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Alberta Environment
Monitoring and Science
Data Management
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Edmonton Alberta T5K 2J6

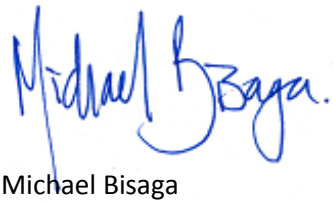
May 13, 2014

RE: March 2014 Ambient Air Monitoring Monthly Reports

Attached are the monthly ambient air monitoring reports for the LICA Airshed Zone's Cold Lake South, Maskwa, St. Lina, and Elk Point continuous stations. In addition, there are also summaries for the passive monitoring network and speciated VOC and PAH sampling programs.

Should you have any questions, please don't hesitate to contact me directly at (780) 266-7068.

Respectfully,



Michael Bisaga

Airshed Program Manager
Lakeland Industry and Community Association

cc (email): LICA Office

Lakeland Industry & Community Association

Cold Lake Monitoring Site
Ambient Air Monitoring
Data Report
For
March 2014

Prepared By:

April 30, 2014

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

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Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: Cold Lake
Data Period: March 2014

The monthly ambient data report:

- Prepared by Lili Zhou
- Reviewed by Lily Lin

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

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 – March 2014

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	0.20	3	8	VAR	VAR	VAR	1.4	8	100.0
TRS (PPB)	-	-	-	-	0.00	0	ALL	VAR	VAR	VAR	0.0	VAR	100.0
NO_2 (PPB)	159	-	0	-	8.13	37.7	7	8	1.4	53(NE)	13.8	7	40.7
NO (PPB)	-	-	-	-	1.79	68	7	8	1.4	53(NE)	7.9	7	40.7
NOx (PPB)	-	-	-	-	9.92	105.7	7	8	1.4	53(NE)	21.7	7	40.7
O_3 (PPB)	82	-	0	-	33.1	55	28	16	11.8	257(WSW)	45.9	12	100.0
THC (PPM)	-	-	-	-	2.2	3.6	9	2	2.1	63(ENE)	2.8	8	100.0
PM 2.5 (UG/M^3)	-	30	-	0	5.95	28	7	8	1.4	53(NE)	15.5	8	93.3
TEMPERATURE (DEG C)	-	-	-	-	-8.55	10.0	16	15	12	265(W)	4.2	12	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	60.2	92	16	6	2.1	215(SSW)	77.5	15	100.0
VECTOR WS (KPH)	-	-	-	-	5.66	18.4	13	11	-	313(NW)	12.0	20	100.0
VECTOR WD (DEGREES)	-	-	-	-	281(W)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS NA: NOT AVAILABLE

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

Passive Ambient Monitoring Network – March 2014

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO_2	#14	1.0	0.5
H_2S	#26	0.14	0.08
NO_2	#6	6.0	1.5
O_3	#4	45.55	35.6

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 – COLD LAKE SOUTH

Sulphur Dioxide (PPB)
- Analyzer make / model – Thermo 43i, S/N: 806528242

The monthly calibration was performed on March 13th. The inlet filter was changed before the monthly calibration. The analyzer spanned low on March 18th. An as found points check was performed on March 20th to verify the analyzer's functionality, and the result was within the acceptable range. No data was invalidated due to this event. The analyzer kept showing downward drift after the check on March 20th. Following the as found points check on March 24th, the permeation tube was replaced. A post-repair calibration was performed after. The perm tube was allowed time to set in. The expected span value was adjusted on March 28th. 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: 501

No operational issues were observed during the month. Following the as found points check on March 13th, the scrubber material was replaced. Another as found points check was performed after to verify the analyzer's functionality, and the result was within the acceptable range. A post-repair calibration was performed on March 14th. As the daily calibration result for March 14th was with in the acceptable range, data between March 13th after the scrubber material replacement and March 14th before the post repair calibration was started was considered valid and were kept. Data was corrected using daily zero information.

Total Hydrocarbon (PPM)
- Analyzer make / model - Thermo 51C-LT, S/N: 51CTL-77021-384

No operational issues were observed during the month. The monthly calibration was performed on March 14th. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – COLD LAKE SOUTH

Ozone (PPB)

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

The monthly calibration was performed on March 13th. The inlet filter was changed before the monthly calibration was started. The analyzer spanned high on March 21st due to the pump for the zero/span system failure. The pump was rebuilt on March 24th following an as found points check was performed. A post-repair calibration was performed after the maintenance. This issue did not affect data quality. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

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

The monthly calibration was performed on March 13th. The inlet filter was changed before the monthly calibration was started. During the site visit on April 16th, it is found that there was a mis-connected sample line between the sample manifold and the analyzer's sample inlet after the monthly calibration was performed. As a result of this error, the analyzer would had been drawing sample air from the interior of the trailer rather than the exterior. Therefore, data between March 13th hour 15 to March 31st hour 23 were considered invalid and were discarded. A total of 441 hours of data was invalidated. Data was corrected using daily zero information. The AESRD Reference number 283348.

Particulate Matter 2.5 (UG/M3)

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

Two Teom audits were performed this month: one was performed on March 13th and the other was on March 27th. The vacuum fitting and the compression fitting on bypass line on Teom unit were replaced on March 13th. A leak check and routine Teom audit was performed after part replacements. The Teom filter was replaced on March 27th. 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. Forty-eight hours of data were invalidated as the data were below –3 ug/m3.

Relative Humidity (PERCENT)

- System make / model - Rotronic Hygroclip-S3

No operational issues were observed during the month.

General Monthly Summary

AQM STATION – LICA - COLD LAKE SOUTH

Ambient Temperature (DEGC)

· System make / model - Rotronic Hygroclip-S3

No operational issues were observed during the month.

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

· System make / model –MetOne, S/N: F1644

The wind system is reported as vector wind speed and vector wind direction. The last wind system calibration was performed on November 18th, 2012.

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 glass manifold was cleaned on March 13th.

Passive Network

The samplers installed at site #2 had been removed, so no sample filters were installed.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

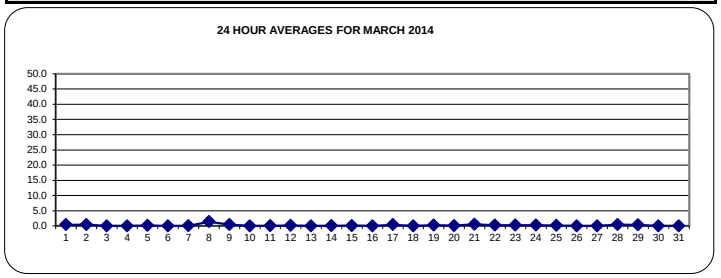
SULPHUR DIOXIDE (SO2) hourly averages in ppb

MST

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

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

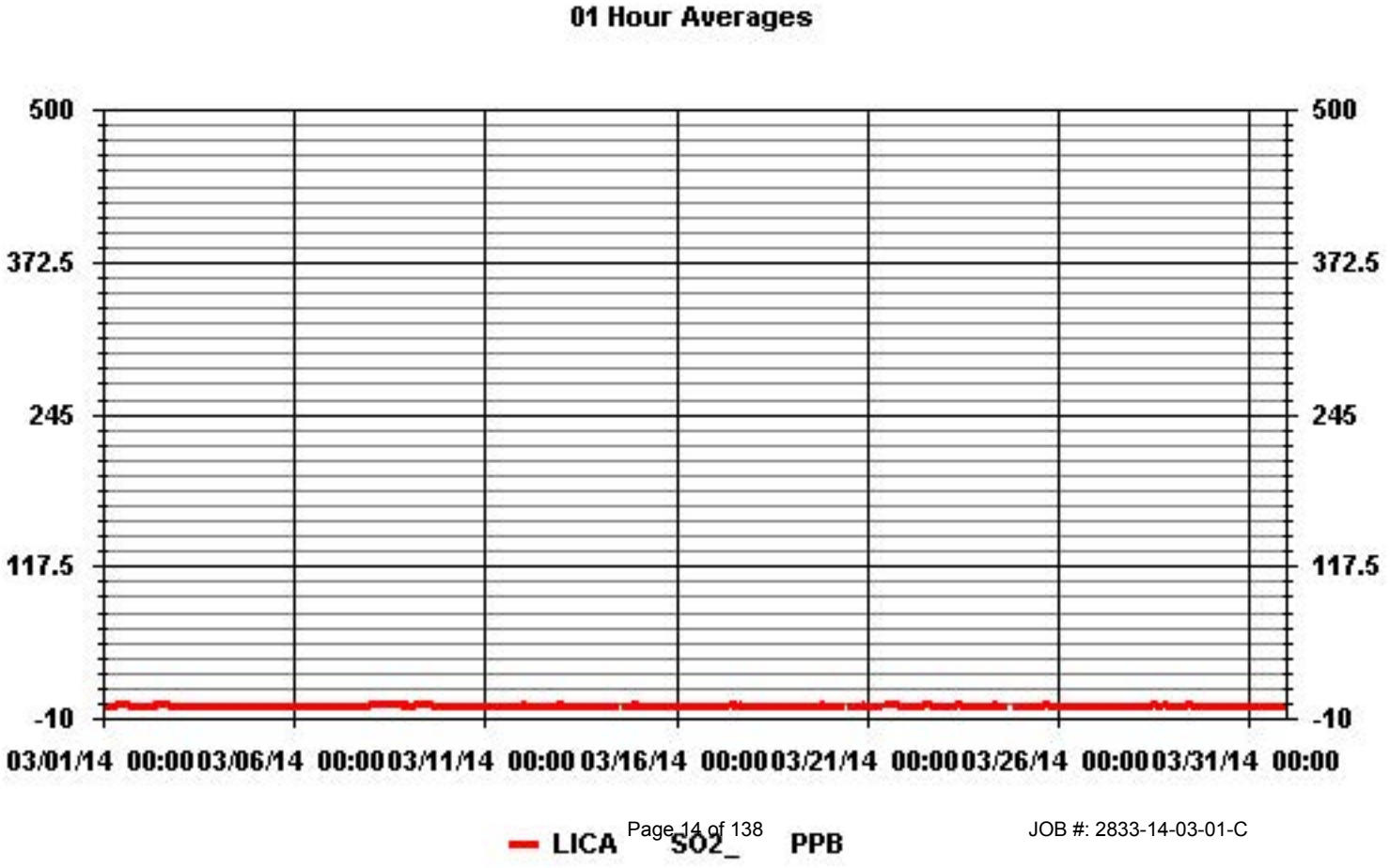


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB | 24-HR 48 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	121					
MAXIMUM 1-HR AVERAGE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	1.4	PPB			ON DAY(S)	8
				VAR-VARIOUS		
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	14	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.48		MONTHLY AVERAGE:		0.20	PPB

JOB #: 2833-14-03-01-C



JOB #: 2833-14-03-01-C

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

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

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 276

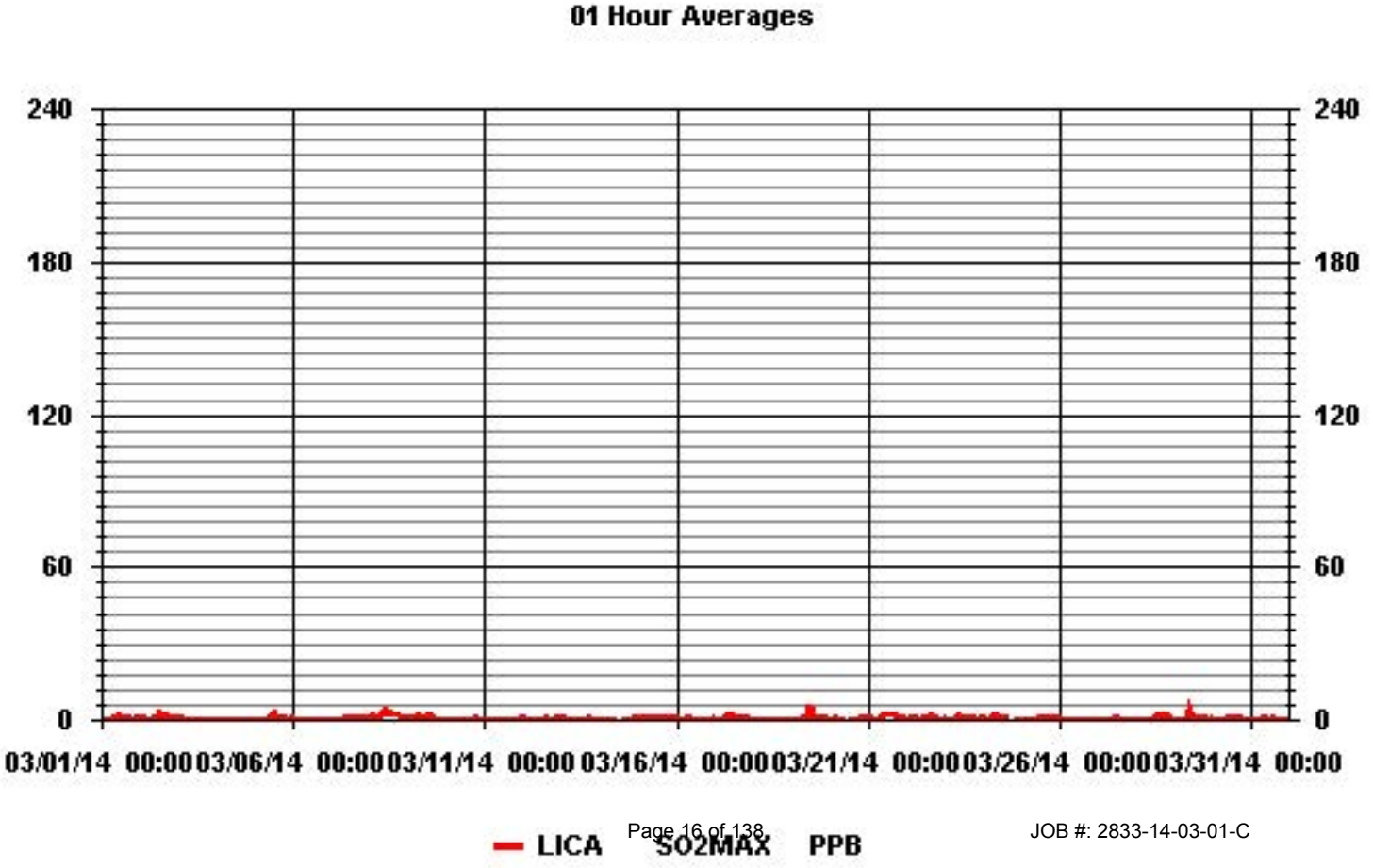
MAXIMUM INSTANTANEOUS VALUE: 5 PPB @ HOUR(S) VAR ON DAY(S) 19, 29

VAR-VARIOUS

IZS CALIBRATION TIME: 37 HRS OPERATIONAL TIME: 743 HRS

MONTHLY CALIBRATION TIME: 16 HRS

STANDARD DEVIATION: 0.76



JOB #: 2833-14-03-01-C

LICA
SO2_ / WDR Joint Frequency Distribution (Percent)

March 2014

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	3.74	5.04	8.21	2.59	3.45	4.17	9.51	3.31	3.02	3.74	9.65	19.02	11.38	4.32	4.17	4.61	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	3.74	5.04	8.21	2.59	3.45	4.17	9.51	3.31	3.02	3.74	9.65	19.02	11.38	4.32	4.17	4.61	

Calm : .00 %

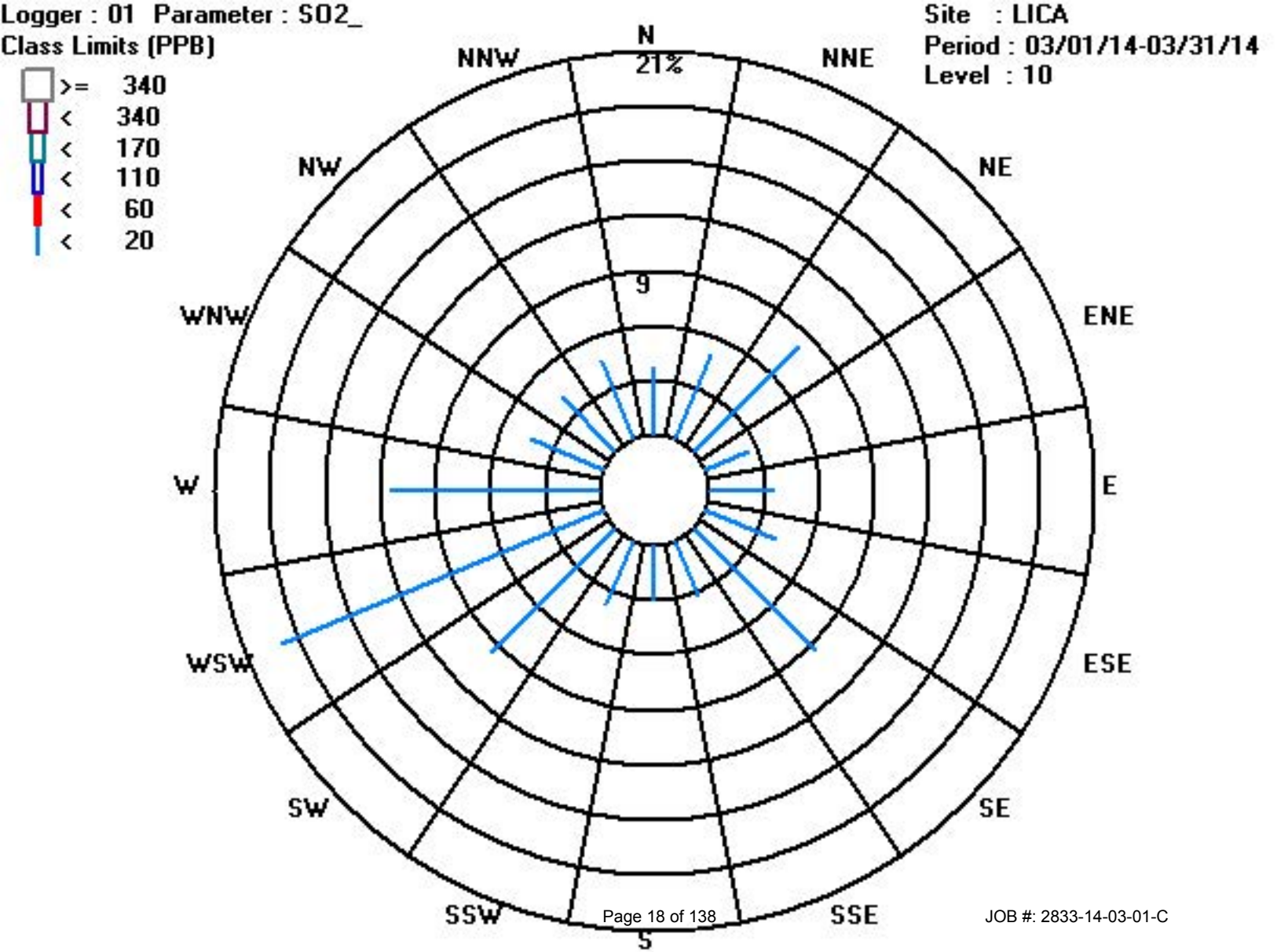
Total # Operational Hours : 694

Distribution By Samples

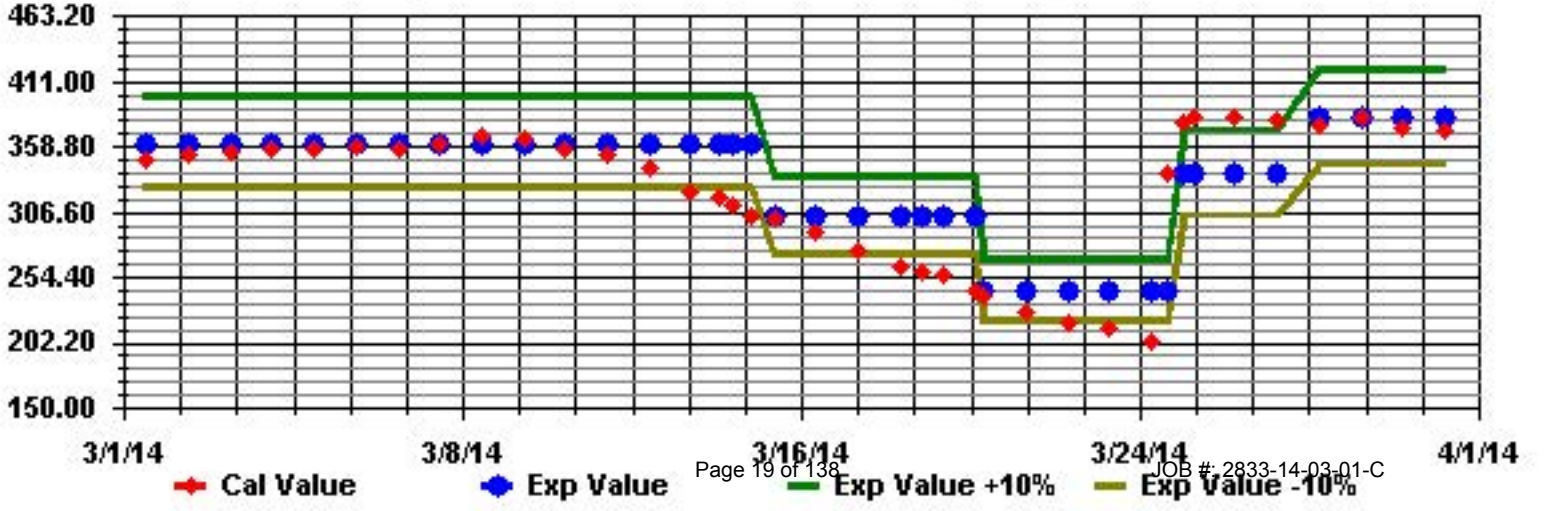
		Direction																
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	26	35	57	18	24	29	66	23	21	26	67	132	79	30	29	32	694
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	26	35	57	18	24	29	66	23	21	26	67	132	79	30	29	32	

Calm : .00 %

Total # Operational Hours : 694



JOB #: 2833-14-03-01-C


Calibration Graph for Site: LICA Parameter: SO2_ Sequence: SO2 Phase: SPAN
463.20
411.00
358.80
306.60
254.40
202.20
150.00
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Reduced Sulphur

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

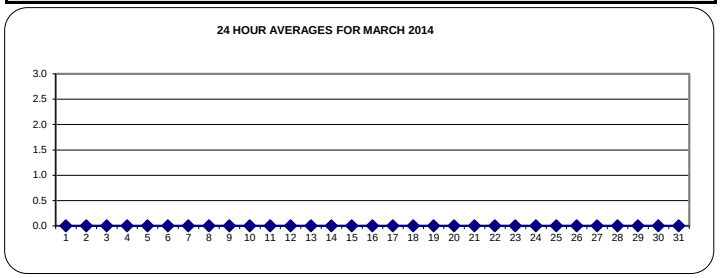
TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

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	S	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	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
3	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
4	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
5	0	0	0	0	0	0	0	0	S	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	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
7	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
8	0	0	0	0	0	S	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	S	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	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
11	0	0	S	0	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	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
13	S	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	0	S	0	0.0	24
14	0	0	0	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	S	0	0	0.0	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0	24
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	0	0	0	0	0	0	0	0	0	0	0	0.0	24
24	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
26	0	0	0	0	0	0	0	0	0	0	S	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	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
28	0	0	0	0	0	0	0	0	S	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	S	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	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
31	0	0	0	0	0	S	0	S	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

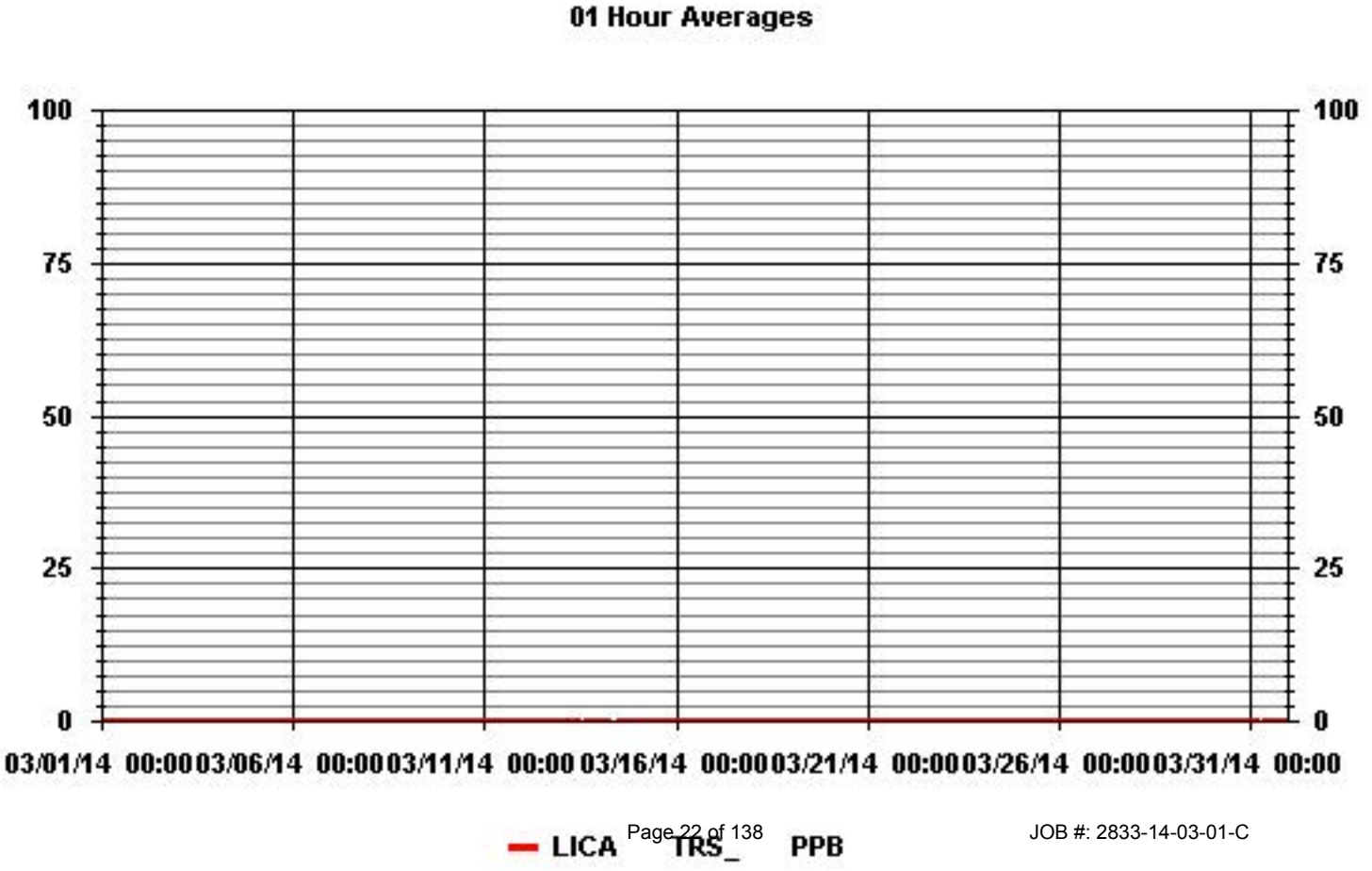


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:**

1-HR	NA	PPB	24-HR	NA	PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF 24-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	0					
MAXIMUM 1-HR AVERAGE:	0	PPB	@ HOUR(S)	ALL	ON DAY(S)	ALL
MAXIMUM 24-HR AVERAGE:	0.0	PPB			ON DAY(S)	ALL
					VAR-VARIOUS	
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	12	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.00		MONTHLY AVERAGE:		0.00	PPB



JOB #: 2833-14-03-01-C

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

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	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
2	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
3	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	0	*1*	*1*	*1*	*1*	1.0	24
4	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
5	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
6	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	0	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	1.0	24
7	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
8	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
9	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
10	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
11	*1*	*1*	S	*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
12	*1*	S	*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
13	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	C	C	C	C	C	C	C	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	***1.0***	24
14	*1*	*1*	*1*	*1*	*1*	*1*	*1*	C	C	C	C	C	C	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	***1.0***	24
15	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	***1.0***	24
16	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	***1.0***	24
17	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	***1.0***	24
18	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
19	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
20	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
21	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
22	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
23	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
24	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
25	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
26	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	0	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	1.0	24
27	*1*	*1*	0	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	1.0	24
28	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
29	*1*	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
30	*1*	*1*	*1*	*1*	*1*	*1*	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	0	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	1.0	24
31	*1*	*1*	*1*	*1*	*1*	S	*1*	S	S	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	***1.0***	24
HOURLY MAX	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
HOURLY AVG	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 692

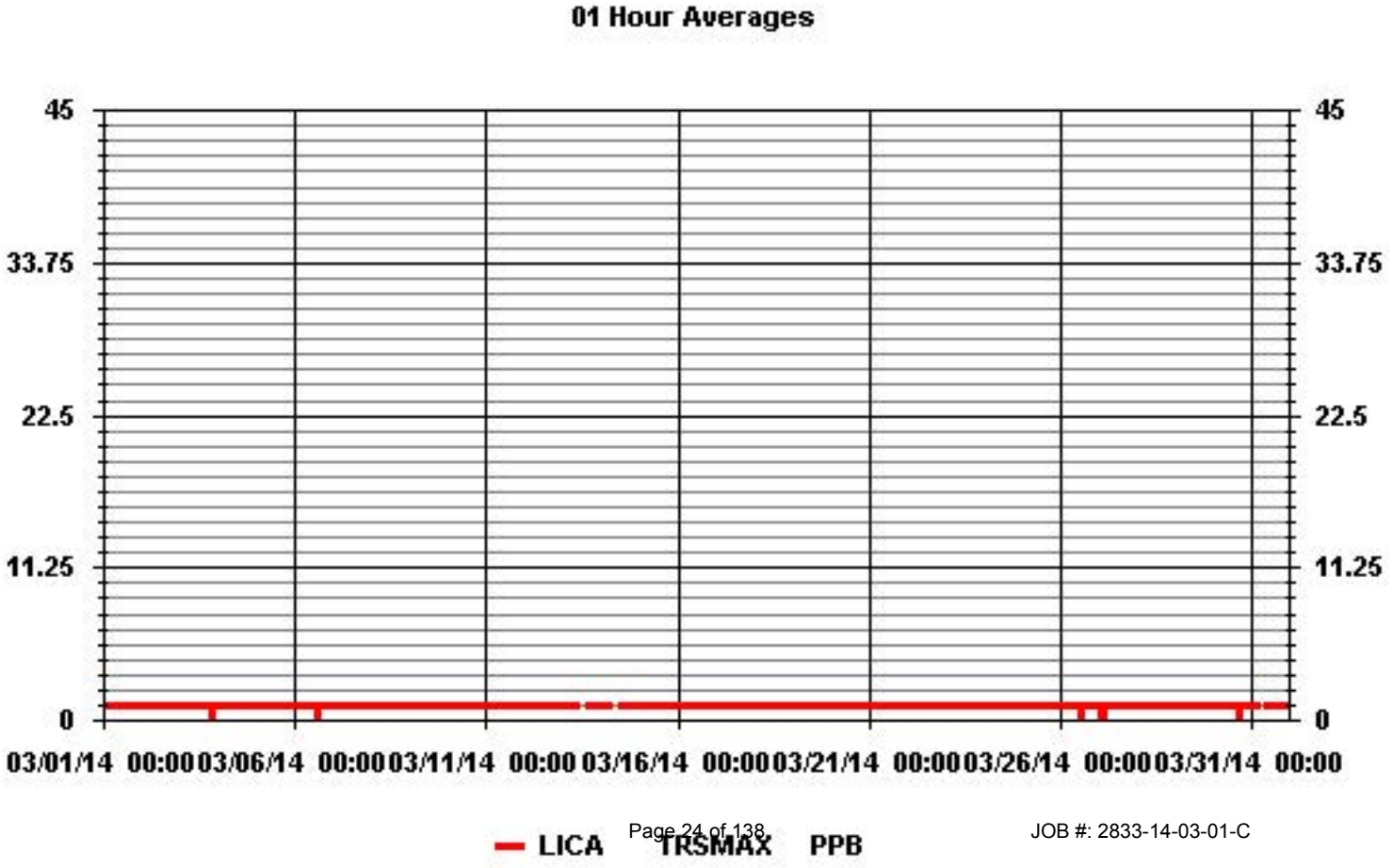
MAXIMUM INSTANTANEOUS VALUE: 1 PPB @ HOUR(S) VAR ON DAY(S) VAR

VAR-VARIOUS

IZS CALIBRATION TIME: 34 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 13 HRS

STANDARD DEVIATION: 0.08



JOB #: 2833-14-03-01-C

LICA
TRS_ / WDR Joint Frequency Distribution (Percent)

March 2014

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	3.72	5.30	8.02	2.43	3.58	4.58	9.31	3.43	3.00	3.72	9.74	18.91	11.74	4.29	3.58	4.58	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	3.72	5.30	8.02	2.43	3.58	4.58	9.31	3.43	3.00	3.72	9.74	18.91	11.74	4.29	3.58	4.58	

Calm : .00 %

Total # Operational Hours : 698

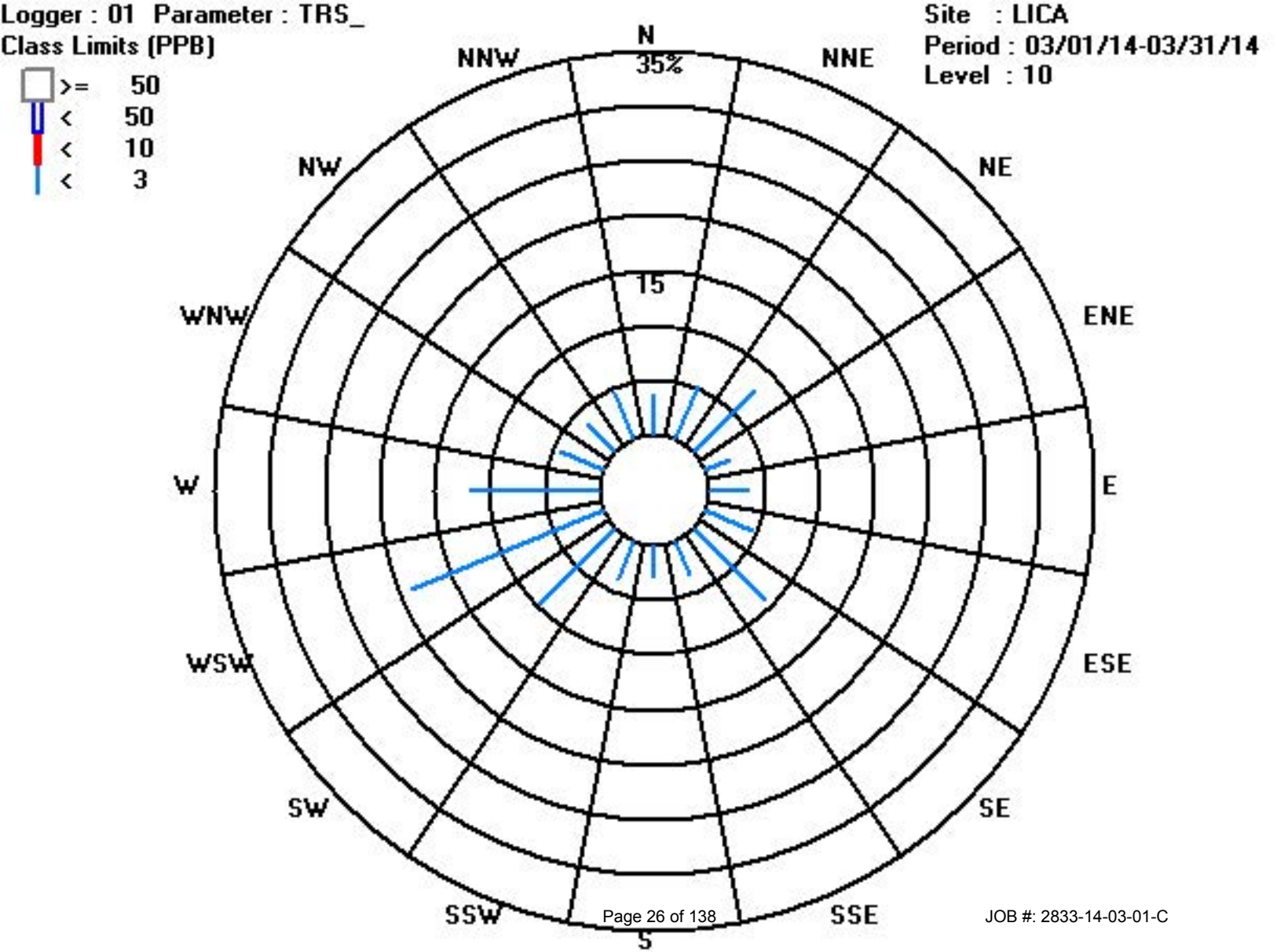
Distribution By Samples

Direction

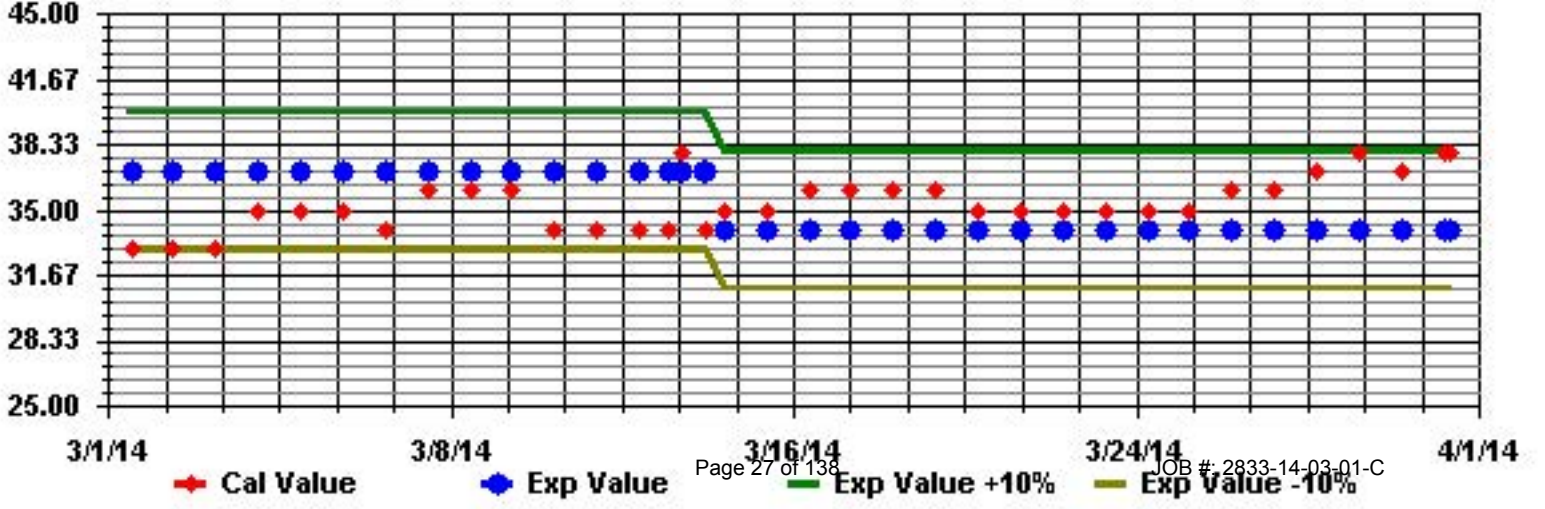
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3	26	37	56	17	25	32	65	24	21	26	68	132	82	30	25	32	698
<	10																	
<	50																	
>=	50																	
	Totals	26	37	56	17	25	32	65	24	21	26	68	132	82	30	25	32	

Calm : .00 %

Total # Operational Hours : 698



JOB #: 2833-14-03-01-C


Calibration Graph for Site: LICA Parameter: TRS_ Sequence: TRS Phase: SPAN
45.00
41.67
38.33
35.00
31.67
28.33
25.00
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

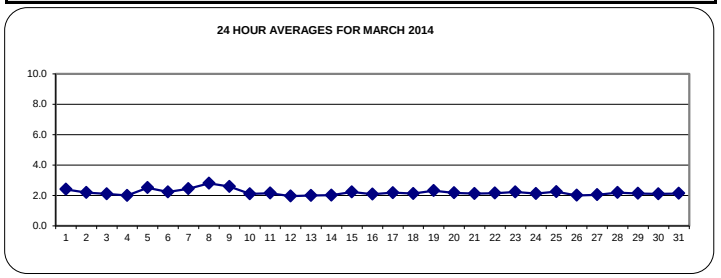
TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST

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

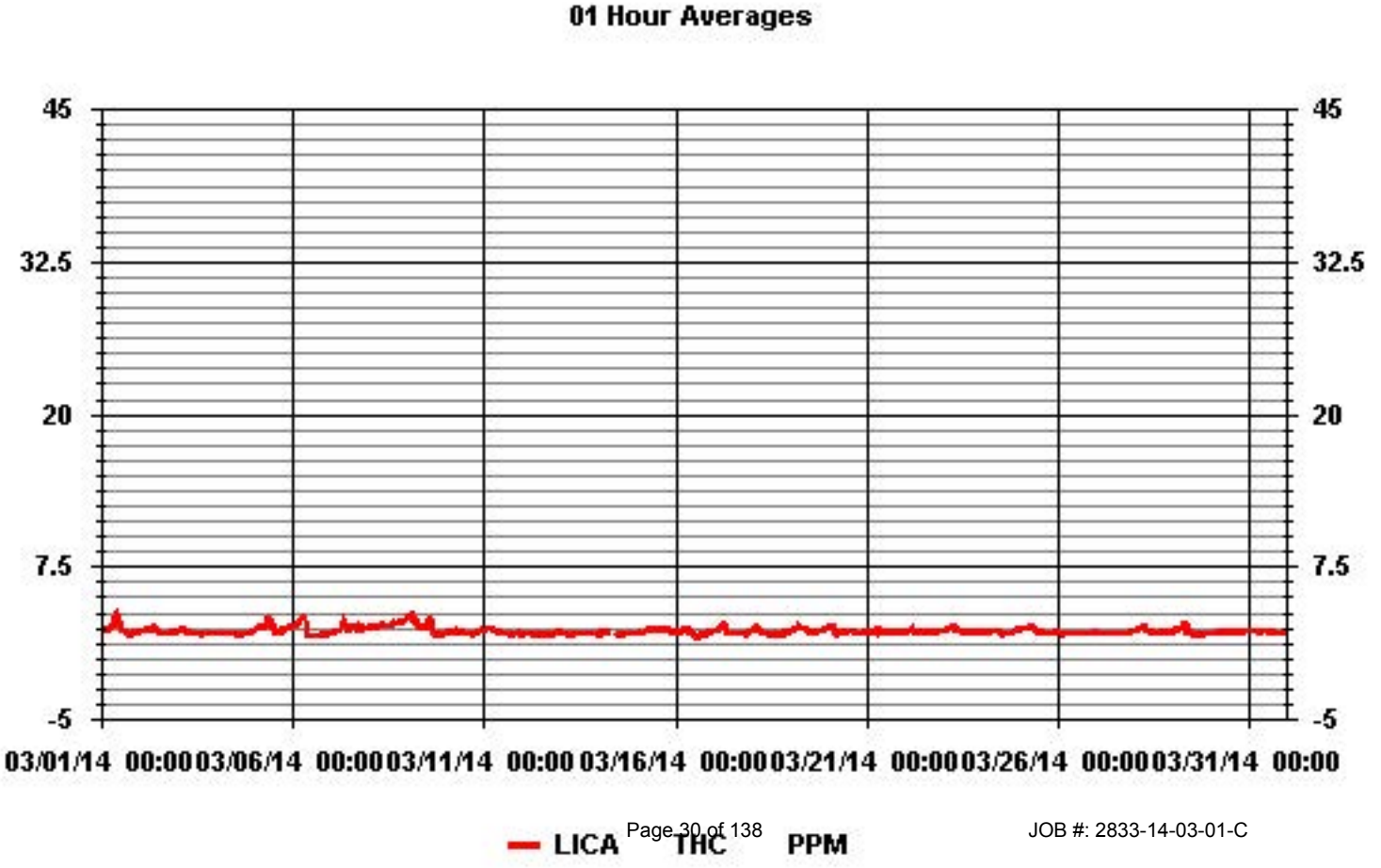
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	707						
MAXIMUM 1-HR AVERAGE:	3.6	PPM	@ HOUR(S)	2	ON DAY(S)	9	
MAXIMUM 24-HR AVERAGE:	2.8	PPM			ON DAY(S)	8	
					VAR-VARIOUS		
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	0.28		MONTHLY AVERAGE:		2.20	PPM	



JOB #: 2833-14-03-01-C

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

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	2.4	2.4	2.4	2.4	2.8	2.7	3	3.7	3.7	3.3	2.9	**S**	2.3	2.3	2.3	2.3	2.1	2.1	2.1	2.2	2.2	2.2	2.1	3.7	2.5	24
2	2.2	2.3	2.3	2.3	2.3	2.5	2.3	2.3	2.7	2.7	2.5	**S**	2.3	2.3	2.1	2	2.2	2.1	3.2	***4.5***	2.2	2.2	2.2	2.2	***4.5***	2.4	24
3	2.2	2.2	2.4	4.3	2.4	2.3	2.4	2.4	2.3	2.7	**S**	2	2	2	2.1	2	2	2	2.1	2.1	2.1	2	2.1	2	4.3	2.3	24
4	2	2	2	2	2	2.4	2	2.1	2	**S**	2	2	2	2	2	2.1	2	2	2	2.1	2	2.2	2.3	2.4	2.4	2.1	24
5	2.4	2.5	2.5	2.7	2.8	2.8	2.9	3	**S**	3.2	3.2	3.1	2.9	2.5	2.2	2.1	3	3	2.4	2.5	2.6	2.7	2.8	2.7	3.2	2.7	24
6	2.7	2.7	2.8	2.9	3.2	3.6	3.6	**S**	3.1	2.7	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.6	2.1	2	2	2.1	2.1	3.6	2.4	24
7	2.1	2.1	2.2	2.2	2.4	2.5	**S**	3.4	3.4	3.1	2.8	2.6	2.6	2.7	2.5	2.5	2.9	2.5	2.3	2.4	2.6	2.8	2.6	2.6	3.4	2.6	24
8	2.7	2.7	2.5	2.6	2.5	**S**	2.9	2.9	2.9	3	3.3	2.7	2.6	2.6	2.7	2.9	3	3.1	3	3	3.1	3.2	3.3	3.5	3.5	***2.9***	24
9	3.6	3.6	3.7	3.6	**S**	3.4	2.8	2.7	2.6	2.6	2.6	2.5	2.9	3.3	3.4	3.1	2.8	2	2	2	2	2	2	2	3.7	2.7	24
10	2.1	2.1	2.1	**S**	2.2	2.3	2.4	3.1	2.4	2.2	2.2	2.1	2.1	2.1	2	2	2	2.2	2.1	2.1	2.2	2.4	2.4	2.4	3.1	2.2	24
11	2.4	2.5	**S**	2.5	2.6	2.5	2.5	2.5	2.3	2.2	2.2	2.3	2.2	2.1	2.1	2	2.1	2	2	2.1	2	2.1	2.1	2.1	2.6	2.2	24
12	2.1	**S**	2	2	2	2	2	2.1	2	2	2.1	2	2	2	2	1.9	2	2	2	2.1	2.1	2.1	2.2	2.2	2.2	2.0	24
13	**S**	2.3	2.3	2.1	2	2	1.9	1.9	2	2	2	4	2	**Y**	2	2	2	2	2	2	2	2.1	2.1	**S**	4	2.1	23
14	2.1	2.2	2.2	2.1	3.1	2.2	2.2	**C**	**C**	**C**	**C**	**C**	2	2.3	2	2	2	2	2	2.2	2.1	2	**S**	2.1	3.1	2.2	24
15	2.3	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.5	2.7	2.4	2.4	2.3	2.3	2.3	2.3	2.6	2.4	2.3	**S**	2.2	2.3	2.7	2.3	24
16	2.2	2.2	2.2	2.2	2.3	2.4	2.4	2.7	2.7	2.2	2	2	1.9	1.9	1.9	2.1	1.9	2	2	2	**S**	2.2	2.1	2.2	2.7	2.2	24
17	2.2	2.2	2.3	2.5	2.5	2.8	2.8	2.8	2.5	2.1	2	2	2	2	2	2.1	2	2.1	2	**S**	2.1	2.1	2.2	2.2	2.8	2.2	24
18	2.3	2.4	2.5	2.8	2.6	2.5	2.3	2.1	2.1	2	2.1	2	2	2	2	2	2	2	**S**	2.1	2.1	2.1	2.2	2.3	2.8	2.2	24
19	2.4	2.5	2.4	2.6	2.8	3	2.8	2.7	2.5	2.4	2.5	2.3	2.2	2.2	2.2	2.2	2.1	**S**	2.2	2.5	2.6	2.4	2.6	2.6	3	2.5	24
20	2.6	2.6	2.7	2.8	2.4	2.1	2.4	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.3	**S**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.3	24
21	2.1	2.1	2.1	2.1	2.1	2.1	2.2	3.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	**S**	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	3.3	2.2	24
22	2.2	2.2	2.3	2.5	2.6	2.5	2.2	2.2	2.2	2.3	2.1	2.1	2.1	2.2	**S**	2.2	2.1	2.2	2.2	2.1	2.5	2.2	2.3	2.2	2.6	2.2	24
23	2.2	2.3	2.4	2.5	2.7	2.7	2.7	2.7	2.6	2.2	2.4	2.4	2.2	**S**	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.7	2.3	24
24	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.2	2.3	2.2	**S**	2.1	2.2	2.5	2.1	2	2.1	2.1	2.3	2.3	2.3	2.3	2.5	2.2	24
25	2.4	2.4	2.4	2.5	2.5	2.6	2.7	3	2.7	2.3	2.3	**S**	2.2	2.2	2.2	2.2	2.1	2.1	2	2.1	2.1	2.3	2.3	2.3	3	2.3	24
26	2.4	2	2	2	2.2	2	2	2	2	2	**S**	2	2	2	2	2	2	2	2	2	2	2.2	2.2	2.2	2.4	2.1	24
27	2.4	2.2	2.1	2.1	2.4	2.1	2.1	2.1	2.2	**S**	2.2	2.1	2.1	2.1	2.1	2	2	2	2	2.1	2.2	2.2	2.2	2.2	2.4	2.1	24
28	2.3	2.5	2.4	2.5	2.5	2.5	2.6	2.7	**S**	2.3	2.3	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.7	2.3	24
29	2.3	2.3	2.4	2.4	3.1	2.7	2.6	**S**	3.5	2.2	2.2	2.3	2.2	2.1	1.9	1.9	1.9	2	2	2	2	2	2	2.1	3.5	2.3	24
30	2.1	2.1	2.1	2.2	2.1	2.1	**S**	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	2.3	2.5	2.3	2.5	2.2	24
31	2.3	2.3	2.2	2.2	2.3	**S**	2.2	2.2	2.2	2.3	2.3	2.3	2.1	2.2	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.2	24
HOURLY MAX	4	4	4	4	3	4	4	3	4	4	3	4	3	3	3	3	3	3	3	5	3	3	3	4			
HOURLY AVG	2.3	2.3	2.3	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.3	2.2	2.2	2.3	2.3			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 706

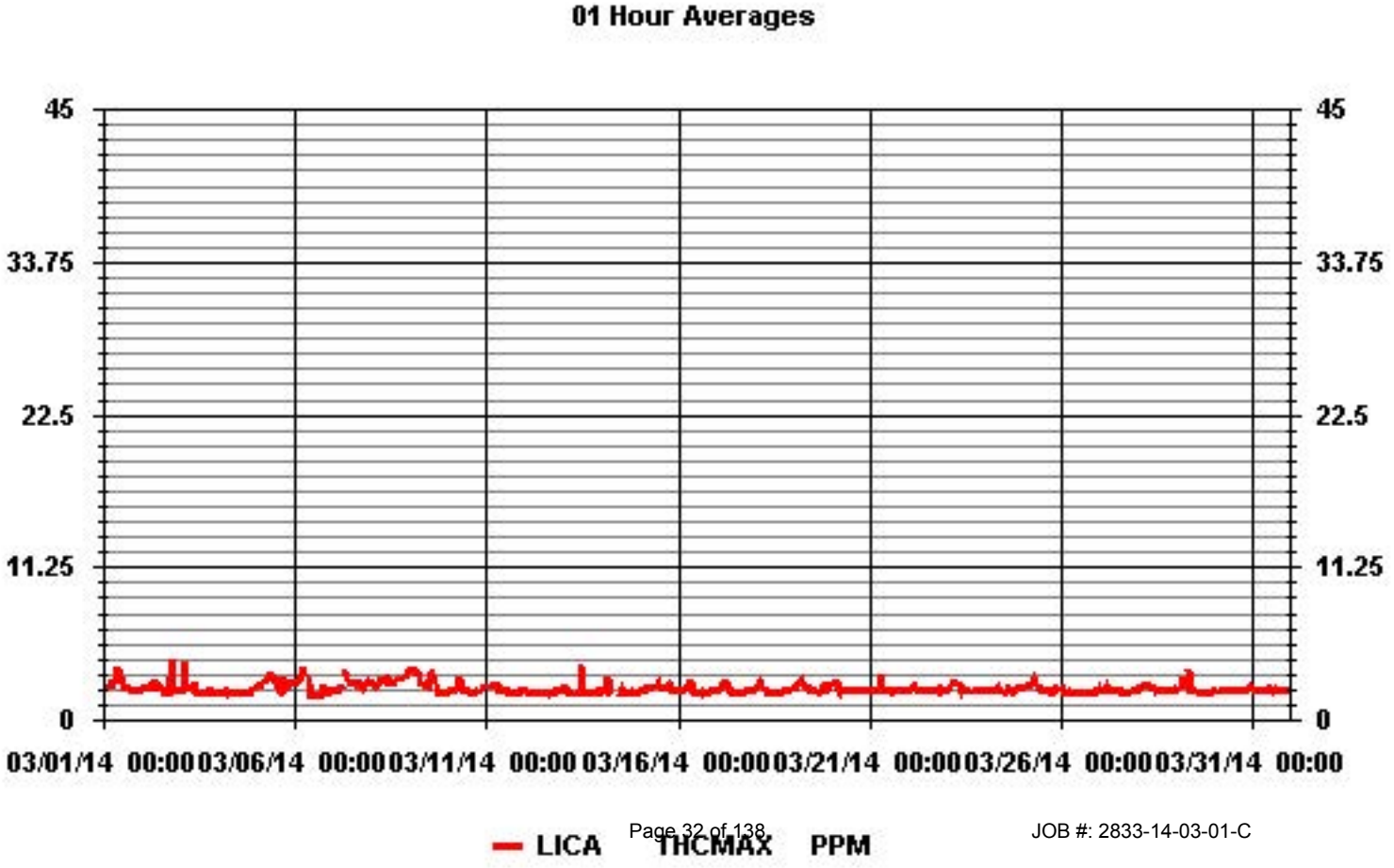
MAXIMUM INSTANTANEOUS VALUE: 4.5 PPM @ HOUR(S) 19 ON DAY(S) 2

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 743 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 0.36



JOB #: 2833-14-03-01-C

LICA
THC / WD Joint Frequency Distribution (Percent)

March 2014

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	3.67	5.23	7.77	1.98	3.11	4.66	9.19	3.39	2.97	3.67	9.33	17.82	11.31	4.10	4.24	4.24	96.74
<	10.0	.00	.00	.14	.42	.42	.00	.28	.00	.00	.00	.28	.84	.28	.28	.00	.28	3.25
<	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	3.67	5.23	7.92	2.40	3.53	4.66	9.47	3.39	2.97	3.67	9.61	18.67	11.59	4.38	4.24	4.52	

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	26	37	55	14	22	33	65	24	21	26	66	126	80	29	30	30	684
<	10.0			1	3	3		2				2	6	2	2		2	23
<	50.0																	
>=	50.0																	
	Totals	26	37	56	17	25	33	67	24	21	26	68	132	82	31	30	32	

