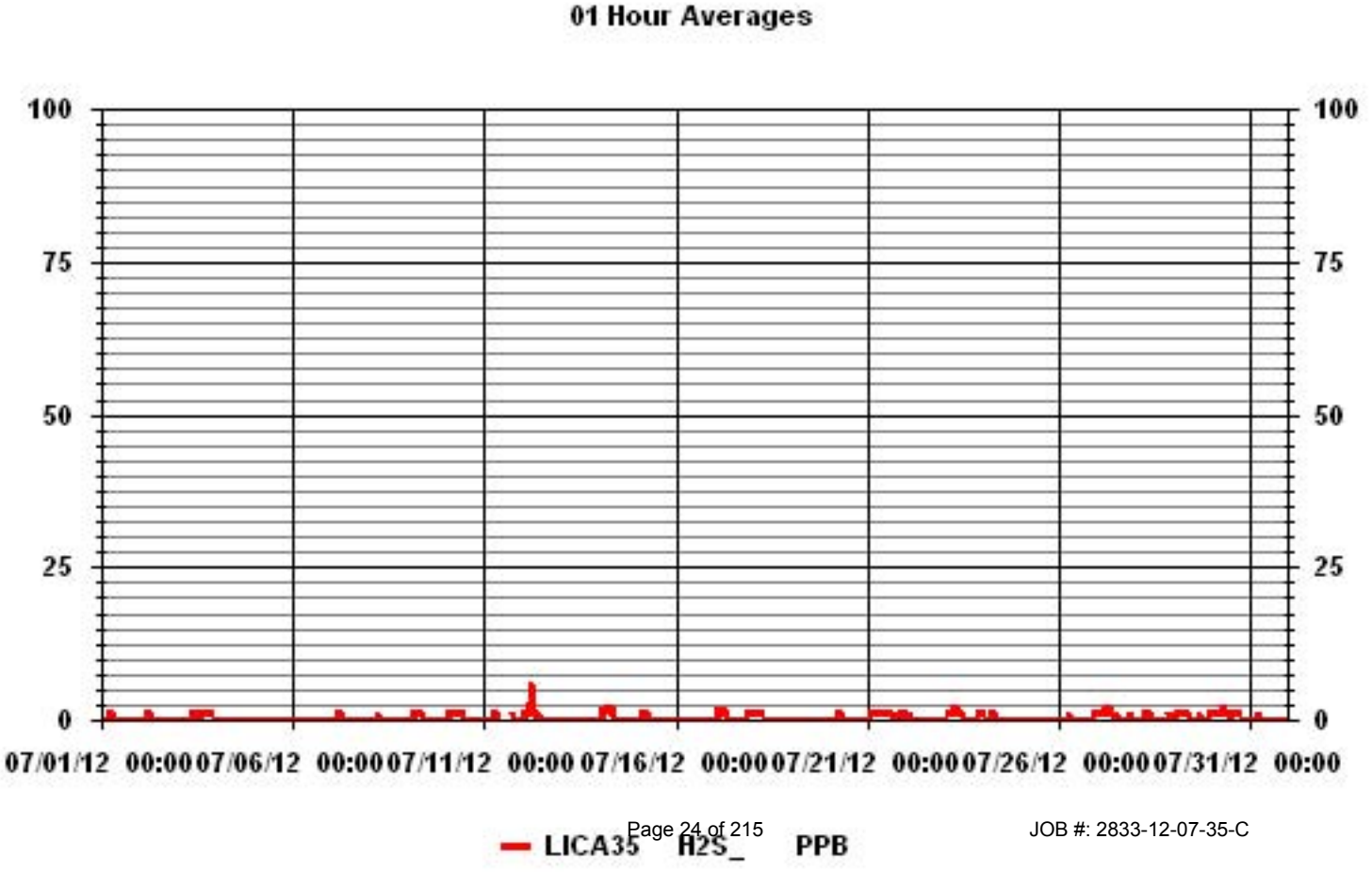
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

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:	154					
MAXIMUM 1-HR AVERAGE:	6	PPB	@ HOUR(S)	5	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	0.8	PPB			ON DAY(S)	12, 30
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		743	HRS
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:		99.9	%
STANDARD DEVIATION:	0.53		MONTHLY AVERAGE:		0.25	PPB



JOB #: 2833-12-07-35-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *PORTABLE SITE - Elk Point Airport*

JULY 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	IZS	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0.5	24
2	IZS	0	1	1	1	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	4	0.4	24
3	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	1	0.8	24
4	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	0.2	24
5	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
6	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
7	0	0	0	1	2	1	1	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	2	0.3	24
8	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	0.2	24
9	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	0.3	24
10	0	1	1	1	1	2	1	2	2	1	1	1	0	29	0	IZS	0	0	0	0	0	0	0	1	29	1.9	24
11	1	0	0	0	1	1	1	1	1	C	C	C	C	C	C	C	C	C	0	0	0	0	0	0	1	0.4	24
12	1	2	2	1	10	11	3	2	1	1	2	1	M	IZS	0	0	0	0	0	0	0	0	0	0	11	1.7	23
13	0	0	1	0	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
14	0	1	3	2	4	3	4	2	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	1	1	4	1.0	24
15	1	1	1	1	2	2	1	0	0	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.4	24
16	0	0	4	0	1	0	0	0	0	IZS	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0.3	24
17	0	0	0	4	2	2	3	2	IZS	0	0	1	1	0	0	1	1	1	1	1	1	1	1	1	4	1.0	24
18	1	1	1	2	2	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0.4	24
19	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.0	24
20	1	2	0	1	1	IZS	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0.5	24
21	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
22	1	1	2	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
23	0	0	IZS	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.3	24
24	1	IZS	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
25	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
26	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1	1	0	0	0	0	1	IZS	1	1	0.6	24
27	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	2	1.2	24
28	0	0	0	0	1	1	1	2	1	1	0	0	0	0	0	0	0	0	P	0	IZS	1	1	P	2	0.4	22
29	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	2	1.1	24
30	2	2	2	2	2	2	3	2	4	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	4	1.3	24
31	0	1	0	0	0	3	1	1	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	3	0.3	24
HOURLY MAX	2	2	4	4	10	11	4	2	4	2	2	1	1	29	1	1	1	1	1	1	1	1	1	1			
HOURLY AVG	0.4	0.6	0.8	0.9	1.4	1.5	1.2	1.0	0.7	0.6	0.4	0.3	0.3	1.2	0.2	0.3	0.3	0.3	0.2	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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 282

MAXIMUM INSTANTANEOUS VALUE: 29 PPB @ HOUR(S) 13 ON DAY(S) 10

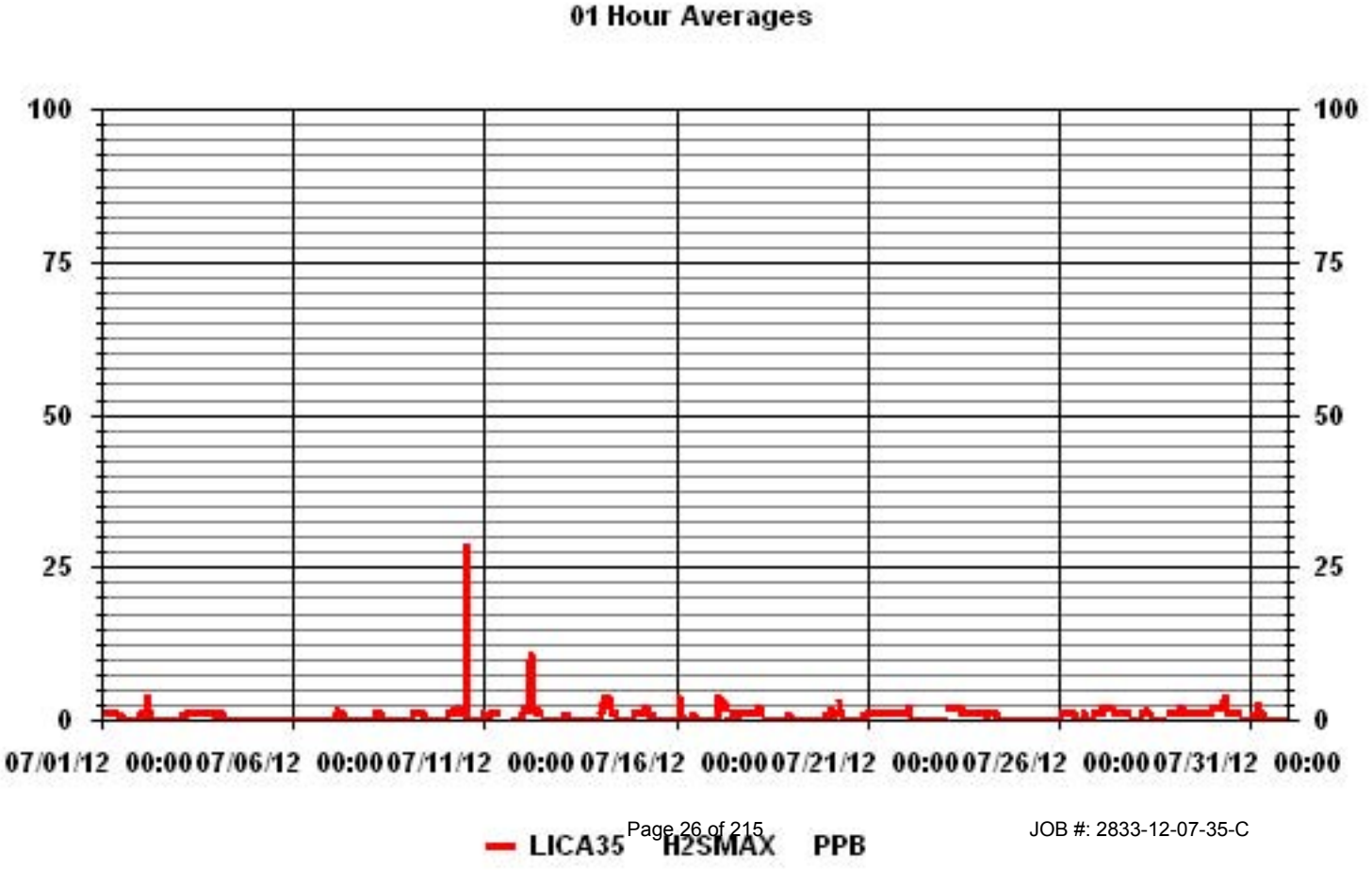
VAR - VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 741 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 1.41

JOB #: 2833-12-07-35-C



JOB #: 2833-12-07-35-C

LICA-ELK
H2S_ / WDR Joint Frequency Distribution (Percent)

July 2012

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
Parameter : H2S_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3	3.12	2.56	2.70	3.55	5.12	9.81	13.51	6.40	4.83	4.69	2.41	3.55	13.22	10.81	9.24	4.12	99.71
<	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.14	.00	.00	.28
<	50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.12	2.56	2.70	3.55	5.12	9.81	13.51	6.40	4.83	4.69	2.41	3.69	13.22	10.95	9.24	4.12	

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	22	18	19	25	36	69	95	45	34	33	17	25	93	76	65	29	701
<	10												1		1			2
<	50																	
>=	50																	
	Totals	22	18	19	25	36	69	95	45	34	33	17	26	93	77	65	29	

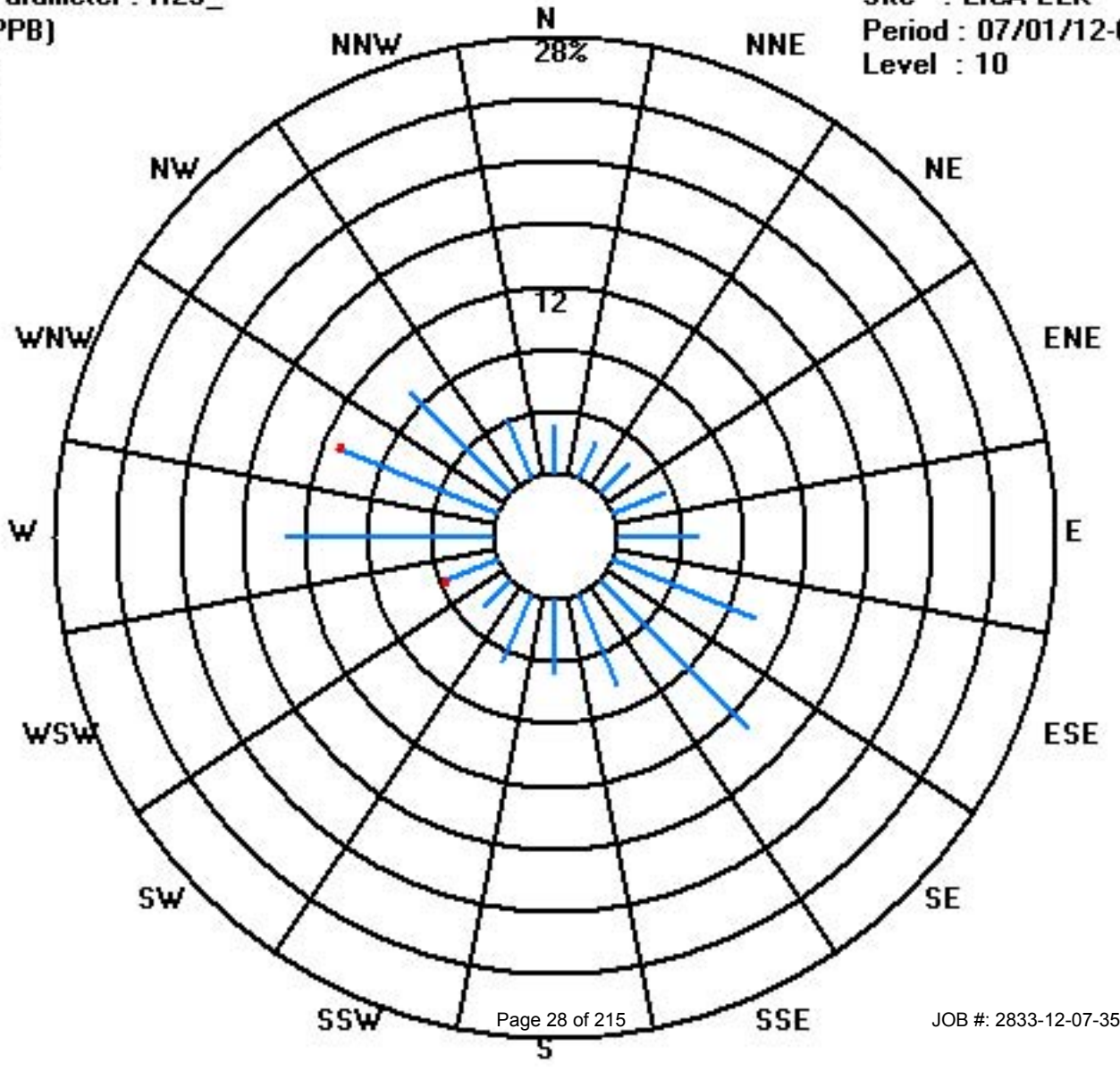
Calm : .00 %

Total # Operational Hours : 703

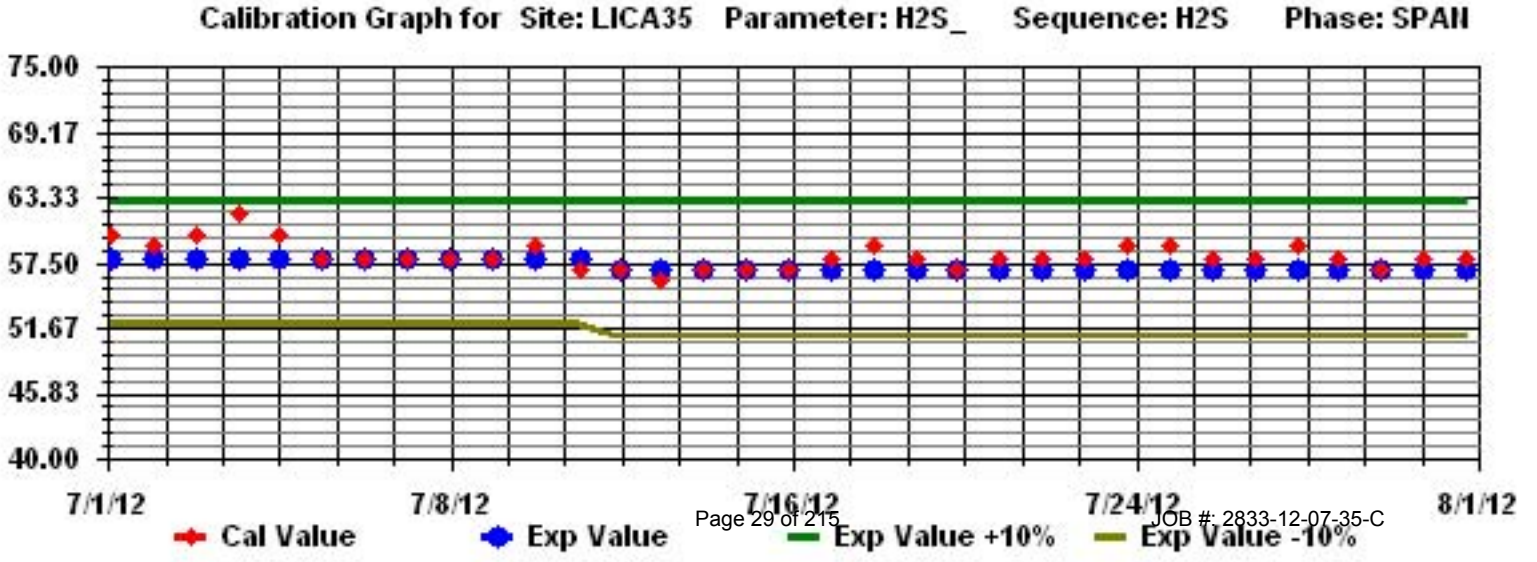
Logger : 35 Parameter : H2S_
Class Limits (PPB)

>= 50
< 50
< 10
< 3

Site : LICA-ELK
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-35-C


Calibration Graph for Site: LICA35 Parameter: H2S_ Sequence: H2S Phase: SPAN
75.00
69.17
63.33
57.50
51.67
45.83
40.00
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Poinr Airport

JULY 2012

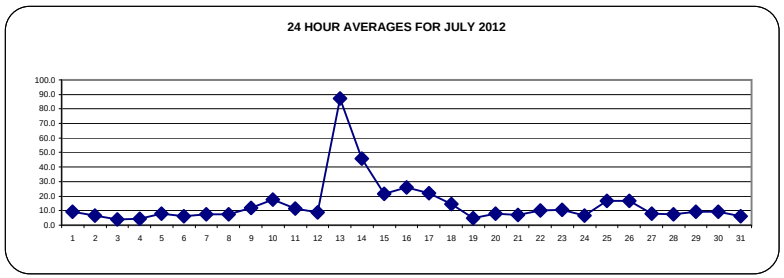
PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m^3

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	3.2	9.2	5.7	0.2	9.2	5.2	9.2	N	14.7	N	10.2	9.7	14.7	27.2	5.7	9.2	N	10.7	0	2.7	N	N	16.2	10.7	27.2	9.1	19
2	7.7	4.2	5.2	6.7	7.7	7.3	12.7	2.7	3.7	2.2	4.8	N	8.8	4.7	1.2	3.7	19.2	14.7	0.2	0	17.7	6.2	N	0	19.2	6.4	22
3	1.7	0.8	2.7	7.7	2.2	2.8	9.7	0	12.7	1.2	5.2	6.2	0.7	8.8	N	1.7	0	6.7	7.7	N	N	2.8	0.2	0	12.7	3.9	21
4	2.7	N	2.8	N	2.2	0.7	0	1.2	N	N	0.7	8.8	2.7	17.7	11.7	1.7	9.2	2.2	6.7	0.7	4.8	N	7.3	2.7	17.7	4.6	19
5	6.2	3.7	6.7	0	4.8	6.7	0.8	5.2	3.3	21.7	17.7	7.7	12.7	N	6.7	10.2	17.7	5.2	5.2	8.8	5.2	8.8	8.2	5.7	21.7	7.8	23
6	1.2	5.2	3.7	1.7	3.2	2.8	0.7	9.7	0.7	3.7	15.7	9.7	4.8	25.7	14.3	3.2	7.7	5.7	7.3	11.7	0.2	1.7	2.7	3.7	25.7	6.1	24
7	1.7	2.7	7.7	7.7	6.2	4.8	5.2	6.7	2.7	10.2	9.2	0.7	N	8.8	1.2	N	19.2	13.2	0.2	N	24.7	5.2	13.8	9.2	24.7	7.7	21
8	7.7	10.7	0	14.3	1.7	7.7	2.7	10.2	14.3	5.7	3.7	7.2	4.2	11.2	6.2	4.7	5.7	8.8	9.2	N	12.2	0	19.7	N	19.7	7.6	22
9	20.7	6.7	14.7	4.2	16.2	N	11.7	3.2	13.2	7.7	14.3	6.2	9.2	N	13.8	14.3	10.7	11.7	9.7	9.2	24.7	12.2	27.2	0	27.2	11.9	22
10	27.7	N	22.2	N	15.7	16.2	12.2	0	8.8	40.8	23.2	13.8	13.8	15.7	14.3	15.2	14.3	22.7	14.7	16.7	12.7	23.7	31.3	8.8	40.8	17.5	22
11	36.8	9.7	20.7	14.3	14.7	10.2	11.2	10.2	6.7	7.3	6.2	16.7	2.3	11.8	9.7	12.3	1.7	9.2	10.7	N	16.2	0	20.3	4.8	36.8	11.5	23
12	N	9.2	3.7	4.8	6.2	11.7	0.2	8.8	11.8	6.2	C	C	1.7	C	0	11.7	10.2	11.7	15.7	29.2	15.7	8.2	8.2	2.2	29.2	8.9	23
13	7.7	15.2	28.7	139.7	150.7	125.7	109.3	122.8	173.3	**176.3**	140.2	103.7	89.2	74.2	60.2	58.2	81.7	72.2	69.7	63.2	52.7	60.2	73.7	49.7	**176.3**	**87.4**	24
14	54.2	55.8	49.7	54.2	55.2	61.3	59.2	63.8	57.3	69.2	60.2	58.3	67.8	32.2	33.7	20.3	37.7	39.7	60.7	30.7	19.2	16.7	31.3	16.2	69.2	46.0	24
15	33.2	20.2	35.3	15.2	24.3	28.7	7.3	22.7	0.7	24.3	N	19.3	2.3	23.3	11.2	37.2	12.2	32.2	16.2	36.3	16.7	28.3	27.7	20.2	37.2	21.5	23
16	24.3	32.2	24.8	39.2	15.7	43.7	26.2	42.2	26.7	33.2	29.8	30.2	21.2	26.2	28.7	37.7	29.2	24.3	14.3	9.2	20.7	12.8	12.7	21.2	43.7	26.1	24
17	13.3	9.2	5.2	9.2	20.3	16.7	19.7	33.7	20.7	17.2	21.7	11.3	21.2	34.2	22.7	21.2	47.8	13.8	40.8	25.3	28.3	29.2	14.7	32.2	47.8	22.1	24
18	6.7	32.7	6.7	26.2	9.2	25.3	3.7	13.3	17.2	10.7	23.2	10.3	13.2	7.7	28.7	22.7	24.2	8.8	0	8.3	10.7	0	20.7	13.8	32.7	14.3	24
19	8.8	9.7	6.2	5.7	11.3	5.2	0	0.3	3.3	3.7	N	7.3	7.3	3.2	7.7	0	5.2	2.8	0.7	0	4.2	8.8	4.8	4.2	11.3	4.8	23
20	4.8	5.7	3.7	3.7	0.3	N	7.3	11.8	0	1.7	0.2	7.7	25.3	19.2	N	N	14.3	0.2	10.7	12.2	N	10.2	5.7	11.8	25.3	7.8	20
21	8.3	N	10.3	3.7	4.2	0	7.7	0	0	9.2	2.2	5.7	5.2	6.2	N	12.2	7.7	N	16.2	N	10.7	3.2	N	19.7	19.7	7.0	19
22	N	11.3	N	8.8	5.3	8.8	N	17.2	N	15.7	7.3	N	13.8	4.2	16.2	N	0	13.2	N	N	13.8	8.3	16.2	2.8	17.2	10.2	16
23	N	N	2.2	6.2	4.2	5.2	17.2	N	14.3	4.8	10.3	0.7	N	0	N	15.7	0.7	45.2	10.7	N	12.3	19.3	7.8	16.7	45.2	10.8	18
24	N	N	1.3	1.7	3.7	8.3	14.3	4.8	9.7	2.7	11.3	2.7	5.2	8.8	N	2.2	11.8	0	N	0.8	15.8	N	7.3	10.7	15.8	6.5	19
25	3.2	6.2	7.3	5.3	2.2	4.8	N	9.7	48.8	4.2	5.7	21.2	5.2	N	21.3	16.7	19.7	20.7	30.2	22.2	35.7	19.3	29.7	28.4	48.8	16.7	22
26	25.3	31.1	22.2	10.7	26	25.3	15.9	10.8	25.6	13.4	17.7	18.1	8.8	11.2	11.9	14.7	0	16.7	19	18.2	9.2	23.4	17.7	6.3	31.1	16.6	24
27	11.6	15	2.3	2.9	8.9	2.2	19.8	6.3	N	3.3	1.8	N	15.7	2.2	12.5	8.9	11.2	2.6	13.9	0.3	18	0	1.2	18.2	19.8	8.1	22
28	7.6	0.4	6.1	11.9	5.1	2.5	11.9	2	10.2	6	1.7	15.7	4.4	16.5	9.1	16.4	17.1	1.1	0	4.3	13	N	10.4	0	17.1	7.5	23
29	3.2	2	2.3	2.3	6	0	13.9	15.6	10.7	11.4	28.2	20.1	3.3	12.1	18	14	0.2	10.6	3.5	13.8	10.7	0.7	3.2	20.9	28.2	9.4	24
30	2.1	17.9	0.3	0	7.3	10.3	9.4	11	4.3	0	17	N	8.2	30.2	13.8	3.7	10.2	9.2	8.8	7.7	5.7	6.3	N	18.2	30.2	9.2	22
31	0	N	11.2	0	N	8.8	4.8	4.8	N	22.2	7.7	10.7	0.2	0	10.2	11.2	2.2	4.2	4.8	3.2	5.2	0.7	12.3	0.7	22.2	6.0	21
HOURLY MAX	54	56	50	140	151	126	109	123	173	176	140	104	89	74	60	58	82	72	70	63	53	60	74	50			
HOURLY AVG	12.3	13.1	10.7	14.1	15.0	15.8	14.6	15.5	19.1	18.5	17.8	16.5	13.6	16.4	15.0	14.3	15.0	14.7	14.1	13.9	15.6	11.7	16.2	12.0			

STATUS FLAG CODES

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

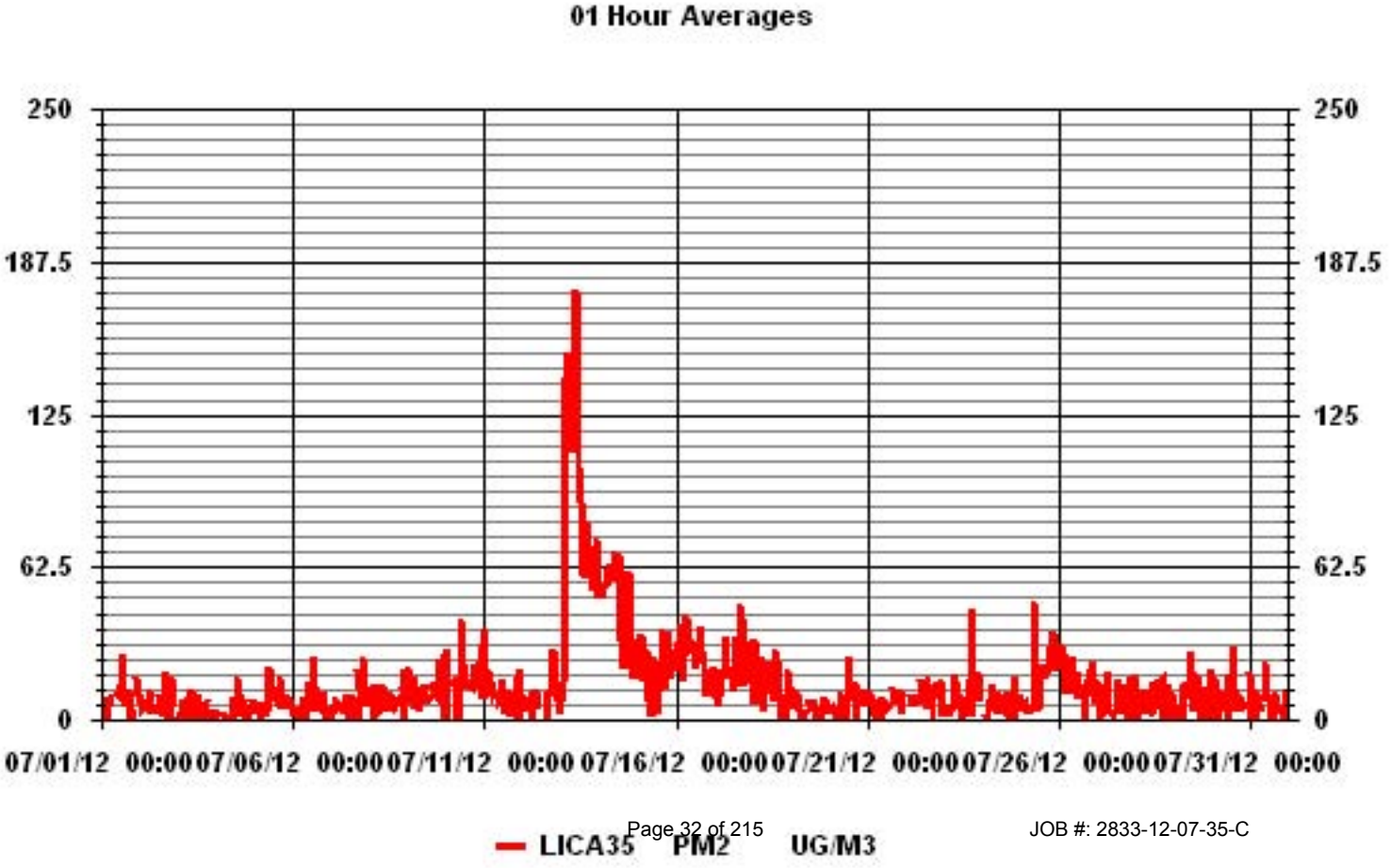


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR - PPB | 24-HR 30 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-					
NUMBER OF 24-HR EXCEEDENCES:	2					
NUMBER OF NON-ZERO READINGS:	638					
MAXIMUM 1-HR AVERAGE:	176.3	UG/M^3	@ HOUR(S)	9	ON DAY(S)	13
MAXIMUM 24-HR AVERAGE:	87.4	UG/M^3			ON DAY(S)	13

IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	677	HRS
MONTHLY CALIBRATION TIME:	3	HRS	AMD OPERATION UPTIME:	91.0	%
STANDARD DEVIATION:	19.96		MONTHLY AVERAGE:	14.80	UG/M^3



JOB #: 2833-12-07-35-C

LICA-ELK
PM2 / WDR Joint Frequency Distribution (Percent)

July 2012

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
Parameter : PM2
Units : UG/M3

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30.0	2.81	1.63	1.92	2.37	3.56	8.45	12.31	5.63	4.59	4.30	2.37	2.96	12.46	11.27	9.64	3.56	89.91
<	60.0	.00	.59	.59	.59	.74	.59	1.63	.89	.00	.14	.00	.00	.00	.00	.14	.59	6.52
<	80.0	.00	.00	.00	.14	.89	.29	.14	.14	.00	.00	.14	.00	.00	.00	.14	.00	1.92
<	120.0	.00	.14	.00	.44	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.59
<	240.0	.14	.29	.14	.44	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.03
>=	240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.96	2.67	2.67	4.00	5.19	9.34	14.09	6.67	4.59	4.45	2.52	2.96	12.46	11.27	9.94	4.15	

Calm : .00 %

Total # Operational Hours : 674

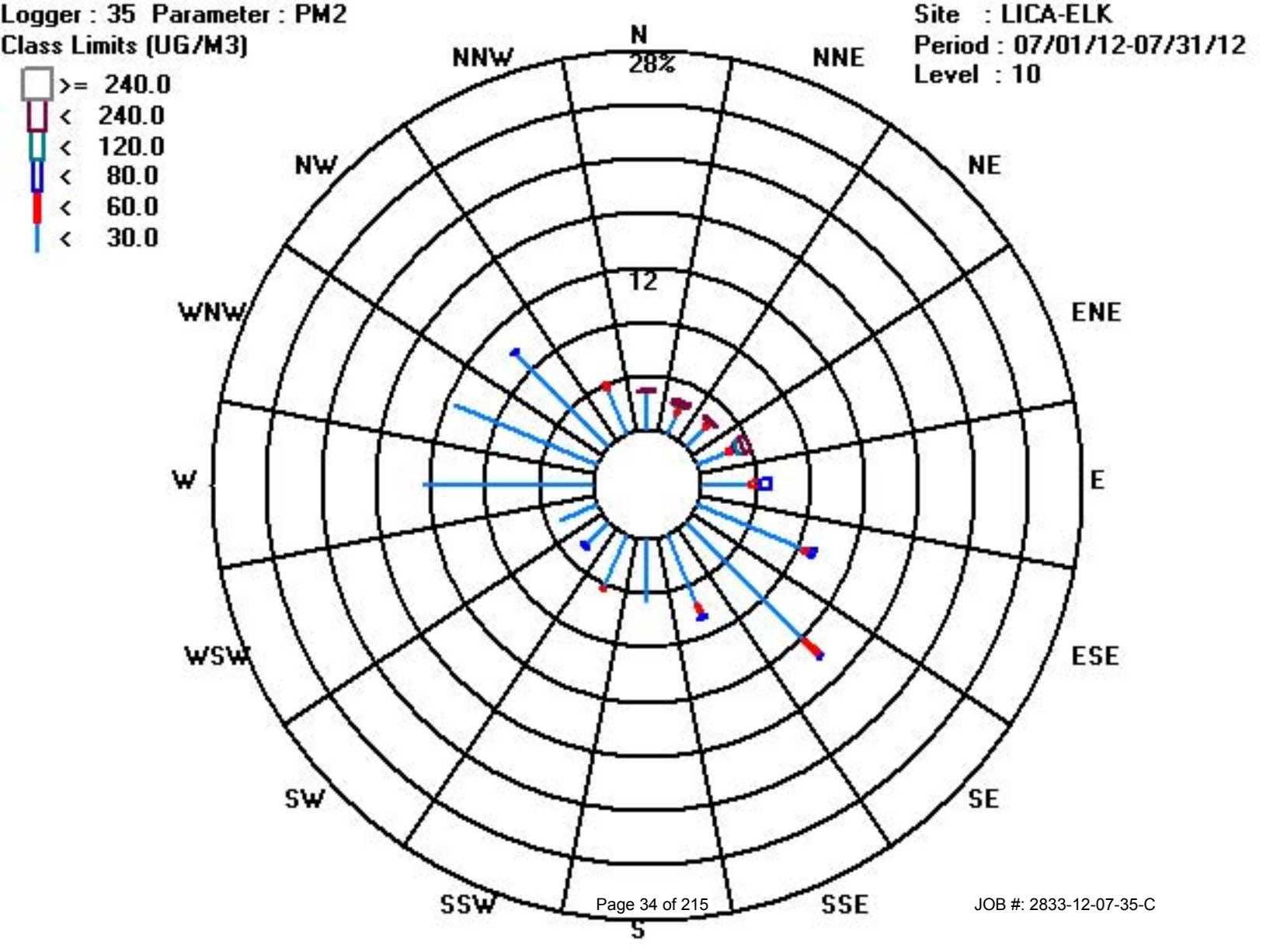
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30.0	19	11	13	16	24	57	83	38	31	29	16	20	84	76	65	24	606
<	60.0		4	4	4	5	4	11	6		1					1	4	44
<	80.0				1	6	2	1	1			1				1		13
<	120.0		1		3													4
<	240.0	1	2	1	3													7
>=	240.0																	
	Totals	20	18	18	27	35	63	95	45	31	30	17	20	84	76	67	28	

Calm : .00 %

Total # Operational Hours : 674



JOB #: 2833-12-07-35-C

Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JULY 2012

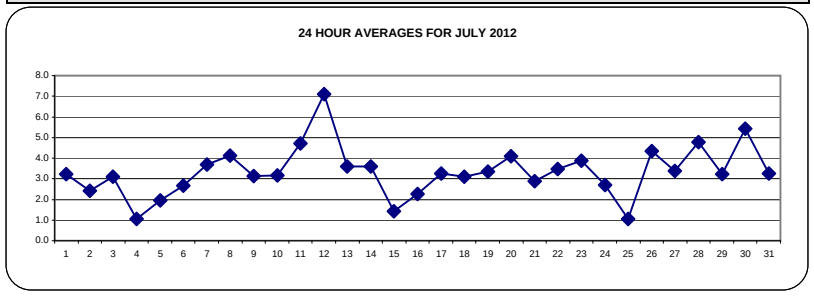
NITROGEN DIOXIDE hourly averages in ppb

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	4	**IZS**	4	6	5	3	2	2	2	2	1	1	2	2	1	0	1	0	1	0	1	9	14	11	14	3.2	24
2	**IZS**	6	3	5	10	6	3	2	1	1	1	1	0	0	0	0	1	2	2	3	5	1	0	**IZS**	10	2.4	24
3	2	3	3	3	3	3	2	3	3	3	3	3	2	3	3	4	3	3	4	3	7	3	**IZS**	2	7	3.1	24
4	1	2	2	2	0	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	**IZS**	2	1	2	1.0	24
5	2	3	1	1	2	2	1	1	1	1	1	0	0	0	0	0	1	1	1	4	**IZS**	13	6	3	13	2.0	24
6	4	3	2	3	5	6	4	2	2	2	1	1	0	1	0	0	0	1	1	**IZS**	3	7	6	7	7	2.7	24
7	7	8	5	6	6	10	6	6	5	5	2	2	1	1	1	2	1	2	**IZS**	1	1	1	2	4	10	3.7	24
8	9	7	7	8	13	9	4	3	2	2	1	1	1	1	1	1	1	**IZS**	2	3	4	5	5	5	13	4.1	24
9	5	5	4	5	5	4	5	2	2	2	2	2	2	1	1	2	**IZS**	2	2	2	4	5	5	3	5	3.1	24
10	5	5	4	5	6	4	3	3	3	3	2	2	2	2	2	**IZS**	2	3	3	2	2	2	2	6	6	3.2	24
11	2	2	4	4	2	5	2	2	2	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	1	2	5	7	11	13	15	15	4.7	24
12	15	**18**	15	11	11	13	4	4	5	9	10	4	**M**	**IZS**	2	2	1	2	2	2	2	3	6	13	4	**18**	**7.1**	23
13	1	1	1	3	3	2	2	2	4	4	3	2	**IZS**	2	1	2	2	2	2	2	2	10	9	12	11	12	3.6	24
14	10	9	7	7	7	7	5	3	3	2	2	**IZS**	2	2	1	1	1	1	2	2	2	2	2	3	10	3.6	24
15	3	5	4	3	4	2	1	1	1	1	**IZS**	1	1	0	1	1	1	1	0	0	0	1	1	0	5	1.4	24
16	1	1	1	1	1	1	0	1	1	**IZS**	0	0	0	0	0	1	2	1	2	3	10	10	7	8	10	2.3	24
17	7	6	5	6	10	5	4	3	**IZS**	1	1	2	2	2	2	2	2	2	2	2	2	3	2	2	10	3.3	24
18	2	2	2	2	3	4	3	**IZS**	2	2	1	2	2	1	1	1	1	2	1	2	4	5	13	13	13	3.1	24
19	15	5	2	7	4	2	**IZS**	2	2	0	1	1	0	0	0	1	1	1	1	2	6	10	9	5	15	3.3	24
20	6	5	12	9	8	**IZS**	5	3	3	1	1	1	1	1	1	1	1	1	2	4	7	8	8	5	12	4.1	24
21	4	4	4	3	**IZS**	2	3	1	1	1	1	2	1	1	1	1	2	1	0	1	1	11	13	7	13	2.9	24
22	5	6	4	**IZS**	2	4	2	2	1	1	1	1	1	1	0	0	0	0	1	4	6	10	15	13	15	3.5	24
23	11	11	**IZS**	8	6	6	6	6	6	7	4	2	1	1	1	1	1	1	1	2	2	1	2	2	11	3.9	24
24	2	**IZS**	4	3	5	7	6	4	2	2	1	0	0	0	0	0	0	2	4	4	2	4	9	1	9	2.7	24
25	**IZS**	1	1	1	5	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	6	**IZS**	6	1.0	24
26	6	8	9	8	7	7	7	7	7	3	1	1	1	1	1	1	1	1	1	5	4	7	**IZS**	6	9	4.3	24
27	6	6	7	8	6	5	5	3	2	2	1	1	1	1	2	2	1	1	1	5	3	**IZS**	5	4	8	3.4	24
28	7	9	6	6	8	7	10	7	5	3	2	1	1	1	1	2	5	2	2	2	**IZS**	4	13	6	13	4.8	24
29	2	5	3	3	11	4	3	2	2	2	1	1	0	1	0	1	1	2	2	**IZS**	5	7	7	9	11	3.2	24
30	11	12	12	12	9	7	11	9	8	6	3	2	2	1	1	1	1	1	**IZS**	3	2	2	2	7	12	5.4	24
31	6	7	2	5	4	6	3	3	1	1	0	1	0	1	1	1	2	**IZS**	2	3	9	8	5	4	9	3.3	24
HOURLY MAX	15	18	15	12	13	13	11	9	8	9	10	4	2	3	3	4	5	3	4	5	10	13	15	15			
HOURLY AVG	5.6	5.7	4.7	5.1	5.7	4.8	3.8	3.0	2.7	2.4	1.7	1.3	1.0	1.0	0.9	1.1	1.2	1.4	1.6	2.5	3.9	5.7	6.9	5.8			

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



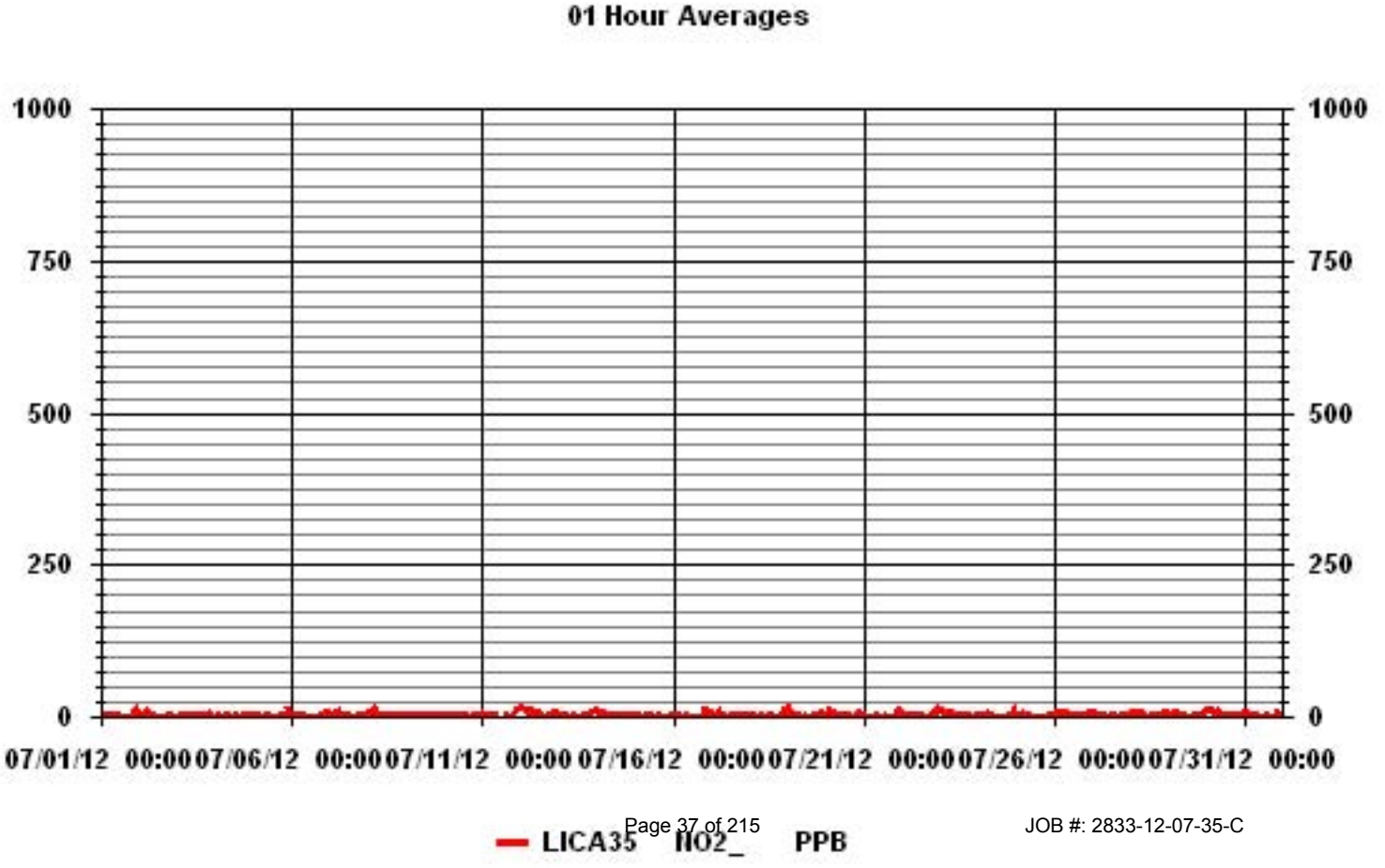
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	646					
MAXIMUM 1-HR AVERAGE:	18	PPB	@ HOUR(S)	1	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	7.1	PPB			ON DAY(S)	12
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		743	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:		99.9	%
STANDARD DEVIATION:	3.16		MONTHLY AVERAGE:		3.32	PPB

JOB #: 2833-12-07-35-C



JOB #: 2833-12-07-35-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *PORTABLE SITE - Elk Point Airport*

JULY 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	7	**IZS**	6	8	7	4	3	3	2	2	2	2	3	4	2	1	2	2	3	3	6	24	16	15	24	5.5	24
2	**IZS**	11	5	9	18	9	5	3	3	2	2	2	1	1	1	1	3	3	3	7	11	7	2	**IZS**	18	5.0	24
3	2	4	3	3	4	4	2	3	3	3	4	4	3	3	4	5	3	4	6	12	24	4	**IZS**	3	24	4.8	24
4	2	3	3	3	2	2	2	2	2	2	1	1	2	2	2	2	2	1	2	2	2	**IZS**	2	2	3	2.0	24
5	7	7	2	2	4	3	2	2	1	2	2	1	1	1	1	1	3	2	3	6	**IZS**	21	11	8	21	4.0	24
6	7	8	4	5	8	9	5	3	3	3	3	2	1	2	1	1	2	2	5	**IZS**	6	13	10	8	13	4.8	24
7	11	11	7	8	9	12	9	7	6	5	3	4	2	2	2	4	4	7	**IZS**	2	2	2	2	7	12	5.6	24
8	16	9	9	12	15	12	7	4	3	2	2	2	2	2	2	2	2	**IZS**	3	5	8	8	9	6	16	6.2	24
9	8	7	5	6	7	6	6	3	4	3	3	3	3	2	2	3	**IZS**	3	3	3	7	9	8	5	9	4.7	24
10	8	7	5	7	11	9	5	4	4	3	3	2	3	3	3	**IZS**	4	4	5	5	3	3	8	12	12	5.3	24
11	11	9	12	12	11	11	4	5	5	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	3	5	10	11	20	16	20	20	9.8	24
12	24	20	19	14	15	25	11	8	10	17	15	7	**M**	**IZS**	2	2	2	4	3	3	6	13	18	12	25	11.4	23
13	1	2	3	4	4	3	3	4	5	5	5	3	**IZS**	3	2	3	3	3	3	5	24	16	15	13	24	5.7	24
14	14	11	10	11	9	9	9	5	3	3	3	**IZS**	3	2	2	2	3	3	3	4	5	3	3	5	14	5.4	24
15	6	7	7	5	5	4	2	2	2	2	**IZS**	2	2	1	2	2	2	2	1	1	1	2	2	2	7	2.8	24
16	2	2	2	2	2	2	2	2	2	**IZS**	5	1	1	1	1	4	3	3	3	5	15	15	10	11	15	4.2	24
17	9	9	7	9	15	6	5	5	**IZS**	2	3	2	2	3	2	3	3	3	3	3	4	4	4	4	15	4.8	24
18	3	3	4	3	4	8	4	**IZS**	7	4	3	3	3	3	2	2	2	3	3	5	6	9	22	27	27	5.8	24
19	26	9	5	13	15	3	**IZS**	**4**	4	2	2	2	1	1	3	2	2	2	2	5	16	16	13	9	26	6.8	24
20	8	10	17	13	11	**IZS**	8	4	4	3	2	1	2	2	2	2	2	3	3	7	9	15	10	7	17	6.3	24
21	6	5	5	5	**IZS**	5	4	2	2	2	2	3	2	12	2	2	3	2	2	2	3	15	**28**	17	**28**	5.7	24
22	9	12	6	**IZS**	5	9	8	2	2	2	1	2	3	2	1	1	2	1	2	11	9	15	24	17	24	6.3	24
23	13	12	**IZS**	10	8	10	8	8	7	9	6	5	2	3	2	2	2	3	2	5	7	3	4	4	13	5.9	24
24	5	**IZS**	9	4	17	16	9	4	3	2	2	1	1	1	1	1	2	5	9	9	3	8	16	3	17	5.7	24
25	**IZS**	2	2	1	16	2	2	1	2	2	2	1	1	1	1	1	1	1	1	15	3	3	24	**IZS**	24	3.9	24
26	9	14	12	12	12	10	8	9	7	7	3	2	2	2	2	2	3	2	3	8	7	10	**IZS**	7	14	6.7	24
27	8	9	10	11	8	7	6	5	3	3	2	1	2	2	6	5	2	4	4	9	7	**IZS**	9	7	11	5.7	24
28	10	13	8	10	11	10	14	12	8	5	4	2	2	3	2	6	15	7	**P**	6	**IZS**	10	18	**P**	18	8.4	22
29	5	12	4	5	19	7	5	3	3	3	2	2	2	2	1	2	3	4	4	**IZS**	9	10	10	15	19	5.7	24
30	21	14	16	15	11	11	14	13	9	10	5	4	3	3	3	2	2	2	**IZS**	5	4	4	4	18	21	8.4	24
31	9	13	7	14	11	14	5	5	3	3	1	2	2	2	2	2	3	**IZS**	5	20	17	15	7	6	20	7.3	24
HOURLY MAX	26	20	19	15	19	25	14	13	10	17	15	7	3	12	6	6	15	7	9	20	24	24	28	27			
HOURLY AVG	9.2	8.8	7.1	7.9	9.8	8.1	5.9	4.6	4.1	3.9	3.2	2.4	2.0	2.4	2.0	2.3	2.9	3.0	3.4	6.3	8.1	10.2	11.2	9.6			

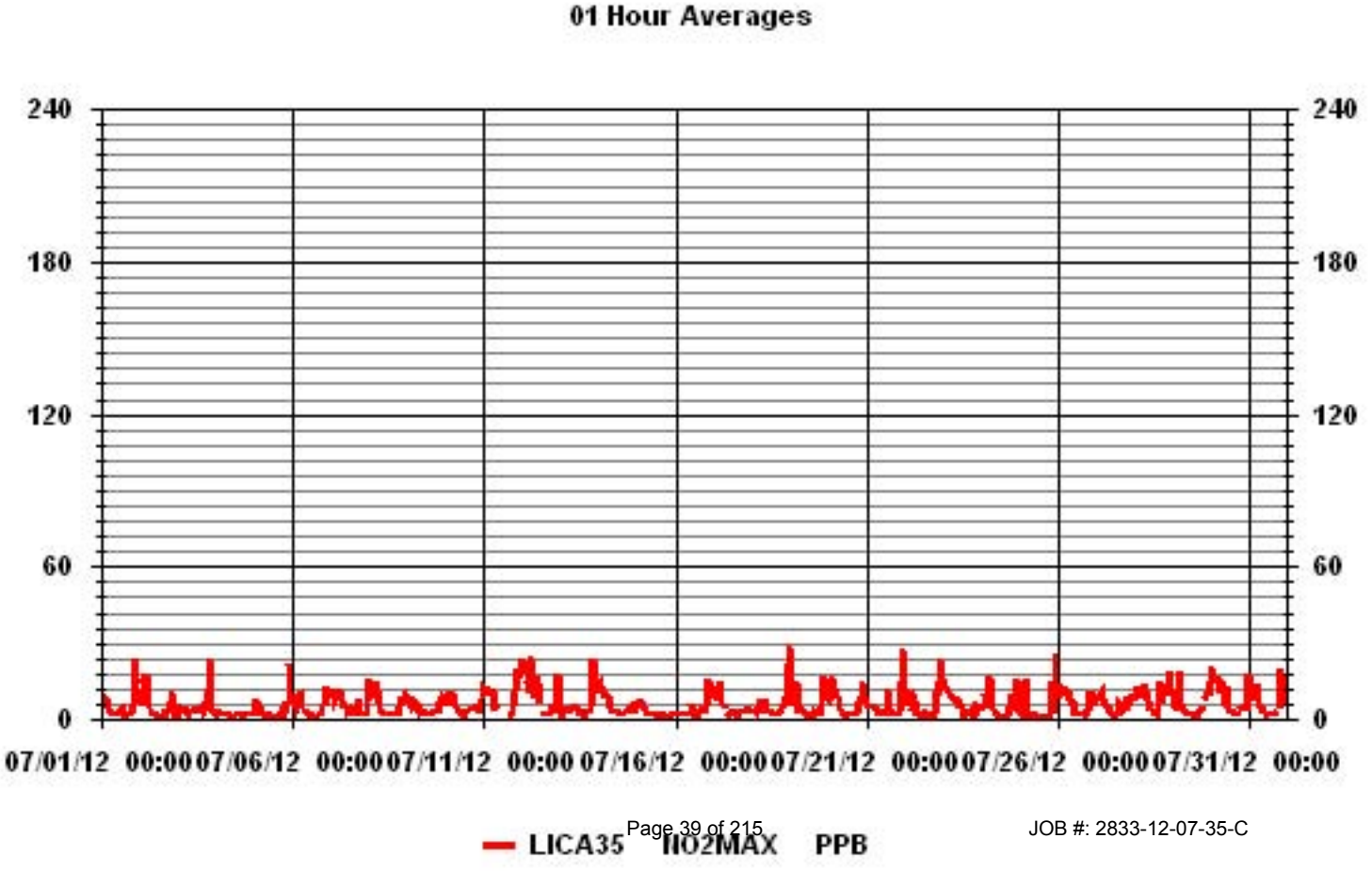
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	702					
MAXIMUM INSTANTANEOUS VALUE:	28	PPB	@ HOUR(S)	22	ON DAY(S)	21
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		741	HRS
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	4.97					

JOB #: 2833-12-07-35-C



JOB #: 2833-12-07-35-C

LICA-ELK
NO2_ / WDR Joint Frequency Distribution (Percent)

July 2012

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
Parameter : NO2_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	3.12	2.55	2.69	3.55	5.11	9.80	13.49	6.39	4.82	4.68	2.41	3.69	13.21	11.07	9.23	4.11	100.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.12	2.55	2.69	3.55	5.11	9.80	13.49	6.39	4.82	4.68	2.41	3.69	13.21	11.07	9.23	4.11	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	22	18	19	25	36	69	95	45	34	33	17	26	93	78	65	29	704
<	110																	
<	210																	
>=	210																	
	Totals	22	18	19	25	36	69	95	45	34	33	17	26	93	78	65	29	

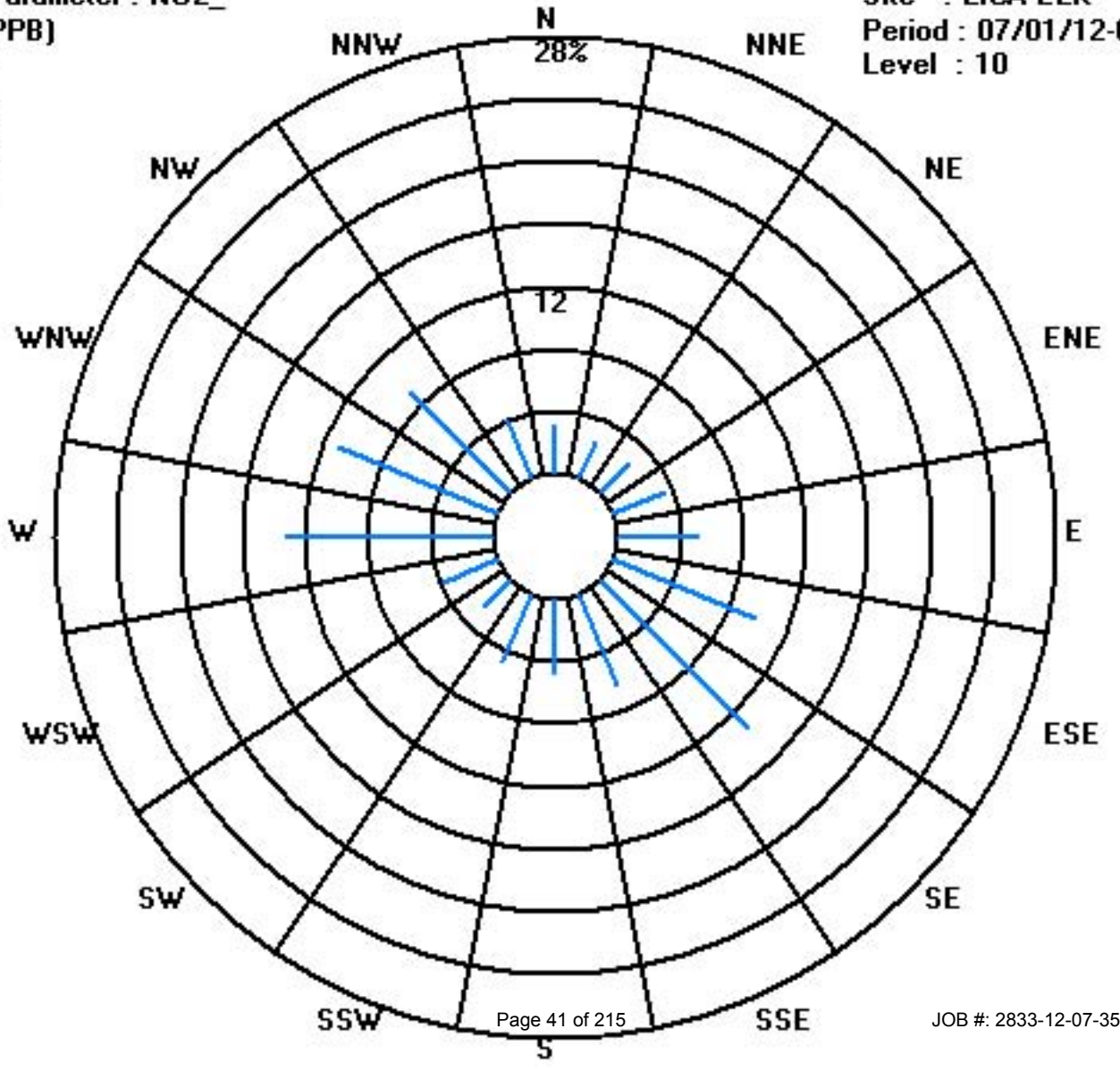
Calm : .00 %

Total # Operational Hours : 704

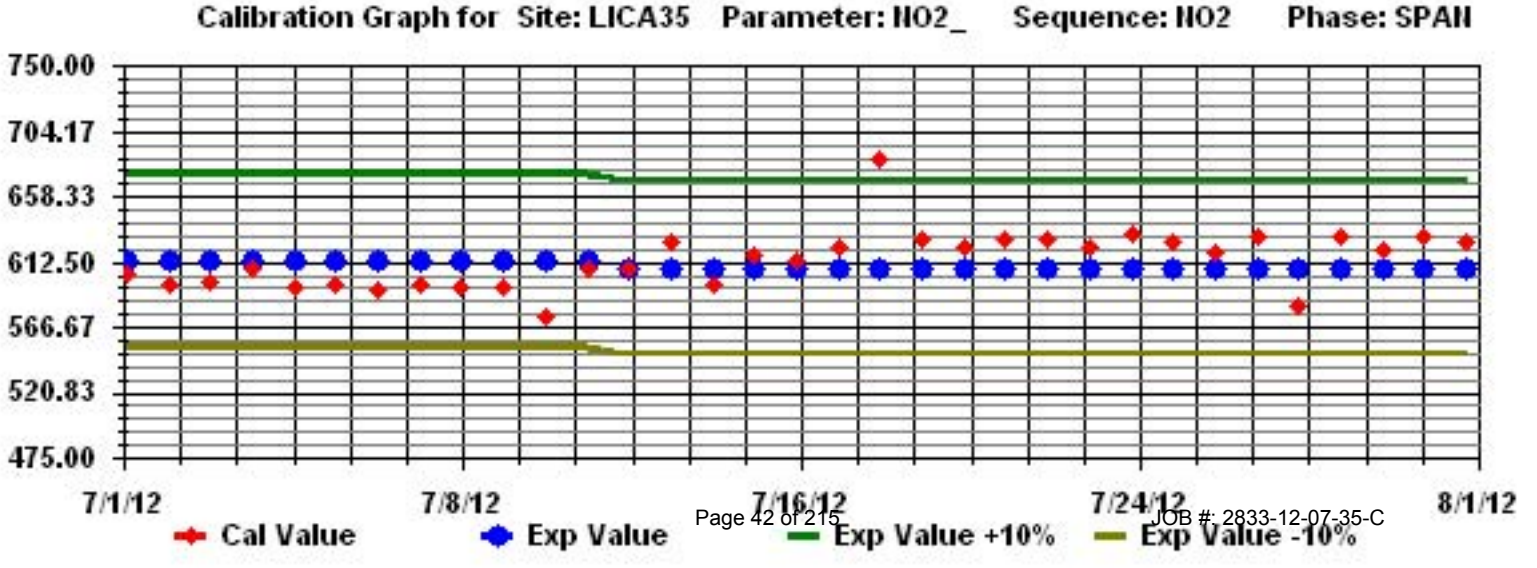
Logger : 35 Parameter : NO2_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA-ELK
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-35-C


Calibration Graph for Site: LICA35 Parameter: NO2_ Sequence: NO2 Phase: SPAN
750.00
704.17
658.33
612.50
566.67
520.83
475.00
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JULY 2012

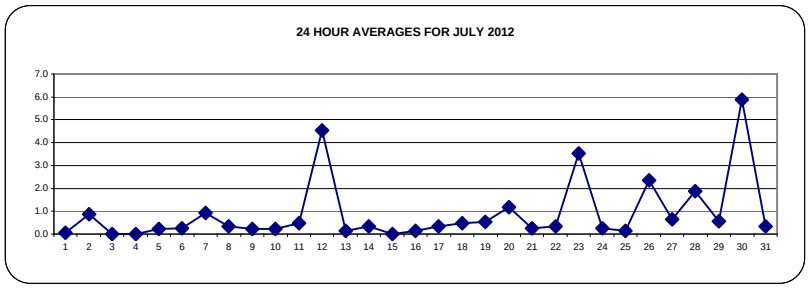
NITRIC OXIDE hourly averages in ppb

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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.0	24
2	**IZS**	0	0	0	12	3	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	12	0.9	24
3	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
4	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
5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	4	0	0	4	0.2	24
6	0	0	0	0	0	2	1	1	1	1	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	2	0.3	24
7	0	0	0	1	3	6	5	3	2	1	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	6	0.9	24
8	0	0	0	0	1	3	2	1	1	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	3	0.3	24
9	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	1	0.2	24
10	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	1	0.2	24
11	0	0	0	0	0	1	1	0	0	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	1	0	1	1	3	3	0.5	24
12	15	23	11	4	15	19	1	1	1	2	3	1	**M**	**IZS**	0	0	0	0	0	0	0	0	3	1	23	4.5	23
13	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	1	0	2	0	2	0.1	24
14	1	1	2	1	2	1	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
15	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
16	0	0	0	0	0	0	0	0	0	**IZS**	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0.1	24
17	0	0	0	0	4	1	2	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.3	24
18	0	0	0	0	0	1	1	**IZS**	1	1	1	0	0	1	0	0	0	0	0	0	0	0	2	3	3	0.5	24
19	4	0	0	0	1	0	**IZS**	0	0	1	0	0	0	0	1	0	0	0	0	0	1	3	1	0	4	0.5	24
20	0	0	8	2	6	**IZS**	6	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1.2	24
21	0	0	0	0	**IZS**	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0.3	24
22	0	0	0	**IZS**	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	4	4	0.3	24
23	9	13	**IZS**	10	7	13	11	7	3	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	13	3.5	24
24	0	**IZS**	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0.3	24
25	**IZS**	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	**IZS**	2	0.1	24
26	1	2	2	3	5	14	9	9	7	2	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	14	2.3	24
27	0	0	1	0	1	4	3	3	2	1	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	4	0.7	24
28	1	2	3	5	2	9	11	5	3	1	0	0	0	0	0	0	1	0	0	0	**IZS**	0	0	0	11	1.9	24
29	0	0	0	0	5	1	1	1	1	0	0	0	0	0	0	0	0	0	0	**IZS**	1	0	1	2	5	0.6	24
30	11	8	10	24	9	20	**31**	12	4	5	1	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	**31**	**5.9**	24
31	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	**IZS**	1	2	1	0	0	0	2	0.3	24
HOURLY MAX	15	23	11	24	15	20	31	12	7	5	3	1	0	1	1	0	1	0	1	2	1	4	3	4			
HOURLY AVG	1.4	1.7	1.2	1.7	2.5	3.5	3.1	1.7	1.1	0.8	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.6	0.5			

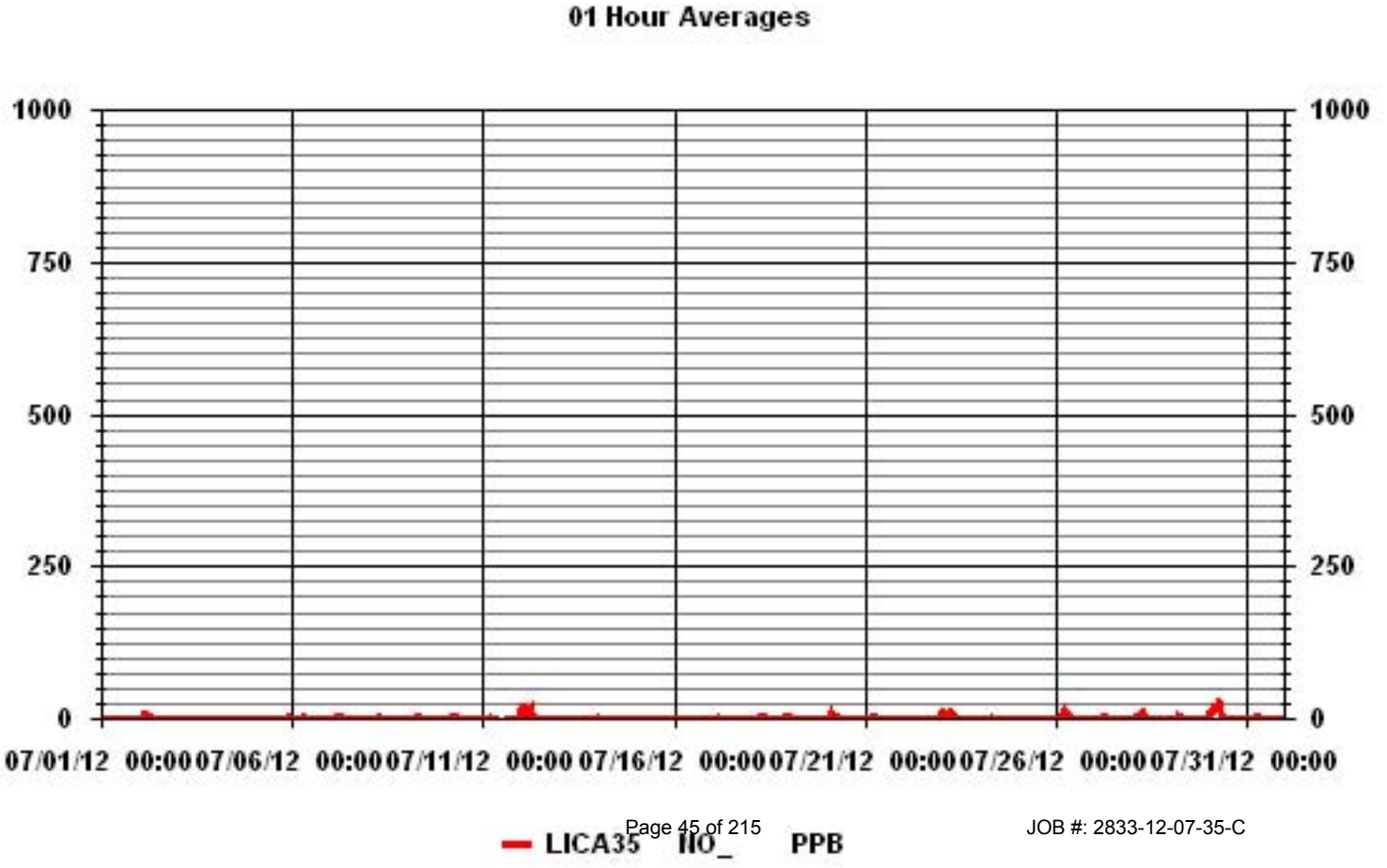
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	173						
MAXIMUM 1-HR AVERAGE:	31	PPB	@ HOUR(S)	6	ON DAY(S)	30	
MAXIMUM 24-HR AVERAGE:	5.9	PPB			ON DAY(S)	30	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:		99.9	%	
STANDARD DEVIATION:	2.83		MONTHLY AVERAGE:		0.88	PPB	



JOB #: 2833-12-07-35-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *PORTABLE SITE - Elk Point Airport*

JULY 2012

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

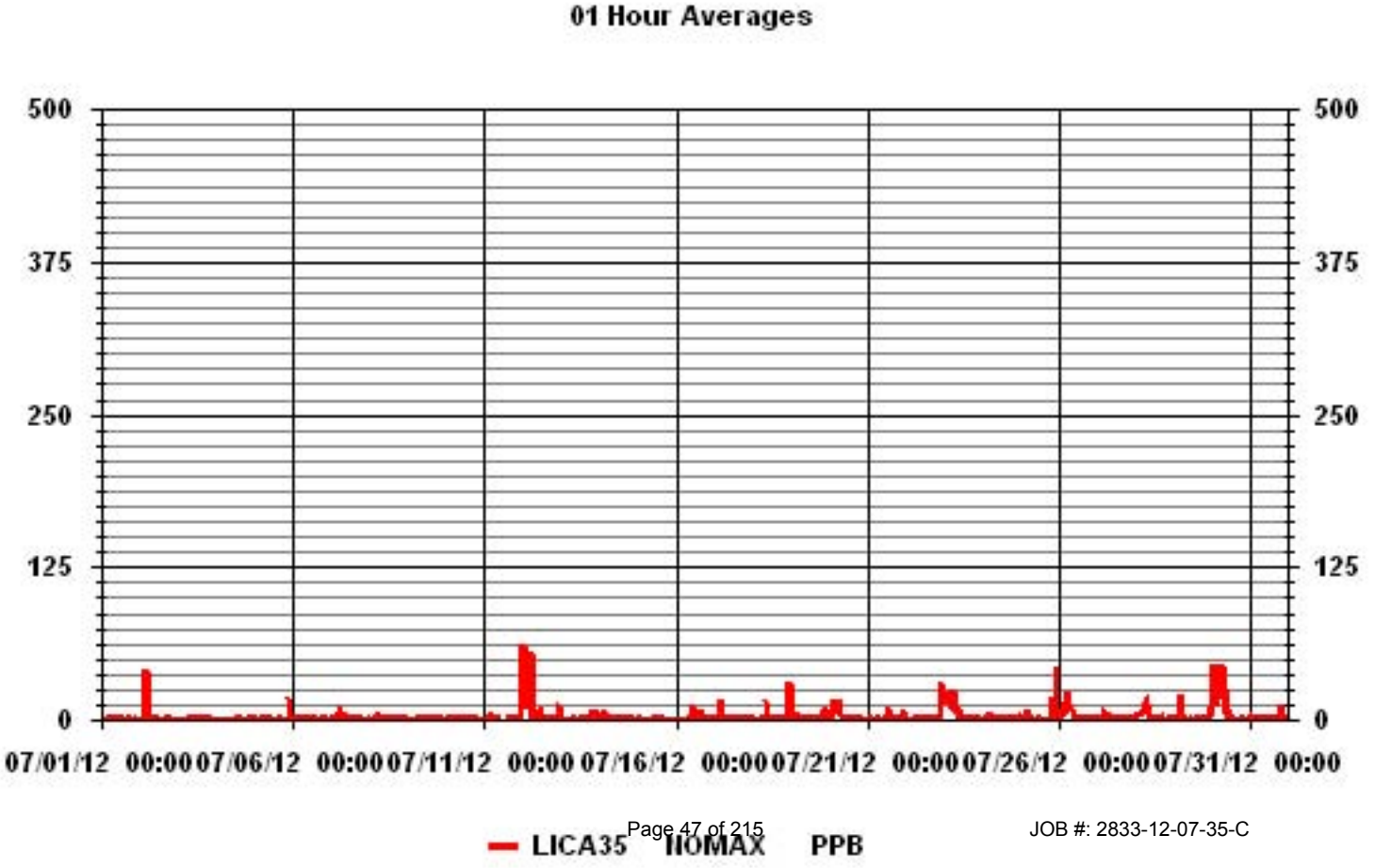
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	**IZS**	1	0	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0	2	2	1	2	0.9	24
2	**IZS**	1	0	2	42	8	4	2	2	1	1	1	1	0	0	0	1	1	1	1	1	0	0	**IZS**	42	3.2	24
3	1	0	0	0	0	0	0	1	1	1	2	1	1	1	1	1	1	1	1	1	1	0	**IZS**	1	2	0.7	24
4	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0	0	1	0	0	**IZS**	1	1	1	0.4	24
5	1	1	0	0	1	1	2	1	1	1	1	1	0	0	0	1	1	1	0	1	**IZS**	16	2	0	16	1.4	24
6	1	1	1	0	2	3	2	2	2	1	1	1	0	1	1	0	0	1	1	**IZS**	1	1	0	0	3	1.0	24
7	1	1	1	2	6	9	7	4	3	3	1	1	1	1	1	1	1	1	**IZS**	1	0	1	0	1	9	2.1	24
8	1	0	1	1	3	5	4	2	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	2	1	5	1.4	24
9	1	0	0	0	1	2	2	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	0	2	0.9	24
10	1	1	1	0	3	2	1	2	2	1	1	1	1	1	1	**IZS**	1	1	1	1	1	0	0	1	3	1.1	24
11	0	0	1	1	3	3	1	2	2	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	1	1	1	1	2	4	10	10	2.0	24
12	**62**	37	21	9	25	56	2	2	2	7	8	3	**M**	**IZS**	1	1	1	1	1	1	1	1	9	7	**62**	11.7	23
13	0	0	0	0	0	0	0	1	1	1	0	0	**IZS**	1	1	1	1	1	1	1	1	7	4	7	7	1.3	24
14	2	5	6	4	4	4	2	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1	1	1	0	0	6	1.8	24
15	1	1	0	0	0	0	0	0	0	0	**IZS**	1	1	1	0	1	1	0	0	0	0	0	0	0	1	0.3	24
16	0	0	0	0	0	0	0	1	1	**IZS**	10	1	1	0	0	8	2	2	1	1	2	1	1	2	10	1.5	24
17	1	1	0	1	17	2	3	2	**IZS**	1	1	1	1	1	1	1	1	2	1	1	1	1	0	1	17	1.8	24
18	1	0	1	0	1	3	2	**IZS**	14	1	2	1	1	2	1	1	1	1	1	1	1	1	7	31	31	3.3	24
19	24	0	0	3	4	1	**IZS**	1	1	1	2	2	1	1	2	1	1	1	2	2	6	9	4	3	24	3.1	24
20	3	2	17	5	10	**IZS**	14	5	3	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	17	3.2	24
21	0	1	1	0	**IZS**	2	3	2	2	1	1	1	1	10	1	1	1	1	1	1	1	1	7	3	10	1.9	24
22	2	2	0	**IZS**	1	2	3	1	1	1	1	1	1	1	1	1	1	1	1	2	1	3	30	13	30	3.1	24
23	15	20	**IZS**	15	13	25	16	8	5	9	3	1	1	1	1	1	1	1	0	1	1	1	1	1	25	6.1	24
24	0	**IZS**	1	1	3	3	4	3	2	1	1	1	1	0	1	1	1	1	1	1	1	1	3	1	4	1.4	24
25	**IZS**	1	1	0	8	1	1	1	0	1	0	1	1	0	0	0	0	1	0	18	1	1	40	**IZS**	40	3.5	24
26	5	6	4	5	14	22	14	11	9	6	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	22	4.7	24
27	1	1	2	2	7	6	5	3	3	1	1	1	1	1	2	1	1	1	1	1	1	**IZS**	2	1	7	2.0	24
28	2	4	5	7	4	14	16	13	6	2	1	0	1	1	1	1	3	1	**P**	0	**IZS**	1	1	**P**	16	4.0	22
29	1	1	1	1	20	1	2	2	2	1	1	1	0	1	1	1	1	1	1	**IZS**	1	1	3	11	20	2.4	24
30	46	12	16	45	16	32	45	26	6	9	2	2	1	1	1	0	1	0	**IZS**	1	1	0	1	3	46	11.6	24
31	1	2	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	**IZS**	3	13	3	3	1	1	13	2.0	24
HOURLY MAX	62	37	21	45	42	56	45	26	14	9	10	3	1	10	2	8	3	2	3	18	7	16	40	31			
HOURLY AVG	6.0	3.5	2.8	3.5	7.0	7.0	5.3	3.4	2.6	2.0	1.7	1.0	0.9	1.2	0.9	1.1	1.0	1.0	1.0	2.0	1.3	1.9	4.4	3.5			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	583				
MAXIMUM INSTANTANEOUS VALUE:	62	PPB	@ HOUR(S)	0	ON DAY(S) 12
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	741	HRS
MONTHLY CALIBRATION TIME:	7	HRS			
STANDARD DEVIATION	6.28				



JOB #: 2833-12-07-35-C

LICA-ELK
NO_ / WDR Joint Frequency Distribution (Percent)

July 2012

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
Parameter : NO_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

Limit		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	3.12	2.55	2.69	3.55	5.11	9.80	13.49	6.39	4.82	4.68	2.41	3.69	13.21	11.07	9.23	4.11	100.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals		3.12	2.55	2.69	3.55	5.11	9.80	13.49	6.39	4.82	4.68	2.41	3.69	13.21	11.07	9.23	4.11	

Calm : .00 %

Total # Operational Hours : 704

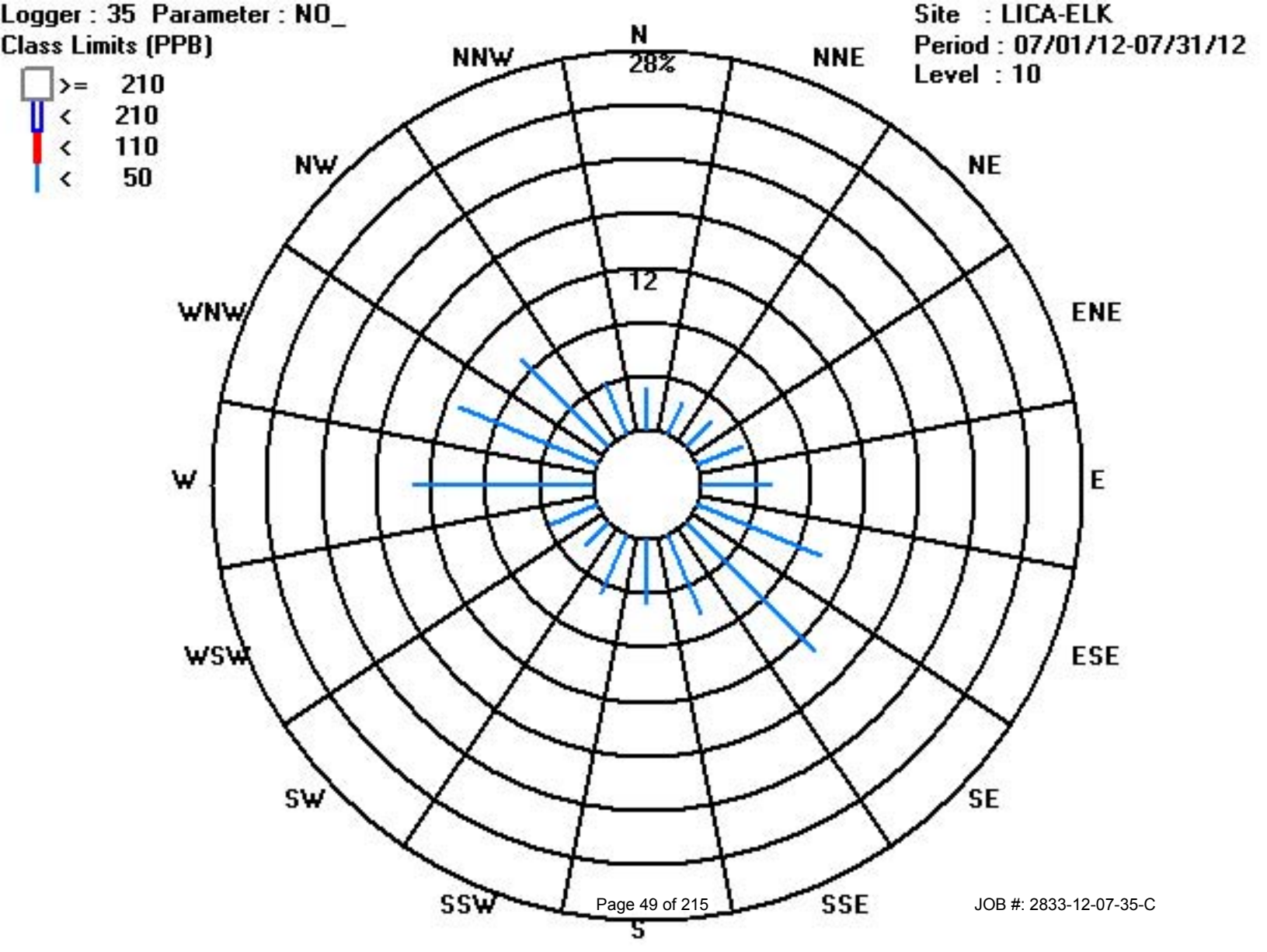
Distribution By Samples

Direction

Limit		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	22	18	19	25	36	69	95	45	34	33	17	26	93	78	65	29	704
<	110																	
<	210																	
>=	210																	
Totals		22	18	19	25	36	69	95	45	34	33	17	26	93	78	65	29	

Calm : .00 %

Total # Operational Hours : 704



JOB #: 2833-12-07-35-C

Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

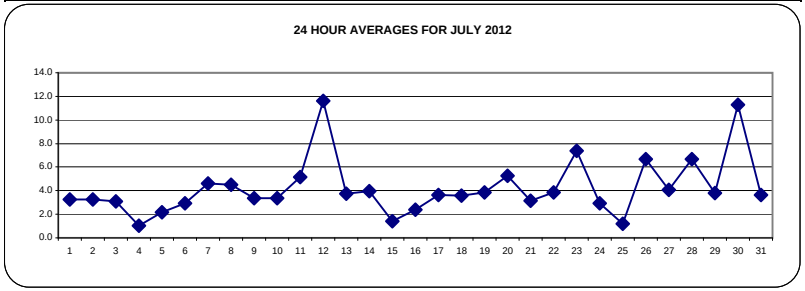
JULY 2012

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	4	**IZS**	4	6	5	3	2	2	2	2	1	1	2	2	1	0	1	0	1	0	1	9	15	11	15	3.3	24
2	**IZS**	6	3	5	22	9	5	3	2	1	1	1	0	0	0	0	1	2	2	3	5	1	0	**IZS**	22	3.3	24
3	2	3	3	3	3	3	2	3	3	3	3	3	2	3	3	4	3	3	4	3	7	3	**IZS**	2	7	3.1	24
4	1	2	2	2	0	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	**IZS**	2	1	2	1.0	24
5	2	3	1	1	2	2	2	1	1	1	1	0	0	0	0	0	1	1	1	4	**IZS**	17	6	3	17	2.2	24
6	4	3	2	3	5	8	5	3	3	3	1	1	0	1	0	0	0	1	1	**IZS**	3	7	6	7	8	2.9	24
7	7	8	5	7	9	16	11	9	7	6	2	2	1	1	1	2	1	2	**IZS**	1	1	1	2	4	16	4.6	24
8	9	7	7	8	14	12	6	4	3	2	1	1	1	1	1	1	1	**IZS**	2	3	4	5	5	5	14	4.5	24
9	5	5	4	5	5	5	6	3	3	3	2	2	2	1	1	2	**IZS**	2	2	2	4	5	5	3	6	3.3	24
10	5	5	4	5	7	5	4	4	4	3	2	2	2	2	2	**IZS**	2	3	3	2	2	2	2	6	7	3.4	24
11	2	2	4	4	2	6	3	2	2	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	1	2	6	7	12	14	18	18	5.2	24
12	30	41	26	15	26	32	5	5	6	11	13	5	**M**	**IZS**	2	2	1	2	2	2	3	6	16	5	41	**11.6**	23
13	1	1	1	3	3	2	2	2	4	4	3	2	**IZS**	2	1	2	2	2	2	2	11	9	14	11	14	3.7	24
14	11	10	9	8	9	8	5	3	3	2	2	**IZS**	2	2	1	1	1	1	2	2	2	2	2	3	11	4.0	24
15	3	5	4	3	4	2	1	1	1	1	**IZS**	1	1	0	1	1	1	1	0	0	0	1	1	0	5	1.4	24
16	1	1	1	1	1	1	0	1	1	**IZS**	1	0	0	0	0	1	2	1	2	3	11	10	7	9	11	2.4	24
17	7	6	5	6	14	6	6	4	**IZS**	1	1	2	2	2	2	2	2	2	2	2	2	3	2	2	14	3.6	24
18	2	2	2	2	3	5	4	**IZS**	3	3	2	2	2	2	1	1	1	2	1	2	4	5	15	16	16	3.6	24
19	19	5	2	7	5	2	**IZS**	2	2	1	1	1	0	0	1	1	1	1	1	2	7	13	10	5	19	3.9	24
20	6	5	20	11	14	**IZS**	11	5	5	2	1	1	1	1	1	1	1	1	2	4	7	8	8	5	20	5.3	24
21	4	4	4	3	**IZS**	3	4	2	2	1	1	2	1	1	1	1	2	1	0	1	1	11	15	7	15	3.1	24
22	5	6	4	**IZS**	2	5	2	2	1	1	1	1	1	1	0	0	0	0	1	4	6	11	17	17	17	3.8	24
23	20	24	**IZS**	18	13	19	17	13	9	12	6	3	1	1	1	1	1	1	1	2	2	1	2	2	24	7.4	24
24	2	**IZS**	4	3	5	8	8	5	3	2	1	0	0	0	0	0	0	2	4	4	2	4	10	1	10	3.0	24
25	**IZS**	1	1	1	7	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	7	**IZS**	7	1.2	24
26	7	10	11	11	12	21	16	16	14	5	1	1	1	1	1	1	1	1	1	5	4	7	**IZS**	6	21	6.7	24
27	6	6	8	8	7	9	8	6	4	3	1	1	1	1	2	2	1	1	1	5	3	**IZS**	5	4	9	4.0	24
28	8	11	9	11	10	16	21	12	8	4	2	1	1	1	1	2	6	2	2	2	**IZS**	4	13	6	21	6.7	24
29	2	5	3	3	16	5	4	3	3	2	1	1	0	1	0	1	1	2	2	**IZS**	6	7	8	11	16	3.8	24
30	22	20	22	36	18	27	**42**	21	12	11	4	2	2	1	1	1	1	1	**IZS**	3	2	2	2	7	**42**	11.3	24
31	6	7	2	5	4	7	4	4	2	1	0	1	0	1	1	1	2	**IZS**	3	5	10	8	5	4	10	3.6	24
HOURLY MAX	30	41	26	36	26	32	42	21	14	12	13	5	2	3	3	4	6	3	4	6	11	17	17	18			
HOURLY AVG	7.0	7.4	5.9	6.8	8.2	8.3	6.9	4.8	3.8	3.2	2.0	1.4	1.0	1.0	0.9	1.1	1.3	1.4	1.7	2.6	4.1	6.0	7.4	6.2			

STATUS FLAG CODES

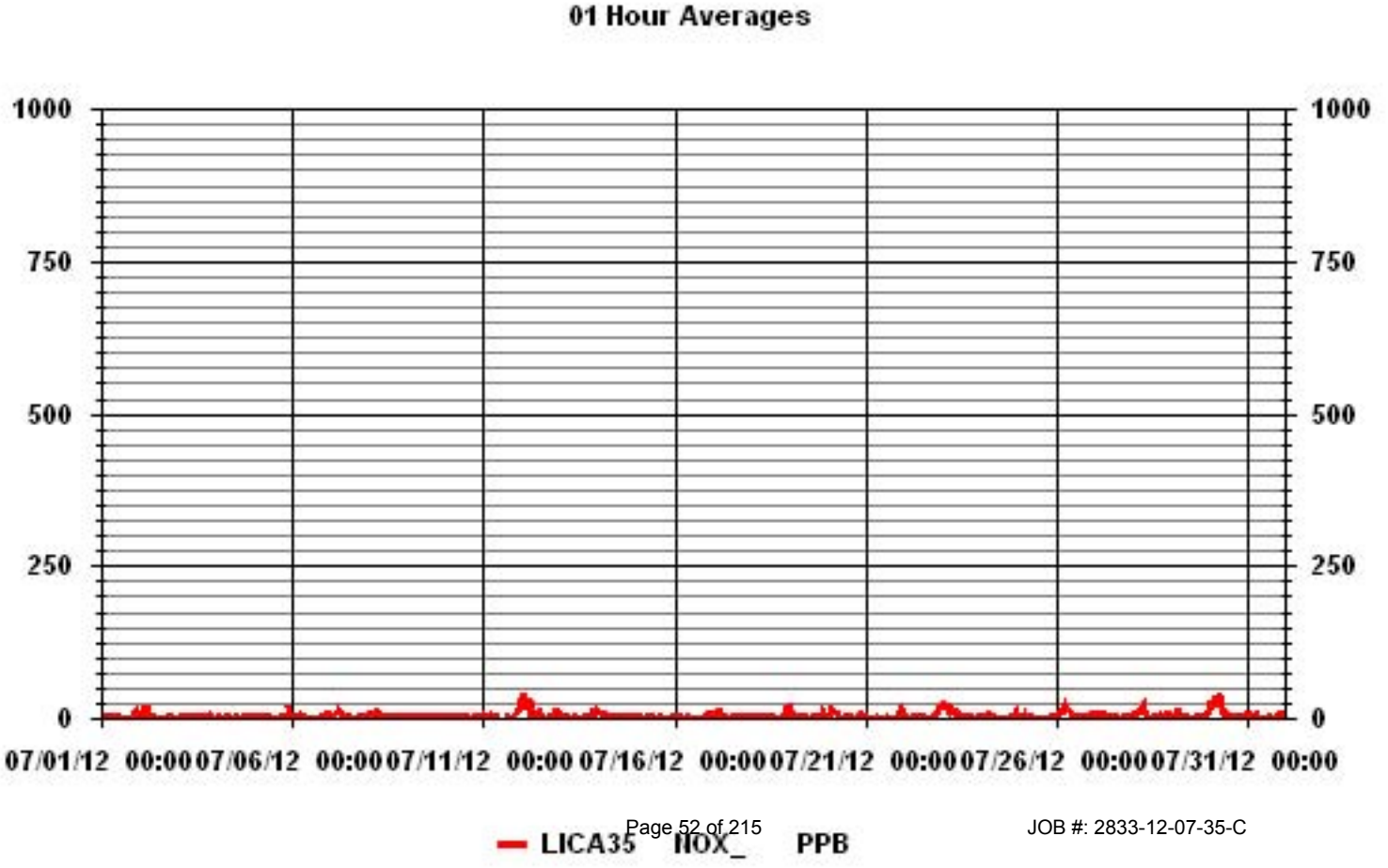
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	649					
MAXIMUM 1-HR AVERAGE:	42	PPB	@ HOUR(S)	6	ON DAY(S)	30
MAXIMUM 24-HR AVERAGE:	11.6	PPB			ON DAY(S)	12
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		743	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:		99.9	%
STANDARD DEVIATION:	5.27		MONTHLY AVERAGE:		4.21	PPB

JOB #: 2833-12-07-35-C



JOB #: 2833-12-07-35-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *PORTABLE SITE - Elk Point Airport*

JULY 2012

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

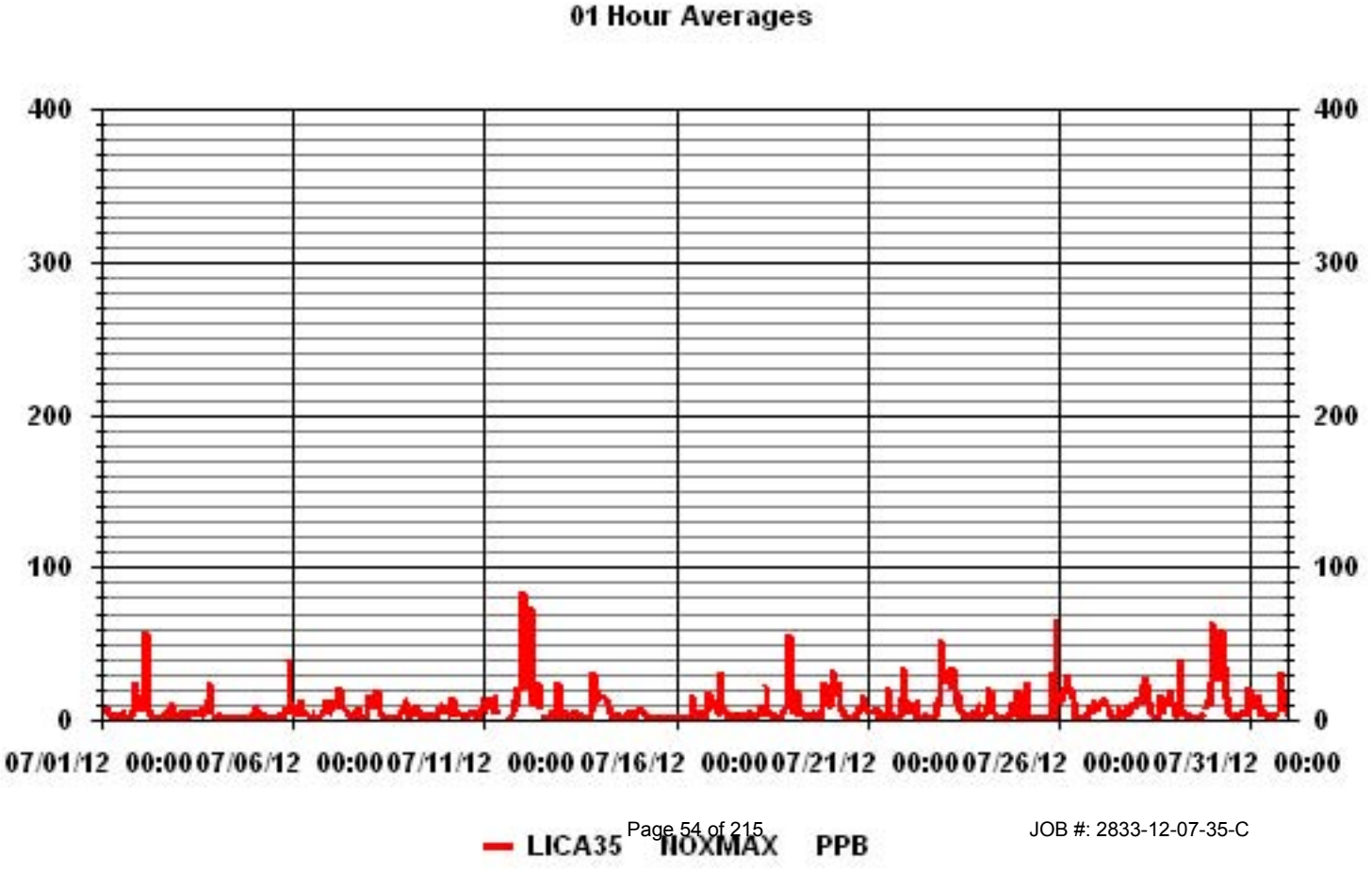
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	7	**IZS**	6	8	7	4	4	3	2	3	2	2	3	4	1	1	2	2	4	4	6	25	17	15	25	5.7	24
2	**IZS**	11	5	10	58	17	8	4	3	2	2	2	1	1	1	1	4	3	3	7	11	7	1	**IZS**	58	7.4	24
3	3	5	4	3	4	4	3	4	4	5	5	5	4	4	5	6	4	5	8	13	25	5	**IZS**	2	25	5.7	24
4	2	3	3	3	1	1	2	2	2	2	1	1	2	2	2	2	1	1	1	2	2	**IZS**	3	2	3	1.9	24
5	7	8	2	2	4	3	4	3	1	2	2	1	1	1	1	1	3	3	2	6	**IZS**	37	12	8	37	5.0	24
6	7	8	4	4	9	12	8	4	4	4	3	2	1	3	1	1	2	3	5	**IZS**	6	13	10	8	13	5.3	24
7	11	11	7	10	15	21	16	10	9	8	4	4	2	2	2	4	4	7	**IZS**	2	2	2	2	8	21	7.1	24
8	17	9	9	12	17	17	10	5	4	3	2	2	2	1	2	2	2	**IZS**	3	6	8	8	10	6	17	6.8	24
9	8	6	4	6	7	7	8	4	4	3	3	2	3	2	2	3	**IZS**	3	3	4	7	9	8	4	9	4.8	24
10	8	8	5	7	14	10	5	4	5	4	2	2	3	3	3	**IZS**	4	4	5	4	3	3	8	12	14	5.5	24
11	11	9	13	12	13	14	5	7	6	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2	3	6	11	11	22	20	30	30	11.5	24
12	**84**	56	36	20	39	74	12	9	12	23	23	9	**M**	**IZS**	2	2	2	4	3	3	6	13	25	19	**84**	21.6	23
13	1	1	3	4	4	3	2	4	5	4	4	3	**IZS**	3	2	2	2	2	2	5	31	17	22	14	31	6.1	24
14	15	15	15	15	12	12	10	5	3	3	3	**IZS**	3	2	2	2	3	3	3	5	5	3	3	5	15	6.4	24
15	5	7	6	5	5	3	2	2	2	2	**IZS**	2	1	1	1	1	1	1	1	1	1	1	1	1	7	2.3	24
16	2	1	1	2	2	1	1	1	2	**IZS**	14	1	1	1	1	7	4	4	3	6	16	16	10	13	16	4.8	24
17	9	9	7	9	31	7	8	5	**IZS**	3	3	2	3	3	3	3	3	4	3	4	3	4	4	4	31	5.8	24
18	3	3	4	3	5	10	4	**IZS**	21	5	4	4	4	3	3	3	2	2	3	5	7	9	28	56	56	8.3	24
19	50	8	4	15	19	4	**IZS**	4	4	3	3	3	1	1	4	3	3	3	3	6	21	24	15	11	50	9.2	24
20	10	12	33	16	21	**IZS**	22	9	7	4	2	1	2	2	2	2	3	2	4	7	9	16	10	7	33	8.8	24
21	6	5	5	5	**IZS**	6	6	3	3	2	2	3	2	21	2	2	3	2	2	2	3	15	35	19	35	6.7	24
22	10	13	6	**IZS**	6	10	11	3	3	1	1	2	3	2	1	1	1	1	2	12	9	15	52	25	52	8.3	24
23	27	32	**IZS**	24	21	34	22	15	11	18	8	6	2	3	2	2	1	3	1	5	7	3	4	3	34	11.0	24
24	4	**IZS**	9	4	19	18	12	6	4	2	1	1	1	1	1	1	1	5	10	10	3	8	19	3	19	6.2	24
25	**IZS**	2	2	1	24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	32	3	3	64	**IZS**	64	6.6	24
26	13	18	15	17	22	30	21	20	15	13	3	2	2	2	2	2	3	2	3	8	7	11	**IZS**	7	30	10.3	24
27	7	10	11	11	13	13	11	7	5	3	2	1	1	2	7	6	1	4	4	10	7	**IZS**	10	7	13	6.7	24
28	11	15	12	13	13	23	28	25	13	6	4	1	2	2	1	6	16	6	**P**	6	**IZS**	10	18	**P**	28	11.0	22
29	4	12	4	5	39	8	6	4	4	3	1	2	1	1	1	2	2	3	4	**IZS**	9	11	11	25	39	7.0	24
30	65	25	28	59	25	42	59	37	14	17	5	5	3	2	3	2	2	2	**IZS**	5	4	4	4	21	65	18.8	24
31	8	15	7	14	12	16	6	7	4	4	1	2	2	3	2	2	3	**IZS**	7	32	20	17	7	5	32	8.5	24
HOURLY MAX	84	56	36	59	58	74	59	37	21	23	23	9	4	21	7	7	16	7	10	32	31	37	64	56			
HOURLY AVG	14.3	11.6	9.0	10.6	16.0	14.2	10.6	7.2	5.9	5.3	3.8	2.6	2.0	2.7	2.1	2.5	2.8	3.0	3.5	7.7	8.7	11.4	14.9	12.1			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	702					
MAXIMUM INSTANTANEOUS VALUE:	84	PPB	@ HOUR(S)	0	ON DAY(S)	12
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		741	HRS
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	9.90					



JOB #: 2833-12-07-35-C

LICA-ELK
NOX_ / WDR Joint Frequency Distribution (Percent)

July 2012

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
Parameter : NOX_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	3.12	2.55	2.69	3.55	5.11	9.80	13.49	6.39	4.82	4.68	2.41	3.69	13.21	11.07	9.23	4.11	100.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.12	2.55	2.69	3.55	5.11	9.80	13.49	6.39	4.82	4.68	2.41	3.69	13.21	11.07	9.23	4.11	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	22	18	19	25	36	69	95	45	34	33	17	26	93	78	65	29	704
<	110																	
<	210																	
>=	210																	
	Totals	22	18	19	25	36	69	95	45	34	33	17	26	93	78	65	29	

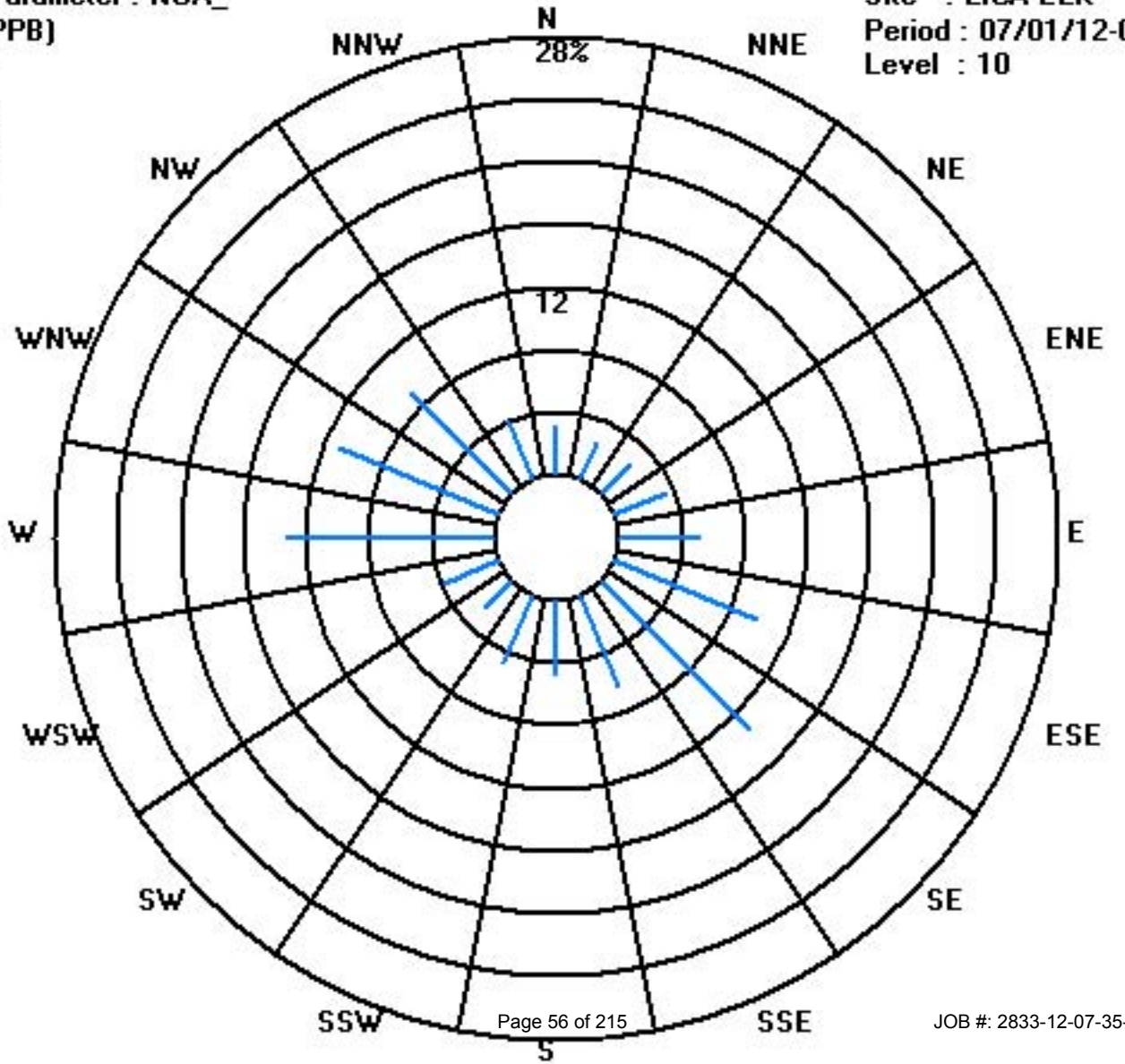
Calm : .00 %

Total # Operational Hours : 704

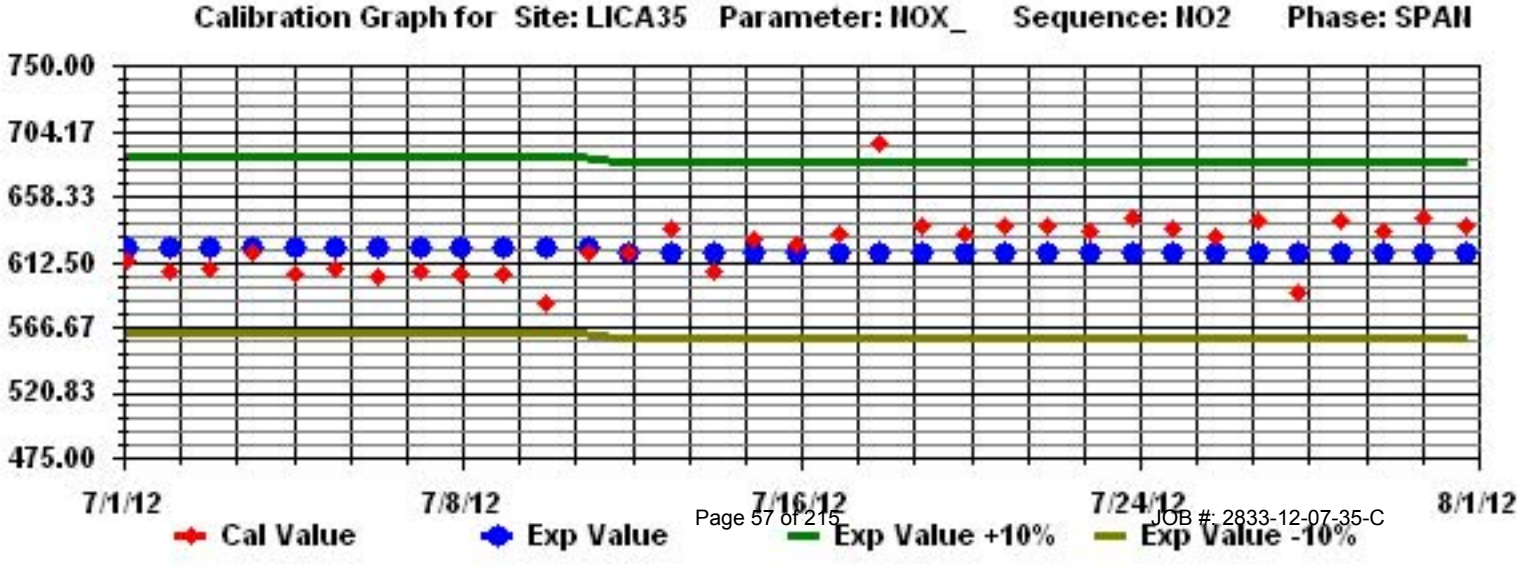
Logger : 35 Parameter : NOX_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA-ELK
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-35-C


Calibration Graph for Site: LICA35 Parameter: NOX_ Sequence: NO2 Phase: SPAN
750.00
704.17
658.33
612.50
566.67
520.83
475.00
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Poinr Airport

JULY 2012

OZONE (O_3) hourly averages in ppb

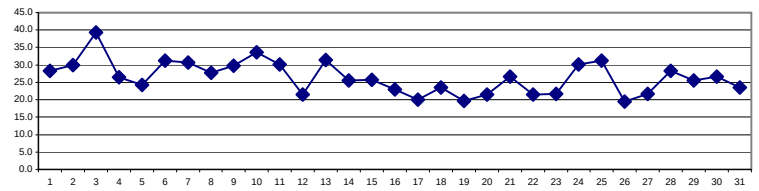
MST

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	17	**IZS**	18	16	19	22	21	21	21	22	26	34	45	47	36	40	43	43	42	40	34	21	9	12	47	28.2	24
2	**IZS**	13	14	10	3	7	14	21	27	36	40	39	39	39	40	42	43	43	39	35	29	38	49	**IZS**	49	30.0	24
3	52	46	47	43	43	41	38	31	29	28	28	27	33	41	37	38	42	44	39	53	52	41	**IZS**	33	53	**39.4**	24
4	34	30	27	31	39	39	35	28	25	30	28	26	28	26	24	21	21	21	21	20	19	**IZS**	17	17	39	26.4	24
5	16	14	16	15	14	14	14	21	25	26	28	28	30	30	31	32	35	36	36	31	**IZS**	11	24	30	36	24.2	24
6	25	23	18	19	15	16	22	26	28	35	41	43	44	43	43	42	40	40	42	**IZS**	35	28	26	23	44	31.2	24
7	15	10	10	4	3	7	12	21	26	37	52	54	52	51	51	48	46	40	**IZS**	41	39	30	32	24	54	30.7	24
8	13	13	8	7	8	12	21	25	30	36	41	43	43	44	46	46	46	**IZS**	42	32	25	23	19	17	46	27.8	24
9	16	17	18	13	16	18	20	25	27	32	37	43	48	48	49	50	**IZS**	49	44	36	24	19	17	19	50	29.8	24
10	14	12	13	13	10	14	14	16	17	20	29	36	45	50	59	**IZS**	72	**83**	61	53	48	39	30	23	**83**	33.5	24
11	34	37	36	36	31	24	26	29	29	32	33	35	37	40	**IZS**	41	39	38	35	29	23	14	9	5	41	30.1	24
12	5	0	0	1	0	4	17	26	22	**C**	**C**	**C**	**C**	**IZS**	48	48	46	45	41	34	27	17	8	19	48	21.5	24
13	24	22	27	30	27	28	28	32	36	42	42	42	**IZS**	42	44	46	47	45	40	33	21	12	7	5	47	31.4	24
14	4	2	1	3	3	8	21	22	24	27	32	**IZS**	43	44	43	43	41	37	36	33	36	33	29	23	44	25.6	24
15	20	16	16	17	17	24	29	31	31	34	**IZS**	33	30	27	26	23	27	26	25	25	27	29	31	26	34	25.7	24
16	19	19	21	16	14	20	19	16	17	**IZS**	26	29	28	34	37	36	35	33	29	25	17	16	12	11	37	23.0	24
17	10	15	19	9	5	11	13	24	**IZS**	36	33	31	32	31	27	26	24	22	20	17	16	13	13	12	36	20.0	24
18	14	14	14	14	12	10	14	**IZS**	21	16	23	28	28	26	32	35	37	38	42	38	32	27	15	11	42	23.5	24
19	14	19	22	14	19	22	**IZS**	24	21	22	23	26	26	25	23	23	23	22	22	19	14	8	8	11	26	19.6	24
20	9	9	2	3	1	**IZS**	9	16	21	28	31	34	34	35	33	33	33	30	28	29	24	20	15	17	35	21.5	24
21	16	16	17	18	**IZS**	15	16	17	20	26	30	34	36	40	43	42	37	32	40	39	32	17	13	17	43	26.7	24
22	18	17	14	**IZS**	16	13	16	16	18	19	23	27	29	35	36	35	36	35	33	26	20	8	4	1	36	21.5	24
23	0	0	**IZS**	0	1	1	3	4	11	11	21	30	36	37	38	40	40	39	37	36	30	33	26	23	40	21.6	24
24	28	**IZS**	34	30	24	16	21	26	37	42	43	42	40	39	39	36	34	30	23	24	25	20	14	24	43	30.0	24
25	**IZS**	22	24	25	23	26	27	28	30	30	35	39	42	40	41	42	41	38	34	31	28	27	15	**IZS**	42	31.3	24
26	6	2	2	1	1	1	2	3	6	24	34	36	36	37	38	38	39	37	34	25	22	15	**IZS**	9	39	19.5	24
27	7	5	4	4	2	4	9	13	18	26	34	37	40	42	42	39	38	32	31	27	23	**IZS**	11	12	42	21.7	24
28	6	1	1	0	2	2	6	15	21	37	47	49	51	50	48	42	31	31	54	57	**IZS**	42	24	34	57	28.3	24
29	41	27	25	20	7	13	15	17	21	28	32	35	40	41	39	37	36	31	32	**IZS**	22	16	8	3	41	25.5	24
30	1	0	0	0	1	1	2	14	10	23	39	46	52	51	52	51	51	49	**IZS**	38	41	37	31	24	52	26.7	24
31	20	16	28	27	23	16	16	15	19	26	29	31	32	33	34	34	32	**IZS**	27	23	14	15	16	16	34	23.6	24
HOURLY MAX	52	46	47	43	43	41	38	32	37	42	52	54	52	51	59	51	72	83	61	57	52	42	49	34			
HOURLY AVG	17.2	15.1	16.5	14.6	13.3	15.0	17.3	20.8	22.9	28.7	33.1	35.8	37.9	38.9	39.3	38.3	38.5	37.6	35.5	32.7	27.6	23.1	18.3	17.3			

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

24 HOUR AVERAGES FOR JULY 2012

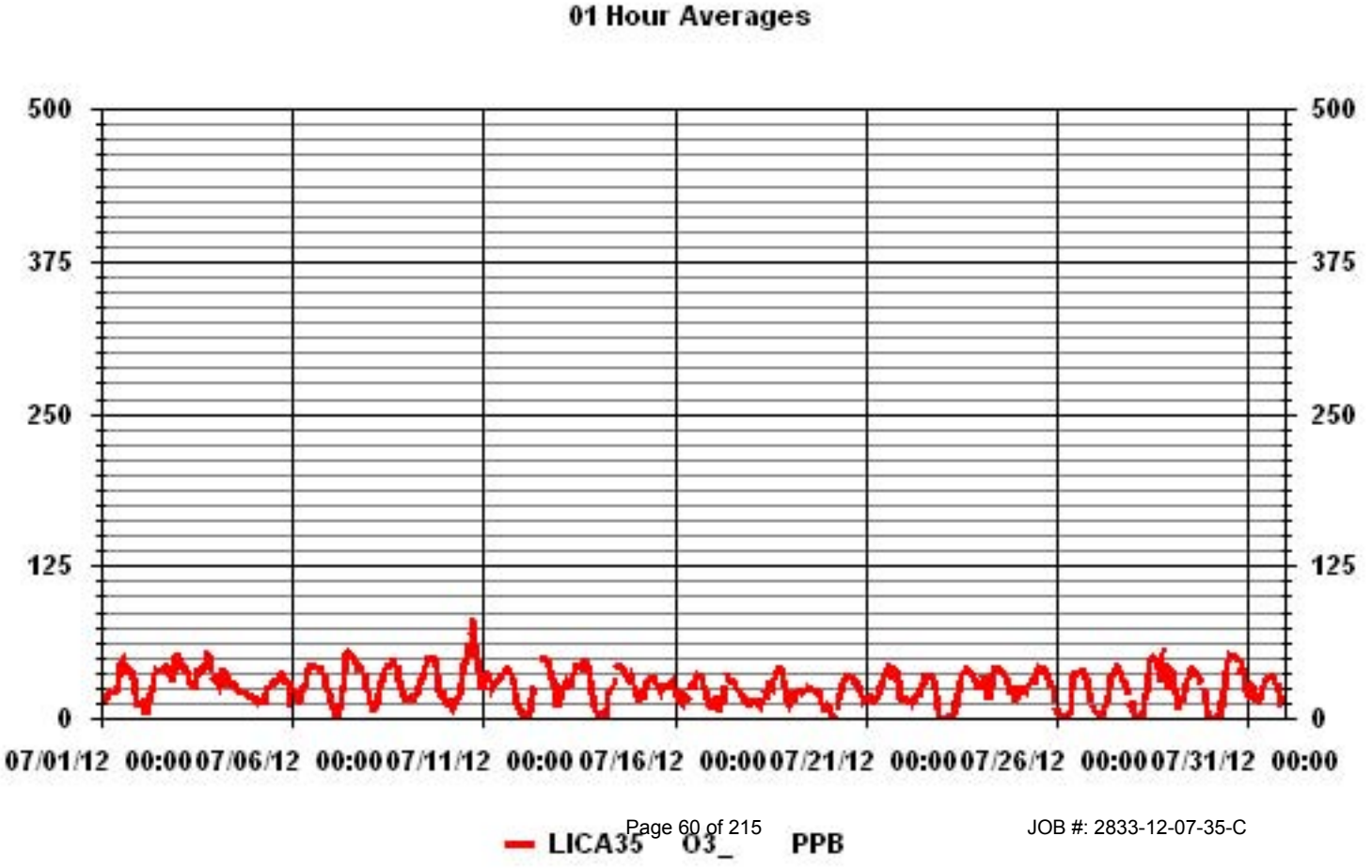


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	1					
NUMBER OF NON-ZERO READINGS:	697					
MAXIMUM 1-HR AVERAGE:	83	PPB	@ HOUR(S)	17	ON DAY(S)	10
MAXIMUM 24-HR AVERAGE:	39.4	PPB			ON DAY(S)	3
					VAR-VARIOUS	
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME		100.0	%
STANDARD DEVIATION	13.32		MONTHLY AVERAGE		26.44	PPB

JOB #: 2833-12-07-35-C



JOB #: 2833-12-07-35-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JULY 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	19	**IZS**	20	20	21	24	22	22	23	26	29	39	50	52	41	43	46	46	44	42	39	35	15	19	52	32.0	24
2	**IZS**	19	16	13	7	9	19	24	34	39	41	40	40	41	42	43	45	45	41	39	36	42	55	**IZS**	55	33.2	24
3	54	50	50	46	46	43	41	35	31	30	30	30	40	45	42	46	47	49	43	63	60	48	**IZS**	35	63	43.7	24
4	35	32	28	38	39	39	39	30	29	32	33	27	31	29	25	23	22	22	22	22	20	**IZS**	18	18	39	28.4	24
5	17	17	17	17	16	15	15	24	26	27	29	29	31	31	32	34	37	37	38	36	**IZS**	22	37	32	38	26.8	24
6	33	27	23	21	18	20	25	29	31	41	43	45	46	45	46	43	42	43	45	**IZS**	42	32	33	26	46	34.7	24
7	24	18	17	7	5	11	17	25	29	48	55	57	54	53	55	51	48	46	**IZS**	43	41	34	34	31	57	34.9	24
8	19	17	12	9	12	17	26	28	34	39	43	45	45	45	48	48	47	**IZS**	45	38	29	26	23	20	48	31.1	24
9	19	19	20	17	19	21	24	26	30	35	42	47	51	50	51	53	**IZS**	52	49	40	31	22	22	21	53	33.1	24
10	18	15	16	15	13	16	16	17	19	27	35	42	50	53	64	**IZS**	82	**88**	72	56	52	44	33	30	**88**	38.0	24
11	40	41	40	42	37	27	29	33	32	34	35	38	39	41	**IZS**	43	41	39	37	34	26	26	17	13	43	34.1	24
12	12	1	1	2	1	14	27	31	**C**	**C**	**C**	**C**	**C**	**IZS**	50	50	47	47	46	41	32	23	16	24	50	25.8	24
13	25	24	30	30	30	29	30	37	39	44	44	44	**IZS**	45	45	48	50	47	44	39	32	21	17	9	50	34.9	24
14	6	5	2	6	10	17	25	25	27	30	38	**IZS**	45	48	45	45	45	39	37	39	38	35	31	27	48	28.9	24
15	22	19	19	19	20	28	33	33	33	39	**IZS**	35	33	29	29	24	30	28	26	26	29	31	32	30	39	28.1	24
16	21	21	22	19	17	22	21	18	20	**IZS**	27	31	32	36	38	38	37	37	31	29	24	22	16	17	38	25.9	24
17	13	20	22	14	10	12	18	28	**IZS**	38	36	32	35	33	30	28	27	23	21	19	17	16	15	15	38	22.7	24
18	16	16	16	16	14	14	18	**IZS**	23	21	28	30	30	30	34	36	39	41	46	41	37	33	30	19	46	27.3	24
19	25	26	23	21	23	25	**IZS**	28	23	24	25	27	27	26	25	24	24	24	23	23	19	16	12	13	28	22.9	24
20	11	11	9	6	4	**IZS**	12	21	26	30	33	36	36	37	35	35	35	32	30	34	27	25	19	20	37	24.5	24
21	18	18	19	19	**IZS**	17	17	18	23	31	34	36	41	43	45	45	40	37	44	41	36	26	25	22	45	30.2	24
22	22	21	18	**IZS**	18	17	19	19	20	21	26	29	35	38	37	37	37	36	35	32	23	21	8	7	38	25.0	24
23	1	1	**IZS**	1	1	2	4	9	15	16	26	37	38	39	39	43	42	42	40	40	35	37	33	26	43	24.7	24
24	43	**IZS**	42	37	33	25	25	36	41	43	45	44	41	41	41	38	35	36	28	28	28	25	25	25	45	35.0	24
25	**IZS**	24	26	27	29	28	34	32	32	32	39	41	43	42	43	43	43	40	36	33	31	31	24	**IZS**	43	34.2	24
26	12	4	4	1	1	2	3	5	11	35	36	38	38	39	40	40	41	39	37	29	28	20	**IZS**	11	41	22.3	24
27	9	7	8	7	4	9	11	15	24	30	35	39	43	45	45	43	44	35	36	32	32	**IZS**	16	22	45	25.7	24
28	11	5	3	2	4	4	10	20	30	43	51	53	55	55	52	47	39	46	**P**	62	**IZS**	53	33	**P**	62	32.3	22
29	47	36	27	24	14	15	17	19	26	32	35	38	42	43	41	39	38	35	34	**IZS**	26	22	13	8	47	29.2	24
30	2	1	1	1	2	2	4	29	24	36	45	50	54	53	55	53	53	51	**IZS**	42	47	42	36	37	55	31.3	24
31	27	22	31	31	29	21	19	17	22	29	30	32	33	35	36	35	34	**IZS**	30	28	25	18	18	18	36	27.0	24
HOURLY MAX	54	50	50	46	46	43	41	37	41	48	55	57	55	55	64	53	82	88	72	63	60	53	55	37			
HOURLY AVG	21.4	18.5	19.4	17.6	16.6	18.2	20.7	24.4	26.8	32.8	36.1	38.3	40.6	41.4	41.7	40.6	41.2	40.8	37.9	36.9	32.5	29.2	24.3	21.3			

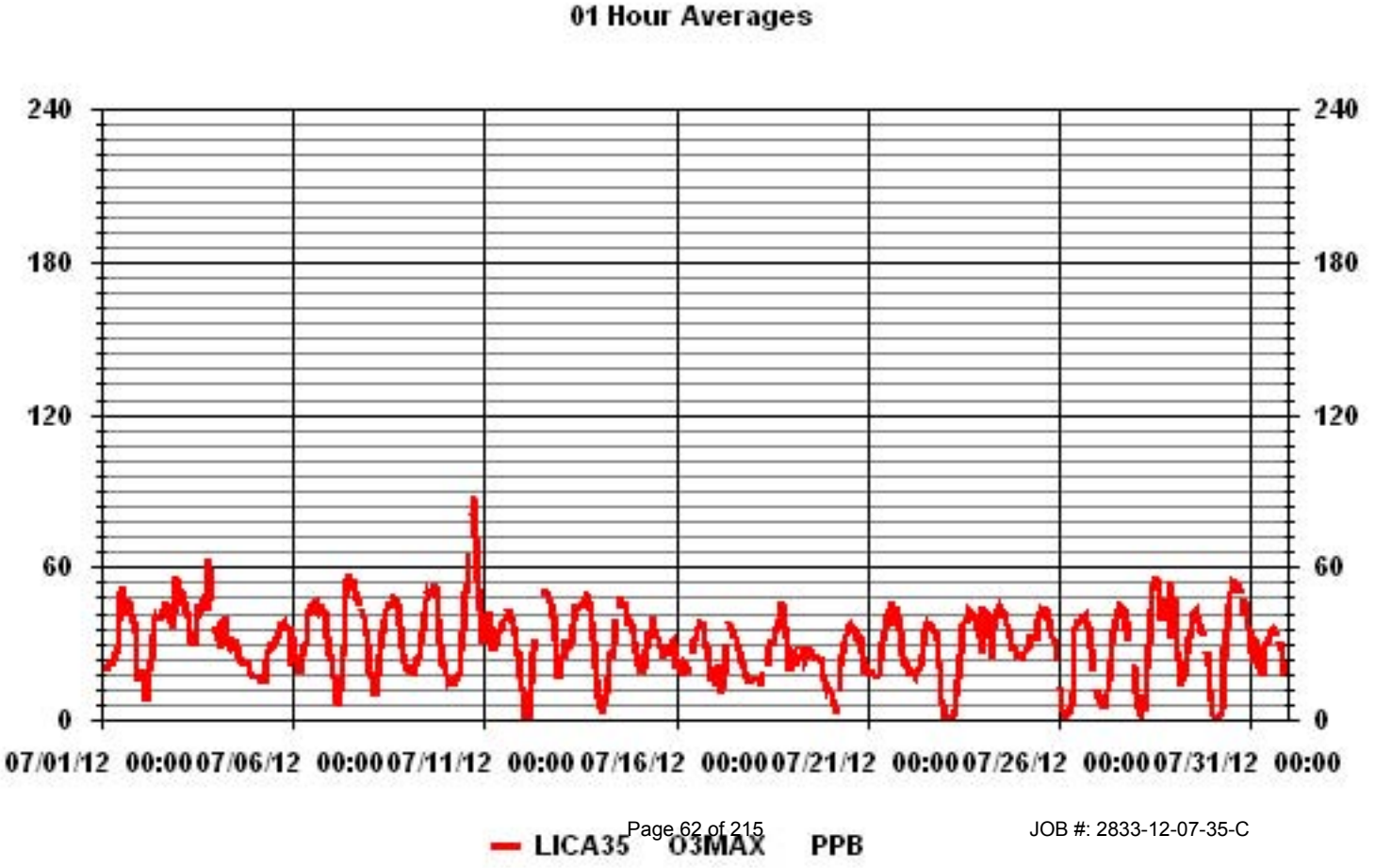
STATUS FLAG CODES

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:	704					
MAXIMUM INSTANTANEOUS VALUE:	88	PPB	@ HOUR(S)	17	ON DAY(S)	10
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		742	HRS
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION	13.34					

JOB #: 2833-12-07-35-C



JOB #: 2833-12-07-35-C

LICA-ELK
O3_ / WDR Joint Frequency Distribution (Percent)

July 2012

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
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	3.11	2.40	2.54	3.53	4.95	9.75	13.15	6.22	4.10	3.81	2.26	3.39	12.58	10.89	9.75	4.10	96.60
< 110	.00	.00	.14	.00	.14	.00	.28	.14	.70	.84	.14	.14	.56	.28	.00	.00	3.39
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.11	2.40	2.68	3.53	5.09	9.75	13.43	6.36	4.80	4.66	2.40	3.53	13.15	11.17	9.75	4.10	

Calm : .00 %

Total # Operational Hours : 707

Distribution By Samples

Direction

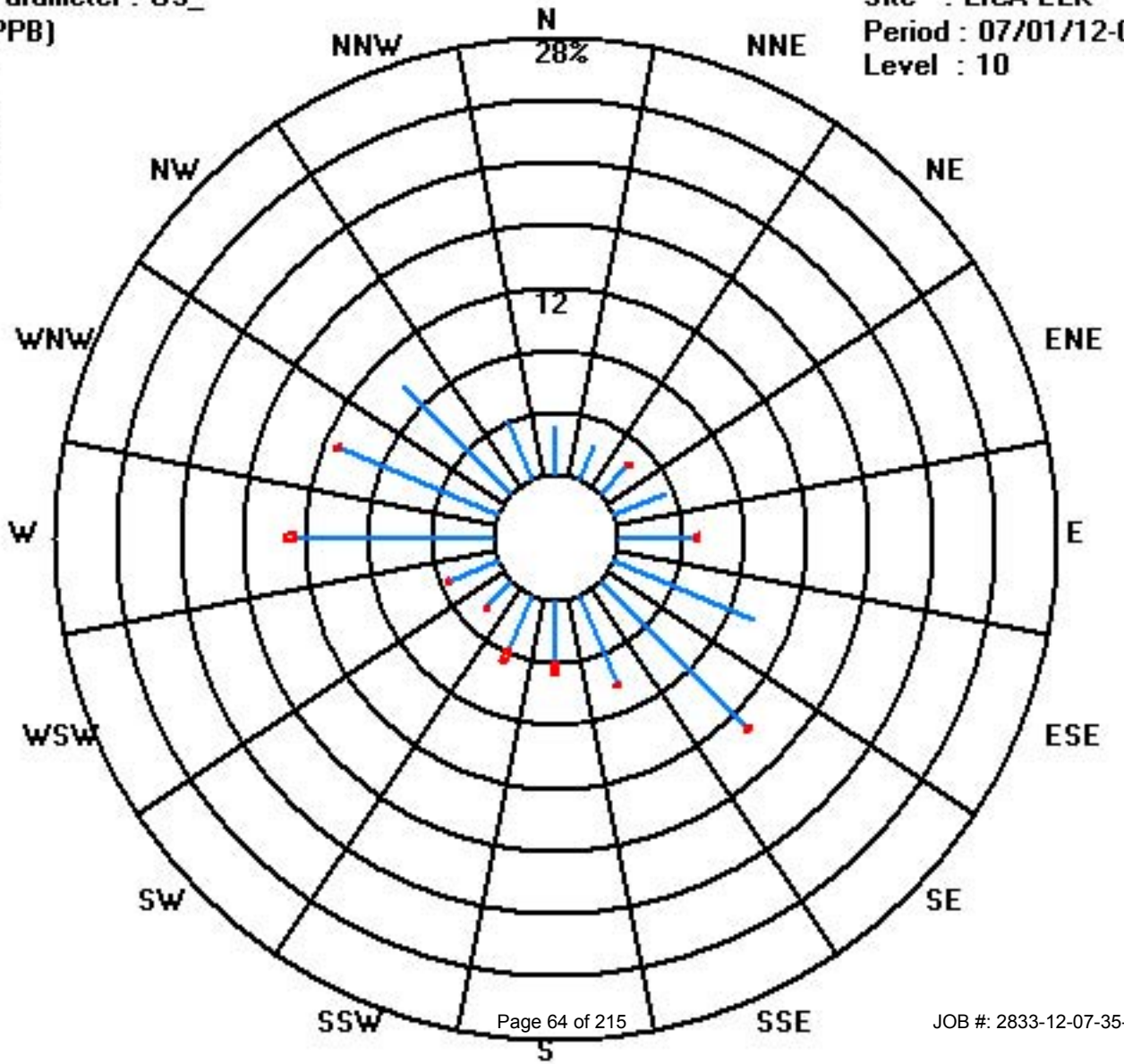
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	22	17	18	25	35	69	93	44	29	27	16	24	89	77	69	29	683
< 110			1		1		2	1	5	6	1	1	4	2			24
< 210																	
>= 210																	
Totals	22	17	19	25	36	69	95	45	34	33	17	25	93	79	69	29	

Calm : .00 %

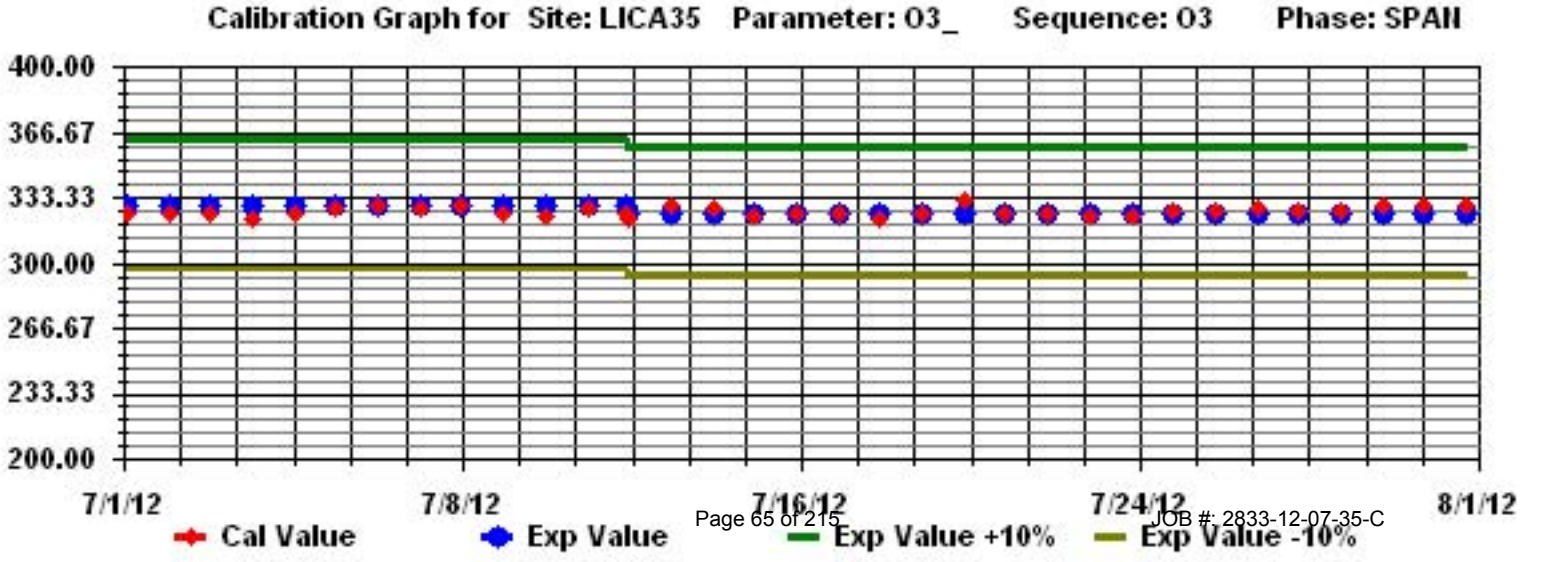
Total # Operational Hours : 707

Logger : 35 Parameter : 03_
Class Limits (PPB)
>= 210
< 210
< 110
< 50

Site : LICA-ELK
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-35-C


Calibration Graph for Site: LICA35 Parameter: O3_ Sequence: O3 Phase: SPAN
400.00
366.67
333.33
300.00
266.67
233.33
200.00
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JULY 2012

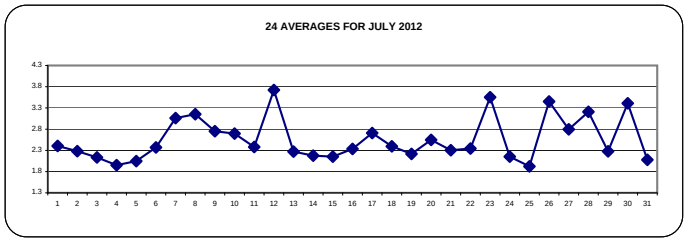
TOTAL HYDROCARBONS (THC) hourly averages in ppm

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	3.4	**IZS**	3	2.9	2.8	2.4	2.5	2.4	2.4	2.4	2.1	2	2	2	2	1.9	1.9	1.9	1.9	1.9	2.1	3.3	3.1	3	3.4	2.4	24
2	**IZS**	3	2.4	2.9	4	2.7	2.4	2.2	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2.1	2.2	2.9	2.1	1.9	**IZS**	4.0	2.3	24
3	2.1	2.2	2.3	2.3	2.3	2.3	2.2	2.3	2.5	2.4	2.1	2.1	1.9	1.9	2	2	2.1	2.2	2	2	2.1	1.9	**IZS**	1.9	2.5	2.1	24
4	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	2	2	2	2	**IZS**	2	2	2.0	2.0	24
5	2	2.1	2	2	2	2	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	2	2	2.1	**IZS**	2.5	2.6	2.3	2.6	2.0	24
6	2.3	2.3	2.3	2.3	3	2.9	2.5	2.3	2.1	2.1	2	2	2	2	2	2	2	2.1	2	**IZS**	2.4	3	3.2	3.7	3.7	2.4	24
7	4.1	3.6	3.9	4.6	5.1	4.8	4.5	3.6	3.2	3.1	2.5	2.5	2.2	2.1	2.1	2.2	2.1	2.1	**IZS**	2.1	2.2	2.2	2.4	3.2	5.1	3.1	24
8	3.7	4.1	4.9	5.1	4.6	4.3	3.5	3.2	2.9	2.5	2.4	2.3	2.4	2.4	2.2	2.1	2.1	**IZS**	2.2	2.3	3.1	3.3	3.2	3.7	5.1	3.2	24
9	3.1	3	2.9	3.3	3.6	3.3	3.1	2.8	2.8	2.7	2.6	2.4	2.2	2.1	2	2	**IZS**	2.1	2.2	2.5	3.4	3.2	3	3	3.6	2.8	24
10	3.4	3.8	3.3	3.6	3.7	3.3	3	3	2.9	2.8	2.7	2.7	2.2	2	2	**IZS**	2	2	2	2.1	2.1	2.2	2.4	2.8	3.8	2.7	24
11	2.2	2.1	2.3	2.4	2.2	2.3	2.1	2.1	2.1	2	1.9	**C**	**C**	**C**	**C**	1.9	1.9	2	2.1	2.4	2.7	3.8	3.2	3.9	3.9	2.4	24
12	5.2	**7.2**	5.5	6.3	6.8	6.5	2.8	2.9	3	3.5	3.3	2.4	**M**	**IZS**	2.2	2.3	2.2	2.3	2.3	2.3	2.7	3	4.5	2.7	**7.2**	**3.7**	23
13	2.1	2.1	2.2	2.4	2.4	2.4	2.3	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	2.4	2.3	7
14	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**M**	**C**	2.9	**IZS**	2.2	2	2	1.9	2	2	2	2.1	2.1	2.2	2.3	2.6	2.9	2.2	15
15	2.5	2.7	2.8	2.7	3	2.1	2.1	2	2.1	1.9	**IZS**	2	1.9	1.9	2	2	2	2	1.9	2	2	2	1.9	2	3.0	2.2	24
16	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	**IZS**	2.1	2	2	2	2	2	2	2	2	2.2	3.9	3.2	3.4	3.8	3.9	2.3	24
17	4	3.8	3.2	4.1	3.9	3.3	3.6	2.9	**IZS**	2.1	2.2	2.4	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.3	2.2	2.5	2.4	2.3	4.1	2.7	24
18	2.2	2.2	2.2	2.3	2.5	2.9	2.6	**IZS**	2.4	2.4	2.2	2.3	2.2	2.1	2.1	2	2	2	1.9	2	2.1	2.5	3.5	4.5	4.5	2.4	24
19	3.7	2.7	2.1	2.8	2.6	2.1	**IZS**	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.4	2.9	2.6	2.2	3.7	2.2	24
20	2.3	2.5	3.8	3.4	3.8	**IZS**	3.4	2.6	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	1.9	2	2.2	2.9	3.3	3	2.9	3.8	2.5	24
21	2.9	2.7	2.7	2.6	**IZS**	2.4	2.3	2.2	2.2	2.1	2	2	2	1.8	1.8	1.9	2	2	1.8	1.9	2	3.5	3.2	3	3.5	2.3	24
22	2.8	2.5	2.5	**IZS**	2.1	2.3	2	2	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	2.2	2.8	3.3	3.7	4.7	4.7	2.3	24
23	4.7	4.8	**IZS**	6.1	6.2	6.3	6.9	5.9	4.2	4.9	4	3	2.2	2.1	2.1	2	1.9	1.9	2	2	2.1	2	2.2	2.2	6.9	3.6	24
24	2.1	**IZS**	2.1	2.4	2.4	2.9	3	2.5	2.3	2.1	2	1.9	1.8	1.8	1.8	1.8	1.8	1.9	2.1	2	2	2.3	2.6	1.9	3.0	2.2	24
25	**IZS**	2	1.9	1.9	2	1.9	1.8	1.8	1.9	1.9	1.9	1.8	1.9	1.9	1.8	1.8	1.9	1.9	2	2	2.1	2.1	2.1	**IZS**	2.1	1.9	24
26	2.5	3.9	5.6	5.1	4.7	6.3	5.9	5.5	5.5	3.6	2.3	2.2	2	2	2	2	2	2.1	2	2.7	2.5	3.4	**IZS**	3.6	6.3	3.5	24
27	3.7	3.9	4.5	4.1	4.2	4	3.3	3.4	3	2.6	2.1	2	2	2	2	1.9	1.9	2.2	2	2.3	2.2	**IZS**	2.5	2.5	4.5	2.8	24
28	3.7	4.5	4.3	6.1	5.2	5.5	5.8	4.3	3.2	2.6	2.4	2.1	1.9	1.9	1.9	1.9	2.2	2	1.9	1.9	**IZS**	2.2	3.6	2.7	6.1	3.2	24
29	2.1	2.6	2.5	2.7	3.1	2.2	2.1	2.1	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	**IZS**	2.2	2.6	3.2	3.6	3.6	2.3	24
30	4.5	5.2	6	6.4	5.1	6.5	5.2	4.3	4.5	3.9	2.8	2.1	2	1.9	1.8	1.8	1.9	1.9	**IZS**	2.2	2	1.9	2	2.5	6.5	3.4	24
31	2.6	2.6	1.9	2	2.1	2.2	2	2	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.9	**IZS**	1.9	2.1	2.4	2.6	2.5	2.3	2.6	2.1	24
HOURLY MAX	5.2	7.2	6.0	6.4	6.8	6.5	6.9	5.9	5.5	4.9	4.0	3.0	2.4	2.4	2.2	2.3	2.2	2.3	2.3	2.7	3.9	3.8	4.5	4.7			
HOURLY AVG	3.0	3.1	3.1	3.4	3.4	3.3	3.1	2.8	2.6	2.5	2.3	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.4	2.7	2.8	2.9			

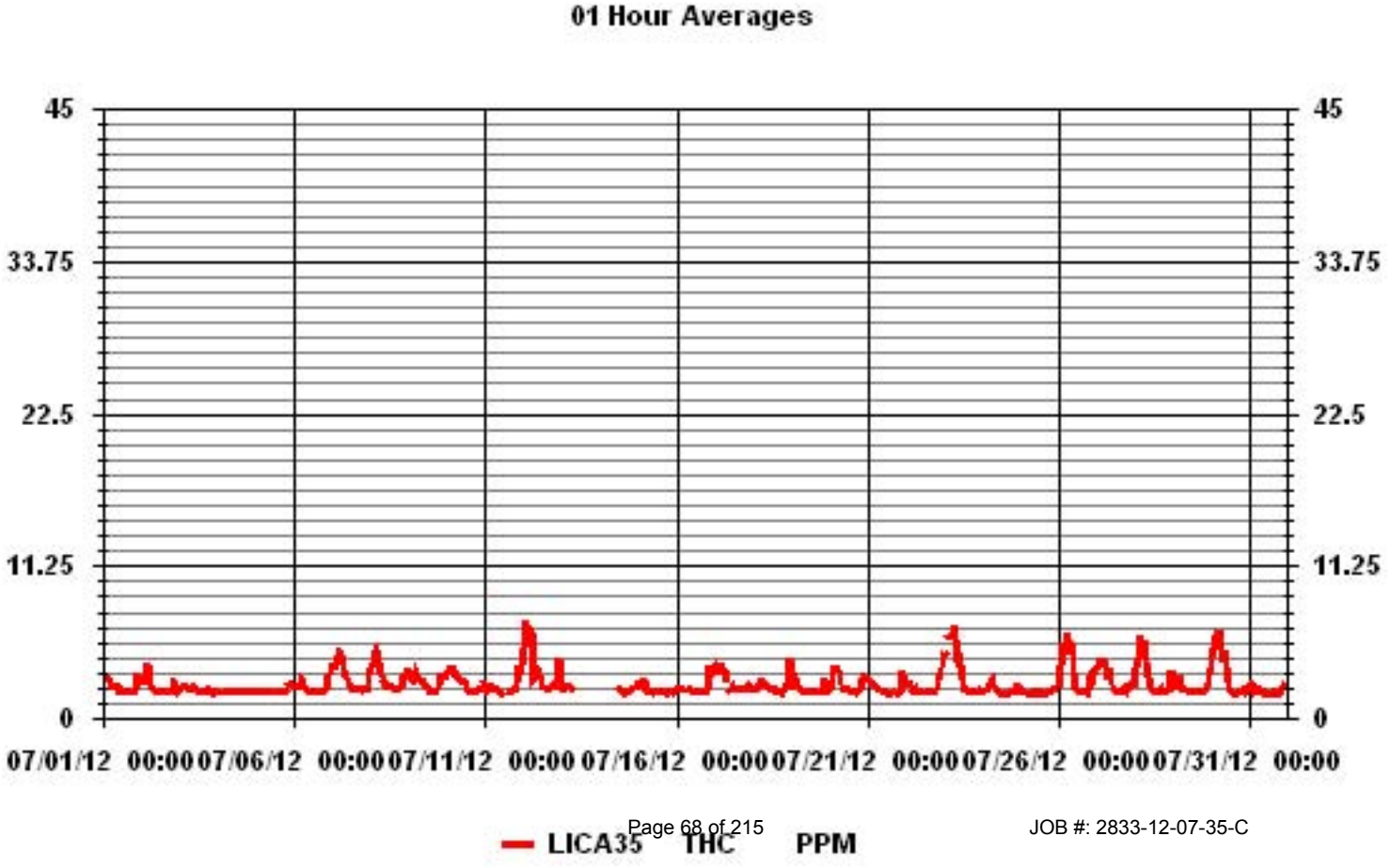
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	681						
MAXIMUM 1-HR AVERAGE:	7.2	PPM	@ HOUR(S)	1	ON DAY(S)	12	
MAXIMUM 24-HR AVERAGE:	3.7	PPM			ON DAY(S)	12	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		717	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:		96.4	%	
STANDARD DEVIATION:	0.96		MONTHLY AVERAGE:		2.57	PPM	



JOB #: 2833-12-07-35-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *PORTABLE SITE - Elk Point Airport*

JULY 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	4	**IZS**	4.4	3.2	3.1	2.5	2.7	2.6	2.5	2.7	2.2	2.1	2.1	2.1	2	2	2.1	2	2.1	2	3.1	4.8	3.6	3.6	4.8	2.8	24
2	**IZS**	4	3.3	4	6.6	3.1	3	2.3	2.2	2	2	2	2	2	2.2	2	3	2.2	2.3	2.8	3.6	3.1	2	**IZS**	6.6	2.8	24
3	2.2	2.8	2.4	2.5	2.5	2.5	2.3	2.4	2.6	2.5	2.4	2.4	2.2	2.2	2.2	2.3	2.5	2.5	2.2	2.7	2.6	2.2	**IZS**	2	2.8	2.4	24
4	2	1.9	2.1	2.1	1.9	1.9	2	2	2	1.9	2	2	2.1	2.2	2.2	2.1	2	2.1	2.1	2.1	2.1	**IZS**	2.1	2	2.2	2.0	24
5	2.4	2.4	2.1	2.1	2.3	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2.2	2	2.2	**IZS**	4.4	4.2	2.5	4.4	2.3	24
6	2.5	3	2.9	2.5	3.9	3.6	2.6	2.5	2.2	2.2	2.1	2.1	2	2	2	2	2.1	2.2	2.5	**IZS**	3.9	5	4.8	5.1	5.1	2.9	24
7	6.7	4.3	6.2	6.3	5.8	5.6	5	4.3	3.8	3.6	3	2.9	2.3	2.2	2.3	4.3	2.3	2.4	**IZS**	2.3	2.9	2.7	2.7	4.9	6.7	3.9	24
8	4.5	5.7	6.7	6.1	5.6	5.3	4	3.5	3.1	2.7	2.5	2.4	2.4	2.5	2.3	2.2	2.2	**IZS**	2.3	2.7	3.8	4.5	4.4	4.8	6.7	3.7	24
9	4.6	3.5	3.1	4.7	5.1	4.1	3.5	3	3	2.8	2.9	2.6	2.3	2.2	2.1	2.1	**IZS**	2.2	2.5	3.5	6.1	5.3	3.6	3.6	6.1	3.4	24
10	4.7	4.7	4.2	5	5.2	4	3.4	3.8	3.1	3.2	2.8	2.9	2.5	2.3	2	**IZS**	2	2	2.2	2.3	2.3	2.4	3.6	4	5.2	3.2	24
11	3.5	3.1	2.9	3.2	2.8	3.3	2.3	2.5	2.5	2.1	**C**	**C**	**C**	**C**	**C**	2.1	2	2.1	2.3	2.6	3.8	5.2	3.8	5.7	5.7	3.0	24
12	10.5	10.4	**12.6**	8.8	11.5	11	4.5	3.5	5.1	5.4	4.2	3.1	**M**	**IZS**	2.4	2.4	2.3	4.5	2.7	2.7	3.1	5.8	5.9	4.4	**12.6**	5.8	23
13	2.2	2.2	2.3	2.5	2.5	2.4	2.4	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	2.5	2.4	7
14	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**M**	**C**	**C**	**IZS**	2.3	2.2	2.1	2.1	2.1	2.2	2.4	2.2	2.3	2.5	2.8	2.9	2.9	2.3	15
15	3	3.3	3.5	3.4	4.1	3	2.9	2.8	2.8	2.5	**IZS**	2.9	2.1	2	2.1	2.1	2.1	2	2	2	2	2	2	2.3	4.1	2.6	24
16	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.4	**IZS**	2.2	2.1	2.1	2.1	2.1	2.2	2.3	2.2	2.1	2.6	5.4	4.6	3.7	5.9	5.9	2.7	24
17	4.6	5.4	4.4	5.7	4.6	4.2	4.3	3.5	**IZS**	2.3	2.4	2.6	2.3	2.3	2.4	2.4	2.4	2.3	2.4	2.5	2.4	3	2.8	2.7	5.7	3.2	24
18	2.5	2.6	2.3	2.8	2.8	3.4	2.9	**IZS**	2.7	2.6	2.4	2.4	2.4	2.8	2.3	2.4	2.1	2.1	2.1	2.2	2.4	3.3	4.9	5.8	5.8	2.8	24
19	7.5	3.4	2.6	5.5	6.2	2.3	**IZS**	2.1	2.1	2.1	2.1	2.6	2	1.9	2.1	2.1	2	2.1	2.1	2.6	3.3	4.9	3.1	2.5	7.5	3.0	24
20	2.6	3.2	5.7	4.7	4.2	**IZS**	4.7	3	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.4	2.4	2.9	3.4	9.1	3.3	3.8	9.1	3.3	24
21	3.8	3	3.3	3.3	**IZS**	2.8	2.4	2.4	2.2	2.3	2.1	2.4	2.1	2.2	1.9	2.3	2.2	2.1	2	2	2.9	5.2	4.6	4.3	5.2	2.8	24
22	3.9	3	2.7	**IZS**	2.3	3	2.2	2.2	2	2	2	2	2.2	2	1.9	1.9	2	1.9	1.9	3.5	4.3	4.2	5	5.9	5.9	2.8	24
23	5.4	5.5	**IZS**	7.8	6.9	7.7	7.6	6.5	4.8	7.5	4.6	3.8	2.5	2.2	2.3	2.1	2.1	2.1	2.2	2.3	2.8	2.3	2.7	2.6	7.8	4.2	24
24	2.3	**IZS**	2.6	2.8	2.7	3.6	3.7	3	2.5	2.2	2.1	1.9	1.9	1.8	1.9	1.9	1.9	2.3	3	2.3	2.3	2.9	3.3	2	3.7	2.5	24
25	**IZS**	2	2	1.9	2.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.1	2.1	2.2	2.4	2.4	**IZS**	2.6	2.0	24
26	4.1	5.9	7.1	8.9	8.1	7.7	7.8	6	6.2	5.1	2.6	2.4	2.1	2.4	2.1	2.1	2.1	2.2	2.4	4.4	3.2	3.8	**IZS**	4.6	8.9	4.5	24
27	4	5.4	6.9	5.1	5.3	5.1	3.8	4.5	3.2	2.9	2.3	2.1	2.1	2.2	3	2.1	2.1	2.6	2.2	2.8	2.6	**IZS**	5.4	3.2	6.9	3.5	24
28	4.2	6.9	5.5	8.5	6.7	7.2	7	6.7	3.6	2.8	2.6	2.2	2	2.1	1.9	2.3	3.5	2.4	**P**	2.3	**IZS**	4.6	5.1	**P**	8.5	4.3	22
29	2.8	3.4	2.7	2.8	4.4	2.7	2.2	2.2	2.2	2.1	2	2.1	2	2	2	2.1	2.2	2.2	2.2	**IZS**	2.6	4.2	4.2	4	4.4	2.7	24
30	6.5	6.4	7.3	7.3	7.8	8.2	6.7	6.1	5.3	5.6	3.3	2.3	2.2	2.4	2.7	2	2.4	2	**IZS**	3.1	2.8	2.1	2.3	7.3	8.2	4.5	24
31	3.2	3.7	2.2	2.5	2.9	3	2.1	2.2	2	2	1.9	1.9	1.9	2	2	2	2	**IZS**	2.2	3.8	3.1	3	2.7	2.5	3.8	2.5	24
HOURLY MAX	10.5	10.4	12.6	8.9	11.5	11.0	7.8	6.7	6.2	7.5	4.6	3.8	2.5	2.8	3.0	4.3	3.5	4.5	3.0	4.4	6.1	9.1	5.9	7.3			
HOURLY AVG	4.0	4.0	4.1	4.4	4.6	4.1	3.6	3.3	2.9	2.9	2.5	2.4	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.6	3.1	3.9	3.6	3.9			