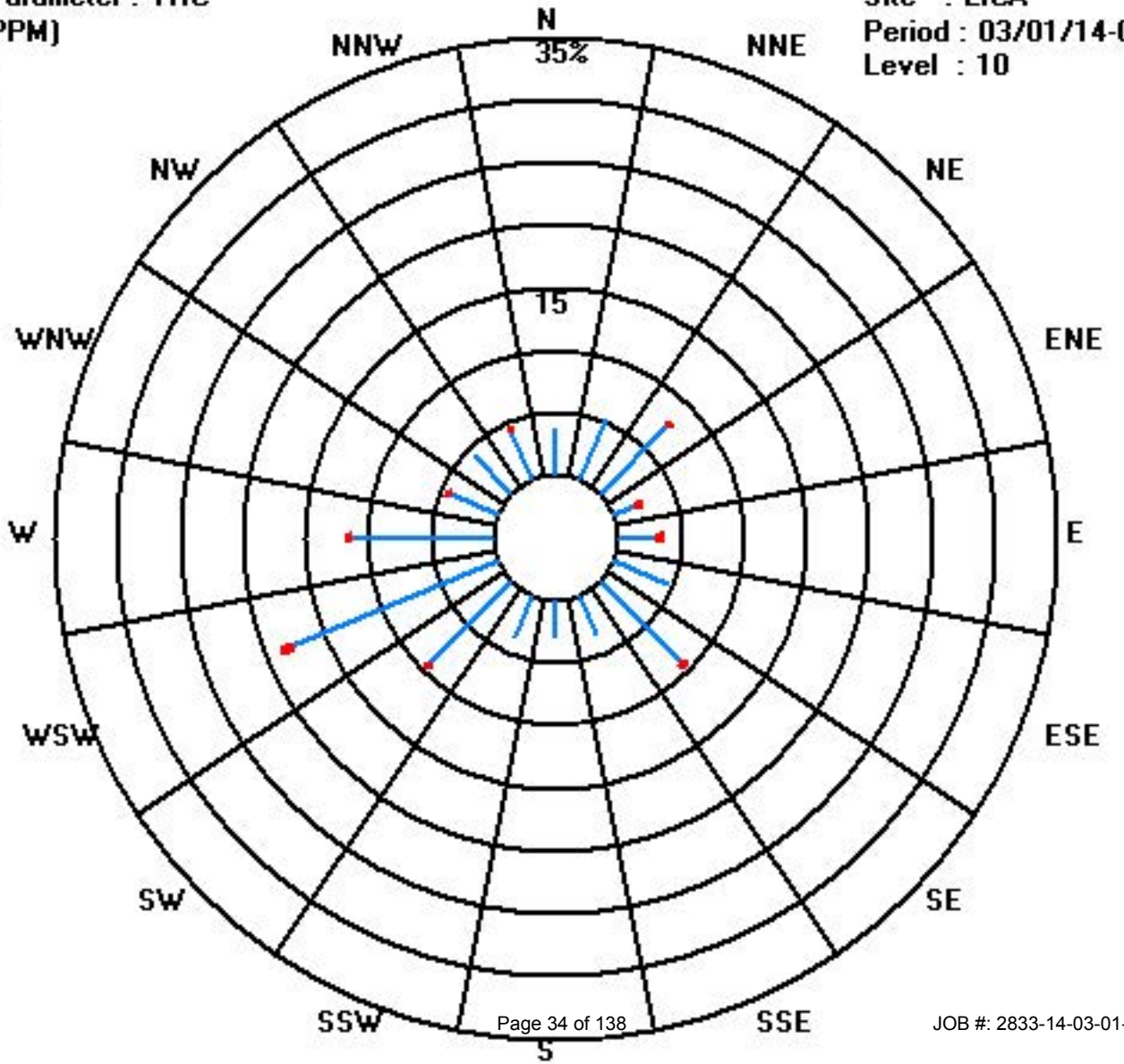
Calm : .00 %

Total # Operational Hours : 707

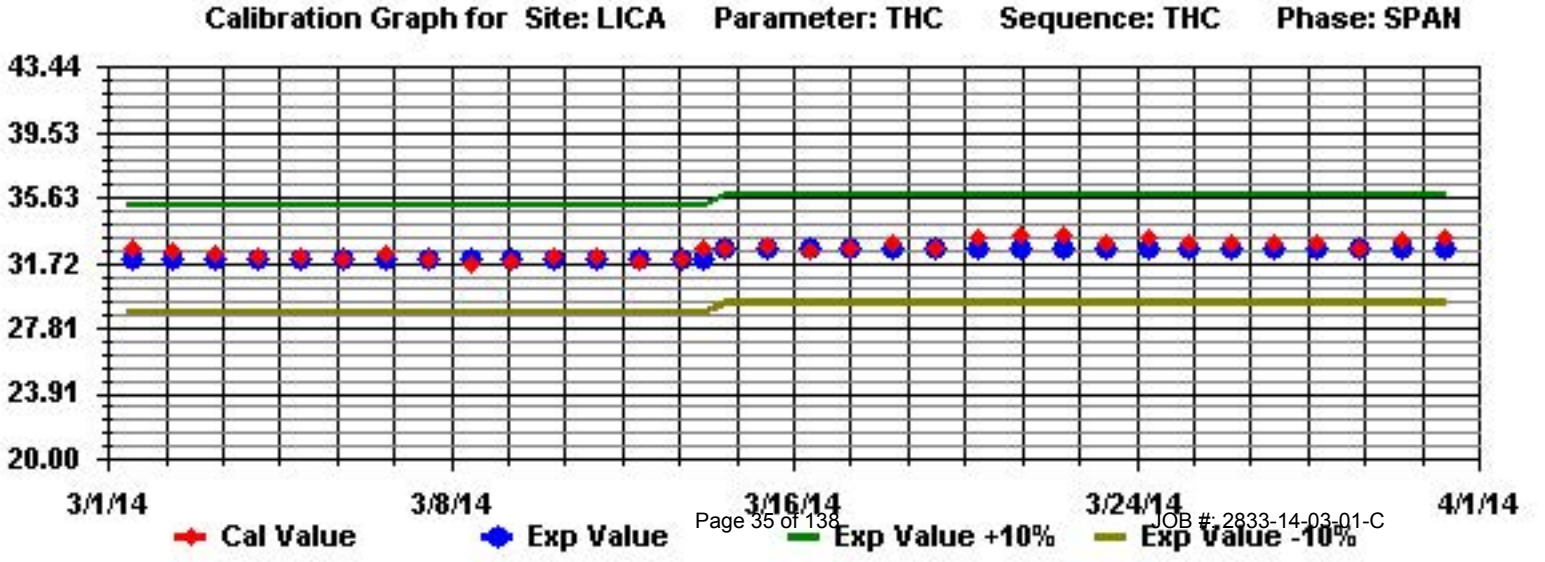
Logger : 01 Parameter : THC
Class Limits (PPM)

>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA
Period : 03/01/14-03/31/14
Level : 10



JOB #: 2833-14-03-01-C


Calibration Graph for Site: LICA Parameter: THC Sequence: THC Phase: SPAN
43.44
39.53
35.63
31.72
27.81
23.91
20.00
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

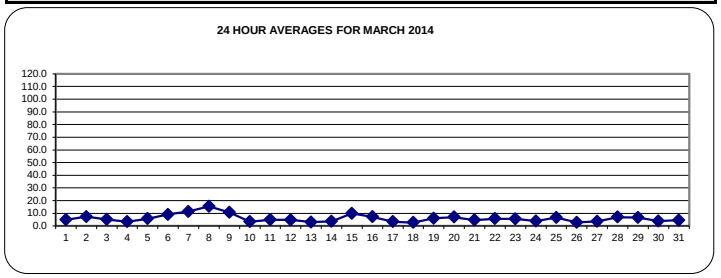
PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5) hourly averages in ug/m3

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	6	11	5	5	4	4	2	2	4	1	5	8	8	5	5	11	5	3	0	8	0	5	0	10	11	4.9	24
2	6	13	2	13	0	8	0	11	0	6	8	18	3	15	6	15	1	7	0	13	X	13	4	7	18	7.3	23
3	1	7	2	22	1	12	1	6	9	11	5	2	0	10	0	6	0	2	0	5	2	10	0	9	22	5.1	24
4	4	4	2	4	X	2	1	4	5	9	6	3	1	4	3	4	1	0	4	2	4	4	3	2	9	3.3	23
5	0	2	7	6	3	5	2	0	17	11	11	1	7	9	7	3	1	8	3	3	9	8	10	3	17	5.7	24
6	8	6	13	0	16	4	10	6	13	1	14	X	9	X	10	X	10	X	18	0	17	X	17	0	18	9.1	19
7	18	X	16	X	16	0	19	X	***28***	8	23	2	21	0	17	3	11	X	14	0	15	1	16	0	***28***	11.4	20
8	19	6	20	4	18	7	24	9	19	8	26	10	19	3	19	7	21	13	21	18	19	15	26	21	26	***15.5***	24
9	23	26	25	25	19	14	11	15	10	9	9	7	4	12	14	15	4	1	0	0	0	1	X	0	26	10.6	23
10	2	2	0	0	X	1	0	6	2	11	0	2	X	11	0	1	X	4	0	8	X	7	2	8	11	3.4	20
11	1	12	0	6	0	7	X	5	X	9	X	4	0	10	1	9	1	11	X	7	0	8	0	5	12	4.8	20
12	0	9	X	6	X	0	X	7	0	7	0	4	0	9	8	6	X	13	1	7	X	5	2	7	13	4.8	19
13	0	3	0	5	0	5	0	Y	Y	C	C	C	C	0	2	8	5	4	4	0	1	2	9	6	9	3.0	22
14	7	1	X	1	X	9	6	X	3	4	0	3	4	5	2	X	5	3	3	4	2	3	1	6	9	3.6	20
15	11	12	5	0	0	7	9	6	7	7	12	8	13	16	12	10	15	11	14	12	13	12	13	10	16	9.8	24
16	12	14	8	13	14	10	11	16	8	12	3	1	5	X	2	0	3	0	0	4	9	5	6	9	16	7.2	23
17	3	4	5	1	2	5	0	1	0	6	6	5	4	4	5	4	2	6	2	4	3	4	1	3	6	3.3	24
18	8	2	4	7	3	5	5	1	2	5	5	7	0	3	1	2	1	0	1	0	0	0	0	2	8	2.7	24
19	2	5	7	5	1	5	6	8	9	6	9	5	7	8	3	4	3	6	5	9	6	9	8	9	9	6.0	24
20	8	6	5	7	5	8	X	X	3	6	X	X	1	X	9	4	7	18	20	11	0	5	4	6	20	7.0	19
21	3	2	4	6	5	0	3	0	3	10	0	X	X	12	X	4	5	10	6	9	6	1	4	5	12	4.7	21
22	8	6	7	3	6	5	5	4	7	0	0	15	12	5	5	4	5	7	7	7	5	4	5	4	15	5.7	24
23	5	4	6	3	4	6	5	9	7	10	10	15	11	4	5	4	3	2	7	0	X	0	1	7	15	5.6	23
24	3	2	2	5	X	9	X	0	X	0	X	X	14	X	X	2	3	X	3	2	1	3	6	6	14	3.8	16
25	5	1	5	2	0	12	0	13	2	8	7	6	8	6	5	6	6	7	7	11	11	8	11	13	13	6.7	24
26	12	1	2	0	1	0	2	0	7	0	1	5	0	2	8	1	2	3	5	X	4	0	5	2	12	2.7	23
27	2	3	4	0	3	3	5	7	7	15	1	0	2	2	C	2	2	3	2	4	4	4	6	4	15	3.7	24
28	3	6	7	3	6	3	6	5	5	5	3	5	7	6	4	5	11	10	8	9	12	8	18	12	18	7.0	24
29	14	11	7	8	8	8	9	6	10	14	9	11	7	7	3	2	3	8	2	4	3	4	3	0	14	6.7	24
30	8	1	5	5	1	4	0	6	3	2	1	4	5	4	3	7	4	2	4	4	5	4	6	4	8	3.8	24
31	5	4	4	5	1	4	9	5	5	3	3	0	6	5	4	6	6	6	3	1	8	7	5	5	9	4.6	24
HOURLY MAX	23	26	25	25	19	14	24	16	28	15	26	18	21	16	19	15	21	18	21	18	19	15	26	21			
HOURLY AVG	6.7	6.2	6.2	5.7	5.3	5.5	5.6	5.9	7.0	6.8	6.6	5.8	6.4	6.6	5.8	5.3	5.0	6.0	5.5	5.5	5.9	5.3	6.4	6.0			

STATUS FLAG CODES

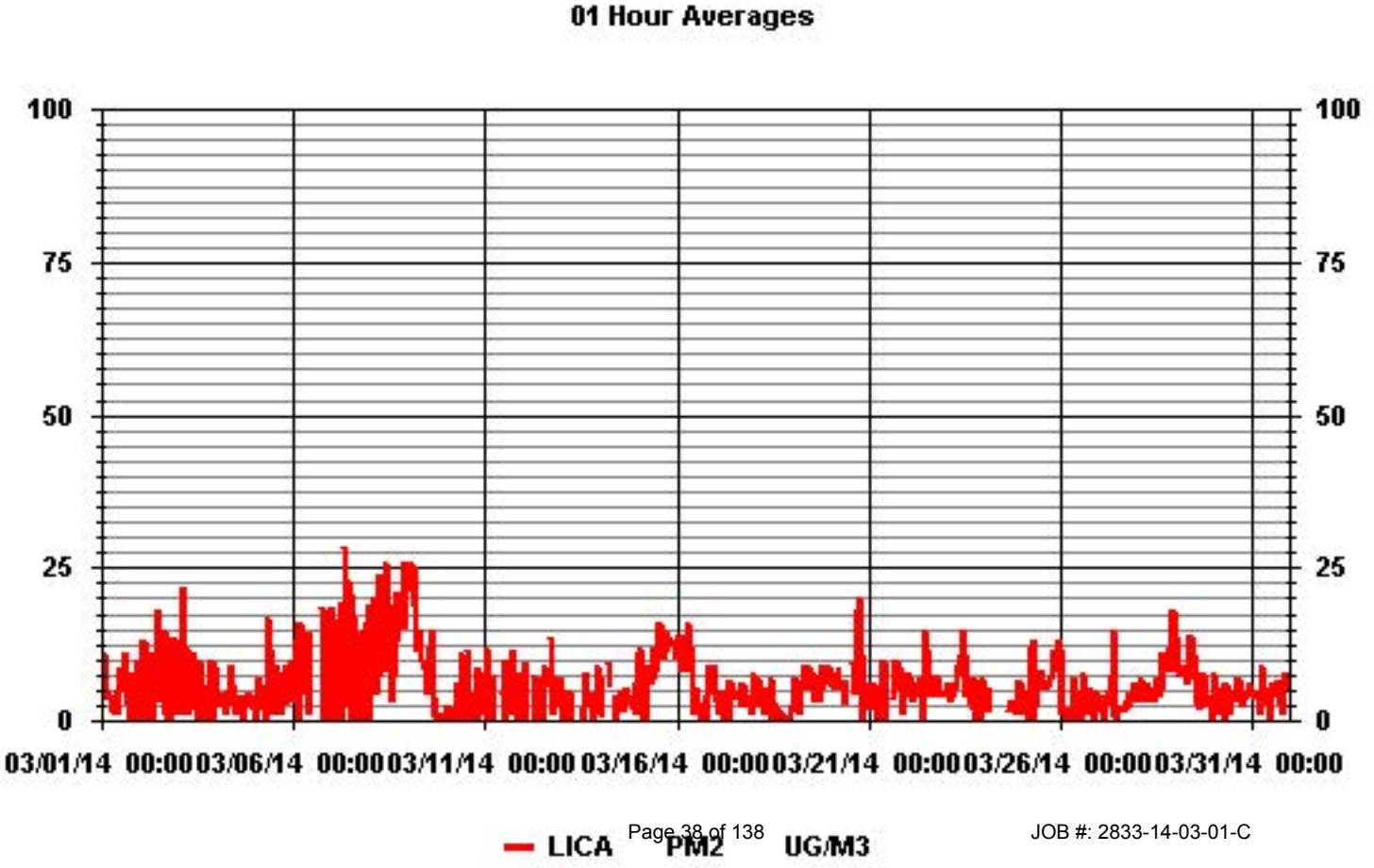
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	0						
NUMBER OF NON-ZERO READINGS:	604						
MAXIMUM 1-HR AVERAGE:	28	ug/m3	@ HOUR(S)	8	ON DAY(S)	7	
MAXIMUM 24-HR AVERAGE:	15.5	ug/m3			ON DAY(S) VAR-VARIOUS	8	
			OPERATIONAL TIME:			694	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:			93.3	%
STANDARD DEVIATION:	5.14		MONTHLY AVERAGE:			5.95	ug/m3



JOB #: 2833-14-03-01-C

LICA
PM2 / WD Joint Frequency Distribution (Percent)

March 2014

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	3.19	4.78	8.56	2.46	3.48	4.78	10.44	3.48	3.04	3.77	9.57	19.15	11.03	4.20	3.19	4.78	100.00
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.19	4.78	8.56	2.46	3.48	4.78	10.44	3.48	3.04	3.77	9.57	19.15	11.03	4.20	3.19	4.78	

Calm : .00 %

Total # Operational Hours : 689

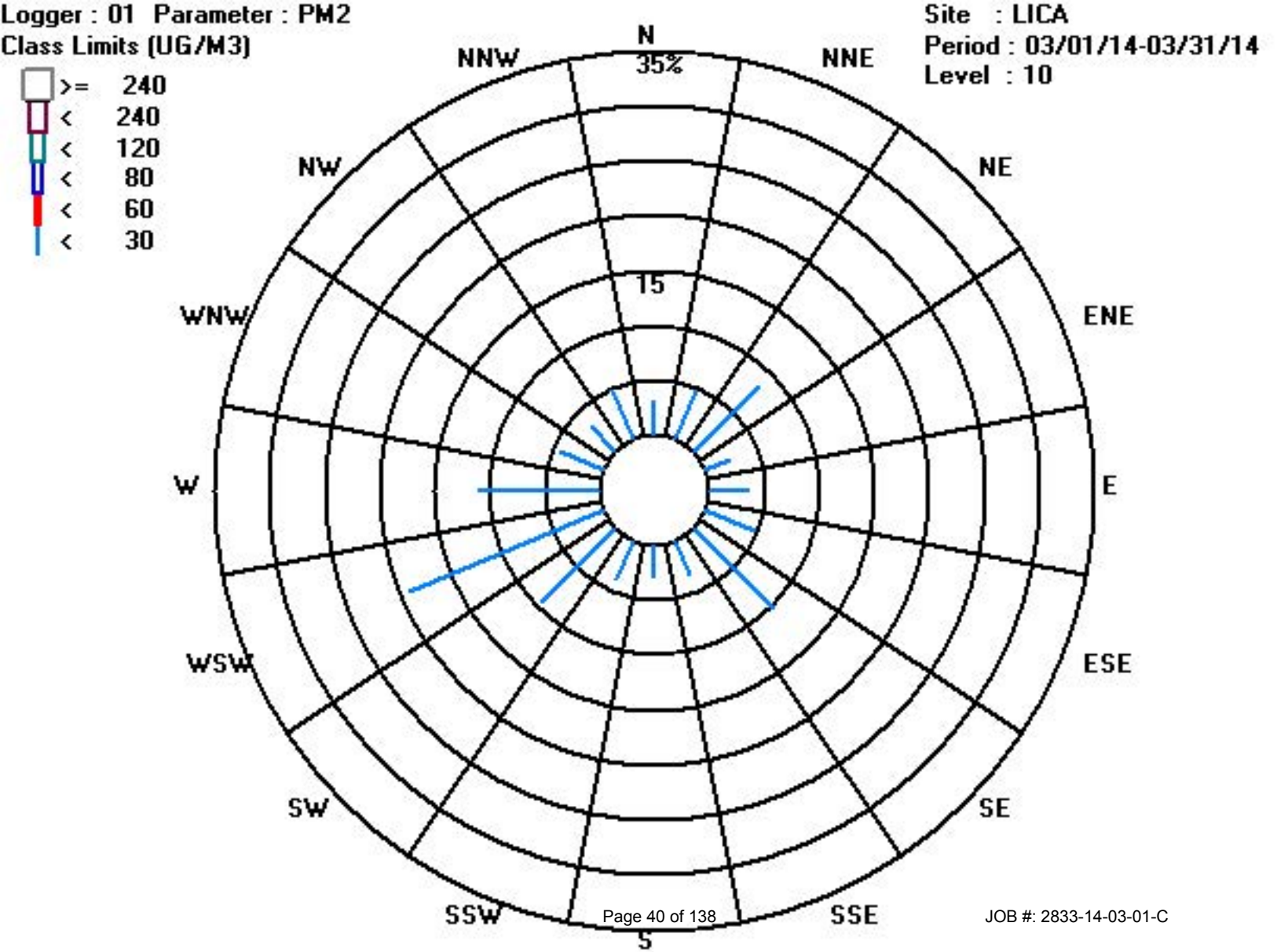
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30	22	33	59	17	24	33	72	24	21	26	66	132	76	29	22	33	689
<	60																	
<	80																	
<	120																	
<	240																	
>=	240																	
	Totals	22	33	59	17	24	33	72	24	21	26	66	132	76	29	22	33	

Calm : .00 %

Total # Operational Hours : 689


Logger : 01 Parameter : PM2
Class Limits (UG/M3)
>= 240
< 240
< 120
< 80
< 60
< 30
Site : LICA
Period : 03/01/14-03/31/14
Level : 10
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
35%
15

Nitrogen Dioxide

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

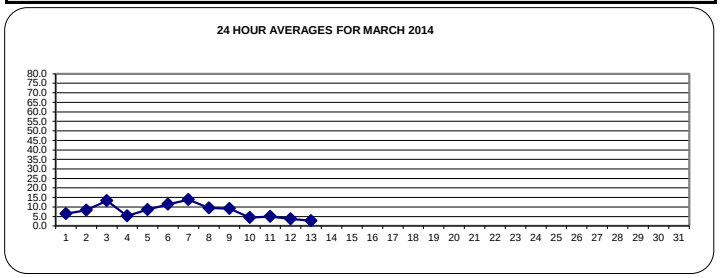
MST

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	6.6	6.3	6.9	7.1	7	9.7	12.4	10.7	10.1	10.1	7.9	5.4	**S**	3.3	3	3.4	3.6	3.4	3.3	4.1	5.3	7.2	6.1	6.3	12.4	6.5	24
2	6.7	6.7	8.6	9.9	10.1	11.6	12.2	11.3	9	7.9	6.5	**S**	5.5	3.7	3.3	2.8	3.6	5.5	10.3	15.6	13.6	9.6	7.7	10	15.6	8.3	24
3	10.6	16.6	25.8	23.7	25.1	23.4	21.3	22.5	21.2	9.3	**S**	2.5	1.5	1.1	1.2	1.6	2.2	6.7	17.2	16.1	19.9	8.7	14.5	12.9	25.8	13.3	24
4	9.1	6.3	6.1	5.1	4.9	9.5	9.9	7.5	6.4	**S**	3.1	1.4	1.5	1.3	1.8	2.1	2.6	4	7	10.2	7.5	3.4	5.5	6.6	10.2	5.3	24
5	5.5	6.7	9	11.3	8.4	10.4	11.5	15.7	**S**	12.2	11.5	8.9	7.7	3.3	2.3	2	2.5	4.7	6.6	11.9	11.7	13.8	11.9	8.9	15.7	8.6	24
6	10.5	9.9	11.5	12.2	17.4	21.8	22.3	**S**	16.1	4.1	1.1	1.7	1	0.7	0.9	0.8	1.1	4.5	15.1	28.3	21.6	18.3	21.2	19.4	28.3	11.4	24
7	16.3	17.8	17.4	24.4	26.5	30.1	**S**	28.6	***37.7***	34	17.9	6.5	3.6	3.5	3.1	3	4	3.9	3.9	4.3	5.6	8.1	8.8	8.3	***37.7***	***13.8***	24
8	6.6	5.6	5	5.9	5.1	**S**	5.8	5	5.8	5.9	5	5	4.6	4.8	6.3	6.5	8.2	9.6	11.4	12.6	22.5	14.3	20.9	33.8	33.8	9.4	24
9	29.6	34.1	32.6	23	**S**	13.7	6.1	7.1	7	7	4.4	4	4.3	5.8	6.4	5.9	3.9	2.6	2.1	2.1	2.8	1.8	2.3	3	34.1	9.2	24
10	4	2.7	2.8	**S**	3.6	4.5	8.5	9.6	6.2	5.8	2.9	2.7	2	1.3	1.1	1	0.8	1.1	3	4	5.7	8.2	10.9	8.1	10.9	4.4	24
11	6	7.6	**S**	6.8	8	10.4	13.4	8.9	6.4	6.6	5.1	4.1	2.6	1.9	1.6	1.3	1.6	2.2	2.2	2.9	2.7	3.6	4.2	4.9	13.4	5.0	24
12	4.8	**S**	3.1	3.1	2.7	2.2	3.9	4.8	3.8	2.9	2	1.7	3	2.5	3	3.3	2.6	2.8	2.6	4.1	6.2	6.7	6.2	7.1	7.1	3.7	24
13	**S**	5.1	3.2	2.1	2.6	1.8	1.7	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	5.1	2.8	15
14	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
15	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
16	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
17	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
18	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
19	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
20	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
21	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
22	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
23	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
24	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
25	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
26	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
27	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
28	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
29	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
30	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
31	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
HOURLY MAX	30	34	33	24	27	30	22	29	38	34	18	9	8	6	6	7	8	10	17	28	23	18	21	34			
HOURLY AVG	9.7	10.5	11.0	11.2	10.1	12.4	10.8	12.0	11.8	9.6	6.1	4.0	3.4	2.8	2.8	2.8	3.1	4.3	7.1	9.7	10.4	8.6	10.0	10.8			

STATUS FLAG CODES

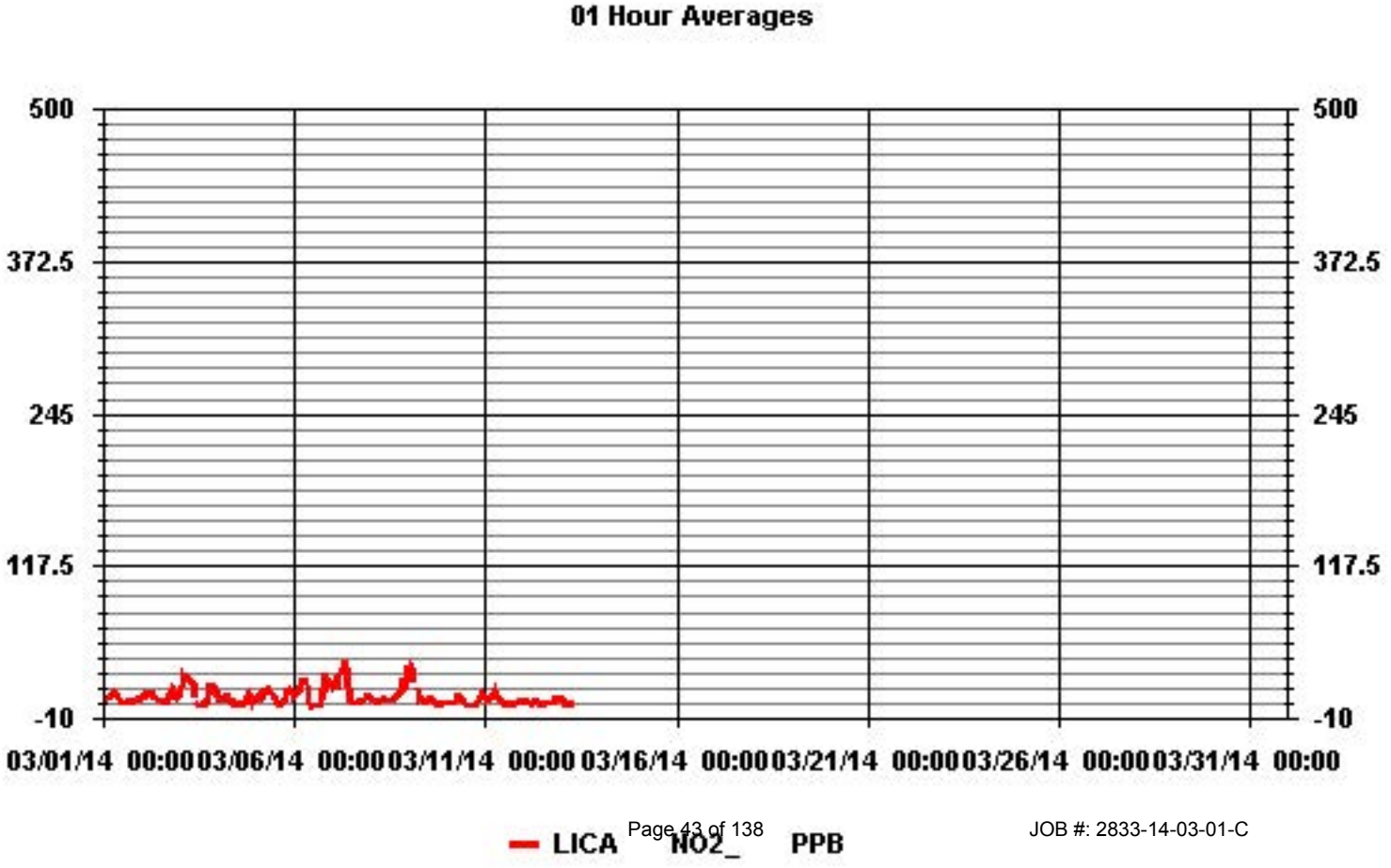
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0						
NUMBER OF NON-ZERO READINGS:	282						
MAXIMUM 1-HR AVERAGE:	37.7	PPB	@ HOUR(S)	8	ON DAY(S)	7	
MAXIMUM 24-HR AVERAGE:	13.8	PPB			ON DAY(S) VAR-VARIOUS	7	
IZS CALIBRATION TIME:	13	HRS	OPERATIONAL TIME:		303	HRS	
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:		40.7	%	
STANDARD DEVIATION:	7.10		MONTHLY AVERAGE:		8.13	PPB	



JOB #: 2833-14-03-01-C

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

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	11.1	8.6	8.6	9.1	8.1	15	16.1	15	12.5	12.1	9.6	7.6	**S**	4.3	4.3	4.3	6.3	4.3	5.3	5.3	7.2	8.3	7.2	7.3	16.1	8.6	24
2	7.3	7.3	10.3	11.3	11.8	20.7	16.8	15.8	12.3	10.3	7.3	**S**	6.5	4.5	4	6.5	5	7.5	29	27.5	20.4	14.5	10	12.9	29	12.2	24
3	17	22	32.4	29.5	29.5	27	25	26.4	31.4	12	**S**	4.7	2.7	2.2	5.7	4.7	3.2	20.1	23.7	26.1	26.6	15.6	18.7	17.2	32.4	***18.4***	24
4	11.7	8.7	9.2	7.2	9.7	18.2	14.7	11.2	11.7	**S**	6.2	2.2	3.2	2.2	3.2	4.7	5.2	7.1	9.7	14.6	12.2	5.2	7.2	10.7	18.2	8.5	24
5	6.2	12.2	14.7	19.6	10.2	16.2	14.2	19.6	**S**	16.7	14.2	10.2	9.2	7.7	4.2	3.2	6.2	8.7	12.6	17.7	15.7	15.2	17.2	10.7	19.6	12.3	24
6	13.6	11.7	12.6	13.7	28.2	30.2	25.7	**S**	20.5	12	2	20.5	4	1.5	1.5	1.5	1.5	14	30	38.4	26.4	23.5	27	27	38.4	16.8	24
7	19.4	22	23	28.5	28.5	34	**S**	32.6	***44.6***	38.6	26.6	11.7	5.2	4.7	4.2	4.2	6.2	7.6	4.7	5.2	8.2	14.2	13.1	11.7	***44.6***	17.3	24
8	9.2	6.7	6.7	9.2	8.7	**S**	10.1	6.1	7.1	8.6	10.6	5.6	5.5	6	8.6	7.6	9.6	16.5	12.5	16.6	36.6	27.1	36	38	38	13.4	24
9	37.1	39.6	40.6	30.1	**S**	32	10.5	10.5	9	10.5	5.4	5	5	7	7	6.5	17	3.5	4	3.5	3.5	2.5	3.5	5	40.6	13.0	24
10	5.5	4	3.5	**S**	5.5	6	14.5	14	12.4	8	4	4.5	3.5	2	1.5	2	1	5.5	5.5	9	9.5	13.5	14.5	10.5	14.5	7.0	24
11	8.5	11	**S**	8.1	13	15.1	18.1	13	14.6	8.1	8.6	5.6	3.6	3.6	2.6	2.1	3.1	2.6	2.6	4.1	4.6	5.5	5.6	6.6	18.1	7.4	24
12	6.1	**S**	5	5	4	3.5	5.5	9	6	7.5	3	2	6	4	6	5	5	3.5	3.5	5	13	9.5	8.5	8.5	13	5.8	24
13	**S**	6	5	3	4	3.5	2	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	6	3.9	16
14	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
15	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
16	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
17	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
18	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
19	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
20	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
21	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
22	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
23	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
24	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
25	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
26	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
27	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
28	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
29	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
30	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
31	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
HOURLY MAX	37	40	41	30	30	34	26	33	45	39	27	21	9	8	9	8	17	20	30	38	37	27	36	38			
HOURLY AVG	12.7	13.3	14.3	14.5	13.4	18.5	14.4	15.7	16.6	13.1	8.9	7.2	4.9	4.1	4.4	4.4	5.8	8.4	11.9	14.4	15.3	12.9	14.0	13.8			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 282

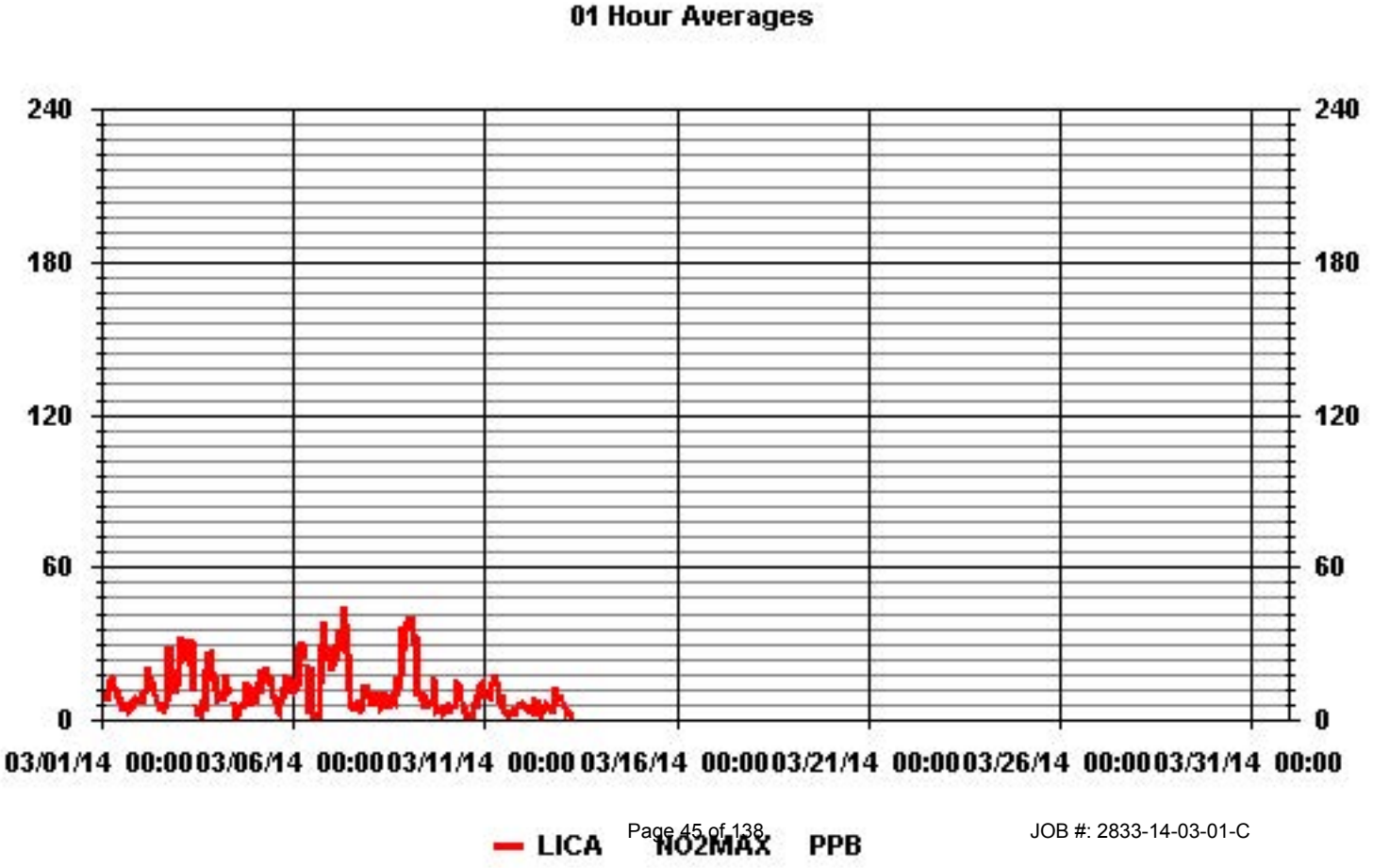
MAXIMUM INSTANTANEOUS VALUE: 44.6 PPB @ HOUR(S) 8 ON DAY(S) 7

VAR-VARIOUS

IZS CALIBRATION TIME: 13 HRS OPERATIONAL TIME: 304 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 9.02



JOB #: 2833-14-03-01-C

LICA
NO2_ / WD Joint Frequency Distribution (Percent)

March 2014

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
<	50.0	2.12	3.54	4.96	3.19	5.67	5.31	7.09	1.41	1.41	3.19	12.76	26.95	14.89	3.19	2.12	2.12	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.12	3.54	4.96	3.19	5.67	5.31	7.09	1.41	1.41	3.19	12.76	26.95	14.89	3.19	2.12	2.12	

Calm : .00 %

Total # Operational Hours : 282

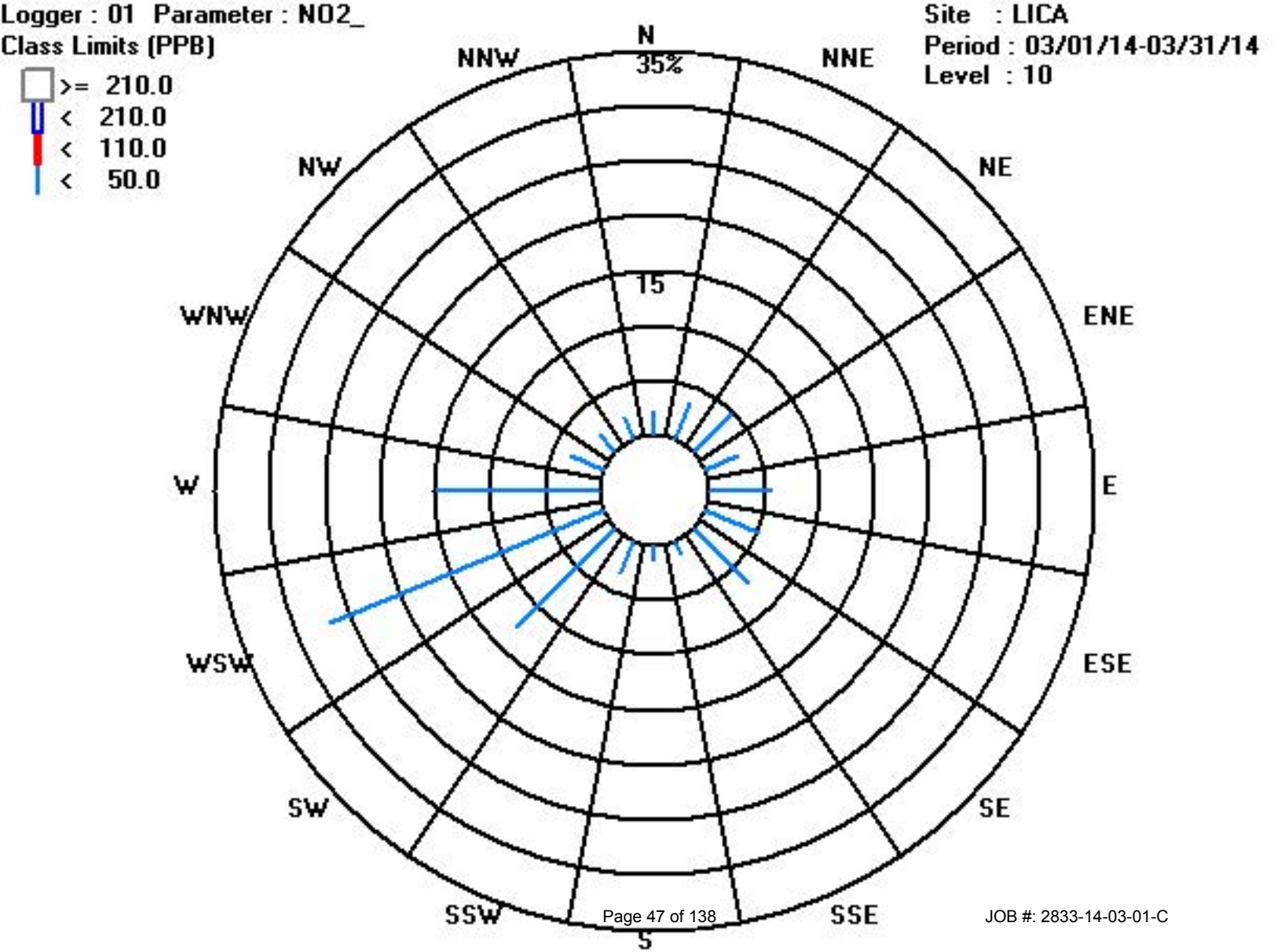
Distribution By Samples

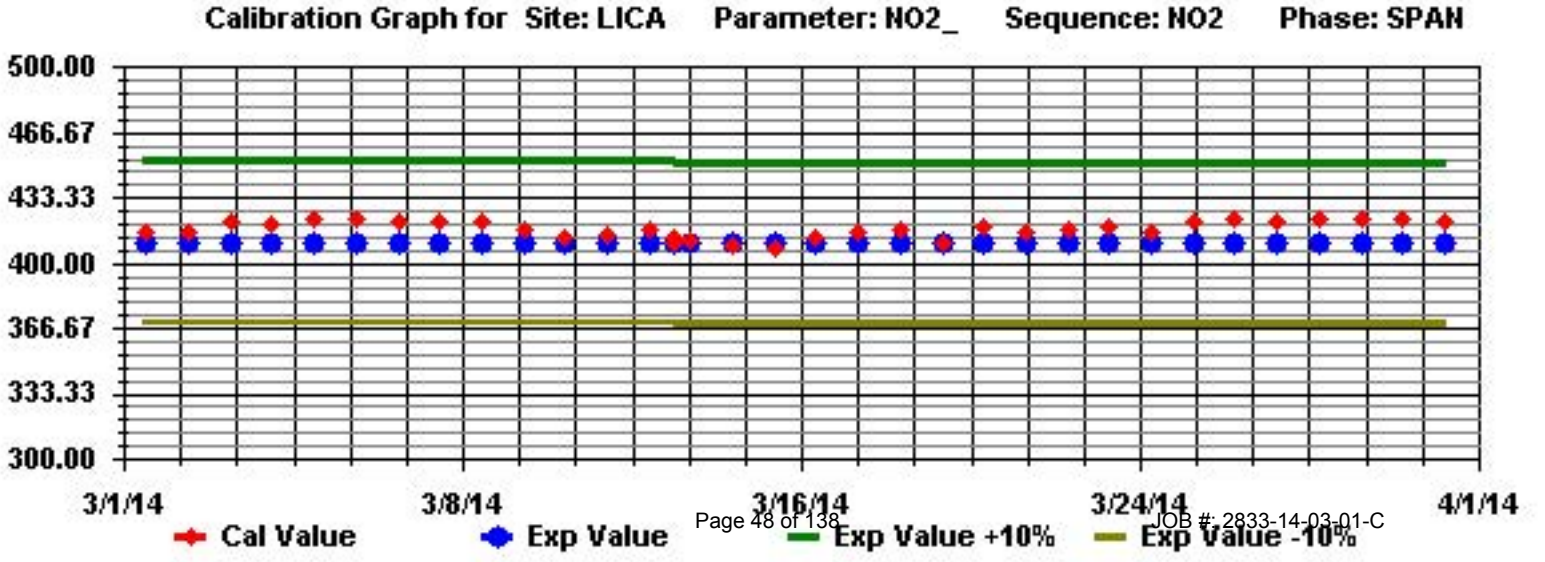
Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	6	10	14	9	16	15	20	4	4	9	36	76	42	9	6	6	282
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	6	10	14	9	16	15	20	4	4	9	36	76	42	9	6	6	

Calm : .00 %

Total # Operational Hours : 282


Logger : 01 Parameter : NO2_
Class Limits (PPB)
>= 210.0
< 210.0
< 110.0
< 50.0
Site : LICA
Period : 03/01/14-03/31/14
Level : 10
N
35%
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
15


Calibration Graph for Site: LICA Parameter: NO2_ Sequence: NO2 Phase: SPAN
500.00
466.67
433.33
400.00
366.67
333.33
300.00
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

NITRIC OXIDE (NO) hourly averages in ppb

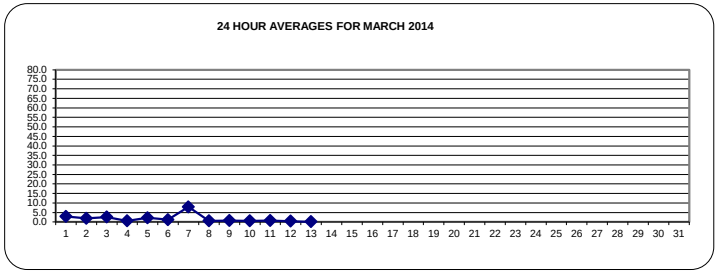
MST

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	0.2	0.2	0.1	0.1	0.4	1	2.5	9.8	15.1	13	8.6	S	3.8	3	2.6	1.5	0.8	0.4	0.3	0.3	0.2	0.3	0.1	15.1	2.8	24
2	0	0.3	0.5	0.5	0.5	0.8	0.1	2	5.6	7.3	7.5	S	6.2	3.3	2.4	1.6	1.2	0.8	0.7	1	0.5	0.4	0	0.2	7.5	1.9	24
3	0.1	0.6	2.5	2.4	2	0.6	0.9	10.2	19.6	7.9	S	2.1	0.9	0.7	0.8	0.8	0.6	1	1.4	0.6	0.6	0.1	0.8	0.3	19.6	2.5	24
4	0.3	0.3	0.7	0.5	0.6	1.3	0.8	1.1	1.4	S	1.6	0.7	0.8	0.5	0.6	0.8	0.6	0.8	0.4	0.3	0	0	0	0	1.6	0.6	24
5	0	0.1	0.2	0.2	0	0.3	0.2	3.6	S	11.4	12.3	8.6	7.1	1.8	1.1	0.6	0.6	0.9	0	0.2	0.4	0.1	0	0.1	12.3	2.2	24
6	0.2	0	0	0.2	0.7	1.3	1.6	S	8.7	2.4	0.7	1.5	0.4	0.3	0.4	0.2	0.3	0.5	0.8	5.1	0.3	0.3	0.7	0.8	8.7	1.2	24
7	0.1	0.4	0.4	1.4	1.6	7	S	24.7	***68***	45.7	19	5.5	2	1.8	1.2	0.9	0.9	0.2	0	0	0.1	0.5	0	0.1	***68***	***7.9***	24
8	0.1	0	0.1	0.2	0	S	0.4	0.3	0.6	1.3	1.1	1	1	1	1.5	1.1	0.9	0.5	0.1	0.1	0.5	0	1	0.8	1.5	0.6	24
9	0.8	0.7	2.9	0.8	S	0.4	0.1	0.5	0.7	1.3	0.7	0.9	0.9	1.4	1.1	0.6	0.5	0	0	0.1	0.1	0.1	0.1	0.2	2.9	0.6	24
10	0.1	0.2	0.2	S	0.3	0.2	0.1	1.3	1.7	2.2	1.1	1.1	0.8	0.5	0.5	0.3	0	0	0.1	0.2	0	0.3	0.1	0.1	2.2	0.5	24
11	0.3	0.2	S	0	0.2	0.2	0.5	1.2	1.9	3	2.4	1.8	0.9	0.7	0.6	0.5	0.3	0	0	0	0.3	0.2	0.2	0.2	3	0.7	24
12	0.3	S	0.3	0.3	0.2	0.3	0.3	0.7	1.1	0.9	0.5	0.5	1	0.7	0.8	0.6	0.3	0	0	0	0.4	0.1	0.1	0	1.1	0.4	24
13	S	0.1	0.1	0.1	0.1	0.1	0.1	C	C	C	C	C	C	C	C	O	O	O	O	O	O	O	O	O	0.1	0.1	15
14	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
15	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
16	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
17	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
18	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
19	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
20	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
21	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
22	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
23	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
24	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
25	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
26	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
27	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
28	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
29	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
30	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
31	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
HOURLY MAX	1	1	3	2	2	7	2	25	68	46	19	9	7	4	3	3	2	1	1	5	1	1	1	1			
HOURLY AVG	0.3	0.3	0.7	0.6	0.5	1.1	0.5	4.4	10.8	9.0	5.4	2.9	2.0	1.4	1.2	0.9	0.6	0.5	0.3	0.7	0.3	0.2	0.3	0.2			

STATUS FLAG CODES

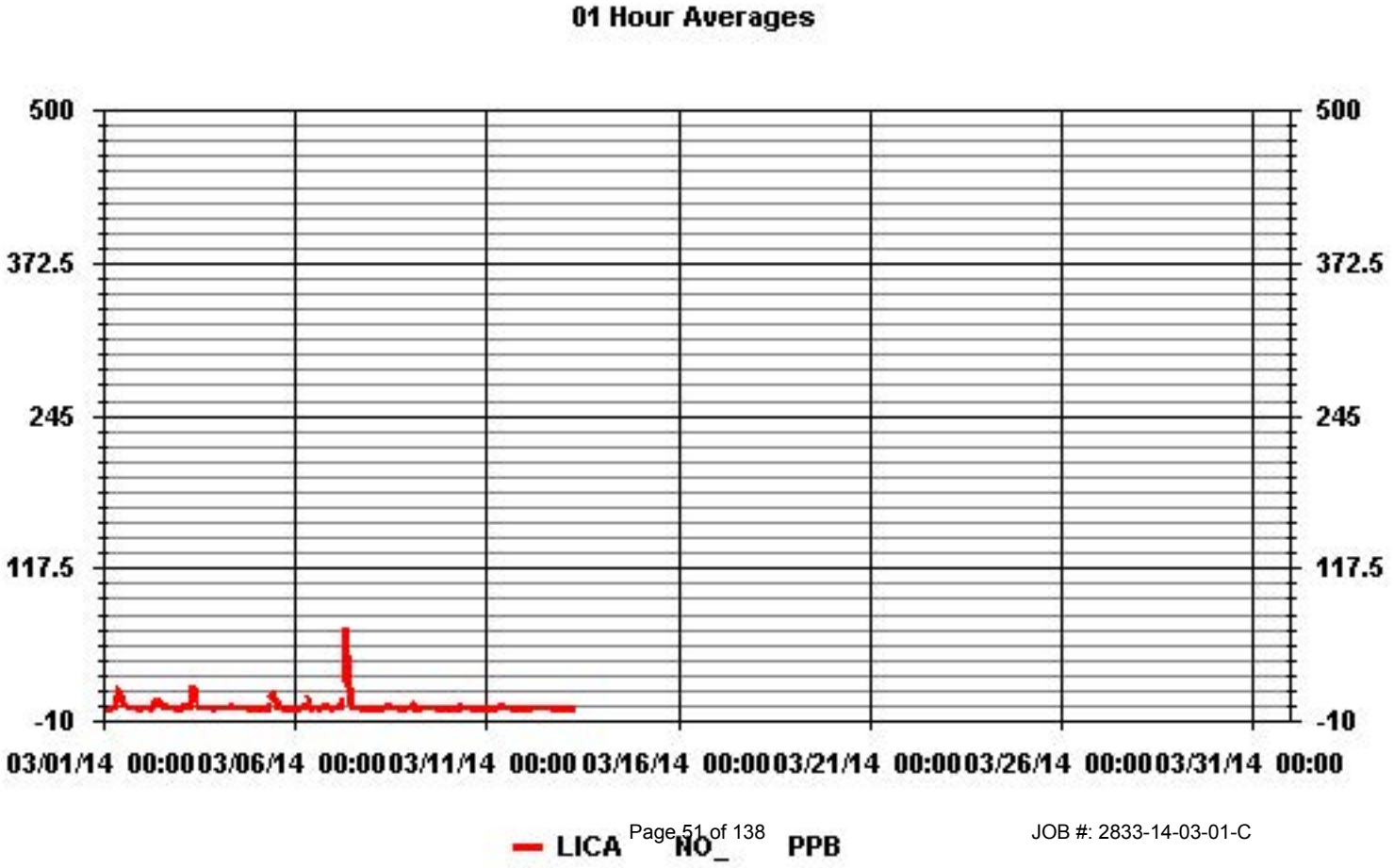
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	251					
MAXIMUM 1-HR AVERAGE:	68	PPB	@ HOUR(S)	8	ON DAY(S)	7
MAXIMUM 24-HR AVERAGE:	7.9	PPB			ON DAY(S) VAR-VARIOUS	7
IZS CALIBRATION TIME:	13	HRS	OPERATIONAL TIME:		303	HRS
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:		40.7	%
STANDARD DEVIATION:	5.62		MONTHLY AVERAGE:		1.79	PPB



JOB #: 2833-14-03-01-C

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

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	9	1.5	1	0.5	1	2	4	5.5	15	17	15	11.5	S	5.5	3.5	4	2.5	2	1.5	1.5	1.5	1	1.5	0.5	17	4.7	24
2	0.5	2.5	2	2.5	2.5	8	1	5	8	9	8.5	S	7.5	4.5	3.5	9.5	2.5	2	20.5	20.5	3	3	0.5	3.5	20.5	5.7	24
3	1	3	8.5	15.5	15	2.5	4	24.5	43.5	11.5	S	4	2	2	3	2.5	1	5	4	3	3.5	2	3	2	43.5	7.2	24
4	2	1.5	2	2	2	4.5	2	3	3	S	4	1.5	2	1	2	2.5	2	3	2	5.5	0.5	0.5	0	0	5.5	2.1	24
5	0	1.5	1.5	1.5	0.5	2.5	1	6.5	S	15	16	10.5	15	5	2.5	1.5	2.5	9.5	1	1	4	1	0.5	1	16	4.4	24
6	2	0.5	0.5	2	5	7	4.5	S	11	9	1.5	25	2.5	3.5	1.5	1.5	1.5	1.5	8	42.5	1	2	4	2.5	42.5	6.1	24
7	1	2	2	3	3.5	17	S	45	***91.4***	60.4	28.5	11.5	2.5	2.5	2.5	1	1.5	1.4	0	0.5	1	8.5	0.5	1	***91.4***	***12.5***	24
8	0.5	0.5	1	1	1	S	4	1	1.5	9	9	1	1.5	1.5	2	2	1.5	5.5	1	0.5	6.5	0.5	8.5	8.5	9	3.0	24
9	3.5	3	9.5	2	S	2.5	1	1	2.5	2.5	1.5	2.5	2	1.5	2	1	6.5	0.5	0.5	0.5	1	0.5	1	1	9.5	2.2	24
10	0.5	1	1	S	1.5	1.5	0.5	4	2.5	3	2	2	2	1	0.5	0.5	0.5	2.5	2.5	3.5	0.5	2	0.5	1	4	1.6	24
11	2.5	3.5	S	1	1.5	1.5	1.5	2.5	7	3.5	3.5	3	1.5	1.5	1	1.5	1.5	0.5	0	0	1	1	1.5	2	7	1.9	24
12	1.5	S	1.5	1.5	1.5	1.5	2	2	2	2.5	1	1	2.5	1.5	1.5	1	1.5	0.5	0	0	3	1.5	2	0.5	3	1.5	24
13	S	1.5	2	1	1	1	0.5	C	C	C	C	C	C	C	C	C	O	O	O	O	O	O	O	O	2	1.2	16
14	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
15	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
16	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
17	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
18	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
19	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
20	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
21	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
22	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
23	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
24	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
25	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
26	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
27	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
28	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
29	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
30	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
31	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
HOURLY MAX	9	4	10	16	15	17	5	45	91	60	29	25	15	6	4	10	7	10	21	43	7	9	9	9			
HOURLY AVG	2.0	1.8	2.7	2.8	3.0	4.3	2.2	9.1	17.0	12.9	8.2	6.7	3.7	2.6	2.1	2.4	2.1	2.8	3.4	6.6	2.2	2.0	2.0	2.0			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 274

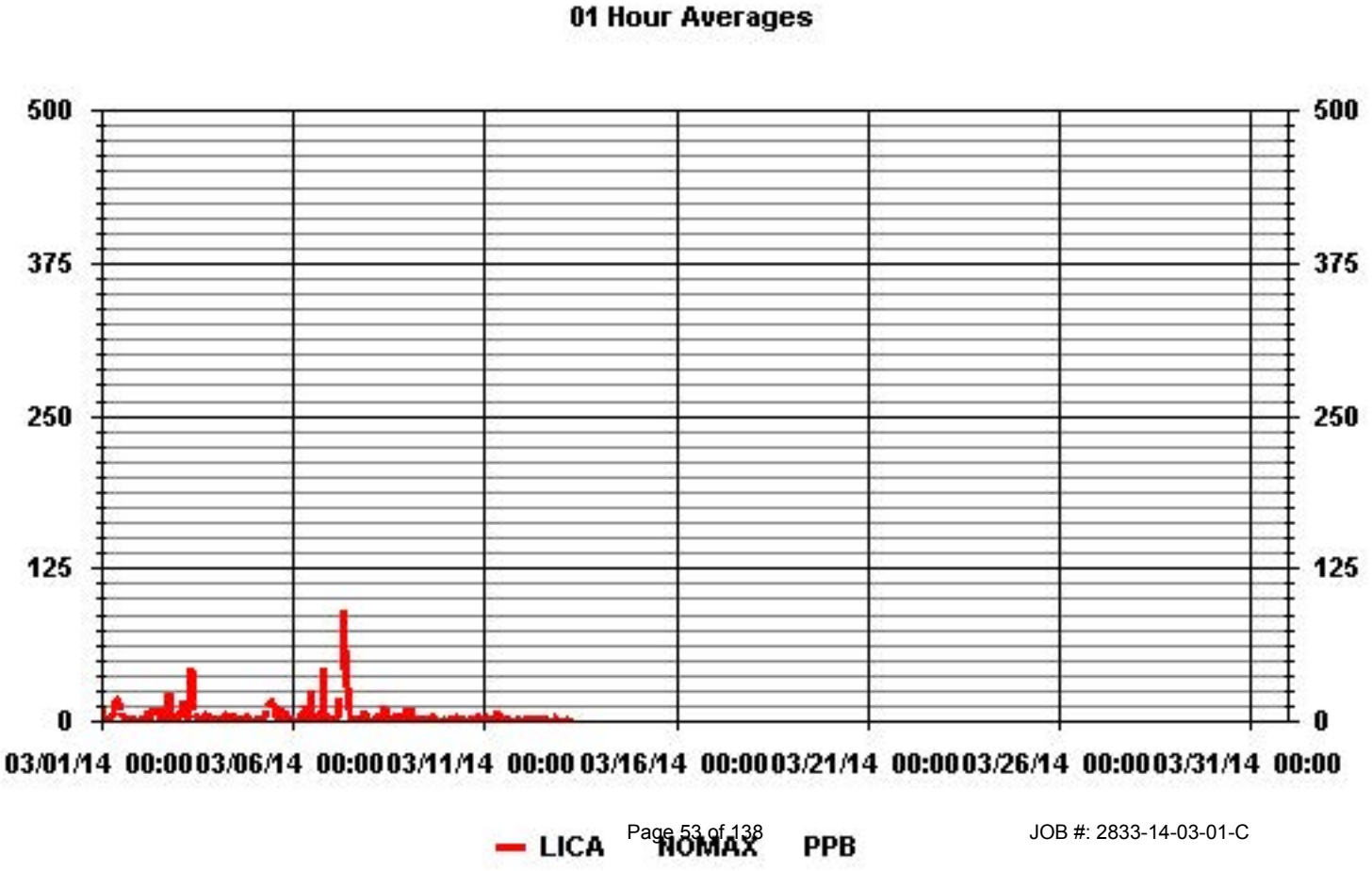
MAXIMUM INSTANTANEOUS VALUE: 91.4 PPB @ HOUR(S) 8 ON DAY(S) 7

VAR-VARIOUS

IZS CALIBRATION TIME: 13 HRS OPERATIONAL TIME: 304 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 8.59



JOB #: 2833-14-03-01-C

LICA
NO_ / WD Joint Frequency Distribution (Percent)

March 2014

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
<	50.0	2.12	3.54	4.60	3.19	5.67	5.31	7.09	1.41	1.41	3.19	12.76	26.95	14.89	3.19	2.12	2.12	99.64
<	110.0	.00	.00	.35	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.35
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.12	3.54	4.96	3.19	5.67	5.31	7.09	1.41	1.41	3.19	12.76	26.95	14.89	3.19	2.12	2.12	