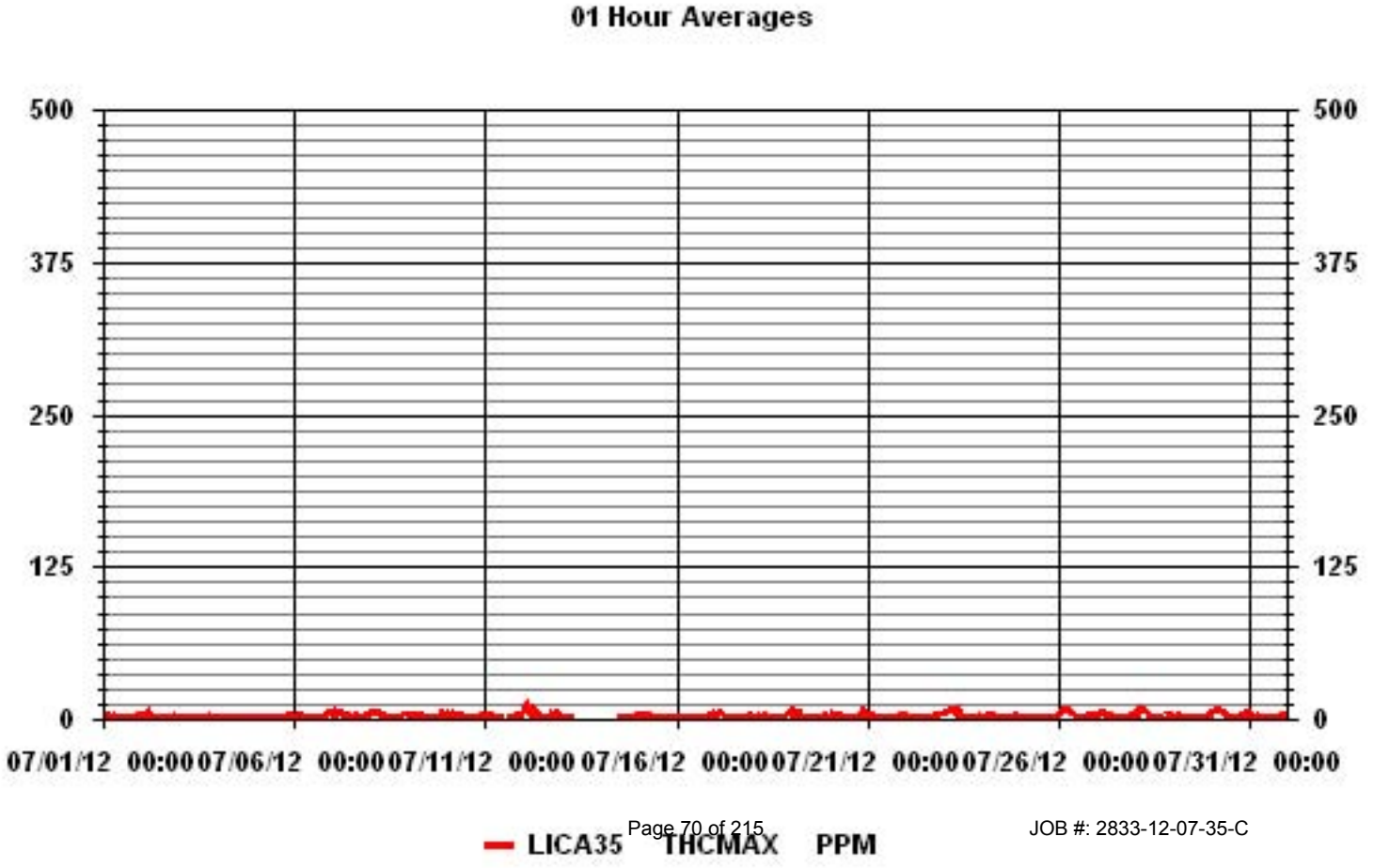
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	677					
MAXIMUM INSTANTANEOUS VALUE:	12.6	PPB	@ HOUR(S)	2	ON DAY(S)	12
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		715	HRS
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	1.58					

JOB #: 2833-12-07-35-C



JOB #: 2833-12-07-35-C

LICA-ELK
THC / WDR Joint Frequency Distribution (Percent)

July 2012

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
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	2.79	2.49	2.20	2.64	2.49	4.25	9.25	5.43	4.55	4.40	2.05	2.93	13.06	9.39	6.60	3.67	78.26
<	10.0	.44	.14	.29	.14	1.46	5.13	4.55	1.17	.44	.44	.29	.88	.58	2.20	3.08	.44	21.73
<	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.23	2.64	2.49	2.79	3.96	9.39	13.80	6.60	4.99	4.84	2.34	3.81	13.65	11.60	9.69	4.11	

Calm : .00 %

Total # Operational Hours : 681

Distribution By Samples

Direction

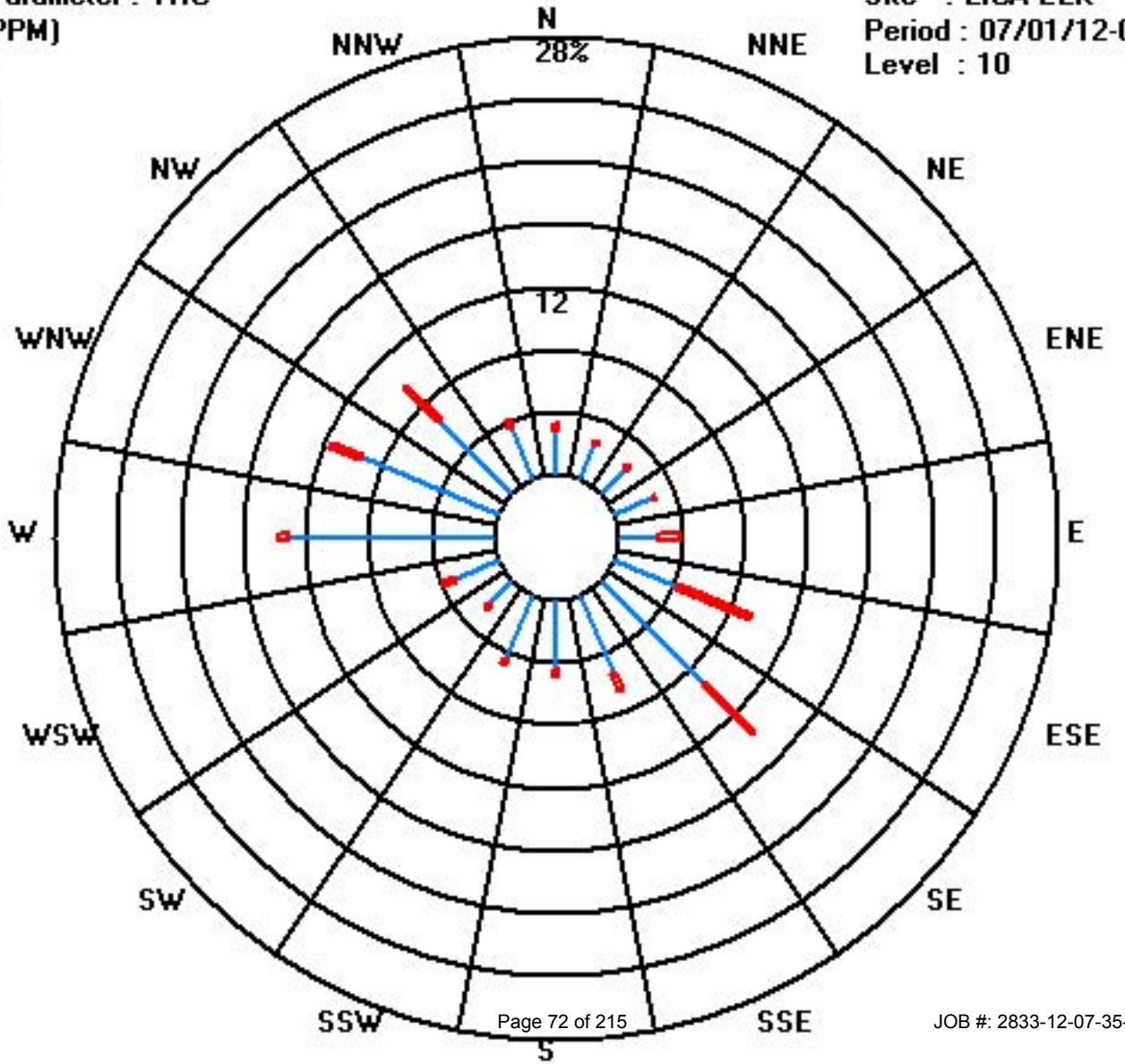
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	19	17	15	18	17	29	63	37	31	30	14	20	89	64	45	25	533
<	10.0	3	1	2	1	10	35	31	8	3	3	2	6	4	15	21	3	148
<	50.0																	
>=	50.0																	
	Totals	22	18	17	19	27	64	94	45	34	33	16	26	93	79	66	28	

Calm : .00 %

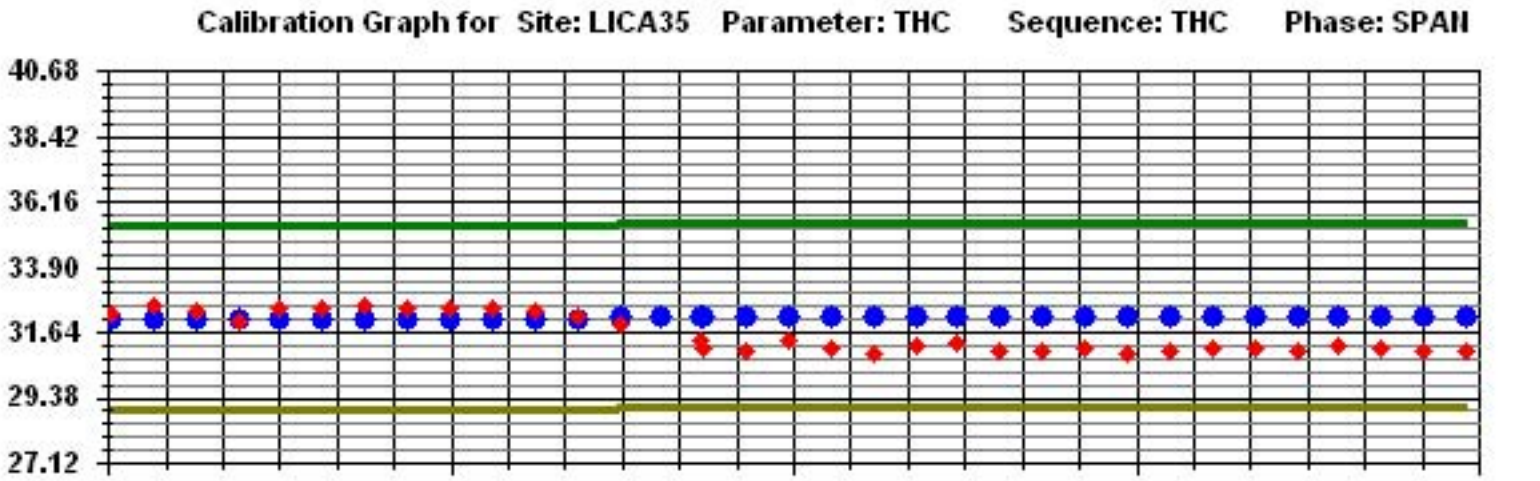
Total # Operational Hours : 681

Logger : 35 Parameter : THC
Class Limits (PPM)
>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA-ELK
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-35-C


Calibration Graph for Site: LICA35 Parameter: THC Sequence: THC Phase: SPAN
40.68
38.42
36.16
33.90
31.64
29.38
27.12
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JULY 2012

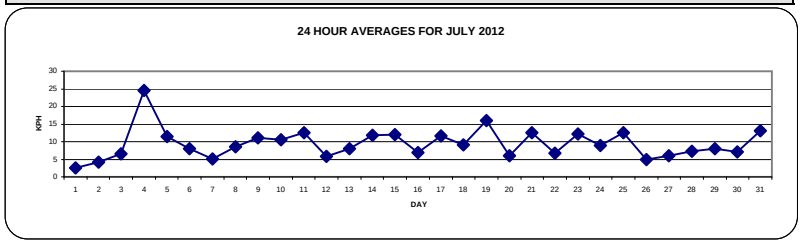
VECTOR WIND SPEED (WS) hourly averages (km/hr)

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	9.3	9.9	11.7	11.1	13	17.9	14.8	16.1	16.9	13.2	14.4	16.8	19.3	17.4	22.8	30.7	26.9	20.9	20.3	12.6	6.9	4.6	2.3	4.9	30.7	2.6	24
2	7.3	8.3	6.1	6	6.8	8.6	6.6	7.7	8.1	6.1	5.1	6.2	5.8	7.6	9.5	8.7	13.4	14.1	9.8	7	6.2	12.3	11.1	11.1	14.1	4.2	24
3	7.8	6.9	7.3	8.1	9.8	8	11.8	12.8	19.6	22.2	25.4	27.6	24.6	9.7	6	4	4.7	14	13.7	7.2	10	16.6	23.5	22.8	27.6	6.6	24
4	25	22.2	21.1	20	22.4	25.9	24.4	22.8	23	23.9	25.9	31.1	**40.5**	38.4	38	29.4	36.3	31.9	24.6	24.7	18.4	18.8	17.4	23.2	**40.5**	**24.5**	24
5	13.1	11.2	13.5	11.8	8.9	8.6	11.7	18.6	18.2	13.8	13.7	15.5	17.9	16.6	12.2	8.2	9.5	9.1	9.3	6.8	6.1	1.3	9.9	9.5	18.6	11.5	24
6	5.7	6	8.7	8	8.1	7.5	5.8	5.5	6.5	7.6	9	8.3	7.4	11.5	12.6	12.6	10.4	10.3	9.1	9.8	6.7	6.7	4.7	1.6	12.6	7.9	24
7	2.3	1	2.9	3.9	3.5	2.1	2	1.6	1.1	2.6	1.4	5	4.7	7.5	11.4	11.6	11.9	8.5	3.3	7.4	6.8	5.2	7.9	4.7	11.9	5.0	24
8	1.2	1.8	5.3	6.2	6.2	7.1	8.3	7.9	5.6	6.1	5.2	7	10.4	13.3	13.6	13.7	13.9	11.9	10.6	9.1	8.9	10.4	12	10.5	13.9	8.6	24
9	6.9	6.9	8	7	10.2	8.7	11.8	10	9.6	12.1	14.8	15.7	15.2	12.8	12.4	15.2	15.7	16.2	15.1	10.7	10.4	7.5	8.4	6.7	16.2	11.2	24
10	7.4	8.2	9.6	7.6	7.9	5.3	8.2	10.7	12.6	5.3	11.2	12	13.7	16.8	15.1	13.6	15.2	14	10.9	10	10.8	9.5	10.8	7.7	16.8	10.6	24
11	11.8	6.8	11.8	15.6	11.8	11.3	16	13.2	12.5	13	16.3	21.7	19.8	18.8	19.1	17.2	13.2	13.5	10.8	6.6	7.8	7.6	3.2	1.5	21.7	12.5	24
12	5.4	3.3	0.4	2.3	0.8	7.8	4.2	13.9	3.9	7	6.6	6.5	5.8	5.9	7.4	9.5	6.4	5.1	6	4.3	2.6	1	9.7	13.4	13.9	5.8	24
13	14.8	12.9	6.2	7.7	7.9	9.9	8.7	12.2	10	12.3	10.8	10.5	11.3	10.9	7.3	6.3	8.2	7.3	7	4.8	1.9	0.3	3	0.5	14.8	8.0	24
14	2.9	3.4	4.6	3.9	5.1	6.1	11.9	12.7	7	10	12.9	16.1	15.7	16.4	18	18.5	17.6	16.2	11.8	15.2	17	15.7	12.7	10.4	18.5	11.7	24
15	8.3	7.7	10.8	11.1	11.6	12	14.2	14.8	13	17.9	16	11.8	10.7	14.1	12.5	12	13.9	11	11.2	12.4	12	11.3	11.2	6.3	17.9	12.0	24
16	7.5	6.5	6.1	5.5	8.1	9.4	10.8	5.8	5.4	6.9	8.7	8	4.9	6.1	6.6	6.7	8.3	8.3	7.2	7.6	6.9	4.9	5.1	5.8	10.8	7.0	24
17	5.7	7.4	4.6	5.2	6.3	5.9	9.1	12.8	14.4	14.9	13.8	14.8	14.2	17.3	17.8	14	14	16	15.4	13.8	12.8	9.9	8.3	8.8	17.8	11.6	24
18	9.4	9.4	8.1	10	3.6	2.8	7.8	9.3	9	4	1.5	8.8	8.5	13	12.6	10.9	11.1	12.6	20.1	10.1	6	9.7	8	9.9	20.1	9.0	24
19	8.4	6.8	9.4	8.4	15.6	19.4	12.1	16.8	15.1	18.4	23.8	27.2	27.6	27.4	23	23.5	21.5	21.3	17.4	10.7	9.6	7.8	6.6	8.1	27.6	16.1	24
20	9.8	7.6	5.9	6.4	2	3.6	5	2.5	0.6	2.3	3.6	4.1	6.5	6.2	7.2	9.3	11.5	10.4	6.7	9.1	6.9	4	4.9	6.8	11.5	6.0	24
21	10.8	13.1	13.9	12	13.1	15	17.2	21.5	24.4	24.5	18.6	13.2	10.9	12.1	10.6	7.8	2.4	9.1	7.5	9.1	6.8	10.3	9.1	8.8	24.5	12.6	24
22	10.5	7.6	8.5	7	3	4.8	6.7	7.1	7.7	6.6	6.3	4.4	5.5	5.8	10	11.5	10.8	11.8	8.5	3.4	7.8	1.7	1.4	4.9	11.8	6.8	24
23	1.8	1.2	1.6	2.1	1.8	2.9	2.2	3.9	3.3	4.4	6.7	16.3	25.3	26	23.5	26.5	25	20.6	20.2	15.3	15.5	17.8	14.6	14.9	26.5	12.2	24
24	12.5	6.1	9.9	3.9	3.3	4.8	3.1	7	6.5	7.9	3.7	5	6.1	11.5	14.5	17.7	15.5	9.1	7.3	7.2	11.2	10	12.4	15.8	17.7	8.8	24
25	13.6	16.1	16.5	13.6	14.8	14.7	16.5	17.7	15	13.2	17	17.9	17.6	14.7	16.7	15.5	13.5	12.5	7	4.8	4.8	1.5	0.5	4.2	17.9	12.5	24
26	3.1	2.5	1.7	0.4	0.3	2.5	2.3	2.6	4.6	5	7.8	9	7.7	9.5	8.8	8.1	7.7	6.8	10.2	7.2	3.9	2.6	2.1	2.8	10.2	5.0	24
27	2.4	3.4	5	5	4	6.2	4.8	6.1	6.2	6.2	10.4	12.6	11.1	12	11.6	6.9	2.9	5.4	5.2	3.8	4	1.6	5.2	1.8	12.6	6.0	24
28	0.3	1.7	0.6	5.3	1.7	3	4	7.4	4.4	1.4	6.3	9.1	8.8	8.9	10.8	13.5	15.4	14.4	25.2	9	4.9	6.1	0.6	10.3	25.2	7.2	24
29	7.7	5.5	8.1	7.7	5.2	8	7.2	6.3	7.2	7.1	7.5	10	12.4	13.3	14.1	13.3	13.4	11	11.5	5	4.4	4.1	1.7	2.4	14.1	8.1	24
30	4.2	2.1	3.2	2.2	1.4	1	0.8	1.7	2.5	1.4	5.8	6.1	7.9	14.9	14.9	16.4	15	12.8	9.5	8.6	15.7	8.4	10.7	3.7	16.4	7.1	24
31	7.3	7.7	15.9	14.4	9	9.7	7.4	11.2	15.4	16.2	14.4	16.8	13.3	18.6	20.9	23.5	18.8	16.1	15.1	12.7	6.8	6.9	9.5	7.9	23.5	13.1	24
HOURLY MAX	25.0	22.2	21.1	20.0	22.4	25.9	24.4	22.8	24.4	24.5	25.9	31.1	40.5	38.4	38.0	30.7	36.3	31.9	25.2	24.7	18.4	18.8	23.5	23.2			
HOURLY AVG	7.9	7.1	8.0	7.7	7.3	8.4	8.9	10.3	10.0	10.1	11.1	12.7	13.3	14.0	14.2	14.1	13.7	13.0	11.9	9.2	8.4	7.6	8.0	8.1			

STATUS FLAG CODES

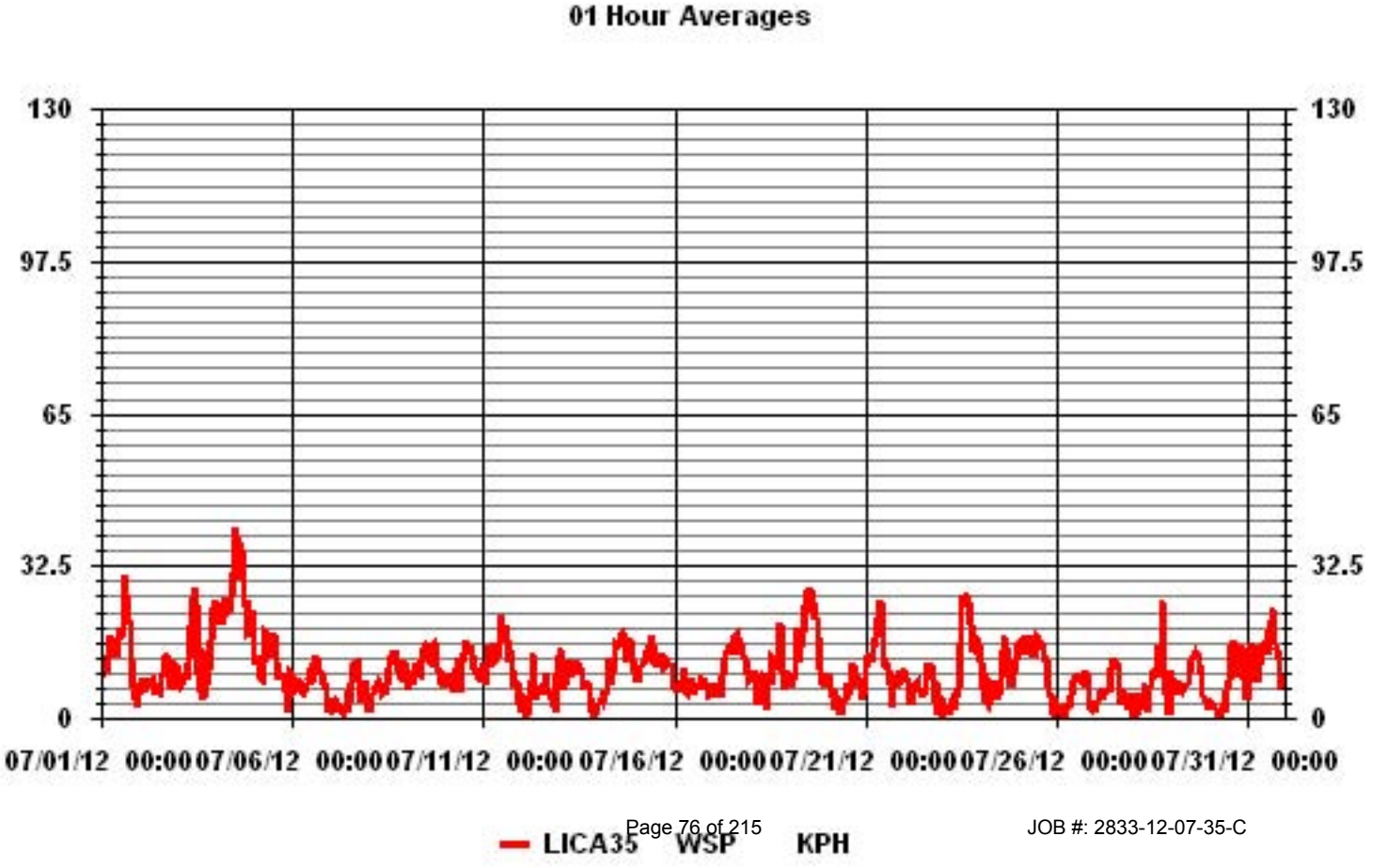
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



LAST CALIBRATION: November 24, 2011

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	40.5	KPH	@ HOUR(S)	12	ON DAY(S)	4	
MAXIMUM 24-HR AVERAGE:	24.5	KPH			ON DAY(S)	4	
CALMS (≤ 0 KPH)	0.40	%	OPERATIONAL TIME:		744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME		100.0	%	
STANDARD DEVIATION:	6.23		MONTHLY AVERAGE:		10.22	KPH	



JOB #: 2833-12-07-35-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *PORTABLE SITE - Elk Point Airport*

JULY 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	12.7	15.1	15.6	15.6	22	27	24.3	24.1	26.1	22.9	24.9	30.6	37	32.8	37.8	48.6	42.9	33.3	32.8	30.2	9.8	7.4	5.3	9.9	48.6
2	11.2	12.8	10.1	12	11.9	13.2	12.1	13.8	16.4	17	17.1	19.5	23.7	21.3	24.8	21.5	27.4	27.6	18.1	11.6	14	26.4	27.4	23.7	27.6
3	13.5	15.5	17.3	13.4	17.6	16.1	23	21.3	35.9	34.3	56.1	55.3	49.3	27.3	15.4	22.9	14.2	25	23.9	32.4	26.9	41.7	43.3	42.7	56.1
4	45.3	37.8	42.1	36.2	42.7	46.2	42.3	44.5	46.3	44.1	48.7	50.8	**67.9**	60.1	62.9	51.9	60.7	62.2	46.1	48.7	39.9	36.7	36	40.5	**67.9**
5	29.9	20	24	21.9	20.3	20.2	22.7	28.5	27.7	24.5	25.9	34.2	33.6	31	26.4	23.3	20.3	19.2	15.9	11.5	9.3	5.4	27.9	19.1	34.2
6	13	14	13.7	13.1	12.9	13.7	11.5	10.9	14.8	15.1	25	23.9	20.6	29.5	32.4	31	26.9	20.6	47.8	26.5	13.2	10.1	9	9.2	47.8
7	6.8	4	5.2	5.6	5.5	4.8	4.9	7.5	7.4	10.5	12	17.3	14.4	20.5	25.9	24.9	27.8	25.4	47.8	16.5	16.8	13.4	20.5	8	47.8
8	5.3	5.1	9.6	8.5	8.6	10.1	12.5	13	14.5	15.3	14.3	14.8	20.9	23.9	24.4	27.3	27.4	22.7	19.3	13.9	11.6	13	17.2	15.4	27.4
9	9.9	10.3	11.9	10.4	15.1	14.8	18.4	14.9	16.4	19.3	29	27.3	26.5	24.5	26.1	28.7	24.9	27.8	24.8	17.7	16.3	11	16.2	15.4	29
10	13.1	12.3	13.6	13.3	11.1	12.6	13.7	17.1	20.9	13.9	20.4	22.4	25.1	29.6	27.2	25.5	28.6	26.8	22.5	18.1	15.7	16	19.1	13	29.6
11	24.7	18.6	21.6	26.7	18.5	21.3	23.8	23.4	23.7	23.9	30.8	35.8	33.2	30.3	31.5	31.6	23.6	22.8	18.8	12.9	11.9	10.8	6.3	8.5	35.8
12	8	7.6	3.2	5.4	6	16.6	35.1	35	16.9	17.8	39.5	62.5	16	14.2	19.9	22	17.3	13.3	11.5	11	9.2	10.3	18.1	21.5	62.5
13	20.9	19.4	13.3	13.5	15.7	19	22.1	25.3	20.8	21.5	21.1	20.7	24.8	23.7	19	17.9	16.5	12.8	11.1	10.1	4.5	3.4	6.7	4.6	25.3
14	6.3	6.8	7.4	7.8	8.8	17.3	22.7	19.9	19.1	19.1	21.2	26.8	28.5	29.6	29.4	31.8	29	29.9	23.1	28.8	25.8	23.5	19.9	17.3	31.8
15	13.9	13.6	16.8	16.4	17.3	20.1	25.5	24	22.8	34.2	30	20.3	20.2	28.2	27.6	28.2	28.2	21.8	20.7	24.8	21.8	24.3	25.5	12.8	34.2
16	15.3	15.9	14.1	10.1	15.3	17.9	21.5	14.8	14.4	14.5	18.3	18.4	13.7	18	15.6	15.6	19.3	14.4	12.6	12.3	11.5	12.3	8.9	9.8	21.5
17	9.2	12.7	11.9	8.1	10.1	9.6	15.6	21.1	25.7	28.1	25.6	25.5	24	28.2	30	24.3	27.8	26	26.1	21.6	21.1	19.1	15.7	21.2	30
18	20.6	17.7	16.3	20.2	14.4	7.3	20.7	19.5	19.7	8.7	13	15.7	23.4	22.7	22.2	20.6	25.5	23.5	55.1	23.1	11.3	13.6	14.7	15.1	55.1
19	17.1	23.4	23.1	17.8	24.1	34.6	25.2	28.8	23.9	30.5	41.1	41.3	43.7	46.6	38	39.8	34.3	32.8	35.2	20.9	12.8	14.3	11.4	12.9	46.6
20	15.8	14.4	9.4	13	9	9.8	9.8	6.9	7.5	12.1	15.6	16.2	17.5	17.4	19.8	19.3	27.9	21.3	14	14.2	13.5	7.9	11.3	12.7	27.9
21	18.2	19.1	24.2	21.6	20.7	25.4	29.9	32.8	35.2	37.3	35.1	26.4	24.8	26.5	26.2	15.5	18.6	21.1	18.5	15.9	11.1	13	12.3	11.5	37.3
22	15.7	16.3	15.5	15.2	9.1	12.2	12.4	13.1	15.7	12.8	15.7	16.8	15.4	16.9	21	30.8	21.6	24	15.8	7.7	10.7	6.9	5.4	7.7	30.8
23	4.9	5.9	6.3	6.5	6.1	9.6	8.2	6.9	10	13.1	12.9	29.3	42.4	39.7	40.7	42.9	44.3	37	32.8	30.5	28.4	40	29.4	37	44.3
24	28.9	22.5	23.7	18.2	10.9	9.2	12	15.1	17	18.7	9.5	11.2	13.1	19.2	25.4	33	26.8	17.3	12.8	14	23	20.4	22.4	24.4	33
25	22.3	26	27.1	18.8	26.1	30.3	33.5	34.3	23.2	21.8	28.7	28.8	31.2	32	30	28.5	24.4	25.4	14	9.2	11.9	5.9	3.2	6.8	34.3
26	6.9	4.4	6.5	4.5	3.9	4.7	5.5	5.9	8.6	13.4	14.2	17.3	16.9	22.5	21.4	18.4	17.9	13.5	21.8	13.6	15.1	7	7.5	6.5	22.5
27	6.5	8.4	8.2	8.4	6.2	11.2	10	11.3	12.6	15.4	23	27.2	23.6	23.7	26.6	19.6	7.3	9.6	10.5	9.6	11.3	6.2	18.4	6.4	27.2
28	3.4	6.7	4	8.7	9.8	6.3	12	14	10.1	8	17.5	19.2	18	17.5	22.5	21.3	28.4	36.8	0	27.3	28.3	13	10.4	0	36.8
29	15.1	15.9	17.9	14.6	11.1	14.5	13.3	13.3	13.6	16.5	17.5	19.5	28.1	24.9	23.4	23.3	21.2	18	30.9	11.4	8.3	8.3	7.2	5.9	30.9
30	8.2	5.8	5.7	4.1	6.1	4.2	3.9	8.9	5.5	10.2	17.9	14	21.2	26.5	36.5	31.1	26.4	23.1	21.9	14.7	55.9	29.4	20.6	16.3	55.9
31	20.9	26.6	25.2	27.3	19.2	18.1	15.3	18.6	30.8	30.3	25.5	30.3	27.6	32	36.3	39.4	32.5	25.2	23	19.2	17.1	12.3	14.2	12.3	39.4
PEAK	45.3	37.8	42.1	36.2	42.7	46.2	42.3	44.5	46.3	44.1	56.1	62.5	67.9	60.1	62.9	51.9	60.7	62.2	55.1	48.7	55.9	41.7	43.3	42.7	

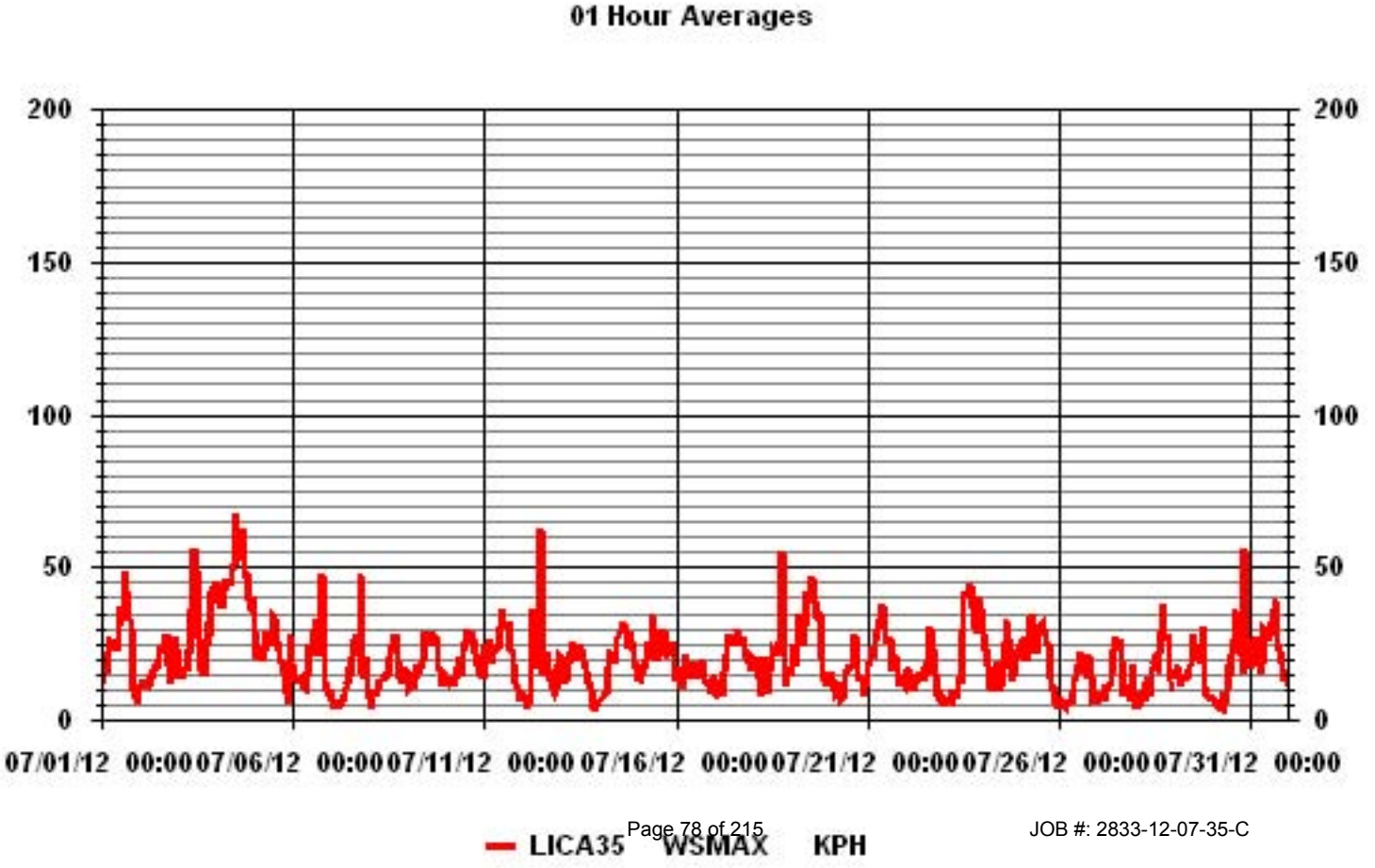
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS READING	67.9	KPH	@ HOUR(S)	12
			ON DAY(S)	4

JOB #: 2833-12-07-35-C



JOB #: 2833-12-07-35-C

LICA-ELK
WSP / WDR Joint Frequency Distribution (Percent)

July 2012

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
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	1.20	.53	2.28	2.82	2.82	1.34	.67	1.07	.67	.80	1.47	2.41	2.68	.80	23.65
<	12.0	1.07	1.61	1.20	2.41	1.88	4.16	4.43	2.68	2.82	2.15	.94	1.74	9.27	3.36	2.41	1.07	43.27
<	20.0	.80	.26	.26	.80	.80	1.74	5.10	2.41	1.07	1.34	.53	.53	1.34	3.62	2.68	2.28	25.67
<	29.0	.00	.00	.00	.00	.00	.94	.94	.00	.13	.00	.26	.53	.94	.94	1.61	.00	6.31
<	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.53	.40	.00	.94
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.00	.13
	Totals	3.22	2.55	2.68	3.76	4.97	9.67	13.30	6.45	4.70	4.56	2.41	3.62	13.03	10.88	9.94	4.16	

Calm : .00 %

Total # Operational Hours : 744

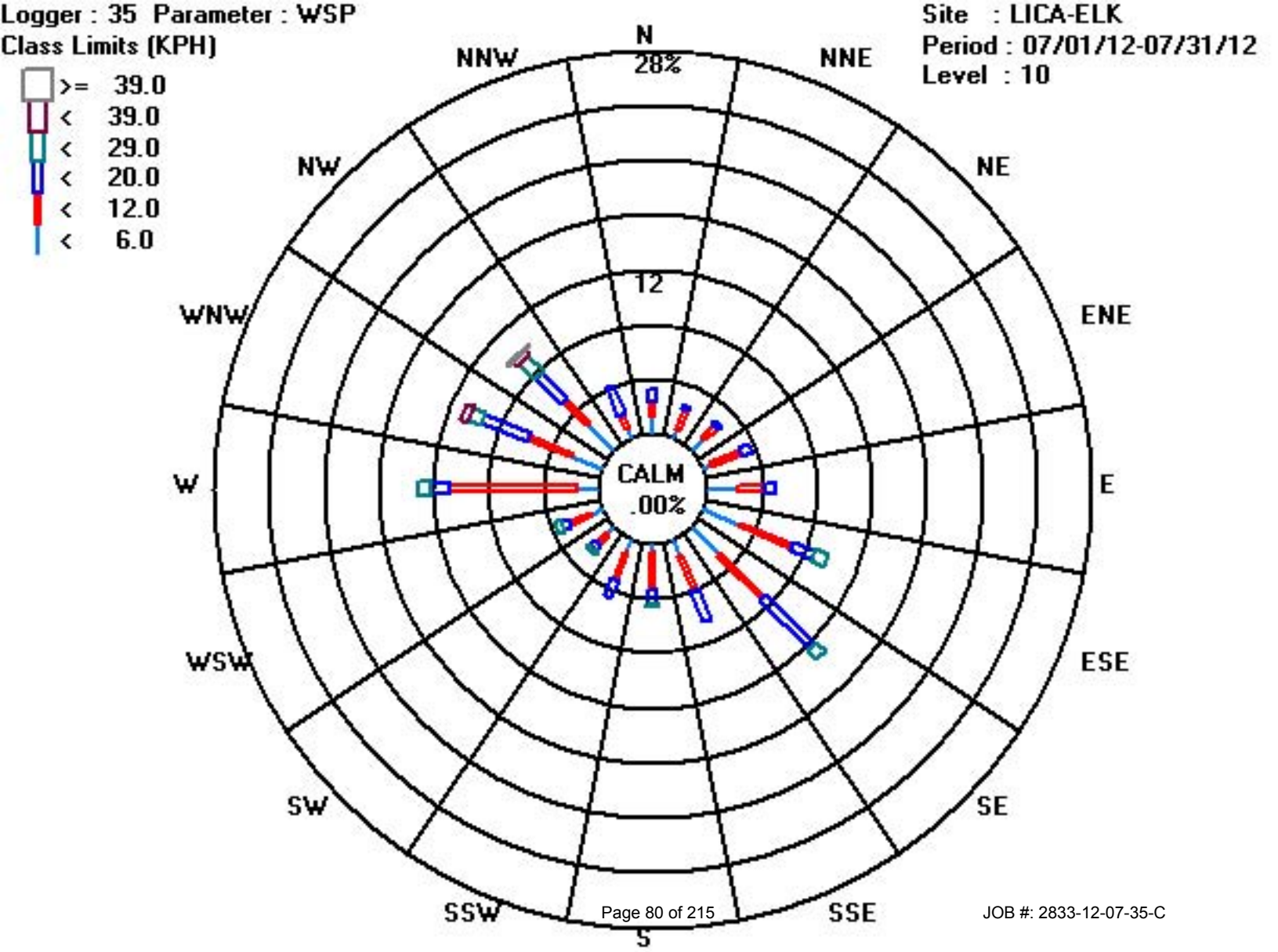
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	10	5	9	4	17	21	21	10	5	8	5	6	11	18	20	6	176
<	12.0	8	12	9	18	14	31	33	20	21	16	7	13	69	25	18	8	322
<	20.0	6	2	2	6	6	13	38	18	8	10	4	4	10	27	20	17	191
<	29.0						7	7		1		2	4	7	7	12		47
<	39.0														4	3		7
>=	39.0															1		1
	Totals	24	19	20	28	37	72	99	48	35	34	18	27	97	81	74	31	

Calm : .00 %

Total # Operational Hours : 744



JOB #: 2833-12-07-35-C

Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *PORTABLE SITE - Elk Point Airport*

JULY 2012

VECTOR WIND DIRECTION (WD) hourly averages in degrees

MST

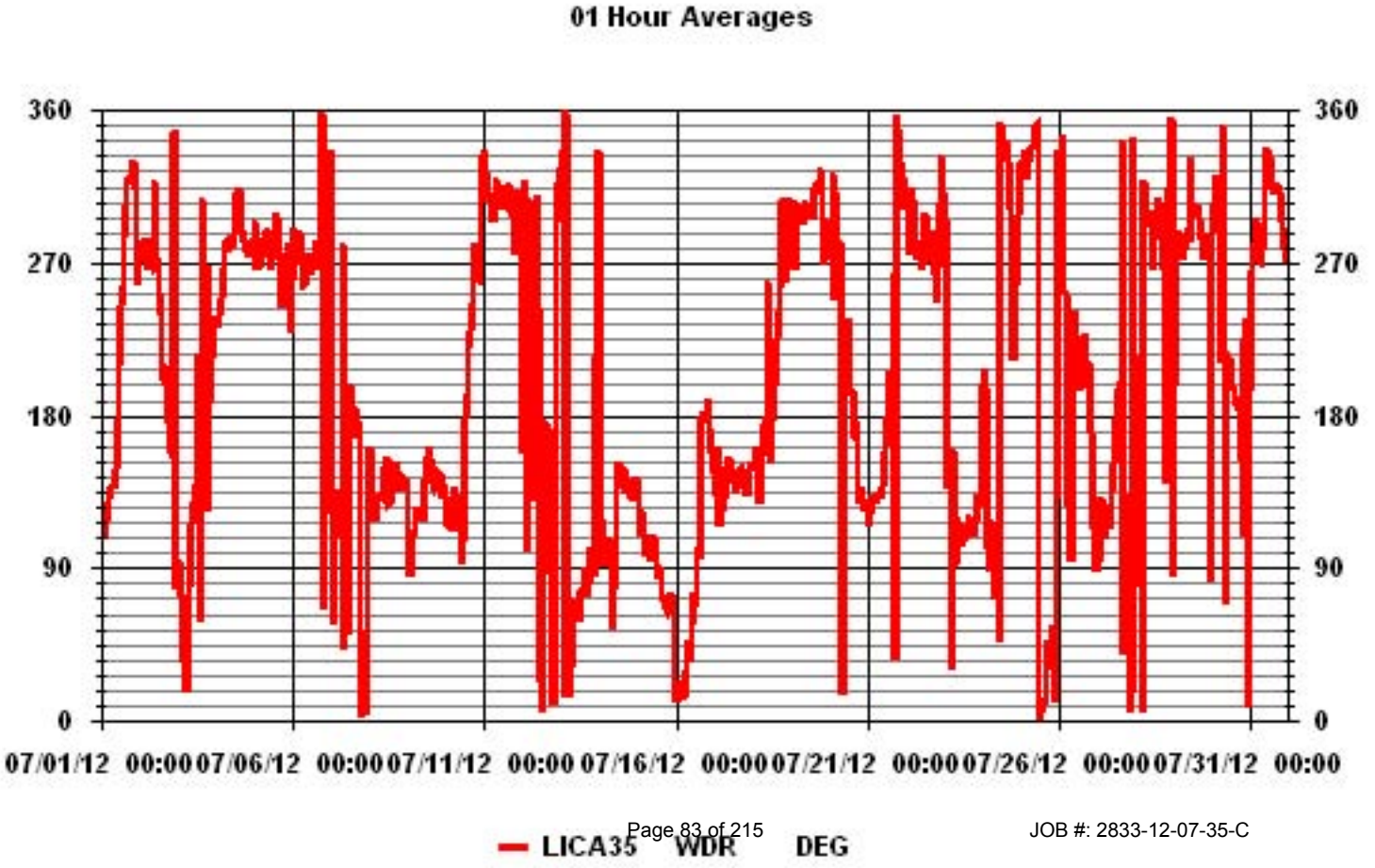
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	129	107	110	118	122	131	137	139	139	149	178	209	245	256	285	304	318	318	322	329	331	315	256	283	242	WSW	24
2	273	271	278	283	285	265	271	281	280	319	268	269	254	240	201	210	199	187	177	159	154	347	349	77	250	WSW	24
3	84	95	75	35	58	16	52	78	116	127	127	139	179	217	58	308	131	138	123	268	187	214	238	233	142	SE	24
4	233	238	240	249	267	283	284	278	278	279	280	286	310	311	314	296	290	284	280	281	274	276	276	284	282	W	24
5	295	265	277	267	285	273	278	289	291	286	266	281	283	300	298	272	277	244	259	259	275	281	229	259	277	W	24
6	290	288	280	269	289	270	277	258	259	266	266	263	275	270	283	272	266	269	359	66	135	139	125	123	273	W	24
7	336	56	114	107	125	137	119	282	41	89	51	195	199	166	184	184	178	173	1	43	32	3	54	127	142	SE	24
8	162	132	121	117	128	133	134	133	132	149	152	156	128	129	139	147	147	152	145	136	141	144	143	142	140	SE	24
9	111	85	96	109	112	118	126	121	123	118	142	155	152	161	155	141	138	140	140	147	146	130	140	133	135	SE	24
10	115	119	115	111	121	138	111	134	129	92	105	145	178	193	220	230	246	277	281	262	261	273	334	305	190	S	24
11	337	324	309	311	305	294	298	320	301	306	301	307	316	305	312	317	301	298	290	274	301	313	288	157	307	NW	24
12	308	319	99	309	283	257	236	129	172	310	245	24	5	86	132	174	173	171	74	9	53	293	317	326	298	WNW	24
13	335	336	360	13	357	13	31	51	70	69	62	58	77	79	87	90	73	81	103	93	85	215	326	336	47	NE	24
14	138	91	119	91	106	106	106	99	54	77	94	137	153	147	139	149	133	144	138	132	129	137	139	144	128	SE	24
15	133	108	124	110	103	97	103	110	93	105	110	95	84	91	87	75	72	68	65	67	67	75	67	24	90	E	24
16	10	23	20	15	12	30	13	48	43	35	56	76	67	103	95	127	179	182	176	182	190	174	159	147	79	ENE	24
17	132	153	162	114	121	124	130	150	153	155	151	141	141	134	137	148	149	145	148	140	133	140	147	153	143	SE	24
18	151	152	162	146	127	151	156	175	179	260	163	152	177	213	197	225	242	255	306	309	264	259	302	309	216	SW	24
19	281	278	265	289	304	303	299	299	293	307	304	300	301	295	312	312	316	318	326	315	268	297	277	279	302	WNW	24
20	271	289	323	248	312	280	267	283	15	175	227	203	237	194	194	168	166	177	128	132	138	123	130	123	193	S	24
21	126	115	122	133	130	128	132	135	131	138	158	180	162	206	173	198	264	36	358	350	331	301	308	320	140	SE	24
22	310	307	274	315	308	276	272	279	280	274	266	291	299	278	272	273	289	281	264	246	267	306	334	313	284	WNW	24
23	307	297	136	144	30	160	91	93	120	118	116	102	112	108	109	122	115	112	109	112	118	134	126	131	115	ESE	24
24	199	208	197	103	87	118	113	71	87	79	46	353	339	336	339	343	330	302	258	212	239	257	298	329	314	NW	24
25	330	325	336	329	319	330	337	340	347	351	352	1	4	5	10	14	31	48	44	57	31	11	130	337	353	N	24
26	308	321	345	254	252	128	109	93	109	204	242	201	194	206	219	226	229	196	212	190	171	114	105	88	201	SSW	24
27	112	94	132	111	107	123	127	113	117	135	151	178	183	195	200	343	38	58	38	133	5	17	344	79	137	SE	24
28	215	101	149	129	4	319	313	296	291	301	265	284	298	294	308	302	306	267	139	176	314	243	356	85	281	W	24
29	197	285	273	289	287	272	279	279	287	286	332	306	297	302	302	302	296	285	272	284	287	277	82	275	289	WNW	24
30	288	306	322	314	292	**210**	352	220	69	207	195	215	197	196	193	187	184	174	155	108	225	237	7	194	196	SSW	24
31	266	281	273	296	293	272	271	278	294	326	338	314	333	315	310	314	312	317	313	295	292	279	272	271	302	WNW	24
HOURLY AVG	337	336	360	329	357	330	352	340	347	351	352	353	339	336	339	343	330	318	359	350	331	347	356	337			

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 24, 2011
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION	94.63		AMD OPERATION UPTIME	100.0	%
			MONTHLY AVERAGE	243	DEG



JOB #: 2833-12-07-35-C

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *PORTABLE SITE - Elk Point Airport*

JULY 2012

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

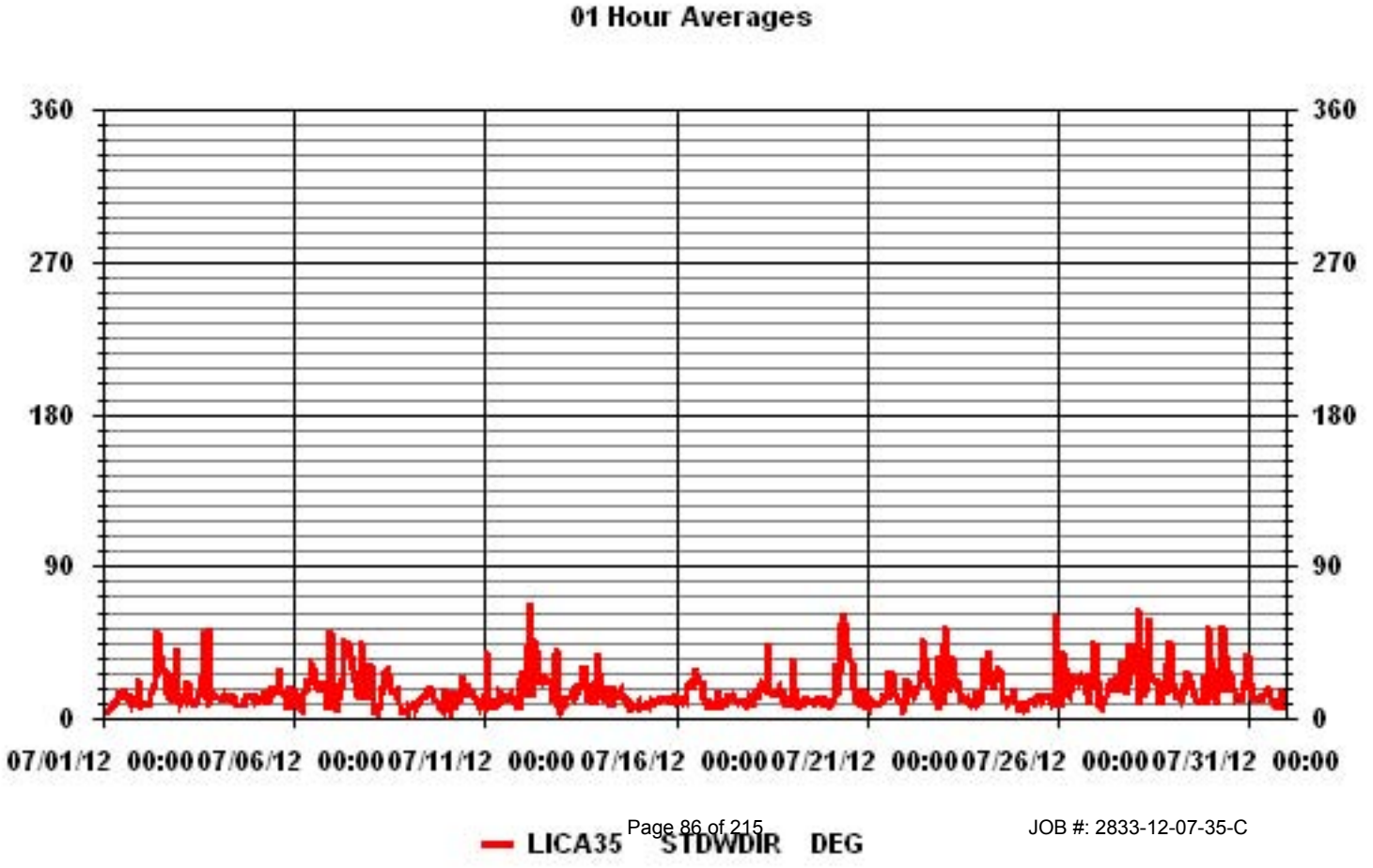
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY									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

LAST CALIBRATION: November 24, 2011

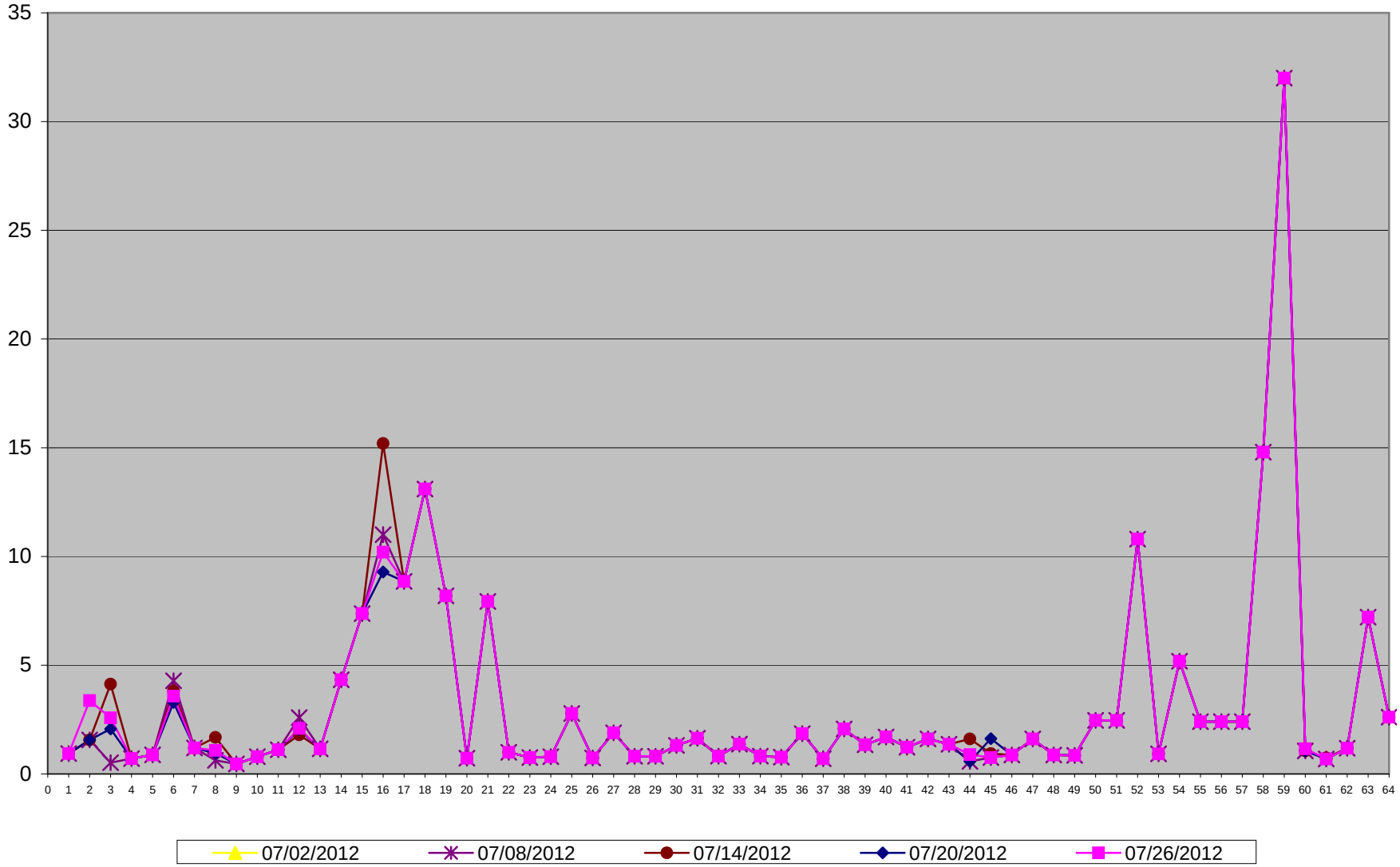
CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS



JOB #: 2833-12-07-35-C

Volatile Organics

Volatile Organics in ug/m3 Site: LICA - Portable - Elk Point Airport



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 July 2012

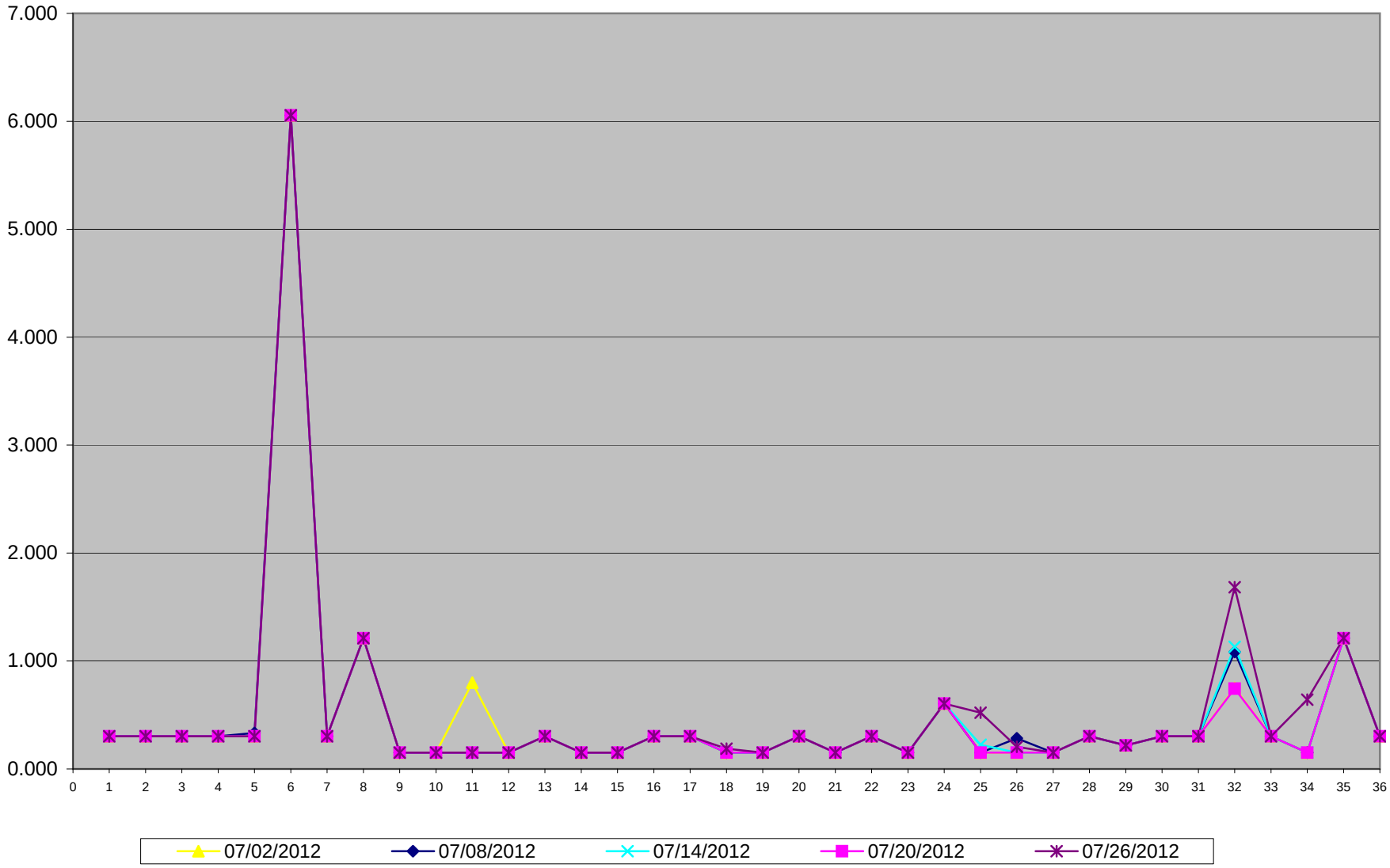
LICA - Portable Site - Elk Point Airport

Unit: ng/m3

	PAHs	07/02/2012	07/08/2012	07/14/2012	07/20/2012	07/26/2012
	Sample Volume (unit: m3)	330.34	330.33	330.33	330.34	330.34
1	1-Methylnaphthalene	0.303	0.303	0.303	0.303	0.303
2	1-Methylphenanthrene	0.303	0.303	0.303	0.303	0.303
3	2-Chloronaphthalene	0.303	0.303	0.303	0.303	0.303
4	2-Methlyanthracene	0.303	0.303	0.303	0.303	0.303
5	2-Methylnaphthalene	0.303	0.333	0.303	0.303	0.303
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	0.151	0.151	0.151	0.151	0.151
10	Acenaphthylene	0.151	0.151	0.151	0.151	0.151
11	Anthracene	0.799	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	0.188
19	Benzo(k)fluoranthene	0.151	0.151	0.151	0.151	0.151
20	Biphenyl	0.303	0.303	0.303	0.303	0.303
21	Chrysene	0.151	0.151	0.151	0.151	0.151
22	Coronene	0.303	0.303	0.303	0.303	0.303
23	Dibenz(a,h)anthracene	0.151	0.151	0.151	0.151	0.151
24	Dibenzo(a,e)pyrene	0.605	0.605	0.605	0.605	0.605
25	Fluoranthene	0.151	0.151	0.224	0.151	0.521
26	Fluorene	0.151	0.285	0.151	0.151	0.206
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	0.218	0.218	0.218	0.218	0.218
30	o-Terphenyl	0.303	0.303	0.303	0.303	0.303
31	Perylene	0.303	0.303	0.303	0.303	0.303
32	Phenanthrene	0.751	1.084	1.132	0.745	1.683
33	p-Terphenyl	0.303	0.303	0.303	0.303	0.303
34	Pyrene	0.151	0.151	0.151	0.151	0.642
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 - Portable - Elk Point Airport



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	July 12, 2012		Previous Calibration	June 15, 2012	
Company	Lakeland Community and Industry Association				
Plant / Location	Portable / Elk Poin Airport				
Start Time (MST)	8:53		End Time (MST)	13:02	
Reason:			Monthly Calibration		
Barometric Pressure	0.933	atm	Station Temperature	22	Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	LL42496	Cal Gas Expiry date	January 16, 2014
DAS Output Voltage	0 - 1	Volts	Chart Rec. Output	NA	Volts

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	467	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range	0 - 1000 ppb							
Sample Flow / Box Temp	590	ccm	31	Deg C	592	ccm	30	Deg C
HVPS / Lamp Setting	612		1744		612		1748	
PMT / RxCell Temp	8.1	Deg C	50	Deg C	8.1	Deg C	50	Deg C
Converter / IZS Temp	NA	Deg C	45	Deg C	NA	Deg C	45.0	Deg C
Offset / Slope	83.1		1.258		86.7		1.236	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	2	N/A
4995	0	0	0	N/A
4924	75.6	750	762	0.9843
4924	75.6	750	749	1.0014
4953	40.3	400	402	0.9958
4982	17.1	170	171	0.9922
4995	0	0	0	N/A
			Sum of Least Squares	0.9998
			New Correction Factor	1.0014

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	3.3	0.7
Auto Span	375.0	361.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9987
Current Correction Factor Before Span Adjust:	0.9843
Percent Change:	1.5%

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

When started the second point, there was a small power outage causing the reading to drop few minutes.

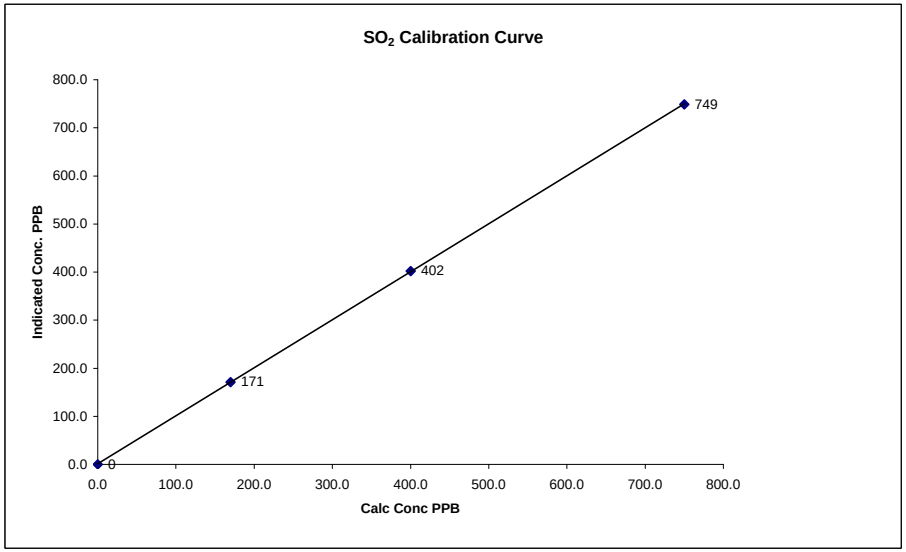
Calibration Performed by: Ting Xu

SO_2 Calibration Curve

Calibration Date	July 12, 2012		
Company	Lakeland Community and Industry Association		
Plant / Location	Portable / Elk Poin Airport		
Start Time (MST)	8:53	End Time (MST)	13:02

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
170	171	0.9922
400	402	0.9958
750	749	1.0014

Correlation Coefficient	(≥ 0.995)	0.999988
Slope	(0.85 to 1.15)	0.998352
Intercept	(± 3% F.S.)	1.047228



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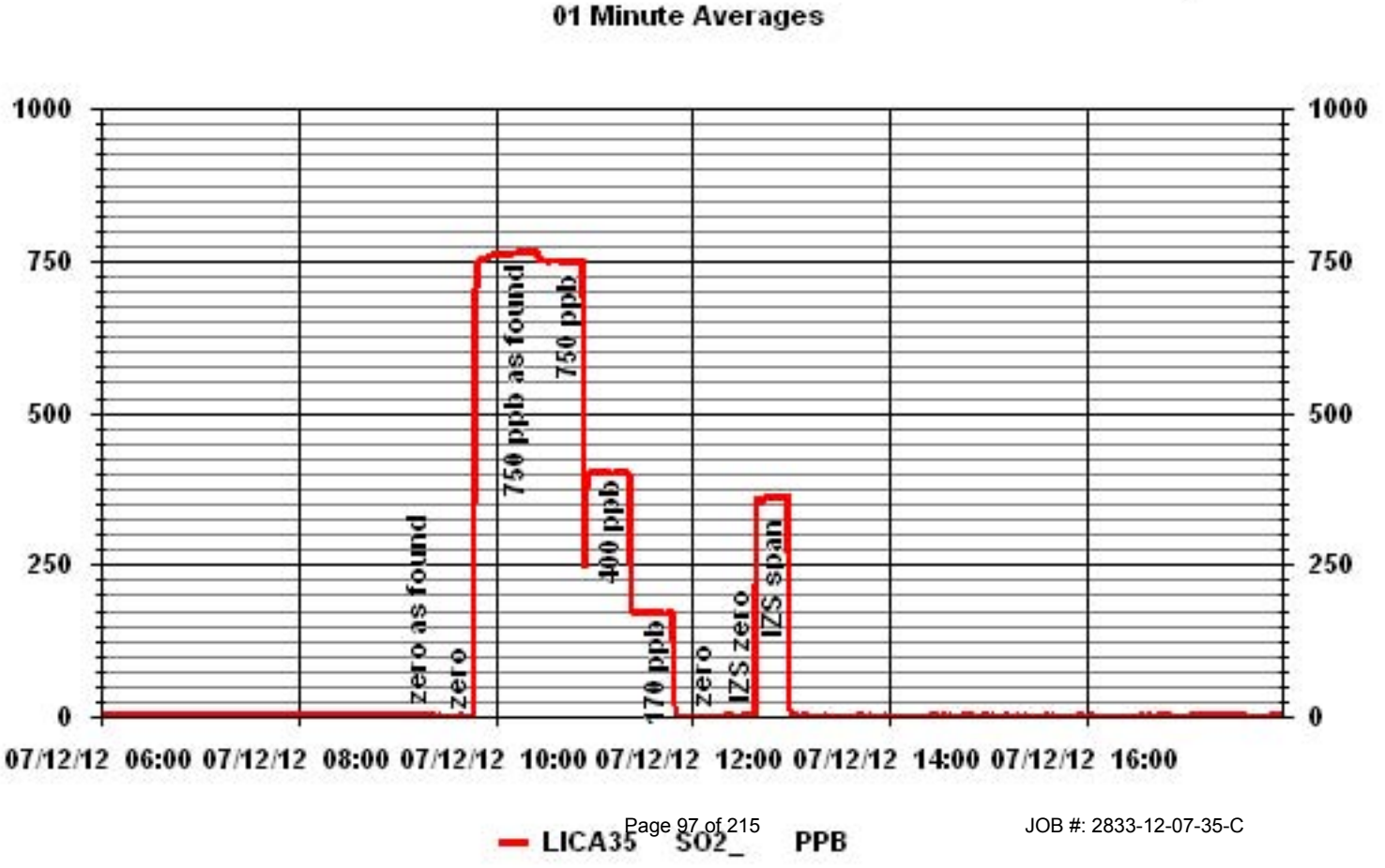


JOB #: 2833-12-07-35-C

SO2 Calibration Report

Station Information

Calibration Date	July 30, 2012		Previous Calibration	July 12, 2012	
Company	Lakeland Community and Industry Association				
Plant / Location	Portable / Elk Poin Airport				
Start Time (MST)	13:06		End Time (MST)	15:33	
Reason:			As Found		
Barometric Pressure	0.934	atm	Station Temperature	22	Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	LL42496	Cal Gas Expiry date	January 16, 2014
DAS Output Voltage	0 - 1	Volts	Chart Rec. Output	NA	Volts

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	467	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range			0 - 1000	ppb				
Sample Flow / Box Temp	592	ccm	30.3	Deg C	592	ccm	30.5	Deg C
HVPS / Lamp Setting	612		1735		612		1735	
PMT / RxCell Temp	8.1	Deg C	50	Deg C	8.1	Deg C	50	Deg C
Converter / IZS Temp	NA	Deg C	45	Deg C	NA	Deg C	45.0	Deg C
Offset / Slope	86.7		1.236		86.7		1.236	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	2	N/A
	No Zero Adj.			
4924	75.6	750	764	0.9817
		Sum of Least Squares		
		New Correction Factor		0.9817

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	2.0	2.1
Auto Span	285.0	321.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0014
Current Correction Factor Before Span Adjust:	0.9817
Percent Change:	2.0%

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

Following the A/F check, the perm tube was replaced.

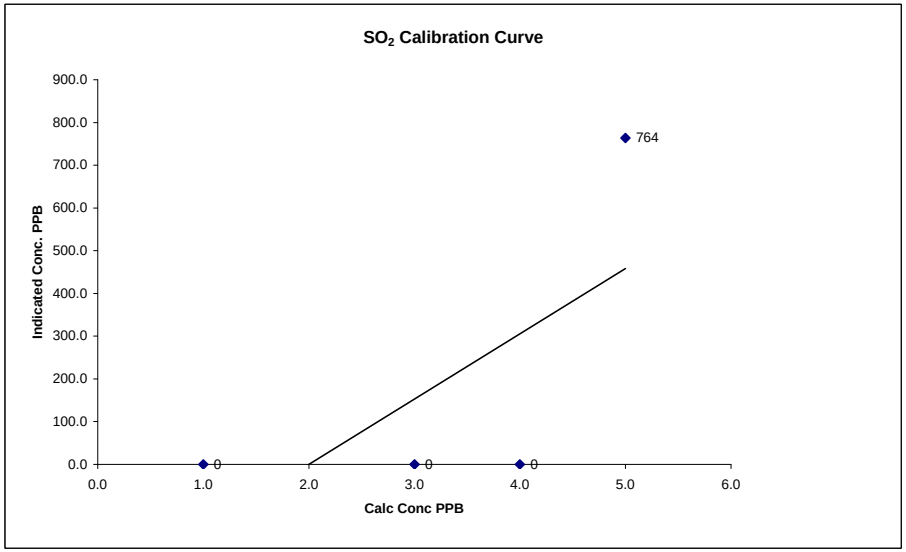
Calibration Performed by: Ting Xu

SO_2 Calibration Curve

Calibration Date	July 30, 2012		
Company	Lakeland Community and Industry Association		
Plant / Location	Portable / Elk Poin Airport		
Start Time (MST)	13:06	End Time (MST)	15:33

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
	0	#VALUE!
	0	#VALUE!
750	764	0.9817

Correlation Coefficient	(≥ 0.995)	1.000000
Slope	(0.85 to 1.15)	1.018650
Intercept	(± 3% F.S.)	0.000000



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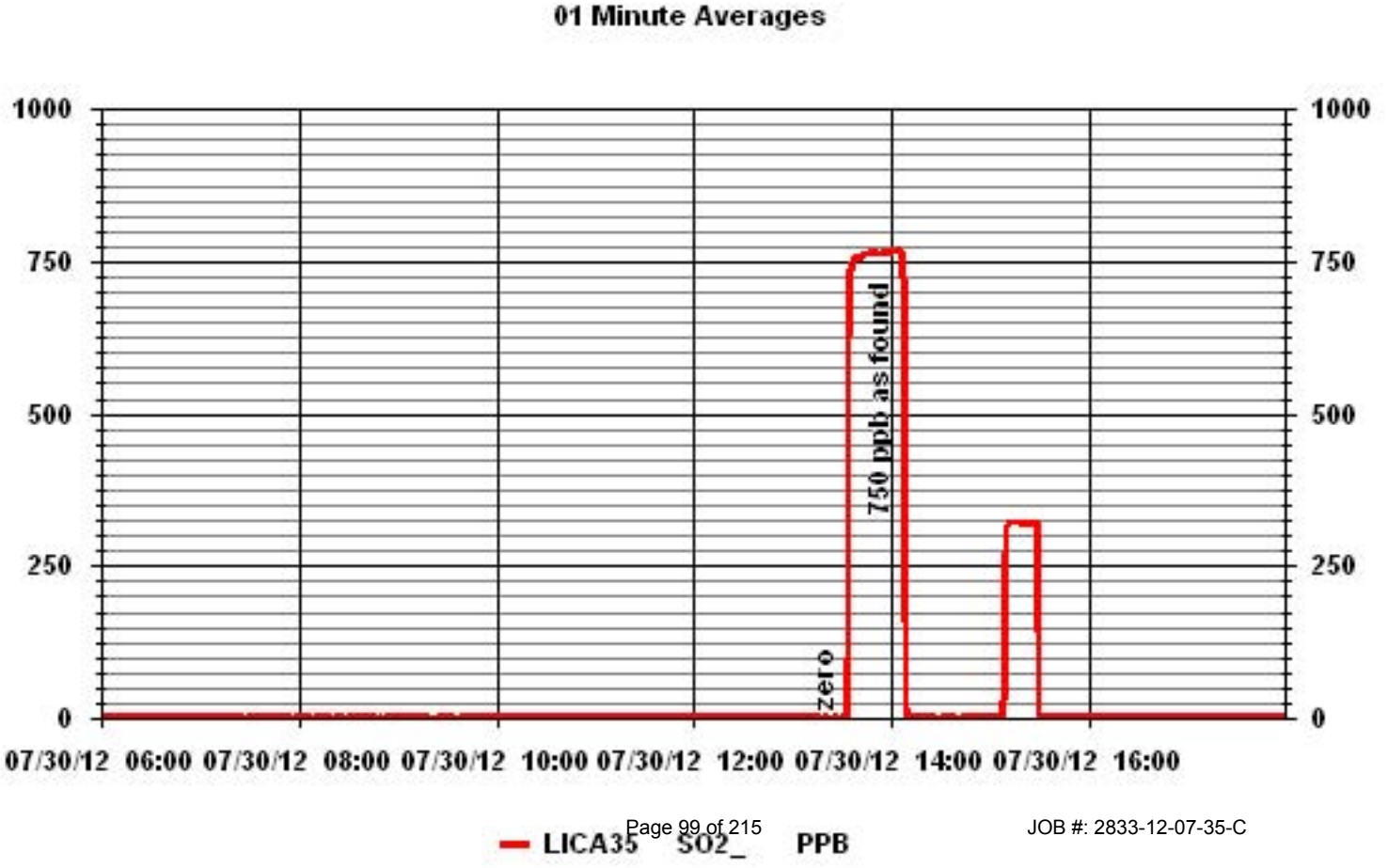


JOB #: 2833-12-07-35-C

Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	July 11, 2012		Previous Calibration	June 14, 2012	
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	Portable/ Elk Point Airport				
Start Time (MST)	9:13		End Time (MST)	10:14	
Reason:	As Found				
Barometric Pressure	0.935	atm	Station Temperature	23	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 2012
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts		

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	509	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range				0 - 100 ppb				
Sample Flow / Box Temp	522 ccm		30.2 Deg C		523 ccm		29.1 Deg C	
HVPS / Lamp Setting	540		1923		540		2064	
PMT / RxCell Temp	7.9 Deg C		50 Deg C		7.9 Deg C		50 Deg C	
Converter / IZS Temp	314.3 Deg C		45 Deg C		314 Deg C		45.0 Deg C	
Offset / Slope	85		0.993		83.8		1.001	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	1	NA
	No Zero Adj.			
4959	40.0	80	82	0.9758
			Sum of Least Squares	
			New Correction Factor	

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	2.3	-
Auto Span	59.3	-
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9758
Percent Change:	2.5%

Notes: **NA : Not Applicable**

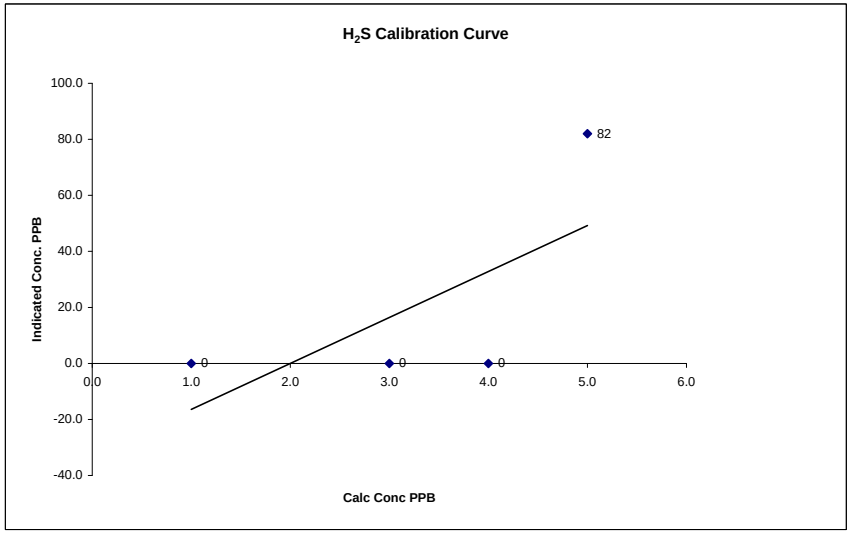
Following the A/F points check, the UV lamp was peaked and the offset and slope was adjusted.

Calibration Performed by: Ting Xu

H_2S Calibration Curve

Calibration Date	July 11, 2012				
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	Portable/ Elk Point Airport				
Start Time (MST)	9:13		End Time (MST)	10:14	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor		
	0		Correlation Coefficient (≥ 0.995)	#DIV/0!
	0	#VALUE!	Slope (0.85 to 1.15)	#DIV/0!
	0	#VALUE!	Intercept (± 3% F.S.)	#DIV/0!
80	82	0.9758		



Notes:

H2S Calibration Report

Station Information

Calibration Date	July 11, 2012		Previous Calibration	June 14, 2012	
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	Portable/ Elk Point Airport				
Start Time (MST)	13:55		End Time (MST)	17:05	
Reason:	Post Repair Calibration				
Barometric Pressure	0.935	atm	Station Temperature	23	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 2012
DAS Output Voltage	0 - 1 Volts		Chart Rec. Output	NA Volts	

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	509	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range				0 - 100 ppb				
Sample Flow / Box Temp	523 ccm		31.8 Deg C		517 ccm		31.3 Deg C	
HVPS / Lamp Setting	540		2062		540		2061	
PMT / RxCell Temp	7.9 Deg C		50 Deg C		7.9 Deg C		50 Deg C	
Converter / IZS Temp	314.3 Deg C		45 Deg C		314 Deg C		45.0 Deg C	
Offset / Slope	83.8		1.001		83.8		1.001	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	NA
	No Zero Adj.			
4960	40.0	80	81	0.9877
	No Span Adj.			
4977	20.0	40	41	0.9762
4987	11.5	23	24	0.9586
4996	0	0	0	NA
			Sum of Least Squares	0.9836
			New Correction Factor	

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-	1.3
Auto Span	-	57.2
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9877
Percent Change:	1.3%

Notes: **NA : Not Applicable**

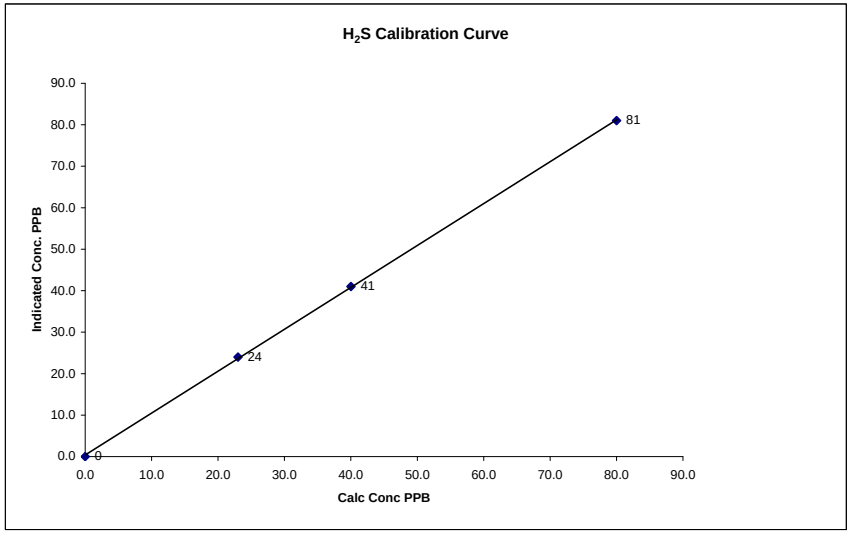
Calibration Performed by: Ting Xu

H_2S Calibration Curve

Calibration Date	July 11, 2012				
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	Portable/ Elk Point Airport				
Start Time (MST)	13:55		End Time (MST)	17:05	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	
23	24	0.9586
40	41	0.9762
80	81	0.9877

Correlation Coefficient	(≥ 0.995)	0.999897
Slope	(0.85 to 1.15)	1.010461
Intercept	(± 3% F.S.)	0.368205



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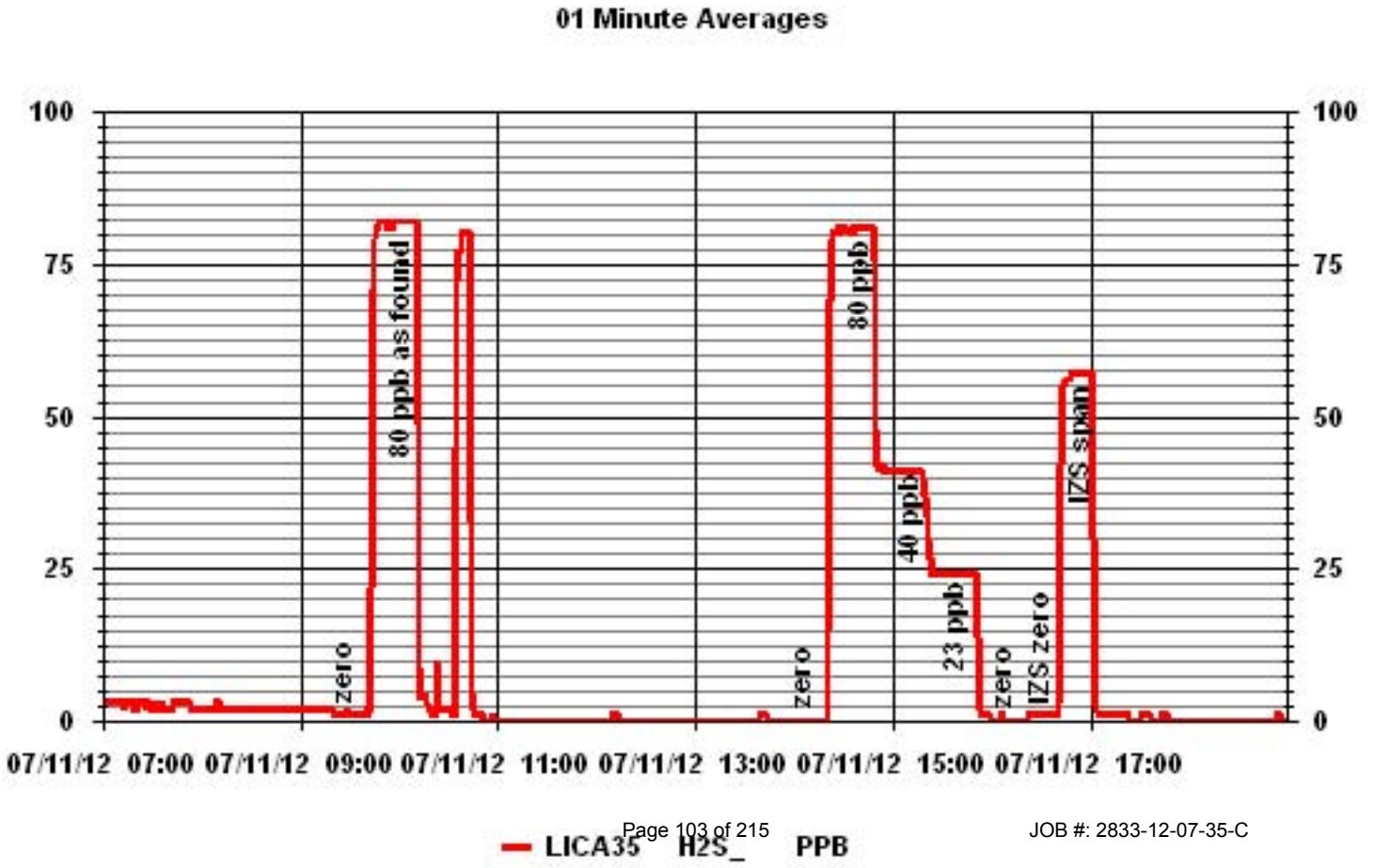


JOB #: 2833-12-07-35-C

Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	July 11, 2012		Previous Calibration	June 14, 2012	
Company:	Lakeland Industry and Community Association				
Plant / Location:	ELICA Portable Station / Elk Point Airport				
Start Time (MST)	10:53		End Time (MST)	14:37	
Reason:	Monthly Calibration				
Barometric Pressure:	0.934	atm	Station Temperature:	23	Deg C
Calibrator:	API 700		S/N:	831	
Cal Gas Concentration:	CH4 600 PPM		C3H8	204 PPM	
	TOTAL CH4 1161.0 PPM		Gas Cyl. #	LL155310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832		S/N :	AO 717	
Chart Recorder:	NA		S/N:	NA	
Output Voltage Range:	0 - 10 VDC		Chart Speed:	NA	mm/hr

Analyzer Information

Make / Model	Thermo 51C	S/N :	04366-09739	Method	Flame Ionization

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	6.8	psi	6.8	psi
Hydrogen Pressure	8	psi	8	psi
Air Pressure	21	psi	21	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	0.0	NA
	No Zero Adj.			
2000	74.0	41.4	42.2	0.9816
2000	74.0	41.4	41.5	0.9982
2000	37.0	21.1	20.8	1.0139
2000	20.0	11.5	11.4	1.0083
2000	0.0	0.0	0.0	NA
			New Correction Factor:	0.9982

Percent Change

Previous Calibration Correction Factor:	0.9982
Current Correction Factor Before Span Adjust:	0.9816
Percent Change:	1.7%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	32.4	32.2
Sample Lines Connected		YES

Cylinder Pressures

Span 2000 psi Hydrogen 1200 psi Zero Air 34 psi

Notes: **NA : Not Applicable**

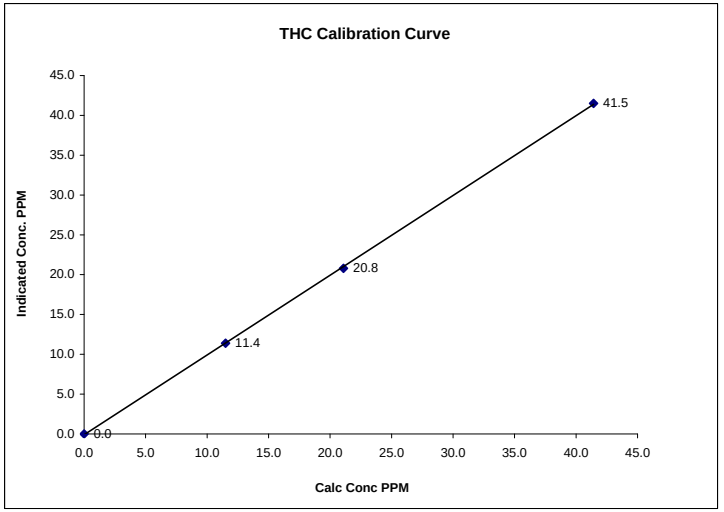
Calibration Performed by: Ting Xu

THC Calibration Curve

Calibration Date	July 11, 2012			
Company	Lakeland Industry and Community Association			
Plant / Location	ELICA Portable Station / Elk Point Airport			
Start Time (MST)	10:53	End Time (MST)	14:37	

Calculated Conc. ppm	Indicated Response ppm	Correction Factor
0.0	0.0	NA
11.5	11.4	1.0083
21.1	20.8	1.0139
41.4	41.5	0.9982

Correlation Coefficient	(≥ 0.995)	0.999923
Slope	(0.85 to 1.15)	1.001792
Intercept	(± 3% F.S.)	-0.11009



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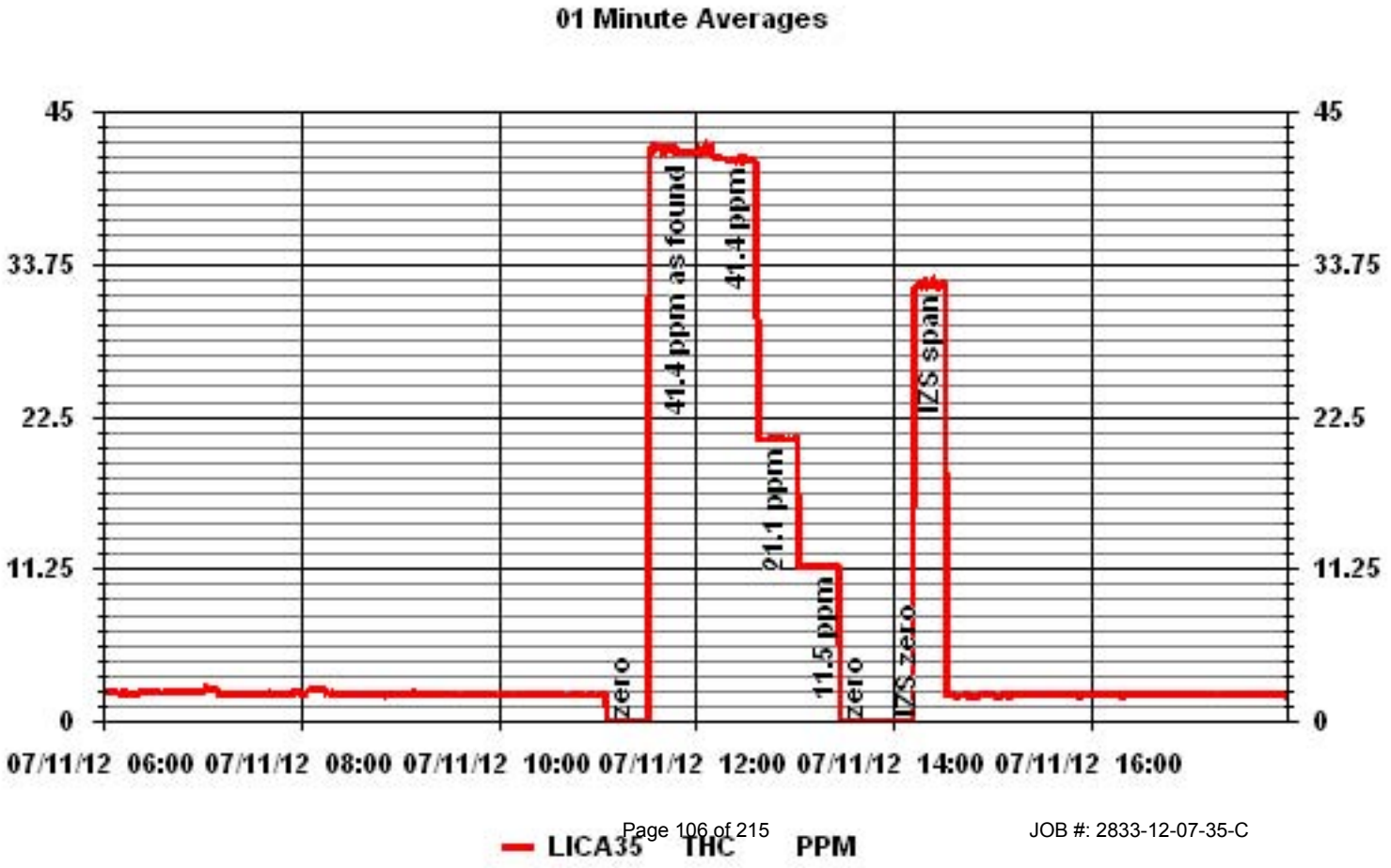


JOB #: 2833-12-07-35-C

Particulate Matter 2.5

TEOM 1405F Audit

Station		Audit Transfer Standard	
Date:	July 12, 2012	Make/Model:	Streamline FTS
Station Name:	Lica Portable (CASA # 35)	Serial Number:	Hi 091001, Low 091099
Location:	Elk Point Airport	Cell s/n:	NA
Operator:	LICA	Thermometer s/n:	Fisher Brand 15-021B

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 (%)	19.2%
Firmware Ver.	1.52	K_o Factor	13125
Parameter	PM 2.5 (with FDMS)	Temp (^oC)	17.9
		Press (ATM)	0.933

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 **<0.40atm**	0.32	Pump Gauge (inHg)	-19

Temperature/Pressure

Measured Temp **(± 2 °C)**	17.8	**D °C**	0.1
Measured Press **(± 0.01atm)**	0.932	**DATM**	0.001

Flow Audit

Indicated Main Flow (l/min)	3.00	Main Flow Drift **(±10.0%)**	1.15%
Measured Main Flow (l/min)	3.00	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift **(±10.0%)**	0.79%
Measured Bypass Flow (l/min)	13.61	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: 10:16 **Finish Time:** 14:40

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

New Filter Loading %: 17.4%

Comments:

JOB #: 2833-12-07-35-C

Auditor/s: Ting Xu

Nitrogen Dioxide

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	July 11, 2012		Previous Calibration	June 14, 2012	
Company	LICA		Plant/Location	**Portable/Elk Point Airport**	
Start Time (MST)	9:13		End Time (MST)	15:44	
Reason:	Monthly Calibration				
Barometric Pressure	0.935 atm	Station Temperature	23 Deg C	MFCF	0
Cal Gas Concentration	NOx 49.6 ppm	NO 49.5 ppm	Cal Gas Expiry date	January 16, 2014	
Cal Gas Cylinder #	LL42496				
DAS Output Voltage	0 - 1 Volts		Chart Rec. Output	NA Volts	

Equipment Information

Analyzer Make / Model:	TAPI 200E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	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	314	Deg C		473	ccm	314	Deg C
Ozone Flow / Vacuum	78	ccm	4.5	"Hg-A		78	ccm	4.5	"Hg-A
HVPS / A ZERO	646	Volts	6.8	MV		646	Volts	7.2	MV
Rx/ Temp / PMT Temp	50.0	Deg C	6.7	Deg C		50.0	Deg C	6.8	Deg C
Box Temp / IZS Temp	30.7	Deg C	45.3	Deg C		33.1	Deg C	45.1	Deg C
Offset	0.5	NOx	0.2	NO		0.5	NOx	0.2	NO
Slope	1.226	NOx	1.218	NO		1.287	NOx	1.251	NO
NO_2 COEF / Conv Efficency	NA	NO2	0.996			NA	NO2	0.996	

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	0	0	0	NA	NA
	No Zero Adj.									
4919	75.5	NA	750	748	NA	713	728	-15	1.0516	1.0278
4919	75.5	NA	750	748	NA	751	748	4	0.9984	1.0000
4954	40.3	NA	400	399	NA	399	397	3	1.0031	1.0061
4974	20.2	NA	201	200	NA	200	199	1	1.0031	1.0061
4994	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		
4918	75.5	NA	750	748	NA	756	748	8	NA	NA
4918	75.5	600	750	NA	543	756	213	543	1.0000	100.00%
	No Adj. Needed									
4918	75.5	250	750	NA	232	760	524	235	0.9872	101.34%
4918	75.5	140	750	NA	133	760	623	137	0.9708	103.20%

Linearity		Sum of Least Squares	NOx=	1.000	NO=	1.002	NO2=	0.997	
OK?	Yes	No	Correction Factors:	NOx=	0.9984	NO=	1.0000	NO2=	1.0516
						Average Converter Efficiency=		101.51%	

IZS Calibration Data

	Before Calibration					After Calibration			
Auto Zero	-0.1	NOx	0.5	NO2		-0.2	NOx	-0.2	NO2
Auto Span	583	NOx	574	NO2		620	NOx	608	NO2
					Sample Lines Connected	YES			
Percent Change from Previous Calibration			NOx	-5.1%	NO	-2.8%	NO2	0.2%	

Notes

NA : Not Applicable

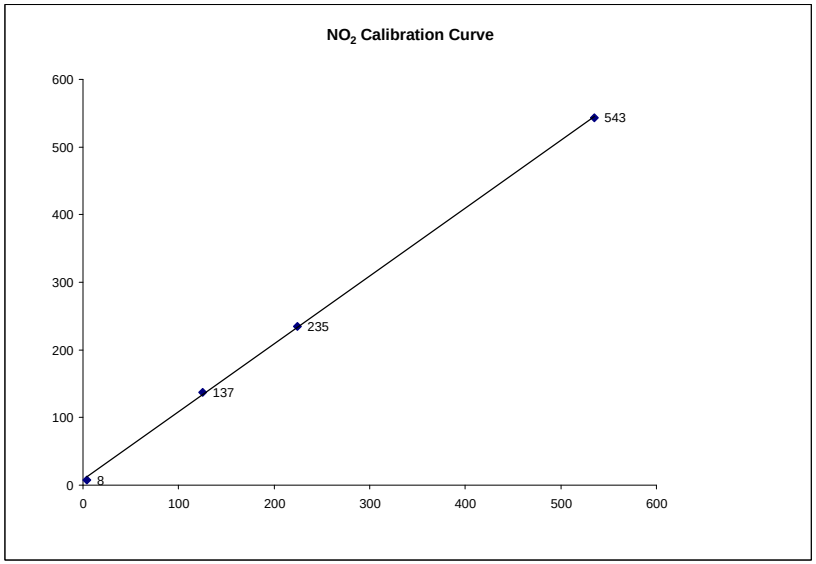
Additional point done for ozone cal: O3 set point 420, NOx 761, NO 373, NO2 388

Calibration Performed by: Ting Xu

NO_2 Calibration Curve

Calibration Date	July 11, 2012		
Company	LICA		
Plant / Location	**Portable/Elk Point Airport**		
Start Time (MST)	9:13	End Time (MST)	15:44

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999761
			Slope (0.85 to 1.15)	1.003163
4	8	N/A	Intercept (± 3% F.S.)	8.04777
125	137	0.9124		
224	235	0.9532		
535	543	0.9853		

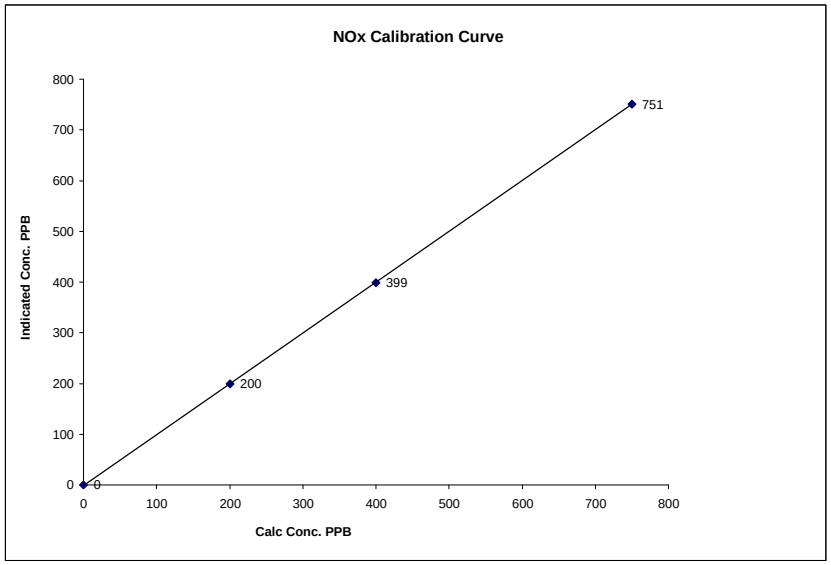


Notes:

NOx Calibration Curve

Calibration Date	July 11, 2012		
Company	LICA		
Plant / Location	Portable/Elk Point Airport		
Start Time (MST)	9:13	End Time (MST)	15:44

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999992
			Slope (0.85 to 1.15)	1.001658
0	0	N/A	Intercept (± 3% F.S.)	-0.71824
201	200	1.0031		
400	399	1.0031		
750	751	0.9984		

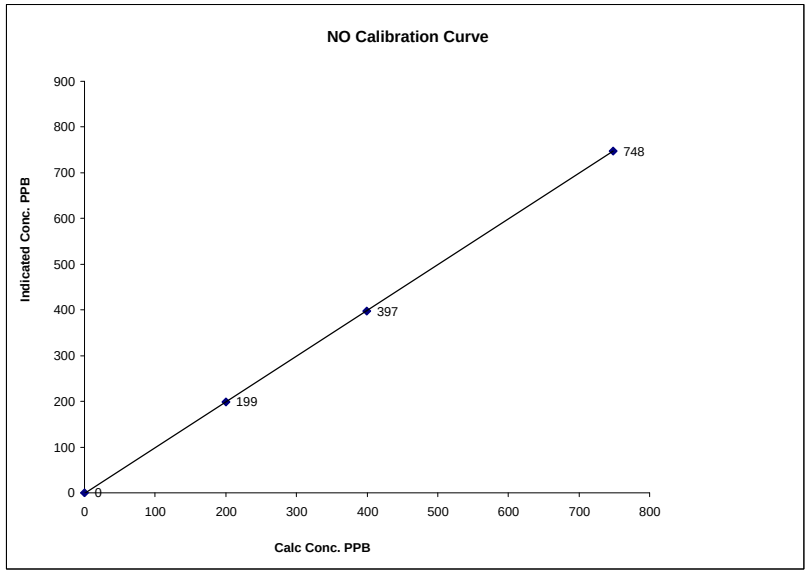


Notes:

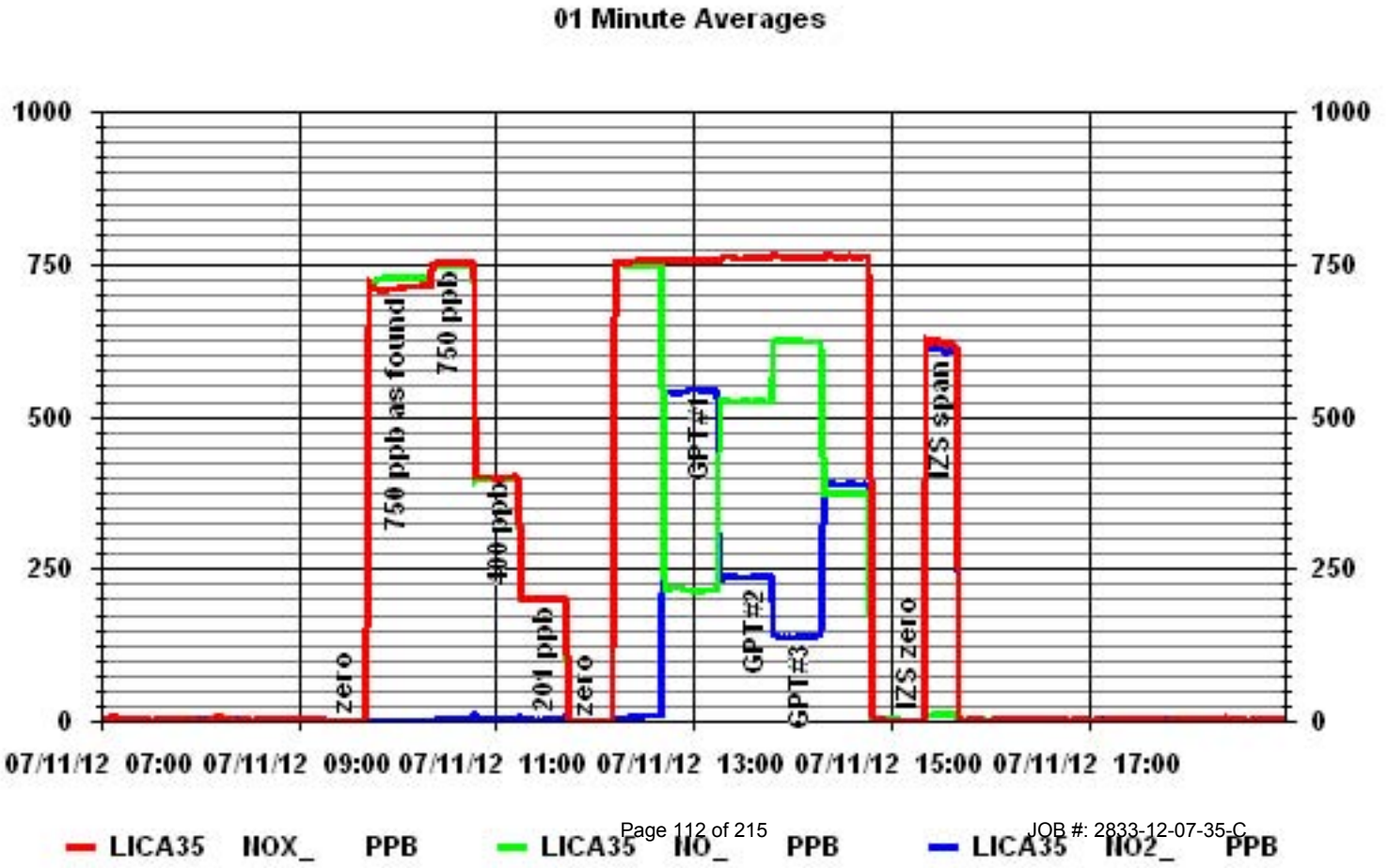
NO Calibration Curve

Calibration Date	July 11, 2012		
Company	LICA		
Plant / Location	Portable/Elk Point Airport		
Start Time (MST)	9:13	End Time (MST)	15:44

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999988
			Slope (0.85 to 1.15)	1.002217
0	0	N/A	Intercept (± 3% F.S.)	-4.8896
200	199	1.0061		
399	397	1.0061		
748	748	1.0004		



Notes:


01 Minute Averages
1000
750
500
250
0
zero
750 ppb as found
750 ppb
400 ppb
201 ppb
zero
GPT#1
GPT#2
GPT#3
IZS zero
IZS span
07/11/12 07:00
07/11/12 09:00
07/11/12 11:00
07/11/12 13:00
07/11/12 15:00
07/11/12 17:00
LICA35 NOX_ PPB
LICA35 NO_ PPB
LICA35 NO2_ PPB

Ozone

O_3 Calibration Report

Station Information

Calibration Date	July 12, 2012	Previous Calibration	June 15, 2012
Company	Lakeland Industry & Community Association		
Plant / Location	Portable / Elk Point Airport		
Start Time (MST)	8:53	End Time (MST)	12:17
Reason:		Monthly Calibration	
Barometric Pressure	0.933 atm	Station Temperature	22 Deg C
DAS Output Voltage	0-10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	1002240372	Method:	Photometric
Calibrator Make / Model:	Environics 6100		4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO 717		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range	0 - 500 ppb							
Cell A Flow / Cell B Flow	753	ccm	760	ccm	757	ccm	764	ccm
Pressure	692	mmHg			697	mmHg		
Bench Lamp	54.1	Deg C			54.1	DegC		
O3 Lamp / Box Temp	68.2	Deg C	30.8	Deg C	68.2	Deg C	30.5	Deg C
Offset / Slope	-0.2		1.005		-0.2		1.005	

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	NA
	No Zero Adj.			
4994	420	375	378	0.9921
	No Span Adj.			
4994	250	224	226	0.9912
4994	140	125	128	0.9766
4994	0	0	0	NA
			Sum of Least Squares	0.9907
			New Correction Factor	0.9921

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.1	-0.5
Auto Span	328.0	326.0
Sample Lines Connected		YES
Previous Calibration Correction Factor:		0.9974
Current Correctio Factor Before Span Adjust:		0.9921
Percent Change:		0.5%

Note: **NA : Not Applicable**

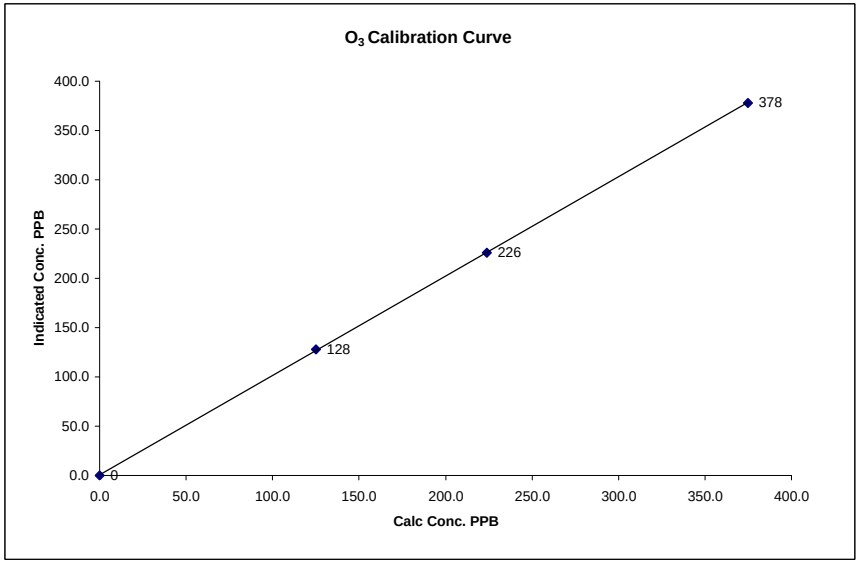
Calibration Performed by: Ting Xu

O_3 Calibration Curve

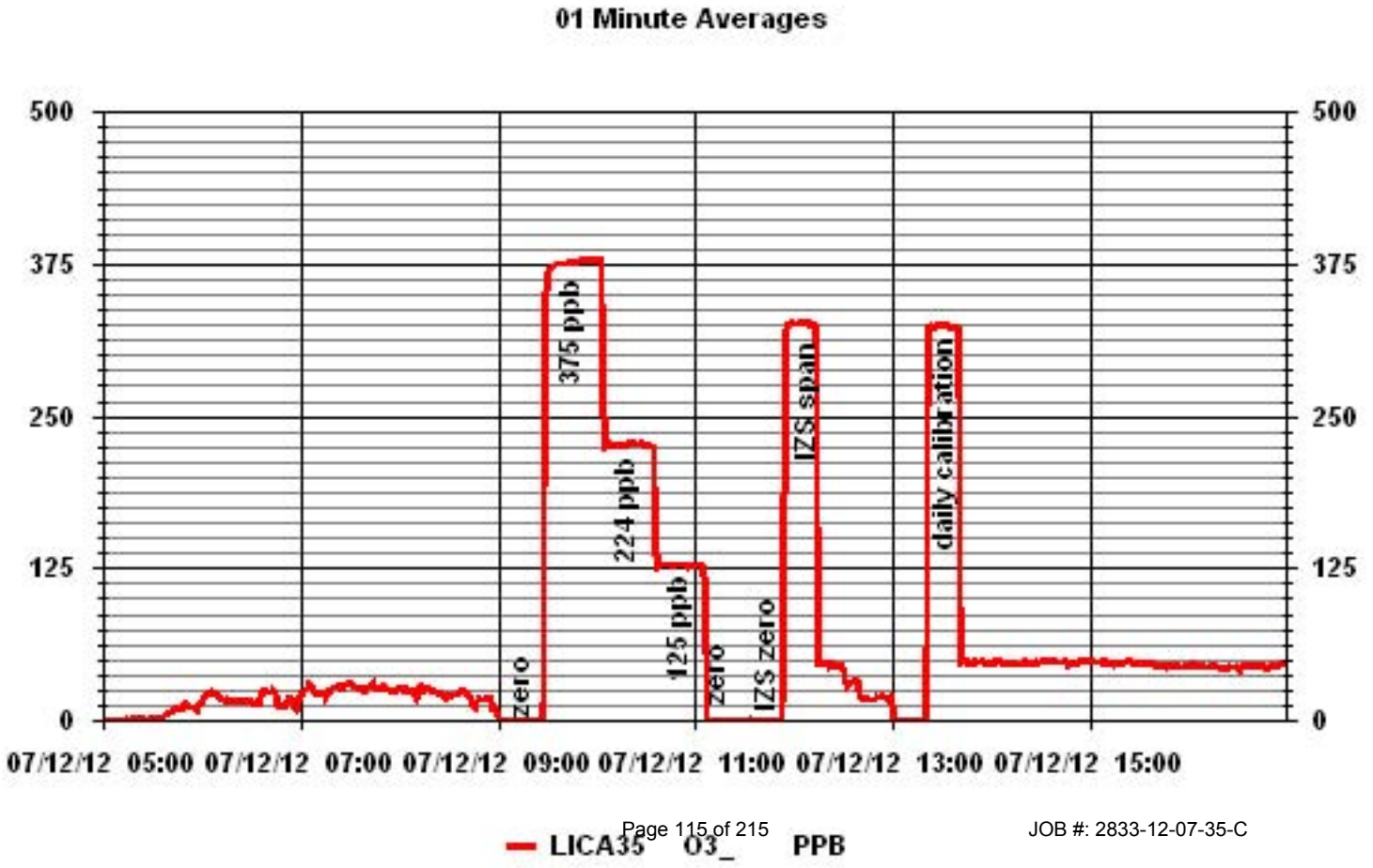
Calibration Date	July 12, 2012		
Company	Lakeland Industry & Community Association		
Plant / Location	Portable / Elk Point Airport		
Start Time (MST)	8:53	End Time (MST)	12:17

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
125	128	0.9766
224	226	0.9912
375	378	0.9921

Correlation Coefficient	(≥ 0.995)	0.999965
Slope	(0.85 to 1.15)	1.006633
Intercept	(± 3% F.S.)	0.799448



Notes:



JOB #: 2833-12-07-35-C

Volatile Organics Laboratory Analysis

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA VOC/PORT/ Jul 08, 12

Sampler s/n: 6200
Canister ID: 7862
Canister Installation Date/Time: Jul 06, 12 @ 09:12 mst
Canister Removal Date/Time: Jul 09, 12 @ 12:56 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
08-Jul-12	07/08/2012 0:00	07/09/2012 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1496	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	21

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

Comments: System leak check prior to sampling. COC #11734

Technician Signature: Ting Xu

Your C.O.C. #: 11734

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

Report Date: 2012/07/24

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2A4190
Received: 2012/07/12, 10:31

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/07/23	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/07/23	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 #: B2A4190
Report Date: 2012/07/24

RESULTS OF ANALYSES OF AIR

Maxxam ID		OC6153	OC6154	
Sampling Date		2012/07/08	2012/07/08	
COC Number		11734	11734	
	Units	**LICA VOC/ CLS/JULY08,12 / 7865**	**LICA VOC/PORT/JULY08,12 / 7862**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	22	21	2917322

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A4190
Report Date: 2012/07/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OC6153				
Sampling Date		2012/07/08				
COC Number		11734				
	Units	**LICA VOC/ CLS/JULY08,12 / 7865**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2917320
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2917320
Propene	ppbv	<0.30	0.30	<0.516	0.516	2917320
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2917320
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2917320
Dichlorodifluoromethane (FREON 12)	ppbv	0.83	0.20	4.10	0.989	2917320
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2917320
Chloromethane	ppbv	<0.30	0.30	<0.620	0.620	2917320
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2917320
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2917320
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2917320
Trichlorofluoromethane (FREON 11)	ppbv	0.44	0.20	2.49	1.12	2917320
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2917320
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2917320
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2917320
2-Propanone	ppbv	6.68	0.80	15.9	1.90	2917320
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2917320
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2917320
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2917320
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2917320
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2917320
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2917320
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2917320
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2917320
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2917320
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2917320
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2917320
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2917320
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2917320
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2917320
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2917320

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OC6153				
Sampling Date		2012/07/08				
COC Number		11734				
	Units	**LICA VOC/ CLS/JULY08,12 / 7865**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2917320
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2917320
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2917320
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2917320
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2917320
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2917320
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2917320
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2917320
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2917320
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2917320
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2917320
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2917320
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2917320
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2917320
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2917320
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2917320
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2917320
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2917320
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2917320
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2917320
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2917320
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2917320
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2917320
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2917320
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2917320
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2917320
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2917320
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2917320
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2917320
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2917320
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2917320
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2917320
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2917320

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A4190
Report Date: 2012/07/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OC6153				
Sampling Date		2012/07/08				
COC Number		11734				
	Units	**LICA VOC/ CLS/JULY08,12 / 7865**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	73		N/A	N/A	2917320
D5-Chlorobenzene	%	69		N/A	N/A	2917320
Difluorobenzene	%	72		N/A	N/A	2917320

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

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OC6154				
Sampling Date		2012/07/08				
COC Number		11734				
	Units	**LICA VOC/PORT/JULY08,12 / 7862**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2917320
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2917320
Propene	ppbv	<0.30	0.30	<0.516	0.516	2917320
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2917320
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2917320
Dichlorodifluoromethane (FREON 12)	ppbv	0.86	0.20	4.28	0.989	2917320
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2917320
Chloromethane	ppbv	<0.30	0.30	<0.620	0.620	2917320
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2917320
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2917320
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2917320
Trichlorofluoromethane (FREON 11)	ppbv	0.46	0.20	2.59	1.12	2917320
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2917320
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2917320
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2917320
2-Propanone	ppbv	4.62	0.80	11.0	1.90	2917320
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2917320
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2917320
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2917320
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2917320
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2917320
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2917320
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2917320
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2917320
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2917320
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2917320
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2917320
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2917320
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2917320
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2917320
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2917320

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OC6154				
Sampling Date		2012/07/08				
COC Number		11734				
	Units	**LICA VOC/PORT/JULY08,12 / 7862**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2917320
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2917320
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2917320
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2917320
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2917320
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2917320
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2917320
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2917320
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2917320
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2917320
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2917320
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2917320
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2917320
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2917320
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2917320
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2917320
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2917320
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2917320
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2917320
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2917320
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2917320
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2917320
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2917320
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2917320
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2917320
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2917320
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2917320
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2917320
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2917320
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2917320
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2917320
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2917320
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2917320

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A4190
Report Date: 2012/07/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OC6154				
Sampling Date		2012/07/08				
COC Number		11734				
	Units	**LICA VOC/PORT/JULY08,12 / 7862**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	68		N/A	N/A	2917320
D5-Chlorobenzene	%	66		N/A	N/A	2917320
Difluorobenzene	%	69		N/A	N/A	2917320

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

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Maxxam Analytics

Maxxam Job #: B2A4190
Report Date: 2012/07/24

Test Summary

Maxxam ID OC6153 **Collected** 2012/07/08
Sample ID LICA VOC/ CLS/JULY08,12 / 7865 **Shipped**
Matrix AIR **Received** 2012/07/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2917322	N/A	2012/07/23	Spomenka Smiljanic
Volatile Organics in Air (TO-15)	GC/MS	2917320	N/A	2012/07/23	Spomenka Smiljanic

Maxxam ID OC6153 Dup **Collected** 2012/07/08
Sample ID LICA VOC/ CLS/JULY08,12 / 7865 **Shipped**
Matrix AIR **Received** 2012/07/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organics in Air (TO-15)	GC/MS	2917320	N/A	2012/07/23	Spomenka Smiljanic

Maxxam ID OC6154 **Collected** 2012/07/08
Sample ID LICA VOC/PORT/JULY08,12 / 7862 **Shipped**
Matrix AIR **Received** 2012/07/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2917322	N/A	2012/07/23	Spomenka Smiljanic
Volatile Organics in Air (TO-15)	GC/MS	2917320	N/A	2012/07/23	Spomenka Smiljanic

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Maxxam Analytics

Maxxam Job #: B2A4190
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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: GB2A4190

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2917320	S_S	Spiked Blank	Bromochloromethane	2012/07/23		100	%	60 - 140
			D5-Chlorobenzene	2012/07/23		96	%	60 - 140
			Difluorobenzene	2012/07/23		100	%	60 - 140
			2,2,4-Trimethylpentane	2012/07/23		82	%	70 - 130
			Carbon Disulfide	2012/07/23		95	%	70 - 130
			Propene	2012/07/23		72	%	70 - 130
			Vinyl Acetate	2012/07/23		86	%	70 - 130
			Vinyl Bromide	2012/07/23		102	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2012/07/23		120	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/07/23		135 (1)	%	70 - 130
			Chloromethane	2012/07/23		105	%	70 - 130
			Vinyl Chloride	2012/07/23		100	%	70 - 130
			Chloroethane	2012/07/23		97	%	70 - 130
			1,3-Butadiene	2012/07/23		93	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/07/23		122	%	70 - 130
			Trichlorotrifluoroethane	2012/07/23		104	%	70 - 130
			Ethanol (ethyl alcohol)	2012/07/23		76	%	70 - 130
			2-propanol	2012/07/23		82	%	70 - 130
			2-Propanone	2012/07/23		109	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/07/23		77	%	70 - 130
			Methyl Isobutyl Ketone	2012/07/23		89	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/07/23		94	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/07/23		101	%	70 - 130
			Ethyl Acetate	2012/07/23		86	%	70 - 130
			1,1-Dichloroethylene	2012/07/23		103	%	70 - 130
			cis-1,2-Dichloroethylene	2012/07/23		98	%	70 - 130
			trans-1,2-Dichloroethylene	2012/07/23		96	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/07/23		85	%	70 - 130
			Chloroform	2012/07/23		109	%	70 - 130
			Carbon Tetrachloride	2012/07/23		122	%	70 - 130
			1,1-Dichloroethane	2012/07/23		95	%	70 - 130
			1,2-Dichloroethane	2012/07/23		118	%	70 - 130
			Ethylene Dibromide	2012/07/23		100	%	70 - 130
			1,1,1-Trichloroethane	2012/07/23		118	%	70 - 130
			1,1,2-Trichloroethane	2012/07/23		96	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/07/23		96	%	70 - 130
			cis-1,3-Dichloropropene	2012/07/23		102	%	70 - 130
			trans-1,3-Dichloropropene	2012/07/23		113	%	70 - 130
			1,2-Dichloropropane	2012/07/23		87	%	70 - 130
			Bromomethane	2012/07/23		105	%	70 - 130
			Bromoform	2012/07/23		108	%	70 - 130
			Bromodichloromethane	2012/07/23		116	%	70 - 130
			Dibromochloromethane	2012/07/23		112	%	70 - 130
			Heptane	2012/07/23		80	%	70 - 130
			Trichloroethylene	2012/07/23		91	%	70 - 130
			Tetrachloroethylene	2012/07/23		96	%	70 - 130
			Benzene	2012/07/23		93	%	70 - 130
			Toluene	2012/07/23		96	%	70 - 130
			Ethylbenzene	2012/07/23		99	%	70 - 130
			p+m-Xylene	2012/07/23		100	%	70 - 130
			o-Xylene	2012/07/23		101	%	70 - 130
			Styrene	2012/07/23		74	%	70 - 130
			1,3,5-Trimethylbenzene	2012/07/23		98	%	70 - 130
			1,2,4-Trimethylbenzene	2012/07/23		96	%	70 - 130
			4-ethyltoluene	2012/07/23		100	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2A4190

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2917320	S_S	Spiked Blank	Chlorobenzene	2012/07/23		91	%	70 - 130
			Benzyl chloride	2012/07/23		91	%	70 - 130
			1,3-Dichlorobenzene	2012/07/23		83	%	70 - 130
			1,4-Dichlorobenzene	2012/07/23		80	%	70 - 130
			1,2-Dichlorobenzene	2012/07/23		84	%	70 - 130
			1,2,4-Trichlorobenzene	2012/07/23		75	%	70 - 130
			Hexachlorobutadiene	2012/07/23		110	%	70 - 130
			Hexane	2012/07/23		84	%	70 - 130
			Cyclohexane	2012/07/23		81	%	70 - 130
			Tetrahydrofuran	2012/07/23		79	%	70 - 130
			1,4-Dioxane	2012/07/23		99	%	70 - 130
			Xylene (Total)	2012/07/23		100	%	70 - 130
		Method Blank	Bromochloromethane	2012/07/23		75	%	60 - 140
			D5-Chlorobenzene	2012/07/23		72	%	60 - 140
			Difluorobenzene	2012/07/23		76	%	60 - 140
			2,2,4-Trimethylpentane	2012/07/23	<0.20		ppbv	
			Carbon Disulfide	2012/07/23	<0.50		ppbv	
			Propene	2012/07/23	<0.30		ppbv	
			Vinyl Acetate	2012/07/23	<0.20		ppbv	
			Vinyl Bromide	2012/07/23	<0.20		ppbv	
			Dichlorodifluoromethane (FREON 12)	2012/07/23	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/07/23	<0.17		ppbv	
			Chloromethane	2012/07/23	<0.30		ppbv	
			Vinyl Chloride	2012/07/23	<0.18		ppbv	
			Chloroethane	2012/07/23	<0.30		ppbv	
			1,3-Butadiene	2012/07/23	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/07/23	<0.20		ppbv	
			Trichlorotrifluoroethane	2012/07/23	<0.15		ppbv	
			Ethanol (ethyl alcohol)	2012/07/23	<2.3		ppbv	
			2-propanol	2012/07/23	<3.0		ppbv	
			2-Propanone	2012/07/23	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/07/23	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/07/23	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/07/23	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/07/23	<0.20		ppbv	
			Ethyl Acetate	2012/07/23	<2.2		ppbv	
			1,1-Dichloroethylene	2012/07/23	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/07/23	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/07/23	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/07/23	<0.80		ppbv	
			Chloroform	2012/07/23	<0.15		ppbv	
			Carbon Tetrachloride	2012/07/23	<0.30		ppbv	
			1,1-Dichloroethane	2012/07/23	<0.20		ppbv	
			1,2-Dichloroethane	2012/07/23	<0.20		ppbv	
			Ethylene Dibromide	2012/07/23	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/07/23	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/07/23	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/07/23	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/07/23	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/07/23	<0.17		ppbv	
			1,2-Dichloropropane	2012/07/23	<0.40		ppbv	
			Bromomethane	2012/07/23	<0.18		ppbv	
			Bromoform	2012/07/23	<0.20		ppbv	
			Bromodichloromethane	2012/07/23	<0.20		ppbv	
			Dibromochloromethane	2012/07/23	<0.20		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2A4190

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2917320	S_S	Method Blank	Heptane	2012/07/23	<0.30		ppbv	
			Trichloroethylene	2012/07/23	<0.30		ppbv	
			Tetrachloroethylene	2012/07/23	<0.20		ppbv	
			Benzene	2012/07/23	<0.18		ppbv	
			Toluene	2012/07/23	<0.20		ppbv	
			Ethylbenzene	2012/07/23	<0.20		ppbv	
			p+m-Xylene	2012/07/23	<0.37		ppbv	
			o-Xylene	2012/07/23	<0.20		ppbv	
			Styrene	2012/07/23	<0.20		ppbv	
			1,3,5-Trimethylbenzene	2012/07/23	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/07/23	<0.50		ppbv	
			4-ethyltoluene	2012/07/23	<2.2		ppbv	
			Chlorobenzene	2012/07/23	<0.20		ppbv	
			Benzyl chloride	2012/07/23	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/07/23	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/07/23	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/07/23	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/07/23	<2.0		ppbv	
			Hexachlorobutadiene	2012/07/23	<3.0		ppbv	
			Hexane	2012/07/23	<0.30		ppbv	
			Cyclohexane	2012/07/23	<0.20		ppbv	
			Tetrahydrofuran	2012/07/23	<0.40		ppbv	
			1,4-Dioxane	2012/07/23	<2.0		ppbv	
			Xylene (Total)	2012/07/23	<0.60		ppbv	
		RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2012/07/23	NC		%	25
			Carbon Disulfide	2012/07/23	NC		%	25
			Propene	2012/07/23	NC		%	25
			Vinyl Acetate	2012/07/23	NC		%	25
			Vinyl Bromide	2012/07/23	NC		%	25
			Dichlorodifluoromethane (FREON 12)	2012/07/23	NC		%	25
			1,2-Dichlorotetrafluoroethane	2012/07/23	NC		%	25
			Chloromethane	2012/07/23	NC		%	25
			Vinyl Chloride	2012/07/23	NC		%	25
			Chloroethane	2012/07/23	NC		%	25
			1,3-Butadiene	2012/07/23	NC		%	25
			Trichlorofluoromethane (FREON 11)	2012/07/23	NC		%	25
			Trichlorotrifluoroethane	2012/07/23	NC		%	25
			Ethanol (ethyl alcohol)	2012/07/23	NC		%	25
			2-propanol	2012/07/23	NC		%	25
			2-Propanone	2012/07/23	1.4		%	25
			Methyl Ethyl Ketone (2-Butanone)	2012/07/23	NC		%	25
			Methyl Isobutyl Ketone	2012/07/23	NC		%	25
			Methyl Butyl Ketone (2-Hexanone)	2012/07/23	NC		%	25
			Methyl t-butyl ether (MTBE)	2012/07/23	NC		%	25
			Ethyl Acetate	2012/07/23	NC		%	25
			1,1-Dichloroethylene	2012/07/23	NC		%	25
			cis-1,2-Dichloroethylene	2012/07/23	NC		%	25
			trans-1,2-Dichloroethylene	2012/07/23	NC		%	25
			Methylene Chloride(Dichloromethane)	2012/07/23	NC		%	25
			Chloroform	2012/07/23	NC		%	25
			Carbon Tetrachloride	2012/07/23	NC		%	25
			1,1-Dichloroethane	2012/07/23	NC		%	25
			1,2-Dichloroethane	2012/07/23	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2A4190

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2917320	S_S	RPD - Sample/Sample Dup	Ethylene Dibromide	2012/07/23	NC		%	25
			1,1,1-Trichloroethane	2012/07/23	NC		%	25
			1,1,2-Trichloroethane	2012/07/23	NC		%	25
			1,1,2,2-Tetrachloroethane	2012/07/23	NC		%	25
			cis-1,3-Dichloropropene	2012/07/23	NC		%	25
			trans-1,3-Dichloropropene	2012/07/23	NC		%	25
			1,2-Dichloropropane	2012/07/23	NC		%	25
			Bromomethane	2012/07/23	NC		%	25
			Bromoform	2012/07/23	NC		%	25
			Bromodichloromethane	2012/07/23	NC		%	25
			Dibromochloromethane	2012/07/23	NC		%	25
			Heptane	2012/07/23	NC		%	25
			Trichloroethylene	2012/07/23	NC		%	25
			Tetrachloroethylene	2012/07/23	NC		%	25
			Benzene	2012/07/23	NC		%	25
			Toluene	2012/07/23	NC		%	25
			Ethylbenzene	2012/07/23	NC		%	25
			p+m-Xylene	2012/07/23	NC		%	25
			o-Xylene	2012/07/23	NC		%	25
			Styrene	2012/07/23	NC		%	25
			1,3,5-Trimethylbenzene	2012/07/23	NC		%	25
			1,2,4-Trimethylbenzene	2012/07/23	NC		%	25
			4-ethyltoluene	2012/07/23	NC		%	25
			Chlorobenzene	2012/07/23	NC		%	25
			Benzyl chloride	2012/07/23	NC		%	25
			1,3-Dichlorobenzene	2012/07/23	NC		%	25
			1,4-Dichlorobenzene	2012/07/23	NC		%	25
			1,2-Dichlorobenzene	2012/07/23	NC		%	25
			1,2,4-Trichlorobenzene	2012/07/23	NC		%	25
			Hexachlorobutadiene	2012/07/23	NC		%	25
			Hexane	2012/07/23	NC		%	25
			Cyclohexane	2012/07/23	NC		%	25
			Tetrahydrofuran	2012/07/23	NC		%	25
			1,4-Dioxane	2012/07/23	NC		%	25
			Xylene (Total)	2012/07/23	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: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA VOC/PORT/ Jul 14, 12

Sampler s/n: 6200
Canister ID: 7802
Canister Installation Date/Time: Jul 12, 12 @ 12:10 mst
Canister Removal Date/Time: Jul 16, 12 @ 09:42 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
14-Jul-12	07/14/2012 0:00	07/15/2012 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1496	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	21

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

Comments: System leak check prior to sampling. COC #11777

Technician Signature: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 11777

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

Report Date: 2012/07/31

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2A7625
Received: 2012/07/18, 09:23

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/07/27	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/07/27	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 #: B2A7625
Report Date: 2012/07/31

RESULTS OF ANALYSES OF AIR

Maxxam ID		OE4305	OE4306	
Sampling Date		2012/07/14	2012/07/14	
COC Number		11777	11777	
	Units	**LICA VOC/CLS/JULY 14,12 - 7819**	**LICA VOC/PORT/JULY 14,12 - 7802**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	23	21	2923504

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A7625
Report Date: 2012/07/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OE4305				
Sampling Date		2012/07/14				
COC Number		11777				
	Units	**LICA VOC/CLS/JULY 14,12 - 7819**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2923594
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2923594
Propene	ppbv	<0.90	0.90	<1.55	1.55	2923594
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2923594
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2923594
Dichlorodifluoromethane (FREON 12)	ppbv	0.73	0.20	3.61	0.989	2923594
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2923594
Chloromethane	ppbv	0.89	0.30	1.84	0.620	2923594
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2923594
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2923594
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2923594
Trichlorofluoromethane (FREON 11)	ppbv	0.33	0.20	1.83	1.12	2923594
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2923594
Ethanol (ethyl alcohol)	ppbv	3.1	2.3	5.90	4.33	2923594
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2923594
2-Propanone	ppbv	6.34	0.80	15.0	1.90	2923594
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2923594
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2923594
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2923594
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2923594
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2923594
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2923594
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2923594
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2923594
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2923594
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2923594
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2923594
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2923594
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2923594
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2923594
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2923594

RDL = Reportable Detection Limit
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

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OE4305				
Sampling Date		2012/07/14				
COC Number		11777				
	Units	**LICA VOC/CLS/JULY 14,12 - 7819**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2923594
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2923594
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2923594
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2923594
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2923594
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2923594
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2923594
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2923594
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2923594
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2923594
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2923594
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2923594
Benzene	ppbv	0.60	0.18	1.91	0.575	2923594
Toluene	ppbv	0.44	0.20	1.64	0.753	2923594
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2923594
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2923594
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2923594
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2923594
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2923594
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2923594
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2923594
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2923594
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2923594
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2923594
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2923594
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2923594
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2923594
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2923594
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2923594
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2923594
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2923594
1,4-Dioxane	ppbv	2.0	2.0	7.33	7.21	2923594
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2923594

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A7625
Report Date: 2012/07/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OE4305				
Sampling Date		2012/07/14				
COC Number		11777				
	Units	**LICA VOC/CLS/JULY 14,12 - 7819**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	93		N/A	N/A	2923594
D5-Chlorobenzene	%	97		N/A	N/A	2923594
Difluorobenzene	%	95		N/A	N/A	2923594

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

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OE4306				
Sampling Date		2012/07/14				
COC Number		11777				
	Units	**LICA VOC/PORT/JULY 14,12 - 7802**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2923594
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2923594
Propene	ppbv	<2.4	2.4	<4.13	4.13	2923594
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2923594
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2923594
Dichlorodifluoromethane (FREON 12)	ppbv	0.77	0.20	3.81	0.989	2923594
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2923594
Chloromethane	ppbv	0.82	0.30	1.68	0.620	2923594
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2923594
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2923594
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2923594
Trichlorofluoromethane (FREON 11)	ppbv	0.32	0.20	1.80	1.12	2923594
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2923594
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2923594
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2923594
2-Propanone	ppbv	6.41	0.80	15.2	1.90	2923594
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2923594
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2923594
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2923594
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2923594
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2923594
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2923594
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2923594
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2923594
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2923594
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2923594
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2923594
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2923594
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2923594
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2923594
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2923594

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OE4306				
Sampling Date		2012/07/14				
COC Number		11777				
	Units	**LICA VOC/PORT/JULY 14,12 - 7802**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2923594
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2923594
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2923594
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2923594
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2923594
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2923594
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2923594
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2923594
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2923594
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2923594
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2923594
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2923594
Benzene	ppbv	0.50	0.18	1.61	0.575	2923594
Toluene	ppbv	0.25	0.20	0.934	0.753	2923594
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2923594
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2923594
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2923594
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2923594
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2923594
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2923594
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2923594
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2923594
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2923594
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2923594
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2923594
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2923594
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2923594
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2923594
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2923594
Cyclohexane	ppbv	0.21	0.20	0.740	0.688	2923594
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2923594
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2923594
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2923594

QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OE4306				
Sampling Date		2012/07/14				
COC Number		11777				
	Units	**LICA VOC/PORT/JULY 14,12 - 7802**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	89		N/A	N/A	2923594
D5-Chlorobenzene	%	92		N/A	N/A	2923594
Difluorobenzene	%	91		N/A	N/A	2923594

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

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Maxxam Analytics

Maxxam Job #: B2A7625
Report Date: 2012/07/31

Test Summary

Maxxam ID OE4305 **Collected** 2012/07/14
Sample ID LICA VOC/CLS/JULY 14,12 - 7819 **Shipped**
Matrix AIR **Received** 2012/07/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2923504	N/A	2012/07/27	Diane Temniuk
Volatile Organics in Air (TO-15)	GC/MS	2923594	N/A	2012/07/27	Diane Temniuk

Maxxam ID OE4306 **Collected** 2012/07/14
Sample ID LICA VOC/PORT/JULY 14,12 - 7802 **Shipped**
Matrix AIR **Received** 2012/07/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2923504	N/A	2012/07/27	Diane Temniuk
Volatile Organics in Air (TO-15)	GC/MS	2923594	N/A	2012/07/27	Diane Temniuk

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GENERAL COMMENTS

TO15
Increased DL for propene due to possible background.

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: GB2A7625

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2923594	DVO	Spiked Blank	Bromochloromethane	2012/07/27		102	%	60 - 140
			D5-Chlorobenzene	2012/07/27		106	%	60 - 140
			Difluorobenzene	2012/07/27		104	%	60 - 140
			2,2,4-Trimethylpentane	2012/07/27		89	%	70 - 130
			Carbon Disulfide	2012/07/27		88	%	70 - 130
			Propene	2012/07/27		84	%	70 - 130
			Vinyl Acetate	2012/07/27		95	%	70 - 130
			Vinyl Bromide	2012/07/27		87	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2012/07/27		94	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/07/27		108	%	70 - 130
			Chloromethane	2012/07/27		93	%	70 - 130
			Vinyl Chloride	2012/07/27		91	%	70 - 130
			Chloroethane	2012/07/27		90	%	70 - 130
			1,3-Butadiene	2012/07/27		89	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/07/27		93	%	70 - 130
			Trichlorotrifluoroethane	2012/07/27		92	%	70 - 130
			Ethanol (ethyl alcohol)	2012/07/27		85	%	70 - 130
			2-propanol	2012/07/27		97	%	70 - 130
			2-Propanone	2012/07/27		101	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/07/27		93	%	70 - 130
			Methyl Isobutyl Ketone	2012/07/27		99	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/07/27		100	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/07/27		93	%	70 - 130
			Ethyl Acetate	2012/07/27		98	%	70 - 130
			1,1-Dichloroethylene	2012/07/27		94	%	70 - 130
			cis-1,2-Dichloroethylene	2012/07/27		93	%	70 - 130
			trans-1,2-Dichloroethylene	2012/07/27		92	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/07/27		84	%	70 - 130
			Chloroform	2012/07/27		92	%	70 - 130
			Carbon Tetrachloride	2012/07/27		97	%	70 - 130
			1,1-Dichloroethane	2012/07/27		92	%	70 - 130
			1,2-Dichloroethane	2012/07/27		97	%	70 - 130
			Ethylene Dibromide	2012/07/27		90	%	70 - 130
			1,1,1-Trichloroethane	2012/07/27		94	%	70 - 130
			1,1,2-Trichloroethane	2012/07/27		93	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/07/27		88	%	70 - 130
			cis-1,3-Dichloropropene	2012/07/27		93	%	70 - 130
			trans-1,3-Dichloropropene	2012/07/27		94	%	70 - 130
			1,2-Dichloropropane	2012/07/27		91	%	70 - 130
			Bromomethane	2012/07/27		91	%	70 - 130
			Bromoform	2012/07/27		100	%	70 - 130
			Bromodichloromethane	2012/07/27		98	%	70 - 130
			Dibromochloromethane	2012/07/27		100	%	70 - 130
			Heptane	2012/07/27		90	%	70 - 130
			Trichloroethylene	2012/07/27		90	%	70 - 130
			Tetrachloroethylene	2012/07/27		90	%	70 - 130
			Benzene	2012/07/27		90	%	70 - 130
			Toluene	2012/07/27		90	%	70 - 130
			Ethylbenzene	2012/07/27		91	%	70 - 130
			p+m-Xylene	2012/07/27		89	%	70 - 130
			o-Xylene	2012/07/27		89	%	70 - 130
			Styrene	2012/07/27		64 (1)	%	70 - 130
			1,3,5-Trimethylbenzene	2012/07/27		82	%	70 - 130
			1,2,4-Trimethylbenzene	2012/07/27		76	%	70 - 130
			4-ethyltoluene	2012/07/27		85	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2A7625

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2923594	DVO	Spiked Blank	Chlorobenzene	2012/07/27		89	%	70 - 130
			Benzyl chloride	2012/07/27		75	%	70 - 130
			1,3-Dichlorobenzene	2012/07/27		76	%	70 - 130
			1,4-Dichlorobenzene	2012/07/27		76	%	70 - 130
			1,2-Dichlorobenzene	2012/07/27		72	%	70 - 130
			1,2,4-Trichlorobenzene	2012/07/27		86	%	70 - 130
			Hexachlorobutadiene	2012/07/27		85	%	70 - 130
			Hexane	2012/07/27		92	%	70 - 130
			Cyclohexane	2012/07/27		89	%	70 - 130
			Tetrahydrofuran	2012/07/27		92	%	70 - 130
			1,4-Dioxane	2012/07/27		89	%	70 - 130
			Xylene (Total)	2012/07/27		89	%	70 - 130
		Method Blank	Bromochloromethane	2012/07/27		89	%	60 - 140
			D5-Chlorobenzene	2012/07/27		87	%	60 - 140
			Difluorobenzene	2012/07/27		92	%	60 - 140
			2,2,4-Trimethylpentane	2012/07/27	<0.20		ppbv	
			Carbon Disulfide	2012/07/27	<0.50		ppbv	
			Propene	2012/07/27	<0.30		ppbv	
			Vinyl Acetate	2012/07/27	<0.20		ppbv	
			Vinyl Bromide	2012/07/27	<0.20		ppbv	
			Dichlorodifluoromethane (FREON 12)	2012/07/27	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/07/27	<0.17		ppbv	
			Chloromethane	2012/07/27	<0.30		ppbv	
			Vinyl Chloride	2012/07/27	<0.18		ppbv	
			Chloroethane	2012/07/27	<0.30		ppbv	
			1,3-Butadiene	2012/07/27	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/07/27	<0.20		ppbv	
			Trichlorotrifluoroethane	2012/07/27	<0.15		ppbv	
			Ethanol (ethyl alcohol)	2012/07/27	<2.3		ppbv	
			2-propanol	2012/07/27	<3.0		ppbv	
			2-Propanone	2012/07/27	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/07/27	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/07/27	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/07/27	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/07/27	<0.20		ppbv	
			Ethyl Acetate	2012/07/27	<2.2		ppbv	
			1,1-Dichloroethylene	2012/07/27	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/07/27	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/07/27	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/07/27	<0.80		ppbv	
			Chloroform	2012/07/27	<0.15		ppbv	
			Carbon Tetrachloride	2012/07/27	<0.30		ppbv	
			1,1-Dichloroethane	2012/07/27	<0.20		ppbv	
			1,2-Dichloroethane	2012/07/27	<0.20		ppbv	
			Ethylene Dibromide	2012/07/27	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/07/27	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/07/27	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/07/27	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/07/27	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/07/27	<0.17		ppbv	
			1,2-Dichloropropane	2012/07/27	<0.40		ppbv	
			Bromomethane	2012/07/27	<0.18		ppbv	
			Bromoform	2012/07/27	<0.20		ppbv	
			Bromodichloromethane	2012/07/27	<0.20		ppbv	
			Dibromochloromethane	2012/07/27	<0.20		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2A7625

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2923594	DVO	Method Blank	Heptane	2012/07/27	<0.30		ppbv	
			Trichloroethylene	2012/07/27	<0.30		ppbv	
			Tetrachloroethylene	2012/07/27	<0.20		ppbv	
			Benzene	2012/07/27	<0.18		ppbv	
			Toluene	2012/07/27	<0.20		ppbv	
			Ethylbenzene	2012/07/27	<0.20		ppbv	
			p+m-Xylene	2012/07/27	<0.37		ppbv	
			o-Xylene	2012/07/27	<0.20		ppbv	
			Styrene	2012/07/27	<0.20		ppbv	
			1,3,5-Trimethylbenzene	2012/07/27	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/07/27	<0.50		ppbv	
			4-ethyltoluene	2012/07/27	<2.2		ppbv	
			Chlorobenzene	2012/07/27	<0.20		ppbv	
			Benzyl chloride	2012/07/27	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/07/27	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/07/27	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/07/27	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/07/27	<2.0		ppbv	
			Hexachlorobutadiene	2012/07/27	<3.0		ppbv	
			Hexane	2012/07/27	<0.30		ppbv	
			Cyclohexane	2012/07/27	<0.20		ppbv	
			Tetrahydrofuran	2012/07/27	<0.40		ppbv	
			1,4-Dioxane	2012/07/27	<2.0		ppbv	
			Xylene (Total)	2012/07/27	<0.60		ppbv	

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA VOC/PORT/ Jul 20, 12

Sampler s/n: 6200
Canister ID: 256
Canister Installation Date/Time: Jul 19, 12 @ 16:25 mst
Canister Removal Date/Time: Jul 24, 12 @ 09:31 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
20-Jul-12	07/20/2012 0:00	07/21/2012 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1496	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	21

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

Comments: System leak check prior to sampling. COC #12335

Technician Signature: Ting Xu

Success Through Science®

Your C.O.C. #: 12335

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

Report Date: 2012/08/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2B2465
Received: 2012/07/26, 09:32

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/08/03	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/08/03	BRL SOP-00304	EPA TO-15

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

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

Encryption Key

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

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

==========

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

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Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2B2465
Report Date: 2012/08/08

RESULTS OF ANALYSES OF AIR

Maxxam ID		OG8642	OG8643	
Sampling Date		2012/07/20	2012/07/20	
COC Number		12335	12335	
	Units	**LICA VOC/CLS/JULY 2012 - 7927**	**LICA VOC/PORT/JULY 2012 - 256**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	22	22	2930359

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B2465
Report Date: 2012/08/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OG8642				
Sampling Date		2012/07/20				
COC Number		12335				
	Units	**LICA VOC/CLS/JULY 2012 - 7927**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2930700
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2930700
Propene	ppbv	<0.30	0.30	<0.516	0.516	2930700
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2930700
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2930700
Dichlorodifluoromethane (FREON 12)	ppbv	0.69	0.20	3.41	0.989	2930700
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2930700
Chloromethane	ppbv	<0.30	0.30	<0.620	0.620	2930700
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2930700
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2930700
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2930700
Trichlorofluoromethane (FREON 11)	ppbv	0.34	0.20	1.90	1.12	2930700
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2930700
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2930700
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2930700
2-Propanone	ppbv	4.36	0.80	10.3	1.90	2930700
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2930700
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2930700
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2930700
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2930700
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2930700
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2930700
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2930700
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2930700
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2930700
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2930700
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2930700
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2930700
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2930700
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2930700
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2930700

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OG8642				
Sampling Date		2012/07/20				
COC Number		12335				
	Units	**LICA VOC/CLS/JULY 2012 - 7927**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2930700
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2930700
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2930700
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2930700
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2930700
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2930700
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2930700
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2930700
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2930700
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2930700
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2930700
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2930700
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2930700
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2930700
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2930700
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2930700
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2930700
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2930700
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2930700
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2930700
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2930700
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2930700
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2930700
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2930700
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2930700
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2930700
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2930700
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2930700
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2930700
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2930700
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2930700
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2930700
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2930700

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B2465
Report Date: 2012/08/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OG8642				
Sampling Date		2012/07/20				
COC Number		12335				
	Units	**LICA VOC/CLS/JULY 2012 - 7927**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	81		N/A	N/A	2930700
D5-Chlorobenzene	%	77		N/A	N/A	2930700
Difluorobenzene	%	81		N/A	N/A	2930700

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

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OG8643				
Sampling Date		2012/07/20				
COC Number		12335				
	Units	**LICA VOC/PORT/JULY 2012 - 256**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2930700
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2930700
Propene	ppbv	<1.2	1.2	<2.07	2.07	2930700
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2930700
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2930700
Dichlorodifluoromethane (FREON 12)	ppbv	0.67	0.20	3.29	0.989	2930700
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2930700
Chloromethane	ppbv	0.46	0.30	0.954	0.620	2930700
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2930700
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2930700
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2930700
Trichlorofluoromethane (FREON 11)	ppbv	0.36	0.20	2.04	1.12	2930700
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2930700
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2930700
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2930700
2-Propanone	ppbv	3.91	0.80	9.29	1.90	2930700
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2930700
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2930700
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2930700
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2930700
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2930700
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2930700
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2930700
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2930700
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2930700
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2930700
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2930700
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2930700
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2930700
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2930700
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2930700

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OG8643				
Sampling Date		2012/07/20				
COC Number		12335				
	Units	**LICA VOC/PORT/JULY 2012 - 256**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2930700
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2930700
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2930700
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2930700
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2930700
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2930700
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2930700
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2930700
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2930700
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2930700
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2930700
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2930700
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2930700
Toluene	ppbv	0.43	0.20	1.62	0.753	2930700
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2930700
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2930700
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2930700
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2930700
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2930700
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2930700
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2930700
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2930700
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2930700
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2930700
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2930700
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2930700
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2930700
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2930700
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2930700
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2930700
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2930700
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2930700
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2930700

QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OG8643				
Sampling Date		2012/07/20				
COC Number		12335				
	Units	**LICA VOC/PORT/JULY 2012 - 256**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	79		N/A	N/A	2930700
D5-Chlorobenzene	%	77		N/A	N/A	2930700
Difluorobenzene	%	80		N/A	N/A	2930700

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

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Maxxam Job #: B2B2465
Report Date: 2012/08/08

Test Summary

Maxxam ID OG8642 **Collected** 2012/07/20
Sample ID LICA VOC/CLS/JULY 2012 - 7927 **Shipped**
Matrix AIR **Received** 2012/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2930359	N/A	2012/08/03	Diane Temniuk
Volatile Organics in Air (TO-15)	GC/MS	2930700	N/A	2012/08/03	Diane Temniuk

Maxxam ID OG8643 **Collected** 2012/07/20
Sample ID LICA VOC/PORT/JULY 2012 - 256 **Shipped**
Matrix AIR **Received** 2012/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2930359	N/A	2012/08/03	Diane Temniuk
Volatile Organics in Air (TO-15)	GC/MS	2930700	N/A	2012/08/03	Diane Temniuk

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GENERAL COMMENTS

Sample OG8643-01: 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: GB2B2465

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2930700	DVO	Spiked Blank	Bromochloromethane	2012/08/03		99	%	60 - 140
			D5-Chlorobenzene	2012/08/03		103	%	60 - 140
			Difluorobenzene	2012/08/03		103	%	60 - 140
			2,2,4-Trimethylpentane	2012/08/03		97	%	70 - 130
			Carbon Disulfide	2012/08/03		97	%	70 - 130
			Propene	2012/08/03		89	%	70 - 130
			Vinyl Acetate	2012/08/03		104	%	70 - 130
			Vinyl Bromide	2012/08/03		102	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2012/08/03		104	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/08/03		116	%	70 - 130
			Chloromethane	2012/08/03		94	%	70 - 130
			Vinyl Chloride	2012/08/03		94	%	70 - 130
			Chloroethane	2012/08/03		90	%	70 - 130
			1,3-Butadiene	2012/08/03		107	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/08/03		98	%	70 - 130
			Trichlorotrifluoroethane	2012/08/03		97	%	70 - 130
			Ethanol (ethyl alcohol)	2012/08/03		78	%	70 - 130
			2-propanol	2012/08/03		100	%	70 - 130
			2-Propanone	2012/08/03		98	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/08/03		102	%	70 - 130
			Methyl Isobutyl Ketone	2012/08/03		102	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/08/03		106	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/08/03		106	%	70 - 130
			Ethyl Acetate	2012/08/03		99	%	70 - 130
			1,1-Dichloroethylene	2012/08/03		94	%	70 - 130
			cis-1,2-Dichloroethylene	2012/08/03		93	%	70 - 130
			trans-1,2-Dichloroethylene	2012/08/03		93	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/08/03		82	%	70 - 130
			Chloroform	2012/08/03		96	%	70 - 130
			Carbon Tetrachloride	2012/08/03		104	%	70 - 130
			1,1-Dichloroethane	2012/08/03		92	%	70 - 130
			1,2-Dichloroethane	2012/08/03		97	%	70 - 130
			Ethylene Dibromide	2012/08/03		101	%	70 - 130
			1,1,1-Trichloroethane	2012/08/03		101	%	70 - 130
			1,1,2-Trichloroethane	2012/08/03		102	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/08/03		105	%	70 - 130
			cis-1,3-Dichloropropene	2012/08/03		100	%	70 - 130
			trans-1,3-Dichloropropene	2012/08/03		100	%	70 - 130
			1,2-Dichloropropane	2012/08/03		95	%	70 - 130
			Bromomethane	2012/08/03		97	%	70 - 130
			Bromoform	2012/08/03		116	%	70 - 130
			Bromodichloromethane	2012/08/03		104	%	70 - 130
			Dibromochloromethane	2012/08/03		111	%	70 - 130
			Heptane	2012/08/03		93	%	70 - 130
			Trichloroethylene	2012/08/03		100	%	70 - 130
			Tetrachloroethylene	2012/08/03		104	%	70 - 130
			Benzene	2012/08/03		96	%	70 - 130
			Toluene	2012/08/03		102	%	70 - 130
			Ethylbenzene	2012/08/03		102	%	70 - 130
			p+m-Xylene	2012/08/03		101	%	70 - 130
			o-Xylene	2012/08/03		104	%	70 - 130
			Styrene	2012/08/03		92	%	70 - 130
			1,3,5-Trimethylbenzene	2012/08/03		104	%	70 - 130
			1,2,4-Trimethylbenzene	2012/08/03		107	%	70 - 130
			4-ethyltoluene	2012/08/03		113	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2B2465

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2930700	DVO	Spiked Blank	Chlorobenzene	2012/08/03		97	%	70 - 130
			Benzyl chloride	2012/08/03		112	%	70 - 130
			1,3-Dichlorobenzene	2012/08/03		106	%	70 - 130
			1,4-Dichlorobenzene	2012/08/03		105	%	70 - 130
			1,2-Dichlorobenzene	2012/08/03		106	%	70 - 130
			1,2,4-Trichlorobenzene	2012/08/03		116	%	70 - 130
			Hexachlorobutadiene	2012/08/03		128	%	70 - 130
			Hexane	2012/08/03		96	%	70 - 130
			Cyclohexane	2012/08/03		95	%	70 - 130
			Tetrahydrofuran	2012/08/03		95	%	70 - 130
			1,4-Dioxane	2012/08/03		111	%	70 - 130
			Xylene (Total)	2012/08/03		102	%	70 - 130
		Method Blank	Bromochloromethane	2012/08/03		89	%	60 - 140
			D5-Chlorobenzene	2012/08/03		86	%	60 - 140
			Difluorobenzene	2012/08/03		90	%	60 - 140
			2,2,4-Trimethylpentane	2012/08/03	<0.20		ppbv	
			Carbon Disulfide	2012/08/03	<0.50		ppbv	
			Propene	2012/08/03	<0.30		ppbv	
			Vinyl Acetate	2012/08/03	<0.20		ppbv	
			Vinyl Bromide	2012/08/03	<0.20		ppbv	
			Dichlorodifluoromethane (FREON 12)	2012/08/03	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/08/03	<0.17		ppbv	
			Chloromethane	2012/08/03	<0.30		ppbv	
			Vinyl Chloride	2012/08/03	<0.18		ppbv	
			Chloroethane	2012/08/03	<0.30		ppbv	
			1,3-Butadiene	2012/08/03	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/08/03	<0.20		ppbv	
			Trichlorotrifluoroethane	2012/08/03	<0.15		ppbv	
			Ethanol (ethyl alcohol)	2012/08/03	<2.3		ppbv	
			2-propanol	2012/08/03	<3.0		ppbv	
			2-Propanone	2012/08/03	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/08/03	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/08/03	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/08/03	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/08/03	<0.20		ppbv	
			Ethyl Acetate	2012/08/03	<2.2		ppbv	
			1,1-Dichloroethylene	2012/08/03	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/08/03	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/08/03	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/08/03	<0.80		ppbv	
			Chloroform	2012/08/03	<0.15		ppbv	
			Carbon Tetrachloride	2012/08/03	<0.30		ppbv	
			1,1-Dichloroethane	2012/08/03	<0.20		ppbv	
			1,2-Dichloroethane	2012/08/03	<0.20		ppbv	
			Ethylene Dibromide	2012/08/03	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/08/03	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/08/03	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/08/03	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/08/03	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/08/03	<0.17		ppbv	
			1,2-Dichloropropane	2012/08/03	<0.40		ppbv	
			Bromomethane	2012/08/03	<0.18		ppbv	
			Bromoform	2012/08/03	<0.20		ppbv	
			Bromodichloromethane	2012/08/03	<0.20		ppbv	
			Dibromochloromethane	2012/08/03	<0.20		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2B2465

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2930700	DVO	Method Blank	Heptane	2012/08/03	<0.30		ppbv	
			Trichloroethylene	2012/08/03	<0.30		ppbv	
			Tetrachloroethylene	2012/08/03	<0.20		ppbv	
			Benzene	2012/08/03	<0.18		ppbv	
			Toluene	2012/08/03	<0.20		ppbv	
			Ethylbenzene	2012/08/03	<0.20		ppbv	
			p+m-Xylene	2012/08/03	<0.37		ppbv	
			o-Xylene	2012/08/03	<0.20		ppbv	
			Styrene	2012/08/03	<0.20		ppbv	
			1,3,5-Trimethylbenzene	2012/08/03	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/08/03	<0.50		ppbv	
			4-ethyltoluene	2012/08/03	<2.2		ppbv	
			Chlorobenzene	2012/08/03	<0.20		ppbv	
			Benzyl chloride	2012/08/03	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/08/03	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/08/03	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/08/03	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/08/03	<2.0		ppbv	
			Hexachlorobutadiene	2012/08/03	<3.0		ppbv	
			Hexane	2012/08/03	<0.30		ppbv	
			Cyclohexane	2012/08/03	<0.20		ppbv	
			Tetrahydrofuran	2012/08/03	<0.40		ppbv	
			1,4-Dioxane	2012/08/03	<2.0		ppbv	
			Xylene (Total)	2012/08/03	<0.60		ppbv	
		RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2012/08/03	NC		%	25
			Carbon Disulfide	2012/08/03	NC		%	25
			Propene	2012/08/03	NC		%	25
			Vinyl Acetate	2012/08/03	NC		%	25
			Vinyl Bromide	2012/08/03	NC		%	25
			Dichlorodifluoromethane (FREON 12)	2012/08/03	NC		%	25
			1,2-Dichlorotetrafluoroethane	2012/08/03	NC		%	25
			Chloromethane	2012/08/03	NC		%	25
			Vinyl Chloride	2012/08/03	NC		%	25
			Chloroethane	2012/08/03	NC		%	25
			1,3-Butadiene	2012/08/03	NC		%	25
			Trichlorofluoromethane (FREON 11)	2012/08/03	NC		%	25
			Trichlorotrifluoroethane	2012/08/03	NC		%	25
			Ethanol (ethyl alcohol)	2012/08/03	NC		%	25
			2-propanol	2012/08/03	NC		%	25
			2-Propanone	2012/08/03	NC		%	25
			Methyl Ethyl Ketone (2-Butanone)	2012/08/03	NC		%	25
			Methyl Isobutyl Ketone	2012/08/03	NC		%	25
			Methyl Butyl Ketone (2-Hexanone)	2012/08/03	NC		%	25
			Methyl t-butyl ether (MTBE)	2012/08/03	NC		%	25
			Ethyl Acetate	2012/08/03	NC		%	25
			1,1-Dichloroethylene	2012/08/03	NC		%	25
			cis-1,2-Dichloroethylene	2012/08/03	NC		%	25
			trans-1,2-Dichloroethylene	2012/08/03	NC		%	25
			Methylene Chloride(Dichloromethane)	2012/08/03	NC		%	25
			Chloroform	2012/08/03	1.7		%	25
			Carbon Tetrachloride	2012/08/03	NC		%	25
			1,1-Dichloroethane	2012/08/03	NC		%	25
			1,2-Dichloroethane	2012/08/03	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2B2465

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2930700	DVO	RPD - Sample/Sample Dup	Ethylene Dibromide	2012/08/03	NC		%	25
			1,1,1-Trichloroethane	2012/08/03	NC		%	25
			1,1,2-Trichloroethane	2012/08/03	NC		%	25
			1,1,2,2-Tetrachloroethane	2012/08/03	NC		%	25
			cis-1,3-Dichloropropene	2012/08/03	NC		%	25
			trans-1,3-Dichloropropene	2012/08/03	NC		%	25
			1,2-Dichloropropane	2012/08/03	NC		%	25
			Bromomethane	2012/08/03	NC		%	25
			Bromoform	2012/08/03	NC		%	25
			Bromodichloromethane	2012/08/03	NC		%	25
			Dibromochloromethane	2012/08/03	NC		%	25
			Heptane	2012/08/03	NC		%	25
			Trichloroethylene	2012/08/03	1.6		%	25
			Tetrachloroethylene	2012/08/03	NC		%	25
			Benzene	2012/08/03	NC		%	25
			Toluene	2012/08/03	NC		%	25
			Ethylbenzene	2012/08/03	NC		%	25
			p+m-Xylene	2012/08/03	NC		%	25
			o-Xylene	2012/08/03	NC		%	25
			Styrene	2012/08/03	NC		%	25
			1,3,5-Trimethylbenzene	2012/08/03	NC		%	25
			1,2,4-Trimethylbenzene	2012/08/03	NC		%	25
			4-ethyltoluene	2012/08/03	NC		%	25
			Chlorobenzene	2012/08/03	NC		%	25
			Benzyl chloride	2012/08/03	NC		%	25
			1,3-Dichlorobenzene	2012/08/03	NC		%	25
			1,4-Dichlorobenzene	2012/08/03	NC		%	25
			1,2-Dichlorobenzene	2012/08/03	NC		%	25
			1,2,4-Trichlorobenzene	2012/08/03	NC		%	25
			Hexachlorobutadiene	2012/08/03	NC		%	25
			Hexane	2012/08/03	NC		%	25
			Cyclohexane	2012/08/03	NC		%	25
			Tetrahydrofuran	2012/08/03	NC		%	25
			1,4-Dioxane	2012/08/03	NC		%	25
			Xylene (Total)	2012/08/03	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.

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MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA VOC/PORT/ Jul 26, 12

Sampler s/n: 6200
Canister ID: 139
Canister Installation Date/Time: Jul 24, 12 @ 09:40 mst
Canister Removal Date/Time: Jul 27, 12 @ 08:48 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
26-Jul-12	07/26/2012 0:00	07/27/2012 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1496	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	22

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

Comments: System leak check prior to sampling. COC # 11875

Technician Signature: Ting Xu

Success Through Science®

Your C.O.C. #: 11875

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

Report Date: 2012/08/15

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2B6141
Received: 2012/08/01, 11:00

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/08/13	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/08/13	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 #: B2B6141
Report Date: 2012/08/15

RESULTS OF ANALYSES OF AIR

Maxxam ID		OI7144	OI7145	
Sampling Date		2012/07/26	2012/07/26	
COC Number		11875	11875	
	Units	**LICA VOC\CLS\JULY 26,12**	**LICA VOC\PORT\JULY 26,12**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	23	22	2938783

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B6141
Report Date: 2012/08/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OI7144				
Sampling Date		2012/07/26				
COC Number		11875				
	Units	**LICA VOC\CLS\JULY 26,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2938240
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2938240
Propene	ppbv	<0.30	0.30	<0.516	0.516	2938240
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2938240
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2938240
Dichlorodifluoromethane (FREON 12)	ppbv	0.74	0.20	3.67	0.989	2938240
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2938240
Chloromethane	ppbv	0.63	0.30	1.29	0.620	2938240
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2938240
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2938240
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2938240
Trichlorofluoromethane (FREON 11)	ppbv	0.38	0.20	2.12	1.12	2938240
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2938240
Ethanol (ethyl alcohol)	ppbv	3.1	2.3	5.81	4.33	2938240
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2938240
2-Propanone	ppbv	4.58	0.80	10.9	1.90	2938240
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2938240
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2938240
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2938240
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2938240
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2938240
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2938240
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2938240
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2938240
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2938240
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2938240
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2938240
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2938240
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2938240
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2938240
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2938240

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B6141
Report Date: 2012/08/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OI7144				
Sampling Date		2012/07/26				
COC Number		11875				
	Units	**LICA VOC\CLS\JULY 26,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2938240
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2938240
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2938240
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2938240
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2938240
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2938240
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2938240
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2938240
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2938240
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2938240
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2938240
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2938240
Benzene	ppbv	0.26	0.18	0.840	0.575	2938240
Toluene	ppbv	0.51	0.20	1.93	0.753	2938240
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2938240
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2938240
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2938240
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2938240
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2938240
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2938240
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2938240
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2938240
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2938240
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2938240
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2938240
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2938240
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2938240
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2938240
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2938240
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2938240
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2938240
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2938240
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2938240

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B6141
Report Date: 2012/08/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OI7144				
Sampling Date		2012/07/26				
COC Number		11875				
	Units	**LICA VOC\CLS\JULY 26,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	86		N/A	N/A	2938240
D5-Chlorobenzene	%	78		N/A	N/A	2938240
Difluorobenzene	%	86		N/A	N/A	2938240

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

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OI7145				
Sampling Date		2012/07/26				
COC Number		11875				
	Units	**LICA VOC\PORT\JULY 26,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2938240
Carbon Disulfide	ppbv	1.08	0.50	3.37	1.56	2938240
Propene	ppbv	<1.5	1.5	<2.58	2.58	2938240
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2938240
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2938240
Dichlorodifluoromethane (FREON 12)	ppbv	0.72	0.20	3.58	0.989	2938240
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2938240
Chloromethane	ppbv	0.52	0.30	1.08	0.620	2938240
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2938240
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2938240
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2938240
Trichlorofluoromethane (FREON 11)	ppbv	0.37	0.20	2.09	1.12	2938240
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2938240
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2938240
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2938240
2-Propanone	ppbv	4.27	0.80	10.2	1.90	2938240
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2938240
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2938240
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2938240
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2938240
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2938240
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2938240
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2938240
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2938240
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2938240
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2938240
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2938240
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2938240
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2938240
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2938240
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2938240

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OI7145				
Sampling Date		2012/07/26				
COC Number		11875				
	Units	**LICA VOC\PORT\JULY 26,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2938240
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2938240
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2938240
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2938240
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2938240
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2938240
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2938240
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2938240
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2938240
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2938240
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2938240
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2938240
Benzene	ppbv	0.28	0.18	0.887	0.575	2938240
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2938240
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2938240
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2938240
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2938240
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2938240
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2938240
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2938240
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2938240
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2938240
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2938240
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2938240
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2938240
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2938240
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2938240
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2938240
Hexane	ppbv	0.33	0.30	1.16	1.06	2938240
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2938240
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2938240
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2938240
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2938240

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B6141
Report Date: 2012/08/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OI7145				
Sampling Date		2012/07/26				
COC Number		11875				
	Units	**LICA VOC\PORT\JULY 26,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	86		N/A	N/A	2938240
D5-Chlorobenzene	%	77		N/A	N/A	2938240
Difluorobenzene	%	83		N/A	N/A	2938240

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

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Maxxam Analytics

Maxxam Job #: B2B6141
Report Date: 2012/08/15

Test Summary

Maxxam ID OI7144 **Collected** 2012/07/26
Sample ID LICA VOC\CLS\JULY 26,12 **Shipped**
Matrix AIR **Received** 2012/08/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2938783	N/A	2012/08/13	Diane Temniuk
Volatile Organics in Air (TO-15)	GC/MS	2938240	N/A	2012/08/13	Diane Temniuk

Maxxam ID OI7145 **Collected** 2012/07/26
Sample ID LICA VOC\PORT\JULY 26,12 **Shipped**
Matrix AIR **Received** 2012/08/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2938783	N/A	2012/08/13	Diane Temniuk
Volatile Organics in Air (TO-15)	GC/MS	2938240	N/A	2012/08/13	Diane Temniuk

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GENERAL COMMENTS

Sample OI7145-01: 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: GB2B6141

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2938240	DVO	Spiked Blank	Bromochloromethane	2012/08/13		105	%	60 - 140
			D5-Chlorobenzene	2012/08/13		106	%	60 - 140
			Difluorobenzene	2012/08/13		107	%	60 - 140
			2,2,4-Trimethylpentane	2012/08/13		93	%	70 - 130
			Carbon Disulfide	2012/08/13		95	%	70 - 130
			Propene	2012/08/13		85	%	70 - 130
			Vinyl Acetate	2012/08/13		99	%	70 - 130
			Vinyl Bromide	2012/08/13		93	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2012/08/13		111	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/08/13		119	%	70 - 130
			Chloromethane	2012/08/13		98	%	70 - 130
			Vinyl Chloride	2012/08/13		96	%	70 - 130
			Chloroethane	2012/08/13		91	%	70 - 130
			1,3-Butadiene	2012/08/13		105	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/08/13		107	%	70 - 130
			Trichlorotrifluoroethane	2012/08/13		102	%	70 - 130
			Ethanol (ethyl alcohol)	2012/08/13		75	%	70 - 130
			2-propanol	2012/08/13		89	%	70 - 130
			2-Propanone	2012/08/13		96	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/08/13		105	%	70 - 130
			Methyl Isobutyl Ketone	2012/08/13		96	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/08/13		97	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/08/13		105	%	70 - 130
			Ethyl Acetate	2012/08/13		93	%	70 - 130
			1,1-Dichloroethylene	2012/08/13		97	%	70 - 130
			cis-1,2-Dichloroethylene	2012/08/13		96	%	70 - 130
			trans-1,2-Dichloroethylene	2012/08/13		92	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/08/13		84	%	70 - 130
			Chloroform	2012/08/13		102	%	70 - 130
			Carbon Tetrachloride	2012/08/13		120	%	70 - 130
			1,1-Dichloroethane	2012/08/13		95	%	70 - 130
			1,2-Dichloroethane	2012/08/13		108	%	70 - 130
			Ethylene Dibromide	2012/08/13		112	%	70 - 130
			1,1,1-Trichloroethane	2012/08/13		115	%	70 - 130
			1,1,2-Trichloroethane	2012/08/13		109	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/08/13		105	%	70 - 130
			cis-1,3-Dichloropropene	2012/08/13		109	%	70 - 130
			trans-1,3-Dichloropropene	2012/08/13		112	%	70 - 130
			1,2-Dichloropropane	2012/08/13		100	%	70 - 130
			Bromomethane	2012/08/13		101	%	70 - 130
			Bromoform	2012/08/13		117	%	70 - 130
			Bromodichloromethane	2012/08/13		110	%	70 - 130
			Dibromochloromethane	2012/08/13		116	%	70 - 130
			Heptane	2012/08/13		94	%	70 - 130
			Trichloroethylene	2012/08/13		107	%	70 - 130
			Tetrachloroethylene	2012/08/13		114	%	70 - 130
			Benzene	2012/08/13		101	%	70 - 130
			Toluene	2012/08/13		109	%	70 - 130
			Ethylbenzene	2012/08/13		106	%	70 - 130
			p+m-Xylene	2012/08/13		106	%	70 - 130
			o-Xylene	2012/08/13		112	%	70 - 130
			Styrene	2012/08/13		91	%	70 - 130
			1,3,5-Trimethylbenzene	2012/08/13		108	%	70 - 130
			1,2,4-Trimethylbenzene	2012/08/13		110	%	70 - 130
			4-ethyltoluene	2012/08/13		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: GB2B6141

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2938240	DVO	Spiked Blank	Chlorobenzene	2012/08/13		103	%	70 - 130
			Benzyl chloride	2012/08/13		115	%	70 - 130
			1,3-Dichlorobenzene	2012/08/13		115	%	70 - 130
			1,4-Dichlorobenzene	2012/08/13		116	%	70 - 130
			1,2-Dichlorobenzene	2012/08/13		110	%	70 - 130
			1,2,4-Trichlorobenzene	2012/08/13		104	%	70 - 130
			Hexachlorobutadiene	2012/08/13		121	%	70 - 130
			Hexane	2012/08/13		93	%	70 - 130
			Cyclohexane	2012/08/13		95	%	70 - 130
			Tetrahydrofuran	2012/08/13		89	%	70 - 130
			1,4-Dioxane	2012/08/13		107	%	70 - 130
			Xylene (Total)	2012/08/13		108	%	70 - 130
		Method Blank	Bromochloromethane	2012/08/13		87	%	60 - 140
			D5-Chlorobenzene	2012/08/13		76	%	60 - 140
			Difluorobenzene	2012/08/13		84	%	60 - 140
			2,2,4-Trimethylpentane	2012/08/13	<0.20		ppbv	
			Carbon Disulfide	2012/08/13	<0.50		ppbv	
			Propene	2012/08/13	<0.30		ppbv	
			Vinyl Acetate	2012/08/13	<0.20		ppbv	
			Vinyl Bromide	2012/08/13	<0.20		ppbv	
			Dichlorodifluoromethane (FREON 12)	2012/08/13	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/08/13	<0.17		ppbv	
			Chloromethane	2012/08/13	<0.30		ppbv	
			Vinyl Chloride	2012/08/13	<0.18		ppbv	
			Chloroethane	2012/08/13	<0.30		ppbv	
			1,3-Butadiene	2012/08/13	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/08/13	<0.20		ppbv	
			Trichlorotrifluoroethane	2012/08/13	<0.15		ppbv	
			Ethanol (ethyl alcohol)	2012/08/13	<2.3		ppbv	
			2-propanol	2012/08/13	<3.0		ppbv	
			2-Propanone	2012/08/13	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/08/13	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/08/13	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/08/13	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/08/13	<0.20		ppbv	
			Ethyl Acetate	2012/08/13	<2.2		ppbv	
			1,1-Dichloroethylene	2012/08/13	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/08/13	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/08/13	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/08/13	<0.80		ppbv	
			Chloroform	2012/08/13	<0.15		ppbv	
			Carbon Tetrachloride	2012/08/13	<0.30		ppbv	
			1,1-Dichloroethane	2012/08/13	<0.20		ppbv	
			1,2-Dichloroethane	2012/08/13	<0.20		ppbv	
			Ethylene Dibromide	2012/08/13	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/08/13	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/08/13	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/08/13	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/08/13	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/08/13	<0.17		ppbv	
			1,2-Dichloropropane	2012/08/13	<0.40		ppbv	
			Bromomethane	2012/08/13	<0.18		ppbv	
			Bromoform	2012/08/13	<0.20		ppbv	
			Bromodichloromethane	2012/08/13	<0.20		ppbv	
			Dibromochloromethane	2012/08/13	<0.20		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2B6141

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2938240	DVO	Method Blank	Heptane	2012/08/13	<0.30		ppbv	
			Trichloroethylene	2012/08/13	<0.30		ppbv	
			Tetrachloroethylene	2012/08/13	<0.20		ppbv	
			Benzene	2012/08/13	<0.18		ppbv	
			Toluene	2012/08/13	<0.20		ppbv	
			Ethylbenzene	2012/08/13	<0.20		ppbv	
			p+m-Xylene	2012/08/13	<0.37		ppbv	
			o-Xylene	2012/08/13	<0.20		ppbv	
			Styrene	2012/08/13	<0.20		ppbv	
			1,3,5-Trimethylbenzene	2012/08/13	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/08/13	<0.50		ppbv	
			4-ethyltoluene	2012/08/13	<2.2		ppbv	
			Chlorobenzene	2012/08/13	<0.20		ppbv	
			Benzyl chloride	2012/08/13	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/08/13	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/08/13	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/08/13	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/08/13	<2.0		ppbv	
			Hexachlorobutadiene	2012/08/13	<3.0		ppbv	
			Hexane	2012/08/13	<0.30		ppbv	
			Cyclohexane	2012/08/13	<0.20		ppbv	
			Tetrahydrofuran	2012/08/13	<0.40		ppbv	
			1,4-Dioxane	2012/08/13	<2.0		ppbv	
			Xylene (Total)	2012/08/13	<0.60		ppbv	
		RPD - Sample/Sample Dup	Vinyl Chloride	2012/08/13	NC		%	25
			1,1-Dichloroethylene	2012/08/13	NC		%	25
			cis-1,2-Dichloroethylene	2012/08/13	NC		%	25
			trans-1,2-Dichloroethylene	2012/08/13	NC		%	25
			Trichloroethylene	2012/08/13	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.

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Polycyclic Aromatic Hydrocarbons Laboratory Analysis

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA PUF/PORT/Jul 02, 12

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Jun 28, 2012 @ 13:04 mst
Removal Date/Time: Jul 04, 2012 @ 10:50 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
02-Jul-12	07/02/2012 0:00	07/03/2012 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
26-Jun-12	04-Jul-12	06-Jul-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)
704	229	18.6	330.34

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

Comments: COC #05852
GB234740 Puff #2
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jul 02 , 12

Technician Signiture: Ting Xu

JOB #: 2833-12-07-35-C

Success Through Science®

Your C.O.C. #: 05852

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

Report Date: 2012/07/30

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2A0822
Received: 2012/07/06, 09:50

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/07/09	2012/07/26	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

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

==========

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

Total cover pages: 1

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

Maxxam ID		OA7835	OA7836		
Sampling Date		2012/07/02	2012/07/02		
COC Number		05852	05852		
	Units	**LICA PUFF+QFF/CLS/JULY 02,12**	**LICA PUFF+QFF/PORT/JULY 02,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2902355
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2902355
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2902355
2-Methylanthracene	ug	<0.10	<0.10	0.10	2902355
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2902355
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2902355
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2902355
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2902355
Acenaphthene	ug	<0.050	<0.050	0.050	2902355
Acenaphthylene	ug	<0.050	<0.050	0.050	2902355
Anthracene	ug	<0.050	0.264	0.050	2902355
Benzo(a)anthracene	ug	0.050	<0.050	0.050	2902355
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2902355
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2902355
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2902355
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2902355
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2902355
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2902355
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2902355
Biphenyl	ug	<0.10	<0.10	0.10	2902355
Chrysene	ug	<0.050	<0.050	0.050	2902355
Coronene	ug	<0.10	<0.10	0.10	2902355
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2902355
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2902355
Fluoranthene	ug	0.084	<0.050	0.050	2902355
Fluorene	ug	0.072	<0.050	0.050	2902355
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2902355
m-Terphenyl	ug	<0.10	<0.10	0.10	2902355
Naphthalene	ug	<0.072	<0.072	0.072	2902355
o-Terphenyl	ug	<0.10	<0.10	0.10	2902355
Perylene	ug	<0.10	<0.10	0.10	2902355

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A0822
Report Date: 2012/07/30

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

Maxxam ID		OA7835	OA7836		
Sampling Date		2012/07/02	2012/07/02		
COC Number		05852	05852		
	Units	**LICA PUFF+QFF/CLS/JULY 02,12**	**LICA PUFF+QFF/PORT/JULY 02,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.530	0.248	0.050	2902355
p-Terphenyl	ug	<0.10	<0.10	0.10	2902355
Pyrene	ug	0.060	<0.050	0.050	2902355
Quinoline	ug	<0.40	<0.40	0.40	2902355
Tetralin	ug	<0.10	<0.10	0.10	2902355
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	56	56		2902355
D10-Fluoranthene	%	94	94		2902355
D10-Fluorene (FS)	%	5.2 (1)	6.6 (1)		2902355
D10-Phenanthrene	%	88	88		2902355
D12-Benzo(a)anthracene	%	102	102		2902355
D12-Benzo(a)pyrene	%	90	90		2902355
D12-Benzo(b)fluoranthene	%	92	92		2902355
D12-Benzo(ghi)perylene	%	82	80		2902355
D12-Benzo(k)fluoranthene	%	78	78		2902355
D12-Chrysene	%	80	80		2902355
D12-Indeno(1,2,3-cd)pyrene	%	84	86		2902355
D12-Perylene	%	78	78		2902355
D14-Dibenzo(a,h)anthracene	%	90	90		2902355
D14-Terphenyl (FS)	%	93	94		2902355
D8-Acenaphthylene	%	66	68		2902355
D8-Naphthalene	%	52	52		2902355

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 #: B2A0822
Report Date: 2012/07/30

Test Summary

Maxxam ID OA7835 **Collected** 2012/07/02
Sample ID LICA PUFF+QFF/CLS/JULY 02,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/07/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2902355	2012/07/09	2012/07/26	Karen Nicol

Maxxam ID OA7836 **Collected** 2012/07/02
Sample ID LICA PUFF+QFF/PORT/JULY 02,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/07/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2902355	2012/07/09	2012/07/26	Karen Nicol

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Maxxam Analytics

Maxxam Job #: B2A0822
Report Date: 2012/07/30

GENERAL COMMENTS

Sample spike. OA7835-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field

Sample spike. OA7836-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field

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: GB2A0822

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2902355	KDN	Spiked Blank	D10-2-Methylnaphthalene	2012/07/26		66	%	50 - 150
			D10-Fluoranthene	2012/07/26		92	%	50 - 150
			D10-Phenanthrene	2012/07/26		82	%	50 - 150
			D12-Benzo(a)anthracene	2012/07/26		96	%	50 - 150
			D12-Benzo(a)pyrene	2012/07/26		98	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/07/26		88	%	50 - 150
			D12-Benzo(ghi)perylene	2012/07/26		82	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/07/26		78	%	50 - 150
			D12-Chrysene	2012/07/26		78	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/07/26		90	%	50 - 150
			D12-Perylene	2012/07/26		84	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/07/26		94	%	50 - 150
			D8-Acenaphthylene	2012/07/26		72	%	50 - 150
			D8-Naphthalene	2012/07/26		66	%	50 - 150
			Acenaphthene	2012/07/26		65	%	60 - 130
		RPD	Acenaphthene	2012/07/26	6.8		%	50
		Spiked Blank	Acenaphthylene	2012/07/26		62	%	60 - 130
		RPD	Acenaphthylene	2012/07/26	6.7		%	50
		Spiked Blank	Anthracene	2012/07/26		72	%	60 - 130
		RPD	Anthracene	2012/07/26	0.7		%	50
		Spiked Blank	Benzo(a)anthracene	2012/07/26		85	%	60 - 130
		RPD	Benzo(a)anthracene	2012/07/26	3.5		%	50
		Spiked Blank	Benzo(a)pyrene	2012/07/26		73	%	60 - 130
		RPD	Benzo(a)pyrene	2012/07/26	2.0		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/07/26		74	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/07/26	3.3		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/07/26		69	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/07/26	0.4		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/07/26		79	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/07/26	2.5		%	50
		Spiked Blank	Chrysene	2012/07/26		69	%	60 - 130
		RPD	Chrysene	2012/07/26	5.3		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/07/26		78	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/07/26	1.3		%	50
		Spiked Blank	Fluoranthene	2012/07/26		85	%	60 - 130
		RPD	Fluoranthene	2012/07/26	2.9		%	50
		Spiked Blank	Fluorene	2012/07/26		71	%	60 - 130
		RPD	Fluorene	2012/07/26	2.9		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/07/26		75	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/07/26	0.7		%	50
		Spiked Blank	Naphthalene	2012/07/26		62	%	60 - 130
		RPD	Naphthalene	2012/07/26	12.0		%	50
		Spiked Blank	Phenanthrene	2012/07/26		73	%	60 - 130
		RPD	Phenanthrene	2012/07/26	2.4		%	50
		Spiked Blank	Pyrene	2012/07/26		81	%	60 - 130
		RPD	Pyrene	2012/07/26	2.1		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/07/26		74	%	50 - 150
			D10-Fluoranthene	2012/07/26		86	%	50 - 150
			D10-Phenanthrene	2012/07/26		78	%	50 - 150
			D12-Benzo(a)anthracene	2012/07/26		82	%	50 - 150
			D12-Benzo(a)pyrene	2012/07/26		94	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/07/26		82	%	50 - 150
			D12-Benzo(ghi)perylene	2012/07/26		74	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/07/26		74	%	50 - 150
			D12-Chrysene	2012/07/26		74	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2A0822

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2902355	KDN	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/07/26		78	%	50 - 150
			D12-Perylene	2012/07/26		82	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/07/26		80	%	50 - 150
			D8-Acenaphthylene	2012/07/26		80	%	50 - 150
			D8-Naphthalene	2012/07/26		74	%	50 - 150
			1-Methylnaphthalene	2012/07/26	<0.10		ug	
			1-Methylphenanthrene	2012/07/26	<0.10		ug	
			2-Chloronaphthalene	2012/07/26	<0.10		ug	
			2-Methylanthracene	2012/07/26	<0.10		ug	
			2-Methylnaphthalene	2012/07/26	<0.10		ug	
			3-Methylcholanthrene	2012/07/26	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/07/26	<0.10		ug	
			9,10-Dimethylanthracene	2012/07/26	<0.40		ug	
			Acenaphthene	2012/07/26	<0.050		ug	
			Acenaphthylene	2012/07/26	<0.050		ug	
			Anthracene	2012/07/26	<0.050		ug	
			Benzo(a)anthracene	2012/07/26	<0.050		ug	
			Benzo(a)fluorene	2012/07/26	<0.10		ug	
			Benzo(a)pyrene	2012/07/26	<0.050		ug	
			Benzo(b)fluoranthene	2012/07/26	<0.050		ug	
			Benzo(b)fluorene	2012/07/26	<0.10		ug	
			Benzo(e)pyrene	2012/07/26	<0.10		ug	
			Benzo(g,h,i)perylene	2012/07/26	<0.050		ug	
			Benzo(k)fluoranthene	2012/07/26	<0.050		ug	
			Biphenyl	2012/07/26	<0.10		ug	
			Chrysene	2012/07/26	<0.050		ug	
			Coronene	2012/07/26	<0.10		ug	
			Dibenz(a,h)anthracene	2012/07/26	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/07/26	<0.20		ug	
			Fluoranthene	2012/07/26	<0.050		ug	
			Fluorene	2012/07/26	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/07/26	<0.050		ug	
			m-Terphenyl	2012/07/26	<0.10		ug	
			Naphthalene	2012/07/26	<0.072		ug	
			o-Terphenyl	2012/07/26	<0.10		ug	
			Perylene	2012/07/26	<0.10		ug	
			Phenanthrene	2012/07/26	<0.050		ug	
			p-Terphenyl	2012/07/26	<0.10		ug	
			Pyrene	2012/07/26	<0.050		ug	
			Quinoline	2012/07/26	<0.40		ug	
			Tetralin	2012/07/26	<0.10		ug	

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

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MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA PUF/PORT/Jul 08, 12

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Jul 06, 2012 @ 09:20 mst
Removal Date/Time: Jul 09, 2012 @ 13:02 mst

vb

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
08-Jul-12	07/08/2012 0:00	07/09/2012 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
04-Jul-12	09-Jul-12	17-Jul-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)
712	229	21.7	330.33

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

Comments: COC #11735
GB234748 Puff #2
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jul 08 , 12

Technician Signiture: Ting Xu

JOB #: 2833-12-07-35-C

Success Through Science®

Your C.O.C. #: 11735

Attention: Michael Bisaga
Lakeland Industry & Community Assoc.
P.O. Box 8237
Bonnyville, AB
CANADA T9N 2J5

Report Date: 2012/07/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2A4219
Received: 2012/07/12, 09:06

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/07/13	2012/07/26	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

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

==========

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

Total cover pages: 1

Lakeland Industry & Community Assoc.

Maxxam Job #: B2A4219
Report Date: 2012/07/26

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

Maxxam ID		OC6230	OC6231		
Sampling Date		2012/07/08	2012/07/08		
COC Number		11735	11735		
	Units	**LICAPUFF/QFF/CLS/JULY08,12**	**LICAPUFF/QFF/PORT/JULY08,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2907121
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2907121
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2907121
2-Methylanthracene	ug	<0.10	<0.10	0.10	2907121
2-Methylnaphthalene	ug	<0.10	0.11	0.10	2907121
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2907121
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2907121
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2907121
Acenaphthene	ug	<0.050	<0.050	0.050	2907121
Acenaphthylene	ug	<0.050	<0.050	0.050	2907121
Anthracene	ug	<0.050	<0.050	0.050	2907121
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2907121
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2907121
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2907121
Benzo(b)Anthracene	ug	<0.10	<0.10	0.10	2907121
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2907121
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2907121
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2907121
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2907121
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2907121
Biphenyl	ug	<0.10	<0.10	0.10	2907121
Chrysene	ug	<0.050	<0.050	0.050	2907121
Coronene	ug	<0.10	<0.10	0.10	2907121
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2907121
Dibenzo(a,c) anthracene + Picene	ug	<0.10	<0.10	0.10	2907121
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2907121
Fluoranthene	ug	0.090	<0.050	0.050	2907121
Fluorene	ug	0.052	0.094	0.050	2907121
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2907121
m-Terphenyl	ug	<0.10	<0.10	0.10	2907121
Naphthalene	ug	<0.072	<0.072	0.072	2907121
o-Terphenyl	ug	<0.10	<0.10	0.10	2907121

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Lakeland Industry & Community Assoc.

Maxxam Job #: B2A4219
Report Date: 2012/07/26

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

Maxxam ID		OC6230	OC6231		
Sampling Date		2012/07/08	2012/07/08		
COC Number		11735	11735		
	Units	**LICAPUFF/QFF/CLS/JULY08,12**	**LICAPUFF/QFF/PORT/JULY08,12**	**RDL**	**QC Batch**
Perylene	ug	<0.10	<0.10	0.10	2907121
Phenanthrene	ug	0.476	0.358	0.050	2907121
p-Terphenyl	ug	<0.10	<0.10	0.10	2907121
Pyrene	ug	0.060	<0.050	0.050	2907121
Quinoline	ug	<0.40	<0.40	0.40	2907121
Tetralin	ug	<0.10	<0.10	0.10	2907121
Triphenylene	ug	<0.10	<0.10	0.10	2907121
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	66	68		2907121
D10-Fluoranthene	%	94	94		2907121
D10-Fluorene (FS)	%	4.0 (1)	4.8 (1)		2907121
D10-Phenanthrene	%	92	92		2907121
D12-Benzo(a)anthracene	%	106	106		2907121
D12-Benzo(a)pyrene	%	96	94		2907121
D12-Benzo(b)fluoranthene	%	96	94		2907121
D12-Benzo(ghi)perylene	%	96	96		2907121
D12-Benzo(k)fluoranthene	%	84	82		2907121
D12-Chrysene	%	78	80		2907121
D12-Indeno(1,2,3-cd)pyrene	%	100	100		2907121
D12-Perylene	%	88	86		2907121
D14-Dibenzo(a,h)anthracene	%	104	106		2907121
D14-Terphenyl (FS)	%	90	92		2907121
D8-Acenaphthylene	%	84	82		2907121
D8-Naphthalene	%	60	64		2907121

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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Lakeland Industry & Community Assoc.

Maxxam Job #: B2A4219
Report Date: 2012/07/26

Test Summary

Maxxam ID OC6230 **Collected** 2012/07/08
Sample ID LICAPUFF/QFF/CLS/JULY08,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/07/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2907121	2012/07/13	2012/07/26	Lidija Tomic

Maxxam ID OC6231 **Collected** 2012/07/08
Sample ID LICAPUFF/QFF/PORT/JULY08,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/07/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2907121	2012/07/13	2012/07/26	Lidija Tomic

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Lakeland Industry & Community Assoc.

Maxxam Job #: B2A4219
Report Date: 2012/07/26

GENERAL COMMENTS

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: GB2A4219

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2907121	LTO	Spiked Blank	D10-2-Methylnaphthalene	2012/07/25		68	%	50 - 150
			D10-Fluoranthene	2012/07/25		88	%	50 - 150
			D10-Phenanthrene	2012/07/25		82	%	50 - 150
			D12-Benzo(a)anthracene	2012/07/25		102	%	50 - 150
			D12-Benzo(a)pyrene	2012/07/25		96	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/07/25		94	%	50 - 150
			D12-Benzo(ghi)perylene	2012/07/25		90	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/07/25		86	%	50 - 150
			D12-Chrysene	2012/07/25		82	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/07/25		94	%	50 - 150
			D12-Perylene	2012/07/25		90	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/07/25		96	%	50 - 150
			D8-Acenaphthylene	2012/07/25		70	%	50 - 150
			D8-Naphthalene	2012/07/25		64	%	50 - 150
			Acenaphthene	2012/07/25		66	%	60 - 130
		RPD	Acenaphthene	2012/07/25	3.0		%	50
		Spiked Blank	Acenaphthylene	2012/07/25		63	%	60 - 130
		RPD	Acenaphthylene	2012/07/25	6.9		%	50
		Spiked Blank	Anthracene	2012/07/25		71	%	60 - 130
		RPD	Anthracene	2012/07/25	0.4		%	50
		Spiked Blank	Benzo(a)anthracene	2012/07/25		96	%	60 - 130
		RPD	Benzo(a)anthracene	2012/07/25	9.3		%	50
		Spiked Blank	Benzo(a)pyrene	2012/07/25		82	%	60 - 130
		RPD	Benzo(a)pyrene	2012/07/25	6.6		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/07/25		91	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/07/25	7.4		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/07/25		78	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/07/25	2.6		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/07/25		91	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/07/25	0.8		%	50
		Spiked Blank	Chrysene	2012/07/25		78	%	60 - 130
		RPD	Chrysene	2012/07/25	6.3		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/07/25		85	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/07/25	3.0		%	50
		Spiked Blank	Fluoranthene	2012/07/25		83	%	60 - 130
		RPD	Fluoranthene	2012/07/25	0.9		%	50
		Spiked Blank	Fluorene	2012/07/25		70	%	60 - 130
		RPD	Fluorene	2012/07/25	3.5		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/07/25		83	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/07/25	3.4		%	50
		Spiked Blank	Naphthalene	2012/07/25		60 (1)	%	60 - 130
		RPD	Naphthalene	2012/07/25	5.3		%	50
		Spiked Blank	Phenanthrene	2012/07/25		71	%	60 - 130
		RPD	Phenanthrene	2012/07/25	1.4		%	50
		Spiked Blank	Pyrene	2012/07/25		81	%	60 - 130
		RPD	Pyrene	2012/07/25	5.4		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/07/25		72	%	50 - 150
			D10-Fluoranthene	2012/07/25		82	%	50 - 150
			D10-Phenanthrene	2012/07/25		74	%	50 - 150
			D12-Benzo(a)anthracene	2012/07/25		84	%	50 - 150
			D12-Benzo(a)pyrene	2012/07/25		88	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/07/25		90	%	50 - 150
			D12-Benzo(ghi)perylene	2012/07/25		86	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/07/25		82	%	50 - 150
			D12-Chrysene	2012/07/25		78	%	50 - 150

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Lakeland Industry & Community Assoc.
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2A4219

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2907121	LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/07/25		86	%	50 - 150
			D12-Perylene	2012/07/25		84	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/07/25		86	%	50 - 150
			D8-Acenaphthylene	2012/07/25		68	%	50 - 150
			D8-Naphthalene	2012/07/25		72	%	50 - 150
			1-Methylnaphthalene	2012/07/25	<0.10		ug	
			1-Methylphenanthrene	2012/07/25	<0.10		ug	
			2-Chloronaphthalene	2012/07/25	<0.10		ug	
			2-Methylanthracene	2012/07/25	<0.10		ug	
			2-Methylnaphthalene	2012/07/25	<0.10		ug	
			3-Methylcholanthrene	2012/07/25	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/07/25	<0.10		ug	
			9,10-Dimethylanthracene	2012/07/25	<0.40		ug	
			Acenaphthene	2012/07/25	<0.050		ug	
			Acenaphthylene	2012/07/25	<0.050		ug	
			Anthracene	2012/07/25	<0.050		ug	
			Benzo(a)anthracene	2012/07/25	<0.050		ug	
			Benzo(a)fluorene	2012/07/25	<0.10		ug	
			Benzo(a)pyrene	2012/07/25	0.066, RDL=0.050		ug	
			Benzo(b)Anthracene	2012/07/25	<0.10		ug	
			Benzo(b)fluoranthene	2012/07/25	0.084, RDL=0.050		ug	
			Benzo(b)fluorene	2012/07/25	<0.10		ug	
			Benzo(e)pyrene	2012/07/25	<0.10		ug	
			Benzo(g,h,i)perylene	2012/07/25	<0.050		ug	
			Benzo(k)fluoranthene	2012/07/25	0.084, RDL=0.050		ug	
			Biphenyl	2012/07/25	<0.10		ug	
			Chrysene	2012/07/25	<0.050		ug	
			Coronene	2012/07/25	<0.10		ug	
			Dibenz(a,h)anthracene	2012/07/25	<0.050		ug	
			Dibenzo(a,c) anthracene + Picene	2012/07/25	<0.10		ug	
			Dibenzo(a,e)pyrene	2012/07/25	<0.20		ug	
			Fluoranthene	2012/07/25	<0.050		ug	
			Fluorene	2012/07/25	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/07/25	<0.050		ug	
			m-Terphenyl	2012/07/25	<0.10		ug	
			Naphthalene	2012/07/25	<0.072		ug	
			o-Terphenyl	2012/07/25	<0.10		ug	
			Perylene	2012/07/25	<0.10		ug	
			Phenanthrene	2012/07/25	<0.050		ug	
			p-Terphenyl	2012/07/25	<0.10		ug	
			Pyrene	2012/07/25	<0.050		ug	
			Quinoline	2012/07/25	<0.40		ug	
			Tetralin	2012/07/25	<0.10		ug	
			Triphenylene	2012/07/25	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA PUF/PORT/Jul 14, 12

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Jul 12, 2012 @ 12:18 mst
Removal Date/Time: Jul 16, 2012 @ 09:50 mst

vb

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
14-Jul-12	07/14/2012 0:00	07/15/2012 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
10-Jul-12	16-Jul-12	23-Jul-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)
710	229	19.0	330.33

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

Comments: COC #11778
GB234752 Puff #2
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jul 14 , 12

Technician Signiture: Ting Xu

JOB #: 2833-12-07-35-C

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Your C.O.C. #: 11778

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

Report Date: 2012/08/04

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2A7700
Received: 2012/07/18, 08:45

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/07/18	2012/07/30	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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Total cover pages: 1

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

Maxxam ID		OE4620	OE4621		
Sampling Date		2012/07/14	2012/07/14		
COC Number		11778	11778		
	Units	**LICA PUFF+QFF/CLS/JULY 14,12**	**LICA PUFF+QFF/PORT/JULY 14,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2912395
1-Methylphenanthrene	ug	0.11	<0.10	0.10	2912395
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2912395
2-Methylanthracene	ug	<0.10	<0.10	0.10	2912395
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2912395
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2912395
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2912395
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2912395
Acenaphthene	ug	<0.050	<0.050	0.050	2912395
Acenaphthylene	ug	<0.050	<0.050	0.050	2912395
Anthracene	ug	<0.050	<0.050	0.050	2912395
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2912395
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2912395
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2912395
Benzo(b)fluoranthene	ug	0.054	<0.050	0.050	2912395
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2912395
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2912395
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2912395
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2912395
Biphenyl	ug	<0.10	<0.10	0.10	2912395
Chrysene	ug	<0.050	<0.050	0.050	2912395
Coronene	ug	<0.10	<0.10	0.10	2912395
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2912395
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2912395
Fluoranthene	ug	0.150	0.074	0.050	2912395
Fluorene	ug	0.080	<0.050	0.050	2912395
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2912395
m-Terphenyl	ug	<0.10	<0.10	0.10	2912395
Naphthalene	ug	<0.072	<0.072	0.072	2912395
o-Terphenyl	ug	<0.10	<0.10	0.10	2912395
Perylene	ug	<0.10	<0.10	0.10	2912395

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

Maxxam ID		OE4620	OE4621		
Sampling Date		2012/07/14	2012/07/14		
COC Number		11778	11778		
	Units	**LICA PUFF+QFF/CLS/JULY 14,12**	**LICA PUFF+QFF/PORT/JULY 14,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.788	0.374	0.050	2912395
p-Terphenyl	ug	<0.10	<0.10	0.10	2912395
Pyrene	ug	0.102	<0.050	0.050	2912395
Quinoline	ug	<0.40	<0.40	0.40	2912395
Tetralin	ug	<0.10	<0.10	0.10	2912395
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	66	68		2912395
D10-Fluoranthene	%	100	92		2912395
D10-Fluorene (FS)	%	4.0 (1)	4.0 (1)		2912395
D10-Phenanthrene	%	90	88		2912395
D12-Benzo(a)anthracene	%	94	90		2912395
D12-Benzo(a)pyrene	%	86	84		2912395
D12-Benzo(b)fluoranthene	%	92	88		2912395
D12-Benzo(ghi)perylene	%	96	96		2912395
D12-Benzo(k)fluoranthene	%	84	86		2912395
D12-Chrysene	%	80	78		2912395
D12-Indeno(1,2,3-cd)pyrene	%	96	96		2912395
D12-Perylene	%	82	80		2912395
D14-Dibenzo(a,h)anthracene	%	100	100		2912395
D14-Terphenyl (FS)	%	82	76		2912395
D8-Acenaphthylene	%	78	78		2912395
D8-Naphthalene	%	54	58		2912395

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 #: B2A7700
Report Date: 2012/08/04

Test Summary

Maxxam ID OE4620 **Collected** 2012/07/14
Sample ID LICA PUFF+QFF/CLS/JULY 14,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/07/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2912395	2012/07/18	2012/07/30	Karen Nicol

Maxxam ID OE4621 **Collected** 2012/07/14
Sample ID LICA PUFF+QFF/PORT/JULY 14,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/07/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2912395	2012/07/18	2012/07/30	Karen Nicol

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 #: B2A7700
Report Date: 2012/08/04

GENERAL COMMENTS

Sample spike. OE4620-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field

Sample spike. OE4621-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field

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: GB2A7700

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2912395	H_P	Spiked Blank	D10-2-Methylnaphthalene	2012/07/30		74	%	50 - 150
			D10-Fluoranthene	2012/07/30		90	%	50 - 150
			D10-Phenanthrene	2012/07/30		84	%	50 - 150
			D12-Benzo(a)anthracene	2012/07/30		82	%	50 - 150
			D12-Benzo(a)pyrene	2012/07/30		84	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/07/30		90	%	50 - 150
			D12-Benzo(ghi)perylene	2012/07/30		90	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/07/30		88	%	50 - 150
			D12-Chrysene	2012/07/30		88	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/07/30		90	%	50 - 150
			D12-Perylene	2012/07/30		84	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/07/30		92	%	50 - 150
			D8-Acenaphthylene	2012/07/30		82	%	50 - 150
			D8-Naphthalene	2012/07/30		70	%	50 - 150
			Acenaphthene	2012/07/30		72	%	60 - 130
		RPD	Acenaphthene	2012/07/30	10.3		%	50
		Spiked Blank	Acenaphthylene	2012/07/30		73	%	60 - 130
		RPD	Acenaphthylene	2012/07/30	10.5		%	50
		Spiked Blank	Anthracene	2012/07/30		76	%	60 - 130
		RPD	Anthracene	2012/07/30	10.8		%	50
		Spiked Blank	Benzo(a)anthracene	2012/07/30		77	%	60 - 130
		RPD	Benzo(a)anthracene	2012/07/30	4.7		%	50
		Spiked Blank	Benzo(a)pyrene	2012/07/30		65	%	60 - 130
		RPD	Benzo(a)pyrene	2012/07/30	3.1		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/07/30		82	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/07/30	6.0		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/07/30		78	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/07/30	7.3		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/07/30		78	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/07/30	4.6		%	50
		Spiked Blank	Chrysene	2012/07/30		77	%	60 - 130
		RPD	Chrysene	2012/07/30	8.5		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/07/30		84	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/07/30	6.5		%	50
		Spiked Blank	Fluoranthene	2012/07/30		92	%	60 - 130
		RPD	Fluoranthene	2012/07/30	8.5		%	50
		Spiked Blank	Fluorene	2012/07/30		75	%	60 - 130
		RPD	Fluorene	2012/07/30	9.1		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/07/30		79	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/07/30	6.2		%	50
		Spiked Blank	Naphthalene	2012/07/30		73	%	60 - 130
		RPD	Naphthalene	2012/07/30	18.3		%	50
		Spiked Blank	Phenanthrene	2012/07/30		85	%	60 - 130
		RPD	Phenanthrene	2012/07/30	14.8		%	50
		Spiked Blank	Pyrene	2012/07/30		77	%	60 - 130
		RPD	Pyrene	2012/07/30	5.0		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/07/30		66	%	50 - 150
			D10-Fluoranthene	2012/07/30		90	%	50 - 150
			D10-Phenanthrene	2012/07/30		78	%	50 - 150
			D12-Benzo(a)anthracene	2012/07/30		82	%	50 - 150
			D12-Benzo(a)pyrene	2012/07/30		86	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/07/30		88	%	50 - 150
			D12-Benzo(ghi)perylene	2012/07/30		90	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/07/30		88	%	50 - 150
			D12-Chrysene	2012/07/30		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: GB2A7700

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2912395	H_P	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/07/30		88	%	50 - 150
			D12-Perylene	2012/07/30		84	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/07/30		90	%	50 - 150
			D8-Acenaphthylene	2012/07/30		74	%	50 - 150
			D8-Naphthalene	2012/07/30		58	%	50 - 150
			1-Methylnaphthalene	2012/07/30	<0.10		ug	
			1-Methylphenanthrene	2012/07/30	<0.10		ug	
			2-Chloronaphthalene	2012/07/30	<0.10		ug	
			2-Methylanthracene	2012/07/30	<0.10		ug	
			2-Methylnaphthalene	2012/07/30	<0.10		ug	
			3-Methylcholanthrene	2012/07/30	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/07/30	<0.10		ug	
			9,10-Dimethylanthracene	2012/07/30	<0.40		ug	
			Acenaphthene	2012/07/30	<0.050		ug	
			Acenaphthylene	2012/07/30	<0.050		ug	
			Anthracene	2012/07/30	<0.050		ug	
			Benzo(a)anthracene	2012/07/30	<0.050		ug	
			Benzo(a)fluorene	2012/07/30	<0.10		ug	
			Benzo(a)pyrene	2012/07/30	<0.050		ug	
			Benzo(b)fluoranthene	2012/07/30	<0.050		ug	
			Benzo(b)fluorene	2012/07/30	<0.10		ug	
			Benzo(e)pyrene	2012/07/30	<0.10		ug	
			Benzo(g,h,i)perylene	2012/07/30	<0.050		ug	
			Benzo(k)fluoranthene	2012/07/30	<0.050		ug	
			Biphenyl	2012/07/30	<0.10		ug	
			Chrysene	2012/07/30	<0.050		ug	
			Coronene	2012/07/30	<0.10		ug	
			Dibenz(a,h)anthracene	2012/07/30	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/07/30	<0.20		ug	
			Fluoranthene	2012/07/30	<0.050		ug	
			Fluorene	2012/07/30	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/07/30	<0.050		ug	
			m-Terphenyl	2012/07/30	<0.10		ug	
			Naphthalene	2012/07/30	<0.072		ug	
			o-Terphenyl	2012/07/30	<0.10		ug	
			Perylene	2012/07/30	<0.10		ug	
			Phenanthrene	2012/07/30	<0.050		ug	
			p-Terphenyl	2012/07/30	<0.10		ug	
			Pyrene	2012/07/30	<0.050		ug	
			Quinoline	2012/07/30	<0.40		ug	
			Tetralin	2012/07/30	<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: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA PUF/PORT/Jul 20, 12

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Jul 19, 2012 @ 16:40 mst
Removal Date/Time: Jul 24, 2012 @ 09:48 mst

vb

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
20-Jul-12	07/20/2012 0:00	07/21/2012 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
17-Jul-12	24-Jul-12	30-Jul-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)
712	229	18.6	330.34

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

Comments: COC #12336
GB234753 Puff #2
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jul 20 , 12

Technician Signiture: Ting Xu

JOB #: 2833-12-07-35-C

Success Through Science®

Your C.O.C. #: 12336

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

Report Date: 2012/08/13

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2B2677
Received: 2012/07/26, 08:45

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/07/27	2012/08/11	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

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

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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 #: B2B2677
Report Date: 2012/08/13

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

Maxxam ID		OG9661	OG9662		
Sampling Date		2012/07/20	2012/07/20		
COC Number		12336	12336		
	Units	**LICA PUFF+QFF/CLS/JULY 20,12**	**LICA PUFF+QFF/PORT/JULY 20,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2921658
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2921658
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2921658
2-Methylanthracene	ug	<0.10	<0.10	0.10	2921658
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2921658
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2921658
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2921658
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2921658
Acenaphthene	ug	<0.050	<0.050	0.050	2921658
Acenaphthylene	ug	<0.050	<0.050	0.050	2921658
Anthracene	ug	<0.050	<0.050	0.050	2921658
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2921658
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2921658
Benzo(a)pyrene	ug	<0.050	0.050	0.050	2921658
Benzo(b)fluoranthene	ug	0.052	0.050	0.050	2921658
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2921658
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2921658
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2921658
Benzo(k)fluoranthene	ug	0.052	0.050	0.050	2921658
Biphenyl	ug	<0.10	<0.10	0.10	2921658
Chrysene	ug	<0.050	<0.050	0.050	2921658
Coronene	ug	<0.10	<0.10	0.10	2921658
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2921658
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2921658
Fluoranthene	ug	0.060	<0.050	0.050	2921658
Fluorene	ug	0.060	<0.050	0.050	2921658
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2921658
m-Terphenyl	ug	<0.10	<0.10	0.10	2921658
Naphthalene	ug	<0.072	<0.072	0.072	2921658
o-Terphenyl	ug	<0.10	<0.10	0.10	2921658
Perylene	ug	<0.10	<0.10	0.10	2921658

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B2677
Report Date: 2012/08/13

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

Maxxam ID		OG9661	OG9662		
Sampling Date		2012/07/20	2012/07/20		
COC Number		12336	12336		
	Units	**LICA PUFF+QFF/CLS/JULY 20,12**	**LICA PUFF+QFF/PORT/JULY 20,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.458	0.246	0.050	2921658
p-Terphenyl	ug	<0.10	<0.10	0.10	2921658
Pyrene	ug	<0.050	<0.050	0.050	2921658
Quinoline	ug	<0.40	<0.40	0.40	2921658
Tetralin	ug	<0.10	<0.10	0.10	2921658
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	66	70		2921658
D10-Fluoranthene	%	102	92		2921658
D10-Fluorene (FS)	%	4.0 (1)	3.6 (1)		2921658
D10-Phenanthrene	%	96	86		2921658
D12-Benzo(a)anthracene	%	114	108		2921658
D12-Benzo(a)pyrene	%	90	84		2921658
D12-Benzo(b)fluoranthene	%	96	90		2921658
D12-Benzo(ghi)perylene	%	82	76		2921658
D12-Benzo(k)fluoranthene	%	92	90		2921658
D12-Chrysene	%	94	92		2921658
D12-Indeno(1,2,3-cd)pyrene	%	82	74		2921658
D12-Perylene	%	82	82		2921658
D14-Dibenzo(a,h)anthracene	%	80	76		2921658
D14-Terphenyl (FS)	%	92	86		2921658
D8-Acenaphthylene	%	72	72		2921658
D8-Naphthalene	%	64	66		2921658

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 #: B2B2677
Report Date: 2012/08/13

Test Summary

Maxxam ID OG9661 **Collected** 2012/07/20
Sample ID LICA PUFF+QFF/CLS/JULY 20,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2921658	2012/07/27	2012/08/11	Karen Nicol

Maxxam ID OG9662 **Collected** 2012/07/20
Sample ID LICA PUFF+QFF/PORT/JULY 20,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2921658	2012/07/27	2012/08/11	Karen Nicol

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 #: B2B2677
Report Date: 2012/08/13

GENERAL COMMENTS

Low recoveries for acenaphthylene,acenapthene & fluorene for the spike but recoveries OK for Spike dup.

Sample OG9661-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample OG9662-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

Maxxam Analytics 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: GB2B2677

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2921658	KDN	Spiked Blank	D10-2-Methylnaphthalene	2012/08/10		64	%	50 - 150
			D10-Fluoranthene	2012/08/10		80	%	50 - 150
			D10-Phenanthrene	2012/08/10		70	%	50 - 150
			D12-Benzo(a)anthracene	2012/08/10		86	%	50 - 150
			D12-Benzo(a)pyrene	2012/08/10		84	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/08/10		90	%	50 - 150
			D12-Benzo(ghi)perylene	2012/08/10		76	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/08/10		92	%	50 - 150
			D12-Chrysene	2012/08/10		90	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/08/10		74	%	50 - 150
			D12-Perylene	2012/08/10		84	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/08/10		74	%	50 - 150
			D8-Acenaphthylene	2012/08/10		64	%	50 - 150
			D8-Naphthalene	2012/08/10		64	%	50 - 150
			Acenaphthene	2012/08/10		59 (1)	%	60 - 130
		RPD	Acenaphthene	2012/08/10	25.4		%	50
		Spiked Blank	Acenaphthylene	2012/08/10		58 (1)	%	60 - 130
		RPD	Acenaphthylene	2012/08/10	27.7		%	50
		Spiked Blank	Anthracene	2012/08/10		67	%	60 - 130
		RPD	Anthracene	2012/08/10	13.9		%	50
		Spiked Blank	Benzo(a)anthracene	2012/08/10		79	%	60 - 130
		RPD	Benzo(a)anthracene	2012/08/10	9.0		%	50
		Spiked Blank	Benzo(a)pyrene	2012/08/10		72	%	60 - 130
		RPD	Benzo(a)pyrene	2012/08/10	12.6		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/08/10		89	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/08/10	9.1		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/08/10		70	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/08/10	12.4		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/08/10		97	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/08/10	10.1		%	50
		Spiked Blank	Chrysene	2012/08/10		80	%	60 - 130
		RPD	Chrysene	2012/08/10	15.3		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/08/10		76	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/08/10	11.5		%	50
		Spiked Blank	Fluoranthene	2012/08/10		75	%	60 - 130
		RPD	Fluoranthene	2012/08/10	4.6		%	50
		Spiked Blank	Fluorene	2012/08/10		60 (1)	%	60 - 130
		RPD	Fluorene	2012/08/10	23.0		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/08/10		73	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/08/10	11.9		%	50
		Spiked Blank	Naphthalene	2012/08/10		61	%	60 - 130
		RPD	Naphthalene	2012/08/10	31.3		%	50
		Spiked Blank	Phenanthrene	2012/08/10		62	%	60 - 130
		RPD	Phenanthrene	2012/08/10	15.6		%	50
		Spiked Blank	Pyrene	2012/08/10		67	%	60 - 130
		RPD	Pyrene	2012/08/10	3.3		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/08/10		74	%	50 - 150
			D10-Fluoranthene	2012/08/10		76	%	50 - 150
			D10-Phenanthrene	2012/08/10		70	%	50 - 150
			D12-Benzo(a)anthracene	2012/08/10		84	%	50 - 150
			D12-Benzo(a)pyrene	2012/08/10		84	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/08/10		92	%	50 - 150
			D12-Benzo(ghi)perylene	2012/08/10		74	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/08/10		88	%	50 - 150
			D12-Chrysene	2012/08/10		88	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2B2677

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2921658	KDN	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/08/10		74	%	50 - 150
			D12-Perylene	2012/08/10		82	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/08/10		74	%	50 - 150
			D8-Acenaphthylene	2012/08/10		72	%	50 - 150
			D8-Naphthalene	2012/08/10		74	%	50 - 150
			1-Methylnaphthalene	2012/08/10	<0.10		ug	
			1-Methylphenanthrene	2012/08/10	<0.10		ug	
			2-Chloronaphthalene	2012/08/10	<0.10		ug	
			2-Methylanthracene	2012/08/10	<0.10		ug	
			2-Methylnaphthalene	2012/08/10	<0.10		ug	
			3-Methylcholanthrene	2012/08/10	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/08/10	<0.10		ug	
			9,10-Dimethylanthracene	2012/08/10	<0.40		ug	
			Acenaphthene	2012/08/10	<0.050		ug	
			Acenaphthylene	2012/08/10	<0.050		ug	
			Anthracene	2012/08/10	<0.050		ug	
			Benzo(a)anthracene	2012/08/10	<0.050		ug	
			Benzo(a)fluorene	2012/08/10	<0.10		ug	
			Benzo(a)pyrene	2012/08/10	<0.050		ug	
			Benzo(b)fluoranthene	2012/08/10	0.060, RDL=0.050		ug	
			Benzo(b)fluorene	2012/08/10	<0.10		ug	
			Benzo(e)pyrene	2012/08/10	<0.10		ug	
			Benzo(g,h,i)perylene	2012/08/10	<0.050		ug	
			Benzo(k)fluoranthene	2012/08/10	0.068, RDL=0.050		ug	
			Biphenyl	2012/08/10	<0.10		ug	
			Chrysene	2012/08/10	<0.050		ug	
			Coronene	2012/08/10	<0.10		ug	
			Dibenz(a,h)anthracene	2012/08/10	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/08/10	<0.20		ug	
			Fluoranthene	2012/08/10	<0.050		ug	
			Fluorene	2012/08/10	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/08/10	<0.050		ug	
			m-Terphenyl	2012/08/10	<0.10		ug	
			Naphthalene	2012/08/10	<0.072		ug	
			o-Terphenyl	2012/08/10	<0.10		ug	
			Perylene	2012/08/10	<0.10		ug	
			Phenanthrene	2012/08/10	<0.050		ug	
			p-Terphenyl	2012/08/10	<0.10		ug	
			Pyrene	2012/08/10	<0.050		ug	
			Quinoline	2012/08/10	<0.40		ug	
			Tetralin	2012/08/10	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA PUF/PORT/Jul 26, 12

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Jul 24, 2012 @ 09:56 mst
Removal Date/Time: Jul 27, 2012 @ 08:56 mst

vb

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
26-Jul-12	07/26/2012 0:00	07/27/2012 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
20-Jul-12	30-Jul-12	02-Aug-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)
709	229	19.4	330.34

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

Comments: COC #11876
GB2A5927 Puff #2
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jul 26 , 12

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 11876

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

Report Date: 2012/08/14

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2B6211
Received: 2012/08/01, 08:59

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/08/02	2012/08/09	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

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

Maxxam ID		OI7367	OI7368		
Sampling Date		2012/07/26	2012/07/26		
COC Number		11876	11876		
	Units	**LICA PUFF+QFF/CLS/JULY 26,12**	**LICA PUFF+QFF/PORT/JULY 26,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2927381
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2927381
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2927381
2-Methylanthracene	ug	<0.10	<0.10	0.10	2927381
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2927381
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2927381
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2927381
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2927381
Acenaphthene	ug	<0.050	<0.050	0.050	2927381
Acenaphthylene	ug	<0.050	<0.050	0.050	2927381
Anthracene	ug	<0.050	0.050	0.050	2927381
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2927381
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2927381
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2927381
Benzo(b)Anthracene	ug	<0.10	<0.10	0.10	2927381
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2927381
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2927381
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2927381
Benzo(g,h,i)perylene	ug	<0.050	0.062	0.050	2927381
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2927381
Biphenyl	ug	<0.10	<0.10	0.10	2927381
Chrysene	ug	<0.050	<0.050	0.050	2927381
Coronene	ug	<0.10	<0.10	0.10	2927381
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2927381
Dibenzo(a,c) anthracene + Picene	ug	<0.10	<0.10	0.10	2927381
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2927381
Fluoranthene	ug	0.108	0.172	0.050	2927381
Fluorene	ug	0.132	0.068	0.050	2927381
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2927381
m-Terphenyl	ug	<0.10	<0.10	0.10	2927381
Naphthalene	ug	0.072	<0.072	0.072	2927381

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

Maxxam ID		OI7367	OI7368		
Sampling Date		2012/07/26	2012/07/26		
COC Number		11876	11876		
	Units	**LICA PUFF+QFF/CLS/JULY 26,12**	**LICA PUFF+QFF/PORT/JULY 26,12**	**RDL**	**QC Batch**
o-Terphenyl	ug	<0.10	<0.10	0.10	2927381
Perylene	ug	<0.10	<0.10	0.10	2927381
Phenanthrene	ug	0.750	0.556	0.050	2927381
p-Terphenyl	ug	<0.10	<0.10	0.10	2927381
Pyrene	ug	0.074	0.212	0.050	2927381
Quinoline	ug	<0.40	<0.40	0.40	2927381
Tetralin	ug	<0.10	<0.10	0.10	2927381
Triphenylene	ug	<0.10	<0.10	0.10	2927381
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	60	60		2927381
D10-Fluoranthene	%	98	96		2927381
D10-Fluorene (FS)	%	4.2 (1)	4.4 (1)		2927381
D10-Phenanthrene	%	90	88		2927381
D12-Benzo(a)anthracene	%	98	96		2927381
D12-Benzo(a)pyrene	%	104	98		2927381
D12-Benzo(b)fluoranthene	%	90	92		2927381
D12-Benzo(ghi)perylene	%	98	96		2927381
D12-Benzo(k)fluoranthene	%	82	80		2927381
D12-Chrysene	%	68	70		2927381
D12-Indeno(1,2,3-cd)pyrene	%	102	98		2927381
D12-Perylene	%	92	86		2927381
D14-Dibenzo(a,h)anthracene	%	102	98		2927381
D14-Terphenyl (FS)	%	87	87		2927381
D8-Acenaphthylene	%	78	76		2927381
D8-Naphthalene	%	56	58		2927381

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 #: B2B6211
Report Date: 2012/08/14

Test Summary

Maxxam ID OI7367 **Collected** 2012/07/26
Sample ID LICA PUFF+QFF/CLS/JULY 26,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/08/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2927381	2012/08/02	2012/08/09	Lidija Tomic

Maxxam ID OI7368 **Collected** 2012/07/26
Sample ID LICA PUFF+QFF/PORT/JULY 26,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/08/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2927381	2012/08/02	2012/08/09	Lidija Tomic

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Maxxam Analytics

Maxxam Job #: B2B6211
Report Date: 2012/08/14

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: GB2B6211

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2927381	LTO	Spiked Blank	D10-2-Methylnaphthalene	2012/08/09		60	%	50 - 150
			D10-Fluoranthene	2012/08/09		84	%	50 - 150
			D10-Phenanthrene	2012/08/09		74	%	50 - 150
			D12-Benzo(a)anthracene	2012/08/09		80	%	50 - 150
			D12-Benzo(a)pyrene	2012/08/09		88	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/08/09		90	%	50 - 150
			D12-Benzo(ghi)perylene	2012/08/09		86	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/08/09		84	%	50 - 150
			D12-Chrysene	2012/08/09		74	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/08/09		86	%	50 - 150
			D12-Perylene	2012/08/09		84	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/08/09		86	%	50 - 150
			D8-Acenaphthylene	2012/08/09		60	%	50 - 150
			D8-Naphthalene	2012/08/09		60	%	50 - 150
			Acenaphthene	2012/08/09		58 (1)	%	60 - 130
		RPD	Acenaphthene	2012/08/09	7.8		%	50
		Spiked Blank	Acenaphthylene	2012/08/09		54 (2)	%	60 - 130
		RPD	Acenaphthylene	2012/08/09	18.1		%	50
		Spiked Blank	Anthracene	2012/08/09		70	%	60 - 130
		RPD	Anthracene	2012/08/09	5.5		%	50
		Spiked Blank	Benzo(a)anthracene	2012/08/09		72	%	60 - 130
		RPD	Benzo(a)anthracene	2012/08/09	5.1		%	50
		Spiked Blank	Benzo(a)pyrene	2012/08/09		67	%	60 - 130
		RPD	Benzo(a)pyrene	2012/08/09	7.2		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/08/09		80	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/08/09	5.5		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/08/09		70	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/08/09	6.6		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/08/09		81	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/08/09	1.5		%	50
		Spiked Blank	Chrysene	2012/08/09		70	%	60 - 130
		RPD	Chrysene	2012/08/09	1.1		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/08/09		77	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/08/09	4.8		%	50
		Spiked Blank	Fluoranthene	2012/08/09		80	%	60 - 130
		RPD	Fluoranthene	2012/08/09	4.0		%	50
		Spiked Blank	Fluorene	2012/08/09		62	%	60 - 130
		RPD	Fluorene	2012/08/09	5.9		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/08/09		74	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/08/09	5.0		%	50
		Spiked Blank	Naphthalene	2012/08/09		58 (2)	%	60 - 130
		RPD	Naphthalene	2012/08/09	3.1		%	50
		Spiked Blank	Phenanthrene	2012/08/09		68	%	60 - 130
		RPD	Phenanthrene	2012/08/09	2.9		%	50
		Spiked Blank	Pyrene	2012/08/09		72	%	60 - 130
		RPD	Pyrene	2012/08/09	3.1		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/08/09		68	%	50 - 150
			D10-Fluoranthene	2012/08/09		86	%	50 - 150
			D10-Phenanthrene	2012/08/09		76	%	50 - 150
			D12-Benzo(a)anthracene	2012/08/09		82	%	50 - 150
			D12-Benzo(a)pyrene	2012/08/09		92	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/08/09		94	%	50 - 150
			D12-Benzo(ghi)perylene	2012/08/09		94	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/08/09		82	%	50 - 150
			D12-Chrysene	2012/08/09		72	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2B6211

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2927381	LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/08/09		92	%	50 - 150
			D12-Perylene	2012/08/09		86	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/08/09		94	%	50 - 150
			D8-Acenaphthylene	2012/08/09		72	%	50 - 150
			D8-Naphthalene	2012/08/09		66	%	50 - 150
			1-Methylnaphthalene	2012/08/09	<0.10		ug	
			1-Methylphenanthrene	2012/08/09	<0.10		ug	
			2-Chloronaphthalene	2012/08/09	<0.10		ug	
			2-Methylanthracene	2012/08/09	<0.10		ug	
			2-Methylnaphthalene	2012/08/09	<0.10		ug	
			3-Methylcholanthrene	2012/08/09	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/08/09	<0.10		ug	
			9,10-Dimethylanthracene	2012/08/09	<0.40		ug	
			Acenaphthene	2012/08/09	<0.050		ug	
			Acenaphthylene	2012/08/09	<0.050	(3)	ug	
			Anthracene	2012/08/09	<0.050		ug	
			Benzo(a)anthracene	2012/08/09	<0.050		ug	
			Benzo(a)fluorene	2012/08/09	<0.10		ug	
			Benzo(a)pyrene	2012/08/09	<0.050		ug	
			Benzo(b)Anthracene	2012/08/09	<0.10		ug	
			Benzo(b)fluoranthene	2012/08/09	<0.050		ug	
			Benzo(b)fluorene	2012/08/09	<0.10		ug	
			Benzo(e)pyrene	2012/08/09	<0.10		ug	
			Benzo(g,h,i)perylene	2012/08/09	<0.050		ug	
			Benzo(k)fluoranthene	2012/08/09	<0.050		ug	
			Biphenyl	2012/08/09	<0.10		ug	
			Chrysene	2012/08/09	<0.050		ug	
			Coronene	2012/08/09	<0.10		ug	
			Dibenz(a,h)anthracene	2012/08/09	<0.050		ug	
			Dibenzo(a,c) anthracene + Picene	2012/08/09	<0.10		ug	
			Dibenzo(a,e)pyrene	2012/08/09	<0.20		ug	
			Fluoranthene	2012/08/09	<0.050		ug	
			Fluorene	2012/08/09	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/08/09	<0.050		ug	
			m-Terphenyl	2012/08/09	<0.10		ug	
			Naphthalene	2012/08/09	<0.072		ug	
			o-Terphenyl	2012/08/09	<0.10		ug	
			Perylene	2012/08/09	<0.10		ug	
			Phenanthrene	2012/08/09	<0.050		ug	
			p-Terphenyl	2012/08/09	<0.10		ug	
			Pyrene	2012/08/09	<0.050		ug	
			Quinoline	2012/08/09	<0.40		ug	
			Tetralin	2012/08/09	<0.10		ug	
			Triphenylene	2012/08/09	<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.
(1) Low recovery in Spike
(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.
(3) Low recovery for Spike

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

Lakeland Industry & Community Association

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

Prepared By:

August 30, 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: July 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 – July 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	0.18	3	27	10	7.6	153(SSE)	1.0	27	99.9
H2S (PPB)	10	3	0	0	0.41	2	VAR	VAR	VAR	VAR	1.1	28	99.9
THC (PPM)	-	-	-	-	2.12	2.7	10	5	10.4	162(SSE)	2.4	14	98.0
OZONE (PPB)	82	-	0	-	29.4	63	10	16	17.7	247(WSW)	37.8	10	99.9
NOx (PPB)	-	-	-	-	0.90	4	6	VAR	VAR	VAR	2.1	13	99.9
NO (PPB)	-	-	-	-	0.17	2	VAR	VAR	VAR	VAR	0.7	22	99.9
NO_2 (PPB)	159	-	0	-	0.74	3	6, 26	VAR	VAR	VAR	1.9	13	99.9
PM2.5 (ug/m3)	-	30	-	3	12.63	185.8	13	5	6.6	25(NNE)	92.6	13	99.5
TEMPERATURE (DEGREE C)	-	-	-	-	19.14	30.7	10	14	11.8	224(SW)	25.5	10	100.0
BP (MILLIBAR)	-	-	-	-	929	943	7	VAR	VAR	VAR	939.7	7	100.0
RH (%)	-	-	-	-	70.18	92	3, 22	VAR	VAR	VAR	90.2	15	100.0
PRECIPITATION (MM)	-	-	-	-	0.20	16.9	3	12	9.9	120(ESE)	40.9	3	100.0
VECTOR WS (KPH)	-	-	-	-	8.97	25.1	4	18	-	263(W)	20.4	4	99.6
VECTOR WD (DEGREES)	-	-	-	-	221(SW)	-	-	-	-	-	-	-	99.6

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. Following the as found points check on July 18th, the sample pump was replaced. A multi-points calibration was then performed. The inlet filter was changed before the monthly calibration was started. Five hourly maximum readings were invalidated due to small power outages this month. Hourly maximum data on July 20th at hour 00 was also invalidated, as the analyzer was recovering from a small power outage. 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 July 17th. Five hourly maximum readings were invalidated due to small power outages this month. Data was corrected using daily zero information.

Total Hydrocarbon (PPM)
Analyzer make / model –TECO 51C, S/N: 77021-384
The analyzer flamed out on July 7th at hour 19 due to a power failure. It was relit on July 8th. A total of 13 hours of data was invalidated due to this issue. The monthly calibration was performed on July 17th. The inlet filter was changed before the monthly calibration was started. Five hourly maximum readings were invalidated due to small power outages this month. 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 July 18th. Hourly maximum values recorded on July 2nd at hour 20 and July 9th at hour 5 were invalid due to the analyzer spiked. Five hourly maximum readings were invalidated due to small power outages this month. 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. Following the as found points check on July 17th, the HVPS voltage and the slope was adjusted. The 3-point calibration was then performed. The inlet filter was changed before the calibration was started. Five hourly maximum readings were invalidated due to small power outages this month. Data was corrected using daily zero information.

Particulate Matter 2.5 (UG/M3)

Analyzer make / model –Thermo Scientific Series 1405F, S/N: 1405A207691003

The Teom unit was working well throughout the month. A routine Teom audit was performed on July 18th. Five hourly maximum readings were invalidated due to small power outages this month. 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 hourly data was invalidated as the data was below –3 ug/m3. There were three 24-Hour PM2.5 contraventions recorded this month: reading of 92.6 ug/m3 on July 13th (AE Ref# 260735), reading of 44.3 ug/m3 on July 14th (AE Ref # 260777), and reading of 33.9 ug/m3 on July 16th (AE Ref # 260886).

General Monthly Summary

AQM STATION – LICA – St. Lina

Temperature (Degree C)
Analyzer make / model – Met One 060
No operational issues were observed during the month.

Barometric Pressure (Millibar)
Analyzer make / model - Met One 092
No operational issues were observed during the month.

Relative Humidity (%)
Analyzer make / model - Met One 083
No operational issues were observed during the month.

Precipitation (MM)
Analyzer make / model - Met One 387
No operational issues were observed during the month.

General Monthly Summary

AQM STATION – LICA – St. Lina

Vector Wind Speed (KPH) & Vector Wind Direction (DEG)
System make / model –RM Young5103VK, S/N: 56589 replaced to MetOne 50.5H Sonic, 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. The MetOne 50.5H Sonic, LICA supplied, wind system was installed on July 18th. Following the wind system installation, the system operation was verified by performing the zero span check. The zero/span test met the manufacturer specs. The manufacturer performed the MetOne wind system calibration on June 12th, 2012.
During the site visit on August 15th, it was noticed that the magnetic declination was not applied on the calculation when the wind system was re-installed after the 2-Year wind system calibration on July 18th. The wind direction sensor was adjusted so that it is facing the true north on August 15th. Hourly data for wind direction between July 18th at hour 9 and August 15th at hour 15 were corrected by subtracting 13degree.

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
The manifold was cleaned on July 18th.

Air Quality Index (AQI)
No AQI report is included in this report, as the AQI value is no longer used by Alberta Environment.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2012

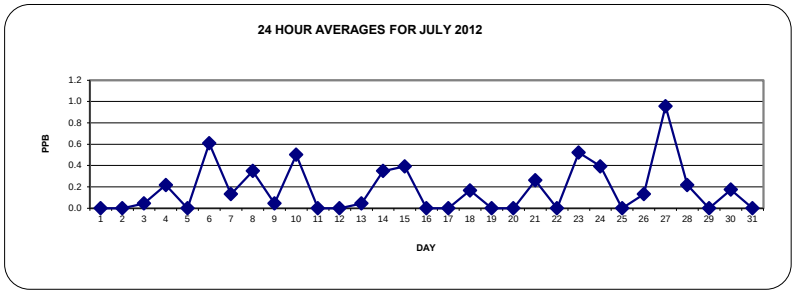
SULPHUR DIOXIDE (SO_2) hourly averages in ppb

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

STATUS FLAG CODES

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

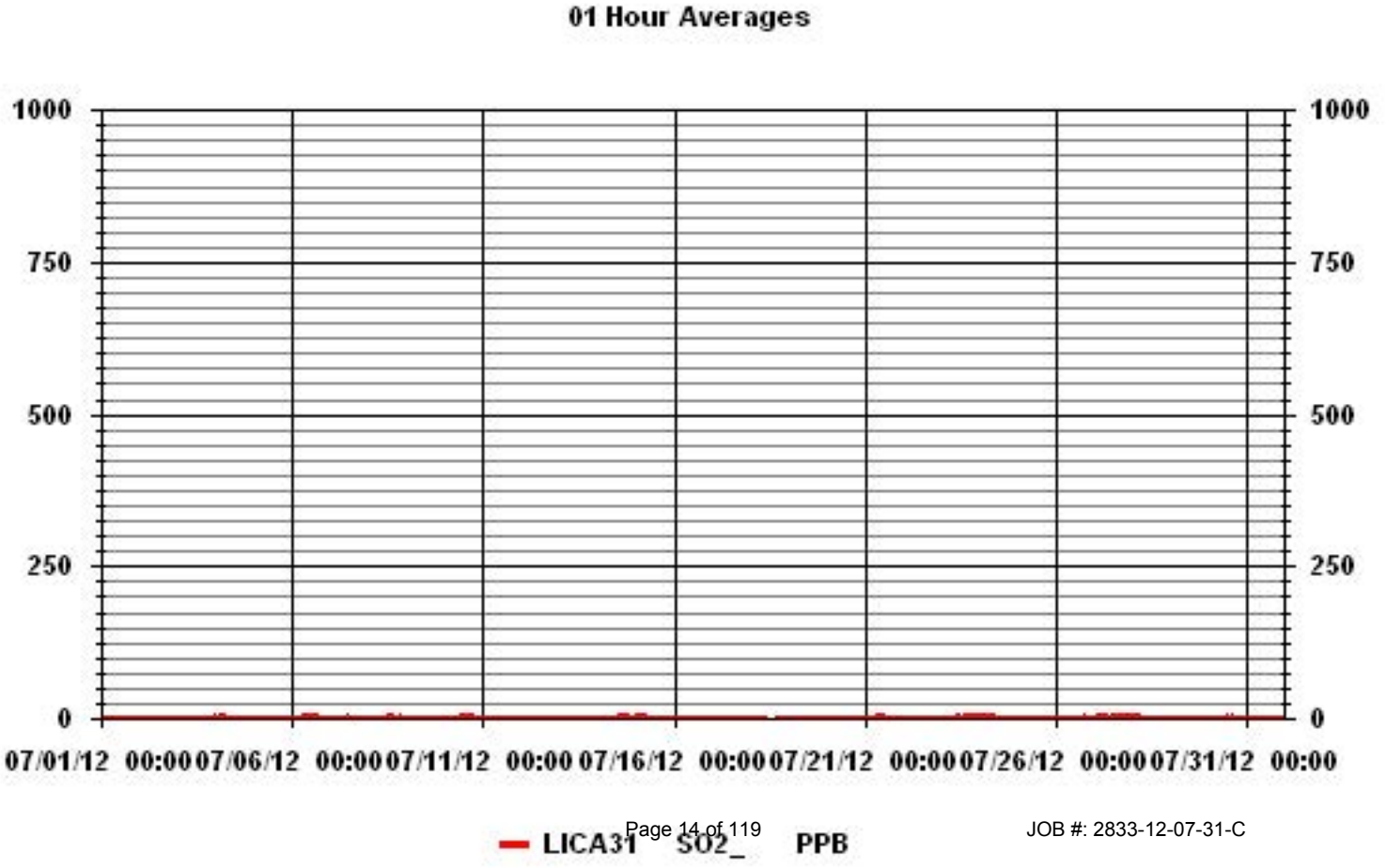


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB | 24-HR 48 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	118					
MAXIMUM 1-HR AVERAGE:	3	PPB	@ HOUR(S)	10	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	1.0	PPB			ON DAY(S)	27
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		743	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:		99.9	%
STANDARD DEVIATION:	0.41		MONTHLY AVERAGE:		0.18	PPB

JOB #: 2833-12-07-31-C



JOB #: 2833-12-07-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2012

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

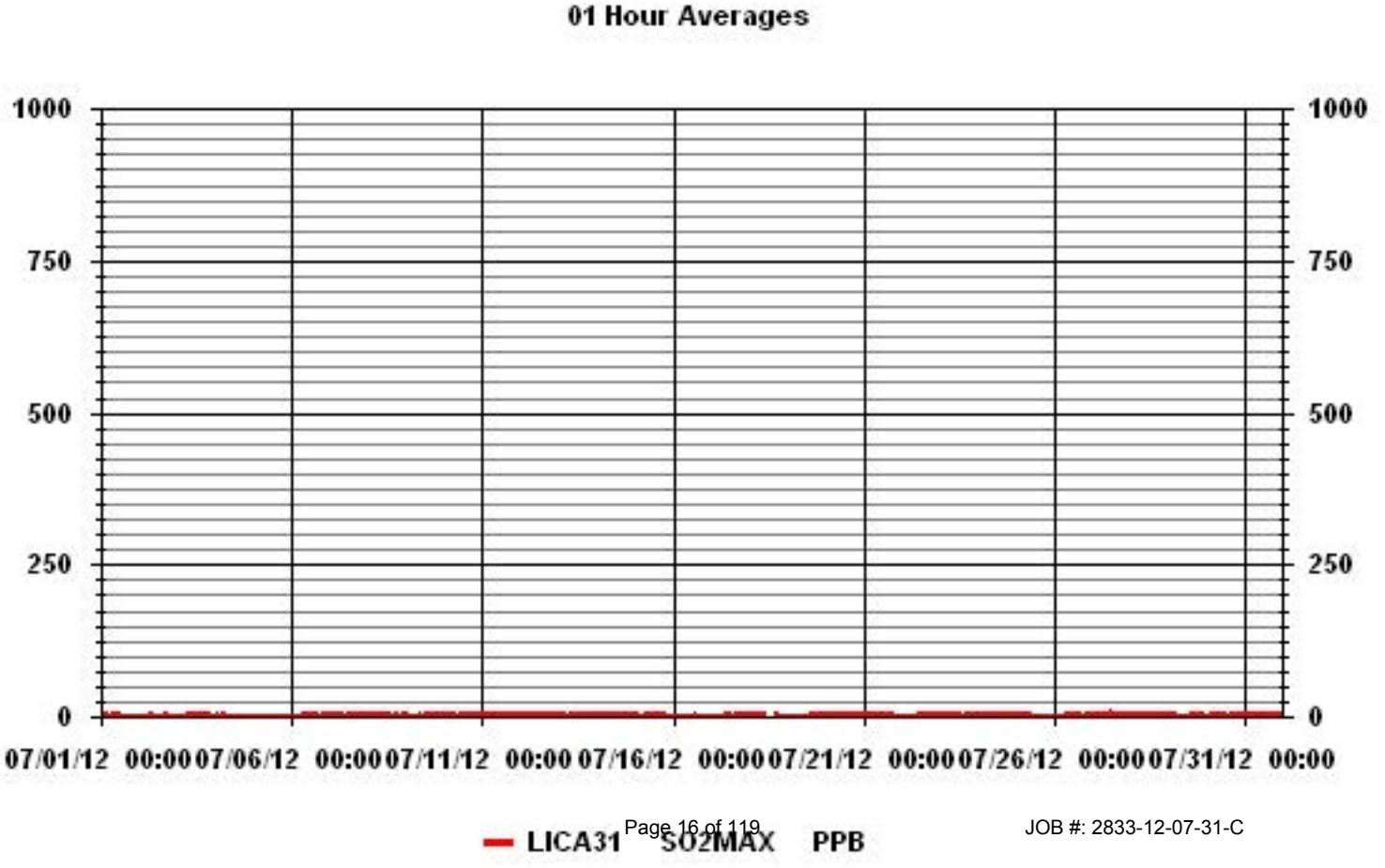
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	1	1	1	1	0	1	1	1	**IZS**	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0.6	24
2	0	0	0	0	0	0	1	1	**IZS**	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	0.2	24
3	0	0	0	0	0	0	0	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	0.7	24
4	1	2	2	1	1	1	**IZS**	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.4	24
5	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
6	0	0	0	0	**IZS**	1	2	2	5	3	3	3	2	2	2	2	2	2	1	1	1	1	1	1	5	1.6	24
7	1	1	1	**IZS**	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	**IZS**	1	1	1	1	2	1.1	23
8	1	1	**IZS**	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	2	1	1	1	2	1.2	24
9	1	**IZS**	0	0	0	0	0	0	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	0.8	24
10	**IZS**	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	1	1	1	1	**IZS**	2	1.5	24
11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1.0	24
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1.0	24
13	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	2	1.0	24
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	**IZS**	1	1	1	1	2	1.1	24
15	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	0	0	0	0	0	2	0.8	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	**IZS**	0	0	0	0	0	0	1	0.1	24
17	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	**IZS**	1	1	1	1	1	1	1	1	0.6	24
18	1	1	1	1	1	1	1	1	1	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	1	1	1	0	0	0	1	0.8	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	1	1	1	1	1	1	**P**	1	0.4	23
20	P	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	23
21	1	1	1	1	1	1	1	2	2	2	2	2	**IZS**	1	1	1	1	1	1	0	0	1	0	0	2	1.0	24
22	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	0.5	24
23	1	1	1	1	1	1	1	1	1	1	**IZS**	3	1	1	1	2	2	1	1	2	2	2	2	2	3	1.4	24
24	2	2	2	2	2	2	2	**P**	2	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.4	23
25	1	1	1	1	1	1	1	1	**IZS**	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24
26	0	0	0	0	0	0	0	**IZS**	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2	0.7	24
27	1	1	1	1	1	1	**IZS**	1	2	3	**7**	2	2	2	2	2	2	2	2	2	2	2	2	2	**7**	2.0	24
28	2	2	2	2	2	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.2	24
29	1	1	1	1	**IZS**	0	0	0	1	0	0	1	0	1	1	1	1	1	1	1	1	1	1	0	1	0.7	24
30	1	**P**	1	**IZS**	1	1	1	1	1	1	2	2	2	1	2	2	2	1	1	1	**P**	1	1	1	2	1.3	22
31	1	1	**IZS**	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
HOURLY MAX	2	2	2	2	2	2	2	2	5	3	7	3	2	2	2	2	2	2	2	2	2	2	2	2			
HOURLY AVG	0.8	0.8	0.8	0.7	0.8	0.7	0.8	0.8	1.1	0.9	1.2	1.1	0.9	1.0	1.0	1.0	1.0	1.0	1.0	0.8	0.8	0.8	0.8	0.8			

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:	519						
MAXIMUM INSTANTANEOUS VALUE:	7	PPB	@ HOUR(S)	10	ON DAY(S)	27	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:			738	HRS
MONTHLY CALIBRATION TIME:	7	HRS					
STANDARD DEVIATION:	0.68						



JOB #: 2833-12-07-31-C

LICA31
SO2_ / WDR Joint Frequency Distribution (Percent)

July 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	2.55	3.12	3.82	4.53	5.39	6.95	8.36	12.48	6.09	2.97	4.25	10.78	12.34	9.78	4.11	2.41	100.00
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.55	3.12	3.82	4.53	5.39	6.95	8.36	12.48	6.09	2.97	4.25	10.78	12.34	9.78	4.11	2.41	

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
<	20	18	22	27	32	38	49	59	88	43	21	30	76	87	69	29	17	705
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	18	22	27	32	38	49	59	88	43	21	30	76	87	69	29	17	

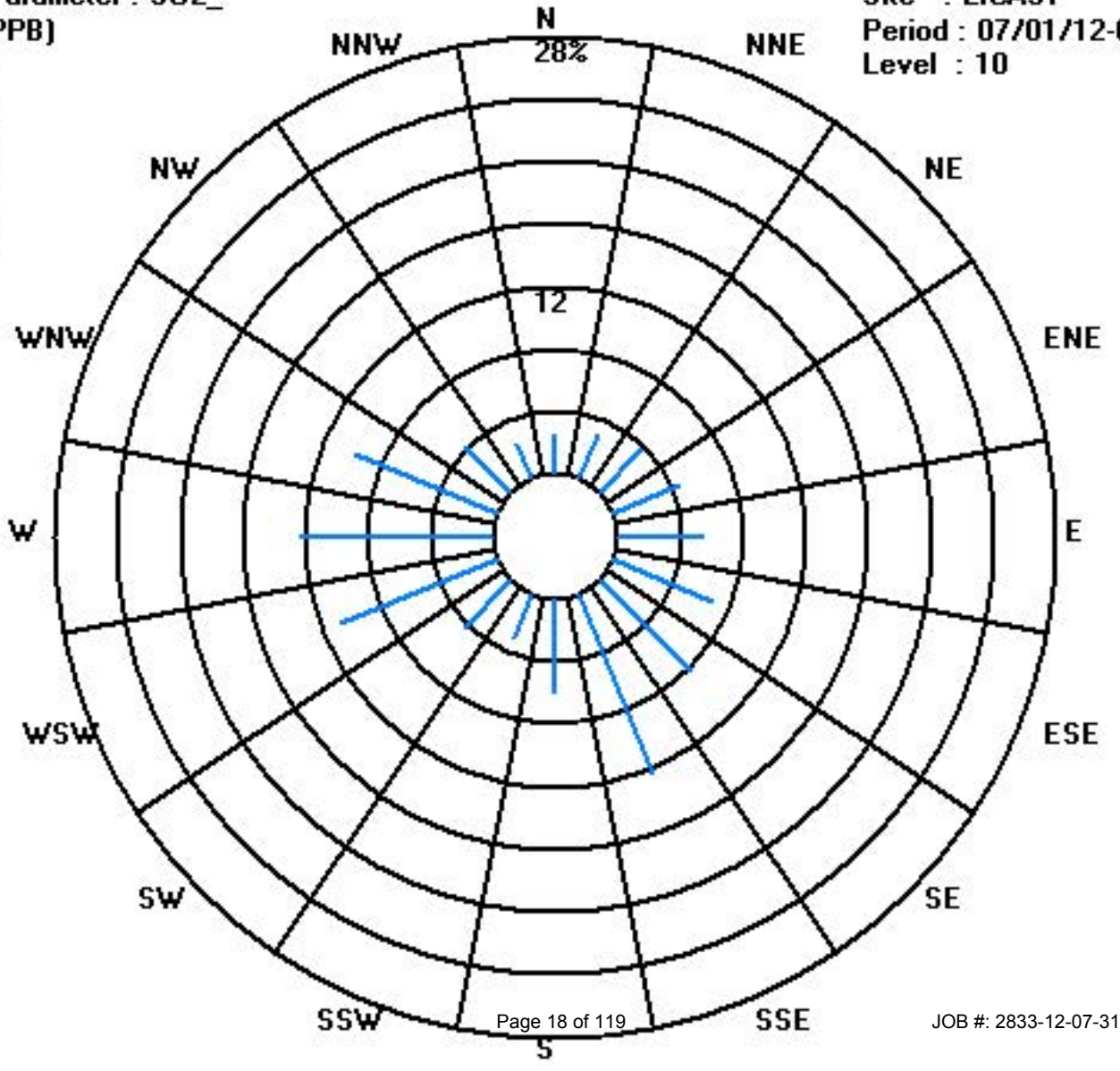
Calm : .00 %

Total # Operational Hours : 705

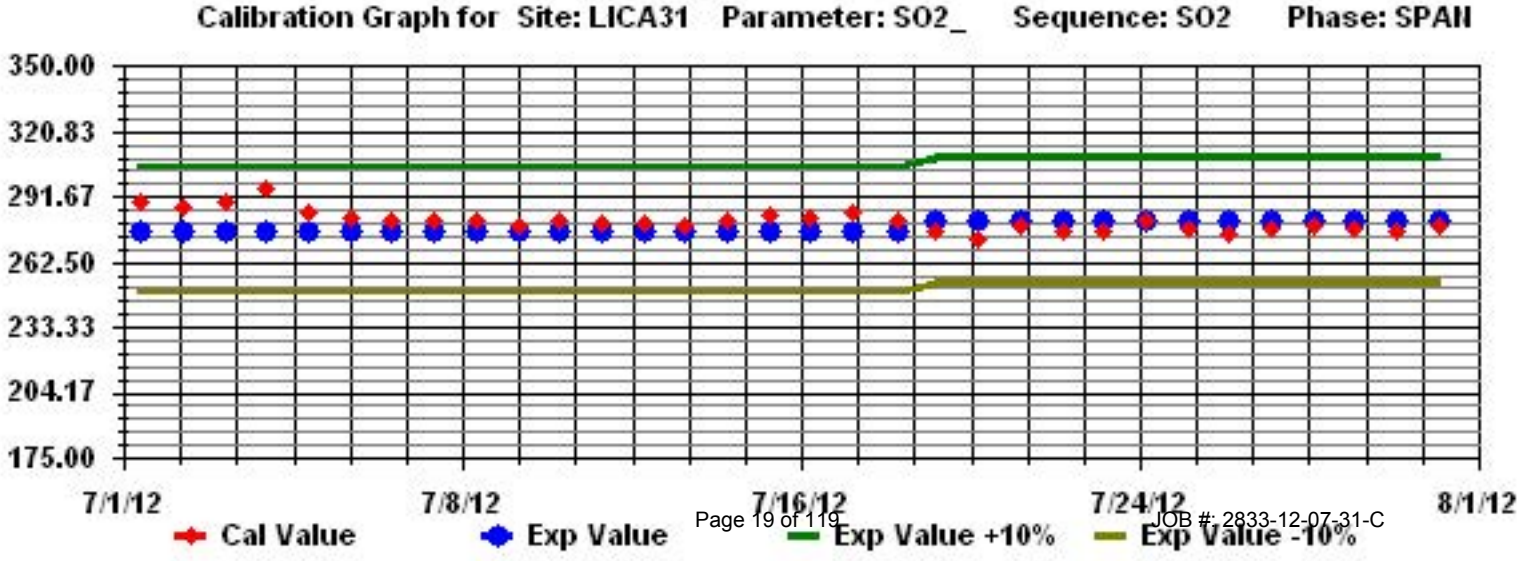
Logger : 31 Parameter : SO2_
Class Limits (PPB)

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

Site : LICA31
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-31-C


Calibration Graph for Site: LICA31 Parameter: SO2_ Sequence: SO2 Phase: SPAN
350.00
320.83
291.67
262.50
233.33
204.17
175.00
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSCOIATION - ST. LINA

JULY 2012

HYDROGEN SULPHIDE (H_2S) hourly averages in ppb

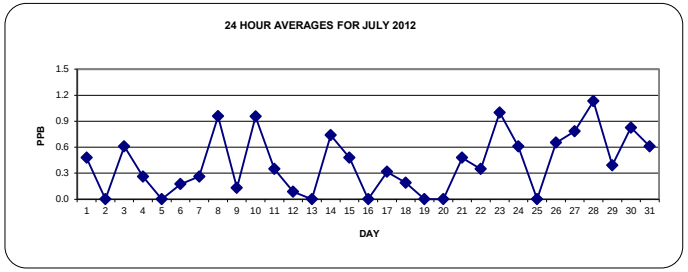
MST

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

STATUS FLAG CODES

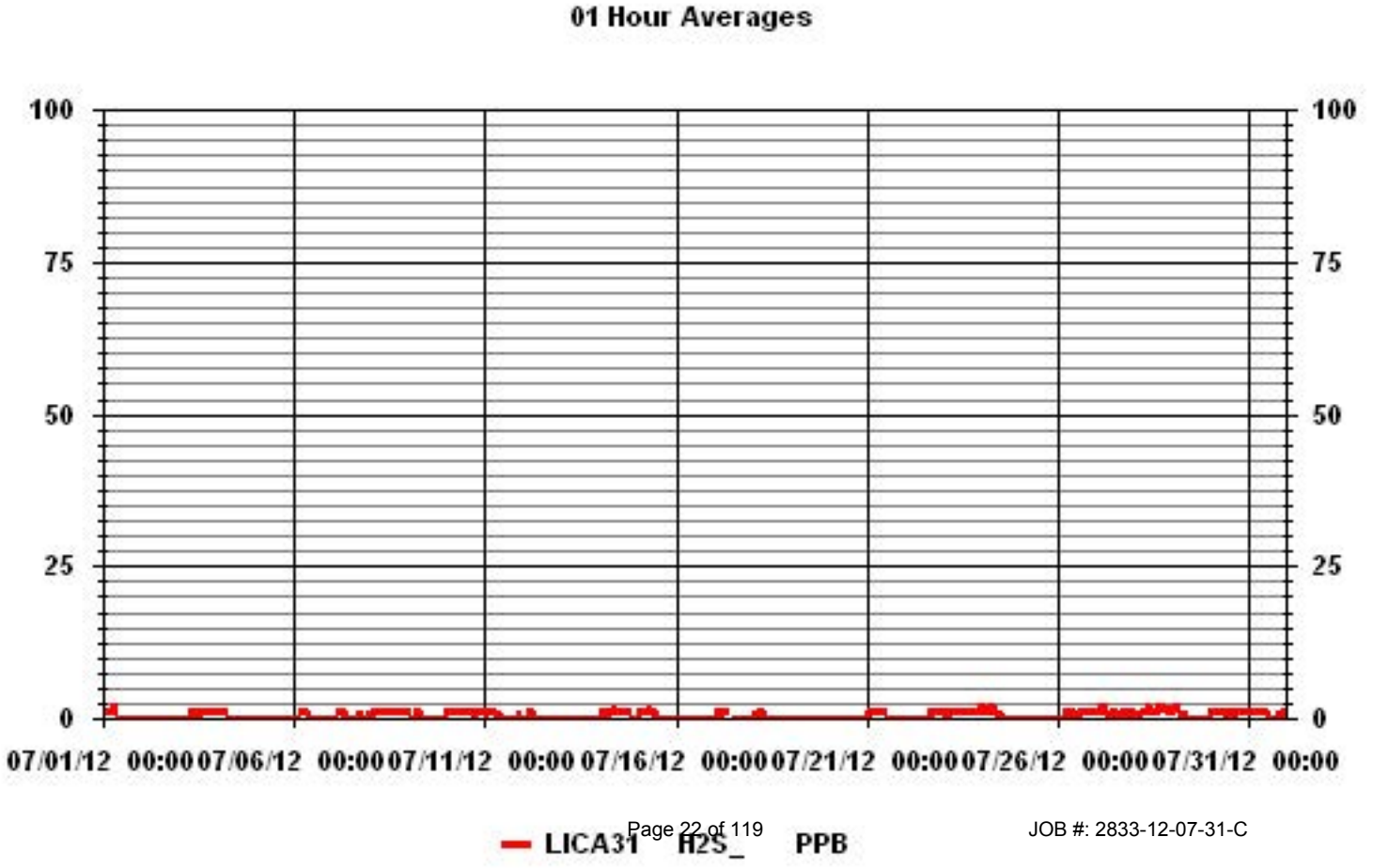
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

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:	270					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	1.1	PPB			ON DAY(S)	28
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		743	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:		99.9	%
STANDARD DEVIATION:	0.55		MONTHLY AVERAGE:		0.41	PPB



JOB #: 2833-12-07-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2012

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST

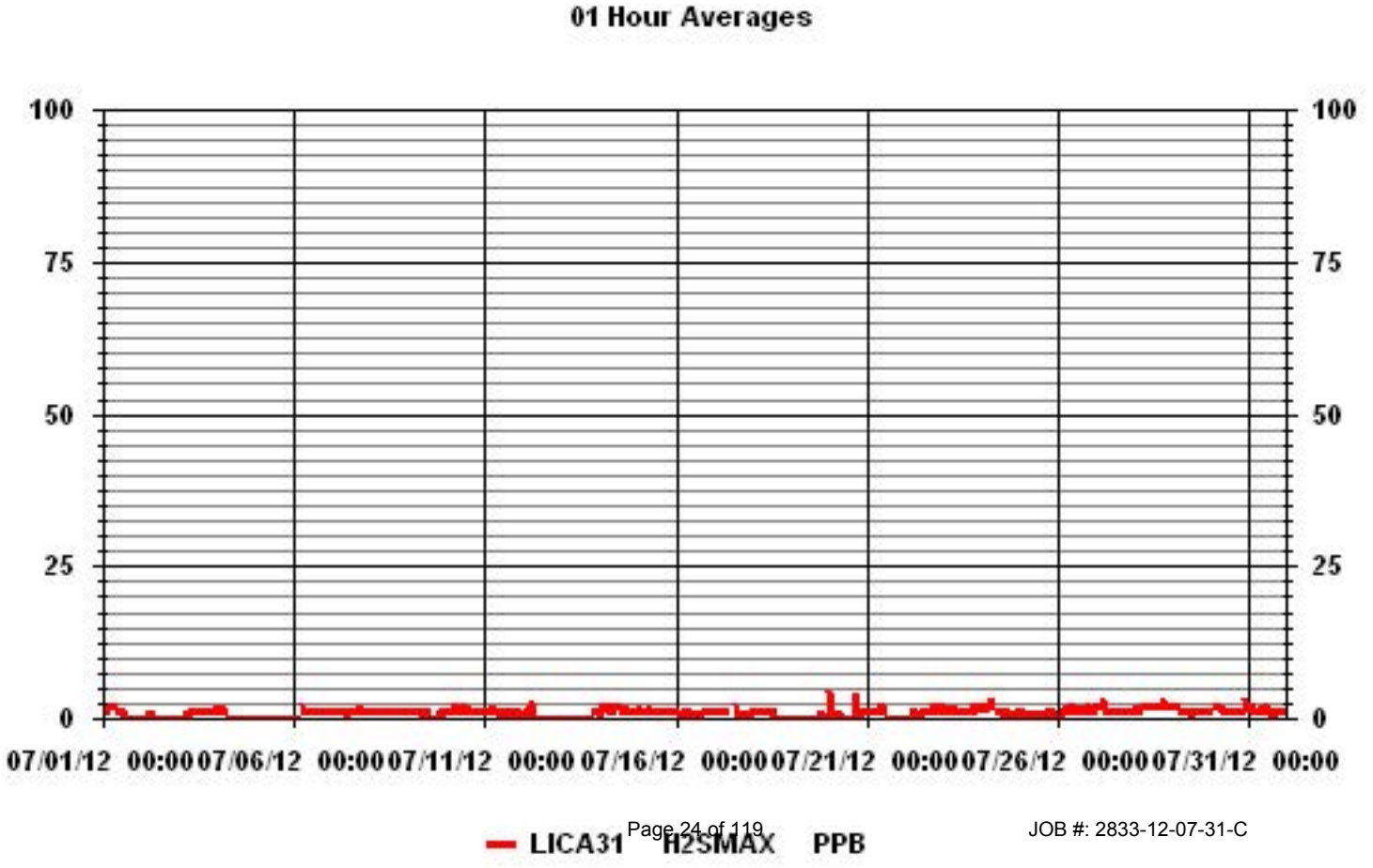
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	1	1	2	2	2	2	2	2	**IZS**	1	1	1	0	0	0	0	0	0	0	0	0	0	0	2	0.8	24
2	0	0	0	0	0	1	0	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
3	0	0	0	0	1	0	0	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	0.8	24
4	1	1	1	2	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
5	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
6	0	0	0	0	**IZS**	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	0.9	24
7	1	1	1	**IZS**	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	**P**	1	1	1	1	2	1.0	23
8	1	1	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
9	1	**IZS**	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	1	0	1	1	1	1	0.7	24
10	**IZS**	1	1	1	1	2	2	1	1	1	2	2	1	2	1	1	1	1	1	1	1	1	1	**IZS**	2	1.2	24
11	1	1	1	1	1	2	1	1	1	1	0	1	1	1	1	1	0	1	1	0	1	1	**IZS**	1	2	0.9	24
12	0	0	1	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	3	0.3	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	1	1	0.1	24
14	0	1	2	2	2	2	1	1	2	2	2	2	2	2	1	1	2	1	1	**IZS**	1	1	1	1	2	1.4	24
15	1	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	2	1.1	24
16	1	1	0	1	0	1	1	1	1	0	1	0	0	0	1	0	1	**IZS**	1	1	1	1	1	1	1	0.7	24
17	1	1	1	1	1	1	1	1	**C**	**C**	**C**	**C**	**C**	2	0	0	**IZS**	1	0	0	1	0	0	0	2	0.7	24
18	1	1	1	1	1	1	1	1	1	1	**M**	**M**	0	1	1	**IZS**	**C**	0	0	0	0	0	0	0	1	0.6	22
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	1	0	1	0	0	**P**	1	0.1	23
20	**4**	0	0	0	1	0	0	1	0	0	0	0	0	**IZS**	0	0	0	**4**	0	0	1	1	1	1	**4**	0.6	24
21	1	1	1	1	1	1	1	1	2	2	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	2	0.6	24
22	0	0	0	0	0	1	1	0	0	0	0	**IZS**	1	1	1	1	1	2	2	1	1	1	2	2	2	0.8	24
23	1	1	1	1	1	2	1	2	1	1	**IZS**	1	1	1	1	1	1	1	1	2	2	2	1	2	2	1.3	24
24	2	2	1	2	2	2	3	**P**	2	**IZS**	1	1	1	0	0	1	1	1	0	1	0	1	0	1	3	1.1	23
25	1	1	0	1	0	1	0	1	**IZS**	1	0	1	0	0	1	0	0	0	1	1	1	0	0	0	1	0.5	24
26	0	0	0	1	1	2	1	**IZS**	2	2	1	1	1	1	1	2	1	1	2	2	1	1	1	2	2	1.2	24
27	2	2	2	2	3	2	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.3	24
28	1	2	1	1	1	**IZS**	2	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	3	1.9	24
29	2	2	2	2	**IZS**	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
30	1	**P**	1	**IZS**	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	**P**	3	2	2	3	1.3	22
31	1	2	**IZS**	1	1	1	1	2	1	1	2	2	1	0	0	0	1	1	1	1	1	1	1	1	2	1.0	24
HOURLY MAX	4	2	2	2	3	3	3	2	2	2	2	2	2	2	2	2	2	4	3	2	2	3	2	2			
HOURLY AVG	0.9	0.9	0.7	0.9	1.0	1.3	0.9	1.0	1.0	0.8	0.8	0.9	0.7	0.7	0.6	0.6	0.7	0.8	0.7	0.7	0.8	0.8	0.7	0.9			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	464						
MAXIMUM INSTANTANEOUS VALUE:	4	PPB	@ HOUR(S)	0, 17	ON DAY(S)	20	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:			737	HRS
MONTHLY CALIBRATION TIME:	6	HRS					
STANDARD DEVIATION:	0.70						



JOB #: 2833-12-07-31-C

LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

July 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	2.55	3.12	3.83	4.54	5.39	6.96	8.23	12.07	6.39	3.12	4.26	10.79	12.35	9.80	4.11	2.41	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.55	3.12	3.83	4.54	5.39	6.96	8.23	12.07	6.39	3.12	4.26	10.79	12.35	9.80	4.11	2.41	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	18	22	27	32	38	49	58	85	45	22	30	76	87	69	29	17	704
< 10																	
< 50																	
>= 50																	
Totals	18	22	27	32	38	49	58	85	45	22	30	76	87	69	29	17	

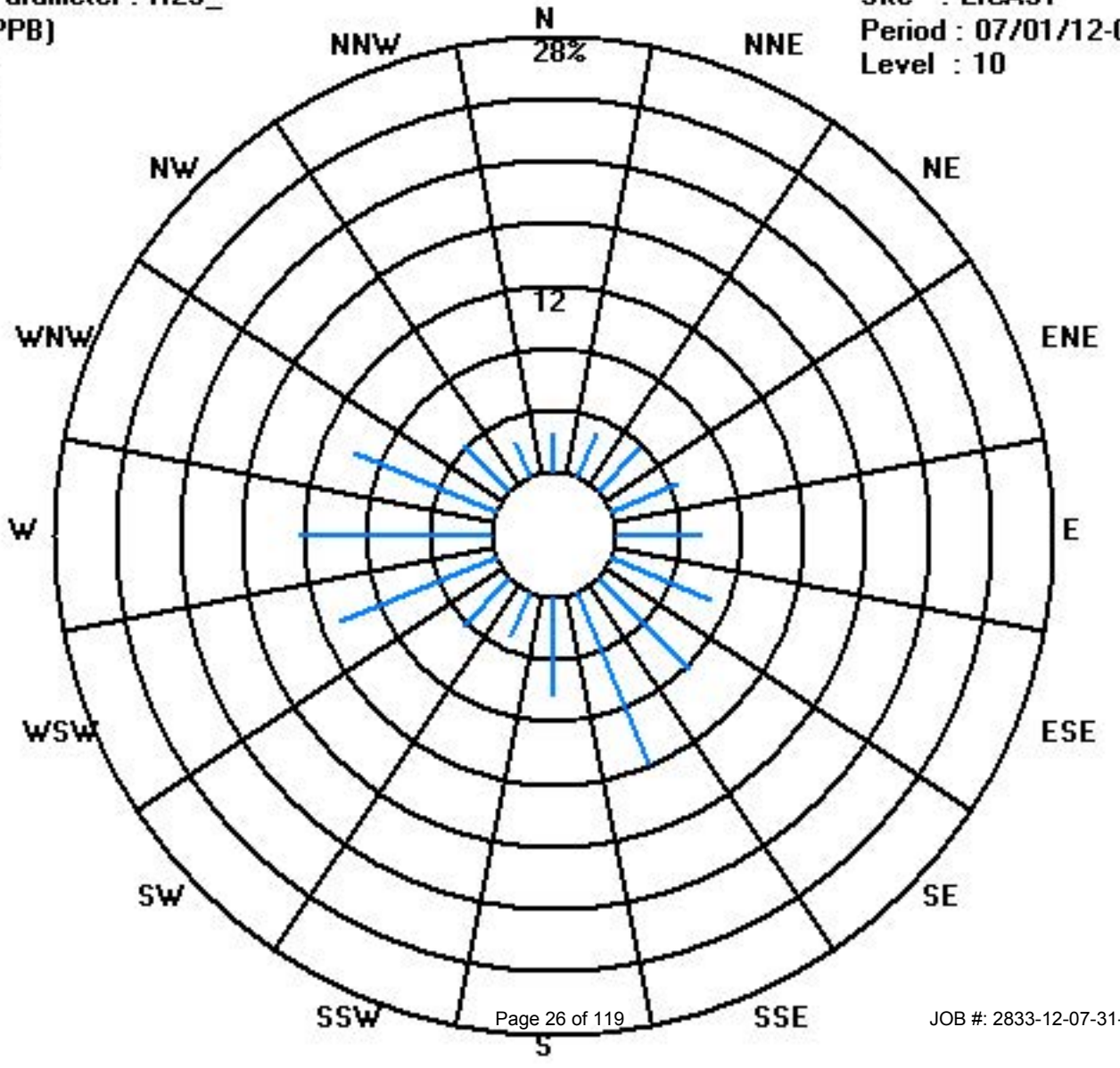
Calm : .00 %

Total # Operational Hours : 704

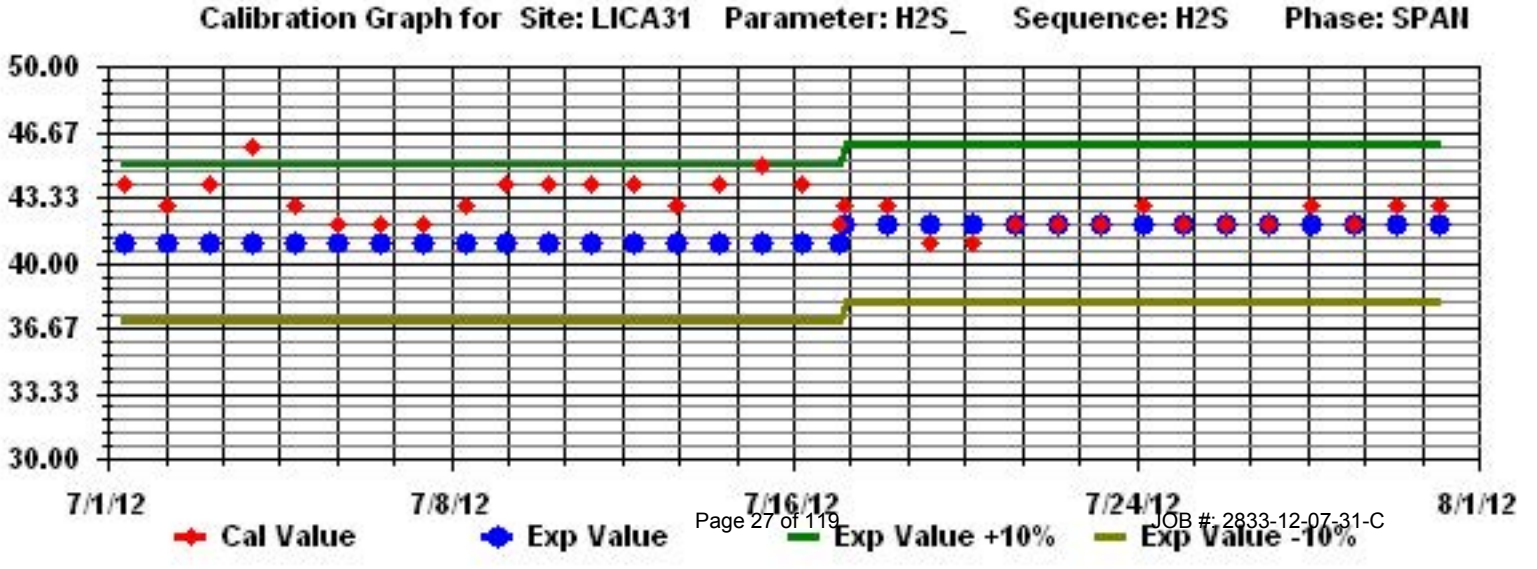
Logger : 31 Parameter : H2S_
Class Limits (PPB)

>= 50
< 50
< 10
< 3

Site : LICA31
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-31-C


Calibration Graph for Site: LICA31 Parameter: H2S_ Sequence: H2S Phase: SPAN
50.00
46.67
43.33
40.00
36.67
33.33
30.00
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2012

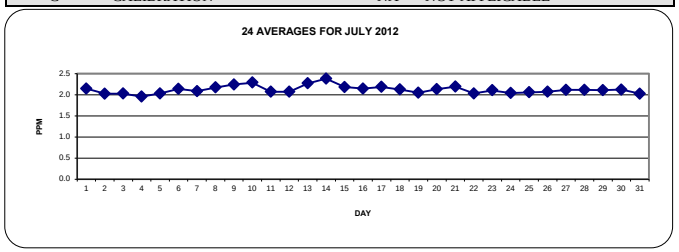
TOTAL HYDROCARBONS hourly averages in ppm

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	2.2	2.2	2.2	2.4	2.5	2.4	2.4	2.3	**IZS**	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2.1	2	2	2.5	2.1	24
2	2.1	2	2	2.1	2.1	2	2.1	2.1	**IZS**	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.0	24
3	2	2.1	2.1	2.1	2	2	2.1	**IZS**	2.2	2.2	2.2	2.1	1.9	2	2	2	2	2	1.9	1.9	1.9	1.9	2	2	2.2	2.0	24
4	1.9	1.9	1.9	1.9	1.9	1.9	**IZS**	1.9	1.9	1.9	1.9	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	2.0	24
5	2	2	2	2	2.1	**IZS**	2.1	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
6	2.1	2.2	2.1	2.2	**IZS**	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1	24
7	2.2	2.2	2.3	**IZS**	2.2	2.2	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	**N**	**N**	**N**	**N**	**N**	2.3	2.1	19
8	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**M**	**C**	2.3	2.2	2.2	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.2	15
9	2.2	**IZS**	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.5	2.2	24
10	**IZS**	2.3	2.3	2.4	2.5	**2.7**	2.6	2.6	2.5	2.3	2.4	2.4	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**IZS**	**2.7**	2.3	24
11	2.1	2.1	2.1	2.1	2.1	2.1	2	2.1	2.1	2.1	2	2.1	2	2	2	2	2.1	2.1	2	2.1	2.1	2.2	**IZS**	2.1	2.2	2.1	24
12	2	2.3	2.1	2.1	2.2	2.2	2	2	2.1	2	2.1	2.1	2	2	2.1	2.1	2.1	2	2	2	2	**IZS**	2	2.1	2.3	2.1	24
13	2.1	2.2	2.3	2.4	2.4	2.4	2.4	2.4	2.3	2.4	2.3	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	2.4	2.3	24
14	2.3	2.3	2.4	2.3	2.5	2.7	2.7	2.6	2.5	2.5	2.4	2.5	2.4	2.4	2.4	2.3	2.2	2.2	2.2	**IZS**	2.2	2.2	2.2	2.3	2.7	**2.4**	24
15	2.3	2.4	2.4	2.4	2.4	2.2	2.3	2.2	2.1	2.2	2.2	2.1	2.1	2	2.1	2.1	2.1	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2.4	2.2	24
16	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	2.2	2.2	2.2	2.2	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24
17	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.1	2.1	**C**	**C**	**C**	**C**	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.2	24
18	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	**M**	2.1	2.1	2.1	2.1	**IZS**	**C**	2	2	2	2	2	2	2	2.3	2.1	23
19	2	2.1	2.1	2.1	2	2	2	2	2	2	2	2.1	2	2	**IZS**	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	24
20	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	**IZS**	2	2	2	2	2.1	2.1	2.1	2.2	2.3	2.4	2.4	2.1	24
21	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.2	2.2	2.2	2.1	2	**IZS**	2	2	2	2	2	2.1	2.1	2.2	2.2	2.2	2.1	2.4	2.2	24
22	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	**IZS**	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2.1	2	2.2	2.0	24
23	2	2	2	1.9	2.1	2	2.1	2.2	2.1	2.1	**IZS**	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24
24	2.1	2	2	2	2.2	2.1	2.1	2	2	**IZS**	2.1	2.1	2	2.1	2.1	2	2	2	2	2	2	2	2	2	2.2	2.0	24
25	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	**IZS**	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24
26	2.1	2.1	2.1	2.3	2.3	2.2	2.2	**IZS**	2.2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.3	2.1	24
27	2.1	2.1	2.1	2.1	2.2	2.1	**IZS**	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2.1	2.1	2.1	2.1	2.3	2.3	2.1	24
28	2.2	2.2	2.2	2.2	2.1	**IZS**	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2	2.1	2.1	2.1	2.1	2	2.1	2	2.1	2.1	2.1	2.2	2.1	24
29	2	2.1	2.1	2.1	**IZS**	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	24
30	2.3	2.3	2.3	**IZS**	2.2	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2	2.1	2	2	2	2	2.1	2.1	2	2	2	2.3	2.1	24
31	2	2	**IZS**	2	2	2	2	2	2	2	2	2	2	2.1	2	2	2	2	2.1	2.1	2	2	2.1	2.1	2.1	2.0	24
HOURLY MAX	2.4	2.4	2.4	2.4	2.5	2.7	2.7	2.6	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.4			
HOURLY AVG	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1			

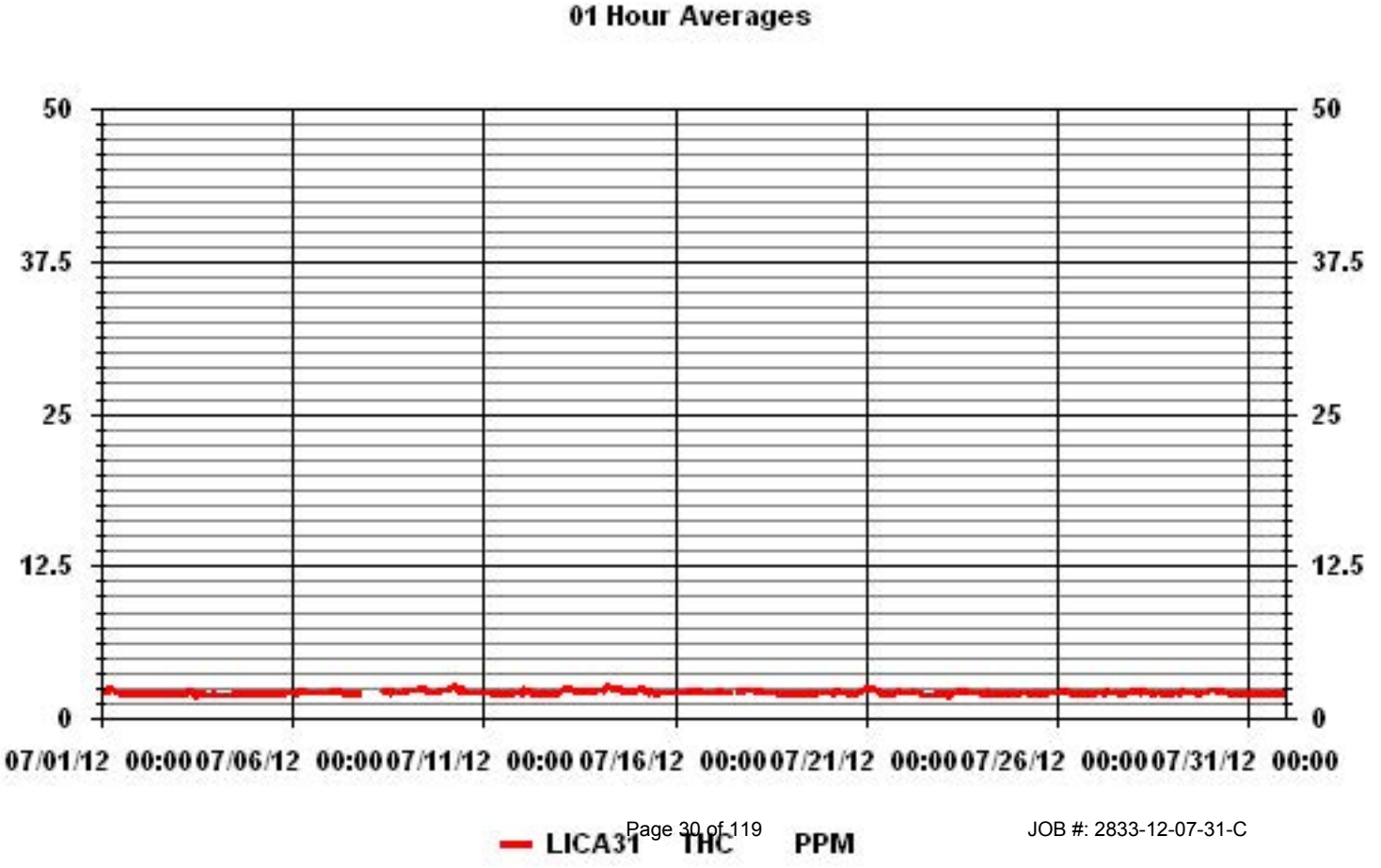
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	693						
MAXIMUM 1-HR AVERAGE:	2.7	PPM	@ HOUR(S)	5	ON DAY(S)	10	
MAXIMUM 24-HR AVERAGE:	2.4	PPM			ON DAY(S)	14	
					VAR- VARIOUS		
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:		729	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:		98.0	%	
STANDARD DEVIATION:	0.13		MONTHLY AVERAGE:		2.12	PPM	



JOB #: 2833-12-07-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2012

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

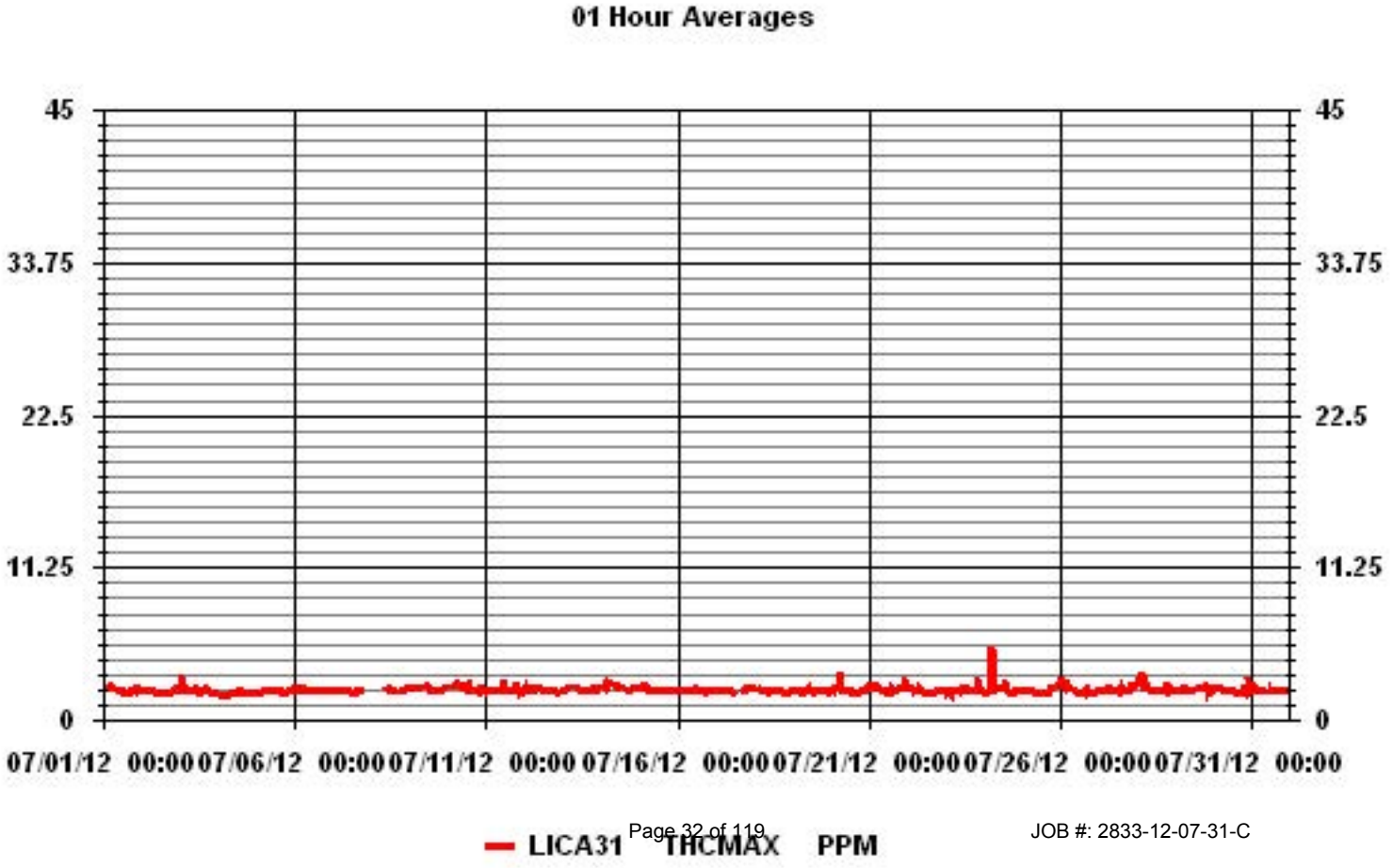
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2.3	2.3	2.3	2.3	2.5	2.5	2.4	2.4	2.3	**IZS**	2.1	2.1	2.2	2.1	2	2	2	2.1	2.1	2.2	2.3	2.6	2.1	2.2	2.6	2.2	24
2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	**IZS**	2.1	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.5	2.2	2.5	2.1	24
3	2.2	3.4	2.2	2.5	2.1	2.1	2.1	**IZS**	2.2	2.2	2.3	2.3	2	2	2.1	2.3	2.4	2.2	2.1	2.1	2	2	2	2	3.4	2.2	24
4	2	1.9	2	1.9	2	1.9	**IZS**	1.9	2	2	2	2	2.2	2.1	2.2	2.1	2	2	2	2	2	2	2	2	2.2	2.0	24
5	2	2	2.1	2	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2	2.1	2.1	2	2.1	2.3	2.2	2.3	2.4	2.4	2.1	24
6	2.2	2.2	2.3	2.5	**IZS**	2.3	2.4	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.5	2.2	24
7	2.2	2.2	2.3	**IZS**	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2	2	2	2.1	2.1	2.1	2.1	**N**	**N**	**N**	**N**	**N**	2.3	2.1	19
8	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**M**	**C**	2.4	2.2	2.3	2.2	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.2	2.3	2.3	2.4	2.2	15
9	2.3	**IZS**	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.6	2.6	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.4	2.6	2.3	24
10	**IZS**	2.4	2.4	2.4	2.6	2.8	2.8	2.6	2.6	2.4	2.5	2.6	2.7	2.2	2.1	2.1	2.1	2.2	2.2	2.1	2.3	2.3	2.4	**IZS**	2.8	2.4	24
11	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.9	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.7	2.1	2.3	**IZS**	2.1	2.9	2.2	24
12	2.2	2.5	2.2	2.2	2.3	2.3	2	2.4	2.3	2.4	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	**IZS**	2.1	2.2	2.5	2.2	24
13	2.2	2.2	2.3	2.4	2.4	2.5	2.4	2.4	2.4	2.4	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	**IZS**	2.2	2.4	2.4	2.5	2.3	24
14	2.4	2.5	2.7	2.4	2.6	2.8	2.8	2.8	2.6	2.6	2.4	2.5	2.5	2.4	2.4	2.4	2.2	2.2	2.2	**IZS**	2.4	2.3	2.3	2.4	2.8	2.5	24
15	2.5	2.4	2.5	2.5	2.5	2.3	2.4	2.3	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	2.2	2.2	2.1	2.5	2.2	24
16	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	**IZS**	2.1	2.2	2.2	2.1	2.1	2.1	2.3	2.2	24
17	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.1	**C**	**C**	**C**	**C**	**C**	2.3	2.2	2.3	2.3	2.4	2.3	2.3	2.4	2.2	24
18	2.3	2.3	2.3	2.4	2.3	2.2	2.2	2.2	2.2	2.1	**M**	**M**	2.1	2.1	2.1	**IZS**	**C**	2.1	2.1	2	2	2	2.1	2.1	2.4	2.2	22
19	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2	2.1	2.1	2.4	2.2	2.2	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	**P**	2.4	2.1	23
20	2.2	2.2	2.6	2.3	2.5	2.8	3.6	2.2	2.1	2.1	2.1	2.1	2.1	**IZS**	2	2	2	2	2.1	2.1	2.2	2.2	2.4	2.4	3.6	2.3	24
21	2.6	2.5	2.5	2.4	2.5	2.5	2.4	2.3	2.3	2.2	2.2	2	**IZS**	2	2.4	2.2	2.1	2.1	2.2	2.3	2.3	2.6	3.1	2.3	3.1	2.3	24
22	2.3	2.3	2.4	2.4	2.1	2.2	2.2	2.5	2.4	2.2	2.1	**IZS**	2	2	2	2	2	2.1	2.2	2.2	2.2	2.1	2.1	2.4	2.5	2.2	24
23	2	2.1	2.1	1.9	2.4	2.1	2.2	2.2	2.2	2.1	**IZS**	2.3	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2.1	3.2	2.1	2.1	2.2	3.2	2.2	24
24	2.1	2	2	2.1	2.6	**5.4**	2.1	**P**	2.1	**IZS**	2.3	2.3	2.3	2.9	2.5	2.2	2.1	2	2	2.1	2.1	2.1	2.1	2.1	**5.4**	2.3	23
25	2.2	2.1	2.2	2.2	2.1	2.2	2.3	2.1	**IZS**	2	2	2	2	2	2	2	2	2.1	2.6	2.3	2.4	2.4	2.6	2.3	2.6	2.2	24
26	3	3	2.6	2.4	2.6	2.3	2.3	**IZS**	2.3	2.1	2.1	2	2	2	2	2.3	2.4	2	2.1	2	2	2	2.1	2.1	3	2.2	24
27	2.1	2.1	2.1	2.1	2.2	2.2	**IZS**	2.3	2.3	2.2	2.2	2.1	2.2	2.1	2.5	2.3	2.1	2.1	2.1	2.3	2.7	2.3	2.4	2.6	2.7	2.2	24
28	2.6	3.2	2.9	3.5	2.4	**IZS**	2.6	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.7	2.2	2.1	2.1	2.1	3.5	2.4	24
29	2.1	2.1	2.1	2.1	**IZS**	2.4	2.3	2.3	2.2	2.2	2.2	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.4	2.8	2.1	2.3	2.1	2.3	2.8	2.3	24
30	2.4	**P**	2.3	**IZS**	2.3	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2	2	2	2	2.5	**P**	2.9	2	2.1	2.9	2.2	22
31	2.7	2.1	**IZS**	2.1	2.1	2.2	2.2	2.3	2.2	2.1	2.2	2.4	2.2	2.3	2.2	2.3	2.2	2.2	2.2	2.3	2.2	2.2	2.1	2.2	2.7	2.2	24
HOURLY MAX	3.0	3.4	2.9	3.5	2.6	5.4	3.6	2.8	2.6	2.6	2.6	2.9	2.7	2.9	2.5	2.4	2.4	2.3	2.6	2.8	3.2	2.9	3.1	2.6			
HOURLY AVG	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	687						
MAXIMUM INSTANTANEOUS VALUE:	5.4	PPM	@ HOUR(S)	5	ON DAY(S)	24	
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:			724	HRS
MONTHLY CALIBRATION TIME:	7	HRS					
STANDARD DEVIATION:	0.24						



JOB #: 2833-12-07-31-C

LICA31
THC / WDR Joint Frequency Distribution (Percent)

July 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	2.60	3.18	3.90	4.34	5.20	6.51	8.39	11.57	6.51	3.18	4.34	10.99	12.59	9.98	4.19	2.46	100.00
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.60	3.18	3.90	4.34	5.20	6.51	8.39	11.57	6.51	3.18	4.34	10.99	12.59	9.98	4.19	2.46	

Calm : .00 %

Total # Operational Hours : 691

Distribution By Samples

Direction

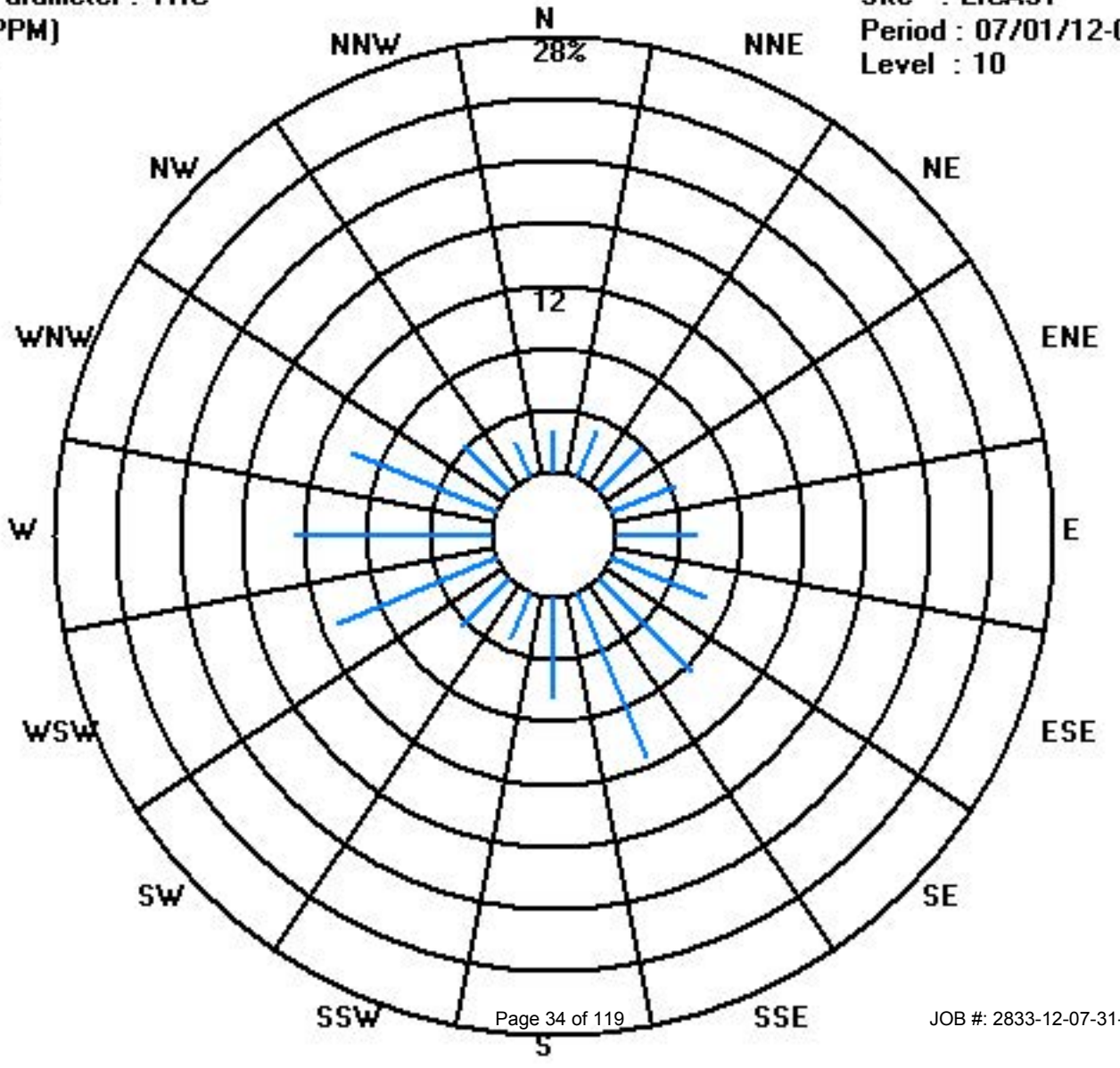
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	18	22	27	30	36	45	58	80	45	22	30	76	87	69	29	17	691
< 10.0																	
< 50.0																	
>= 50.0																	
Totals	18	22	27	30	36	45	58	80	45	22	30	76	87	69	29	17	

Calm : .00 %

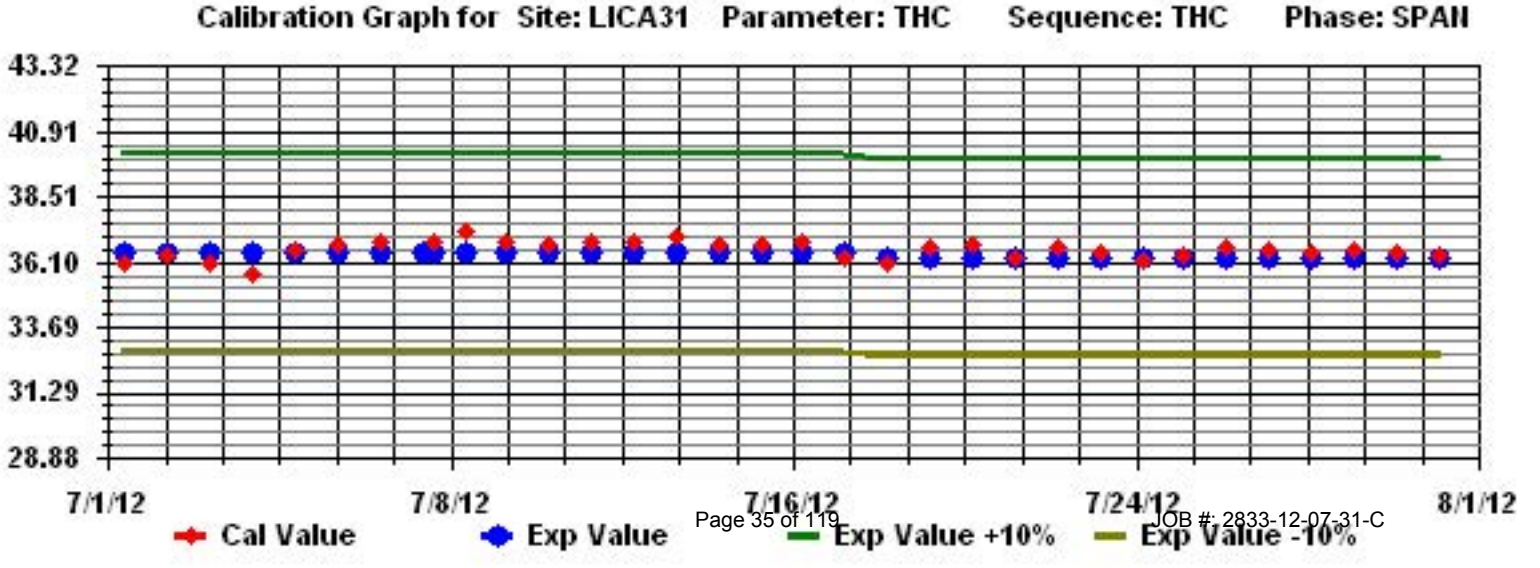
Total # Operational Hours : 691

Logger : 31 Parameter : THC
Class Limits (PPM)
>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA31
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-31-C


Calibration Graph for Site: LICA31 Parameter: THC Sequence: THC Phase: SPAN
43.32
40.91
38.51
36.10
33.69
31.29
28.88
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST. LINA*

JULY 2012

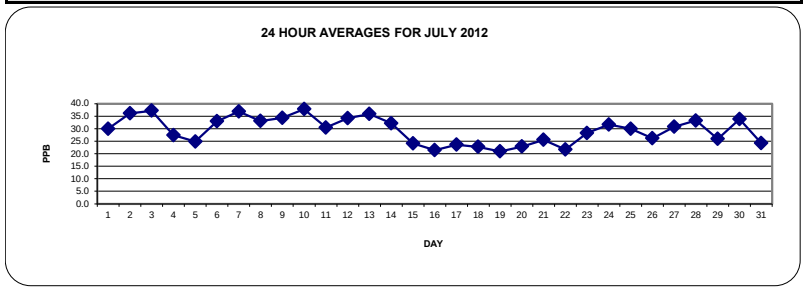
OZONE (O_3) hourly averages in ppb

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	28	29	29	28	25	21	21	21	20	**IZS**	26	32	31	31	39	41	39	39	36	33	34	32	29	24	41	29.9	24
2	20	20	22	19	20	23	21	23	**IZS**	35	34	34	35	41	43	43	46	45	49	47	51	58	53	48	58	36.1	24
3	46	36	31	32	33	40	43	**IZS**	34	28	23	33	53	39	31	37	41	37	46	47	46	42	31	26	53	37.2	24
4	45	45	41	39	42	37	**IZS**	28	31	33	29	26	24	23	20	20	19	20	20	18	19	17	17	17	45	27.4	24
5	18	19	21	22	16	**IZS**	16	20	23	24	25	26	28	29	29	30	32	32	31	28	25	25	25	28	32	24.9	24
6	25	21	24	20	**IZS**	15	18	23	27	32	38	39	39	42	43	46	51	42	38	35	34	33	36	36	51	32.9	24
7	36	35	36	**IZS**	32	28	22	24	33	35	37	40	45	45	42	37	42	44	40	40	40	38	38	38	45	36.8	24
8	36	34	**IZS**	28	27	24	20	21	22	26	30	34	38	44	44	44	43	42	39	35	34	34	32	29	44	33.0	24
9	29	**IZS**	26	25	24	24	23	25	29	32	37	38	40	41	42	42	42	46	46	41	39	36	32	30	46	34.3	24
10	**IZS**	26	26	24	22	19	21	22	28	36	36	40	43	48	52	58	**63**	57	45	43	37	41	45	**IZS**	**63**	**37.8**	24
11	44	40	36	31	27	25	25	26	27	28	29	29	31	34	35	35	32	30	28	29	25	26	**IZS**	28	44	30.4	24
12	31	19	26	26	22	30	43	33	31	41	29	31	40	42	42	41	41	42	41	42	40	**IZS**	27	25	43	34.1	24
13	26	27	31	32	30	29	27	27	30	36	37	36	37	41	44	43	44	44	41	41	**IZS**	45	41	36	45	35.9	24
14	35	33	29	27	28	24	23	25	28	24	29	34	38	41	43	42	44	43	37	**IZS**	28	29	29	26	44	32.1	24
15	22	21	19	19	23	27	24	27	29	28	27	29	32	31	26	25	26	23	**IZS**	21	19	19	21	17	32	24.1	24
16	15	15	14	14	16	13	8	8	10	15	22	29	33	34	38	35	34	**IZS**	26	23	22	24	22	22	38	21.4	24
17	21	21	21	21	20	20	22	25	29	33	34	33	32	29	26	26	**IZS**	26	24	21	16	15	14	14	34	23.6	24
18	14	14	14	15	15	15	14	15	19	19	**M**	25	29	**C**	**C**	**C**	**C**	38	36	35	32	29	29	25	38	22.7	23
19	25	23	24	24	23	21	20	17	18	21	21	20	20	20	**IZS**	21	21	22	23	21	20	19	18	19	25	20.9	24
20	18	19	20	20	17	19	15	17	22	23	25	27	28	**IZS**	25	27	28	27	26	24	23	25	27	24	28	22.9	24
21	19	18	16	16	15	14	14	17	20	25	28	33	**IZS**	38	37	38	36	38	35	33	28	25	24	20	38	25.5	24
22	19	19	18	17	14	9	10	13	15	19	22	**IZS**	30	31	31	30	29	28	25	25	23	24	21	26	31	21.7	24
23	26	28	31	35	26	31	28	22	24	25	**IZS**	27	28	32	33	32	30	30	29	26	24	27	28	28	35	28.3	24
24	30	39	36	35	26	25	30	34	32	**IZS**	36	35	33	30	31	32	33	34	34	31	29	25	30	27	39	31.6	24
25	23	23	24	23	24	23	25	30	**IZS**	32	33	33	33	33	34	34	35	33	32	36	34	24	35	33	36	30.0	24
26	32	35	35	22	17	18	18	**IZS**	17	26	27	30	33	32	31	27	25	23	20	23	29	30	27	24	35	26.1	24
27	22	21	20	20	18	20	**IZS**	17	22	29	36	36	38	41	40	37	35	37	37	39	32	34	41	35	41	30.7	24
28	40	34	37	29	35	**IZS**	26	30	33	38	36	41	40	42	40	35	32	29	32	32	28	25	27	24	42	33.3	24
29	25	26	23	20	**IZS**	18	15	17	20	25	31	33	36	35	34	35	31	30	28	24	23	23	24	20	36	25.9	24
30	15	14	14	**IZS**	18	16	23	24	27	29	35	42	48	46	47	50	46	43	40	37	40	46	41	37	50	33.8	24
31	33	31	**IZS**	24	19	17	18	19	21	23	25	27	28	30	29	27	28	27	26	23	21	21	20	20	33	24.2	24
HOURLY MAX	46	45	41	39	42	40	43	34	34	41	38	42	53	48	52	58	63	57	49	47	51	58	53	48			
HOURLY AVG	27.3	26.2	25.7	24.4	23.2	22.2	21.8	22.4	24.9	28.3	30.2	32.4	34.8	36.0	36.2	35.7	36.1	35.0	33.7	31.8	29.8	29.7	29.5	26.9			

STATUS FLAG CODES

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



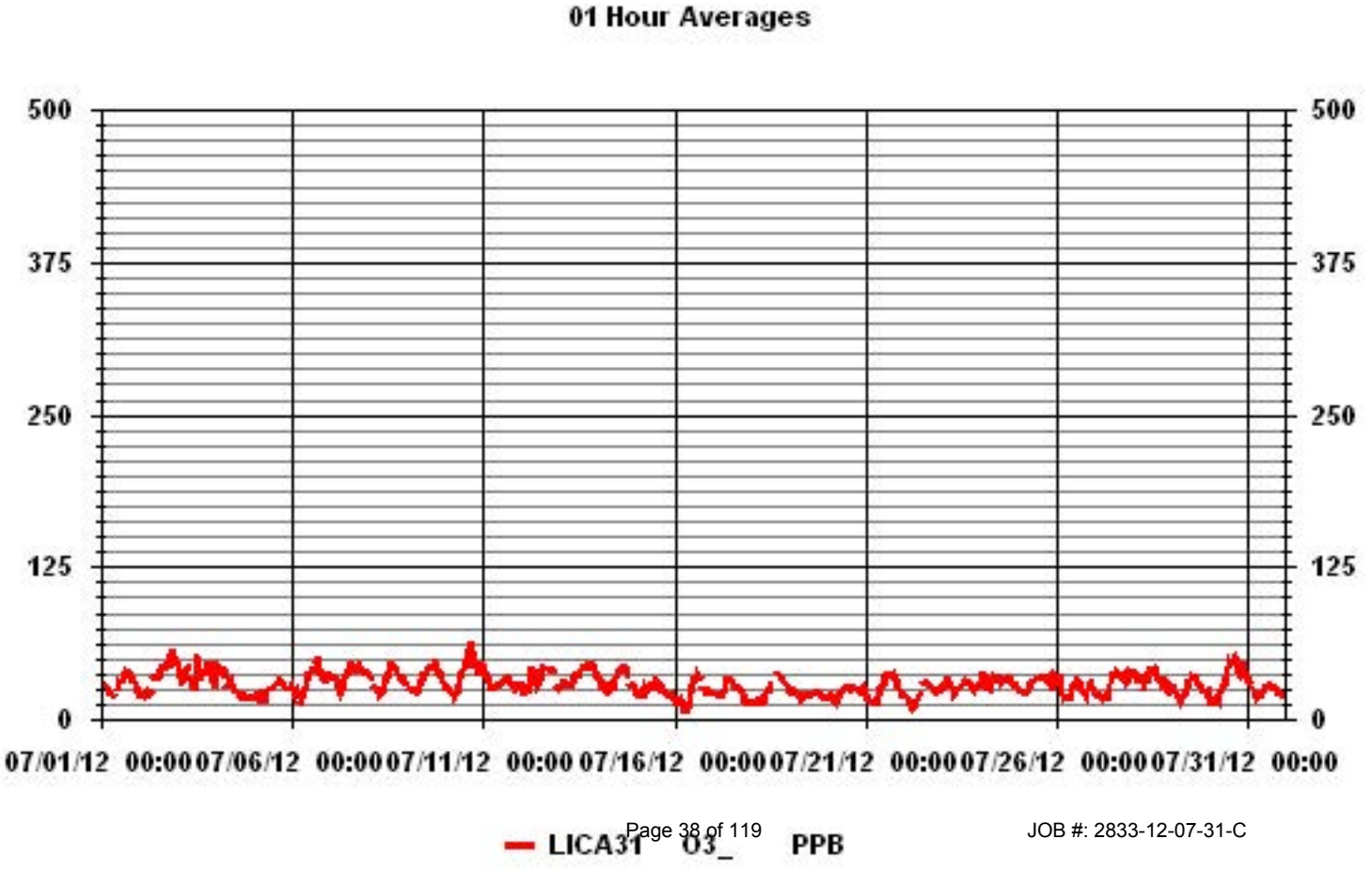
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	708					
MAXIMUM 1-HR AVERAGE:	63	PPB	@ HOUR(S)	16	ON DAY(S)	10
MAXIMUM 24-HR AVERAGE:	37.8	PPB			ON DAY(S)	10
					VAR-VARIOUS	

IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.9	%
STANDARD DEVIATION:	8.91		MONTHLY AVERAGE:	29.4	PPB

JOB #: 2833-12-07-31-C



JOB #: 2833-12-07-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST. LINA*

JULY 2012

OZONE MAX instantaneous maximum in ppb

MST

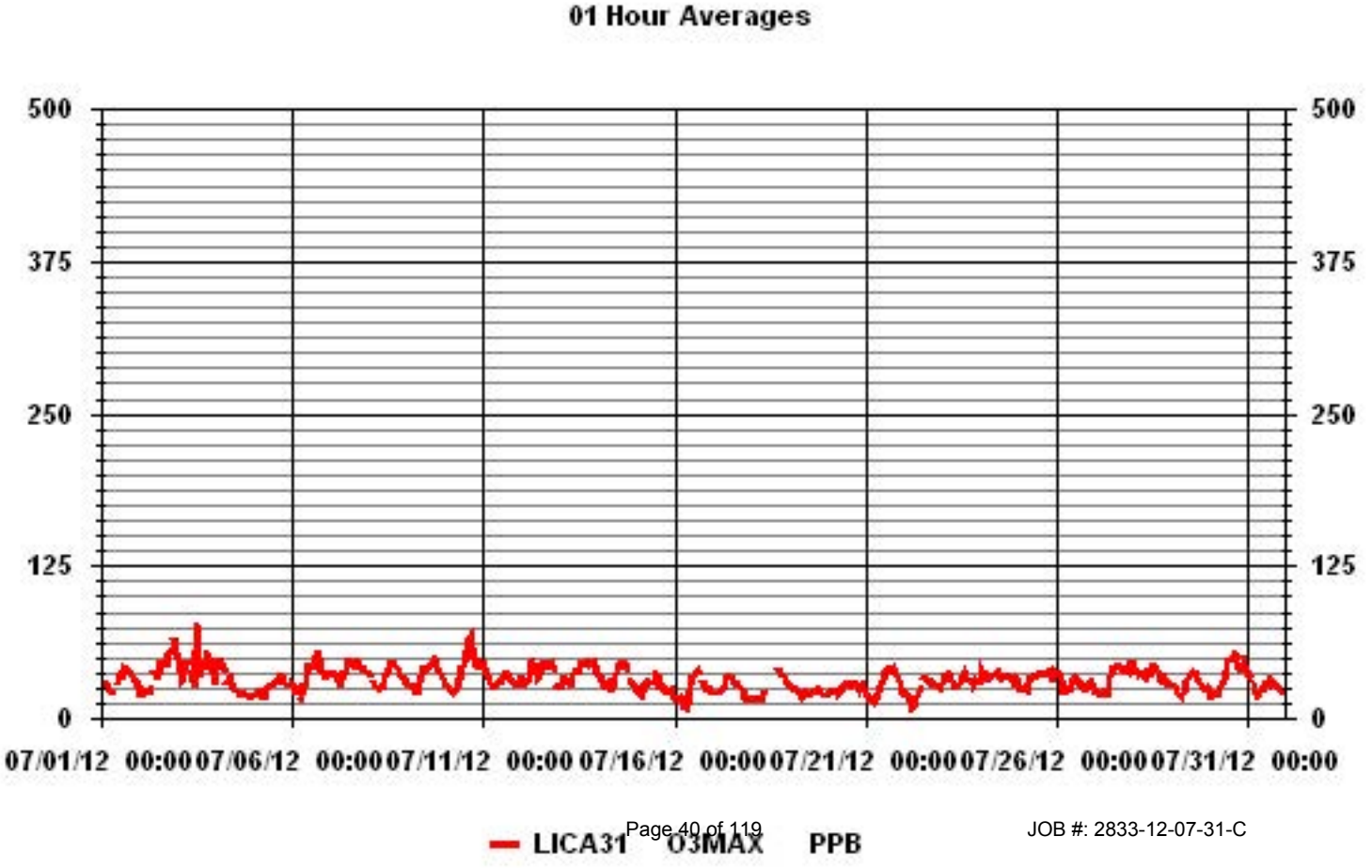
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	30	30	29	29	27	23	22	21	21	**IZS**	31	35	37	36	43	42	41	41	39	35	35	33	31	28	43	32.1	24
2	21	22	23	21	23	24	23	26	**IZS**	38	36	35	37	45	45	45	48	47	53	56	**N**	64	55	51	64	38.1	23
3	51	40	33	35	39	45	46	**IZS**	37	32	25	56	**78**	45	34	44	45	39	52	51	48	46	37	28	**78**	42.9	24
4	50	47	46	40	44	41	**IZS**	30	34	35	31	27	25	23	22	21	20	21	21	19	19	18	17	18	50	29.1	24
5	19	21	22	22	20	**IZS**	18	23	24	25	26	27	29	30	30	32	34	34	34	30	28	27	27	30	34	26.6	24
6	29	24	25	23	**IZS**	17	20	27	29	35	42	42	42	44	46	50	54	50	40	38	35	36	38	37	54	35.8	24
7	36	36	37	**IZS**	34	31	25	32	39	36	41	47	47	47	45	41	46	46	43	**P**	41	39	39	38	47	39.4	23
8	37	36	**IZS**	30	27	26	24	25	25	29	34	36	41	48	45	46	45	44	42	35	35	35	34	30	48	35.2	24
9	29	**IZS**	27	26	25	**N**	23	28	30	35	40	40	42	43	43	44	44	48	48	43	40	38	34	31	48	36.4	23
10	**IZS**	27	26	25	23	21	22	25	33	39	37	43	47	53	53	66	68	60	50	45	41	45	47	**IZS**	68	40.7	24
11	45	43	37	33	29	26	26	27	28	29	30	30	34	36	36	36	34	32	30	30	29	28	**IZS**	32	45	32.2	24
12	32	25	28	29	30	46	47	41	43	46	35	37	43	44	44	43	44	44	43	45	41	**IZS**	27	26	47	38.4	24
13	26	29	33	34	32	31	28	28	36	39	38	38	40	45	46	45	46	47	44	45	**IZS**	47	44	38	47	38.2	24
14	36	35	32	29	29	26	25	30	30	28	32	37	41	43	45	44	46	45	41	**IZS**	31	31	29	28	46	34.5	24
15	24	22	21	20	27	29	27	30	30	29	29	30	37	36	27	26	27	25	**IZS**	22	22	23	24	18	37	26.3	24
16	17	16	15	15	18	16	10	9	12	22	28	33	35	38	40	37	37	**IZS**	29	24	24	25	24	22	40	23.7	24
17	21	21	22	21	21	22	24	27	33	34	35	35	34	31	28	28	**IZS**	27	26	24	18	15	15	15	35	25.1	24
18	15	15	16	16	16	16	16	18	21	21	**M**	**M**	31	**C**	**C**	**C**	**C**	40	37	37	35	31	31	28	40	24.4	22
19	28	25	25	24	24	22	21	18	20	21	22	22	20	21	**IZS**	22	22	23	24	22	21	21	20	**P**	28	22.2	23
20	20	21	22	23	22	22	19	20	24	24	27	29	30	**IZS**	27	29	29	29	28	27	24	27	28	25	30	25.0	24
21	22	20	17	16	16	14	16	19	22	27	31	35	**IZS**	39	40	40	39	41	38	36	33	32	26	22	41	27.9	24
22	20	21	19	18	16	10	11	15	17	21	25	**IZS**	34	33	33	32	31	30	29	27	27	26	25	28	34	23.8	24
23	29	30	36	37	37	33	32	24	27	27	**IZS**	29	30	34	37	33	32	31	31	27	29	32	30	30	37	31.2	24
24	42	40	38	37	30	33	36	**P**	35	**IZS**	37	38	34	32	33	34	34	35	35	33	31	26	33	31	42	34.4	23
25	24	24	25	24	25	24	29	33	**IZS**	35	36	35	36	36	36	36	36	36	36	38	38	30	38	36	38	32.4	24
26	36	37	37	33	22	22	26	**IZS**	23	29	31	33	35	34	32	29	26	26	22	26	30	31	29	25	37	29.3	24
27	22	21	21	21	20	23	**IZS**	19	25	34	40	39	41	43	44	42	41	41	40	43	38	38	48	41	48	34.1	24
28	43	40	39	36	38	**IZS**	35	34	39	39	38	43	42	43	43	40	32	31	33	34	30	29	30	28	43	36.5	24
29	28	27	27	21	**IZS**	19	17	19	22	30	33	36	38	35	35	36	32	32	30	27	25	24	26	23	38	27.9	24
30	17	**P**	15	**IZS**	20	20	26	28	29	32	39	48	49	48	48	53	53	46	42	40	**P**	50	44	41	53	37.5	22
31	37	35	**IZS**	28	21	18	19	21	22	23	26	29	30	32	32	28	29	28	27	25	24	23	21	21	37	26.0	24
HOURLY MAX	51	47	46	40	44	46	47	41	43	46	42	56	78	53	53	66	68	60	53	56	48	64	55	51			
HOURLY AVG	29.5	28.6	27.3	26.4	26.0	25.0	24.6	24.9	27.9	30.8	32.9	36.0	38.0	38.5	38.3	38.1	38.4	37.3	36.2	33.9	31.1	32.3	31.7	29.3			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	700					
MAXIMUM INSTANTANEOUS VALUE:	78	PPB	@ HOUR(S)	12	ON DAY(S)	3
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		735	HRS
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	9.56					



JOB #: 2833-12-07-31-C

LICA31
O3_ / WDR Joint Frequency Distribution (Percent)

July 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	2.54	2.97	3.82	4.39	5.38	6.79	8.35	12.32	6.23	2.97	4.10	10.19	12.32	9.77	4.10	2.26	98.58
< 110	.00	.14	.00	.14	.00	.14	.00	.14	.00	.00	.14	.56	.00	.00	.00	.14	1.41
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.54	3.11	3.82	4.53	5.38	6.94	8.35	12.46	6.23	2.97	4.24	10.76	12.32	9.77	4.10	2.40	

Calm : .00 %

Total # Operational Hours : 706

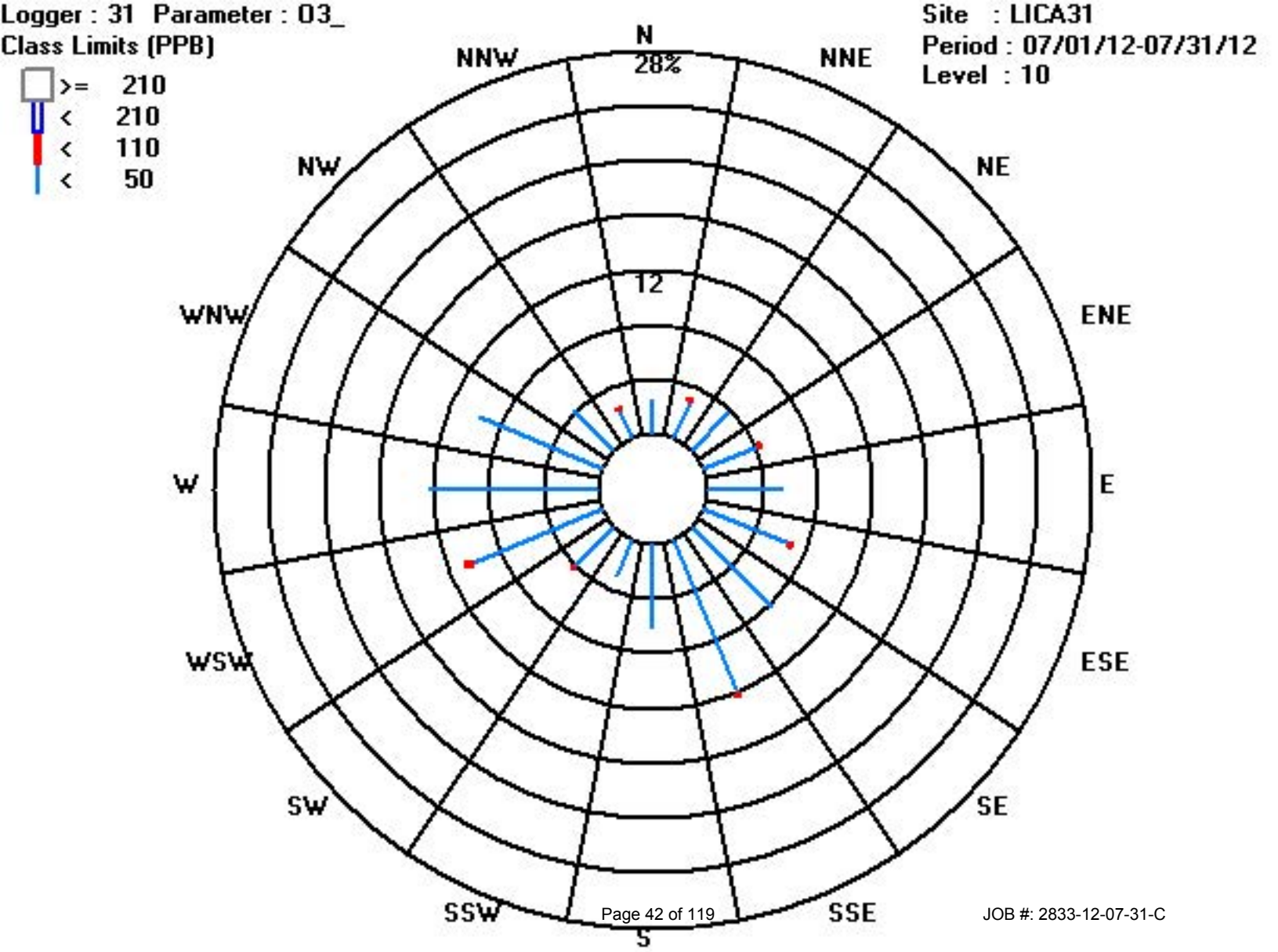
Distribution By Samples

Direction

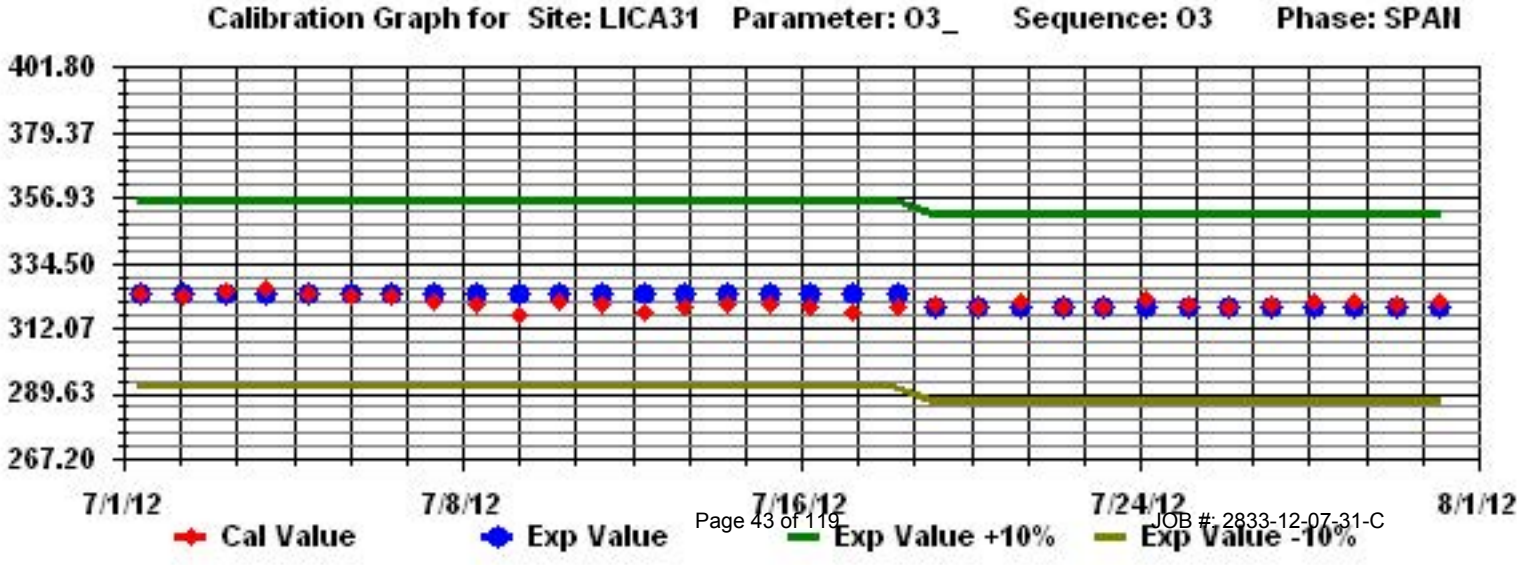
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	18	21	27	31	38	48	59	87	44	21	29	72	87	69	29	16	696
< 110		1		1		1		1			1	4				1	10
< 210																	
>= 210																	
Totals	18	22	27	32	38	49	59	88	44	21	30	76	87	69	29	17	

Calm : .00 %

Total # Operational Hours : 706



JOB #: 2833-12-07-31-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
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2012

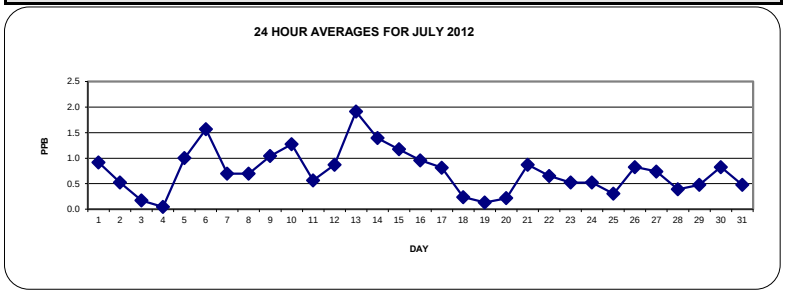
NITROGEN DIOXIDE hourly averages in ppb

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	2	2	1	1	2	2	2	1	2	**IZS**	0	1	1	0	0	0	0	0	0	0	1	1	1	1	2	0.9	24
2	1	0	1	1	1	1	1	1	**IZS**	0	1	1	0	0	0	0	0	1	0	0	1	0	1	0	1	0.5	24
3	0	0	0	1	1	0	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.2	24
4	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.0	24
5	0	0	0	0	1	**IZS**	1	1	0	1	2	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1.0	24
6	2	3	3	3	**IZS**	2	2	2	3	3	2	1	1	0	1	1	1	1	0	1	1	1	1	1	**3**	1.6	24
7	1	1	1	**IZS**	0	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	0	0	1	0	1	0.7	24
8	1	1	**IZS**	1	1	1	0	0	1	0	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	0.7	24
9	1	**IZS**	2	1	1	1	1	2	1	1	1	1	0	1	0	0	1	1	1	1	1	2	2	1	2	1.0	24
10	**IZS**	1	2	2	1	2	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1	**IZS**	2	1.3	24
11	0	1	1	0	1	1	1	1	0	1	1	0	0	0	0	0	0	1	1	0	1	1	**IZS**	1	1	0.6	24
12	1	2	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	**IZS**	0	0	2	0.9	24
13	1	1	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	1	2	2	**IZS**	1	3	2	3	**1.9**	24
14	2	1	2	2	2	2	1	2	2	2	2	1	1	2	1	1	1	1	1	**IZS**	0	1	1	1	2	1.4	24
15	1	2	2	2	1	1	1	1	1	1	1	0	1	0	1	1	1	2	**IZS**	1	2	1	1	2	2	1.2	24
16	2	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	**IZS**	0	1	1	1	1	1	2	1.0	24
17	1	1	1	1	1	2	1	1	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	0	1	1	1	2	0.8	24
18	1	0	0	0	0	0	0	0	0	1	**M**	1	0	1	1	**IZS**	**C**	0	0	0	0	0	0	0	1	0.2	23
19	1	1	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	1	0	0	1	0.1	24
20	0	0	0	0	1	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	1	1	1	1	1	0.2	24
21	1	1	1	1	1	1	1	1	1	1	1	0	**IZS**	0	1	1	0	1	1	1	1	1	1	1	1	0.9	24
22	1	0	0	1	1	0	1	0	0	1	0	**IZS**	1	0	0	0	0	1	1	1	1	1	2	2	2	0.7	24
23	1	1	1	1	1	1	1	1	1	1	**IZS**	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0.5	24
24	0	1	0	1	0	1	2	1	1	**IZS**	0	1	1	0	0	0	0	0	0	1	1	0	1	0	2	0.5	24
25	1	0	0	1	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.3	24
26	0	0	0	1	1	3	3	**IZS**	1	1	1	1	1	0	0	1	1	1	1	0	0	0	1	1	**3**	0.8	24
27	1	1	0	1	1	1	**IZS**	0	1	1	1	1	0	1	1	1	1	1	1	0	1	0	0	1	1	0.7	24
28	1	1	1	1	1	**IZS**	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0.4	24
29	1	1	0	0	**IZS**	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	0	2	0	1	2	0.5	24
30	2	1	1	**IZS**	1	1	2	2	2	1	1	1	1	0	0	0	0	0	0	0	1	1	1	0	2	0.8	24
31	1	1	**IZS**	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	1	1	0	1	1	1	1	0.5	24
HOURLY MAX	2	3	3	3	2	3	3	2	3	3	2	2	2	2	2	2	2	2	2	2	2	2	3	2			
HOURLY AVG	0.9	0.9	0.8	0.9	0.9	1.1	1.1	0.9	0.8	0.8	0.8	0.7	0.6	0.4	0.4	0.4	0.5	0.6	0.5	0.5	0.7	0.8	0.9	0.8			

STATUS FLAG CODES

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



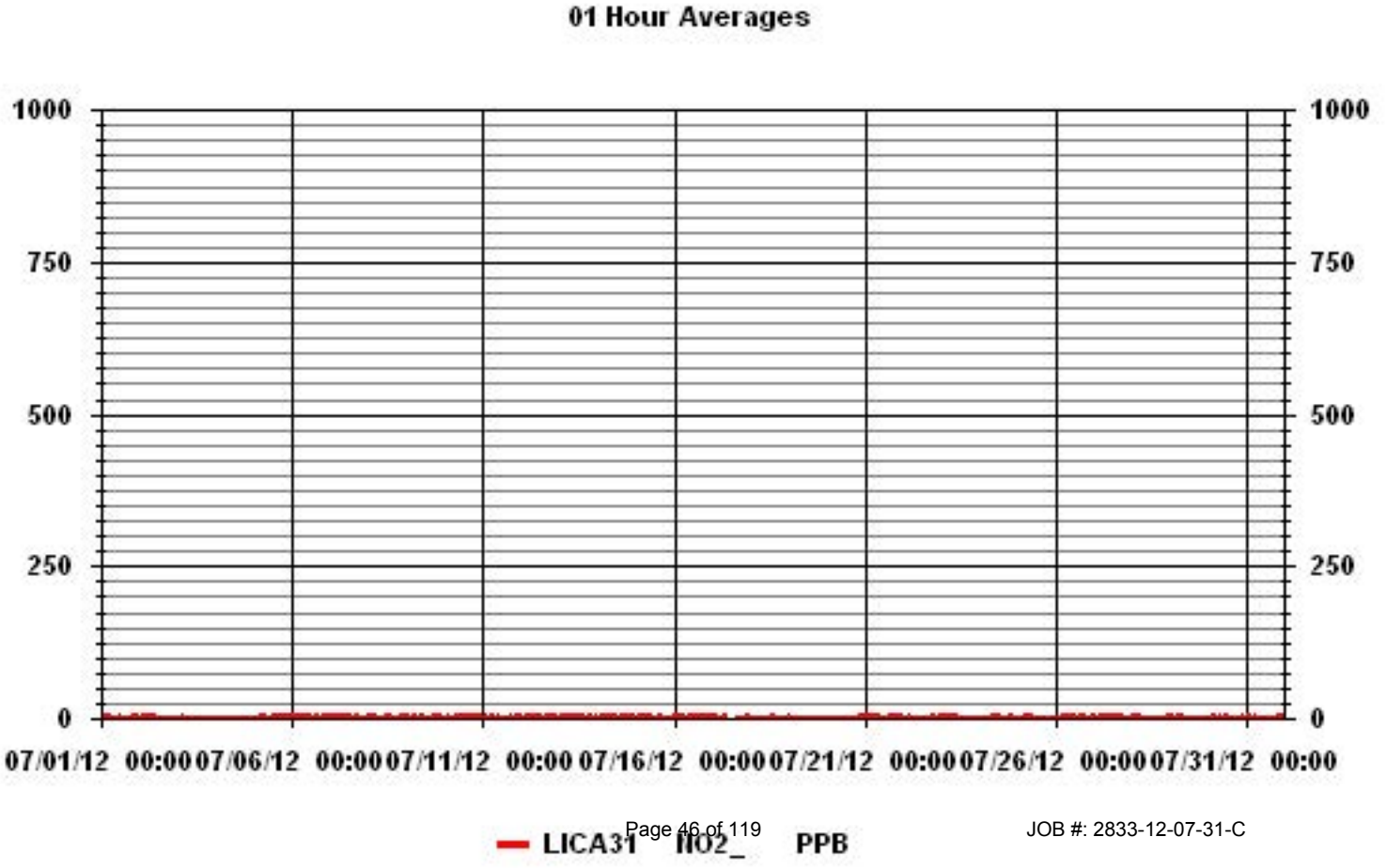
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	429					
MAXIMUM 1-HR AVERAGE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S)	6, 26
MAXIMUM 24-HR AVERAGE:	1.9	PPB			ON DAY(S)	13

IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	99.9	%
STANDARD DEVIATION:	0.69		MONTHLY AVERAGE:	0.74	PPB



JOB #: 2833-12-07-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST.LINA*

JULY 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	2	2	2	2	2	2	2	2	2	**IZS**	1	2	2	1	1	1	1	1	1	2	1	2	3	1	3	1.7	24
2	2	2	2	2	2	2	2	2	**IZS**	1	1	2	1	1	2	1	1	2	1	2	2	1	1	1	2	1.6	24
3	1	1	2	2	1	1	1	**IZS**	1	1	1	2	2	2	2	1	1	1	2	2	2	2	2	3	3	1.6	24
4	2	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
5	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1.1	24
6	2	2	3	3	**IZS**	3	3	3	4	4	4	3	2	3	2	2	2	2	1	1	2	2	2	2	4	2.5	24
7	2	2	2	**IZS**	1	3	2	2	2	1	1	1	1	1	1	1	1	2	1	**P**	1	1	1	1	3	1.4	23
8	1	2	**IZS**	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	2	1	2	2	2	2	2	1.7	24
9	2	**IZS**	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	2	1	2	2	2	3	2	3	1.8	24
10	**IZS**	2	2	2	3	3	2	2	2	2	2	2	2	2	2	3	3	2	2	3	3	2	2	**IZS**	3	2.3	24
11	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1	3	2	**IZS**	2	3	1.3	24
12	1	3	2	2	3	2	2	3	2	2	2	2	2	2	1	2	2	2	2	3	2	**IZS**	1	1	3	2.0	24
13	2	2	3	3	3	3	3	3	3	4	3	2	3	3	3	2	2	2	2	3	**IZS**	3	4	3	4	2.8	24
14	2	2	2	2	2	3	3	3	2	2	2	2	2	2	2	2	2	2	2	**IZS**	2	2	2	2	3	2.1	24
15	2	2	3	2	2	2	2	2	1	1	1	1	1	1	1	1	2	2	**IZS**	2	2	2	2	2	3	1.7	24
16	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	**IZS**	1	2	1	1	2	1	2	1.8	24
17	2	2	2	2	2	3	2	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	1	2	2	2	2	2	3	1.9	24
18	2	2	2	2	2	2	3	2	2	14	**M**	**M**	2	2	3	**IZS**	**C**	2	2	2	2	3	2	2	14	2.8	22
19	2	2	2	2	2	2	2	2	2	1	2	1	1	1	**IZS**	1	1	2	2	1	2	5	2	**P**	5	1.8	23
20	**40**	2	2	2	3	2	2	2	1	2	1	1	1	**IZS**	1	1	2	2	2	2	2	2	3	3	**40**	3.5	24
21	3	2	3	2	3	2	2	2	2	2	2	2	**IZS**	1	2	2	1	2	2	2	3	6	6	3	6	2.5	24
22	2	2	2	2	2	2	14	2	2	2	2	**IZS**	1	1	2	2	2	14	5	5	4	2	3	3	14	3.4	24
23	2	3	2	2	3	2	2	2	2	2	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.5	24
24	1	1	1	1	1	1	3	**P**	1	**IZS**	2	2	2	2	3	2	2	2	2	2	2	2	13	2	13	2.3	23
25	2	2	2	2	2	2	3	2	**IZS**	0	1	1	1	1	1	1	0	1	1	1	1	2	1	1	3	1.3	24
26	1	1	1	1	2	4	5	**IZS**	3	4	2	2	3	2	2	2	2	2	2	2	2	2	2	2	5	2.2	24
27	2	2	2	2	3	2	**IZS**	1	1	1	1	1	1	1	3	2	3	2	2	1	1	1	1	1	3	1.6	24
28	2	1	1	1	1	**IZS**	2	1	1	1	1	2	1	1	1	1	1	5	2	1	2	2	1	1	5	1.4	24
29	1	2	1	1	**IZS**	1	1	1	1	1	1	1	1	1	1	1	15	1	1	19	1	3	2	4	19	2.7	24
30	2	**P**	2	**IZS**	2	3	2	3	2	2	2	2	1	1	1	1	1	1	1	1	**P**	2	1	1	3	1.6	22
31	1	1	**IZS**	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1	1	2	1.1	24
HOURLY MAX	40	3	3	3	3	4	14	3	4	14	4	3	3	3	3	3	15	14	5	19	4	6	13	4			
HOURLY AVG	3.0	1.8	1.9	1.8	2.0	2.1	2.6	1.9	1.8	2.1	1.6	1.6	1.5	1.4	1.6	1.4	1.9	2.1	1.7	2.4	1.8	2.1	2.4	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

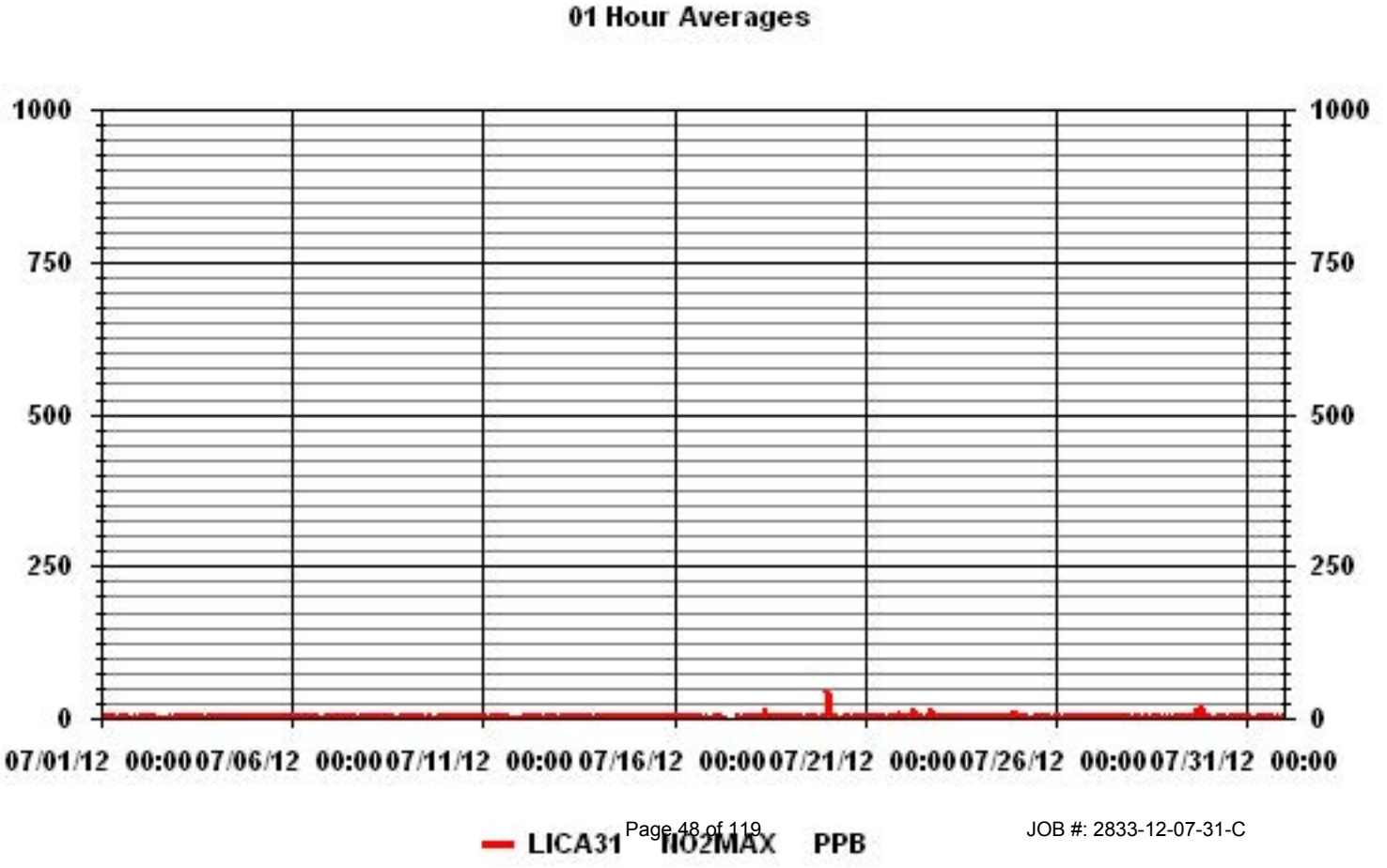
NUMBER OF NON-ZERO READINGS: 694

MAXIMUM INSTANTANEOUS VALUE: 40 PPB @ HOUR(S) 0 ON DAY(S) 20

IZS CALIBRATION TIME: 31 HRS OPERATIONAL TIME: 737 HRS

MONTHLY CALIBRATION TIME: 10 HRS

STANDARD DEVIATION: 2.04



JOB #: 2833-12-07-31-C

LICA31
NO2_ / WDR Joint Frequency Distribution (Percent)

July 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	2.56	3.13	3.85	4.56	5.42	6.99	8.27	11.69	6.41	3.13	4.27	10.84	12.41	9.84	4.13	2.42	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.56	3.13	3.85	4.56	5.42	6.99	8.27	11.69	6.41	3.13	4.27	10.84	12.41	9.84	4.13	2.42	

Calm : .00 %

Total # Operational Hours : 701

Distribution By Samples

Direction

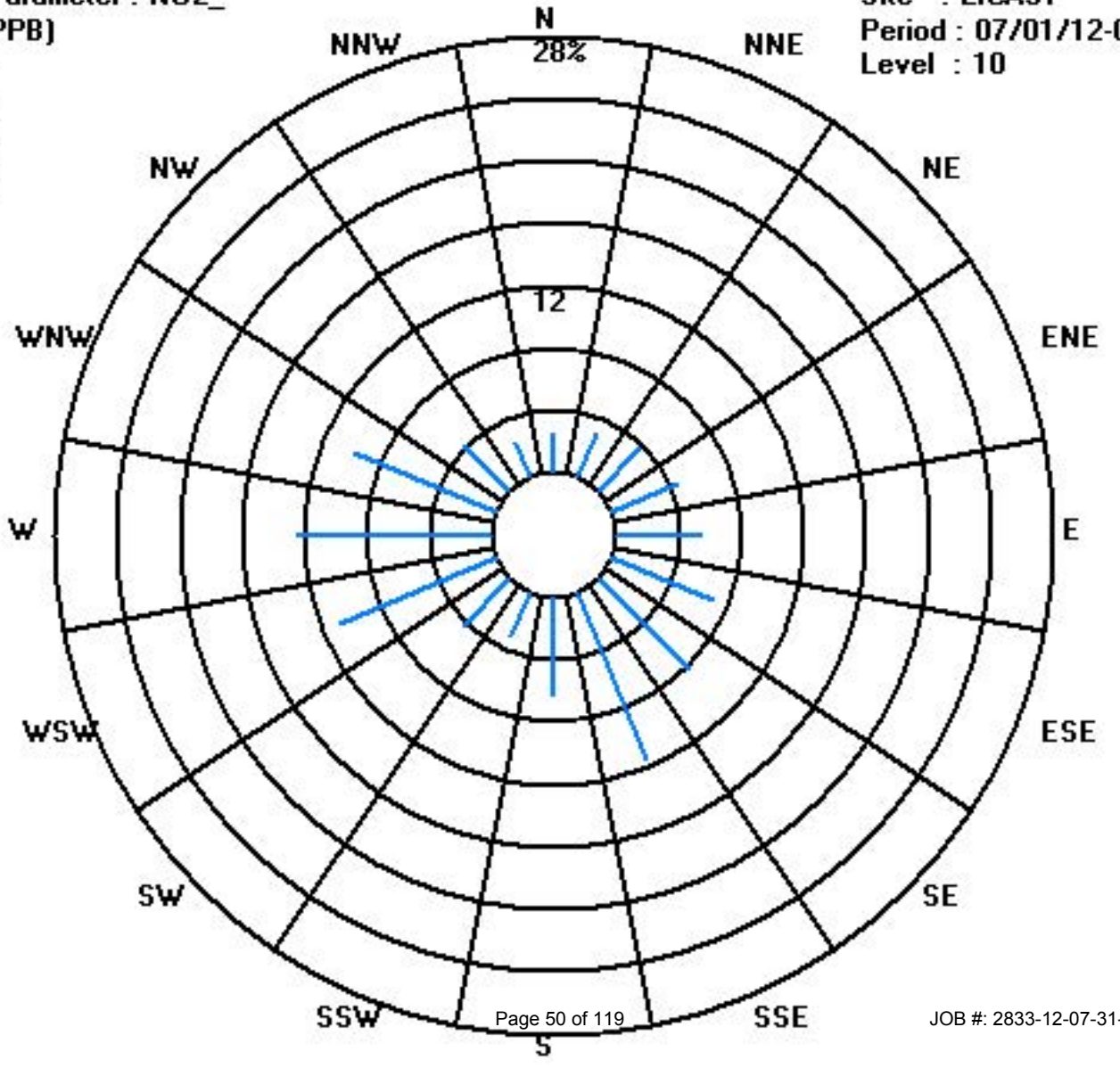
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	18	22	27	32	38	49	58	82	45	22	30	76	87	69	29	17	701
< 110																	
< 210																	
>= 210																	
Totals	18	22	27	32	38	49	58	82	45	22	30	76	87	69	29	17	

Calm : .00 %

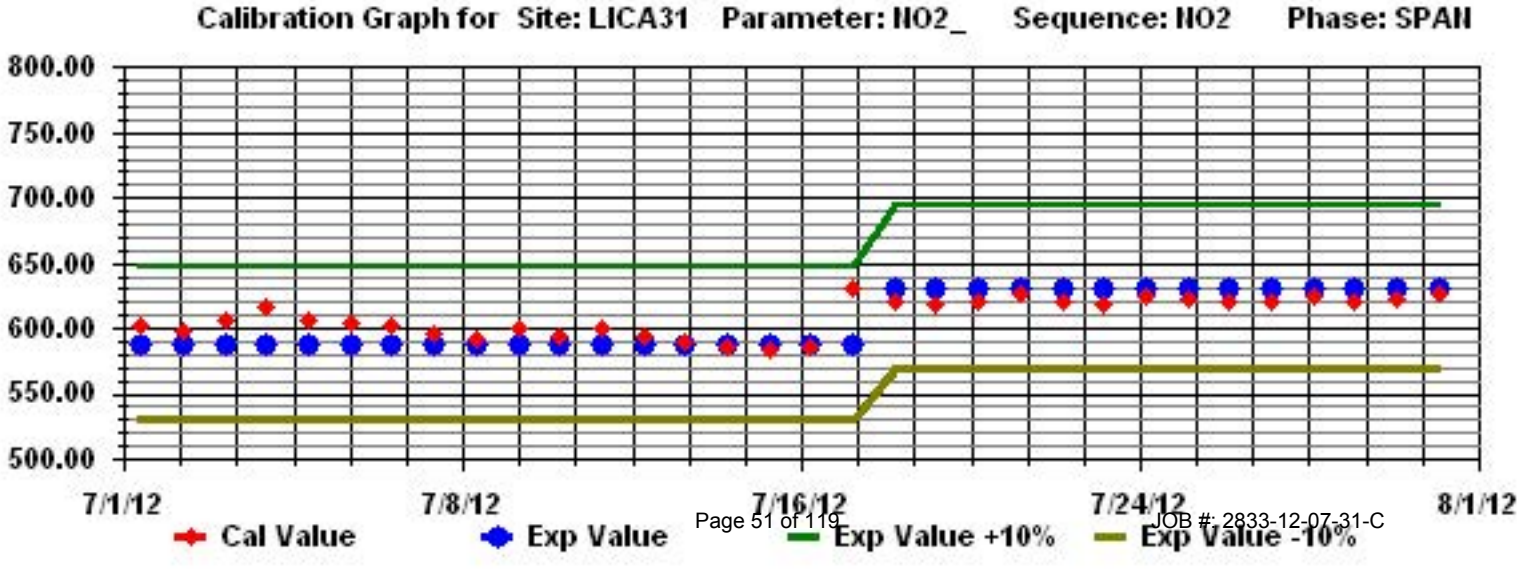
Total # Operational Hours : 701

Logger : 31 Parameter : NO2_
Class Limits (PPB)
>= 210
< 210
< 110
< 50

Site : LICA31
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-31-C


Calibration Graph for Site: LICA31 Parameter: NO2_ Sequence: NO2 Phase: SPAN
800.00
750.00
700.00
650.00
600.00
550.00
500.00
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2012

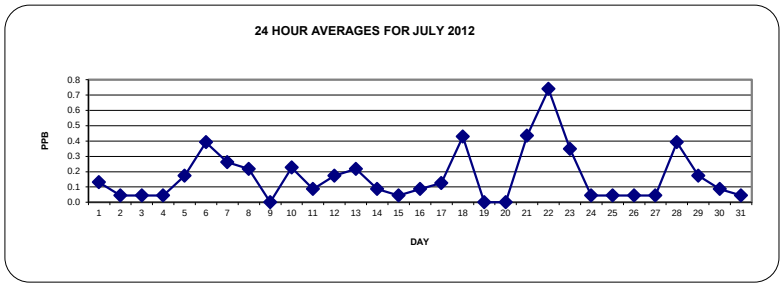
NITRIC OXIDE hourly averages in ppb

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

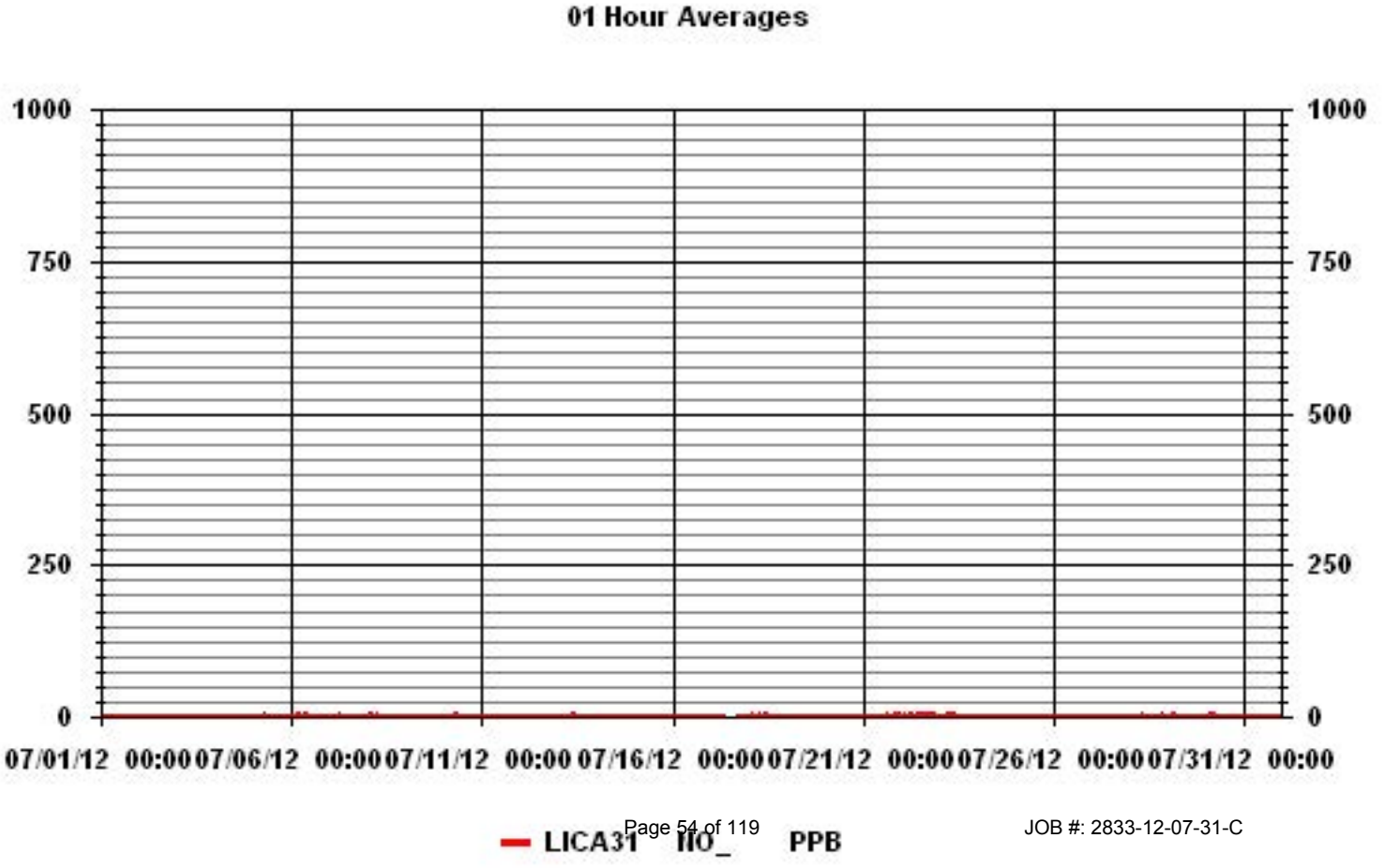
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	109					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.7	PPB			ON DAY(S)	22
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		743	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		99.9	%
STANDARD DEVIATION:	0.40		MONTHLY AVERAGE:		0.17	PPB



JOB #: 2833-12-07-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST. LINA*

JULY 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	1	1	**IZS**	4	1	1	1	0	1	1	1	1	1	1	1	1	1	4	1.1	24
2	1	1	1	1	1	1	1	1	**IZS**	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.1	24
3	1	1	1	1	1	1	1	**IZS**	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.1	24
4	1	1	1	1	1	1	**IZS**	4	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	4	1.1	24
5	1	1	1	1	1	**IZS**	4	2	2	1	2	1	1	1	1	1	1	2	2	1	1	1	1	1	4	1.3	24
6	1	1	1	1	**IZS**	4	2	4	3	2	2	2	1	3	1	2	1	1	1	1	1	1	1	1	4	1.7	24
7	1	1	1	**IZS**	4	3	1	2	1	1	1	1	1	1	1	1	1	1	1	**P**	1	1	1	1	4	1.3	23
8	1	1	**IZS**	3	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.1	24
9	1	**IZS**	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24
10	**IZS**	3	1	1	1	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	2	2	1	**IZS**	3	1.3	24
11	3	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	2	1	1	2	1	**IZS**	3	3	1.3	24
12	1	1	1	1	3	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	**IZS**	3	1	3	1.3	24
13	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	**IZS**	3	1	1	3	1.1	24
14	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	2	1	1	1	2	1.1	24
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	3	1	1	1	1	3	1.1	24
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	3	1	1	1	1	1	3	1.1	24
17	1	1	1	1	1	1	1	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	3	1	1	1	1	1	1	3	1.1	24
18	1	1	1	1	1	1	3	2	1	**64**	**M**	**M**	1	1	1	**IZS**	**C**	1	1	1	1	2	1	1	**64**	4.4	22
19	1	1	1	1	1	1	2	1	2	1	1	1	1	1	**IZS**	2	1	1	1	0	1	4	0	**P**	4	1.2	23
20	33	0	0	0	1	0	1	1	0	1	0	1	0	**IZS**	2	0	1	1	1	1	0	0	0	0	33	1.9	24
21	0	0	0	0	0	0	0	1	1	0	0	0	**IZS**	3	2	2	2	1	1	1	1	4	5	2	5	1.1	24
22	2	2	1	1	1	1	17	1	1	1	1	**IZS**	3	2	2	1	2	20	4	2	2	2	1	1	20	3.1	24
23	1	1	1	1	2	2	1	1	2	1	**IZS**	2	1	0	0	0	0	0	0	0	1	0	0	0	2	0.7	24
24	0	0	0	0	0	1	2	**P**	1	**IZS**	3	1	1	0	1	0	1	0	1	1	0	0	19	0	19	1.5	23
25	0	0	0	0	1	1	1	1	**IZS**	3	1	1	1	0	1	0	0	0	0	0	0	1	1	1	3	0.6	24
26	0	0	0	0	2	1	1	**IZS**	2	1	0	1	1	0	0	1	1	1	0	0	0	0	1	1	2	0.6	24
27	1	0	0	0	0	0	**IZS**	2	1	1	1	1	0	1	2	1	1	1	1	0	1	0	0	0	2	0.7	24
28	0	0	0	0	0	**IZS**	4	2	1	1	1	2	1	1	2	2	1	4	2	1	2	2	2	1	4	1.4	24
29	1	1	1	1	**IZS**	3	1	1	0	1	0	1	0	1	1	1	4	0	1	34	1	1	1	1	34	2.5	24
30	1	**P**	0	**IZS**	3	2	1	1	1	1	1	1	0	0	0	0	1	0	0	0	**P**	0	0	0	3	0.6	22
31	1	0	**IZS**	2	3	2	0	1	0	1	0	1	1	1	0	0	1	1	1	1	1	1	2	0	3	0.9	24
HOURLY MAX	33	3	2	3	4	4	17	4	4	64	4	2	3	3	2	2	4	20	4	34	2	4	19	3			
HOURLY AVG	2.0	0.8	0.8	0.8	1.2	1.2	1.9	1.4	1.2	3.4	1.0	1.1	0.9	1.0	1.0	0.9	1.1	1.7	1.1	2.0	1.0	1.2	1.7	0.9			

STATUS FLAG CODES

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

MONTHLY SUMMARY

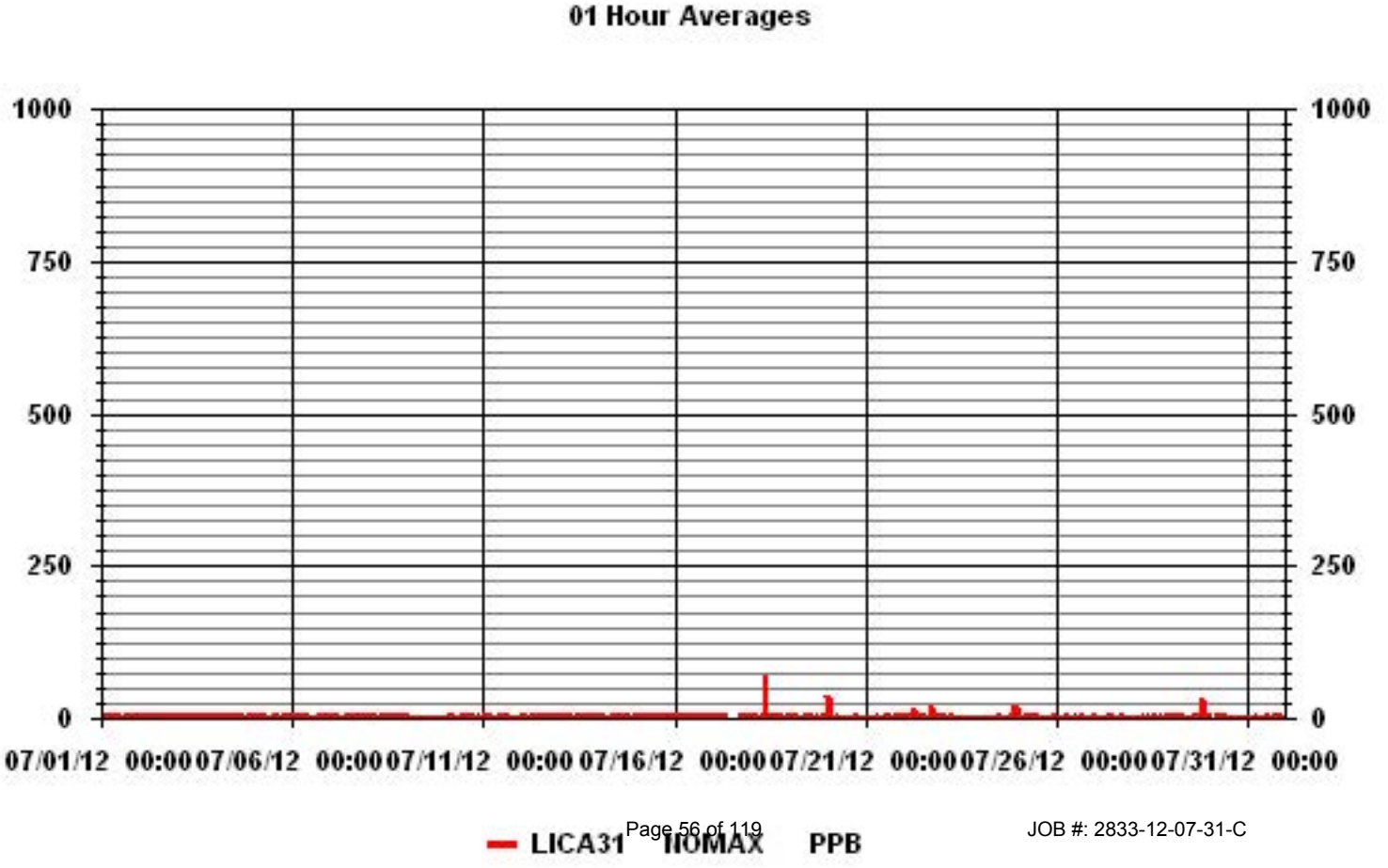
NUMBER OF NON-ZERO READINGS: 570

MAXIMUM INSTANTANEOUS VALUE: 64 PPB @ HOUR(S) 9 ON DAY(S) 18

IZS CALIBRATION TIME: 31 HRS OPERATIONAL TIME: 737 HRS

MONTHLY CALIBRATION TIME: 10 HRS

STANDARD DEVIATION: 3.25



JOB #: 2833-12-07-31-C

LICA31
NO_ / WDR Joint Frequency Distribution (Percent)

July 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	2.56	3.13	3.85	4.56	5.42	6.99	8.27	11.69	6.41	3.13	4.27	10.84	12.41	9.84	4.13	2.42	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.56	3.13	3.85	4.56	5.42	6.99	8.27	11.69	6.41	3.13	4.27	10.84	12.41	9.84	4.13	2.42	

Calm : .00 %

Total # Operational Hours : 701

Distribution By Samples

Direction

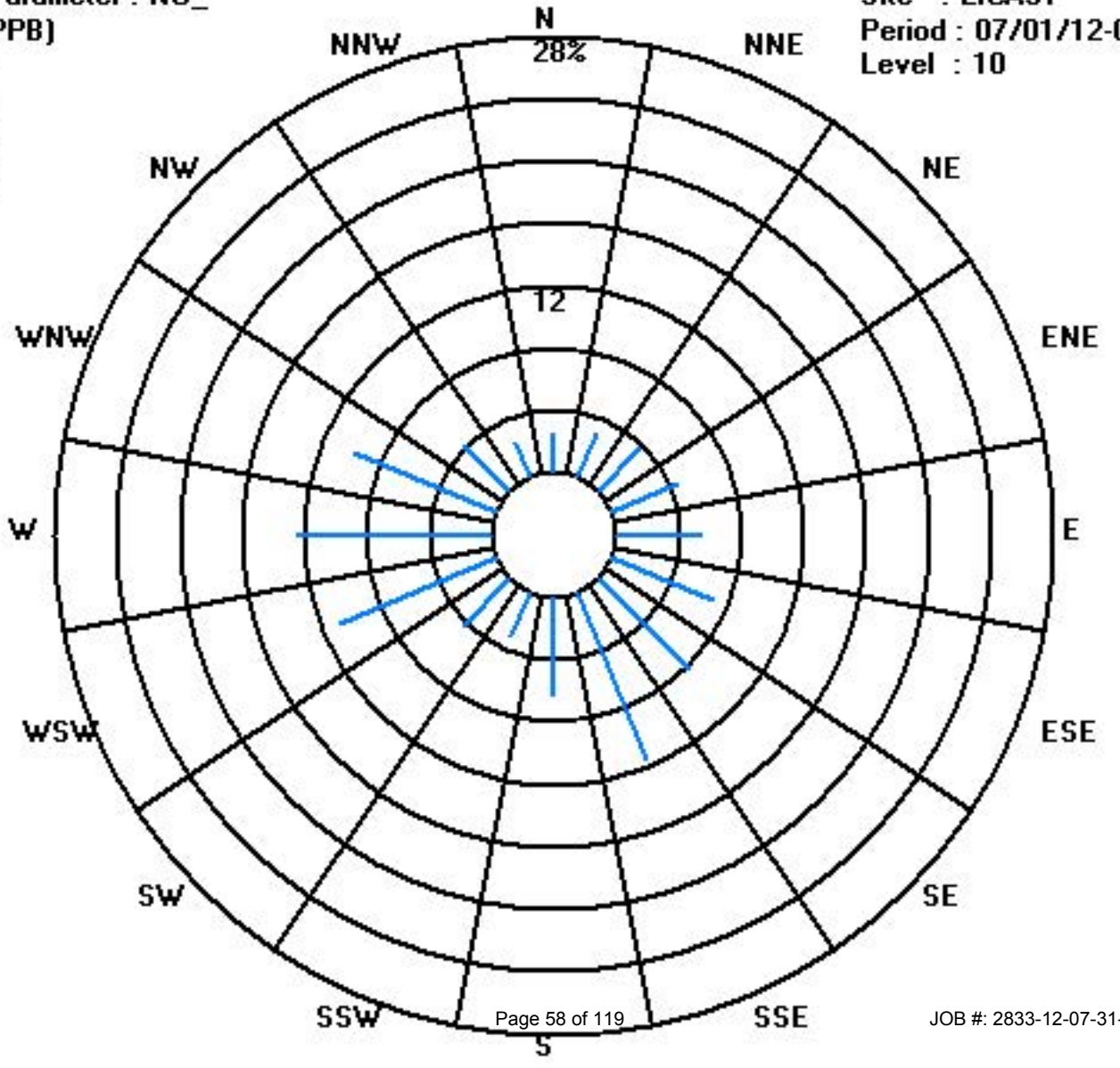
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	18	22	27	32	38	49	58	82	45	22	30	76	87	69	29	17	701
< 110																	
< 210																	
>= 210																	
Totals	18	22	27	32	38	49	58	82	45	22	30	76	87	69	29	17	

Calm : .00 %

Total # Operational Hours : 701

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

Site : LICA31
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-31-C

Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

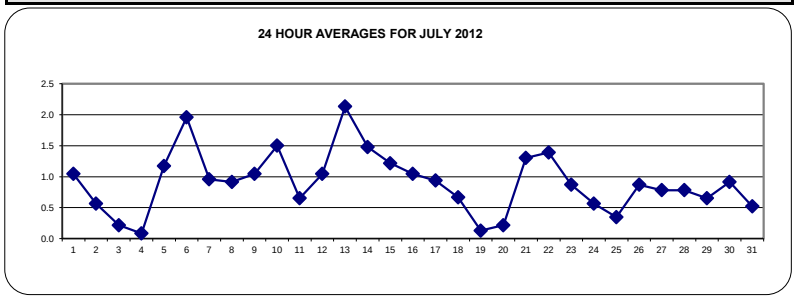
JULY 2012

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	2	2	1	1	2	2	2	2	2	**IZS**	2	1	1	0	0	0	0	0	0	0	1	1	1	1	2	1.0	24
2	1	0	1	1	1	1	1	1	**IZS**	1	1	1	0	0	0	0	0	1	0	0	1	0	1	0	1	0.6	24
3	0	0	0	1	1	0	1	**IZS**	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.2	24
4	0	0	0	0	0	0	**IZS**	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.1	24
5	0	0	0	0	1	**IZS**	3	2	1	1	2	1	1	1	1	1	1	1	1	1	2	2	2	2	3	1.2	24
6	2	3	3	3	**IZS**	4	4	3	4	4	3	1	1	1	1	1	1	1	0	1	1	1	1	1	**4**	2.0	24
7	1	1	1	**IZS**	2	2	2	2	1	1	1	1	1	1	0	0	1	1	1	1	0	0	1	0	2	1.0	24
8	1	1	**IZS**	2	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	2	0.9	24
9	1	**IZS**	2	1	1	1	1	2	1	1	1	1	0	1	0	0	1	1	1	1	1	2	2	1	2	1.0	24
10	**IZS**	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2	2	2	1	1	1	1	**IZS**	2	1.5	24
11	1	1	1	0	1	1	1	1	0	1	1	0	0	0	0	0	0	1	1	0	1	1	**IZS**	2	2	0.7	24
12	1	2	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	**IZS**	1	0	2	1.0	24
13	1	1	2	2	2	2	3	2	3	3	3	2	2	2	2	2	2	2	2	2	**IZS**	2	3	2	3	**2.1**	24
14	2	1	2	2	2	2	2	2	2	2	2	1	1	2	1	1	1	1	1	**IZS**	1	1	1	1	2	1.5	24
15	1	2	2	2	1	1	1	1	1	1	1	0	1	0	1	1	1	2	**IZS**	2	2	1	1	2	2	1.2	24
16	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	2	1.0	24
17	1	1	1	1	1	2	1	1	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	0	0	1	1	1	1	2	0.9	24
18	1	0	1	1	0	0	1	1	0	3	**M**	2	1	1	1	**IZS**	**C**	0	0	0	0	1	0	0	3	0.7	23
19	1	1	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	1	0	0	1	0.1	24
20	0	0	0	0	1	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	1	1	1	1	1	0.2	24
21	1	1	1	1	1	1	1	1	1	1	1	0	**IZS**	2	2	2	1	1	1	2	2	2	2	2	2	1.3	24
22	1	1	1	1	1	1	2	1	1	1	1	**IZS**	2	1	1	1	1	2	2	2	2	2	2	2	2	1.4	24
23	1	2	1	1	2	2	2	2	2	2	**IZS**	1	1	0	0	0	0	0	0	0	1	0	0	0	2	0.9	24
24	0	1	0	1	0	1	2	1	1	**IZS**	1	1	1	0	0	0	0	0	0	1	1	0	1	0	2	0.6	24
25	1	0	0	1	1	1	1	1	**IZS**	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.3	24
26	0	0	0	1	1	3	3	**IZS**	2	1	1	1	1	0	0	1	1	1	1	0	0	0	1	1	3	0.9	24
27	1	1	0	1	1	1	**IZS**	1	1	1	1	1	0	1	1	1	1	1	1	0	1	0	0	1	1	0.8	24
28	1	1	1	1	1	**IZS**	2	1	1	0	1	1	0	1	0	0	0	2	0	0	1	1	1	1	2	0.8	24
29	1	1	1	1	**IZS**	2	1	1	0	1	0	0	0	0	0	0	1	0	0	2	0	2	0	1	2	0.7	24
30	2	1	1	**IZS**	2	2	2	2	2	1	1	1	1	0	0	0	0	0	0	0	1	1	1	0	2	0.9	24
31	1	1	**IZS**	1	1	1	0	1	0	0	0	1	0	0	0	0	0	0	1	1	0	1	1	1	1	0.5	24
HOURLY MAX	2	3	3	3	2	4	4	3	4	4	3	2	2	2	2	2	2	2	2	2	2	2	3	2			
HOURLY AVG	1.0	1.0	0.9	1.1	1.1	1.3	1.5	1.3	1.1	1.1	1.0	0.8	0.7	0.6	0.5	0.5	0.6	0.7	0.6	0.7	0.8	1.0	0.9	0.9			

STATUS FLAG CODES

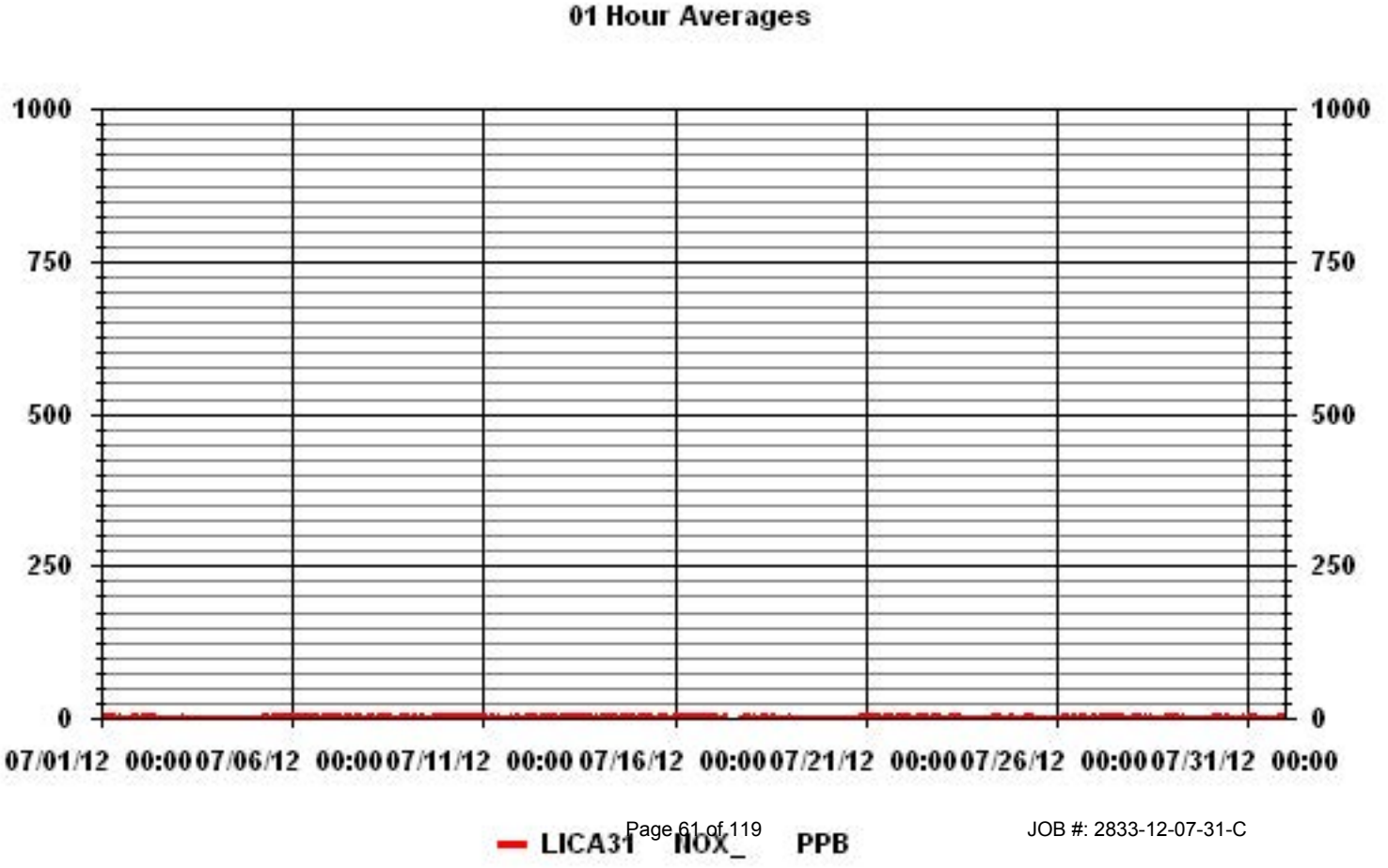
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	481					
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	VAR	ON DAY(S)	6
MAXIMUM 24-HR AVERAGE:	2.1	PPB			ON DAY(S)	13

IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	99.9	%
STANDARD DEVIATION:	0.77		MONTHLY AVERAGE:	0.90	PPB



JOB #: 2833-12-07-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 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	2	2	2	2	2	2	3	3	2	**IZS**	4	2	2	1	1	1	1	2	1	2	2	2	3	2	4	2.0	24
2	1	1	2	2	2	2	3	2	**IZS**	2	1	2	1	1	1	2	1	2	1	3	2	1	2	1	3	1.7	24
3	1	1	1	2	1	1	1	**IZS**	2	0	1	1	0	1	0	0	0	0	1	1	1	1	1	2	2	0.9	24
4	1	0	0	0	0	0	**IZS**	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	0.9	24
5	1	1	1	1	2	**IZS**	4	3	2	2	4	3	2	2	2	3	2	3	3	2	2	3	3	3	4	2.3	24
6	3	3	4	4	**IZS**	6	5	7	6	5	5	4	2	5	2	3	2	2	1	1	2	2	2	3	7	3.4	24
7	2	2	2	**IZS**	4	4	3	3	2	1	1	1	1	1	1	1	2	2	1	**P**	1	1	1	2	4	1.8	23
8	1	2	**IZS**	3	2	2	2	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2	2	2	3	1.9	24
9	2	**IZS**	3	2	2	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2	2	3	2	2	3	1.9	24
10	**IZS**	3	2	2	3	3	3	3	2	2	3	2	2	2	2	3	3	2	3	3	4	3	2	**IZS**	4	2.6	24
11	2	1	1	1	2	2	1	3	1	1	1	2	1	1	1	1	2	2	2	1	4	2	**IZS**	4	4	1.7	24
12	2	3	2	2	5	2	2	3	2	1	2	3	2	2	2	2	3	2	2	3	2	**IZS**	2	1	5	2.3	24
13	1	2	3	3	3	3	4	3	4	4	4	3	2	3	2	2	3	3	3	3	**IZS**	3	4	3	4	3.0	24
14	2	2	3	3	3	3	3	3	3	3	2	2	2	3	2	2	1	2	2	**IZS**	2	2	2	2	3	2.3	24
15	2	2	2	2	2	2	2	2	2	1	2	2	1	1	1	1	2	2	**IZS**	3	2	2	3	2	3	1.9	24
16	2	2	1	2	2	2	2	2	2	2	2	2	2	1	2	2	2	**IZS**	2	2	2	1	2	1	2	1.8	24
17	2	2	2	2	2	3	2	2	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	3	1	1	2	2	2	1	3	1.9	24
18	1	1	1	2	1	1	4	2	1	**76**	**M**	**M**	2	2	2	**IZS**	**C**	1	1	1	1	4	1	1	**76**	5.3	22
19	1	1	1	1	1	1	1	1	1	1	1	1	0	1	**IZS**	2	2	1	1	1	2	9	1	**P**	9	1.5	23
20	39	1	1	1	3	2	1	2	1	3	1	1	1	**IZS**	2	1	1	1	1	1	2	2	2	2	39	3.1	24
21	2	2	2	2	2	2	2	2	2	2	2	1	**IZS**	2	3	3	2	2	2	2	3	10	11	4	11	2.9	24
22	3	4	2	2	2	3	27	2	2	2	2	**IZS**	3	2	3	2	3	30	8	7	5	3	4	3	30	5.4	24
23	2	3	2	2	3	3	3	2	2	3	**IZS**	2	2	1	1	1	1	1	1	1	2	1	1	1	3	1.8	24
24	1	2	1	2	2	3	6	**P**	2	**IZS**	3	2	1	1	3	1	2	1	1	2	1	2	28	1	28	3.1	23
25	1	1	1	1	2	2	2	2	**IZS**	3	2	1	1	1	1	1	1	1	1	1	1	3	1	1	3	1.4	24
26	1	1	1	2	4	5	6	**IZS**	4	4	2	2	3	1	2	2	2	2	1	1	1	1	1	1	6	2.2	24
27	2	2	1	2	2	2	**IZS**	3	2	2	2	2	1	2	5	4	3	3	3	1	2	1	1	1	5	2.1	24
28	2	1	2	2	1	**IZS**	4	2	2	1	2	2	1	2	1	1	1	8	4	1	4	3	2	1	8	2.2	24
29	1	2	2	2	**IZS**	3	2	1	1	2	1	1	1	2	1	2	20	1	1	50	3	4	2	4	50	4.7	24
30	3	**P**	2	**IZS**	4	5	4	4	3	2	2	2	2	2	1	1	1	1	1	1	**P**	2	2	1	5	2.2	22
31	2	2	**IZS**	2	5	3	1	2	1	2	1	2	1	2	1	1	1	2	3	3	1	3	3	2	5	2.0	24
HOURLY MAX	39	4	4	4	5	6	27	7	6	76	5	4	3	5	5	4	20	30	8	50	5	10	28	4			
HOURLY AVG	2.9	1.8	1.7	1.9	2.4	2.6	3.6	2.5	2.1	4.7	2.1	1.9	1.5	1.7	1.7	1.7	2.3	2.9	1.9	3.6	2.1	2.6	3.1	1.9			

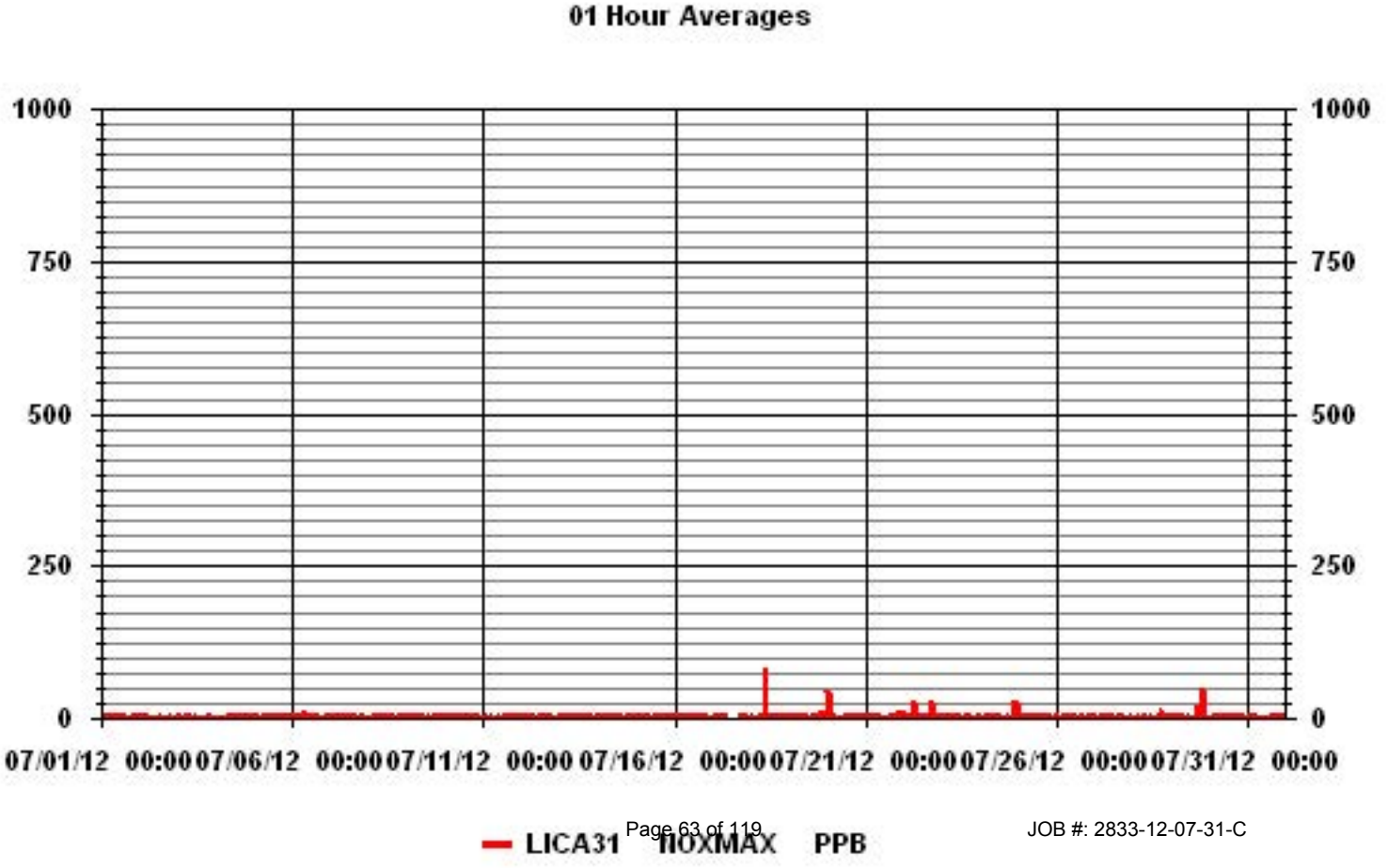
STATUS FLAG CODES

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:	684					
MAXIMUM INSTANTANEOUS VALUE:	76	PPB	@ HOUR(S)	9	ON DAY(S)	18
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		737	HRS
MONTHLY CALIBRATION TIME:	10	HRS				
STANDARD DEVIATION:	4.23					

JOB #: 2833-12-07-31-C



JOB #: 2833-12-07-31-C

LICA31
NOX_ / WDR Joint Frequency Distribution (Percent)

July 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	2.56	3.13	3.85	4.56	5.42	6.99	8.27	11.69	6.41	3.13	4.27	10.84	12.41	9.84	4.13	2.42	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.56	3.13	3.85	4.56	5.42	6.99	8.27	11.69	6.41	3.13	4.27	10.84	12.41	9.84	4.13	2.42	

Calm : .00 %

Total # Operational Hours : 701

Distribution By Samples

Direction

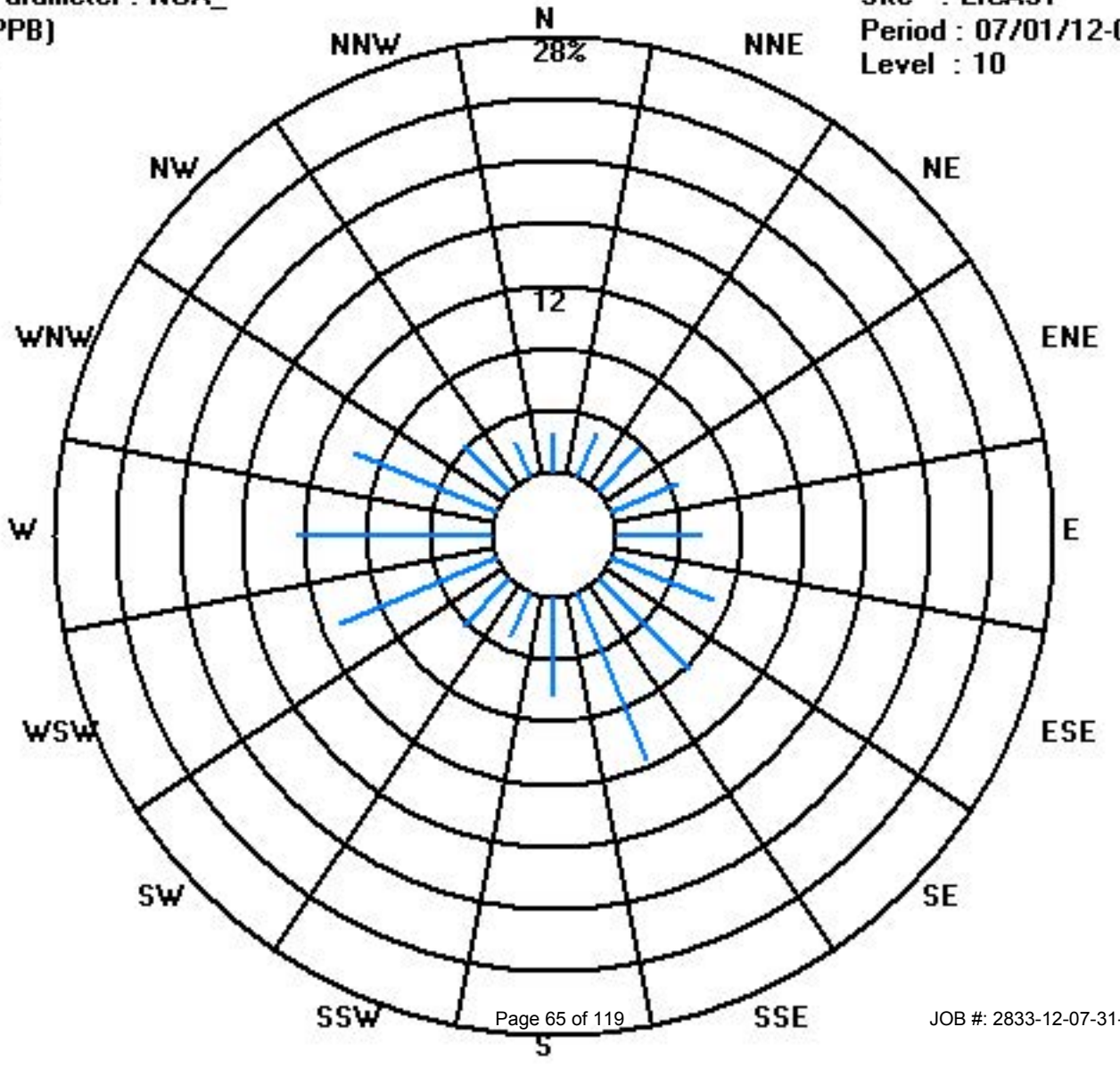
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	18	22	27	32	38	49	58	82	45	22	30	76	87	69	29	17	701
< 110																	
< 210																	
>= 210																	
Totals	18	22	27	32	38	49	58	82	45	22	30	76	87	69	29	17	

Calm : .00 %

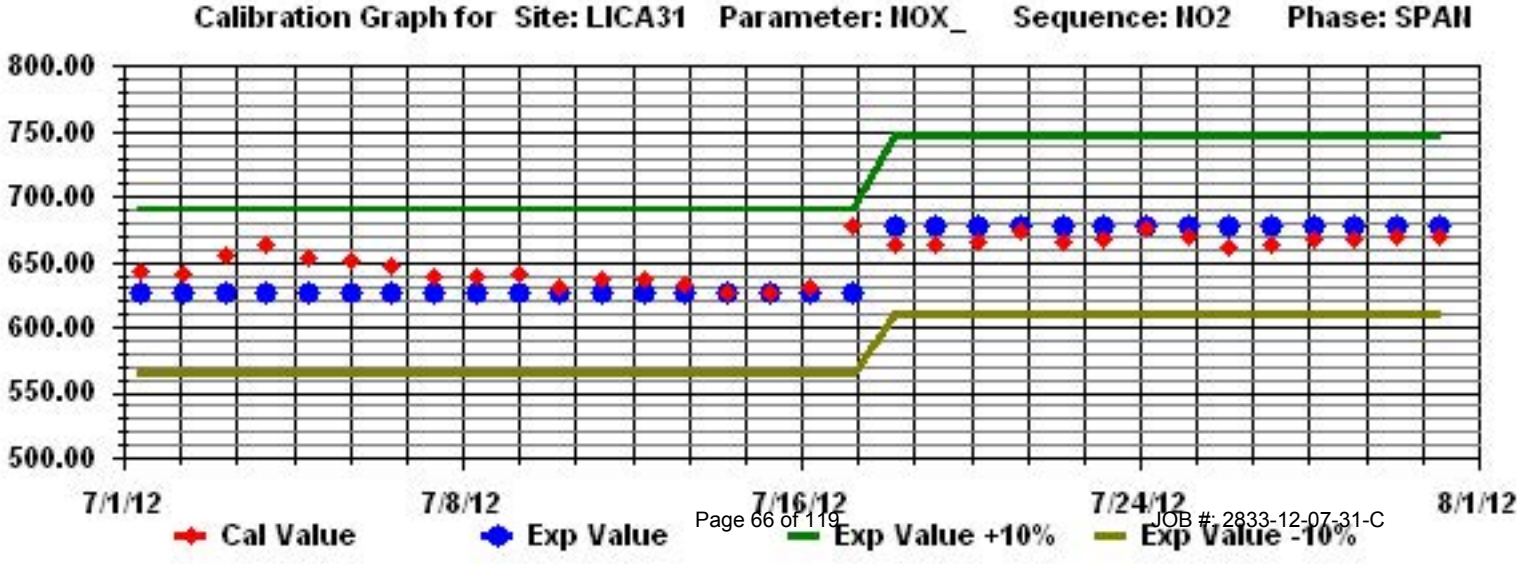
Total # Operational Hours : 701

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

Site : LICA31
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-31-C


Calibration Graph for Site: LICA31 Parameter: NOX_ Sequence: NO2 Phase: SPAN
800.00
750.00
700.00
650.00
600.00
550.00
500.00
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2012

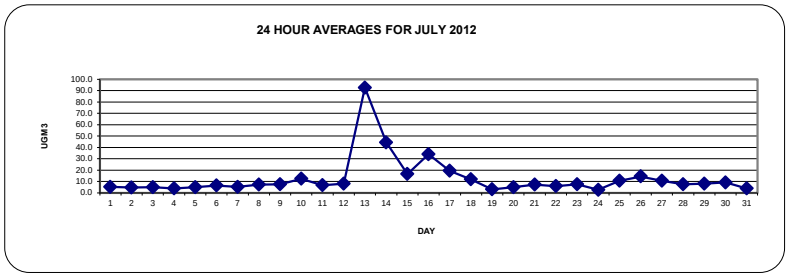
PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m^3

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	2.6	9	8	7.6	7.1	4	6.6	4	4	5.5	6	7.1	15	4	0	2.1	0	2.6	0	3	4	5.5	7.6	9.5	15.0	5.2	24
2	9.5	6.6	6.6	4	8	2.1	5.5	4	2.6	3.6	2.6	6.1	6.6	5.1	0	**N**	0.5	0	4.6	3.5	9.5	**N**	6	3.5	9.5	4.6	22
3	9.5	3.6	4	7.1	12.6	2.1	4	6.6	1.5	6.1	9	3	8	5.1	7.1	1.1	10	7.1	3.5	0	2.1	1.1	3.5	1.1	12.6	5.0	24
4	2.6	2.1	3	0	0	0	2.6	1.1	1.5	0	3	6.1	5.5	6.6	9.1	10.5	4	6	3.5	5.1	6.1	4.6	5.5	4	10.5	3.9	24
5	5.1	0	4	1.5	3	3.5	2.6	6.6	6	5.1	4.6	3.5	3	8.6	6.6	8.6	9.5	9.1	3	1.1	4.6	7.6	4	8	9.5	5.0	24
6	6	4.6	2.6	6.6	4.6	6.6	7.1	7.1	7.1	9	1.1	5.1	9.1	7.1	11.5	4.6	10.5	7.1	14	2.1	3.6	6	6.6	4	14.0	6.4	24
7	5.1	4.6	4.6	1.1	3	4	7.1	5.1	7.6	4.6	5.1	3.5	11.1	2.1	6.1	6.6	4.6	7.6	6.4	0.5	5.5	5.1	8	5.1	11.1	5.2	24
8	10.1	7.6	9.1	6.6	6.6	3	1.5	7.1	3.6	10	9.5	10	10.1	8	7.1	7.1	7.1	9.1	8	5.1	7.6	4.6	8.6	8.1	10.1	7.3	24
9	6.1	7.1	3.5	3.5	4	7.6	5.1	4.6	5.5	8.6	6.1	7.1	7.6	7.1	5.5	7.1	8.6	8.6	11.1	9.6	12.1	12.1	11.6	11.1	12.1	7.5	24
10	10.1	11.1	9.6	8.6	10.1	12.1	10.5	13.1	9.1	9.1	10.1	10.5	11.1	14.6	11.5	15.1	14.6	15	12.1	14.1	12.6	13.6	17.5	19.1	19.1	12.3	24
11	18	10.1	10.5	13.1	12.6	5.5	3	7.6	4.6	4.6	2.6	10.5	0	3	5.1	11.6	1.1	2.1	5.5	3	6.6	4.6	8	7.6	18.0	6.7	24
12	9.1	6.6	14.1	13.1	9.1	2.6	0	6.1	10.5	3.6	5.1	5.1	9.1	3	3.6	7.1	9.5	12.6	12.1	15	14.1	7.6	5.5	9.6	15.0	8.1	24
13	9.1	33.6	122.2	169.2	177.3	**185.8**	163.2	141.7	131.2	129.7	83.6	58.6	56.1	68.1	65.6	61.1	65.1	71.1	74.1	75.6	66.1	67.6	76.1	70.1	**185.8**	**92.6**	24
14	55.1	56.6	57.1	58.1	61.6	61.6	60.6	58.1	57.6	52.6	41.1	52.6	46.6	46.1	35.1	37.1	31.6	25.5	28.6	33.6	36.1	33.6	23.1	14.6	61.6	44.3	24
15	23.1	18	22.6	15.5	26.1	18.1	22.1	21.1	14.6	11.6	13.1	5.1	3.6	6.6	12.1	16.6	16.6	16	17.5	18.6	18.5	17.5	20.1	19.6	26.1	16.4	24
16	16.6	22.6	20.1	19.6	32.1	34.1	32.1	35.1	34.1	37.1	43.6	40.1	45.1	45.1	58.1	52.1	58.1	53.1	36.1	32.1	20.6	17.5	14.1	15	58.1	33.9	24
17	12.1	10.5	12.5	16.1	17.5	13.1	14.6	21.5	24.6	32.6	38.1	24.6	13.1	13	19.1	17.5	17.5	21.5	19.6	17.1	22	22	23.6	18.5	38.1	19.3	24
18	17.5	17.1	18	16.6	15	13.6	15	12.6	13.1	9.1	14.1	12.6	11.1	**C**	16.6	6.1	10.5	16	4.6	7.1	4.6	3.5	7.6	9.6	18.0	11.8	24
19	7.6	4	3.5	6.6	1.1	5.5	4	2.1	2.1	2.6	0.5	5.5	0.1	1.5	0	4.6	0.6	2	0	3	4	3.6	2.1	4	7.6	2.9	24
20	1.5	3	5.1	5.5	1.5	6.1	2.6	3.6	6.6	3	7.1	2.1	2.6	9.6	4.6	5.1	1.5	3	6	8.6	5.5	8.1	5.1	9.1	9.6	4.9	24
21	8.6	10.5	5.1	7.1	6.6	4.6	5.5	1.5	**N**	3	23	9.5	2.1	3	8.6	15.1	18.6	13.6	1.5	6.1	2.6	2.1	5.5	4	23.0	7.3	23
22	8.1	2.6	6.1	9.1	3	4.6	6.6	5.1	6.6	7.6	4.6	5.1	8.1	4	1.5	0	2.1	7.6	10	6.6	4	6.1	12.5	8.6	12.5	5.8	24
23	7.6	7.1	7.6	6.1	3.6	6.6	4.6	2.1	5.1	10.1	2.6	8	13.1	19.6	12.6	2.1	0	14.1	10.1	4.6	2.1	14.1	5.5	11.1	19.6	7.5	24
24	0	2.6	2.6	5.5	3.6	0	0	0.5	2.6	3	1.5	1.5	0	0	2.6	3	1.1	3	3	2.1	6.1	8.6	4	6.1	8.6	2.6	24
25	4.6	8	4.6	9.5	5.5	10.1	10	5.5	7.1	10.5	9.6	5.1	6	12.1	11.1	18.6	22	11	12.1	16.1	12.6	16	10	15.5	22.0	10.6	24
26	11	9.5	12.6	12	12.5	14.1	10	12.1	14.6	15	14.1	14.1	10	15.6	22	23.6	19.1	8.6	17.1	17.5	16.6	15	15.1	12.6	23.6	14.4	24
27	12.6	13.6	13	14.1	12.6	12	13.1	10.5	17.1	11.1	10.5	10.1	12.5	7.1	11.6	6.1	10.5	13.1	15.1	3	5.1	5.5	8.1	8.6	17.1	10.7	24
28	7.1	7.1	10.1	7.1	7.6	10	4	10	9.5	8.6	9.1	13.6	3	4	6.1	2.1	12.6	10.5	6.6	6.1	7.1	8.6	3.6	7.6	13.6	7.6	24
29	9.6	2.6	4.6	3.5	6.6	7.6	6.1	10.1	9.6	12.1	3.5	9.6	7.6	14.6	4.6	3.6	11	9.5	8	5.5	11.1	8	12.6	12.1	14.6	8.1	24
30	8.1	0.5	14.6	10.1	10.1	10.1	13.6	14.1	10.5	12.6	14.1	4.6	13.6	6.1	9.6	14.6	3	6.6	9.1	13.1	**N**	2.1	3	5.1	14.6	9.1	23
31	6.1	9.1	3	3	7.1	6.6	3	5.1	3	3	0.5	6.1	2.1	3	4	0.5	2.1	7.1	0	2.1	1.1	6.6	0	4.6	9.1	3.7	24
HOURLY MAX	55.1	56.6	122.2	169.2	177.3	185.8	163.2	141.7	131.2	129.7	83.6	58.6	56.1	68.1	65.6	61.1	65.1	71.1	74.1	75.6	66.1	67.6	76.1	70.1			
HOURLY AVG	10.3	10.1	13.7	15.1	15.9	15.4	14.4	14.4	14.4	14.3	12.9	11.8	11.4	11.8	12.2	12.4	12.4	12.9	11.7	11.0	11.1	11.3	11.1	11.2			

STATUS FLAG CODES

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

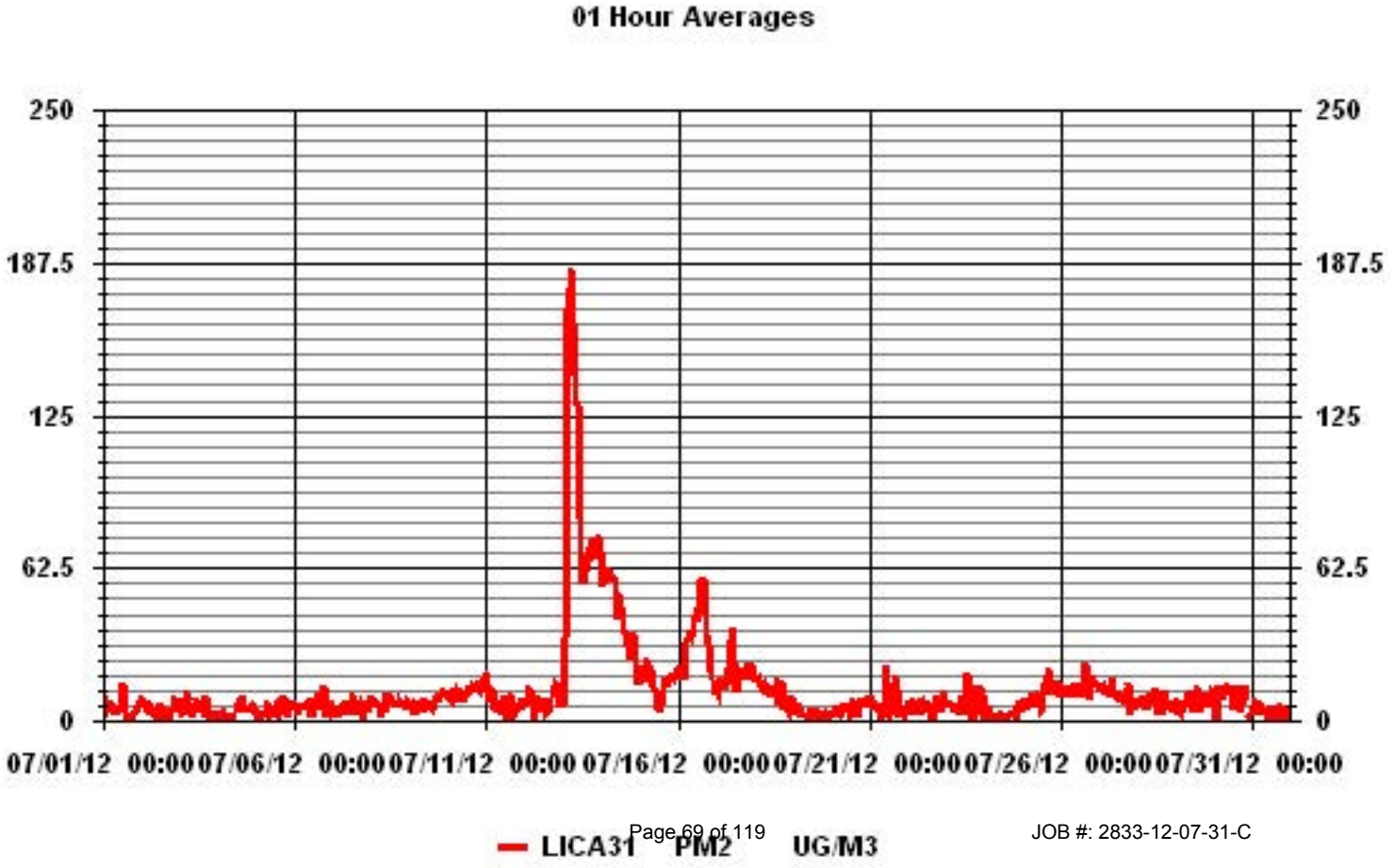


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR - ug/m3 | 24-HR 30 ug/m3

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-					
NUMBER OF 24-HR EXCEEDENCES:	3					
NUMBER OF NON-ZERO READINGS:	715					
MAXIMUM 1-HR AVERAGE:	185.8	UG/M^3	@ HOUR(S)	5	ON DAY(S)	13
MAXIMUM 24-HR AVERAGE:	92.6	UG/M^3			ON DAY(S)	13

IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	740	HRS
MONTHLY CALIBRATION TIME:	1	HRS	AMD OPERATION UPTIME:	99.5	%
STANDARD DEVIATION:	19.60		MONTHLY AVERAGE:	12.63	UG/M^3



JOB #: 2833-12-07-31-C

LICA31
PM2 / WDR Joint Frequency Distribution (Percent)

July 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	1.76	1.90	2.98	3.80	4.34	5.57	6.52	11.95	6.11	3.12	4.89	10.46	12.22	9.37	4.07	2.58	91.71
<	60.0	.67	.54	.13	.27	.67	.95	1.22	.67	.00	.00	.00	.00	.00	.00	.00	.00	5.16
<	80.0	.00	.00	.27	.00	.40	.27	.67	.13	.13	.00	.00	.00	.00	.00	.00	.00	1.90
<	120.0	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13
<	240.0	.00	.67	.27	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.08
>=	240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.44	3.12	3.80	4.21	5.43	6.79	8.42	12.77	6.25	3.12	4.89	10.46	12.22	9.37	4.07	2.58	

Calm : .00 %

Total # Operational Hours : 736

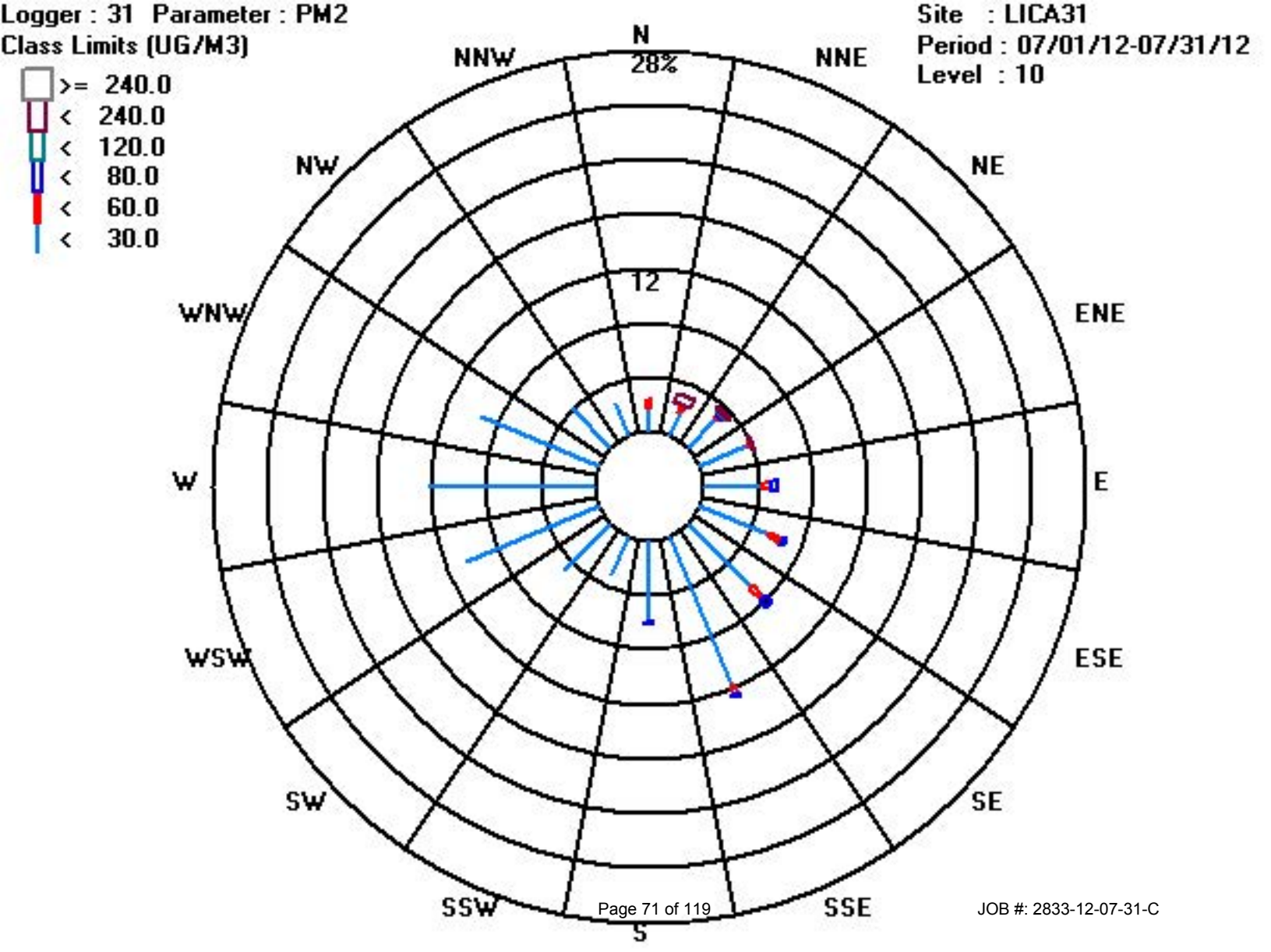
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30.0	13	14	22	28	32	41	48	88	45	23	36	77	90	69	30	19	675
<	60.0	5	4	1	2	5	7	9	5									38
<	80.0			2		3	2	5	1	1								14
<	120.0			1														1
<	240.0		5	2	1													8
>=	240.0																	
	Totals	18	23	28	31	40	50	62	94	46	23	36	77	90	69	30	19	

Calm : .00 %

Total # Operational Hours : 736



JOB #: 2833-12-07-31-C

Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2012

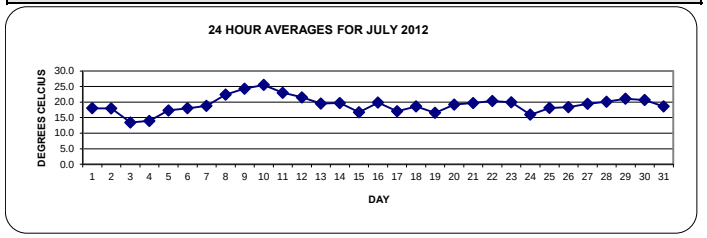
AMBIENT TEMPERATURE hourly averages (Degrees C)

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	16.8	17	17	16.6	16.6	16.1	17	18.1	18.3	20.3	21	22.3	20.9	18.2	19.7	18.4	19.1	20.3	19.2	18.3	16.7	15.4	14.6	14.1	22.3	18.0	24
2	13.1	12.7	12.8	11.9	12	13.9	17.3	19.2	21.9	23.4	23	24.1	24.7	24.2	23.8	24.1	22.5	22.4	19.4	14.9	13.3	11.9	12.1	12.2	24.7	18.0	24
3	12.4	11.8	11.7	12.3	12.4	12.6	13.1	15.2	16	16.3	17.6	18.2	12.9	14.6	15	14	13.7	13.7	12.7	11.7	11.2	11	11.3	10.9	18.2	13.4	24
4	11.1	11.3	11.3	11.5	11.6	12	11.9	12	12.7	13.1	13.8	14.4	14.4	15.2	16	17.2	16.6	17.5	17	16	15.4	14.5	14.2	13.6	17.5	13.9	24
5	13.1	12.3	12.2	11.6	10.4	11.1	14.1	15.7	16.1	17.6	20.3	21.4	22.1	22.9	24.1	24	23.4	23	21.6	19.1	16.8	14.2	13.7	14.9	24.1	17.3	24
6	13.9	13.3	13.4	11.8	10.8	14.2	17	19.1	21	22.1	22.8	23.4	24.1	24.5	23.8	23.6	24.2	19.6	16.1	16.6	15	13.5	14	14	24.5	18.0	24
7	13.6	12.9	13.1	12.9	12.4	13.9	17	20	22.5	23.8	24.1	24.8	25.6	26.4	25.6	23.3	17.3	17	17.1	17.6	17	17	17.7	17.4	26.4	18.8	24
8	17	17	16.4	15.6	15.5	16.9	19	20.7	22.1	23.9	25	26.2	27	27.2	27.7	27.8	27.5	27.1	25.8	24.4	22.9	22.4	21.4	20.7	27.8	22.4	24
9	20.2	19.9	19.1	18.5	18.2	19	20.4	22.3	24.3	25.6	26.2	27	28.3	28.9	29.4	29.7	29.6	28.8	27.8	26.1	24.7	23.8	23.1	22.4	29.7	24.3	24
10	21.8	21.2	21	20.5	20.3	20.6	22.3	24.2	27.9	28.3	28.9	28.8	29.1	29.8	**30.7**	30.6	30.2	28.3	28.6	27.2	25.5	23.7	22.1	21	**30.7**	**25.5**	24
11	19.6	18.8	18.3	17.6	17	17.8	19.4	21.4	23	24.6	25.6	26.5	28	28.3	28.7	28.4	28.2	27.5	25.9	24.8	21.8	20.3	20.1	19.4	28.7	23.0	24
12	19.4	17.3	17.7	18.1	17	16.8	18.3	18.5	18	19.2	19.5	21.4	25.2	25.7	26.2	27.6	28.4	28.1	26.8	24.6	22.7	21.2	20.2	18.5	28.4	21.5	24
13	17.7	15.9	14.9	13.6	12.8	14.1	16.3	18.5	20.2	21.6	22.5	23.4	23.5	24.2	23.9	24.2	24.3	23.3	21.7	20.7	19.2	18.1	17.3	17	24.3	19.5	24
14	17.1	16.5	15.7	15.4	15.9	15.3	15.9	16.3	15.7	15	19.4	22	23.9	25.1	25.6	25.3	25.2	24.7	23.4	22	20.6	20.1	18.9	18.1	25.6	19.7	24
15	17.5	17.3	17	16.8	16.6	16.5	16.7	17.1	17.3	17.6	17.2	16.9	16.7	16.5	16.3	16.3	16.2	16.6	16.6	16.5	16.6	16.4	16.2	16.1	17.6	16.7	24
16	16.2	16.1	16.2	16.1	15.6	16	16.6	17.6	19.1	21.7	23.5	24.1	24.6	24.3	24.6	24.2	24.2	23.2	22	20.6	19	18	17	16.3	24.6	19.9	24
17	15.5	14.9	14.3	13.7	13.3	13.8	15	16.4	18.2	19	19.3	18.6	18.7	18.8	18.7	19.5	20.1	19.4	18.8	18	16.8	16.5	16.2	15.8	20.1	17.1	24
18	15.9	16.1	16.1	15.8	15.7	16	16.1	16.9	18.1	18.4	20.6	21.5	22.3	23.1	24	25.3	25	20.4	18.6	18.6	16.8	15.2	15.3	13.8	25.3	18.6	24
19	14.3	13.8	13.9	12.8	12.3	12.1	11.6	12.5	14.6	17.4	18.7	19.6	20.1	21	20.8	21.1	20.9	20.7	20	19	16.8	15.1	14	14.4	21.1	16.6	24
20	13.8	13.5	13.4	13.1	11.6	15.1	18.3	20.1	21	21.5	22.1	22.4	23.3	23.4	24.1	23.8	23.5	22.3	21.6	19.8	18.7	18.7	18	17.3	24.1	19.2	24
21	16.7	17	16.3	16	15.5	15.7	17.9	18.9	20.7	21.6	22.6	22.8	22.4	23.3	24.2	25	23.9	23.5	21.4	19.8	17.9	16.8	16.4	16	25.0	19.7	24
22	15.4	15.1	15.3	15.1	15	15.1	15.3	15.4	16.3	19.8	23.3	24.2	24.8	25.4	26.1	26.6	26.7	25.8	24.1	23.3	21.6	20.5	18.8	18.3	26.7	20.3	24
23	17.7	17.6	17.5	18.4	16.3	17.4	19.5	18.3	20.2	20.8	21.2	21.2	22.7	23.5	24.3	24	22.9	22.4	21.6	20.1	18.4	18	17.4	17	24.3	19.9	24
24	16.6	12.4	11	10.3	**9.4**	11.3	14.6	15.6	14.6	16.1	16.4	18.4	20.2	19.1	19.1	19.4	19.7	19.9	19.6	18	16.6	15.5	14.8	13.9	20.2	15.9	24
25	13.4	13.2	13.5	13.7	13.8	14.2	15.8	17.8	18.9	20.6	19.9	20.1	19.8	20.6	22.5	22.5	23.2	22.4	19.3	19.8	18.9	17	16.8	16.7	23.2	18.1	24
26	16	16.4	16.3	15.5	14.8	14.9	16.1	16.7	17.7	18.8	18.6	20.3	22.7	21.8	21.7	22	21.4	20.8	20.2	19.3	18	17.4	17.1	16.6	22.7	18.4	24
27	16.1	16.2	15.8	15.2	14.5	15.5	17.1	18.8	21.5	22.5	23.4	24.4	24.9	25.4	24.8	20.9	19.1	19.8	21.4	20.3	18.4	16.7	16.8	16.1	25.4	19.4	24
28	16.4	15.2	14.9	14	14.5	15.6	19.5	20.9	22.6	24.2	23.5	25	25.8	26.9	26.2	23.9	22.6	21.7	20.8	19.8	18.8	17.5	16.6	16	26.9	20.1	24
29	16	15.6	15.3	14.4	14.7	15.8	18.3	20.1	22	23.4	24.6	25.8	25.8	26.4	26.9	26.2	24	25.3	24.7	23.1	20.5	19.1	19.1	17.8	26.9	21.0	24
30	16.7	16.3	15.1	14.9	15	16.4	19.2	19.8	19.7	22	24.8	24.8	26.3	26.7	26.7	27.1	26	25.6	25.6	24.1	19.7	14.8	14.4	14.3	27.1	20.7	24
31	14.3	14.3	14.3	14	14	14	14.6	15.6	17.1	18.6	21.2	23	23.9	24.4	24.6	24.8	24.1	23.4	21	19.4	17.4	16.9	16	15.7	24.8	18.6	24
HOURLY MAX	21.8	21.2	21.0	20.5	20.3	20.6	22.3	24.2	27.9	28.3	28.9	28.8	29.1	29.8	30.7	30.6	30.2	28.8	28.6	27.2	25.5	23.8	23.1	22.4			
HOURLY AVG	16.0	15.4	15.2	14.8	14.4	15.2	16.8	18.1	19.3	20.6	21.6	22.5	23.1	23.4	23.7	23.6	23.0	22.4	21.3	20.1	18.5	17.3	16.8	16.3			

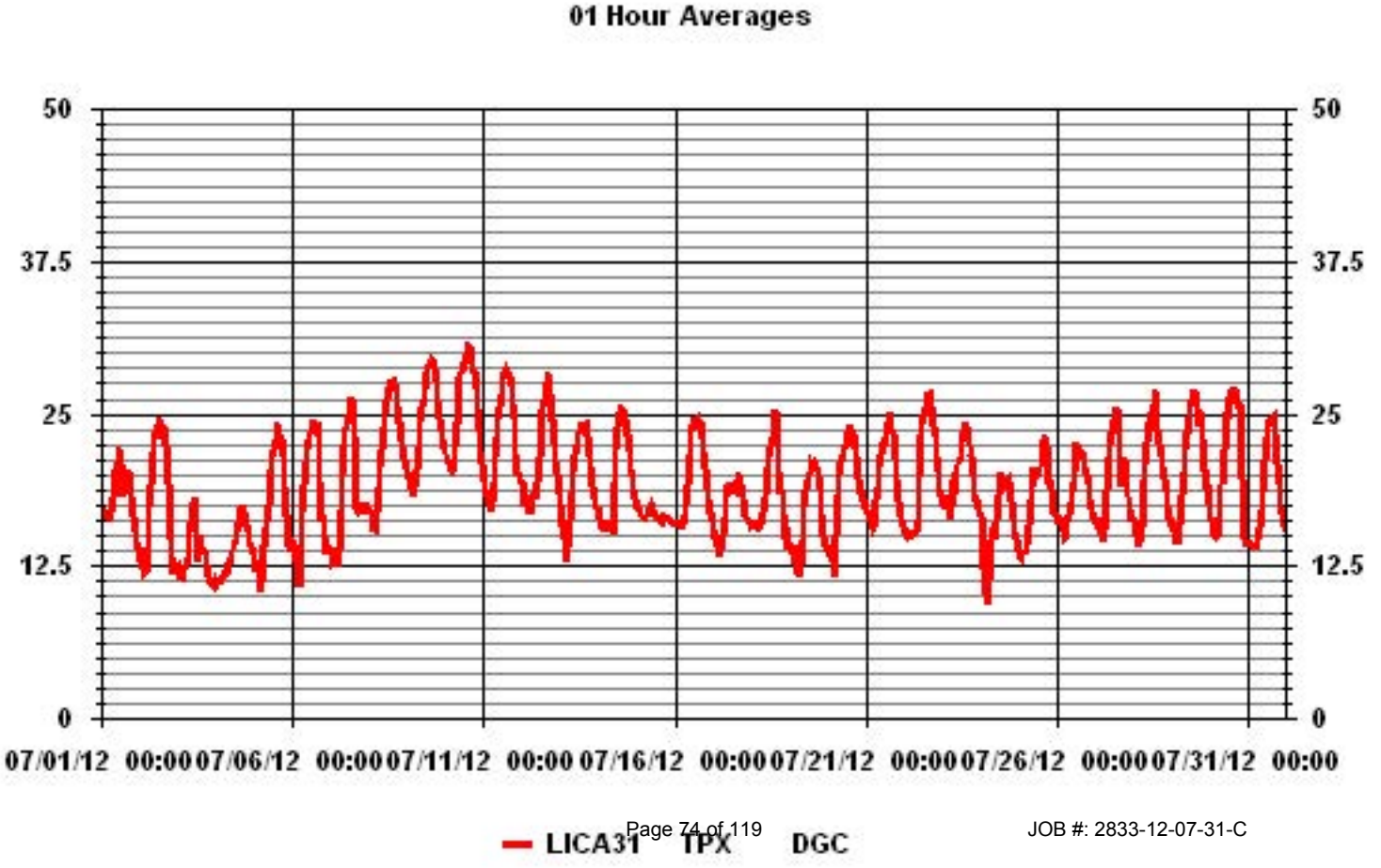
STATUS FLAG CODES

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:	9.4	^{O}C	@ HOUR(S)	4	ON DAY(S)	24	
MAXIMUM 1-HR AVERAGE:	30.7	^{O}C	@ HOUR(S)	14	ON DAY(S)	10	
MAXIMUM 24-HR AVERAGE:	25.5	^{O}C			ON DAY(S)	10	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		744	HRS	
			AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	4.43		MONTHLY AVERAGE:		19.14	^{O}C	



JOB #: 2833-12-07-31-C

Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2012

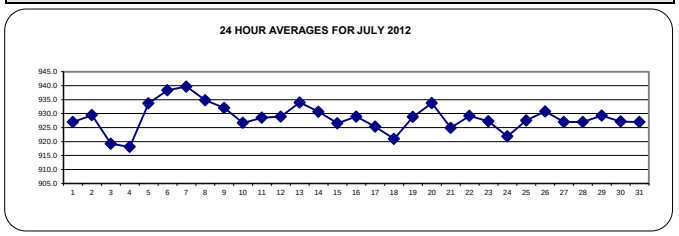
BAROMETRIC PRESSURE hourly averages (millibar)

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	927	927	926	926	925	925	925	925	925	926	926	926	926	926	928	928	929	929	930	930	929	929	928	928	930	927.0	24
2	928	928	928	928	928	929	930	930	931	932	932	932	932	932	931	931	930	930	929	928	928	927	926	927	932	929.5	24
3	927	927	926	926	925	924	923	923	922	922	921	921	920	920	919	917	916	915	914	912	911	911	910	909	927	919.2	24
4	909	909	908	908	910	911	911	912	913	913	915	917	919	921	922	924	925	925	926	926	927	927	928	928	928	918.1	24
5	929	929	929	930	930	930	931	932	933	934	935	935	936	936	937	937	936	937	937	936	935	935	935	935	937	933.7	24
6	935	935	935	935	935	936	937	938	939	939	940	940	940	941	940	940	940	940	939	940	939	939	939	939	941	938.3	24
7	939	939	939	939	939	939	940	941	943	943	943	943	943	943	943	942	940	940	939	935	935	935	935	935	**943**	**939.7**	24
8	935	935	935	935	935	935	935	935	936	936	936	936	936	935	935	935	935	934	934	934	934	934	933	933	936	934.8	24
9	933	933	933	933	933	933	933	933	933	933	933	933	933	932	932	932	931	931	931	931	930	930	930	930	933	932.0	24
10	929	929	929	928	928	928	927	928	928	927	927	926	926	926	925	925	925	925	925	925	926	926	926	927	929	926.7	24
11	927	927	927	927	928	928	929	929	929	929	929	929	929	929	929	929	929	929	929	929	929	929	929	928	929	928.5	24
12	928	928	928	929	929	928	928	929	929	929	929	929	929	929	929	929	929	928	929	929	929	930	931	931	931	929.0	24
13	932	931	932	932	933	933	934	934	935	936	936	936	935	935	935	935	934	934	934	934	934	934	934	933	936	934.0	24
14	933	933	932	932	932	932	932	932	932	931	932	932	931	931	931	930	930	929	929	929	928	928	928	927	933	930.7	24
15	927	927	927	926	926	926	926	926	926	926	926	926	926	926	926	926	927	927	927	927	927	928	928	928	928	926.6	24
16	928	928	928	928	928	928	929	929	929	930	930	930	930	930	930	930	929	929	929	929	929	928	928	928	930	928.9	24
17	928	927	927	927	927	927	927	927	927	926	926	926	926	926	925	925	924	924	923	923	923	923	922	922	928	925.3	24
18	922	921	921	921	921	921	920	920	920	920	920	920	920	920	920	920	920	922	921	922	922	923	923	923	923	921.0	24
19	924	924	925	925	925	926	926	927	928	928	929	929	930	930	930	931	931	931	932	932	932	932	933	933	933	928.9	24
20	933	934	934	934	934	934	935	936	936	936	936	936	935	935	934	934	934	933	933	932	931	931	931	930	936	933.8	24
21	929	928	926	926	926	925	925	924	924	924	924	924	924	923	923	923	924	924	925	925	925	925	926	926	929	924.9	24
22	926	927	927	927	928	928	929	929	929	930	930	930	930	930	930	930	930	930	930	930	930	930	930	930	930	929.2	24
23	930	930	929	930	930	929	930	930	930	930	929	928	928	927	927	927	926	925	924	925	924	923	922	922	930	927.3	24
24	922	922	921	921	921	921	922	922	922	922	922	922	922	923	923	922	922	922	922	922	921	922	922	922	923	921.9	24
25	923	923	923	924	924	925	925	926	926	927	928	928	929	929	929	930	930	930	930	930	930	931	931	931	931	927.6	24
26	931	931	931	931	931	931	932	932	932	932	932	932	932	931	931	931	930	930	930	929	929	929	929	929	932	930.8	24
27	928	928	928	928	927	927	927	928	928	928	928	928	927	927	927	926	926	926	926	926	926	926	926	926	928	927.0	24
28	926	925	926	926	926	926	927	927	927	927	928	928	928	927	927	927	927	927	928	927	928	928	928	928	928	927.0	24
29	928	928	928	928	928	929	929	929	930	930	930	930	930	930	930	930	930	930	930	930	930	929	929	929	930	929.3	24
30	929	929	929	929	929	929	929	929	929	929	929	929	928	927	927	926	925	925	925	924	924	924	924	925	929	927.2	24
31	925	925	925	925	925	925	926	926	927	927	928	928	928	928	928	928	928	928	929	928	928	928	928	928	929	927.0	24
HOURLY MAX	939	939	939	939	939	939	940	941	943	943	943	943	943	943	943	942	940	940	939	940	939	939	939	939			
HOURLY AVG	928	928	928	928	928	928	928	929	929	929	929	929	929	929	929	929	929	929	929	928	928	928	928	928			

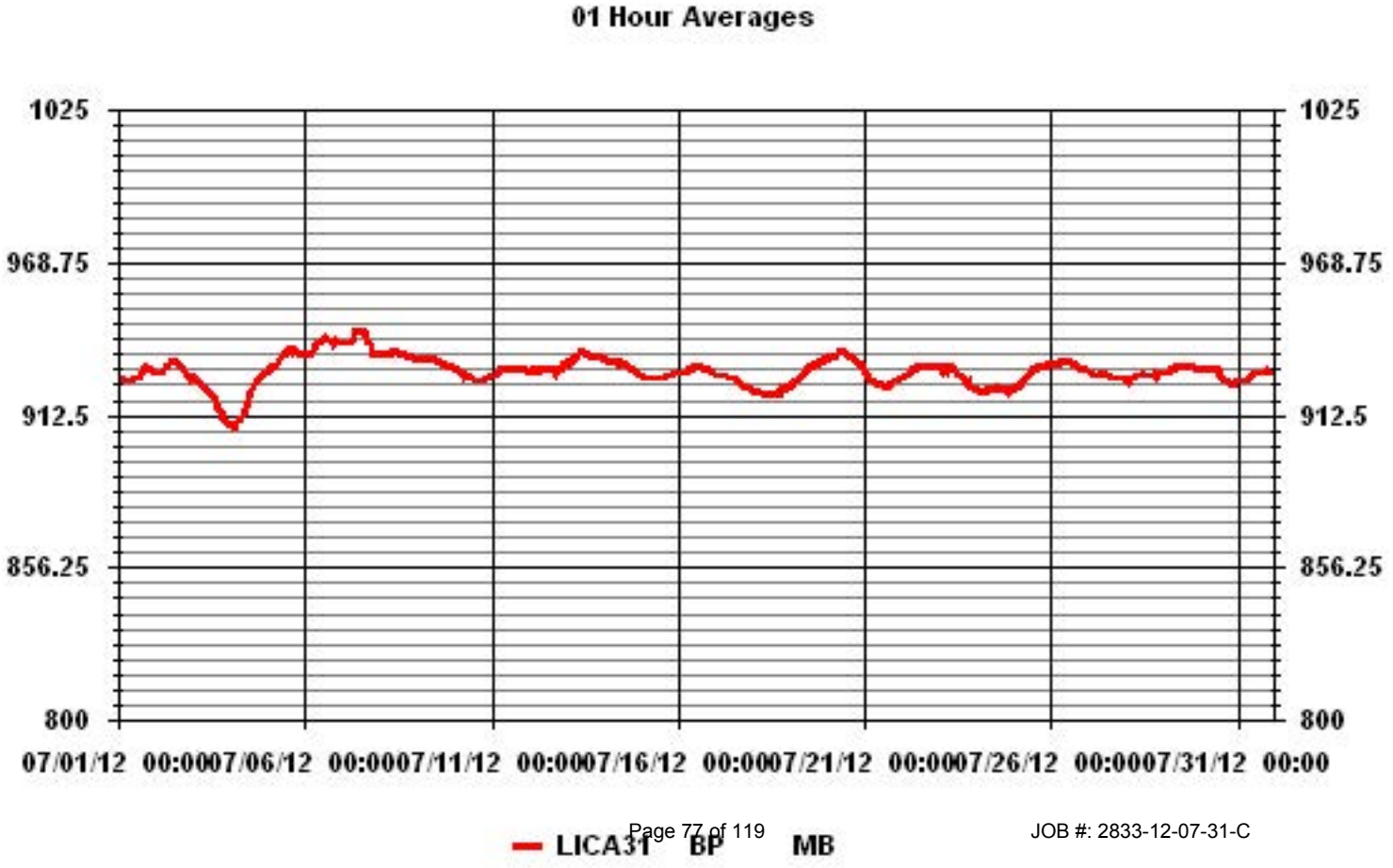
STATUS FLAG CODES

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:	943	MB	@ HOUR(S)	VAR	ON DAY(S)	7
MAXIMUM 24-HR AVERAGE:	939.7	MB			ON DAY(S)	7
				VAR-VARIOUS		
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		744	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	5.31		MONTHLY AVERAGE:		929	MB



JOB #: 2833-12-07-31-C

Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2012

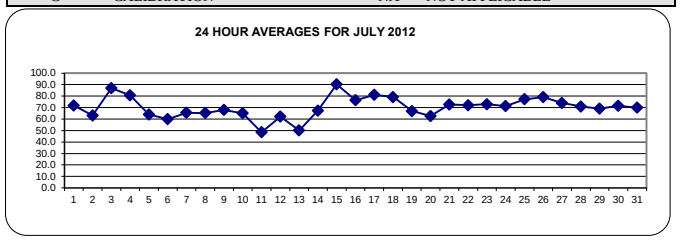
RELATIVE HUMIDITY hourly averages (%)

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	77	75	73	74	76	78	76	75	75	69	66	62	67	72	65	68	65	61	65	68	73	78	82	84	84	71.8	24
2	87	84	80	83	82	73	66	63	54	42	44	40	38	38	39	38	44	46	55	80	85	83	86	86	87	63.2	24
3	85	90	92	91	91	89	86	79	79	81	81	77	88	89	89	90	90	91	88	87	86	86	90	90	**92**	86.9	24
4	91	91	91	91	91	90	90	91	90	89	87	80	78	71	69	65	66	65	68	74	75	79	78	79	91	80.8	24
5	79	80	79	80	85	84	74	69	68	63	57	55	51	48	45	43	44	44	47	57	64	74	75	69	85	63.9	24
6	74	77	75	82	87	75	67	61	57	54	49	42	41	37	38	40	36	46	63	66	67	71	67	65	87	59.9	24
7	67	70	68	70	73	70	66	62	56	50	50	52	51	47	52	60	76	75	77	78	79	78	72	74	79	65.5	24
8	75	75	78	80	79	74	71	68	68	65	64	61	57	53	51	50	51	51	57	62	66	66	70	74	80	65.3	24
9	74	75	78	80	81	78	75	71	68	66	66	64	58	56	54	54	54	56	59	63	67	76	78	80	81	68.0	24
10	82	84	84	85	86	85	80	75	62	61	61	56	55	53	51	50	50	58	60	59	61	55	54	53	86	65.0	24
11	55	57	57	60	62	61	57	52	49	45	44	40	36	31	31	31	34	39	45	45	58	60	58	57	62	48.5	24
12	54	75	69	68	79	77	66	70	72	62	67	67	54	51	51	51	51	52	58	64	66	62	49	56	79	62.1	24
13	57	61	60	62	65	64	61	57	53	46	40	37	38	35	35	34	34	40	48	51	53	56	57	58	65	50.1	24
14	57	60	65	65	62	67	67	74	78	85	75	61	58	57	55	58	59	62	69	70	77	76	78	81	85	67.3	24
15	85	87	89	90	91	91	91	90	89	89	90	91	91	91	91	91	91	91	91	91	91	91	91	91	91	**90.2**	24
16	91	91	91	90	88	88	89	87	83	73	65	61	59	60	57	59	59	64	68	75	82	83	85	86	91	76.4	24
17	87	88	88	90	90	88	85	81	75	72	69	71	71	73	77	74	74	76	78	82	87	89	90	91	91	81.1	24
18	91	90	91	90	91	90	90	90	86	85	78	76	73	71	68	58	58	65	70	69	75	81	80	86	91	79.3	24
19	84	84	78	77	78	82	86	85	76	64	58	56	53	50	50	50	50	51	52	58	65	71	76	73	86	67.0	24
20	75	76	76	76	83	70	65	63	58	54	51	49	47	49	50	48	49	55	60	66	70	70	70	73	83	62.6	24
21	77	76	80	83	84	83	78	76	73	71	68	62	62	58	57	54	60	59	67	73	81	85	88	90	90	72.7	24
22	91	91	91	92	92	92	90	91	89	76	65	61	57	54	49	47	47	50	57	60	67	71	77	71	**92**	72.0	24
23	72	71	71	67	78	73	69	76	74	72	71	73	70	65	58	59	65	68	69	77	87	87	88	89	89	72.9	24
24	85	81	82	83	87	81	70	67	74	70	68	64	59	62	59	56	57	55	57	67	77	84	82	86	87	71.4	24
25	90	91	91	91	91	90	86	78	74	70	71	69	70	68	63	64	61	64	79	72	76	86	79	80	91	77.3	24
26	84	81	81	88	90	87	83	84	82	76	76	73	66	68	68	70	74	78	80	81	78	80	83	86	90	79.0	24
27	87	86	87	88	90	85	80	77	69	66	62	60	56	54	59	75	76	71	68	68	78	80	77	79	90	74.1	24
28	76	82	83	87	86	83	71	69	63	58	63	57	56	51	53	61	65	68	70	72	77	82	83	85	87	70.9	24
29	85	86	87	91	90	86	78	74	69	64	59	55	51	51	48	47	55	55	57	65	72	76	76	83	91	69.2	24
30	88	88	91	90	89	83	75	75	74	69	61	59	51	50	53	48	55	56	59	65	73	86	88	89	91	71.5	24
31	90	91	90	90	91	91	90	87	81	74	66	58	53	45	42	45	45	48	55	61	69	69	72	75	91	69.9	24
HOURLY MAX	91	91	92	92	92	92	91	91	90	89	90	91	91	91	91	91	91	91	91	91	91	91	91	91			
HOURLY AVG	79.1	80.5	80.5	81.7	83.5	80.9	76.7	74.7	71.5	67.1	64.3	60.9	58.5	56.7	55.7	56.1	57.9	60.0	64.4	68.6	73.6	76.5	76.7	78.0			

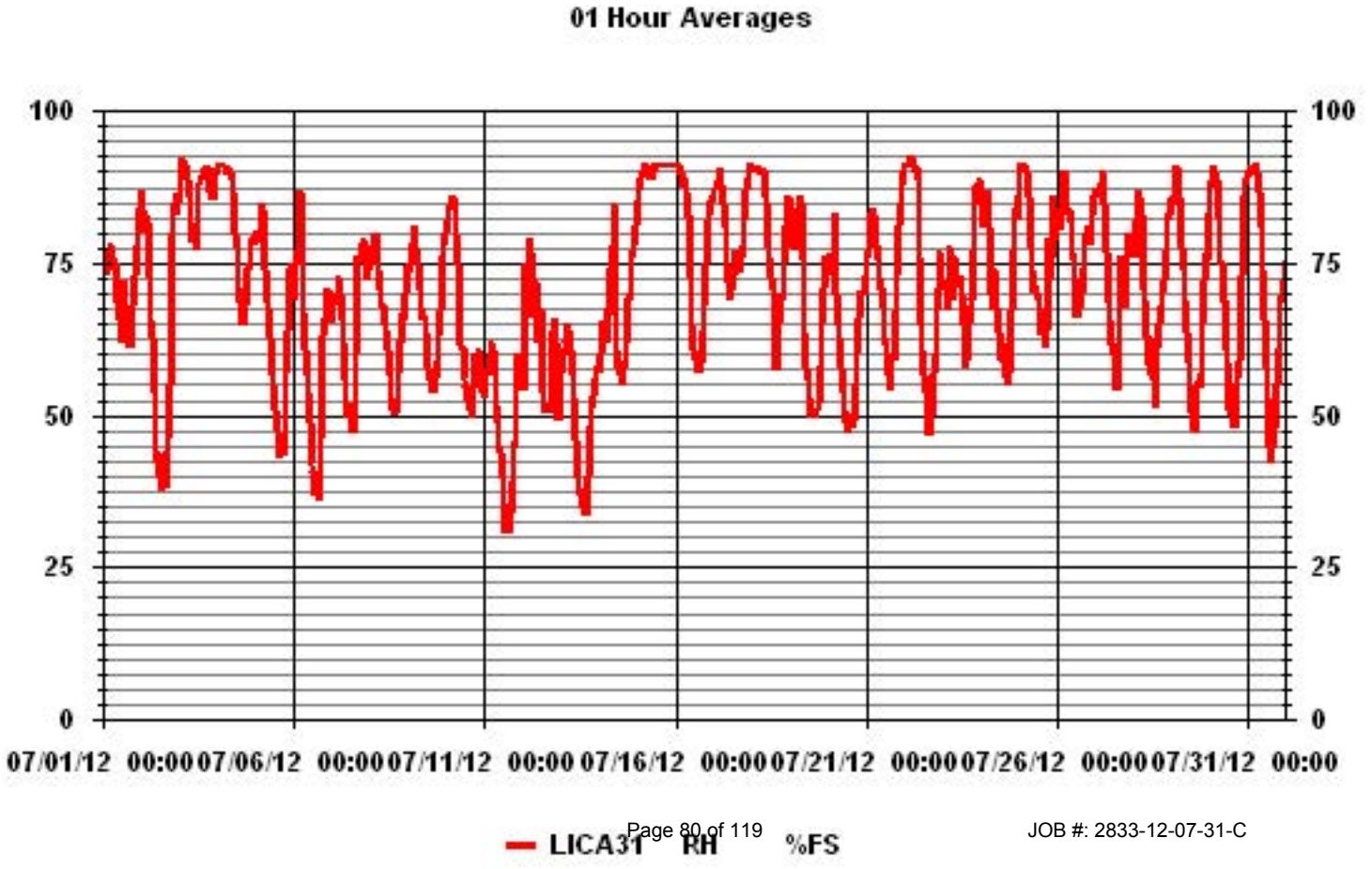
STATUS FLAG CODES

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:		92	%	@ HOUR(S)	VAR	ON DAY(S)	3, 22
MAXIMUM 24-HR AVERAGE:		90.2	%			ON DAY(S)	15
						VAR-VARIOUS	
CALIBRATION TIME:	0 HRS			OPERATIONAL TIME:		744	HRS
				AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	14.55			MONTHLY AVERAGE:		70.18	%



JOB #: 2833-12-07-31-C

Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2012

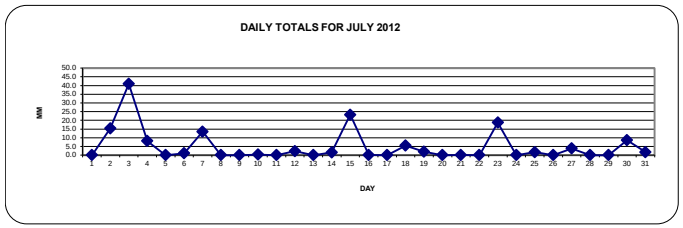
PRECIPITATION hourly averages (mm)

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	2	3.8	3.3	6.2	0	0	6.2	15.3	24
3	0	0	0	0.1	5.2	0	0	0	0	0	0	1.7	**16.9**	1.8	3.4	6.4	0.7	0.1	1.8	0	0	0	0.2	2.6	**16.9**	**40.9**	24
4	1.3	0.3	2.4	2.6	0	0	0.6	0.4	0.2	0.1	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	2.6	8.1	24
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.1	0	0	0	0	0	1.1	1.1	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	12.8	0.1	0.1	0.1	0	0	0	0	12.8	13.5	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	0.4	0	0	0	0	0	0	0.4	0.4	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	0.1	1	1.1	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	1.1	2.3	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	0.6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.0	1.6	24
15	0	0	0.2	1.1	3.9	0.8	0.4	0.7	0.4	0.3	0.6	4.2	3	2	1	0.4	0.8	0.4	0.4	1.1	0.9	0.4	0.2	0	4.2	23.2	24
16	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
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	0.7	4.6	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.6	5.5	24
19	0	0	0	0	0.1	1.5	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.5	2.0	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	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
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	2	9.2	7.5	0	0	9.2	18.7	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	0.9	0.8	0	0	0	0	0	0.9	1.7	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	0.3	3.5	0.1	0	0	0	0	0	0	0	3.5	3.9	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	0	0	0	0	0	0	2.6	2.9	3.1	3.1	8.6	24
31	0.7	0.9	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	1.7	24
HOURLY MAX	1.3	0.9	2.4	2.6	5.2	1.5	4.6	0.7	0.4	1.0	0.6	4.2	16.9	2.0	3.4	6.4	12.8	0.9	2.0	3.8	9.2	7.5	2.9	3.1			

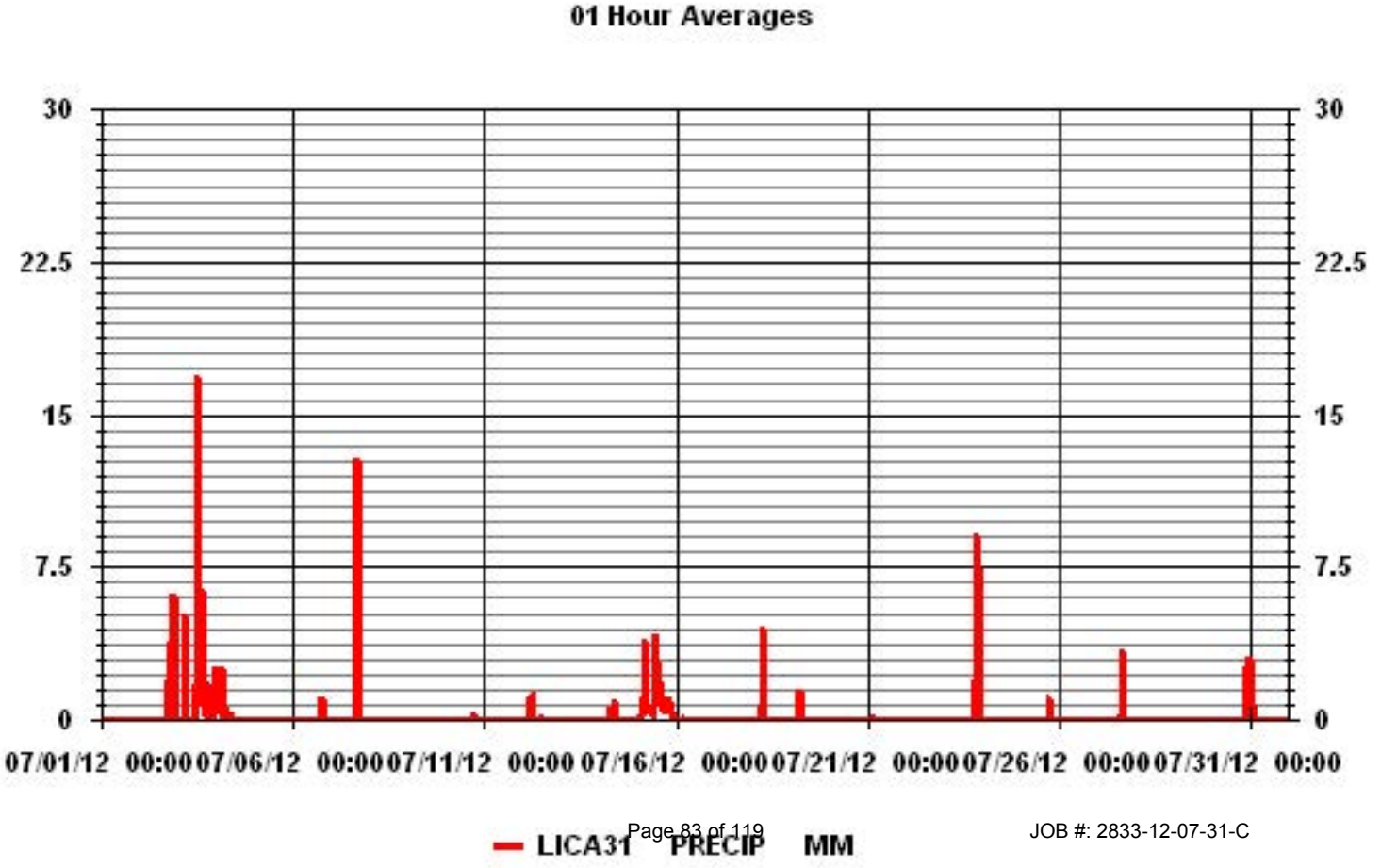
STATUS FLAG CODES

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



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	16.9	MM	HOUR(S)	12	ON DAY(S)	3
MAXIMUM DAILY TOTAL	40.9	MM			ON DAY(S)	3
MONTHLY TOTAL	148.7	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		744	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	1.08		MONTHLY AVERAGE:		0.20	MM



JOB #: 2833-12-07-31-C

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2012

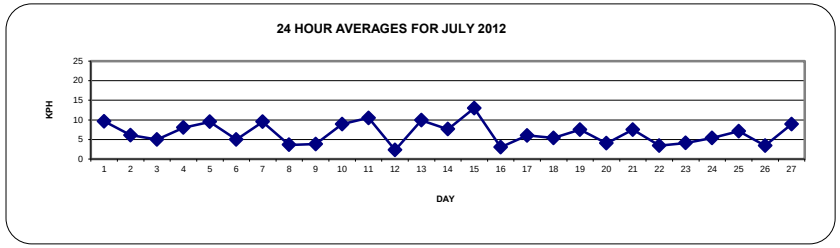
WIND SPEED hourly averages (km/hr)

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	9.7	10.6	11.5	9.8	7.5	9.2	10.3	9.5	8.3	7.1	8.3	6.3	15.7	16.9	18.2	15.9	11.5	10	11.5	8.3	6.3	6.3	6.1	8.3	18.2	3.6	24
2	9.2	9	9.8	7.4	9.2	7.7	8.7	10.7	6.8	4.3	6	9.3	10.1	8.1	8.1	7.6	9.1	5.6	0.5	17.1	9.3	4.9	7.3	7.8	17.1	5.1	24
3	6.3	5.8	6.4	5.2	7.9	14	18.7	17.9	17.7	17.4	14.1	15.2	9.9	4.2	3.4	3.6	5.1	8.1	4.2	4.5	6.5	6.6	8.4	9.4	18.7	5.7	24
4	18.4	16.5	16.4	21.4	17.4	17.6	19.6	22.7	21.7	22.2	22.9	24	23.5	24.4	21.5	23.9	24.8	24.2	**25.1**	23.3	21.9	21.2	17.6	14.3	**25.1**	**20.4**	24
5	12.8	13.9	12	11.5	12.6	12.7	13.1	14.2	11.4	12.4	12.5	14.7	16.1	10	8.8	10	10.1	10.7	10.7	8.2	4	5	1.9	3.8	16.1	9.6	24
6	5.7	10.7	9.5	7.6	7.6	6.4	2.6	6.3	6.2	7.2	9	8.2	9.7	13.8	18.5	14.4	16.7	8.5	6.2	5	7.4	5.2	4.1	6.7	18.5	6.1	24
7	6	6.9	6.7	7.5	6.7	4.9	3.3	2	2.9	6.4	7.5	7.8	7.1	7	7.4	5	18.2	17.6	9.9	12.7	10.5	11.2	11.8	9.8	18.2	5	24
8	9.8	10.9	9.1	8.9	7.2	4.9	2.9	3.4	4.3	5	8.3	7.2	7.6	8.5	10.8	10.9	10.8	11	9.2	9.9	11	11.5	11.3	10.6	11.5	8	24
9	11	10.7	11.1	11.3	11.6	12.2	9.6	9	5.9	6.3	9.5	10.5	9.8	10.7	10	9.3	8.8	10.4	9.8	9	10.6	10.9	10.2	9.3	12.2	9.5	24
10	9.7	9.6	8	8.1	8.2	10.4	7.8	6.4	2	7.1	9	10	10.3	9.1	11.8	17.6	17.7	11.5	6.4	8.6	10.7	12.6	12	11.4	17.7	5	24
11	10.1	11	13.6	11.4	12.3	12.9	11.6	13.1	12.3	11.6	11.9	12.6	11.5	12.7	11.6	11.3	9.5	7.5	4.4	5.1	6	5.7	5.8	6.5	13.6	9.5	24
12	5.9	6.9	7.6	11.3	8.5	14.9	5.2	3.7	3.8	1.6	4.1	6.3	5.5	7.2	8	6.1	6.7	5.7	6	6.4	6.7	7.3	8.7	8	14.9	3.6	24
13	8	9.9	9	6.4	6.8	6.6	7	7.8	6.8	6.3	6.8	6.7	5.7	4.8	4.3	3.2	1.5	2.4	4.1	2.8	4.6	7.6	7.9	8	9.9	3.8	24
14	6.4	5.8	8.2	9.4	9.1	8.7	8.7	10.6	10.5	7.8	4.6	12	9.3	9.4	11	10.2	12.2	11	9.6	9	9.4	11	10.1	6.6	12.2	8.9	24
15	7.6	8.2	7.1	10.4	12.4	12.4	11.6	13.2	13.3	13.5	14.6	13.1	14.5	12.7	17.1	14.2	13.2	12.2	10.3	11.2	11.6	8.9	7.4	7.2	17.1	10.5	24
16	7.2	8.2	7.2	7.4	8.6	7.9	5.9	6.7	5.6	5.1	5.9	5.8	5.9	6.7	5	5	6	7.3	6.4	6.9	8.4	8.5	9	9.5	9.5	2.3	24
17	9.1	7.9	8.3	9.2	8.9	9.2	11.6	10.1	11.3	13.2	14.5	14.2	13.3	11.1	9.4	12	13.2	11.6	10.8	9.2	9.3	8.4	9.4	5.8	14.5	9.9	24
18	7.9	8.7	7.6	8.6	9.6	11	7.4	6.5	10.5	**M**	**M**	**M**	9.1	10.2	9.5	16.8	18.7	21	10.6	9.6	8.6	7	8.3	8.1	21	7.6	21
19	10.2	10.7	12	12.6	14.1	14	12.8	15.9	15.4	17.7	19	18	18.9	17.2	16.1	15.9	15.4	13.7	11.1	7.3	8.5	7	7.9	8.4	19	13	24
20	8.7	7.5	7.8	5.8	5.4	4.3	1.7	1.5	3.9	5.3	4.8	5.5	5.4	6	6	6.5	8.8	7.8	6.1	8.2	10.6	11.2	10.3	10	11.2	3	24
21	9.1	10.7	12.6	13.4	11.5	12	11.5	11.5	14.6	13.8	13.6	13.2	9.8	7.7	3.8	4.7	6.7	6.7	6.5	3.8	3.1	2.6	8.5	7.4	14.6	6	24
22	6.9	8.3	6.9	6	4.3	7	9.5	9.8	8.4	5.7	7.2	7.1	7.1	9.6	7.9	8.1	5.5	5.6	4	1.2	2.6	4.3	5.1	4.8	9.8	5.4	24
23	4.6	4.7	4.1	3.7	5	5.3	5.9	4.9	5	6.4	7.4	10.3	11.6	17.7	18.1	17.7	13.1	16	16.8	9.8	3.9	11.6	11.4	10.6	18.1	7.5	24
24	10.2	9.5	7.4	8.7	1.6	4.2	3.1	3.4	7.3	6.2	1.3	4.3	7.4	8.8	11.5	12.2	12.4	12.4	11.3	9.6	10.1	9.5	10.2	8.8	12.4	4	24
25	8.8	8.7	7.9	10.4	11.7	9	9.2	11.9	12.5	9.9	10.9	8.9	10.9	10.3	8.8	7.9	7.5	3.9	6.3	3.6	5.8	4	4.9	1.7	12.5	7.5	24
26	2.9	2.7	1.7	4.2	5.7	3.7	2.3	2.8	3.3	3.5	6	8.9	9.1	9.1	8.3	3.2	3.9	3.7	1.9	4.5	7	7.5	7.2	7.6	9.1	3.4	24
27	8.2	5.9	5.7	7.4	7.5	6	6.4	5.7	4.2	7.6	7.6	7.7	7.8	6.9	3.7	4	5.4	6.7	4.9	2.5	6.4	5.4	6.7	8.5	8.5	4.1	24
28	2.2	6.7	5.3	5.3	5.9	2.6	1.5	2	3.1	5.5	8.4	7	6.8	9	9.5	11.8	10.3	6.2	8.8	6.6	6.5	7.2	7.6	7.7	11.8	5.4	24
29	7.2	7.1	7.9	7.9	7.6	5.4	6.4	6.5	6.7	7.4	5.8	7.3	10.6	9.4	10.7	10.8	8.7	11.2	6.4	4.4	7.3	6.3	7.2	5.6	11.2	7.1	24
30	5.6	5.4	6	5.9	6.4	5.8	5.2	5.7	2.9	4.6	3.3	4.4	6.7	9.7	10.7	12.8	10.8	9.4	9.1	4.8	7.1	11.2	10.4	4.9	12.8	3.4	24
31	1.5	13.9	7.9	8.9	9.1	7.6	8.7	11.3	12	12.2	12.5	10.3	11	12.2	11.8	9.4	12.5	10.6	9.2	6.8	6.5	7.7	9.7	9.6	13.9	8.9	24
HOURLY MAX	18.4	16.5	16.4	21.4	17.4	17.6	19.6	22.7	21.7	22.2	22.9	24.0	23.5	24.4	21.5	23.9	24.8	24.2	25.1	23.3	21.9	21.2	17.6	14.3			
HOURLY AVG	8.0	8.8	8.5	8.8	8.6	8.7	8.1	8.6	8.4	8.7	9.2	9.9	10.2	10.4	10.4	10.4	10.8	10.0	8.3	7.7	8.0	8.2	8.5	8.0			

STATUS FLAG CODES

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

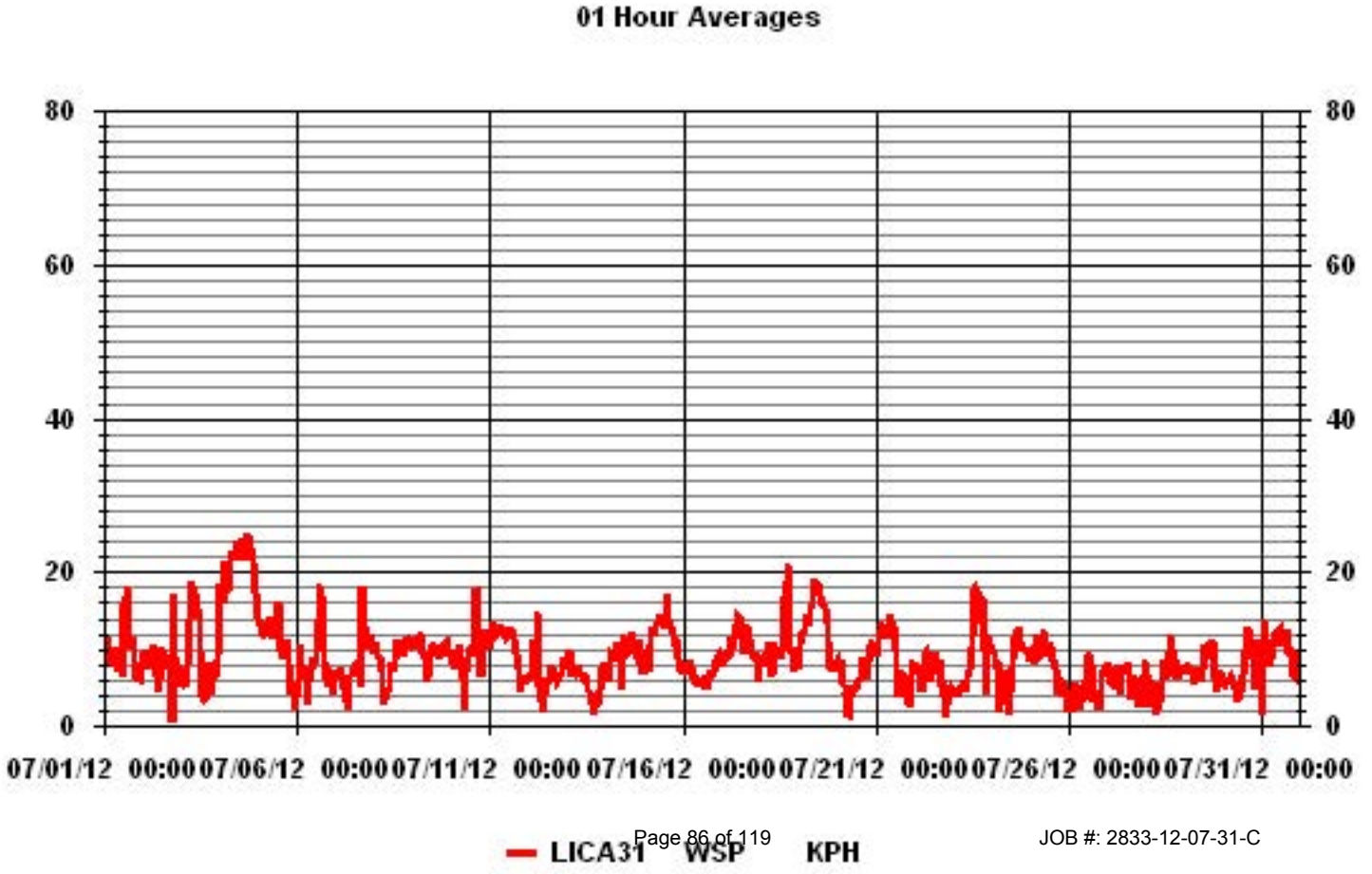


LAST CALIBRATION: June 12, 2012

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:		25.1	KPH	@ HOUR(S)	18	ON DAY(S)	4
MAXIMUM 24-HR AVERAGE:		20.4	KPH			ON DAY(S)	4
CALMS (≤ 0 KPH)	0.13	%		OPERATIONAL TIME:		741	HRS
MONTHLY CALIBRATION TIME:	0	HRS		AMD OPERATION UPTIME:		99.6	%
STANDARD DEVIATION:	4.15			MONTHLY AVERAGE:		8.97	KPH