Calm : .00 %

Total # Operational Hours : 282

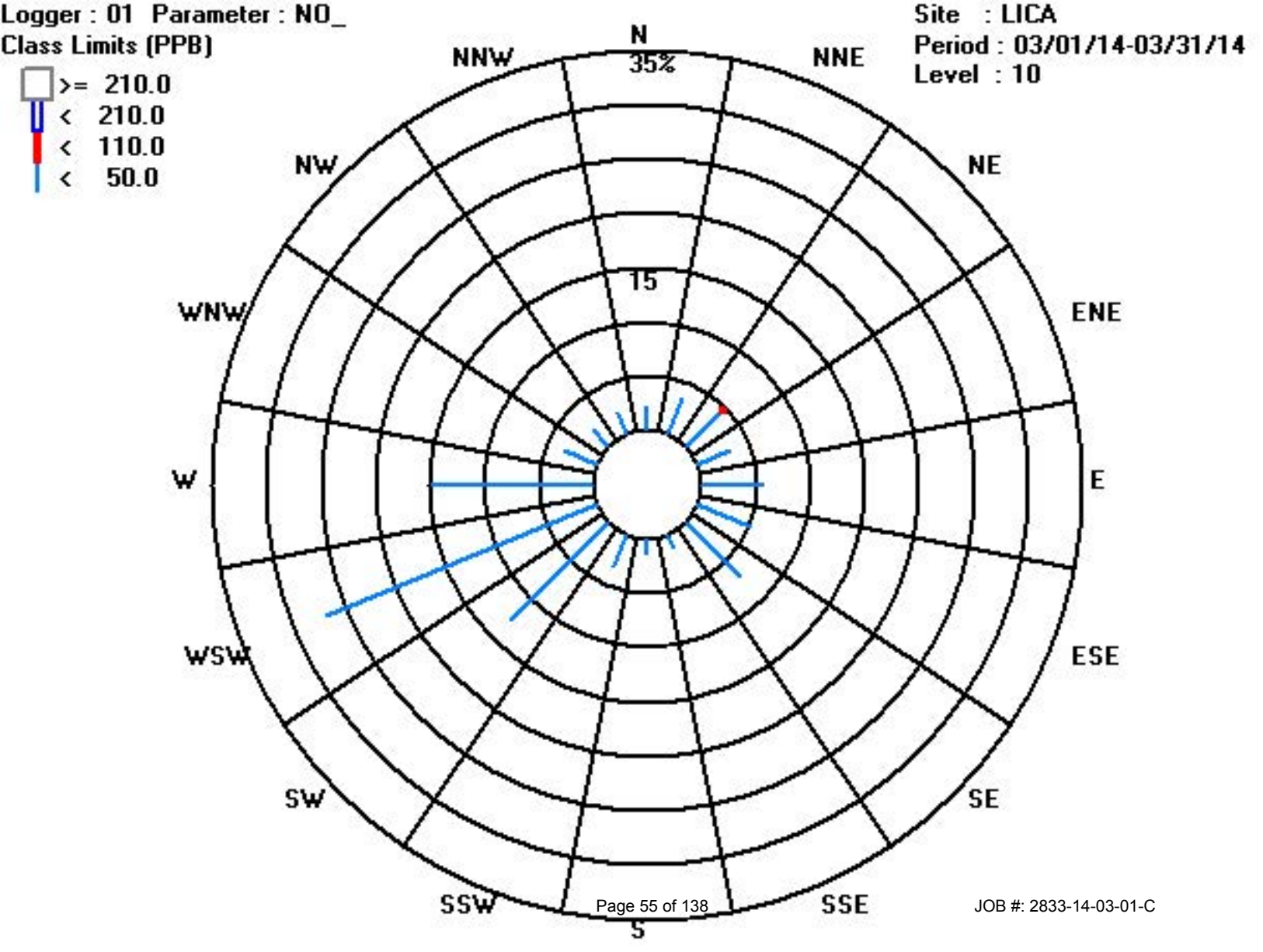
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	6	10	13	9	16	15	20	4	4	9	36	76	42	9	6	6	281
<	110.0			1														1
<	210.0																	
>=	210.0																	
	Totals	6	10	14	9	16	15	20	4	4	9	36	76	42	9	6	6	

Calm : .00 %

Total # Operational Hours : 282



JOB #: 2833-14-03-01-C

Oxides of Nitrogen

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

OXIDES OF NITROGEN (NOx) hourly averages in ppb

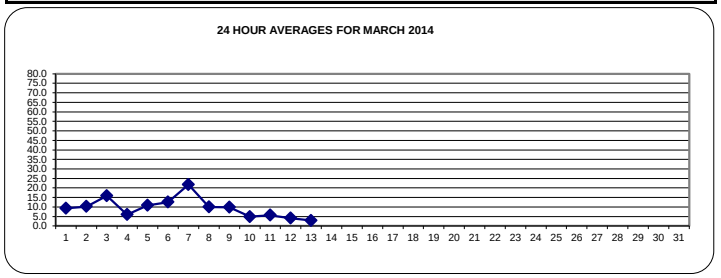
MST

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	7.8	6.5	7.1	7.2	7.1	10.1	13.4	13.2	19.9	25.2	20.9	14	**S**	7.1	6	6	5.1	4.2	3.7	4.4	5.6	7.4	6.4	6.4	25.2	9.3	24
2	6.7	7	9.1	10.4	10.6	12.4	12.3	13.3	14.6	15.2	14	**S**	11.7	7	5.7	4.4	4.8	6.3	11	16.6	14.1	10	7.7	10.2	16.6	10.2	24
3	10.7	17.2	28.3	26.1	27.1	24	22.2	32.7	40.8	17.2	**S**	4.6	2.4	1.8	2	2.4	2.8	7.7	18.6	16.7	20.5	8.8	15.3	13.2	40.8	15.8	24
4	9.4	6.6	6.8	5.6	5.5	10.8	10.7	8.6	7.8	**S**	4.7	2.1	2.3	1.8	2.4	2.9	3.2	4.8	7.4	10.5	7.5	3.4	5.5	6.6	10.8	6.0	24
5	5.5	6.8	9.2	11.5	8.4	10.7	11.7	19.3	**S**	23.6	23.8	17.5	14.8	5.1	3.4	2.6	3.1	5.6	6.6	12.1	12.1	13.9	11.9	9	23.8	10.8	24
6	10.7	9.9	11.5	12.4	18.1	23.1	23.9	**S**	24.8	6.5	1.8	3.2	1.4	1	1.3	1	1.4	5	15.9	33.4	21.9	18.6	21.9	20.2	33.4	12.6	24
7	16.4	18.2	17.8	25.8	28.1	37.1	**S**	53.3	***105.7***	79.7	36.9	12	5.6	5.3	4.3	3.9	4.9	4.1	3.9	4.3	5.7	8.6	8.8	8.4	***105.7***	***21.7***	24
8	6.7	5.6	5.1	6.1	5.1	**S**	6.2	5.3	6.4	7.2	6.1	6	5.6	5.8	7.8	7.6	9.1	10.1	11.5	12.7	23	14.3	21.9	34.6	34.6	10.0	24
9	30.4	34.8	35.5	23.8	**S**	14.1	6.2	7.6	7.7	8.3	5.1	4.9	5.2	7.2	7.5	6.5	4.4	2.6	2.1	2.2	2.9	1.9	2.4	3.2	35.5	9.8	24
10	4.1	2.9	3	**S**	3.9	4.7	8.6	10.9	7.9	8	4	3.8	2.8	1.8	1.6	1.3	0.8	1.1	3.1	4.2	5.7	8.5	11	8.2	11	4.9	24
11	6.3	7.8	**S**	6.8	8.2	10.6	13.9	10.1	8.3	9.6	7.5	5.9	3.5	2.6	2.2	1.8	1.9	2.2	2.2	2.9	3	3.8	4.4	5.1	13.9	5.7	24
12	5.1	**S**	3.4	3.4	2.9	2.5	4.2	5.5	4.9	3.8	2.5	2.2	4	3.2	3.8	3.9	2.9	2.8	2.6	4.1	6.6	6.8	6.3	7.1	7.1	4.1	24
13	**S**	5.2	3.3	2.2	2.7	1.9	1.8	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	5.2	2.9	15
14	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
15	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
16	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
17	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
18	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
19	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
20	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
21	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
22	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
23	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
24	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
25	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
26	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
27	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
28	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
29	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
30	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
31	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
HOURLY MAX	30	35	36	26	28	37	24	53	106	80	37	18	15	7	8	8	9	10	19	33	23	19	22	35			
HOURLY AVG	10.0	10.7	11.7	11.8	10.6	13.5	11.3	16.3	22.6	18.6	11.6	6.9	5.4	4.1	4.0	3.7	3.7	4.7	7.4	10.3	10.7	8.8	10.3	11.0			

STATUS FLAG CODES

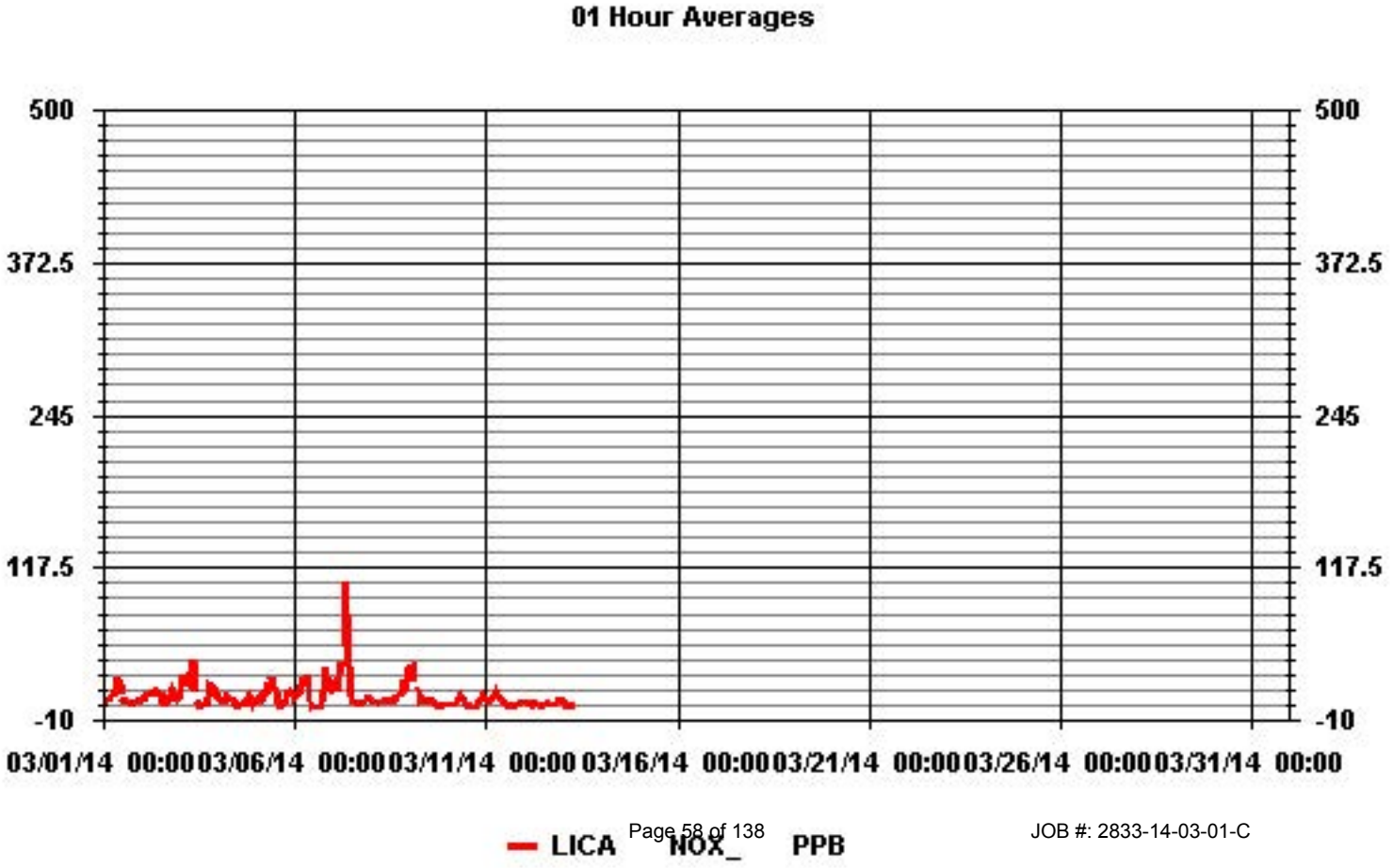
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA						
NUMBER OF NON-ZERO READINGS:	282						
MAXIMUM 1-HR AVERAGE:	105.7	PPB	@ HOUR(S)	8	ON DAY(S)	7	
MAXIMUM 24-HR AVERAGE:	21.7	PPB			ON DAY(S) VAR-VARIOUS	7	
IZS CALIBRATION TIME:	13	HRS	OPERATIONAL TIME:			303	HRS
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:			40.7	%
STANDARD DEVIATION:	10.76		MONTHLY AVERAGE:			9.92	PPB



JOB #: 2833-14-03-01-C

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

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	18	9.5	9	9	9	17	20	18	27	27.5	24.5	18.5	**S**	9.1	7.1	7.6	8.6	6.1	6.1	5.6	7.6	8.1	7.6	7.1	27.5	12.5	24
2	7.1	9.6	11.6	12.6	13.1	25.6	16.6	20.6	19.1	18.1	15.1	**S**	14	9	7.5	14.5	7	8.5	49	48	23	17	10.5	16	49	17.1	24
3	17.5	24	38.4	39	42	29	27.5	50.5	69.9	23	**S**	8	5	3.5	8	6.5	4	23	25.9	28	29	17	20	18.5	69.9	24.2	24
4	12.5	9.5	11	7.5	11	22.5	16.5	12	14.5	**S**	10.1	3.6	5.1	3.1	4.6	7.1	6.1	9.1	10.6	20.1	12.6	5.6	7.1	10.6	22.5	10.1	24
5	6.1	13.1	15.1	20.1	10.1	18.1	14.1	25.6	**S**	29.5	30.5	21	20.5	12.5	5.5	4.5	8.5	12.5	12.4	17.5	19.5	15.5	17	10.5	30.5	15.6	24
6	14	12	13	15	31.4	33.5	30	**S**	31.4	21	3	43.5	6.5	2.5	3	3	3	15.5	34.5	76.4	26.9	25.5	28	28.5	76.4	21.8	24
7	20.5	23.5	24.5	30.5	32	51	**S**	76	***135.9***	97.4	52.5	23	7	6	6	5	7.5	8.9	4.5	5	8.5	19.5	13.4	12.5	***135.9***	***29.2***	24
8	9	7	7	9.5	10	**S**	11.5	6.5	8.5	16	16	6.5	7	7.5	10.5	9.5	11	21.5	13	17	42	26.9	44.5	43.9	44.5	15.7	24
9	40	42.5	46	31.4	**S**	33.5	11	11	11	12.5	6.5	6.5	6.5	8.5	8.5	7	23.5	3.5	4	3.5	4	3	3.5	5.5	46	14.5	24
10	6	4.5	4.5	**S**	6	7	14.5	15.5	14.9	10.5	5.5	7	5.5	3	2.5	2.5	1.5	8	8	12	9.5	15.5	15.5	11	15.5	8.3	24
11	11	14.5	**S**	8.5	14.5	16.5	19	15.5	19	11.5	12	7.5	5	4.5	3	3.5	4.5	3	3	4	5.5	6.5	6.5	7.5	19	9.0	24
12	7	**S**	6	5.5	5	4.5	6.5	10.5	7	10	3.5	3	8.5	5.5	7.5	6	6	3.5	3.5	5	15.5	10	9	9	15.5	6.8	24
13	**S**	6.5	6.5	4	4.5	3.5	2.5	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	6.5	4.6	16
14	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
15	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
16	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
17	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
18	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
19	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
20	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
21	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
22	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
23	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
24	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
25	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
26	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
27	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
28	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
29	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
30	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
31	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**			0
HOURLY MAX	40	43	46	39	42	51	30	76	136	97	53	44	21	13	11	15	24	23	49	76	42	27	45	44			
HOURLY AVG	14.1	14.7	16.1	16.1	15.7	21.8	15.8	23.8	32.6	25.2	16.3	13.5	8.2	6.2	6.1	6.4	7.6	10.3	14.5	20.2	17.0	14.2	15.2	15.1			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 282

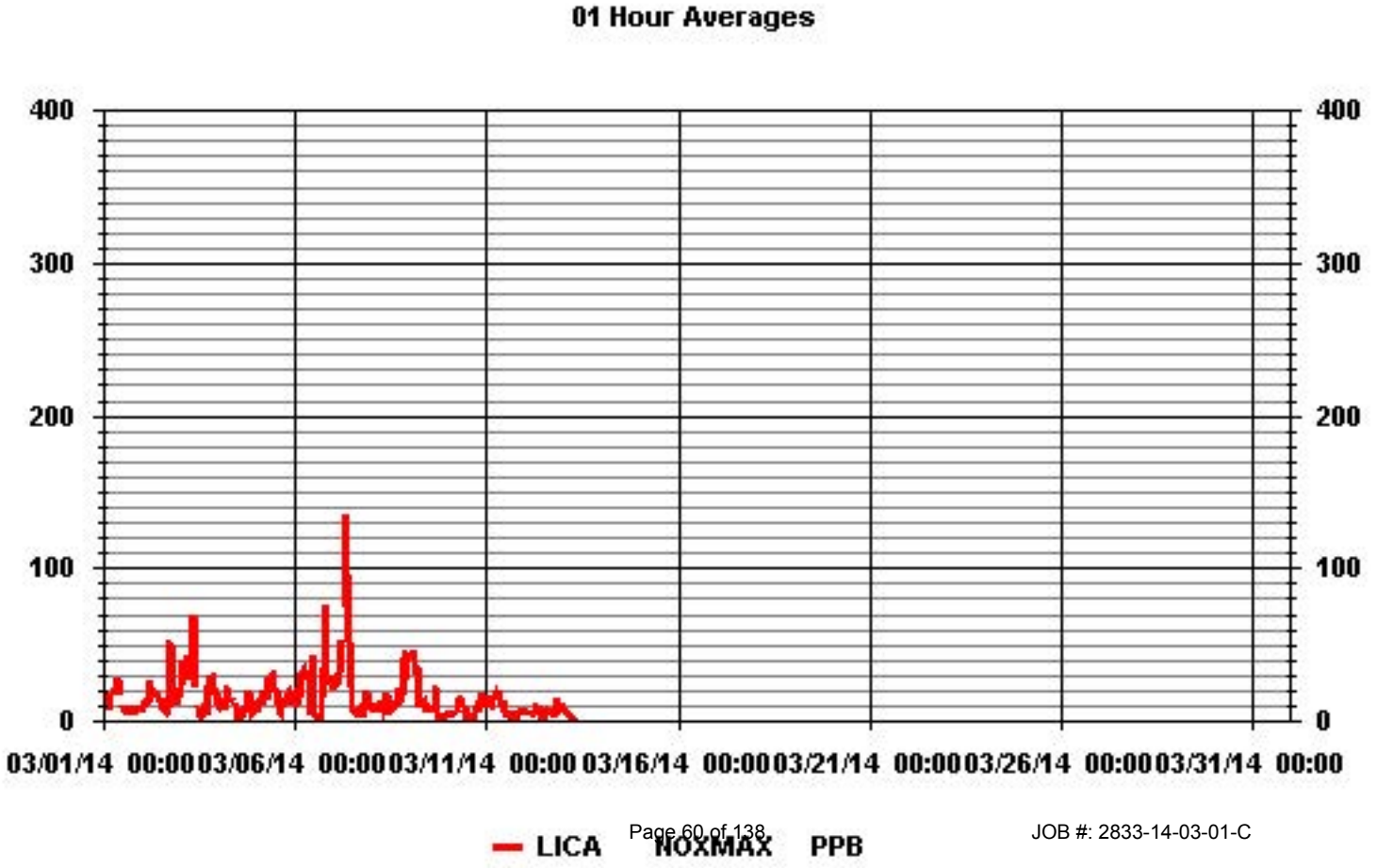
MAXIMUM INSTANTANEOUS VALUE: 135.9 PPB @ HOUR(S) 8 ON DAY(S) 7

VAR-VARIOUS

IZS CALIBRATION TIME: 13 HRS OPERATIONAL TIME: 304 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 15.03



JOB #: 2833-14-03-01-C

LICA
NOX_ / WD Joint Frequency Distribution (Percent)

March 2014

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
<	50.0	2.12	3.54	4.60	2.83	5.67	5.31	7.09	1.41	1.41	3.19	12.76	26.95	14.89	3.19	1.77	2.12	98.93
<	110.0	.00	.00	.35	.35	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.35	.00	1.06
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.12	3.54	4.96	3.19	5.67	5.31	7.09	1.41	1.41	3.19	12.76	26.95	14.89	3.19	2.12	2.12	

Calm : .00 %

Total # Operational Hours : 282

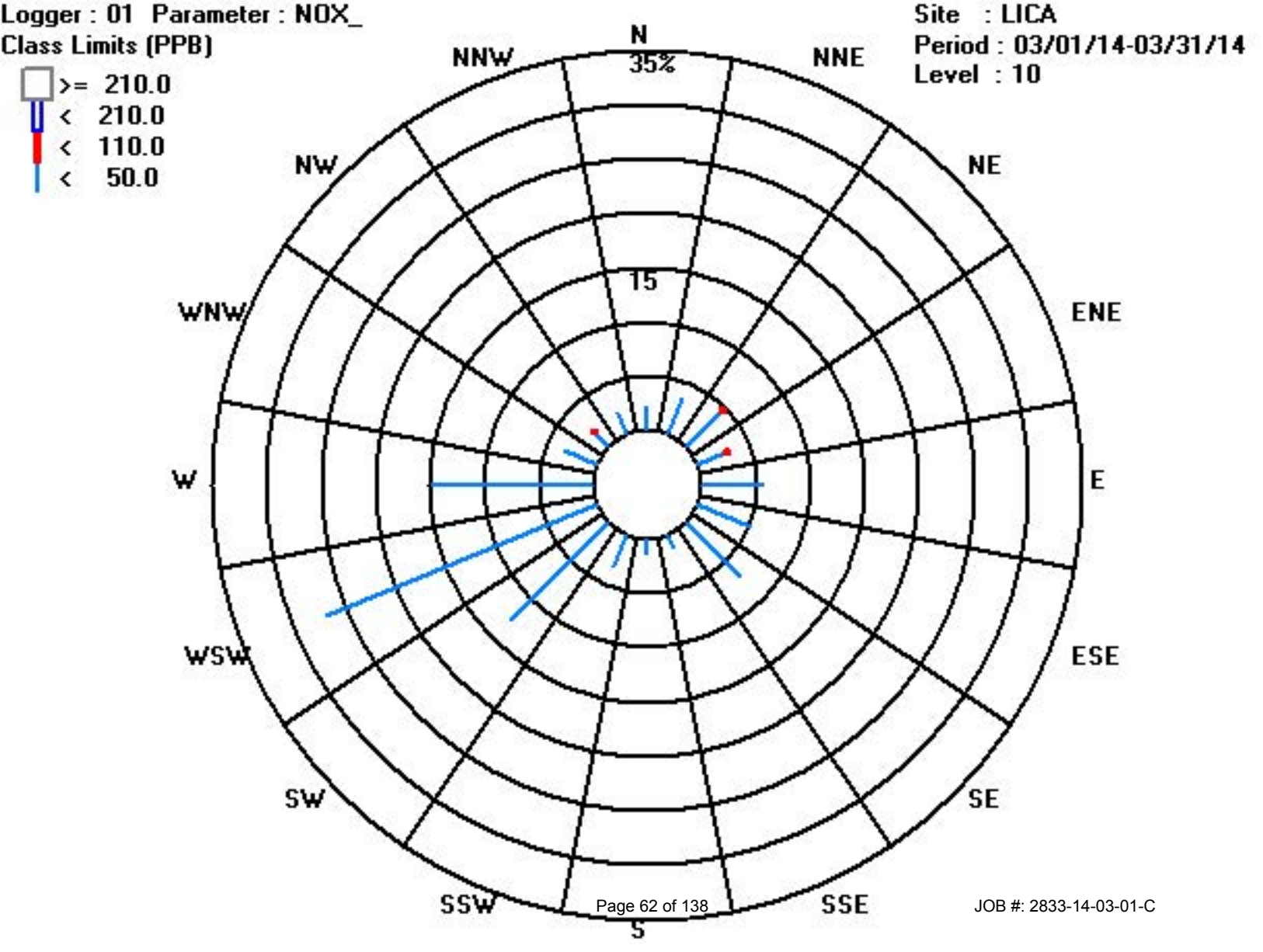
Distribution By Samples

Direction

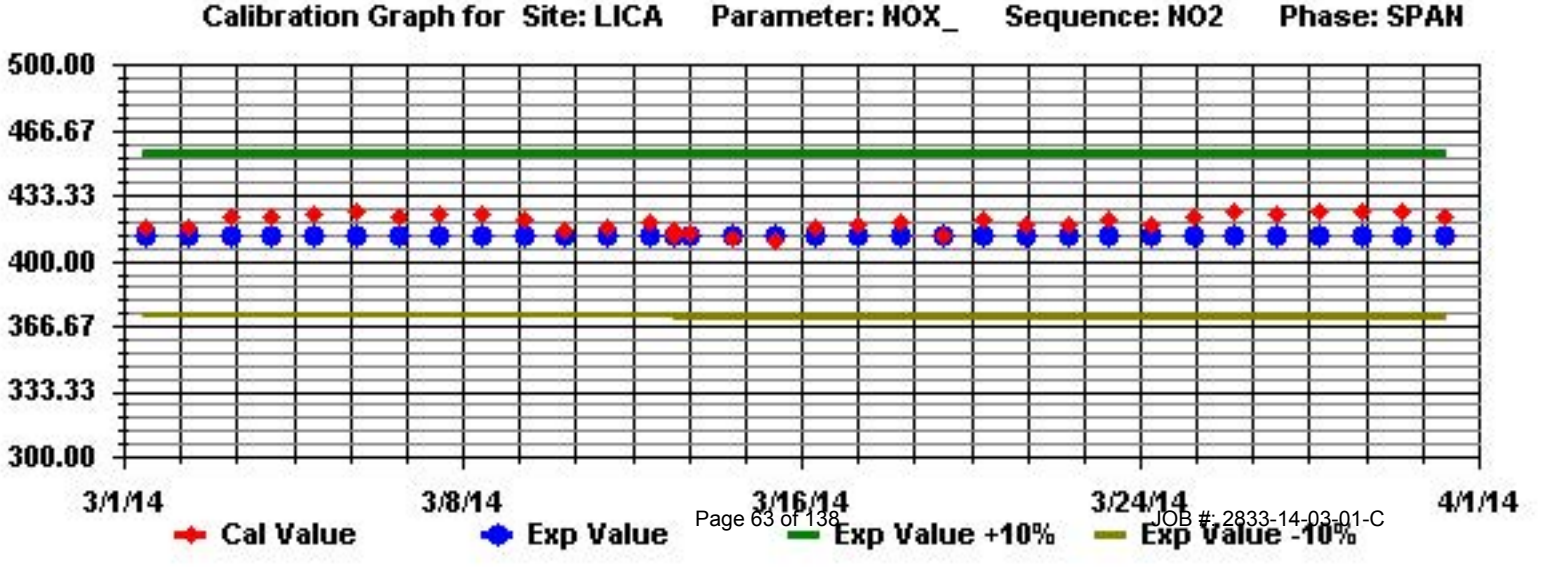
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	6	10	13	8	16	15	20	4	4	9	36	76	42	9	5	6	279
<	110.0			1	1											1		3
<	210.0																	
>=	210.0																	
	Totals	6	10	14	9	16	15	20	4	4	9	36	76	42	9	6	6	

Calm : .00 %

Total # Operational Hours : 282



JOB #: 2833-14-03-01-C


Calibration Graph for Site: LICA Parameter: NOX_ Sequence: NO2 Phase: SPAN
500.00
466.67
433.33
400.00
366.67
333.33
300.00
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

OZONE (O3) 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	19	18	15	14	16	12	10	11	15	17	19	22	**S**	26	28	29	30	32	35	33	29	25	25	26	35	22.0	24
2	25	25	24	21	21	17	15	16	21	25	27	**S**	30	34	39	42	39	36	29	21	21	22	23	20	42	25.8	24
3	20	13	6	7	6	7	9	9	16	28	**S**	38	41	41	41	41	41	36	26	26	20	28	25	26	41	24.0	24
4	30	34	34	35	36	33	32	34	36	**S**	39	40	40	41	41	40	40	39	36	32	34	37	35	31	41	36.0	24
5	29	26	22	19	21	19	18	15	**S**	24	27	30	33	42	42	43	42	39	37	30	31	27	25	31	43	29.2	24
6	28	26	25	26	19	13	10	**S**	20	35	39	40	41	42	43	43	43	40	27	11	16	16	12	13	43	27.3	24
7	14	11	12	5	3	2	**S**	5	8	14	25	36	41	42	43	44	44	45	45	45	43	39	38	38	45	27.9	24
8	42	44	44	43	43	**S**	41	42	42	42	45	46	47	47	46	47	48	47	44	41	26	29	24	14	48	40.6	24
9	11	8	7	17	**S**	31	40	39	39	40	43	45	48	50	53	54	48	44	45	45	44	45	44	43	54	38.4	24
10	42	42	41	**S**	40	39	34	33	37	39	41	43	45	46	46	47	47	45	38	34	28	22	20	22	47	37.9	24
11	25	23	**S**	30	27	21	15	28	35	36	38	39	42	45	47	47	48	48	48	48	49	48	44	41	49	37.9	24
12	41	**S**	44	43	43	43	41	42	43	44	47	48	49	51	52	52	54	52	52	50	46	42	41	36	54	***45.9***	24
13	**S**	40	44	46	45	46	45	45	44	43	43	44	44	**C**	**C**	**C**	**C**	44	42	38	36	32	36	**S**	46	42.1	24
14	22	15	14	16	11	4	4	3	10	30	38	37	38	39	41	38	37	36	34	35	38	38	**S**	32	41	26.5	24
15	30	29	30	32	33	33	32	31	31	31	33	34	35	37	39	40	41	40	37	35	35	**S**	35	35	41	34.3	24
16	36	35	33	32	32	28	24	25	30	35	39	43	46	46	47	47	48	47	47	46	**S**	38	39	37	48	38.3	24
17	33	33	34	28	28	28	26	23	32	36	41	42	43	44	43	42	41	40	42	**S**	37	28	20	21	44	34.1	24
18	18	17	14	14	11	18	29	32	35	38	39	42	44	45	46	46	45	44	**S**	39	31	28	25	23	46	31.4	24
19	15	17	17	8	11	2	2	17	29	31	34	43	45	44	43	43	44	**S**	39	37	30	23	21	15	45	26.5	24
20	16	14	11	14	36	39	39	37	37	36	36	36	37	38	39	39	**S**	38	36	34	32	31	29	30	39	31.9	24
21	31	31	30	30	30	29	27	26	31	32	33	35	38	40	40	**S**	41	40	39	39	39	38	39	34	41	34.4	24
22	31	29	23	22	24	28	**S**	**S**	37	38	40	40	39	39	**S**	40	40	41	41	34	30	25	24	25	41	32.9	24
23	25	24	21	17	19	17	14	19	31	36	39	40	43	**S**	45	45	44	44	43	43	43	42	41	39	45	33.7	24
24	39	39	39	38	37	34	32	31	31	32	34	**C**	**C**	**C**	**C**	**C**	**C**	43	39	37	30	29	26	24	43	34.1	24
25	22	21	21	21	16	14	**S**	16	28	35	39	**S**	43	44	44	45	46	47	46	43	39	39	33	22	47	32.9	24
26	26	43	43	43	42	42	42	42	42	43	**S**	42	42	43	43	43	43	42	40	36	32	28	28	30	43	39.1	24
27	23	27	33	29	26	26	20	25	29	**S**	41	44	44	44	46	46	46	45	44	42	39	33	29	28	46	35.2	24
28	23	22	20	19	18	18	16	30	**S**	37	41	45	47	47	48	52	***55***	52	50	46	42	35	32	33	***55***	36.0	24
29	25	22	31	27	26	23	20	**S**	34	45	48	50	51	51	52	51	51	50	50	49	45	43	41	40	52	40.2	24
30	40	39	36	31	27	25	**S**	22	16	15	16	18	18	19	20	21	21	22	21	18	14	21	20	22	40	22.7	24
31	19	17	14	11	10	**S**	5	21	26	27	31	33	34	35	35	36	37	39	40	38	39	37	34	31	40	28.2	24
HOURLY MAX	42	44	44	46	45	46	45	45	44	45	48	50	51	51	53	54	55	52	52	50	49	48	44	43			
HOURLY AVG	26.7	26.1	26.1	24.6	25.2	23.8	23.8	25.7	29.8	33.2	36.4	39.1	41.0	41.5	42.6	43.0	43.0	41.9	39.7	36.8	33.9	32.3	30.3	28.7			

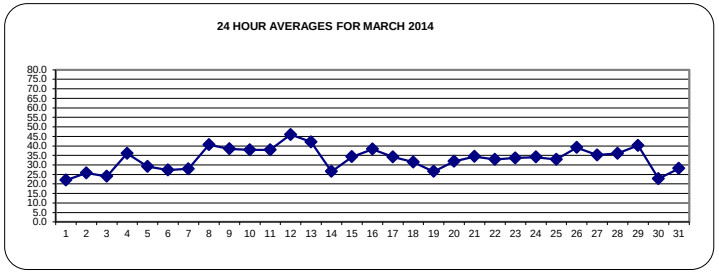
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

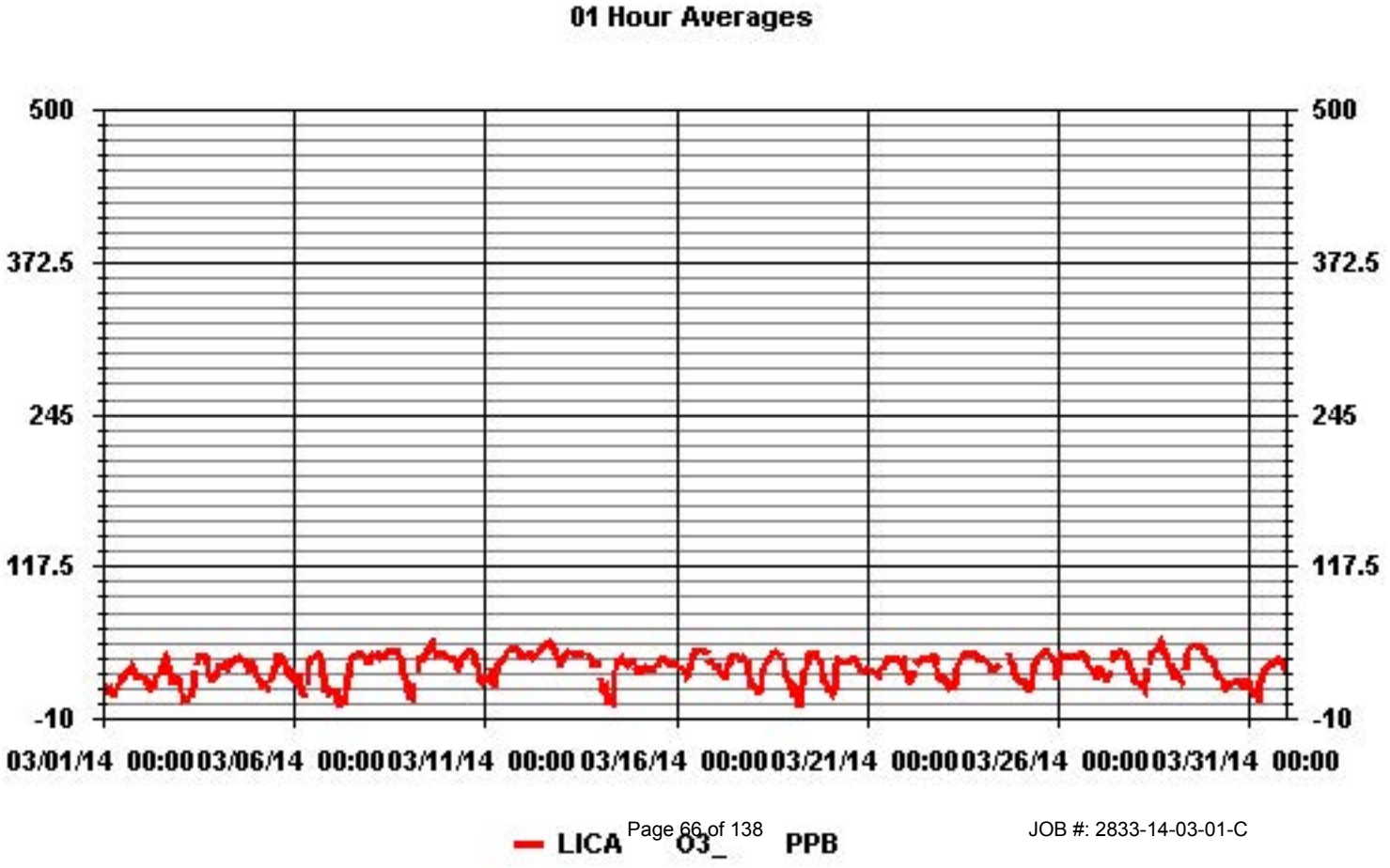
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	700					
MAXIMUM 1-HR AVERAGE:	55	PPB	@ HOUR(S)	16	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	45.9	PPB			ON DAY(S) VAR-VARIOUS	12
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	11.28		MONTHLY AVERAGE:		33.07	PPB



JOB #: 2833-14-03-01-C



JOB #: 2833-14-03-01-C

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

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	20	21	17	19	18	15	13	16	17	18	21	24	**S**	28	29	30	31	34	35	35	32	26	26	26	35	24.0	24
2	29	26	25	23	22	20	18	20	24	26	28	**S**	32	36	43	43	42	38	34	28	26	26	27	24	43	28.7	24
3	25	22	13	11	9	11	13	14	25	32	**S**	40	42	42	42	42	42	40	30	32	31	32	27	29	42	28.1	24
4	34	35	37	37	38	35	35	37	38	**S**	40	41	42	42	42	44	41	40	43	37	38	39	39	35	44	38.7	24
5	35	33	26	25	24	22	22	19	**S**	26	32	31	40	46	43	43	44	41	39	35	34	31	29	35	46	32.8	24
6	31	28	26	32	26	17	15	**S**	25	39	40	41	42	43	43	44	43	43	39	25	22	21	18	25	44	31.7	24
7	19	17	18	10	4	5	**S**	8	10	20	30	41	45	43	45	45	45	46	45	46	45	45	41	42	46	31.1	24
8	44	45	46	45	45	**S**	43	43	43	44	46	47	48	48	47	47	49	49	47	45	40	33	37	22	49	43.6	24
9	19	17	16	21	**S**	40	41	40	40	43	45	47	50	52	56	55	54	46	46	46	45	46	45	44	56	41.5	24
10	43	43	42	**S**	41	40	38	37	38	40	42	44	46	47	47	47	48	47	42	37	32	26	23	29	48	40.0	24
11	27	27	**S**	33	37	26	28	35	36	37	39	40	44	47	48	48	49	48	49	49	50	49	46	43	50	40.7	24
12	42	**S**	45	44	44	44	42	43	44	46	49	50	51	53	53	55	55	53	53	52	49	44	43	38	55	***47.5***	24
13	**S**	42	48	47	47	47	46	45	44	43	44	45	45	**C**	**C**	**C**	**C**	45	43	39	38	35	38	**S**	48	43.4	24
14	31	21	19	25	22	7	9	8	14	38	40	39	40	41	43	39	38	38	35	37	39	38	**S**	33	43	30.2	24
15	31	30	32	33	34	34	33	32	31	32	33	34	37	38	40	41	42	42	39	36	35	**S**	35	36	42	35.2	24
16	37	36	35	34	33	31	28	26	32	38	42	44	47	48	48	48	49	48	49	47	**S**	42	40	39	49	40.0	24
17	36	34	35	33	33	30	29	26	35	38	43	43	44	45	45	43	43	43	43	**S**	41	31	25	26	45	36.7	24
18	22	24	16	20	15	27	30	34	36	40	41	44	45	46	46	47	46	45	**S**	41	36	31	31	29	47	34.4	24
19	18	27	23	15	20	6	5	28	31	32	37	47	47	45	44	44	45	**S**	41	40	36	30	30	19	47	30.9	24
20	21	18	13	25	40	41	41	38	37	37	37	37	38	39	40	40	**S**	39	37	35	33	31	30	31	41	33.8	24
21	32	32	31	31	31	30	28	30	32	33	35	38	40	40	41	**S**	41	41	41	39	40	39	40	39	41	35.8	24
22	36	34	26	27	28	31	**S**	**S**	38	40	41	40	40	40	**S**	41	41	43	44	42	37	27	26	30	44	35.8	24
23	28	27	28	22	20	19	16	27	34	38	40	42	45	**S**	45	45	45	45	44	43	44	43	42	40	45	35.7	24
24	40	40	40	39	38	36	33	32	31	33	35	**C**	**C**	**C**	**C**	**C**	**C**	45	43	37	36	32	28	32	45	36.1	24
25	31	29	28	23	23	19	**S**	24	33	38	42	**S**	44	44	45	46	47	47	48	46	41	42	39	26	48	36.6	24
26	42	44	44	44	43	43	43	43	43	43	**S**	43	43	44	44	44	44	43	43	40	41	33	35	36	44	42.0	24
27	28	36	35	33	32	31	29	29	35	**S**	44	45	45	46	46	47	47	47	45	44	41	39	35	33	47	38.8	24
28	25	26	25	24	22	21	22	35	**S**	39	44	47	48	49	49	56	***57***	54	51	50	47	43	39	41	***57***	39.7	24
29	34	28	36	30	29	30	25	**S**	46	48	50	51	51	52	53	52	52	51	51	51	47	44	42	40	53	43.2	24
30	41	40	39	33	30	26	**S**	24	19	16	18	19	19	20	21	22	22	22	22	21	18	24	23	27	41	24.6	24
31	21	19	17	13	15	**S**	12	24	27	29	33	34	35	36	36	38	38	40	41	39	41	41	37	33	41	30.4	24
HOURLY MAX	44	45	48	47	47	47	46	45	46	48	50	51	51	53	56	56	57	54	53	52	50	49	46	44			
HOURLY AVG	30.7	30.0	29.4	28.4	28.8	27.0	27.3	29.2	32.3	35.4	38.3	40.6	42.6	42.9	43.7	44.1	44.3	43.4	42.1	39.8	37.8	35.4	33.9	32.7			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 700

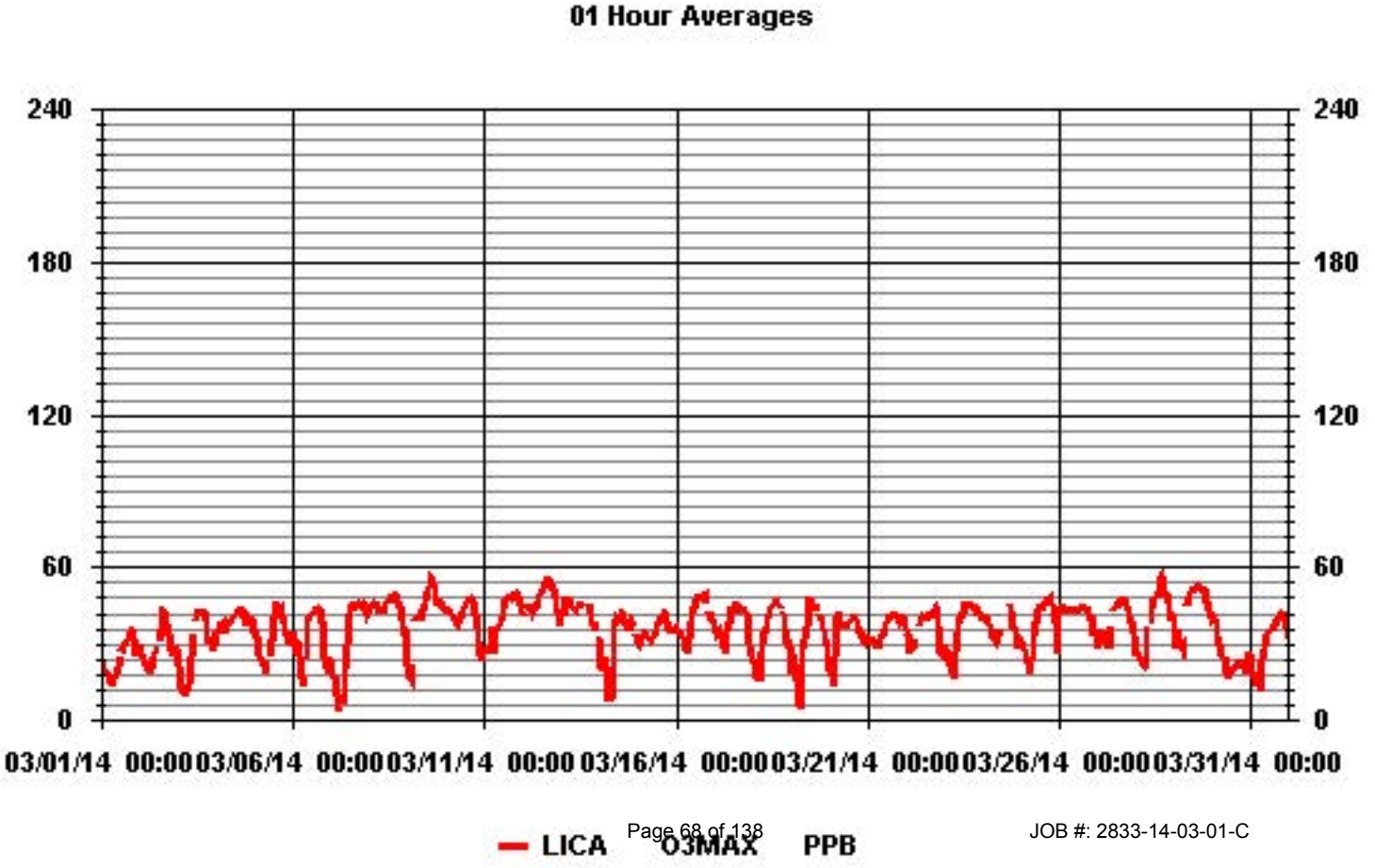
MAXIMUM INSTANTANEOUS VALUE: 57 PPB @ HOUR(S) 16 ON DAY(S) 28

VAR-VARIOUS

IZS CALIBRATION TIME: 34 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 10 HRS

STANDARD DEVIATION: 10.16



JOB #: 2833-14-03-01-C

LICA
O3_ / WD Joint Frequency Distribution (Percent)

March 2014

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	3.71	5.42	8.00	2.71	3.57	4.71	9.57	3.42	3.00	3.71	9.57	17.00	10.71	4.14	3.14	4.42	96.85
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.85	1.00	.14	.00	.14	3.14
<	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.71	5.42	8.00	2.71	3.57	4.71	9.57	3.42	3.00	3.71	9.57	18.85	11.71	4.28	3.14	4.57	

Calm : .00 %

Total # Operational Hours : 700

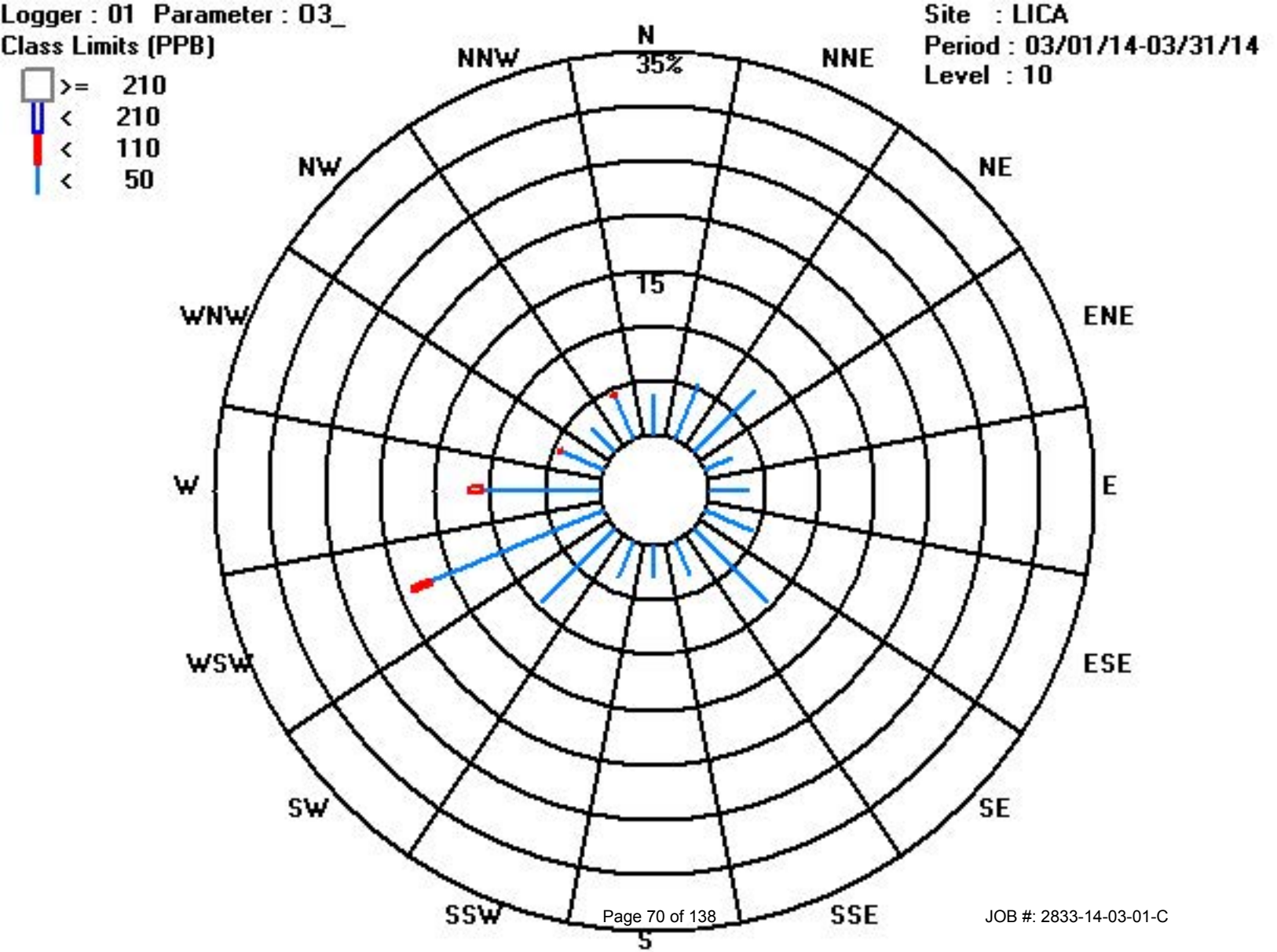
Distribution By Samples

Direction

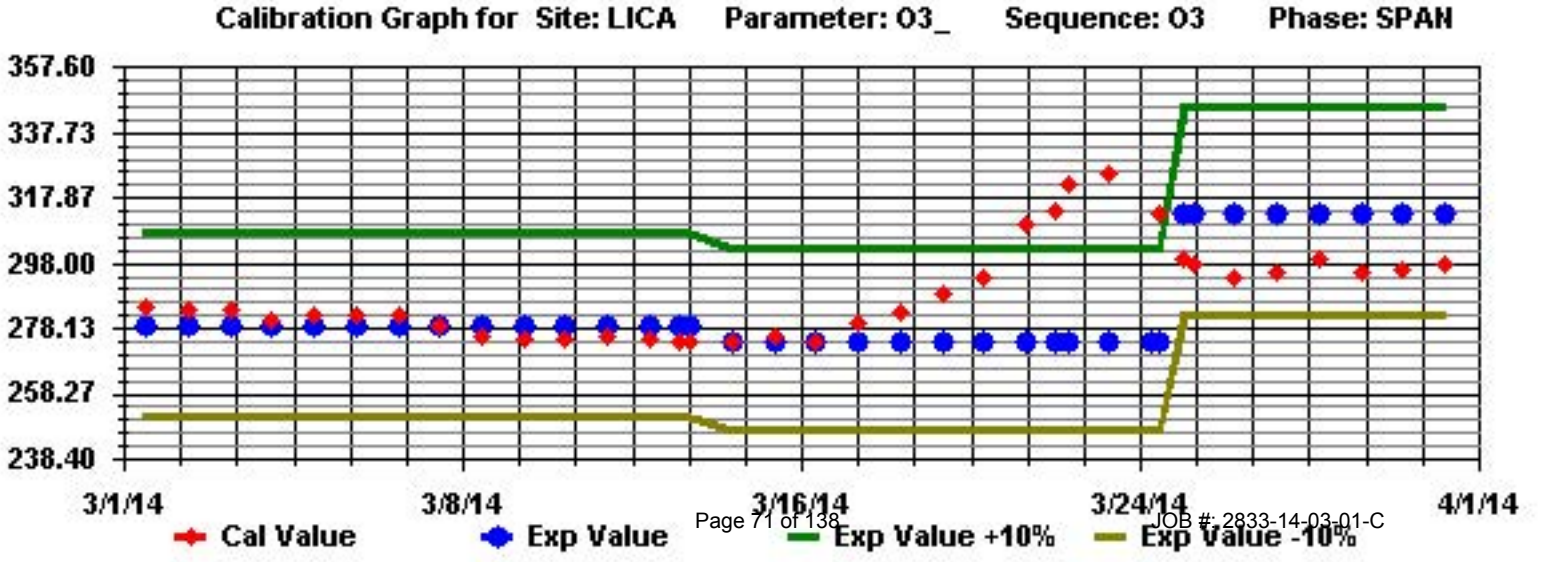
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	26	38	56	19	25	33	67	24	21	26	67	119	75	29	22	31	678
<	110												13	7	1		1	22
<	210																	
>=	210																	
	Totals	26	38	56	19	25	33	67	24	21	26	67	132	82	30	22	32	

Calm : .00 %

Total # Operational Hours : 700



JOB #: 2833-14-03-01-C


Calibration Graph for Site: LICA Parameter: O3_ Sequence: O3 Phase: SPAN
357.60
337.73
317.87
298.00
278.13
258.27
238.40
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ambient Temperature

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

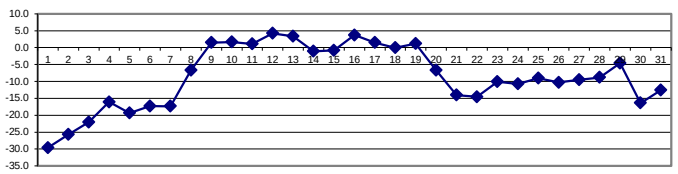
MST

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	-35	-36	-37	-37.3	-38.2	-38.5	-38.4	***-38.6***	-35.1	-31.1	-27.9	-25.3	-23.7	-23	-22.3	-21.3	-21.4	-22.6	-24.1	-25.3	-25.9	-26.7	-27.6	-28.5	-21.3	-29.6	24
2	-29.8	-30.4	-30.5	-31.6	-32.6	-33.8	-34.5	-34.9	-30.6	-27.4	-24.1	-21.1	-19	-17	-15.8	-15.2	-15.4	-17	-21.3	-24.3	-26.3	-27.7	-28.3	-28.6	-15.2	-25.7	24
3	-29.3	-29.5	-29.5	-30.5	-31	-32	-31.4	-30.9	-25.8	-22.5	-20.3	-17.5	-16	-15.2	-14.5	-14.1	-13.9	-14.7	-16.4	-17.6	-19.3	-20.1	-19	-18.3	-13.9	-22.1	24
4	-17.9	-17.4	-17.3	-17.7	-18.1	-18	-18	-17.9	-17.5	-17	-16	-15	-14.3	-13.8	-13.8	-13.6	-13.6	-13.7	-14	-14.5	-15	-15.6	-16.9	-19.5	-13.6	-16.1	24
5	-21.9	-23.6	-25.2	-26.5	-27.4	-28.4	-27.9	-26.3	-23.5	-19	-16.2	-13.8	-12.6	-12.1	-11.8	-11.4	-11.2	-13.7	-15.4	-17.2	-18.9	-19.7	-21	-18.9	-11.2	-19.3	24
6	-20.2	-19.9	-19.1	-18.9	-20.2	-22.2	-23.7	-21.8	-19.8	-16.5	-14.7	-12.9	-11.6	-10.3	-9.9	-9.8	-10.7	-11.5	-14.7	-17.6	-20.1	-21.8	-23.4	-24.1	-9.8	-17.3	24
7	-25.2	-26.6	-27	-27.7	-28.8	-28.6	-29	-28.6	-23.9	-19.6	-14.5	-11.6	-8.9	-8.1	-7.6	-7.6	-8.1	-9.1	-10.4	-11.1	-11.9	-13.3	-14	-14.6	-7.6	-17.3	24
8	-13.7	-12.8	-12.7	-12.3	-12.1	-12.2	-11.6	-10.7	-9.9	-8.8	-7.6	-5.7	-4.2	-2	-1.1	-1.1	-1	-1.5	-2.1	-2.7	-3.2	-3.7	-4	-4.2	-1	-6.7	24
9	-4.5	-4.5	-4.9	-4.7	-4	-2.8	-2.2	-2.2	-1.8	-1.5	-0.6	1	3.6	4.3	5.7	6.5	7.8	7.3	7	6.6	5.8	5.3	4.5	3.7	7.8	1.5	24
10	2.8	1.5	0.2	-0.6	-1.4	-1.1	-2	-2.5	-0.3	2.2	4	5.4	6.7	7.1	7.4	7.7	5.9	4.6	1.8	0	-1.8	-2.7	-2.7	-3	7.7	1.6	24
11	-2.9	-2.7	-2.3	-1.9	-2.4	-3.1	-4.1	-3	-1.2	0.5	2.1	3	4.1	5.5	6.2	6.4	5.5	4.2	3.1	2.6	2.3	2	1.4	0.8	6.4	1.1	24
12	1.2	1.7	2.5	1.5	1	0.7	0.4	0.9	2.1	4.4	6.2	7.7	8.1	8.7	8.4	8.3	8.6	7	6	4.9	4.1	3	2.6	1.4	8.7	***4.2***	24
13	1.1	0.9	1.9	2.5	2.3	3.6	3.1	3.1	3.3	3.6	3.5	4.1	5.1	6.8	7.3	6.9	6.7	6.1	4.4	2	1.5	1.1	1	-0.9	7.3	3.4	24
14	-2.5	-3.3	-2.2	-2.1	-3.1	-3.9	-4.7	-3.9	-1.2	0.1	0.8	0.9	1.3	1.6	1.9	1.9	1.6	0.4	-0.4	-1.2	-1.5	-1.6	-2.2	-2.6	1.9	-1.1	24
15	-3	-3.3	-3.2	-3.4	-3.8	-4	-4.4	-4.5	-4.4	-3.5	-1.7	-0.1	1.4	3.2	4.1	4.2	4.4	3.5	2.1	0.6	-0.4	-0.9	-1.1	-1.1	4.4	-0.8	24
16	-1.2	-0.9	-0.6	-0.6	-0.7	-1.4	-1.8	-0.7	1.8	4.9	7	8.6	9.6	9.7	9.9	***10***	9.2	7.6	5.8	4.7	3.5	2.1	1.6	1.1	***10***	3.7	24
17	0.6	1	1.2	0.4	-0.8	-1	-0.7	0	2	3.6	5.3	5.9	6.2	5.9	4.1	2.6	3	3	2.3	1.3	-0.1	-2.4	-3.5	-4.1	6.2	1.5	24
18	-5	-5.9	-6.2	-5.8	-5.7	-4.2	-1.7	-0.6	0.3	1.7	2.3	2.9	3.7	4.3	5	5.4	5.5	4.7	3.3	1.9	0.4	-1.8	-2.5	-3.1	5.5	0.0	24
19	-3.7	-4.5	-5.5	-6	-5.4	-4.3	-3.9	-2.6	-0.9	0.8	3.5	5.4	6.2	7.3	7.5	7.6	7.2	6.5	5.4	4.5	3	1.6	0.5	-1.2	7.6	1.2	24
20	-1.9	-2.6	-3.3	-3.2	-0.6	-0.5	-1.8	-3.7	-5.5	-5.8	-6.3	-5.7	-5.8	-5.8	-5.7	-6.2	-7.2	-8.5	-10.5	-12.2	-13.4	-14.1	-14.8	-15.6	-0.5	-6.7	24
21	-16.4	-17.1	-17.7	-18.3	-19.1	-19.8	-19.9	-18.9	-17.2	-15.9	-14.4	-12.6	-11.2	-10.1	-9.2	-8.2	-8.1	-8.3	-9.6	-11	-12	-13.3	-13.8	-14.7	-8.1	-14.0	24
22	-16.9	-18.3	-19.2	-19.8	-19.5	-19.5	-19.4	-18.8	-18.2	-16.7	-15	-13	-11.5	-10.1	-8.6	-7.8	-7.5	-8.1	-9.1	-11.5	-13.1	-14.8	-15.9	-16.7	-7.5	-14.5	24
23	-17.6	-18.4	-18.8	-19.2	-19.8	-20.4	-20.3	-16.6	-12.1	-9.1	-7	-5.6	-4.4	-3.7	-3.1	-2.5	-2.5	-3.2	-3.9	-5.1	-5.6	-6.3	-7.3	-8.9	-2.5	-10.1	24
24	-9.5	-10.4	-11.9	-12.4	-12.9	-13.7	-14.5	-14.3	-13.8	-13	-12.1	-10.5	-9.2	-7.9	-7	-6.2	-6	-6.1	-7.5	-9.1	-10.3	-12	-13	-14.2	-6	-10.7	24
25	-15.4	-16.1	-16.5	-17	-16.7	-16.4	-16.1	-14.3	-9.6	-8.4	-6.9	-5.5	-5.3	-4.2	-3.4	-2.8	-2.7	-3.3	-4	-4.7	-5.8	-6.4	-7.7	-8.1	-2.7	-9.1	24
26	-8.6	-9.9	-10.4	-11	-11.8	-12.8	-13.1	-13.2	-12.8	-12.2	-11.5	-10.8	-10.1	-9.2	-8.2	-7.8	-7.4	-7.1	-7.4	-8.7	-9.4	-10.5	-11.1	-12.6	-7.1	-10.3	24
27	-13.3	-12.8	-12.4	-14.7	-16.2	-16.9	-16.7	-13.1	-10.2	-8.5	-6.4	-5.6	-4.8	-4.8	-3.8	-4	-4	-4.3	-5.2	-6.8	-8.1	-10	-12	-13.9	-3.8	-9.5	24
28	-15	-15.5	-16.3	-16.7	-17.5	-18.2	-17.4	-13.1	-10.2	-7.6	-5.4	-4.1	-2.8	-2.2	-1.7	-1.4	-1.9	-2.3	-3.3	-4.8	-6.5	-8.6	-9.4	-9.6	-1.4	-8.8	24
29	-9.5	-8	-7.3	-7.2	-7.7	-9.3	-9.7	-7.9	-5.6	-3.6	-1.9	-0.5	0.4	1.2	1.9	1.7	1.1	0.8	0	-1.6	-6.3	-8.8	-10.5	-12	1.9	-4.6	24
30	-13.4	-14.5	-16	-17.9	-19.2	-20.3	-20.9	-21	-20.6	-19.8	-18.6	-17.2	-15.9	-14.7	-13.2	-12.3	-11.9	-11.6	-12.1	-14.4	-16.4	-16	-17.4	-17.9	-11.6	-16.4	24
31	-19.6	-20.3	-21.2	-22.1	-22.9	-23	-21.9	-17.3	-14.6	-12.3	-10.1	-8.6	-7.2	-6.2	-5.8	-5.6	-5.3	-4.9	-5.7	-7.4	-8.6	-9.5	-10.1	-10.5	-4.9	-12.5	24
HOURLY MAX	2.8	1.7	2.5	2.5	2.3	3.6	3.1	3.1	3.3	4.9	7	8.6	9.6	9.7	9.9	10	9.2	7.6	7	6.6	5.8	5.3	4.5	3.7			
HOURLY AVG	-11.8	-12.3	-12.5	-13.0	-13.4	-13.7	-13.8	-12.8	-10.9	-9.0	-7.2	-5.7	-4.6	-3.7	-3.1	-2.9	-3.0	-3.7	-5.0	-6.4	-7.7	-8.8	-9.6	-10.3			

STATUS FLAG CODES

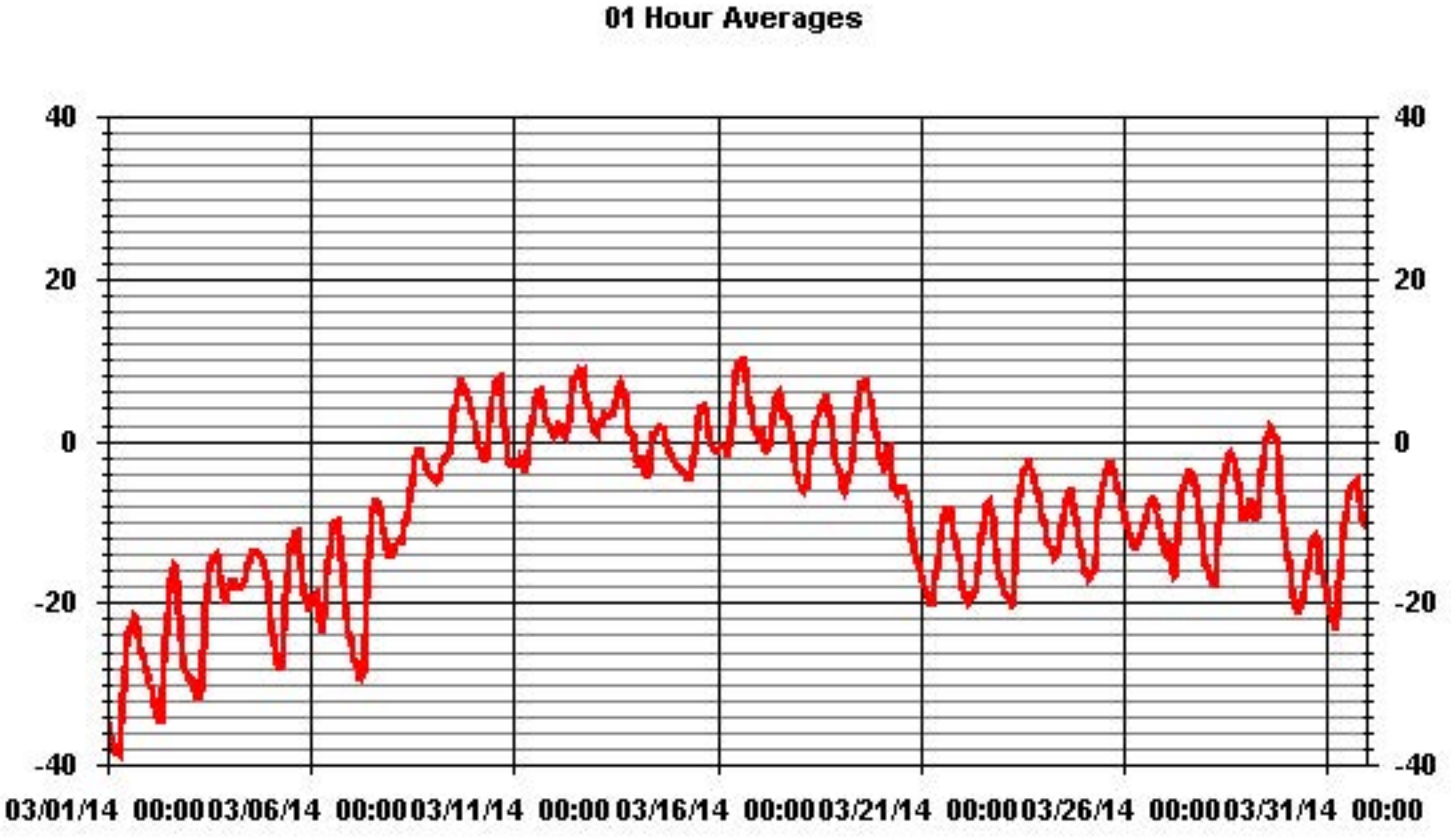
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

24 HOUR AVERAGES FOR MARCH 2014



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-38.6	°C	@ HOUR(S)	7	ON DAY(S)	1
MAXIMUM 1-HR AVERAGE:	10	°C	@ HOUR(S)	15	ON DAY(S)	16
MAXIMUM 24-HR AVERAGE:	4.2	°C			ON DAY(S)	12
					VAR-VARIOUS	
OPERATIONAL TIME:					744	HRS
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	10.20		MONTHLY AVERAGE:		-8.55	°C



JOB #: 2833-14-03-01-C

Relative Humidity

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

RELATIVE HUMIDITY (RH) hourly averages in %

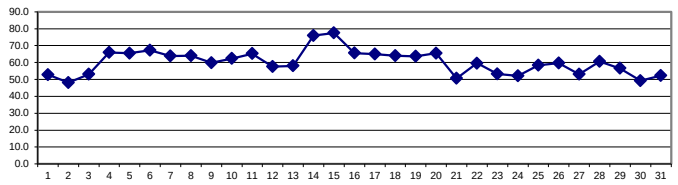
MST

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	64	64	65	65	64	64	64	63	62	54	47	40	38	38	38	37	40	44	49	52	53	53	54	55	65	52.8	24
2	58	59	58	60	63	67	67	67	61	52	43	37	33	29	23	***18***	22	27	39	49	53	54	57	58	67	48.1	24
3	61	64	65	66	68	68	68	67	57	47	45	41	40	39	38	37	36	39	48	51	57	56	58	58	68	53.1	24
4	59	59	59	65	71	70	70	68	67	68	68	63	61	61	63	62	62	63	65	67	69	71	75	77	77	66.0	24
5	76	75	74	72	72	71	71	72	72	67	60	56	54	50	51	50	48	57	63	67	73	73	75	73	76	65.5	24
6	75	74	73	73	75	77	75	75	72	69	66	63	60	55	50	47	50	52	63	71	74	74	75	74	77	67.2	24
7	73	72	72	72	70	71	70	70	71	69	60	54	48	49	49	49	50	53	58	63	68	72	75	76	76	63.9	24
8	73	71	74	74	73	73	74	72	69	66	63	58	55	50	49	50	51	53	56	60	64	67	69	71	74	64.0	24
9	73	74	75	74	73	69	68	69	69	67	64	59	53	55	51	53	54	56	43	43	45	47	49	52	75	59.8	24
10	55	59	62	64	66	65	68	69	61	54	50	48	45	43	41	39	50	56	74	79	85	88	88	89	89	62.4	24
11	88	88	87	83	85	87	89	85	72	61	54	53	51	44	40	41	47	53	57	58	57	58	62	66	89	65.3	24
12	65	63	61	66	68	69	72	71	66	59	53	48	46	44	45	45	43	48	50	54	56	61	62	67	72	57.6	24
13	65	62	55	56	57	58	69	73	73	67	65	58	51	37	28	29	29	34	41	71	75	77	78	85	85	58.0	24
14	88	90	88	88	90	91	91	90	84	74	64	66	64	60	57	61	61	64	70	73	67	70	83	87	91	75.9	24
15	88	90	90	88	82	80	83	84	84	82	78	71	67	60	58	59	61	65	70	78	83	85	87	87	90	***77.5***	24
16	88	88	87	87	87	91	***92***	89	79	65	56	48	38	36	35	35	40	47	52	58	64	69	71	73	***92***	65.6	24
17	76	73	70	74	77	76	75	74	70	62	52	49	47	49	65	70	61	56	48	50	58	72	77	78	78	65.0	24
18	83	86	87	87	86	86	91	89	81	60	54	52	45	37	33	31	32	37	45	52	59	71	75	77	91	64.0	24
19	80	81	85	86	85	84	84	75	67	62	52	40	37	38	40	41	44	49	53	56	64	69	74	81	86	63.6	24
20	83	86	87	88	85	83	83	79	73	68	63	59	56	49	47	44	43	46	51	56	59	60	61	62	88	65.5	24
21	61	60	62	63	64	66	67	62	55	51	48	43	39	36	35	34	34	35	40	45	48	53	53	61	67	50.6	24
22	71	75	78	78	75	74	71	65	62	57	51	47	46	44	41	39	39	40	43	54	62	70	73	75	78	59.6	24
23	77	78	78	78	77	76	76	73	67	55	46	43	37	29	28	27	29	31	33	38	41	46	54	61	78	53.3	24
24	64	63	73	70	64	65	67	60	56	53	49	43	39	36	32	28	27	28	37	47	52	60	66	71	73	52.1	24
25	74	76	77	79	79	78	78	73	55	53	50	49	48	43	41	40	37	40	43	48	54	55	63	69	79	58.4	24
26	67	60	62	65	70	75	75	74	72	69	65	63	58	50	42	39	39	38	42	52	58	65	64	68	75	59.7	24
27	73	70	65	73	77	79	78	65	55	50	38	34	34	37	32	32	31	32	35	41	48	56	66	72	79	53.0	24
28	76	75	77	77	78	78	76	68	59	49	41	41	39	37	35	35	49	52	56	62	67	75	76	77	78	60.6	24
29	79	78	76	78	79	83	84	78	71	64	54	44	38	31	26	25	29	32	30	41	61	62	61	53	84	56.5	24
30	49	47	53	59	58	59	61	60	53	49	46	43	41	38	36	35	34	34	37	51	59	54	63	62	63	49.2	24
31	70	71	74	74	75	75	73	59	51	45	35	32	29	28	31	33	35	35	40	49	55	60	62	64	75	52.3	24
HOURLY MAX	88	90	90	88	90	91	92	90	84	82	78	71	67	61	65	70	62	65	74	79	85	88	88	89			
HOURLY AVG	72.0	72.0	72.5	73.6	74.0	74.5	75.2	72.2	66.6	60.3	54.2	49.8	46.4	43.0	41.3	40.8	42.2	45.0	49.4	56.0	60.9	64.6	67.9	70.3			

STATUS FLAG CODES

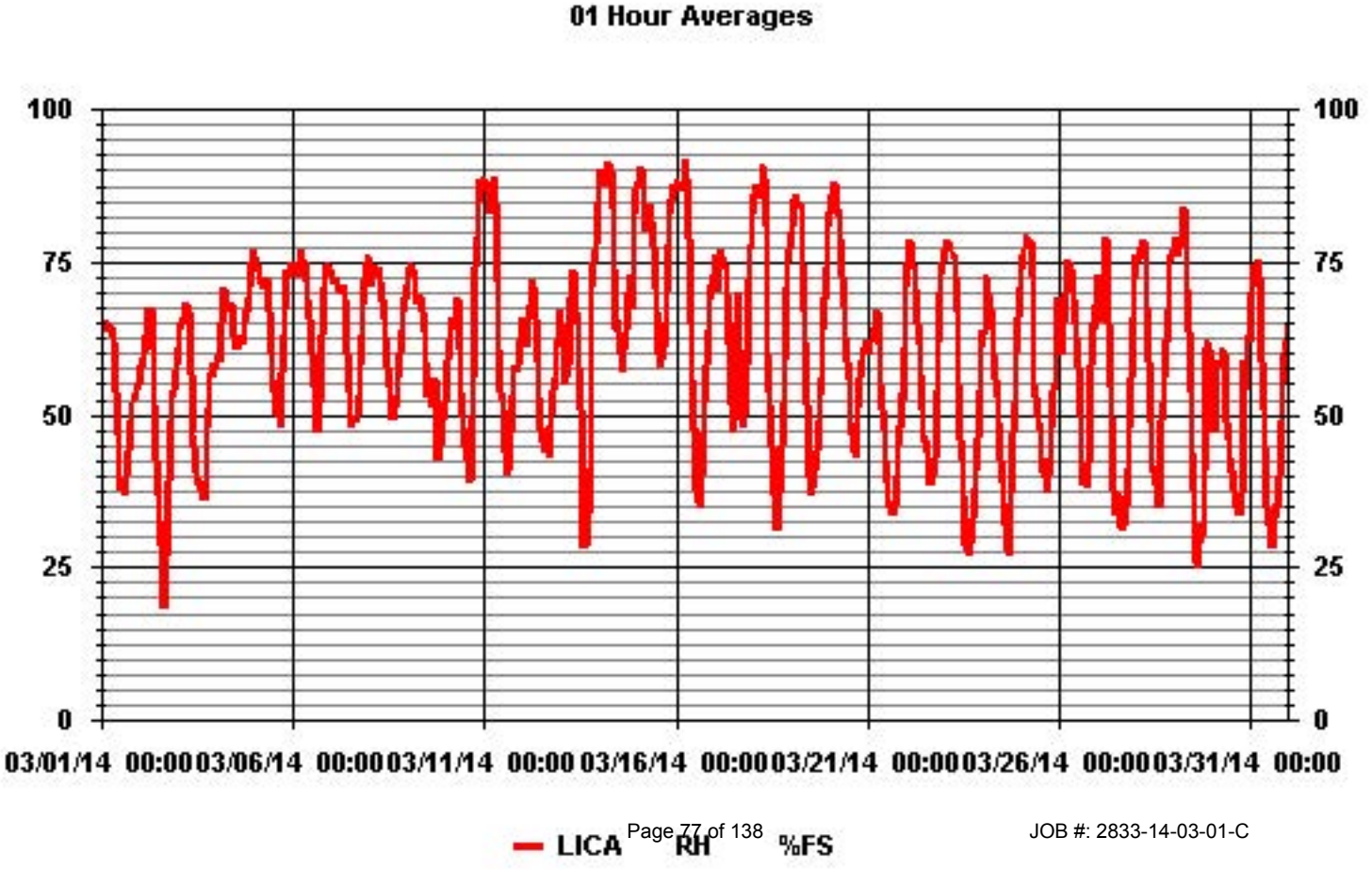
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

24 HOUR AVERAGES FOR MARCH 2014



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	92	%	@ HOUR(S)	6	ON DAY(S)	16
MAXIMUM 24-HR AVERAGE:	77.5	%			ON DAY(S)	15
					VAR-VARIOUS	
			OPERATIONAL TIME:		744	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	15.79		MONTHLY AVERAGE:		60.19	%



JOB #: 2833-14-03-01-C

Vector Wind Speed

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

WIND SPEED (WS) hourly averages in km/hr

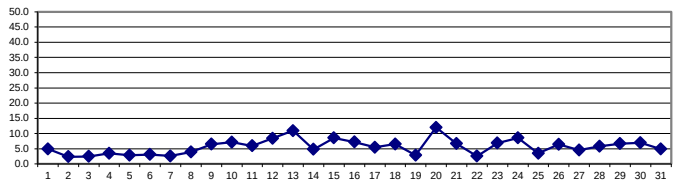
MST

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	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	1.6	2.2	1	0.2	3.1	1.3	0.4	3.9	3.7	6	6.9	7.7	9.8	9	8.5	9.2	6.7	4.5	6	6.8	6	5.7	5	9.8	4.9	24
2	3.5	4.1	4.5	2.9	3.3	1.3	0.5	0.4	2.1	3.8	2	1.2	5.4	3.7	1.3	1.8	5.5	4.1	2.5	0.1	0.4	1.5	0.3	0.6	5.5	2.4	24
3	1	1	0.1	0.6	0.3	0.2	0.3	0.4	0.3	2.8	5.1	3.8	5.6	5.7	6.2	6	5	4.5	3.4	2	0.4	1	1.8	1.3	6.2	2.5	24
4	2.2	1.4	3.9	5.3	4.8	4	5.2	5	4.1	4	3.7	4.8	3	3.4	3	3.6	3.5	3.9	2.2	1.9	3.1	3.8	1.6	1.4	5.3	3.5	24
5	0.7	1.1	1.3	0.4	0.3	0.4	1.1	0.7	1.7	1.9	2.7	3.8	4.1	4.7	7	6.1	4.7	5.3	4.2	4.1	4.8	2.9	2.6	2	7.0	2.9	24
6	0.6	0.7	0.9	1.6	1.8	1.5	3.1	1.9	1.2	7.4	7.8	6.8	7.3	7.1	6.9	6.8	4.6	3	0.7	0.2	0.9	0.5	0.8	0.4	7.8	3.1	24
7	0.3	0.9	0.8	0.2	1.3	1	0.3	0.8	1.4	0.7	2.1	4.4	4.1	4.7	6	7.1	5.8	5.2	5.4	2.8	2.4	1.9	1.3	1.7	7.1	2.6	24
8	2.1	2.7	3.5	4.5	5.1	5.4	4.9	5.9	4.6	5.2	6.9	3.8	4.9	3.6	5.7	6.5	4.5	4.4	3.5	1.6	0.9	1.4	1.4	1.2	6.9	3.9	24
9	0.9	0.9	2.1	1.8	1.7	8	5.5	6.1	4.3	5.3	6.8	6.2	5.8	9	7.1	6.3	10.1	8.3	8.5	10	11.3	10.9	10.1	8.6	11.3	6.5	24
10	8.5	6.5	5.9	6.3	6.5	5	3.8	5	4.7	5.7	7.2	9.3	11.4	14.5	14.9	14.8	18	10	5.4	2.5	1.6	0.9	0.7	2	18.0	7.1	24
11	3.3	0.5	3.7	3.7	0.9	0.4	2.4	4.9	7	7.4	7.7	8.2	9.3	10.4	10.3	11	9.8	7.3	7.5	6.6	5.6	5.5	4.5	5.1	11.0	6.0	24
12	8	8.3	10.1	8.8	10.1	7.8	8.5	9.2	7.7	8.5	9	10.7	12.3	11.9	12.5	10.9	10.1	6.4	6.6	4.9	5.7	4.2	5.4	4.2	12.5	8.4	24
13	6	5	7.7	8.8	9.2	12.9	13	14.1	16.6	17.7	16.3	***18.4***	16	13.7	17.8	18.2	16	13.4	7	5.1	2.7	0.7	3.4	2.7	***18.4***	10.9	24
14	0.9	0.2	0.2	1	0.1	0.3	1.1	1.2	0.5	6	7.4	4.4	5	5.3	6.7	9.5	9.1	9.4	7.6	10.8	9.4	8.2	5.8	5.1	10.8	4.8	24
15	8.9	9.1	9.7	10.1	9.3	7.4	8.6	8.5	8.3	6.4	6.3	10.6	8.3	6.5	6.9	7.5	6.2	5.2	7.5	10.9	11.7	9.9	10.9	10.3	11.7	8.5	24
16	9.4	7.4	2.4	4.8	1.7	2.3	2.1	3.2	6.3	7.7	9.4	11	14.9	15.6	14.6	12	9.5	8	7.9	5.8	3.3	4.2	4.7	5	15.6	7.2	24
17	3.6	4.8	4.4	3.5	3.6	4.6	4	3.6	4.1	5	7.4	8.1	9.2	9.7	10.3	10.3	10.3	6	6	5	2.5	2	1	2.4	10.3	5.5	24
18	0.4	0.4	0.7	1.1	2	4	5.4	7	7.4	11	12.7	13.6	12.9	12.3	12.5	11.7	12.2	9.8	6.1	4.2	1.8	2.9	2.5	1.9	13.6	6.5	24
19	1	1	1.2	1	1.4	0.3	0.7	2.7	3.8	5.3	6.1	6.1	6.9	6.1	7.4	4.7	3.8	2.1	1.7	1.8	0.5	2.3	0.4	0.6	7.4	2.9	24
20	0.6	0.5	0.6	2.5	8.4	11.1	13.4	15.5	16.2	15.7	17.9	14.7	14.1	14.2	14.1	15.6	18.2	16.1	14.3	15.2	13.3	12.6	12.7	10.6	18.2	***12.0***	24
21	10	10.1	7.7	7.5	4.8	4.5	3.4	6.3	6.5	6.8	4.9	5	6.6	9	8.7	9	10	9.7	8.5	6.3	5.2	3.7	5.2	0.4	10.1	6.7	24
22	0.6	2	1.8	2.4	0.4	2.7	4.3	5.1	6.4	4.7	3	1.3	4.6	3.5	1.7	1.9	5.4	3.8	2.3	1.4	0.5	0.6	0.3	0.2	6.4	2.5	24
23	0.6	1.1	0.4	0.8	0.4	0.7	0.2	3.8	7.2	8.2	10.4	10.3	10.9	13.1	12.4	12.3	11.4	9.4	9.8	7.9	9.2	7.6	9.6	7.9	13.1	6.9	24
24	6	9.2	8.3	7.9	9.4	9.1	7.9	13.5	13.5	13.2	12.5	11.3	10.9	8.9	10.5	10.2	8.8	7.8	6.8	7.2	5.1	4	1.9	1	13.5	8.5	24
25	0.5	0.6	0.6	0.8	0.1	0.4	0.9	0.7	1	5.1	7.7	7.3	8.5	7.4	6.7	7.5	6.7	5.5	4.7	1.8	3.1	3.3	1.6	0.8	8.5	3.5	24
26	5.1	10.4	9.5	9	8.8	9.6	10.6	10.4	9.2	8.7	9.3	8.5	8.9	9.1	8	5.8	5.6	3.5	0.3	1.5	0.2	0.6	1.1	0.6	10.6	6.4	24
27	0.9	2.6	2.9	1.2	0.6	0.8	0.2	0.7	2.5	4.2	5.3	7.8	8	10.6	11.3	10.8	10.2	8.5	6.5	4.3	4.7	1.5	1.3	1.7	11.3	4.5	24
28	1.3	2.8	2.9	2	1.3	3	2.3	5.8	6.7	6.4	9.5	11.4	11.7	11.6	12	12.8	11.8	9.1	5.3	3.2	2.2	0.5	1.4	2.3	12.8	5.8	24
29	0.8	0.6	1.2	0.3	0.7	0.6	0.4	1.3	4.5	5	5.4	6	8.2	9.4	9.7	9.8	10.7	9.9	9.1	11.2	15.3	13.6	13.1	12.9	15.3	6.7	24
30	10.7	11.4	9.7	11.5	10.4	11.1	10.1	9.7	10.6	9.7	9.1	8.5	7.9	5.6	4.8	4.5	4.9	4.7	2.1	0	1.6	3.8	2.3	2.9	11.5	7.0	24
31	1.4	0.6	0.5	0.1	0	0.7	0.9	6.4	7.9	7.4	9.5	10.4	9.2	6.5	7.8	9.9	8.3	5	4.4	3.7	2.4	5.2	4.8	4.5	10.4	4.9	24
HOURLY MAX	10.7	11.4	10.1	11.5	10.4	12.9	13.4	15.5	16.6	17.7	17.9	18.4	16.0	15.6	17.8	18.2	18.2	16.1	14.3	15.2	15.3	13.6	13.1	12.9			
HOURLY AVG	3.3	3.5	3.6	3.7	3.5	4.0	4.1	5.2	5.9	6.8	7.6	7.9	8.5	8.6	8.8	8.8	8.7	7.0	5.6	4.8	4.5	4.1	3.9	3.5			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

24 HOUR AVERAGES FOR MARCH 2014



LAST CALIBRATION: November 28, 2012

DECLINATION : MAGNETIC DELINATION 19 DEGREE EAST

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 742

MAXIMUM 1-HR AVERAGE: 18.4 KPH @ HOUR(S) 11 ON DAY(S) 13

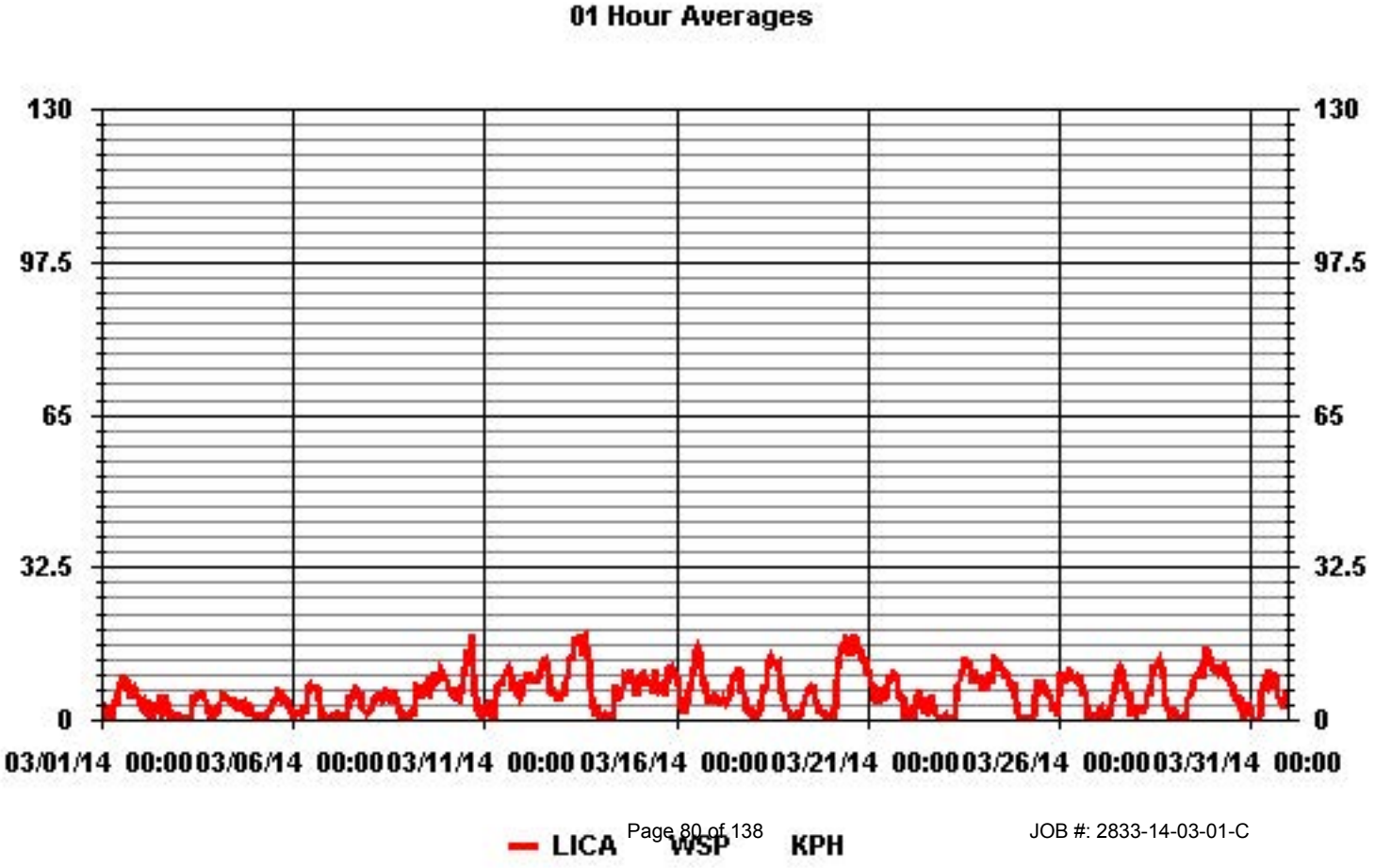
MAXIMUM 24-HR AVERAGE: 12.0 KPH ON DAY(S) 20

VAR-VARIOUS

OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 0 HRS AMD OPERATION UPTIME: 100.0 %

STANDARD DEVIATION: 4.15 MONTHLY AVERAGE: 5.66 KPH



JOB #: 2833-14-03-01-C

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

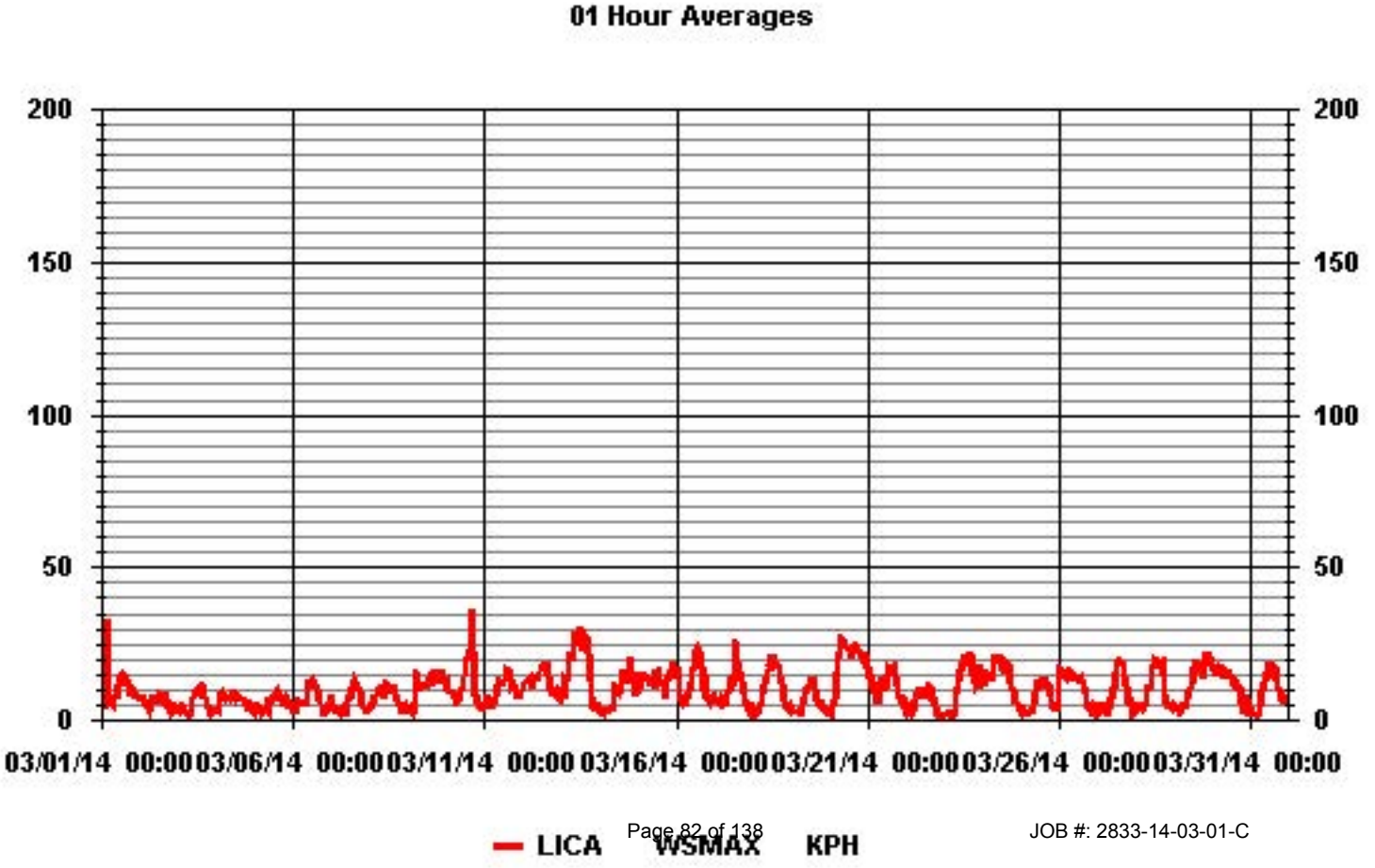
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	7.1	3.7	4.6	15.7	33.3	6.3	5.7	5	7.6	7.8	11.1	11.4	14.2	15.6	15	14	13.7	12	7.3	10	9.1	8.4	7.7	7.8	33	10.6	24
2	6.6	6.6	7.1	5.7	5.8	4.6	3.4	4.9	7.2	7.3	5.1	7.2	8.6	8.1	6.2	5.6	9.1	7.5	5.3	2.8	3.4	5.8	2.3	4.3	9	5.9	24
3	4	3.1	4.5	4.5	3.2	2.5	2.5	1.9	3.1	6.9	8.2	9.2	10	10.9	11.3	11.4	8.1	7.6	5.7	4.1	2.3	3.3	3.1	3.1	11	5.6	24
4	3.9	3.3	8.3	9	7.7	7	7.9	8.2	7.9	6.6	7	9.8	7.1	8	7	7.2	7.3	7	5.2	4	4	6.2	3.1	3.2	10	6.5	24
5	2.3	3.5	5.3	3.7	2	2.9	3.7	4.1	3.3	7.7	6.1	6.7	7.6	9.1	10.2	9.1	7	7.7	7.1	6.1	7.3	6.5	5.9	4.3	10	5.8	24
6	3.2	2.7	2.6	6.4	6.1	5	5.1	6.8	4.5	11.1	13.3	12.1	13.1	11.9	11.8	10.8	7.1	5.8	2.8	2.9	2.4	3.6	5.6	2.5	13	6.6	24
7	8.1	3.2	4.5	2.1	4.2	3	4.1	3.6	2.9	2.7	5.7	9.3	8.7	10.7	13.8	13.1	11	10.8	9.7	5.5	4.6	3	3	3.1	14	6.3	24
8	4.9	4.8	5.7	7.6	8.1	9.5	9.5	11.7	8.1	8.4	13	10.5	8.9	10.3	9.7	10.2	7.4	7.2	5.2	4.9	2.9	3	4.4	3.3	13	7.5	24
9	3.1	3	3.9	2.8	3.8	16.1	13.2	9.5	10.4	12	11.7	10.2	11.7	13.5	12.6	11.1	15.6	15.4	12	13.8	15.9	16.1	13.2	11.5	16	10.9	24
10	12.4	9.8	9.1	9.2	9.5	7.9	6.2	6.8	7.8	9.9	10.5	13.8	19.4	20.1	22.9	21.9	***35.9***	23.3	8.8	6.3	4.6	4.9	4	4.2	***36***	12.1	24
11	5.2	3.7	8.3	5.8	5.8	5	5.8	7.5	11	13.6	11.3	12.8	13.2	16.6	16	16.2	14	10.8	11.3	10.1	8.4	8.8	7.2	9.8	17	9.9	24
12	11.3	11.9	12.5	12.6	13.5	10.5	11.9	12.7	14.7	12.4	15.8	17	17.6	18.1	18.4	14.9	14.6	9.9	11.2	7.8	9.1	9.8	8.3	7.5	18	12.7	24
13	9.5	8.9	13.9	13.4	14.6	22	19.7	20.8	23.7	28.6	24.9	27.9	30.2	22.5	27.3	27.1	28.2	22	13.7	7.9	4.8	2.9	6	4.2	30	17.7	24
14	2.7	3.3	3.1	2.4	3.5	3	3.8	4.2	2.8	11.8	11.5	10.6	9.3	10.7	15	16.3	14.5	15.4	11.8	20.2	16	12.5	10.1	8	20	9.3	24
15	12.7	12.1	15.7	14	12.5	14.1	13.5	13.3	11.9	11.5	12.4	15.9	16.3	12.3	12.7	13.1	12.8	7	12.5	14.2	16.1	16.6	19.1	15.1	19	13.6	24
16	15.4	17	7.3	7.1	5.6	6.2	5	7.3	9.3	12.3	16	17.4	22.9	23.9	22.8	17.6	17.4	12.3	13	8	7.2	6.1	7.4	7.8	24	12.2	24
17	6.4	6.5	6.3	5.8	7.8	7.4	6	5.8	8.5	9.8	13.1	12.8	14.8	26.5	18.6	18.2	16.5	13.2	9.3	7.4	5.4	3.5	4.1	5.5	27	10.0	24
18	1.8	1.4	1.8	2.3	4.1	5.8	8.2	11.5	13.6	16.6	19.2	18.5	21.7	20	18.7	18.4	17.2	14.9	12.2	6.9	6.3	4.5	4.2	4.8	22	10.6	24
19	2.7	3.1	3.1	2.8	3.2	3	2.7	5.2	6.8	8.3	10.6	11.7	14	12.2	13.5	10.9	7.2	5.5	4.8	6.2	2.4	4.7	2.6	2.9	14	6.3	24
20	2.2	1.5	4	6.7	15.5	20	22.2	26.8	26.5	25.7	24.6	23.6	23.1	23.2	20.3	23.6	25.1	21.9	23.8	21	20.8	18.8	22.1	17.8	27	***19.2***	24
21	15.7	16.2	15.6	10.9	9.2	6.2	6.2	12	10.2	13.5	10.6	10.7	14.6	17	16.3	16.5	17.2	15	12.1	9.1	7.7	4.9	8.5	4.2	17	11.7	24
22	2.4	3.3	4	4.9	3.2	4.4	8.2	8.5	10.8	9	9.9	6.5	10.2	9.3	12.1	8.7	10.3	7.8	4.9	2.4	1.6	1.1	1	1.5	12	6.1	24
23	2	2.4	2.2	2.7	1.5	2.4	1.2	8.7	10.5	12.7	16.3	18.4	17.3	21.5	17.4	19.6	22.1	15.7	16	11.6	12.4	10	17.9	12.9	22	11.5	24
24	10.9	16.1	14.5	12.9	15.6	14.2	12.3	20.9	20.8	19.9	20.5	21.5	16.9	15.7	19.4	17.6	18.5	12.6	10.5	10.3	6.6	5.9	4	4.2	22	14.3	24
25	2.2	3.3	2	2.3	2	2.4	3	2.8	5.4	9.3	12.4	12.1	12.7	11.9	12.5	12.9	11	11.2	8.1	4.5	4.1	4.9	5.2	2.8	13	6.7	24
26	17.8	15.9	13.9	15.1	14.1	15.7	16.2	15.1	12.9	14.5	14.5	14.2	13.6	14.4	13.4	10.1	10.3	6.4	4.6	3.5	1.3	5	4.3	1.8	18	11.2	24
27	2.4	5	4.7	5.8	2.1	4.5	1.4	3.2	6.7	7.2	10.3	15.2	19.1	19.4	19.5	19	18.2	15.1	11.7	6.4	6.7	5.4	2.2	2.6	20	8.9	24
28	3.5	5.7	4.5	4.4	3.6	4.3	5.7	9.1	10.7	11.5	16.9	18.6	17.3	19.3	19.4	18.8	19.2	14.7	9.2	6.1	5	4.7	3.8	5	19	10.0	24
29	4.1	3.7	3.6	2.7	3.2	5.3	3.6	5.2	7.2	9.4	10.4	12	17.2	15.8	19.3	15.3	16.5	17.8	13.2	21.5	21.8	19.2	18.2	18.8	22	11.9	24
30	15.6	17.9	14.7	16.6	15.6	16.7	18.4	15.2	14.4	14.3	15.9	14.4	13.9	11.7	10.8	11.4	9.4	11.2	5.6	1.7	7.5	7.2	4	4.7	18	12.0	24
31	2.5	1.8	1.8	1.6	1.4	1.9	4	9.8	11.7	13	15.5	17.9	18.1	13.6	15.2	17.9	13.6	11.3	10.2	6.9	5	8.1	6.8	6.1	18	9.0	24
HOURLY MAX	18	18	16	17	33	22	22	27	27	29	25	28	30	27	27	27	36	23	24	22	22	19	22	19			
HOURLY AVG	6.6	6.6	6.9	7.1	7.8	7.7	7.8	9.3	10.1	11.8	13.0	13.9	14.9	15.3	15.5	14.8	14.7	12.1	9.6	8.2	7.5	7.3	7.1	6.3			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	36	KPH	@ HOUR(S)	16	ON DAY(S)	10
					VAR-VARIOUS	
OPERATIONAL TIME:					744	HRS



JOB #: 2833-14-03-01-C

LICA
WSP / WD Joint Frequency Distribution (Percent)

March 2014

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	1.20	1.88	2.82	2.15	3.09	3.62	5.77	1.61	1.61	2.68	5.77	10.88	4.43	2.28	1.34	1.74	52.95
<	12.0	1.20	1.88	4.30	.00	.40	.67	3.76	1.47	.94	.26	3.36	7.12	4.56	1.07	2.01	2.15	35.21
<	20.0	.80	1.07	.67	.00	.00	.00	.00	.00	.00	.00	.00	.53	2.01	1.07	.94	.80	7.93
<	29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.22	4.83	7.79	2.15	3.49	4.30	9.54	3.09	2.55	2.95	9.13	18.54	11.02	4.43	4.30	4.70	

Calm : 3.89 %

Total # Operational Hours : 744

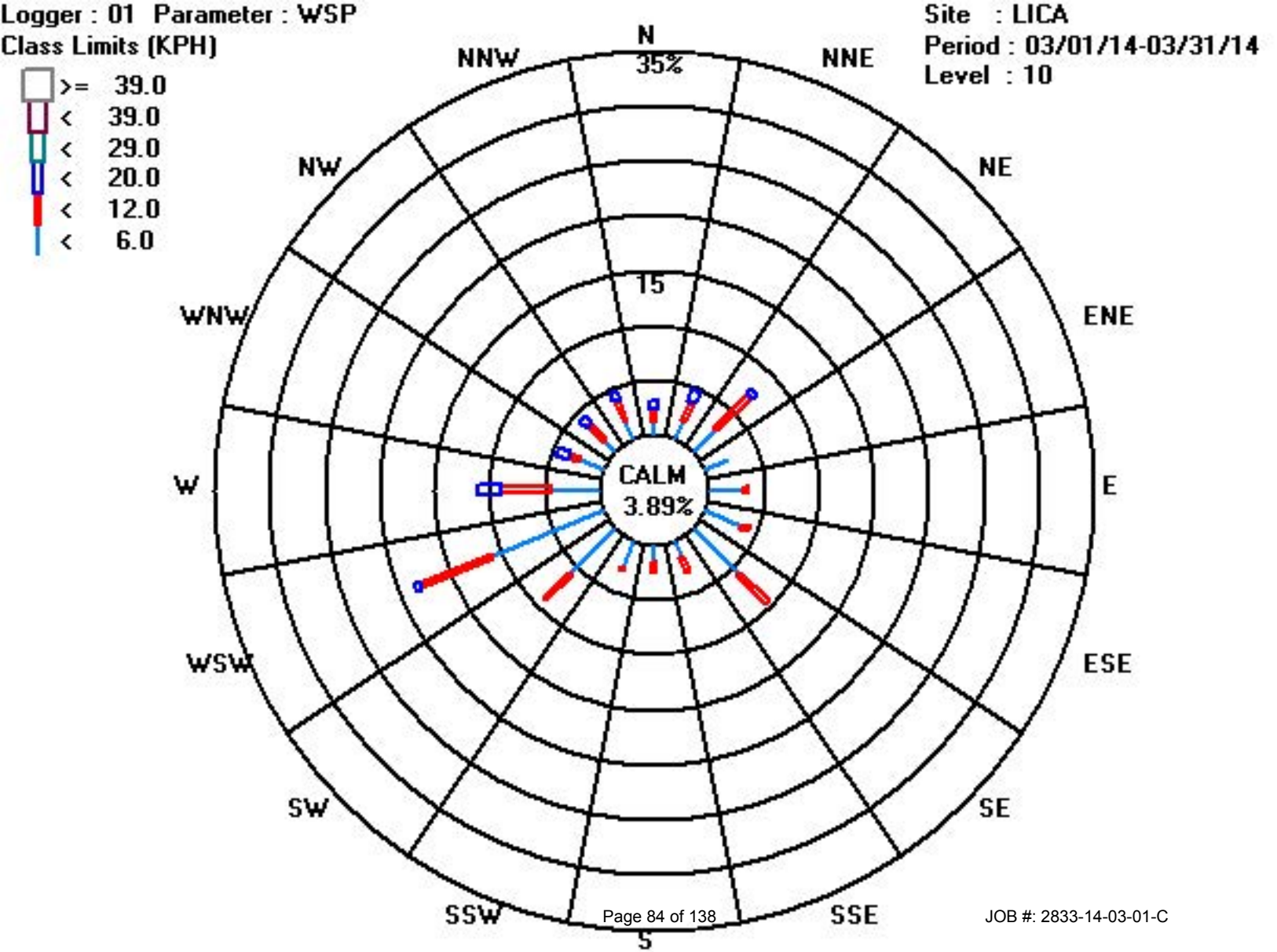
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	9	14	21	16	23	27	43	12	12	20	43	81	33	17	10	13	394
<	12.0	9	14	32		3	5	28	11	7	2	25	53	34	8	15	16	262
<	20.0	6	8	5									4	15	8	7	6	59
<	29.0																	
<	39.0																	
>=	39.0																	
	Totals	24	36	58	16	26	32	71	23	19	22	68	138	82	33	32	35	

Calm : 3.89 %

Total # Operational Hours : 744



JOB #: 2833-14-03-01-C

Vector Wind Direction

Lakeland Industry & Community Association - Cold Lake South Site

MARCH 2014

WIND DIRECTION (WD) hourly averages in degrees

MST

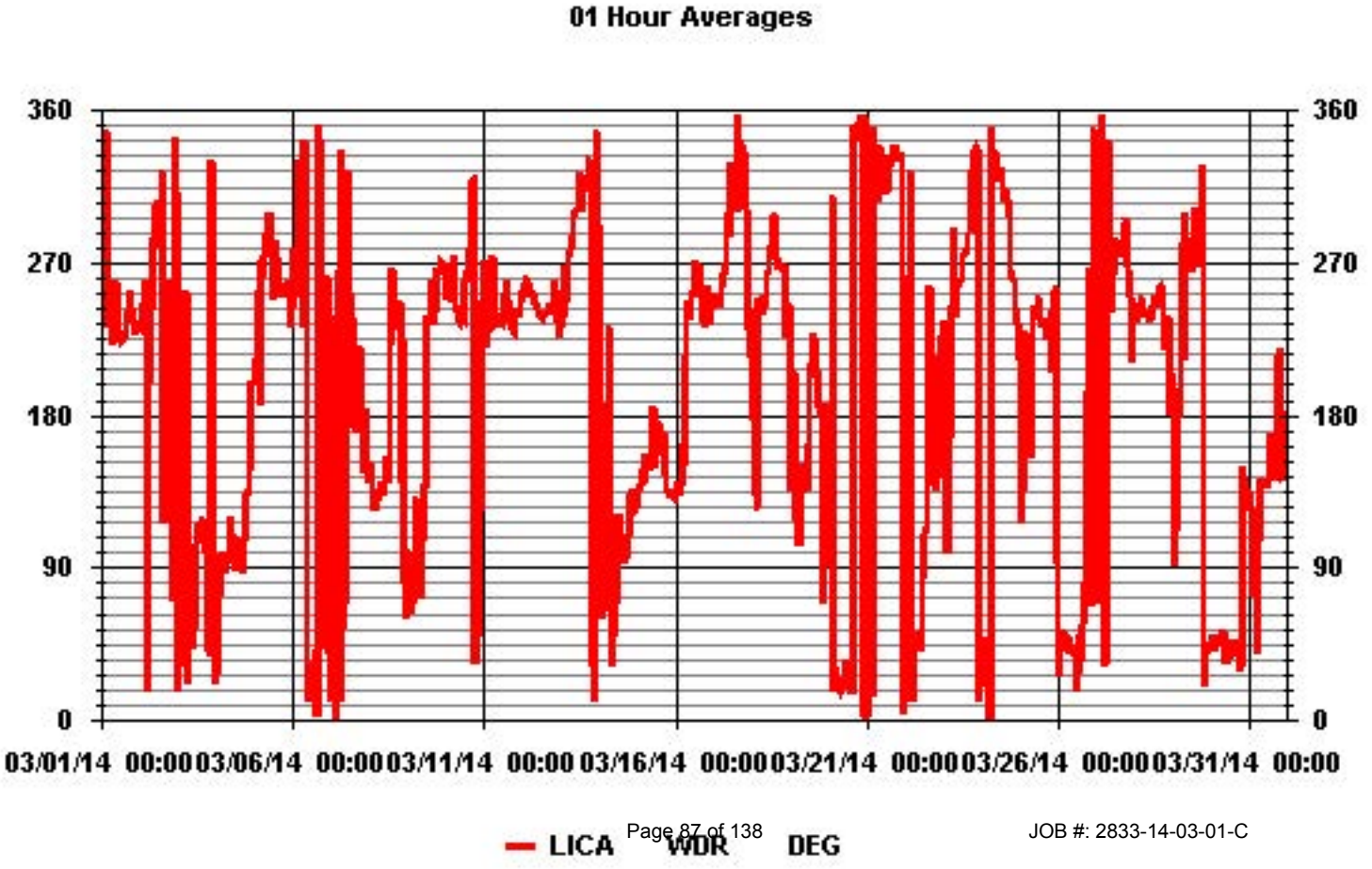
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	278	232	251	348	278	261	248	221	242	260	244	227	228	224	225	228	235	242	253	245	236	228	230	233	348	NNW	24
2	232	240	246	250	259	16	199	242	285	279	303	307	284	287	324	115	254	250	259	208	70	240	344	313	344	NNW	24
3	16	43	31	39	199	253	21	106	41	65	53	98	115	113	117	120	106	100	63	42	37	331	53	21	331	NNW	24
4	28	29	73	97	100	87	92	95	93	120	104	109	87	108	97	103	86	92	106	133	136	147	199	200	200	SSW	24
5	211	213	254	185	272	261	274	287	300	273	299	247	268	283	274	268	256	249	254	250	257	260	231	243	300	WNW	24
6	278	268	262	250	330	289	232	343	333	11	28	34	30	24	41	1	352	344	146	41	255	262	232	40	352	N	24
7	10	239	89	0	266	10	336	312	53	68	324	286	254	239	174	169	197	215	221	196	164	145	184	140	336	NNW	24
8	153	143	137	124	136	134	133	141	137	133	143	155	140	221	267	251	245	230	241	248	140	226	81	59	267	W	24
9	101	85	63	68	96	132	124	102	71	105	140	136	239	237	239	259	233	241	267	265	266	272	271	265	272	W	24
10	266	249	251	247	256	275	242	242	237	235	237	236	259	265	272	278	318	319	34	34	247	49	123	225	319	NW	24
11	271	219	250	248	256	274	233	234	240	235	236	235	252	257	257	249	236	232	230	229	243	237	243	247	274	W	24
12	253	257	262	254	255	250	252	252	247	244	240	238	237	239	239	240	240	246	244	241	259	255	236	226	262	W	24
13	231	238	268	247	260	273	277	286	297	300	302	313	323	299	318	321	312	330	329	46	33	11	349	294	349	NNW	24
14	198	59	105	175	187	69	233	66	32	50	54	68	122	118	111	92	97	97	108	132	133	136	124	125	233	SW	24
15	137	135	139	145	144	157	152	151	148	157	185	148	156	176	173	166	171	146	136	134	135	133	133	132	185	S	24
16	136	141	133	138	163	150	215	248	237	239	251	251	272	266	269	265	238	236	232	236	256	233	246	246	272	W	24
17	243	250	250	251	243	256	263	270	299	285	329	317	315	318	300	358	343	339	339	336	302	232	213	243	358	N	24
18	221	178	133	124	246	245	239	250	243	266	264	271	280	298	300	274	266	271	269	265	270	226	231	246	300	WNW	24
19	136	139	206	118	120	102	123	133	151	138	135	163	210	202	229	227	207	184	188	179	69	144	91	148	229	SW	24
20	187	177	310	17	31	26	20	17	19	23	19	35	29	29	15	351	346	345	353	355	357	2	357	2	357	N	24
21	3	14	22	13	350	335	305	326	339	312	334	311	314	314	327	334	331	340	338	329	333	333	3	32	350	N	24
22	257	235	263	325	10	25	48	50	47	50	41	83	110	114	138	257	247	216	197	135	142	157	213	226	325	NW	24
23	235	222	98	162	167	244	290	246	237	256	260	261	274	275	279	288	292	291	325	336	339	337	11	34	339	NNW	24
24	20	43	49	27	1	1	350	337	336	330	320	320	326	315	306	314	308	298	267	261	259	244	235	213	350	N	24
25	115	199	135	230	171	203	226	154	243	245	239	250	237	234	234	233	237	227	226	205	242	253	257	94	257	WSW	24
26	25	40	48	53	47	48	51	39	44	38	42	17	27	51	34	57	82	102	194	267	124	67	350	342	350	N	24
27	69	102	114	358	53	32	232	343	324	240	262	281	285	278	273	279	273	293	296	269	267	251	211	239	358	N	24
28	234	246	242	246	250	240	239	239	241	235	237	245	250	244	247	256	257	254	238	219	226	238	179	204	257	WSW	24
29	130	91	112	178	196	282	212	300	279	273	285	278	264	279	303	278	267	275	327	20	41	40	41	44	327	NW	24
30	44	50	41	48	48	47	51	51	47	33	38	36	47	40	46	37	48	29	31	150	144	142	132	136	150	SSE	24
31	125	119	74	74	39	124	106	143	140	138	138	141	143	169	156	142	147	169	215	220	184	144	145	143	220	SW	24

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION:	November 28, 2012
DECLINATION :	MAGNETIC DELINATION 19 DEGREE EAST

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	96.20		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	281	DEG