JOB #: 2833-12-07-31-C



JOB #: 2833-12-07-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 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	25.5	26	22.7	15.8	19.1	23.3	21.5	19.3	17.5	18.8	20.5	48.4	45.1	46.7	38.6	27.3	30.8	25.6	20.1	14.6	11.4	11.2	14.3	48.4
2	13.4	13.4	16.7	12.4	13.7	13.6	15.5	16.2	16.9	19.1	21	27	32.4	26.8	29.5	23.7	24.1	15.8	39.4	43.1	48.8	**69.3**	24.4	17.4	**69.3**
3	35.1	12.4	19.8	19.4	26.5	33.2	41.7	41	40	37.8	31.8	43.8	40.9	17.7	10.7	15.6	13.7	18.8	44.8	11.7	12.7	13.9	26.1	23.4	44.8
4	33.2	28.5	38.3	44.2	42.4	37.7	35.7	40	45.4	58.8	51.3	60.9	55.1	51.8	55.1	54.1	48.7	53	51.8	42.1	40.5	41.9	34	25.6	60.9
5	22.2	23.2	22.4	19.2	21.4	19.9	22.1	27.3	22.4	24.6	28.8	31.7	30.4	27.6	20.9	21.6	24.7	25.4	19.9	13.7	14.4	9.3	16.6	7	31.7
6	10.9	15.8	14	13.3	10.3	9.8	6.2	13.9	15.2	21.2	20.4	23.9	29.3	32.3	40.4	28.5	31	30.9	18.4	12.8	18.1	9.3	12.1	12.2	40.4
7	11.1	9	9.2	9.2	10.3	9.6	7.8	7.3	8.3	17.8	17.8	19.8	19.8	23.9	20.1	31.5	63	51.4	39.8	**P**	21.1	22.2	20.9	17.7	63
8	19.1	17.9	17.3	12	11.8	10	7.6	10.6	10.5	12.6	17.3	18.7	19.2	20.8	23.9	25.5	22.5	24.3	19.5	16.9	24.2	23.5	21.7	22.2	25.5
9	22.9	20.1	19	20.1	19.6	22.8	18.6	16.7	14.7	14.2	20.9	29.7	22.6	24.3	22.7	22.4	20.6	21.2	21.7	18.4	21.1	19.7	22.6	21	29.7
10	18.5	17.9	16.6	15.7	15.8	19	16	21.5	10.7	18.5	18.9	24.8	22.7	23.2	30.5	32.7	31	26.7	17.8	16.9	24.9	28.4	26	26.1	32.7
11	23.6	24.2	25.5	22.9	26.2	22.1	24.6	28.4	30	24.6	29.6	31.9	25.6	29.3	26.1	31.2	20.9	17.1	12.3	9.5	8	8.2	8.6	8.2	31.9
12	8	11	13.9	21.6	23	45.9	30.1	14.2	7.3	7.3	13.6	15.1	13.6	19.8	18.5	16.6	16.8	12.5	14.8	14.9	15.1	17.6	19.4	15.9	45.9
13	18	22.1	21	17.1	17.2	14.3	17.8	21.6	17.9	19.2	19.4	21.5	19.6	16.3	13.8	11.7	8.4	8.4	8	5.4	6.6	11	14.2	13.8	22.1
14	11	11.1	15.6	19.5	17.1	17.1	19.6	25.7	21.4	21.8	21.4	27.9	20.6	25.2	24.6	23.1	28.8	26.7	20.9	19	19.4	23.6	17.7	15	28.8
15	15.8	15.4	15.3	25.8	25.4	27.5	28.9	29.4	30.2	37.7	37.4	33.6	32.8	36.4	45.2	34.1	35.5	31.8	32.2	32.5	28.5	20.4	19.8	19.5	45.2
16	18.1	22.4	16.2	17.3	18.8	17.7	14.4	14.8	12.7	14.3	17	17.1	17.3	17.2	16.4	13.9	14.8	14.5	12.7	13.9	13.8	15.6	15.5	16.1	22.4
17	14.7	14.3	14.6	16.6	14.6	18.2	23.5	21.6	26.8	27.6	29.8	30.8	28.7	28.6	23	25.1	29.6	31.2	23.6	20.8	18	15.8	19.3	14.1	31.2
18	17.5	17.9	19	19.4	19.1	23.8	20.6	17.5	24.2	**M**	**M**	**M**	30.6	35.5	27	P	44.9	49.9	29.6	19.9	13.2	13.4	16.9	12.3	49.9
19	21.9	24.3	26.5	29	45.1	42.2	27.6	31.1	33.5	48.4	51.4	50.3	47.7	49	40.9	44.4	38.3	35.9	26.3	16.9	14.7	12.5	12.7	**P**	51.4
20	13.6	14	15.3	15.1	12.7	10.5	9	7.9	12.1	24.7	22.3	21.9	22.5	24.7	24.8	28	24.7	17.1	15.1	15.6	21.5	25.6	21.5	19.9	28
21	20.4	27.8	34.8	26.7	23.2	23.3	25	26.3	38.5	35.9	34.2	29.3	35.2	26.1	16.9	16.9	19.9	22.1	17.5	11.4	6.6	6.9	18.2	19.7	38.5
22	14.9	17.3	13.6	13.8	10.7	14.2	17.5	25.2	21.7	15.6	18.4	16.4	25.6	22.1	23.9	20.6	18.4	18.4	12.9	16.2	5.6	7.2	7.5	7.5	25.6
23	7.5	7.2	5.9	6.9	11.2	8.1	21.9	9.9	12.1	19.7	18.6	26.8	31.8	49.9	51.6	56.7	39.2	42.5	43.1	28.7	18.6	48.8	23.6	27.8	56.7
24	38.1	25.2	14.7	23.6	10.3	12.5	9.2	**P**	19.1	16.9	10.3	12.9	18.2	25.4	29.6	29.1	31.8	36.1	28.9	24.3	23.9	23	29.8	19.1	38.1
25	19.1	21	20.4	21.7	26.9	24.6	27.4	33.5	39.2	27.6	31.5	35	32.6	34.2	30.1	27.4	24.3	23.2	19.7	8.6	10.7	12.5	12.5	8.6	39.2
26	9.9	6.8	5.7	6.4	9	8.8	5.1	8.6	8.3	9.6	14.2	27.1	26.5	25.9	24.5	11.2	9.6	9.6	9	12.9	12.6	13.2	12.5	12.5	27.1
27	14.5	10.3	10.5	13.8	15.4	10.3	19.3	15.6	14	19.1	23.6	27.8	25	24.7	17.7	35.7	28.9	24.5	14.7	13	27	11	10.1	12.9	35.7
28	11.4	11.4	10.1	11.7	12.1	6.4	5.7	11.8	11.8	14.5	16.9	16.7	20.2	23.9	25.2	31.1	27.1	13.2	19.6	18.2	12.5	12.5	11.8	12.9	31.1
29	14.9	13.6	13.6	13.4	14.5	14	14.2	16.6	17.5	20.8	19.8	21	26.7	24.1	24.7	29.1	22.8	34	15.3	8.3	11	8.1	11.2	10.8	34
30	9.9	**P**	9	12.1	13.1	13.8	12.7	13.8	15	12.1	13.1	13.8	24.5	32	30	36	32.3	28	23.6	21.9	**P**	39.6	32.2	16.9	39.6
31	8.8	28.9	24.7	17.8	15	14.9	17.8	23.4	25.6	27.8	34.4	22.6	28.2	31.8	30.6	22.8	29.8	31.3	21.7	14.7	12.1	12.1	15.6	18.4	34.4
PEAK	38.1	28.9	38.3	44.2	45.1	45.9	41.7	41.0	45.4	58.8	51.4	60.9	55.1	51.8	55.1	56.7	63.0	53.0	51.8	43.1	48.8	69.3	34.0	27.8	

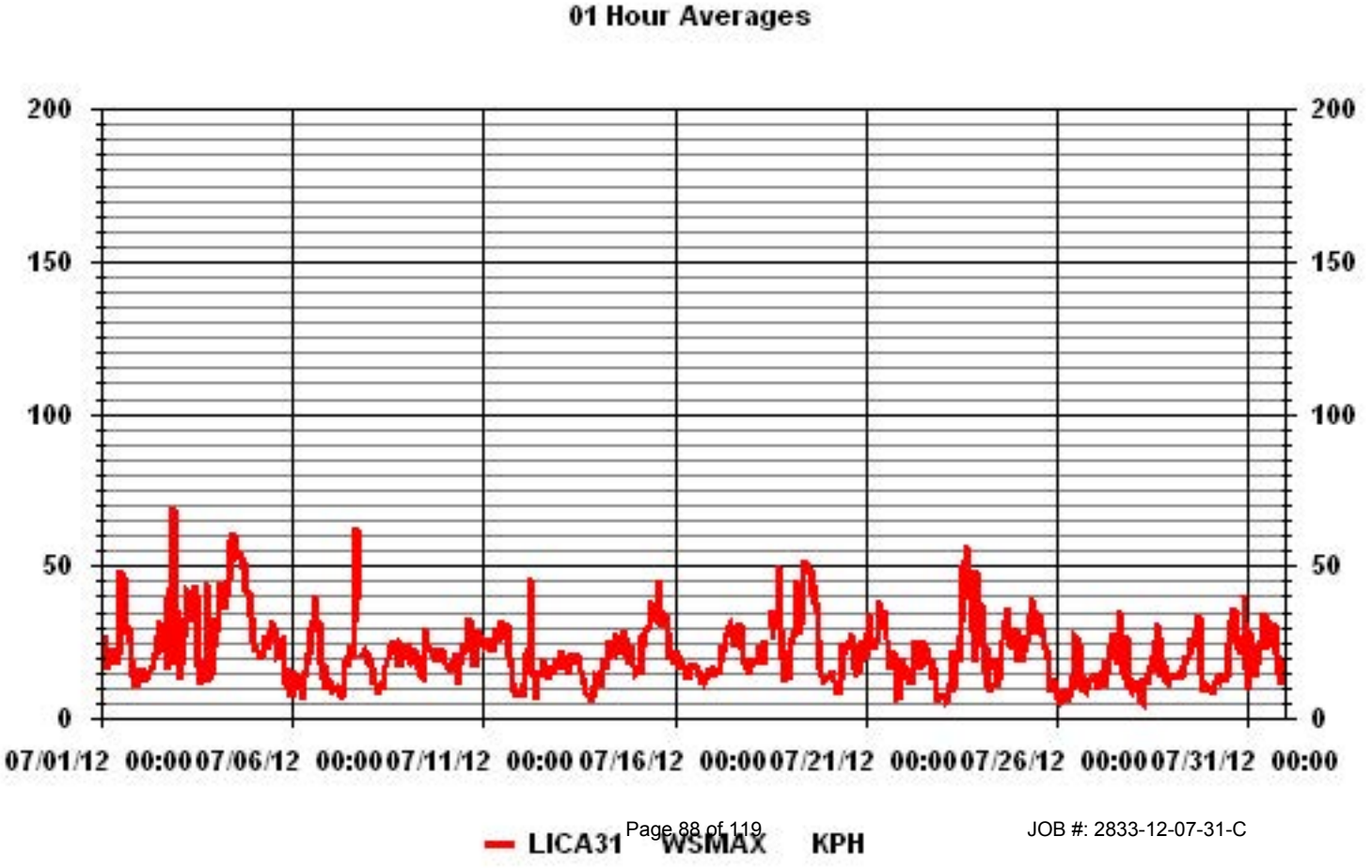
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS READING	69.3	KPH	@ HOUR(S)	21
			ON DAY(S)	2

JOB #: 2833-12-07-31-C



JOB #: 2833-12-07-31-C

LICA31
WSP / WDR Joint Frequency Distribution (Percent)

July 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	.94	1.48	1.48	1.07	1.21	1.07	2.15	2.02	2.02	1.75	1.34	.94	.53	1.75	1.34	.67	21.86
<	12.0	1.48	1.61	1.88	.94	2.83	4.99	5.66	9.85	4.18	1.48	2.96	6.74	6.34	4.99	2.56	1.75	60.32
<	20.0	.00	.13	.40	2.29	1.34	.67	.53	.80	.13	.00	.53	2.15	4.04	2.02	.13	.13	15.38
<	29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.40	1.34	.53	.00	.00	2.29
<	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.42	3.23	3.77	4.31	5.39	6.74	8.36	12.68	6.34	3.23	4.85	10.25	12.28	9.31	4.04	2.56	

Calm : .13 %

Total # Operational Hours : 741

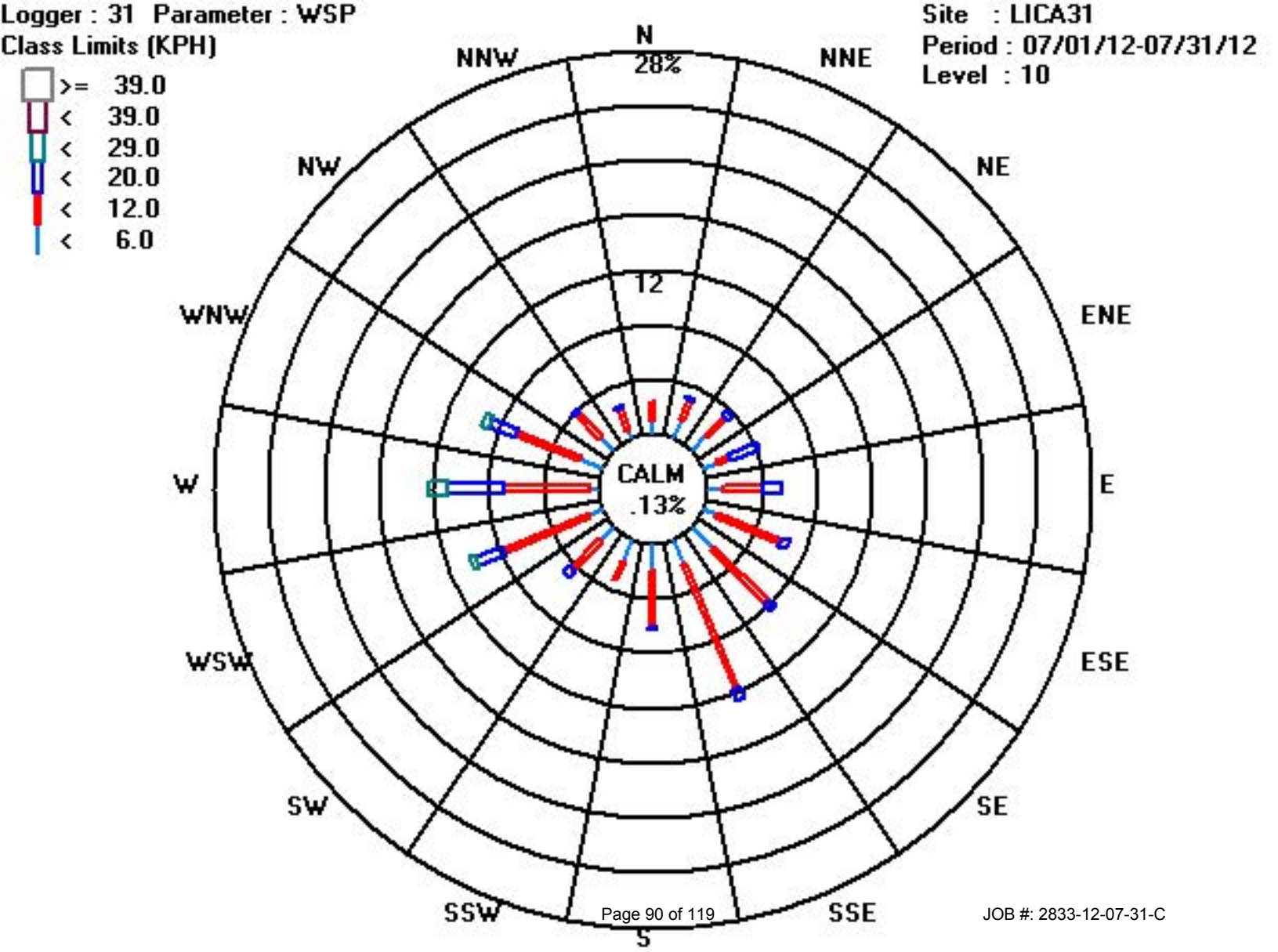
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	7	11	11	8	9	8	16	15	15	13	10	7	4	13	10	5	162
<	12.0	11	12	14	7	21	37	42	73	31	11	22	50	47	37	19	13	447
<	20.0		1	3	17	10	5	4	6	1		4	16	30	15	1	1	114
<	29.0												3	10	4			17
<	39.0																	
>=	39.0																	
	Totals	18	24	28	32	40	50	62	94	47	24	36	76	91	69	30	19	

Calm : .13 %

Total # Operational Hours : 741



JOB #: 2833-12-07-31-C

Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

JULY 2012

WIND DIRECTION hourly averages in degrees

MST

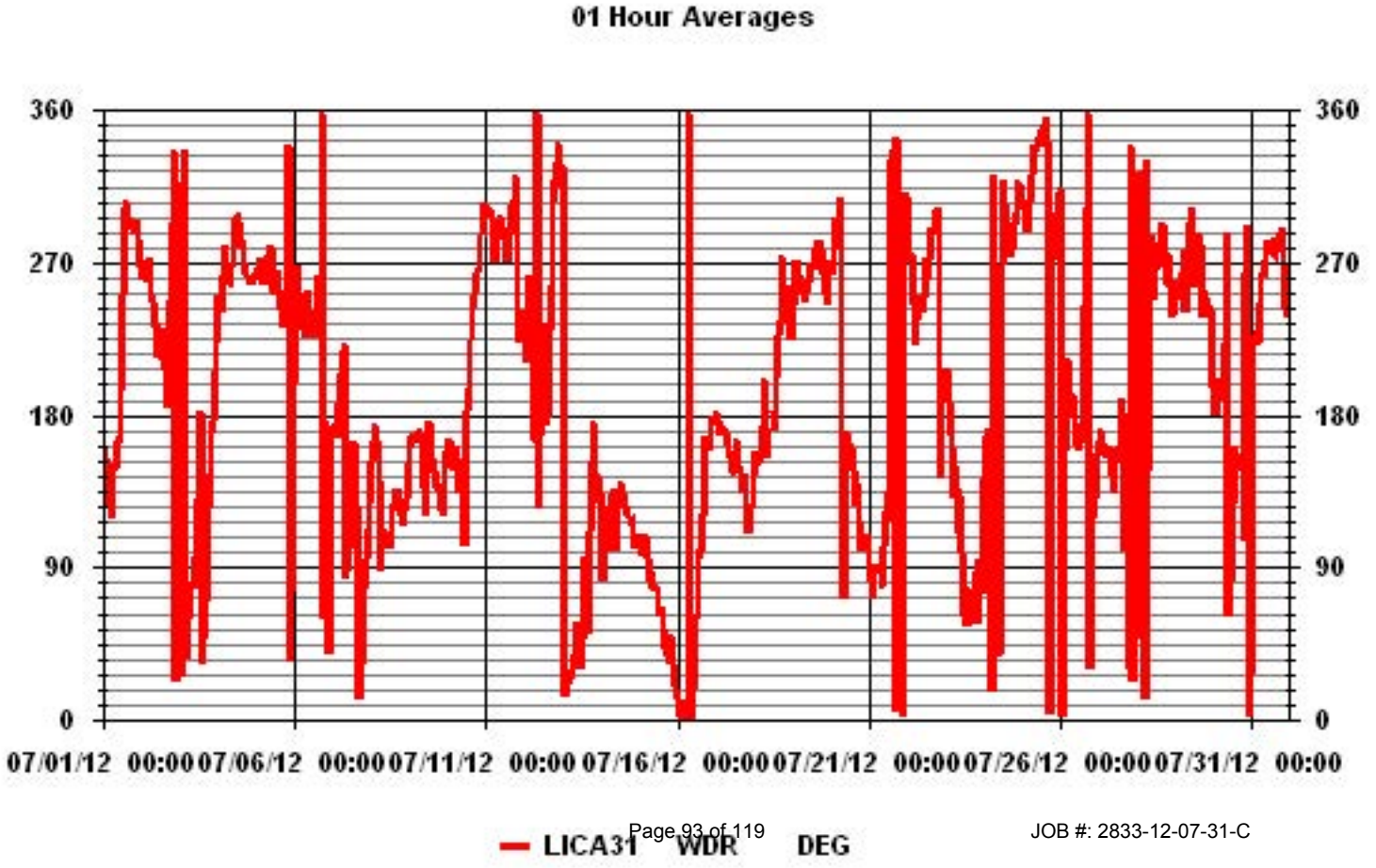
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	159	151	152	146	127	119	149	151	148	164	168	194	250	302	307	298	297	292	289	294	286	295	284	268	236	SW	24
2	263	264	271	259	263	273	252	248	234	234	213	227	228	213	218	207	185	187	248	294	337	23	60	64	249	WSW	24
3	318	26	47	337	36	59	77	79	79	84	96	130	120	183	33	47	70	79	145	125	169	177	206	222	89	E	24
4	251	243	241	262	280	270	260	259	267	270	279	296	297	295	284	279	264	266	263	258	258	258	262	262	269	W	24
5	265	264	273	268	259	259	259	271	270	280	255	254	253	265	255	244	232	238	247	248	339	34	75	199	260	WSW	24
6	231	258	268	253	236	232	226	248	253	243	232	233	225	233	248	262	252	359	59	176	167	38	130	173	241	WSW	24
7	166	172	171	186	192	204	218	222	84	88	101	103	134	164	153	128	12	78	33	67	77	95	113	127	109	ESE	24
8	153	165	175	166	162	143	87	107	112	104	104	103	103	124	128	136	133	134	122	116	116	123	131	151	132	SE	24
9	160	167	168	167	163	169	170	167	161	138	120	153	177	164	155	146	148	138	135	139	125	121	148	159	153	SSE	24
10	164	164	150	148	156	162	134	151	154	113	102	148	183	195	224	248	247	252	264	267	286	291	290	305	211	SSW	24
11	299	304	301	299	293	271	274	288	294	298	284	291	276	270	277	286	304	307	322	288	237	222	235	241	284	WNW	24
12	239	210	240	263	241	167	166	317	359	125	167	233	235	174	178	224	230	257	305	318	329	341	326	314	246	WSW	24
13	328	14	23	25	23	25	30	38	42	58	48	30	51	49	97	84	50	111	153	177	145	145	144	128	55	NE	24
14	133	82	91	123	126	99	114	133	137	100	134	124	139	139	135	127	122	121	118	119	102	107	108	108	119	ESE	24
15	101	110	97	103	109	96	83	78	87	82	77	79	67	62	66	55	44	39	33	39	50	34	21	19	69	ENE	24
16	13	4	1	10	10	8	12	359	1	1	18	62	60	95	100	112	121	165	165	159	167	177	177	174	69	ENE	24
17	182	178	177	169	171	171	170	163	155	158	147	145	151	166	147	150	134	144	144	122	110	119	125	128	151	SSE	24
18	144	159	150	152	158	173	202	174	157	**M**	**M**	**M**	181	170	202	227	236	274	258	247	244	235	257	224	208	SSW	21
19	247	247	272	270	264	251	254	246	257	256	259	268	268	268	279	283	281	283	278	264	257	253	245	272	264	W	24
20	262	270	297	277	290	305	308	96	72	159	171	152	163	161	148	135	127	140	119	100	104	110	106	110	138	SE	24
21	89	84	72	90	90	86	92	90	78	102	123	120	135	118	331	337	5	344	45	48	233	1	296	311	83	E	24
22	309	274	271	276	246	221	236	251	245	250	241	249	273	259	271	288	288	290	301	303	142	164	192	205	257	WSW	24
23	204	208	188	169	161	131	150	138	110	134	99	62	55	58	77	76	71	60	61	87	56	95	88	74	85	E	24
24	142	167	168	172	41	16	322	49	49	42	38	268	319	305	297	282	283	273	277	293	299	301	316	315	293	WNW	24
25	301	307	299	288	294	305	322	339	337	339	343	348	339	352	346	355	342	3	299	290	288	292	312	272	323	NW	24
26	315	1	130	159	213	178	187	193	185	172	163	159	175	163	168	245	303	359	30	142	129	119	131	157	162	SSE	24
27	165	171	165	158	155	162	157	161	146	134	153	154	158	161	190	99	109	172	181	30	340	22	35	47	145	SE	24
28	67	323	304	311	324	12	331	147	251	286	248	266	272	267	281	284	293	268	257	276	257	237	244	243	275	W	24
29	248	260	250	253	264	277	240	271	288	294	303	255	276	266	288	275	282	238	254	250	246	239	243	196	262	W	24
30	198	180	198	201	189	197	200	223	287	62	64	82	127	162	153	152	148	153	157	106	264	292	1	27	168	SSE	24
31	125	226	228	228	222	246	264	261	271	274	283	281	276	275	284	282	276	287	289	289	247	248	237	266	264	W	24
HOURLY AVG	328	323	304	337	324	305	331	359	359	339	343	348	339	352	346	355	342	359	322	318	340	341	326	315			

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 12, 2012
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	741	HRS
STANDARD DEVIATION:	88.60		AMD OPERATION UPTIME:	99.6	%
			MONTHLY AVERAGE:	221	DEG



JOB #: 2833-12-07-31-C

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

JULY 2012

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

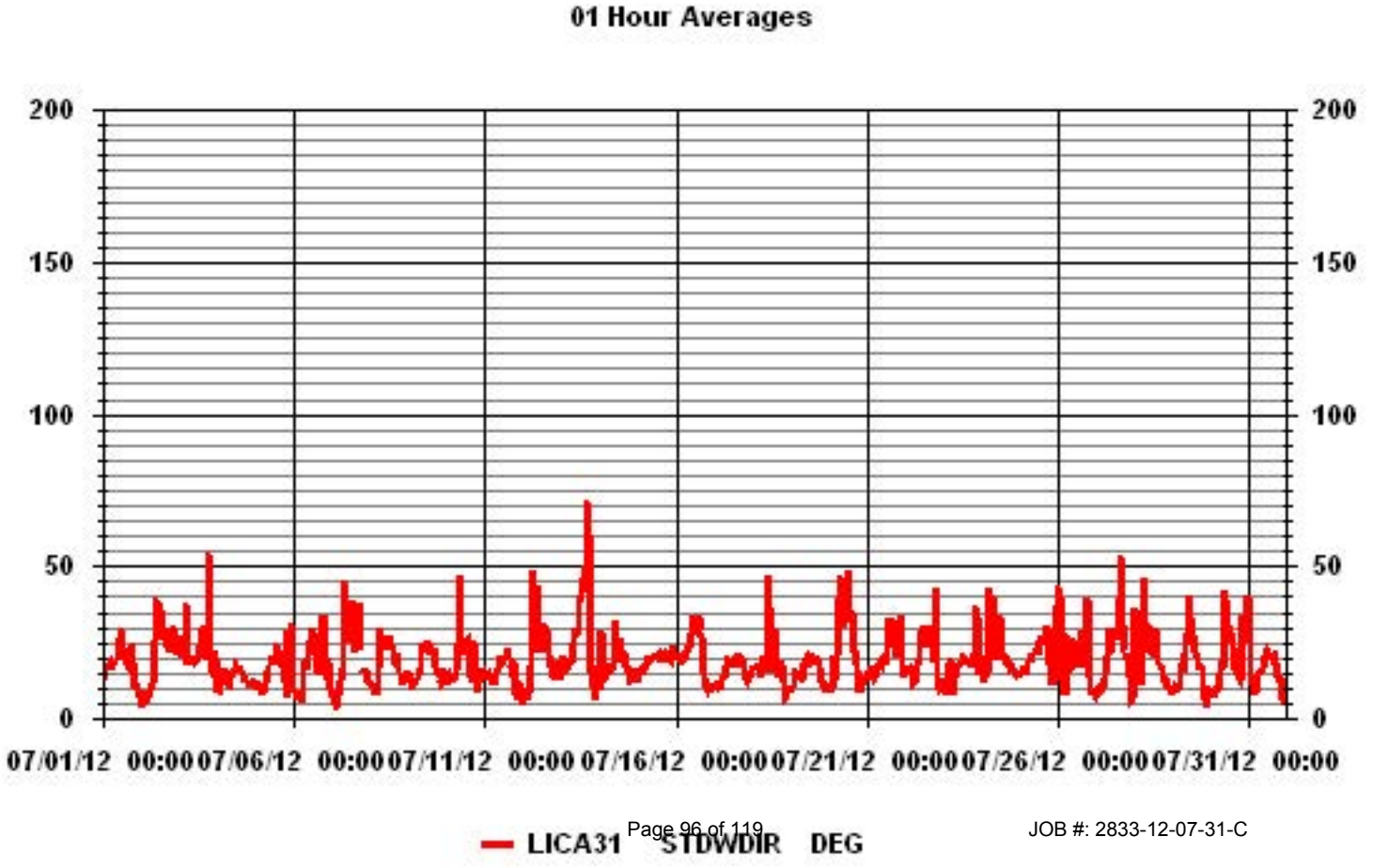
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	13	16	16	18	19	16	18	18	19	25	24	29	23	20	19	18	22	23	17	17	12	11	9	8
2	5	5	9	6	7	8	10	12	26	38	38	29	26	35	29	27	24	21	30	21	30	24	23	22
3	25	27	25	25	38	19	18	19	20	18	19	19	24	20	29	30	22	19	55	21	16	14	23	20
4	10	9	14	13	17	15	12	11	15	15	17	18	18	16	17	16	13	14	13	12	11	11	13	12
5	12	9	12	11	8	9	12	15	18	20	20	19	18	24	23	21	19	17	13	7	29	18	31	10
6	9	6	7	9	7	5	19	16	20	24	23	30	29	23	16	16	14	34	27	34	13	20	18	10
7	8	5	4	5	8	12	17	45	43	30	27	27	30	39	22	24	32	22	37	0	16	16	13	12
8	11	11	11	7	10	17	30	27	26	27	23	26	27	24	20	20	21	18	16	12	12	14	15	15
9	15	13	11	11	12	13	15	15	25	24	23	22	25	21	22	22	22	17	16	14	12	13	17	14
10	12	13	15	14	13	14	16	25	47	23	21	23	26	27	21	15	12	26	17	9	13	15	14	15
11	14	14	14	15	14	11	12	16	17	18	20	19	20	21	23	21	17	18	19	9	6	12	8	5
12	6	10	6	9	17	26	49	35	21	44	29	21	29	31	24	29	21	18	14	14	14	19	15	13
13	16	20	19	17	18	18	19	25	26	29	28	38	40	41	46	50	72	61	15	18	11	6	9	10
14	10	29	16	14	15	17	18	17	18	25	32	18	23	26	20	22	18	18	16	13	13	15	14	16
15	12	15	16	16	16	18	20	20	20	20	21	21	19	21	20	20	21	22	22	20	19	22	24	22
16	21	20	20	19	21	20	20	22	24	28	29	33	30	27	34	29	27	16	14	11	10	11	11	10
17	11	12	11	12	10	13	14	17	20	19	19	19	19	17	20	20	19	20	18	16	14	13	14	16
18	16	16	17	17	15	15	18	20	18	15	47	37	27	26	30	16	14	19	18	12	7	7	11	9
19	10	11	15	15	15	15	14	12	17	18	19	20	19	20	20	19	19	19	17	13	10	12	9	10
20	9	11	10	21	13	20	40	47	30	33	43	38	48	31	35	33	23	18	17	9	11	13	12	13
21	14	15	17	14	13	14	17	18	19	18	20	20	22	27	33	31	26	24	20	32	23	34	14	15
22	16	17	16	17	16	11	12	18	19	28	29	28	30	23	29	26	30	24	18	43	10	9	10	10
23	12	12	8	18	20	8	15	15	17	18	18	19	21	19	19	19	18	18	17	21	37	34	14	21
24	19	12	14	15	43	23	31	40	19	24	31	34	25	22	20	17	19	17	18	17	16	15	15	16
25	15	17	17	15	16	19	20	20	21	22	21	25	20	27	27	27	24	30	17	20	11	23	13	37
26	44	40	29	11	8	14	18	26	26	25	18	18	26	22	17	29	19	19	39	14	10	9	9	8
27	10	10	9	9	10	13	15	21	29	22	26	28	27	27	40	53	32	22	20	21	17	15	6	7
28	36	12	16	14	11	31	46	30	31	23	22	25	26	29	26	19	17	17	13	13	11	11	10	8
29	9	11	10	10	11	18	15	21	25	28	41	34	24	28	22	21	19	17	16	11	7	4	10	8
30	9	10	7	10	9	15	19	16	42	27	39	27	28	26	24	17	15	14	13	16	34	25	28	41
31	31	15	12	9	9	13	15	16	16	17	20	23	22	21	21	21	18	19	15	12	11	7	4	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: May 15, 2012

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 743 HRS



JOB #: 2833-12-07-31-C

Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	July 18, 2012	Previous Calibration	June 7, 2012
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	12:03	End Time (MST)	13:16
Reason:	As Found		
Barometric Pressure	920 mBar	Station Temperature	27 Deg C
Cal Gas	49.6 ppm	Gas Cyl. # LL42496	Cal Gas Expiry date January 16, 2014
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	520 ccm	33.5 Deg C			517 ccm	33.5 Deg C		
HVPS / Lamp Setting	540	2258			540	2260		
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	84.8	1.038			84.8	1.038		

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	3	N/A
	No Zero Adj.			
4925	75.6	750	764	0.9815
		Sum of Least Squares		
		New Correction Factor		0.9815

IZS alibration Data

	Before Calibration	After Calibration
Auto Zero	2.8	-
Auto Span	285.0	-
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9815
Percent Change:	1.9%

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

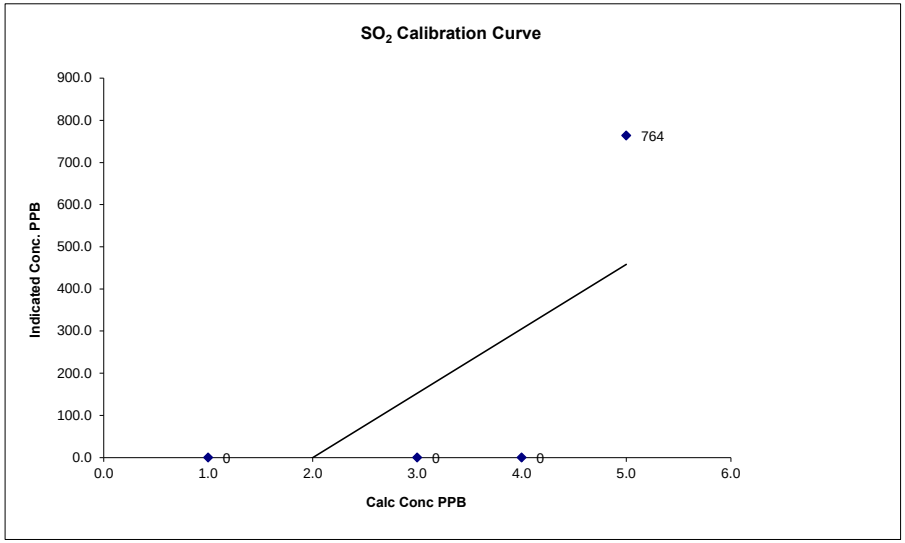
Following the A/F points, a new exhausting pump was replaced.

Calibration Performed by: Ting Xu

SO_2 Calibration Curve

Calibration Date	July 18, 2012		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	12:03	End Time (MST)	13:16

Calculated Conc. ppb	Indicated Response ppb	Correction Factor			
0	0	n/a	Correlation Coefficient	(≥ 0.995)	1.000000
	0	#VALUE!	Slope	(0.85 to 1.15)	1.018854
	0	#VALUE!	Intercept	(± 3% F.S.)	0.000000
750	764	0.9815			



Notes:

SO2 Calibration Report

Station Information

Calibration Date	July 18, 2012		Previous Calibration	June 7, 2012	
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	ST. LINA				
Start Time (MST)	13:32		End Time (MST)	16:58	
Reason:			Post Repair Calibration		
Barometric Pressure	920	mBar	Station Temperature	27	Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	LL42496	Cal Gas Expiry date	January 16, 2014
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	517	ccm	33.5	Deg C	516	ccm	32.8	Deg C
HVPS / Lamp Setting	540		2260		540		2260	
PMT / RxCell Temp	7.8	Deg C	50	Deg C	7.8	Deg C	50	Deg C
Converter / IZS Temp	NA	Deg C	40	Deg C	NA	Deg C	40.0	Deg C
Offset / Slope	84.8		1.038		89.5		1.015	

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.			
4924	75.6	750	750	1.0000
	No Span Adj.			
4955	40.3	400	403	0.9929
4980	17.1	170	172	0.9868
4997	0	0	1	N/A
			Sum of Least Squares	0.9980
			New Correction Factor	1.0000

IZS alibration Data

	Before Calibration	After Calibration
Auto Zero	1.4	0.9
Auto Span	282.0	281.0
Sample Lines Connected		YES

Percent Change

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

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

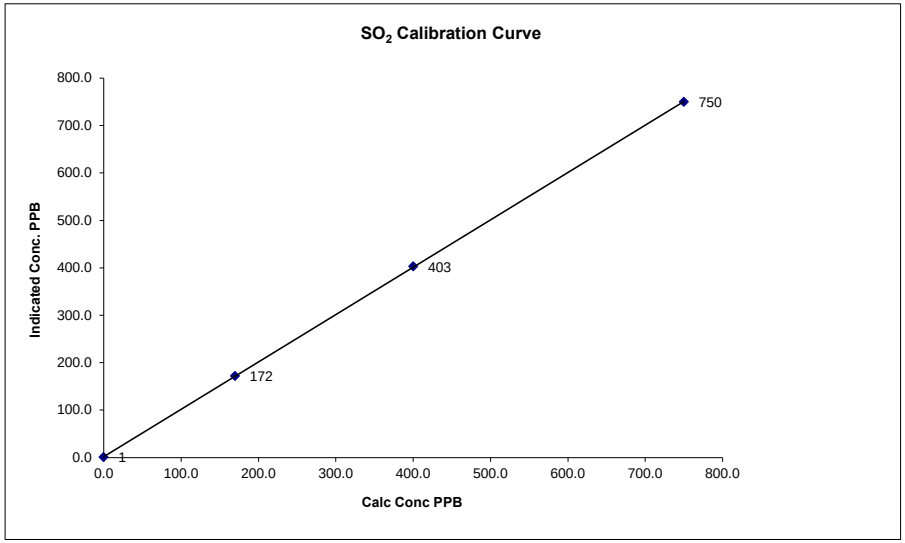
Calibration Performed by: Ting Xu

SO_2 Calibration Curve

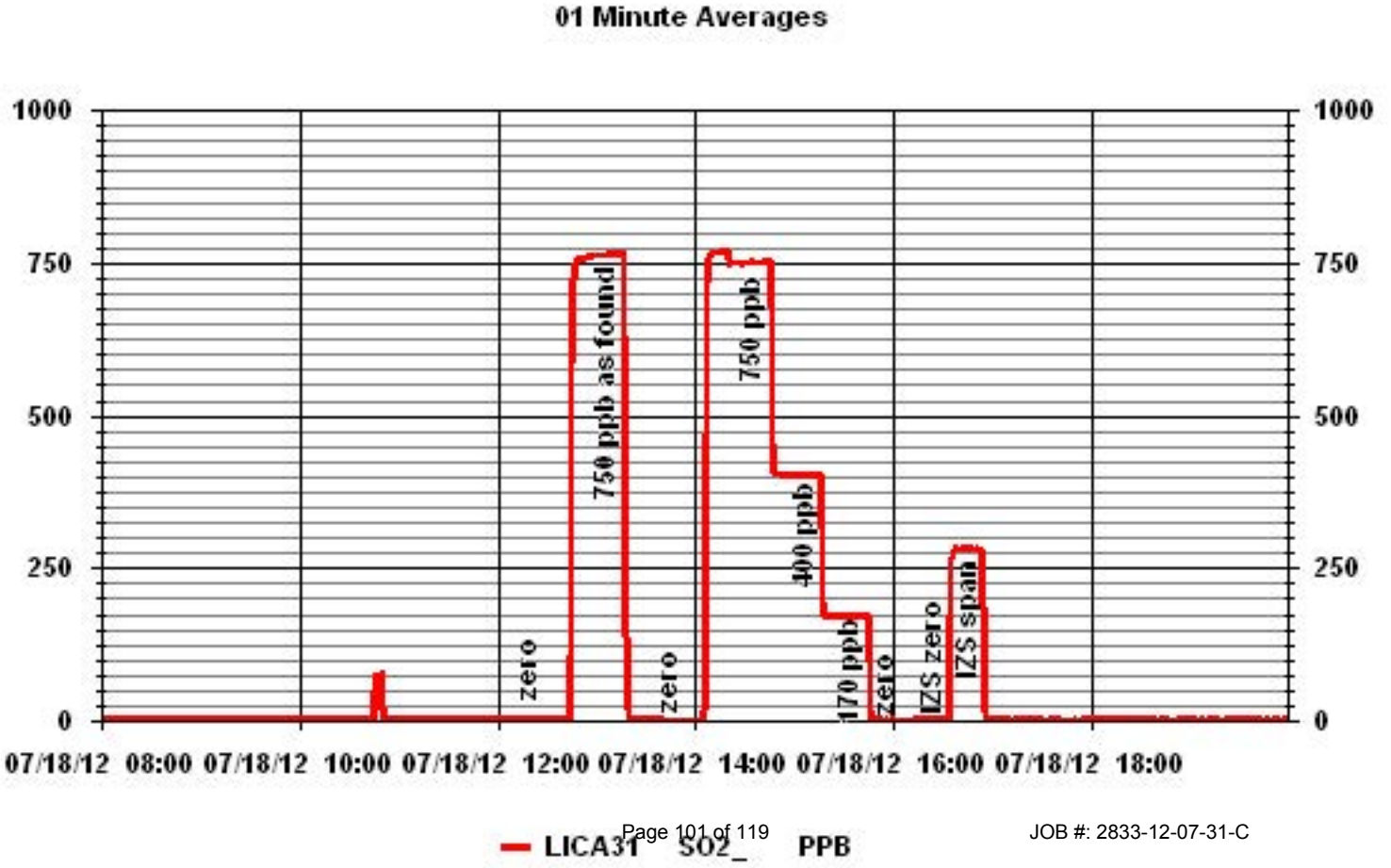
Calibration Date	July 18, 2012		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	13:32	End Time (MST)	16:58

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	1	n/a
170	172	0.9868
400	403	0.9929
750	750	1.0000

Correlation Coefficient	(≥ 0.995)	0.999987
Slope	(0.85 to 1.15)	0.998421
Intercept	(± 3% F.S.)	2.047385



Notes:



JOB #: 2833-12-07-31-C

Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	July 17, 2012		Previous Calibration	June 6, 2012	
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	ST.LINA				
Start Time (MST)	8:53		End Time (MST)	12:59	
Reason:	Monthly Calibration				
Barometric Pressure	927	mBar	Station Temperature	27	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 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	530	ccm	36.4	Deg C	529	ccm	36.3	Deg C
HVPS / Lamp Setting	518		2262		518		2263	
PMT / RxCell Temp	8.4	Deg C	50	Deg C	8.4	Deg C	50	Deg C
Converter / IZS Temp	315	Deg C	45	Deg C	315	Deg C	45.0	Deg C
Offset / Slope	84.1		1.028		89.8		1.026	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4997	0	0	3	NA
4997	0	0	0	1.0000
4959	40.0	80	83	0.9640
4959	40.0	80	80	1.0000
4980	20.0	40	41	0.9756
4988	11.5	23	24	0.9584
4996	0	0	0	NA
			Sum of Least Squares	0.9928
			New Correction Factor	1.0000

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	3.1	0.6
Auto Span	44.5	42.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9640
Percent Change:	3.7%

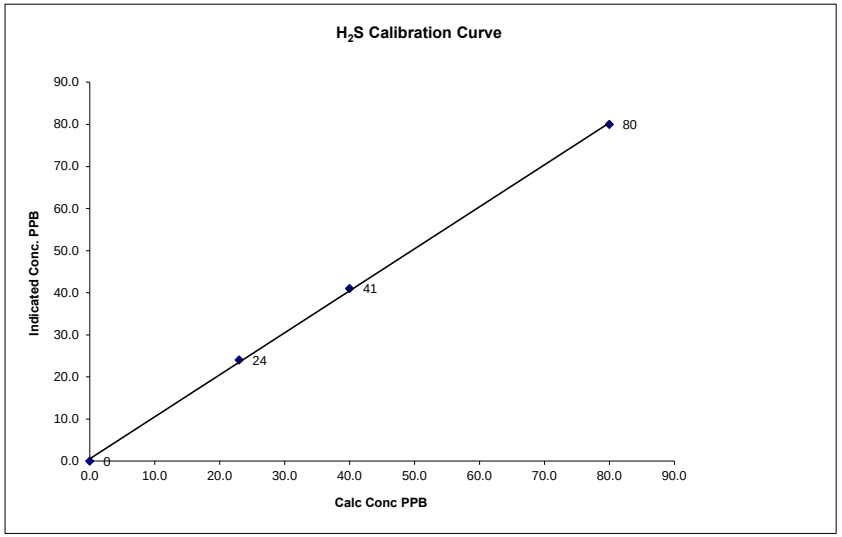
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

H_2S Calibration Curve

Calibration Date	July 17, 2012				
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	ST.LINA				
Start Time (MST)	8:53		End Time (MST)	12:59	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor			
0	0		Correlation Coefficient	(≥ 0.995)	0.999709
23	24	0.9584	Slope	(0.85 to 1.15)	0.997313
40	41	0.9756	Intercept	(± 3% F.S.)	0.591511
80	80	1.0002			



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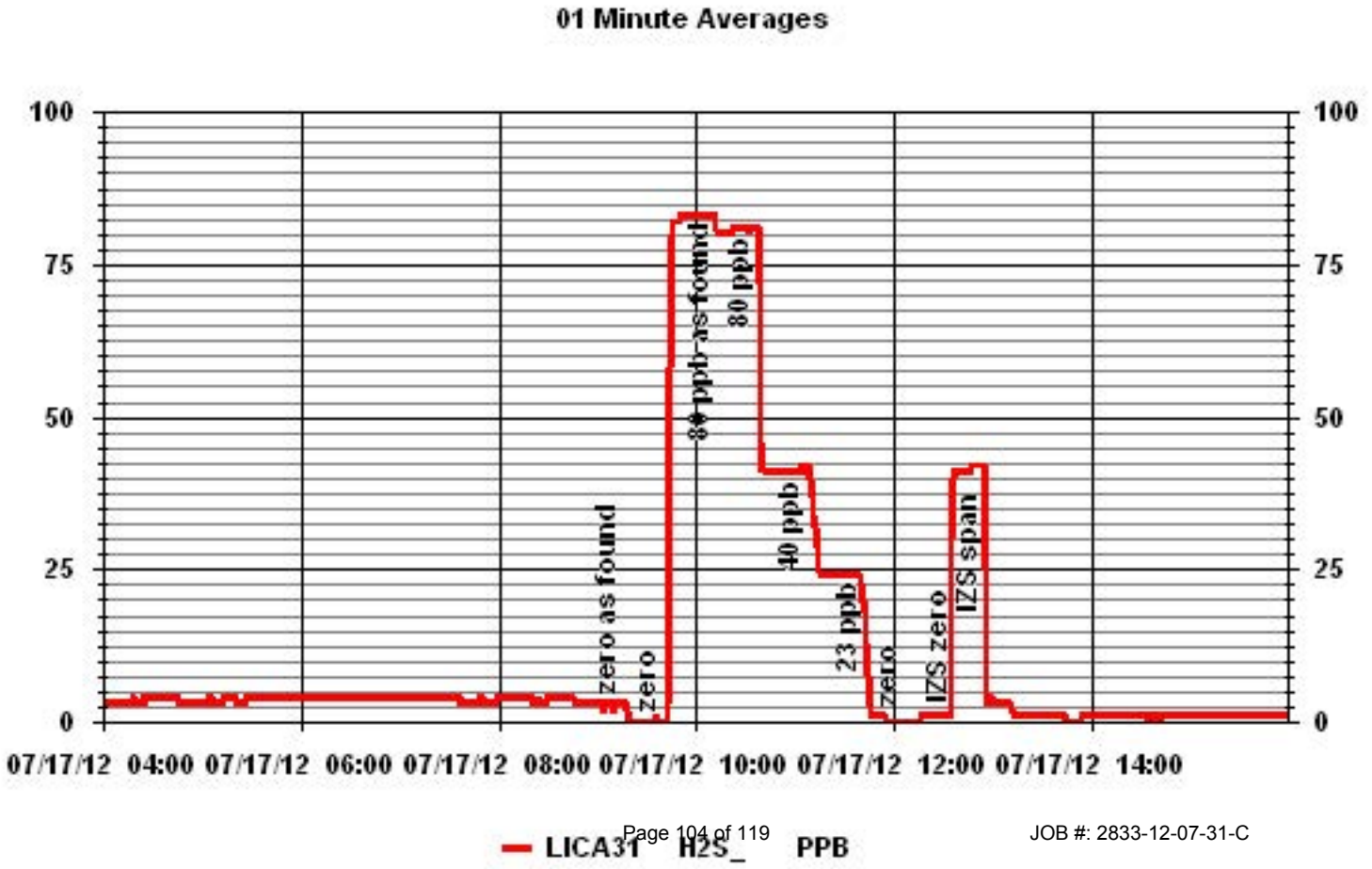


JOB #: 2833-12-07-31-C

Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	July 17, 2012		Previous Calibration	June 6, 2012	
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location:	ST. LINA				
Start Time (MST)	12:20		End Time (MST)	16:11	
Reason:	Monthly Calibration				
Barometric Pressure:	926	mBar	Station Temperature:	26	Deg C
Calibrator:	API 700		S/N:	831	
Cal Gas Concentration:	CH4 600 PPM		C3H8	204 PPM	
	TOTAL CH4 1161.0 PPM		Gas Cyl. #	LL155310	Cal Gas Expiry Date: September 9, 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	10	psi	10	psi
Air Pressure	21	psi	21	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	0.1	NA
2000	0.0	0.0	0.0	NA
2000	74.0	41.4	42.3	0.9793
2000	74.0	41.4	41.5	0.9982
2000	37.0	21.1	20.9	1.0090
2000	20.0	11.5	11.5	1.0000
2000	0.0	0.0	0.0	NA
			New Correction Factor:	0.9982

Percent Change

Previous Calibration Correction Factor:	0.9958
Current Correction Factor Before Span Adjust:	0.9793
Percent Change:	1.7%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.1	0.0
Auto Span	36.9	36.3
Sample Lines Connected		YES

Cylinder Pressures

Span 1300 psi Hydrogen 1400 psi Zero Air 34 psi

Notes: **NA : Not Applicable**

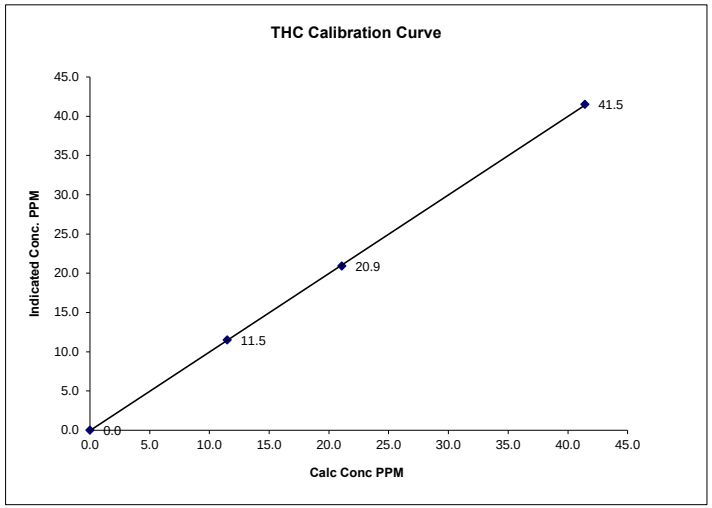
Calibration Performed by: Ting Xu

THC Calibration Curve

Calibration Date	July 17, 2012		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	12:20	End Time (MST)	16:11

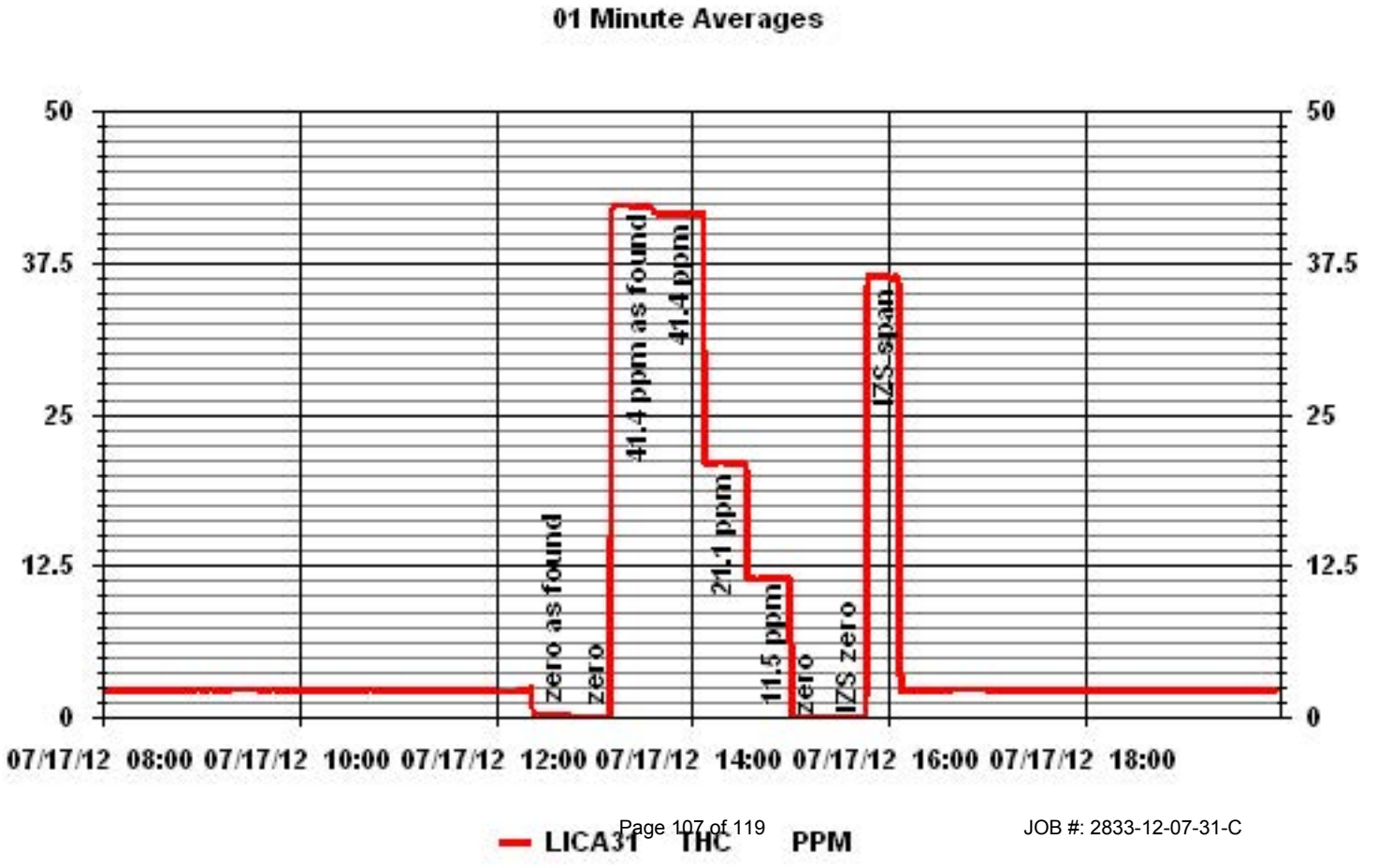
Calculated Conc. ppm	Indicated Response ppm	Correction Factor
0.0	0.0	NA
11.5	11.5	0.9996
21.1	20.9	1.0090
41.4	41.5	0.9982

Correlation Coefficient	(≥ 0.995)	0.999960
Slope	(0.85 to 1.15)	1.001314
Intercept	(± 3% F.S.)	-0.05124



Notes:

JOB #: 2833-12-07-31-C



JOB #: 2833-12-07-31-C

Nitrogen Dioxide

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	July 17, 2012		Previous Calibration	June 7, 2012	
Company	LICA		Plant/Location	St. Lina	
Start Time (MST)	8:53		End Time (MST)	10:08	
Reason:	As Found				
Barometric Pressure	927 mBar	Station Temperature	27 Deg C	MFCF	1
Cal Gas Concentration	NOx 49.6 ppm	NO 49.5 ppm	Cal Gas Expiry date	January 16, 2014	
Cal Gas Cylinder #	LL42496				
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	480	ccm	316	Deg C		485	ccm	315	Deg C
Ozone Flow / Vacuum	71	ccm	5.1	"Hg-A		71	ccm	5.2	"Hg-A
HVPS / A ZERO	662	Volts	22.0	MV		694	Volts	28.1	MV
Rx/ Temp / PMT Temp	50.0	Deg C	6.9	Deg C		50.0	Deg C	6.9	Deg C
Box Temp / IZS Temp	34.0	Deg C	42.2	Deg C		32.9	Deg C	42.1	Deg C
Offset	1.5	NOx	0.5	NO		1.5	NOx	0.2	NO
Slope	1.484	NOx	1.472	NO		1.062	NOx	1.048	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	0	NA	NA
	No Zero Adj.									
4918	75.5	NA	750	748	NA	718	725	-6	1.0445	1.0323

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		Sum of Least Squares	NOx=	#VALUE!	NO=	#VALUE!	NO2=	#VALUE!
OK? Yes	No	Correction Factors:	NOx=	1.0445	NO=	1.0323	NO2=	
					Average Converter Efficiency=		#DIV/0!	

IZS Calibration Data

	Before Calibration					After Calibration			
Auto Zero	0.2	NOx	0.4	NO2		-	NOx	-	NO2
Auto Span	631	NOx	587	NO2		-	NOx	-	NO2
					Sample Lines Connected	YES			

Percent Change from Previous Calibration	NOx	-4.3%	NO	-3.1%	NO2

Notes

NA : Not Applicable

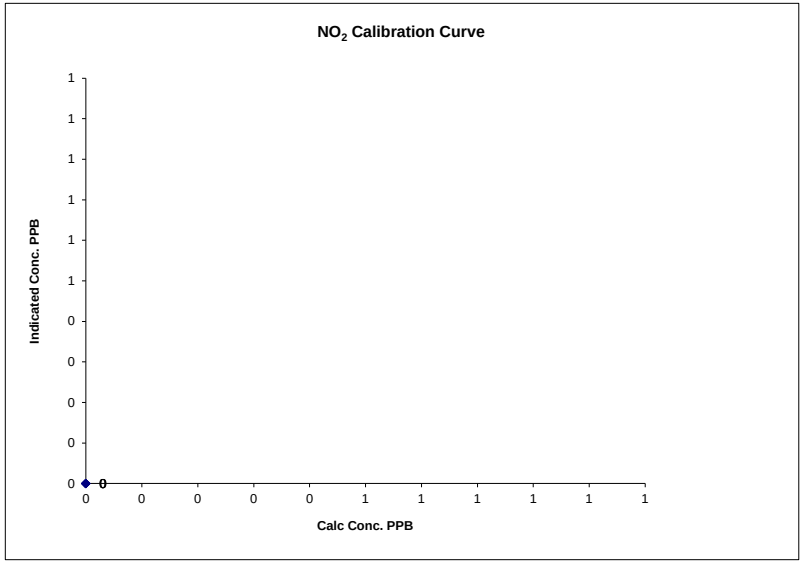
Following the A/F check, the HVPS voltage and the slope were adjusted.

Calibration Performed by: Ting Xu

NO_2 Calibration Curve

Calibration Date	July 17, 2012		
Company	LICA		
Plant / Location	St. Lina		
Start Time (MST)	8:53	End Time (MST)	10:08

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



Notes:

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	July 17, 2012		Previous Calibration	June 7, 2012	
Company	LICA		Plant/Location	St. Lina	
Start Time (MST)	10:35		End Time (MST)	16:54	
Reason:	Post Repair Calibration				
Barometric Pressure	927 mBar	Station Temperature	27 Deg C	MFCF	1
Cal Gas Concentration	NOx 49.6 ppm	NO 49.5 ppm	Cal Gas Expiry date	January 16, 2014	
Cal Gas Cylinder #	LL42496				
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	485	ccm	315	Deg C		480	ccm	316	Deg C
Ozone Flow / Vacuum	71	ccm	5.2	"Hg-A		71	ccm	5.1	"Hg-A
HVPS / A ZERO	694	Volts	28.1	MV		694	Volts	28.9	MV
Rx/ Temp / PMT Temp	50.0	Deg C	6.9	Deg C		50.0	Deg C	6.9	Deg C
Box Temp / IZS Temp	32.9	Deg C	42.1	Deg C		32.7	Deg C	42.1	Deg C
Offset	1.5	NOx	0.2	NO		2.4	NOx	1.5	NO
Slope	1.062	NOx	1.048	NO		1.071	NOx	1.053	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	0	NA	NA
	No Zero Adj.									
4919	75.5	NA	750	748	NA	752	748	4	0.9971	1.0000
	No Span Adj.									
4959	35.3	NA	351	350	NA	350	348	2	1.0016	1.0054
4978	17.2	NA	171	170	NA	170	169	1	1.0046	1.0085
4994	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		
4919	75.5	NA	750	748	NA	754	747	7	NA	NA
4919	75.5	600	750	NA	506	755	248	506	1.0000	100.00%
No Adj. Needed										
4919	75.5	300	750	NA	258	754	496	258	1.0000	100.00%
4919	75.5	120	750	NA	108	755	646	110	0.9818	101.98%

Linearity			Sum of Least Squares	NOx=	0.998	NO=	1.002	NO2=	0.999
OK?	Yes	No	Correction Factors:	NOx=	0.9971	NO=	1.0000	NO2=	1.0000
						Average Converter Efficiency=		100.66%	

IZS Calibration Data

	Before Calibration					After Calibration			
Auto Zero	-	NOx	-	NO2		-0.8	NOx	-0.3	NO2
Auto Span	-	NOx	-	NO2		678	NOx	631	NO2
					Sample Lines Connected	YES			

Percent Change from Previous Calibration	NOx	0.3%	NO	0.0%	NO2	0.2%

Notes

NA : Not Applicable

Additional GPT point done for O3 calibration: O3 set point 450, NOx 754, NO 369, NO2 385

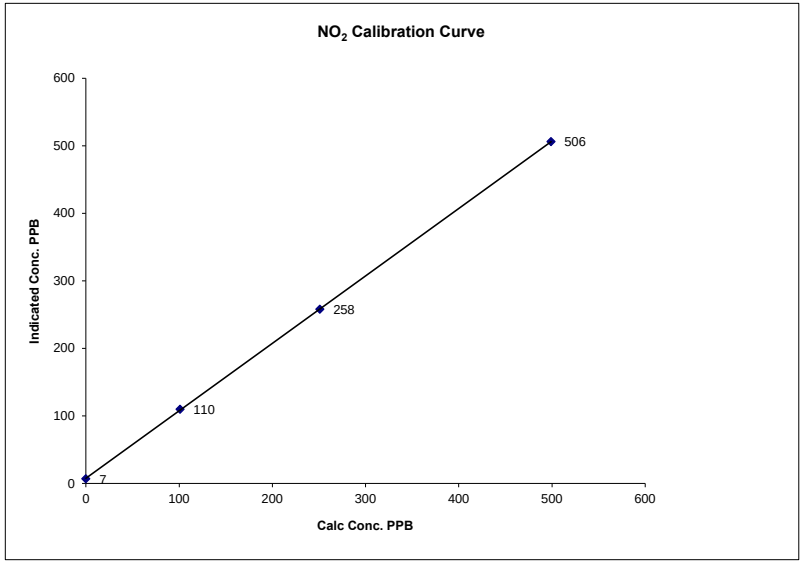
Calibration Performed by: Ting Xu

NO_2 Calibration Curve

Calibration Date	July 17, 2012		
Company	LICA		
Plant / Location	St. Lina		
Start Time (MST)	10:35	End Time (MST)	16:54

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	7	N/A
101	110	0.9182
251	258	0.9729
499	506	0.9862

Correlation Coefficient	(≥ 0.995)	0.999981
Slope	(0.85 to 1.15)	0.998417
Intercept	(± 3% F.S.)	7.83687

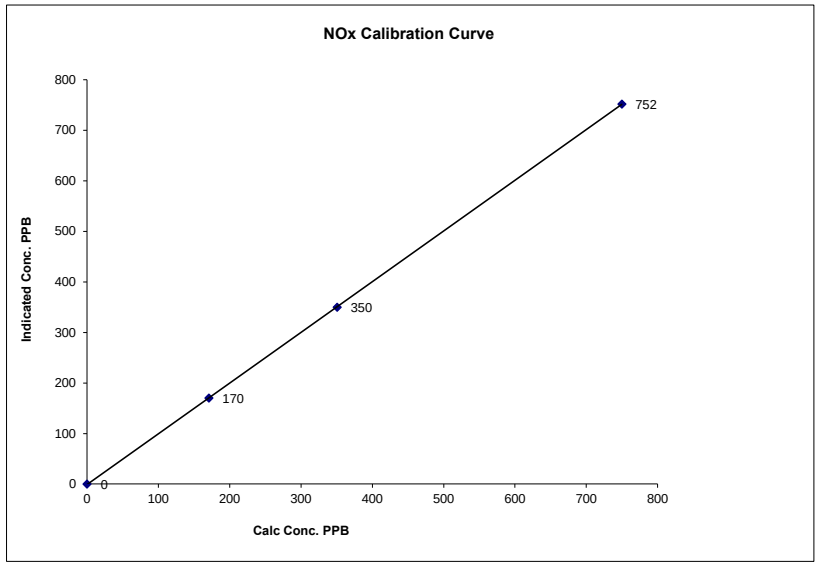


Notes:

NOx Calibration Curve

Calibration Date	July 17, 2012				
Company	LICA				
Plant / Location	St. Lina				
Start Time (MST)	10:35	End Time (MST)	16:54		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999993
			Slope	(0.85 to 1.15)	1.003397
0	0	N/A	Intercept	(± 3% F.S.)	-0.86647
171	170	1.0046			
351	350	1.0016			
750	752	0.9971			

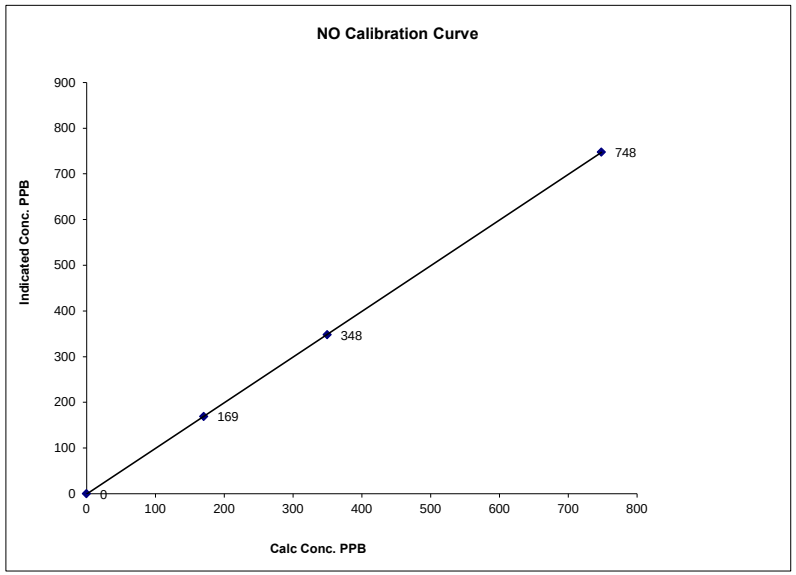


Notes:

NO Calibration Curve

Calibration Date	July 17, 2012				
Company	LICA				
Plant / Location	St. Lina				
Start Time (MST)	10:35	End Time (MST)	16:54		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999992
			Slope	(0.85 to 1.15)	1.002355
0	0	N/A	Intercept	(± 3% F.S.)	-3.2702
170	169	1.0085			
350	348	1.0054			
748	748	1.0004			



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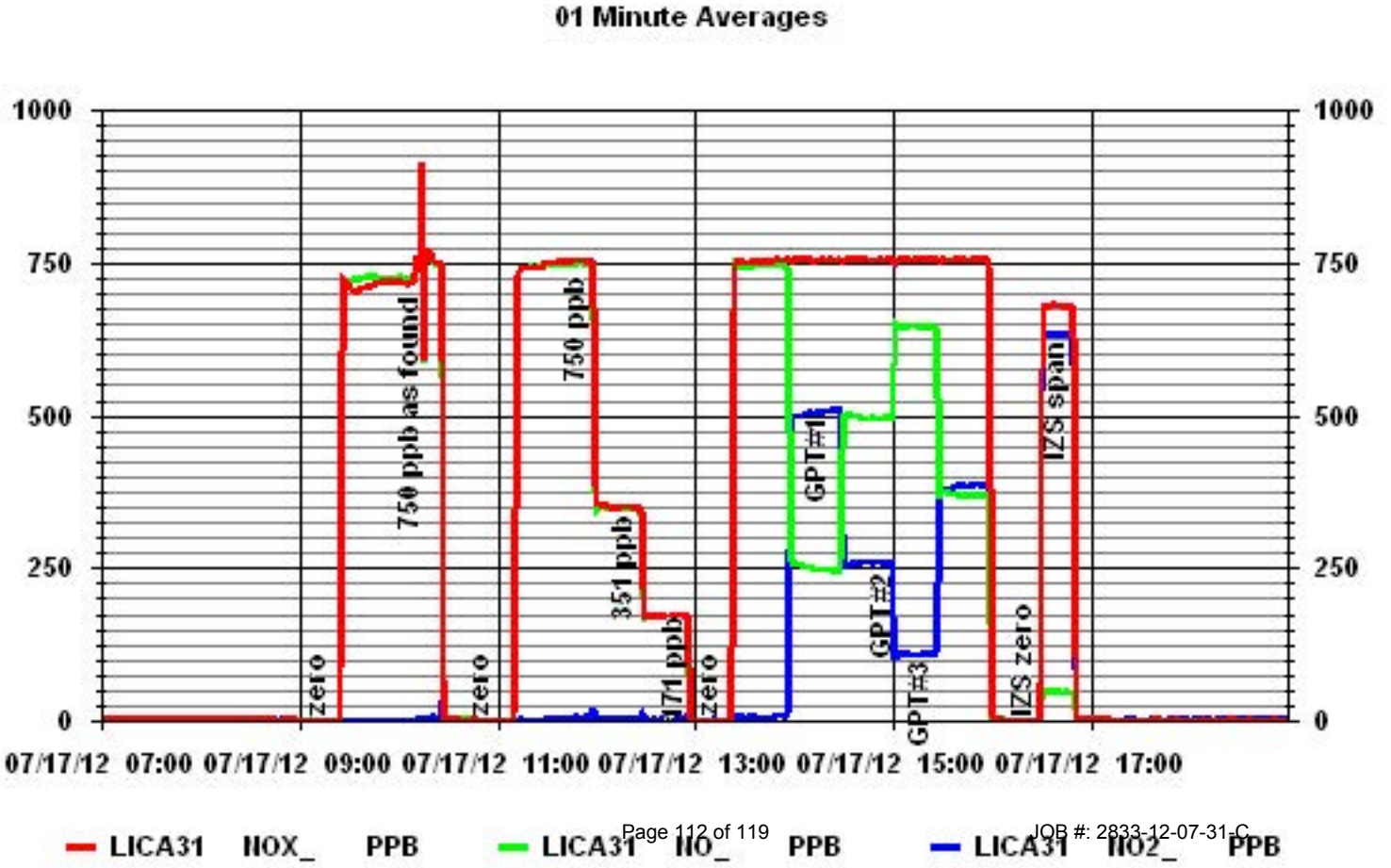

01 Minute Averages
1000
750
500
250
0
zero
750 ppb as found
zero
750 ppb
351 ppb
171 ppb
zero
GPT#1
GPT#2
GPT#3
IZS zero
IZS span
07/17/12 07:00
07/17/12 09:00
07/17/12 11:00
07/17/12 13:00
07/17/12 15:00
07/17/12 17:00
LICA31 NOX_ PPB
LICA31 NO_ PPB
LICA31 NO2_ PPB

Ozone

O_3 Calibration Report

Station Information

Calibration Date	July 18, 2012	Previous Calibration	June 7, 2012
Company	**Lakeland Industry & Community Association**		
Plant / Location	**St. Lina**		
Start Time (MST)	13:32	End Time (MST)	16:58
Reason:	Monthly Calibration		
Barometric Pressure	920 mBar	Station Temperature	27 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	821 ccm	851 ccm	834 ccm	864 ccm
Pressure	681 mmHg		699 mmHg	
Bench Temp	56.9 Deg C		56.9 Deg C	
O3 Lamp / Box Temp	80 Deg C	35.4 Deg C	80 Deg C	35.7 Deg C
Offset / Slope	0.1	0.991	0.1	0.991

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	378	381	0.9921
	No Span Adj.			
4994	300	251	255	0.9843
4994	120	101	103	0.9806
4994	0	0	0	N/A
			Sum of Least Squares	N/A
			New Correction Factor	0.0000

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.3	0.9
Auto Span	318	319
Sample Lines Connected		YES
Percent Change from Previous Calibration		1.6%

Note: **NA: Not Applicable**

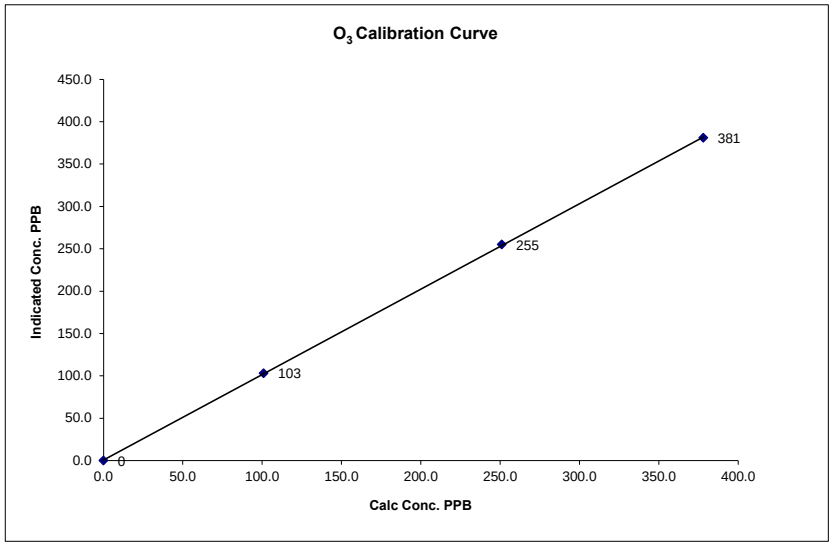
Calibration Performed by: Ting Xu

O_3 Calibration Curve

Calibration Date	July 18, 2012			
Company	**Lakeland Industry & Community Association**			
Plant / Location	**St. Lina**			
Start Time (MST)	13:32	End Time (MST)	16:58	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
101	103	0.9806
251	255	0.9843
378	381	0.9921

Correlation Coefficient	(≥ 0.995)	0.999966
Slope	(0.85 to 1.15)	1.008418
Intercept	(± 3% F.S.)	0.713768



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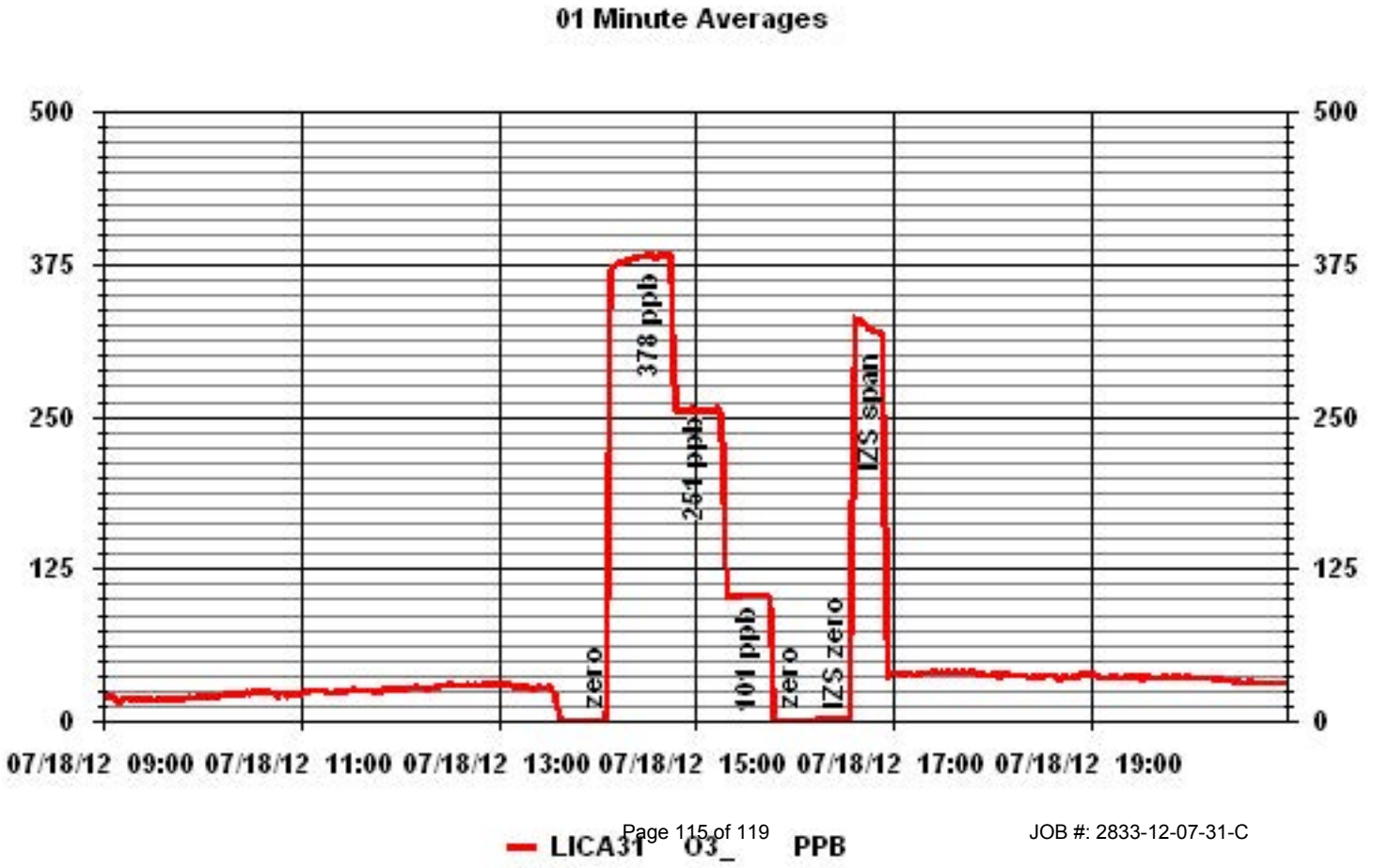


JOB #: 2833-12-07-31-C

Particulate Matter 2.5

TEOMÒ 1405F Audit

Station		Audit Transfer Standard	
Date:	July 18, 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 (%)	36.4%
Firmware Ver.	1.55	K_o Factor	15634.0
Parameter	PM 2.5 (with FDMS)	Temp (^oC)	23.92
		Press (ATM)	0.914

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**	0.004	Warnings	None
Pump Vacuum **<0.4atm**	0.29	Pump Gauge (inHg)	NA

Temperature/Pressure

Measured Temp **(± 2 °C)**	22.73	**D °C**	1.2
Measured Press **(± 0.01atm)**	0.908	**DATM**	0.006

Flow Audit

Indicated Main Flow (l/min)	3.00	Main Flow Drift **(±10.0%)**	0.76%
Measured Main Flow (l/min)	3.01	Flow Adjusted to Measured?	YES
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift **(±10.0%)**	0.16%
Measured Bypass Flow (l/min)	13.66	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: 13:08 **Finish Time:** 14:34

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

New Filter Loading %: 17.4%

Comments:

Auditor/s: Ting Xu

JOB #: 2833-12-07-31-C

Wind System

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

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

Sonic Wind Sensor Certificate of Calibration

Sensor Model No: 50.5H Sonic **Sensor Serial No:** H12635
Customer: Maxxam Analytics **P.O. No:** **Sales Order:** RA 33601
Final Calibration By: Kevin Ricks **Calibration Date:** 06-12-12
Quality Control Inspected By: D. Nelson **Inspection Date:** 6-15-2012

New Unit [ ] **Repair/Adjust** [X] **Re-Calibration** [X] **As Found** [ ]

Unit Within Tolerance as Found [ ] **Unit Within Tolerance as Left** [X]

Calibration Equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal. Due
Digital Multimeter 1	Agilent	34401A	MY41040097	12/16/2012
Digital Multimeter 2	HP	34401A	US36094551	7/05/2012
Frequency Counter	HP	53131A	KR91201739	7/11/2012
Standard Sensor	Climet	011-1	2551	7/18/2013
Standard Cup Set	Climet	014	0008	7/18/2013
Temperature Probe	MOI	920005/PC8340	E3402	8/25/2012

Test 1: Average Wind Tunnel Speed: 3.07 **Meters per Second** **FirmwareVersion:** 3194-01 R2.62

WD Setting (Deg)	WD Output (Volts)	WD Indication (Deg)	WD Error (+/- 3 Deg)	WS Standard (m/s)	WS Output (Volts)	WS Indication (m/s)	WS Error (+/- .20 m/s)
30	.084	30.4	.4	3.05	.059	2.96	-.09
60	.165	59.3	-.7	3.05	.06	3	-.05
120	.333	119.8	-.2	3.09	.06	2.98	-.1
150	.416	149.6	-.4	3.09	.059	2.93	-.15
210	.584	210.2	.2	3.1	.059	2.97	-.13
240	.663	238.8	-1.2	3.06	.06	2.98	-.08
300	.835	300.6	.6	3.06	.06	2.99	-.07
330	.915	329.3	-.7	3.07	.059	2.95	-.12

Output Type:

0 to 1 volt	X
0 to 2.5 volt	
0 to 5 volt	
RS-232	X
SDI-12	
RS-422	
RS-485	

Test 2: Average Wind Tunnel Speed: 11.66 **Meters per Second** **Output Range:** 0-50 m/s

WD Setting (Deg)	WD Output (Volts)	WD Indication (Deg)	WD Error (+/- 3 Deg)	WS Standard (m/s)	WS Output (Volts)	WS Indication (m/s)	WS Error (+/- .24 m/s)
30	.081	29.2	-.8	11.68	.232	11.62	-.06
60	.163	58.8	-1.2	11.65	.234	11.7	.05
120	.331	119.3	-.7	11.66	.229	11.47	-.19
150	.417	150.1	.1	11.63	.228	11.4	-.23
210	.581	209	-1	11.71	.231	11.53	-.17
240	.662	238.4	-1.6	11.64	.233	11.67	.03
300	.834	300.2	.2	11.7	.232	11.6	-.09
330	.915	329.4	-.6	11.64	.23	11.51	-.13

Test Items:

Array Alignment	✓
Jumper Config	✓
Firmware Config	✓
Zero Calibration	✓
Low Speed Test OK	✓
High Speed Test OK	✓
Sensor Function	✓
Physical Inspection	✓

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

Lakeland Industry & Community Association

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

Prepared By:

August 30, 2012

JOB #: 2833-12-07-01-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: July 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 – July 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	0.05	2	13	2	6.6	1(N)	0.3	13	100.0
TRS (PPB)	-	-	-	-	0.01	4	29	22	1	233(SW)	0.2	29	99.6
NO_2 (PPB)	159	-	0	-	1.72	7	11	5	4	241(WSW)	2.8	13	100.0
NO (PPB)	-	-	-	-	0.30	8	26	5	0.1	281(W)	0.8	26	100.0
NOx (PPB)	-	-	-	-	2.01	11	17	3	2.1	125(SE)	3.0	20	100.0
O_3 (PPB)	82	-	0	-	24.42	71	10	18	8.3	239(WSW)	32.8	3	100.0
THC (PPM)	-	-	-	-	2.26	4.0	12	4	0.5	228(SW)	2.8	12	100.0
PM 2.5 (UG/M^3)	-	30	-	3	16.57	203.6	13	2	6.6	1(N)	89.1	13	99.5
TEMPERATURE (DEG C)	-	-	-	-	19.14	31.9	10	15	7.5	210(SSW)	24.7	10	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	74.58	100	22	7	3.5	204(SSW)	86.8	3	100.0
VECTOR WS (KPH)	-	-	-	-	4.84	20.3	4	14	-	301(WNW)	10.2	4	100.0
VECTOR WD (DEGREES)	-	-	-	-	200(SSW)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS NA: NOT AVAILABLE

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

Passive Ambient Monitoring Network – July 2012

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO_2	#8, #27	1.2	0.47
H_2S	#27	0.66	0.25
NO_2	#10, #16	1.5	0.6
O_3	#32	33.9	22.2

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

Xontech Model 910A – July 2nd, 2012

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

Xontech Model 910A – July 8th, 2012

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

Xontech Model 910A – July 14th, 2012

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

Xontech Model 910A – July 20th, 2012

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

Xontech Model 910A – July 26th, 2012

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

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

PUF cartridge – July 2nd, 2012

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

PUF cartridge – July 8th, 2012

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

PUF cartridge – July 14th, 2012

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

PUF cartridge – July 20th, 2012

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

PUF cartridge – July 26th, 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 were observed during the month. The inlet filter was changed before the monthly calibration was started on July 5th. 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

The monthly calibration was performed on the analyzer on July 5th. The inlet filter was changed before the monthly calibration was started on July 5th. The analyzer spanned low on July 7th. Following the as found points check on July 9th, the permeation tube was changed. The new perm tube would not stabilize after it was installed. The as found points checks and the 3-points calibrations were performed on the analyzer multiple times between July 9th and July 29th. All results showed that the analyzer was in a good working condition. The perm tube was changed again on June 29th. After that, the daily span results were within the +/- 10% of the limited range. Data was corrected using daily zero information.

Ozone (PPB)
- Analyzer make / model –Thermo 49i, S/N: 700419951

No operational issues were observed during the month. The inlet filter was changed before the monthly calibration was started on July 5th. Data was corrected using daily zero information.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Total Hydrocarbon (PPM)

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

No operational issues were observed during the month. The inlet filter was changed before the monthly calibration was started on July 3rd. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

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

The monthly calibration was performed on July 5th. The inlet filter was changed before the monthly calibration was started. The analyzer spanned low on July 27th. Following the as found points check on July 29th, the permeation tube was replaced. The permeation tube was allowed time to stabilize. The expected span value was changed on August 3rd. Data was corrected using daily zero information.

Particulate Matter 2.5 (UG/M3)

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

No operational issues were observed this month. A routine Teom audit was performed on July 6th. Both the Teom filter and the FDMS filter were changed on July 6th. 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 invalid as the data were below –3 ug/m3. There were three 24-Hour PM2.5 contraventions recorded this month: reading of 89.1 ug/m3 on July 13th (AE Ref# 260734), reading of 55.3 ug/m3 on July 14th (AE Ref # 260776), and reading of 36.7 ug/m3 on July 16th (AE Ref # 260885).

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

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

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

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

Relative Humidity (PERCENT)

- System make / model - Rotronic Hygroclip-S3

No operational issues were observed during the month.

Ambient Temperature (DEGC)

- System make / model - Rotronic Hygroclip-S3

No operational issues were observed during the month.

Trailer Temperature (DEGC)

- System make / model - R&R 61

No operational issues were 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

The manifold was cleaned on July 5th.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Air Quality Index (AQI)
No AQI report is included in this report, as the AQI value is no longer used by Alberta Environment.

Passive Network
The 10% duplicate sampling program was run this month.
No issue was recorded this month.

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

Polycyclic Aromatic Hydrocarbons (PAHs)
The PAHs scheduled to be sampled on July 2nd to July 26th. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the PAHs in this report were reported as ng/m3.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

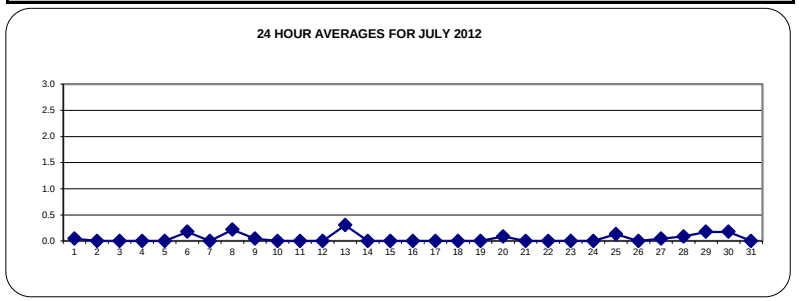
SULPHUR DIOXIDE (SO_2) hourly averages in ppb

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	0	0	0	1	0	0	0	0	0	IZS	0	0	0	1	0.0	24
2	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
3	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
4	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
5	0	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0.0	24
6	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	IZS	0	0	0	0	0	0	0	0	1	0.2	24
7	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
8	0	0	0	0	0	0	0	0	0	0	0	1	1	IZS	1	1	1	0	0	0	0	0	0	0	1	0.2	24
9	0	0	0	0	0	0	1	0	0	0	0	0	IZS	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	0	0	IZS	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	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
13	1	1	**2**	1	1	0	0	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**	**0.3**	24
14	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
15	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
16	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
17	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
18	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
19	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
20	0	IZS	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
21	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
22	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
23	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
24	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
25	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	IZS	0	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	IZS	0	0	0	0	0	0	0.0	24
27	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	IZS	0	0	0	0	0	0	1	0.0	24
28	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	0.1	24
29	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	IZS	0	0	0	0	0	0	0	0	1	0.2	24
30	0	0	0	0	0	0	0	0	0	0	0	1	1	1	IZS	1	0	0	0	0	0	0	0	0	1	0.2	24
31	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
HOURLY MAX	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0			
HOURLY AVG	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	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	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

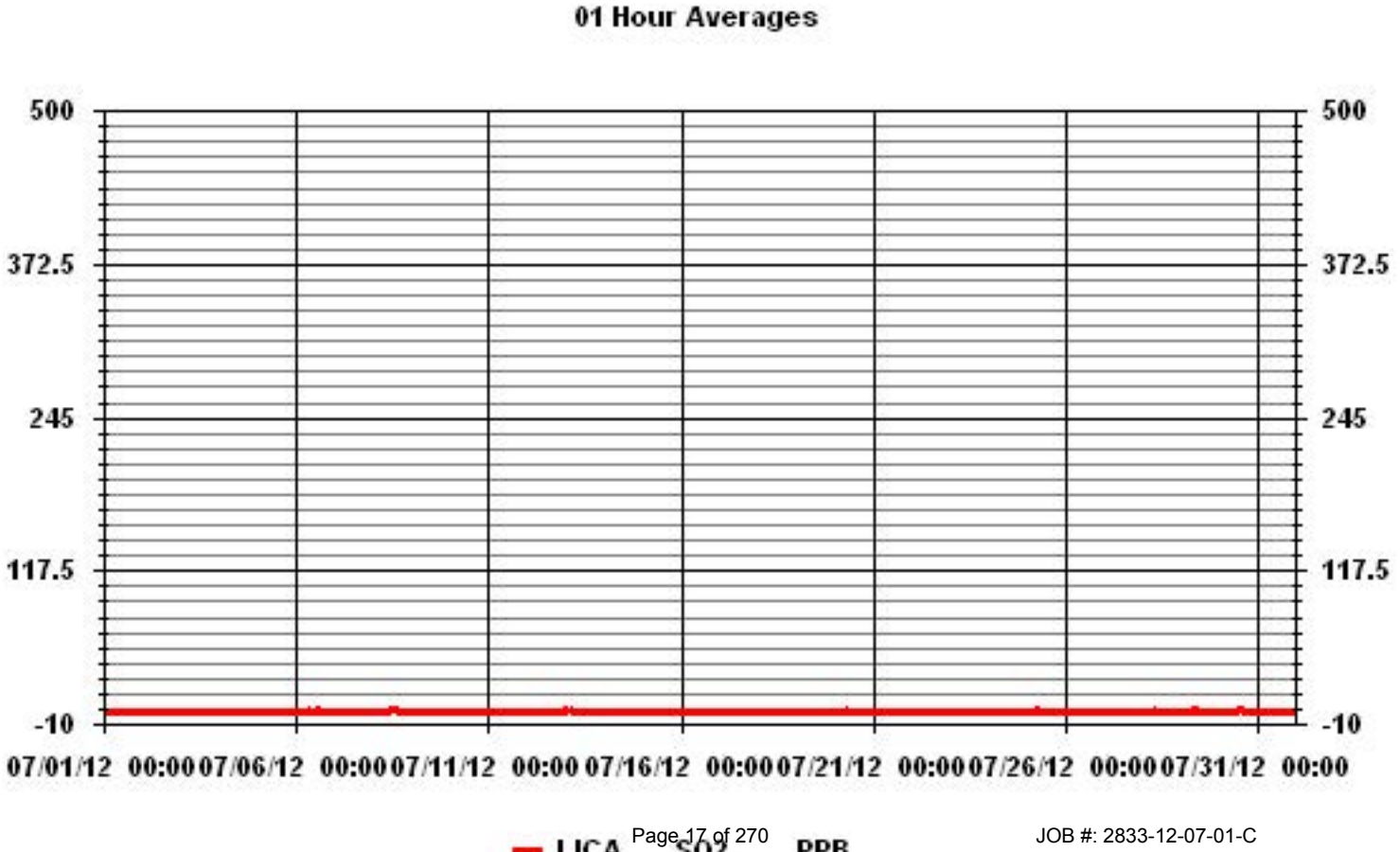


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB | 24-HR 48 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	33					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	2	ON DAY(S)	13
MAXIMUM 24-HR AVERAGE:	0.3	PPB			ON DAY(S)	13
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.22		MONTHLY AVERAGE:		0.05	PPB

JOB #: 2833-12-07-01-C



JOB #: 2833-12-07-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

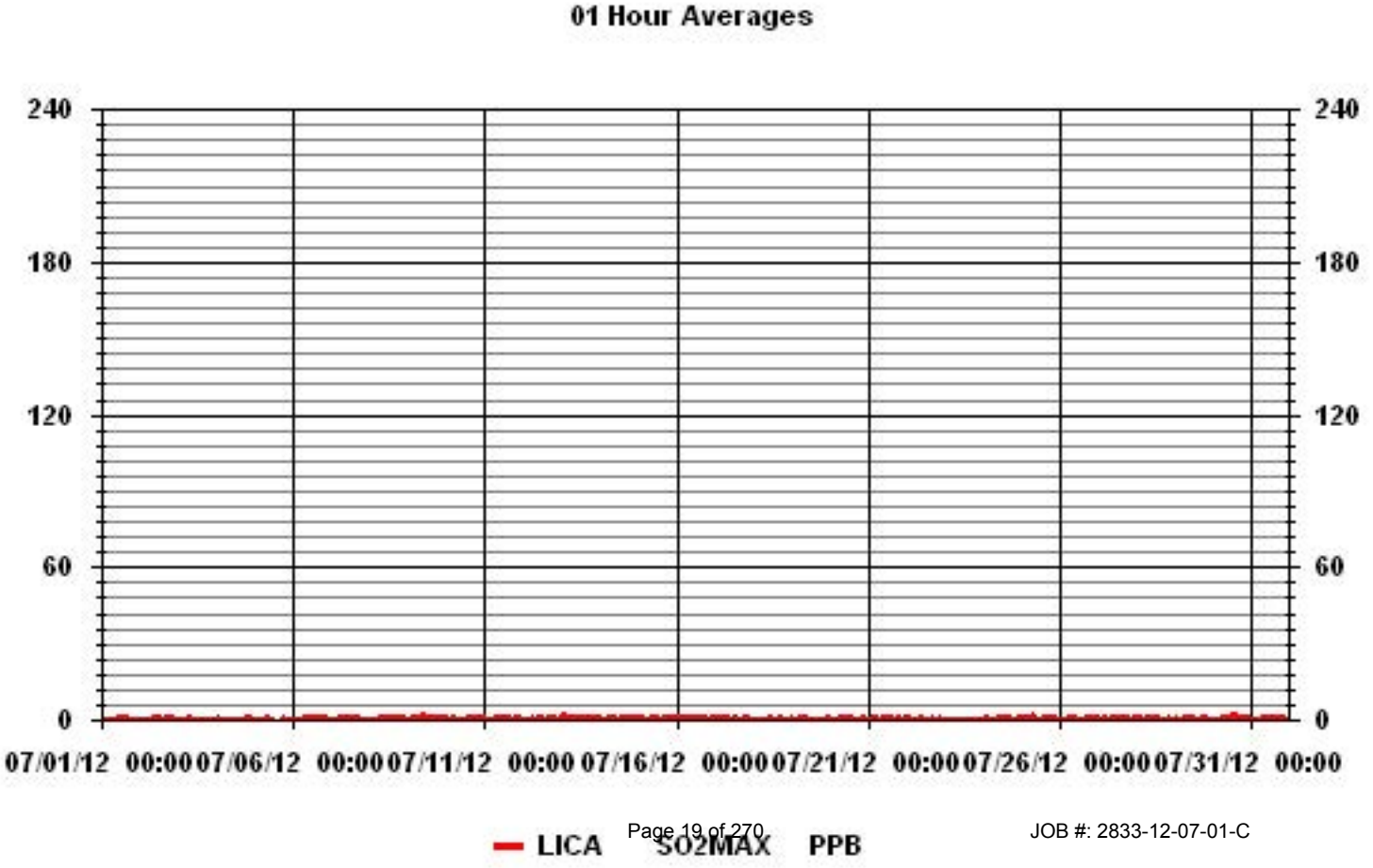
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00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

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	303					
MAXIMUM INSTANTANEOUS VALUE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.51					



JOB #: 2833-12-07-01-C

LICA
SO2_ / WDR Joint Frequency Distribution (Percent)

July 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	2.67	2.96	2.82	3.94	3.80	5.50	21.29	5.78	5.21	4.93	10.43	13.68	9.02	4.65	1.83	1.41	100.00
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.67	2.96	2.82	3.94	3.80	5.50	21.29	5.78	5.21	4.93	10.43	13.68	9.02	4.65	1.83	1.41	

Calm : .00 %

Total # Operational Hours : 709

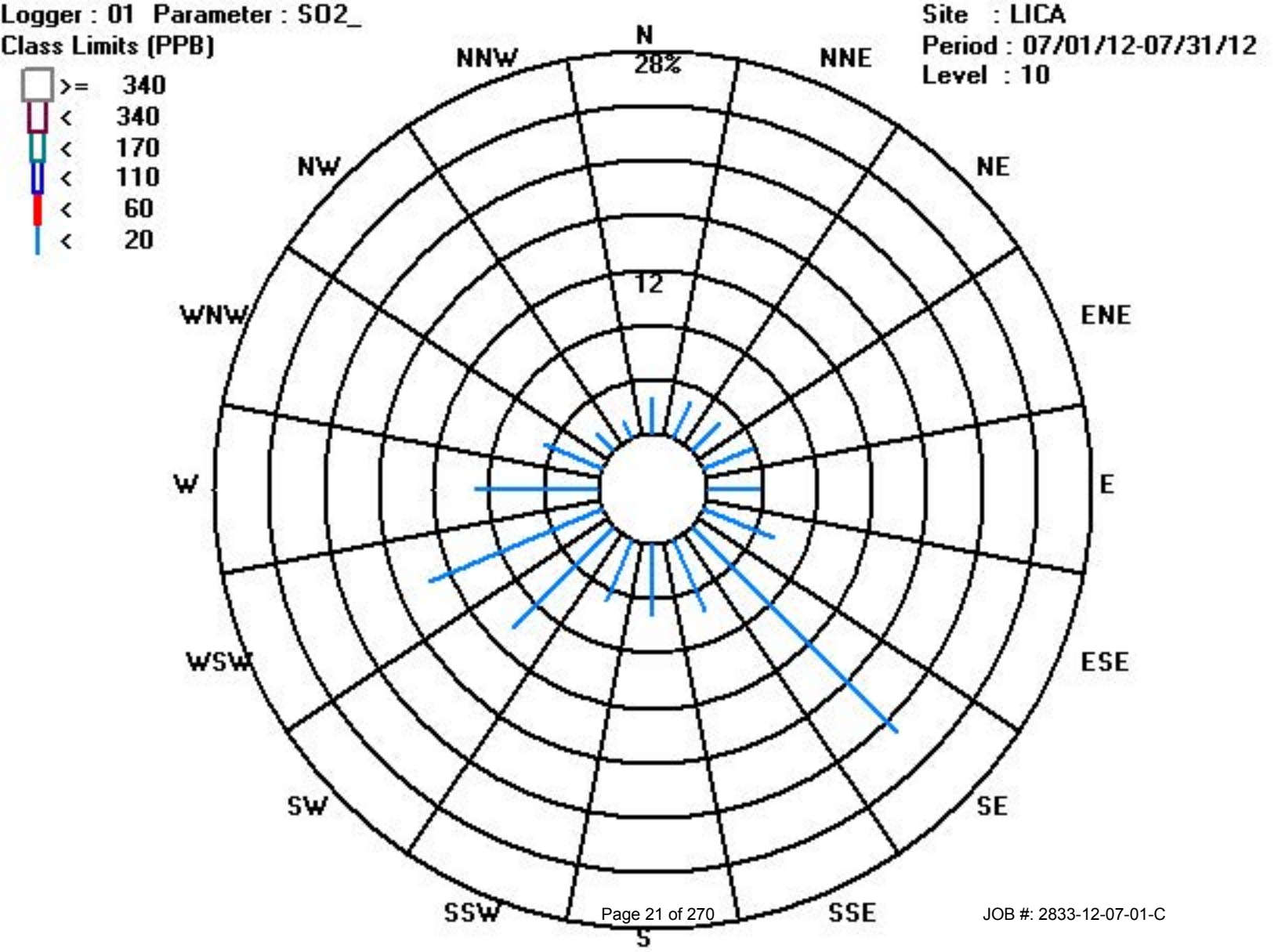
Distribution By Samples

Direction

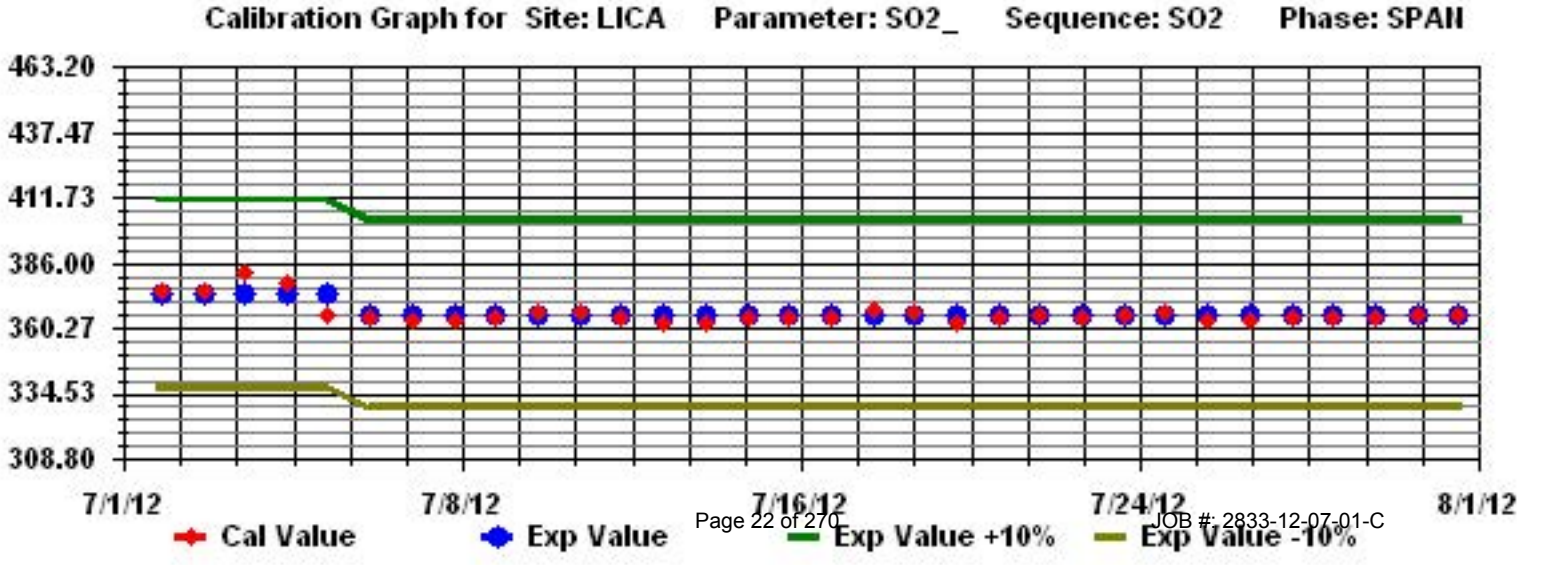
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	19	21	20	28	27	39	151	41	37	35	74	97	64	33	13	10	709
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	19	21	20	28	27	39	151	41	37	35	74	97	64	33	13	10	

Calm : .00 %

Total # Operational Hours : 709



JOB #: 2833-12-07-01-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
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Reduced Sulphur

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

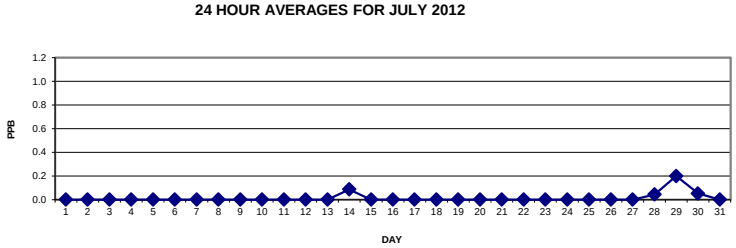
TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

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	0	0	**IZS**	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	**IZS**	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	**IZS**	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	**IZS**	0	0	0	0	0	0	0	0.0	24
5	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0.0	24
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0.0	24
9	0	0	0	0	0	0	0	0	**C**	**C**	**M**	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23
10	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	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	**IZS**	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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
14	1	1	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	24
15	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
16	0	0	0	0	0	**IZS**	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0	0.0	24
17	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
18	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
19	0	0	**IZS**	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0	0	0.0	24
20	0	**IZS**	0	0	0	0	0	0	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
21	**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
22	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
23	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
24	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
25	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
26	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
27	0	0	0	0	0	0	0	**C**	0	0	0	**C**	**M**	**M**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0.0	22
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	1	0	0	1	0.0	24
29	0	0	0	0	0	0	0	**C**	**C**	**C**	0	0	0	0	0	**IZS**	0	0	0	0	0	0	**4**	0	**4**	**0.2**	24
30	0	0	0	0	0	0	1	**C**	**C**	**C**	**C**	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	1	0.1	24
31	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
HOURLY MAX	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	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	0.1	0.0			

STATUS FLAG CODES

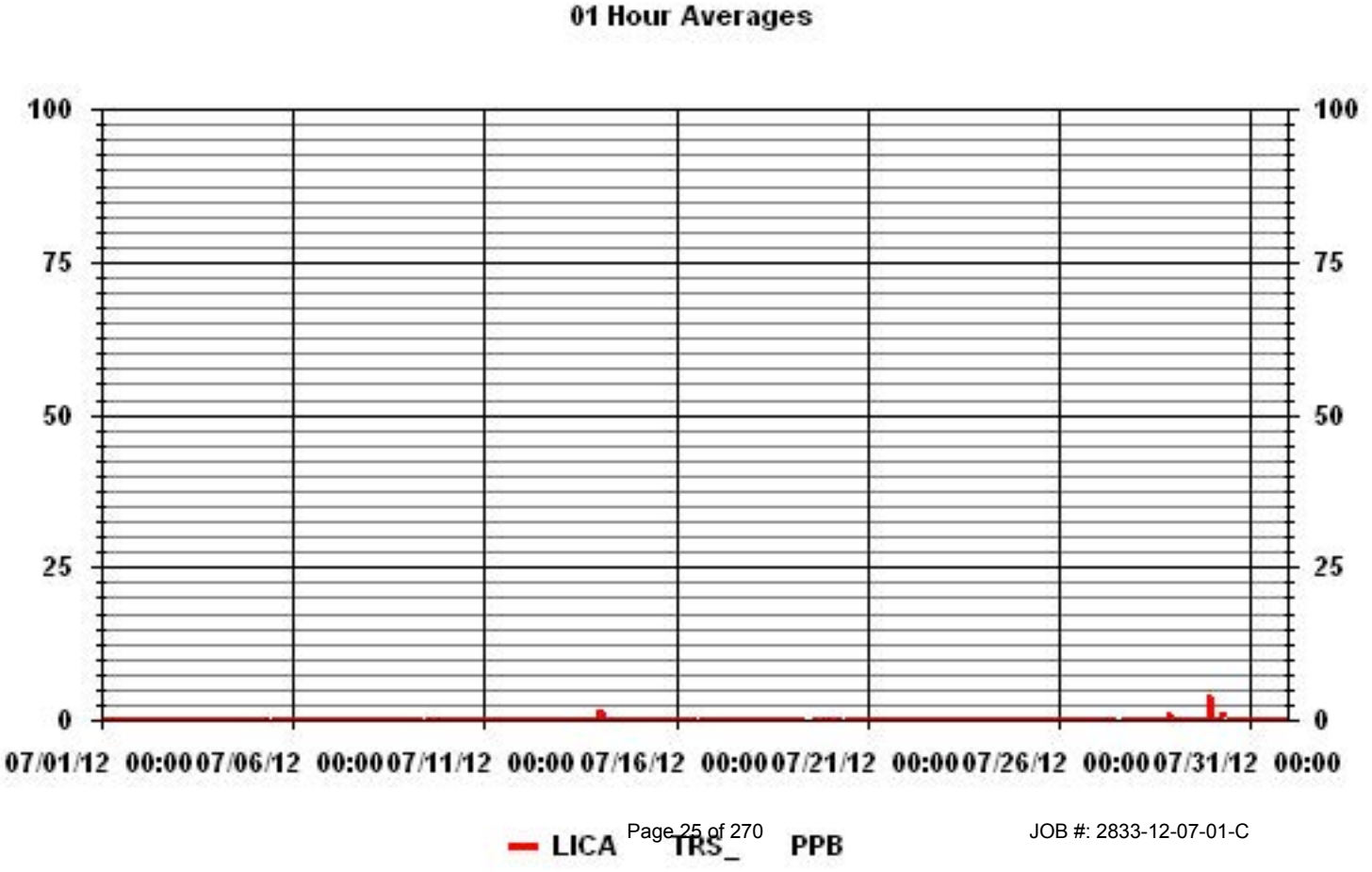
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	5					
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	22	ON DAY(S)	29
MAXIMUM 24-HR AVERAGE:	0.2	PPB			ON DAY(S)	29
				VAR-VARIOUS		

IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	741	HRS
MONTHLY CALIBRATION TIME:	37	HRS	AMD OPERATION UPTIME:	99.6	%
STANDARD DEVIATION:	0.17		MONTHLY AVERAGE:	0.01	PPB



JOB #: 2833-12-07-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

TOTAL REDUCED SULPHUR MAX instantaneous maximum in ppb

MST

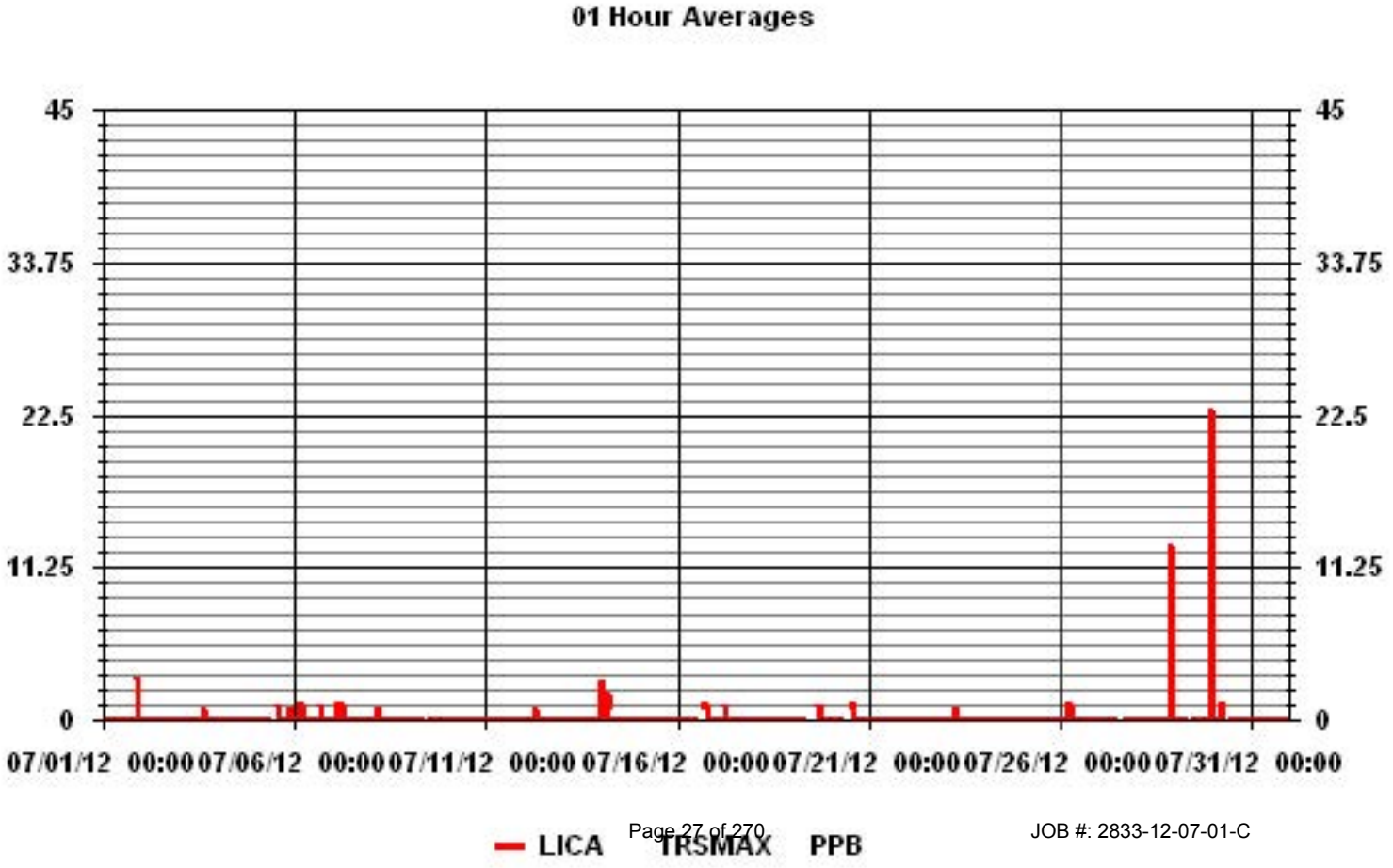
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	3	0	0	3	0.1	24
2	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
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**IZS**	0	0	0	0	0	1	0.0	24
4	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
5	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	1	0	0	**IZS**	0	0	0	0	1	0	0	1	0.1	24
6	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	**IZS**	1	0	0	0	0	0	0	0	1	0.1	24
7	0	0	0	1	1	1	1	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	1	0.2	24
8	0	0	0	0	1	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	1	0.0	24
9	0	0	0	0	0	0	0	0	**C**	**C**	**M**	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23
10	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	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	1	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
13	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
14	3	1	1	0	2	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.4	24
15	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
16	0	0	0	0	0	**IZS**	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	1	1	0	0	0	0	0	1	0.1	24
17	0	0	0	0	**IZS**	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
18	0	0	0	**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
19	0	0	**IZS**	0	0	0	0	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	0	0	0	0	0	0	0	1	0.1	24
20	0	**IZS**	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	**C**	1	1	0	0	0	0	0	0	0	0	0	1	0.1	24
21	**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
22	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
23	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	1	0.0	24
24	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
25	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
26	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	1	0.1	24
27	0	0	0	0	0	0	**C**	**C**	0	0	0	**C**	**M**	**M**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0.0	22
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	13	0	0	13	0.6	24
29	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	0	0	0	0	**IZS**	0	0	0	0	0	0	**23**	0	**23**	1.2	24
30	0	0	0	0	0	1	1	**C**	**C**	**C**	**C**	**C**	0	0	**IZS**	0	0	0	0	0	0	0	0	0	1	0.1	24
31	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
HOURLY MAX	3	1	1	1	2	1	1	1	0	0	0	0	0	1	1	1	1	1	1	0	0	13	23	0			
HOURLY AVG	0.1	0.0	0.0	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.6	0.8	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:	32					
MAXIMUM INSTANTANEOUS VALUE:	23	PPB	@ HOUR(S)	22	ON DAY(S)	29
				VAR - VARIOUS		
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:			741 HRS
MONTHLY CALIBRATION TIME:	43	HRS				
STANDARD DEVIATION:	1.05					



JOB #: 2833-12-07-01-C

LICA
TRS_ / WDR Joint Frequency Distribution (Percent)

July 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	2.67	3.12	2.97	4.16	4.01	5.79	21.24	5.94	5.34	4.90	9.80	13.52	8.17	4.75	1.93	1.48	99.85
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.14
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.67	3.12	2.97	4.16	4.01	5.79	21.24	5.94	5.34	4.90	9.95	13.52	8.17	4.75	1.93	1.48	

Calm : .00 %

Total # Operational Hours : 673

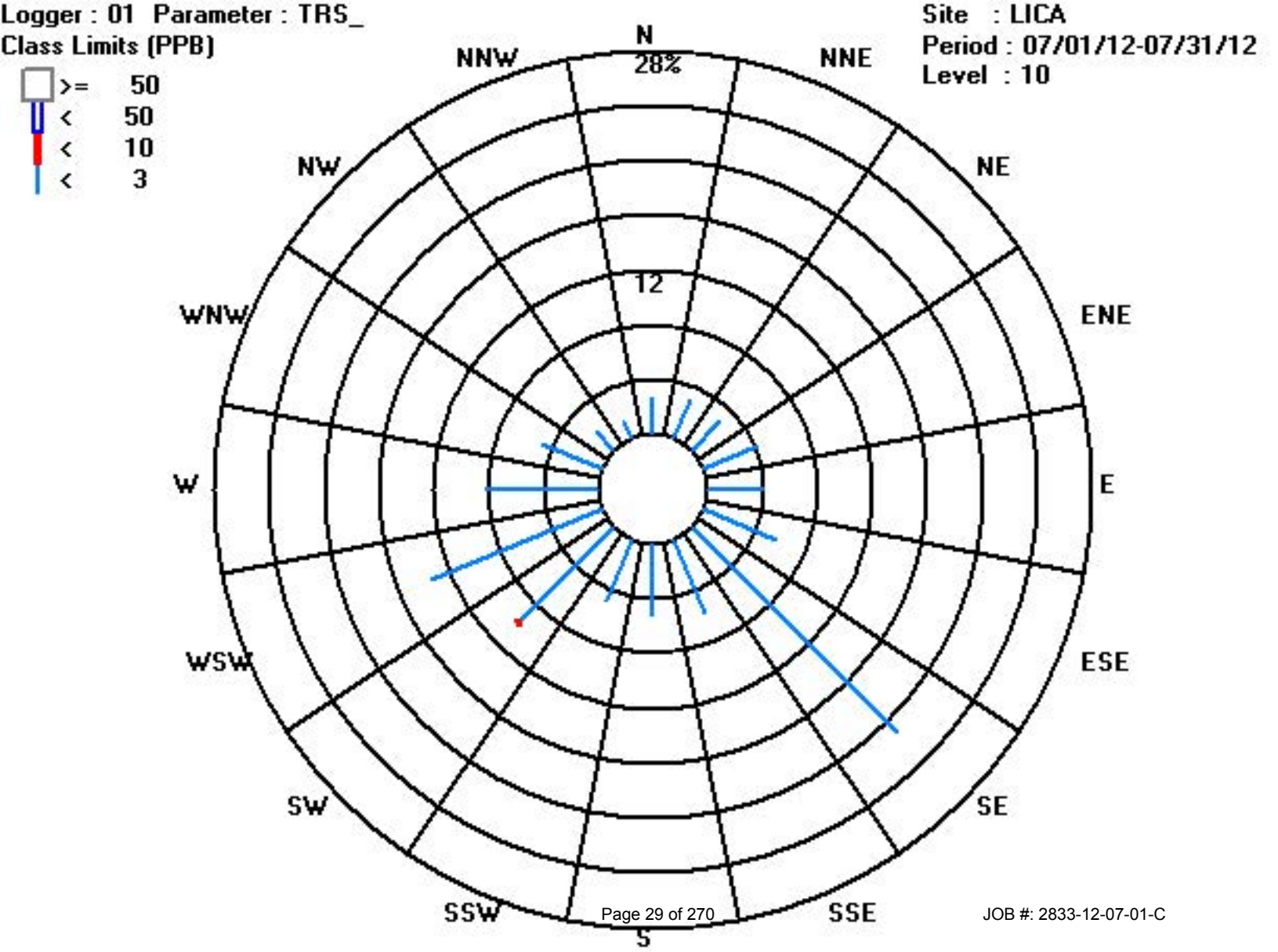
Distribution By Samples

Direction

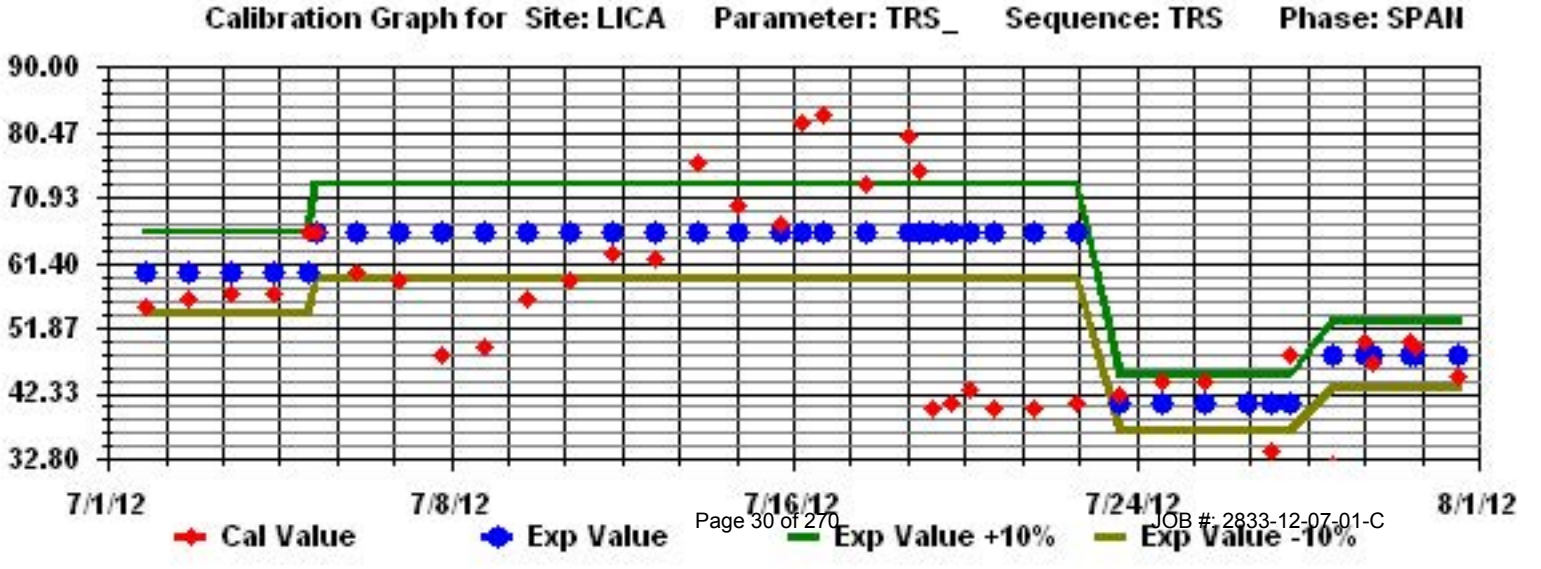
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	18	21	20	28	27	39	143	40	36	33	66	91	55	32	13	10	672
< 10											1						1
< 50																	
>= 50																	
Totals	18	21	20	28	27	39	143	40	36	33	67	91	55	32	13	10	

Calm : .00 %

Total # Operational Hours : 673



JOB #: 2833-12-07-01-C


Calibration Graph for Site: LICA Parameter: TRS_ Sequence: TRS Phase: SPAN
90.00
80.47
70.93
61.40
51.87
42.33
32.80
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

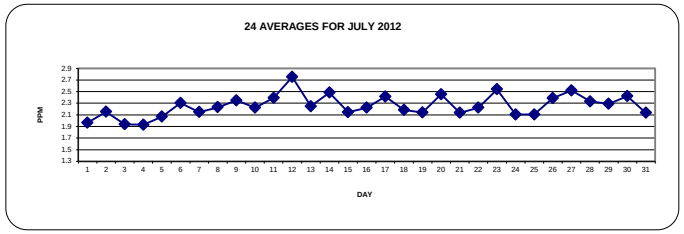
TOTAL HYDROCARBONS (THC) hourly averages in ppm

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	2.1	2.1	2.2	2.2	2	1.9	1.9	1.9	1.9	1.9	1.9	2	2.1	2	1.9	2	1.9	1.8	1.8	1.8	**IZS**	1.9	1.9	2.1	2.2	2.0	24
2	2.4	2.7	2.6	2.5	2.6	2.5	2.5	2.4	2.2	2	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	**IZS**	2.1	2	1.9	1.9	2.7	2.2	24
3	1.9	1.9	1.9	2	2.1	2	2	1.9	1.9	1.9	1.9	1.9	**C**	**C**	**C**	**C**	**C**	1.9	**IZS**	1.9	1.9	1.9	2	2	2.1	1.9	24
4	1.9	1.9	1.9	1.9	2	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	**IZS**	1.9	1.9	1.9	2	2	2	2.0	1.9	24
5	2	2	2.2	2.2	2.2	2.3	2.2	2	2.1	2.1	2.1	2	2	2	2	2	**IZS**	1.9	1.9	2	2	2.1	2.1	2.2	2.3	2.1	24
6	2.4	2.6	2.6	2.8	2.9	3	3	3	2.7	2.4	2.1	2.1	2	2	2	**IZS**	1.9	1.9	1.9	1.9	1.9	2	1.9	2	3.0	2.3	24
7	2.1	2.1	2.3	2.4	2.5	2.5	2.4	2.3	2.2	2.2	2.1	2	2	2	**IZS**	2	2	2.1	2.1	2.3	1.9	1.9	2	2	2.5	2.1	24
8	2.1	2.2	2.3	2.3	2.4	2.3	2.2	2.3	2.2	2.2	2.2	2.1	2.1	**IZS**	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.2	24
9	2.5	2.5	2.7	2.7	2.6	2.6	2.5	2.5	2.5	2.4	2.3	2.2	**IZS**	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.4	2.3	2.2	2.1	2.7	2.3	24
10	2.2	2.2	2.4	2.6	2.6	2.6	2.3	2.4	2.3	2.3	2.2	**IZS**	2.1	2	2.2	2.3	2	2	2	2.1	2	2	2.1	2.2	2.6	2.2	24
11	2.2	2.3	2.4	2.6	2.8	3.4	3.1	2.6	2.3	2.1	**IZS**	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.5	2.6	2.8	3.4	2.4	24
12	3.1	3	3.2	3.6	**4**	3.9	3.7	3.3	3.2	**IZS**	2.4	2.7	2.7	2.3	2	2	2.1	2.1	2.2	2.2	2.3	2.4	2.5	2.4	**4.0**	**2.8**	24
13	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.2	**IZS**	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.4	2.6	2.8	2.8	2.8	2.2	24
14	2.8	2.9	2.9	3.1	3.3	3	2.6	**IZS**	2.5	2.5	2.3	2.3	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	3.3	2.5	24
15	2.2	2.2	2.3	2.3	2.3	2.3	**IZS**	2.3	2.3	2.2	2.1	2.1	2.1	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1	24
16	2.1	2.2	2.2	2.2	2.3	**IZS**	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.5	2.6	2.6	2.2	24
17	2.7	2.8	2.9	2.9	**IZS**	3	3.1	3.1	2.8	2.3	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	3.1	2.4	24
18	2.2	2.2	2.3	**IZS**	2.2	2.2	2.3	2.3	2.3	2.2	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2	2	2	2	2.1	2.2	2.3	2.3	2.2	24
19	2.4	2.3	**IZS**	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2.1	2.1	2	2	2	2	2.1	2.2	2.2	2.3	2.4	2.4	2.1	24
20	2.7	**IZS**	2.9	2.9	3.2	3.1	3	2.8	2.5	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.4	2.4	3.2	2.5	24
21	**IZS**	2.4	2.4	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	2	1.9	1.9	1.9	2	2.3	2.4	**IZS**	2.4	2.1	24
22	2.2	2.3	2.4	2.4	2.3	2.4	2.3	2.3	2.3	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2.1	2.2	**IZS**	2.7	2.7	2.2	24
23	2.9	2.9	2.8	3.1	3.7	3.8	3.9	3.1	2.7	2.3	2.3	2.3	2.2	2.1	2	2	2	2	2.1	2.1	2.1	**IZS**	2	2	3.9	2.5	24
24	2	2	2	2.1	2.2	2.3	2.3	2.2	2.1	2.1	2	2	2	2	2.2	2.1	2	2	2.1	2.1	**IZS**	2.3	2.2	2.1	2.3	2.1	24
25	2.2	2.3	2.7	2.2	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	**IZS**	2.1	2.1	2.1	2.3	2.7	2.1	24
26	2.3	2.6	2.6	2.6	2.7	3.2	2.6	2.3	2.3	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.2	2.1	**IZS**	2.2	2.3	2.4	2.5	2.6	3.2	2.4	24
27	2.9	3	3.2	3.3	3.2	3.5	3.1	2.7	2.6	2.4	2.2	2.1	2.1	2.2	2.2	2.2	2.1	**IZS**	2.1	2.2	2.3	2.1	2.1	2.1	3.5	2.5	24
28	2.2	2.4	2.6	2.9	2.8	3	3	2.6	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	**IZS**	2	2	2	2	2.1	2.2	2.2	3.0	2.3	24
29	2.2	2.2	2.3	2.3	2.4	2.6	2.9	2.8	2.6	2.3	2.2	2.2	2.1	2.1	2.1	**IZS**	2	2	2	2.1	2.1	2.2	2.4	2.6	2.9	2.3	24
30	2.9	2.9	3	3.1	3.2	3.5	3.5	2.7	2.4	2.2	2.1	2	2	2.1	**IZS**	2.1	2	2	2	2.1	2	1.9	2	2	3.5	2.4	24
31	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.2	2.1	2	2.1	2	2	**IZS**	1.9	1.9	2	2	2	2	2.2	2.3	2.5	2.5	2.5	2.1	24
HOURLY MAX	3.1	3.0	3.2	3.6	4.0	3.9	3.9	3.3	3.2	2.5	2.4	2.7	2.7	2.3	2.3	2.3	2.2	2.2	2.2	2.3	2.4	2.5	2.6	2.8			
HOURLY AVG	2.3	2.4	2.5	2.5	2.6	2.7	2.6	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3			

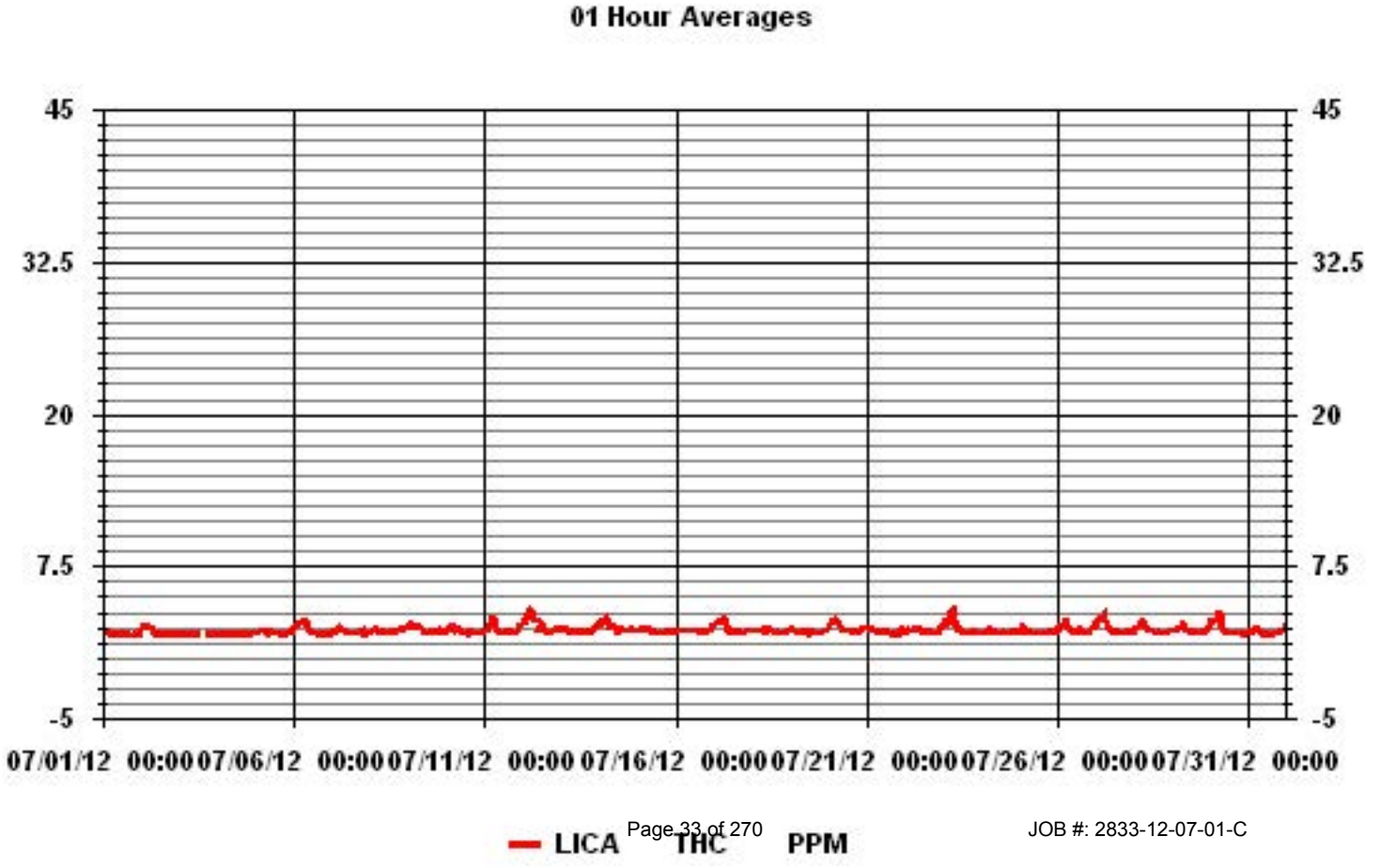
STATUS FLAG CODES

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:	707						
MAXIMUM 1-HR AVERAGE:	4.0	PPM	@ HOUR(S)	4	ON DAY(S)	12	
MAXIMUM 24-HR AVERAGE:	2.8	PPM			ON DAY(S)	12	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	0.34		MONTHLY AVERAGE:		2.26	PPM	



JOB #: 2833-12-07-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

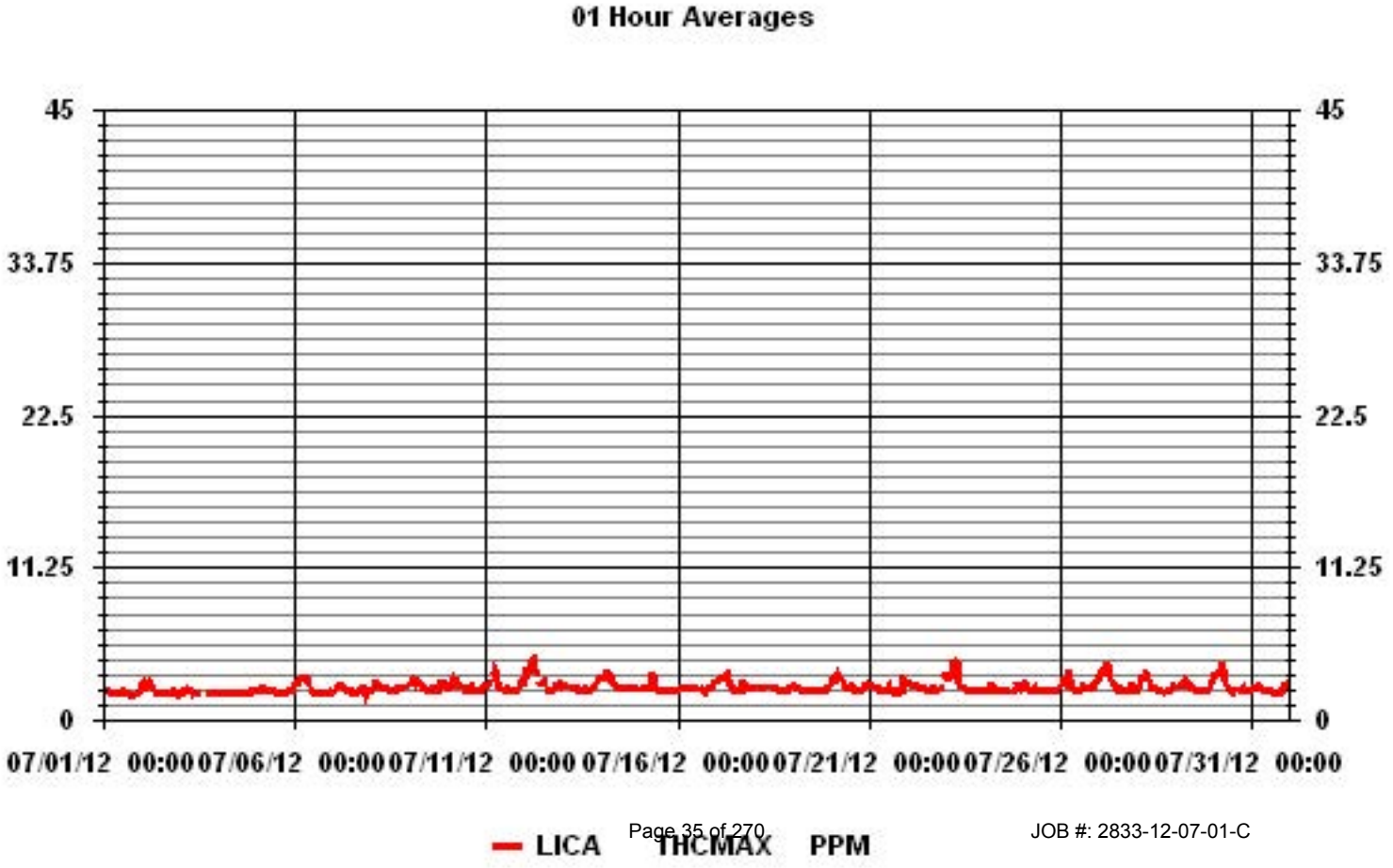
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2.2	2.2	2.3	2.2	2.1	2	2	2	2	2	2	2.1	2.2	2.1	2	2.1	2	1.8	1.8	1.9	**IZS**	2	2.1	2.2	2.3	2.1	24
2	2.7	2.9	2.8	2.6	2.8	2.6	2.5	2.5	2.3	2.1	2	2	2	2	2	2	2	2	2	**IZS**	2.2	2.1	2	1.9	2.9	2.3	24
3	2	2	2.1	2.1	2.3	2.1	2.1	2.1	1.9	2	2	2	**C**	**C**	**C**	**C**	**C**	1.9	**IZS**	2	2	2.1	2	2	2.3	2.0	24
4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	**IZS**	1.9	1.9	1.9	2.1	2.1	2.1	2.1	2.0	24
5	2.1	2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.2	2	2	2.1	2	**IZS**	2	2	2.1	2.2	2.1	2.1	2.4	2.4	2.2	24
6	2.6	2.6	2.8	3	3	3.2	3.3	3.2	2.8	2.6	2.2	2.2	2.1	2	2	**IZS**	1.9	1.9	1.9	2	2	2.2	2	2.1	3.3	2.4	24
7	2.1	2.2	2.4	2.5	2.6	2.7	2.6	2.4	2.4	2.2	2.2	2.1	2.1	2	**IZS**	2	2.1	2.1	2.2	2.5	1.9	2.1	2.3	2.2	2.7	2.3	24
8	2.2	2.3	2.8	2.7	2.7	2.5	2.4	2.4	2.3	2.3	2.3	2.3	2.2	**IZS**	2.2	2.2	2.3	2.3	2.3	2.5	2.4	2.4	2.5	2.6	2.8	2.4	24
9	2.6	2.7	3.1	3	2.7	2.9	2.7	2.5	2.6	2.5	2.4	2.3	**IZS**	2.2	2.4	2.3	2.3	2.2	2.2	2.4	3	2.7	2.4	2.4	3.1	2.5	24
10	2.3	2.4	2.8	3.1	2.9	3.2	2.5	2.5	2.5	2.4	2.4	**IZS**	2.2	2.2	2.4	2.5	2.1	2.1	2.2	2.2	2.2	2.2	2.5	2.4	3.2	2.4	24
11	2.4	2.6	2.7	2.9	3	3.7	3.5	2.9	2.6	2.3	**IZS**	2.2	2.3	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.4	2.8	3	2.9	3.7	2.6	24
12	3.4	3.2	3.4	3.9	4.4	4.5	3.8	3.7	3.4	**IZS**	2.7	2.8	2.9	2.6	2.2	2.2	2.2	2.2	2.3	2.5	2.5	2.7	2.8	2.5	4.5	3.0	24
13	2.6	2.5	2.5	2.4	2.4	2.4	2.5	2.4	**IZS**	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.3	2.4	2.6	2.7	2.9	3	3	2.4	24
14	3.2	3.1	3.1	3.3	3.7	3.4	3	**IZS**	2.6	2.6	2.6	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.4	2.5	2.4	2.3	3.7	2.7	24
15	2.3	2.4	2.4	2.4	2.5	2.4	**IZS**	2.4	3.2	3.2	2.3	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	3.2	2.3	24
16	2.3	2.4	2.3	2.3	2.5	**IZS**	2.4	2.3	2.4	2.4	2.3	2.3	2.4	2.4	2.3	2.3	2.2	2.1	2.3	2.4	2.3	2.4	2.8	2.8	2.8	2.4	24
17	2.8	3	3.1	3.1	**IZS**	3.1	3.3	3.4	3.1	2.7	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.9	2.6	2.3	2.3	2.4	2.3	2.3	3.4	2.6	24
18	2.4	2.4	2.4	**IZS**	2.4	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.2	2.2	2.4	2.4	2.4	2.3	24
19	2.5	2.5	**IZS**	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	2.2	2.2	2.2	2.4	2.3	2.5	2.6	2.6	2.3	24
20	3	**IZS**	3.2	3.1	3.5	3.3	3.2	3	2.7	2.5	2.4	2.3	2.3	2.7	2.4	2.2	2.2	2.2	2.2	2.3	2.5	2.5	2.7	2.8	3.5	2.7	24
21	**IZS**	2.6	2.6	2.5	2.4	2.3	2.3	2.3	2.2	2.3	2.2	2.2	2.5	2.2	2.2	2.1	2.1	2	2	2.1	2.1	3	2.9	**IZS**	3	2.3	24
22	2.8	2.7	2.6	2.5	2.5	2.6	2.5	2.5	2.4	2.5	2.4	2.3	2.3	2.2	2.2	2.2	2.5	2.1	2.1	2.2	2.3	2.4	**IZS**	3.3	3.3	2.4	24
23	3.1	3.1	3.2	3.5	4.2	4.2	**4.5**	4.4	2.8	2.5	2.5	2.4	2.3	2.3	2.2	2.2	2.2	2.1	2.2	2.2	2.2	**IZS**	2.1	2.1	**4.5**	2.8	24
24	2.1	2.1	2.2	2.2	2.5	2.5	2.5	2.3	2.2	2.2	2.1	2.2	2.2	2.2	2.3	2.2	2.1	2.1	2.2	2.2	**IZS**	2.7	2.5	2.3	2.7	2.3	24
25	2.4	2.7	3	2.3	2.2	2.3	2.2	2.4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**IZS**	2.3	2.2	2.3	2.4	3	2.3	24
26	2.5	3	3	2.8	3.1	3.7	3.2	2.4	2.4	2.3	2.2	2.2	2.3	2.5	2.5	2.4	2.3	2.3	**IZS**	2.4	2.5	2.5	2.7	2.9	3.7	2.6	24
27	3.5	3.4	3.4	3.8	3.5	4.2	3.4	3	2.7	2.7	2.3	2.2	2.2	2.3	2.3	2.3	2.2	**IZS**	2.2	2.3	2.5	2.5	2.2	2.2	4.2	2.8	24
28	2.4	2.6	3.1	3.1	3.1	3.4	3.3	3	2.5	2.4	2.3	2.3	2.3	2.3	2.2	2.2	**IZS**	2.1	2.2	2.2	2.2	2.3	2.5	2.5	3.4	2.5	24
29	2.4	2.4	2.4	2.4	2.6	2.8	3.1	3	2.9	2.6	2.4	2.3	2.3	2.2	2.2	**IZS**	2.1	2.1	2.2	2.2	2.2	2.4	2.8	2.8	3.1	2.5	24
30	3.5	3.2	3.3	3.4	3.6	4.2	3.9	3.1	2.6	2.3	2.3	2.2	2.1	2.3	**IZS**	2.3	2.1	2.1	2.2	2.4	2.1	2.1	2.1	2.2	4.2	2.7	24
31	2.3	2.3	2.3	2.4	2.5	2.5	2.4	2.3	2.2	2.2	2.2	2.1	2.1	**IZS**	2.1	2	2	2	2.1	2.1	2.5	2.5	2.8	2.7	2.8	2.3	24
HOURLY MAX	4	3	3	4	4	5	5	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3			
HOURLY AVG	2.6	2.6	2.7	2.7	2.8	2.9	2.8	2.6	2.5	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.3	2.4	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:	707					
MAXIMUM INSTANTANEOUS VALUE:	4.5	PPM	@ HOUR(S)	6	ON DAY(S)	23
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.43					



JOB #: 2833-12-07-01-C

LICA
THC / WD Joint Frequency Distribution (Percent)

July 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	2.54	2.97	2.54	3.81	3.39	5.37	20.08	5.51	4.66	3.96	9.90	12.72	8.91	4.66	1.69	1.27	94.05
<	10.0	.14	.00	.28	.14	.42	.00	.99	.00	.56	.99	.56	1.41	.14	.00	.14	.14	5.94
<	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.68	2.97	2.82	3.96	3.81	5.37	21.07	5.51	5.23	4.95	10.46	14.14	9.05	4.66	1.83	1.41	

Calm : .00 %

Total # Operational Hours : 707

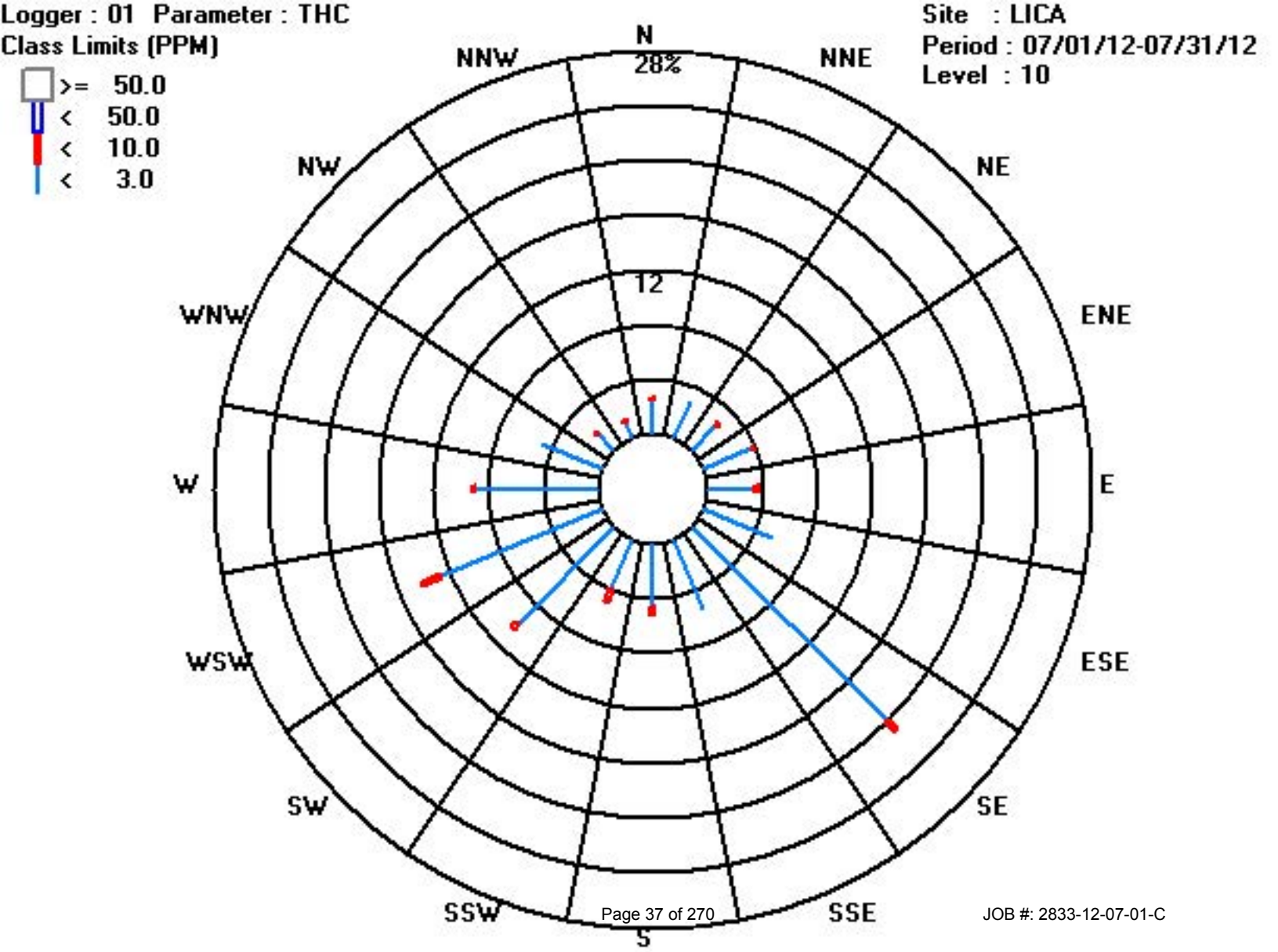
Distribution By Samples

Direction

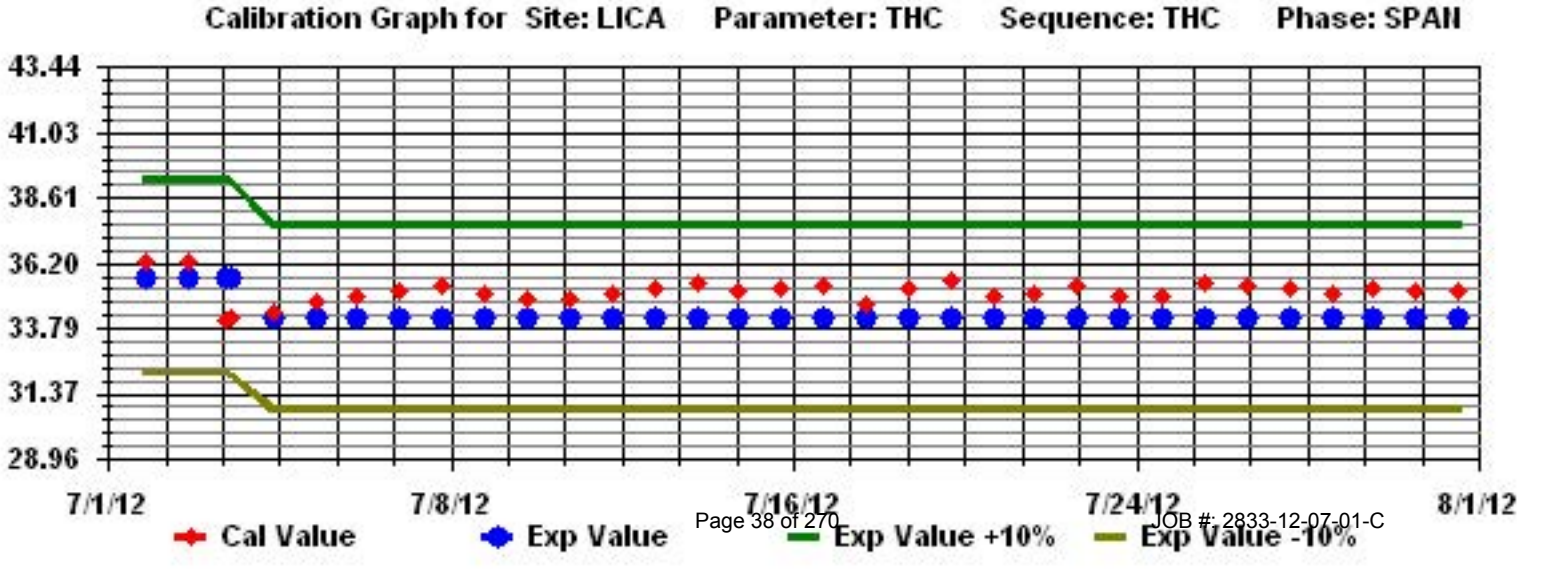
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	18	21	18	27	24	38	142	39	33	28	70	90	63	33	12	9	665
<	10.0	1		2	1	3		7		4	7	4	10	1		1	1	42
<	50.0																	
>=	50.0																	
	Totals	19	21	20	28	27	38	149	39	37	35	74	100	64	33	13	10	

Calm : .00 %

Total # Operational Hours : 707



JOB #: 2833-12-07-01-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
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

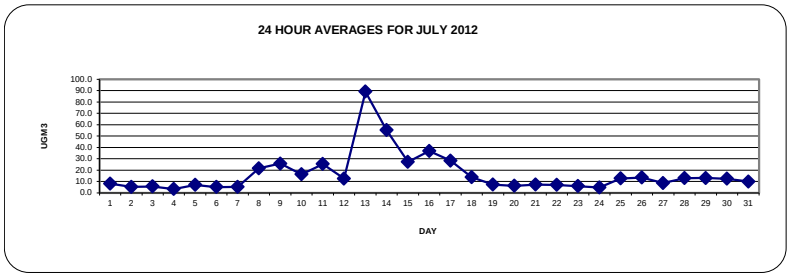
PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m^3

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	26	30	26.5	35	0.5	7	0	3.4	0	4	5.5	12.5	0.5	9	5.5	12	6	1	3.4	0	0	1.4	0	2.9	35.0	8.0	24
2	3.4	2	4.4	6	5	5.5	7.5	9.4	0.5	4	4.4	2.9	5.5	7	1.4	9.4	8.4	9.4	1	5	12	9	0	1	12.0	5.2	24
3	0	7	0	5	2	1.4	5	6.5	8	6	1.4	2.9	3.4	4.4	6.5	7.9	31	20.5	0	2.5	5.5	3.4	2.9	1	31.0	5.6	24
4	1.9	1	1.4	0	1.9	2	0	0	1.9	**C**	7	1	1.9	0	7.9	4.4	7.9	1	6	6.5	7.9	4	5.5	4	7.9	3.3	24
5	4.4	4	6.5	0	6	5	22.5	30	17.5	1	8.9	1.4	2.4	1.9	8.9	4	6.5	3.4	5.5	4.4	7	4	7.5	6.5	30.0	7.1	24
6	9	4.4	5.5	6.5	9.5	5.5	6.5	7.5	9.4	6.5	9	**N**	**N**	4.4	8.4	0	5	1.4	2.9	0.5	1	3.4	4	1.4	9.5	5.1	22
7	2.9	6.5	9	4	4	2.9	6	6	3.4	7.9	7.9	0.5	1.9	4	3.4	1.9	6	9	7.9	9	4.4	2.9	7	5.5	9.0	5.2	24
8	9.9	4	7.9	6	6.5	6	9.9	23.5	23	24	25.5	22.5	26.5	35.5	27.4	26	31.5	23	34	37	26	26.5	28	26.5	37.0	21.5	24
9	27.9	29	30	29.5	33	32.5	28	30.5	16.5	27.4	23.5	23	17.5	20.5	22.5	23.5	30	24	23.5	26.5	29	28.5	19.5	21.5	33.0	25.7	24
10	20	18	17.5	18.5	17	18.5	17.5	18	18	13.5	10.9	11.5	9.9	12.5	15.5	17.5	17.5	17.5	21	21.5	12.5	17	13.5	17	21.5	16.3	24
11	11	11.5	11	13	13.5	13.5	18.5	18	15	12.5	12.5	21.5	58.5	135.6	100	31	26.5	15.5	12.5	11.5	9.9	9	13.5	13	135.6	25.3	24
12	12.5	9	8.4	6.5	10.9	7.9	15.5	9.5	13	13.9	12.4	13.9	15.5	12.5	13.5	10.9	17.5	12.5	14.5	12	15	12.5	13.9	15	17.5	12.4	24
13	17	113.5	**203.6**	140.6	132.5	119	120.5	105.5	92	90.5	102.5	84	87.5	72	75.5	71.5	61	58.5	65	68.5	66.5	65.5	66	60	**203.6**	**89.1**	24
14	65.5	58.5	65.5	57.5	59	59	68	69.5	72	67	69	63	58.5	57	57.5	53	52.5	45.5	42.5	43.5	42	39.5	32	29.5	72.0	55.3	24
15	26	27.4	24	32.5	26.5	31	26.5	34.5	30.5	27.5	24	27.9	21	23.5	17.5	26	24.5	26.5	26	34.5	28.5	32	26.9	30	34.5	27.3	24
16	28.5	31.5	29	41	39.5	39	37	46.5	39.5	46.5	42	43.5	41	35.9	44.5	48	40.5	37.5	27.5	23.5	28.5	32.5	28	31	48.0	36.7	24
17	26	36	23.5	31	21	23.5	29	36	38.5	40.5	36.5	26.9	22.5	24.5	26.5	20.5	22.5	26	26	26.9	32	27.5	29	27.5	40.5	28.3	24
18	21	17	15.5	13.9	12	15.5	14.5	13	11.5	10.9	15	10.5	8.4	13	16	8.4	20	17	17.5	9.9	12	9	13	11.5	21.0	13.6	24
19	13.9	9.4	5	7.9	11.5	6.5	7.5	4	9.9	4	2.5	1.9	10.5	7.5	9	3.4	7.9	3.4	7.9	7.9	9.9	8.4	9.4	3.4	13.9	7.2	24
20	6	4	6	1	3.4	4	7	1.4	6	8.4	8.9	4.4	0	4.4	13	2.9	11.5	6.5	14	5	9	6.5	9	5.5	14.0	6.2	24
21	10.9	1.9	13.5	3.4	16.5	1.4	13.9	2.9	12.5	4	13.5	7.5	9	0.5	19	1	10.5	0	9.9	0.5	8.4	1	10.5	0	19.0	7.2	24
22	9.4	1.4	9.4	1.9	8.4	1.4	10.9	1.9	9.9	7.5	9	2.5	12	4.5	16	5	13.5	2.9	5.5	1	10.5	3.4	9.9	6	16.0	6.8	24
23	9	5	7	6	4	5	7.5	4	10.5	6.5	9	2.9	9	0	11	6.5	2.9	2.5	2.5	8.4	2.5	3.4	7.9	7	11.0	5.8	24
24	6	7.9	3.4	7	0	4.4	4.4	4	2.9	9.4	2.5	9.9	6.5	7	2.9	7.5	0	4.4	1.9	6	0.5	7	0	5	9.9	4.6	24
25	2.5	7	0.5	6.5	0	7.5	0	7.9	2.5	7.5	4.4	9.9	10.5	21.5	12.5	22	21.5	27.9	18.5	27.5	19.5	25	17	22	27.9	12.6	24
26	15.5	21	15.5	17	14	17	9.5	13	13	17.5	15.5	9.4	12.4	8.4	7.9	17.5	9.9	9.4	13.5	13	12.5	15.5	11.5	12	21.0	13.4	24
27	12	9	9.4	7	9	4.4	9.9	6	10.4	4	10.9	6.5	9.4	**N**	**N**	5.9	10.9	0	4.4	9.9	11.5	4.4	16.5	16	16.5	8.5	22
28	11	5.6	15.8	9.5	14.5	5	12	5.1	12.9	7.4	21	8.5	28.5	30.4	32.6	1.5	23.6	7.6	14.4	7.7	9.9	8.2	10	5.4	32.6	12.8	24
29	13	0.1	8.3	4.3	9.9	4	11.2	10.1	17	16.2	14	22.8	35.6	27.8	20.8	7.3	21.8	13.3	12.6	4	11.3	3.1	16.5	7	35.6	13.0	24
30	9.1	4.6	13.9	5	14.9	0	10.3	1.6	13.3	5.9	22.8	20	15.7	17.7	31.1	1.3	3.6	15.3	29	9.2	18.8	7.9	22.6	4.3	31.1	12.4	24
31	12.6	10.9	16.4	3.4	14.8	2.2	14.2	3.4	17	1	14.3	4.2	16.7	6.8	15.5	4.9	20.2	10.3	15	5.8	12.5	5.5	8.4	1.3	20.2	9.9	24
HOURLY MAX	66	114	204	141	133	119	121	106	92	91	103	84	88	136	100	72	61	59	65	69	67	66	66	60			
HOURLY AVG	14.3	16.1	19.8	17.0	16.8	14.8	17.8	17.2	17.7	16.8	18.3	16.0	18.6	20.3	21.7	14.9	18.5	14.6	15.7	14.5	15.4	13.8	14.8	12.9			

STATUS FLAG CODES

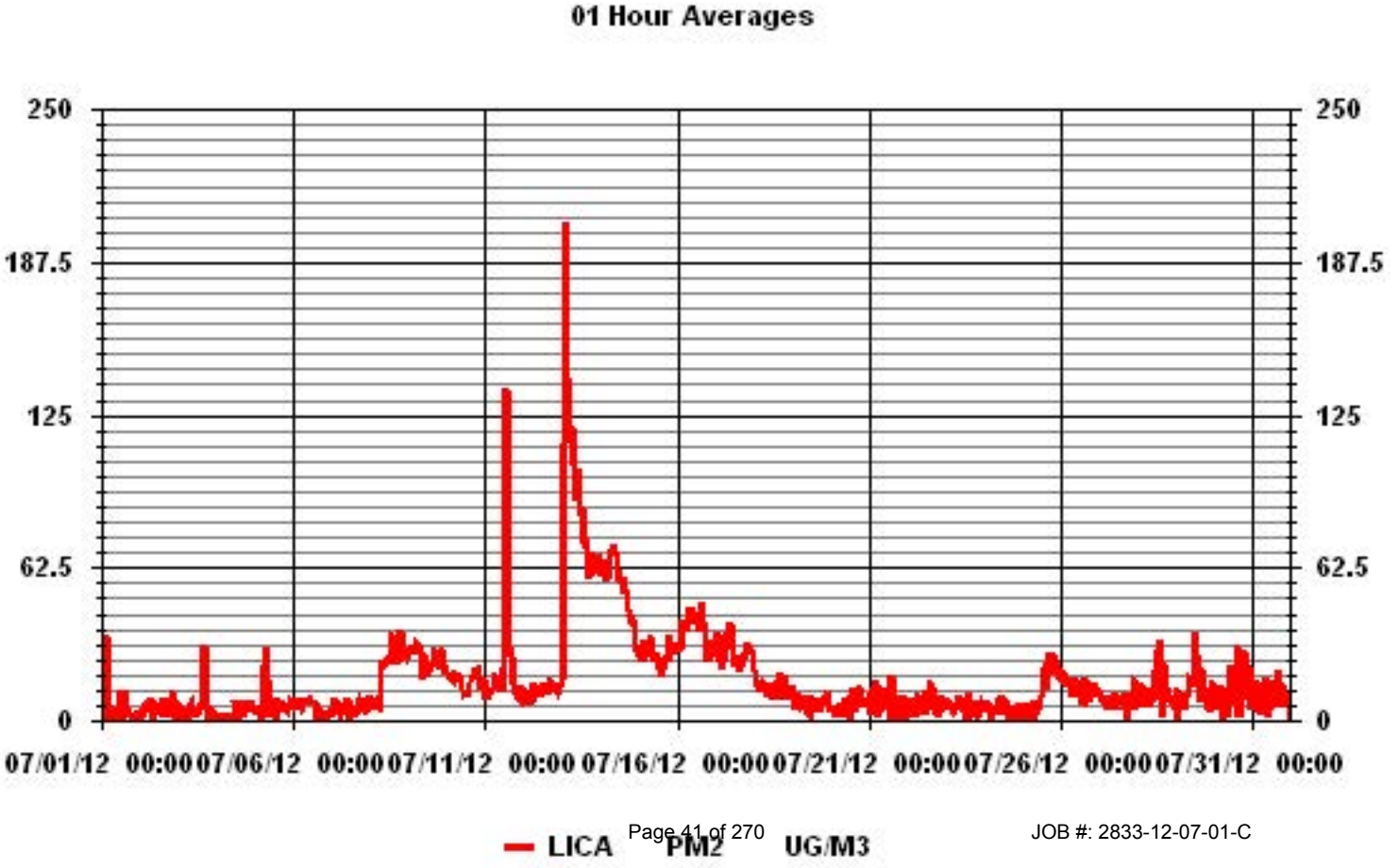
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



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

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-					
NUMBER OF 24-HR EXCEEDENCES:	3					
NUMBER OF NON-ZERO READINGS:	713					
MAXIMUM 1-HR AVERAGE:	203.6	UG/M^3	@ HOUR(S)	2	ON DAY(S)	13
MAXIMUM 24-HR AVERAGE:	89.1	UG/M^3			ON DAY(S)	13
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		740	HRS
MONTHLY CALIBRATION TIME:	1	HRS	AMD OPERATION UPTIME:		99.5	%
STANDARD DEVIATION:	20.19		MONTHLY AVERAGE:		16.57	UG/M^3



JOB #: 2833-12-07-01-C

LICA
PM2 / WD Joint Frequency Distribution (Percent)

July 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	2.02	1.89	2.30	2.43	3.65	4.46	16.23	5.14	4.46	4.87	9.87	13.39	8.52	4.46	1.75	1.08	86.60
<	60.0	.13	.94	.27	.67	.13	.81	4.46	.13	.40	.13	.00	.27	.54	.00	.00	.13	9.06
<	80.0	.00	.00	.00	.54	.13	.27	.67	.40	.40	.00	.00	.00	.00	.00	.00	.00	2.43
<	120.0	.13	.13	.40	.13	.00	.00	.00	.00	.00	.00	.00	.00	.27	.00	.00	.13	1.21
<	240.0	.40	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.13	.00	.67
>=	240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.70	2.97	2.97	3.78	3.92	5.54	21.38	5.68	5.27	5.00	9.87	13.66	9.33	4.60	1.89	1.35	

Calm : .00 %

Total # Operational Hours : 739

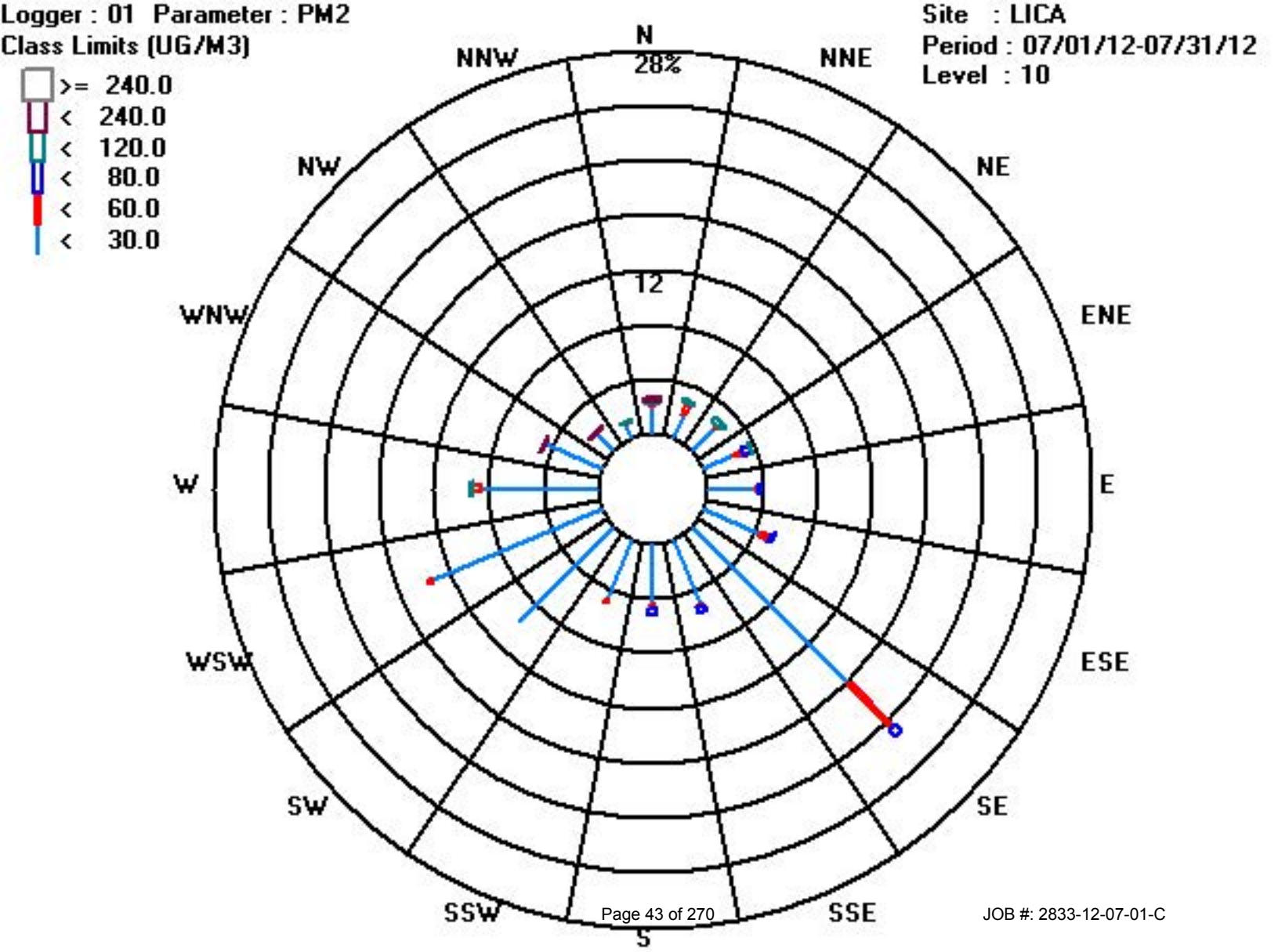
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30.0	15	14	17	18	27	33	120	38	33	36	73	99	63	33	13	8	640
<	60.0	1	7	2	5	1	6	33	1	3	1		2	4			1	67
<	80.0				4	1	2	5	3	3								18
<	120.0	1	1	3	1									2			1	9
<	240.0	3													1	1		5
>=	240.0																	
	Totals	20	22	22	28	29	41	158	42	39	37	73	101	69	34	14	10	

Calm : .00 %

Total # Operational Hours : 739



JOB #: 2833-12-07-01-C

Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

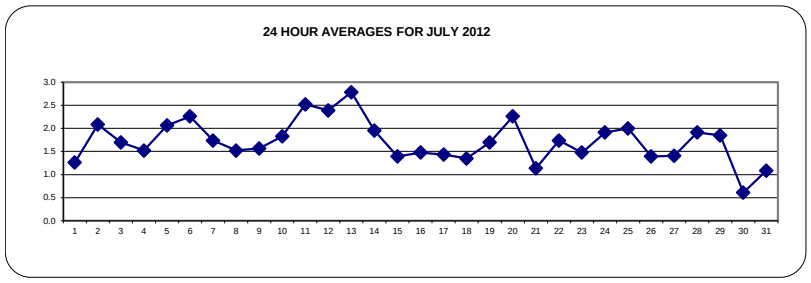
NITROGEN DIOXIDE hourly averages in ppb

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	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	0	**IZS**	3	3	3	3	1.3	24
2	3	4	3	3	3	4	4	2	2	2	1	1	1	1	1	1	1	1	1	**IZS**	4	3	1	1	4	2.1	24
3	1	1	1	2	3	3	2	3	2	1	2	1	1	1	1	2	2	1	**IZS**	2	2	2	1	2	3	1.7	24
4	2	2	2	2	2	2	2	3	4	2	1	1	1	1	0	0	0	**IZS**	1	1	1	1	2	2	4	1.5	24
5	2	2	3	3	3	3	3	2	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	**IZS**	1	1	1	3	2	1	2	3	2.1	24
6	3	3	2	3	3	3	3	4	5	3	2	1	2	1	1	**IZS**	1	1	1	3	2	2	1	2	5	2.3	24
7	2	2	3	3	1	1	2	2	2	2	2	1	1	1	**IZS**	1	1	2	3	2	1	2	2	1	3	1.7	24
8	2	2	2	2	3	2	1	1	1	1	1	1	1	**IZS**	1	1	1	1	2	2	2	2	2	1	3	1.5	24
9	1	1	2	2	2	2	2	2	2	1	1	2	**IZS**	1	1	1	1	1	1	2	3	2	2	1	3	1.6	24
10	1	1	2	2	3	3	2	2	1	2	1	**IZS**	2	1	2	1	1	2	2	3	2	2	2	2	3	1.8	24
11	2	2	1	4	5	**7**	5	3	2	2	**IZS**	2	2	3	2	1	1	1	1	2	3	2	3	2	**7**	2.5	24
12	2	2	2	2	2	3	4	6	5	**IZS**	4	3	3	2	1	1	1	1	1	2	2	2	2	2	6	2.4	24
13	3	3	3	2	2	3	6	3	**IZS**	3	3	3	3	2	2	3	2	2	2	2	3	3	3	3	6	**2.8**	24
14	4	4	2	2	1	3	3	**IZS**	2	1	1	1	2	2	3	2	1	1	1	2	2	1	2	2	4	2.0	24
15	1	1	1	1	1	1	**IZS**	2	2	1	1	2	2	1	1	2	2	1	2	1	2	2	1	1	2	1.4	24
16	1	1	1	1	2	**IZS**	3	1	1	1	2	1	1	2	2	1	1	1	1	2	2	2	2	2	3	1.5	24
17	2	2	2	4	**IZS**	2	2	2	1	2	1	1	1	1	1	1	1	1	0	2	1	1	1	1	4	1.4	24
18	1	1	1	**IZS**	2	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	3	1.3	24
19	2	1	**IZS**	2	2	2	2	3	1	1	1	1	1	1	1	1	1	1	1	1	3	2	4	4	4	1.7	24
20	5	**IZS**	4	3	1	3	4	4	3	2	2	2	1	1	2	1	1	1	1	1	3	2	3	2	5	2.3	24
21	**IZS**	1	1	1	2	1	1	1	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	**IZS**	2	1.1	24
22	2	2	4	3	4	2	1	2	2	2	1	1	1	1	1	1	1	1	1	1	2	2	**IZS**	2	4	1.7	24
23	1	2	1	1	1	2	3	2	3	2	1	1	1	1	1	1	1	1	2	2	2	**IZS**	1	1	3	1.5	24
24	1	1	1	1	1	2	2	2	3	1	2	2	2	2	3	2	2	2	2	2	**IZS**	5	2	1	5	1.9	24
25	1	2	2	4	4	6	4	3	2	1	1	1	1	1	1	1	1	1	2	**IZS**	2	2	2	1	6	2.0	24
26	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	2	1	**IZS**	2	3	3	2	1	3	1.4	24
27	1	1	1	1	2	3	3	1	1	1	1	1	1	1	1	1	1	**IZS**	1	2	2	**C**	2	2	3	1.4	24
28	1	2	2	3	2	2	5	5	3	2	2	1	2	1	1	1	**IZS**	1	1	1	1	2	2	1	5	1.9	24
29	1	2	2	5	4	5	5	**C**	**C**	**C**	2	1	1	1	1	**IZS**	0	0	0	1	2	2	1	1	5	1.9	24
30	1	0	0	0	0	0	2	2	1	1	1	1	0	0	**IZS**	0	0	0	0	1	1	1	1	1	2	0.6	24
31	1	1	1	1	2	1	1	2	2	1	1	1	0	**IZS**	0	0	0	0	0	0	2	3	3	2	3	1.1	24
HOURLY MAX	5	4	4	5	5	7	6	6	5	3	4	3	3	3	3	3	2	2	3	3	4	5	4	4			
HOURLY AVG	1.7	1.7	1.8	2.2	2.2	2.5	2.8	2.3	2.0	1.5	1.5	1.3	1.3	1.2	1.3	1.1	1.0	1.0	1.2	1.6	2.1	2.1	1.9	1.7			

STATUS FLAG CODES

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



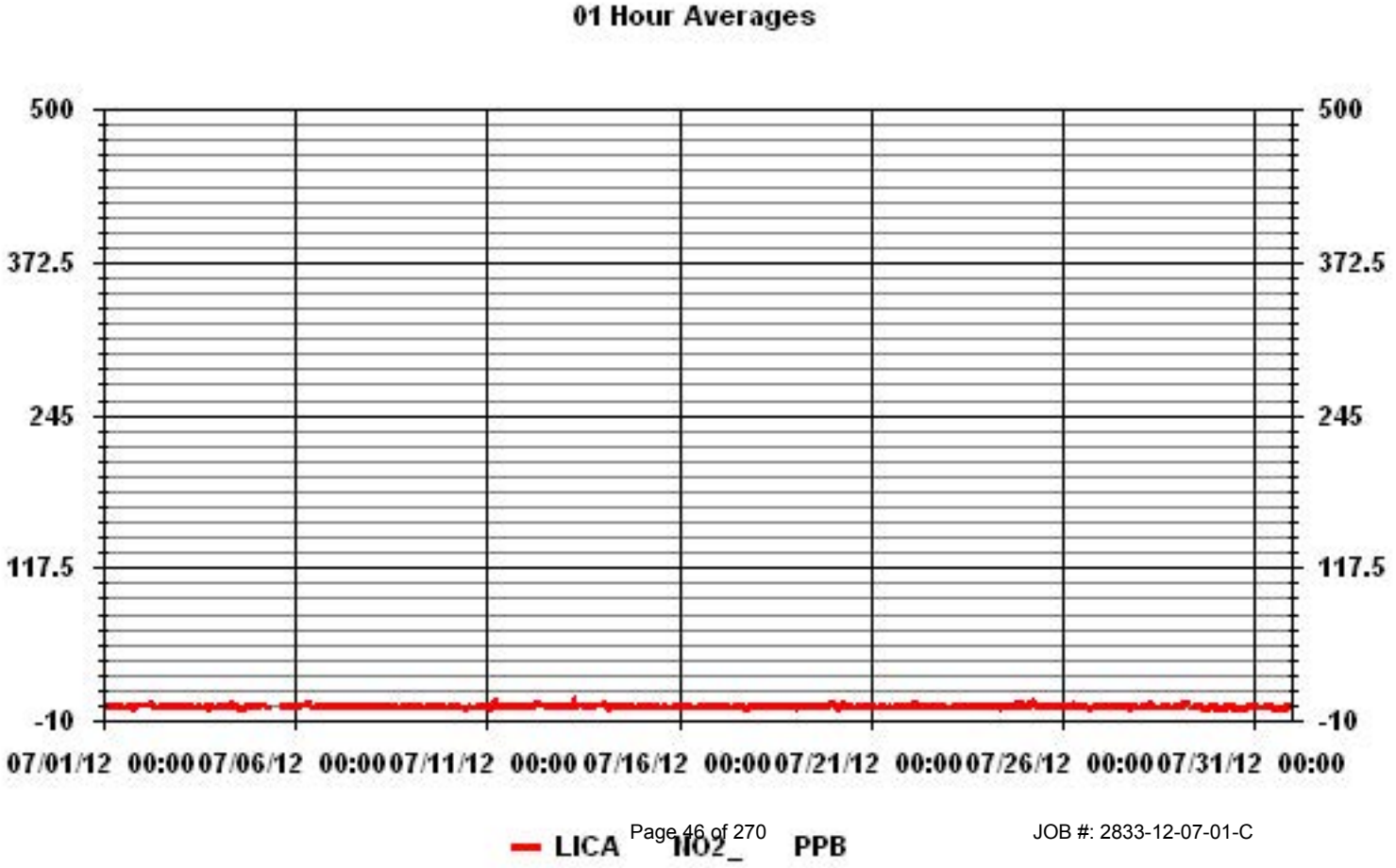
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	675					
MAXIMUM 1-HR AVERAGE:	7	PPB	@ HOUR(S)	5	ON DAY(S)	11
MAXIMUM 24-HR AVERAGE:	2.8	PPB			ON DAY(S)	13

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	11	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	1.01		MONTHLY AVERAGE:	1.72	PPB

JOB #: 2833-12-07-01-C



JOB #: 2833-12-07-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 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	2	2	2	1	2	2	2	6	6	3	1	2	2	3	2	1	1	1	1	**IZS**	6	6	3	6	2.5	24
2	5	5	4	4	3	4	5	3	3	3	1	2	1	1	2	2	1	2	2	**IZS**	9	7	1	2	9	3.1	24
3	2	2	2	3	5	5	5	4	3	2	6	3	2	2	2	28	3	2	**IZS**	3	3	3	2	3	28	4.1	24
4	3	2	2	2	2	2	2	5	13	4	3	2	1	1	1	1	1	**IZS**	1	1	1	2	4	3	13	2.6	24
5	2	3	3	3	3	7	6	8	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	**IZS**	1	4	2	12	2	2	4	12	3.9	24
6	4	4	3	6	6	3	14	6	6	9	6	2	5	4	2	**IZS**	2	2	2	9	2	2	2	3	14	4.5	24
7	2	3	3	3	2	2	3	3	3	3	4	2	2	1	**IZS**	2	2	5	6	3	3	3	5	2	6	2.9	24
8	3	3	4	3	4	3	1	1	1	1	2	2	2	**IZS**	2	2	2	1	7	2	5	4	3	2	7	2.6	24
9	1	2	2	3	4	3	10	2	4	3	1	8	**IZS**	2	2	2	3	2	5	2	5	7	2	4	10	3.4	24
10	1	2	3	3	22	5	2	5	4	12	2	**IZS**	4	2	6	2	2	3	3	4	4	3	3	3	22	4.3	24
11	2	2	2	6	8	8	8	4	5	2	**IZS**	2	3	4	4	2	2	1	2	3	5	4	3	3	8	3.7	24
12	3	2	3	4	3	4	11	14	11	**IZS**	4	5	5	3	2	2	3	1	2	4	15	2	3	3	15	4.7	24
13	6	3	4	3	3	6	14	3	**IZS**	4	5	6	4	4	5	6	6	3	2	3	4	4	4	4	14	4.6	24
14	6	5	3	2	4	5	4	**IZS**	2	2	2	4	5	3	14	7	1	3	2	6	5	2	3	3	14	4.0	24
15	1	1	1	2	2	2	**IZS**	2	3	3	2	5	3	2	4	3	3	2	2	3	5	2	2	2	5	2.5	24
16	2	2	1	1	2	**IZS**	11	2	1	4	11	1	3	6	6	4	8	1	4	7	4	11	4	2	11	4.3	24
17	3	3	3	**53**	**IZS**	17	4	3	3	12	2	2	19	1	4	3	5	3	2	4	7	3	2	2	**53**	7.0	24
18	2	1	1	**IZS**	7	2	24	2	2	2	2	2	2	2	2	2	3	1	4	2	2	2	3	3	24	3.3	24
19	3	2	**IZS**	3	2	2	3	4	3	2	2	1	1	1	1	1	1	1	1	1	5	3	6	5	6	2.3	24
20	5	**IZS**	5	3	3	4	7	5	7	6	2	2	3	6	5	9	2	2	1	2	4	3	4	4	9	4.1	24
21	**IZS**	2	2	2	4	2	1	1	1	1	3	2	2	2	2	2	2	2	2	3	1	2	2	**IZS**	4	2.0	24
22	3	4	5	3	5	4	2	2	2	2	2	1	1	2	1	1	2	1	1	2	6	3	**IZS**	2	6	2.5	24
23	2	2	2	2	2	5	3	3	6	5	3	3	3	2	2	2	2	2	8	6	2	**IZS**	4	3	8	3.2	24
24	1	1	1	2	10	3	4	3	14	5	4	3	4	3	6	3	2	2	2	4	**IZS**	8	3	2	14	3.9	24
25	2	2	3	5	5	8	7	7	8	3	1	1	9	1	2	2	1	3	3	**IZS**	6	3	2	2	9	3.7	24
26	2	2	2	1	2	5	6	1	3	8	2	1	2	4	3	2	4	2	**IZS**	3	3	3	3	2	8	2.9	24
27	2	2	2	2	3	5	5	2	5	2	5	2	4	4	1	1	2	**IZS**	2	2	**C**	**C**	3	3	5	2.8	24
28	2	3	3	4	2	2	6	6	4	3	5	2	2	2	2	2	**IZS**	2	1	2	2	3	2	2	6	2.8	24
29	2	2	3	6	6	7	6	**C**	**C**	**C**	**C**	2	2	2	1	**IZS**	0	1	2	2	3	3	2	2	7	2.8	24
30	1	1	1	1	1	1	3	3	2	2	2	2	2	2	**IZS**	1	1	1	0	3	2	2	2	2	3	1.7	24
31	1	1	1	2	2	11	2	4	4	4	4	2	0	**IZS**	1	0	0	0	0	0	5	5	4	2	11	2.4	24
HOURLY MAX	6	5	5	53	22	17	24	14	14	12	11	8	19	6	14	28	8	5	8	9	15	11	6	5			
HOURLY AVG	2.5	2.4	2.5	4.6	4.3	4.6	6.0	3.8	4.6	4.1	3.3	2.5	3.4	2.5	3.1	3.3	2.3	1.8	2.6	3.1	4.6	3.7	3.0	2.7			

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

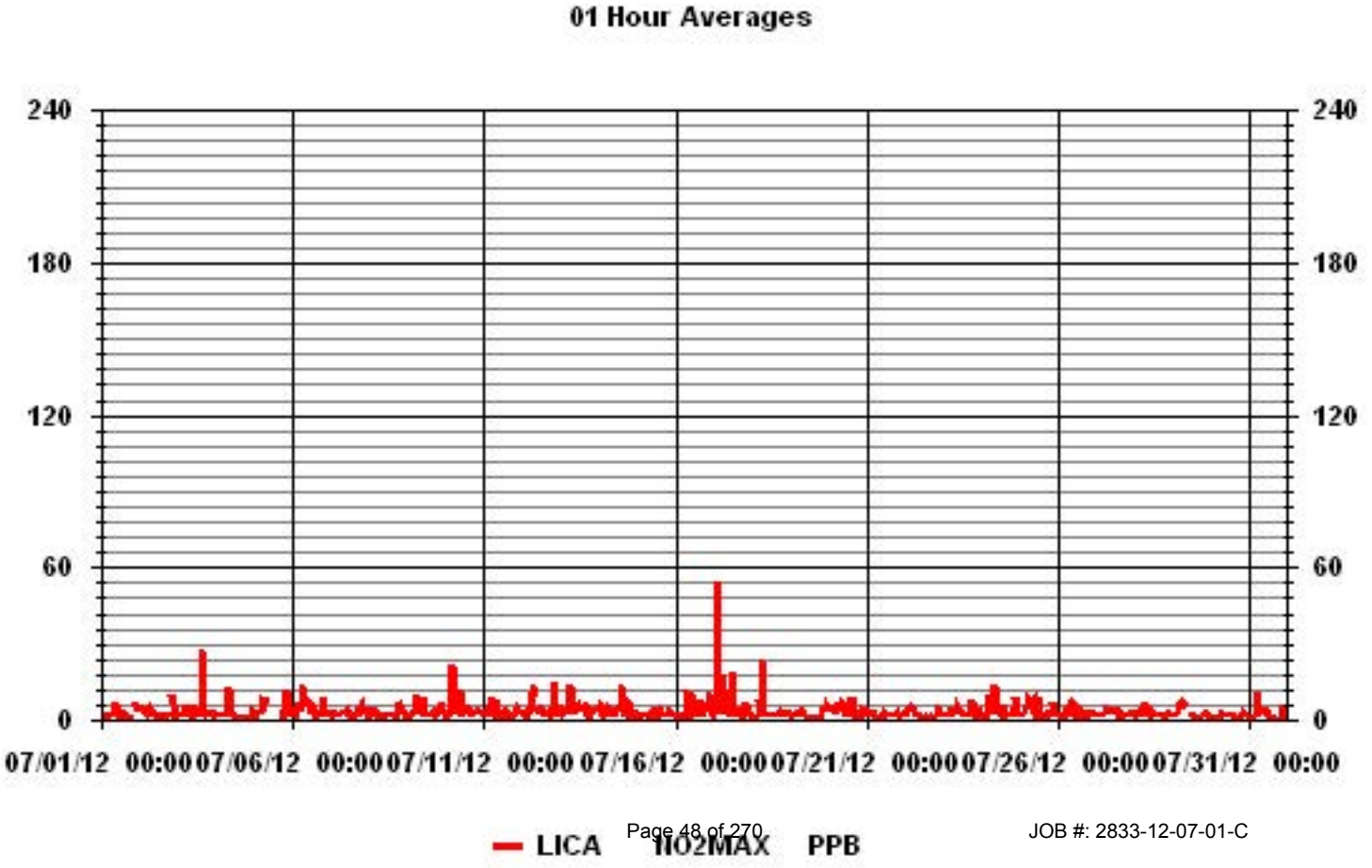
NUMBER OF NON-ZERO READINGS: 691

MAXIMUM INSTANTANEOUS VALUE: 53 PPB @ HOUR(S) 9 ON DAY(S) 17

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 13 HRS

STANDARD DEVIATION: 3.34



JOB #: 2833-12-07-01-C

LICA
NO2_ / WD Joint Frequency Distribution (Percent)

July 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	2.71	2.99	2.71	3.99	3.85	5.56	21.54	5.84	5.27	4.99	10.55	13.26	8.70	4.70	1.85	1.42	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.71	2.99	2.71	3.99	3.85	5.56	21.54	5.84	5.27	4.99	10.55	13.26	8.70	4.70	1.85	1.42	

Calm : .00 %

Total # Operational Hours : 701

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	19	21	19	28	27	39	151	41	37	35	74	93	61	33	13	10	701
< 110																	
< 210																	
>= 210																	
Totals	19	21	19	28	27	39	151	41	37	35	74	93	61	33	13	10	

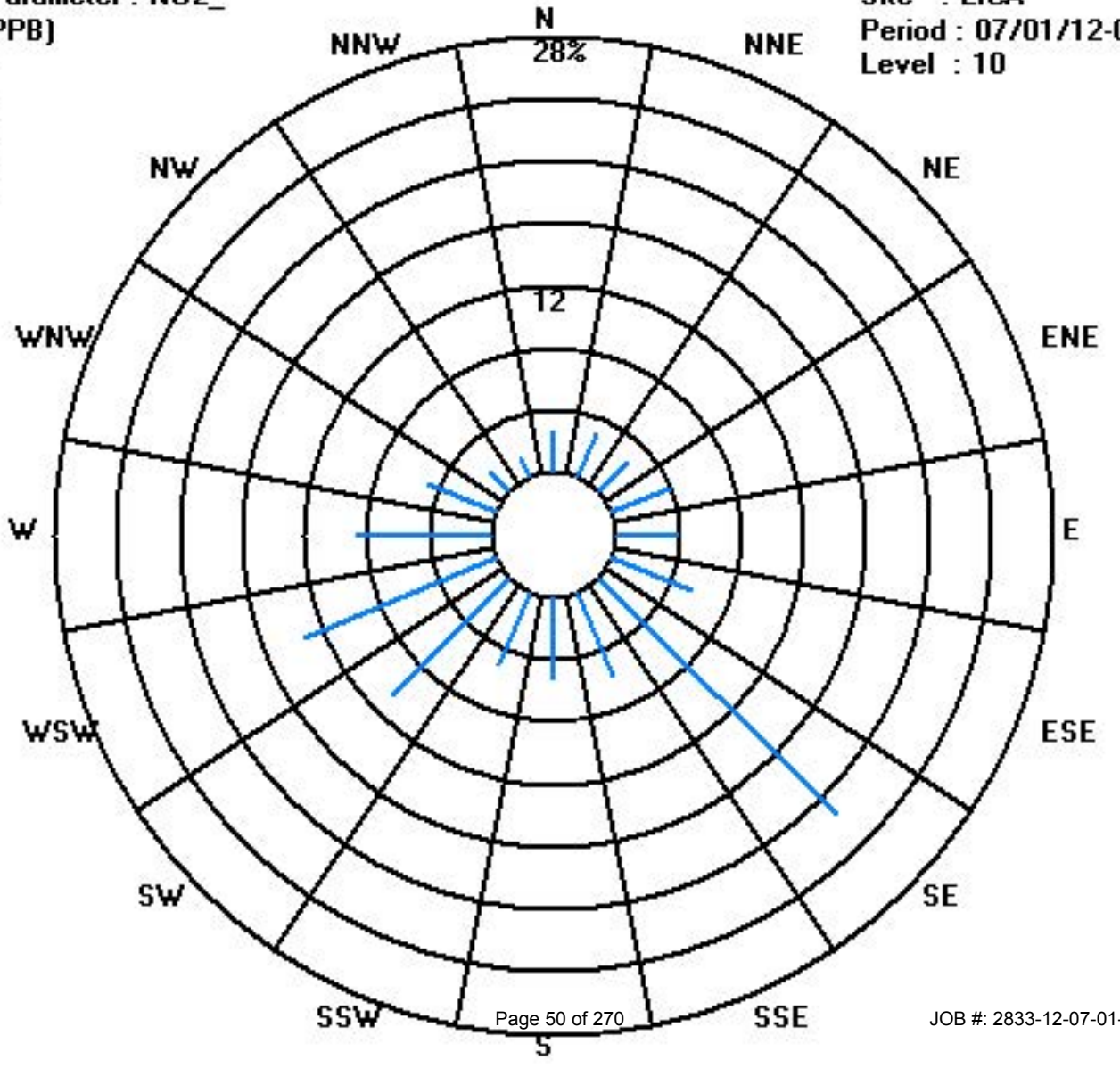
Calm : .00 %

Total # Operational Hours : 701

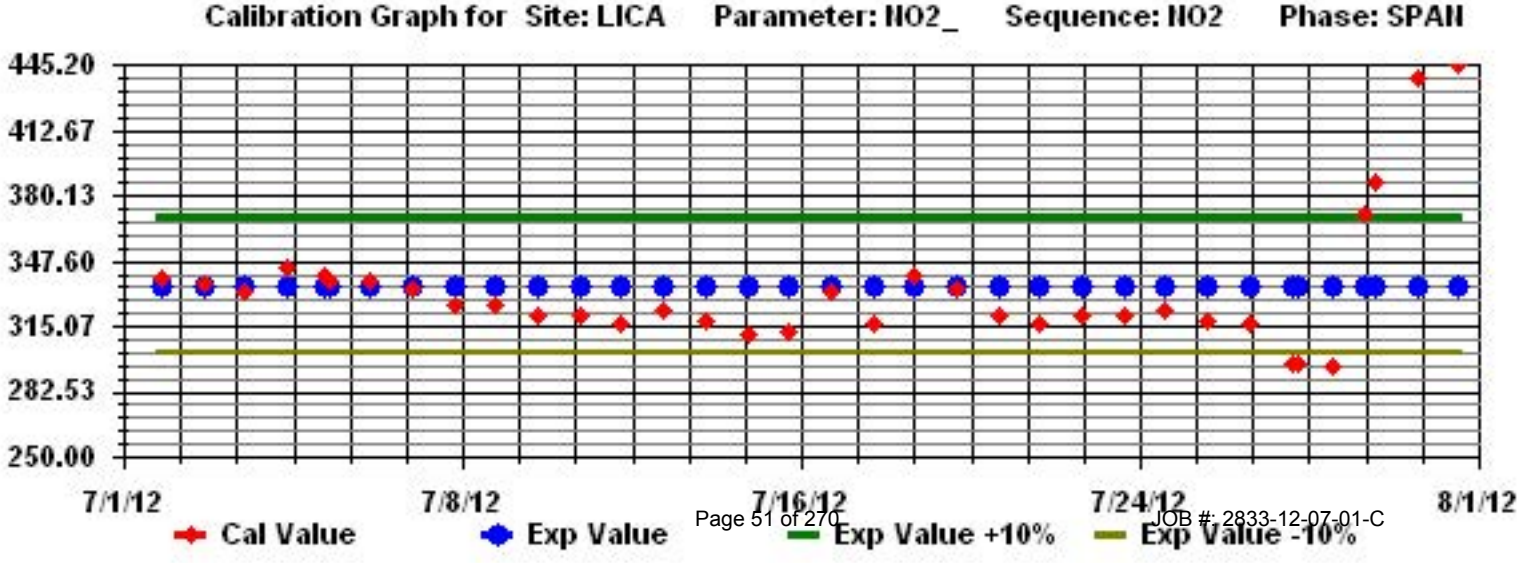
Logger : 01 Parameter : NO2_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-01-C


Calibration Graph for Site: LICA Parameter: NO2_ Sequence: NO2 Phase: SPAN
445.20
412.67
380.13
347.60
315.07
282.53
250.00
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

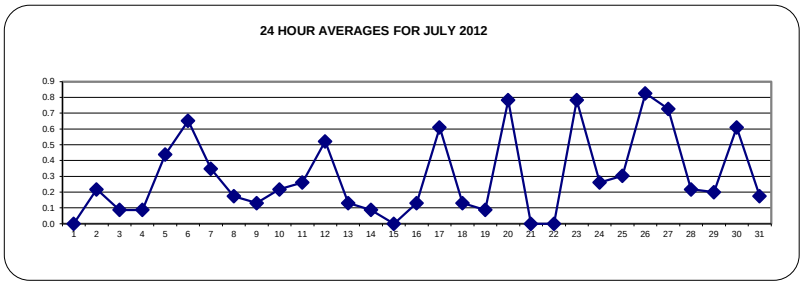
NITRIC OXIDE hourly averages in ppb

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	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0.0	24
2	0	0	0	0	0	1	1	2	1	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	2	0.2	24
3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	**IZS**	0	0	0	0	0	1	0.1	24
4	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	1	0.1	24
5	0	0	0	0	0	1	2	4	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	**IZS**	0	0	0	0	0	0	0	4	0.4	24
6	0	0	0	0	2	3	4	3	2	1	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	4	0.7	24
7	0	0	0	1	1	3	2	1	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	3	0.3	24
8	0	0	1	1	1	1	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	1	0.2	24
9	0	0	0	0	0	0	2	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	1	0	0	2	0.1	24
10	0	0	0	0	1	1	0	1	1	1	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
11	0	0	0	0	1	1	2	1	1	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
12	0	0	0	1	1	1	1	2	3	**IZS**	0	1	1	0	0	0	0	0	0	0	1	0	0	0	3	0.5	24
13	0	0	0	0	0	0	3	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.1	24
14	0	0	0	0	1	1	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
15	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
16	0	0	0	0	0	**IZS**	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0.1	24
17	0	0	0	7	**IZS**	2	1	1	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	7	0.6	24
18	0	0	0	**IZS**	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24
19	0	0	**IZS**	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
20	0	**IZS**	0	0	2	2	4	4	3	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	4	0.8	24
21	**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
22	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
23	1	1	1	1	1	5	5	1	1	1	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	5	0.8	24
24	0	0	0	0	2	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	2	0.3	24
25	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	0	1	1	0.3	24
26	1	1	1	1	2	**8**	3	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	1	1	**8**	**0.8**	24
27	1	1	1	1	1	6	2	1	1	1	0	0	0	0	0	0	0	**IZS**	0	0	0	**C**	0	0	6	0.7	24
28	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	2	0.2	24
29	0	0	0	0	0	1	3	**C**	**C**	**C**	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	3	0.2	24
30	0	1	1	1	1	3	5	1	1	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	5	0.6	24
31	0	0	0	0	0	1	1	1	0	0	1	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	1	0.2	24
HOURLY MAX	1	1	1	7	2	8	5	4	3	1	1	1	1	1	0	1	0	0	1	0	1	1	1	1			
HOURLY AVG	0.1	0.1	0.2	0.5	0.6	1.4	1.6	1.0	0.7	0.3	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1			

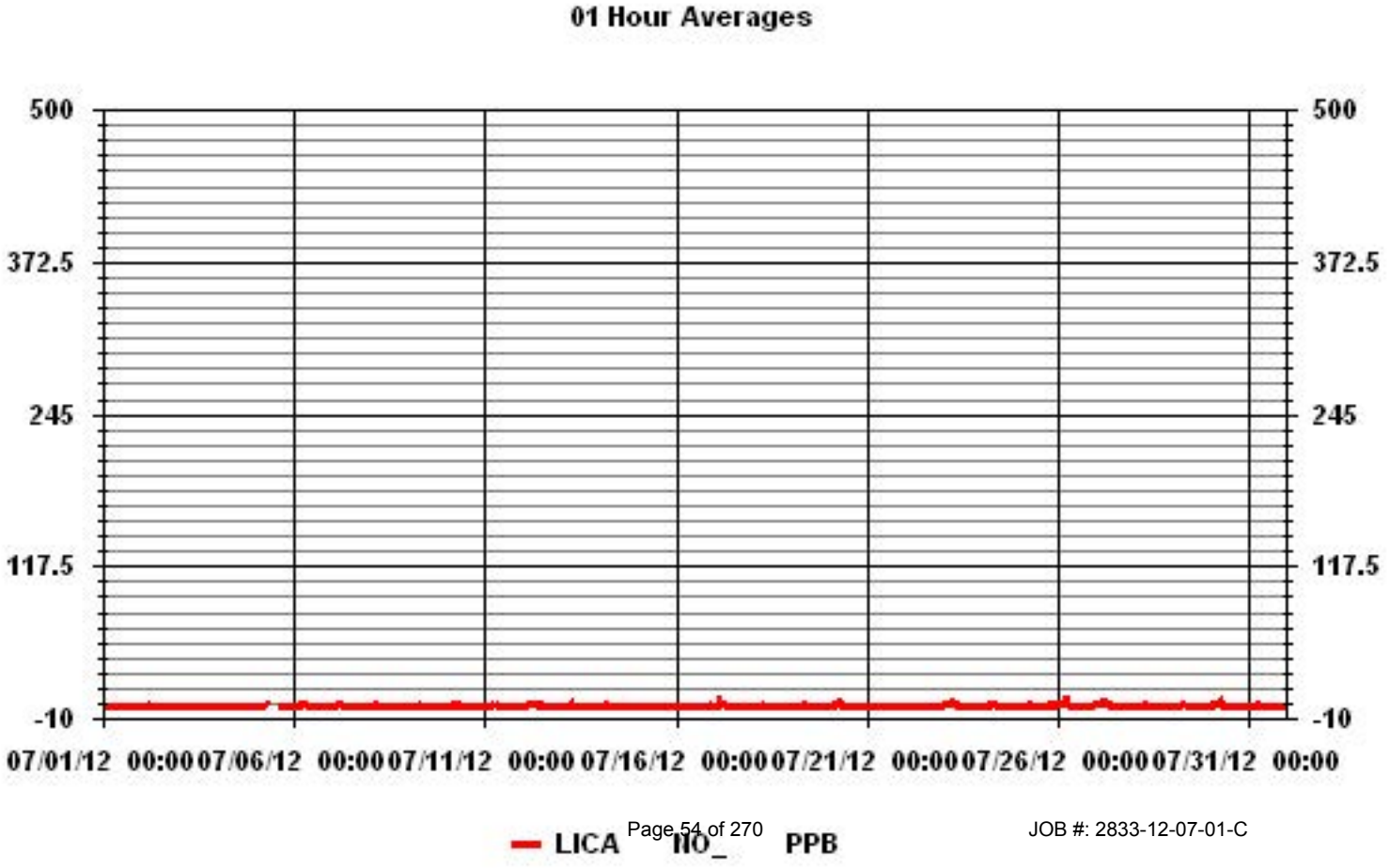
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		130					
MAXIMUM 1-HR AVERAGE:		8	PPB	@ HOUR(S)	5	ON DAY(S)	26
MAXIMUM 24-HR AVERAGE:		0.8	PPB			ON DAY(S)	26
IZS CALIBRATION TIME:	32	HRS		OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	11	HRS		AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.82			MONTHLY AVERAGE:		0.30	PPB



JOB #: 2833-12-07-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

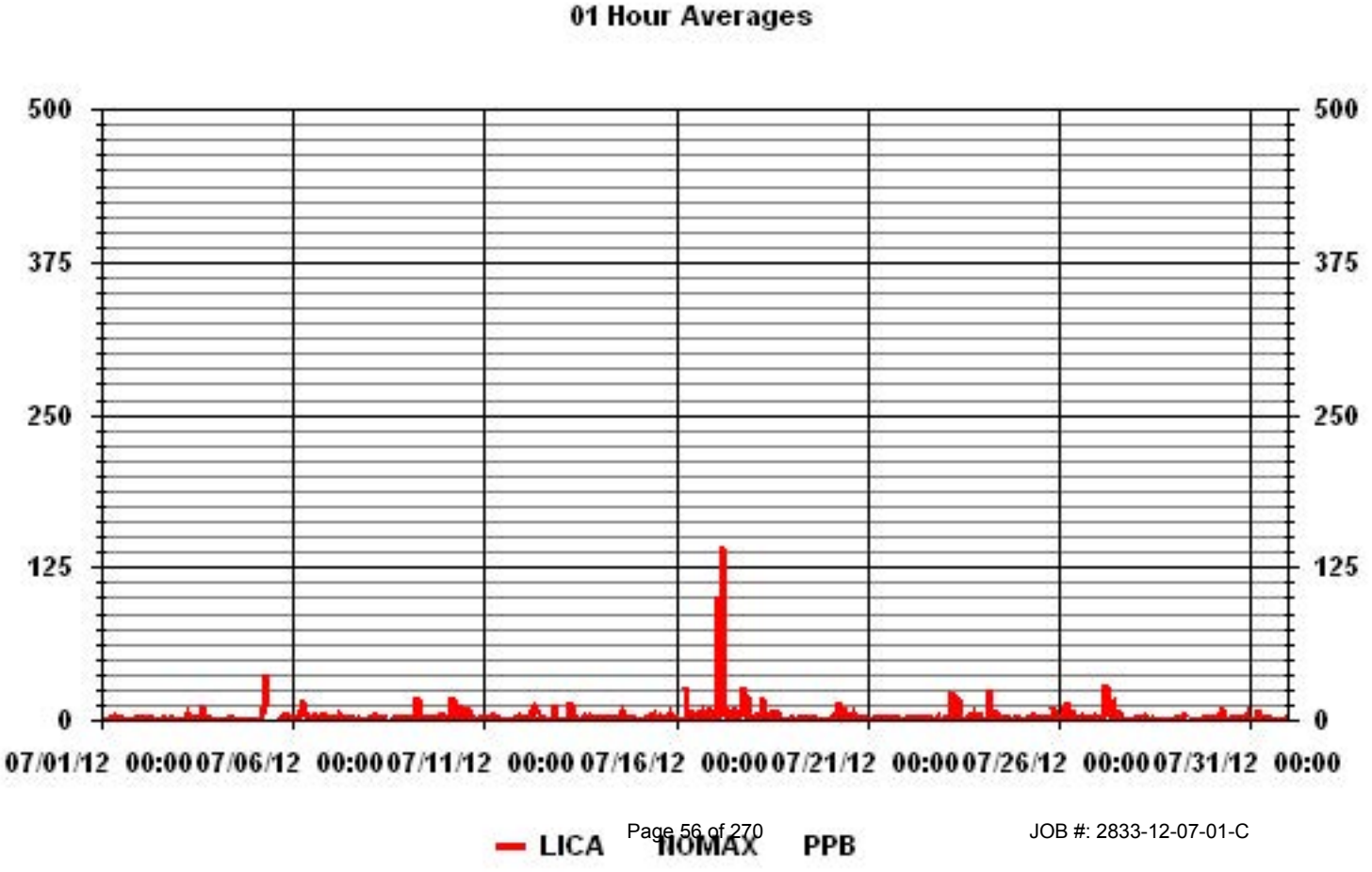
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	0	0	0	0	1	1	1	2	4	3	1	1	1	1	0	0	0	0	0	**IZS**	0	1	1	4	0.8	24
2	1	0	1	1	1	2	3	2	1	1	0	1	0	0	1	2	0	1	0	**IZS**	1	1	0	0	3	0.9	24
3	0	0	0	1	2	2	5	1	1	3	2	2	0	1	1	12	0	1	**IZS**	1	1	1	0	0	12	1.6	24
4	0	0	0	0	0	0	0	1	2	1	1	1	0	1	0	0	0	**IZS**	1	0	0	1	0	1	2	0.4	24
5	0	0	0	0	1	5	10	35	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	**IZS**	1	2	1	5	1	1	1	35	3.9	24
6	1	1	1	2	3	7	17	5	5	3	2	1	3	4	1	**IZS**	1	1	1	5	0	0	0	1	17	2.8	24
7	1	1	1	2	2	6	5	1	1	1	1	1	1	1	**IZS**	1	0	1	1	0	0	0	1	0	6	1.3	24
8	1	1	1	2	4	2	1	1	1	0	2	1	0	**IZS**	0	1	1	0	2	1	2	1	1	0	4	1.1	24
9	1	1	1	2	3	1	18	1	3	1	0	3	**IZS**	1	1	1	1	1	3	0	1	6	1	2	18	2.3	24
10	0	1	0	0	18	1	1	3	2	12	2	**IZS**	2	1	10	0	1	2	0	0	1	3	2	1	18	2.7	24
11	1	1	1	1	2	3	3	2	3	1	**IZS**	1	0	0	0	0	0	0	0	1	1	1	3	1	3	1.1	24
12	1	1	1	3	1	3	8	10	7	**IZS**	1	2	2	1	1	0	1	0	1	2	13	0	1	0	13	2.6	24
13	0	0	0	0	0	3	14	1	**IZS**	1	2	2	1	1	1	3	1	3	0	1	1	1	1	1	14	1.7	24
14	1	1	1	1	3	2	1	**IZS**	1	1	1	1	2	2	6	3	0	1	1	3	2	0	1	1	6	1.6	24
15	0	0	0	0	1	1	**IZS**	1	4	4	1	4	1	1	3	1	2	3	1	2	5	1	1	0	5	1.6	24
16	1	1	0	0	1	**IZS**	24	1	1	6	6	1	1	4	2	2	6	3	3	4	1	10	7	1	24	3.7	24
17	1	1	1	98	**IZS**	**139**	4	4	11	3	1	1	2	9	6	2	7	3	27	3	21	1	1	1	**139**	15.1	24
18	1	1	1	**IZS**	4	1	19	4	3	1	4	1	2	1	1	8	3	1	1	0	0	0	0	0	19	2.5	24
19	1	1	**IZS**	0	0	1	1	2	1	2	1	1	1	1	1	1	1	0	0	0	0	0	0	1	2	0.7	24
20	0	**IZS**	1	1	5	4	14	5	6	9	1	1	2	6	2	5	1	1	1	1	1	1	2	1	14	3.1	24
21	**IZS**	1	0	1	2	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	0	0	**IZS**	2	1.1	24
22	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	3	1	**IZS**	1	3	0.9	24
23	2	2	2	2	4	22	11	3	3	18	2	2	2	1	2	1	3	3	1	5	2	**IZS**	5	1	22	4.3	24
24	0	0	0	1	24	1	1	1	8	1	2	1	2	1	1	1	1	1	0	1	**IZS**	1	1	1	24	2.2	24
25	0	0	0	0	0	2	1	2	6	2	0	1	2	0	1	1	1	1	2	**IZS**	8	2	1	2	8	1.5	24
26	3	2	2	2	9	14	9	2	2	4	1	0	1	1	3	0	1	1	**IZS**	1	1	1	3	1	14	2.8	24
27	1	1	2	2	3	29	10	2	11	13	3	1	2	7	0	0	0	**IZS**	0	1	**C**	**C**	0	1	29	4.2	24
28	1	0	1	1	2	1	4	3	1	1	2	0	0	0	0	0	**IZS**	0	0	0	1	0	0	0	4	0.8	24
29	0	1	1	0	1	2	4	**C**	**C**	**C**	**C**	0	0	1	0	**IZS**	0	0	1	1	1	1	1	1	4	0.8	24
30	1	2	1	2	5	6	10	2	1	0	0	1	1	1	**IZS**	0	1	2	0	1	1	4	0	0	10	1.8	24
31	1	0	0	0	0	9	1	1	1	1	1	1	1	**IZS**	1	0	0	0	0	0	0	0	1	1	9	0.9	24
HOURLY MAX	3	2	2	98	24	139	24	35	11	18	6	4	3	9	10	12	7	3	27	5	21	10	7	2			
HOURLY AVG	0.7	0.7	0.7	4.2	3.4	9.1	6.7	3.4	3.2	3.4	1.6	1.2	1.2	1.8	1.7	1.6	1.2	1.1	1.7	1.3	2.6	1.3	1.2	0.8			

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:	533					
MAXIMUM INSTANTANEOUS VALUE:	139	PPB	@ HOUR(S)	5	ON DAY(S)	17
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	13	HRS				
STANDARD DEVIATION:	7.25					



JOB #: 2833-12-07-01-C

LICA
NO_ / WD Joint Frequency Distribution (Percent)

July 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	2.71	2.99	2.71	3.99	3.85	5.56	21.54	5.84	5.27	4.99	10.55	13.26	8.70	4.70	1.85	1.42	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.71	2.99	2.71	3.99	3.85	5.56	21.54	5.84	5.27	4.99	10.55	13.26	8.70	4.70	1.85	1.42	

Calm : .00 %

Total # Operational Hours : 701

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	19	21	19	28	27	39	151	41	37	35	74	93	61	33	13	10	701
< 110																	
< 210																	
>= 210																	
Totals	19	21	19	28	27	39	151	41	37	35	74	93	61	33	13	10	

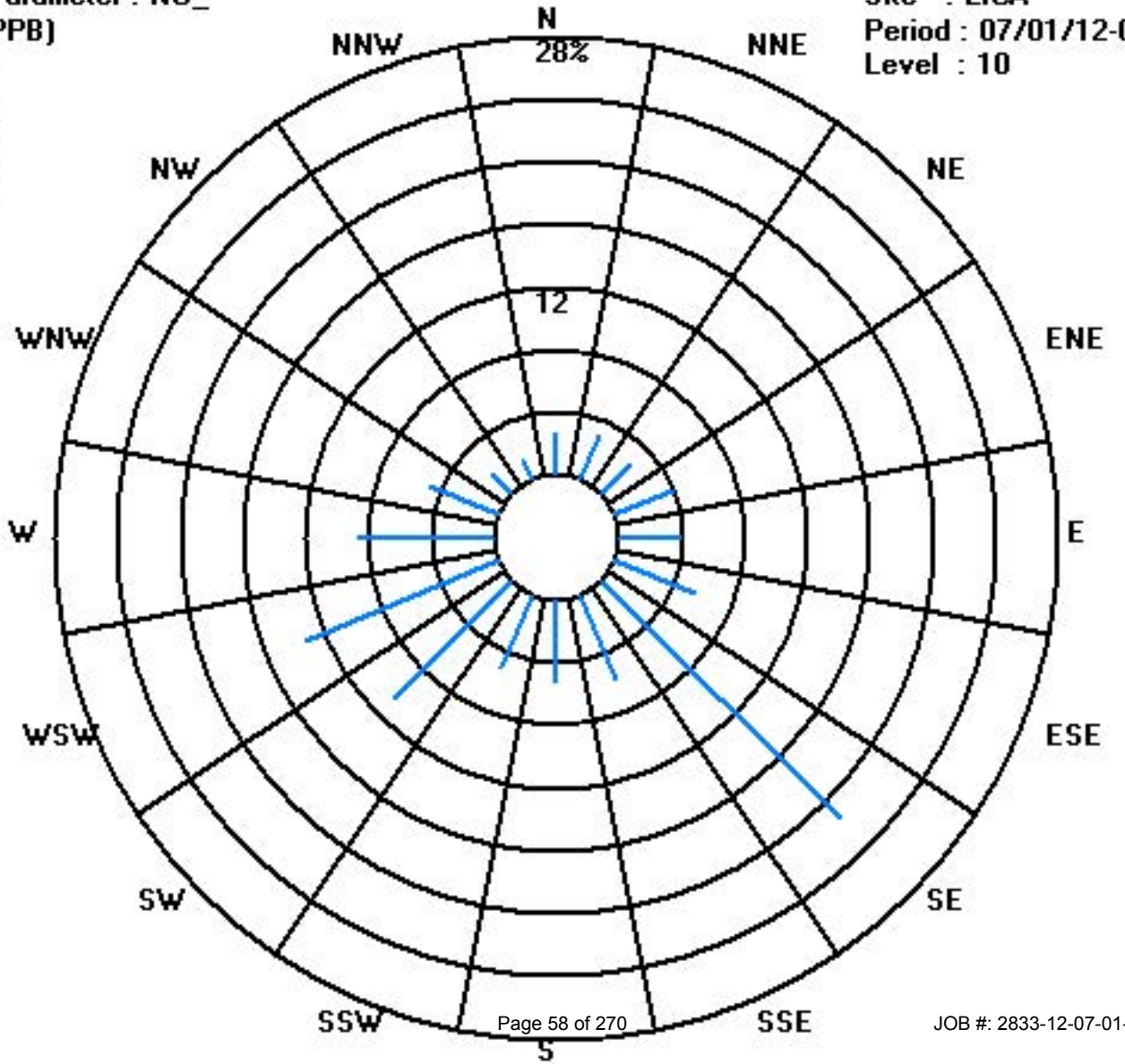
Calm : .00 %

Total # Operational Hours : 701

Logger : 01 Parameter : NO_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-01-C

Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

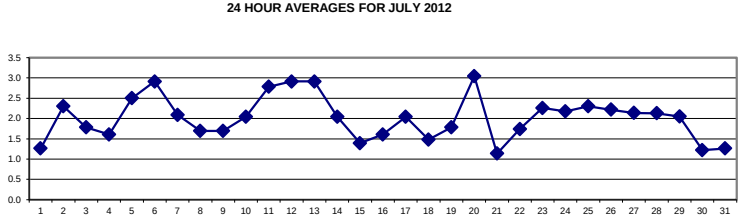
OXIDES OF NITROGEN hourly averages in ppb

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	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	0	IZS	3	3	3	3	1.3	24
2	3	4	3	3	3	5	5	4	3	2	1	1	1	1	1	1	1	1	1	IZS	4	3	1	1	5	2.3	24
3	1	1	1	2	3	3	2	4	2	1	2	1	1	1	1	3	2	1	IZS	2	2	2	1	2	4	1.8	24
4	2	2	2	2	2	2	2	3	5	2	2	1	1	1	0	0	0	IZS	1	1	1	1	2	2	5	1.6	24
5	2	2	3	3	3	4	5	6	C	C	C	C	C	C	C	1	IZS	1	1	1	3	2	1	2	6	2.5	24
6	3	3	2	3	5	6	7	7	7	4	2	1	2	1	1	IZS	1	1	1	3	2	2	1	2	7	2.9	24
7	2	2	3	2	2	4	4	3	2	3	3	1	1	1	IZS	1	1	2	3	2	1	2	2	1	4	2.1	24
8	2	2	3	3	4	3	1	1	1	1	1	1	1	IZS	1	1	1	1	2	2	2	2	2	1	4	1.7	24
9	1	1	2	2	2	2	4	2	2	1	1	2	IZS	1	1	1	1	1	1	2	3	3	2	1	4	1.7	24
10	1	1	2	2	4	4	2	3	2	3	1	IZS	2	1	2	1	1	2	2	3	2	2	2	2	4	2.0	24
11	2	2	1	4	6	8	7	4	3	2	IZS	2	2	3	2	1	1	1	1	2	3	2	3	2	8	2.8	24
12	2	2	2	3	3	4	5	8	8	IZS	4	4	4	2	1	1	1	1	1	2	3	2	2	2	8	2.9	24
13	3	3	3	2	2	3	9	3	IZS	3	3	3	3	2	2	3	2	2	2	2	3	3	3	3	9	2.9	24
14	4	4	2	2	2	4	3	IZS	2	1	1	1	2	2	3	2	1	1	1	2	2	1	2	2	4	2.0	24
15	1	1	1	1	1	1	IZS	2	2	1	1	2	2	1	1	2	2	1	2	1	2	2	1	1	2	1.4	24
16	1	1	1	1	2	IZS	4	1	1	1	2	1	1	2	2	1	1	1	1	2	2	3	3	2	4	1.6	24
17	2	2	2	11	IZS	4	3	3	2	2	1	1	1	1	1	1	1	1	1	2	2	1	1	1	11	2.0	24
18	1	1	1	IZS	2	2	5	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	5	1.5	24
19	2	1	IZS	2	2	2	2	3	2	2	1	1	1	1	1	1	1	1	1	1	3	2	4	4	4	1.8	24
20	5	IZS	4	3	3	5	8	8	6	3	2	2	1	2	2	2	1	1	1	1	3	2	3	2	8	3.0	24
21	IZS	1	1	1	2	1	1	1	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	IZS	2	1.1	24
22	2	2	4	3	4	2	1	2	2	2	1	1	1	1	1	1	1	1	1	1	2	2	IZS	2	4	1.7	24
23	2	3	2	2	2	7	8	3	4	3	1	1	1	1	1	1	1	1	2	2	2	IZS	1	1	8	2.3	24
24	1	1	1	1	3	2	3	3	4	2	2	2	2	2	3	2	2	2	2	2	IZS	5	2	1	5	2.2	24
25	1	2	2	4	4	7	5	4	3	1	1	1	1	1	1	1	1	1	2	IZS	3	3	2	2	7	2.3	24
26	2	2	2	2	3	9	6	1	1	1	1	1	1	1	1	1	2	1	IZS	2	3	3	3	2	9	2.2	24
27	2	2	2	2	3	9	5	2	2	2	1	1	1	1	1	1	1	IZS	1	2	2	C	2	2	9	2.1	24
28	1	2	2	3	2	2	7	7	4	2	2	1	2	1	1	1	IZS	1	1	1	1	2	2	1	7	2.1	24
29	1	2	2	5	4	6	8	C	C	C	2	1	1	1	1	IZS	0	0	0	1	2	2	1	1	8	2.1	24
30	1	1	1	1	1	3	7	3	2	1	1	1	0	0	IZS	0	0	0	0	1	1	1	1	1	7	1.2	24
31	1	1	1	1	2	2	2	3	2	1	2	1	0	IZS	0	0	0	0	0	0	2	3	3	2	3	1.3	24
HOURLY MAX	5	4	4	11	6	9	9	8	8	4	4	4	4	3	3	3	2	2	3	3	4	5	4	4			
HOURLY AVG	1.8	1.8	2.0	2.6	2.7	3.9	4.4	3.3	2.8	1.8	1.6	1.3	1.3	1.3	1.3	1.2	1.0	1.0	1.2	1.6	2.2	2.2	2.0	1.8			

STATUS FLAG CODES

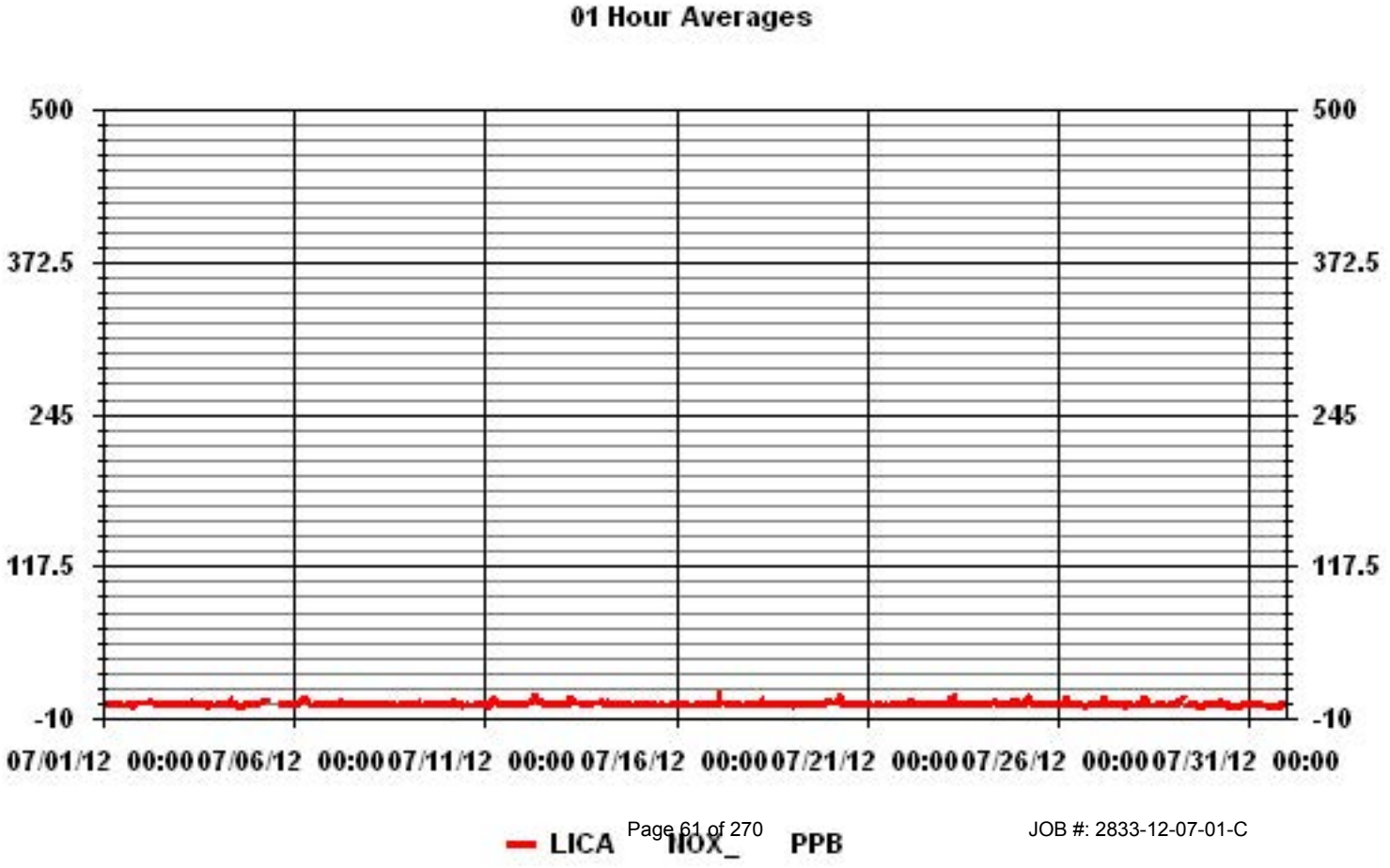
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	681					
MAXIMUM 1-HR AVERAGE:	11	PPB	@ HOUR(S)	3	ON DAY(S)	17
MAXIMUM 24-HR AVERAGE:	3.0	PPB			ON DAY(S)	20

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	11	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	1.47		MONTHLY AVERAGE:	2.01	PPB



JOB #: 2833-12-07-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

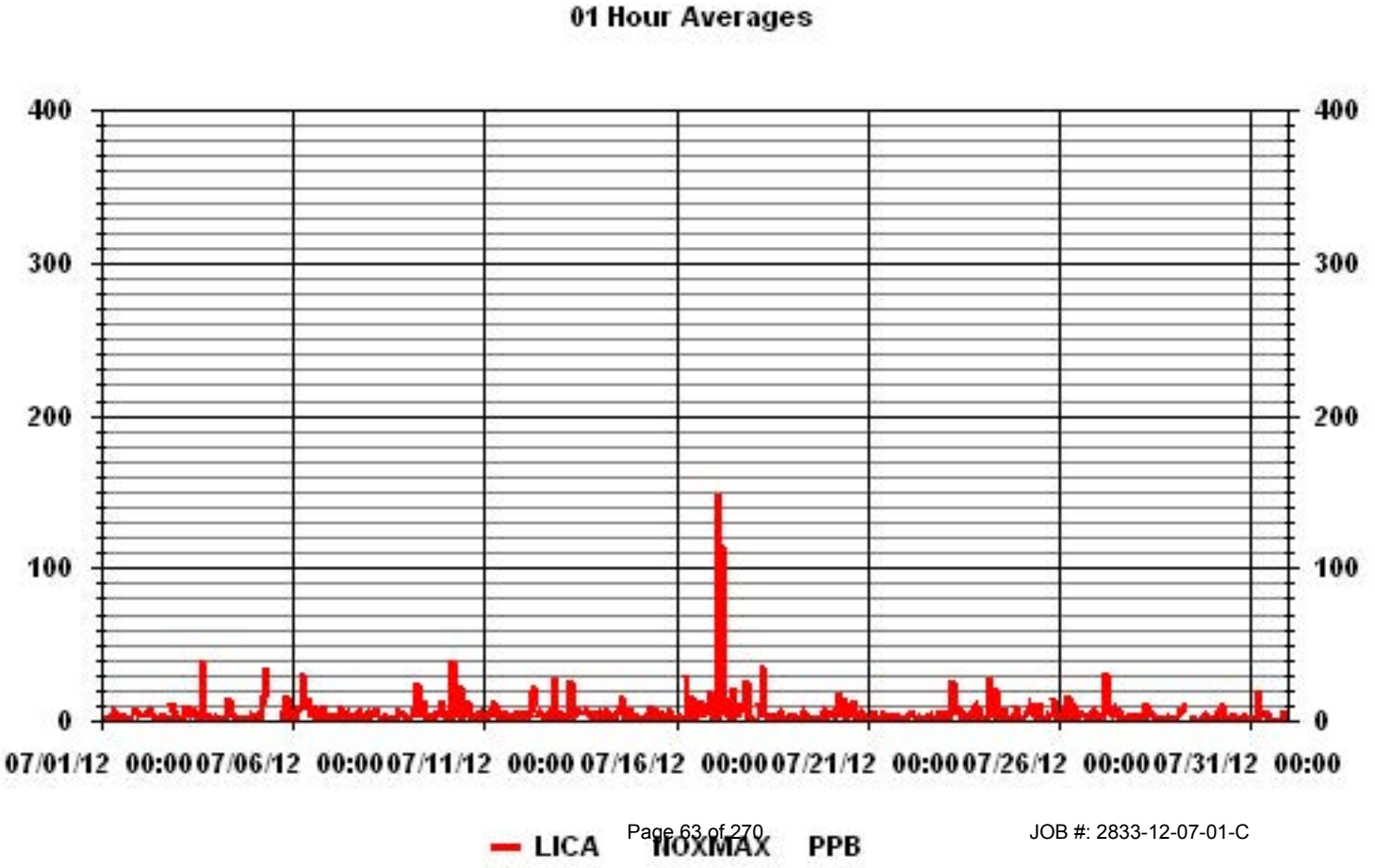
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2	2	2	2	1	2	3	2	7	6	4	2	2	2	3	2	1	1	1	1	**IZS**	6	6	4	7	2.8	24
2	5	5	4	5	4	5	7	5	4	3	2	2	2	1	3	3	1	2	2	**IZS**	10	7	1	2	10	3.7	24
3	2	2	2	3	7	7	8	5	3	4	8	5	2	2	2	39	4	2	**IZS**	3	3	3	2	3	39	5.3	24
4	3	2	2	2	2	2	3	5	14	4	4	2	1	1	1	1	1	**IZS**	1	1	1	2	4	3	14	2.7	24
5	2	3	4	4	3	11	16	32	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	**IZS**	1	6	3	16	3	2	4	32	6.9	24
6	4	4	3	8	8	9	31	11	11	12	8	2	7	7	2	**IZS**	2	2	2	10	2	2	2	3	31	6.6	24
7	3	3	4	3	3	7	7	4	4	3	5	2	2	2	**IZS**	3	3	5	6	3	3	3	5	2	7	3.7	24
8	3	4	4	5	8	4	2	2	2	2	3	2	2	**IZS**	2	2	2	1	8	2	7	4	3	2	8	3.3	24
9	2	2	3	6	6	3	25	2	7	4	2	11	**IZS**	2	3	2	4	3	7	2	5	13	3	6	25	5.3	24
10	1	3	3	3	39	6	3	8	6	23	3	**IZS**	5	2	13	2	3	4	3	4	5	3	5	3	39	6.5	24
11	3	3	2	6	8	11	11	6	7	3	**IZS**	2	4	4	4	2	2	1	2	4	5	4	5	3	11	4.4	24
12	3	3	3	6	3	6	19	23	13	**IZS**	5	7	6	3	2	2	4	1	3	6	28	2	3	3	28	6.7	24
13	6	3	3	3	3	9	27	3	**IZS**	5	6	7	5	5	6	8	7	4	3	3	5	5	5	4	27	5.9	24
14	6	5	3	2	6	6	5	**IZS**	2	2	3	5	7	4	16	9	2	3	2	8	6	2	3	3	16	4.8	24
15	1	1	1	2	2	3	**IZS**	3	7	7	3	8	4	2	7	3	5	4	3	4	8	2	2	2	8	3.7	24
16	2	3	1	1	2	**IZS**	28	2	1	6	16	2	3	9	8	6	13	3	6	11	4	20	9	3	28	6.9	24
17	4	4	3	**146**	**IZS**	114	7	6	8	14	3	2	21	2	7	3	11	5	10	6	27	3	2	2	**146**	17.8	24
18	2	2	1	**IZS**	10	2	37	5	5	3	3	2	3	3	2	3	5	2	4	2	2	2	3	3	37	4.6	24
19	3	2	**IZS**	3	2	2	3	6	4	3	3	1	2	1	1	1	2	1	1	1	5	3	6	5	6	2.7	24
20	5	**IZS**	5	4	7	6	18	10	12	14	3	3	5	11	6	13	3	2	1	2	5	3	5	4	18	6.4	24
21	**IZS**	2	2	2	6	2	2	2	2	2	4	4	3	3	3	3	2	3	2	3	1	2	2	**IZS**	6	2.6	24
22	3	4	5	4	5	4	2	2	3	3	2	2	2	3	1	1	3	1	1	2	7	4	**IZS**	3	7	2.9	24
23	4	4	3	3	5	26	14	5	7	9	3	4	4	2	2	2	4	4	9	10	3	**IZS**	8	3	26	6.0	24
24	1	1	1	2	28	3	5	4	21	6	6	4	5	3	7	3	3	2	2	4	**IZS**	8	3	2	28	5.4	24
25	2	2	3	5	5	10	8	9	12	4	1	1	11	1	2	2	2	4	3	**IZS**	13	4	3	3	13	4.8	24
26	4	3	3	3	10	15	15	3	4	12	2	1	3	5	5	2	5	2	**IZS**	3	4	4	6	3	15	5.1	24
27	2	3	3	3	4	31	15	4	8	5	7	2	6	8	1	1	2	**IZS**	2	3	**C**	**C**	3	3	31	5.5	24
28	3	3	3	4	3	3	9	9	6	3	6	2	2	2	2	2	**IZS**	2	1	2	3	3	2	2	9	3.3	24
29	2	2	3	6	6	7	10	**C**	**C**	**C**	**C**	2	2	2	1	**IZS**	0	1	3	2	4	3	2	2	10	3.2	24
30	2	2	2	2	5	7	11	5	3	2	2	3	3	3	**IZS**	1	1	1	0	3	2	3	2	2	11	2.9	24
31	2	1	1	2	2	19	3	5	5	5	5	2	1	**IZS**	1	0	0	0	0	0	5	5	5	3	19	3.1	24
HOURLY MAX	6	5	5	146	39	114	37	32	21	23	16	11	21	11	16	39	13	5	10	11	28	20	9	6			
HOURLY AVG	2.9	2.8	2.7	8.3	6.8	11.4	11.8	6.5	6.7	6.0	4.4	3.2	4.3	3.4	4.0	4.2	3.3	2.3	3.2	3.7	6.8	4.4	3.7	3.0			

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:	692					
MAXIMUM INSTANTANEOUS VALUE:	146	PPB	@ HOUR(S)	3	ON DAY(S)	17
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	13	HRS				
STANDARD DEVIATION:	8.35					



JOB #: 2833-12-07-01-C

LICA
NOX_ / WD Joint Frequency Distribution (Percent)

July 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	2.71	2.99	2.71	3.99	3.85	5.56	21.54	5.84	5.27	4.99	10.55	13.26	8.70	4.70	1.85	1.42	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.71	2.99	2.71	3.99	3.85	5.56	21.54	5.84	5.27	4.99	10.55	13.26	8.70	4.70	1.85	1.42	

Calm : .00 %

Total # Operational Hours : 701

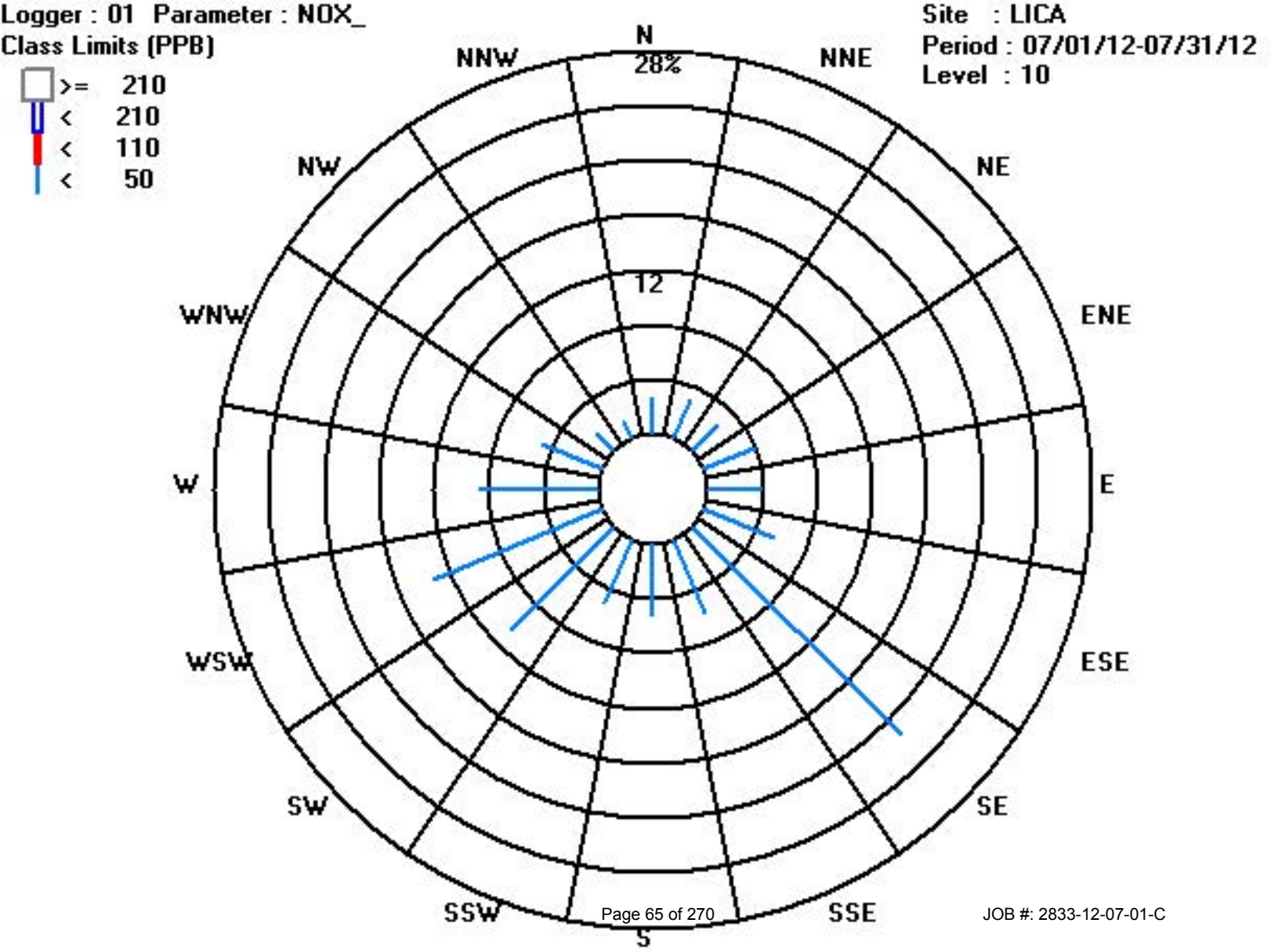
Distribution By Samples

Direction

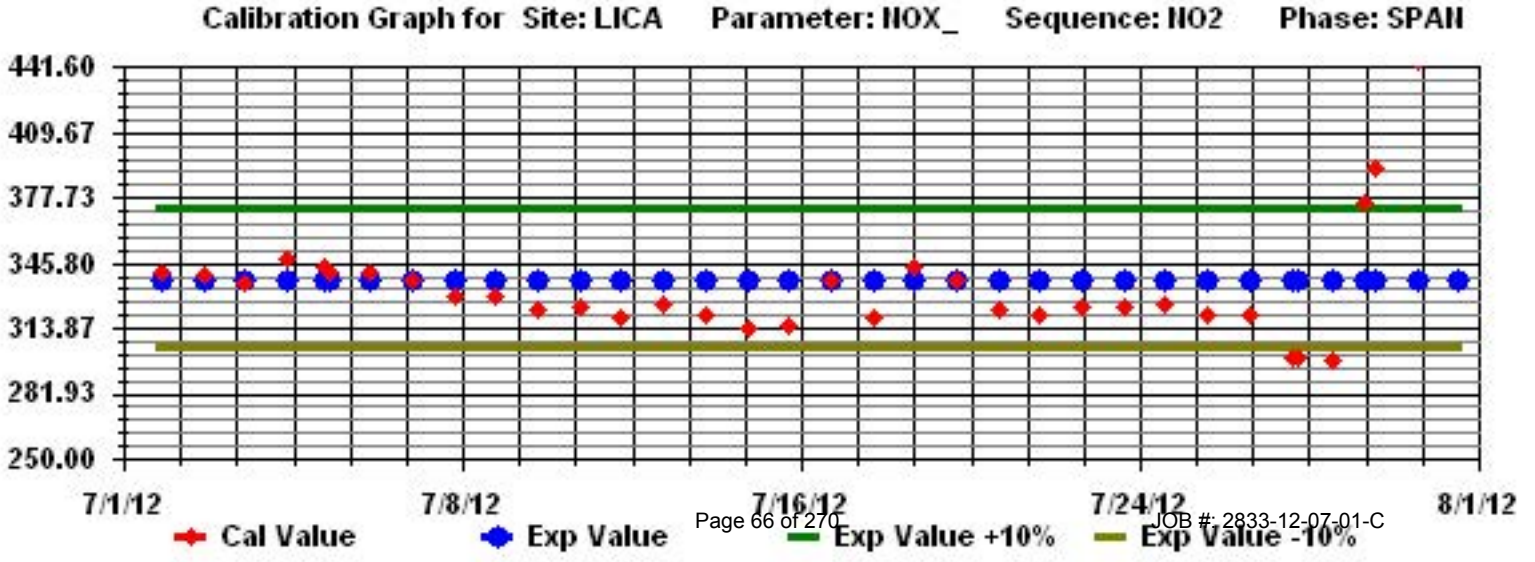
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	19	21	19	28	27	39	151	41	37	35	74	93	61	33	13	10	701
< 110																	
< 210																	
>= 210																	
Totals	19	21	19	28	27	39	151	41	37	35	74	93	61	33	13	10	

Calm : .00 %

Total # Operational Hours : 701



JOB #: 2833-12-07-01-C


Calibration Graph for Site: LICA Parameter: NOX_ Sequence: NO2 Phase: SPAN
441.60
409.67
377.73
345.80
313.87
281.93
250.00
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

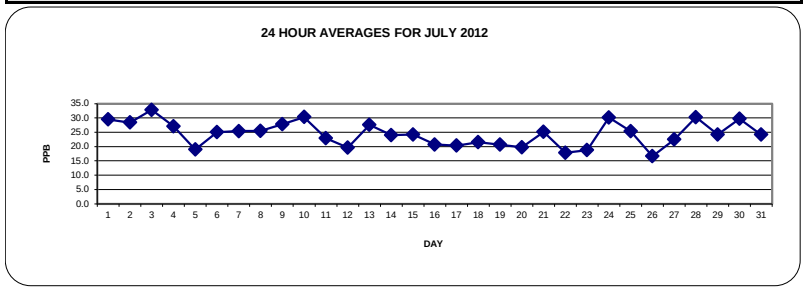
OZONE (O_3) hourly averages in ppb

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	28	28	27	28	32	30	27	26	26	23	27	29	30	32	39	38	36	42	42	42	**IZS**	21	13	12	42	29.5	24
2	13	17	9	5	5	9	10	16	25	32	37	40	43	45	42	40	39	37	34	**IZS**	27	33	50	45	50	28.4	24
3	41	29	24	15	13	29	30	32	37	31	28	28	31	29	32	38	39	47	**IZS**	36	38	45	47	35	47	**32.8**	24
4	30	29	29	29	28	33	40	38	31	29	30	30	38	36	26	22	21	**IZS**	21	20	19	17	14	13	40	27.1	24
5	13	14	11	11	12	13	14	19	23	26	29	29	27	**C**	**C**	**C**	**C**	31	32	27	23	12	8	6	32	19.0	24
6	6	5	2	2	1	3	8	14	22	32	37	38	39	42	43	**IZS**	44	44	42	39	37	30	30	16	44	25.0	24
7	7	4	3	2	1	2	10	25	32	38	41	41	40	43	**IZS**	44	43	33	21	31	37	28	28	30	44	25.4	24
8	18	9	3	3	3	8	21	25	30	33	35	37	39	**IZS**	45	47	46	44	40	32	22	15	15	15	47	25.4	24
9	13	15	10	9	17	21	25	27	29	30	29	37	**IZS**	45	46	46	46	45	38	31	14	16	22	27	46	27.7	24
10	26	20	16	10	10	12	21	20	22	21	21	**IZS**	23	29	34	49	50	59	**71**	61	46	39	22	15	**71**	30.3	24
11	13	6	5	8	7	16	18	25	30	34	**IZS**	37	37	36	34	35	36	40	37	33	16	11	7	6	40	22.9	24
12	3	2	2	2	1	2	5	10	11	**IZS**	20	19	24	32	43	44	42	41	37	30	22	17	20	22	44	19.6	24
13	20	30	32	30	26	14	12	23	**IZS**	30	37	38	39	40	41	42	43	41	36	24	13	10	7	5	43	27.5	24
14	4	3	8	5	3	6	15	**IZS**	26	25	31	34	35	34	32	33	35	38	39	33	27	28	29	29	39	24.0	24
15	30	29	28	24	23	19	**IZS**	16	21	24	26	24	25	24	27	23	21	22	25	31	27	24	24	19	31	24.2	24
16	12	12	14	16	12	**IZS**	13	16	18	20	27	28	28	30	32	34	34	33	29	22	13	9	11	13	34	20.7	24
17	13	8	11	7	**IZS**	7	16	20	26	32	33	32	32	31	29	28	24	22	20	17	16	15	15	13	33	20.3	24
18	13	9	8	**IZS**	9	9	9	13	17	18	21	26	30	29	30	30	33	36	37	31	24	25	20	19	37	21.6	24
19	15	15	**IZS**	19	18	18	20	18	18	19	24	26	25	25	25	26	27	26	26	25	20	17	13	10	27	20.7	24
20	10	**IZS**	6	2	1	4	8	11	18	26	33	38	36	35	36	33	32	30	27	23	15	11	9	10	38	19.7	24
21	**IZS**	16	19	19	19	20	20	22	22	23	22	25	27	30	28	38	38	38	39	32	22	15	19	**IZS**	39	25.1	24
22	17	12	7	4	6	13	17	16	19	22	21	23	19	21	25	28	30	31	28	26	16	6	**IZS**	3	31	17.8	24
23	1	0	0	0	0	1	3	12	18	22	24	24	25	28	30	33	34	31	29	30	31	**IZS**	28	27	34	18.7	24
24	27	24	24	19	8	16	26	34	37	40	50	46	42	42	43	44	38	35	32	26	**IZS**	12	14	13	50	30.1	24
25	22	27	22	20	19	18	23	28	29	34	36	39	41	40	39	38	37	35	25	**IZS**	6	2	2	1	41	25.3	24
26	1	0	0	0	0	1	9	17	21	27	30	32	32	36	37	36	33	27	**IZS**	17	14	5	4	3	37	16.6	24
27	2	2	1	2	1	1	10	15	19	25	33	37	37	39	40	41	39	**IZS**	33	22	13	36	39	29	41	22.4	24
28	19	17	9	6	4	7	10	20	33	40	44	46	53	52	49	47	**IZS**	44	39	41	38	26	25	26	53	30.2	24
29	19	23	14	16	11	9	9	15	22	36	46	43	46	46	46	**IZS**	42	39	27	19	11	8	5	5	46	24.2	24
30	3	1	1	1	1	1	5	17	26	37	42	45	48	51	**IZS**	49	48	48	45	39	48	49	43	36	51	29.7	24
31	29	27	25	28	25	20	20	18	18	24	19	22	24	**IZS**	33	31	33	33	32	30	24	19	10	11	33	24.1	24
HOURLY MAX	41	30	32	30	32	33	40	38	37	40	50	46	53	52	49	49	50	59	71	61	48	49	50	45			
HOURLY AVG	15.6	14.4	12.3	11.4	10.5	12.1	15.8	20.3	24.2	28.4	31.1	33.1	33.8	35.8	35.9	37.0	36.7	37.0	33.9	30.0	23.4	20.0	19.8	17.1			

STATUS FLAG CODES

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



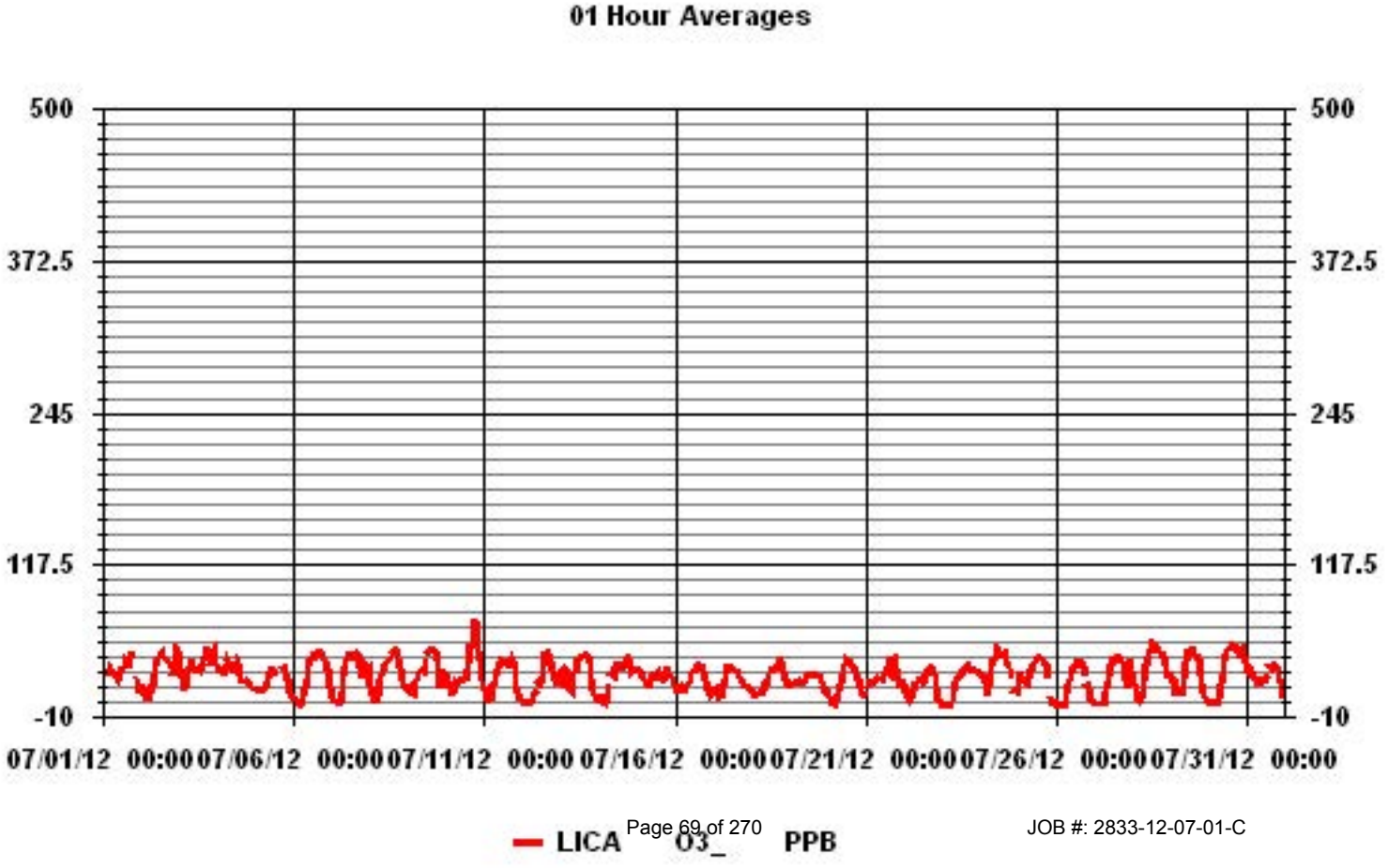
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	701					
MAXIMUM 1-HR AVERAGE:	71	PPB	@ HOUR(S)	18	ON DAY(S)	10
MAXIMUM 24-HR AVERAGE:	32.8	PPB			ON DAY(S)	3
					VAR-VARIOUS	

IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	12.94		MONTHLY AVERAGE:	24.42	PPB

JOB #: 2833-12-07-01-C



JOB #: 2833-12-07-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 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	29	28	28	31	33	32	30	27	28	25	29	31	31	35	54	43	40	44	44	44	**IZS**	30	18	22	54	32.9	24
2	19	19	18	11	8	11	13	21	29	37	40	44	46	48	44	42	42	40	39	**IZS**	30	50	55	52	55	33.0	24
3	48	36	31	26	20	37	35	37	39	35	30	33	34	33	41	41	45	49	**IZS**	40	61	60	50	43	61	39.3	24
4	31	31	30	31	29	41	42	41	34	31	32	33	43	45	30	23	22	**IZS**	22	21	20	18	17	14	45	29.6	24
5	15	15	12	12	14	14	17	22	26	29	30	31	29	**C**	**C**	**C**	**C**	32	36	30	29	17	11	11	36	21.6	21
6	11	8	4	4	2	7	10	20	30	36	39	40	43	43	46	**IZS**	46	46	43	42	39	36	33	27	46	28.5	24
7	11	7	4	5	2	2	23	31	36	41	44	43	42	47	**IZS**	47	46	42	30	51	46	37	37	35	51	30.8	24
8	24	16	6	5	8	18	24	29	32	36	38	42	42	**IZS**	48	50	49	47	44	37	29	20	21	20	50	29.8	24
9	18	20	19	15	20	25	27	30	32	33	32	42	**IZS**	47	48	48	48	47	42	35	24	21	26	29	48	31.7	24
10	29	25	22	14	13	23	23	24	26	23	24	**IZS**	27	37	46	52	53	69	**73**	71	52	46	33	22	**73**	36.0	24
11	18	14	10	11	16	19	22	28	34	35	**IZS**	39	39	38	36	38	41	42	39	36	27	16	12	8	42	26.9	24
12	5	3	5	2	2	4	8	14	18	**IZS**	32	22	28	39	46	47	45	44	41	39	30	23	24	23	47	23.7	24
13	27	34	34	31	29	22	19	26	**IZS**	34	39	40	42	42	43	44	45	45	42	35	18	14	11	8	45	31.5	24
14	6	5	14	8	7	10	22	**IZS**	30	28	34	39	39	37	33	36	39	40	40	37	30	33	33	32	40	27.5	24
15	32	31	30	26	24	23	**IZS**	17	24	27	29	28	28	27	29	26	23	23	28	34	30	25	27	23	34	26.7	24
16	18	15	15	18	15	**IZS**	18	18	20	24	31	30	31	32	34	36	36	35	32	27	19	14	16	15	36	23.9	24
17	16	13	16	12	**IZS**	16	18	24	32	34	34	34	33	32	30	30	27	23	21	19	18	16	16	15	34	23.0	24
18	15	12	11	**IZS**	10	11	10	17	19	20	23	29	32	31	32	33	38	38	44	42	27	28	27	21	44	24.8	24
19	19	19	**IZS**	20	19	20	21	19	19	22	26	27	27	25	26	28	28	27	28	27	23	20	17	12	28	22.6	24
20	12	**IZS**	8	4	1	8	9	15	22	32	38	40	38	38	40	37	34	32	29	26	22	15	12	16	40	23.0	24
21	**IZS**	19	20	20	21	20	21	22	23	25	24	30	29	33	35	44	42	40	43	39	30	21	22	**IZS**	44	28.3	24
22	21	16	10	8	8	16	20	18	23	25	25	25	22	25	29	32	32	32	31	30	22	9	**IZS**	5	32	21.0	24
23	3	1	1	1	1	2	9	17	21	25	26	27	26	31	32	36	35	33	32	32	32	**IZS**	30	28	36	20.9	24
24	29	27	27	23	14	21	35	39	42	47	59	55	48	46	49	49	42	37	35	32	**IZS**	15	22	24	59	35.5	24
25	27	30	25	22	21	21	28	32	34	38	40	42	44	42	41	39	38	37	34	**IZS**	11	3	3	2	44	28.4	24
26	1	1	1	1	1	2	16	21	24	30	32	34	36	38	39	42	43	35	**IZS**	25	22	9	11	8	43	20.5	24
27	6	5	4	4	3	6	14	19	21	29	38	40	41	42	43	43	43	**IZS**	38	34	17	44	42	39	44	26.7	24
28	26	23	13	11	9	12	18	31	38	44	48	50	57	56	53	50	**IZS**	48	43	47	45	39	31	29	57	35.7	24
29	26	27	23	20	15	10	13	19	30	45	50	49	48	49	48	**IZS**	43	44	37	35	17	20	8	10	50	29.8	24
30	6	3	2	2	2	2	13	22	32	41	45	48	54	54	**IZS**	51	51	50	48	46	53	53	52	41	54	33.5	24
31	36	34	29	30	29	25	23	20	26	28	23	23	27	**IZS**	34	32	35	35	33	31	30	21	17	15	36	27.7	24
HOURLY MAX	48	36	34	31	33	41	42	41	42	47	59	55	57	56	54	52	53	69	73	71	61	60	55	52			
HOURLY AVG	19.5	17.9	15.7	14.3	13.2	16.0	20.0	24.0	28.1	32.0	34.5	36.3	36.9	39.0	39.6	40.0	39.7	39.9	37.6	36.0	29.4	25.8	24.5	21.6			

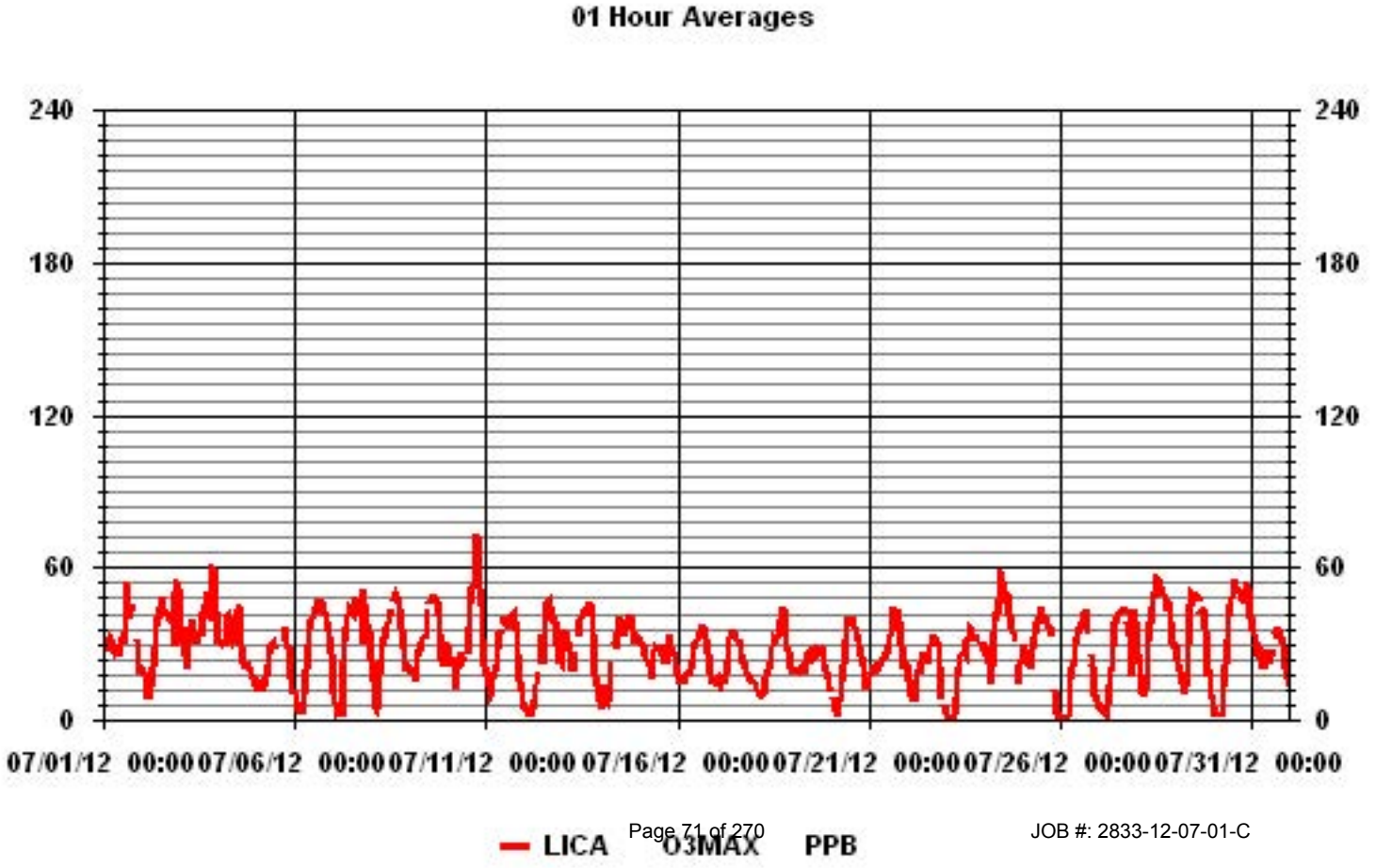
STATUS FLAG CODES

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:	709					
MAXIMUM INSTANTANEOUS VALUE:	73	PPB	@ HOUR(S)	18	ON DAY(S)	10
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		741	HRS
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	13.32					

JOB #: 2833-12-07-01-C



JOB #: 2833-12-07-01-C

LICA
O3_ / WD Joint Frequency Distribution (Percent)

July 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	2.67	2.82	2.82	3.94	3.80	5.50	21.29	5.78	5.21	4.65	10.29	13.25	8.88	4.51	1.83	1.41	98.73
< 110	.00	.14	.00	.00	.00	.00	.00	.00	.00	.28	.14	.42	.14	.14	.00	.00	1.26
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.67	2.96	2.82	3.94	3.80	5.50	21.29	5.78	5.21	4.93	10.43	13.68	9.02	4.65	1.83	1.41	

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
< 50	19	20	20	28	27	39	151	41	37	33	73	94	63	32	13	10	700
< 110		1								2	1	3	1	1			9
< 210																	
>= 210																	
Totals	19	21	20	28	27	39	151	41	37	35	74	97	64	33	13	10	

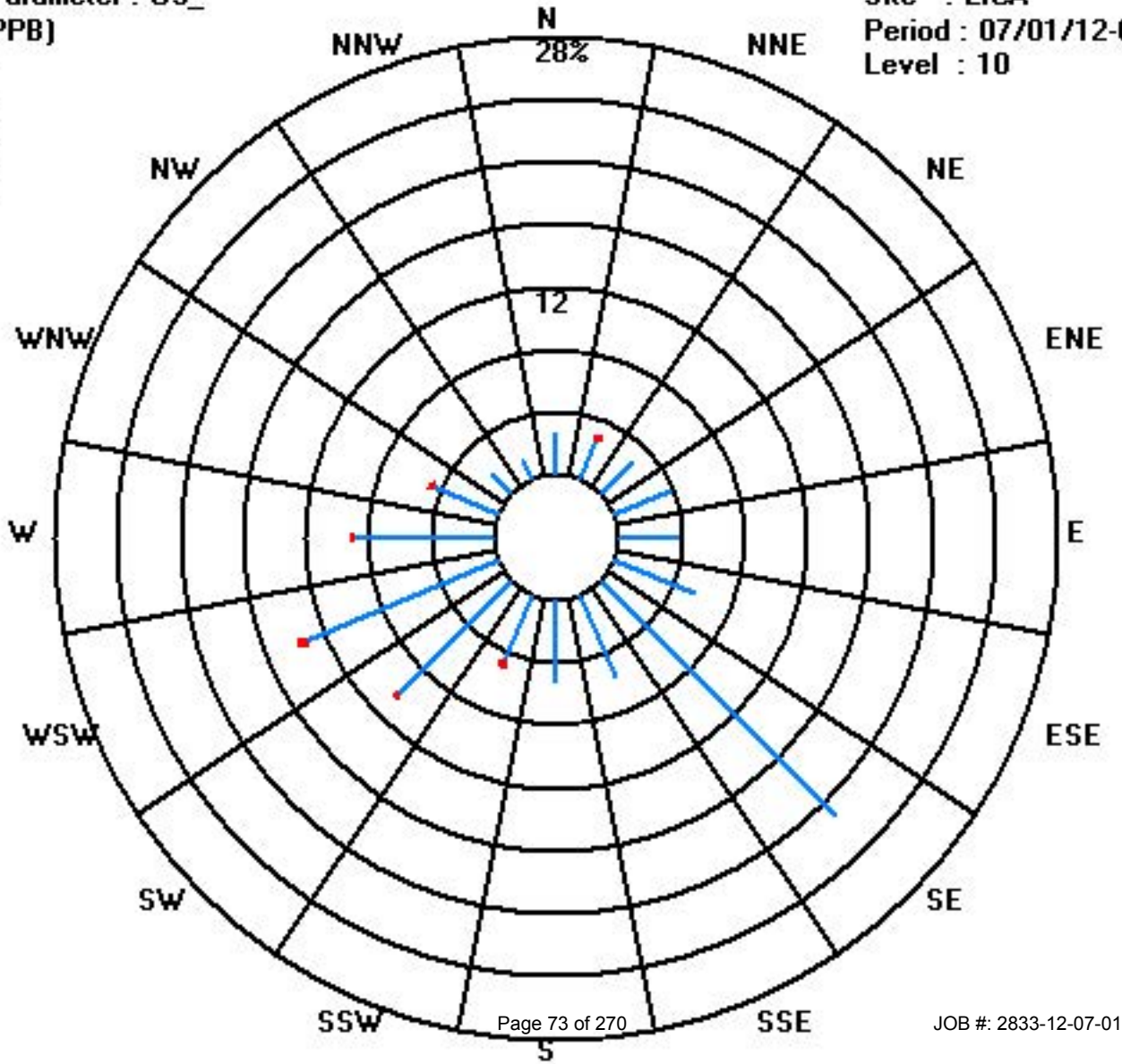
Calm : .00 %

Total # Operational Hours : 709

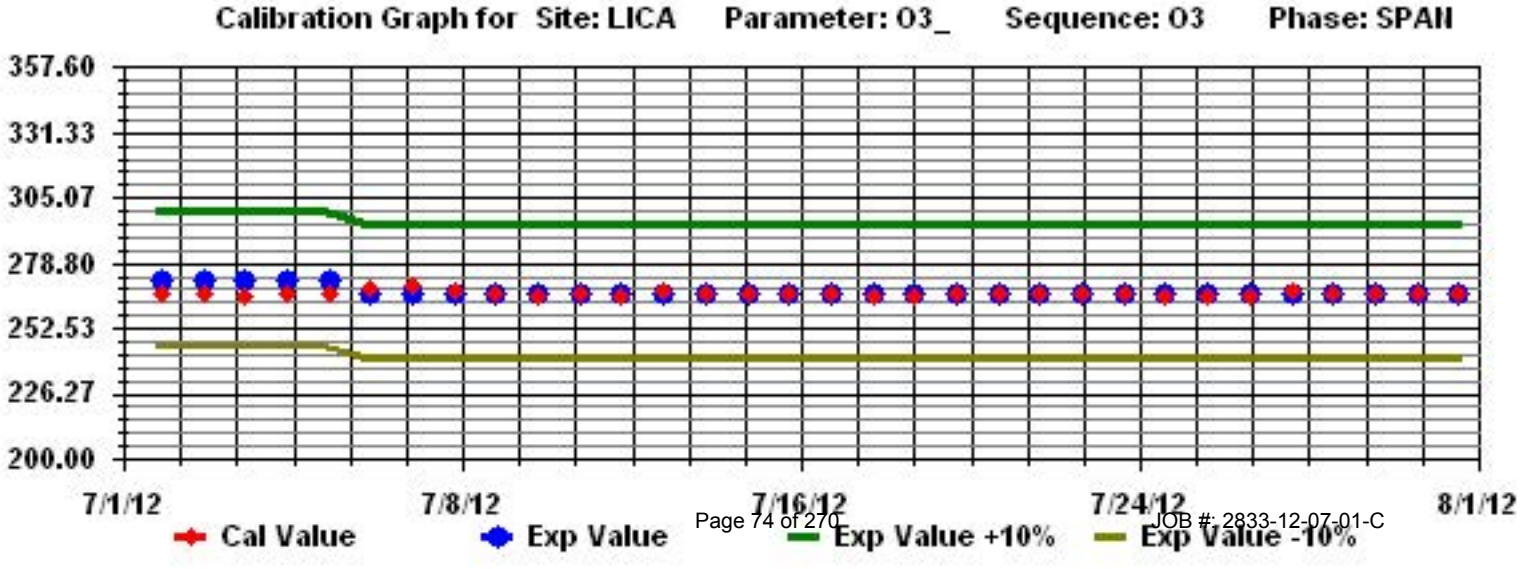
Logger : 01 Parameter : 03_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA
Period : 07/01/12-07/31/12
Level : 10



JOB #: 2833-12-07-01-C


Calibration Graph for Site: LICA Parameter: O3_ Sequence: O3 Phase: SPAN
357.60
331.33
305.07
278.80
252.53
226.27
200.00
7/1/12
7/8/12
7/16/12
7/24/12
8/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ambient Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

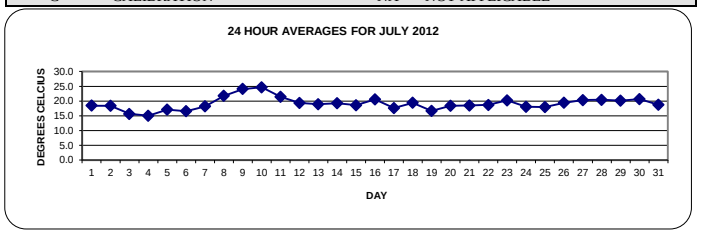
AMBIENT TEMPERATURE hourly averages (Degrees C)

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	17.2	16.7	16.3	16.1	17.4	17.8	17.1	18	18.2	18.3	20.3	21.4	22.2	23.2	23.8	22.5	20.4	19.9	19.7	19.1	17.6	14.5	12.9	12.4	23.8	18.5	24
2	11.9	12.4	11.5	10.7	10.9	12.6	13.4	16.6	19.1	21.2	22.4	22.9	23.8	24.2	24.3	24.7	23.9	23.7	22.6	21	19.7	17.7	15.8	14	24.7	18.4	24
3	13.9	13.5	13	12.2	12.2	13.5	14.1	15.4	17.3	19.2	21.2	21.2	19.8	18.3	17.5	16.8	15.4	16.4	17.5	16.9	15.5	11.9	11.5	11.7	21.2	15.7	24
4	11.8	11.2	11	11.5	11.8	12.2	13	13.6	13.9	14	15.1	15.5	16.8	15.9	16.6	18.2	19.3	18.8	19.1	18	17.1	16.3	16.1	14.5	19.3	15.1	24
5	14	13.7	12.3	11.5	11.5	12.1	12.5	15.5	17.4	18.9	20.1	21	22.2	22.9	23.6	24.2	23.7	23.6	20.1	17.5	15.9	13.3	11.7	11.2	24.2	17.1	24
6	10.8	10.2	9.1	8.6	8.7	11	14.1	16.3	18.9	20.8	22.1	23	23.4	24	24.3	24.4	24.4	19.2	16.4	16.2	15.6	13.6	12.8	10.7	24.4	16.6	24
7	9.3	8.5	7.6	**7.2**	**7.2**	10.1	15.1	17.5	19.2	21.6	23.2	24	24.8	25.8	26.5	26.6	26.5	24.1	22.6	21.1	17.3	17.2	17.5	17	26.6	18.2	24
8	15.8	14.4	13.7	13.1	13.2	15.5	18	20.1	22.2	23.5	24.3	25.3	26.6	27.6	28.1	28.8	28.7	28.5	27.2	25	23.1	21.2	20	19.5	28.8	21.8	24
9	18.1	17.7	16.6	16.1	17.1	18.8	20.1	21.8	23.8	25.2	26.7	28.1	29	29.6	29.9	29.9	29.8	29.5	28.9	27.7	25.2	23.4	22.8	22.2	29.9	24.1	24
10	21.4	20.1	19.3	18	18.1	20.2	22.2	22.8	24.6	26.2	26.7	26.9	29.1	30.6	31.4	**31.9**	31.4	30.7	29.3	27.8	23.8	21.2	19.6	19.1	**31.9**	**24.7**	24
11	17.8	16.8	15.8	15.7	15.3	16.1	17.9	19.8	22	23.8	25	26.2	25.2	25.2	26.1	26.9	28.3	28.7	27.4	25.7	20.9	17.2	15.6	14.2	28.7	21.4	24
12	12.8	12.1	11.6	11.1	11.5	13	14.5	15.8	17.7	20.6	20.9	20.6	21.6	22.6	25.5	26.3	26.1	26.9	26.1	24.9	23	20.5	19.7	19	26.9	19.4	24
13	17.7	17.1	16.8	16	15.2	13.6	15.5	17.7	18.4	20.1	21.4	21.7	22.3	23	23.4	23.6	23.9	24.1	23.2	21.3	17.8	15.2	13.5	12.4	24.1	19.0	24
14	12.8	13.5	13	11.5	12.1	13.6	15.1	17.5	18.4	19.9	20.4	21.5	21.4	22.2	24	25.5	25.6	25.5	24.8	23	21.6	20.6	19.8	19.4	25.6	19.3	24
15	19.2	18.9	18.8	18.4	18.1	17.5	17.3	17.4	18.5	18.9	18.4	18.2	17.9	18.2	18.5	18.4	19.1	19.7	20.1	19.4	18.7	18.9	18.9	18.5	20.1	18.6	24
16	18	18.2	18.8	18.4	17.6	17.6	18.8	19.7	20.7	21.4	22.7	23.4	23.6	24	24.2	24.1	23.9	23.5	22.8	21.5	19.1	17.5	17.1	16.5	24.2	20.5	24
17	15.8	14.6	14	13.2	12.2	12.6	14.5	16.2	18.2	19.5	19.5	19.1	20.3	21	20.8	20.6	20.2	19.7	19	18.6	18.7	18.3	18	17.9	21.0	17.6	24
18	17.4	17	16.9	17.5	17.8	18.1	18.4	19.6	20.2	20.4	21	22.4	23.1	22.5	22.5	23.4	24.2	24.4	20.9	17.5	16.4	15.3	15.1	14.3	24.4	19.4	24
19	13.5	12.8	13.5	13.7	12.9	13.1	13.4	12.6	13.9	15.5	18.2	19.5	19.8	20.6	20.8	21.6	21.5	21.1	21.2	20.4	17.9	15.4	14.3	13	21.6	16.7	24
20	12.6	11.6	10.5	9.1	8.2	10.4	13.9	16.7	19.7	21.5	22.3	22.8	23.1	24	24.7	24.9	24.5	24.7	24.1	22.8	19.6	17.3	16.8	16.8	24.9	18.4	24
21	16.7	17.1	17.7	17.3	17.2	17.2	17.9	19.5	20.6	22	21.6	23.1	22.2	23.2	22.7	18.2	17.7	16.9	16.6	17.1	16.4	15.2	14.9	15.3	23.2	18.5	24
22	14.8	14	13.8	13.9	14.1	14.9	14.7	15.2	16.4	17.9	18.8	20	19.9	21.1	23.3	24.8	25.5	25.9	25.7	24.5	20.8	17.3	16	15	25.9	18.7	24
23	14.3	13.4	12.7	12	11.6	13.6	16.8	19.4	20.4	21.9	22.8	23.6	24.1	25.3	25.9	26	26	25.4	24.4	23.5	23	21.7	19.7	18.8	26.0	20.3	24
24	18.5	18.4	17.9	16	14.1	15	15.5	16.6	18.3	19.7	20.1	20.7	20.2	20.7	20.7	21	20.9	20.9	20.1	18.3	16.4	15.1	14.3	13.9	21.0	18.1	24
25	14	13.9	13.2	13.2	13.3	14	15.3	17.1	17.6	18.9	19.9	20.7	21	21.6	21.6	22.2	22.8	22.3	20	19	18.4	17.8	17.4	16.9	22.8	18.0	24
26	16.3	15.4	14.7	13.7	13	13.9	17.5	19.1	20.9	22.1	23.3	24.3	23.8	24.7	25.1	24.4	21	23.3	22.1	20.1	19	17.1	16	15	25.1	19.4	24
27	14.3	14.2	13.8	13.3	13	14.1	16.6	18.8	20.5	22.2	23.6	23.7	25.3	25.2	26.4	26.6	25.8	24.5	24.7	23.4	20.6	20.4	18.8	17.6	26.6	20.3	24
28	15.8	14.7	14.2	13.6	12.8	14.2	17.8	20.1	21.8	23.7	24.8	26.1	26.7	27.2	27.7	28.1	26.9	25.3	23.8	19.7	17.1	16.6	16.1	15.5	28.1	20.4	24
29	15.2	15.3	14.7	14.6	14.3	14.3	16.3	18.8	21.1	23	24.3	25.3	25.6	26.1	26.6	26.7	26.5	23.6	21.4	21.4	18.8	17.2	16.1	15.2	26.7	20.1	24
30	14.5	13.9	13	12.4	11.9	12.8	17	19.6	22.5	24.5	25	26.4	26.2	27.4	27.8	27.8	27.9	27.8	25.8	23.6	19.9	16.5	16	15.4	27.9	20.7	24
31	15.3	15.2	14.9	15.2	15.1	15.1	16.1	18.1	17.2	17	18	20.1	21.9	23.3	24.3	24.5	24.7	24.8	23.7	21.2	18.9	16.9	14.8	13.6	24.8	18.7	24
HOURLY MAX	21.4	20.1	19.3	18.4	18.1	20.2	22.2	22.8	24.6	26.2	26.7	28.1	29.1	30.6	31.4	31.9	31.4	30.7	29.3	27.8	25.2	23.4	22.8	22.2			
HOURLY AVG	15.2	14.7	14.2	13.7	13.5	14.5	16.1	17.8	19.3	20.8	21.7	22.5	23.0	23.6	24.1	24.3	24.1	23.7	22.6	21.2	19.2	17.4	16.4	15.7			

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

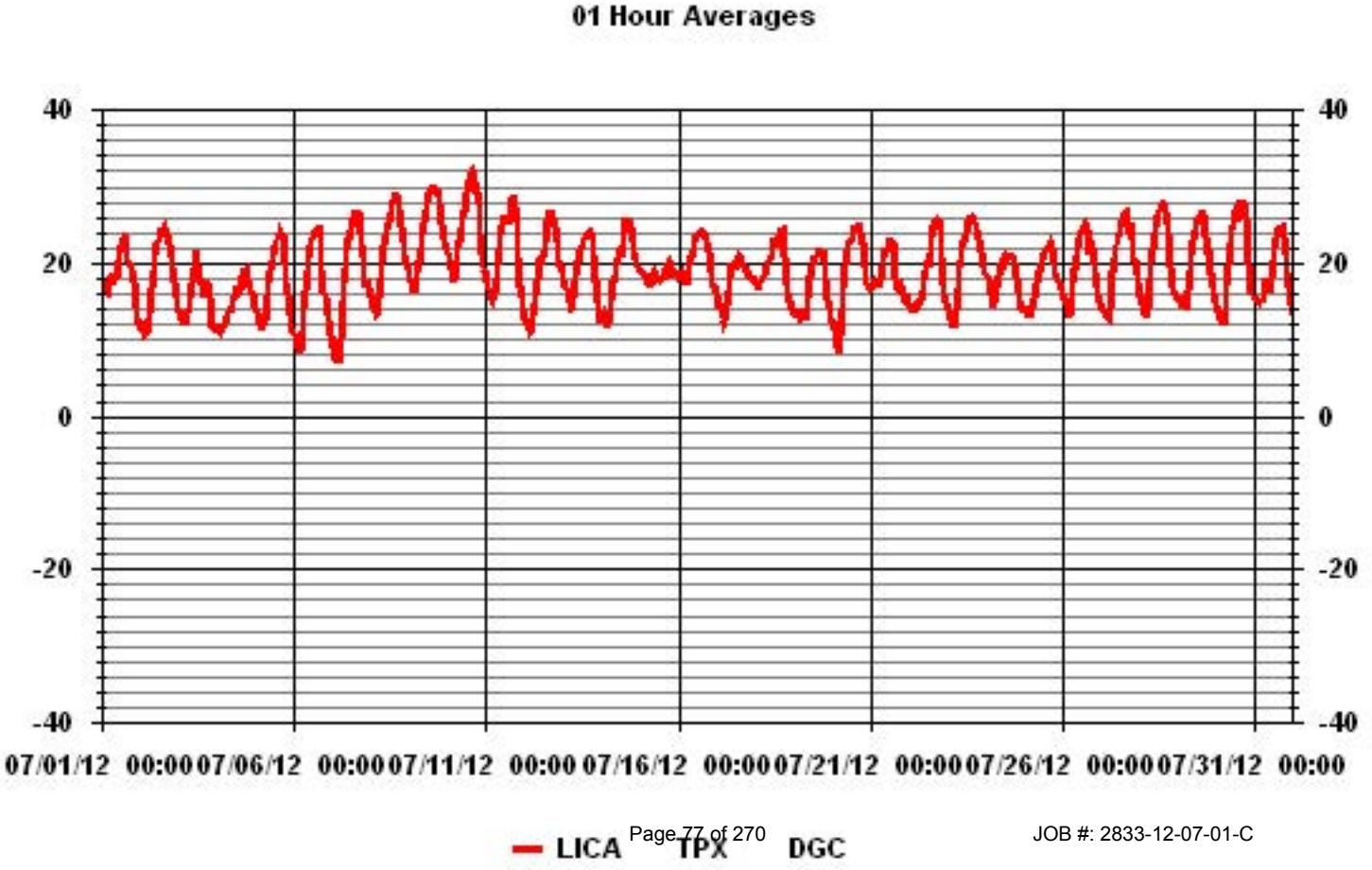


MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	7.2	^{O}C	@ HOUR(S)	3, 4	ON DAY(S)	7
MAXIMUM 1-HR AVERAGE:	31.9	^{O}C	@ HOUR(S)	15	ON DAY(S)	10
MAXIMUM 24-HR AVERAGE:	24.7	^{O}C			ON DAY(S)	10
					VAR-VARIOUS	

CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
			AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	4.74		MONTHLY AVERAGE:	19.14	^{O}C

*** Outside detection limits of sensor.**



JOB #: 2833-12-07-01-C

Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

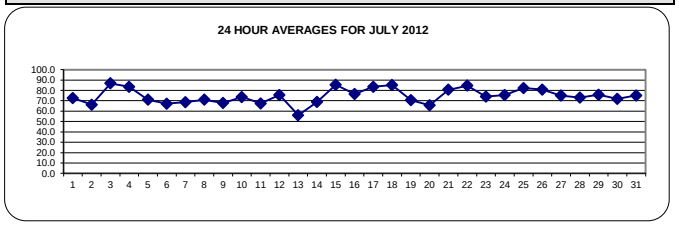
RELATIVE HUMIDITY hourly averages (%)

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	76	76	77	78	71	72	80	77	75	79	70	67	67	64	61	62	67	62	62	62	71	86	91	92	92	72.7	24
2	94	95	95	95	95	93	89	75	64	53	43	41	39	36	39	39	42	45	51	61	66	72	78	90	95	66.3	24
3	92	96	97	98	98	91	90	85	76	72	68	69	74	87	91	89	95	83	79	85	89	93	91	95	98	**86.8**	24
4	97	96	97	98	97	96	93	90	92	95	92	91	82	84	75	63	57	61	61	67	72	78	81	88	98	83.5	24
5	88	88	92	93	92	89	87	76	69	65	62	59	57	54	47	40	42	41	54	65	73	86	92	93	93	71.0	24
6	94	95	95	96	96	90	83	76	65	58	49	45	44	39	36	36	33	47	60	63	67	76	79	88	96	67.1	24
7	91	92	93	94	92	85	73	65	60	53	44	40	38	37	38	40	44	60	75	70	91	93	91	90	94	68.7	24
8	95	98	98	97	97	91	83	73	63	59	59	58	55	52	49	45	42	45	53	63	74	83	86	87	98	71.0	24
9	91	90	91	92	87	79	75	70	67	64	61	52	46	44	44	46	47	49	52	61	75	82	83	83	92	68.0	24
10	85	90	92	95	95	87	83	82	77	73	72	73	65	56	52	48	44	49	55	62	66	80	93	94	95	73.7	24
11	97	97	98	99	98	90	82	73	64	57	48	42	48	50	46	43	42	36	37	42	70	83	87	90	99	67.5	24
12	93	93	93	94	94	94	91	88	84	69	76	79	74	65	48	44	47	47	55	65	74	84	84	77	94	75.5	24
13	70	57	56	60	67	79	74	65	59	52	38	35	33	33	33	31	30	33	42	60	77	84	88	90	90	56.1	24
14	88	88	89	93	91	88	82	67	64	63	57	55	57	57	54	53	55	53	51	59	67	72	74	75	93	68.8	24
15	76	78	78	81	82	90	93	94	93	89	88	92	93	90	88	91	88	86	78	77	83	81	78	83	94	85.4	24
16	89	91	86	86	91	91	87	82	77	73	67	64	63	61	59	58	58	59	65	74	85	90	92	89	92	76.5	24
17	83	92	95	95	96	95	92	85	77	71	70	72	68	68	70	72	76	80	85	88	88	92	97	97	97	83.5	24
18	98	99	99	99	98	97	95	89	84	82	79	72	69	73	73	71	67	66	75	87	91	93	94	94	99	85.2	24
19	94	96	94	89	89	84	84	92	86	77	64	56	54	51	49	46	47	49	48	50	61	72	78	84	96	70.6	24
20	86	89	91	94	93	89	81	73	61	53	48	47	45	43	41	41	42	41	46	56	71	80	83	83	94	65.7	24
21	82	80	76	75	78	77	74	70	69	67	74	68	71	65	69	87	87	91	94	93	95	98	98	97	98	80.6	24
22	97	98	99	99	99	98	99	**100**	94	88	87	81	83	76	68	63	59	57	58	61	80	94	96	96	**100**	84.6	24
23	96	96	96	97	97	92	88	82	78	71	68	64	63	55	50	47	48	54	61	63	63	72	84	90	97	74.0	24
24	91	91	90	95	97	94	83	71	66	62	54	56	61	60	62	59	58	61	67	76	84	89	92	94	97	75.5	24
25	93	90	93	95	96	94	90	83	81	75	71	66	63	64	64	62	61	64	84	95	96	97	98	98	98	82.2	24
26	98	98	98	98	98	96	89	84	76	66	62	56	59	55	52	58	79	71	76	87	90	97	97	97	98	80.7	24
27	98	98	98	98	98	96	89	81	76	71	62	61	54	55	50	50	54	62	64	74	88	69	73	81	98	75.0	24
28	90	94	94	94	96	93	80	75	69	63	58	54	50	48	46	43	46	51	58	75	89	94	95	96	96	73.0	24
29	96	95	96	96	97	97	90	81	74	65	56	53	52	48	46	46	45	62	75	78	89	93	95	97	97	75.9	24
30	97	96	96	96	96	94	86	79	69	61	58	53	53	48	46	48	48	49	56	65	67	82	89	95	97	72.0	24
31	96	95	96	96	96	97	93	85	89	88	88	77	65	58	55	50	42	43	44	51	60	71	83	86	97	75.2	24
HOURLY MAX	98	99	99	99	99	98	99	100	94	95	92	92	93	90	91	91	95	91	94	95	96	98	98	98			
HOURLY AVG	90.7	91.2	91.5	92.4	92.5	90.3	85.7	79.6	74.1	68.8	64.3	61.2	59.5	57.3	54.9	53.9	54.6	56.7	62.0	68.9	77.8	84.4	87.7	90.0			

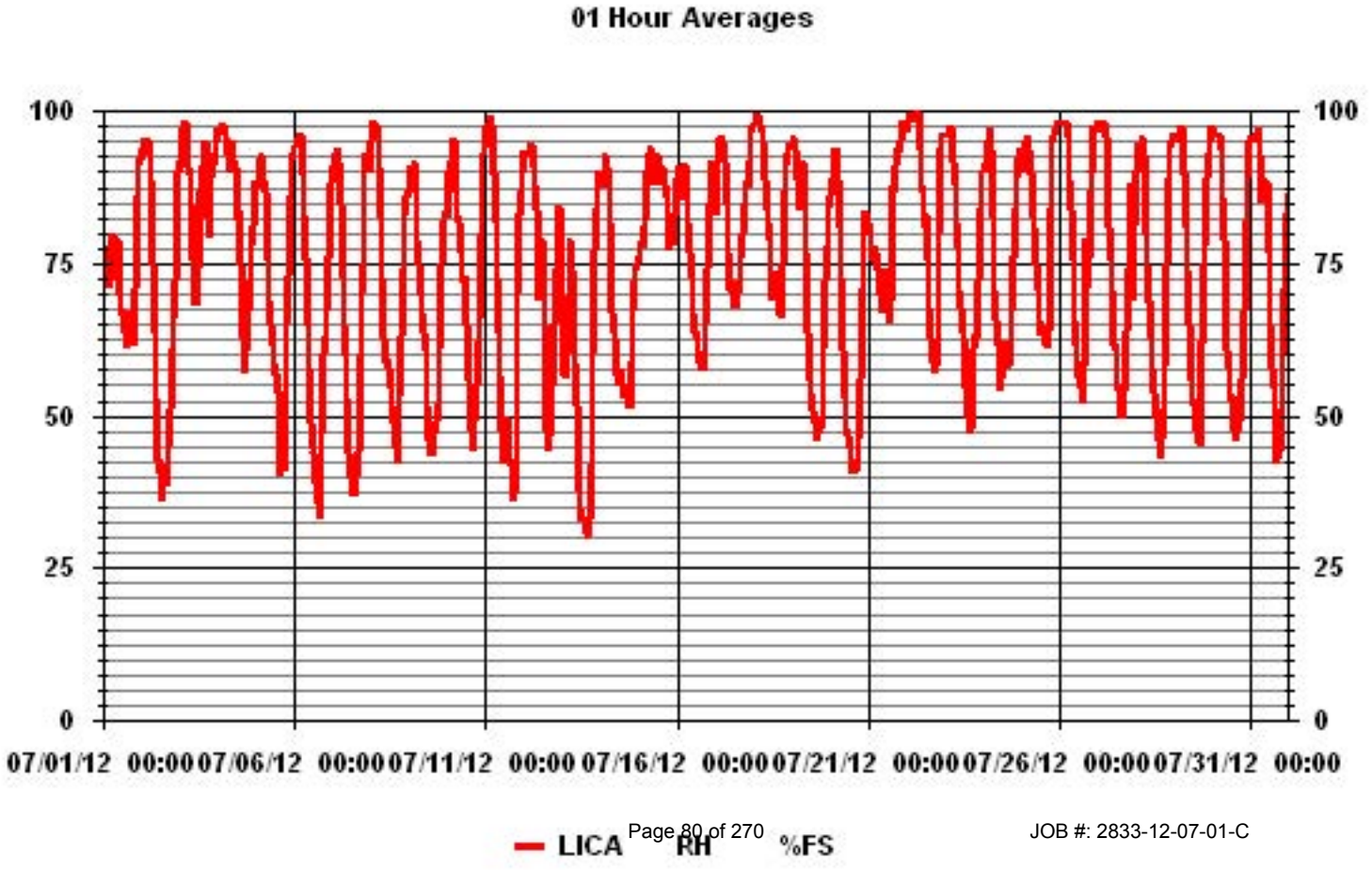
STATUS FLAG CODES

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:	100	%	@ HOUR(S)	7	ON DAY(S)	22	
MAXIMUM 24-HR AVERAGE:	86.8	%			ON DAY(S)	3	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		744	HRS	
			AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	18.17		MONTHLY AVERAGE:		74.58	%	



JOB #: 2833-12-07-01-C

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

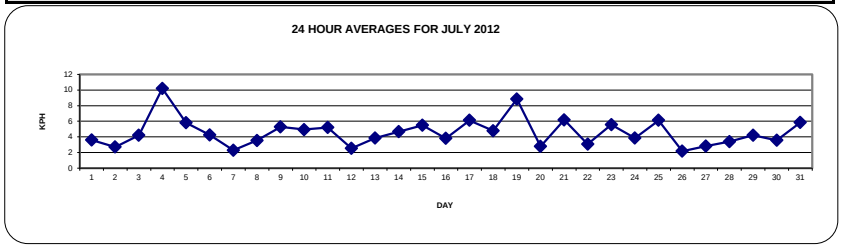
VECTOR WIND SPEED (WS) hourly averages (km/hr)

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	8	8.4	8.8	8.2	11.1	8.7	8	7.9	11.6	12	10.8	6.5	5.1	8.3	8.3	15.3	13.8	11.6	9.9	7.9	2.7	2.9	2.2	1.5	15.3	3.6	24
2	3	4.2	1.8	1.6	2.6	4.1	3.9	4	5.4	4.7	4.1	5.6	5	4.9	5.7	3.3	1	1.1	3	2.8	1.7	6.1	9.8	2.3	9.8	2.7	24
3	2	0.8	1.2	0.7	2.6	4.3	4.3	7.3	9.9	8.4	8.5	11.2	12.9	6.4	2.8	4.9	5.5	14.6	7.1	4.4	2.6	2.9	4.9	4.1	14.6	4.2	24
4	6.1	5	4.3	6.6	6.4	6.9	12	12.3	10.3	11.1	12.7	10.8	14.4	16.4	**20.3**	19.4	14.9	17.6	18.3	14.5	13.7	7.1	5.4	4.8	**20.3**	**10.2**	24
5	6.2	6.3	4.6	5.2	4.9	4.7	6.1	7.7	7.6	7.1	8.2	9.6	9.2	9.6	9.3	8.3	7.5	7.1	4.3	2.6	0.3	1.4	1.6	0.5	9.6	5.8	24
6	1	0.2	1.7	0.9	1	1.1	3.2	3.8	2.9	4	5	5.9	6.6	8.7	8.1	9	10.1	13.3	6.4	1	3.6	2.4	1.4	0.7	13.3	4.3	24
7	0.5	0.7	1.3	0.5	0.3	0.9	1.5	1.2	2.6	0.8	2.8	2.9	3.9	3.7	2.8	2.7	3.5	1.4	1.3	3.8	3.9	1.7	6.5	3.6	6.5	2.3	24
8	1.1	0.6	0.8	1.3	1.1	2.5	6.3	6.4	3.1	2.5	3.5	5.4	4.3	4.3	5.9	3.3	4.1	4.3	5.1	4.4	4	3.4	4.5	3	6.4	3.6	24
9	3.9	3.5	1.5	2.1	2.9	3.7	5.4	4.9	4.6	6.4	7.8	8.8	7	6.2	7.9	7.9	7.6	6.9	5.5	4	2.6	4.9	4.6	5.8	8.8	5.3	24
10	5.9	2.3	1.7	1.2	1.5	2	3.3	4.4	5.6	4.6	6.8	6.3	7	8.9	8	7.5	7	10.1	8.3	4.4	8.7	1.9	0.3	0.7	10.1	4.9	24
11	1	0.8	1.2	4	2.7	4	4.8	7.3	7	7.8	9.6	9.9	11.1	8.9	8.3	7.5	4.2	6.2	7.8	5.6	2.3	1.2	0.7	1	11.1	5.2	24
12	0.7	0.8	1	1.4	0.5	1.8	2.7	2.6	2.5	2.8	2.3	2.4	4.2	4.3	4.3	3.1	2.7	1.8	3.3	3.4	1.3	1.9	4	5.2	5.2	2.5	24
13	5.3	5.8	6.6	5.8	4	1.6	2.4	5.2	5.6	2.7	5.6	6.7	5.5	5.2	5.9	6	3.5	3.3	2.2	1.3	0.5	0.4	0.6	0.5	6.7	3.8	24
14	1.5	0.7	1.2	0.2	0.7	0.7	3.2	6.2	7.1	5.2	8.3	7.3	5.9	6	7.4	7.2	8.9	8.7	8.2	3.5	3.9	4.1	2.5	3.8	8.9	4.7	24
15	3.4	3.8	2.8	3.4	5.3	3.9	3	4	5.8	7.8	8	6.6	7.5	6.2	6.1	4.8	6	8.3	8.1	8.3	5.9	5.8	4.8	1.9	8.3	5.5	24
16	0.6	3	5.4	2.6	1.8	3.3	2.7	5.5	5.7	6	4.9	3.1	3	4.4	3.4	6.4	6.7	6	4.3	3.6	3.4	2.7	1.4	1.4	6.7	3.8	24
17	1.2	1.9	2.8	2.1	1.4	2.8	6.1	5.9	6.9	8.6	9.8	8.6	9.3	11.7	11.9	11	10.1	9.2	6.8	3.7	3.6	4.5	3.6	3.3	11.9	6.1	24
18	4	2.5	3	3.4	2.4	4.3	4.9	6	5.7	6.7	7.9	5.8	5.2	6.1	5.9	5.8	6	7.2	5	1.1	2.7	4.1	4.5	4.7	7.9	4.8	24
19	3.2	4	7.1	6.7	5.7	8.1	11.1	6.9	8.8	11.7	12.9	14.1	14.8	13.8	13.3	14.2	11.7	9.1	9.3	6.8	5.9	4.2	3.9	4.6	14.8	8.8	24
20	4	4.5	2	0.9	0.7	2.5	2.6	2.7	0.7	2	2.8	3.7	3.6	3.1	2.9	2.2	4.1	3.3	4	3.8	2.2	3.6	2.4	2.6	4.5	2.8	24
21	2.4	2.7	5.3	6.1	6.3	7.9	7.5	9.8	9.9	10.2	8	11.8	11	7.9	4.8	2.1	6.1	6.8	5.8	2.1	2.1	2.5	4.1	4.7	11.8	6.2	24
22	3.6	3	1	1.6	3.2	2	2.6	3.5	4.2	4.6	5.2	6.5	5.1	4.1	1.4	2.7	5.7	4.9	3	3.4	0.2	1.1	0.8	0.7	6.5	3.1	24
23	0.4	0.7	0.4	0.8	0.7	0.1	1.2	1.8	1.8	3.3	3	5.4	7.1	10.3	11.9	12.6	12	11.2	8.8	8.9	7.3	6.4	6.9	10.2	12.6	5.6	24
24	8.1	9	5.4	3.8	1.5	3.4	5.5	1.2	1.7	2.2	4.9	0.9	3.5	3.9	6.9	6.8	5.7	4.4	4.2	1.9	1.2	1.4	2.3	2.7	9.0	3.9	24
25	4.2	5.6	4.5	4.5	5.1	5.8	8.4	9.1	8.5	9.6	10.2	10.2	11.1	9.8	9.4	9.3	9	6.1	2	1.2	0.3	1.1	0.8	1	11.1	6.1	24
26	0.2	0.9	0.7	1	0.6	0.1	2.6	3.2	1.9	2.8	2.9	3.2	4.7	5.2	6.3	4.6	1.9	2.4	2.2	0.3	0.6	0.8	1.6	1.6	6.3	2.2	24
27	1	0.2	0.8	0.6	0.8	0.8	1.4	1.4	3.6	4.3	3.8	4.8	5.1	5.8	5.4	4.1	3.8	3.9	3.2	1.5	0.4	5.1	3.3	2.6	5.8	2.8	24
28	2	1.6	1.3	0.6	1.7	0.6	0.7	2.3	4	2.4	1.2	3.6	6	6.1	6.1	5.8	7	7.5	4.9	6.9	2.5	0.8	3	2.9	7.5	3.4	24
29	2.1	2.7	2.7	6.1	3.4	3.4	3.1	3.3	3.4	4.5	5	4.7	4.4	8	7.9	9.7	10.6	8.6	2.2	0.2	1.2	1.2	1	1.9	10.6	4.2	24
30	1.1	0.4	0.8	0.6	0.5	0.5	1.9	3.8	3.4	4.2	4.7	4.9	5.3	5.1	6.5	6	4.4	5.4	4.1	2.3	9.8	3.2	4.9	1.6	9.8	3.6	24
31	4.2	0.9	3.4	5.8	3.2	2.3	4	5	2.7	5.7	5.9	7.5	9.5	7.8	9.3	10.9	10.9	10.5	8.1	6.5	5.2	5	1.8	3.9	10.9	5.8	24
HOURLY MAX	8.1	9.0	8.8	8.2	11.1	8.7	12.0	12.3	11.6	12.0	12.9	14.1	14.8	16.4	20.3	19.4	14.9	17.6	18.3	14.5	13.7	7.1	9.8	10.2			
HOURLY AVG	3.0	2.8	2.8	2.9	2.8	3.2	4.4	5.1	5.3	5.7	6.4	6.6	7.0	7.1	7.2	7.2	7.0	7.2	5.7	4.1	3.4	3.1	3.2	2.9			

STATUS FLAG CODES

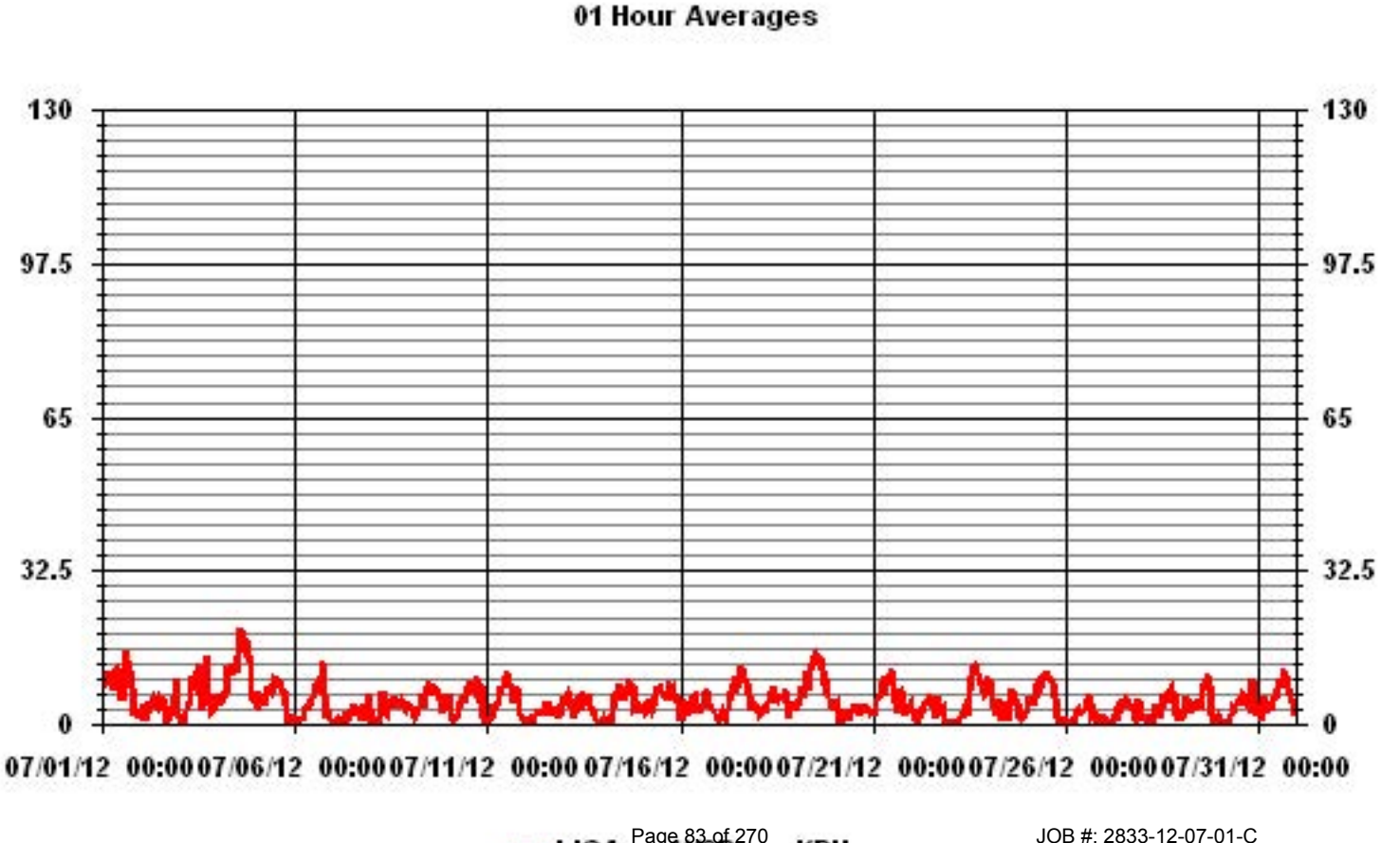
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



LAST CALIBRATION: December 16, 2010

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	20.3	KPH	@ HOUR(S)	14	ON DAY(S)	4	
MAXIMUM 24-HR AVERAGE:	10.2	KPH			ON DAY(S)	4	
CALMS (≤ 0 KPH)	1.75	%	OPERATIONAL TIME:		744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	3.36		MONTHLY AVERAGE:		4.84	KPH	