JOB #: 2833-14-03-01-C

Standard Deviation Wind Direction

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

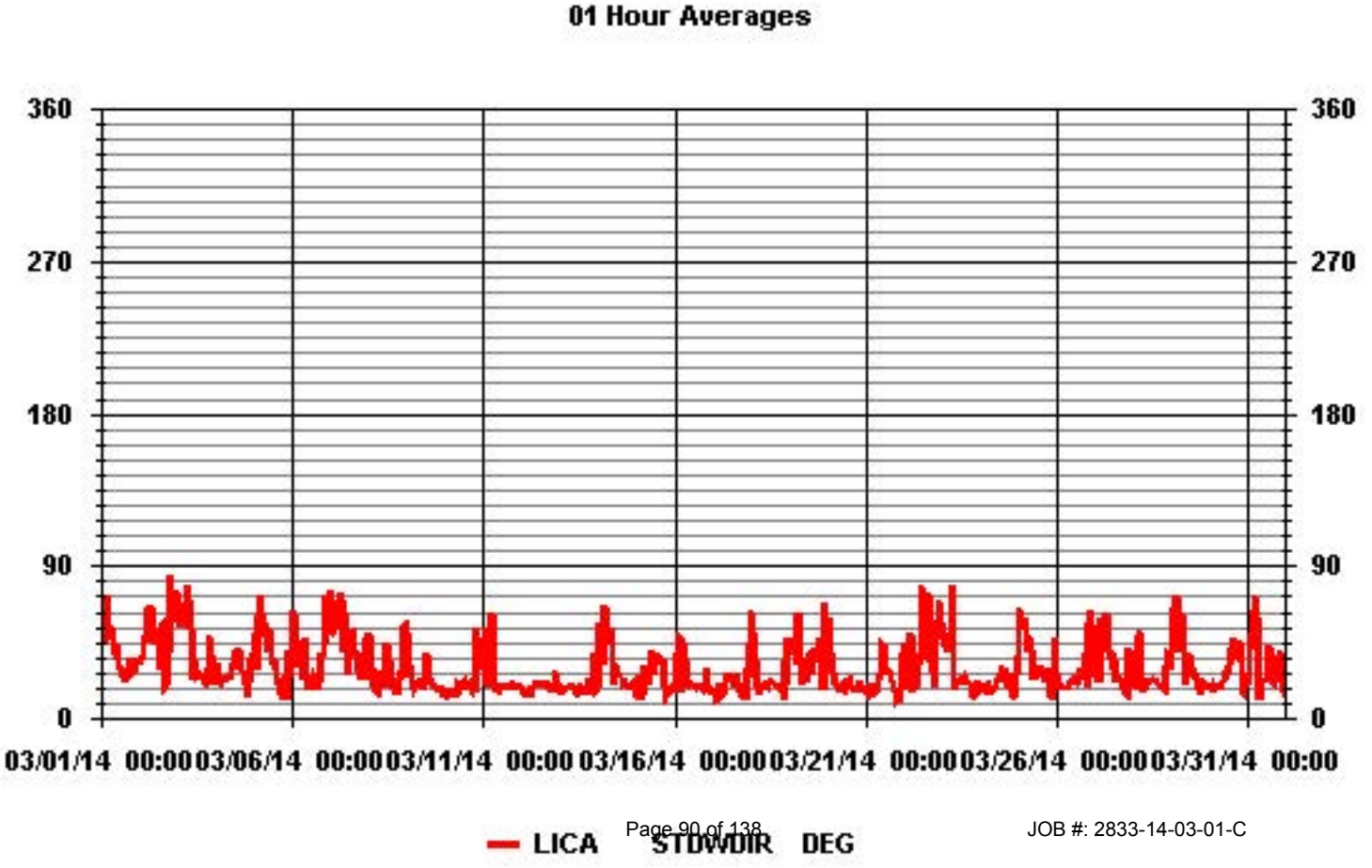
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	50	44	46	68	73	47	55	51	38	45	36	31	30	27	29	25	22	28	36	32	28	29	34	35
2	34	36	37	47	47	65	58	67	50	44	54	49	28	45	55	56	19	20	39	84	67	58	67	76
3	58	56	54	65	66	68	79	71	54	38	22	34	26	27	27	24	22	21	19	29	49	39	23	33
4	20	33	22	21	23	25	21	23	24	27	33	29	40	35	41	33	29	25	26	21	12	21	35	38
5	50	29	61	64	73	63	57	49	39	53	46	33	33	30	21	21	22	16	12	12	12	40	24	34
6	64	62	35	37	30	46	22	27	47	19	19	25	23	26	24	25	17	21	39	36	43	73	54	53
7	75	49	53	69	66	70	74	71	38	63	49	26	50	51	42	36	40	29	22	36	33	23	47	32
8	51	28	20	20	18	17	26	25	28	20	18	44	31	36	20	19	23	16	16	23	29	28	54	55
9	52	32	26	20	17	19	20	20	24	21	17	20	38	20	24	22	20	19	18	18	17	17	17	15
10	14	18	13	16	13	18	16	13	21	20	21	20	22	19	19	20	18	21	20	53	37	42	32	48
11	28	53	21	19	51	63	40	20	18	17	19	19	20	19	19	20	19	20	18	18	19	20	19	19
12	18	16	15	16	15	17	16	18	20	20	20	20	20	21	20	19	21	21	20	16	18	28	17	20
13	16	16	17	18	18	19	19	19	19	18	17	16	18	21	16	16	16	16	23	18	23	38	17	18
14	30	57	41	32	67	59	43	54	49	22	22	33	26	26	25	20	21	18	21	18	18	18	21	22
15	14	13	13	16	16	31	24	24	20	32	40	26	34	37	37	32	36	19	12	13	14	17	17	19
16	17	39	50	15	48	45	33	33	21	20	21	21	20	18	19	19	20	19	17	18	29	17	17	14
17	17	12	13	13	20	13	14	21	26	22	24	27	23	25	18	27	15	20	14	12	12	30	24	44
18	63	52	39	35	19	14	19	19	21	20	19	22	23	22	21	21	20	18	19	16	34	11	19	47
19	45	39	39	47	31	63	47	20	30	23	21	35	37	38	26	36	33	36	39	47	43	16	68	52
20	37	59	40	28	22	21	18	19	18	19	18	22	23	22	23	19	17	17	17	17	22	17	17	18
21	16	19	19	15	16	13	20	15	23	26	44	43	39	30	29	27	23	17	17	11	12	10	16	38
22	44	17	27	21	51	15	18	19	21	32	38	78	34	55	59	74	33	35	28	18	58	46	69	57
23	56	49	43	39	48	48	78	24	17	21	21	23	25	21	24	22	22	21	14	13	14	15	20	20
24	19	19	18	19	20	15	17	16	17	19	22	23	27	31	27	24	26	24	18	15	14	12	26	37
25	65	58	52	56	60	39	47	46	42	25	25	29	25	27	31	26	27	23	21	29	14	11	40	47
26	28	21	19	18	18	18	18	19	21	22	22	24	24	22	23	29	27	30	38	18	57	64	24	55
27	45	27	21	60	51	57	48	63	41	34	40	29	35	22	25	24	23	18	18	16	15	42	34	18
28	39	25	16	49	52	20	21	16	22	23	22	23	24	24	23	21	21	20	19	18	31	38	37	28
29	57	65	38	73	59	63	62	40	19	30	33	38	29	26	27	24	20	21	14	19	19	20	20	19
30	19	18	20	18	19	18	18	19	21	23	27	27	31	41	45	48	38	35	46	34	16	15	18	20
31	26	41	50	63	73	45	59	12	14	21	23	21	33	43	36	22	21	37	31	24	40	23	17	15

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: November 28, 2012

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS



JOB #: 2833-14-03-01-C

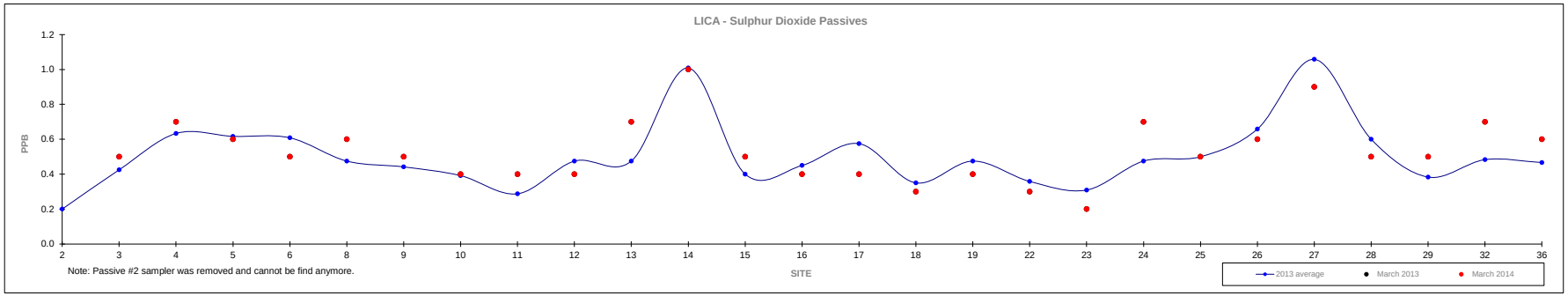
Non-Continuous Monitoring

Passive Summary Results for March 2014

Lakeland Industry & Community Association

Sulphur Dioxide
ppb

	2013																									March 2014	
	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	0.6	0.6	0.6	0.5	0.4	0.4	0.3	0.5	0.5	1.0	0.4	0.5	0.6	0.4	0.5	0.4	0.3	0.5	0.5	0.7	1.1	0.6	0.4	0.5	0.5	0.5	-
Minimum	0.2	0.2	0.3	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.5	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.4	0.3	0.4	0.2	0.2	0.2	0.2	#23
Maximum	0.2	0.8	1.0	0.9	1.0	0.8	0.8	0.6	0.4	1.0	0.9	1.7	0.6	0.8	1.0	0.6	1.3	0.6	0.5	0.8	1.0	1.3	1.8	0.9	0.7	0.9	0.8	1.0	#14



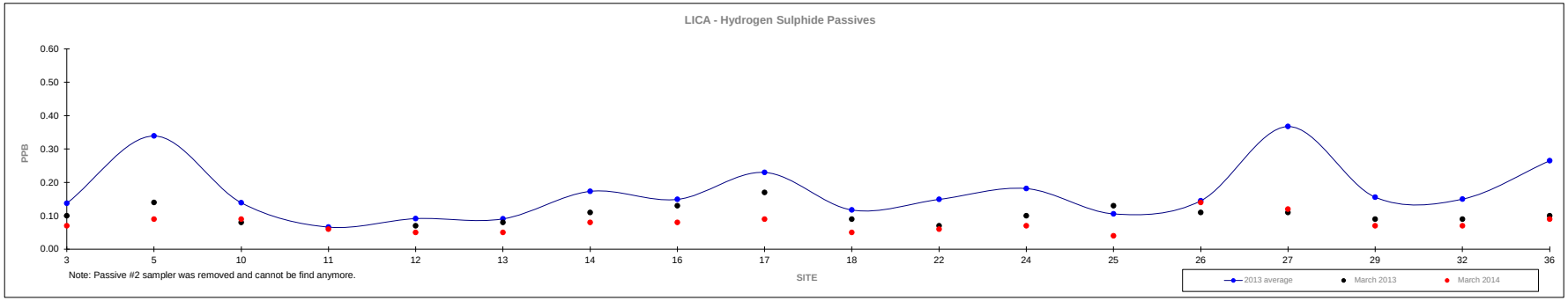
Note: Passive #2 sampler was removed and cannot be find anymore.

Passive Summary Results for March 2014

Lakeland Industry & Community Association

Hydrogen Sulphide
ppb

	2013																			March 2014	
	3	5	10	11	12	13	14	16	17	18	22	24	25	26	27	29	32	36		Reading	Site
Mean	0.14	0.34	0.14	0.07	0.09	0.09	0.17	0.15	0.23	0.12	0.15	0.18	0.11	0.15	0.37	0.16	0.15	0.27		0.08	-
Minimum	0.05	0.07	0.06	0.04	0.02	0.02	0.05	0.07	0.11	0.04	0.04	0.06	0.03	0.06	0.04	0.05	0.05	0.07		0.04	#25
Maximum	0.24	0.97	0.31	0.11	0.20	0.16	0.30	0.29	0.44	0.17	0.32	0.32	0.16	0.21	1.23	0.33	0.26	1.36		0.14	#26



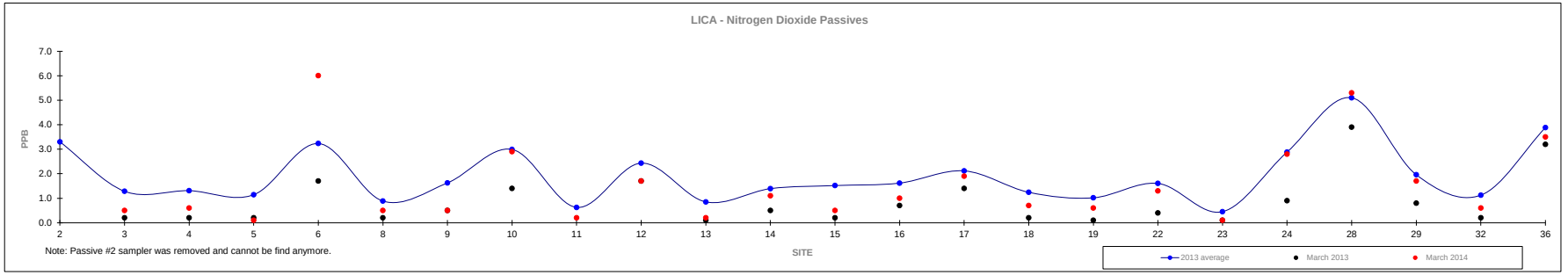
Note: Passive #2 sampler was removed and cannot be find anymore.

Passive Summary Results for March 2014

Lakeland Industry & Community Association

Nitrogen Dioxide
ppb

	2013																							March 2014	
	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	3.3	1.3	1.3	1.1	3.2	0.9	1.6	3.0	0.6	2.4	0.9	1.4	1.5	1.6	2.1	1.2	1.0	1.6	0.5	2.9	5.1	2.0	1.1	3.9	1.5	-
Minimum	3.3	0.2	0.2	0.1	1.5	0.1	0.3	0.8	0.1	0.6	0.1	0.3	0.2	0.4	0.8	0.2	0.1	0.4	0.1	0.9	1.2	0.5	0.2	1.4	0.1	#5, #23
Maximum	3.3	3.7	2.8	3.4	7.1	2.0	4.0	6.7	1.5	4.7	1.9	3.4	4.9	3.9	4.9	2.8	3.1	4.3	1.0	5.7	11.6	4.7	2.6	8.1	6.0	#6



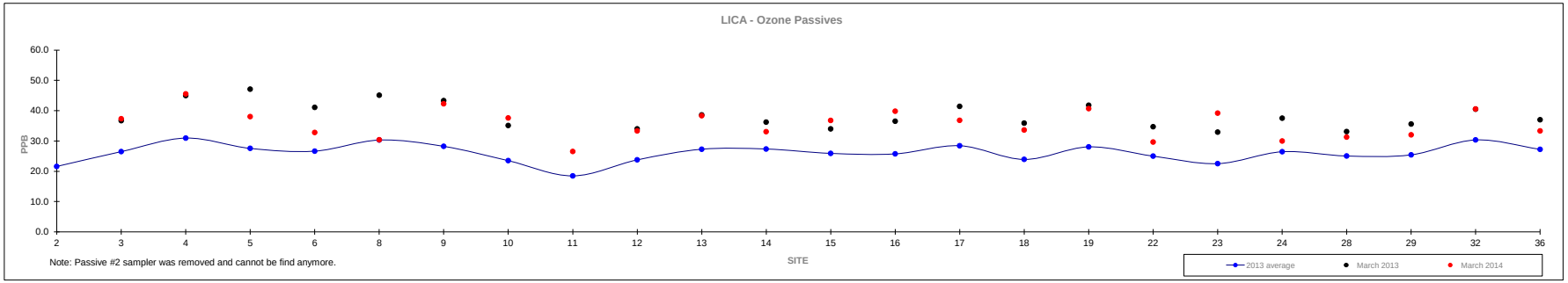
Note: Passive #2 sampler was removed and cannot be find anymore.

Passive Summary Results for March 2014

Lakeland Industry & Community Association

Ozone
ppb

	2013																							March 2014	
	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	21.6	26.5	31.0	27.6	26.7	30.3	28.2	23.5	18.5	23.8	27.3	27.4	25.9	25.7	28.4	23.9	28.1	25.0	22.5	26.5	25.0	25.4	30.3	27.2	35.6	-
Minimum	21.6	15.9	16.7	16.3	13.2	18.9	17.6	12.1	11.1	14.8	18.1	16.8	14.7	14.1	14.4	12.0	17.6	13.5	12.5	15.5	14.8	15.4	20.7	15.5	26.5	#18
Maximum	21.6	37.0	48.1	47.1	43.3	45.1	43.3	36.3	31.5	34.0	38.6	37.5	39.3	40.2	44.1	36.2	41.8	36.1	35.1	38.7	36.3	38.9	40.5	39.4	45.6	#4



Note: Passive #2 sampler was removed and cannot be find anymore.

Calibration Reports

Sulphur Dioxide

Thermo 43i SO2 Analyzer Calibration

Date:	14-Mar-14	**Start/End Time (mst):**	1059/1530
Company:	LICA	**Calibration Purpose:**	Routine
Station Name/Location:	Cold Lake South	**Converter Make & Model:**	NA
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	SO2	**Cal Gas Expiry Date:**	29-Dec-16

Analyzer:

Serial Number:	AMU 1771	**Range ppb:**	500
Last Calibration Date:	Febuary 15, 2014	**As Found C.F.**	1.019
Previous Cal High Point C.F.:	0.998	**New C.F.:**	0.995

		As found:	**As left:**
	BKG:	6.9	6.8
	COEF:	1.066	1.085
MOTHERBOARD:	3.3	3.3	3.3
	5.0	5.0	5.0
	15.0	15.0	15.0
	24.0	24.0	23.9
	-3.3	-3.2	-3.3
INTERFACE BOARD:	PMT:	-632	-631.6
	FLASH:	726	726
	3.3	3.3	3.3
	5.0	5.0	5.0
	15.0	14.8	14.8
	-15.0	-15.1	-15.1
	24.0	23.7	23.7
	INTERNAL:	27.8	28.1
	CHAMBER:	45.0	45.0
	PERM OVEN GAS:	45.00	45.00
	PERM OVEN HEATER:	44.19	44.20
	PRESSURE:	680.7	681.0
	SAMPLE FLOW:	0.451	0.451
	LAMP INTENSITY:	76	75
	CONVERTER:	NA	NA
	CONVERTER SET:	NA	NA
	Internal Span:	323.6	303.7

Calibrator:

Flow Meter ID's:	NA
Make & Model:	Environics 6100
Serial #:	4760
Cal Gas Cylinder I.D. # :	BAL3165
Cal Gas Conc. (ppm):	49.7

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	5000	40	5040
mid	5000	20	5020
low	5000	10	5010

Calibration:

Calibrator Flow Rates (cc/min)				**Calculated Concentration:**	**Indicated Concentration:**	**Correction Factors:**
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	-0.2	NA
adjusted zero	5000	0.0	5000	0	0.1	NA
as found high	4996	39.80	5036	392.8	385.6	1.019
adjusted high	4996	39.80	5036	392.8	395.1	0.994
mid	4996	19.90	5016	197.2	198.1	0.996
low	4996	9.98	5006	99.1	99.7	0.994
calibrator zero	5000	0.00	5000	0	0.2	NA
					Average C.F.=	0.995

Linear Regression/Calibration Results:

		LIMITS	**Pass/Fail ?**
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.994**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.01%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-2.05%**	**± 15%**	**PASS**

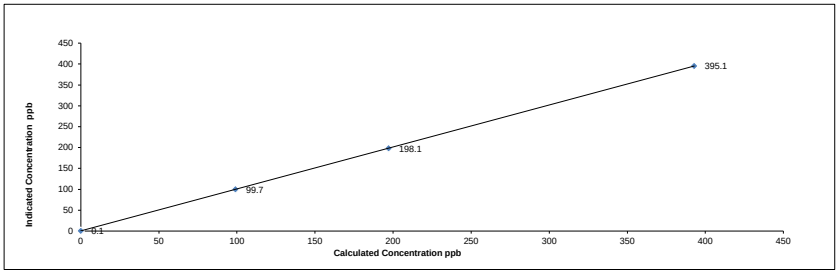
Converter Effeciency Check for H_2S/TRS application:

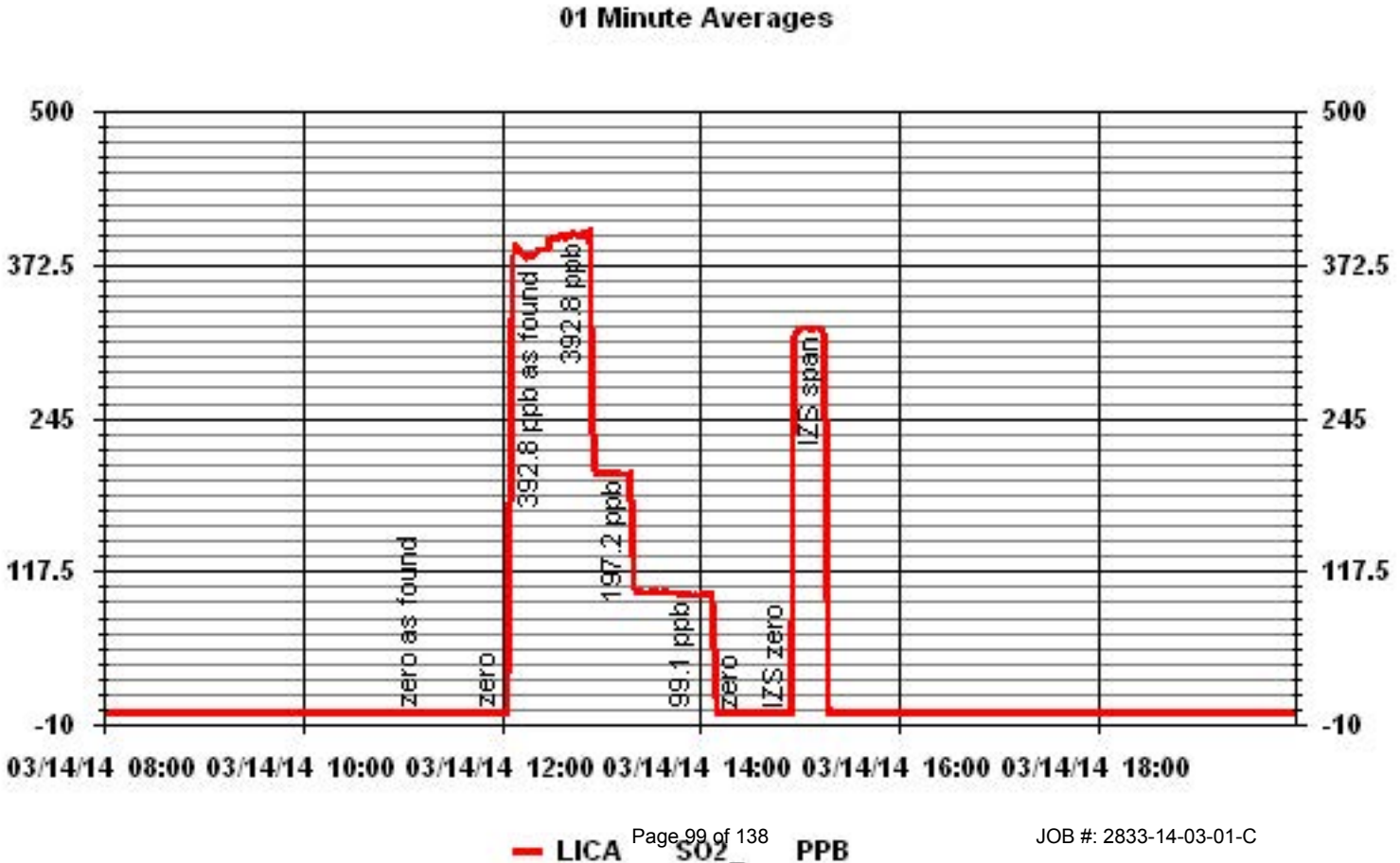
****run converter effeciency test immediately following zero adjust****

SO_2 High Point gas concentration:	395.0	Time gas run (mst):	na
Zero corrrected analyzer response:	na		

Comments:

Thermo 43i SO2 Analyzer Calibration





JOB #: 2833-14-03-01-C

Thermo 43i SO2 Analyzer Calibration

Date:	20-Mar-14	**Start/End Time (mst):**	1020/1200
Company:	LICA	**Calibration Purpose:**	As Found
Station Name/Location:	Cold Lake South	**Converter Make & Model:**	NA
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application $H_2S/TRS/SO_2$:	SO2	**Cal Gas Expiry Date:**	29-Dec-16

Analyzer:

Serial Number:	AMU 1771	**Range ppb:**	500
Last Calibration Date:	14-Mar-14	**As Found C.F.**	0.982
Previous Cal High Point C.F.:	0.994	**New C.F.:**	NA

		As found:	**As left:**
	BKG:	6.8	6.8
	COEF:	1.085	1.085
MOTHERBOARD:	3.3	3.3	3.3
	5.0	5.0	5.0
	15.0	15.0	15.0
	24.0	23.9	24.0
	-3.3	-3.2	-3.2
INTERFACE BOARD:	PMT:	-631.6	-632.0
	FLASH:	726	726
	3.3	3.3	3.3
	5.0	5.0	5.0
	15.0	14.8	14.8
	-15.0	-15.1	-15.1
	24.0	23.7	23.7
	INTERNAL:	28.1	27.7
	CHAMBER:	45.0	44.9
	PERM OVEN GAS:	45.00	45.00
	PERM OVEN HEATER:	44.20	44.20
	PRESSURE:	681.0	682.2
	SAMPLE FLOW:	0.451	0.451
	LAMP INTENSITY:	75	76
	CONVERTER:	NA	na
	CONVERTER SET:	NA	na
	Internal Span:	303.7	243.8

Calibrator:

Flow Meter ID's:	NA
Make & Model:	Environics 6100
Serial #:	4760
Cal Gas Cylinder I.D. # :	BAL3165
Cal Gas Conc. (ppm):	49.7

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	5000	40	5040
mid	5000	20	5020
low	5000	10	5010

Calibration:

Calibrator Flow Rates (cc/min)				**Calculated Concentration:**	**Indicated Concentration:**	**Correction Factors:**
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	0.1	NA
adjusted zero						NA
as found high	4996	39.80	5036	392.8	400.2	0.982
adjusted high						
mid						
low						
calibrator zero						NA
					Average C.F.=	

Linear Regression/Calibration Results:

		LIMITS	**Pass/Fail ?**
Correlation Coeffecient =		**> or = 0.995**	
Slope =		**0.85-1.15**	
b (Intercept as % of full scale)=		**± 3% F.S.**	
% change in C.F. from last cal	**1.26%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

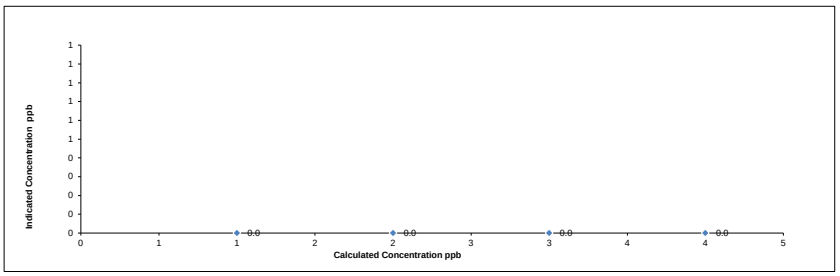
****run converter effeciency test immediately following zero adjust****

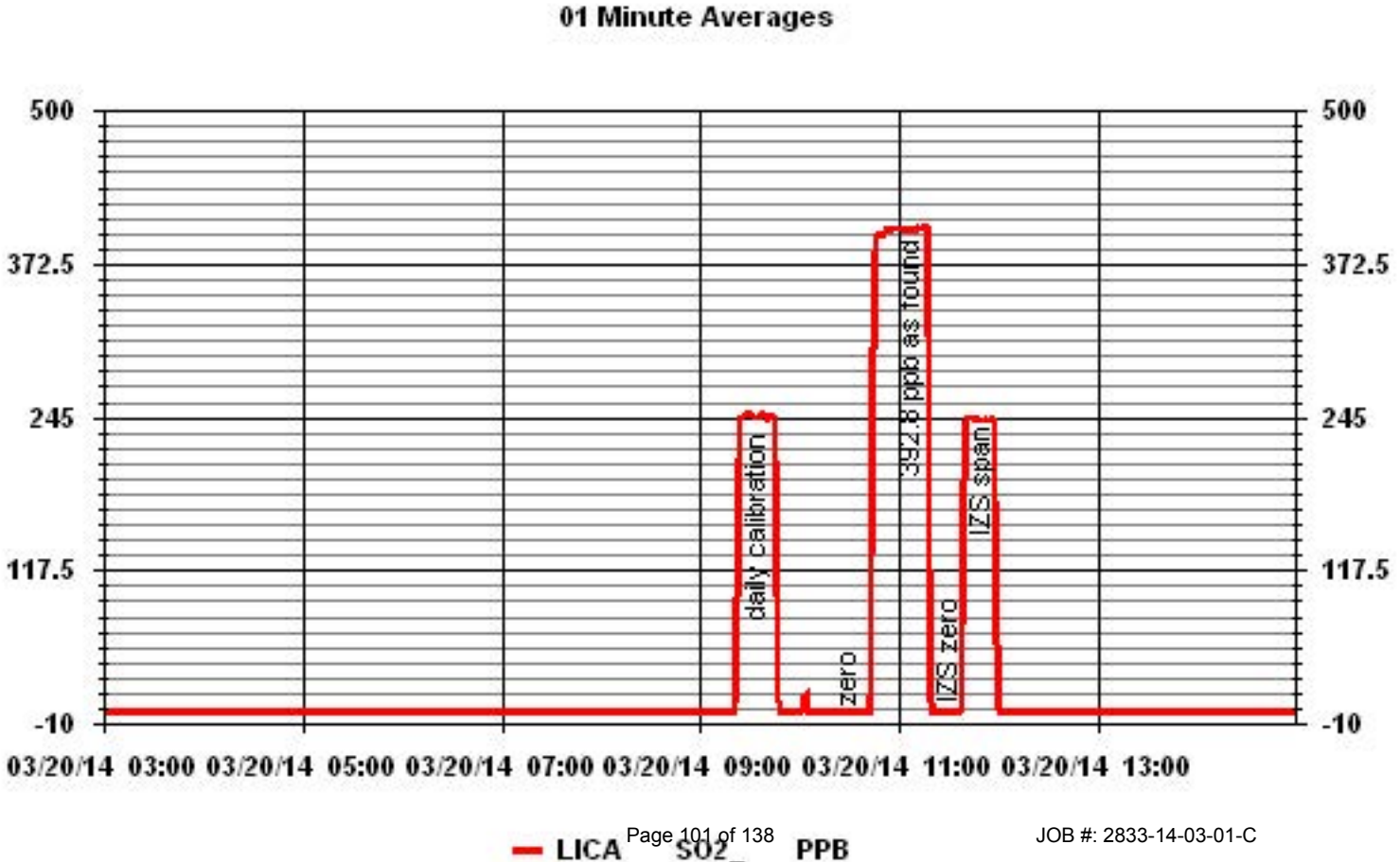
SO_2 High Point gas concentration:		Time gas run (mst):	na
Zero corrrected analyzer response:	na		

Comments:

Daily zero span check failed (low), so as found calibration done to verify response and then IZS done and this span value entered as new expected value

Thermo 43i SO2 Analyzer Calibration





JOB #: 2833-14-03-01-C

Thermo 43i SO2 Analyzer Calibration

Date:	24-Mar-14	**Start/End Time (mst):**	1612/2125
Company:	LICA	**Calibration Purpose:**	Maintenance
Station Name/Location:	Cold Lake South	**Converter Make & Model:**	NA
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	SO2	**Cal Gas Expiry Date:**	29-Dec-16

Analyzer:

Serial Number:	AMU 1771	**Range ppb:**	500
Last Calibration Date:	14-Mar-14	**As Found C.F.**	0.987
Previous Cal High Point C.F.:	0.994	**New C.F.:**	0.997

		As found:		**As left:**
	BKG:	6.8	BKG:	6.7
	COEF:	1.085	COEF:	1.086
MOTHERBOARD:	3.3	3.3	3.3	3.3
	5.0	5.0	5.0	5.0
	15.0	15.0	15.0	15.0
	24.0	24.0	24.0	24.0
	-3.3	-3.2	-3.3	-3.2
INTERFACE BOARD:	PMT:	-632.0	PMT:	-632.0
	FLASH:	726	FLASH:	726
	3.3	3.3	3.3	3.3
	5.0	5.0	5.0	5.0
	15.0	14.8	15.0	14.8
	-15.0	-15.1	-15.0	-15.1
	24.0	23.7	24.0	23.7
	INTERNAL:	27.7	INTERNAL:	27.7
	CHAMBER:	44.9	CHAMBER:	44.9
	PERM OVEN GAS:	45.00	PERM OVEN GAS:	45.00
	PERM OVEN HEATER:	44.20	PERM OVEN HEATER:	44.20
	PRESSURE:	682.2	PRESSURE:	682.2
	SAMPLE FLOW:	0.451	SAMPLE FLOW:	0.451
	LAMP INTENSITY:	76	LAMP INTENSITY:	76
	CONVERTER:	na	CONVERTER:	na
	CONVERTER SET:	na	CONVERTER SET:	na
	Internal Span:	243.8	Internal Span:	331.8

Calibrator:

Flow Meter ID's:	NA
Make & Model:	Environics 6100
Serial #:	4760
Cal Gas Cylinder I.D. # :	BAL3165
Cal Gas Conc. (ppm):	49.7

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	5000	40	5040
mid	5000	20	5020
low	5000	10	5010

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	-0.1	NA
adjusted zero	5000	0.0	5000	0	0.0	NA
as found high	4995	39.80	5035	392.9	398.0	0.987
adjusted high	4995	39.80	5035	392.9	394.0	0.997
mid	4995	19.80	5015	196.2	197.0	0.996
low	4995	9.98	5005	99.1	99.5	0.996
calibrator zero	4995	0.00	4995	0	0.2	NA
					Average C.F.=	0.997

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.997**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.02%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**0.68%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

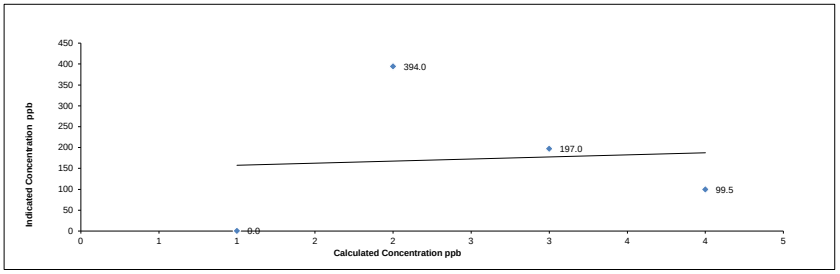
****run converter effeciency test immediately following zero adjust****

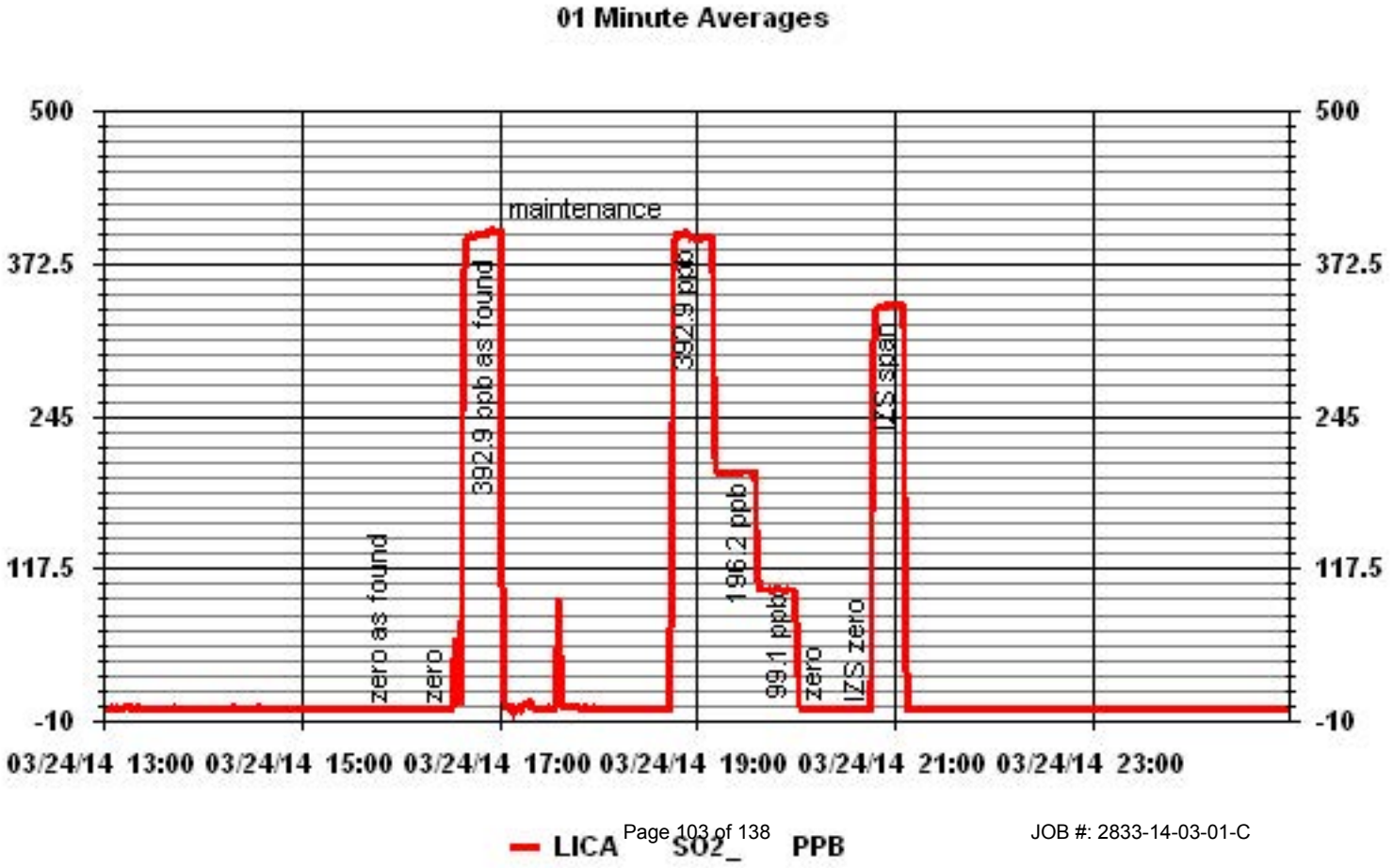
SO_2 High Point gas concentration:	394.0	Time gas run (mst):	na
Zero corrrected analyzer response:	na		

Comments:

As founds and post repair cal after installing new perm tube. No major issues.

Thermo 43i SO2 Analyzer Calibration





JOB #: 2833-14-03-01-C

Total Reduced Sulphur

Thermo 450i TRS Analyzer Calibration

Date:	13-Mar-14	**Start/End Time (mst):**	1156/1221
Company:	LICA	**Calibration Purpose:**	As Found/2 point
Station Name/Location:	Cold Lake South	**Converter Make & Model:**	Thermo CND-101
Performed by:	Tom Bourque	**Converter Serial #:**	501
Application H_2S/TRS/SO_2:	TRS	**Cal Gas Expiry Date:**	5-Dec-15

Analyzer:

Serial Number:		812728560	**Range ppb:**		100
Last Calibration Date:		15-Feb-14	**As Found C.F.**		0.996
Previous Cal High Point C.F.:		1.000	**New C.F.:**		NA
		As found:			**As left:**
	BKG:	12.3		BKG:	13.6
	COEF:	0.894		COEF:	.992
MOTHERBOARD:	3.3	3.3		3.3	3.3
	5.0	5.0		5.0	5.0
	15.0	15.0		15.0	15.0
	24.0	23.9		24.0	23.9
	-3.3	-3.2		-3.3	-3.2
INTERFACE BOARD:	PMT:	-650.5		PMT:	-650.5
	FLASH:	747		FLASH:	745
	3.3	3.2		3.3	3.2
	5.0	5.0		5.0	5.0
	15.0	14.6		15.0	14.7
	-15.0	-15.0		-15.0	-15.0
	24.0	23.3		24.0	23.3
	INTERNAL:	31.2		INTERNAL:	31.5
	CHAMBER:	45.0		CHAMBER:	44.8
	CONVERTER TEMP:	810		CONVERTER TEMP:	810
	CONVERTER SET:	810		CONVERTER SET:	810
	PERM OVEN GAS:	45.0		PERM OVEN GAS:	45
	PERM OVEN HTR:	44.38		PERM OVEN HTR:	44.38
	PRESSURE:	635.9		PRESSURE:	653.5
	SAMPLE FLOW:	0.487		SAMPLE FLOW:	.502
	LAMP INTENSITY:	92		LAMP INTENSITY:	90
	Internal Span:	36.76		Internal Span:	na

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	831
Cal Gas Cylinder I.D. # :	BLM005049
Cal Gas Conc. (ppm):	10.1

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	5000	39	5039
mid	5000	19	5019
low	5000	11	5011

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4994	0.0	4994	0	0.4	NA
adjusted zero	5000	0.0	5000	0	0.0	NA
as found high	4994	39.00	5033	78.3	78.6	0.996
adjusted high	4957	37.10	4994	75.0	75.0	1.000
mid						
low						
calibrator zero						NA
					Average C.F.=	

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =		**> or = 0.995**	
Slope =		**0.85-1.15**	
b (Intercept as % of full scale)=		**± 3% F.S.**	
% change in C.F. from last cal	**0.42%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

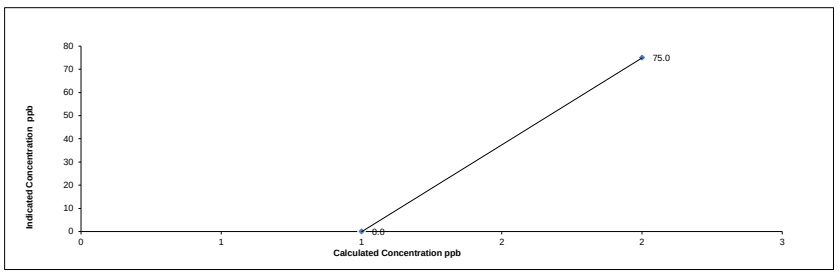
****run converter effeciency test immediately following zero adjust****

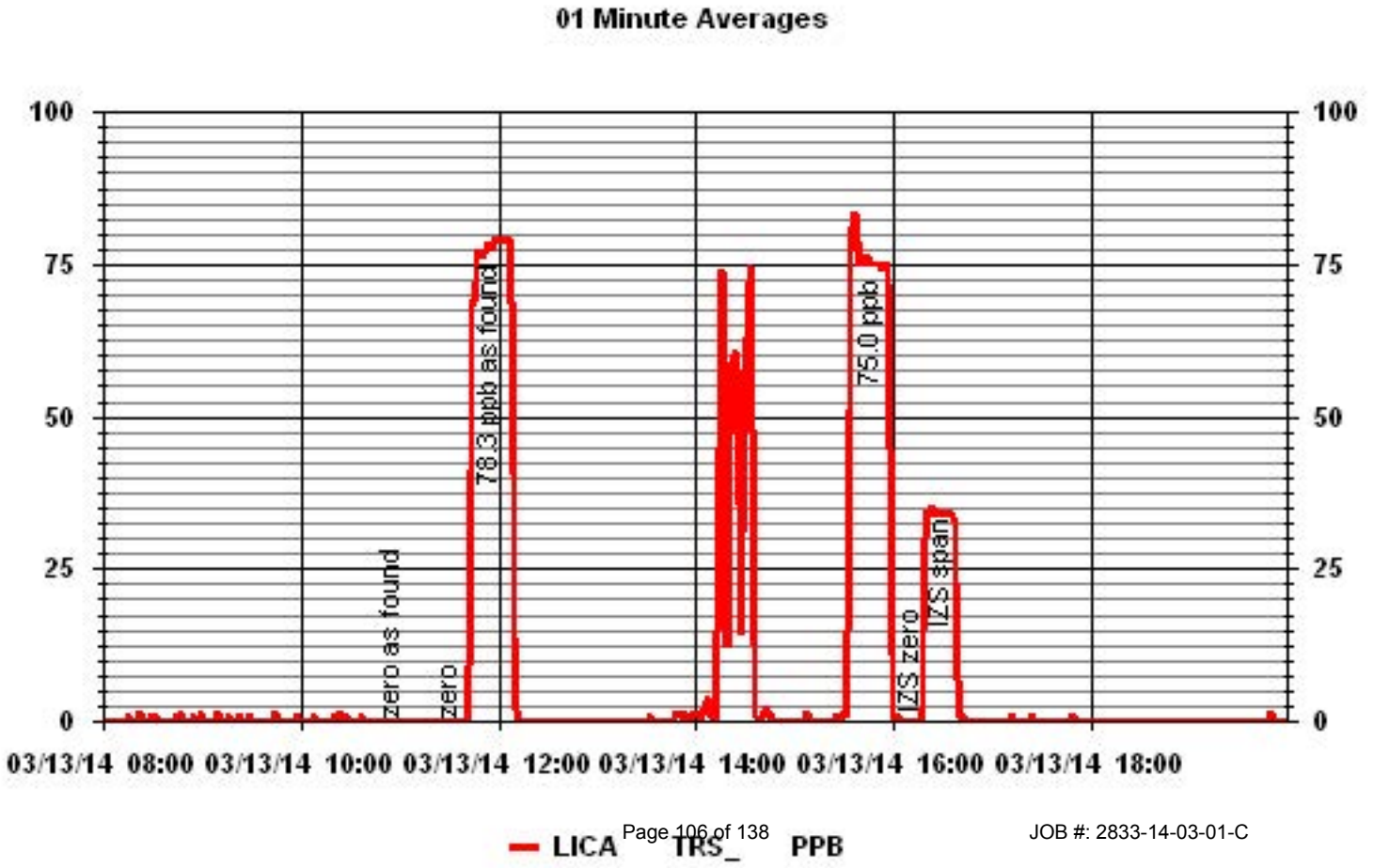
SO_2 High Point gas concentration:	20.0	Time gas run (mst):	1448-1458
Zero corrrected analyzer response:	0		

Comments:

As found, then changed scrubber material. No more heated scrubber AND gold beads, gold beads ONLY now. Performed scrubber test with 20 ppb SO2, response was 0. Do 2 point cal and leave overnight, if as founds on March 14 are good, data is valid back to time when the 2 point cal was completed.

Thermo 450i TRS Analyzer Calibration





JOB #: 2833-14-03-01-C

Thermo 450i TRS Analyzer Calibration

Date:	14-Mar-14	**Start/End Time (mst):**	728/1046
Company:	LICA	**Calibration Purpose:**	routine
Station Name/Location:	Cold Lake South	**Converter Make & Model:**	Thermo CND-101
Performed by:	Tom Bourque	**Converter Serial #:**	501
Application H_2S/TRS/SO_2:	TRS	**Cal Gas Expiry Date:**	5-Dec-15

Analyzer:

Serial Number:	812728560	**Range ppb:** 100
Last Calibration Date:	15-Feb-14	**As Found C.F.** 0.902
Previous Cal High Point C.F.:	1.000	**New C.F.:** 1.004

		As found:	**As left:**
	BKG:	13.6	12.2
	COEF:	0.992	.897
MOTHERBOARD:	3.3	3.3	3.3
	5.0	5.0	5.0
	15.0	15.0	15.0
	24.0	23.9	23.9
	-3.3	-3.2	-3.2
INTERFACE BOARD:	PMT:	-650.5	-650.5
	FLASH:	746	746
	3.3	3.2	3.2
	5.0	5.0	5.0
	15.0	14.6	14.6
	-15.0	-15.0	-15.0
	24.0	23.3	23.3
	INTERNAL:	30.9	30.9
	CHAMBER:	44.9	44.9
	CONVERTER TEMP:	810	810
	CONVERTER SET:	810	810
	PERM OVEN GAS:	45.0	45.0
	PERM OVEN HTR:	44.38	44.38
	PRESSURE:	653.5	653.5
	SAMPLE FLOW:	0.505	0.505
	LAMP INTENSITY:	91	91
	Internal Span:	36.76	34.46

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	831
Cal Gas Cylinder I.D. # :	BLM005049
Cal Gas Conc. (ppm):	10.1

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	5000	39	5039
mid	5000	19	5019
low	5000	11	5011

Calibration:

Calibrator Flow Rates (cc/min)				**Calculated Concentration:**	**Indicated Concentration:**	**Correction Factors:**
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	0.0	NA
adjusted zero	5000	0.0	5000	0	0.0	NA
as found high	4995	39.00	5034	78.2	86.8	0.902
adjusted high	4995	39.00	5034	78.2	78.2	1.001
mid	4996	19.00	5015	38.3	38.2	1.001
low	4996	10.00	5006	20.2	20.0	1.009
calibrator zero	4994	0.00	4994	0	0.2	NA
					Average C.F.=	1.004

Linear Regression/Calibration Results:

		LIMITS	**Pass/Fail ?**
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.000**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.08%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**9.84%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

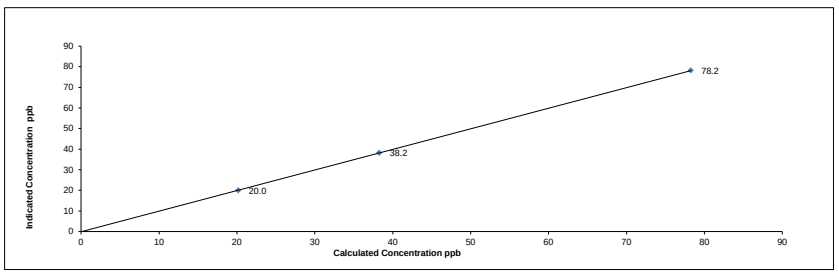
****run converter effeciency test immediately following zero adjust****

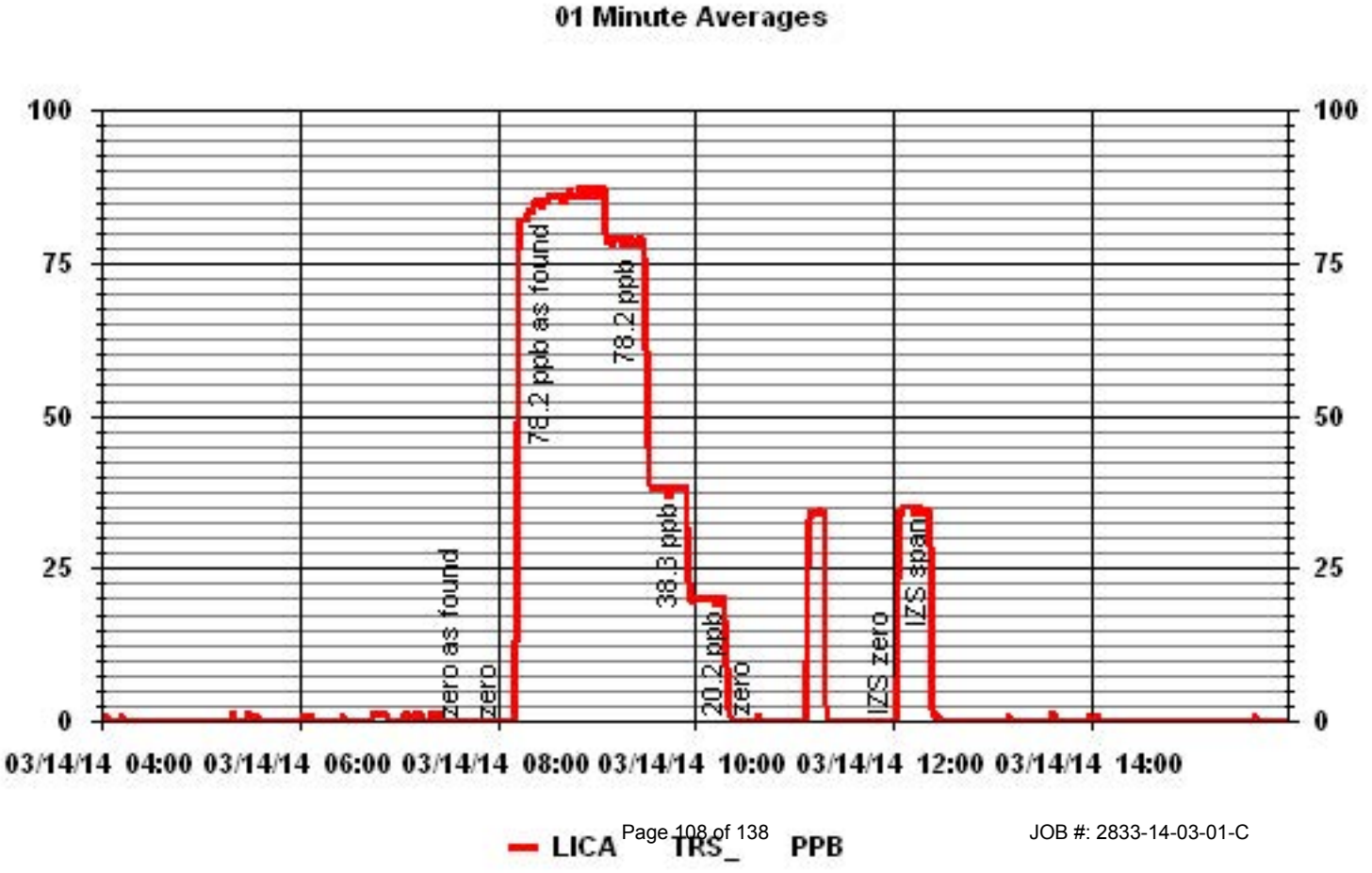
SO_2 High Point gas concentration:	20.0	Time gas run (mst):	1448-1458 - on March 13
Zero corrrected analyzer response:	0		

Comments:

as founds pass - validates data back to March 13 following the 2 point cal.

Thermo 450i TRS Analyzer Calibration





JOB #: 2833-14-03-01-C

Total Hydrocarbons

Thermo 51C THC Analyzer Calibration

Date:	14-Mar-14	**Start Time (mst):**	754
Company:	LICA	**End Time (mst):**	1046
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	Routine
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	7-Nov-21

Analyzer:

Serial Number:	51CLT-77021-384	**Range ppm:**	50
Last Calibration Date:	26-Feb-14	**As Found C.F.**	1.024
Previous Cal High Point C.F.:	1.000	**New C.F.:**	1.008

		As found:	As left:
	H_2 cylinder (psi):	2000	2000
	H_2 cylinder reg set (psi):	20	20
	Span Cylinder (psi):	1000	1000
	Span Cylinder Reg Set (psi):	28	28
	Zero Air Gen Pressure:	35	35
	measurement alarms:	none	none
	service alarms:	none	none
FID status:	cnt:	1470	1380
	rng:	1	1
	try:	1	1
	flm:	190.3	189.8
	det:	125.8	125.5
Oven Readings:	Flame:	190	189
	Filter:	125	125
	Base:	125	125
	Pump:	6.88	6.87
Voltages:	+5	4.9	4.9
	+15	14.8	14.8
	-15	-14.9	-14.9
	Internal Span:	32.0	32.57

Calibrator:

Flow Meter ID's:	NA	
Make & Model:	Environics 6100	
Serial #:	4760	
Cal Gas Cylinder I.D. # :	LL36542	
CH_4/C_3H_8 Cylinder Conc. (ppm):	609.0	201.0
CH_4 as propane/total CH_4 equivilants (ppm):	552.8	1161.8

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	2000	0	2000
high	2000	65	2065
mid	2000	30	2030
low	2000	15	2015

Calibration:

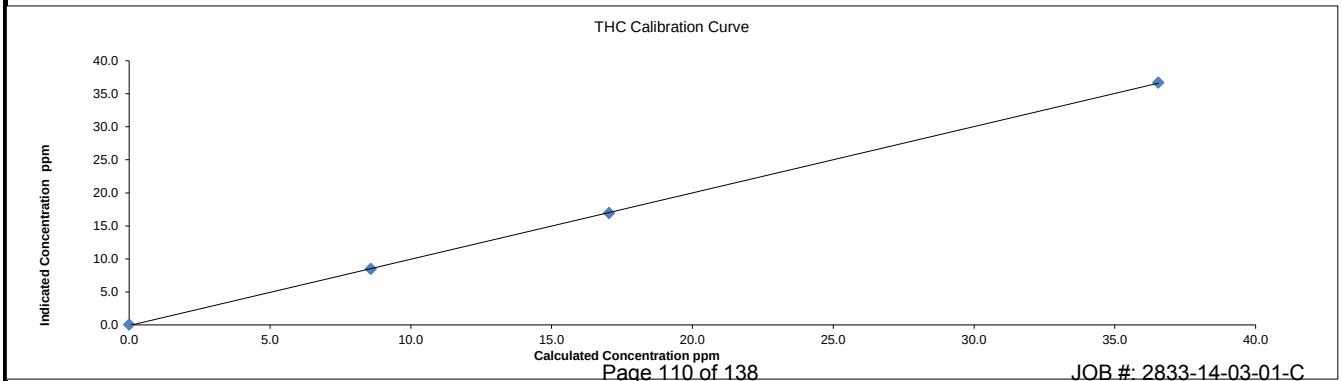
Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppm)	(ppm)	
as found zero	2000	0.00	2000	0	0.04	NA
adjusted zero	2000	0.00	2000	0	0.02	NA
as found high	1995	64.80	2060	36.55	35.71	1.024
adjusted high	1995	64.80	2060	36.55	36.65	0.998
mid	2002	29.80	2032	17.04	16.93	1.008
low	2002	14.90	2017	8.58	8.45	1.018
calibrator zero	2002	0.00	2002	0	0.02	NA
					Average C.F.=	1.008

Linear Regression/Calibration Results:

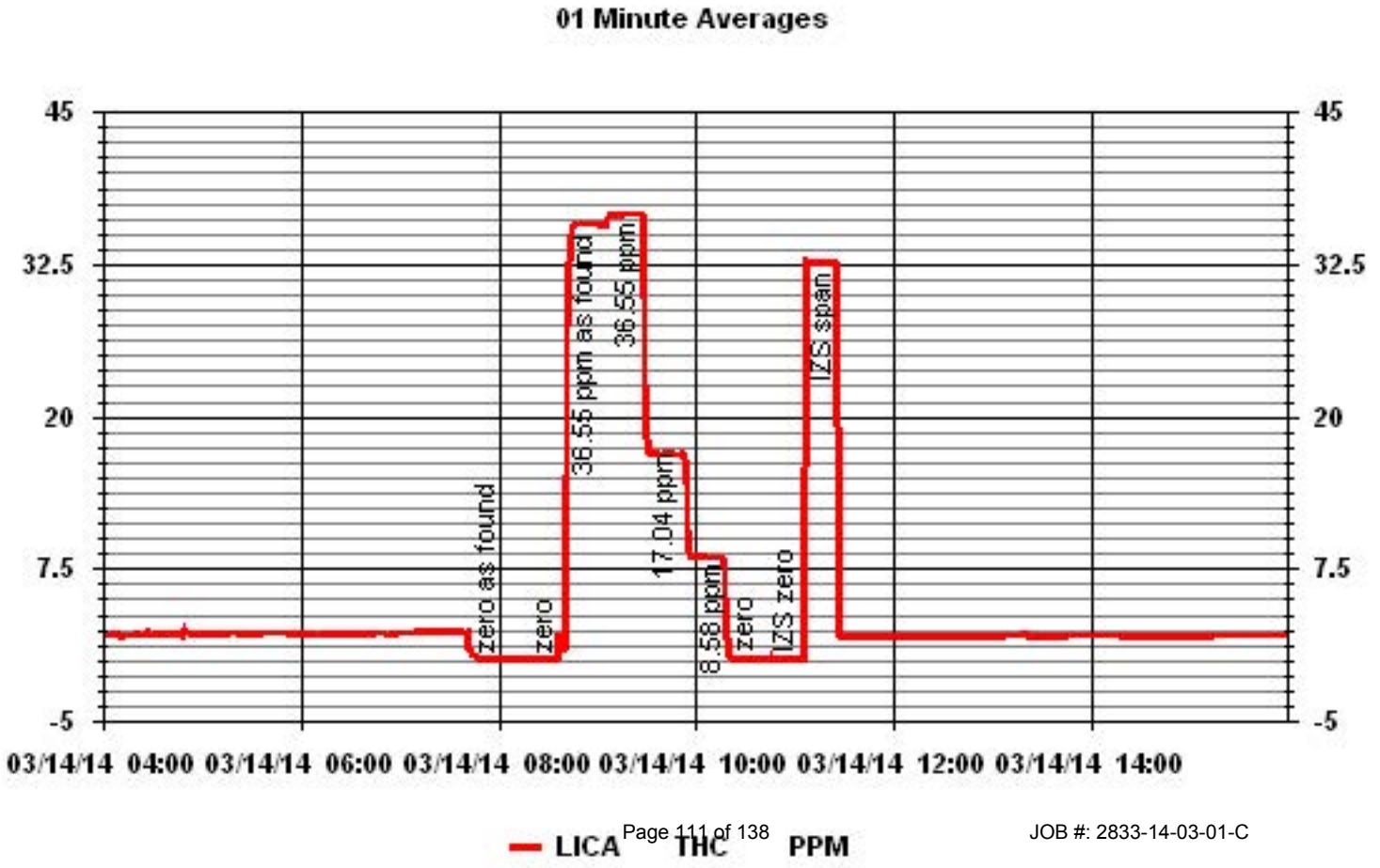
		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.996**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.171%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-2.40%**	**± 15%**	**PASS**

Comments:

Thermo 51C THC Analyzer Calibration



JOB #: 2833-14-03-01-C



JOB #: 2833-14-03-01-C

Particulate Matter 2.5

R & P 1405F PM2.5 Monitor Audit/Calibration

Date:	13-Mar-14	**Performed by:**	Tom Bourque
Company:	LICA	**Start/End Time (mst):**	0900/1140
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	Pre & Post Maintenance
Serial Number:	1405A201620804	**Filter Loading %:**	18

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	Dwyer	Brunton	Brunton
Model:	475 Mark III	ADC Summitt	ADC Summitt
Serial Number:	NA	na	na
Calibration Date:	NA	2-Dec-13	2-Dec-13

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.10	0.06	0.12	0.06
	limit	0.15		0.15	
Bypass Flow	actual	0.58	-0.19	0.41	-0.19
	limit	0.60		0.60	

As left leak check (same as above if as found passes):

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.07	0.06	0.07	0.06
	limit	0.15		0.15	
Bypass Flow	actual	0.67	-0.18	0.67	-0.18
	limit	0.60		0.60	

As found temperature and pressure:

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	0.5	**1405F pressure atm:**	0.911
reference temperature °C:	3.3	**reference pressure:**	0.928
difference °C:	2.8	**difference :**	-0.017

As left temperature and pressure (same as above if as found adequate):

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	3.3	**1405F pressure atm:**	0.928
reference temperature °C:	3.3	**reference pressure:**	0.928
difference °C:	0.0	**difference :**	0.000

As found flows:

	main flow tolerance 3.00 lpm +/- 0.20 lpm		**total flow tolerance 16.67 lpm +/- 1.00 lpm**
1405F main flow lpm:	3.00	**1405F total flow lpm:**	16.67
reference main flow lpm:	2.97	**reference total flow lpm:**	15.90
difference °C:	0.03	**difference °C:**	0.77

As left flows (same as above if as found adequate):

	main flow tolerance 3.00 lpm +/- 0.20 lpm		**total flow tolerance 16.67 lpm +/- 1.00 lpm**
1405F main flow lpm:	3.00	**1405F total flow lpm:**	16.67
reference main flow lpm:	2.97	**reference total flow lpm:**	15.90
difference °C:	0.03	**difference °C:**	0.77

K_o Audit:

Last K_o audit date:	
1405F K_o factor:	
Measured K_o factor:	
% difference:	

Comments:

**Note - asleft leak check actually passes (leak check wizard stated successful) because the zero must be subtracted fro the indicated leak rate i.e. leak rate = 0.67,zero=-0.18, therefore final leak rate = 0.49. Analyzer fans cleaned and filters changed.