JOB #: 2833-12-07-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

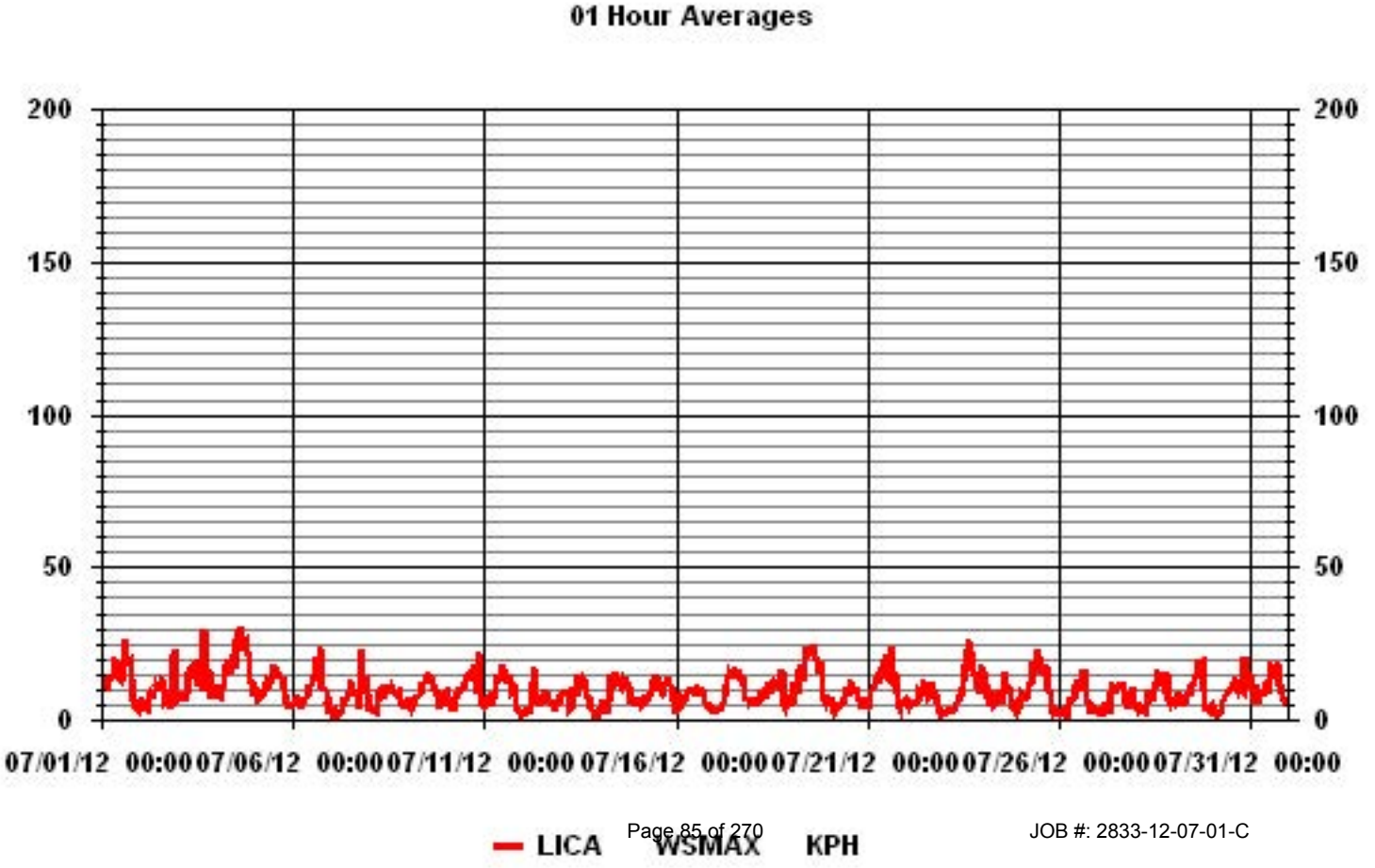
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.
DAY																									
1	10.3	11.9	11.9	11.3	14.9	13.3	13.6	15	20.3	17.3	17.7	13.8	12.9	14	24.9	26	19.6	18.7	19.4	13.6	7.1	4.3	4.3	3.5	26
2	4.9	7.2	4.6	4.1	3.8	6.7	8	7.9	9.8	10	11.9	10.7	10.5	13.6	13.2	10.3	6.4	7.1	5.8	4.9	5.2	21.3	22.9	6.7	22.9
3	6.8	6.9	8.1	8.2	6.4	8.7	15.3	16.7	15.8	15.1	14.7	19	20.1	11.8	11.6	9.7	29.4	22.9	15.7	9	16.4	7	8	8	29.4
4	11.3	9	8.4	10.4	10.6	13.9	17.7	19.3	15.1	17	19.8	19.1	25.6	25.9	29.7	**30.6**	22.5	25.3	26	21.6	21.6	12.3	13.2	7.4	**30.6**
5	11.4	9.9	7.3	7.8	7.9	8.3	9.8	12.5	11.6	12.4	13.9	17	16.9	14.9	16.4	13.6	14.9	12.1	12.5	8.6	5.9	4.7	4.7	4.6	17
6	5.3	7.7	4.4	7.9	5.1	4.7	5.9	6.3	7.2	8.1	11	11.4	14.7	12.9	20.3	15.6	17.1	24	11.1	9.9	9.8	5	5.7	2.9	24
7	3.1	2	3	1.5	1.5	1.9	2.4	4.7	6.4	6.6	7.7	9	12.7	8	8.9	8.9	10	3.3	9.7	23.1	8.4	12.3	12.9	9	23.1
8	3.7	3.7	3	3.1	2.7	6.4	9.1	9.8	7.6	7.6	9.5	11.4	9.6	9.6	11	9.9	9	8.5	9.2	5.5	5.1	4.8	6.4	4.8	11.4
9	6.3	6.2	3.7	4.4	5.7	7.4	8.1	9.1	9.1	11.9	12.3	14.1	14.6	13.3	13.9	13.1	12.2	10.4	8.6	5.9	4	6.5	6.9	8.2	14.6
10	8.9	5.5	4.6	5.3	3	7.2	7.8	8.3	9.5	9.7	11	10.1	13.7	13.8	15.5	12.5	16.2	18.1	15.1	8.4	22.5	10.6	5.5	4.8	22.5
11	5.7	7	7.8	8.1	4.6	7.3	8.8	11.4	14.7	12.7	14.9	18.4	17.3	13.5	12.9	13.4	9.1	9.8	12.4	9	4	3.3	1.7	2.5	18.4
12	2.8	2.6	3.3	3.6	2.4	10.4	9.8	17.6	7.3	6.1	4.5	6.4	8.2	9	9	6.2	6.4	5.6	5.3	5.4	3.1	4.4	7.5	7.1	17.6
13	8.9	9.4	9.3	9	8.5	3.6	4.1	9.9	10.1	7.7	14.7	12.8	13.7	11.1	14	11.2	9	7.7	4.9	3.7	1.3	1.8	2.8	2.2	14.7
14	4	3	6.2	3.5	4	3.5	6.3	14.6	10.9	11.2	15.6	13.8	12.6	11.5	13.5	12.7	12	12.7	11.1	5.3	6.7	6.9	4.4	7.1	15.6
15	6	6.1	4.7	5.4	8	6.8	7	7.7	9.3	13	13.4	13.4	14.6	9.3	10.3	8.9	9.8	11.4	12.2	14.1	11.9	8.1	8.7	3.7	14.6
16	2.5	6.4	9.2	4.8	5.4	6.7	7.7	9.3	10.2	10.4	9.5	10.2	9.6	11.3	8.5	10.1	10	8.9	6.2	4.7	4.9	4	4.2	2.8	11.3
17	2.8	3.6	3.9	3.4	3.4	5.5	10.4	9.9	14.4	16.3	15.6	13.9	15.5	17.3	15.7	15.8	14.1	13.9	12	8.3	6.1	7.5	5.6	6.2	17.3
18	6.6	5.3	5.4	6.6	5.6	9.7	7	9.3	10.2	9.3	11.3	11.4	12.4	11.1	12	11.3	10.9	12.3	16.7	5.5	4.4	6.5	7.3	7	16.7
19	5.6	5.8	12	11.1	8.6	16.7	18.2	12.3	15.9	20.1	24.2	20.7	22.4	23	24.2	21.4	19.7	15.4	17	17.5	8.6	6.7	5.5	6.7	24.2
20	6.1	6.5	3.8	2.1	2.9	4.8	4.5	4.7	6.3	6.3	9.7	9.6	9.3	12.8	9.9	9.6	9.6	10.9	7.5	6.5	3.7	7	4.2	5.4	12.8
21	4.4	5	9.4	11.1	11.4	13.5	12	14.9	14.6	17.4	19.2	21.1	16.3	13.4	12.5	23.9	10.5	15.2	9.5	4.9	3.5	4.9	6.4	7.1	23.9
22	6.2	6.2	4.5	5.3	6.6	4.4	5.9	6.3	9.3	8.5	9.9	12.7	9.6	9.7	7.7	8.4	12.2	10.7	8.8	6	4	3.3	2	3	12.7
23	2.4	2.7	3	3.2	3.3	3.1	3.3	5.3	5.8	6.2	7.8	10.4	12.6	18.1	23	26	23.1	16.8	15.9	14.9	11.3	9.8	9.7	18.1	26
24	12.6	15.9	12.1	7.5	4.5	9	8.7	5	5.6	6.3	10.2	5.6	6.9	8.3	15.7	11	10.6	9.5	7.1	4.6	3.5	5.3	4.4	6.4	15.9
25	9.1	8.5	7.4	7.1	8.2	11.5	12.1	18.8	14.9	17	22.7	16.5	20.6	16.1	15.8	17.2	18.4	10.1	9.6	3.5	2.2	3.3	2.6	2.5	22.7
26	2	2.8	3.5	2.3	2.2	1.9	6.1	6	6.3	9.4	8.6	9.8	13.3	12.4	15.6	15.7	12.2	6.8	6.3	3.5	3.8	3.5	4.1	3.4	15.7
27	3.4	2.1	2.2	3.9	3.1	1.9	4.5	4.1	8.8	12.2	9.1	10.2	10.6	12	11.7	11.9	11.7	7.3	6.4	3.4	5.3	8.6	10.7	4.9	12.2
28	4.1	4.7	3.2	3.9	4.2	2.9	2.5	5.5	9.6	8	6	9.9	11.9	16	12	12.2	12.8	11	11.9	15.8	7.1	5.7	7.1	6.1	16
29	5.3	6.1	4.6	8.6	6	5.7	7.3	6.9	8.2	8.5	10.8	11.5	11.6	14	14.7	18.9	19.2	19.5	10.2	2.9	3.7	4.1	3.3	4.5	19.5
30	2.9	2.2	3.1	2	2.6	2.7	6.6	7.4	7.9	9.9	8.6	10.6	9.4	12.1	13.8	12.2	9.6	10.4	10	9.5	21	14.4	15.3	14.8	21
31	10.7	6.9	7.3	11.3	7.2	4.9	8.9	8.6	8.5	10.9	10.5	13.5	18.6	13.7	16.8	15.5	16.5	18.8	12.1	9.5	7.6	6.9	4.2	5.5	18.8
PEAK	12.6	15.9	12.1	11.3	14.9	16.7	18.2	19.3	20.3	20.1	24.2	21.1	25.6	25.9	29.7	30.6	29.4	25.3	26.0	23.1	22.5	21.3	22.9	18.1	

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	30.6	KPH	@ HOUR(S)	15
			ON DAY(S)	4



JOB #: 2833-12-07-01-C

LICA
WSP / WD Joint Frequency Distribution (Percent)

July 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	1.88	1.61	1.74	3.09	1.47	3.49	13.70	4.70	4.97	4.03	8.19	9.27	4.30	2.15	1.20	1.07	66.93
<	12.0	.67	1.07	1.20	.67	2.15	1.88	6.98	.80	.13	.67	1.61	4.03	3.62	1.61	.40	.26	27.82
<	20.0	.13	.00	.00	.00	.13	.13	.40	.00	.00	.00	.00	.67	1.20	.67	.00	.00	3.36
<	29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00	.13
<	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.68	2.68	2.95	3.76	3.76	5.51	21.10	5.51	5.10	4.70	9.81	13.97	9.13	4.56	1.61	1.34	

Calm : 1.74 %

Total # Operational Hours : 744

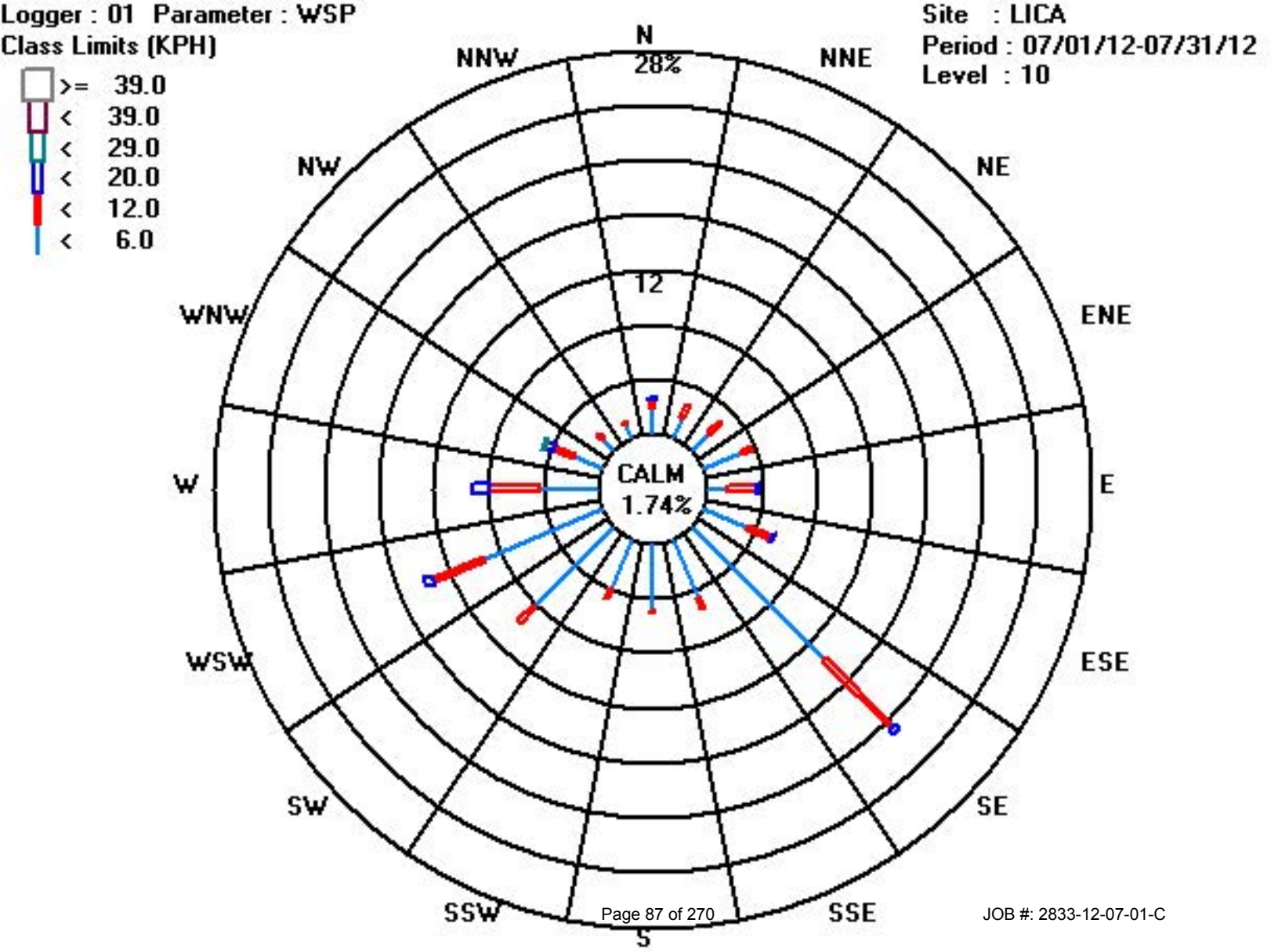
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	14	12	13	23	11	26	102	35	37	30	61	69	32	16	9	8	498
<	12.0	5	8	9	5	16	14	52	6	1	5	12	30	27	12	3	2	207
<	20.0	1				1	1	3					5	9	5			25
<	29.0														1			1
<	39.0																	
>=	39.0																	
	Totals	20	20	22	28	28	41	157	41	38	35	73	104	68	34	12	10	

Calm : 1.74 %

Total # Operational Hours : 744



JOB #: 2833-12-07-01-C

Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2011

VECTOR WIND DIRECTION (WD) hourly averages in degrees

MST

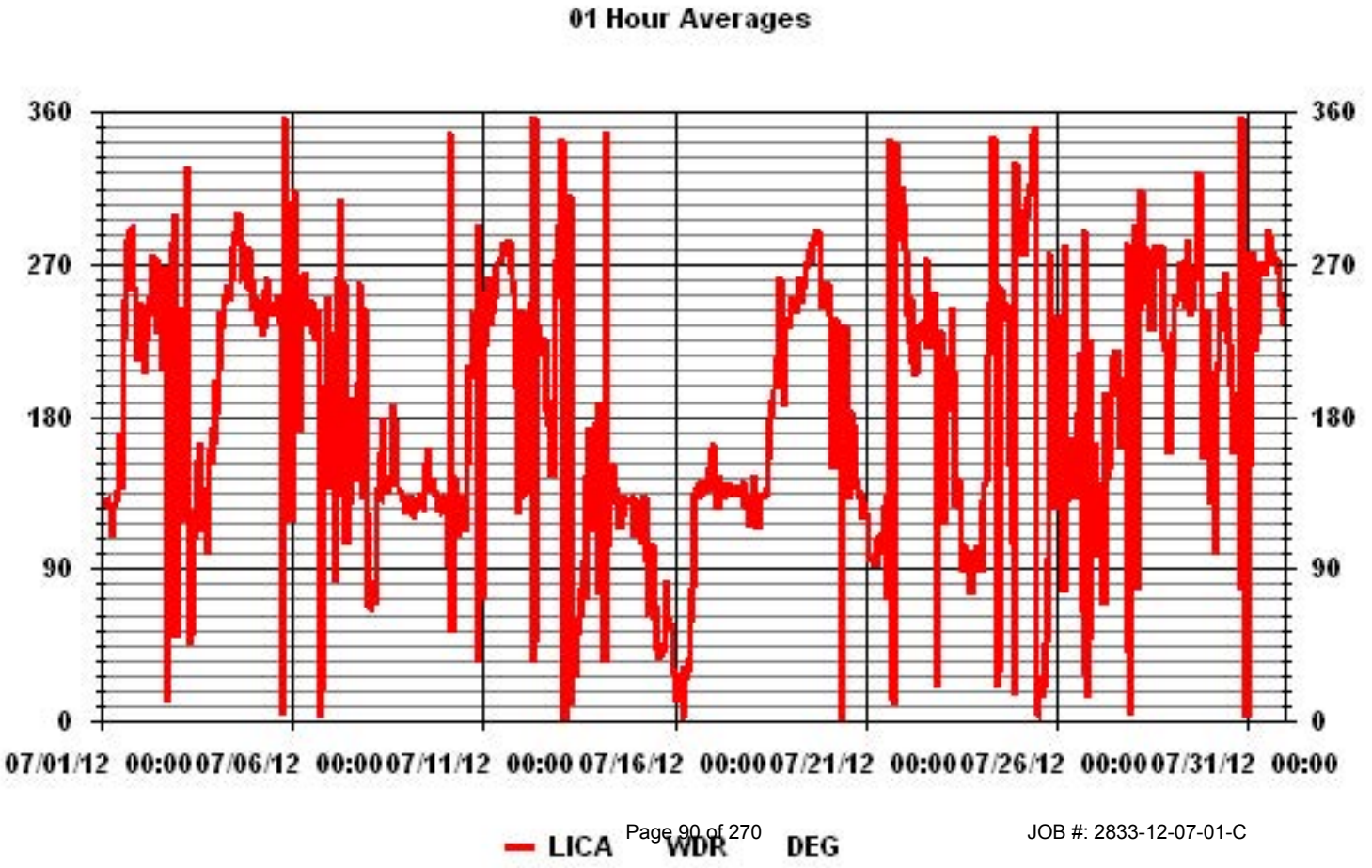
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	131	128	128	128	130	128	126	108	126	129	136	151	170	136	225	249	280	285	289	290	254	256	212	218	166	SSE	24
2	225	247	227	205	224	243	239	250	276	265	275	228	261	254	215	207	268	10	154	139	70	283	300	49	250	WSW	24
3	68	155	245	140	118	125	328	45	50	73	107	124	130	154	164	112	130	137	132	98	160	152	174	163	119	ESE	24
4	202	181	208	241	232	246	252	258	250	248	259	280	289	293	301	298	285	263	264	258	257	280	263	242	266	W	24
5	248	248	234	237	234	228	231	255	263	248	244	239	243	241	252	250	240	236	3	357	308	194	232	117	246	WSW	24
6	182	315	238	266	190	170	238	251	266	238	234	245	249	230	225	228	243	1	18	44	157	199	250	137	245	WSW	24
7	141	138	230	81	132	263	309	255	248	259	105	107	127	144	191	141	173	200	259	249	130	244	140	124	161	SSE	24
8	69	68	82	81	69	134	133	132	158	180	135	135	145	139	144	187	180	153	139	135	135	130	133	122	139	SE	24
9	134	125	134	123	122	124	128	131	129	128	134	136	153	161	142	140	141	137	134	133	124	133	125	126	135	SE	24
10	132	131	90	349	52	104	146	109	117	114	134	120	112	127	151	210	202	240	239	232	34	294	229	71	148	SE	24
11	254	221	238	263	233	241	242	250	268	271	274	271	277	283	275	280	284	266	260	254	219	197	122	130	265	W	24
12	243	138	133	216	228	247	175	34	358	46	235	221	215	219	227	184	173	190	151	144	183	249	273	294	214	SSW	24
13	305	344	1	1	3	263	311	9	42	48	25	50	61	78	73	95	71	145	173	162	167	111	177	170	36	NE	24
14	74	188	146	172	34	348	103	128	136	152	138	140	129	114	114	121	134	132	132	131	130	131	108	132	129	SE	24
15	126	123	112	104	127	133	95	66	67	83	106	59	69	43	36	38	41	46	60	83	62	59	55	32	72	ENE	24
16	29	13	11	25	12	1	32	24	34	33	58	78	135	138	131	141	137	141	141	138	140	139	149	161	86	E	24
17	164	137	136	125	145	137	133	133	140	136	137	140	135	134	134	137	136	138	139	142	128	127	128	115	135	SE	24
18	124	133	146	127	113	133	135	131	135	134	135	154	178	189	196	212	211	220	262	197	186	227	239	232	174	S	24
19	238	245	250	244	241	248	262	247	253	256	269	269	276	275	283	280	286	289	289	284	253	244	247	252	266	W	24
20	259	240	235	149	204	238	232	222	235	0	218	235	182	130	184	173	150	175	144	138	131	136	119	129	185	S	24
21	124	121	96	95	95	97	91	108	110	109	98	104	127	134	71	344	15	14	10	342	283	299	307	315	90	E	24
22	307	279	241	222	251	213	211	204	234	228	233	234	230	224	274	220	237	237	239	253	20	199	173	232	235	SW	24
23	166	116	182	200	215	207	245	207	126	132	144	126	89	89	103	102	94	94	75	79	101	93	104	91	99	E	24
24	88	131	138	141	196	216	248	337	345	320	20	29	220	254	253	236	248	240	214	151	105	15	330	296	217	SW	24
25	290	302	288	274	293	297	310	317	331	347	351	5	4	27	14	22	22	46	96	278	193	238	166	124	345	NNW	24
26	224	240	162	140	76	281	129	143	168	137	146	130	141	183	218	205	64	291	28	13	48	225	148	151	161	SSE	24
27	165	97	125	141	87	68	195	177	142	149	191	215	192	220	215	205	160	195	191	170	283	42	3	112	179	S	24
28	218	293	77	195	242	314	251	246	280	268	232	230	258	267	281	276	277	279	282	226	220	215	158	182	256	WSW	24
29	207	230	252	250	252	249	270	271	243	267	284	239	256	242	269	259	273	325	309	154	161	174	233	243	262	W	24
30	208	128	187	98	206	212	244	253	230	243	265	246	224	199	196	157	188	168	164	77	358	96	157	1	205	SSW	24
31	249	150	278	219	236	218	229	264	271	265	263	269	291	287	269	278	275	274	273	265	249	250	233	241	264	W	24
HOURLY AVG	307	344	288	349	293	348	328	337	358	347	351	280	291	293	301	344	286	325	309	357	358	299	330	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 :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	80.57		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	200	DEG



JOB #: 2833-12-07-01-C

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

JULY 2012

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

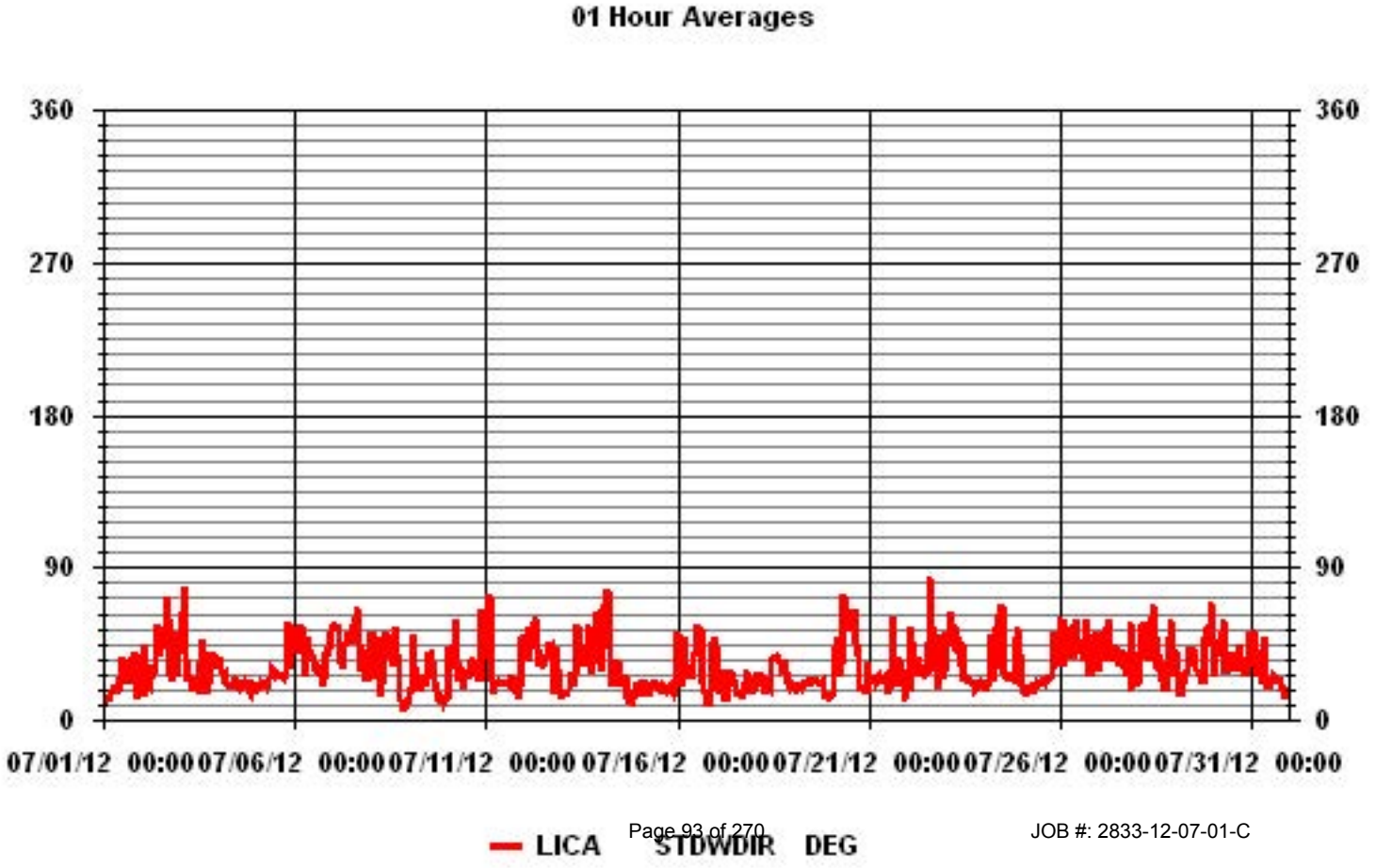
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	12	12	12	13	13	16	17	21	18	16	24	29	38	31	33	23	23	23	24	21	40	12	34	26
2	22	13	45	30	21	20	24	32	28	38	56	37	42	46	46	50	72	61	27	23	35	37	26	52
3	39	46	64	78	37	22	26	20	19	24	25	18	15	34	48	27	40	15	21	24	35	40	34	35
4	30	37	29	26	27	22	20	20	21	23	19	26	21	20	19	19	23	21	20	18	17	23	20	20
5	18	18	22	20	18	23	20	22	25	31	29	27	28	28	27	25	28	26	27	56	58	29	56	53
6	47	48	39	49	57	44	26	35	48	43	37	39	34	29	33	29	27	21	24	41	38	42	52	55
7	53	57	52	57	45	34	31	45	45	51	49	48	56	50	61	67	46	30	31	41	22	40	23	37
8	50	50	37	24	50	48	14	22	39	52	45	36	50	43	31	55	40	34	13	8	7	8	9	13
9	16	19	50	32	20	25	17	24	27	24	21	24	39	40	35	28	24	18	12	10	15	10	12	12
10	13	44	37	45	29	59	36	24	24	32	19	26	29	24	34	35	35	27	24	24	24	65	62	50
11	36	57	74	24	16	23	22	20	24	23	22	23	22	21	22	21	27	23	18	16	12	20	49	39
12	50	50	35	54	49	52	57	61	43	34	34	33	33	36	39	46	44	45	20	15	43	30	19	12
13	17	16	16	18	24	23	27	19	27	57	40	32	38	45	35	32	56	52	27	33	48	63	53	52
14	28	65	68	65	77	44	24	20	23	36	20	36	23	24	26	26	14	12	12	11	13	17	18	23
15	20	14	24	22	16	16	21	21	20	20	24	21	20	19	21	19	20	17	19	21	18	16	18	28
16	52	28	19	32	49	30	33	25	25	30	38	40	56	49	55	23	16	17	17	9	11	17	46	49
17	44	26	15	21	29	26	11	19	26	30	20	24	22	16	16	15	15	17	22	30	18	18	18	20
18	16	25	28	20	28	21	15	19	25	19	17	36	38	35	37	36	35	29	30	36	29	23	20	22
19	20	19	18	21	22	20	22	23	21	22	24	24	23	24	24	24	22	22	22	23	14	15	13	13
20	17	14	43	38	49	32	26	33	75	70	67	64	53	63	56	65	46	38	22	17	19	17	17	34
21	22	24	21	27	22	23	26	24	24	26	24	24	16	18	30	60	23	21	22	38	31	21	13	14
22	19	19	55	48	26	30	35	36	32	29	31	28	28	46	85	56	31	30	36	18	51	42	24	29
23	51	43	49	63	49	56	41	50	40	32	46	24	25	24	25	24	23	22	19	20	23	23	23	22
24	20	16	20	23	50	30	22	55	51	62	30	68	28	30	25	25	25	25	24	28	49	55	41	21
25	16	16	16	19	19	20	15	18	19	22	21	21	21	25	23	25	25	26	26	31	52	39	33	37
26	60	32	60	53	56	43	41	36	56	48	59	49	39	46	34	43	60	42	26	48	49	46	50	28
27	51	36	38	34	55	38	59	42	35	41	44	36	40	32	35	42	31	28	28	34	57	21	22	23
28	21	39	39	56	36	58	48	38	35	61	69	51	32	31	37	36	24	19	16	33	49	59	26	37
29	41	39	23	14	28	22	27	30	44	32	34	42	37	31	29	28	25	21	49	53	55	53	70	44
30	26	46	40	38	47	52	59	27	40	39	32	37	29	41	38	36	44	36	29	37	26	29	32	50
31	50	53	44	26	33	29	24	23	49	21	21	24	23	28	27	24	23	23	21	19	15	13	20	15

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 #: 2833-12-07-01-C

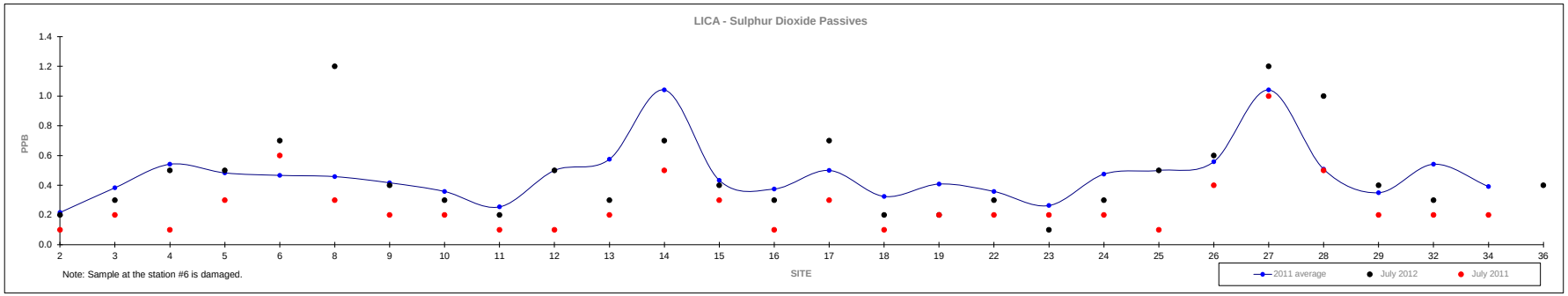
Non-Continuous Monitoring

Passive Summary Results for July 2012

Lakeland Industry & Community Association

Sulphur Dioxide
ppb

	2011																									July 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**	**36**	**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	0.47	-
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	0.1	#23
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	1.2	#8, #27



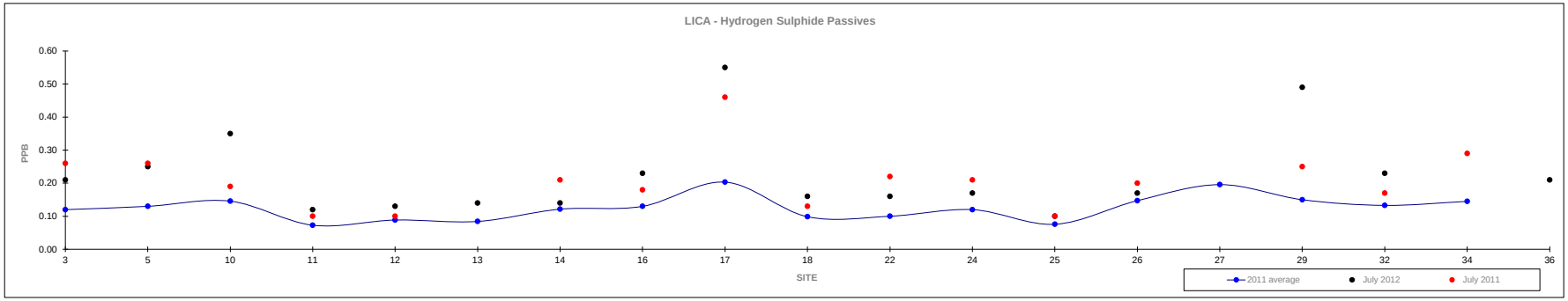
Note: Sample at the station #6 is damaged.

Passive Summary Results for July 2012

Lakeland Industry & Community Association

Hydrogen Sulphide
ppb

	2011																		July 2012	
	3	5	10	11	12	13	14	16	17	18	22	24	25	26	27	29	32	36	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	0.25	-
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	0.10	#25
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	0.66	#27

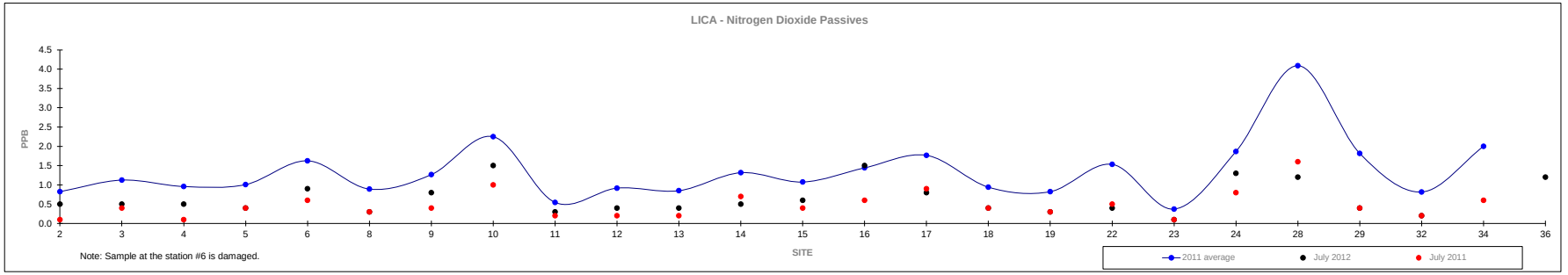


Passive Summary Results for July 2012

Lakeland Industry & Community Association

Nitrogen Dioxide
ppb

	2011																							July 2012	
	2	**3**	**4**	**5**	**6**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**22**	**23**	**24**	**28**	**29**	**32**	**36**	**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	0.6	-
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	<0.1	#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	1.5	#10, #16



Note: Sample at the station #6 is damaged.

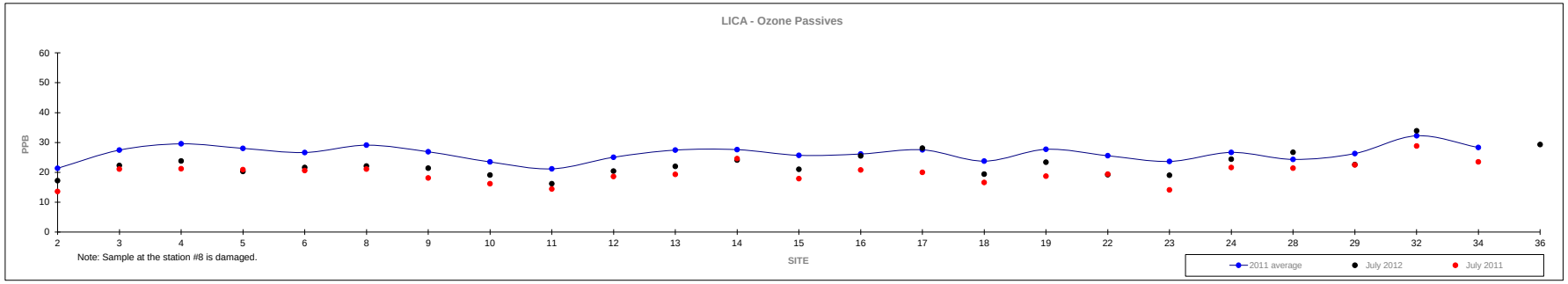
Passive Summary Results for July 2012

Lakeland Industry & Community Association

Ozone
ppb

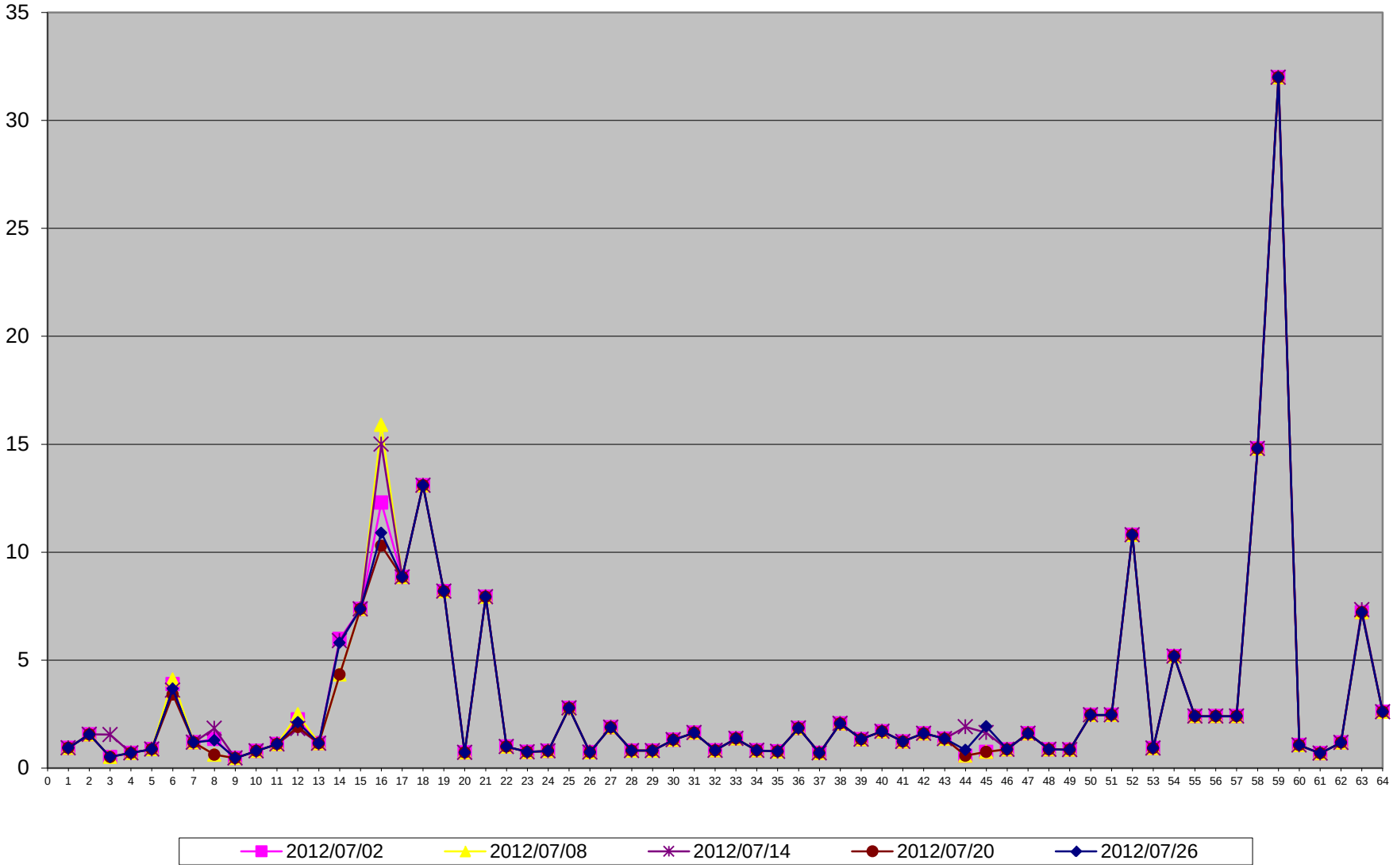
	2	3	4	5	6	8	9	10	11	12	2011 13	14	15	16	17	18	19	22	23	24	28	29	32	36
Mean	21.4	27.5	29.6	28.0	26.6	29.1	26.9	23.5	21.2	25.1	27.5	27.6	25.7	26.1	27.5	23.8	27.7	25.6	23.7	26.7	24.3	26.3	32.2	28.3
Minimum	11.9	17.6	20.0	18.5	16.8	19.1	18.0	13.9	11.5	14.0	18.4	19.1	16.1	16.6	17.8	13.3	18.6	15.1	12.8	17.1	15.8	17.3	25.0	17.6
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

July 2012	
Reading	**Site**
22.2	-
16.2	#11
33.9	#32



Volatile Organics

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



JOB #: 2833-12-07-01-C

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 July 2012

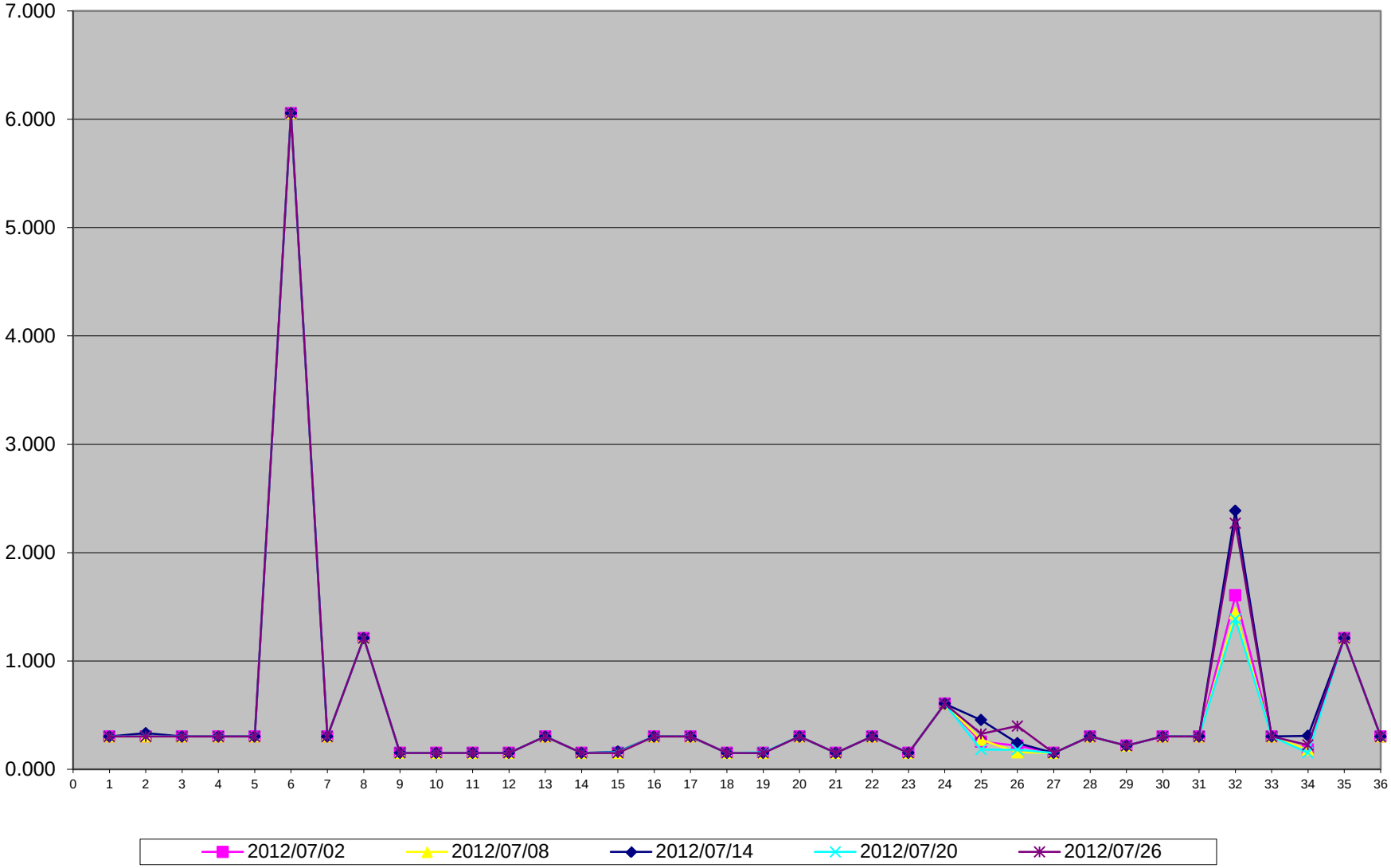
LICA- Cold Lake South Site

Unit: ng/m3

	PAHs	2012/07/02	2012/07/08	2012/07/14	2012/07/20	2012/07/26
	Sample Volume (unit: m3)	330.33	330.33	330.33	330.33	330.33
1	1-Methylnaphthalene	0.303	0.303	0.303	0.303	0.303
2	1-Methylphenanthrene	0.303	0.303	0.333	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	0.303	0.303	0.303	0.303	0.303
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	0.151	0.151	0.151	0.151	0.151
10	Acenaphthylene	0.151	0.151	0.151	0.151	0.151
11	Anthracene	0.151	0.151	0.151	0.151	0.151
12	Benzo(a)anthracene	0.151	0.151	0.151	0.151	0.151
13	Benzo(a)fluorene	0.303	0.303	0.303	0.303	0.303
14	Benzo(a)pyrene	0.151	0.151	0.151	0.151	0.151
15	Benzo(b)fluoranthene	0.151	0.151	0.163	0.157	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	0.157	0.151
20	Biphenyl	0.303	0.303	0.303	0.303	0.303
21	Chrysene	0.151	0.151	0.151	0.151	0.151
22	Coronene	0.303	0.303	0.303	0.303	0.303
23	Dibenz(a,h)anthracene	0.151	0.151	0.151	0.151	0.151
24	Dibenzo(a,e)pyrene	0.605	0.605	0.605	0.605	0.605
25	Fluoranthene	0.254	0.272	0.454	0.182	0.327
26	Fluorene	0.218	0.157	0.242	0.182	0.400
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	0.218	0.218	0.218	0.218	0.218
30	o-Terphenyl	0.303	0.303	0.303	0.303	0.303
31	Perylene	0.303	0.303	0.303	0.303	0.303
32	Phenanthrene	1.604	1.441	2.385	1.386	2.270
33	p-Terphenyl	0.303	0.303	0.303	0.303	0.303
34	Pyrene	0.182	0.182	0.309	0.151	0.224
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	July 5, 2012		Previous Calibration	June 5, 2012	
Company	Lakeland Community and Industry Association				
Plant / Location	LICA 1 - Cold Lake South				
Start Time (MST)	12:47		End Time (MST)	16:30	
Reason:			Monthly Calibration		
Barometric Pressure	0.907	atm	Station Temperature	21	Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	LL42496	Cal Gas Expiry date	January 16, 2014
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 - 500	ppb				
Sample Flow / Box Temp	448	ccm	28.8	Deg C	449	ccm	31	Deg C
HVPS / Lamp Setting	-932		735		-632		7.38	
PMT / RxCell Temp	OK	Deg C	45.2	Deg C	OK	Deg C	45	Deg C
Converter / IZS Temp	NA	Deg C	45	Deg C	NA	Deg C	45.0	Deg C
Offset / Slope	6		1.029		5.9		1.01	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	N/A
	No Zero Adj			
4951	40.3	400	407	0.9840
4951	40.3	400	401	0.9987
4972	22.7	225	227	0.9931
4980	12.6	125	127	0.9856
4994	0	0	0	N/A
			Sum of Least Squares	0.9965
			New Correction Factor	0.9987

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.1	0.0
Auto Span	378.0	366.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9962
Current Correction Factor Before Span Adjust:	0.9840
Percent Change:	1.2%

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

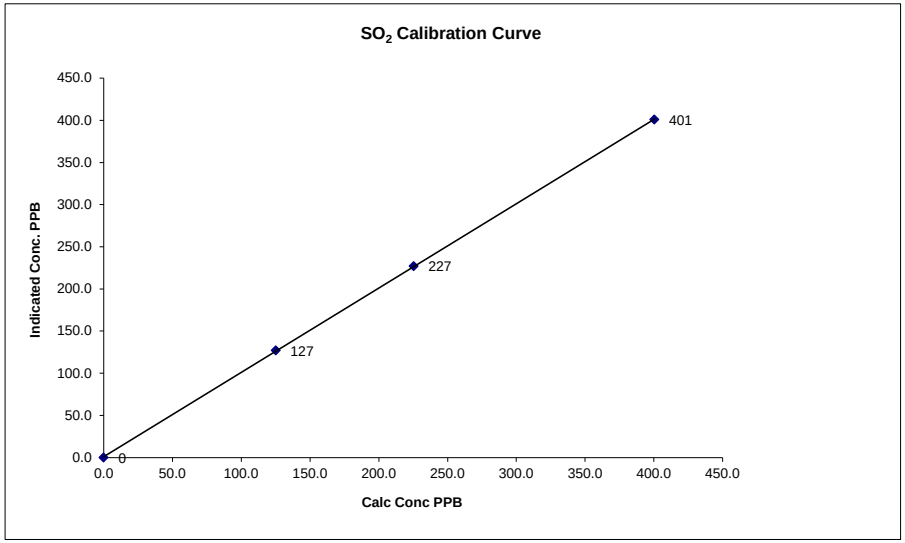
Calibration Performed by: Ting Xu

SO_2 Calibration Curve

Calibration Date	July 5, 2012				
Company	Lakeland Community and Industry Association				
Plant / Location	LICA 1 - Cold Lake South				
Start Time (MST)	12:47	End Time (MST)	16:30		

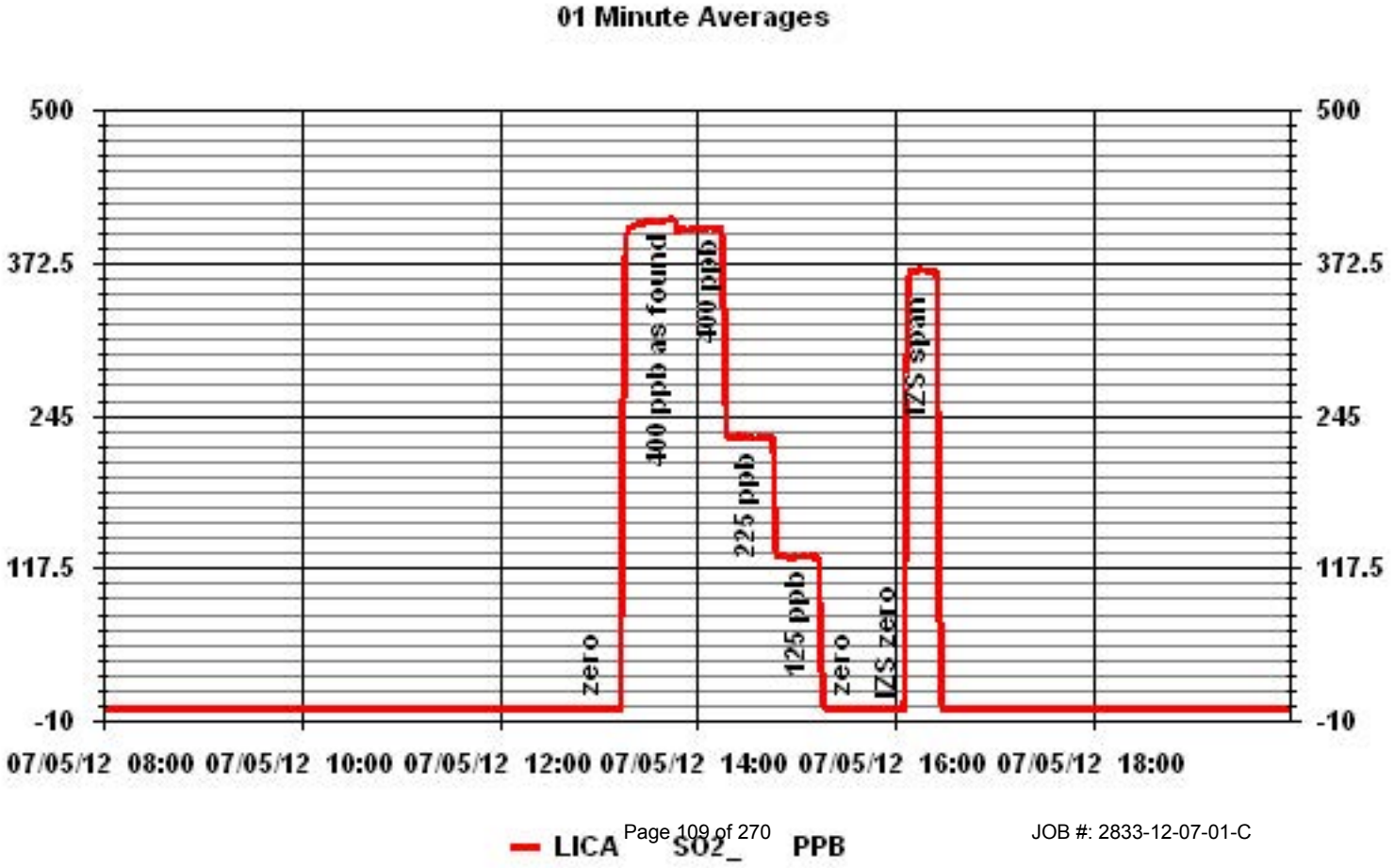
Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
125	127	0.9856
225	227	0.9931
400	401	0.9987

Correlation Coefficient	(≥ 0.995)	0.999974
Slope	(0.85 to 1.15)	1.000669
Intercept	(± 3% F.S.)	0.856113



Notes:

JOB #: 2833-12-07-01-C



JOB #: 2833-12-07-01-C

Total Reduced Sulphur

TRS Calibration Report

Station Information

Calibration Date	July 5, 2012		Previous Calibration	June 5, 2012	
Company	**Lakeland Industry & Community Association**				
Plant / Location	**LICA 1 - Cold Lake South**				
Start Time (MST)	8:10		End Time (MST)	12:20	
Reason:	Monthly Calibration				
Barometric Pressure	0.961	atm	Station Temperature	23	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 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	352 ccm	31.2 Deg C	352 ccm	31.4 Deg C
HVPS / Lamp Setting	-623.5	745	-623.5	748
PMT / RxCell Temp	OK Deg C	45.2 Deg C	OK Deg C	44.9 Deg C
Converter / IZS Temp	810 Deg C	45 Deg C	810 Deg C	45.0 Deg C
Offset / Slope	13.4	1.307	14	1.361

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			
4960	40.0	80	75	1.0667
4960	40.0	80	81	0.9877
4975	20.0	40	41	0.9766
4987	11.5	23	24	0.9586
4996	0.0	0	0	N/A
			Sum of Least Squares	0.9837
			New Correction Factor	0.9877

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.3	-0.2
Auto Span	57.4	66.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0667
Percent Change:	-6.3%

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

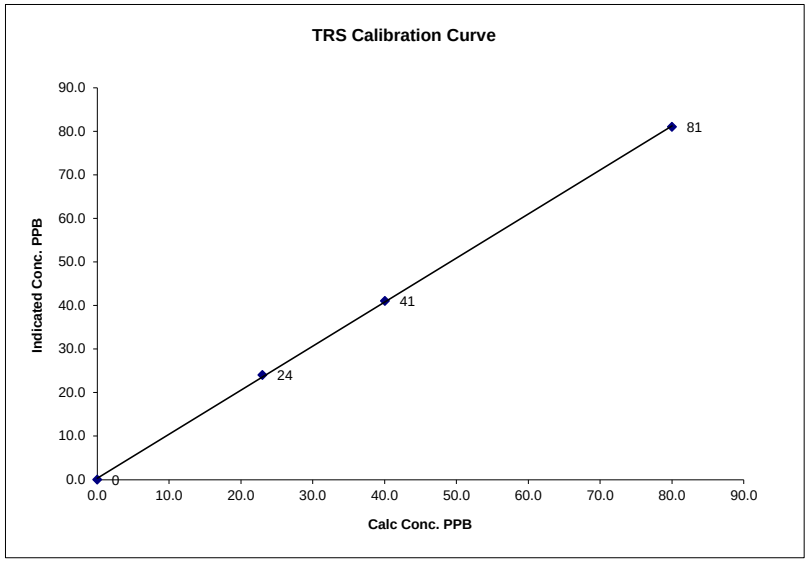
Calibration Performed by: Ting Xu

TRS Calibration Curve

Calibration Date	July 5, 2012		
Company	**Lakeland Industry & Community Association**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	8:10	End Time (MST)	12:20

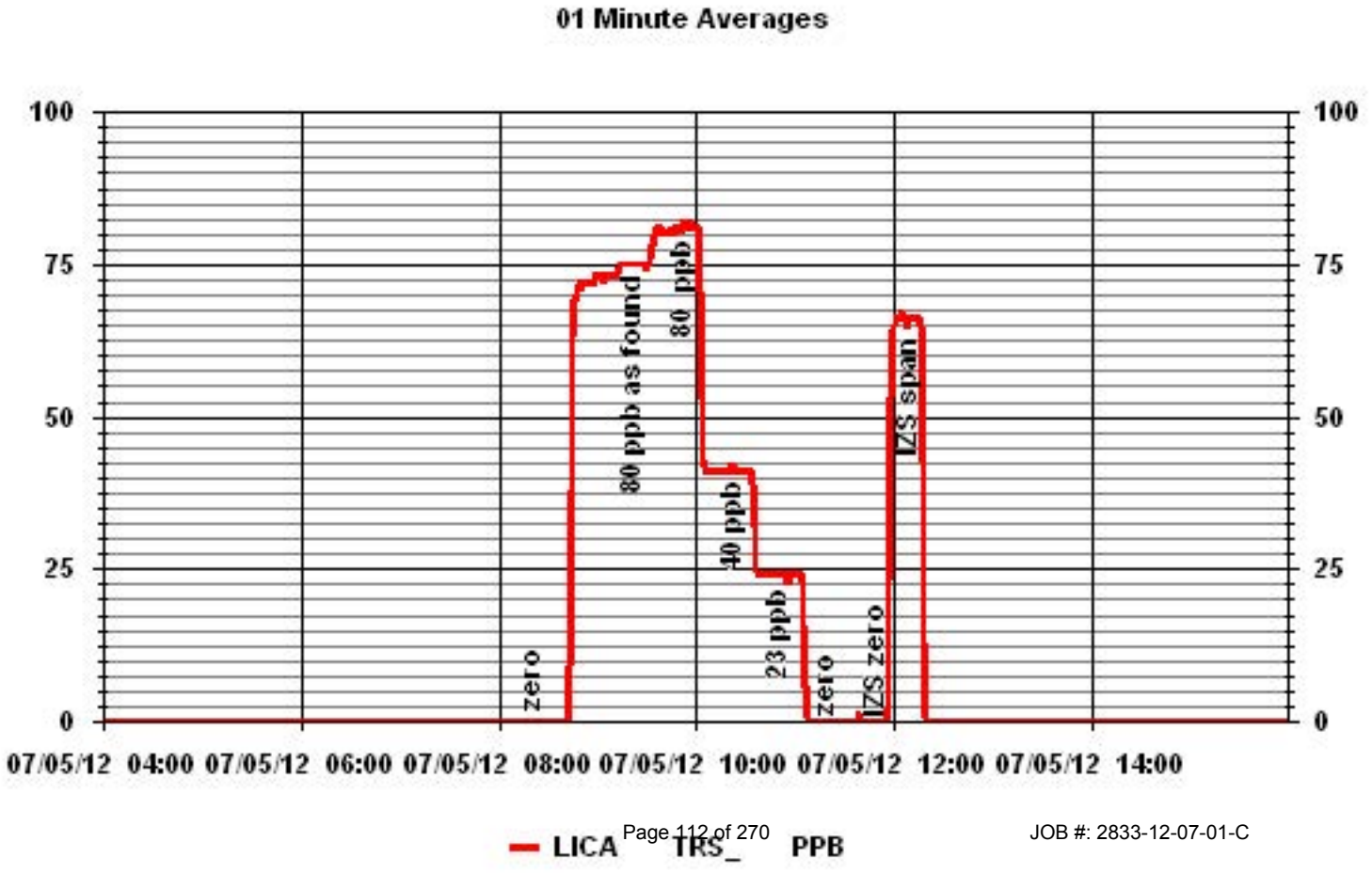
Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
23	24	0.0000
40	41	0.5611
80	81	0.4943

Correlation Coefficient	(≥ 0.995)	0.999898
Slope	(0.85 to 1.15)	1.010442
Intercept	(± 3% F.S.)	0.364851



Notes:

JOB #: 2833-12-07-01-C



JOB #: 2833-12-07-01-C

TRS Calibration Report

Station Information

Calibration Date	July 9, 2012		Previous Calibration	July 5, 2012	
Company	**Lakeland Industry & Community Association**				
Plant / Location	**LICA 1 - Cold Lake South**				
Start Time (MST)	8:07		End Time (MST)	9:54	
Reason:	As Found				
Barometric Pressure	0.969	atm	Station Temperature	23	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 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	354	ccm	32.7	Deg C	352	ccm	31.4	Deg C
HVPS / Lamp Setting	-623.5		745		-623.5		748	
PMT / RxCell Temp	OK	Deg C	45.2	Deg C	OK	Deg C	44.9	Deg C
Converter / IZS Temp	810	Deg C	45	Deg C	810	Deg C	45.0	Deg C
Offset / Slope	13.9		1.361		14		1.361	

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			
4960	40.0	80	84	0.9524
			Sum of Least Squares	
			New Correction Factor	0.9524

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.2	-0.6
Auto Span	48.0	49.2
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9877
Current Correction Factor Before Span Adjust:	0.9524
Percent Change:	3.7%

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

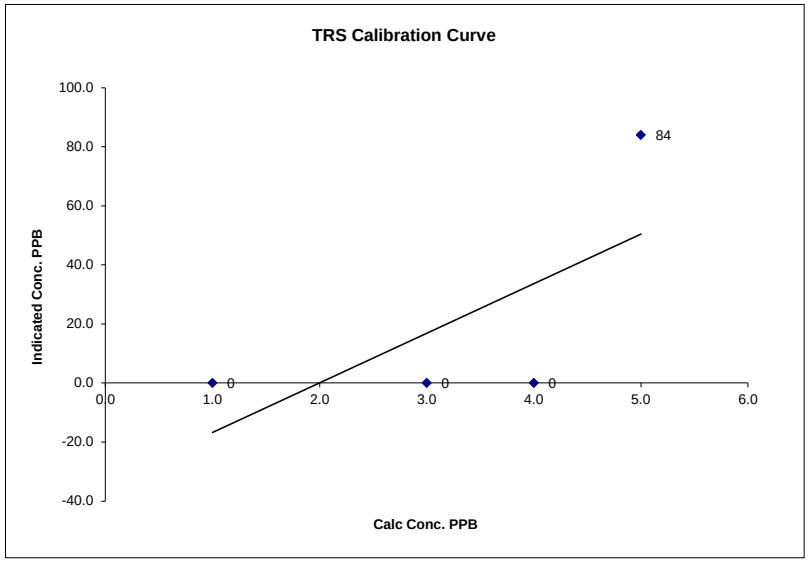
Following the A/F points check, the perm tube was replaced.

Calibration Performed by: Ting Xu

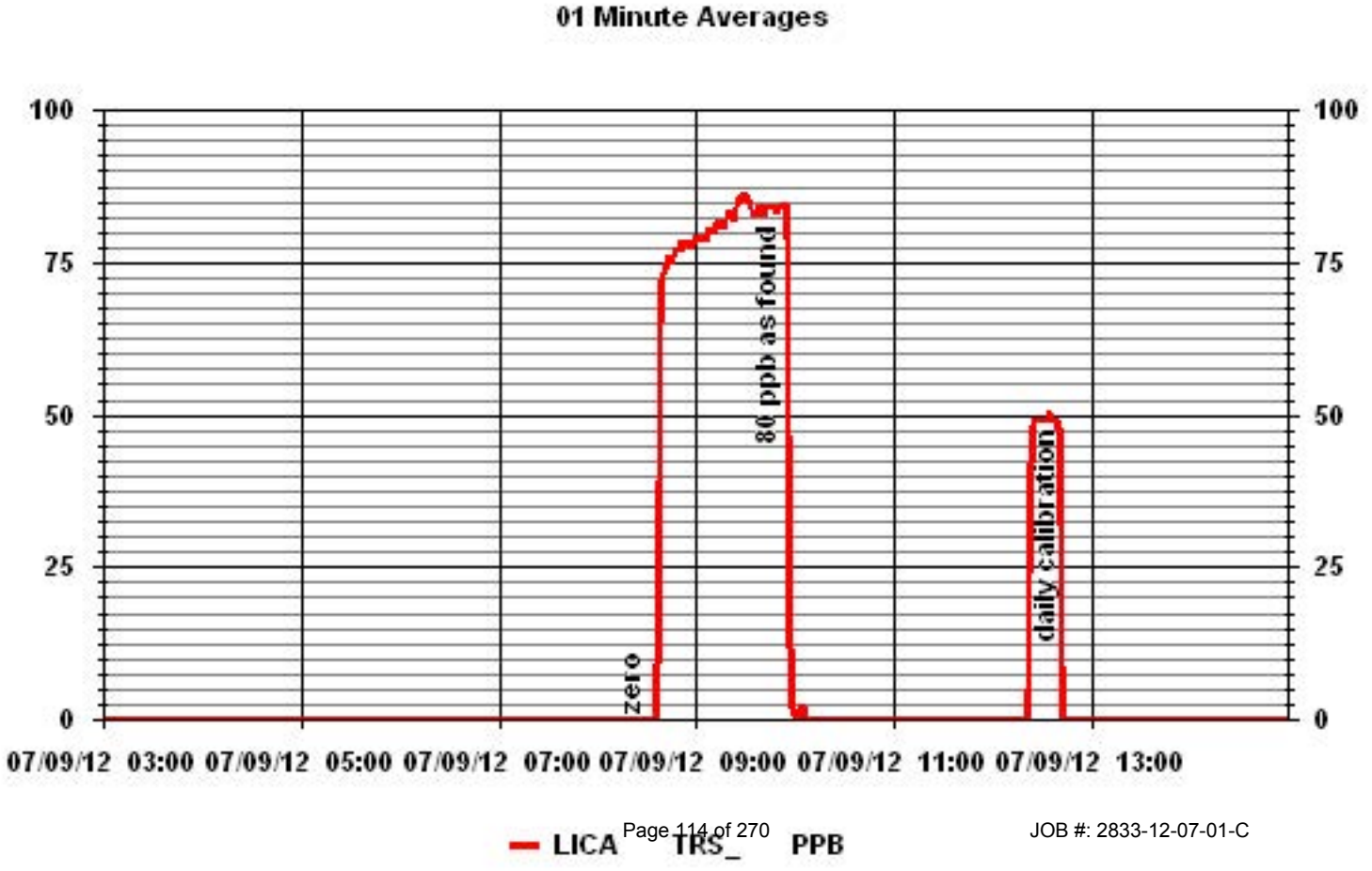
TRS Calibration Curve

Calibration Date	July 9, 2012		
Company	**Lakeland Industry & Community Association**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	8:07	End Time (MST)	9:54

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	#DIV/0!
	0	n/a	Slope (0.85 to 1.15)	#DIV/0!
	0	#DIV/0!	Intercept (± 3% F.S.)	#DIV/0!
	0	#VALUE!		
80	84	#VALUE!		



Notes:



JOB #: 2833-12-07-01-C

TRS Calibration Report

Station Information

Calibration Date	July 16, 2012		Previous Calibration	July 9, 2012	
Company	**Lakeland Industry & Community Association**				
Plant / Location	**LICA 1 - Cold Lake South**				
Start Time (MST)	12:42		End Time (MST)	16:45	
Reason:	Post- Repaire Calibration				
Barometric Pressure	0.967	atm	Station Temperature	23	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 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	353 ccm	32.8 Deg C	353 ccm	32.8 Deg C
HVPS / Lamp Setting	-623.5	745	-623.5	747
PMT / RxCell Temp	OK Deg C	44.9 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	14	1.361	13.1	1.279

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
	No Zero Adj			
4960	40.0	80	84	0.9524
4960	40.0	80	80	1.0000
4976	20.0	40	40	1.0000
4988	11.5	23	23	1.0000
4996	0.0	0	0	N/A
			Sum of Least Squares	1.0002
			New Correction Factor	1.0000

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.4	-0.1
Auto Span	67.1	81.9
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9877
Current Correction Factor Before Span Adjust:	0.9524
Percent Change:	3.7%

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

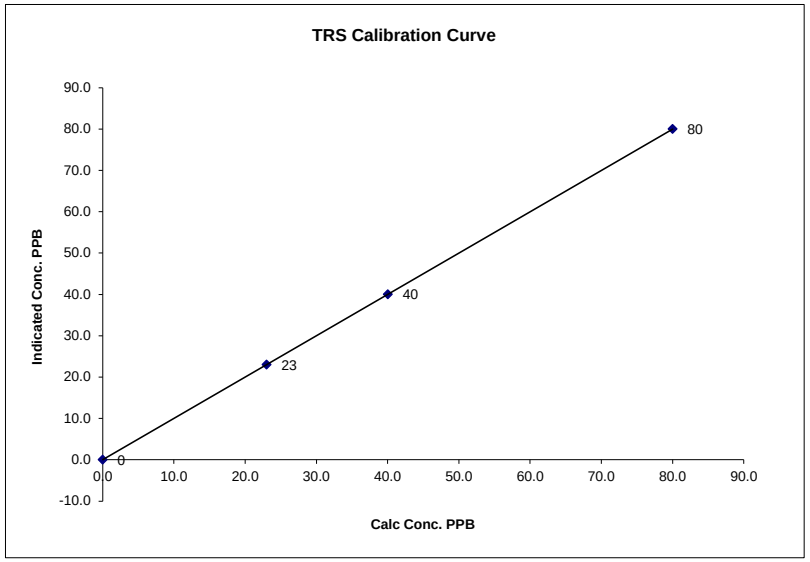
The perm tube was replaced on July 9th. Performed A/F check and full calibration.

Calibration Performed by: Ting Xu

TRS Calibration Curve

Calibration Date	July 16, 2012		
Company	**Lakeland Industry & Community Association**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	12:42	End Time (MST)	16:45

Calculated Conc. ppb	Indicated Response ppb	Correction Factor			
0	0	n/a	Correlation Coefficient	(≥ 0.995)	1.000000
23	23	0.0000	Slope	(0.85 to 1.15)	0.999969
40	40	0.5751	Intercept	(± 3% F.S.)	-0.007456
80	80	0.5004			



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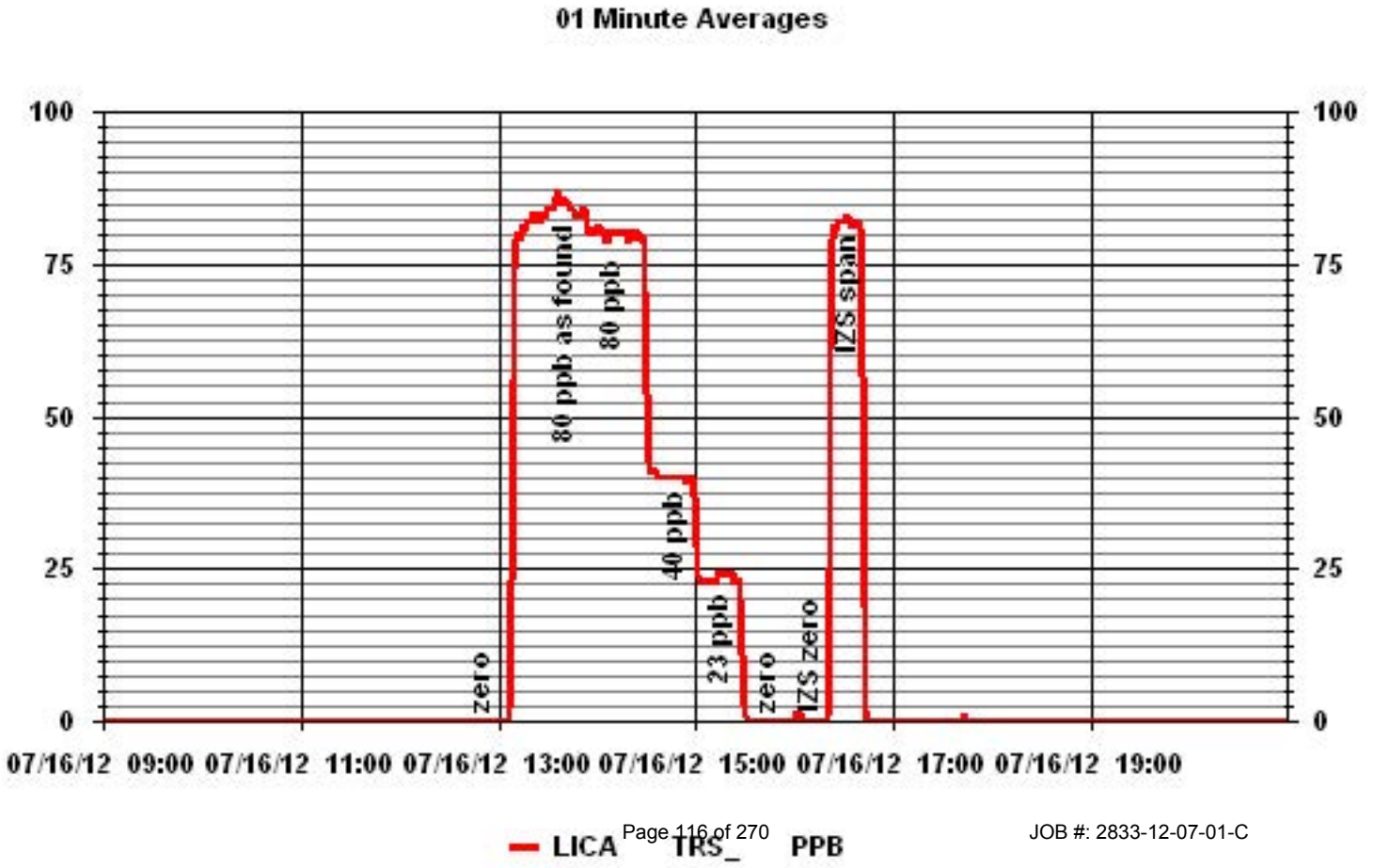


JOB #: 2833-12-07-01-C

TRS Calibration Report

Station Information

Calibration Date	July 19, 2012		Previous Calibration	July 16, 2012	
Company	**Lakeland Industry & Community Association**				
Plant / Location	**LICA 1 - Cold Lake South**				
Start Time (MST)	9:06		End Time (MST)	10:25	
Reason:	As Found				
Barometric Pressure	0.9	atm	Station Temperature	24	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 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	353	ccm	33.2	Deg C	353	ccm	32.1	Deg C
HVPS / Lamp Setting	-623.5		745		-623.5		745	
PMT / RxCell Temp	OK	Deg C	45	Deg C	OK	Deg C	45.2	Deg C
Converter / IZS Temp	810	Deg C	45	Deg C	810	Deg C	45.0	Deg C
Offset / Slope	13.1		1.279		13.1		1.279	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
	No Zero Adj			
4960	40.0	80	74	1.0811
			Sum of Least Squares	
			New Correction Factor	1.0811

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-	-
Auto Span	74.9	-
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0811
Percent Change:	-7.5%

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

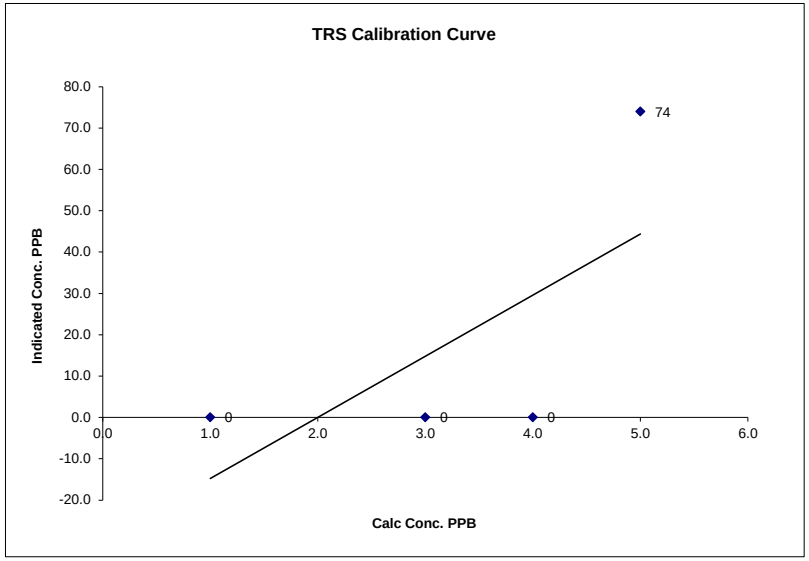
Following the A/F points check, the perm tube was replaced.

Calibration Performed by: Ting Xu

TRS Calibration Curve

Calibration Date	July 19, 2012			
Company	**Lakeland Industry & Community Association**			
Plant / Location	**LICA 1 - Cold Lake South**			
Start Time (MST)	9:06	End Time (MST)	10:25	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	#DIV/0!
	0	n/a	Slope (0.85 to 1.15)	#DIV/0!
	0	#DIV/0!	Intercept (± 3% F.S.)	#DIV/0!
	0	#VALUE!		
80	74	#VALUE!		



Notes:

TRS Calibration Report

Station Information

Calibration Date	July 19, 2012		Previous Calibration	July 19, 2012	
Company	**Lakeland Industry & Community Association**				
Plant / Location	**LICA 1 - Cold Lake South**				
Start Time (MST)	11:05		End Time (MST)	12:27	
Reason:	As Found				
Barometric Pressure	0.902	atm	Station Temperature	22	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 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:	Environics 6100	S/N :	4760	Method:	Dilution
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 - 100	ppb				
Sample Flow / Box Temp	353	ccm	32.1	Deg C	354	ccm	32.6	Deg C
HVPS / Lamp Setting	-623.5		745		-623.5		746	
PMT / RxCell Temp	OK	Deg C	45.2	Deg C	OK	Deg C	44.9	Deg C
Converter / IZS Temp	810	Deg C	45	Deg C	810	Deg C	45.0	Deg C
Offset / Slope	13.1		1.279		13.1		1.279	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	N/A
	No Zero Adj			
4956	39.9	80	72	1.1092
			Sum of Least Squares	
			New Correction Factor	1.1092

IZS Calibration Data

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

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.1092
Percent Change:	-9.8%

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

Following the A/F points check, the perm tube was replaced.

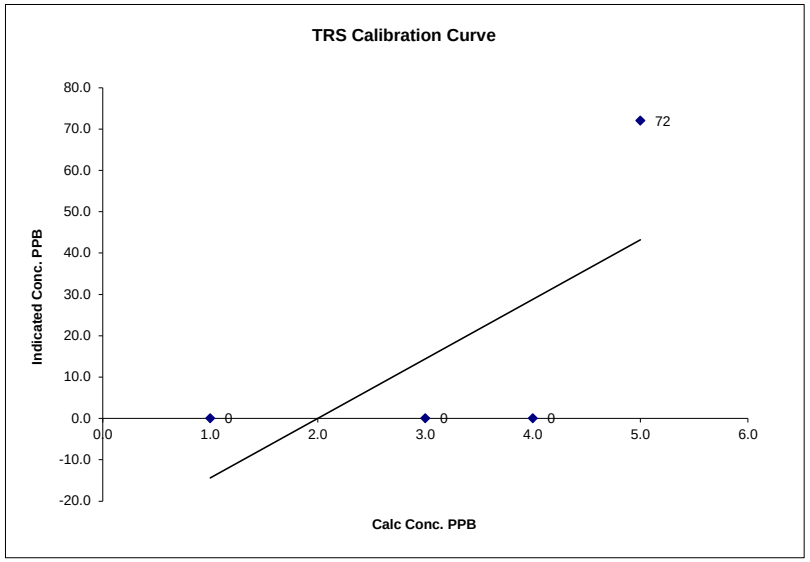
Performed A/F check using Environics calibrator to try to compare the result with API 700 calibrator.

Calibration Performed by: Ting Xu

TRS Calibration Curve

Calibration Date	July 19, 2012			
Company	**Lakeland Industry & Community Association**			
Plant / Location	**LICA 1 - Cold Lake South**			
Start Time (MST)	11:05	End Time (MST)	12:27	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	#DIV/0!
	0	n/a	Slope (0.85 to 1.15)	#DIV/0!
	0	#DIV/0!	Intercept (± 3% F.S.)	#DIV/0!
	0	#VALUE!		
80	72	#VALUE!		



Notes:

JOB #: 2833-12-07-01-C

TRS Calibration Report

Station Information

Calibration Date	July 19, 2012		Previous Calibration	July 19, 2012	
Company	**Lakeland Industry & Community Association**				
Plant / Location	**LICA 1 - Cold Lake South**				
Start Time (MST)	12:37		End Time (MST)	15:27	
Reason:	As Found				
Barometric Pressure	0.967	atm	Station Temperature	23	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 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	354 ccm	32.6 Deg C	355 ccm	32.8 Deg C
HVPS / Lamp Setting	-623.5	746	-623.5	745
PMT / RxCell Temp	OK Deg C	44.9 Deg C	OK Deg C	45.2 Deg C
Converter / IZS Temp	810 Deg C	45 Deg C	810 Deg C	45.0 Deg C
Offset / Slope	13.1	1.279	13.1	1.279

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
	No Zero Adj			
4960	39.9	80	78	1.0231
			Sum of Least Squares	
			New Correction Factor	1.0231

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-	0.0
Auto Span	74.8	40.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0231
Percent Change:	-2.3%

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

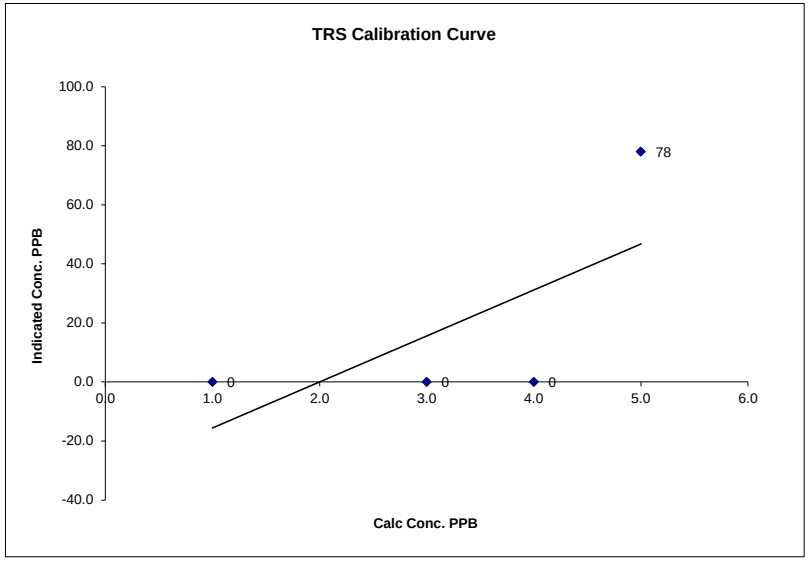
Performed the A/F points check after the perm tube replacement.

Calibration Performed by: Ting Xu

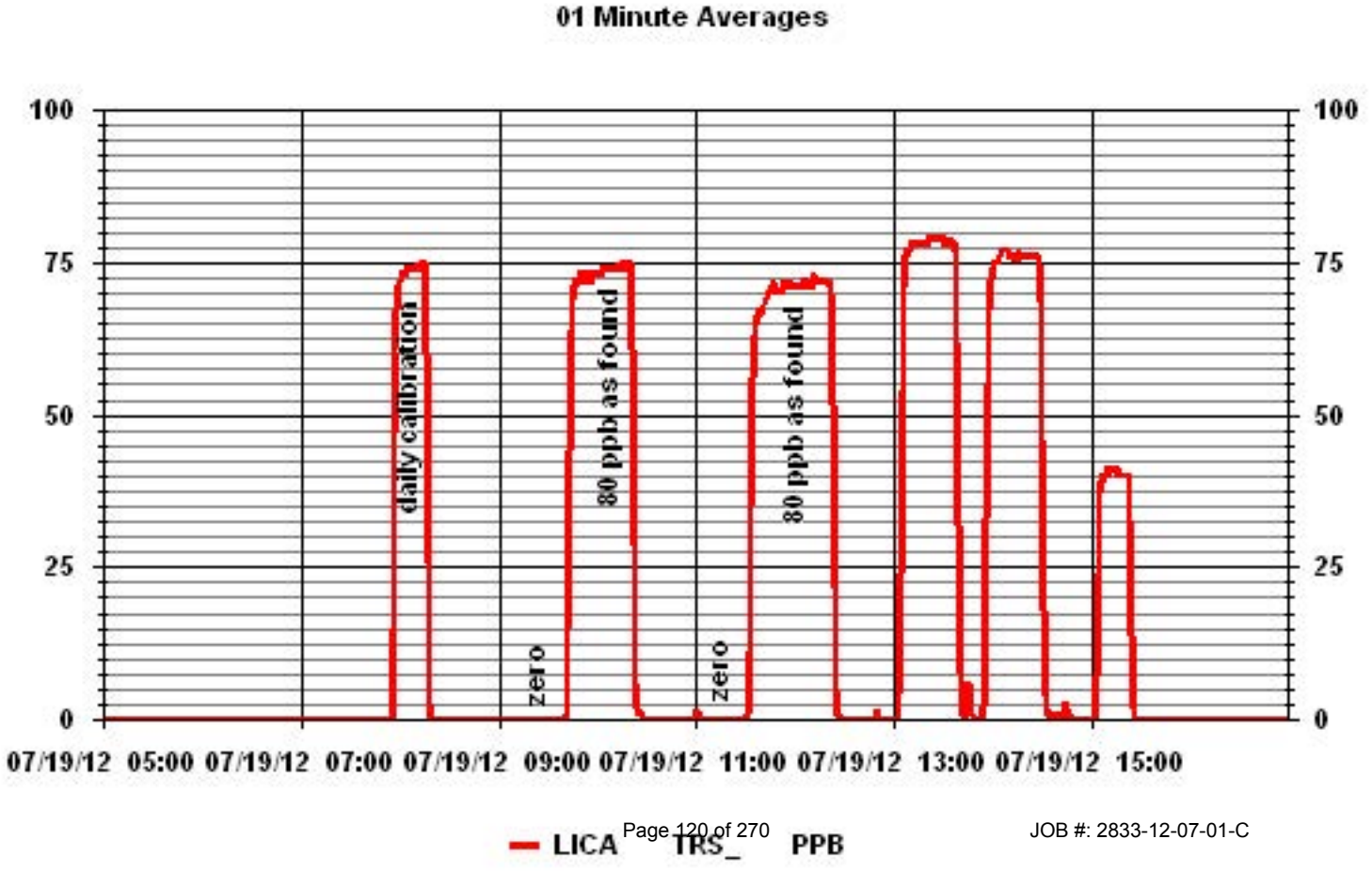
TRS Calibration Curve

Calibration Date	July 19, 2012			
Company	**Lakeland Industry & Community Association**			
Plant / Location	**LICA 1 - Cold Lake South**			
Start Time (MST)	12:37	End Time (MST)	15:27	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	#DIV/0!
	0	n/a	Slope (0.85 to 1.15)	#DIV/0!
	0	#DIV/0!	Intercept (± 3% F.S.)	#DIV/0!
	0	#VALUE!		
80	78	#VALUE!		



Notes:



JOB #: 2833-12-07-01-C

TRS Calibration Report

Station Information

Calibration Date	July 20, 2012		Previous Calibration	July 19, 2012	
Company	**Lakeland Industry & Community Association**				
Plant / Location	**LICA 1 - Cold Lake South**				
Start Time (MST)	7:55		End Time (MST)	12:04	
Reason:	Post Repair Calibration				
Barometric Pressure	0.908	atm	Station Temperature	23	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 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	355 ccm	33.3 Deg C	355 ccm	33.1 Deg C
HVPS / Lamp Setting	-623.5	745	-623.5	744
PMT / RxCell Temp	OK Deg C	45.2 Deg C	OK Deg C	45.1 Deg C
Converter / IZS Temp	810 Deg C	45 Deg C	810 Deg C	45.0 Deg C
Offset / Slope	13.1	1.279	13.7	1.342

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4997	0	0	0	N/A
	No Zero Adj			
4960	40.0	80	76	1.0526
4960	40.0	80	81	0.9877
4976	20.0	40	41	0.9764
4986	11.5	23	24	0.9588
4997	0.0	0	0	N/A
			Sum of Least Squares	0.9837
			New Correction Factor	0.9877

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.1	-0.1
Auto Span	41.4	42.7
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0526
Percent Change:	-5.0%

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

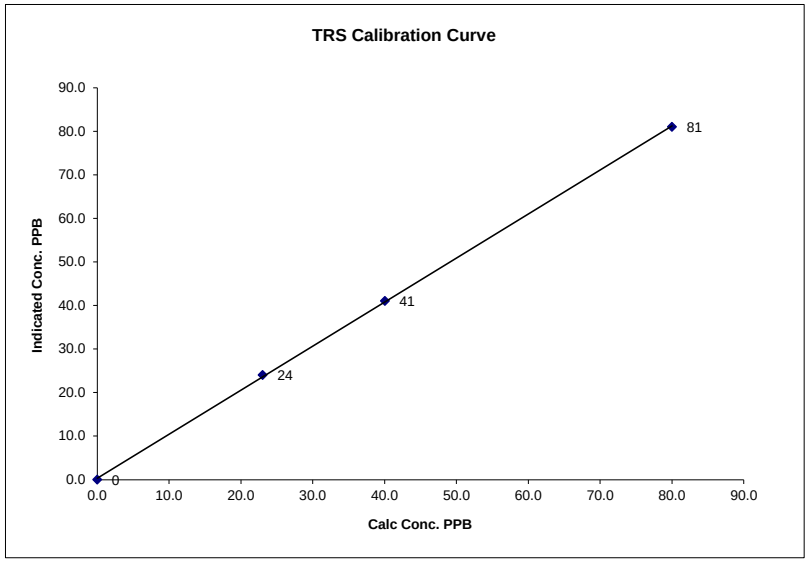
Calibration Performed by: Ting Xu

TRS Calibration Curve

Calibration Date	July 20, 2012		
Company	**Lakeland Industry & Community Association**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	7:55	End Time (MST)	12:04

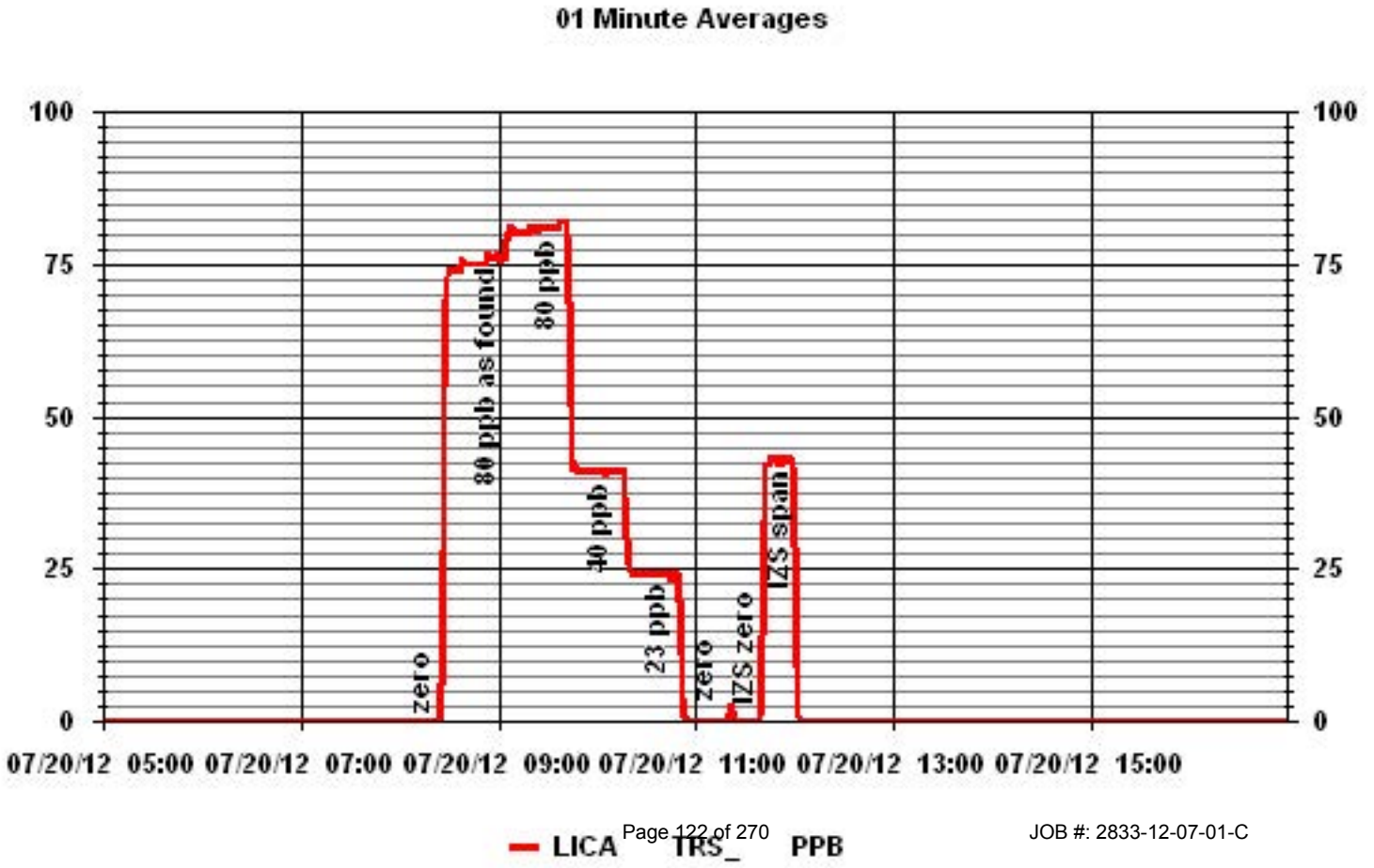
Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
23	24	0.0000
40	41	0.5613
80	81	0.4942

Correlation Coefficient	(≥ 0.995)	0.999898
Slope	(0.85 to 1.15)	1.010469
Intercept	(± 3% F.S.)	0.364726



Notes:

JOB #: 2833-12-07-01-C



JOB #: 2833-12-07-01-C

TRS Calibration Report

Station Information

Calibration Date	July 27, 2012		Previous Calibration	July 20, 2012	
Company	**Lakeland Industry & Community Association**				
Plant / Location	**LICA 1 - Cold Lake South**				
Start Time (MST)	11:37		End Time (MST)	12:52	
Reason:	As Found				
Barometric Pressure	0.895	atm	Station Temperature	22	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 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	352	ccm	33	Deg C	352	ccm	31.5	Deg C
HVPS / Lamp Setting	-623.5		745		-623.5		747	
PMT / RxCell Temp	OK	Deg C	44.9	Deg C	OK	Deg C	44.9	Deg C
Converter / IZS Temp	810	Deg C	45	Deg C	810	Deg C	45.0	Deg C
Offset / Slope	13.8		1.342		13.8		1.342	

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			
4960	40.0	80	81	0.9877
			Sum of Least Squares	
			New Correction Factor	0.9877

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.2	-
Auto Span	33.6	-
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9877
Current Correction Factor Before Span Adjust:	0.9877
Percent Change:	0.0%

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

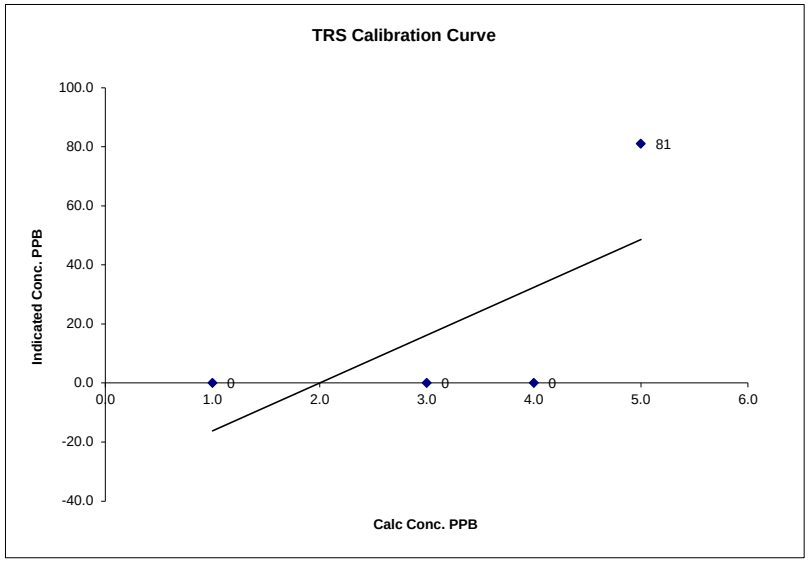
Following the A/F check, tested thermocouple voltage, OK; checked and tightened all tubing connections to the analyzer, including the scrubber material tubing inside the convertor.

Calibration Performed by: Ting Xu

TRS Calibration Curve

Calibration Date	July 27, 2012			
Company	**Lakeland Industry & Community Association**			
Plant / Location	**LICA 1 - Cold Lake South**			
Start Time (MST)	11:37	End Time (MST)	12:52	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	#DIV/0!
	0	n/a	Slope (0.85 to 1.15)	#DIV/0!
	0	#DIV/0!	Intercept (± 3% F.S.)	#DIV/0!
	0	#VALUE!		
80	81	#VALUE!		



Notes:

TRS Calibration Report

Station Information

Calibration Date	July 27, 2012		Previous Calibration	July 27, 2012	
Company	**Lakeland Industry & Community Association**				
Plant / Location	**LICA 1 - Cold Lake South**				
Start Time (MST)	13:59		End Time (MST)	17:29	
Reason:			Post Repair Calibration		
Barometric Pressure	0.892	atm	Station Temperature	22	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 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	352	ccm	31.5	Deg C	352	ccm	32.6	Deg C
HVPS / Lamp Setting	-623.5		747		-623.5		747	
PMT / RxCell Temp	OK	Deg C	44.9	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	13.8		1.342		13.1		1.272	

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			
4960	40.0	80	84	0.9524
4960	40.0	80	81	0.9877
4976	20.0	40	40	1.0000
4987	11.5	23	23	1.0000
4996	0.0	0	0	N/A
			Sum of Least Squares	0.9909
			New Correction Factor	0.9877

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-	-0.1
Auto Span	-	48.1
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9877
Current Correction Factor Before Span Adjust:	0.9524
Percent Change:	3.7%

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

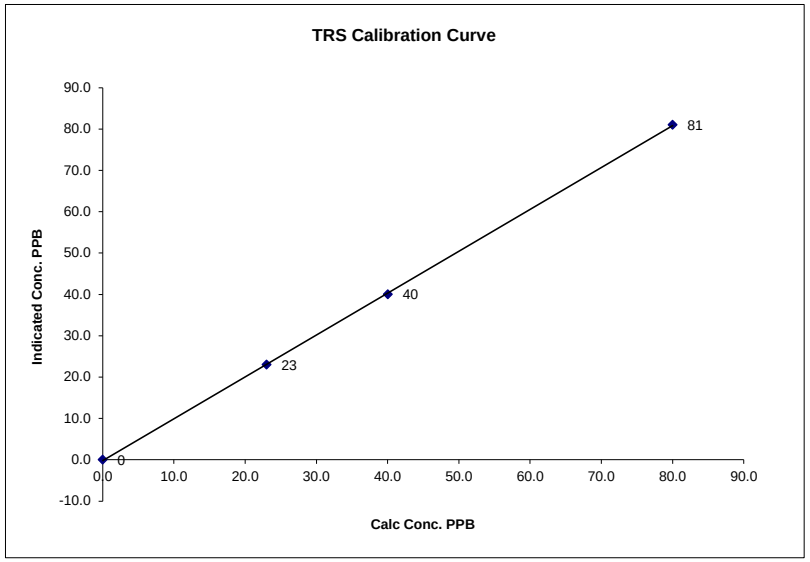
Calibration Performed by: Ting Xu

TRS Calibration Curve

Calibration Date	July 27, 2012		
Company	**Lakeland Industry & Community Association**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	13:59	End Time (MST)	17:29

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
23	23	0.0000
40	40	0.5752
80	81	0.4942

Correlation Coefficient	(≥ 0.995)	0.999943
Slope	(0.85 to 1.15)	1.012933
Intercept	(± 3% F.S.)	-0.222227



Notes:

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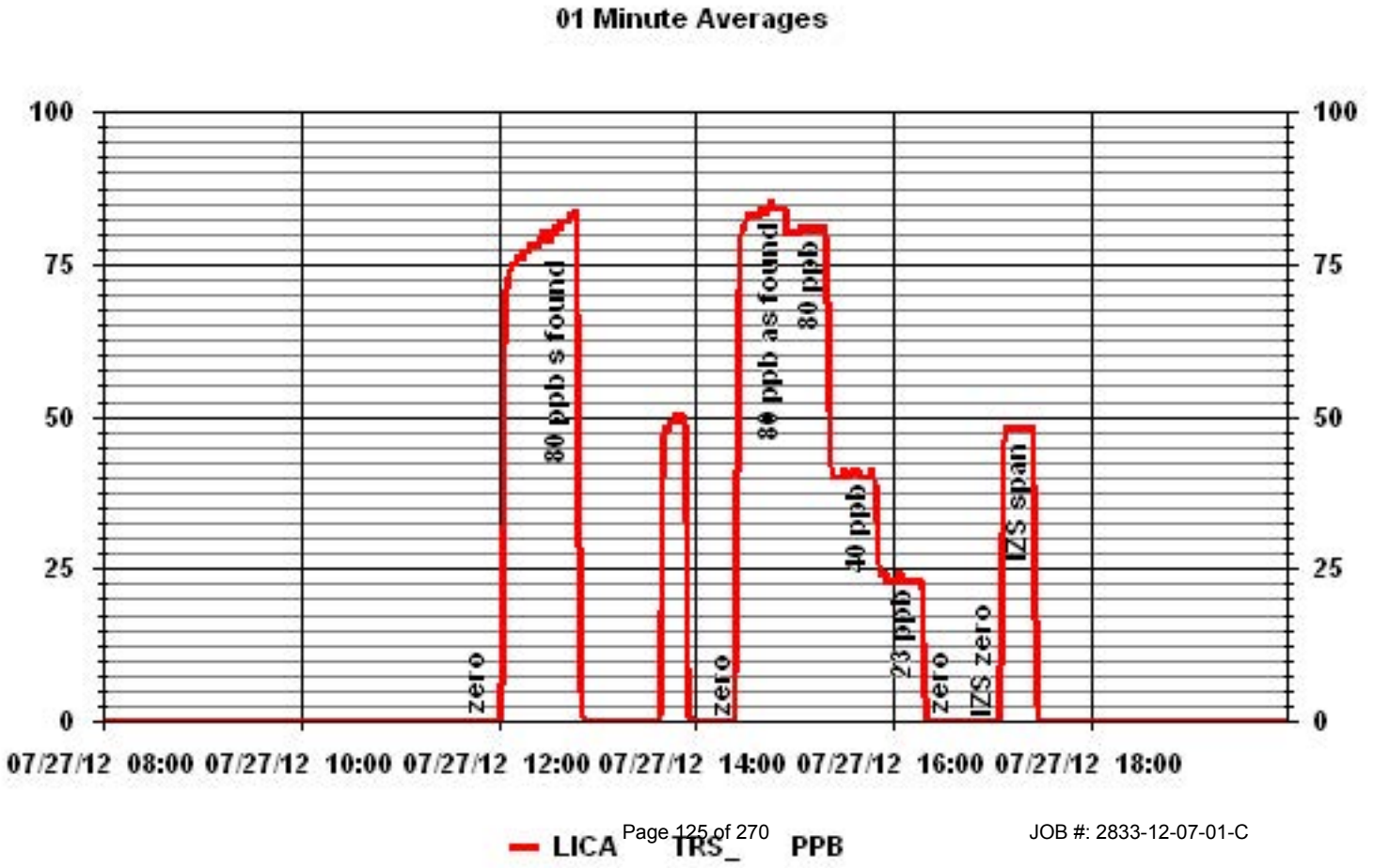


JOB #: 2833-12-07-01-C

TRS Calibration Report

Station Information

Calibration Date	July 29, 2012		Previous Calibration	July 27, 2012	
Company	**Lakeland Industry & Community Association**				
Plant / Location	**LICA 1 - Cold Lake South**				
Start Time (MST)	7:03		End Time (MST)	10:11	
Reason:	As Found				
Barometric Pressure	0.971	atm	Station Temperature	22	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 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	353	ccm	33.3	Deg C	352	ccm	33.1	Deg C
HVPS / Lamp Setting	-623.5		745		-623.5		746	
PMT / RxCell Temp	OK	Deg C	45	Deg C	OK	Deg C	44.9	Deg C
Converter / IZS Temp	810	Deg C	45	Deg C	810	Deg C	45.0	Deg C
Offset / Slope	13.1		1.272		13.1		1.272	

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			
4960	40.0	80	79	1.0127
			Sum of Least Squares	
			New Correction Factor	1.0127

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.4	-0.3
Auto Span	32.1	50.4
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9877
Current Correction Factor Before Span Adjust:	1.0127
Percent Change:	-2.5%

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

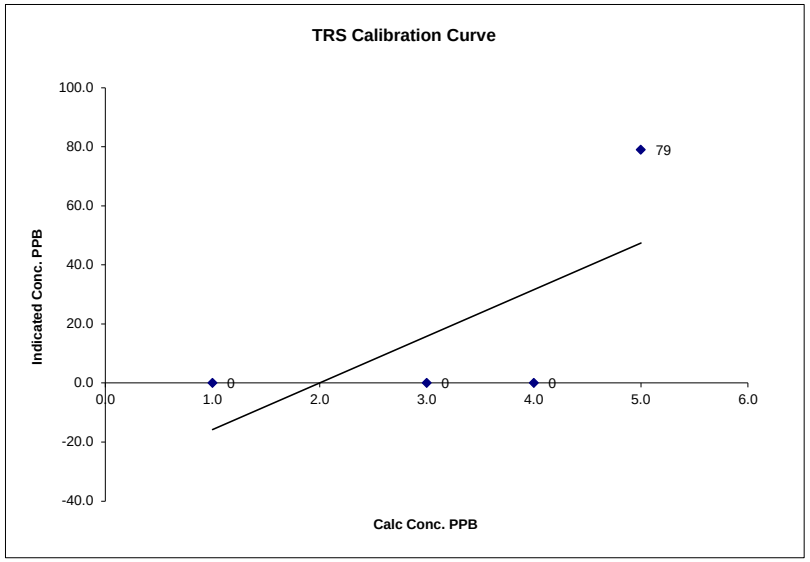
Following the A/F check, the scrubber material was replaced.

Calibration Performed by: Ting Xu

TRS Calibration Curve

Calibration Date	July 29, 2012				
Company	**Lakeland Industry & Community Association**				
Plant / Location	**LICA 1 - Cold Lake South**				
Start Time (MST)	7:03		End Time (MST)	10:11	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor			
			Correlation Coefficient	(≥ 0.995)	#DIV/0!
	0	n/a	Slope	(0.85 to 1.15)	#DIV/0!
	0	#DIV/0!	Intercept	(± 3% F.S.)	#DIV/0!
	0	#VALUE!			
80	79	#VALUE!			



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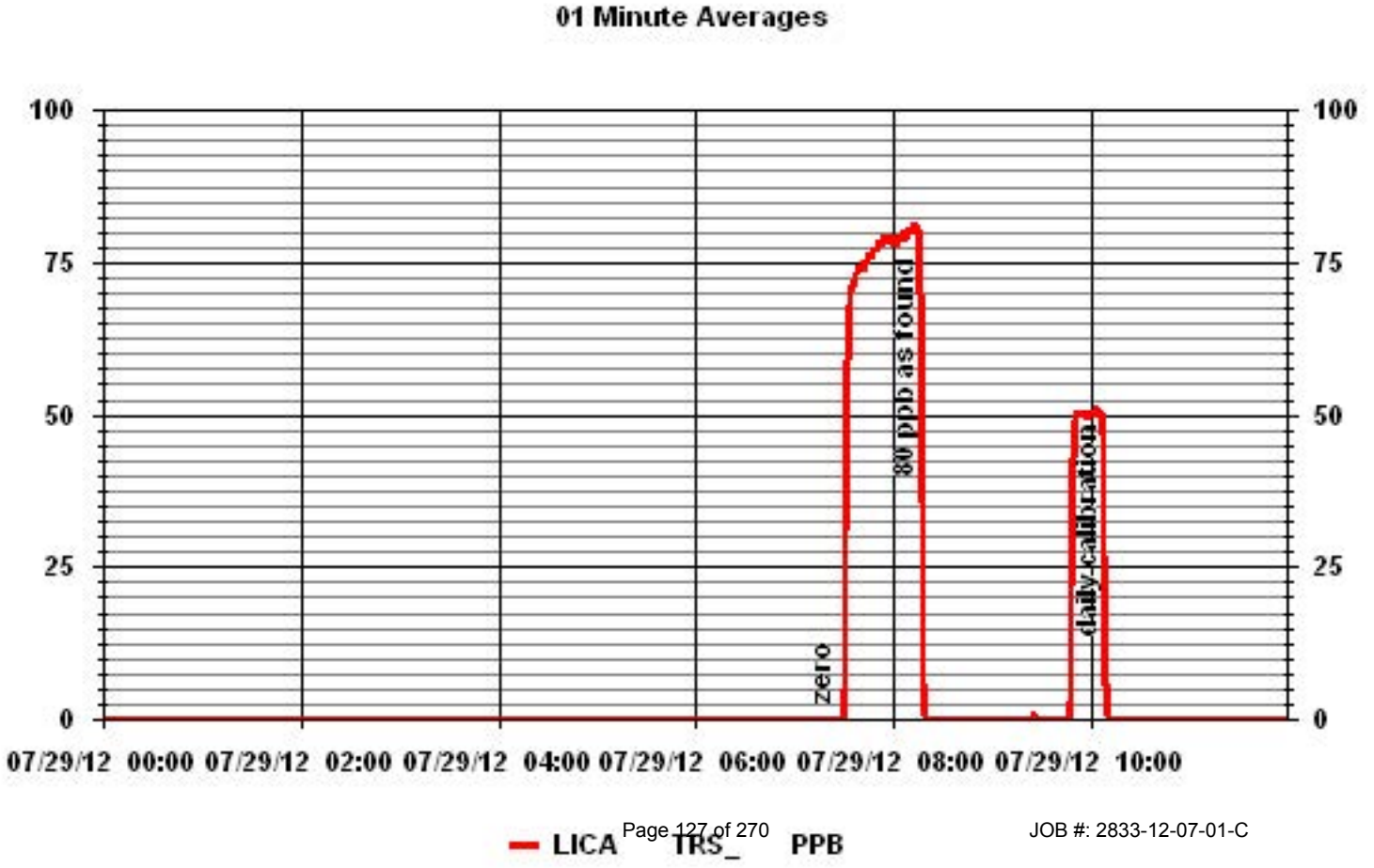


JOB #: 2833-12-07-01-C

TRS Calibration Report

Station Information

Calibration Date	July 29, 2012		Previous Calibration	July 29, 2012	
Company	**Lakeland Industry & Community Association**				
Plant / Location	**LICA 1 - Cold Lake South**				
Start Time (MST)	7:44		End Time (MST)	11:05	
Reason:	Post Repair Calibration				
Barometric Pressure	0.896	atm	Station Temperature	22	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 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	342	ccm	33	Deg C	342	ccm	32.9	Deg C
HVPS / Lamp Setting	-623.5		748		-623.5		744	
PMT / RxCell Temp	OK	Deg C	45.1	Deg C	OK	Deg C	45.2	Deg C
Converter / IZS Temp	810	Deg C	45	Deg C	810	Deg C	45.0	Deg C
Offset / Slope	13.3		1.272		13.4		1.272	

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			
4960	40.0	80	80	1.0000
	No Span Adj.			
4976	20.0	40	41	0.9764
4987	11.5	23	23	1.0000
4996	0.0	0	0	N/A
			Sum of Least Squares	0.9955
			New Correction Factor	1.0000

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.3	-0.3
Auto Span	46.6	50.4
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9877
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	-1.2%

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

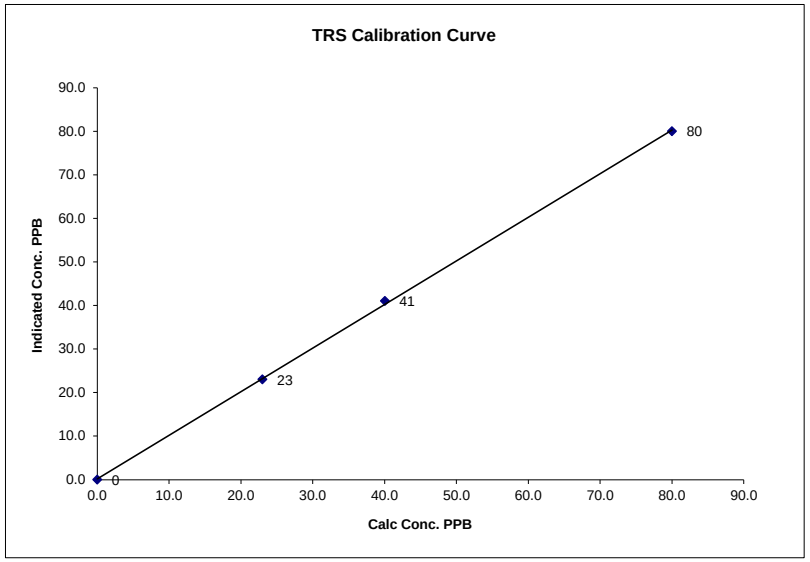
Calibration Performed by: Ting Xu

TRS Calibration Curve

Calibration Date	July 29, 2012		
Company	**Lakeland Industry & Community Association**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	7:44	End Time (MST)	11:05

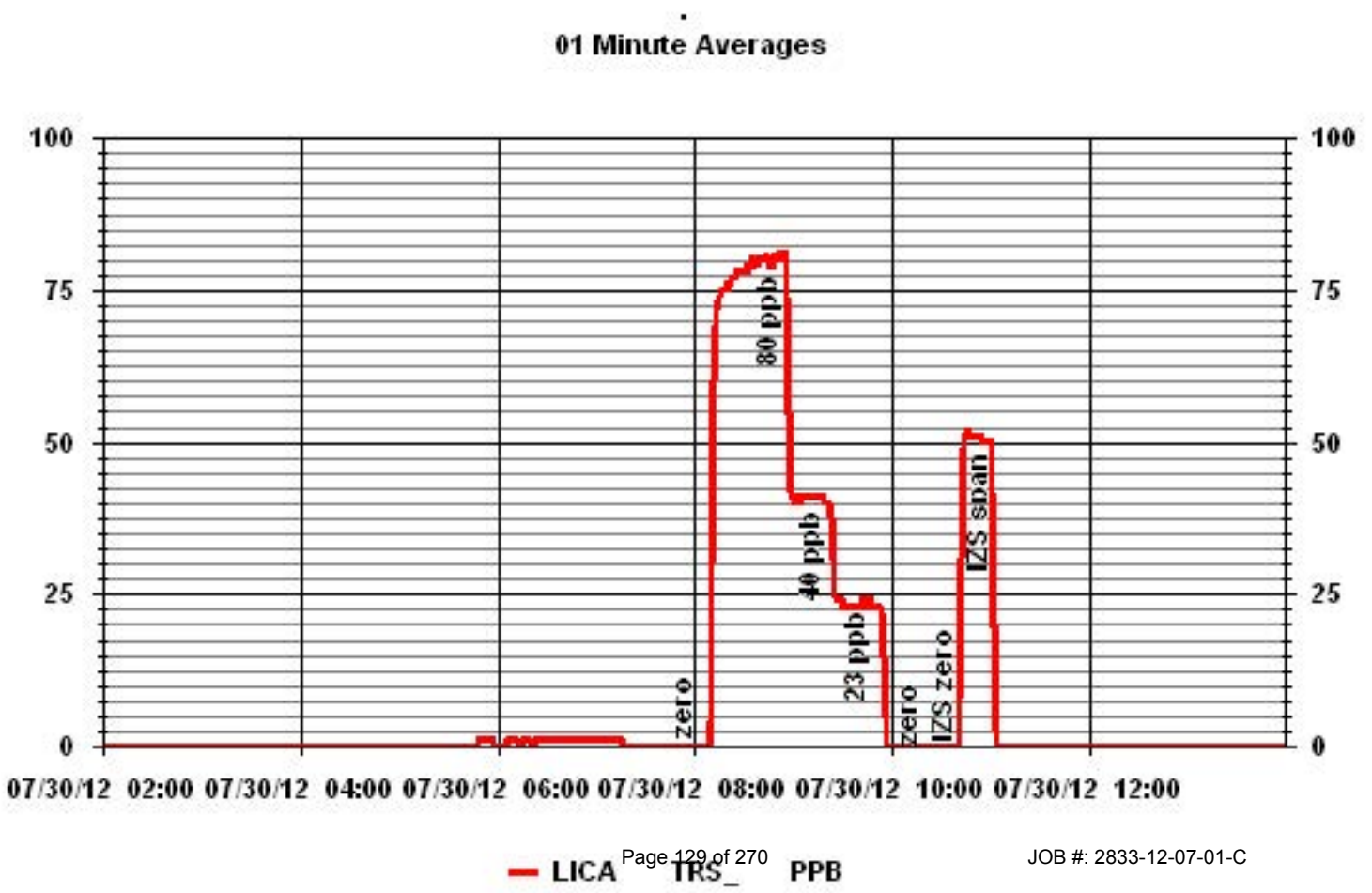
Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
23	23	0.0000
40	41	0.5611
80	80	0.5004

Correlation Coefficient	(≥ 0.995)	0.999795
Slope	(0.85 to 1.15)	1.001236
Intercept	(± 3% F.S.)	0.196066



Notes:

JOB #: 2833-12-07-01-C



JOB #: 2833-12-07-01-C

Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	July 3, 2012		Previous Calibration	June 26, 2012	
Company:	**Lakeland Industry and Community Association**				
Plant / Location:	**LICA1/Cold Lake**				
Start Time (MST)	12:29		End Time (MST)	16:16	
Reason:	Monthly Calibration				
Barometric Pressure:	0.95	atm	Station Temperature:	23	Deg C
Calibrator:	API 700		S/N:	831	
Cal Gas Concentration:	CH4 600 PPM		C3H8	204 PPM	
	TOTAL CH4 1161.0 PPM		Gas Cyl. #	LL55310	Cal Gas Expiry Date: September 9, 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
2000	0.0	0.0	2.0	NA
2000	0.0	0.0	0.0	NA
2000	74.0	41.4	43.4	0.9545
2000	74.0	41.4	41.6	0.9958
2000	37.0	21.1	21.0	1.0042
2000	20.0	11.5	11.5	1.0000
2000	0.0	0.0	0.0	NA
			New Correction Factor:	0.9958

Percent Change

Previous Calibration Correction Factor:	0.9958
Current Correction Factor Before Span Adjust:	0.9545
Percent Change:	4.3%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	2.1	0.0
Auto Span	36.3	34.2
Sample Lines Connected		**YES**

Cylinder Pressures

Span 1750 psi Hydrogen 2350 psi Zero Air 32 psi

Notes: **NA : Not Applicable**

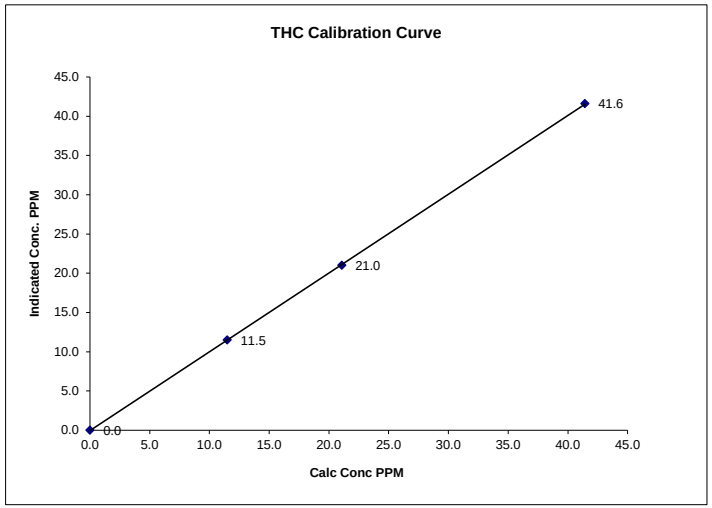
Calibration Performed by: Ting Xu

THC Calibration Curve

Calibration Date	July 3, 2012		
Company	**Lakeland Industry and Community Association**		
Plant / Location	**LICA1/Cold Lake**		
Start Time (MST)	12:29	End Time (MST)	16:16

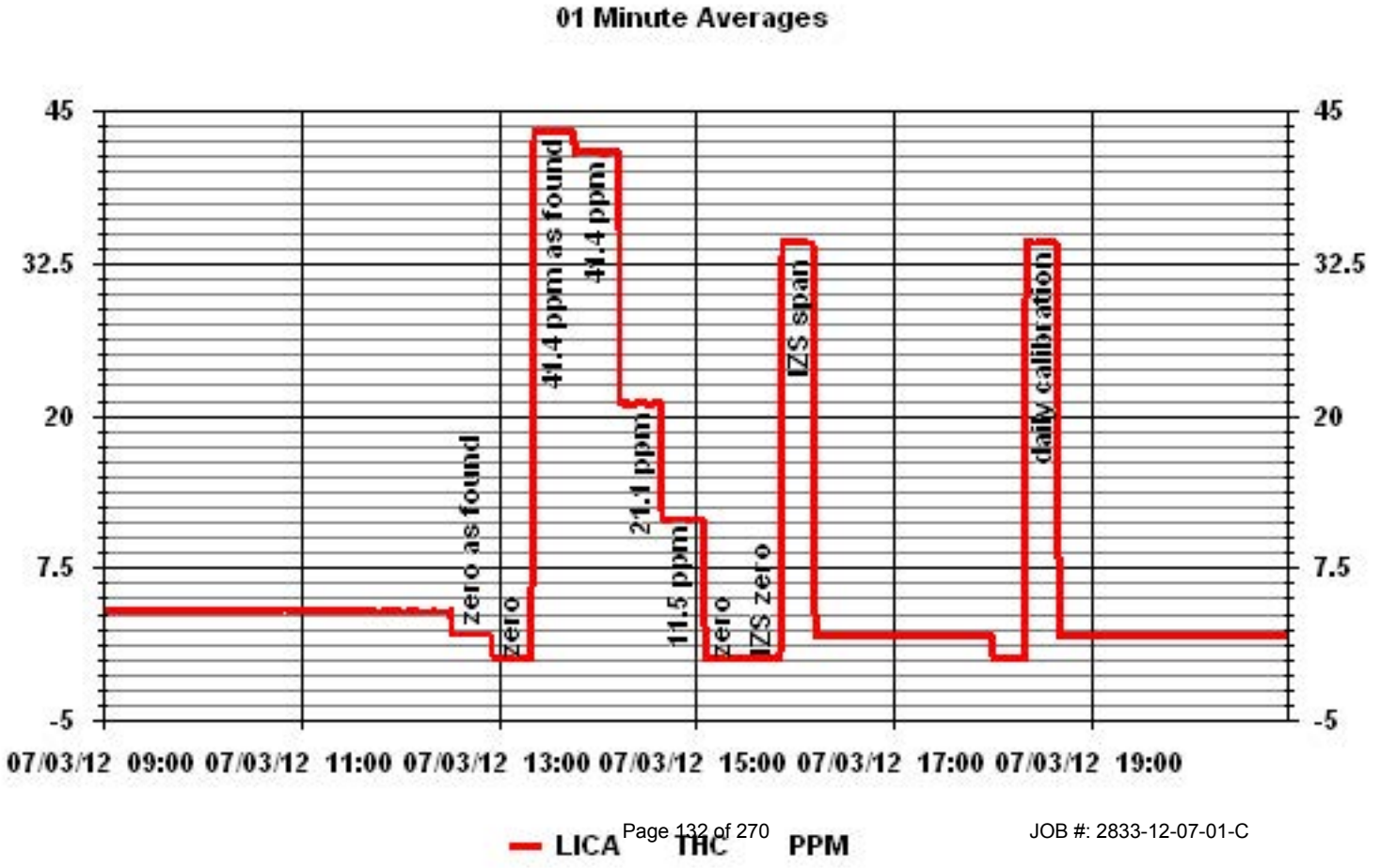
Calculated Conc. ppm	Indicated Response ppm	Correction Factor
0.0	0.0	NA
11.5	11.5	0.9996
21.1	21.0	1.0042
41.4	41.6	0.9958

Correlation Coefficient	(≥ 0.995)	0.999977
Slope	(0.85 to 1.15)	1.004076
Intercept	(± 3% F.S.)	-0.05234



Notes:

JOB #: 2833-12-07-01-C



JOB #: 2833-12-07-01-C

Particulate Matter 2.5

TEOM 1405F Audit

Station		Audit Transfer Standard	
Date:	July 6, 2012	Make/Model:	Streamline FTS
Station Name:	LICA 1	Serial Number:	Hi 091001, Lo 091099
Location:	Cold Lake South	Cell s/n:	NA
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 (%)	29.8%
Firmware Ver.	1.52	K_o Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (^oC)	24.2
		Press (ATM)	0.967

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**	0.007	Warnings	None
Pump Vacuum **< 0.40 atm**	0.32		

Temperature/Pressure

Measured Temp **(± 2 ^oC)**	23.5	**$\Delta\ ^oC$**	0.7
Measured Press **(± 0.01atm)**	0.968	**DATM**	-0.001

Flow Audit

Indicated Main Flow (l/min)	3.00	Main Flow Drift **(±10.0%)**	0.02%
Measured Main Flow (l/min)	3.03	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift **(±10.0%)**	0.44%
Measured Bypass Flow (l/min)	13.80	Flow Adjusted to Measured?	Yes

Leak Check		Instrument Setup
Main **(< 0.15 l/min)**	NA	Flow Control = Active
Aux **(< 0.6 l/min)**	NA	Report Conditions = Actual

K_o Factor

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

Start Time: 11:34 **Finish Time:** 13:15

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

New Filter Loading %: 19.4%

Comments:

Auditor/s: Ting Xu

JOB #: 2833-12-07-01-C

Nitrogen Dioxide

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	July 8, 2012		Previous Calibration	July 4, 2012	
Company	LICA		Plant/Location	Cold Lake South	
Start Time (MST)	8:10		End Time (MST)	14:19	
Reason:	Monthly Calibration				
Barometric Pressure	0.961	atm	Station Temperature	23	Deg C
Cal Gas Concentration	NOx 49.6	ppm	NO 49.5	ppm	
Cal Gas Cylinder #	LL42496				
DAS Output Voltage	0 - 10	Volts	Chart Rec. Output	NA	Volts

MFCF: 0

Cal Gas Expiry date: January 16, 2014

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	732	ccm	317	Deg C		726	ccm	317	Deg C
Ozone Flow / Vacuum	OK	ccm	177.0	"Hg-A		OK	ccm	177	"Hg-A
HVPS / A ZERO	-821	Volts	NA	MV		-821	Volts	NA	MV
Rx/ Temp / PMT Temp	49.9	Deg C	-2.5	Deg C		50.0	Deg C	-2.4	Deg C
Box Temp / IZS Temp	29.7	Deg C	OK	Deg C		29.6	Deg C	OK	Deg C
Offset	3.9	NOx	3.6	NO		3.9	NOx	3.6	NO
Slope	1.005	NOx	0.925	NO		1.005	NOx	0.925	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	40.3	NA	400	399	NA	399	398	2	1.0031	1.0036
	No Span Adj.									
4974	20.2	NA	201	200	NA	200	200	1	1.0031	1.0000
4986	10.1	NA	100	100	NA	101	101	0	0.9928	0.9908
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	40.3	NA	400	399	NA	398	397	2	NA	NA
4954	40.3	350	400	NA	317	398	82	316	1.0032	99.68%
	No NO2 Adj.									
4954	40.3	150	400	NA	139	399	260	139	1.0000	100.00%
4954	40.3	75	400	NA	70	399	329	70	1.0000	100.00%

Linearity			Sum of Least Squares	NOx= 1.003	NO= 1.001	NO2= 1.003
OK?	Yes	No	Correction Factors:	NOx= 1.0031	NO= 1.0036	NO2= 1.0032
				Average Converter Efficiency= 99.89%		

IZS Calibration Data

	Before Calibration					After Calibration			
Auto Zero	0.1	NOx	0.2	NO2		0.1	NOx	0.2	NO2
Auto Span	348	NOx	345	NO2		344	NOx	341	NO2
					Sample Lines Connected	YES			

Percent Change from Previous Calibration	NOx	-0.5%	NO	-0.4%	NO2	-0.6%

Notes

NA : Not Applicable

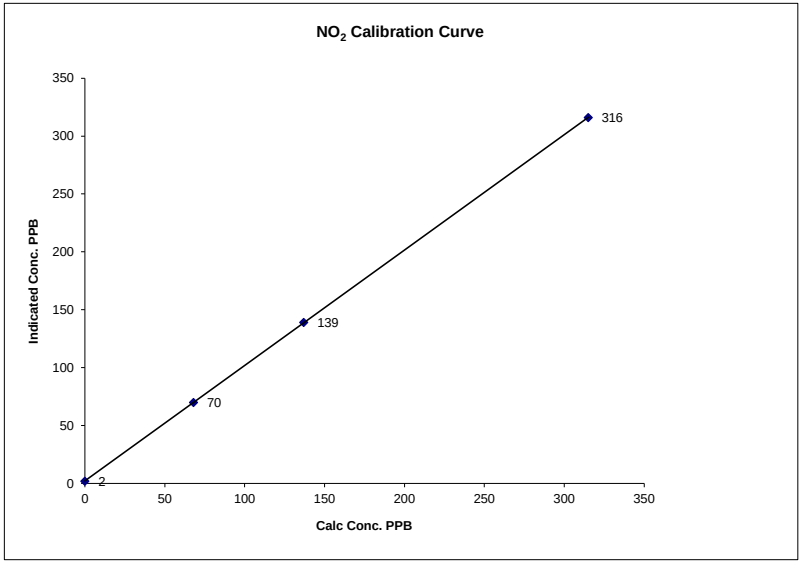
Calibration Performed by: Ting Xu

NO_2 Calibration Curve

Calibration Date	July 8, 2012		
Company	LICA		
Plant / Location	Cold Lake South		
Start Time (MST)	8:10	End Time (MST)	14:19

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	2	N/A
68	70	0.9714
137	139	0.9856
315	316	0.9968

Correlation Coefficient	(≥ 0.995)	0.999998
Slope	(0.85 to 1.15)	0.996637
Intercept	(± 3% F.S.)	2.18713



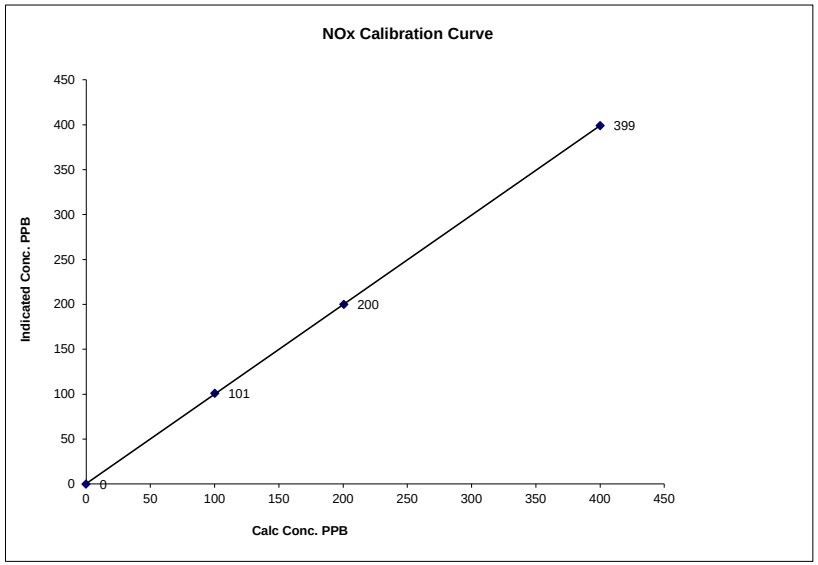
Notes:

JOB #: 2833-12-07-01-C

NOx Calibration Curve

Calibration Date	July 8, 2012				
Company	LICA				
Plant / Location	Cold Lake South				
Start Time (MST)	8:10	End Time (MST)	14:19		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999991
			Slope	(0.85 to 1.15)	0.996032
0	0	N/A	Intercept	(± 3% F.S.)	0.41569
100	101	0.9928			
201	200	1.0031			
400	399	1.0031			

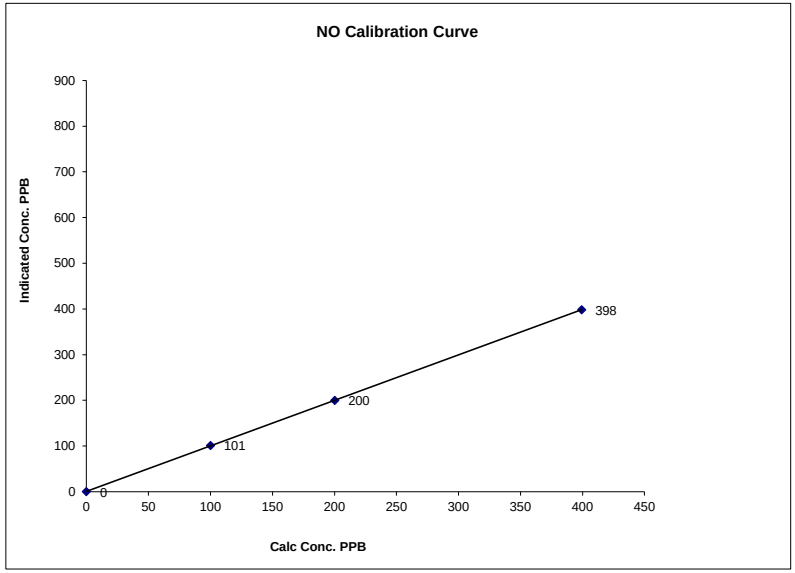


Notes:

NO Calibration Curve

Calibration Date	July 8, 2012				
Company	LICA				
Plant / Location	Cold Lake South				
Start Time (MST)	8:10	End Time (MST)	14:19		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999988
			Slope	(0.85 to 1.15)	0.992378
0	0	N/A	Intercept	(± 3% F.S.)	1.0069
100	101	0.9908			
200	200	1.0011			
399	398	1.0036			



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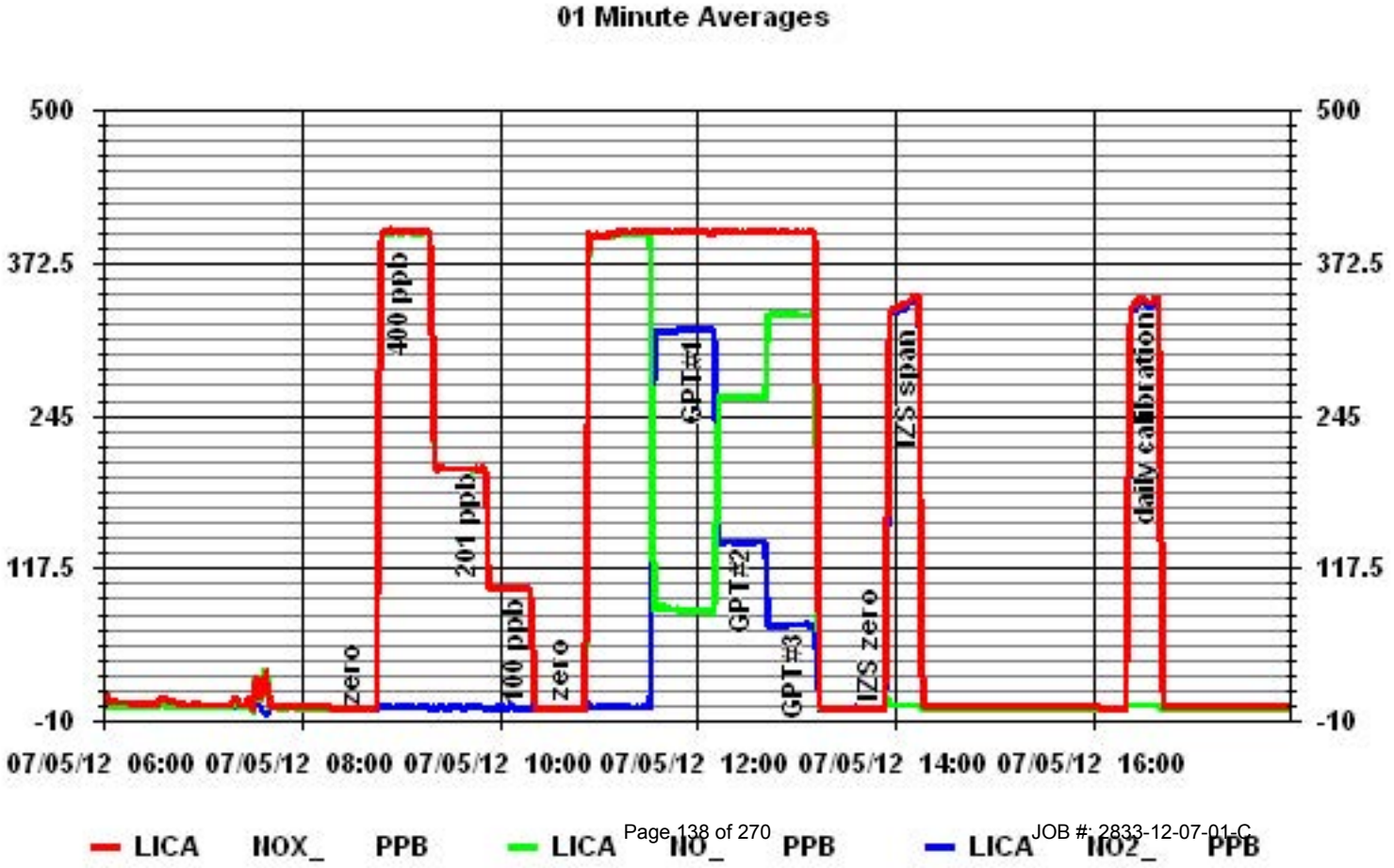

01 Minute Averages
500
372.5
245
117.5
-10
400 ppb
201 ppb
100 ppb
zero
zero
GPT#1
GPT#2
GPT#3
IZS zero
IZS span
daily calibration
07/05/12 06:00
07/05/12 08:00
07/05/12 10:00
07/05/12 12:00
07/05/12 14:00
07/05/12 16:00
LICA NOX_ PPB
LICA NO_ PPB
LICA NO2_ PPB

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	July 29, 2012	Previous Calibration	July 5, 2012
Company	LICA	Plant/Location	Cold Lake South
Start Time (MST)	7:03	End Time (MST)	10:11
Reason:	As Found		

Barometric Pressure	0.971 atm	Station Temperature	22 Deg C		MFCF	0	
Cal Gas Concentration	NOx 49.6 ppm	NO 49.5 ppm		Cal Gas Expiry date	January 16, 2014		
Cal Gas Cylinder #	LL42496						
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	733	ccm	316	Deg C	731	ccm	317	Deg C
Ozone Flow / Vacuum	OK	ccm	178.0	"Hg-A	OK	ccm	178	"Hg-A
HVPS / A ZERO	-821	Volts	NA	MV	-821	Volts	NA	MV
Rx/ Temp / PMT Temp	49.8	Deg C	-2.4	Deg C	50.0	Deg C	-2.5	Deg C
Box Temp / IZS Temp	30.1	Deg C	OK	Deg C	27.6	Deg C	OK	Deg C
Offset	3.9	NOx	3.6	NO	3.9	NOx	3.6	NO
Slope	1.005	NOx	0.925	NO	1.005	NOx	0.925	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
4995	0.0	NA	0	0	NA	0	0	0	NA	NA
	No Zero Adj									
4954	40.3	NA	400	399	NA	398	396	2	1.0056	1.0086

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
		350								
		150								
		75								

Linearity			Sum of Least Squares	NOx=	#VALUE!	NO=	#VALUE!	NO2=	#VALUE!	
OK?	Yes	No	Correction Factors:	NOx=	1.0056	NO=	1.0086	NO2=		
				Average Converter Efficiency=				#DIV/0!		

IZS Calibration Data

	Before Calibration				After Calibration			
Auto Zero	0.1	NOx	0.2	NO2	0.1	NOx	0.2	NO2
Auto Span	298	NOx	295	NO2	375	NOx	371	NO2
			Sample Lines Connected		YES			
Percent Change from Previous Calibration			NOx	-0.3%	NO	-0.5%	NO2	-

Notes

NA : Not Applicable

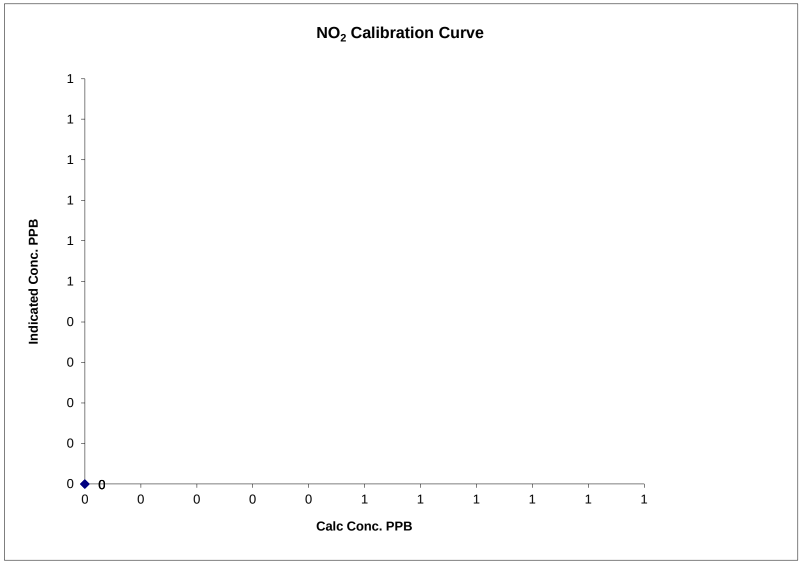
Following the A/F points check, the perm tube was replaced.