R & P 1405F PM2.5 Monitor Audit/Calibration

Date:	27-Mar-14	**Performed by:**	Kevin Hope
Company:	LICA	**Start/End Time (mst):**	1536/
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	Monthly calibration
Serial Number:	1405A201620804	**Filter Loading %:**	21

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	Dwyer	Brunton	Brunton
Model:	475 Mark III	ADC Summitt	ADC Summitt
Serial Number:	NA	na	na
Calibration Date:	NA	2-Dec-13	2-Dec-13

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.09	0.07	0.09	0.06
	limit	0.15		0.15	
Bypass Flow	actual	0.50	-0.18	0.34	-0.18
	limit	0.60		0.60	

As left leak check (same as above if as found passes):

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.09	0.07	0.09	0.06
	limit	0.15		0.15	
Bypass Flow	actual	0.50	-0.18	0.34	-0.18
	limit	0.60		0.60	

As found temperature and pressure:

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	-3.3	**1405F pressure atm:**	0.944
reference temperature °C:	-3.3	**reference pressure:**	0.938
difference °C:	0.0	**difference :**	0.006

As left temperature and pressure (same as above if as found adequate):

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	-3.3	**1405F pressure atm:**	0.944
reference temperature °C:	-3.3	**reference pressure:**	0.938
difference °C:	0.0	**difference :**	-0.006

As found flows:

	main flow tolerance 3.00 lpm +/- 0.20 lpm		**total flow tolerance 16.67 lpm +/- 1.00 lpm**
1405F main flow lpm:	3.00	**1405F total flow lpm:**	16.68
reference main flow lpm:	2.96	**reference total flow lpm:**	15.98
difference °C:	0.04	**difference °C:**	0.69

As left flows (same as above if as found adequate):

	main flow tolerance 3.00 lpm +/- 0.20 lpm		**total flow tolerance 16.67 lpm +/- 1.00 lpm**
1405F main flow lpm:	3.00	**1405F total flow lpm:**	16.68
reference main flow lpm:	2.96	**reference total flow lpm:**	15.98
difference °C:	0.04	**difference °C:**	0.69

K_o Audit:

Last K_o audit date:	
1405F K_o factor:	
Measured K_o factor:	
% difference:	

Comments:

2nd TEOM audit for the month. Leak check & flow audit passed and changed filters.

Nitrogen Dioxide

Thermo 42C NOx Analyzer Calibration

Date:	13-Mar-14	**Start Time (mst):**	805
Company:	LICA	**End Time (mst):**	1410
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	Routine
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	29-Dec-16

Analyzer Serial Number:	427408716
Last Calibration Date:	26-Feb-14
Range ppb:	500

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	1.020	1.000
NOx=	1.022	0.999
NO_2=	0.993	0.990

	As found:	As left:
NO Bkg ppb:	5.2	5.3
NOx Bkg ppb:	5.6	5.8
NO Coef:	1.376	1.402
NOx Coef:	1.002	1.003
NO_2 Coef:	0.995	0.997
PMT:	-821.0	-821.0
+15:	15.1	15.1
+5:	5.0	5.0
+15:	15.1	15.1
-15:	-15.1	-15.1
Battery:	ok	3.2
Internal:	29	28.5
Chamber:	49.9	49.8
Cooler:	-2.5	-2.5
Converter:	318	317.0
Converter Set:	319	319.0
Pressure:	182.8	183.0
Sample Flow:	0.685	0.676
Ozonator Flow:	ok	ok
Internal Span:	413/2.971/411.8	413/3/410

Make & Model:	Environics 6100
Serial #:	4760
Cal Gas Cylinder I.D. # :	BAL3165
NO Cylinder Conc. (ppm):	48.9
NOx Cylinder Conc. (ppm):	49.0

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	O_3 setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	5000	40	300.00	5040
mid	5000	20	140.00	5020
low	5000	10	75.00	5010

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	4994	0.0	4994	0	0	0.0	0.1	NA	NA
adjusted zero	4994	0.0	4994	0	0	0.0	0.1	NA	NA
as found high	4995	39.80	5035	386.6	387.3	379	379	1.020	1.022
adjusted high	4995	39.80	5035	386.6	387.3	388	387	0.997	1.001
mid	4995	19.95	5015	194.5	194.9	195	195	0.998	1.003
low	4995	10.16	5005	99.3	99.5	99	100	1.002	1.000
calibrator zero	4995	0.00	4995	0	0	0.0	0.1	NA	NA
							Average C.F.=	0.999	1.001

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO_2	NO drop	NO_2 increase	NO_2 C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4995	39.80	5035	0.0	385.1	385.9	0.2	0.0	0.1	
as found NO_2	4995	39.80	5035	300.0	50.7	387.8	337.0	334.4	336.9	0.993
adjusted NO_2	4995	39.80	5035	300.0	49.6	386.5	337.0	335.5	336.9	0.996
gpt mid	4995	39.80	5035	140.0	224.2	387.0	162.8	160.9	162.7	0.989
gpt low	4995	39.80	5035	75.0	300.3	386.6	86.5	84.8	86.4	0.982
								Average NO_2 C.F.=		0.989

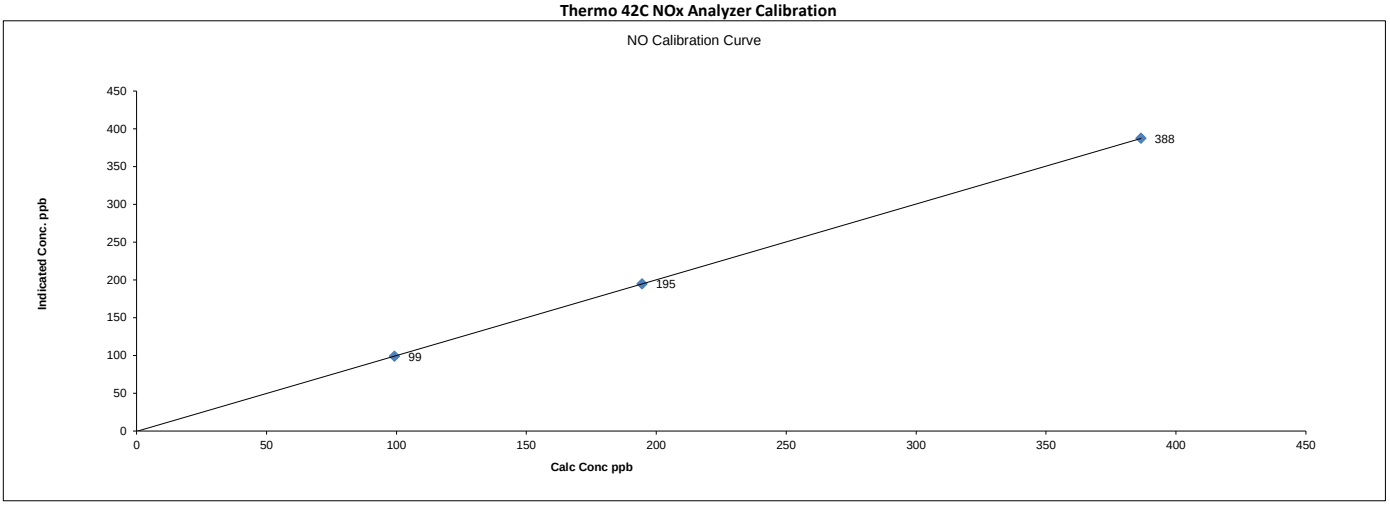
Linear Regression/Calibration Results:

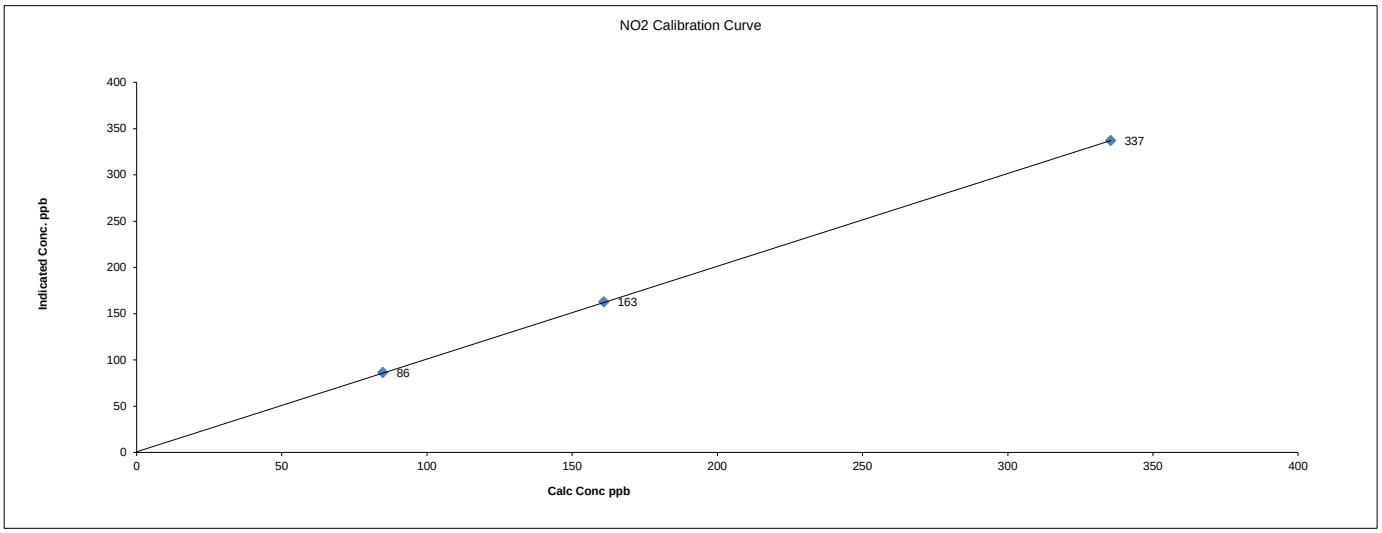
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**0.997**	**1.001**	**0.997**	**0.85-1.15**
b (Intercept as % of full scale)=	**0.05%**	**-0.01%**	**-0.16%**	**± 3% F.S.**
% change in C.F. from last cal=	**-2.01%**	**-2.30%**	**-0.27%**	**+/-15%**
NO2 converter effeciency			**101.1%**	**>85%**

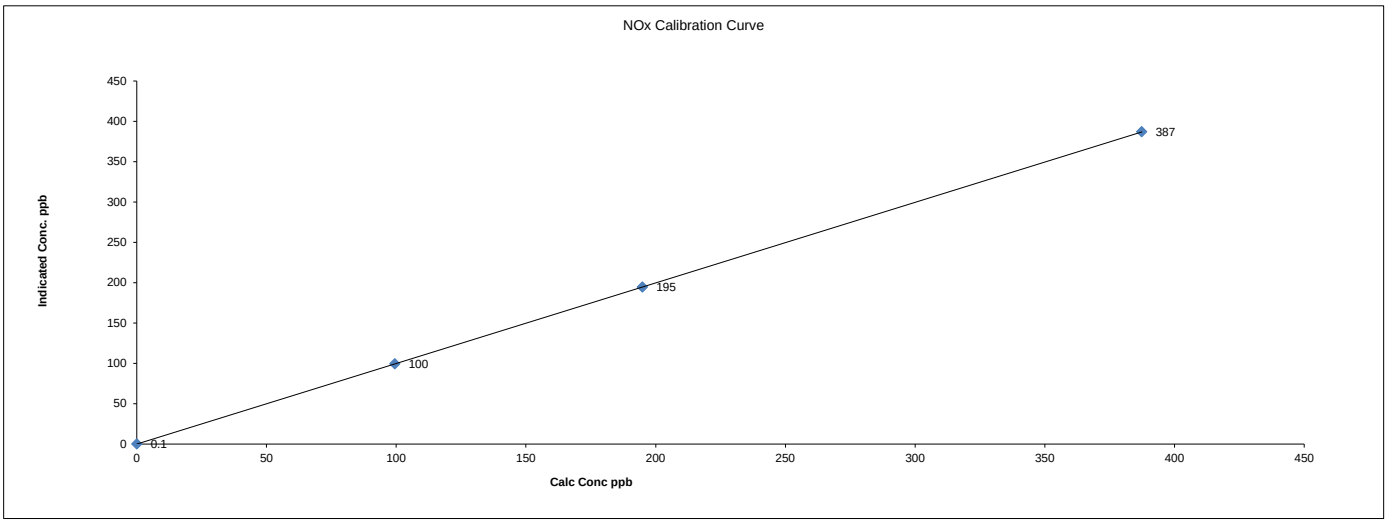
Comments:

Date:	13-Mar-14	**Start Time (mst):**	805
Company:	LICA	**End Time (mst):**	1410
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	Routine
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	29-Dec-16

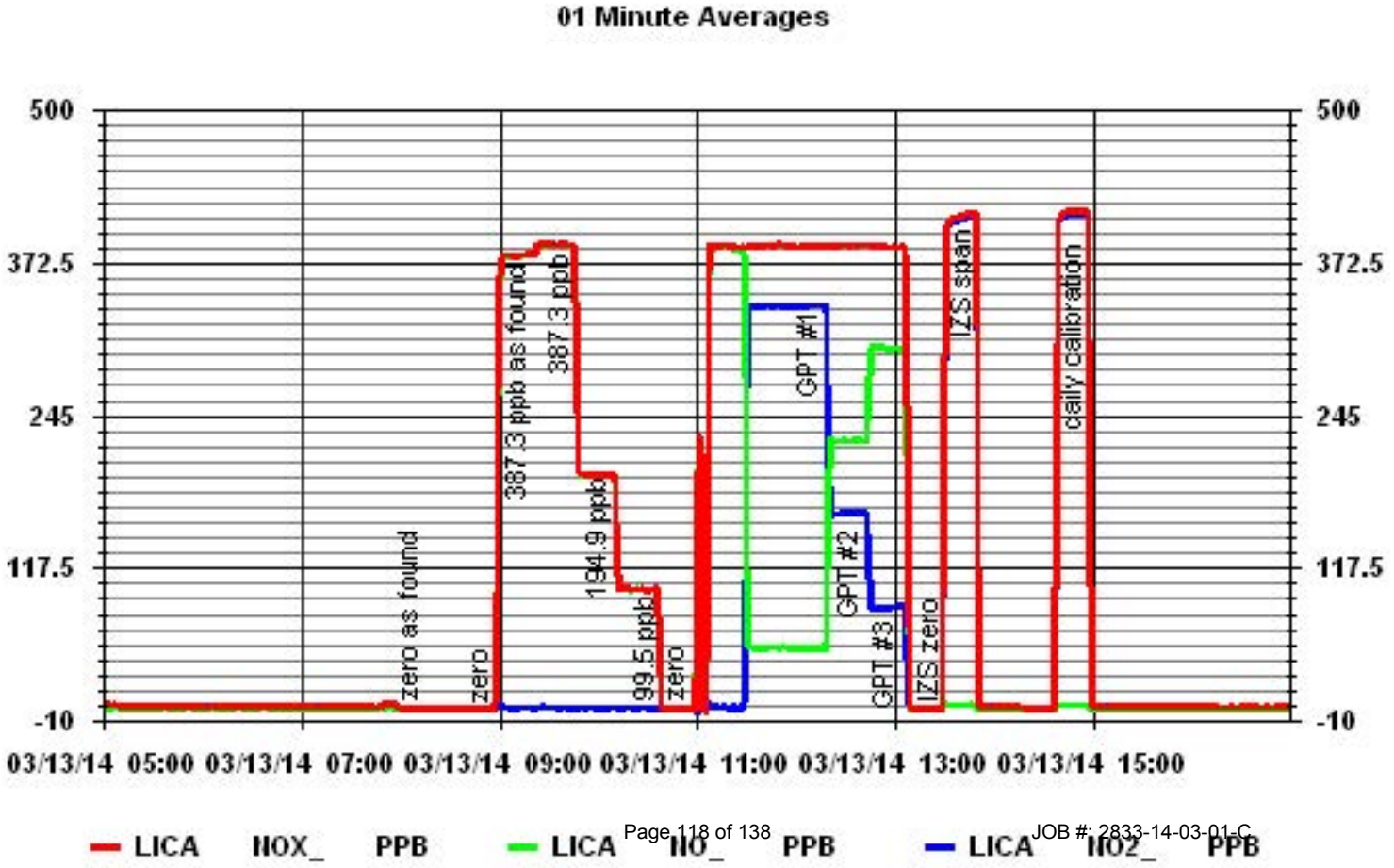
Thermo 42C NOx Analyzer Calibration







JOB #: 2833-14-03-01-C


01 Minute Averages
500
372.5
245
117.5
-10
zero as found
zero
387.3 ppb as found
387.3 ppb
194.9 ppb
99.5 ppb
zero
GPT #1
GPT #2
GPT #3
IZS zero
IZS span
daily calibration
03/13/14 05:00
03/13/14 07:00
03/13/14 09:00
03/13/14 11:00
03/13/14 13:00
03/13/14 15:00
LICA NOX_ PPB
LICA NO_ PPB
LICA NO2_ PPB

Ozone

Maxxam Thermo 49i O_3 Analyzer Calibration

Date:	13-Mar-14	**Start Time (mst):**	1412
Company:	LICA	**End Time (mst):**	1706
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	Routine
Performed by:	Kevin Hope	**G.P.T. Date:**	13-Mar-14

Analyzer:

Serial Number:	700419951	**Range ppm:**	500
Last Calibration Date:	15-Feb-14	**As Found C.F.**	1.000
Previous Cal High Point C.F.:	1.000	**New C.F.:**	1.019

		As found:		As left:
	O_3 Bkg:	-0.2	O_3 Bkg:	-0.1
	O_3 Coef:	1.030	O_3 Coef:	1.030
Motherboard:	3.3	3.3	3.3	3.3
	15.0	4.9	15.0	4.9
	24.0	23.9	24.0	23.9
	-3.3	-3.2	-3.3	-3.2
Interface Board:	3.3	3.2	3.3	3.2
	5.0	4.9	5.0	4.9
	15.0	14.8	15.0	14.8
	-15.0	-14.8	-15.0	-14.8
	Photo Lamp	8.7	Photo Lamp	8.7
	24.0	23.6	24.0	23.6
	O_3 Lamp	9.0	O_3 Lamp	9.0
	Bench:	28.9	Bench:	28.9
	Bench Lamp:	53.5	Bench Lamp:	53.5
	O_3 Lamp:	67.5	O_3 Lamp:	67.5
	Pressure:	695.0	Pressure:	695.0
	Cell A lpm:	0.706	Cell A lpm:	0.706
	Cell B lpm:	0.745	Cell B lpm:	0.745
	O_3 ppb:	42.5	O_3 ppb:	42.5
	Cell A ppb:	66.7	Cell A ppb:	66.7
	Cell B ppb:	20.2	Cell B ppb:	20.2
	Cell A int:	66226	Cell A int:	66226
	Cell B int:	61888	Cell B int:	61888
	Internal Span:	279	Internal Span:	274.2

Calibrator:

Make & Model:	Environics 6100
Serial #:	4760
NOx Gas Cylinder I.D. # :	BAL3165
NOx Cylinder Conc. (ppm):	49.0

Calibrator Flow Targets:

point	total flow (cc/min)	O_3 setting (v or ppb)
zero	5035	0
high	5035	300
mid	5035	140
low	5035	75

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5035	0.0	5035	0.0	0.2	NA
adjusted zero	5035	0.0	5035	0.0	0.2	NA
as found high	5035	0.00	5035	335.5	335.8	1.000
adjusted high	5035	0.00	5035	335.5	335.6	1.000
mid	5035	0.00	5035	160.9	159.0	1.013
low	5035	0.00	5035	84.8	81.4	1.044
calibrator zero	5035	0.00	5035	0.0	0.1	NA

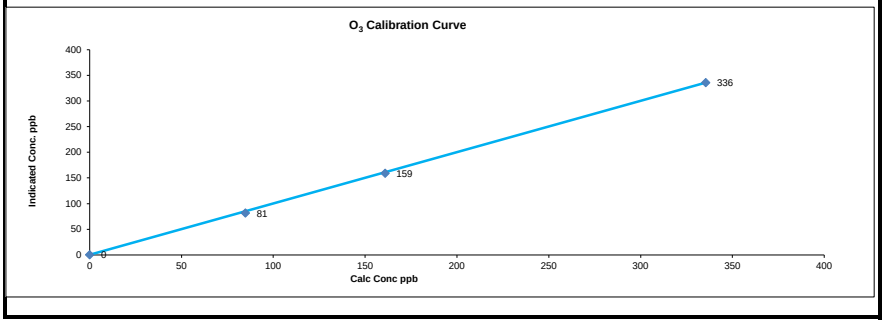
copy and paste flows and NO decrease from NOx cal in to calculated concentration **Average C.F.=** 1.019

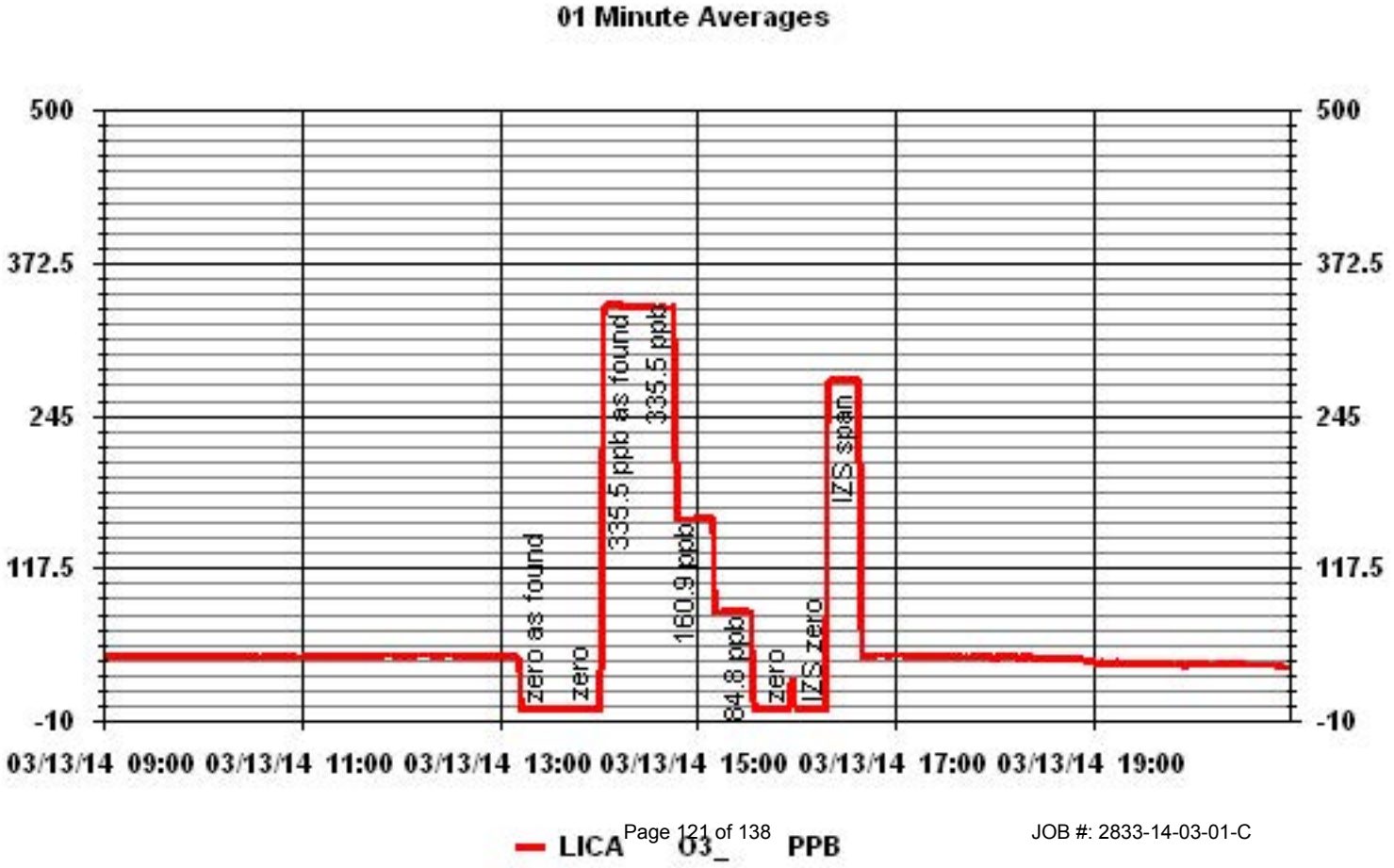
Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	1.000	> or = 0.995	PASS
Slope =	0.997	0.85-1.15	PASS
b (Intercept as % of full scale)=	-0.332%	± 3% F.S.	PASS
% change in C.F. from last cal	0%	± 15%	PASS

Comments:

Thermo 49i O3 Analyzer Calibration





JOB #: 2833-14-03-01-C

Maxxam Thermo 49i O_3 Analyzer Calibration

Date:	24-Mar-14	**Start Time (mst):**	1213
Company:	LICA	**End Time (mst):**	1607
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	Maintenance
Performed by:	Kevin Hope	**G.P.T. Date:**	24-Mar-14

Analyzer:

Serial Number:	700419951	**Range ppm:**	500
Last Calibration Date:	13-Mar-14	**As Found C.F.**	1.035
Previous Cal High Point C.F.:	1.000	**New C.F.:**	1.009

		As found:		As left:
	O_3 Bkg:	-0.1	O_3 Bkg:	0.2
	O_3 Coef:	1.030	O_3 Coef:	1.068
Motherboard:	3.3	3.3	3.3	3.3
	15.0	4.9	15.0	4.9
	24.0	23.9	24.0	23.9
	-3.3	-3.2	-3.3	-3.2
Interface Board:	3.3	3.2	3.3	3.2
	5.0	4.9	5.0	4.9
	15.0	14.8	15.0	14.8
	-15.0	-14.8	-15.0	-14.8
	Photo Lamp	8.7	Photo Lamp	8.7
	24.0	23.6	24.0	23.6
	O_3 Lamp	9.0	O_3 Lamp	9.0
	Bench:	28.9	Bench:	28.9
	Bench Lamp:	53.5	Bench Lamp:	53.5
	O_3 Lamp:	67.5	O_3 Lamp:	67.5
	Pressure:	695.0	Pressure:	695.0
	Cell A lpm:	0.706	Cell A lpm:	0.706
	Cell B lpm:	0.745	Cell B lpm:	0.745
	O_3 ppb:	42.5	O_3 ppb:	42.5
	Cell A ppb:	66.7	Cell A ppb:	66.7
	Cell B ppb:	20.2	Cell B ppb:	20.2
	Cell A int:	66226	Cell A int:	66226
	Cell B int:	61888	Cell B int:	61888
	Internal Span:	274.2	Internal Span:	313.2

Calibrator:

Make & Model:	Environics 6100
Serial #:	4760
NOx Gas Cylinder I.D. # :	BAL3165
NOx Cylinder Conc. (ppm):	49.0

Calibrator Flow Targets:

point	total flow (cc/min)	O_3 setting (v or ppb)
zero	5035	0
high	5035	300
mid	5035	140
low	5035	75

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5035	0.0	5035	0.0	0.2	NA
adjusted zero	5035	0.0	5035	0.0	0.0	NA
as found high	5029	0.00	5029	338.3	327.0	1.035
adjusted high	5029	0.00	5029	338.3	338.0	1.001
mid	5029	0.00	5029	162.0	159.3	1.017
low	5029	0.00	5029	83.2	82.5	1.009
calibrator zero	5029	0.00	5029	0.0	-0.1	NA

copy and paste flows and NO decrease from NOx cal in to calculated concentration **Average C.F.=** 1.009

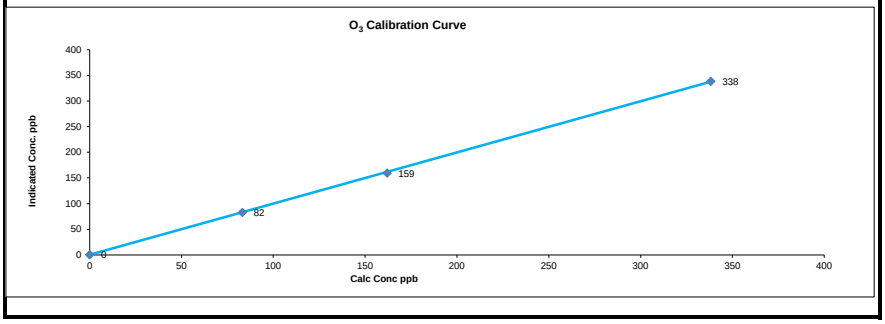
Linear Regression/Calibration Results:

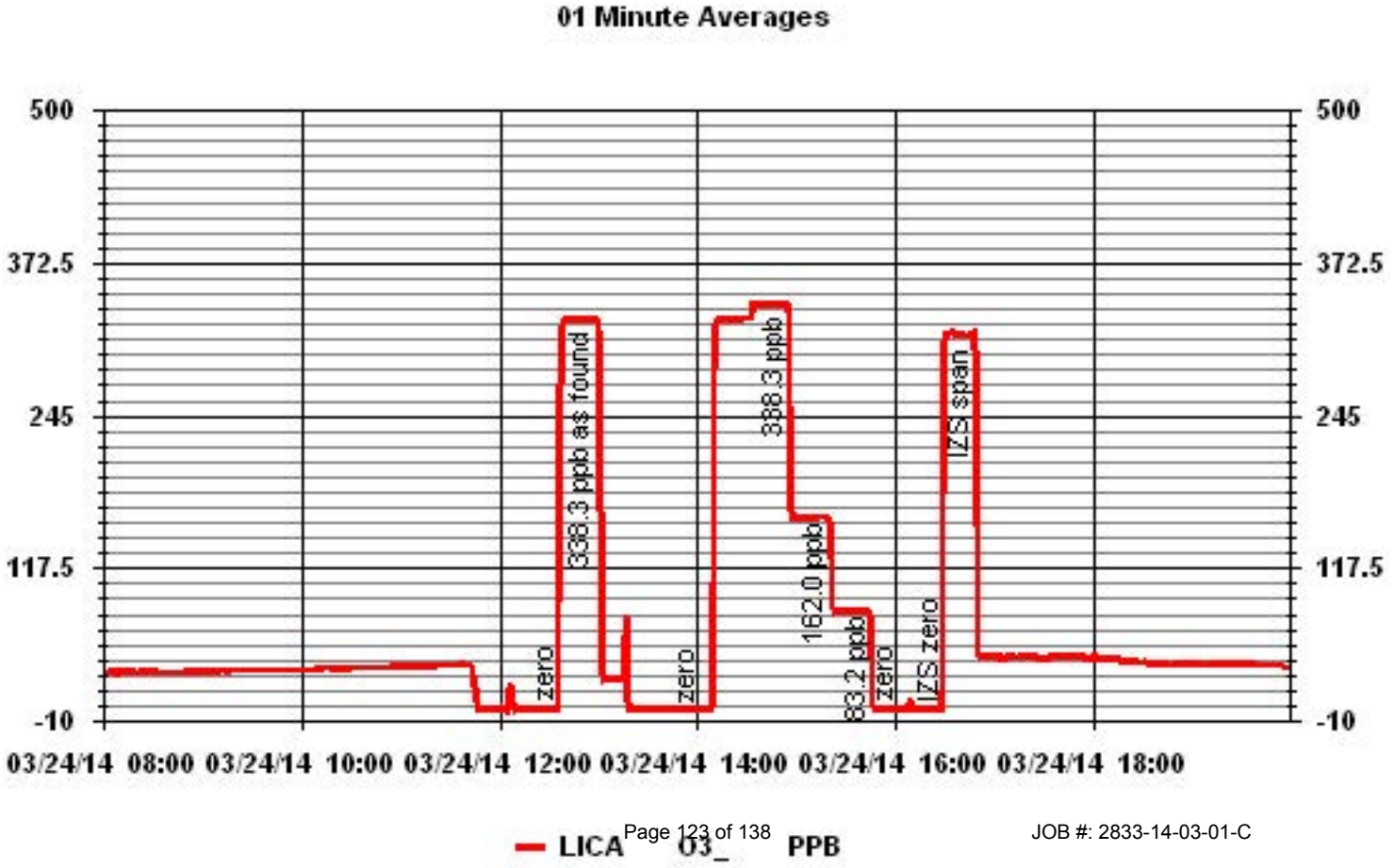
		LIMITS	Pass/Fail ?
Correlation Coeffecient =	1.000	> or = 0.995	PASS
Slope =	1.001	0.85-1.15	PASS
b (Intercept as % of full scale)=	-0.155%	± 3% F.S.	PASS
% change in C.F. from last cal	-3%	± 15%	PASS

Comments:

As found and post-repair calibration after installing new pump.

Thermo 49i O3 Analyzer Calibration





JOB #: 2833-14-03-01-C

Passive Bubble Maps

Lakeland Industry & Community Association
H_2S Passive Bubble Map

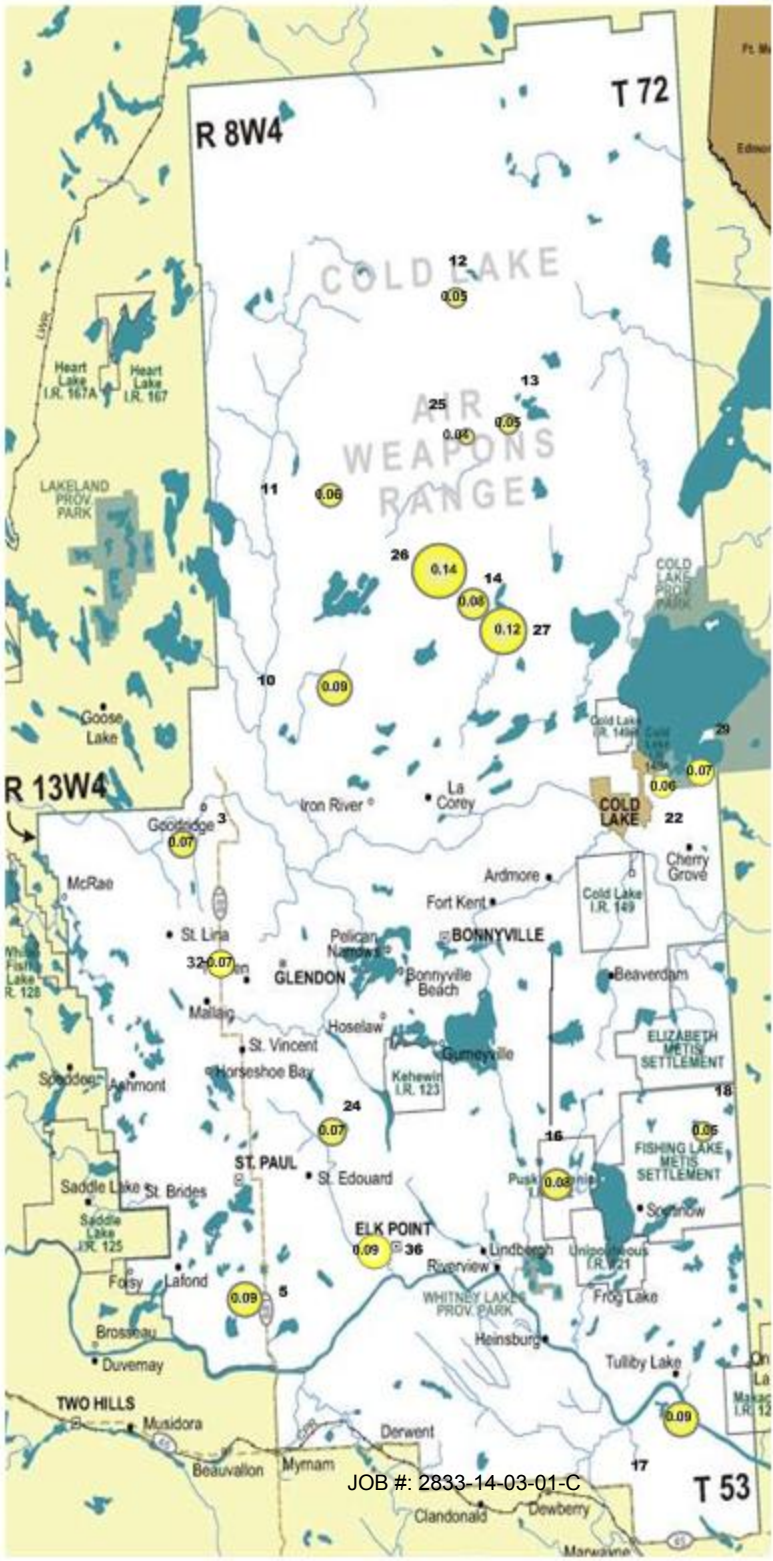
MARCH 2014

PASSIVE STATIONS

		DUPLICATE
3 – Therien	0.07 PPB	NA
5 – Lake Eliza	0.09 PPB	NA
10 – La Corey	0.10 PPB	0.08 PPB
11 – Wolf Lake	0.06 PPB	NA
12 – Foster Creek	0.05 PPB	NA
13 – Primrose	0.05 PPB	NA
14 – Maskwa	0.08 PPB	NA
16 – Frog Lake	0.08 PPB	NA
17 – Clear Range	0.09 PPB	NA
18 – Fishing Lake	0.05 PPB	NA
22 – Cold Lake South	0.06 PPB	NA
24 – Fort George	0.07 PPB	NA
25 – Burnt Lake	0.04 PPB	NA
26 – Mahihkan	0.14 PPB	NA
27 – Mahkeses	0.12 PPB	NA
29 – Cold Lake South 2	0.07 PPB	NA
32 – St. Lina	0.07 PPB	NA
36 – Elk Point	0.09 PPB	NA

H_2S

PPB



Summary

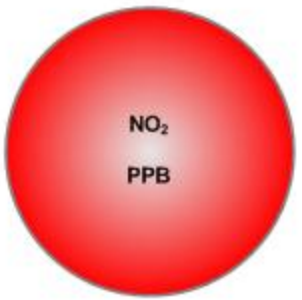
Minimum : 0.04 PPB –Burnt Lake
Maximum: 0.14 PPB – Mahihkan
Average: 0.08 PPB (Includes Duplicates)

Lakeland Industry & Community Association
NO_2 Passive Bubble Map

MARCH 2014

PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	0.5 PPB	NA
4 – Flat Lake	0.6 PPB	NA
5 – Lake Eliza	0.1 PPB	NA
6 – Telegraph Creek	6.0 PPB	NA
8 – Muriel-Kehewin	0.5 PPB	0.5 PPB
9 – Dupre	0.4 PPB	0.5 PPB
10 – La Corey	2.9 PPB	NA
11 – Wolf Lake	0.2 PPB	NA
12 – Foster Creek	1.7 PPB	NA
13 – Primrose	0.2 PPB	NA
14 – Maskwa	1.1 PPB	NA
15 – Ardmore	0.5 PPB	NA
16 – Frog Lake	1.0 PPB	NA
17 – Clear Range	1.9 PPB	NA
18 – Fishing Lake	0.7 PPB	NA
19 – Beaverdam	0.6 PPB	NA
22 – Cold Lake South	1.3 PPB	NA
23 – Medley-Martineau	0.1 PPB	NA
24 – Fort George	2.8 PPB	NA
28 – Town of Bonnyville	5.3 PPB	NA
29 – Cold Lake South 2	1.7 PPB	NA
32 – St. Lina	0.6 PPB	NA
36 – Elk Point	3.5 PPB	NA



Summary

Minimum : 0.1 PPB – Lake Eliza and Medley-Martineau
Maximum: 6.0 PPB – Telegraph Creek
Average: 1.5 PPB *Includes Duplicates

JOB #: 2833-14-03-01-C

Lakeland Industry & Community Association
O_3 Passive Bubble Map

MARCH 2014

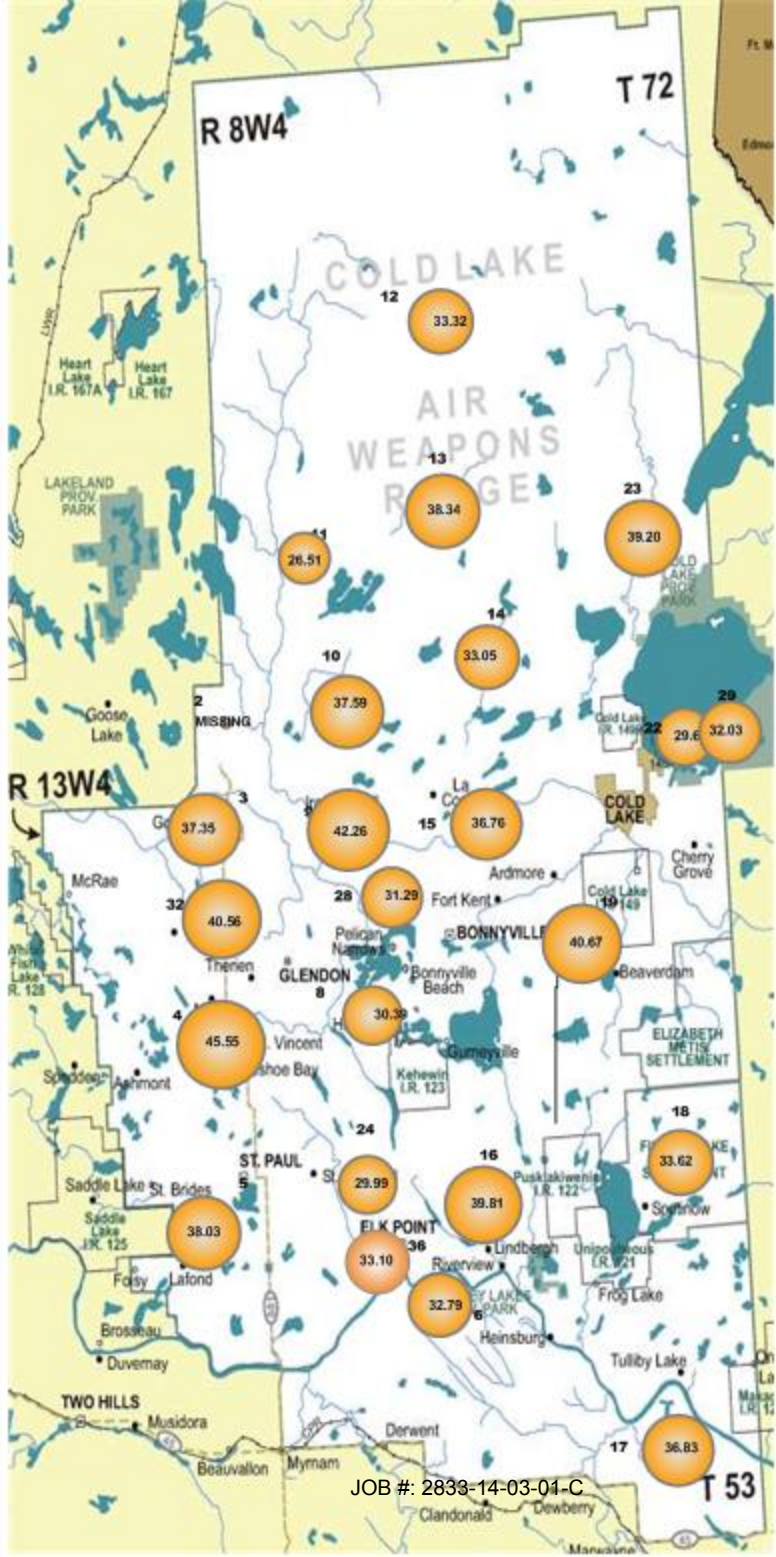
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	37.35 PPB	NA
4 – Flat Lake	45.55 PPB	NA
5 – Lake Eliza	38.03 PPB	NA
6 – Telegraph Creek	32.79 PPB	NA
8 – Muriel-Kehewin	30.39 PPB	NA
9 – Dupre	43.84 PPB	40.67 PPB
10 – La Corey	38.28 PPB	36.39 PPB
11 – Wolf Lake	26.51 PPB	NA
12 – Foster Creek	33.32 PPB	NA
13 – Primrose	38.34 PPB	NA
14 – Maskwa	33.05 PPB	NA
15 – Ardmore	36.76 PPB	NA
16 – Frog Lake	39.81 PPB	NA
17 – Clear Range	36.83 PPB	NA
18 – Fishing Lake	33.62 PPB	NA
19 – Beaverdam	40.67 PPB	NA
22 – Cold Lake South	29.66 PPB	NA
23 – Medley-Martineau	39.20 PPB	NA
24 – Fort George	29.99 PPB	NA
28 – Town of Bonnyville	31.29 PPB	NA
29 – Cold Lake South 2	32.03 PPB	NA
32 – St. Lina	40.56 PPB	NA
36 – Elk Point	33.10 PPB	NA

O_3 PPB

Summary

Minimum : 26.51 PPB – Wolf Lake
Maximum: 45.55 PPB – Flat Lake
Average: 35.6 PPB *Includes Duplicates



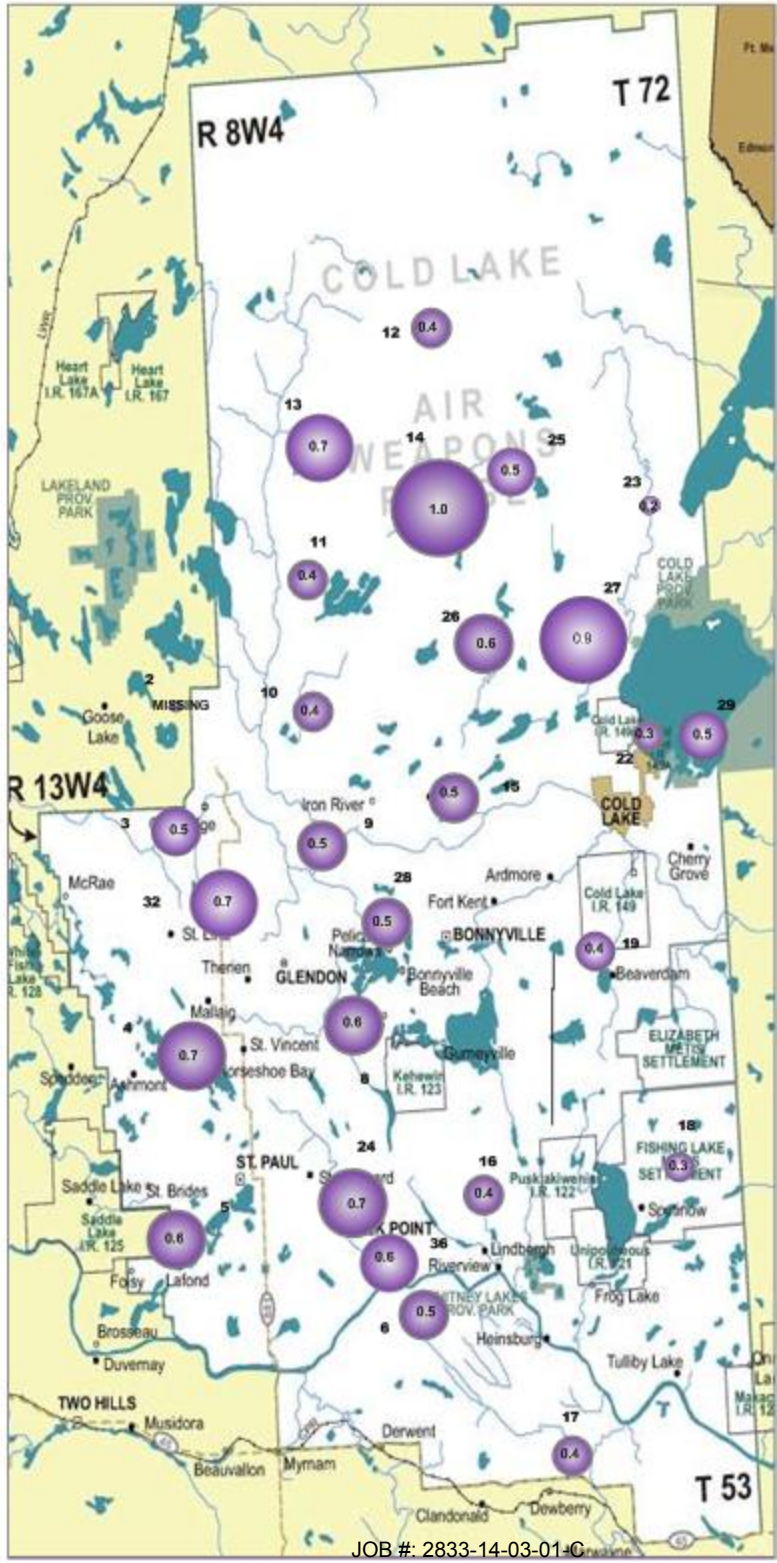
Lakeland Industry & Community Association
SO_2 Passive Bubble Map

MARCH 2014

PASSIVE STATIONS		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	0.5 PPB	0.5 PPB
4 – Flat Lake	0.7 PPB	0.7 PPB
5 – Lake Eliza	0.6 PPB	NA
6 – Telegraph Creek	0.5 PPB	NA
8 – Muriel-Kehewin	0.6 PPB	NA
9 – Dupre	0.5 PPB	NA
10 – La Corey	0.4 PPB	NA
11 – Wolf Lake	0.4 PPB	NA
12 – Foster Creek	0.4 PPB	NA
13 – Primrose	0.7 PPB	NA
14 – Maskwa	1.0 PPB	NA
15 – Ardmore	0.5 PPB	NA
16 – Frog Lake	0.4 PPB	NA
17 – Clear Range	0.4 PPB	NA
18 – Fishing Lake	0.3 PPB	NA
19 – Beaverdam	0.4 PPB	NA
22 – Cold Lake South	0.3 PPB	NA
23 – Medley-Martineau	0.2 PPB	NA
24 – Fort George	0.7 PPB	NA
25 – Burnt Lake	0.5 PPB	NA
26 – Mahikan	0.6 PPB	NA
27 – Mahkeses	0.9 PPB	NA
28 – Town of Bonnyville	0.5 PPB	NA
29 – Cold Lake South 2	0.5 PPB	NA
32 – St. Lina	0.7 PPB	NA
36 – Elk Point	0.6 PPB	NA

Summary

Minimum : 0.2 PPB –Medley-Martineau
Maximum: 1.0 PPB – Maskwa
Average: 0.5 PPB *Includes Duplicates



Passive Field Data

Passive Sampler Data Sheet for LICA March 2014

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
2	$SO_2/NO_2/O_3$	NA	NA	NA	NA	All samplers had been removed. No samples was installed.
3	$H_2S/SO_2/NO_2/O_3$	02/27/2014	14:09	04/03/2014	14:15	
4	$SO_2/NO_2/O_3$	03/04/2014	11:23	04/03/2014	14:52	
5	$H_2S/SO_2/NO_2/O_3$	03/05/2014	10:20	04/04/2014	13:46	
6	$SO_2/NO_2/O_3$	03/04/2014	14:36	04/04/2014	12:28	
8	$SO_2/NO_2/O_3$	01/26/2014	15:26	04/03/2014	15:45	
9	$SO_2/NO_2/O_3$	02/27/2014	12:00	03/31/2014	14:33	
10	$H_2S/SO_2/NO_2/O_3$	03/03/2014	09:53	04/02/2014	12:39	
11	$H_2S/SO_2/NO_2/O_3$	01/25/2014	09:45	04/02/2014	13:16	
12	$H_2S/SO_2/NO_2/O_3$	03/03/2014	14:58	04/02/2014	14:27	
13	$H_2S/SO_2/NO_2/O_3$	03/06/2014	09:23	04/03/2014	09:16	
14	$H_2S/SO_2/NO_2/O_3$	03/06/2014	10:30	04/03/2014	08:59	
15	$SO_2/NO_2/O_3$	02/27/2014	11:20	0402/2014	11:48	
16	$H_2S/SO_2/NO_2/O_3$	03/05/2014	11:23	04/04/2014	10:55	
17	$H_2S/SO_2/NO_2/O_3$	03/04/2014	15:45	04/04/2014	11:38	
18	$H_2S/SO_2/NO_2/O_3$	03/05/2014	13:01	04/04/2014	10:18	
19	$SO_2/NO_2/O_3$	03/05/2014	12:00	04/04/2014	09:20	
22	$H_2S/SO_2/NO_2/O_3$	02/27/2014	08:35	03/31/2014	11:02	
23	$SO_2/NO_2/O_3$	03/06/2014	11:43	04/03/2014	12:09	
24	$H_2S/SO_2/NO_2/O_3$	03/04/2014	14:01	04/04/2014	13:01	
25	H_2S/SO_2	03/05/2014	15:42	04/02/2014	15:30	
26	H_2S/SO_2	03/06/2014	09:56	04/03/2014	09:40	
27	H_2S/SO_2	03/06/2014	10:50	04/03/2014	11:00	
28	$SO_2/NO_2/O_3$	02/27/2014	12:40	03/31/2014	14:05	
29	$H_2S/SO_2/NO_2/O_3$	02/27/2014	08:35	03/31/2014	10:57	
32	$H_2S/SO_2/NO_2/O_3$	02/27/2014	13:25	04/01/2014	15:30	
34	$H_2S/SO_2/NO_2/O_3$	03/04/2014	14:00	03/31/2014	13:13	

Passive Sampler Data Sheet for LICA March 2014

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
Duplicate #3	SO_2	02/27/2014	14:09	04/03/2014	14:15	
Duplicate #4	SO_2	03/04/2014	11:23	04/03/2014	14:52	
Duplicate #10	H_2S	03/03/2014	09:53	04/02/2014	12:39	
Duplicate #9	NO_2	02/27/2014	12:00	03/31/2014	14:33	
Duplicate #9	O_3	02/27/2014	12:00	03/31/2014	14:33	
Duplicate #10	O_3	03/03/2014	09:53	04/02/2014	12:39	

Passive Network Laboratory Analysis

Maxxam

Success Through Science®

Your Project #: 2014/02/27 - 2014/04/03
Site Location: LICA

Attention:MICHAEL BISAGA

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

Report Date: 2014/04/14
Report #: R1551990
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B428169
Received: 2014/04/10, 09:48

Sample Matrix: Air
Samples Received: 33

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis (1)	19	2014/04/11	2014/04/14	PTC SOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (1)	25	2014/04/14	2014/04/14	PTC SOP-00148	Passive NO2 in ATM
O3 Passive Analysis (1)	26	2014/04/14	2014/04/14	PTC SOP-00197	EPA 300 R2.1
SO2 Passive Analysis (1)	28	2014/04/14	2014/04/14	PTC SOP-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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6744 50th Street T6B 3M9 Telephone(780) 378-8500 FAX(780) 478-8689

Maxxam Job #: B428169
Report Date: 2014/04/14

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/02/27 - 2014/04/03
Site Location: LICA
Sampler Initials: WA

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		JH7862	JH7863	JH7864	JH7865	JH7866		JH7867		
Sampling Date		2014/02/27 11:01	2014/03/04 11:23	2014/03/03 10:20	2014/03/04 14:36	2014/01/26 15:26		2014/02/27 12:00		
	Units	3	4	5	6	8	QC Batch	9	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.07		0.09			7449907		0.02	7449907
Calculated NO2	ppb	0.5	0.6	0.1	6.0	0.5	7451304	0.4	0.1	7451304
Calculated O3	ppb	37.35	45.55	38.03	32.79	30.39	7451646	43.84	0	7451695
Calculated SO2	ppb	0.5	0.7	0.6	0.5	0.6	7451316	0.5	0.1	7451316
RDL = Reportable Detection Limit										

Maxxam ID		JH7868	JH7869	JH7870	JH7871	JH7872	JH7873	JH7874		
Sampling Date		2014/03/03 09:53	2014/01/25 09:45	2014/03/03 14:58	2014/03/06 09:23	2014/03/06 10:30	2014/02/27 11:00	2014/03/05 11:23		
	Units	10	11	12	13	14	15	16	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.10	0.06	0.05	0.05	0.08		0.08	0.02	7449907
Calculated NO2	ppb	2.9	0.2	1.7	0.2	1.1	0.5	1.0	0.1	7451304
Calculated O3	ppb	38.28	26.51	33.32	38.34	33.05	36.76	39.81	0	7451695
Calculated SO2	ppb	0.4	0.4	0.4	0.7	1.0	0.5	0.4	0.1	7451316
RDL = Reportable Detection Limit										

Maxxam ID		JH7875	JH7876	JH7877		JH7878	JH7879	JH7880		
Sampling Date		2014/03/04 15:45	2014/03/05 13:01	2014/03/05 12:00		2014/02/27 08:52	2014/03/06 11:43	2014/03/04 14:01		
	Units	17	18	19	QC Batch	22	23	24	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.09	0.05		7449907	0.06		0.07	0.02	7449907
Calculated NO2	ppb	1.9	0.7	0.6	7451304	1.3	0.1	2.8	0.1	7451307
Calculated O3	ppb	36.83	33.62	40.67	7451695	29.66	39.20	29.99	0	7451695
Calculated SO2	ppb	0.4	0.3	0.4	7451316	0.3	0.2	0.7	0.1	7451316
RDL = Reportable Detection Limit										

Maxxam ID		JH7881	JH7882	JH7883	JH7884	JH7885	JH7886	JH7887		
Sampling Date		2014/03/03 15:42	2014/03/06 09:56	2014/03/06 10:50	2014/02/27 12:40	2014/02/27 08:50	2014/02/27 01:25	2014/03/04 14:00		
	Units	25	26	27	28	29	32	36	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.04	0.14	0.12		0.07	0.07	0.09	0.02	7449907
Calculated NO2	ppb				5.3	1.7	0.6	3.5	0.1	7451307
Calculated O3	ppb				31.29	32.03	40.56	33.10	0	7451695
Calculated SO2	ppb	0.5	0.6	0.9	0.5	0.5	0.7	0.6	0.1	7451322
RDL = Reportable Detection Limit										

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Maxxam Job #: B428169
Report Date: 2014/04/14

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/02/27 - 2014/04/03
Site Location: LICA
Sampler Initials: WA

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		JH7890	JH7892	JH7893	JH7894	JH7895	JH7896		
Sampling Date		2014/02/27 12:00	2014/02/27 12:00	2014/03/03 09:53	2014/02/27 11:01	2014/03/04 11:23	2014/03/03 09:53		
	Units	9 DUP	9 DUP	10 DUP	3 DUP	4 DUP	10 DUP	RDL	QC Batch
Passive Monitoring									
Calculated H2S	ppb						0.08	0.02	7449907
Calculated NO2	ppb	0.5						0.1	7451307
Calculated O3	ppb		40.67	36.39				0	7451695
Calculated SO2	ppb				0.5	0.7		0.1	7451322
RDL = Reportable Detection Limit									

Maxxam ID		JI7703		
Sampling Date		2014/01/26 15:26		
	Units	8 DUP	RDL	QC Batch
Passive Monitoring				
Calculated NO2	ppb	0.5	0.1	7451304
Calculated O3	ppb	30.18	0	7451695
RDL = Reportable Detection Limit				

Maxxam Job #: B428169
Report Date: 2014/04/14

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/02/27 - 2014/04/03
Site Location: LICA
Sampler Initials: WA

GENERAL COMMENTS

Sample JH7866-01 : Sample deployed for approx. 2 months due to site inaccessability in early March 2014.

Sample JH7869-01 : Sample deployed for approx. 2 months due to site inaccessability in early March 2014.

Sample JH7895-01 : Sample incorrectly labeled as DUP #34. No station #34 exists; sample assumed to be DUP #4.

Results relate only to the items tested.

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

Maxxam Job #: B428169
Report Date: 2014/04/14

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/02/27 - 2014/04/03
Site Location: LICA
Sampler Initials: WA

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
7449907	JPF	Spiked Blank	Calculated H2S	2014/04/11		100	%	90 - 110
7451304	DF4	Spiked Blank	Calculated NO2	2014/04/14		99	%	90 - 110
7451304	DF4	Method Blank	Calculated NO2	2014/04/14	<0.1		ppb	
7451307	DF4	Spiked Blank	Calculated NO2	2014/04/14		99	%	90 - 110
7451307	DF4	Method Blank	Calculated NO2	2014/04/14	<0.1		ppb	
7451316	DF4	Spiked Blank	Calculated SO2	2014/04/14		99	%	90 - 110
7451316	DF4	Method Blank	Calculated SO2	2014/04/14	<0.1		ppb	
7451322	DF4	Spiked Blank	Calculated SO2	2014/04/14		100	%	90 - 110
7451322	DF4	Method Blank	Calculated SO2	2014/04/14	<0.1		ppb	
7451646	OZ	Spiked Blank	Calculated O3	2014/04/14		100	%	90 - 110
7451646	OZ	Method Blank	Calculated O3	2014/04/14	0.0 , RDL=0		ppb	
7451695	OZ	Spiked Blank	Calculated O3	2014/04/14		100	%	90 - 110
7451695	OZ	Method Blank	Calculated O3	2014/04/14	0.01 , RDL=0		ppb	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

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

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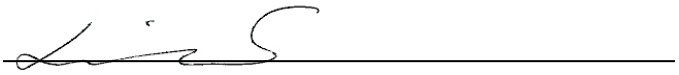
Maxxam Job #: B428169
Report Date: 2014/04/14

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/02/27 - 2014/04/03
Site Location: LICA
Sampler Initials: WA

VALIDATION SIGNATURE PAGE

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



Linda Lin, Supervisor, Centre for Passive Sampling Technology

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Lakeland Industry & Community Association

Maskwa Monitoring Site
Ambient Air Monitoring
Data Report
For
March 2014

Prepared By:

April 28, 2014

Lakeland Industry & Community Association
Ambient Air Monitoring
Maskwa

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Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: Maskwa
Data Period: March 2014

The monthly ambient data report:

- Prepared by Ernestine Tangang
- Reviewed by Lily Lin

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:

- AIR SOP-00211
- AIR SOP-00209
- AIR SOP-00213
- AIR SOP-00214
- AIR 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 – March 2014

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	1.09	23	5	10	1.3	271(W)	3.6	8	100.0
H2S (PPB)	10	3	0	0	0.11	2	1	8	1.4	359(N)	0.7	6	100.0
THC (PPM)	-	-	-	-	2.20	3.6	5	8	0.5	298(WNW)	2.8	8	100.0
NOx (PPB)	-	-	-	-	4.33	38.2	5	8	0.5	298(WNW)	10.9	5	100.0
NO (PPB)	-	-	-	-	0.79	20.4	5	10	1.3	271(W)	3.5	5	100.0
NO_2 (PPB)	159	-	0	-	3.54	22.9	17	4	3.1	276(W)	7.4	5	100.0
VECTOR WS (KPH)	-	-	-	-	4.88	17.6	29	20	-	18(NNE)	11.4	20	100.0
VECTOR WD (DEGREES)	-	-	-	-	270(W)	-	-	-	-	-	-	-	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	55.95	88	14, 16	VAR	VAR	VAR	75.3	15	100.0
TEMPERATURE (DEG C)	-	-	-	-	-8.35	13	12	13, 14	11.6 11.7	281(W) 283(W)	5.7	12	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	941.3	963	1	VAR	VAR	VAR	959.7	1	100.0
PRECIPITATION (MM)	-	-	-	-	0.0	0.2	15	1, 2	5.2 5.5	121(ESE) 127(SE)	0.0	ALL	100.0

NA-NOT AVAILABLE 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 monthly calibration was performed on March 26th. The inlet filter was changed before the calibration was started. 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 monthly calibration was performed on March 26th. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Total Hydrocarbon (PPM)

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

No operational issues were observed during the month. The H2 gas cylinder was changed on March 25th. The monthly calibration was performed on March 26th. The inlet filter was changed before the monthly calibration was started. 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 monthly calibration was performed on March 25th. The inlet filter was changed before the calibration was started. 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 replaced to RM Young 5103VK, S/N: 129612

The wind system is reported as vector wind speed and vector wind direction. The last wind system calibration was performed by manufacturer on February 5th, 2014.
No operational issues were observed this month.

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.

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 March 25th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

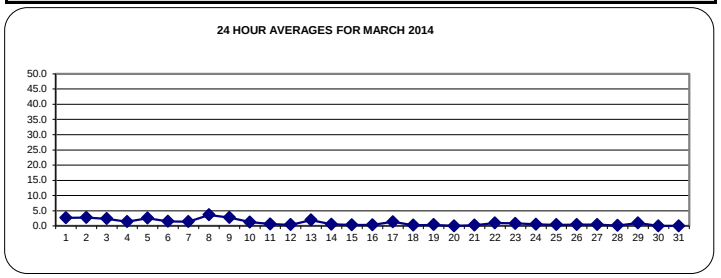
SULPHUR DIOXIDE (SO2) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2	2	2	1	1	2	2	2	4	7	4	6	5	4	3	2	2	2	2	2	2	**S**	1	1	7	2.7	24
2	1	1	1	1	2	1	2	2	2	2	4	7	7	5	4	4	3	3	3	3	**S**	2	2	2	7	2.8	24
3	2	2	2	2	2	2	2	2	2	2	2	5	3	3	5	4	3	2	2	**S**	2	2	1	1	5	2.4	24
4	1	1	1	1	1	1	1	1	3	2	1	1	1	5	3	2	1	1	**S**	1	1	1	1	1	5	1.4	24
5	1	1	1	1	1	1	1	1	1	2	***23***	3	2	2	2	2	2	**S**	2	2	2	2	2	2	***23***	2.6	24
6	2	2	2	2	2	2	2	2	2	2	1	1	2	1	1	2	**S**	1	1	1	1	1	1	1	2	1.5	24
7	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	**S**	2	2	2	2	2	2	2	2	2	1.4	24
8	3	4	4	5	3	4	3	4	4	4	5	4	5	4	**S**	3	3	3	3	3	3	3	3	3	5	***3.6***	24
9	3	3	3	3	3	3	5	3	3	4	3	3	3	**S**	3	3	3	2	2	2	2	2	1	2	5	2.8	24
10	1	1	1	1	1	2	2	1	1	2	1	1	**S**	1	2	1	2	2	1	1	1	1	1	1	2	1.3	24
11	1	1	1	1	1	1	1	1	1	1	1	**S**	0	0	0	0	0	0	0	0	0	0	1	2	2	0.6	24
12	1	0	0	0	1	1	2	2	1	1	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.4	24
13	0	0	0	0	0	0	0	0	2	**S**	6	6	6	8	4	8	5	0	0	0	0	0	0	0	8	2.0	24
14	0	0	0	0	0	0	0	0	**S**	0	0	0	1	1	0	1	3	5	1	0	0	0	0	1	5	0.6	24
15	0	1	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0.3	24
16	1	1	1	1	1	1	**S**	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
17	1	0	0	1	12	**S**	3	1	4	1	1	2	4	0	0	0	0	0	0	0	0	1	0	0	12	1.3	24
18	0	0	0	0	**S**	0	0	0	0	0	0	0	2	0	1	0	0	0	0	2	0	0	0	0	2	0.2	24
19	0	0	0	**S**	0	0	0	0	0	0	1	0	1	3	1	1	1	1	0	0	0	0	0	0	3	0.4	24
20	0	0	**S**	0	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	**S**	0	0	0	0	0	0	1	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	0.2	24
22	**S**	0	0	0	0	0	0	0	0	0	5	7	3	2	2	1	0	1	1	0	0	0	0	**S**	7	1.0	24
23	0	0	0	0	0	0	0	0	1	0	2	1	0	0	2	4	2	6	1	0	0	0	**S**	0	6	0.8	24
24	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	2	4	0	1	0	0	**S**	0	0	4	0.6	24
25	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	1	1	1	1	1	**S**	0	0	0	1	0.4	24
26	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	1	1	1	2	1	1	1	**S**	0	0	0	0	2	0.4	24
27	1	0	0	0	0	0	0	0	0	2	1	1	0	0	2	1	1	1	**S**	1	0	0	0	0	2	0.5	24
28	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	**S**	0	0	0	0	0	0	1	0.1	24
29	0	0	0	0	0	0	0	0	2	6	5	2	3	0	2	2	**S**	0	0	0	0	0	0	0	6	1.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0.0	24
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	3	4	4	5	12	4	5	4	4	7	23	7	7	8	5	8	5	6	3	3	3	3	3	3			
HOURLY AVG	0.7	0.7	0.7	0.7	1.1	0.7	0.9	0.8	1.3	1.4	2.3	1.9	1.8	1.5	1.5	1.6	1.3	1.2	0.9	0.8	0.6	0.6	0.6	0.7			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

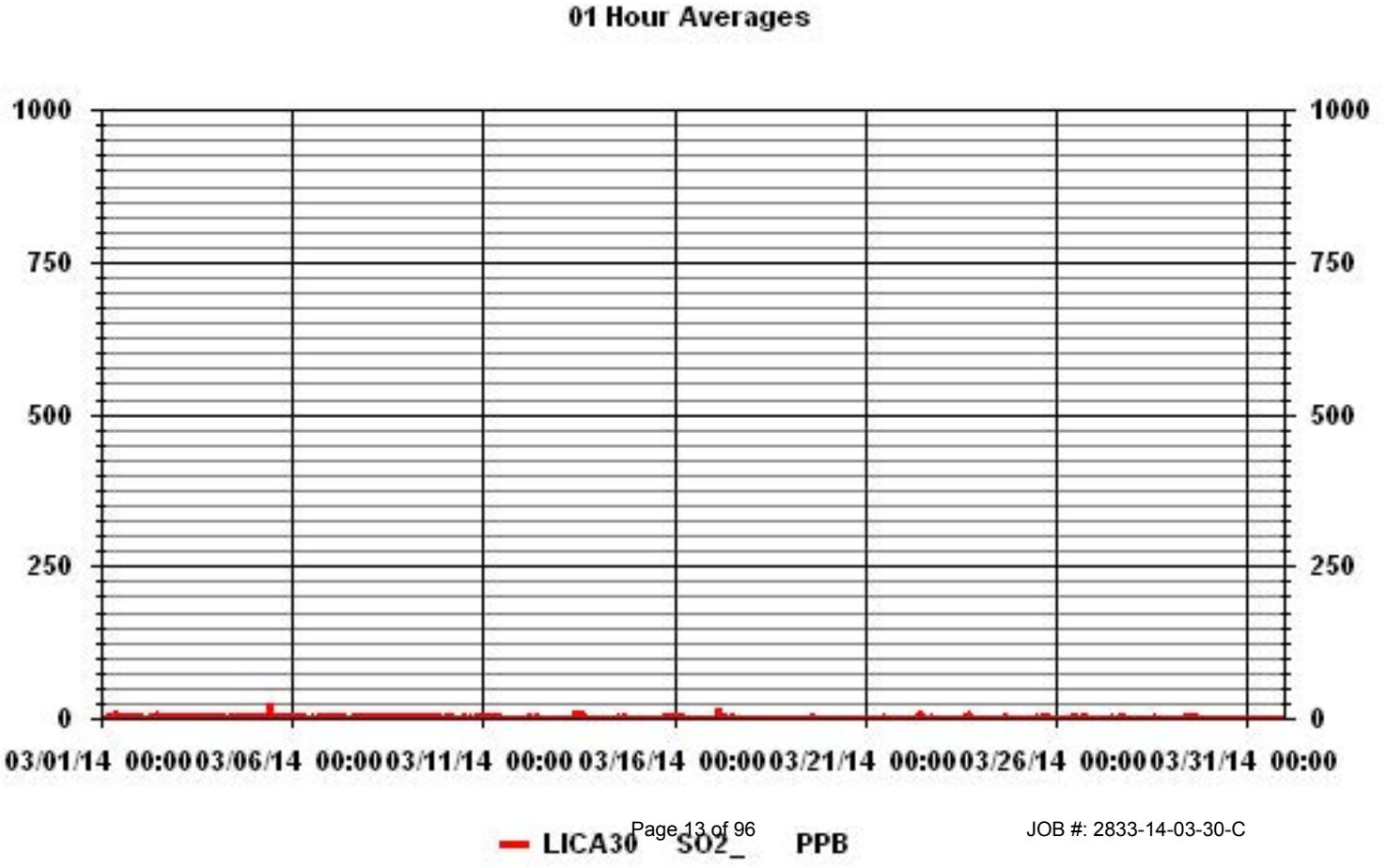


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB 24-HR 48 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	363					
MAXIMUM 1-HR AVERAGE:	23	PPB	@ HOUR(S)	10	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	3.6	PPB			ON DAY(S)	8
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	1.68		MONTHLY AVERAGE:		1.09	PPB

JOB #: 2833-14-03-30-C



JOB #: 2833-14-03-30-C

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

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	3	3	3	2	2	2	2	3	9	13	8	12	9	9	7	2	3	3	2	3	3	**S**	2	2	13	4.7	24
2	2	2	2	2	3	2	3	4	3	4	5	16	9	6	5	5	4	4	3	3	**S**	3	3	3	16	4.2	24
3	3	2	3	3	3	2	2	2	2	3	7	11	6	6	9	8	7	3	3	**S**	4	3	2	1	11	4.1	24
4	1	1	2	1	1	1	1	1	8	7	3	2	3	16	7	4	2	2	**S**	1	1	1	2	1	16	3.0	24
5	2	1	2	1	2	1	2	2	2	5	***59***	5	3	3	2	3	2	**S**	2	2	2	2	2	3	***59***	4.8	24
6	2	4	3	2	2	2	2	2	3	2	2	2	2	2	2	5	**S**	2	2	2	2	2	1	2	5	2.3	24
7	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	**S**	2	2	2	2	2	2	2	3	3	1.7	24
8	4	5	5	7	4	8	4	5	5	6	6	5	5	5	**S**	4	4	4	3	3	3	3	3	3	8	4.5	24
9	3	3	3	3	3	3	11	3	6	8	4	4	4	**S**	4	4	4	4	2	2	2	2	2	2	11	3.7	24
10	2	2	2	2	2	3	3	2	2	3	2	2	**S**	2	12	6	5	7	2	1	1	1	1	1	12	2.9	24
11	2	2	2	1	1	2	1	1	2	2	1	**S**	1	1	1	1	0	1	1	1	1	1	3	3	3	1.4	24
12	3	1	1	1	2	3	3	3	2	1	**S**	0	0	0	0	0	0	0	2	1	1	0	0	0	3	1.0	24
13	0	0	1	0	0	0	0	2	9	**S**	14	14	16	16	11	16	16	0	0	0	0	0	0	0	16	***5.0***	24
14	0	0	0	0	0	0	0	0	**S**	1	1	1	2	2	1	3	8	8	6	1	1	1	1	2	8	1.7	24
15	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	2	2	1	1	1	2	2	2	1.2	24
16	2	1	2	2	1	1	**S**	1	2	1	0	0	0	1	0	0	1	0	1	1	1	1	1	1	2	0.9	24
17	3	1	1	5	31	**S**	14	2	14	1	3	7	13	5	1	1	1	0	1	0	0	2	0	0	31	4.6	24
18	0	0	0	0	**S**	0	0	0	0	0	0	0	12	2	8	5	0	0	0	10	1	0	0	0	12	1.7	24
19	0	0	0	**S**	0	0	0	0	0	0	1	1	3	3	2	2	2	1	1	1	1	1	1	1	3	0.9	24
20	0	0	**S**	0	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	**S**	0	0	0	0	0	1	7	18	2	3	5	8	0	2	0	0	0	0	0	0	0	0	18	2.0	24
22	**S**	1	1	1	1	0	0	1	1	1	11	11	6	3	3	1	1	1	1	1	1	1	1		11	2.2	23
23	0	0	0	0	0	0	0	1	1	2	10	4	2	2	8	11	9	20	14	1	0	1	**S**	0	20	3.7	24
24	0	0	0	0	0	0	0	0	0	6	3	12	6	8	10	12	13	7	7	1	0	**S**	0	0	13	3.7	24
25	0	0	0	0	0	1	0	1	5	1	1	1	1	**Y**	**Y**	2	2	2	1	2	**S**	0	0	0	5	1.0	22
26	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	2	2	2	2	1	**S**	0	0	0	0	0	2	0.6	24
27	0	0	0	0	0	0	0	0	0	7	7	6	0	3	7	7	4	6	**S**	2	1	0	0	0	7	2.2	24
28	0	0	0	0	0	0	0	1	1	1	1	1	1	2	2	1	1	**S**	1	1	1	1	0	1	2	0.7	24
29	1	1	1	1	1	1	1	1	6	11	9	5	9	3	6	6	**S**	6	0	0	0	0	0	0	11	3.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	1	2	1	0	0	0	0	0	2	0.2	24
31	0	0	0	0	0	0	0	0	1	1	0	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	0.6	24
HOURLY MAX	4	5	5	7	31	8	14	5	14	18	59	16	16	16	12	16	16	20	14	10	4	3	3	3			
HOURLY AVG	1.2	1.1	1.2	1.2	2.0	1.1	1.7	1.3	3.2	3.7	5.6	4.4	4.2	3.9	4.0	4.0	3.3	3.1	2.1	1.5	1.1	1.0	1.0	1.1			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 498

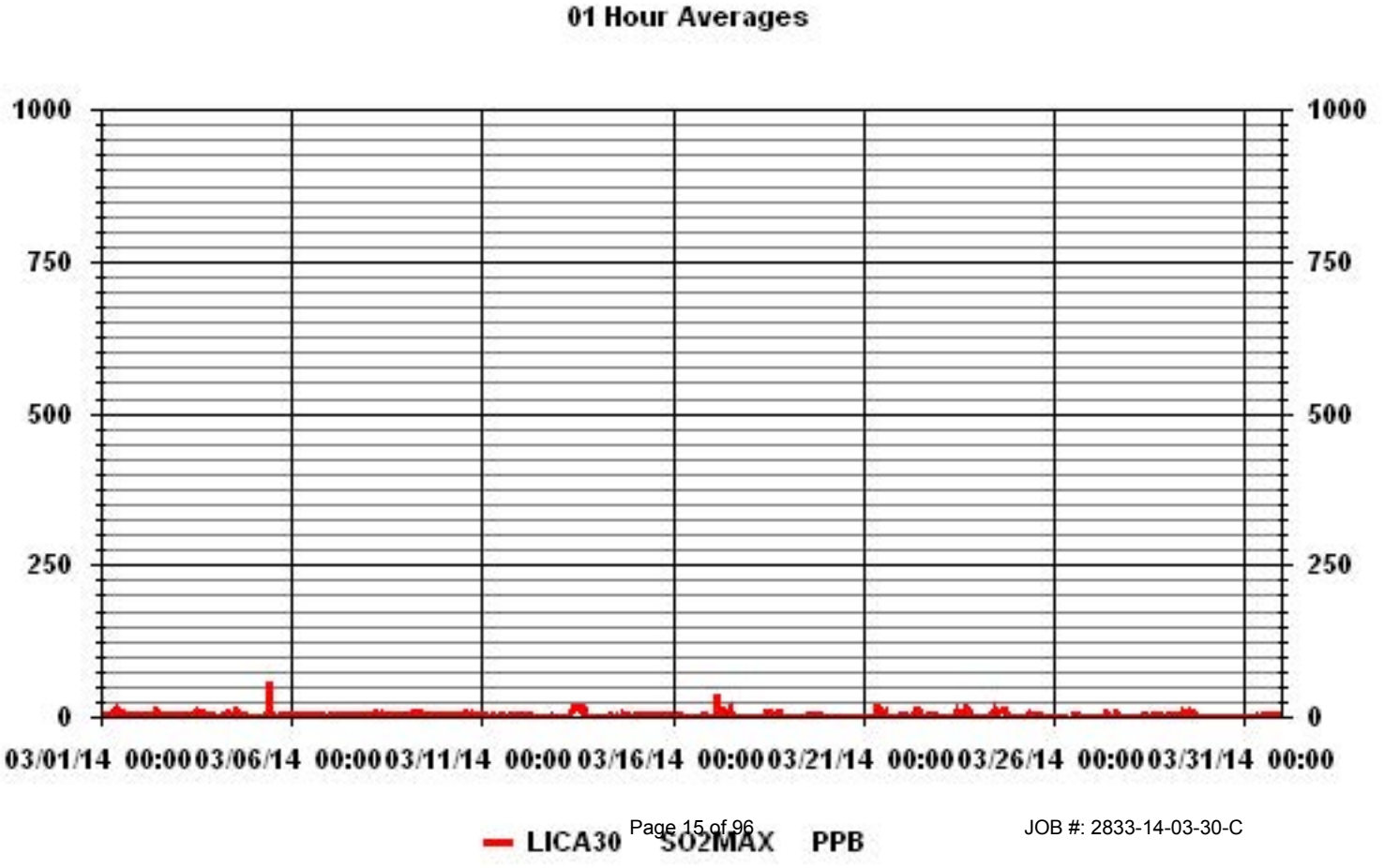
MAXIMUM INSTANTANEOUS VALUE: 59 PPB @ HOUR(S) 10 ON DAY(S) 5

VAR-VARIOUS

IZS CALIBRATION TIME: 31 HRS OPERATIONAL TIME: 741 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 3.93



JOB #: 2833-14-03-30-C

LICA30
SO2_ / WDR Joint Frequency Distribution (Percent)

March 2014

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	6.07	6.35	5.22	4.66	2.25	4.37	2.68	4.37	9.32	16.24	9.60	4.80	6.92	7.48	5.08	4.37	99.85
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.14
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	6.07	6.35	5.22	4.66	2.25	4.37	2.68	4.37	9.32	16.24	9.60	4.80	7.06	7.48	5.08	4.37	

Calm : .00 %

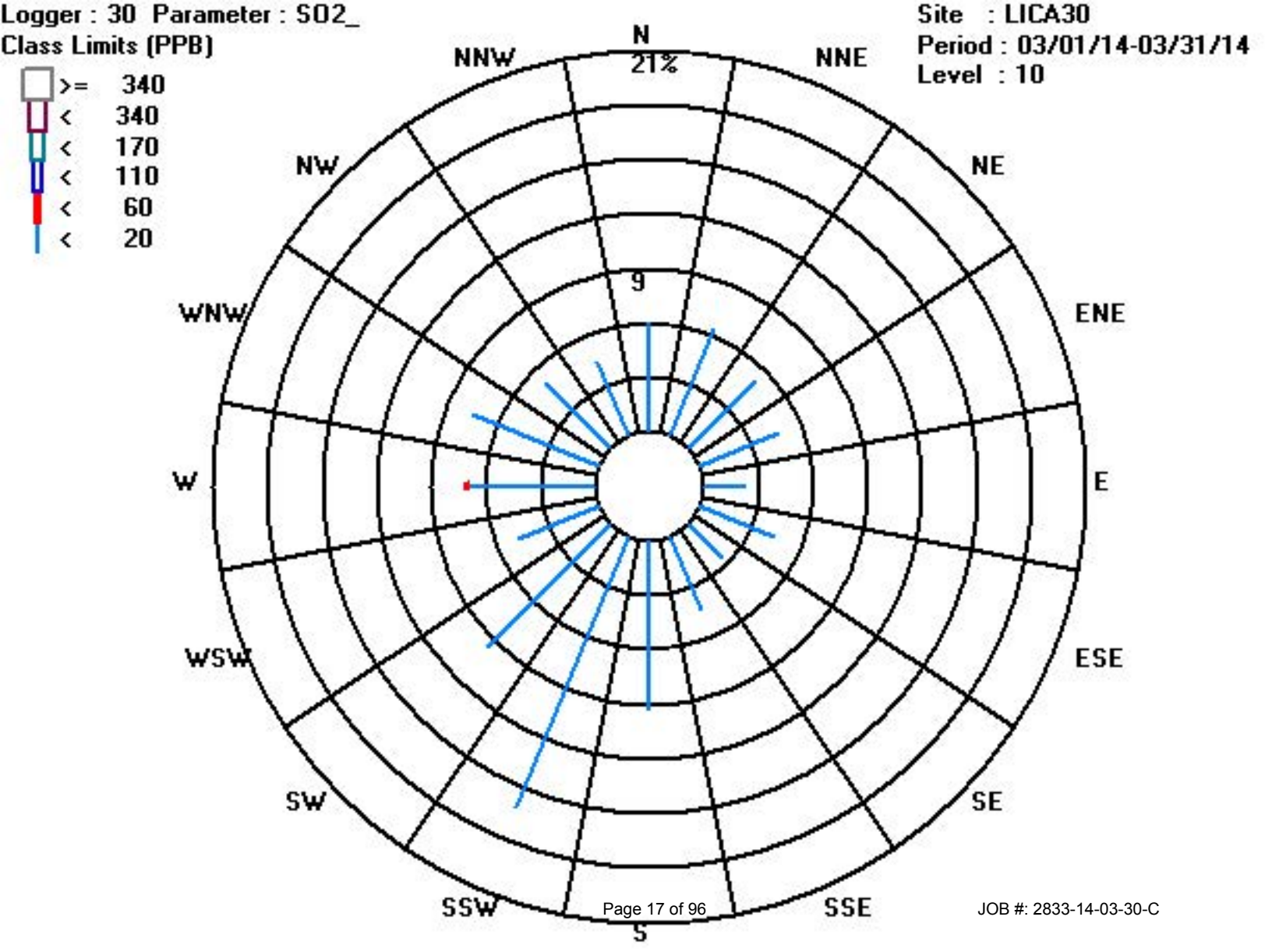
Total # Operational Hours : 708

Distribution By Samples

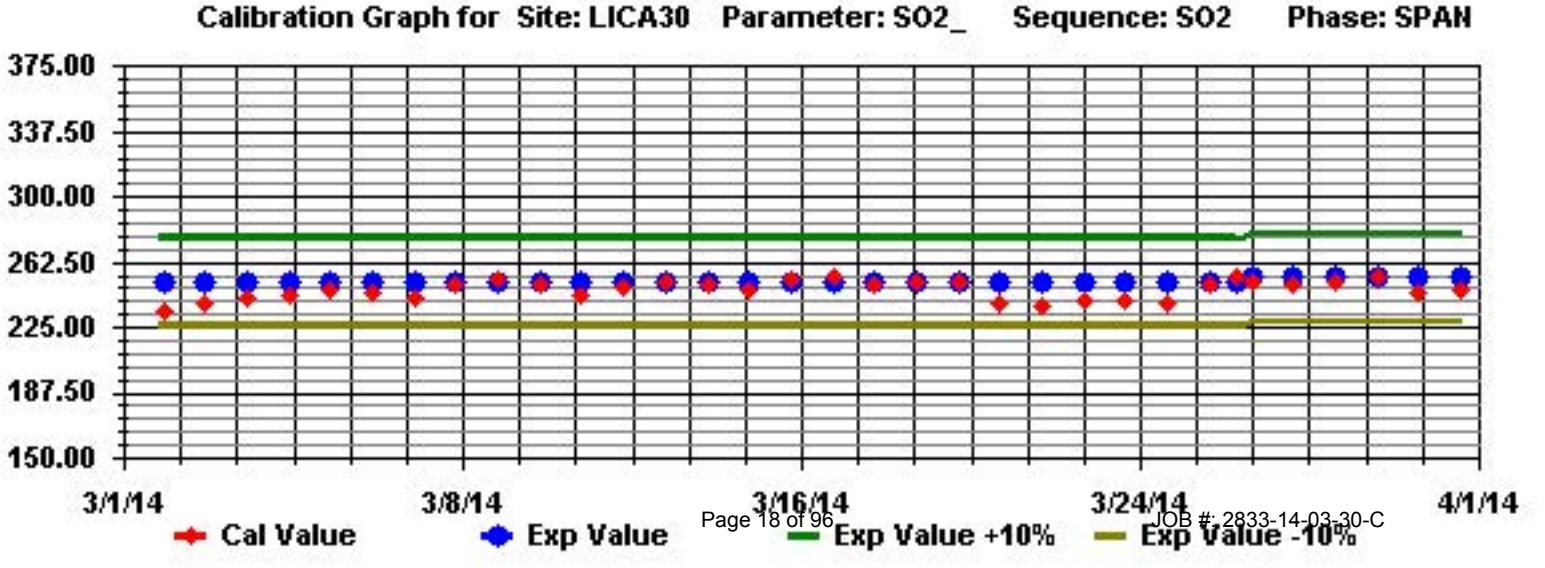
		Direction																
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	43	45	37	33	16	31	19	31	66	115	68	34	49	53	36	31	707
<	60													1				1
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	43	45	37	33	16	31	19	31	66	115	68	34	50	53	36	31	

Calm : .00 %

Total # Operational Hours : 708



JOB #: 2833-14-03-30-C


Calibration Graph for Site: LICA30 Parameter: SO2_ Sequence: SO2 Phase: SPAN
375.00
337.50
300.00
262.50
225.00
187.50
150.00
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

HYDROGEN SULPHIDE (H2S) hourly averages in ppb

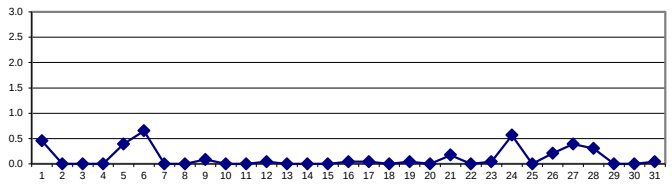
MST

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

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

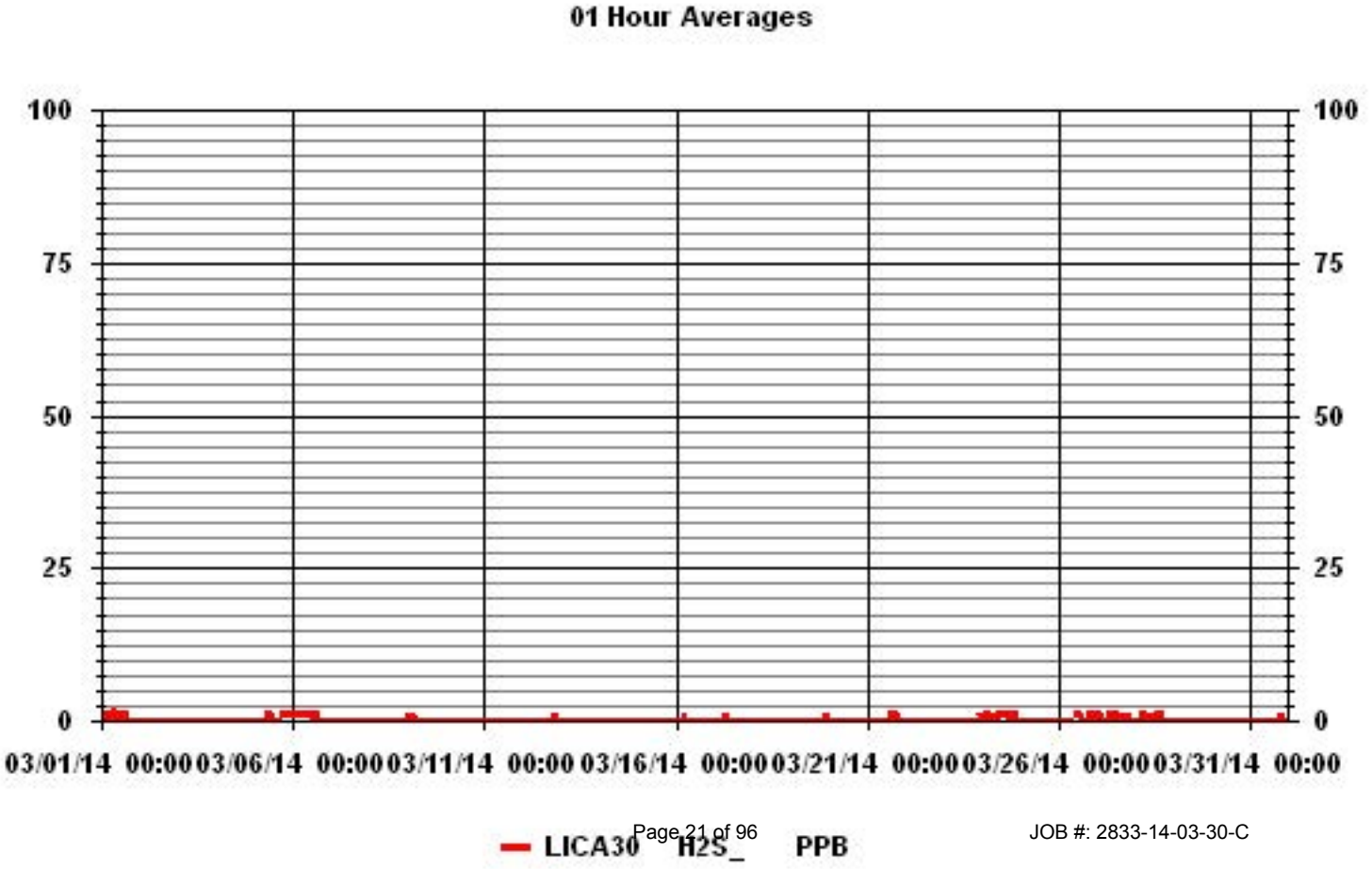
24 HOUR AVERAGES FOR MARCH 2014



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:	78						
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	8	ON DAY(S)		1
MAXIMUM 24-HR AVERAGE:	0.7	PPB			ON DAY(S)		6
					VAR-VARIOUS		
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:			744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	0.32		MONTHLY AVERAGE:			0.11	PPB



JOB #: 2833-14-03-30-C

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

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

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 298

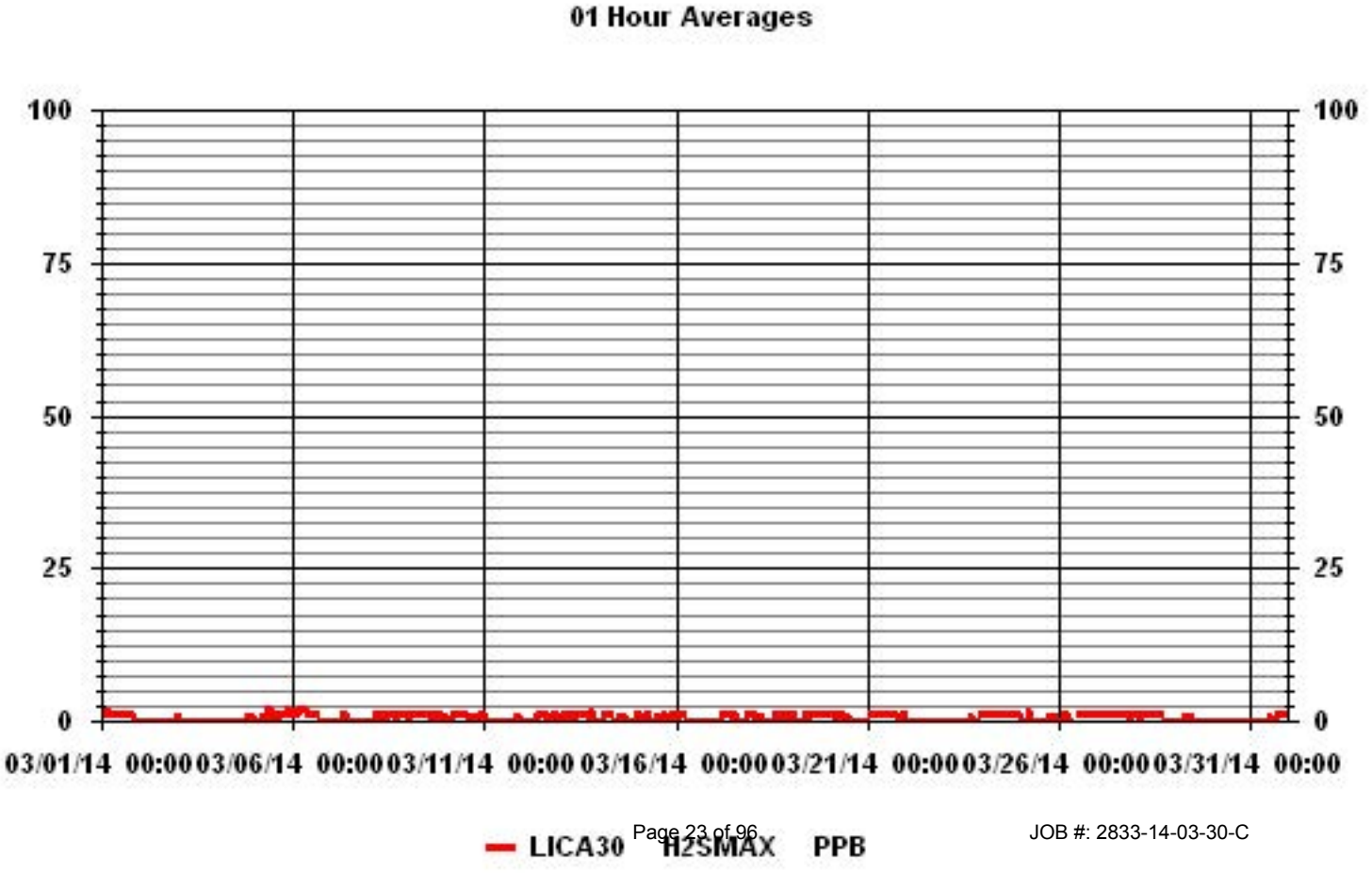
MAXIMUM INSTANTANEOUS VALUE: 2 PPB @ HOUR(S) VAR ON DAY(S) VAR

VAR-VARIOUS

IZS CALIBRATION TIME: 35 HRS OPERATIONAL TIME: 742 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 0.54



JOB #: 2833-14-03-30-C

LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

March 2014

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	6.08	6.36	5.23	4.66	2.26	4.38	2.68	4.38	9.33	16.26	9.61	4.80	7.07	7.35	5.09	4.38	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	6.08	6.36	5.23	4.66	2.26	4.38	2.68	4.38	9.33	16.26	9.61	4.80	7.07	7.35	5.09	4.38	

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	43	45	37	33	16	31	19	31	66	115	68	34	50	52	36	31	707
< 10																	
< 50																	
>= 50																	
Totals	43	45	37	33	16	31	19	31	66	115	68	34	50	52	36	31	

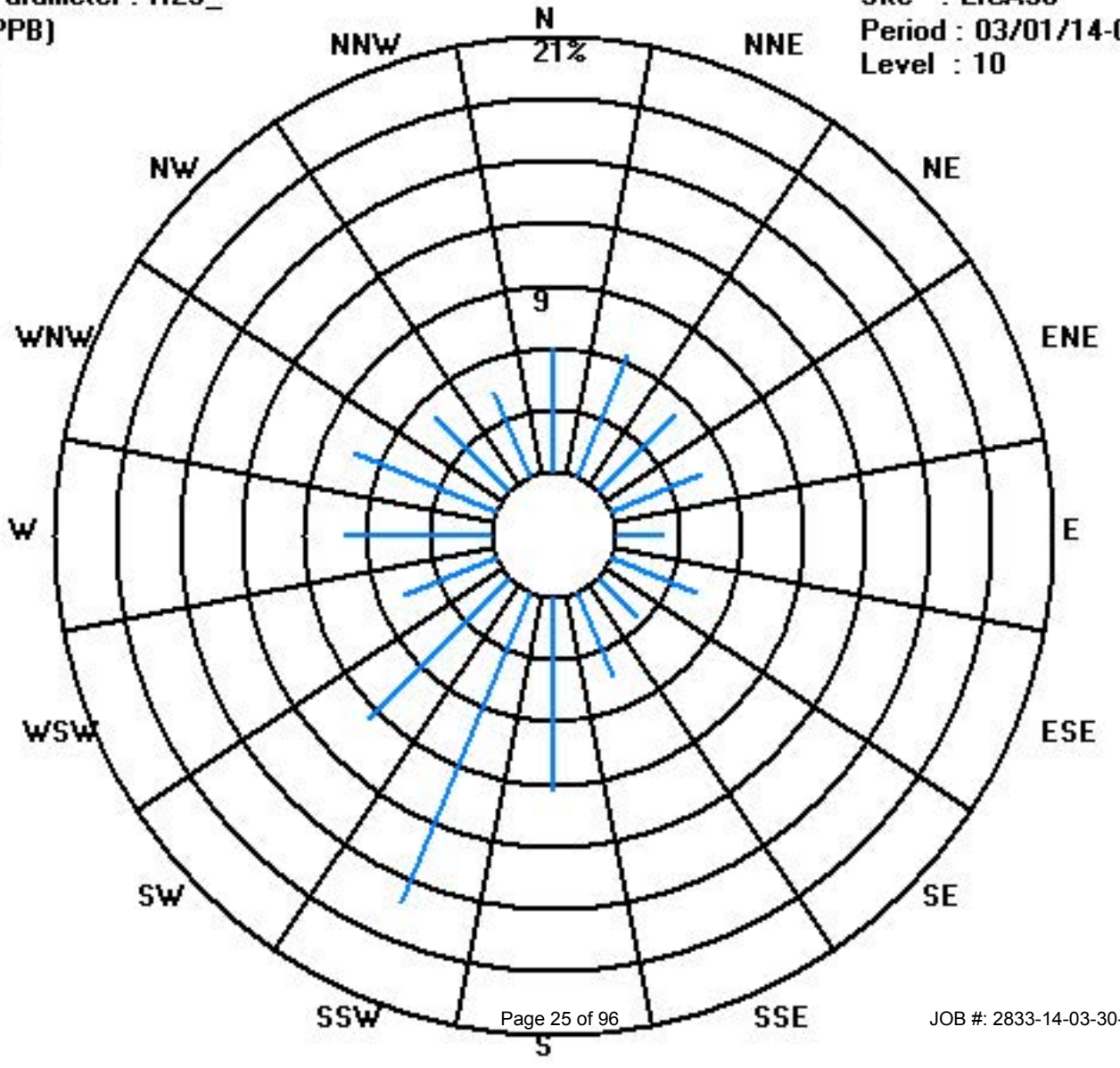
Calm : .00 %

Total # Operational Hours : 707

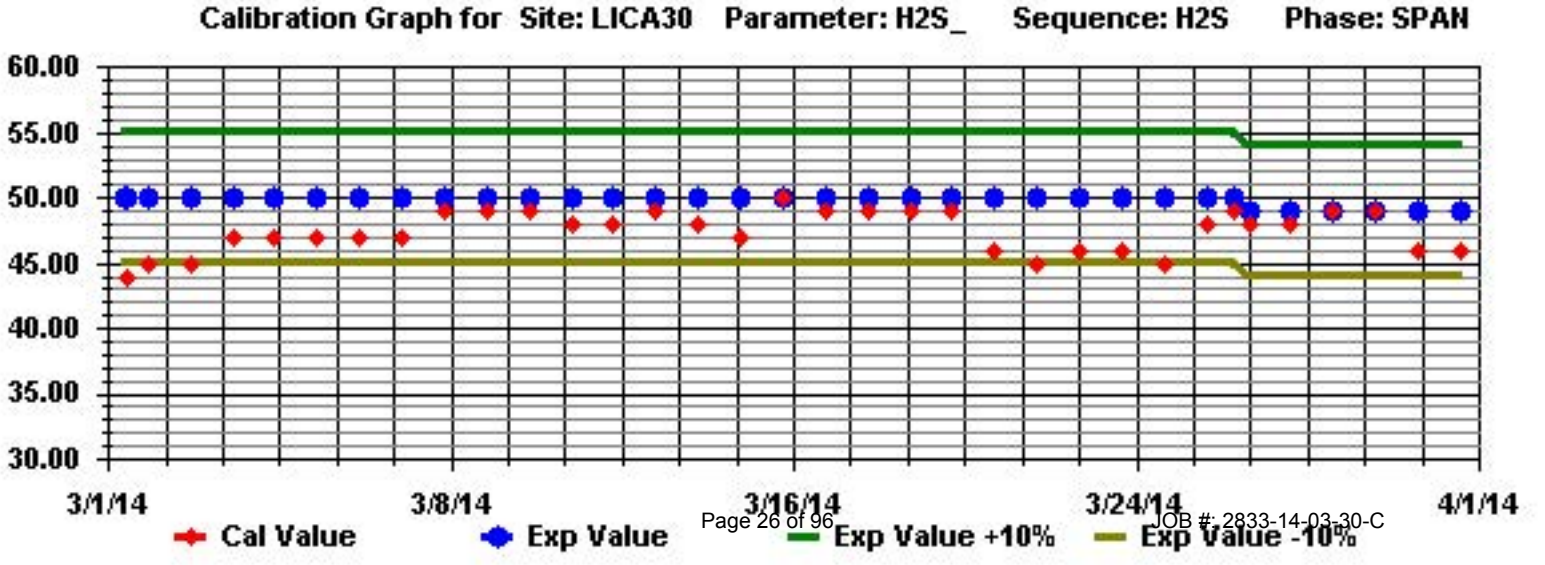
Logger : 30 Parameter : H2S_
Class Limits (PPB)

>= 50
< 50
< 10
< 3

Site : LICA30
Period : 03/01/14-03/31/14
Level : 10



JOB #: 2833-14-03-30-C


Calibration Graph for Site: LICA30 Parameter: H2S_ Sequence: H2S Phase: SPAN
60.00
55.00
50.00
45.00
40.00
35.00
30.00
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

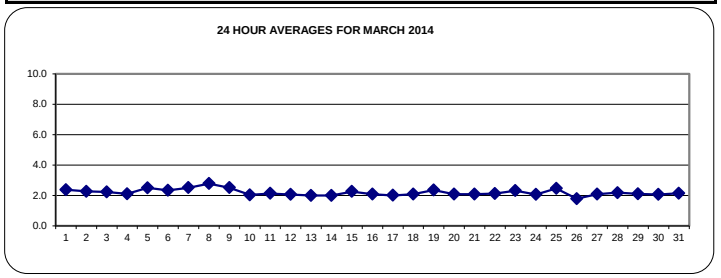
TOTAL HYDROCARBONS (THC) hourly averages in ppm

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	2.3	2.4	2.3	2.3	2.6	2.4	2.3	2.4	3.0	2.7	2.3	2.2	2.2	2.2	2.2	2.3	2.4	2.4	2.3	2.3	2.4	**S**	2.4	2.5	3.0	2.4	24
2	2.5	2.3	2.2	2.2	2.2	2.2	2.4	2.3	2.3	2.5	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	**S**	2.3	2.4	2.4	2.5	2.3	24
3	2.6	2.7	2.6	2.6	2.3	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**S**	2.1	2.1	2.1	2.1	2.7	2.2	24
4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**S**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24
5	2.1	2.5	3.3	2.7	2.5	2.4	2.5	2.6	***3.6***	3.2	2.5	2.2	2.2	2.3	2.2	2.2	2.2	**S**	2.3	2.3	2.4	2.4	2.4	2.5	***3.6***	2.5	24
6	2.5	2.6	2.5	2.6	3.3	2.7	2.7	2.7	2.5	2.2	2.1	2.1	2.1	2.1	2.1	2.1	**S**	2.1	2.1	2.1	2.1	2.1	2.2	2.2	3.3	2.3	24
7	2.2	2.2	2.2	2.2	2.2	2.3	2.4	3.1	3.1	2.7	2.6	2.5	2.6	2.5	2.6	**S**	2.7	2.6	2.6	2.6	2.5	2.5	2.5	2.5	3.1	2.5	24
8	2.5	2.6	2.6	2.8	2.8	2.6	2.6	2.7	2.8	2.9	2.8	2.8	2.7	2.7	**S**	2.8	2.8	2.9	2.9	2.9	2.9	2.9	3.0	2.9	3.0	***2.8***	24
9	2.9	2.9	2.9	3.0	3.0	3.0	2.8	2.8	2.5	2.5	2.5	2.6	2.7	**S**	2.9	3.0	2.5	2.0	1.9	1.9	1.9	1.9	1.9	1.9	3.0	2.5	24
10	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.1	2.1	2.1	**S**	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.0	24
11	2.1	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.1	2.1	**S**	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.2	2.1	2.1	2.2	2.4	2.4	2.1	24
12	2.3	2.2	2.0	2.0	2.0	2.1	2.3	2.4	2.4	2.2	**S**	2.0	2.0	1.9	2.0	1.9	1.9	1.9	2.0	2.1	2.1	2.1	2.0	1.9	2.4	2.1	24
13	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.4	**S**	2.3	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.4	2.0	24
14	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	**S**	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	24
15	2.0	2.1	2.1	2.1	2.1	2.2	2.3	**S**	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.3	2.4	2.3	2.3	2.2	2.4	2.3	24
16	2.2	2.2	2.2	2.2	2.2	2.2	**S**	2.5	2.5	2.4	2.2	2.0	2.0	1.9	2.0	1.9	1.9	1.9	1.9	2.0	1.9	1.9	2.0	2.0	2.5	2.1	24
17	2.0	1.9	1.9	2.1	2.1	**S**	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.1	2.0	2.2	2.0	24
18	2.1	2.1	2.1	2.1	**S**	2.6	2.3	2.1	2.0	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.6	2.1	24
19	2.1	2.1	2.3	**S**	3.0	2.9	3.0	2.9	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.3	2.2	2.1	2.1	2.1	2.2	2.3	2.3	2.3	3.0	2.4	24
20	2.3	2.3	**S**	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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
21	2.1	**S**	2.0	2.1	2.1	2.1	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	2.1	2.1	2.1	2.1	2.1	24
22	**S**	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	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.2	**S**	2.2	2.1	24
23	2.4	2.4	2.6	2.6	2.8	2.9	2.9	2.8	2.5	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	**S**	2.0	2.9	2.3	24
24	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	**S**	2.6	2.6	2.6	2.1	24
25	2.6	2.6	2.9	3.0	3.1	3.1	3.1	2.9	2.7	2.5	2.5	2.5	2.6	2.7	2.0	2.2	2.1	2.1	2.1	2.1	**S**	1.7	1.8	1.9	3.1	2.5	24
26	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	**C**	**C**	**C**	**C**	2.0	2.0	2.0	2.0	**S**	2.0	2.1	2.1	2.1	2.1	1.8	24
27	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	**S**	2.2	2.2	2.2	2.1	2.1	2.2	2.1	24
28	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.8	2.6	2.3	2.1	2.2	2.1	2.1	2.1	2.1	2.1	**S**	2.1	2.1	2.0	2.1	2.1	2.2	2.8	2.2	24
29	2.3	2.2	2.2	2.2	2.2	2.4	2.3	2.3	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.0	**S**	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.4	2.1	24
30	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**S**	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	24
31	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	**S**	2.3	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.1	24
HOURLY MAX	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3			
HOURLY AVG	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.2			

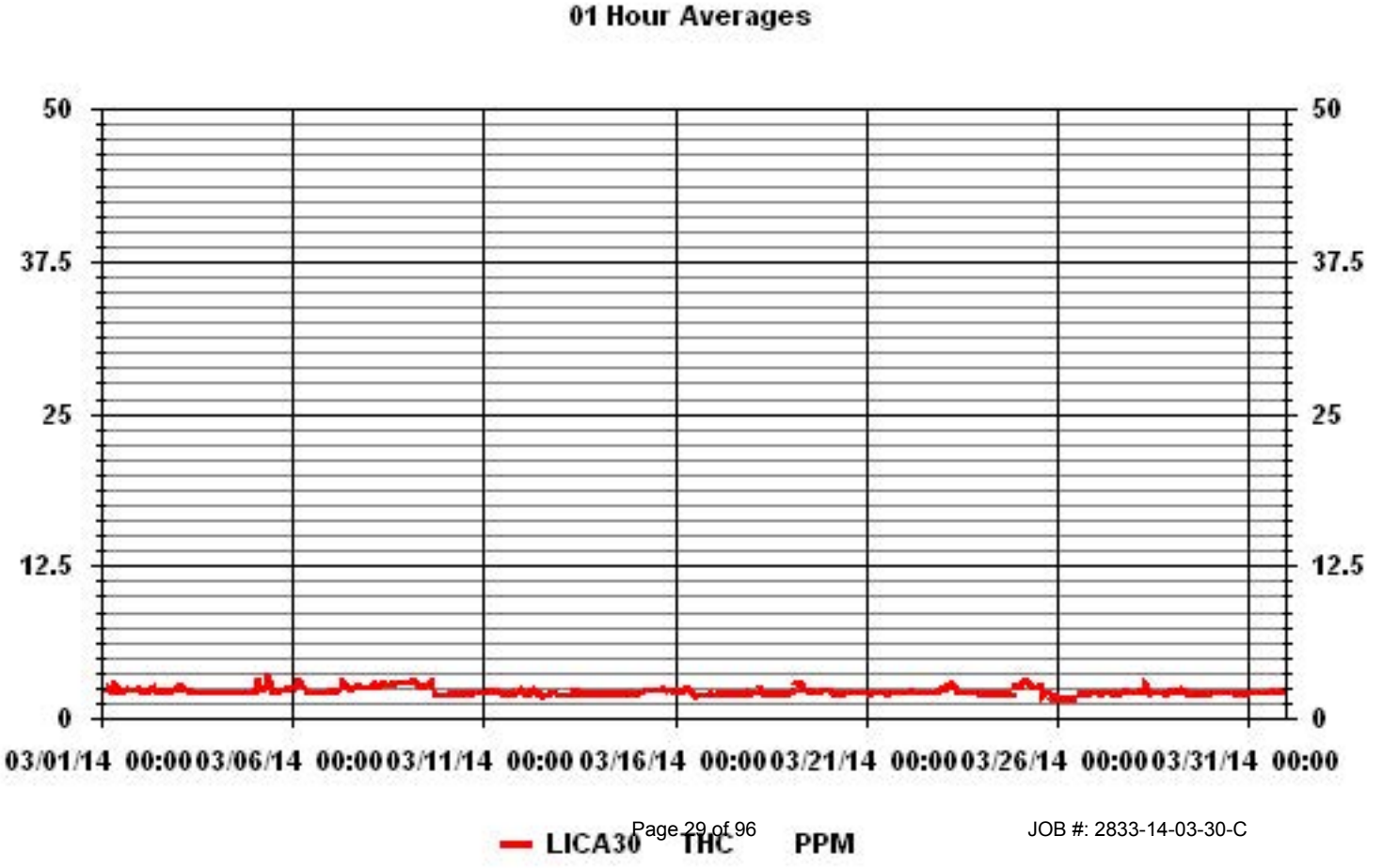
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	708						
MAXIMUM 1-HR AVERAGE:	3.6	PPM	@ HOUR(S)	8	ON DAY(S)		5
MAXIMUM 24-HR AVERAGE:	2.8	PPM			ON DAY(S)		8
					VAR-VARIOUS		
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:			744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	0.28		MONTHLY AVERAGE:			2.20	PPM