Calibration Performed by: Ting Xu

NO_2 Calibration Curve

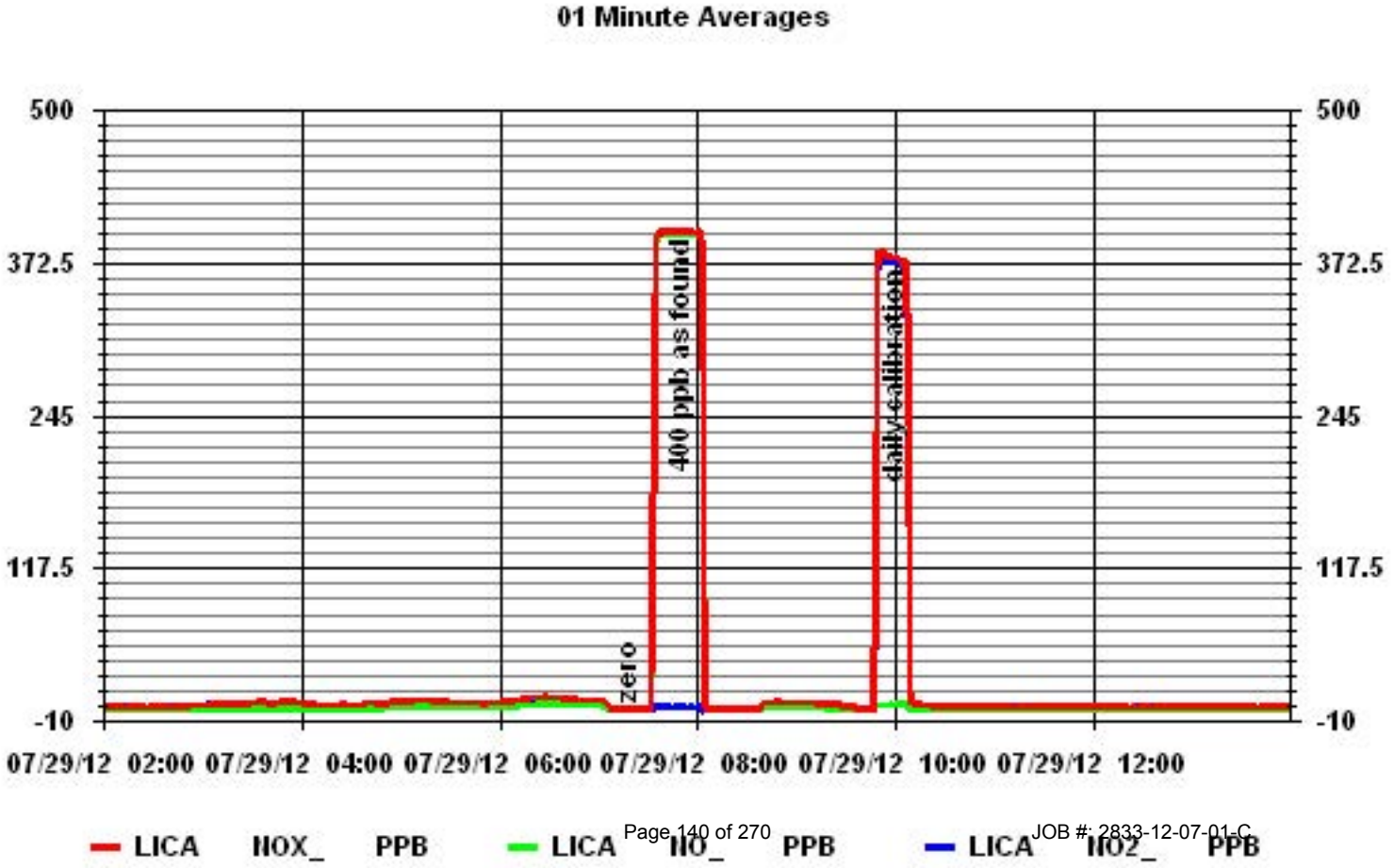
Calibration Date	July 29, 2012		
Company	**LICA**		
Plant / Location	**Cold Lake South**		
Start Time (MST)	7:03	End Time (MST)	10:11

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



Notes:

JOB #: 2833-12-07-01-C


01 Minute Averages
500
372.5
245
117.5
-10
zero
400 ppb as found
daily calibration
07/29/12 02:00
07/29/12 04:00
07/29/12 06:00
07/29/12 08:00
07/29/12 10:00
07/29/12 12:00
LICA NOX_ PPB
LICA NO_ PPB
LICA NO2_ PPB

Ozone

O_3 Calibration Report

Station Information

Calibration Date	July 5, 2012	Previous Calibration	June 4, 2012
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	13:35	End Time (MST)	16:57
Reason:		Monthly Calibration	
Barometric Pressure	0.906 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	709	LPM	750	LPM	715	LPM	757	LPM
O_3 Set Level	701		mmHg		713		mmHg	
Bench Lamp	53.5		Deg C		53.5		Deg C	
O3 Lamp / Box Temp	67.5	Deg	27.4	Deg C	67.5	Deg C	29	Deg C
Offset / Slope	-0.1		1.021		0.1		1.021	

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	NA
	No Zero Adj			
4994	350	315	315	1.0000
	No Span Adj.			
4994	150	137	136	1.0074
4994	75	68	68	1.0000
4994	0	0	0	NA
			Sum of Least Squares	1.0011
			New Correction Factor	1.0000

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	-0.1
Auto Span	267	267
Sample Lines Connected		YES
Previous Calibration Correction Factor:		1.0000
Current Correctio Factor Before Span Adjust:		1.0000
Percent Change:		0.0%

Note: **NA : Not Applicable**

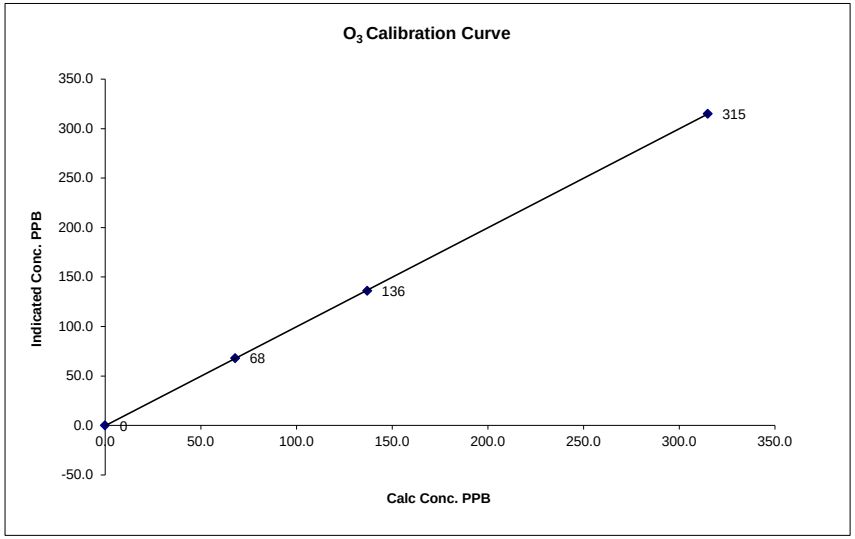
Calibration Performed by: Ting Xu

O_3 Calibration Curve

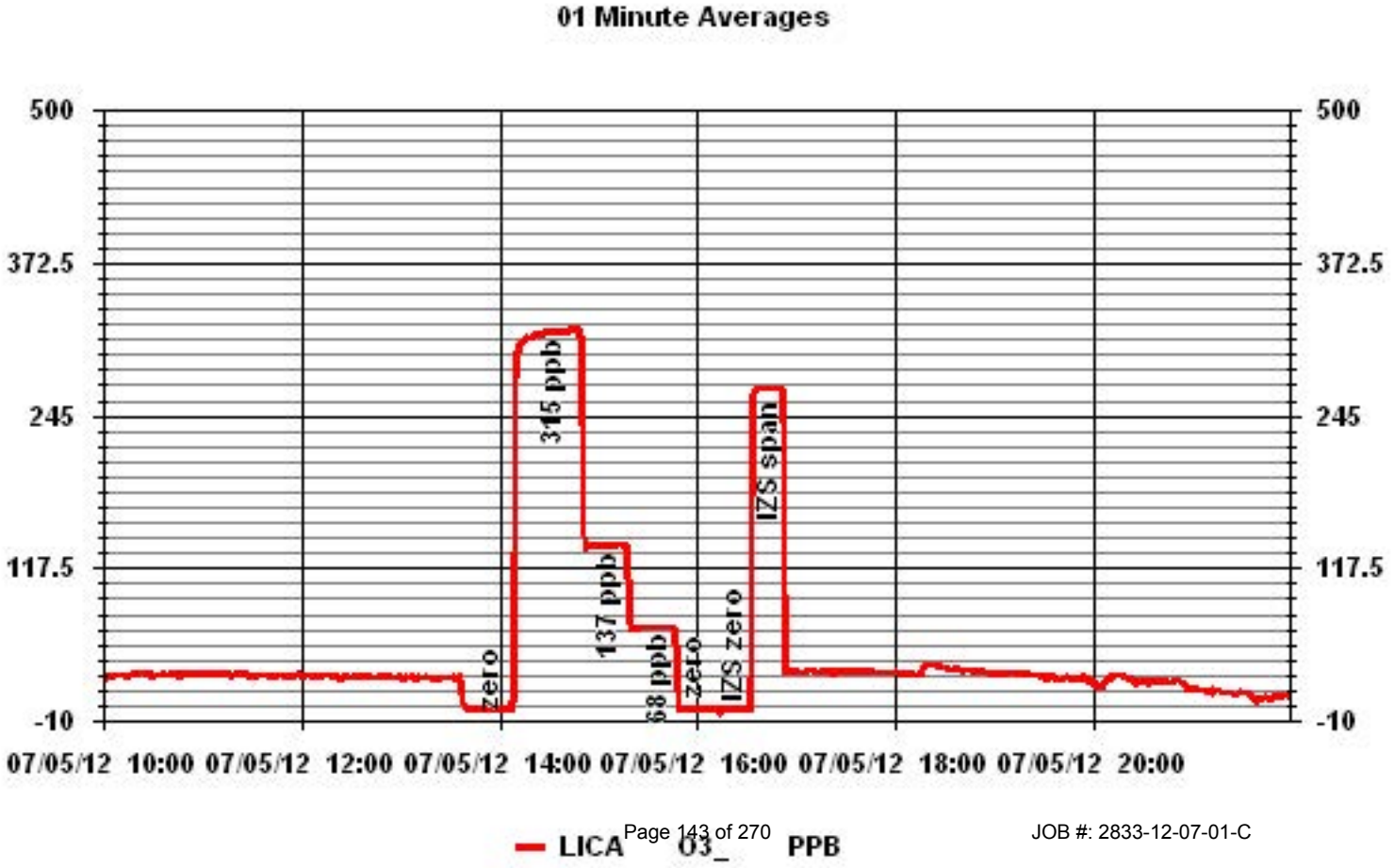
Calibration Date	July 5, 2012
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	13:35
End Time (MST)	16:57

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
68	68	1.0000
137	136	1.0074
315	315	1.0000

Correlation Coefficient	(≥ 0.995)	0.999986
Slope	(0.85 to 1.15)	0.999873
Intercept	(± 3% F.S.)	-0.233460



Notes:



JOB #: 2833-12-07-01-C

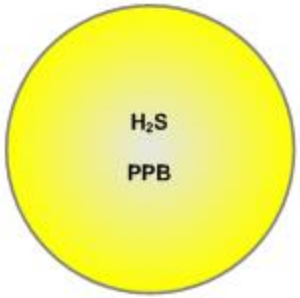
Passive Bubble Maps

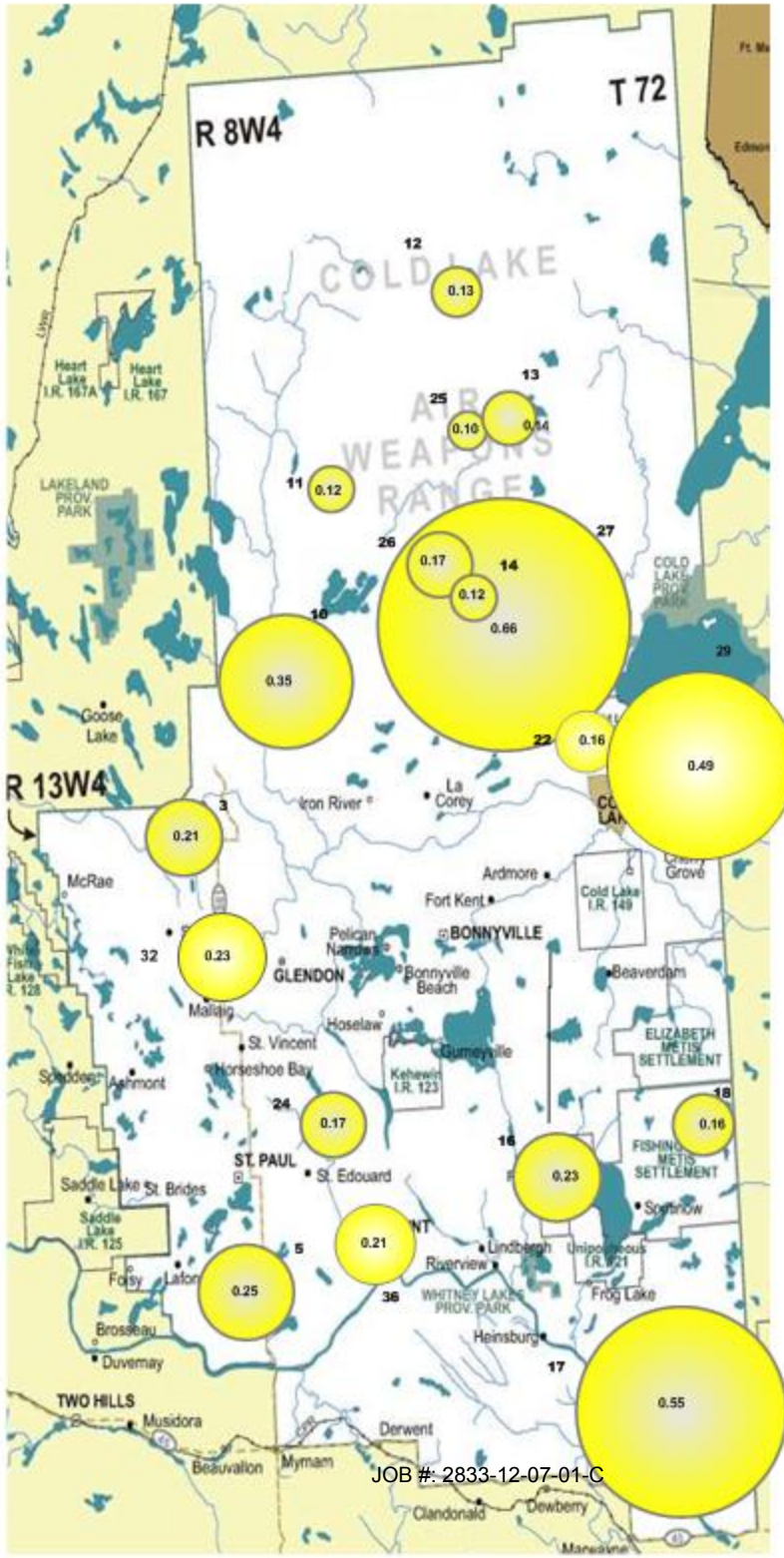
Lakeland Industry & Community Association
H_2S Passive Bubble Map

JULY 2012

PASSIVE STATIONS

		DUPLICATE
3 – Therien	0.20 PPB	0.22 PPB
5 – Lake Eliza	0.25 PPB	NA
10 – La Corey	0.35 PPB	NA
11 – Wolf Lake	0.12 PPB	NA
12 – Foster Creek	0.13 PPB	NA
13 – Primrose	0.14 PPB	NA
14 – Maskwa	0.12 PPB	NA
16 – Frog Lake	0.23 PPB	NA
17 – Clear Range	0.55 PPB	NA
18 – Fishing Lake	0.16 PPB	NA
22 – Cold Lake South	0.16 PPB	NA
24 – Fort George	0.17 PPB	NA
25 – Burnt Lake	0.10 PPB	NA
26 – Mahihkan	0.17 PPB	NA
27 – Mahkeses	0.66 PPB	NA
29 – Cold Lake South 2	0.49 PPB	NA
32 – St. Lina	0.23 PPB	NA
36 – Portable	0.19 PPB	0.22 PPB





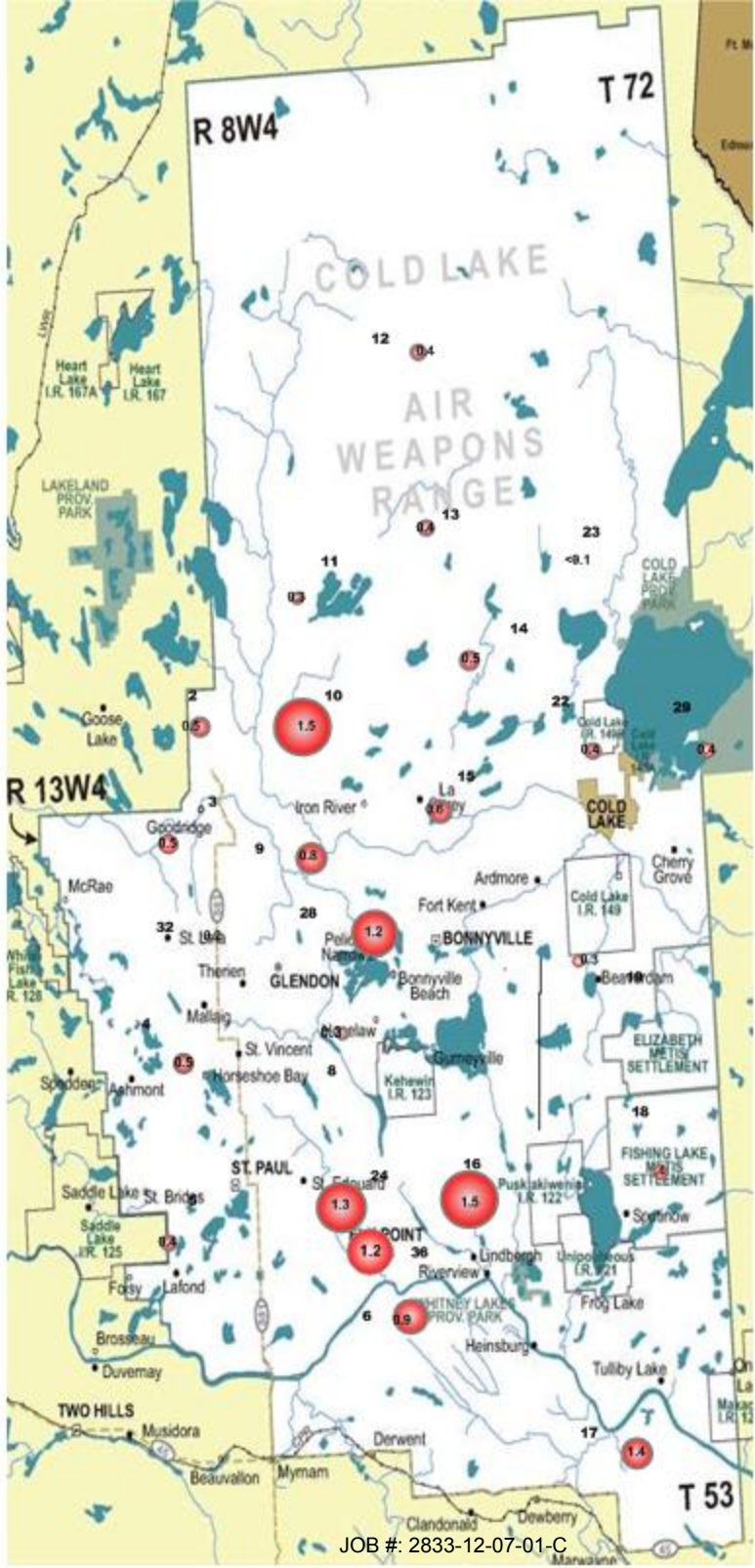
Summary

Minimum : 0.10 PPB – Burnt Lake
Maximum: 0.66 PPB –Mahkeses
Average: 0.25 PPB *Includes Duplicates

Lakeland Industry & Community Association
NO_2 Passive Bubble Map

JULY 2012

PASSIVE STATIONS		DUPLICATE
2 – Sand River	0.5 PPB	NA
3 – Therien	0.5 PPB	NA
4 – Flat Lake	0.5 PPB	NA
5 – Lake Eliza	0.4 PPB	NA
6 – Telegraph Creek	0.9 PPB	NA
8 – Muriel-Kehewin	0.3 PPB	NA
9 – Dupre	0.8 PPB	NA
10 – La Corey	1.5 PPB	NA
11 – Wolf Lake	0.3 PPB	NA
12 – Foster Creek	0.4 PPB	NA
13 – Primrose	0.3 PPB	NA
14 – Maskwa	0.5 PPB	NA
15 – Ardmore	0.6 PPB	NA
16 – Frog Lake	1.5 PPB	NA
17 – Clear Range	0.8 PPB	NA
18 – Fishing Lake	0.4 PPB	NA
19 – Beaverdam	0.3 PPB	0.3 PPB
22 – Cold Lake South	0.4 PPB	0.4 PPB
23 – Medley-Martineau	<0.1 PPB	NA
24 – Fort George	1.3 PPB	NA
28 – Town of Bonnyville	1.2 PPB	NA
29 – Cold Lake South 2	0.4 PPB	NA
32 – St. Lina	0.2 PPB	NA
36 – Portable	1.2 PPB	NA



Summary

Minimum : <0.1 PPB – Medley-Martineau
Maximum: 1.5 PPB – La Corey and Frog Lake
Average: 0.6 PPB *Includes Duplicates

JOB #: 2833-12-07-01-C

Lakeland Industry & Community Association
O_3 Passive Bubble Map

JULY 2012

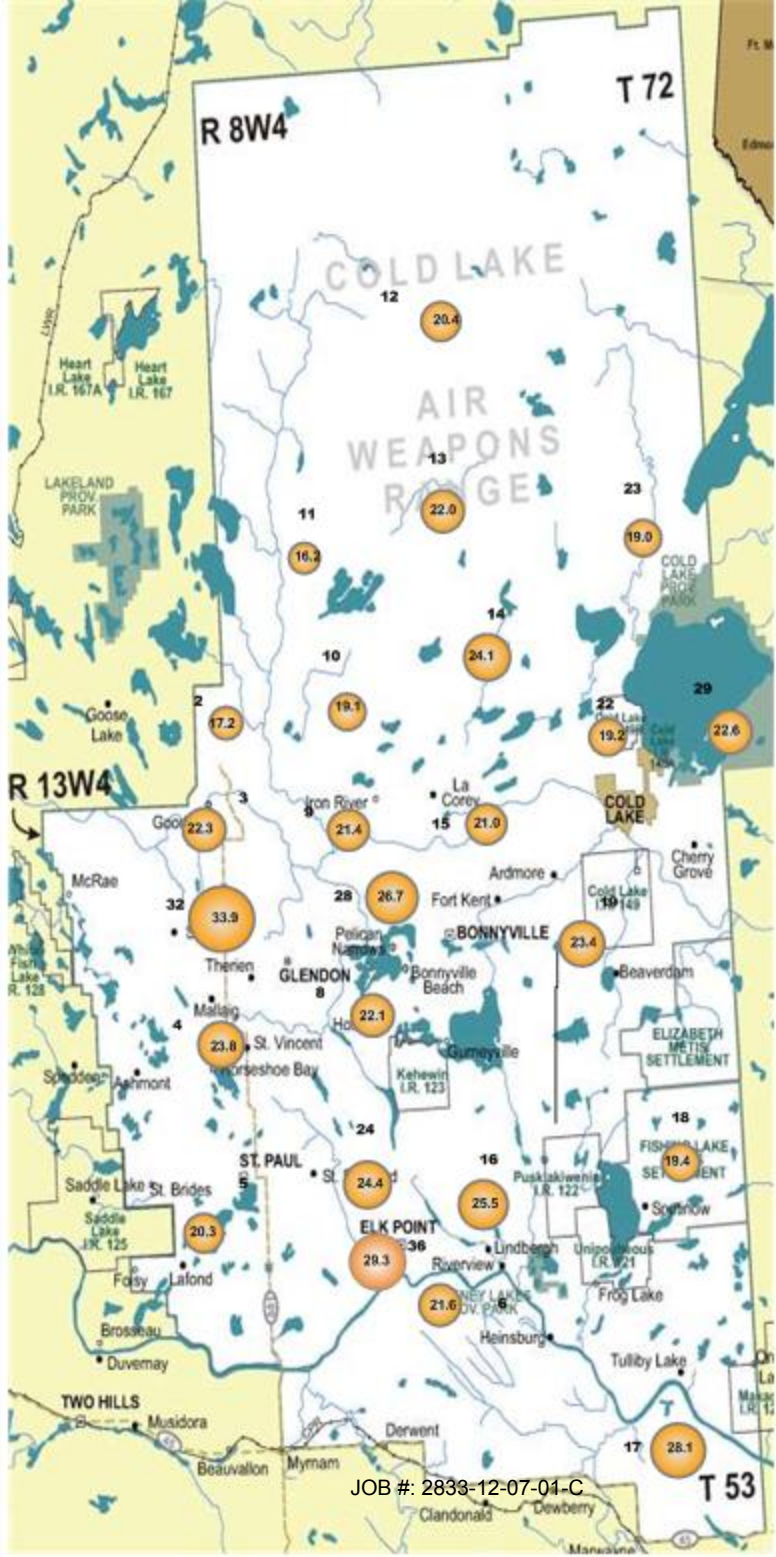
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	17.2 PPB	NA
3 – Therien	22.3 PPB	NA
4 – Flat Lake	23.8 PPB	NA
5 – Lake Eliza	20.3 PPB	NA
6 – Telegraph Creek	21.6 PPB	NA
8 – Muriel-Kehewin	22.1 PPB	NA
9 – Dupre	21.4 PPB	NA
10 – La Corey	19.1 PPB	NA
11 – Wolf Lake	16.2 PPB	NA
12 – Foster Creek	20.4 PPB	NA
13 – Primrose	22.0 PPB	NA
14 – Maskwa	24.1 PPB	NA
15 – Ardmore	21.0 PPB	NA
16 – Frog Lake	25.5 PPB	NA
17 – Clear Range	28.1 PPB	NA
18 – Fishing Lake	19.4 PPB	NA
19 – Beaverdam	23.8 PPB	23.0 PPB
22 – Cold Lake South	19.6 PPB	18.8 PPB
23 – Medley-Martineau	19.0 PPB	NA
24 – Fort George	24.4 PPB	NA
28 – Town of Bonnyville	26.7 PPB	NA
29 – Cold Lake South 2	22.6 PPB	NA
32 – St. Lina	33.9 PPB	NA
36 – Portable	29.3 PPB	NA

O_3 PPB

Summary

Minimum : 16.2 PPB – Wolf Lake
Maximum: 33.9 PPB – St. Lina
Average: 22.2 PPB *Includes Duplicates



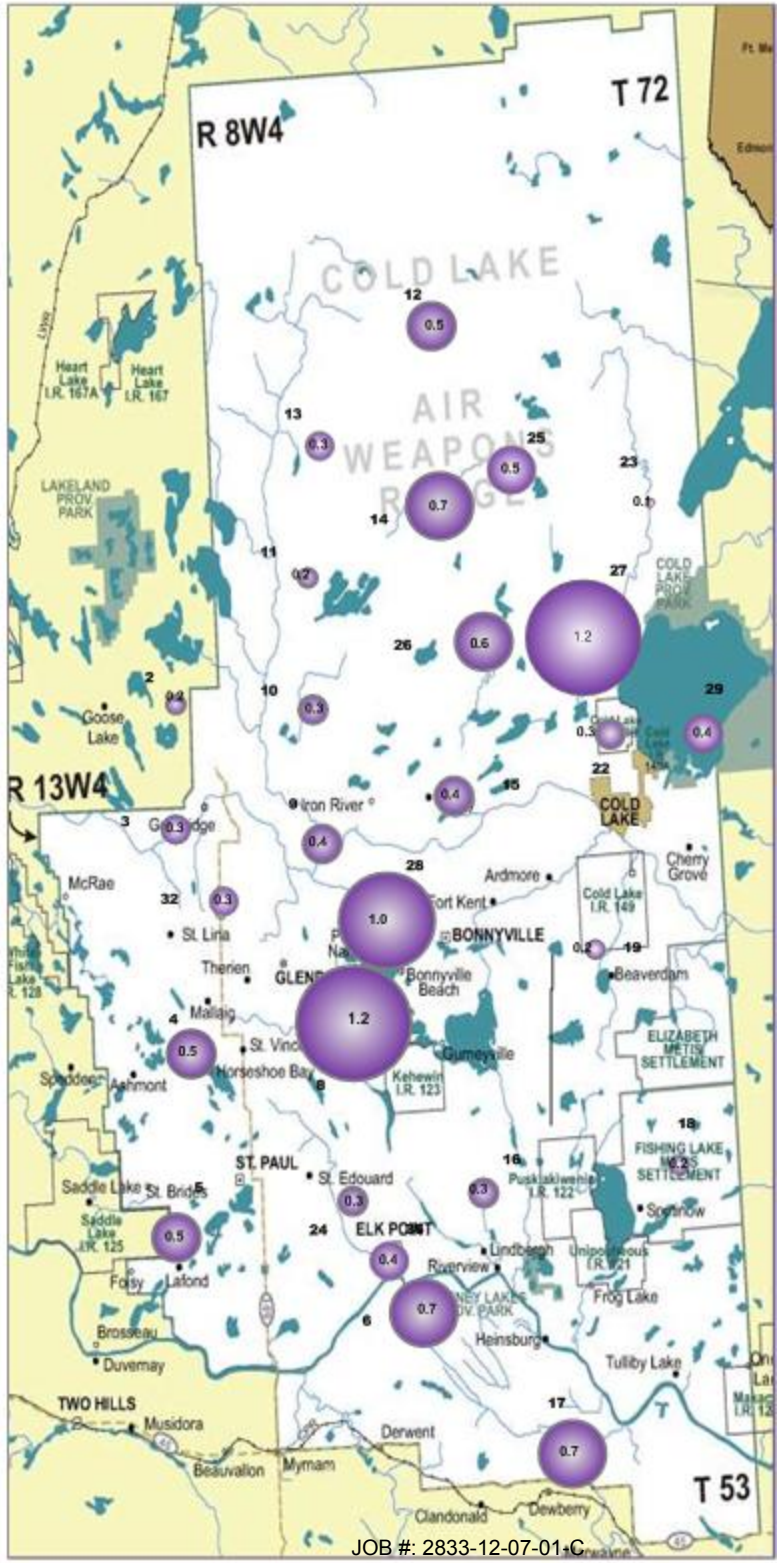
Lakeland Industry & Community Association
SO_2 Passive Bubble Map

JULY 2012

PASSIVE STATIONS		DUPLICATE
2 – Sand River	0.2 PPB	NA
3 – Therien	0.3 PPB	NA
4 – Flat Lake	0.5 PPB	NA
5 – Lake Eliza	0.5 PPB	NA
6 – Telegraph Creek	0.7 PPB	NA
8 – Muriel-Kehewin	1.2 PPB	NA
9 – Dupre	0.4 PPB	NA
10 – La Corey	0.3 PPB	NA
11 – Wolf Lake	0.2 PPB	NA
12 – Foster Creek	0.5 PPB	NA
13 – Primrose	0.3 PPB	NA
14 – Maskwa	0.7 PPB	NA
15 – Ardmore	0.4 PPB	NA
16 – Frog Lake	0.3 PPB	NA
17 – Clear Range	0.7 PPB	NA
18 – Fishing Lake	0.2 PPB	NA
19 – Beaverdam	0.2 PPB	NA
22 – Cold Lake South	0.3 PPB	NA
23 – Medley-Martineau	0.1 PPB	NA
24 – Fort George	0.3 PPB	NA
25 – Burnt Lake	0.5 PPB	NA
26 – Mahikan	0.6 PPB	NA
27 – Mahkeses	1.2 PPB	NA
28 – Town of Bonnyville	1.0 PPB	0.9 PPB
29 – Cold Lake South 2	0.4 PPB	0.4 PPB
32 – St. Lina	0.3 PPB	0.3 PPB
36 – Portable	0.4 PPB	NA

Summary

Minimum : 0.1 PPB –Medley-Martineau
Maximum: 1.2 PPB –Muriel-Kehewin and Mahkeses
Average: 0.47 PPB *Includes Duplicates



JOB #: 2833-12-07-01-C

Passive Field Data

Field Notes

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
2	$SO_2/NO_2/O_3$	06/28/2012	18:00	07/31/2012	15:20	
3	$H_2S/SO_2/NO_2/O_3$	06/28/2012	17:15	07/31/2012	16:00	
4	$SO_2/NO_2/O_3$	06/28//2012	15:50	08/01/2012	13:15	
5	$H_2S/SO_2/NO_2/O_3$	06/28/2012	15:20	08/01/2012	12:30	
6	$SO_2/NO_2/O_3$	06/28/2012	12:50	08/01/2012	10:44	
8	$SO_2/NO_2/O_3$	06/28/2012	13:00	07/30/2012	17:15	
9	$SO_2/NO_2/O_3$	06/29/2012	10:15	07/31/2012	17:56	
10	$H_2S/SO_2/NO_2/O_3$	06/29/2012	14:05	07/31/2012	10:15	
11	$H_2S/SO_2/NO_2/O_3$	06/29/2012	14:50	07/31/2012	11:19	
12	$H_2S/SO_2/NO_2/O_3$	06/29/2012	16:00	07/31/2012	12:25	
13	$H_2S/SO_2/NO_2/O_3$	06/29/2012	08:40	07/31/2012	08:15	
14	$H_2S/SO_2/NO_2/O_3$	06/29/2012	07:40	07/31/2012	07:10	
15	$SO_2/NO_2/O_3$	06/29/2012	09:45	07/31/2012	09:35	
16	$H_2S/SO_2/NO_2/O_3$	06/28/2012	11:14	08/01/2012	09:05	
17	$H_2S/SO_2/NO_2/O_3$	06/28/2012	12:05	08/01/2012	09:52	
18	$H_2S/SO_2/NO_2/O_3$	06/28/2012	10:35	08/01/2012	08:10	
19	$SO_2/NO_2/O_3$	06/28/2012	09:35	08/01/2012	07:05	
22	$H_2S/SO_2/NO_2/O_3$	06/28/2012	08:38	08/01/2012	15:10	
23	$SO_2/NO_2/O_3$	06/28/2012	19:17	07/31/2012	18:55	
24	$H_2S/SO_2/NO_2/O_3$	06/28/2012	13:26	08/01/2012	11:35	
25	H_2S/SO_2	06/29/2012	17:03	07/31/2012	13:38	
26	H_2S/SO_2	06/29/2012	08:00	07/31/2012	07:35	
27	H_2S/SO_2	06/29/2012	07:15	07/31/2012	06:46	
28	$SO_2/NO_2/O_3$	06/29/2012	10:35	07/31/2012	17:35	
29	$H_2S/SO_2/NO_2/O_3$	06/28/2012	08:20	08/01/2012	15:25	
32	$H_2S/SO_2/NO_2/O_3$	06/27/2012	19:30	07/31/2012	16:40	
36	$H_2S/SO_2/NO_2/O_3$	06/28/2012	14:30	07/30/2012	15:20	

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
Duplicate # 28	SO_2	06/29/2012	10:35	07/31/2012	17:35	
Duplicate # 29	SO_2	06/28/2012	08:20	08/01/2012	15:25	
Duplicate # 32	SO_2	06/27/2012	19:30	07/31/2012	16:40	
Duplicate # 36	H_2S	06/28/2012	14:30	07/30/2012	15:20	
Duplicate # 03	H_2S	06/28/2012	17:15	07/31/2012	16:00	
Duplicate # 19	NO_2	06/28/2012	09:36	08/01/2012	07;05	
Duplicate # 22	NO_2	06/28/2012	08:38	08/01/2012	15:15	
Duplicate # 19	O_3	06/28/2012	09:36	08/01/2012	07:05	
Duplicate # 22	O_3	06/28/2012	08:38	08/01/2012	15:10	

Passive Network Laboratory Analysis

Maxxam

Your Project #: 2012/06/28 - 2012/07/31
Site Location: LICA

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

Report Date: 2012/08/20

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B268601
Received: 2012/08/03, 13:18

Sample Matrix: Air
Samples Received: 34

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis (1)	20	2012/08/17	2012/08/20	EINDSOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (1)	26	2012/08/13	2012/08/20	EINDSOP-00148	Tang Passive NO2 in
O3 Passive Analysis (1)	26	2012/08/08	2012/08/20	EINDSOP-00197	EPA 300 R2.1
SO2 Passive Analysis (1)	30	2012/08/16	2012/08/20	EINDSOP-00149	Tang Passive SO2 in

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

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

Encryption Key

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

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

==========

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

Total cover pages: 1

Maxxam Job #: B268601
Report Date: 2012/08/20

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2012/06/28 - 2012/07/31
Site Location: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		EC5147	EC5148	EC5149	EC5150	EC5151		
Sampling Date		2012/06/28 18:00	2012/06/28 17:15	2012/06/28 15:50	2012/06/28 15:20	2012/06/28 12:50		
	UNITS	**2**	**3**	**4**	**5**	**6**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb		0.20		0.25		0.02	6092788
Calculated NO2	ppb	0.5	0.5	0.5	0.4	0.9	0.1	6076437
Calculated O3	ppb	17.2	22.3	23.8	20.3	21.6	0.1	6065642
Calculated SO2	ppb	0.2	0.3	0.5	0.5	0.7	0.1	6087531

RDL = Reportable Detection Limit

Maxxam ID		EC5152	EC5153	EC5154	EC5155	EC5156		
Sampling Date		2012/06/29 13:00	2012/06/29 10:15	2012/06/29 14:05	2012/06/29 14:50	2012/06/29 16:00		
	UNITS	**8**	**9**	**10**	**11**	**12**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb			0.35	0.12	0.13	0.02	6092788
Calculated NO2	ppb	0.3	0.8	1.5	0.3	0.4	0.1	6076437
Calculated O3	ppb	22.1	21.4	19.1	16.2	20.4	0.1	6065642
Calculated SO2	ppb	1.2	0.4	0.3	0.2	0.5	0.1	6087531

RDL = Reportable Detection Limit

Maxxam ID		EC5157	EC5158	EC5159		EC5160		
Sampling Date		2012/06/29 08:40	2012/06/29 07:40	2012/06/29 09:45		2012/06/28 11:14		
	UNITS	**13**	**14**	**15**	**QC Batch**	**16**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb	0.14	0.12		6092788	0.23	0.02	6092788
Calculated NO2	ppb	0.4	0.5	0.6	6076437	1.5	0.1	6076437
Calculated O3	ppb	22.0	24.1	21.0	6065642	25.5	0.1	6065654
Calculated SO2	ppb	0.3	0.7	0.4	6087531	0.3	0.1	6087531

RDL = Reportable Detection Limit

Maxxam Job #: B268601
Report Date: 2012/08/20

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2012/06/28 - 2012/07/31
Site Location: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		EC5161	EC5162	EC5163		EC5164		
Sampling Date		2012/06/28 12:05	2012/06/28 10:35	2012/06/28 09:36		2012/06/28 08:38		
	UNITS	**17**	**18**	**19**	**QC Batch**	**22**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb	0.55	0.16		6092788	0.16	0.02	6092788
Calculated NO2	ppb	0.8	0.4	0.3	6076437	0.4	0.1	6076441
Calculated O3	ppb	28.1	19.4	23.8	6065654	19.6	0.1	6065654
Calculated SO2	ppb	0.7	0.2	0.2	6087531	0.3	0.1	6087589

RDL = Reportable Detection Limit

Maxxam ID		EC5165	EC5166	EC5167	EC5168	EC5181		
Sampling Date		2012/06/28 19:17	2012/06/28 13:36	2012/06/29 17:03	2012/06/29 08:00	2012/06/29 07:15		
	UNITS	**23**	**24**	**25**	**26**	**27**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb		0.17	0.10	0.17	0.66	0.02	6092788
Calculated NO2	ppb	<0.1	1.3				0.1	6076441
Calculated O3	ppb	19.0	24.4				0.1	6065654
Calculated SO2	ppb	0.1	0.3	0.5	0.6	1.2	0.1	6087589

RDL = Reportable Detection Limit

Maxxam ID		EC5182	EC5183	EC5184	EC5185	EC5188		
Sampling Date		2012/06/29 10:35	2012/06/28 08:20	2012/06/27 19:30	2012/06/28 14:30	2012/06/28 09:36		
	UNITS	**28**	**29**	**32**	**36**	**19 DUP**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb		0.49	0.23	0.19		0.02	6092788
Calculated NO2	ppb	1.2	0.4	0.2	1.2	0.3	0.1	6076441
Calculated O3	ppb	26.7	22.6	33.9	29.3	23.0	0.1	6065654
Calculated SO2	ppb	1.0	0.3	0.3	0.4		0.1	6087589

RDL = Reportable Detection Limit

Maxxam Job #: B268601
Report Date: 2012/08/20

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2012/06/28 - 2012/07/31
Site Location: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		EC5189	EC5190	EC5191	EC5192	EC5193		
Sampling Date		2012/06/28 08:38	2012/06/29 10:35	2012/06/28 08:20	2012/06/27 19:30	2012/06/28 17:15		
	UNITS	**22 DUP**	**28 DUP**	**29 DUP**	**32 DUP**	**3 DUP**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb					0.22	0.02	6092788
Calculated NO2	ppb	0.4					0.1	6076441
Calculated O3	ppb	18.8					0.1	6065654
Calculated SO2	ppb		0.9	0.4	0.3		0.1	6087589

RDL = Reportable Detection Limit

Maxxam ID		EC5194		
Sampling Date		2012/06/28 14:30		
	UNITS	**36 DUP**	**RDL**	**QC Batch**
Passive Monitoring				
Calculated H2S	ppb	0.22	0.02	6092788

RDL = Reportable Detection Limit

General Comments

Results relate only to the items tested.

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Attention: MICHAEL BISAGA
Client Project #: 2012/06/28 - 2012/07/31
P.O. #:
Site Location: LICA

Quality Assurance Report

Maxxam Job Number: PB268601

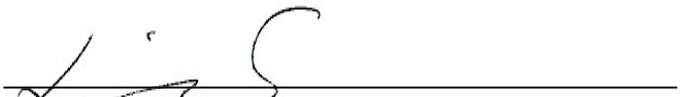
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6065642	OZ	Calibration Check	Calculated O3	2012/08/08		99	%	91 - 107
		Spiked Blank	Calculated O3	2012/08/08		97	%	N/A
		Method Blank	Calculated O3	2012/08/08	<0.1		ppb	
6065654	OZ	Calibration Check	Calculated O3	2012/08/08		98	%	91 - 107
		Spiked Blank	Calculated O3	2012/08/08		102	%	N/A
		Method Blank	Calculated O3	2012/08/08	<0.1		ppb	
6076437	DF4	Calibration Check	Calculated NO2	2012/08/13		100	%	76 - 118
		Spiked Blank	Calculated NO2	2012/08/13		97	%	N/A
		Method Blank	Calculated NO2	2012/08/13	<0.1		ppb	
6076441	DF4	Calibration Check	Calculated NO2	2012/08/13		98	%	76 - 118
		Spiked Blank	Calculated NO2	2012/08/13		96	%	N/A
		Method Blank	Calculated NO2	2012/08/13	<0.1		ppb	
6087531	DF4	Calibration Check	Calculated SO2	2012/08/16		99	%	95 - 105
		Spiked Blank	Calculated SO2	2012/08/16		96	%	N/A
		Method Blank	Calculated SO2	2012/08/16	<0.1		ppb	
6087589	DF4	Calibration Check	Calculated SO2	2012/08/16		100	%	95 - 105
		Spiked Blank	Calculated SO2	2012/08/16		101	%	N/A
		Method Blank	Calculated SO2	2012/08/16	<0.1		ppb	
6092788	WC6	Calibration Check	Calculated H2S	2012/08/20		98	%	80 - 120
		Spiked Blank	Calculated H2S	2012/08/20		101	%	N/A

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 #: B268601

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

==========

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

Volatile Organics Laboratory Analysis

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Cold Lake South
Station ID: Lica 1
Field Sample ID: LICA VOC/ CLS /Jul 02, 2012

Sampler s/n: 6167
Canister ID: 284
Canister Installation Date/Time: Jun 28, 2012 @ 6:22 mst
Canister Removal Date/Time: Jul 03, 2012 @ 11:28 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
02-Jul-12	07/02/2012 0:00	07/03/2012 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 # 05853

Technician Signiture: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 05853

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

Report Date: 2012/07/13

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2A0733
Received: 2012/07/06, 11:35

Sample Matrix: AIR
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	1	N/A	2012/07/10	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	1	N/A	2012/07/10	BRL SOP-00304	EPA TO-15

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

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

Encryption Key

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

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

==========

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Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2A0733
Report Date: 2012/07/13

RESULTS OF ANALYSES OF AIR

Maxxam ID		OA7519	
Sampling Date		2012/07/02	
COC Number		05853	
	Units	**LICA VOC/CLS/JULY 0212 / 284**	**QC Batch**
Volatile Organics			
Pressure on Receipt	psig	23	2903648

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A0733
Report Date: 2012/07/13

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OA7519				
Sampling Date		2012/07/02				
COC Number		05853				
	Units	**LICA VOC/CLS/JULY 0212 / 284**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2904498
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2904498
Propene	ppbv	<0.30	0.30	<0.516	0.516	2904498
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2904498
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2904498
Dichlorodifluoromethane (FREON 12)	ppbv	0.79	0.20	3.89	0.989	2904498
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2904498
Chloromethane	ppbv	0.65	0.30	1.35	0.620	2904498
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2904498
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2904498
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2904498
Trichlorofluoromethane (FREON 11)	ppbv	0.40	0.20	2.25	1.12	2904498
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2904498
Ethanol (ethyl alcohol)	ppbv	3.2	2.3	5.98	4.33	2904498
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2904498
2-Propanone	ppbv	5.17	0.80	12.3	1.90	2904498
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2904498
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2904498
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2904498
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2904498
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2904498
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2904498
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2904498
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2904498
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2904498
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2904498
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2904498
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2904498
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2904498
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2904498
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2904498

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OA7519				
Sampling Date		2012/07/02				
COC Number		05853				
	Units	**LICA VOC/CLS/JULY 0212 / 284**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2904498
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2904498
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2904498
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2904498
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2904498
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2904498
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2904498
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2904498
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2904498
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2904498
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2904498
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2904498
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2904498
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2904498
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2904498
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2904498
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2904498
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2904498
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2904498
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2904498
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2904498
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2904498
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2904498
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2904498
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2904498
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2904498
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2904498
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2904498
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2904498
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2904498
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2904498
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2904498
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2904498

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A0733
Report Date: 2012/07/13

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OA7519				
Sampling Date		2012/07/02				
COC Number		05853				
	Units	**LICA VOC/CLS/JULY 0212 / 284**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	89		N/A	N/A	2904498
D5-Chlorobenzene	%	80		N/A	N/A	2904498
Difluorobenzene	%	90		N/A	N/A	2904498

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

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Maxxam Analytics

Maxxam Job #: B2A0733
Report Date: 2012/07/13

Test Summary

Maxxam ID OA7519
Sample ID LICA VOC/CLS/JULY 0212 / 284
Matrix AIR

Collected 2012/07/02
Shipped
Received 2012/07/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2903648	N/A	2012/07/10	Spomenka Smiljanic
Volatile Organics in Air (TO-15)	GC/MS	2904498	N/A	2012/07/10	Spomenka Smiljanic

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Maxxam Analytics

Maxxam Job #: B2A0733
Report Date: 2012/07/13

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: GB2A0733

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2904498	S_S	Spiked Blank	Bromochloromethane	2012/07/10		122	%	60 - 140
			D5-Chlorobenzene	2012/07/10		123	%	60 - 140
			Difluorobenzene	2012/07/10		126	%	60 - 140
			2,2,4-Trimethylpentane	2012/07/10		99	%	70 - 130
			Carbon Disulfide	2012/07/10		97	%	70 - 130
			Propene	2012/07/10		86	%	70 - 130
			Vinyl Acetate	2012/07/10		104	%	70 - 130
			Vinyl Bromide	2012/07/10		97	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2012/07/10		94	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/07/10		113	%	70 - 130
			Chloromethane	2012/07/10		105	%	70 - 130
			Vinyl Chloride	2012/07/10		96	%	70 - 130
			Chloroethane	2012/07/10		95	%	70 - 130
			1,3-Butadiene	2012/07/10		103	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/07/10		96	%	70 - 130
			Trichlorotrifluoroethane	2012/07/10		90	%	70 - 130
			Ethanol (ethyl alcohol)	2012/07/10		107	%	70 - 130
			2-propanol	2012/07/10		93	%	70 - 130
			2-Propanone	2012/07/10		130	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/07/10		96	%	70 - 130
			Methyl Isobutyl Ketone	2012/07/10		106	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/07/10		112	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/07/10		90	%	70 - 130
			Ethyl Acetate	2012/07/10		103	%	70 - 130
			1,1-Dichloroethylene	2012/07/10		90	%	70 - 130
			cis-1,2-Dichloroethylene	2012/07/10		91	%	70 - 130
			trans-1,2-Dichloroethylene	2012/07/10		97	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/07/10		89	%	70 - 130
			Chloroform	2012/07/10		91	%	70 - 130
			Carbon Tetrachloride	2012/07/10		103	%	70 - 130
			1,1-Dichloroethane	2012/07/10		94	%	70 - 130
			1,2-Dichloroethane	2012/07/10		102	%	70 - 130
			Ethylene Dibromide	2012/07/10		92	%	70 - 130
			1,1,1-Trichloroethane	2012/07/10		96	%	70 - 130
			1,1,2-Trichloroethane	2012/07/10		89	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/07/10		94	%	70 - 130
			cis-1,3-Dichloropropene	2012/07/10		100	%	70 - 130
			trans-1,3-Dichloropropene	2012/07/10		107	%	70 - 130
			1,2-Dichloropropane	2012/07/10		90	%	70 - 130
			Bromomethane	2012/07/10		95	%	70 - 130
			Bromoform	2012/07/10		104	%	70 - 130
			Bromodichloromethane	2012/07/10		111	%	70 - 130
			Dibromochloromethane	2012/07/10		109	%	70 - 130
			Heptane	2012/07/10		101	%	70 - 130
			Trichloroethylene	2012/07/10		77	%	70 - 130
			Tetrachloroethylene	2012/07/10		87	%	70 - 130
			Benzene	2012/07/10		86	%	70 - 130
			Toluene	2012/07/10		87	%	70 - 130
			Ethylbenzene	2012/07/10		86	%	70 - 130
			p+m-Xylene	2012/07/10		87	%	70 - 130
			o-Xylene	2012/07/10		88	%	70 - 130
			Styrene	2012/07/10		69 (1)	%	70 - 130
			1,3,5-Trimethylbenzene	2012/07/10		88	%	70 - 130
			1,2,4-Trimethylbenzene	2012/07/10		87	%	70 - 130
			4-ethyltoluene	2012/07/10		96	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2A0733

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2904498	S_S	Spiked Blank	Chlorobenzene	2012/07/10		82	%	70 - 130
			Benzyl chloride	2012/07/10		106	%	70 - 130
			1,3-Dichlorobenzene	2012/07/10		82	%	70 - 130
			1,4-Dichlorobenzene	2012/07/10		81	%	70 - 130
			1,2-Dichlorobenzene	2012/07/10		80	%	70 - 130
			1,2,4-Trichlorobenzene	2012/07/10		90	%	70 - 130
			Hexachlorobutadiene	2012/07/10		100	%	70 - 130
			Hexane	2012/07/10		98	%	70 - 130
			Cyclohexane	2012/07/10		97	%	70 - 130
			Tetrahydrofuran	2012/07/10		98	%	70 - 130
			1,4-Dioxane	2012/07/10		103	%	70 - 130
			Xylene (Total)	2012/07/10		87	%	70 - 130
		Method Blank	Bromochloromethane	2012/07/10		97	%	60 - 140
			D5-Chlorobenzene	2012/07/10		87	%	60 - 140
			Difluorobenzene	2012/07/10		100	%	60 - 140
			2,2,4-Trimethylpentane	2012/07/10	<0.20		ppbv	
			Carbon Disulfide	2012/07/10	<0.50		ppbv	
			Propene	2012/07/10	<0.30		ppbv	
			Vinyl Acetate	2012/07/10	<0.20		ppbv	
			Vinyl Bromide	2012/07/10	<0.20		ppbv	
			Dichlorodifluoromethane (FREON 12)	2012/07/10	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/07/10	<0.17		ppbv	
			Chloromethane	2012/07/10	<0.30		ppbv	
			Vinyl Chloride	2012/07/10	<0.18		ppbv	
			Chloroethane	2012/07/10	<0.30		ppbv	
			1,3-Butadiene	2012/07/10	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/07/10	<0.20		ppbv	
			Trichlorotrifluoroethane	2012/07/10	<0.15		ppbv	
			Ethanol (ethyl alcohol)	2012/07/10	<2.3		ppbv	
			2-propanol	2012/07/10	<3.0		ppbv	
			2-Propanone	2012/07/10	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/07/10	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/07/10	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/07/10	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/07/10	<0.20		ppbv	
			Ethyl Acetate	2012/07/10	<2.2		ppbv	
			1,1-Dichloroethylene	2012/07/10	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/07/10	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/07/10	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/07/10	<0.80		ppbv	
			Chloroform	2012/07/10	<0.15		ppbv	
			Carbon Tetrachloride	2012/07/10	<0.30		ppbv	
			1,1-Dichloroethane	2012/07/10	<0.20		ppbv	
			1,2-Dichloroethane	2012/07/10	<0.20		ppbv	
			Ethylene Dibromide	2012/07/10	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/07/10	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/07/10	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/07/10	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/07/10	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/07/10	<0.17		ppbv	
			1,2-Dichloropropane	2012/07/10	<0.40		ppbv	
			Bromomethane	2012/07/10	<0.18		ppbv	
			Bromoform	2012/07/10	<0.20		ppbv	
			Bromodichloromethane	2012/07/10	<0.20		ppbv	
			Dibromochloromethane	2012/07/10	<0.20		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2A0733

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2904498	S_S	Method Blank	Heptane	2012/07/10	<0.30		ppbv	
			Trichloroethylene	2012/07/10	<0.30		ppbv	
			Tetrachloroethylene	2012/07/10	<0.20		ppbv	
			Benzene	2012/07/10	<0.18		ppbv	
			Toluene	2012/07/10	<0.20		ppbv	
			Ethylbenzene	2012/07/10	<0.20		ppbv	
			p+m-Xylene	2012/07/10	<0.37		ppbv	
			o-Xylene	2012/07/10	<0.20		ppbv	
			Styrene	2012/07/10	<0.20		ppbv	
			1,3,5-Trimethylbenzene	2012/07/10	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/07/10	<0.50		ppbv	
			4-ethyltoluene	2012/07/10	<2.2		ppbv	
			Chlorobenzene	2012/07/10	<0.20		ppbv	
			Benzyl chloride	2012/07/10	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/07/10	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/07/10	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/07/10	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/07/10	<2.0		ppbv	
			Hexachlorobutadiene	2012/07/10	<3.0		ppbv	
			Hexane	2012/07/10	<0.30		ppbv	
			Cyclohexane	2012/07/10	<0.20		ppbv	
			Tetrahydrofuran	2012/07/10	<0.40		ppbv	
			1,4-Dioxane	2012/07/10	<2.0		ppbv	
			Xylene (Total)	2012/07/10	<0.60		ppbv	

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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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 /Jul 08, 2012

Sampler s/n: 6167
Canister ID: 7865
Canister Installation Date/Time: Jul 06, 2012 @ 10:50 mst
Canister Removal Date/Time: Jul 09, 2012 @ 10:46 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
08-Jul-12	07/08/2012 0:00	07/09/2012 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 # 11734

Technician Signiture: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 11734

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

Report Date: 2012/07/24

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2A4190
Received: 2012/07/12, 10:31

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/07/23	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/07/23	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 #: B2A4190
Report Date: 2012/07/24

RESULTS OF ANALYSES OF AIR

Maxxam ID		OC6153	OC6154	
Sampling Date		2012/07/08	2012/07/08	
COC Number		11734	11734	
	Units	**LICA VOC/ CLS/JULY08,12 / 7865**	**LICA VOC/PORT/JULY08,12 / 7862**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	22	21	2917322

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A4190
Report Date: 2012/07/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OC6153				
Sampling Date		2012/07/08				
COC Number		11734				
	Units	**LICA VOC/ CLS/JULY08,12 / 7865**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2917320
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2917320
Propene	ppbv	<0.30	0.30	<0.516	0.516	2917320
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2917320
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2917320
Dichlorodifluoromethane (FREON 12)	ppbv	0.83	0.20	4.10	0.989	2917320
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2917320
Chloromethane	ppbv	<0.30	0.30	<0.620	0.620	2917320
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2917320
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2917320
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2917320
Trichlorofluoromethane (FREON 11)	ppbv	0.44	0.20	2.49	1.12	2917320
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2917320
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2917320
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2917320
2-Propanone	ppbv	6.68	0.80	15.9	1.90	2917320
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2917320
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2917320
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2917320
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2917320
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2917320
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2917320
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2917320
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2917320
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2917320
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2917320
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2917320
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2917320
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2917320
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2917320
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2917320

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A4190
Report Date: 2012/07/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OC6153				
Sampling Date		2012/07/08				
COC Number		11734				
	Units	**LICA VOC/ CLS/JULY08,12 / 7865**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2917320
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2917320
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2917320
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2917320
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2917320
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2917320
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2917320
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2917320
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2917320
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2917320
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2917320
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2917320
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2917320
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2917320
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2917320
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2917320
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2917320
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2917320
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2917320
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2917320
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2917320
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2917320
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2917320
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2917320
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2917320
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2917320
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2917320
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2917320
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2917320
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2917320
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2917320
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2917320
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2917320

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A4190
Report Date: 2012/07/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OC6153				
Sampling Date		2012/07/08				
COC Number		11734				
	Units	**LICA VOC/ CLS/JULY08,12 / 7865**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	73		N/A	N/A	2917320
D5-Chlorobenzene	%	69		N/A	N/A	2917320
Difluorobenzene	%	72		N/A	N/A	2917320

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

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OC6154				
Sampling Date		2012/07/08				
COC Number		11734				
	Units	**LICA VOC/PORT/JULY08,12 / 7862**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2917320
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2917320
Propene	ppbv	<0.30	0.30	<0.516	0.516	2917320
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2917320
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2917320
Dichlorodifluoromethane (FREON 12)	ppbv	0.86	0.20	4.28	0.989	2917320
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2917320
Chloromethane	ppbv	<0.30	0.30	<0.620	0.620	2917320
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2917320
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2917320
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2917320
Trichlorofluoromethane (FREON 11)	ppbv	0.46	0.20	2.59	1.12	2917320
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2917320
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2917320
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2917320
2-Propanone	ppbv	4.62	0.80	11.0	1.90	2917320
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2917320
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2917320
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2917320
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2917320
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2917320
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2917320
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2917320
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2917320
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2917320
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2917320
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2917320
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2917320
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2917320
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2917320
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2917320

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OC6154				
Sampling Date		2012/07/08				
COC Number		11734				
	Units	**LICA VOC/PORT/JULY08,12 / 7862**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2917320
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2917320
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2917320
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2917320
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2917320
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2917320
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2917320
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2917320
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2917320
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2917320
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2917320
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2917320
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2917320
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2917320
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2917320
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2917320
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2917320
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2917320
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2917320
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2917320
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2917320
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2917320
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2917320
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2917320
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2917320
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2917320
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2917320
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2917320
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2917320
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2917320
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2917320
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2917320
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2917320

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A4190
Report Date: 2012/07/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OC6154				
Sampling Date		2012/07/08				
COC Number		11734				
	Units	**LICA VOC/PORT/JULY08,12 / 7862**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	68		N/A	N/A	2917320
D5-Chlorobenzene	%	66		N/A	N/A	2917320
Difluorobenzene	%	69		N/A	N/A	2917320

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

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Maxxam Analytics

Maxxam Job #: B2A4190
Report Date: 2012/07/24

Test Summary

Maxxam ID OC6153 **Collected** 2012/07/08
Sample ID LICA VOC/ CLS/JULY08,12 / 7865 **Shipped**
Matrix AIR **Received** 2012/07/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2917322	N/A	2012/07/23	Spomenka Smiljanic
Volatile Organics in Air (TO-15)	GC/MS	2917320	N/A	2012/07/23	Spomenka Smiljanic

Maxxam ID OC6153 Dup **Collected** 2012/07/08
Sample ID LICA VOC/ CLS/JULY08,12 / 7865 **Shipped**
Matrix AIR **Received** 2012/07/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organics in Air (TO-15)	GC/MS	2917320	N/A	2012/07/23	Spomenka Smiljanic

Maxxam ID OC6154 **Collected** 2012/07/08
Sample ID LICA VOC/PORT/JULY08,12 / 7862 **Shipped**
Matrix AIR **Received** 2012/07/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2917322	N/A	2012/07/23	Spomenka Smiljanic
Volatile Organics in Air (TO-15)	GC/MS	2917320	N/A	2012/07/23	Spomenka Smiljanic

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Maxxam Analytics

Maxxam Job #: B2A4190
Report Date: 2012/07/24

GENERAL COMMENTS

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: GB2A4190

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2917320	S_S	Spiked Blank	Bromochloromethane	2012/07/23		100	%	60 - 140
			D5-Chlorobenzene	2012/07/23		96	%	60 - 140
			Difluorobenzene	2012/07/23		100	%	60 - 140
			2,2,4-Trimethylpentane	2012/07/23		82	%	70 - 130
			Carbon Disulfide	2012/07/23		95	%	70 - 130
			Propene	2012/07/23		72	%	70 - 130
			Vinyl Acetate	2012/07/23		86	%	70 - 130
			Vinyl Bromide	2012/07/23		102	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2012/07/23		120	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/07/23		135 (1)	%	70 - 130
			Chloromethane	2012/07/23		105	%	70 - 130
			Vinyl Chloride	2012/07/23		100	%	70 - 130
			Chloroethane	2012/07/23		97	%	70 - 130
			1,3-Butadiene	2012/07/23		93	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/07/23		122	%	70 - 130
			Trichlorotrifluoroethane	2012/07/23		104	%	70 - 130
			Ethanol (ethyl alcohol)	2012/07/23		76	%	70 - 130
			2-propanol	2012/07/23		82	%	70 - 130
			2-Propanone	2012/07/23		109	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/07/23		77	%	70 - 130
			Methyl Isobutyl Ketone	2012/07/23		89	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/07/23		94	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/07/23		101	%	70 - 130
			Ethyl Acetate	2012/07/23		86	%	70 - 130
			1,1-Dichloroethylene	2012/07/23		103	%	70 - 130
			cis-1,2-Dichloroethylene	2012/07/23		98	%	70 - 130
			trans-1,2-Dichloroethylene	2012/07/23		96	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/07/23		85	%	70 - 130
			Chloroform	2012/07/23		109	%	70 - 130
			Carbon Tetrachloride	2012/07/23		122	%	70 - 130
			1,1-Dichloroethane	2012/07/23		95	%	70 - 130
			1,2-Dichloroethane	2012/07/23		118	%	70 - 130
			Ethylene Dibromide	2012/07/23		100	%	70 - 130
			1,1,1-Trichloroethane	2012/07/23		118	%	70 - 130
			1,1,2-Trichloroethane	2012/07/23		96	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/07/23		96	%	70 - 130
			cis-1,3-Dichloropropene	2012/07/23		102	%	70 - 130
			trans-1,3-Dichloropropene	2012/07/23		113	%	70 - 130
			1,2-Dichloropropane	2012/07/23		87	%	70 - 130
			Bromomethane	2012/07/23		105	%	70 - 130
			Bromoform	2012/07/23		108	%	70 - 130
			Bromodichloromethane	2012/07/23		116	%	70 - 130
			Dibromochloromethane	2012/07/23		112	%	70 - 130
			Heptane	2012/07/23		80	%	70 - 130
			Trichloroethylene	2012/07/23		91	%	70 - 130
			Tetrachloroethylene	2012/07/23		96	%	70 - 130
			Benzene	2012/07/23		93	%	70 - 130
			Toluene	2012/07/23		96	%	70 - 130
			Ethylbenzene	2012/07/23		99	%	70 - 130
			p+m-Xylene	2012/07/23		100	%	70 - 130
			o-Xylene	2012/07/23		101	%	70 - 130
			Styrene	2012/07/23		74	%	70 - 130
			1,3,5-Trimethylbenzene	2012/07/23		98	%	70 - 130
			1,2,4-Trimethylbenzene	2012/07/23		96	%	70 - 130
			4-ethyltoluene	2012/07/23		100	%	70 - 130

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Maxxam Analytics
Attention: Michael Bisaga
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Quality Assurance Report (Continued)

Maxxam Job Number: GB2A4190

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2917320	S_S	Spiked Blank	Chlorobenzene	2012/07/23		91	%	70 - 130
			Benzyl chloride	2012/07/23		91	%	70 - 130
			1,3-Dichlorobenzene	2012/07/23		83	%	70 - 130
			1,4-Dichlorobenzene	2012/07/23		80	%	70 - 130
			1,2-Dichlorobenzene	2012/07/23		84	%	70 - 130
			1,2,4-Trichlorobenzene	2012/07/23		75	%	70 - 130
			Hexachlorobutadiene	2012/07/23		110	%	70 - 130
			Hexane	2012/07/23		84	%	70 - 130
			Cyclohexane	2012/07/23		81	%	70 - 130
			Tetrahydrofuran	2012/07/23		79	%	70 - 130
			1,4-Dioxane	2012/07/23		99	%	70 - 130
			Xylene (Total)	2012/07/23		100	%	70 - 130
		Method Blank	Bromochloromethane	2012/07/23		75	%	60 - 140
			D5-Chlorobenzene	2012/07/23		72	%	60 - 140
			Difluorobenzene	2012/07/23		76	%	60 - 140
			2,2,4-Trimethylpentane	2012/07/23	<0.20		ppbv	
			Carbon Disulfide	2012/07/23	<0.50		ppbv	
			Propene	2012/07/23	<0.30		ppbv	
			Vinyl Acetate	2012/07/23	<0.20		ppbv	
			Vinyl Bromide	2012/07/23	<0.20		ppbv	
			Dichlorodifluoromethane (FREON 12)	2012/07/23	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/07/23	<0.17		ppbv	
			Chloromethane	2012/07/23	<0.30		ppbv	
			Vinyl Chloride	2012/07/23	<0.18		ppbv	
			Chloroethane	2012/07/23	<0.30		ppbv	
			1,3-Butadiene	2012/07/23	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/07/23	<0.20		ppbv	
			Trichlorotrifluoroethane	2012/07/23	<0.15		ppbv	
			Ethanol (ethyl alcohol)	2012/07/23	<2.3		ppbv	
			2-propanol	2012/07/23	<3.0		ppbv	
			2-Propanone	2012/07/23	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/07/23	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/07/23	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/07/23	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/07/23	<0.20		ppbv	
			Ethyl Acetate	2012/07/23	<2.2		ppbv	
			1,1-Dichloroethylene	2012/07/23	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/07/23	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/07/23	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/07/23	<0.80		ppbv	
			Chloroform	2012/07/23	<0.15		ppbv	
			Carbon Tetrachloride	2012/07/23	<0.30		ppbv	
			1,1-Dichloroethane	2012/07/23	<0.20		ppbv	
			1,2-Dichloroethane	2012/07/23	<0.20		ppbv	
			Ethylene Dibromide	2012/07/23	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/07/23	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/07/23	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/07/23	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/07/23	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/07/23	<0.17		ppbv	
			1,2-Dichloropropane	2012/07/23	<0.40		ppbv	
			Bromomethane	2012/07/23	<0.18		ppbv	
			Bromoform	2012/07/23	<0.20		ppbv	
			Bromodichloromethane	2012/07/23	<0.20		ppbv	
			Dibromochloromethane	2012/07/23	<0.20		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2A4190

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2917320	S_S	Method Blank	Heptane	2012/07/23	<0.30		ppbv	
			Trichloroethylene	2012/07/23	<0.30		ppbv	
			Tetrachloroethylene	2012/07/23	<0.20		ppbv	
			Benzene	2012/07/23	<0.18		ppbv	
			Toluene	2012/07/23	<0.20		ppbv	
			Ethylbenzene	2012/07/23	<0.20		ppbv	
			p+m-Xylene	2012/07/23	<0.37		ppbv	
			o-Xylene	2012/07/23	<0.20		ppbv	
			Styrene	2012/07/23	<0.20		ppbv	
			1,3,5-Trimethylbenzene	2012/07/23	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/07/23	<0.50		ppbv	
			4-ethyltoluene	2012/07/23	<2.2		ppbv	
			Chlorobenzene	2012/07/23	<0.20		ppbv	
			Benzyl chloride	2012/07/23	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/07/23	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/07/23	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/07/23	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/07/23	<2.0		ppbv	
			Hexachlorobutadiene	2012/07/23	<3.0		ppbv	
			Hexane	2012/07/23	<0.30		ppbv	
			Cyclohexane	2012/07/23	<0.20		ppbv	
			Tetrahydrofuran	2012/07/23	<0.40		ppbv	
			1,4-Dioxane	2012/07/23	<2.0		ppbv	
			Xylene (Total)	2012/07/23	<0.60		ppbv	
		RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2012/07/23	NC		%	25
			Carbon Disulfide	2012/07/23	NC		%	25
			Propene	2012/07/23	NC		%	25
			Vinyl Acetate	2012/07/23	NC		%	25
			Vinyl Bromide	2012/07/23	NC		%	25
			Dichlorodifluoromethane (FREON 12)	2012/07/23	NC		%	25
			1,2-Dichlorotetrafluoroethane	2012/07/23	NC		%	25
			Chloromethane	2012/07/23	NC		%	25
			Vinyl Chloride	2012/07/23	NC		%	25
			Chloroethane	2012/07/23	NC		%	25
			1,3-Butadiene	2012/07/23	NC		%	25
			Trichlorofluoromethane (FREON 11)	2012/07/23	NC		%	25
			Trichlorotrifluoroethane	2012/07/23	NC		%	25
			Ethanol (ethyl alcohol)	2012/07/23	NC		%	25
			2-propanol	2012/07/23	NC		%	25
			2-Propanone	2012/07/23	1.4		%	25
			Methyl Ethyl Ketone (2-Butanone)	2012/07/23	NC		%	25
			Methyl Isobutyl Ketone	2012/07/23	NC		%	25
			Methyl Butyl Ketone (2-Hexanone)	2012/07/23	NC		%	25
			Methyl t-butyl ether (MTBE)	2012/07/23	NC		%	25
			Ethyl Acetate	2012/07/23	NC		%	25
			1,1-Dichloroethylene	2012/07/23	NC		%	25
			cis-1,2-Dichloroethylene	2012/07/23	NC		%	25
			trans-1,2-Dichloroethylene	2012/07/23	NC		%	25
			Methylene Chloride(Dichloromethane)	2012/07/23	NC		%	25
			Chloroform	2012/07/23	NC		%	25
			Carbon Tetrachloride	2012/07/23	NC		%	25
			1,1-Dichloroethane	2012/07/23	NC		%	25
			1,2-Dichloroethane	2012/07/23	NC		%	25

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Quality Assurance Report (Continued)

Maxxam Job Number: GB2A4190

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2917320	S_S	RPD - Sample/Sample Dup	Ethylene Dibromide	2012/07/23	NC		%	25
			1,1,1-Trichloroethane	2012/07/23	NC		%	25
			1,1,2-Trichloroethane	2012/07/23	NC		%	25
			1,1,2,2-Tetrachloroethane	2012/07/23	NC		%	25
			cis-1,3-Dichloropropene	2012/07/23	NC		%	25
			trans-1,3-Dichloropropene	2012/07/23	NC		%	25
			1,2-Dichloropropane	2012/07/23	NC		%	25
			Bromomethane	2012/07/23	NC		%	25
			Bromoform	2012/07/23	NC		%	25
			Bromodichloromethane	2012/07/23	NC		%	25
			Dibromochloromethane	2012/07/23	NC		%	25
			Heptane	2012/07/23	NC		%	25
			Trichloroethylene	2012/07/23	NC		%	25
			Tetrachloroethylene	2012/07/23	NC		%	25
			Benzene	2012/07/23	NC		%	25
			Toluene	2012/07/23	NC		%	25
			Ethylbenzene	2012/07/23	NC		%	25
			p+m-Xylene	2012/07/23	NC		%	25
			o-Xylene	2012/07/23	NC		%	25
			Styrene	2012/07/23	NC		%	25
			1,3,5-Trimethylbenzene	2012/07/23	NC		%	25
			1,2,4-Trimethylbenzene	2012/07/23	NC		%	25
			4-ethyltoluene	2012/07/23	NC		%	25
			Chlorobenzene	2012/07/23	NC		%	25
			Benzyl chloride	2012/07/23	NC		%	25
			1,3-Dichlorobenzene	2012/07/23	NC		%	25
			1,4-Dichlorobenzene	2012/07/23	NC		%	25
			1,2-Dichlorobenzene	2012/07/23	NC		%	25
			1,2,4-Trichlorobenzene	2012/07/23	NC		%	25
			Hexachlorobutadiene	2012/07/23	NC		%	25
			Hexane	2012/07/23	NC		%	25
			Cyclohexane	2012/07/23	NC		%	25
			Tetrahydrofuran	2012/07/23	NC		%	25
			1,4-Dioxane	2012/07/23	NC		%	25
			Xylene (Total)	2012/07/23	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.

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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 /Jul 14, 2012

Sampler s/n: 6167
Canister ID: 7819
Canister Installation Date/Time: Jul 12, 2012 @ 16:07 mst
Canister Removal Date/Time: Jul 16, 2012 @ 08:20 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
14-Jul-12	07/14/2012 0:00	07/15/2012 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 # 11777

Technician Signiture: Ting Xu

JOB #: 2833-12-07-01-C

Maxxam

Success Through Science®

Your C.O.C. #: 11777

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

Report Date: 2012/07/31

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2A7625
Received: 2012/07/18, 09:23

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/07/27	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/07/27	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 #: B2A7625
Report Date: 2012/07/31

RESULTS OF ANALYSES OF AIR

Maxxam ID		OE4305	OE4306	
Sampling Date		2012/07/14	2012/07/14	
COC Number		11777	11777	
	Units	**LICA VOC/CLS/JULY 14,12 - 7819**	**LICA VOC/PORT/JULY 14,12 - 7802**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	23	21	2923504

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A7625
Report Date: 2012/07/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OE4305				
Sampling Date		2012/07/14				
COC Number		11777				
	Units	**LICA VOC/CLS/JULY 14,12 - 7819**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2923594
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2923594
Propene	ppbv	<0.90	0.90	<1.55	1.55	2923594
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2923594
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2923594
Dichlorodifluoromethane (FREON 12)	ppbv	0.73	0.20	3.61	0.989	2923594
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2923594
Chloromethane	ppbv	0.89	0.30	1.84	0.620	2923594
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2923594
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2923594
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2923594
Trichlorofluoromethane (FREON 11)	ppbv	0.33	0.20	1.83	1.12	2923594
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2923594
Ethanol (ethyl alcohol)	ppbv	3.1	2.3	5.90	4.33	2923594
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2923594
2-Propanone	ppbv	6.34	0.80	15.0	1.90	2923594
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2923594
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2923594
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2923594
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2923594
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2923594
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2923594
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2923594
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2923594
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2923594
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2923594
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2923594
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2923594
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2923594
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2923594
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2923594

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OE4305				
Sampling Date		2012/07/14				
COC Number		11777				
	Units	**LICA VOC/CLS/JULY 14,12 - 7819**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2923594
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2923594
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2923594
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2923594
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2923594
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2923594
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2923594
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2923594
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2923594
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2923594
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2923594
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2923594
Benzene	ppbv	0.60	0.18	1.91	0.575	2923594
Toluene	ppbv	0.44	0.20	1.64	0.753	2923594
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2923594
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2923594
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2923594
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2923594
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2923594
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2923594
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2923594
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2923594
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2923594
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2923594
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2923594
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2923594
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2923594
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2923594
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2923594
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2923594
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2923594
1,4-Dioxane	ppbv	2.0	2.0	7.33	7.21	2923594
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2923594

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A7625
Report Date: 2012/07/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OE4305				
Sampling Date		2012/07/14				
COC Number		11777				
	Units	**LICA VOC/CLS/JULY 14,12 - 7819**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	93		N/A	N/A	2923594
D5-Chlorobenzene	%	97		N/A	N/A	2923594
Difluorobenzene	%	95		N/A	N/A	2923594

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

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OE4306				
Sampling Date		2012/07/14				
COC Number		11777				
	Units	**LICA VOC/PORT/JULY 14,12 - 7802**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2923594
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2923594
Propene	ppbv	<2.4	2.4	<4.13	4.13	2923594
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2923594
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2923594
Dichlorodifluoromethane (FREON 12)	ppbv	0.77	0.20	3.81	0.989	2923594
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2923594
Chloromethane	ppbv	0.82	0.30	1.68	0.620	2923594
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2923594
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2923594
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2923594
Trichlorofluoromethane (FREON 11)	ppbv	0.32	0.20	1.80	1.12	2923594
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2923594
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2923594
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2923594
2-Propanone	ppbv	6.41	0.80	15.2	1.90	2923594
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2923594
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2923594
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2923594
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2923594
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2923594
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2923594
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2923594
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2923594
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2923594
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2923594
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2923594
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2923594
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2923594
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2923594
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2923594

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OE4306				
Sampling Date		2012/07/14				
COC Number		11777				
	Units	**LICA VOC/PORT/JULY 14,12 - 7802**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2923594
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2923594
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2923594
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2923594
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2923594
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2923594
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2923594
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2923594
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2923594
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2923594
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2923594
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2923594
Benzene	ppbv	0.50	0.18	1.61	0.575	2923594
Toluene	ppbv	0.25	0.20	0.934	0.753	2923594
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2923594
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2923594
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2923594
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2923594
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2923594
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2923594
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2923594
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2923594
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2923594
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2923594
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2923594
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2923594
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2923594
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2923594
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2923594
Cyclohexane	ppbv	0.21	0.20	0.740	0.688	2923594
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2923594
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2923594
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2923594

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A7625
Report Date: 2012/07/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OE4306				
Sampling Date		2012/07/14				
COC Number		11777				
	Units	**LICA VOC/PORT/JULY 14,12 - 7802**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	89		N/A	N/A	2923594
D5-Chlorobenzene	%	92		N/A	N/A	2923594
Difluorobenzene	%	91		N/A	N/A	2923594

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

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Maxxam Analytics

Maxxam Job #: B2A7625
Report Date: 2012/07/31

Test Summary

Maxxam ID OE4305 **Collected** 2012/07/14
Sample ID LICA VOC/CLS/JULY 14,12 - 7819 **Shipped**
Matrix AIR **Received** 2012/07/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2923504	N/A	2012/07/27	Diane Temniuk
Volatile Organics in Air (TO-15)	GC/MS	2923594	N/A	2012/07/27	Diane Temniuk

Maxxam ID OE4306 **Collected** 2012/07/14
Sample ID LICA VOC/PORT/JULY 14,12 - 7802 **Shipped**
Matrix AIR **Received** 2012/07/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2923504	N/A	2012/07/27	Diane Temniuk
Volatile Organics in Air (TO-15)	GC/MS	2923594	N/A	2012/07/27	Diane Temniuk

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Maxxam Analytics

Maxxam Job #: B2A7625
Report Date: 2012/07/31

GENERAL COMMENTS

TO15
Increased DL for propene due to possible background.

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: GB2A7625

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2923594	DVO	Spiked Blank	Bromochloromethane	2012/07/27		102	%	60 - 140
			D5-Chlorobenzene	2012/07/27		106	%	60 - 140
			Difluorobenzene	2012/07/27		104	%	60 - 140
			2,2,4-Trimethylpentane	2012/07/27		89	%	70 - 130
			Carbon Disulfide	2012/07/27		88	%	70 - 130
			Propene	2012/07/27		84	%	70 - 130
			Vinyl Acetate	2012/07/27		95	%	70 - 130
			Vinyl Bromide	2012/07/27		87	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2012/07/27		94	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/07/27		108	%	70 - 130
			Chloromethane	2012/07/27		93	%	70 - 130
			Vinyl Chloride	2012/07/27		91	%	70 - 130
			Chloroethane	2012/07/27		90	%	70 - 130
			1,3-Butadiene	2012/07/27		89	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/07/27		93	%	70 - 130
			Trichlorotrifluoroethane	2012/07/27		92	%	70 - 130
			Ethanol (ethyl alcohol)	2012/07/27		85	%	70 - 130
			2-propanol	2012/07/27		97	%	70 - 130
			2-Propanone	2012/07/27		101	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/07/27		93	%	70 - 130
			Methyl Isobutyl Ketone	2012/07/27		99	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/07/27		100	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/07/27		93	%	70 - 130
			Ethyl Acetate	2012/07/27		98	%	70 - 130
			1,1-Dichloroethylene	2012/07/27		94	%	70 - 130
			cis-1,2-Dichloroethylene	2012/07/27		93	%	70 - 130
			trans-1,2-Dichloroethylene	2012/07/27		92	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/07/27		84	%	70 - 130
			Chloroform	2012/07/27		92	%	70 - 130
			Carbon Tetrachloride	2012/07/27		97	%	70 - 130
			1,1-Dichloroethane	2012/07/27		92	%	70 - 130
			1,2-Dichloroethane	2012/07/27		97	%	70 - 130
			Ethylene Dibromide	2012/07/27		90	%	70 - 130
			1,1,1-Trichloroethane	2012/07/27		94	%	70 - 130
			1,1,2-Trichloroethane	2012/07/27		93	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/07/27		88	%	70 - 130
			cis-1,3-Dichloropropene	2012/07/27		93	%	70 - 130
			trans-1,3-Dichloropropene	2012/07/27		94	%	70 - 130
			1,2-Dichloropropane	2012/07/27		91	%	70 - 130
			Bromomethane	2012/07/27		91	%	70 - 130
			Bromoform	2012/07/27		100	%	70 - 130
			Bromodichloromethane	2012/07/27		98	%	70 - 130
			Dibromochloromethane	2012/07/27		100	%	70 - 130
			Heptane	2012/07/27		90	%	70 - 130
			Trichloroethylene	2012/07/27		90	%	70 - 130
			Tetrachloroethylene	2012/07/27		90	%	70 - 130
			Benzene	2012/07/27		90	%	70 - 130
			Toluene	2012/07/27		90	%	70 - 130
			Ethylbenzene	2012/07/27		91	%	70 - 130
			p+m-Xylene	2012/07/27		89	%	70 - 130
			o-Xylene	2012/07/27		89	%	70 - 130
			Styrene	2012/07/27		64 (1)	%	70 - 130
			1,3,5-Trimethylbenzene	2012/07/27		82	%	70 - 130
			1,2,4-Trimethylbenzene	2012/07/27		76	%	70 - 130
			4-ethyltoluene	2012/07/27		85	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2A7625

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2923594	DVO	Spiked Blank	Chlorobenzene	2012/07/27		89	%	70 - 130
			Benzyl chloride	2012/07/27		75	%	70 - 130
			1,3-Dichlorobenzene	2012/07/27		76	%	70 - 130
			1,4-Dichlorobenzene	2012/07/27		76	%	70 - 130
			1,2-Dichlorobenzene	2012/07/27		72	%	70 - 130
			1,2,4-Trichlorobenzene	2012/07/27		86	%	70 - 130
			Hexachlorobutadiene	2012/07/27		85	%	70 - 130
			Hexane	2012/07/27		92	%	70 - 130
			Cyclohexane	2012/07/27		89	%	70 - 130
			Tetrahydrofuran	2012/07/27		92	%	70 - 130
			1,4-Dioxane	2012/07/27		89	%	70 - 130
			Xylene (Total)	2012/07/27		89	%	70 - 130
		Method Blank	Bromochloromethane	2012/07/27		89	%	60 - 140
			D5-Chlorobenzene	2012/07/27		87	%	60 - 140
			Difluorobenzene	2012/07/27		92	%	60 - 140
			2,2,4-Trimethylpentane	2012/07/27	<0.20		ppbv	
			Carbon Disulfide	2012/07/27	<0.50		ppbv	
			Propene	2012/07/27	<0.30		ppbv	
			Vinyl Acetate	2012/07/27	<0.20		ppbv	
			Vinyl Bromide	2012/07/27	<0.20		ppbv	
			Dichlorodifluoromethane (FREON 12)	2012/07/27	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/07/27	<0.17		ppbv	
			Chloromethane	2012/07/27	<0.30		ppbv	
			Vinyl Chloride	2012/07/27	<0.18		ppbv	
			Chloroethane	2012/07/27	<0.30		ppbv	
			1,3-Butadiene	2012/07/27	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/07/27	<0.20		ppbv	
			Trichlorotrifluoroethane	2012/07/27	<0.15		ppbv	
			Ethanol (ethyl alcohol)	2012/07/27	<2.3		ppbv	
			2-propanol	2012/07/27	<3.0		ppbv	
			2-Propanone	2012/07/27	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/07/27	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/07/27	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/07/27	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/07/27	<0.20		ppbv	
			Ethyl Acetate	2012/07/27	<2.2		ppbv	
			1,1-Dichloroethylene	2012/07/27	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/07/27	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/07/27	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/07/27	<0.80		ppbv	
			Chloroform	2012/07/27	<0.15		ppbv	
			Carbon Tetrachloride	2012/07/27	<0.30		ppbv	
			1,1-Dichloroethane	2012/07/27	<0.20		ppbv	
			1,2-Dichloroethane	2012/07/27	<0.20		ppbv	
			Ethylene Dibromide	2012/07/27	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/07/27	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/07/27	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/07/27	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/07/27	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/07/27	<0.17		ppbv	
			1,2-Dichloropropane	2012/07/27	<0.40		ppbv	
			Bromomethane	2012/07/27	<0.18		ppbv	
			Bromoform	2012/07/27	<0.20		ppbv	
			Bromodichloromethane	2012/07/27	<0.20		ppbv	
			Dibromochloromethane	2012/07/27	<0.20		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2A7625

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2923594	DVO	Method Blank	Heptane	2012/07/27	<0.30		ppbv	
			Trichloroethylene	2012/07/27	<0.30		ppbv	
			Tetrachloroethylene	2012/07/27	<0.20		ppbv	
			Benzene	2012/07/27	<0.18		ppbv	
			Toluene	2012/07/27	<0.20		ppbv	
			Ethylbenzene	2012/07/27	<0.20		ppbv	
			p+m-Xylene	2012/07/27	<0.37		ppbv	
			o-Xylene	2012/07/27	<0.20		ppbv	
			Styrene	2012/07/27	<0.20		ppbv	
			1,3,5-Trimethylbenzene	2012/07/27	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/07/27	<0.50		ppbv	
			4-ethyltoluene	2012/07/27	<2.2		ppbv	
			Chlorobenzene	2012/07/27	<0.20		ppbv	
			Benzyl chloride	2012/07/27	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/07/27	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/07/27	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/07/27	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/07/27	<2.0		ppbv	
			Hexachlorobutadiene	2012/07/27	<3.0		ppbv	
			Hexane	2012/07/27	<0.30		ppbv	
			Cyclohexane	2012/07/27	<0.20		ppbv	
			Tetrahydrofuran	2012/07/27	<0.40		ppbv	
			1,4-Dioxane	2012/07/27	<2.0		ppbv	
			Xylene (Total)	2012/07/27	<0.60		ppbv	

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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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 /Jul 20, 2012

Sampler s/n: 6167
Canister ID: 7927
Canister Installation Date/Time: Jul 19, 2012 @ 07:50 mst
Canister Removal Date/Time: Jul 24, 2012 @ 07:20 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
20-Jul-12	07/20/2012 0:00	07/21/2012 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 # 12335

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 12335

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

Report Date: 2012/08/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2B2465
Received: 2012/07/26, 09:32

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/08/03	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/08/03	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 #: B2B2465
Report Date: 2012/08/08

RESULTS OF ANALYSES OF AIR

Maxxam ID		OG8642	OG8643	
Sampling Date		2012/07/20	2012/07/20	
COC Number		12335	12335	
	Units	**LICA VOC/CLS/JULY 2012 - 7927**	**LICA VOC/PORT/JULY 2012 - 256**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	22	22	2930359

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B2465
Report Date: 2012/08/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OG8642				
Sampling Date		2012/07/20				
COC Number		12335				
	Units	**LICA VOC/CLS/JULY 2012 - 7927**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2930700
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2930700
Propene	ppbv	<0.30	0.30	<0.516	0.516	2930700
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2930700
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2930700
Dichlorodifluoromethane (FREON 12)	ppbv	0.69	0.20	3.41	0.989	2930700
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2930700
Chloromethane	ppbv	<0.30	0.30	<0.620	0.620	2930700
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2930700
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2930700
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2930700
Trichlorofluoromethane (FREON 11)	ppbv	0.34	0.20	1.90	1.12	2930700
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2930700
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2930700
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2930700
2-Propanone	ppbv	4.36	0.80	10.3	1.90	2930700
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2930700
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2930700
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2930700
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2930700
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2930700
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2930700
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2930700
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2930700
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2930700
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2930700
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2930700
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2930700
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2930700
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2930700
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2930700

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B2465
Report Date: 2012/08/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OG8642				
Sampling Date		2012/07/20				
COC Number		12335				
	Units	**LICA VOC/CLS/JULY 2012 - 7927**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2930700
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2930700
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2930700
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2930700
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2930700
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2930700
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2930700
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2930700
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2930700
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2930700
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2930700
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2930700
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2930700
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2930700
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2930700
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2930700
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2930700
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2930700
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2930700
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2930700
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2930700
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2930700
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2930700
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2930700
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2930700
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2930700
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2930700
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2930700
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2930700
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2930700
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2930700
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2930700
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2930700

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B2465
Report Date: 2012/08/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OG8642				
Sampling Date		2012/07/20				
COC Number		12335				
	Units	**LICA VOC/CLS/JULY 2012 - 7927**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	81		N/A	N/A	2930700
D5-Chlorobenzene	%	77		N/A	N/A	2930700
Difluorobenzene	%	81		N/A	N/A	2930700

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

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Maxxam Analytics

Maxxam Job #: B2B2465
Report Date: 2012/08/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OG8643				
Sampling Date		2012/07/20				
COC Number		12335				
	Units	**LICA VOC/PORT/JULY 2012 - 256**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2930700
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2930700
Propene	ppbv	<1.2	1.2	<2.07	2.07	2930700
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2930700
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2930700
Dichlorodifluoromethane (FREON 12)	ppbv	0.67	0.20	3.29	0.989	2930700
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2930700
Chloromethane	ppbv	0.46	0.30	0.954	0.620	2930700
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2930700
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2930700
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2930700
Trichlorofluoromethane (FREON 11)	ppbv	0.36	0.20	2.04	1.12	2930700
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2930700
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2930700
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2930700
2-Propanone	ppbv	3.91	0.80	9.29	1.90	2930700
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2930700
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2930700
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2930700
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2930700
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2930700
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2930700
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2930700
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2930700
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2930700
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2930700
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2930700
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2930700
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2930700
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2930700
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2930700

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B2465
Report Date: 2012/08/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OG8643				
Sampling Date		2012/07/20				
COC Number		12335				
	Units	**LICA VOC/PORT/JULY 2012 - 256**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2930700
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2930700
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2930700
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2930700
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2930700
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2930700
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2930700
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2930700
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2930700
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2930700
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2930700
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2930700
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2930700
Toluene	ppbv	0.43	0.20	1.62	0.753	2930700
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2930700
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2930700
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2930700
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2930700
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2930700
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2930700
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2930700
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2930700
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2930700
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2930700
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2930700
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2930700
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2930700
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2930700
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2930700
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2930700
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2930700
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2930700
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2930700

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B2465
Report Date: 2012/08/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OG8643				
Sampling Date		2012/07/20				
COC Number		12335				
	Units	**LICA VOC/PORT/JULY 2012 - 256**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	79		N/A	N/A	2930700
D5-Chlorobenzene	%	77		N/A	N/A	2930700
Difluorobenzene	%	80		N/A	N/A	2930700

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

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Maxxam Analytics

Maxxam Job #: B2B2465
Report Date: 2012/08/08

Test Summary

Maxxam ID OG8642 **Collected** 2012/07/20
Sample ID LICA VOC/CLS/JULY 2012 - 7927 **Shipped**
Matrix AIR **Received** 2012/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2930359	N/A	2012/08/03	Diane Temniuk
Volatile Organics in Air (TO-15)	GC/MS	2930700	N/A	2012/08/03	Diane Temniuk

Maxxam ID OG8643 **Collected** 2012/07/20
Sample ID LICA VOC/PORT/JULY 2012 - 256 **Shipped**
Matrix AIR **Received** 2012/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2930359	N/A	2012/08/03	Diane Temniuk
Volatile Organics in Air (TO-15)	GC/MS	2930700	N/A	2012/08/03	Diane Temniuk

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GENERAL COMMENTS

Sample OG8643-01: 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: GB2B2465

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2930700	DVO	Spiked Blank	Bromochloromethane	2012/08/03		99	%	60 - 140
			D5-Chlorobenzene	2012/08/03		103	%	60 - 140
			Difluorobenzene	2012/08/03		103	%	60 - 140
			2,2,4-Trimethylpentane	2012/08/03		97	%	70 - 130
			Carbon Disulfide	2012/08/03		97	%	70 - 130
			Propene	2012/08/03		89	%	70 - 130
			Vinyl Acetate	2012/08/03		104	%	70 - 130
			Vinyl Bromide	2012/08/03		102	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2012/08/03		104	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/08/03		116	%	70 - 130
			Chloromethane	2012/08/03		94	%	70 - 130
			Vinyl Chloride	2012/08/03		94	%	70 - 130
			Chloroethane	2012/08/03		90	%	70 - 130
			1,3-Butadiene	2012/08/03		107	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/08/03		98	%	70 - 130
			Trichlorotrifluoroethane	2012/08/03		97	%	70 - 130
			Ethanol (ethyl alcohol)	2012/08/03		78	%	70 - 130
			2-propanol	2012/08/03		100	%	70 - 130
			2-Propanone	2012/08/03		98	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/08/03		102	%	70 - 130
			Methyl Isobutyl Ketone	2012/08/03		102	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/08/03		106	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/08/03		106	%	70 - 130
			Ethyl Acetate	2012/08/03		99	%	70 - 130
			1,1-Dichloroethylene	2012/08/03		94	%	70 - 130
			cis-1,2-Dichloroethylene	2012/08/03		93	%	70 - 130
			trans-1,2-Dichloroethylene	2012/08/03		93	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/08/03		82	%	70 - 130
			Chloroform	2012/08/03		96	%	70 - 130
			Carbon Tetrachloride	2012/08/03		104	%	70 - 130
			1,1-Dichloroethane	2012/08/03		92	%	70 - 130
			1,2-Dichloroethane	2012/08/03		97	%	70 - 130
			Ethylene Dibromide	2012/08/03		101	%	70 - 130
			1,1,1-Trichloroethane	2012/08/03		101	%	70 - 130
			1,1,2-Trichloroethane	2012/08/03		102	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/08/03		105	%	70 - 130
			cis-1,3-Dichloropropene	2012/08/03		100	%	70 - 130
			trans-1,3-Dichloropropene	2012/08/03		100	%	70 - 130
			1,2-Dichloropropane	2012/08/03		95	%	70 - 130
			Bromomethane	2012/08/03		97	%	70 - 130
			Bromoform	2012/08/03		116	%	70 - 130
			Bromodichloromethane	2012/08/03		104	%	70 - 130
			Dibromochloromethane	2012/08/03		111	%	70 - 130
			Heptane	2012/08/03		93	%	70 - 130
			Trichloroethylene	2012/08/03		100	%	70 - 130
			Tetrachloroethylene	2012/08/03		104	%	70 - 130
			Benzene	2012/08/03		96	%	70 - 130
			Toluene	2012/08/03		102	%	70 - 130
			Ethylbenzene	2012/08/03		102	%	70 - 130
			p+m-Xylene	2012/08/03		101	%	70 - 130
			o-Xylene	2012/08/03		104	%	70 - 130
			Styrene	2012/08/03		92	%	70 - 130
			1,3,5-Trimethylbenzene	2012/08/03		104	%	70 - 130
			1,2,4-Trimethylbenzene	2012/08/03		107	%	70 - 130
			4-ethyltoluene	2012/08/03		113	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2B2465

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2930700	DVO	Spiked Blank	Chlorobenzene	2012/08/03		97	%	70 - 130
			Benzyl chloride	2012/08/03		112	%	70 - 130
			1,3-Dichlorobenzene	2012/08/03		106	%	70 - 130
			1,4-Dichlorobenzene	2012/08/03		105	%	70 - 130
			1,2-Dichlorobenzene	2012/08/03		106	%	70 - 130
			1,2,4-Trichlorobenzene	2012/08/03		116	%	70 - 130
			Hexachlorobutadiene	2012/08/03		128	%	70 - 130
			Hexane	2012/08/03		96	%	70 - 130
			Cyclohexane	2012/08/03		95	%	70 - 130
			Tetrahydrofuran	2012/08/03		95	%	70 - 130
			1,4-Dioxane	2012/08/03		111	%	70 - 130
			Xylene (Total)	2012/08/03		102	%	70 - 130
		Method Blank	Bromochloromethane	2012/08/03		89	%	60 - 140
			D5-Chlorobenzene	2012/08/03		86	%	60 - 140
			Difluorobenzene	2012/08/03		90	%	60 - 140
			2,2,4-Trimethylpentane	2012/08/03	<0.20		ppbv	
			Carbon Disulfide	2012/08/03	<0.50		ppbv	
			Propene	2012/08/03	<0.30		ppbv	
			Vinyl Acetate	2012/08/03	<0.20		ppbv	
			Vinyl Bromide	2012/08/03	<0.20		ppbv	
			Dichlorodifluoromethane (FREON 12)	2012/08/03	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/08/03	<0.17		ppbv	
			Chloromethane	2012/08/03	<0.30		ppbv	
			Vinyl Chloride	2012/08/03	<0.18		ppbv	
			Chloroethane	2012/08/03	<0.30		ppbv	
			1,3-Butadiene	2012/08/03	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/08/03	<0.20		ppbv	
			Trichlorotrifluoroethane	2012/08/03	<0.15		ppbv	
			Ethanol (ethyl alcohol)	2012/08/03	<2.3		ppbv	
			2-propanol	2012/08/03	<3.0		ppbv	
			2-Propanone	2012/08/03	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/08/03	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/08/03	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/08/03	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/08/03	<0.20		ppbv	
			Ethyl Acetate	2012/08/03	<2.2		ppbv	
			1,1-Dichloroethylene	2012/08/03	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/08/03	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/08/03	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/08/03	<0.80		ppbv	
			Chloroform	2012/08/03	<0.15		ppbv	
			Carbon Tetrachloride	2012/08/03	<0.30		ppbv	
			1,1-Dichloroethane	2012/08/03	<0.20		ppbv	
			1,2-Dichloroethane	2012/08/03	<0.20		ppbv	
			Ethylene Dibromide	2012/08/03	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/08/03	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/08/03	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/08/03	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/08/03	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/08/03	<0.17		ppbv	
			1,2-Dichloropropane	2012/08/03	<0.40		ppbv	
			Bromomethane	2012/08/03	<0.18		ppbv	
			Bromoform	2012/08/03	<0.20		ppbv	
			Bromodichloromethane	2012/08/03	<0.20		ppbv	
			Dibromochloromethane	2012/08/03	<0.20		ppbv	

Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
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Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2B2465

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2930700	DVO	Method Blank	Heptane	2012/08/03	<0.30		ppbv	
			Trichloroethylene	2012/08/03	<0.30		ppbv	
			Tetrachloroethylene	2012/08/03	<0.20		ppbv	
			Benzene	2012/08/03	<0.18		ppbv	
			Toluene	2012/08/03	<0.20		ppbv	
			Ethylbenzene	2012/08/03	<0.20		ppbv	
			p+m-Xylene	2012/08/03	<0.37		ppbv	
			o-Xylene	2012/08/03	<0.20		ppbv	
			Styrene	2012/08/03	<0.20		ppbv	
			1,3,5-Trimethylbenzene	2012/08/03	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/08/03	<0.50		ppbv	
			4-ethyltoluene	2012/08/03	<2.2		ppbv	
			Chlorobenzene	2012/08/03	<0.20		ppbv	
			Benzyl chloride	2012/08/03	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/08/03	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/08/03	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/08/03	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/08/03	<2.0		ppbv	
			Hexachlorobutadiene	2012/08/03	<3.0		ppbv	
			Hexane	2012/08/03	<0.30		ppbv	
			Cyclohexane	2012/08/03	<0.20		ppbv	
			Tetrahydrofuran	2012/08/03	<0.40		ppbv	
			1,4-Dioxane	2012/08/03	<2.0		ppbv	
			Xylene (Total)	2012/08/03	<0.60		ppbv	
		RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2012/08/03	NC		%	25
			Carbon Disulfide	2012/08/03	NC		%	25
			Propene	2012/08/03	NC		%	25
			Vinyl Acetate	2012/08/03	NC		%	25
			Vinyl Bromide	2012/08/03	NC		%	25
			Dichlorodifluoromethane (FREON 12)	2012/08/03	NC		%	25
			1,2-Dichlorotetrafluoroethane	2012/08/03	NC		%	25
			Chloromethane	2012/08/03	NC		%	25
			Vinyl Chloride	2012/08/03	NC		%	25
			Chloroethane	2012/08/03	NC		%	25
			1,3-Butadiene	2012/08/03	NC		%	25
			Trichlorofluoromethane (FREON 11)	2012/08/03	NC		%	25
			Trichlorotrifluoroethane	2012/08/03	NC		%	25
			Ethanol (ethyl alcohol)	2012/08/03	NC		%	25
			2-propanol	2012/08/03	NC		%	25
			2-Propanone	2012/08/03	NC		%	25
			Methyl Ethyl Ketone (2-Butanone)	2012/08/03	NC		%	25
			Methyl Isobutyl Ketone	2012/08/03	NC		%	25
			Methyl Butyl Ketone (2-Hexanone)	2012/08/03	NC		%	25
			Methyl t-butyl ether (MTBE)	2012/08/03	NC		%	25
			Ethyl Acetate	2012/08/03	NC		%	25
			1,1-Dichloroethylene	2012/08/03	NC		%	25
			cis-1,2-Dichloroethylene	2012/08/03	NC		%	25
			trans-1,2-Dichloroethylene	2012/08/03	NC		%	25
			Methylene Chloride(Dichloromethane)	2012/08/03	NC		%	25
			Chloroform	2012/08/03	1.7		%	25
			Carbon Tetrachloride	2012/08/03	NC		%	25
			1,1-Dichloroethane	2012/08/03	NC		%	25
			1,2-Dichloroethane	2012/08/03	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2B2465

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2930700	DVO	RPD - Sample/Sample Dup	Ethylene Dibromide	2012/08/03	NC		%	25
			1,1,1-Trichloroethane	2012/08/03	NC		%	25
			1,1,2-Trichloroethane	2012/08/03	NC		%	25
			1,1,2,2-Tetrachloroethane	2012/08/03	NC		%	25
			cis-1,3-Dichloropropene	2012/08/03	NC		%	25
			trans-1,3-Dichloropropene	2012/08/03	NC		%	25
			1,2-Dichloropropane	2012/08/03	NC		%	25
			Bromomethane	2012/08/03	NC		%	25
			Bromoform	2012/08/03	NC		%	25
			Bromodichloromethane	2012/08/03	NC		%	25
			Dibromochloromethane	2012/08/03	NC		%	25
			Heptane	2012/08/03	NC		%	25
			Trichloroethylene	2012/08/03	1.6		%	25
			Tetrachloroethylene	2012/08/03	NC		%	25
			Benzene	2012/08/03	NC		%	25
			Toluene	2012/08/03	NC		%	25
			Ethylbenzene	2012/08/03	NC		%	25
			p+m-Xylene	2012/08/03	NC		%	25
			o-Xylene	2012/08/03	NC		%	25
			Styrene	2012/08/03	NC		%	25
			1,3,5-Trimethylbenzene	2012/08/03	NC		%	25
			1,2,4-Trimethylbenzene	2012/08/03	NC		%	25
			4-ethyltoluene	2012/08/03	NC		%	25
			Chlorobenzene	2012/08/03	NC		%	25
			Benzyl chloride	2012/08/03	NC		%	25
			1,3-Dichlorobenzene	2012/08/03	NC		%	25
			1,4-Dichlorobenzene	2012/08/03	NC		%	25
			1,2-Dichlorobenzene	2012/08/03	NC		%	25
			1,2,4-Trichlorobenzene	2012/08/03	NC		%	25
			Hexachlorobutadiene	2012/08/03	NC		%	25
			Hexane	2012/08/03	NC		%	25
			Cyclohexane	2012/08/03	NC		%	25
			Tetrahydrofuran	2012/08/03	NC		%	25
			1,4-Dioxane	2012/08/03	NC		%	25
			Xylene (Total)	2012/08/03	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.

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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 /Jul 26, 2012

Sampler s/n: 6167
Canister ID: 112
Canister Installation Date/Time: Jul 24, 2012 @ 07:28 mst
Canister Removal Date/Time: Jul 27, 2012 @ 11:38 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
26-Jul-12	07/26/2012 0:00	07/27/2012 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 # 11875

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 11875

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

Report Date: 2012/08/15

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2B6141
Received: 2012/08/01, 11:00

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/08/13	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/08/13	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 #: B2B6141
Report Date: 2012/08/15

RESULTS OF ANALYSES OF AIR

Maxxam ID		OI7144	OI7145	
Sampling Date		2012/07/26	2012/07/26	
COC Number		11875	11875	
	Units	**LICA VOC\CLS\JULY 26,12**	**LICA VOC\PORT\JULY 26,12**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	23	22	2938783

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B6141
Report Date: 2012/08/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OI7144				
Sampling Date		2012/07/26				
COC Number		11875				
	Units	**LICA VOC\CLS\JULY 26,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2938240
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2938240
Propene	ppbv	<0.30	0.30	<0.516	0.516	2938240
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2938240
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2938240
Dichlorodifluoromethane (FREON 12)	ppbv	0.74	0.20	3.67	0.989	2938240
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2938240
Chloromethane	ppbv	0.63	0.30	1.29	0.620	2938240
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2938240
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2938240
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2938240
Trichlorofluoromethane (FREON 11)	ppbv	0.38	0.20	2.12	1.12	2938240
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2938240
Ethanol (ethyl alcohol)	ppbv	3.1	2.3	5.81	4.33	2938240
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2938240
2-Propanone	ppbv	4.58	0.80	10.9	1.90	2938240
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2938240
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2938240
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2938240
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2938240
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2938240
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2938240
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2938240
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2938240
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2938240
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2938240
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2938240
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2938240
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2938240
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2938240
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2938240

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B6141
Report Date: 2012/08/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OI7144				
Sampling Date		2012/07/26				
COC Number		11875				
	Units	**LICA VOC\CLS\JULY 26,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2938240
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2938240
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2938240
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2938240
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2938240
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2938240
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2938240
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2938240
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2938240
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2938240
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2938240
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2938240
Benzene	ppbv	0.26	0.18	0.840	0.575	2938240
Toluene	ppbv	0.51	0.20	1.93	0.753	2938240
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2938240
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2938240
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2938240
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2938240
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2938240
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2938240
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2938240
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2938240
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2938240
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2938240
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2938240
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2938240
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2938240
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2938240
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2938240
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2938240
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2938240
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2938240
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2938240

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B6141
Report Date: 2012/08/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OI7144				
Sampling Date		2012/07/26				
COC Number		11875				
	Units	**LICA VOC\CLS\JULY 26,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	86		N/A	N/A	2938240
D5-Chlorobenzene	%	78		N/A	N/A	2938240
Difluorobenzene	%	86		N/A	N/A	2938240

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

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OI7145				
Sampling Date		2012/07/26				
COC Number		11875				
	Units	**LICA VOC\PORT\JULY 26,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2938240
Carbon Disulfide	ppbv	1.08	0.50	3.37	1.56	2938240
Propene	ppbv	<1.5	1.5	<2.58	2.58	2938240
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2938240
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2938240
Dichlorodifluoromethane (FREON 12)	ppbv	0.72	0.20	3.58	0.989	2938240
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2938240
Chloromethane	ppbv	0.52	0.30	1.08	0.620	2938240
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2938240
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2938240
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2938240
Trichlorofluoromethane (FREON 11)	ppbv	0.37	0.20	2.09	1.12	2938240
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2938240
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2938240
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2938240
2-Propanone	ppbv	4.27	0.80	10.2	1.90	2938240
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2938240
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2938240
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2938240
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2938240
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2938240
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2938240
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2938240
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2938240
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2938240
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2938240
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2938240
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2938240
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2938240
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2938240
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2938240

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OI7145				
Sampling Date		2012/07/26				
COC Number		11875				
	Units	**LICA VOC\PORT\JULY 26,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2938240
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2938240
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2938240
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2938240
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2938240
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2938240
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2938240
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2938240
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2938240
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2938240
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2938240
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2938240
Benzene	ppbv	0.28	0.18	0.887	0.575	2938240
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2938240
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2938240
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2938240
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2938240
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2938240
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2938240
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2938240
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2938240
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2938240
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2938240
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2938240
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2938240
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2938240
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2938240
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2938240
Hexane	ppbv	0.33	0.30	1.16	1.06	2938240
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2938240
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2938240
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2938240
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2938240

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B6141
Report Date: 2012/08/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OI7145				
Sampling Date		2012/07/26				
COC Number		11875				
	Units	**LICA VOC\PORT\JULY 26,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	86		N/A	N/A	2938240
D5-Chlorobenzene	%	77		N/A	N/A	2938240
Difluorobenzene	%	83		N/A	N/A	2938240

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

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Maxxam Analytics

Maxxam Job #: B2B6141
Report Date: 2012/08/15

Test Summary

Maxxam ID OI7144 **Collected** 2012/07/26
Sample ID LICA VOC\CLS\JULY 26,12 **Shipped**
Matrix AIR **Received** 2012/08/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2938783	N/A	2012/08/13	Diane Temniuk
Volatile Organics in Air (TO-15)	GC/MS	2938240	N/A	2012/08/13	Diane Temniuk

Maxxam ID OI7145 **Collected** 2012/07/26
Sample ID LICA VOC\PORT\JULY 26,12 **Shipped**
Matrix AIR **Received** 2012/08/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2938783	N/A	2012/08/13	Diane Temniuk
Volatile Organics in Air (TO-15)	GC/MS	2938240	N/A	2012/08/13	Diane Temniuk

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Maxxam Analytics

Maxxam Job #: B2B6141
Report Date: 2012/08/15

GENERAL COMMENTS

Sample OI7145-01: DL raised for Propene due to matrix interference.

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: GB2B6141

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2938240	DVO	Spiked Blank	Bromochloromethane	2012/08/13		105	%	60 - 140
			D5-Chlorobenzene	2012/08/13		106	%	60 - 140
			Difluorobenzene	2012/08/13		107	%	60 - 140
			2,2,4-Trimethylpentane	2012/08/13		93	%	70 - 130
			Carbon Disulfide	2012/08/13		95	%	70 - 130
			Propene	2012/08/13		85	%	70 - 130
			Vinyl Acetate	2012/08/13		99	%	70 - 130
			Vinyl Bromide	2012/08/13		93	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2012/08/13		111	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/08/13		119	%	70 - 130
			Chloromethane	2012/08/13		98	%	70 - 130
			Vinyl Chloride	2012/08/13		96	%	70 - 130
			Chloroethane	2012/08/13		91	%	70 - 130
			1,3-Butadiene	2012/08/13		105	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/08/13		107	%	70 - 130
			Trichlorotrifluoroethane	2012/08/13		102	%	70 - 130
			Ethanol (ethyl alcohol)	2012/08/13		75	%	70 - 130
			2-propanol	2012/08/13		89	%	70 - 130
			2-Propanone	2012/08/13		96	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/08/13		105	%	70 - 130
			Methyl Isobutyl Ketone	2012/08/13		96	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/08/13		97	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/08/13		105	%	70 - 130
			Ethyl Acetate	2012/08/13		93	%	70 - 130
			1,1-Dichloroethylene	2012/08/13		97	%	70 - 130
			cis-1,2-Dichloroethylene	2012/08/13		96	%	70 - 130
			trans-1,2-Dichloroethylene	2012/08/13		92	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/08/13		84	%	70 - 130
			Chloroform	2012/08/13		102	%	70 - 130
			Carbon Tetrachloride	2012/08/13		120	%	70 - 130
			1,1-Dichloroethane	2012/08/13		95	%	70 - 130
			1,2-Dichloroethane	2012/08/13		108	%	70 - 130
			Ethylene Dibromide	2012/08/13		112	%	70 - 130
			1,1,1-Trichloroethane	2012/08/13		115	%	70 - 130
			1,1,2-Trichloroethane	2012/08/13		109	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/08/13		105	%	70 - 130
			cis-1,3-Dichloropropene	2012/08/13		109	%	70 - 130
			trans-1,3-Dichloropropene	2012/08/13		112	%	70 - 130
			1,2-Dichloropropane	2012/08/13		100	%	70 - 130
			Bromomethane	2012/08/13		101	%	70 - 130
			Bromoform	2012/08/13		117	%	70 - 130
			Bromodichloromethane	2012/08/13		110	%	70 - 130
			Dibromochloromethane	2012/08/13		116	%	70 - 130
			Heptane	2012/08/13		94	%	70 - 130
			Trichloroethylene	2012/08/13		107	%	70 - 130
			Tetrachloroethylene	2012/08/13		114	%	70 - 130
			Benzene	2012/08/13		101	%	70 - 130
			Toluene	2012/08/13		109	%	70 - 130
			Ethylbenzene	2012/08/13		106	%	70 - 130
			p+m-Xylene	2012/08/13		106	%	70 - 130
			o-Xylene	2012/08/13		112	%	70 - 130
			Styrene	2012/08/13		91	%	70 - 130
			1,3,5-Trimethylbenzene	2012/08/13		108	%	70 - 130
			1,2,4-Trimethylbenzene	2012/08/13		110	%	70 - 130
			4-ethyltoluene	2012/08/13		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: GB2B6141

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2938240	DVO	Spiked Blank	Chlorobenzene	2012/08/13		103	%	70 - 130
			Benzyl chloride	2012/08/13		115	%	70 - 130
			1,3-Dichlorobenzene	2012/08/13		115	%	70 - 130
			1,4-Dichlorobenzene	2012/08/13		116	%	70 - 130
			1,2-Dichlorobenzene	2012/08/13		110	%	70 - 130
			1,2,4-Trichlorobenzene	2012/08/13		104	%	70 - 130
			Hexachlorobutadiene	2012/08/13		121	%	70 - 130
			Hexane	2012/08/13		93	%	70 - 130
			Cyclohexane	2012/08/13		95	%	70 - 130
			Tetrahydrofuran	2012/08/13		89	%	70 - 130
			1,4-Dioxane	2012/08/13		107	%	70 - 130
			Xylene (Total)	2012/08/13		108	%	70 - 130
		Method Blank	Bromochloromethane	2012/08/13		87	%	60 - 140
			D5-Chlorobenzene	2012/08/13		76	%	60 - 140
			Difluorobenzene	2012/08/13		84	%	60 - 140
			2,2,4-Trimethylpentane	2012/08/13	<0.20		ppbv	
			Carbon Disulfide	2012/08/13	<0.50		ppbv	
			Propene	2012/08/13	<0.30		ppbv	
			Vinyl Acetate	2012/08/13	<0.20		ppbv	
			Vinyl Bromide	2012/08/13	<0.20		ppbv	
			Dichlorodifluoromethane (FREON 12)	2012/08/13	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/08/13	<0.17		ppbv	
			Chloromethane	2012/08/13	<0.30		ppbv	
			Vinyl Chloride	2012/08/13	<0.18		ppbv	
			Chloroethane	2012/08/13	<0.30		ppbv	
			1,3-Butadiene	2012/08/13	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/08/13	<0.20		ppbv	
			Trichlorotrifluoroethane	2012/08/13	<0.15		ppbv	
			Ethanol (ethyl alcohol)	2012/08/13	<2.3		ppbv	
			2-propanol	2012/08/13	<3.0		ppbv	
			2-Propanone	2012/08/13	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/08/13	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/08/13	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/08/13	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/08/13	<0.20		ppbv	
			Ethyl Acetate	2012/08/13	<2.2		ppbv	
			1,1-Dichloroethylene	2012/08/13	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/08/13	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/08/13	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/08/13	<0.80		ppbv	
			Chloroform	2012/08/13	<0.15		ppbv	
			Carbon Tetrachloride	2012/08/13	<0.30		ppbv	
			1,1-Dichloroethane	2012/08/13	<0.20		ppbv	
			1,2-Dichloroethane	2012/08/13	<0.20		ppbv	
			Ethylene Dibromide	2012/08/13	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/08/13	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/08/13	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/08/13	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/08/13	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/08/13	<0.17		ppbv	
			1,2-Dichloropropane	2012/08/13	<0.40		ppbv	
			Bromomethane	2012/08/13	<0.18		ppbv	
			Bromoform	2012/08/13	<0.20		ppbv	
			Bromodichloromethane	2012/08/13	<0.20		ppbv	
			Dibromochloromethane	2012/08/13	<0.20		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2B6141

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2938240	DVO	Method Blank	Heptane	2012/08/13	<0.30		ppbv	
			Trichloroethylene	2012/08/13	<0.30		ppbv	
			Tetrachloroethylene	2012/08/13	<0.20		ppbv	
			Benzene	2012/08/13	<0.18		ppbv	
			Toluene	2012/08/13	<0.20		ppbv	
			Ethylbenzene	2012/08/13	<0.20		ppbv	
			p+m-Xylene	2012/08/13	<0.37		ppbv	
			o-Xylene	2012/08/13	<0.20		ppbv	
			Styrene	2012/08/13	<0.20		ppbv	
			1,3,5-Trimethylbenzene	2012/08/13	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/08/13	<0.50		ppbv	
			4-ethyltoluene	2012/08/13	<2.2		ppbv	
			Chlorobenzene	2012/08/13	<0.20		ppbv	
			Benzyl chloride	2012/08/13	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/08/13	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/08/13	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/08/13	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/08/13	<2.0		ppbv	
			Hexachlorobutadiene	2012/08/13	<3.0		ppbv	
			Hexane	2012/08/13	<0.30		ppbv	
			Cyclohexane	2012/08/13	<0.20		ppbv	
			Tetrahydrofuran	2012/08/13	<0.40		ppbv	
			1,4-Dioxane	2012/08/13	<2.0		ppbv	
			Xylene (Total)	2012/08/13	<0.60		ppbv	
		RPD - Sample/Sample Dup	Vinyl Chloride	2012/08/13	NC		%	25
			1,1-Dichloroethylene	2012/08/13	NC		%	25
			cis-1,2-Dichloroethylene	2012/08/13	NC		%	25
			trans-1,2-Dichloroethylene	2012/08/13	NC		%	25
			Trichloroethylene	2012/08/13	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.

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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/Jul 02, 2012

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Jun 28, 2012 @ 6:40 mst
Removal Date/Time: Jul 03, 2012 @ 11:35 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
02-Jul-12	07/02/2012 0:00	07/03/2012 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
26-Jun-12	04-Jul-12	06-Jul-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)
708	229	21.3	330.33

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

Comments: COC#05852
GB234740PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jul 02, 2012

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 05852

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

Report Date: 2012/07/30

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2A0822
Received: 2012/07/06, 09:50

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/07/09	2012/07/26	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

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

==========

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

Total cover pages: 1

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

Maxxam ID		OA7835	OA7836		
Sampling Date		2012/07/02	2012/07/02		
COC Number		05852	05852		
	Units	**LICA PUFF+QFF/CLS/JULY 02,12**	**LICA PUFF+QFF/PORT/JULY 02,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2902355
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2902355
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2902355
2-Methylanthracene	ug	<0.10	<0.10	0.10	2902355
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2902355
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2902355
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2902355
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2902355
Acenaphthene	ug	<0.050	<0.050	0.050	2902355
Acenaphthylene	ug	<0.050	<0.050	0.050	2902355
Anthracene	ug	<0.050	0.264	0.050	2902355
Benzo(a)anthracene	ug	0.050	<0.050	0.050	2902355
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2902355
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2902355
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2902355
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2902355
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2902355
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2902355
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2902355
Biphenyl	ug	<0.10	<0.10	0.10	2902355
Chrysene	ug	<0.050	<0.050	0.050	2902355
Coronene	ug	<0.10	<0.10	0.10	2902355
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2902355
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2902355
Fluoranthene	ug	0.084	<0.050	0.050	2902355
Fluorene	ug	0.072	<0.050	0.050	2902355
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2902355
m-Terphenyl	ug	<0.10	<0.10	0.10	2902355
Naphthalene	ug	<0.072	<0.072	0.072	2902355
o-Terphenyl	ug	<0.10	<0.10	0.10	2902355
Perylene	ug	<0.10	<0.10	0.10	2902355

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A0822
Report Date: 2012/07/30

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

Maxxam ID		OA7835	OA7836		
Sampling Date		2012/07/02	2012/07/02		
COC Number		05852	05852		
	Units	**LICA PUFF+QFF/CLS/JULY 02,12**	**LICA PUFF+QFF/PORT/JULY 02,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.530	0.248	0.050	2902355
p-Terphenyl	ug	<0.10	<0.10	0.10	2902355
Pyrene	ug	0.060	<0.050	0.050	2902355
Quinoline	ug	<0.40	<0.40	0.40	2902355
Tetralin	ug	<0.10	<0.10	0.10	2902355
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	56	56		2902355
D10-Fluoranthene	%	94	94		2902355
D10-Fluorene (FS)	%	5.2 (1)	6.6 (1)		2902355
D10-Phenanthrene	%	88	88		2902355
D12-Benzo(a)anthracene	%	102	102		2902355
D12-Benzo(a)pyrene	%	90	90		2902355
D12-Benzo(b)fluoranthene	%	92	92		2902355
D12-Benzo(ghi)perylene	%	82	80		2902355
D12-Benzo(k)fluoranthene	%	78	78		2902355
D12-Chrysene	%	80	80		2902355
D12-Indeno(1,2,3-cd)pyrene	%	84	86		2902355
D12-Perylene	%	78	78		2902355
D14-Dibenzo(a,h)anthracene	%	90	90		2902355
D14-Terphenyl (FS)	%	93	94		2902355
D8-Acenaphthylene	%	66	68		2902355
D8-Naphthalene	%	52	52		2902355

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 #: B2A0822
Report Date: 2012/07/30

Test Summary

Maxxam ID OA7835 **Collected** 2012/07/02
Sample ID LICA PUFF+QFF/CLS/JULY 02,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/07/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2902355	2012/07/09	2012/07/26	Karen Nicol

Maxxam ID OA7836 **Collected** 2012/07/02
Sample ID LICA PUFF+QFF/PORT/JULY 02,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/07/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2902355	2012/07/09	2012/07/26	Karen Nicol

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Maxxam Analytics

Maxxam Job #: B2A0822
Report Date: 2012/07/30

GENERAL COMMENTS

Sample spike. OA7835-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field

Sample spike. OA7836-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field

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: GB2A0822

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2902355	KDN	Spiked Blank	D10-2-Methylnaphthalene	2012/07/26		66	%	50 - 150
			D10-Fluoranthene	2012/07/26		92	%	50 - 150
			D10-Phenanthrene	2012/07/26		82	%	50 - 150
			D12-Benzo(a)anthracene	2012/07/26		96	%	50 - 150
			D12-Benzo(a)pyrene	2012/07/26		98	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/07/26		88	%	50 - 150
			D12-Benzo(ghi)perylene	2012/07/26		82	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/07/26		78	%	50 - 150
			D12-Chrysene	2012/07/26		78	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/07/26		90	%	50 - 150
			D12-Perylene	2012/07/26		84	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/07/26		94	%	50 - 150
			D8-Acenaphthylene	2012/07/26		72	%	50 - 150
			D8-Naphthalene	2012/07/26		66	%	50 - 150
			Acenaphthene	2012/07/26		65	%	60 - 130
		RPD	Acenaphthene	2012/07/26	6.8		%	50
		Spiked Blank	Acenaphthylene	2012/07/26		62	%	60 - 130
		RPD	Acenaphthylene	2012/07/26	6.7		%	50
		Spiked Blank	Anthracene	2012/07/26		72	%	60 - 130
		RPD	Anthracene	2012/07/26	0.7		%	50
		Spiked Blank	Benzo(a)anthracene	2012/07/26		85	%	60 - 130
		RPD	Benzo(a)anthracene	2012/07/26	3.5		%	50
		Spiked Blank	Benzo(a)pyrene	2012/07/26		73	%	60 - 130
		RPD	Benzo(a)pyrene	2012/07/26	2.0		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/07/26		74	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/07/26	3.3		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/07/26		69	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/07/26	0.4		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/07/26		79	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/07/26	2.5		%	50
		Spiked Blank	Chrysene	2012/07/26		69	%	60 - 130
		RPD	Chrysene	2012/07/26	5.3		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/07/26		78	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/07/26	1.3		%	50
		Spiked Blank	Fluoranthene	2012/07/26		85	%	60 - 130
		RPD	Fluoranthene	2012/07/26	2.9		%	50
		Spiked Blank	Fluorene	2012/07/26		71	%	60 - 130
		RPD	Fluorene	2012/07/26	2.9		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/07/26		75	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/07/26	0.7		%	50
		Spiked Blank	Naphthalene	2012/07/26		62	%	60 - 130
		RPD	Naphthalene	2012/07/26	12.0		%	50
		Spiked Blank	Phenanthrene	2012/07/26		73	%	60 - 130
		RPD	Phenanthrene	2012/07/26	2.4		%	50
		Spiked Blank	Pyrene	2012/07/26		81	%	60 - 130
		RPD	Pyrene	2012/07/26	2.1		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/07/26		74	%	50 - 150
			D10-Fluoranthene	2012/07/26		86	%	50 - 150
			D10-Phenanthrene	2012/07/26		78	%	50 - 150
			D12-Benzo(a)anthracene	2012/07/26		82	%	50 - 150
			D12-Benzo(a)pyrene	2012/07/26		94	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/07/26		82	%	50 - 150
			D12-Benzo(ghi)perylene	2012/07/26		74	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/07/26		74	%	50 - 150
			D12-Chrysene	2012/07/26		74	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2A0822

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2902355	KDN	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/07/26		78	%	50 - 150
			D12-Perylene	2012/07/26		82	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/07/26		80	%	50 - 150
			D8-Acenaphthylene	2012/07/26		80	%	50 - 150
			D8-Naphthalene	2012/07/26		74	%	50 - 150
			1-Methylnaphthalene	2012/07/26	<0.10		ug	
			1-Methylphenanthrene	2012/07/26	<0.10		ug	
			2-Chloronaphthalene	2012/07/26	<0.10		ug	
			2-Methylanthracene	2012/07/26	<0.10		ug	
			2-Methylnaphthalene	2012/07/26	<0.10		ug	
			3-Methylcholanthrene	2012/07/26	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/07/26	<0.10		ug	
			9,10-Dimethylanthracene	2012/07/26	<0.40		ug	
			Acenaphthene	2012/07/26	<0.050		ug	
			Acenaphthylene	2012/07/26	<0.050		ug	
			Anthracene	2012/07/26	<0.050		ug	
			Benzo(a)anthracene	2012/07/26	<0.050		ug	
			Benzo(a)fluorene	2012/07/26	<0.10		ug	
			Benzo(a)pyrene	2012/07/26	<0.050		ug	
			Benzo(b)fluoranthene	2012/07/26	<0.050		ug	
			Benzo(b)fluorene	2012/07/26	<0.10		ug	
			Benzo(e)pyrene	2012/07/26	<0.10		ug	
			Benzo(g,h,i)perylene	2012/07/26	<0.050		ug	
			Benzo(k)fluoranthene	2012/07/26	<0.050		ug	
			Biphenyl	2012/07/26	<0.10		ug	
			Chrysene	2012/07/26	<0.050		ug	
			Coronene	2012/07/26	<0.10		ug	
			Dibenz(a,h)anthracene	2012/07/26	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/07/26	<0.20		ug	
			Fluoranthene	2012/07/26	<0.050		ug	
			Fluorene	2012/07/26	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/07/26	<0.050		ug	
			m-Terphenyl	2012/07/26	<0.10		ug	
			Naphthalene	2012/07/26	<0.072		ug	
			o-Terphenyl	2012/07/26	<0.10		ug	
			Perylene	2012/07/26	<0.10		ug	
			Phenanthrene	2012/07/26	<0.050		ug	
			p-Terphenyl	2012/07/26	<0.10		ug	
			Pyrene	2012/07/26	<0.050		ug	
			Quinoline	2012/07/26	<0.40		ug	
			Tetralin	2012/07/26	<0.10		ug	

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

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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/Jul 08, 2012

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Jul 06, 2012 @ 11:05 mst
Removal Date/Time: Jul 09, 2012 @ 11:02 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
08-Jul-12	07/08/2012 0:00	07/09/2012 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
04-Jul-12	09-Jul-12	17-Jul-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)
716	229	24.4	330.33

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

Comments: COC#11735
GB234748PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jul 08, 2012

Technician Signiture: Ting Xu

JOB #: 2833-12-07-01-C

Success Through Science®

Your C.O.C. #: 11735

Attention: Michael Bisaga
Lakeland Industry & Community Assoc.
P.O. Box 8237
Bonnyville, AB
CANADA T9N 2J5

Report Date: 2012/07/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2A4219
Received: 2012/07/12, 09:06

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/07/13	2012/07/26	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

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

==========

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

Total cover pages: 1

Lakeland Industry & Community Assoc.

Maxxam Job #: B2A4219
Report Date: 2012/07/26

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

Maxxam ID		OC6230	OC6231		
Sampling Date		2012/07/08	2012/07/08		
COC Number		11735	11735		
	Units	**LICAPUFF/QFF/CLS/JULY08,12**	**LICAPUFF/QFF/PORT/JULY08,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2907121
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2907121
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2907121
2-Methylanthracene	ug	<0.10	<0.10	0.10	2907121
2-Methylnaphthalene	ug	<0.10	0.11	0.10	2907121
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2907121
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2907121
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2907121
Acenaphthene	ug	<0.050	<0.050	0.050	2907121
Acenaphthylene	ug	<0.050	<0.050	0.050	2907121
Anthracene	ug	<0.050	<0.050	0.050	2907121
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2907121
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2907121
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2907121
Benzo(b)Anthracene	ug	<0.10	<0.10	0.10	2907121
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2907121
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2907121
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2907121
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2907121
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2907121
Biphenyl	ug	<0.10	<0.10	0.10	2907121
Chrysene	ug	<0.050	<0.050	0.050	2907121
Coronene	ug	<0.10	<0.10	0.10	2907121
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2907121
Dibenzo(a,c) anthracene + Picene	ug	<0.10	<0.10	0.10	2907121
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2907121
Fluoranthene	ug	0.090	<0.050	0.050	2907121
Fluorene	ug	0.052	0.094	0.050	2907121
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2907121
m-Terphenyl	ug	<0.10	<0.10	0.10	2907121
Naphthalene	ug	<0.072	<0.072	0.072	2907121
o-Terphenyl	ug	<0.10	<0.10	0.10	2907121

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Lakeland Industry & Community Assoc.

Maxxam Job #: B2A4219
Report Date: 2012/07/26

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

Maxxam ID		OC6230	OC6231		
Sampling Date		2012/07/08	2012/07/08		
COC Number		11735	11735		
	Units	**LICAPUFF/QFF/CLS/JULY08,12**	**LICAPUFF/QFF/PORT/JULY08,12**	**RDL**	**QC Batch**
Perylene	ug	<0.10	<0.10	0.10	2907121
Phenanthrene	ug	0.476	0.358	0.050	2907121
p-Terphenyl	ug	<0.10	<0.10	0.10	2907121
Pyrene	ug	0.060	<0.050	0.050	2907121
Quinoline	ug	<0.40	<0.40	0.40	2907121
Tetralin	ug	<0.10	<0.10	0.10	2907121
Triphenylene	ug	<0.10	<0.10	0.10	2907121
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	66	68		2907121
D10-Fluoranthene	%	94	94		2907121
D10-Fluorene (FS)	%	4.0 (1)	4.8 (1)		2907121
D10-Phenanthrene	%	92	92		2907121
D12-Benzo(a)anthracene	%	106	106		2907121
D12-Benzo(a)pyrene	%	96	94		2907121
D12-Benzo(b)fluoranthene	%	96	94		2907121
D12-Benzo(ghi)perylene	%	96	96		2907121
D12-Benzo(k)fluoranthene	%	84	82		2907121
D12-Chrysene	%	78	80		2907121
D12-Indeno(1,2,3-cd)pyrene	%	100	100		2907121
D12-Perylene	%	88	86		2907121
D14-Dibenzo(a,h)anthracene	%	104	106		2907121
D14-Terphenyl (FS)	%	90	92		2907121
D8-Acenaphthylene	%	84	82		2907121
D8-Naphthalene	%	60	64		2907121

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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Lakeland Industry & Community Assoc.

Maxxam Job #: B2A4219
Report Date: 2012/07/26

Test Summary

Maxxam ID OC6230 **Collected** 2012/07/08
Sample ID LICAPUFF/QFF/CLS/JULY08,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/07/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2907121	2012/07/13	2012/07/26	Lidija Tomic

Maxxam ID OC6231 **Collected** 2012/07/08
Sample ID LICAPUFF/QFF/PORT/JULY08,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/07/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2907121	2012/07/13	2012/07/26	Lidija Tomic

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Lakeland Industry & Community Assoc.

Maxxam Job #: B2A4219
Report Date: 2012/07/26

GENERAL COMMENTS

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: GB2A4219

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2907121	LTO	Spiked Blank	D10-2-Methylnaphthalene	2012/07/25		68	%	50 - 150
			D10-Fluoranthene	2012/07/25		88	%	50 - 150
			D10-Phenanthrene	2012/07/25		82	%	50 - 150
			D12-Benzo(a)anthracene	2012/07/25		102	%	50 - 150
			D12-Benzo(a)pyrene	2012/07/25		96	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/07/25		94	%	50 - 150
			D12-Benzo(ghi)perylene	2012/07/25		90	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/07/25		86	%	50 - 150
			D12-Chrysene	2012/07/25		82	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/07/25		94	%	50 - 150
			D12-Perylene	2012/07/25		90	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/07/25		96	%	50 - 150
			D8-Acenaphthylene	2012/07/25		70	%	50 - 150
			D8-Naphthalene	2012/07/25		64	%	50 - 150
			Acenaphthene	2012/07/25		66	%	60 - 130
		RPD	Acenaphthene	2012/07/25	3.0		%	50
		Spiked Blank	Acenaphthylene	2012/07/25		63	%	60 - 130
		RPD	Acenaphthylene	2012/07/25	6.9		%	50
		Spiked Blank	Anthracene	2012/07/25		71	%	60 - 130
		RPD	Anthracene	2012/07/25	0.4		%	50
		Spiked Blank	Benzo(a)anthracene	2012/07/25		96	%	60 - 130
		RPD	Benzo(a)anthracene	2012/07/25	9.3		%	50
		Spiked Blank	Benzo(a)pyrene	2012/07/25		82	%	60 - 130
		RPD	Benzo(a)pyrene	2012/07/25	6.6		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/07/25		91	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/07/25	7.4		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/07/25		78	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/07/25	2.6		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/07/25		91	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/07/25	0.8		%	50
		Spiked Blank	Chrysene	2012/07/25		78	%	60 - 130
		RPD	Chrysene	2012/07/25	6.3		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/07/25		85	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/07/25	3.0		%	50
		Spiked Blank	Fluoranthene	2012/07/25		83	%	60 - 130
		RPD	Fluoranthene	2012/07/25	0.9		%	50
		Spiked Blank	Fluorene	2012/07/25		70	%	60 - 130
		RPD	Fluorene	2012/07/25	3.5		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/07/25		83	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/07/25	3.4		%	50
		Spiked Blank	Naphthalene	2012/07/25		60 (1)	%	60 - 130
		RPD	Naphthalene	2012/07/25	5.3		%	50
		Spiked Blank	Phenanthrene	2012/07/25		71	%	60 - 130
		RPD	Phenanthrene	2012/07/25	1.4		%	50
		Spiked Blank	Pyrene	2012/07/25		81	%	60 - 130
		RPD	Pyrene	2012/07/25	5.4		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/07/25		72	%	50 - 150
			D10-Fluoranthene	2012/07/25		82	%	50 - 150
			D10-Phenanthrene	2012/07/25		74	%	50 - 150
			D12-Benzo(a)anthracene	2012/07/25		84	%	50 - 150
			D12-Benzo(a)pyrene	2012/07/25		88	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/07/25		90	%	50 - 150
			D12-Benzo(ghi)perylene	2012/07/25		86	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/07/25		82	%	50 - 150
			D12-Chrysene	2012/07/25		78	%	50 - 150

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Lakeland Industry & Community Assoc.
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2A4219

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2907121	LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/07/25		86	%	50 - 150
			D12-Perylene	2012/07/25		84	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/07/25		86	%	50 - 150
			D8-Acenaphthylene	2012/07/25		68	%	50 - 150
			D8-Naphthalene	2012/07/25		72	%	50 - 150
			1-Methylnaphthalene	2012/07/25	<0.10		ug	
			1-Methylphenanthrene	2012/07/25	<0.10		ug	
			2-Chloronaphthalene	2012/07/25	<0.10		ug	
			2-Methylanthracene	2012/07/25	<0.10		ug	
			2-Methylnaphthalene	2012/07/25	<0.10		ug	
			3-Methylcholanthrene	2012/07/25	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/07/25	<0.10		ug	
			9,10-Dimethylanthracene	2012/07/25	<0.40		ug	
			Acenaphthene	2012/07/25	<0.050		ug	
			Acenaphthylene	2012/07/25	<0.050		ug	
			Anthracene	2012/07/25	<0.050		ug	
			Benzo(a)anthracene	2012/07/25	<0.050		ug	
			Benzo(a)fluorene	2012/07/25	<0.10		ug	
			Benzo(a)pyrene	2012/07/25	0.066, RDL=0.050		ug	
			Benzo(b)Anthracene	2012/07/25	<0.10		ug	
			Benzo(b)fluoranthene	2012/07/25	0.084, RDL=0.050		ug	
			Benzo(b)fluorene	2012/07/25	<0.10		ug	
			Benzo(e)pyrene	2012/07/25	<0.10		ug	
			Benzo(g,h,i)perylene	2012/07/25	<0.050		ug	
			Benzo(k)fluoranthene	2012/07/25	0.084, RDL=0.050		ug	
			Biphenyl	2012/07/25	<0.10		ug	
			Chrysene	2012/07/25	<0.050		ug	
			Coronene	2012/07/25	<0.10		ug	
			Dibenz(a,h)anthracene	2012/07/25	<0.050		ug	
			Dibenzo(a,c) anthracene + Picene	2012/07/25	<0.10		ug	
			Dibenzo(a,e)pyrene	2012/07/25	<0.20		ug	
			Fluoranthene	2012/07/25	<0.050		ug	
			Fluorene	2012/07/25	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/07/25	<0.050		ug	
			m-Terphenyl	2012/07/25	<0.10		ug	
			Naphthalene	2012/07/25	<0.072		ug	
			o-Terphenyl	2012/07/25	<0.10		ug	
			Perylene	2012/07/25	<0.10		ug	
			Phenanthrene	2012/07/25	<0.050		ug	
			p-Terphenyl	2012/07/25	<0.10		ug	
			Pyrene	2012/07/25	<0.050		ug	
			Quinoline	2012/07/25	<0.40		ug	
			Tetralin	2012/07/25	<0.10		ug	
			Triphenylene	2012/07/25	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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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/Jul 14, 2012

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Jul 12, 2012 @ 16:15 mst
Removal Date/Time: Jul 16, 2012 @ 08:26 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
14-Jul-12	07/14/2012 0:00	07/15/2012 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
10-Jul-12	16-Jul-12	23-Jul-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)
713	229	21.1	330.33

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

Comments: COC#11778
GB234752PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jul 14, 2012

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 11778

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

Report Date: 2012/08/04

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2A7700
Received: 2012/07/18, 08:45

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/07/18	2012/07/30	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

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

Maxxam ID		OE4620	OE4621		
Sampling Date		2012/07/14	2012/07/14		
COC Number		11778	11778		
	Units	**LICA PUFF+QFF/CLS/JULY 14,12**	**LICA PUFF+QFF/PORT/JULY 14,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2912395
1-Methylphenanthrene	ug	0.11	<0.10	0.10	2912395
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2912395
2-Methylanthracene	ug	<0.10	<0.10	0.10	2912395
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2912395
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2912395
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2912395
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2912395
Acenaphthene	ug	<0.050	<0.050	0.050	2912395
Acenaphthylene	ug	<0.050	<0.050	0.050	2912395
Anthracene	ug	<0.050	<0.050	0.050	2912395
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2912395
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2912395
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2912395
Benzo(b)fluoranthene	ug	0.054	<0.050	0.050	2912395
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2912395
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2912395
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2912395
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2912395
Biphenyl	ug	<0.10	<0.10	0.10	2912395
Chrysene	ug	<0.050	<0.050	0.050	2912395
Coronene	ug	<0.10	<0.10	0.10	2912395
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2912395
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2912395
Fluoranthene	ug	0.150	0.074	0.050	2912395
Fluorene	ug	0.080	<0.050	0.050	2912395
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2912395
m-Terphenyl	ug	<0.10	<0.10	0.10	2912395
Naphthalene	ug	<0.072	<0.072	0.072	2912395
o-Terphenyl	ug	<0.10	<0.10	0.10	2912395
Perylene	ug	<0.10	<0.10	0.10	2912395

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2A7700
Report Date: 2012/08/04

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

Maxxam ID		OE4620	OE4621		
Sampling Date		2012/07/14	2012/07/14		
COC Number		11778	11778		
	Units	**LICA PUFF+QFF/CLS/JULY 14,12**	**LICA PUFF+QFF/PORT/JULY 14,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.788	0.374	0.050	2912395
p-Terphenyl	ug	<0.10	<0.10	0.10	2912395
Pyrene	ug	0.102	<0.050	0.050	2912395
Quinoline	ug	<0.40	<0.40	0.40	2912395
Tetralin	ug	<0.10	<0.10	0.10	2912395
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	66	68		2912395
D10-Fluoranthene	%	100	92		2912395
D10-Fluorene (FS)	%	4.0 (1)	4.0 (1)		2912395
D10-Phenanthrene	%	90	88		2912395
D12-Benzo(a)anthracene	%	94	90		2912395
D12-Benzo(a)pyrene	%	86	84		2912395
D12-Benzo(b)fluoranthene	%	92	88		2912395
D12-Benzo(ghi)perylene	%	96	96		2912395
D12-Benzo(k)fluoranthene	%	84	86		2912395
D12-Chrysene	%	80	78		2912395
D12-Indeno(1,2,3-cd)pyrene	%	96	96		2912395
D12-Perylene	%	82	80		2912395
D14-Dibenzo(a,h)anthracene	%	100	100		2912395
D14-Terphenyl (FS)	%	82	76		2912395
D8-Acenaphthylene	%	78	78		2912395
D8-Naphthalene	%	54	58		2912395

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 #: B2A7700
Report Date: 2012/08/04

Test Summary

Maxxam ID OE4620 **Collected** 2012/07/14
Sample ID LICA PUFF+QFF/CLS/JULY 14,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/07/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2912395	2012/07/18	2012/07/30	Karen Nicol

Maxxam ID OE4621 **Collected** 2012/07/14
Sample ID LICA PUFF+QFF/PORT/JULY 14,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/07/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2912395	2012/07/18	2012/07/30	Karen Nicol

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 #: B2A7700
Report Date: 2012/08/04

GENERAL COMMENTS

Sample spike. OE4620-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field

Sample spike. OE4621-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field

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: GB2A7700

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2912395	H_P	Spiked Blank	D10-2-Methylnaphthalene	2012/07/30		74	%	50 - 150
			D10-Fluoranthene	2012/07/30		90	%	50 - 150
			D10-Phenanthrene	2012/07/30		84	%	50 - 150
			D12-Benzo(a)anthracene	2012/07/30		82	%	50 - 150
			D12-Benzo(a)pyrene	2012/07/30		84	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/07/30		90	%	50 - 150
			D12-Benzo(ghi)perylene	2012/07/30		90	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/07/30		88	%	50 - 150
			D12-Chrysene	2012/07/30		88	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/07/30		90	%	50 - 150
			D12-Perylene	2012/07/30		84	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/07/30		92	%	50 - 150
			D8-Acenaphthylene	2012/07/30		82	%	50 - 150
			D8-Naphthalene	2012/07/30		70	%	50 - 150
			Acenaphthene	2012/07/30		72	%	60 - 130
		RPD	Acenaphthene	2012/07/30	10.3		%	50
		Spiked Blank	Acenaphthylene	2012/07/30		73	%	60 - 130
		RPD	Acenaphthylene	2012/07/30	10.5		%	50
		Spiked Blank	Anthracene	2012/07/30		76	%	60 - 130
		RPD	Anthracene	2012/07/30	10.8		%	50
		Spiked Blank	Benzo(a)anthracene	2012/07/30		77	%	60 - 130
		RPD	Benzo(a)anthracene	2012/07/30	4.7		%	50
		Spiked Blank	Benzo(a)pyrene	2012/07/30		65	%	60 - 130
		RPD	Benzo(a)pyrene	2012/07/30	3.1		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/07/30		82	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/07/30	6.0		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/07/30		78	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/07/30	7.3		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/07/30		78	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/07/30	4.6		%	50
		Spiked Blank	Chrysene	2012/07/30		77	%	60 - 130
		RPD	Chrysene	2012/07/30	8.5		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/07/30		84	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/07/30	6.5		%	50
		Spiked Blank	Fluoranthene	2012/07/30		92	%	60 - 130
		RPD	Fluoranthene	2012/07/30	8.5		%	50
		Spiked Blank	Fluorene	2012/07/30		75	%	60 - 130
		RPD	Fluorene	2012/07/30	9.1		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/07/30		79	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/07/30	6.2		%	50
		Spiked Blank	Naphthalene	2012/07/30		73	%	60 - 130
		RPD	Naphthalene	2012/07/30	18.3		%	50
		Spiked Blank	Phenanthrene	2012/07/30		85	%	60 - 130
		RPD	Phenanthrene	2012/07/30	14.8		%	50
		Spiked Blank	Pyrene	2012/07/30		77	%	60 - 130
		RPD	Pyrene	2012/07/30	5.0		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/07/30		66	%	50 - 150
			D10-Fluoranthene	2012/07/30		90	%	50 - 150
			D10-Phenanthrene	2012/07/30		78	%	50 - 150
			D12-Benzo(a)anthracene	2012/07/30		82	%	50 - 150
			D12-Benzo(a)pyrene	2012/07/30		86	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/07/30		88	%	50 - 150
			D12-Benzo(ghi)perylene	2012/07/30		90	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/07/30		88	%	50 - 150
			D12-Chrysene	2012/07/30		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: GB2A7700

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2912395	H_P	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/07/30		88	%	50 - 150
			D12-Perylene	2012/07/30		84	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/07/30		90	%	50 - 150
			D8-Acenaphthylene	2012/07/30		74	%	50 - 150
			D8-Naphthalene	2012/07/30		58	%	50 - 150
			1-Methylnaphthalene	2012/07/30	<0.10		ug	
			1-Methylphenanthrene	2012/07/30	<0.10		ug	
			2-Chloronaphthalene	2012/07/30	<0.10		ug	
			2-Methylanthracene	2012/07/30	<0.10		ug	
			2-Methylnaphthalene	2012/07/30	<0.10		ug	
			3-Methylcholanthrene	2012/07/30	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/07/30	<0.10		ug	
			9,10-Dimethylanthracene	2012/07/30	<0.40		ug	
			Acenaphthene	2012/07/30	<0.050		ug	
			Acenaphthylene	2012/07/30	<0.050		ug	
			Anthracene	2012/07/30	<0.050		ug	
			Benzo(a)anthracene	2012/07/30	<0.050		ug	
			Benzo(a)fluorene	2012/07/30	<0.10		ug	
			Benzo(a)pyrene	2012/07/30	<0.050		ug	
			Benzo(b)fluoranthene	2012/07/30	<0.050		ug	
			Benzo(b)fluorene	2012/07/30	<0.10		ug	
			Benzo(e)pyrene	2012/07/30	<0.10		ug	
			Benzo(g,h,i)perylene	2012/07/30	<0.050		ug	
			Benzo(k)fluoranthene	2012/07/30	<0.050		ug	
			Biphenyl	2012/07/30	<0.10		ug	
			Chrysene	2012/07/30	<0.050		ug	
			Coronene	2012/07/30	<0.10		ug	
			Dibenz(a,h)anthracene	2012/07/30	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/07/30	<0.20		ug	
			Fluoranthene	2012/07/30	<0.050		ug	
			Fluorene	2012/07/30	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/07/30	<0.050		ug	
			m-Terphenyl	2012/07/30	<0.10		ug	
			Naphthalene	2012/07/30	<0.072		ug	
			o-Terphenyl	2012/07/30	<0.10		ug	
			Perylene	2012/07/30	<0.10		ug	
			Phenanthrene	2012/07/30	<0.050		ug	
			p-Terphenyl	2012/07/30	<0.10		ug	
			Pyrene	2012/07/30	<0.050		ug	
			Quinoline	2012/07/30	<0.40		ug	
			Tetralin	2012/07/30	<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/Jul 20, 2012

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Jul 19, 2012 @ 08:10 mst
Removal Date/Time: Jul 24, 2012 @ 07:35 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
20-Jul-12	07/20/2012 0:00	07/21/2012 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
17-Jul-12	24-Jul-12	30-Jul-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	12.3	330.33

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

Comments: COC#12336
GB234753PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jul 20, 2012

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 12336

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

Report Date: 2012/08/13

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2B2677
Received: 2012/07/26, 08:45

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/07/27	2012/08/11	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

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

==========

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

Total cover pages: 1

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

Maxxam ID		OG9661	OG9662		
Sampling Date		2012/07/20	2012/07/20		
COC Number		12336	12336		
	Units	**LICA PUFF+QFF/CLS/JULY 20,12**	**LICA PUFF+QFF/PORT/JULY 20,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2921658
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2921658
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2921658
2-Methylanthracene	ug	<0.10	<0.10	0.10	2921658
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2921658
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2921658
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2921658
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2921658
Acenaphthene	ug	<0.050	<0.050	0.050	2921658
Acenaphthylene	ug	<0.050	<0.050	0.050	2921658
Anthracene	ug	<0.050	<0.050	0.050	2921658
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2921658
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2921658
Benzo(a)pyrene	ug	<0.050	0.050	0.050	2921658
Benzo(b)fluoranthene	ug	0.052	0.050	0.050	2921658
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2921658
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2921658
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2921658
Benzo(k)fluoranthene	ug	0.052	0.050	0.050	2921658
Biphenyl	ug	<0.10	<0.10	0.10	2921658
Chrysene	ug	<0.050	<0.050	0.050	2921658
Coronene	ug	<0.10	<0.10	0.10	2921658
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2921658
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2921658
Fluoranthene	ug	0.060	<0.050	0.050	2921658
Fluorene	ug	0.060	<0.050	0.050	2921658
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2921658
m-Terphenyl	ug	<0.10	<0.10	0.10	2921658
Naphthalene	ug	<0.072	<0.072	0.072	2921658
o-Terphenyl	ug	<0.10	<0.10	0.10	2921658
Perylene	ug	<0.10	<0.10	0.10	2921658

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2B2677
Report Date: 2012/08/13

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

Maxxam ID		OG9661	OG9662		
Sampling Date		2012/07/20	2012/07/20		
COC Number		12336	12336		
	Units	**LICA PUFF+QFF/CLS/JULY 20,12**	**LICA PUFF+QFF/PORT/JULY 20,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.458	0.246	0.050	2921658
p-Terphenyl	ug	<0.10	<0.10	0.10	2921658
Pyrene	ug	<0.050	<0.050	0.050	2921658
Quinoline	ug	<0.40	<0.40	0.40	2921658
Tetralin	ug	<0.10	<0.10	0.10	2921658
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	66	70		2921658
D10-Fluoranthene	%	102	92		2921658
D10-Fluorene (FS)	%	4.0 (1)	3.6 (1)		2921658
D10-Phenanthrene	%	96	86		2921658
D12-Benzo(a)anthracene	%	114	108		2921658
D12-Benzo(a)pyrene	%	90	84		2921658
D12-Benzo(b)fluoranthene	%	96	90		2921658
D12-Benzo(ghi)perylene	%	82	76		2921658
D12-Benzo(k)fluoranthene	%	92	90		2921658
D12-Chrysene	%	94	92		2921658
D12-Indeno(1,2,3-cd)pyrene	%	82	74		2921658
D12-Perylene	%	82	82		2921658
D14-Dibenzo(a,h)anthracene	%	80	76		2921658
D14-Terphenyl (FS)	%	92	86		2921658
D8-Acenaphthylene	%	72	72		2921658
D8-Naphthalene	%	64	66		2921658

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 #: B2B2677
Report Date: 2012/08/13

Test Summary

Maxxam ID OG9661 **Collected** 2012/07/20
Sample ID LICA PUFF+QFF/CLS/JULY 20,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2921658	2012/07/27	2012/08/11	Karen Nicol

Maxxam ID OG9662 **Collected** 2012/07/20
Sample ID LICA PUFF+QFF/PORT/JULY 20,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2921658	2012/07/27	2012/08/11	Karen Nicol

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Maxxam Analytics

Maxxam Job #: B2B2677
Report Date: 2012/08/13

GENERAL COMMENTS

Low recoveries for acenaphthylene,acenapthene & fluorene for the spike but recoveries OK for Spike dup.

Sample OG9661-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample OG9662-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB2B2677

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2921658	KDN	Spiked Blank	D10-2-Methylnaphthalene	2012/08/10		64	%	50 - 150
			D10-Fluoranthene	2012/08/10		80	%	50 - 150
			D10-Phenanthrene	2012/08/10		70	%	50 - 150
			D12-Benzo(a)anthracene	2012/08/10		86	%	50 - 150
			D12-Benzo(a)pyrene	2012/08/10		84	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/08/10		90	%	50 - 150
			D12-Benzo(ghi)perylene	2012/08/10		76	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/08/10		92	%	50 - 150
			D12-Chrysene	2012/08/10		90	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/08/10		74	%	50 - 150
			D12-Perylene	2012/08/10		84	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/08/10		74	%	50 - 150
			D8-Acenaphthylene	2012/08/10		64	%	50 - 150
			D8-Naphthalene	2012/08/10		64	%	50 - 150
			Acenaphthene	2012/08/10		59 (1)	%	60 - 130
		RPD	Acenaphthene	2012/08/10	25.4		%	50
		Spiked Blank	Acenaphthylene	2012/08/10		58 (1)	%	60 - 130
		RPD	Acenaphthylene	2012/08/10	27.7		%	50
		Spiked Blank	Anthracene	2012/08/10		67	%	60 - 130
		RPD	Anthracene	2012/08/10	13.9		%	50
		Spiked Blank	Benzo(a)anthracene	2012/08/10		79	%	60 - 130
		RPD	Benzo(a)anthracene	2012/08/10	9.0		%	50
		Spiked Blank	Benzo(a)pyrene	2012/08/10		72	%	60 - 130
		RPD	Benzo(a)pyrene	2012/08/10	12.6		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/08/10		89	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/08/10	9.1		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/08/10		70	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/08/10	12.4		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/08/10		97	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/08/10	10.1		%	50
		Spiked Blank	Chrysene	2012/08/10		80	%	60 - 130
		RPD	Chrysene	2012/08/10	15.3		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/08/10		76	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/08/10	11.5		%	50
		Spiked Blank	Fluoranthene	2012/08/10		75	%	60 - 130
		RPD	Fluoranthene	2012/08/10	4.6		%	50
		Spiked Blank	Fluorene	2012/08/10		60 (1)	%	60 - 130
		RPD	Fluorene	2012/08/10	23.0		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/08/10		73	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/08/10	11.9		%	50
		Spiked Blank	Naphthalene	2012/08/10		61	%	60 - 130
		RPD	Naphthalene	2012/08/10	31.3		%	50
		Spiked Blank	Phenanthrene	2012/08/10		62	%	60 - 130
		RPD	Phenanthrene	2012/08/10	15.6		%	50
		Spiked Blank	Pyrene	2012/08/10		67	%	60 - 130
		RPD	Pyrene	2012/08/10	3.3		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/08/10		74	%	50 - 150
			D10-Fluoranthene	2012/08/10		76	%	50 - 150
			D10-Phenanthrene	2012/08/10		70	%	50 - 150
			D12-Benzo(a)anthracene	2012/08/10		84	%	50 - 150
			D12-Benzo(a)pyrene	2012/08/10		84	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/08/10		92	%	50 - 150
			D12-Benzo(ghi)perylene	2012/08/10		74	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/08/10		88	%	50 - 150
			D12-Chrysene	2012/08/10		88	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2B2677

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2921658	KDN	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/08/10		74	%	50 - 150
			D12-Perylene	2012/08/10		82	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/08/10		74	%	50 - 150
			D8-Acenaphthylene	2012/08/10		72	%	50 - 150
			D8-Naphthalene	2012/08/10		74	%	50 - 150
			1-Methylnaphthalene	2012/08/10	<0.10		ug	
			1-Methylphenanthrene	2012/08/10	<0.10		ug	
			2-Chloronaphthalene	2012/08/10	<0.10		ug	
			2-Methylanthracene	2012/08/10	<0.10		ug	
			2-Methylnaphthalene	2012/08/10	<0.10		ug	
			3-Methylcholanthrene	2012/08/10	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/08/10	<0.10		ug	
			9,10-Dimethylanthracene	2012/08/10	<0.40		ug	
			Acenaphthene	2012/08/10	<0.050		ug	
			Acenaphthylene	2012/08/10	<0.050		ug	
			Anthracene	2012/08/10	<0.050		ug	
			Benzo(a)anthracene	2012/08/10	<0.050		ug	
			Benzo(a)fluorene	2012/08/10	<0.10		ug	
			Benzo(a)pyrene	2012/08/10	<0.050		ug	
			Benzo(b)fluoranthene	2012/08/10	0.060, RDL=0.050		ug	
			Benzo(b)fluorene	2012/08/10	<0.10		ug	
			Benzo(e)pyrene	2012/08/10	<0.10		ug	
			Benzo(g,h,i)perylene	2012/08/10	<0.050		ug	
			Benzo(k)fluoranthene	2012/08/10	0.068, RDL=0.050		ug	
			Biphenyl	2012/08/10	<0.10		ug	
			Chrysene	2012/08/10	<0.050		ug	
			Coronene	2012/08/10	<0.10		ug	
			Dibenz(a,h)anthracene	2012/08/10	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/08/10	<0.20		ug	
			Fluoranthene	2012/08/10	<0.050		ug	
			Fluorene	2012/08/10	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/08/10	<0.050		ug	
			m-Terphenyl	2012/08/10	<0.10		ug	
			Naphthalene	2012/08/10	<0.072		ug	
			o-Terphenyl	2012/08/10	<0.10		ug	
			Perylene	2012/08/10	<0.10		ug	
			Phenanthrene	2012/08/10	<0.050		ug	
			p-Terphenyl	2012/08/10	<0.10		ug	
			Pyrene	2012/08/10	<0.050		ug	
			Quinoline	2012/08/10	<0.40		ug	
			Tetralin	2012/08/10	<0.10		ug	

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

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Cold Lake South
Station ID: Lica1
Field Sample ID: LICA PUF/CLS/Jul 26, 2012

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Jul 24, 2012 @ 07:50 mst
Removal Date/Time: Jul 27, 2012 @ 11:45 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
26-Jul-12	07/26/2012 0:00	07/27/2012 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
20-Jul-12	30-Jul-12	02-Aug-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)
712	229	21.2	330.33

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

Comments: COC#11876
GB2A5927 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jul 26, 2012

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 11876

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

Report Date: 2012/08/14

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2B6211
Received: 2012/08/01, 08:59

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/08/02	2012/08/09	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

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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

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

Maxxam ID		OI7367	OI7368		
Sampling Date		2012/07/26	2012/07/26		
COC Number		11876	11876		
	Units	**LICA PUFF+QFF/CLS/JULY 26,12**	**LICA PUFF+QFF/PORT/JULY 26,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2927381
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2927381
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2927381
2-Methylanthracene	ug	<0.10	<0.10	0.10	2927381
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2927381
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2927381
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2927381
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2927381
Acenaphthene	ug	<0.050	<0.050	0.050	2927381
Acenaphthylene	ug	<0.050	<0.050	0.050	2927381
Anthracene	ug	<0.050	0.050	0.050	2927381
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2927381
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2927381
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2927381
Benzo(b)Anthracene	ug	<0.10	<0.10	0.10	2927381
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2927381
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2927381
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2927381
Benzo(g,h,i)perylene	ug	<0.050	0.062	0.050	2927381
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2927381
Biphenyl	ug	<0.10	<0.10	0.10	2927381
Chrysene	ug	<0.050	<0.050	0.050	2927381
Coronene	ug	<0.10	<0.10	0.10	2927381
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2927381
Dibenzo(a,c) anthracene + Picene	ug	<0.10	<0.10	0.10	2927381
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2927381
Fluoranthene	ug	0.108	0.172	0.050	2927381
Fluorene	ug	0.132	0.068	0.050	2927381
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2927381
m-Terphenyl	ug	<0.10	<0.10	0.10	2927381
Naphthalene	ug	0.072	<0.072	0.072	2927381

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

Maxxam ID		OI7367	OI7368		
Sampling Date		2012/07/26	2012/07/26		
COC Number		11876	11876		
	Units	**LICA PUFF+QFF/CLS/JULY 26,12**	**LICA PUFF+QFF/PORT/JULY 26,12**	**RDL**	**QC Batch**
o-Terphenyl	ug	<0.10	<0.10	0.10	2927381
Perylene	ug	<0.10	<0.10	0.10	2927381
Phenanthrene	ug	0.750	0.556	0.050	2927381
p-Terphenyl	ug	<0.10	<0.10	0.10	2927381
Pyrene	ug	0.074	0.212	0.050	2927381
Quinoline	ug	<0.40	<0.40	0.40	2927381
Tetralin	ug	<0.10	<0.10	0.10	2927381
Triphenylene	ug	<0.10	<0.10	0.10	2927381
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	60	60		2927381
D10-Fluoranthene	%	98	96		2927381
D10-Fluorene (FS)	%	4.2 (1)	4.4 (1)		2927381
D10-Phenanthrene	%	90	88		2927381
D12-Benzo(a)anthracene	%	98	96		2927381
D12-Benzo(a)pyrene	%	104	98		2927381
D12-Benzo(b)fluoranthene	%	90	92		2927381
D12-Benzo(ghi)perylene	%	98	96		2927381
D12-Benzo(k)fluoranthene	%	82	80		2927381
D12-Chrysene	%	68	70		2927381
D12-Indeno(1,2,3-cd)pyrene	%	102	98		2927381
D12-Perylene	%	92	86		2927381
D14-Dibenzo(a,h)anthracene	%	102	98		2927381
D14-Terphenyl (FS)	%	87	87		2927381
D8-Acenaphthylene	%	78	76		2927381
D8-Naphthalene	%	56	58		2927381

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 #: B2B6211
Report Date: 2012/08/14

Test Summary

Maxxam ID OI7367 **Collected** 2012/07/26
Sample ID LICA PUFF+QFF/CLS/JULY 26,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/08/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2927381	2012/08/02	2012/08/09	Lidija Tomic

Maxxam ID OI7368 **Collected** 2012/07/26
Sample ID LICA PUFF+QFF/PORT/JULY 26,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/08/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2927381	2012/08/02	2012/08/09	Lidija Tomic

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Maxxam Analytics

Maxxam Job #: B2B6211
Report Date: 2012/08/14

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: GB2B6211

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2927381	LTO	Spiked Blank	D10-2-Methylnaphthalene	2012/08/09		60	%	50 - 150
			D10-Fluoranthene	2012/08/09		84	%	50 - 150
			D10-Phenanthrene	2012/08/09		74	%	50 - 150
			D12-Benzo(a)anthracene	2012/08/09		80	%	50 - 150
			D12-Benzo(a)pyrene	2012/08/09		88	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/08/09		90	%	50 - 150
			D12-Benzo(ghi)perylene	2012/08/09		86	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/08/09		84	%	50 - 150
			D12-Chrysene	2012/08/09		74	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/08/09		86	%	50 - 150
			D12-Perylene	2012/08/09		84	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/08/09		86	%	50 - 150
			D8-Acenaphthylene	2012/08/09		60	%	50 - 150
			D8-Naphthalene	2012/08/09		60	%	50 - 150
			Acenaphthene	2012/08/09		58 (1)	%	60 - 130
		RPD	Acenaphthene	2012/08/09	7.8		%	50
		Spiked Blank	Acenaphthylene	2012/08/09		54 (2)	%	60 - 130
		RPD	Acenaphthylene	2012/08/09	18.1		%	50
		Spiked Blank	Anthracene	2012/08/09		70	%	60 - 130
		RPD	Anthracene	2012/08/09	5.5		%	50
		Spiked Blank	Benzo(a)anthracene	2012/08/09		72	%	60 - 130
		RPD	Benzo(a)anthracene	2012/08/09	5.1		%	50
		Spiked Blank	Benzo(a)pyrene	2012/08/09		67	%	60 - 130
		RPD	Benzo(a)pyrene	2012/08/09	7.2		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/08/09		80	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/08/09	5.5		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/08/09		70	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/08/09	6.6		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/08/09		81	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/08/09	1.5		%	50
		Spiked Blank	Chrysene	2012/08/09		70	%	60 - 130
		RPD	Chrysene	2012/08/09	1.1		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/08/09		77	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/08/09	4.8		%	50
		Spiked Blank	Fluoranthene	2012/08/09		80	%	60 - 130
		RPD	Fluoranthene	2012/08/09	4.0		%	50
		Spiked Blank	Fluorene	2012/08/09		62	%	60 - 130
		RPD	Fluorene	2012/08/09	5.9		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/08/09		74	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/08/09	5.0		%	50
		Spiked Blank	Naphthalene	2012/08/09		58 (2)	%	60 - 130
		RPD	Naphthalene	2012/08/09	3.1		%	50
		Spiked Blank	Phenanthrene	2012/08/09		68	%	60 - 130
		RPD	Phenanthrene	2012/08/09	2.9		%	50
		Spiked Blank	Pyrene	2012/08/09		72	%	60 - 130
		RPD	Pyrene	2012/08/09	3.1		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/08/09		68	%	50 - 150
			D10-Fluoranthene	2012/08/09		86	%	50 - 150
			D10-Phenanthrene	2012/08/09		76	%	50 - 150
			D12-Benzo(a)anthracene	2012/08/09		82	%	50 - 150
			D12-Benzo(a)pyrene	2012/08/09		92	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/08/09		94	%	50 - 150
			D12-Benzo(ghi)perylene	2012/08/09		94	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/08/09		82	%	50 - 150
			D12-Chrysene	2012/08/09		72	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB2B6211

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2927381	LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/08/09		92	%	50 - 150
			D12-Perylene	2012/08/09		86	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/08/09		94	%	50 - 150
			D8-Acenaphthylene	2012/08/09		72	%	50 - 150
			D8-Naphthalene	2012/08/09		66	%	50 - 150
			1-Methylnaphthalene	2012/08/09	<0.10		ug	
			1-Methylphenanthrene	2012/08/09	<0.10		ug	
			2-Chloronaphthalene	2012/08/09	<0.10		ug	
			2-Methylanthracene	2012/08/09	<0.10		ug	
			2-Methylnaphthalene	2012/08/09	<0.10		ug	
			3-Methylcholanthrene	2012/08/09	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/08/09	<0.10		ug	
			9,10-Dimethylanthracene	2012/08/09	<0.40		ug	
			Acenaphthene	2012/08/09	<0.050		ug	
			Acenaphthylene	2012/08/09	<0.050 (3)		ug	
			Anthracene	2012/08/09	<0.050		ug	
			Benzo(a)anthracene	2012/08/09	<0.050		ug	
			Benzo(a)fluorene	2012/08/09	<0.10		ug	
			Benzo(a)pyrene	2012/08/09	<0.050		ug	
			Benzo(b)Anthracene	2012/08/09	<0.10		ug	
			Benzo(b)fluoranthene	2012/08/09	<0.050		ug	
			Benzo(b)fluorene	2012/08/09	<0.10		ug	
			Benzo(e)pyrene	2012/08/09	<0.10		ug	
			Benzo(g,h,i)perylene	2012/08/09	<0.050		ug	
			Benzo(k)fluoranthene	2012/08/09	<0.050		ug	
			Biphenyl	2012/08/09	<0.10		ug	
			Chrysene	2012/08/09	<0.050		ug	
			Coronene	2012/08/09	<0.10		ug	
			Dibenz(a,h)anthracene	2012/08/09	<0.050		ug	
			Dibenzo(a,c) anthracene + Picene	2012/08/09	<0.10		ug	
			Dibenzo(a,e)pyrene	2012/08/09	<0.20		ug	
			Fluoranthene	2012/08/09	<0.050		ug	
			Fluorene	2012/08/09	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/08/09	<0.050		ug	
			m-Terphenyl	2012/08/09	<0.10		ug	
			Naphthalene	2012/08/09	<0.072		ug	
			o-Terphenyl	2012/08/09	<0.10		ug	
			Perylene	2012/08/09	<0.10		ug	
			Phenanthrene	2012/08/09	<0.050		ug	
			p-Terphenyl	2012/08/09	<0.10		ug	
			Pyrene	2012/08/09	<0.050		ug	
			Quinoline	2012/08/09	<0.40		ug	
			Tetralin	2012/08/09	<0.10		ug	
			Triphenylene	2012/08/09	<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.
(1) Low recovery in Spike
(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.
(3) Low recovery for Spike

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