JOB #: 2833-14-03-30-C

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

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	2.7	2.8	2.7	2.3	3.5	2.4	2.4	3	4.6	3.2	2.7	2.5	2.3	2.4	2.5	2.5	2.4	2.4	2.3	2.4	2.4	**S**	2.6	2.6	4.6	2.7	24
2	2.6	2.7	2.3	2.2	2.3	3.2	2.9	2.8	2.6	2.8	2.4	2.3	2.3	2.4	2.3	2.3	2.2	2.2	2.2	2.2	**S**	2.4	2.4	2.7	3.2	2.5	24
3	3.2	3.2	2.8	3.2	2.5	2.4	2.4	2.4	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**S**	2.2	2.2	2.1	2.1	3.2	2.4	24
4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**S**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24
5	2.2	3.3	3.9	3.2	2.6	2.5	2.5	2.8	***6.4***	3.9	2.7	2.2	2.2	2.4	2.4	2.3	2.2	**S**	2.3	2.4	2.5	2.5	2.5	2.6	***6.4***	2.8	24
6	2.6	2.7	2.6	4.6	4.6	3	3.1	3.3	3	2.3	2.1	2.1	2.1	2.1	2.1	2.1	**S**	2.1	2.1	2.1	2.2	2.2	2.3	2.2	4.6	2.6	24
7	2.5	2.3	2.3	2.2	2.3	2.4	3	4.2	3.9	3	2.6	2.6	2.6	2.6	2.6	**S**	2.8	2.8	2.6	2.6	2.6	2.5	2.5	2.5	4.2	2.7	24
8	2.6	2.7	2.7	2.9	2.9	2.7	2.6	2.7	2.9	2.9	2.9	2.8	2.8	2.8	**S**	2.9	2.9	2.9	2.9	2.9	2.9	3	3.1	3	3.1	***2.8***	24
9	2.9	3.2	2.9	3	3.1	3.1	2.9	2.9	2.6	2.5	2.5	2.6	2.7	**S**	3	3.1	2.9	2.2	1.9	1.9	1.9	1.9	1.9	1.9	3.2	2.6	24
10	1.9	2	2	2	2	3	3.1	2	2.1	2.5	2.6	2.4	**S**	2.3	2.2	2.3	2.2	2.4	2.1	2.1	2.1	2.1	2.3	2.2	3.1	2.3	24
11	2.2	2.3	2.3	2.2	2.2	2.7	2.3	2.3	2.4	2.2	2.1	**S**	2.1	2.1	2.3	2.1	2	2	2.1	2.2	2.2	2.2	2.4	2.4	2.7	2.2	24
12	2.4	2.3	2.2	2	2.1	2.2	2.4	2.5	2.4	2.3	**S**	2.2	2.2	2.1	2.1	2.2	2	1.9	2.1	2.2	2.2	2.2	2	2	2.5	2.2	24
13	1.9	1.9	2	1.9	1.9	1.9	2	2.2	3.2	**S**	3	2.2	3	2.6	2.2	2.2	2.2	2	2	2	2	2	2	2.2	3.2	2.2	24
14	2.1	2.1	2	2	2.1	2.1	2.1	2.1	**S**	2	2	2	2	2	2	2	2	2	2	2	2.1	2	2	2.1	2.1	2.0	24
15	2.1	2.1	2.1	2.1	2.2	2.3	2.3	**S**	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.2	2.4	2.3	24
16	2.2	2.2	2.2	2.2	2.2	2.3	**S**	2.7	2.7	2.5	2.3	2.2	2.2	2	2.2	2.2	1.9	1.9	2	2.1	2	1.9	2	2.2	2.7	2.2	24
17	2.3	1.9	2.1	2.6	2.7	**S**	2.3	2	2.3	2	2	2	2.1	2	2	2	2	2	2	2	2	2.1	2.6	2.1	2.1	2.7	2.1	24
18	2.1	2.3	2.2	2.3	**S**	2.7	2.6	2.1	2	2.3	2.1	2.2	2.2	2.3	2.4	2.3	2.3	2.3	2	2.5	2.1	2.1	2.1	2.1	2.7	2.2	24
19	2.1	2.1	2.9	**S**	3.3	3.1	3.1	3	2.8	2.3	2.3	2.3	2.4	2.2	2.3	2.3	2.2	2.2	2.2	2.1	2.3	2.3	2.3	2.3	3.3	2.5	24
20	2.4	2.5	**S**	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	2.2	2.2	2.2	2.1	2.5	2.1	24
21	2.2	**S**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.1	24
22	**S**	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.2	2.3	**S**	2.3	2.2	24
23	2.5	2.5	2.6	2.7	2.8	3	3	2.9	2.6	2.4	2.4	2.2	2.2	2.2	2.4	2.2	2.3	2.4	2.1	2.1	2.1	2.1	**S**	2	3	2.4	24
24	2	2	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2	2.5	2.4	2.1	**S**	2.6	2.6	2.6	2.2	24
25	2.7	2.8	3.1	3.2	3.2	3.4	3.4	3.1	2.8	2.6	2.5	2.5	2.7	**Y**	**Y**	2.3	2.1	2.1	2.1	2.1	**S**	1.8	1.9	1.9	3.4	2.6	22
26	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.6	**C**	**C**	**C**	**C**	2	2	2	2	**S**	2	2.2	2.1	2.1	2.2	1.8	24
27	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.2	2.2	2.1	2.2	2.1	2.2	2.4	2.2	**S**	2.6	2.3	2.4	2.1	2.1	2.6	2.2	24
28	2.1	2.1	2.2	2.2	2.2	2.2	2.4	3.2	3.2	2.4	2.2	2.4	2.3	2.1	2.1	2.1	2.1	**S**	2.1	2.1	2.1	2.1	2.2	2.3	3.2	2.3	24
29	2.3	2.4	2.2	2.2	2.3	3.3	2.6	2.4	2.4	2.4	2.2	2.1	2.1	2.1	2.1	2.2	**S**	2	2	2	2	2	2	2.1	3.3	2.2	24
30	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**S**	2	2	2	2	2	2.1	2.2	2.1	2.2	2.1	24
31	2.2	2.3	2.2	2.2	2.1	2.1	2.3	2.2	2.2	2.2	2.2	2.1	2.2	2.3	**S**	2.4	2.3	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.2	24
HOURLY MAX	3	3	4	5	5	3	3	4	6	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3			
HOURLY AVG	2.3	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.7	2.4	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			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 706

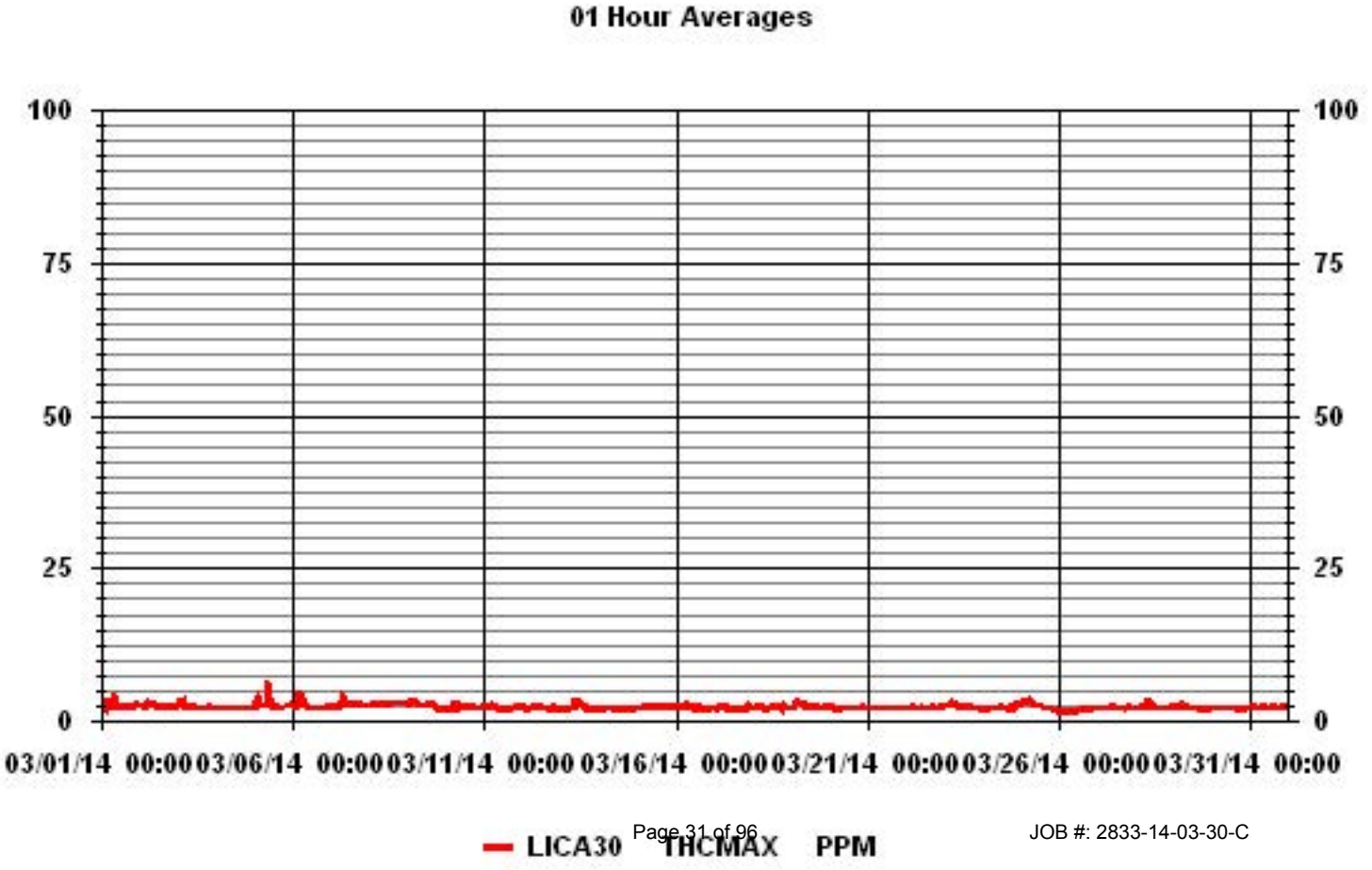
MAXIMUM INSTANTANEOUS VALUE: 6.4 PPM @ HOUR(S) 8 ON DAY(S) 5

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 742 HRS

MONTHLY CALIBRATION TIME: 4 HRS

STANDARD DEVIATION: 0.41



JOB #: 2833-14-03-30-C

LICA30
THC / WDR Joint Frequency Distribution (Percent)

March 2014

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	6.07	6.49	5.08	4.51	2.11	4.23	2.68	4.23	9.03	15.11	9.60	4.80	7.06	7.20	4.94	4.23	97.45
< 10.0	.00	.00	.28	.14	.00	.00	.00	.14	.28	1.12	.00	.00	.00	.28	.14	.14	2.54
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	6.07	6.49	5.36	4.66	2.11	4.23	2.68	4.37	9.32	16.24	9.60	4.80	7.06	7.48	5.08	4.37	

Calm : .00 %

Total # Operational Hours : 708

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	43	46	36	32	15	30	19	30	64	107	68	34	50	51	35	30	690
< 10.0			2	1				1	2	8				2	1	1	18
< 50.0																	
>= 50.0																	
Totals	43	46	38	33	15	30	19	31	66	115	68	34	50	53	36	31	

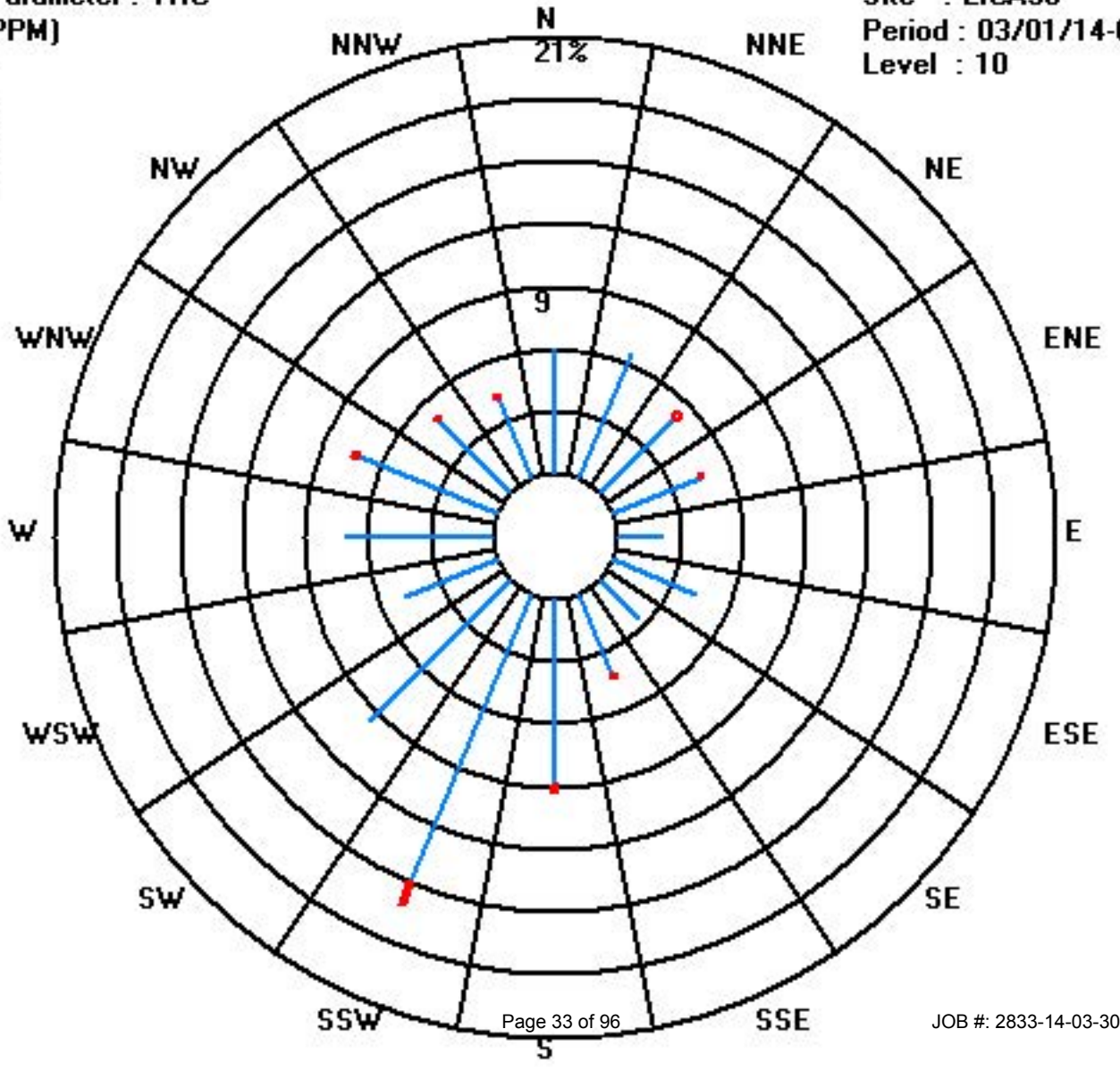
Calm : .00 %

Total # Operational Hours : 708

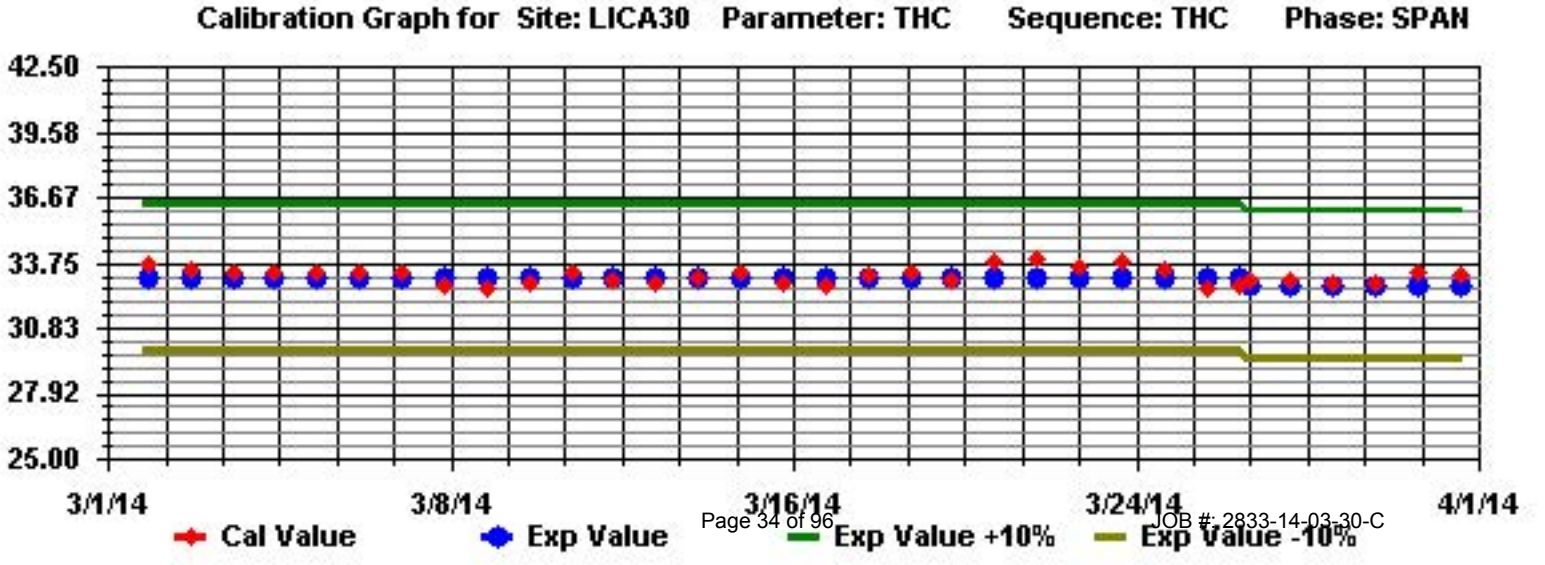
Logger : 30 Parameter : THC
Class Limits (PPM)

>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA30
Period : 03/01/14-03/31/14
Level : 10



JOB #: 2833-14-03-30-C


Calibration Graph for Site: LICA30 Parameter: THC Sequence: THC Phase: SPAN
42.50
39.58
36.67
33.75
30.83
27.92
25.00
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitrogen Dioxide

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST

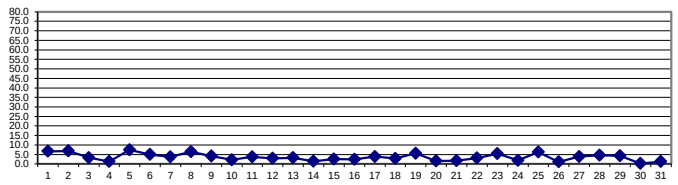
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	6.9	10.2	10.4	10.5	12.1	11.1	7.8	7.9	10.9	8.4	3.7	4.4	3.7	2.9	2.9	3	3.9	4.6	3.5	4.1	5.3	**S**	7.2	8.4	12.1	6.7	24
2	8	7.5	7.3	5.1	7.8	7.8	11.7	11.6	9.2	7.2	4.3	5.1	5.3	5.5	5.2	4.5	4.2	4.8	8.7	6.4	**S**	7.3	6.5	5.8	11.7	6.8	24
3	7.8	8.5	8.3	7.7	7.9	5.9	3.9	3.7	3.2	1.5	0.9	2.8	0.9	1	1.8	1.5	1.3	1.6	1.9	**S**	1.7	1.5	0.9	0.4	8.5	3.3	24
4	0.4	0.4	0.7	0.6	0.6	0.5	0.5	0.3	2.4	1.7	1.6	0.6	1.4	4.2	3	2	2.1	1	**S**	1.5	0.6	0.8	0.9	1.6	4.2	1.3	24
5	4.1	3.3	5.8	6	5.9	7	9.7	21.7	20	14.3	16.4	4.6	2.1	3	2.3	2.5	3.1	**S**	6	7.7	6.9	5.5	5.1	7.2	21.7	***7.4***	24
6	6.8	8.7	8.1	7.7	10.8	9.4	14.9	17.4	14.7	2.7	1.2	0.7	0.7	0.7	0.7	1.4	**S**	0.4	0.3	0.8	1.2	1.5	1.2	1.6	17.4	4.9	24
7	1.6	1.1	0.9	1.1	1.4	2.7	4.6	9.1	6.5	8.9	5	3.3	3.1	3	3.2	**S**	4.1	4.5	4.6	4.3	3.6	3.4	3	3.3	9.1	3.8	24
8	3.8	4.3	4.7	7.6	5.1	4.9	3.8	5.2	6	6.2	6.2	4.8	5	5.1	**S**	6.3	7.9	9.3	9.3	9.1	9	8.7	8.3	7.3	9.3	6.4	24
9	7.2	6.5	6.1	6.6	6.8	6.5	7.6	4.2	3.7	5.5	3.7	4.5	4	**S**	6.1	6.9	6.1	2.4	0.2	0	0	0	0	0	7.6	4.1	24
10	0	0.2	0.5	0.1	0.1	2.2	5.5	6	4.2	4.8	1.1	0.4	**S**	0.7	1.9	1.7	3.7	5.5	0.8	0.9	2.2	3	2.6	2.1	6	2.2	24
11	2.5	3.7	4.6	3.2	4.3	8.4	8.4	8.8	7.2	3.5	1.3	**S**	1.2	0.9	0.8	0.8	0.4	0.5	1.3	2.6	2.3	2.7	5.6	9.6	9.6	3.7	24
12	6.2	2.6	1.3	0.5	2.8	6.3	10.2	10.8	7.1	4.4	**S**	0.4	0.6	0.4	0.4	0.7	0.4	0.2	2.3	3.1	4.1	2.3	0.4	0.5	10.8	3.0	24
13	0.2	0.3	0	0	0	0.1	0.9	4.4	7.5	**S**	9.9	8.5	6.6	8.7	5.8	11	8.1	0	0	0.4	0.9	1	0.9	0.3	11	3.3	24
14	0.5	0.5	0.5	0.4	0.4	0.2	2	4.2	**S**	0.5	0.2	0.5	1.5	1.7	0.6	0.9	3.7	8.1	1.6	0.7	0.7	0.3	0.8	2.7	8.1	1.4	24
15	0	0.6	0.6	1.1	1.5	1.1	0.9	**S**	1.3	1.8	2.2	2.4	2.8	2.9	3	3.1	3.3	4.2	5.6	4.8	3.7	3.3	3.3	4.2	5.6	2.5	24
16	3.1	2	2.4	2.9	1.8	2.1	**S**	6.9	8.7	5.5	2.9	1.2	1	0.9	1	1	1	0.8	1	2.9	0.9	1	2.6	1.5	8.7	2.4	24
17	8.1	2.1	1.6	7.2	***22.9***	**S**	6.6	3.9	7.2	2.9	2.6	2.2	4.4	1.4	1.2	1.4	1.9	1.9	1.6	0.9	0.5	3	1.9	0.9	***22.9***	3.8	24
18	0.4	0.7	0.1	2.4	**S**	11.5	8.6	2.5	2.6	1.4	1.1	1.2	4.4	2	3.8	3.7	1.1	1.8	1.3	5	3.5	3.5	1.2	1.4	11.5	2.8	24
19	1.2	1.6	5.9	**S**	10	11.5	17.1	10	6.3	5.1	5.5	4.7	3.1	3.1	3	4.4	4.3	4.1	4.4	5	4.7	4.8	4	4	17.1	5.6	24
20	3.7	3.2	**S**	1.5	0.8	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.4	0.5	0.4	0.9	1.4	1.6	2.1	2.7	3.1	4	3.3	1.4	4	1.5	24
21	1.1	**S**	0.1	0.3	0.5	1.2	5	4.9	4.2	4	2.7	2.8	2.4	2.2	0.2	0.9	0.7	0.9	0	0	1.1	1.8	1.8	1.3	5	1.7	24
22	**S**	2.6	2.5	2.4	3.5	3.1	2.7	4	1.3	1.5	5.7	8.6	4.2	2.7	2.6	2.2	2.1	2.5	2.1	1.7	2	3.3	4.6	**S**	8.6	3.1	24
23	8.5	6	6.5	8.2	11.3	14	15.2	13.5	8	3.1	3.9	2.3	0.4	0.6	3.1	5.3	3.4	7.1	2	1	0	0.5	**S**	0.7	15.2	5.4	24
24	0.7	0.8	0.7	0.6	1.3	3.8	1.8	1	0.6	1	1.3	2.6	1.6	3.2	1.7	2.6	4.7	1.2	3.8	3	1.2	**S**	2.2	2.2	4.7	1.9	24
25	2.1	5.3	6.3	8.4	9.8	12.7	17.7	10.7	9.2	**C**	**C**	**C**	**C**	**C**	**C**	2.3	1.7	2.7	2.6	2.7	**S**	2.4	4.5	4.7	17.7	6.2	24
26	2.6	0.6	0.4	0.1	0.8	0	0	0	0	0	0	0	0	0.8	0.4	2	1.6	0.6	0.2	**S**	5.1	2.9	5.3	1.8	5.3	1.1	24
27	1.8	5.4	4.5	5.6	5.2	8.9	9.4	6	3.6	6.6	2.7	2.5	0.7	1.5	3.6	1.6	3.3	3.1	**S**	2.9	1.6	1.3	2.4	4	9.4	3.8	24
28	1.4	1	1.5	2.6	5.2	9.7	21.4	16.5	10.8	5	1.9	3.2	2.4	2.6	3.3	1.5	1.4	**S**	1.5	2	2.7	1.3	1.8	3.1	21.4	4.5	24
29	2.4	3.1	3.5	3.6	2.9	3.1	15.9	20.1	9.4	11.1	8.1	2.4	3.2	0.4	2.2	2.7	**S**	1.4	0.3	0.7	0.7	0.2	0.1	0	20.1	4.2	24
30	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0.2	0	0.1	0	**S**	0.3	0.4	0.2	0	0.3	0.7	0.8	1.2	1.2	0.2	24
31	0.7	0.9	0.9	1	1.1	2.5	2.6	2.4	2.1	1.6	1.1	0.9	0.8	0.9	**S**	1.2	1.1	0.9	1	1	0.8	0.9	1.1	1.2	2.6	1.2	24
HOURLY MAX	9	10	10	11	23	14	21	22	20	14	16	9	7	9	6	11	8	9	9	9	9	9	8	10			
HOURLY AVG	3.1	3.1	3.2	3.5	4.8	5.3	7.2	7.3	5.9	4.2	3.4	2.7	2.3	2.2	2.3	2.8	2.8	2.7	2.4	2.7	2.4	2.5	2.8	2.8			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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

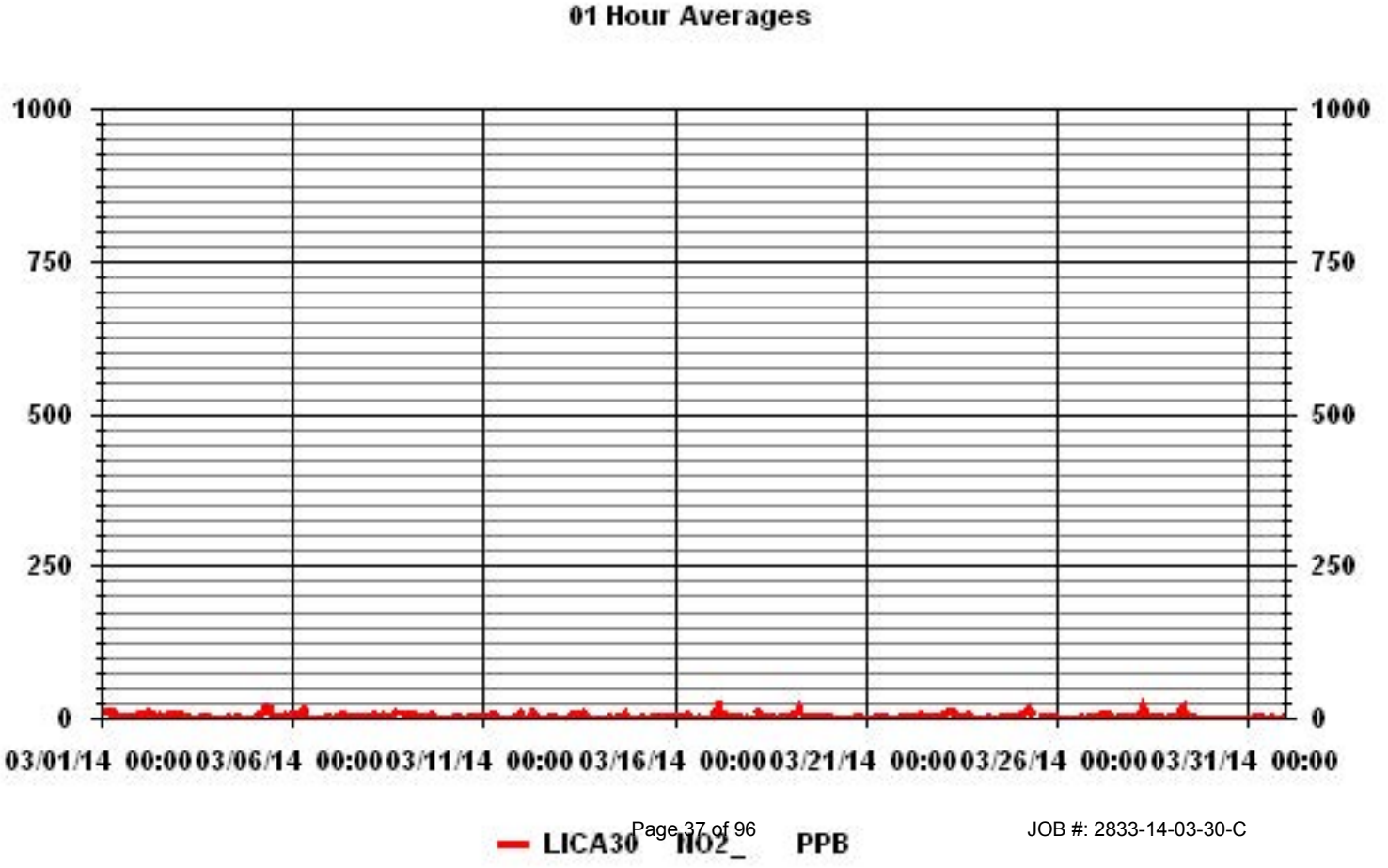
24 HOUR AVERAGES FOR MARCH 2014



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	672					
MAXIMUM 1-HR AVERAGE:	22.9	PPB	@ HOUR(S)	4	ON DAY(S)	17
MAXIMUM 24-HR AVERAGE:	7.4	PPB			ON DAY(S) VAR-VARIOUS	5

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	3.57		MONTHLY AVERAGE:	3.54	PPB



JOB #: 2833-14-03-30-C

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

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	8.6	13	12.3	13.4	13.8	13.3	9.8	12.4	17.6	11	6.9	6.2	5.5	4.9	4.1	3.6	5.2	5.5	4.4	5.6	6.5	**S**	8.3	9.6	17.6	8.8	24
2	9.5	9.1	9.1	6.2	13.2	9.2	13.8	18.2	13.7	9.9	6.9	9.9	6.4	6.2	5.8	5.7	4.7	5.4	15.4	8.9	**S**	8.1	7.9	6.9	18.2	9.1	24
3	11.9	12.4	10.1	9.3	9.3	7.9	5.4	4.5	4.4	3.3	3.8	6.1	2.8	2.1	3.8	2.9	2.9	3	3.4	**S**	2.8	2.5	1.9	1.3	12.4	5.1	24
4	1	1.5	1.5	1.3	1.4	1.3	1.3	1.1	7.4	6.3	3.2	1.9	17.5	11.9	7.2	3.2	3.4	2.5	**S**	3.6	1.4	2.1	2.2	12.9	17.5	4.2	24
5	16.4	5.7	9.2	7.7	6.9	11.3	18.3	35.3	25.8	20.1	30.6	7.8	3.7	3.8	4.1	4.5	4.6	**S**	9.5	23.1	13.2	8.7	6.9	8.6	35.3	***12.4***	24
6	8.7	11.4	9.8	9.7	16.8	11.9	23.9	22.8	23.3	7.4	2.7	1.5	1.6	1.5	1.7	4.8	**S**	1.1	1.1	1.4	2.1	2.6	2.2	2.6	23.9	7.5	24
7	2.4	2.1	1.6	2.1	2.4	3.9	6.5	14.9	9.3	11.3	6.6	4	4.1	4.3	3.8	**S**	5.2	5.5	8.2	5.1	4.3	4	3.8	4	14.9	5.2	24
8	4.8	4.8	6.5	9.4	6.8	9.5	4.9	7	6.6	7	7.6	5.6	5.6	5.8	**S**	7.1	9.5	10.9	10.5	9.9	9.8	9.9	9.4	8.2	10.9	7.7	24
9	8.1	7.8	7.3	7.4	7.7	7.5	17	5.9	7.8	11.4	4.5	6.3	4.5	**S**	6.8	7.4	7.2	8.9	1.1	0.7	1	0.9	0.8	0.6	17	6.0	24
10	0.8	1.6	1.8	1.2	0.9	9.4	10.8	11.7	24.4	26.5	11.5	1.8	**S**	1.2	11.5	9.7	12.3	14.2	1.5	1.6	3.6	3.8	3.2	2.9	26.5	7.3	24
11	4.9	4.6	9.2	4.3	10.8	15.1	14.5	13.5	12.5	5.6	2.6	**S**	1.7	1.3	1.7	1.7	1.2	1.3	3.3	3	3	4.4	9.2	11.7	15.1	6.1	24
12	9.1	4.7	3.7	1.5	5.1	11.6	14	13.8	8.5	6.3	**S**	1	1.2	1.2	1.3	2.2	10.5	1.4	4.4	4.1	5.8	3.8	1.5	1.9	14	5.2	24
13	0.9	0.8	0.7	0.6	0.7	1	2.5	11.1	14.6	**S**	16.8	15.9	13.7	13.6	12.7	17.8	19.8	0.6	0.5	1.2	1.3	1.6	1.5	2.2	19.8	6.6	24
14	2	2.8	2	1.6	1.7	2.1	8.4	8.3	**S**	1.4	1.1	1.6	3.5	3.6	1.3	2.9	9.4	12.2	9.4	2.1	1.5	1.2	2.6	5.3	12.2	3.8	24
15	1	1.4	1.7	2.6	2.4	2	1.8	**S**	2.4	2.3	2.7	3	3.4	3.8	3.7	3.6	3.9	6.6	6.6	5.8	4.4	4.4	4.3	6.6	6.6	3.5	24
16	5.8	2.9	5.6	5.2	3.4	4.1	**S**	10.3	10.8	7.6	4.2	1.8	1.9	1.4	2.4	1.6	1.1	1.1	1.6	5.9	1.4	2.5	3.7	2.9	10.8	3.9	24
17	14.4	6.8	3.4	13.6	35.6	**S**	17.1	5.3	16.6	3.8	3.5	4.5	10.3	5.4	1.9	2.4	2.7	2.5	2.4	2	2.1	6.5	3.4	2.6	35.6	7.3	24
18	2.1	2.9	2.2	9.9	**S**	14.2	13.1	4.8	4.5	1.9	1.8	2.9	15.1	4.7	11	26.7	2.5	4.6	3.9	16.6	5.1	7.7	2.1	2.7	26.7	7.1	24
19	2.4	2.7	12.5	**S**	15.3	24.9	21.9	15.9	10.7	7	6.7	6.5	4.6	4.4	4.7	6.2	6.3	5.4	6.4	6.6	6.3	6.2	5.5	5.5	24.9	8.5	24
20	5.7	4.6	**S**	3.1	1.6	1.5	1.7	1	1.1	1.2	1.1	1.1	1.1	1.2	1.3	1.6	2.2	2.3	3.2	3.5	4.5	4.9	5.3	2.9	5.7	2.5	24
21	2.1	**S**	0.9	1.1	1.5	3.3	7.1	6.7	6.7	10.9	10.3	9.3	4.1	6	1.3	2.6	1.5	2.3	1.6	0.9	3.9	3.4	2.8	2.1	10.9	4.0	24
22	**S**	3	3	3.5	11	6.7	6.1	7.1	2.1	2.1	9.6	11.1	6.7	3.3	3.5	15.2	2.7	3.1	3.4	2.6	3.5	6.1	9.7	**S**	15.2	5.7	24
23	21	12.6	8.5	10.4	17.5	18.3	20.4	16.5	15.3	6.8	10.7	6.2	2	2.3	6.9	17.6	9.1	18	15	2.7	0.6	3.8	**S**	1.3	21	10.6	24
24	1.3	1.3	1.4	1.7	3.2	4.8	3.5	1.8	1.4	4.5	5	8.1	5.2	6.4	6.2	7.3	9.6	7.2	10.7	8.1	1.7	**S**	2.9	2.8	10.7	4.6	24
25	2.8	17.2	8.8	11	12.5	***49.6***	22.2	18.3	**C**	**C**	**C**	**C**	**C**	**C**	**C**	4.6	3.1	3.9	3.9	3.4	**S**	3.8	7.1	6.2	***49.6***	11.2	24
26	3.8	2	1.5	1	1.6	1	0.3	0.9	0.4	0.4	0.6	0.8	0.4	2.2	1.5	3.1	2.2	0.9	0.8	**S**	32.8	33.9	40.8	2.6	40.8	5.9	24
27	3.8	6.8	5.7	6.6	6.2	12.3	11.6	10.3	6.6	10	9.8	7.3	1.7	4.3	9.9	5.3	8.8	10	**S**	4.8	4.7	2.2	5.6	5.9	12.3	7.0	24
28	2.2	1.9	2.6	3.9	11.3	24	24.6	24.7	16.1	6.7	4.2	4.3	4	3.9	4.6	2.3	2.3	**S**	2.7	3.3	6.3	2.4	2.6	8.1	24.7	7.3	24
29	3.3	4.5	4.6	4.4	3.8	4.8	33.3	23.9	15.9	16.9	12.8	5.3	7.5	2.8	6.5	7.1	**S**	6.3	1.1	1.9	1.8	1.1	0.8	0.8	33.3	7.4	24
30	0.9	1.1	1.1	1	1.1	0.8	1.1	1	1.1	1.1	1	2.1	0.9	1.2	1.1	**S**	1.3	2.2	1.3	0.7	1.2	1.4	1.6	1.9	2.2	1.2	24
31	1.3	1.5	1.6	1.7	2	3.7	3.4	4.5	6	2.6	2	1.6	1.3	1.7	**S**	2.1	2.1	1.5	1.7	1.8	1.8	1.6	1.9	2.1	6	2.2	24
HOURLY MAX	21	17	13	14	36	50	33	35	26	27	31	16	18	14	13	27	20	18	15	23	33	34	41	13			
HOURLY AVG	5.4	5.2	5.0	5.2	7.6	9.7	11.3	11.1	10.1	7.4	6.6	5.0	4.9	4.0	4.7	6.3	5.4	5.2	4.8	4.9	4.8	5.0	5.4	4.5			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 705

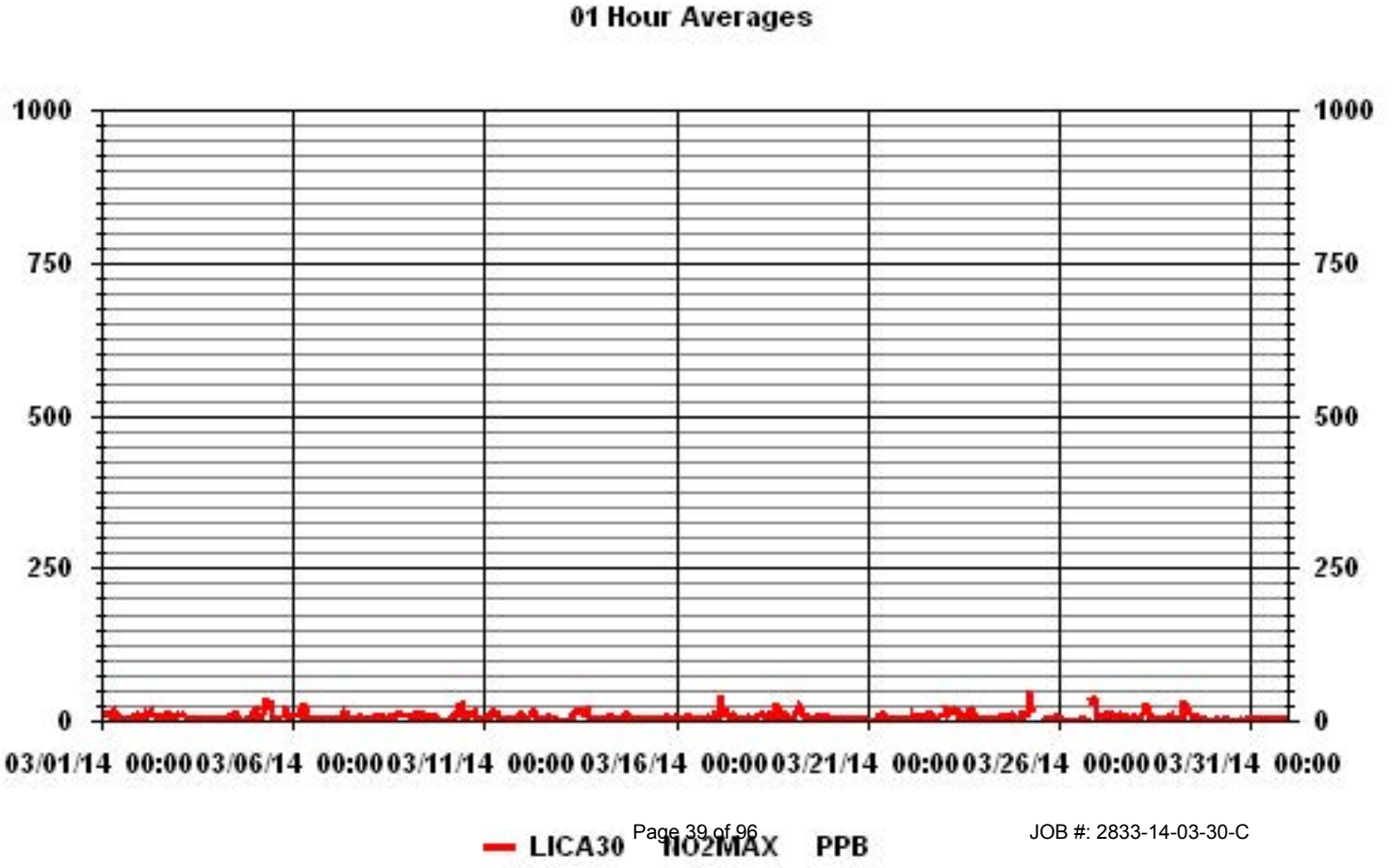
MAXIMUM INSTANTANEOUS VALUE: 49.6 PPB @ HOUR(S) 5 ON DAY(S) 25

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 7 HRS

STANDARD DEVIATION: 6.08



JOB #: 2833-14-03-30-C

LICA30
NO2_ / WDR Joint Frequency Distribution (Percent)

March 2014

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
<	50.0	6.09	6.66	5.39	4.82	2.26	4.39	2.69	4.39	9.21	15.74	9.36	4.82	7.09	7.51	5.10	4.39	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	6.09	6.66	5.39	4.82	2.26	4.39	2.69	4.39	9.21	15.74	9.36	4.82	7.09	7.51	5.10	4.39	

Calm : .00 %

Total # Operational Hours : 705

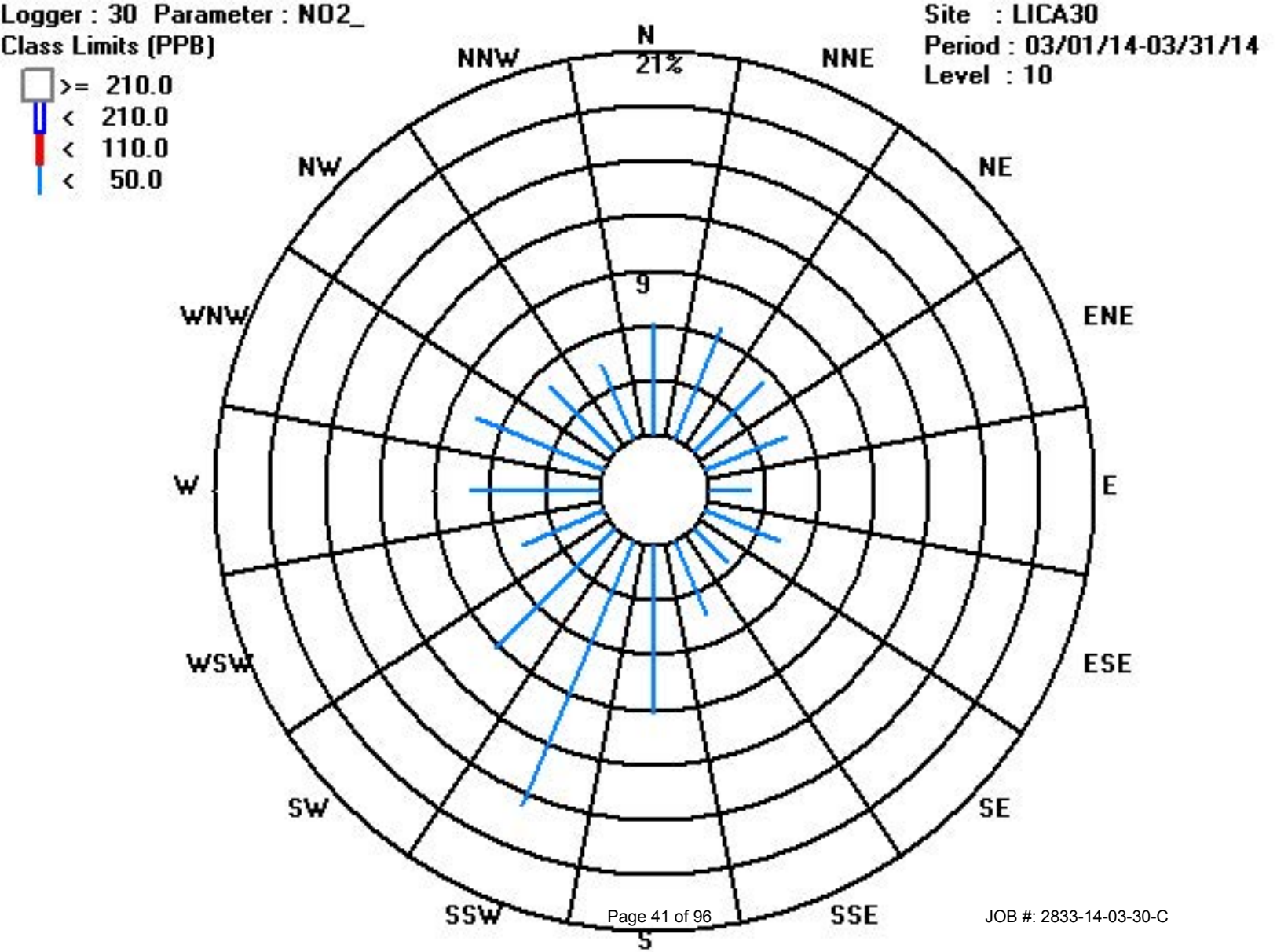
Distribution By Samples

Direction

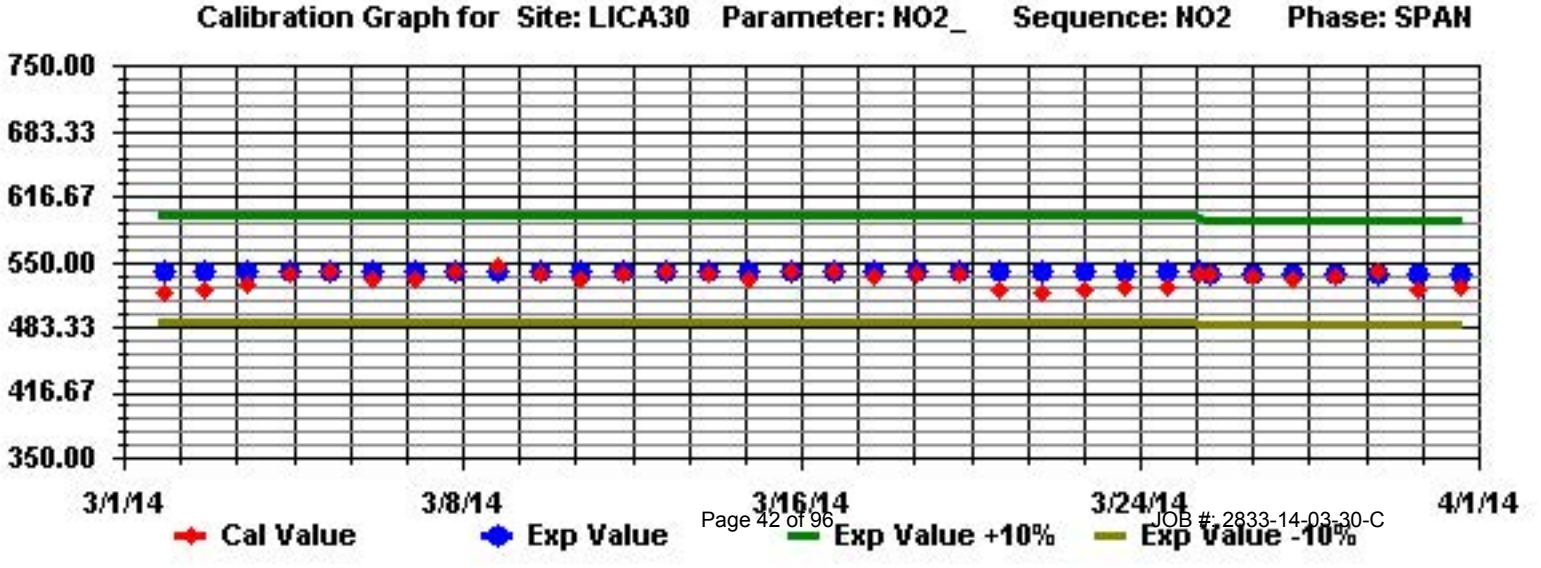
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	43	47	38	34	16	31	19	31	65	111	66	34	50	53	36	31	705
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	43	47	38	34	16	31	19	31	65	111	66	34	50	53	36	31	

Calm : .00 %

Total # Operational Hours : 705



JOB #: 2833-14-03-30-C


Calibration Graph for Site: LICA30 Parameter: NO2_ Sequence: NO2 Phase: SPAN
750.00
683.33
616.67
550.00
483.33
416.67
350.00
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

NITRIC OXIDE (NO) hourly averages in ppb

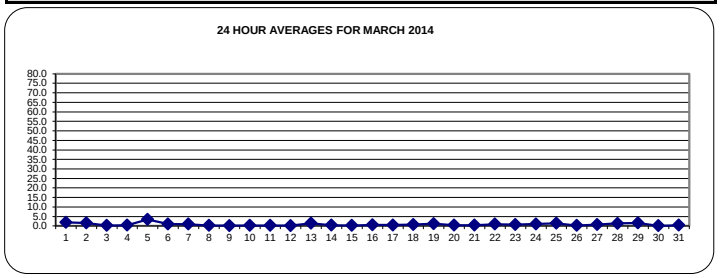
MST

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	1.6	9.1	10.7	4.8	5.9	4	2.2	1.9	1.6	0.7	0	0	0	0	**S**	0	0	10.7	1.8	24
2	0	0	0	0	0	0	0	1.2	4.2	5.3	3.8	4.9	4.7	5	3.5	2	0.6	0	0	0	**S**	0	0	0	5.3	1.5	24
3	0	0	0	0	0	0	0	0.1	1.2	0.9	0.6	1.9	0.3	0	0.4	0.1	0	0	0	**S**	0	0	0	0	1.9	0.2	24
4	0.1	0	0	0	0.1	0	0	0	0.4	0.4	0.8	0.3	0.9	2.2	0.8	0.3	0.3	0	**S**	0.3	0.3	0.3	0.2	0.2	2.2	0.3	24
5	0.5	0.3	0.4	0.4	0.4	0.5	1	9.7	18.2	13.3	***20.4***	3.6	1.7	2.3	1.6	1.2	1	**S**	0.1	0.9	0.7	0.5	0.4	0.6	***20.4***	***3.5***	24
6	0.5	0.5	0.7	0.6	0.5	0.6	1.6	3.5	9	2	1.2	0.6	0.4	0.2	0.4	0.7	**S**	0	0	0	0	0	0	0	9	1.0	24
7	0	0	0	0	0	0	0	2.3	4.1	5.9	2.6	2	1.5	1	0.7	**S**	1	0.4	0.3	0	0	0	0.2	0.1	5.9	1.0	24
8	0	0.1	0	0	0	0	0	0	0.4	0.9	0.9	0.9	1.1	1.4	**S**	0.5	0.4	0	0	0	0	0	0	0	1.4	0.3	24
9	0	0	0	0	0	0	0	0	0	0.3	0	0.6	0.5	**S**	1.1	0.6	0.3	0	0	0	0	0	0	0	1.1	0.1	24
10	0	0	0	0	0	0	0	0	0.9	1.8	0	0	**S**	0.1	0.7	0.4	0.4	0.5	0	0	0	0	0	0	1.8	0.2	24
11	0	0	0	0	0.2	0	0.2	1.3	1.7	1.3	0.4	**S**	0.2	0	0	0	0	0	0	0	0	0	0	0	1.7	0.2	24
12	0	0	0	0	0	0	0	0.7	1.4	0.9	**S**	0.2	0.1	0	0	0	0	0	0	0	0	0	0	0	1.4	0.1	24
13	0	0	0	0	0	0	0	0.1	1.6	**S**	3.6	3.5	4	5.8	2.8	6.6	3.3	0	0	0	0	0	0	0	6.6	1.4	24
14	0	0	0	0	0	0	0	0	**S**	0.4	0.6	0.7	1.1	1.2	0.4	0.5	1.4	1.5	0.6	0.4	0.2	0	0	0.1	1.5	0.4	24
15	0	0	0	0	0	0	0	**S**	0	0	0.3	1.1	1.1	1	0.7	0.7	0.4	0.4	0.3	0.2	0.1	0	0	0	1.1	0.3	24
16	0	0	0	0	0	0	**S**	0.9	3	2.3	1.3	0.6	0.6	0.6	0.5	0.4	0.2	0.3	0.3	0.4	0.5	0.3	0.4	0.3	3	0.6	24
17	0.5	0.3	0.4	0.2	4.2	**S**	0.5	0	1	0.5	0.5	0.6	2	0	0	0.1	0.1	0.1	0	0	0	0	0	0	4.2	0.5	24
18	0	0	0	0	**S**	0.4	1	0.4	0.8	0.6	0.9	1	2.9	1.4	1.8	2.5	0.9	0.8	0.9	0.8	0.4	0	0	0	2.9	0.8	24
19	0	0	0	**S**	0	2.2	0.6	2.3	2	2.2	2.8	2.2	1.8	1.8	1.7	1.6	1.5	1	0.9	0.7	0.7	0.7	0.3	0	2.8	1.2	24
20	0	0	**S**	0	0.3	0.5	0.4	0.2	0.1	0.3	0.3	0.4	0.3	0.1	0.5	0.4	0.7	0.3	0.3	0.4	0.5	0.6	0.5	0.7	0.7	0.3	24
21	0.7	**S**	0	0	0	0	0	0.9	1.7	2.5	1.6	1.6	1	0.4	0	0	0	0	0	0	0	0	0	0	2.5	0.5	24
22	**S**	0	0.1	0	0.4	0	0.2	0.8	0.6	0.9	4.6	7.1	2.6	1.3	0.6	0.6	0.3	0	0	0	0	0	0.1	**S**	7.1	0.9	24
23	0.5	0	0	0	0.4	0.1	0.8	3.4	3.2	0.6	1.1	0.2	0	0	1	2.3	0.8	2.1	0	0	0	0	**S**	0.4	3.4	0.7	24
24	0.4	0.4	0.6	0.6	0.7	0.8	1	0.8	0.9	1.1	1.3	2.9	1.4	2.4	1.3	1.7	2.4	0.5	0.4	0.4	0.4	**S**	0	0	2.9	1.0	24
25	0	0.6	0	0	0	7.6	6.5	3.8	5.2	**C**	**C**	**C**	**C**	**C**	**C**	1	0.2	0.1	0	0	**S**	0	0	0	7.6	1.5	24
26	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0.2	0.7	0.3	0	0	**S**	1.1	0.5	2.2	0	2.2	0.2	24
27	0	0.1	0	0	0.2	0.2	0.8	2	2	4.4	1.5	1.4	0.2	0.3	1.3	0.3	0.6	0.5	**S**	0	0	0	0	0.1	4.4	0.7	24
28	0	0.1	0	0	0.1	0.6	5	8.1	6.7	3.1	1	1.8	1.1	1	1.2	0.1	0	**S**	0.1	0	0.1	0	0	0	8.1	1.3	24
29	0	0	0	0	0.2	0.1	5.9	12.4	3.9	5.6	3.8	1.1	1.4	0.1	0.7	0.6	**S**	0	0	0	0	0	0	0	12.4	1.6	24
30	0	0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.2	0.3	0.3	**S**	0	0	0	0	0	0	0	0	0.5	0.1	24
31	0	0	0	0.1	0.3	0.2	0.4	2	2.3	1.3	0.9	0.7	0.6	0.4	**S**	0.5	0.4	0	0	0	0	0	0	0	2.3	0.4	24
HOURLY MAX	1	1	1	1	4	8	7	12	18	13	20	7	5	6	4	7	3	2	1	1	1	1	2	1			
HOURLY AVG	0.1	0.1	0.1	0.1	0.3	0.5	0.9	2.0	2.9	2.4	2.1	1.7	1.3	1.1	0.9	1.0	0.6	0.3	0.1	0.2	0.2	0.1	0.1	0.1			

STATUS FLAG CODES

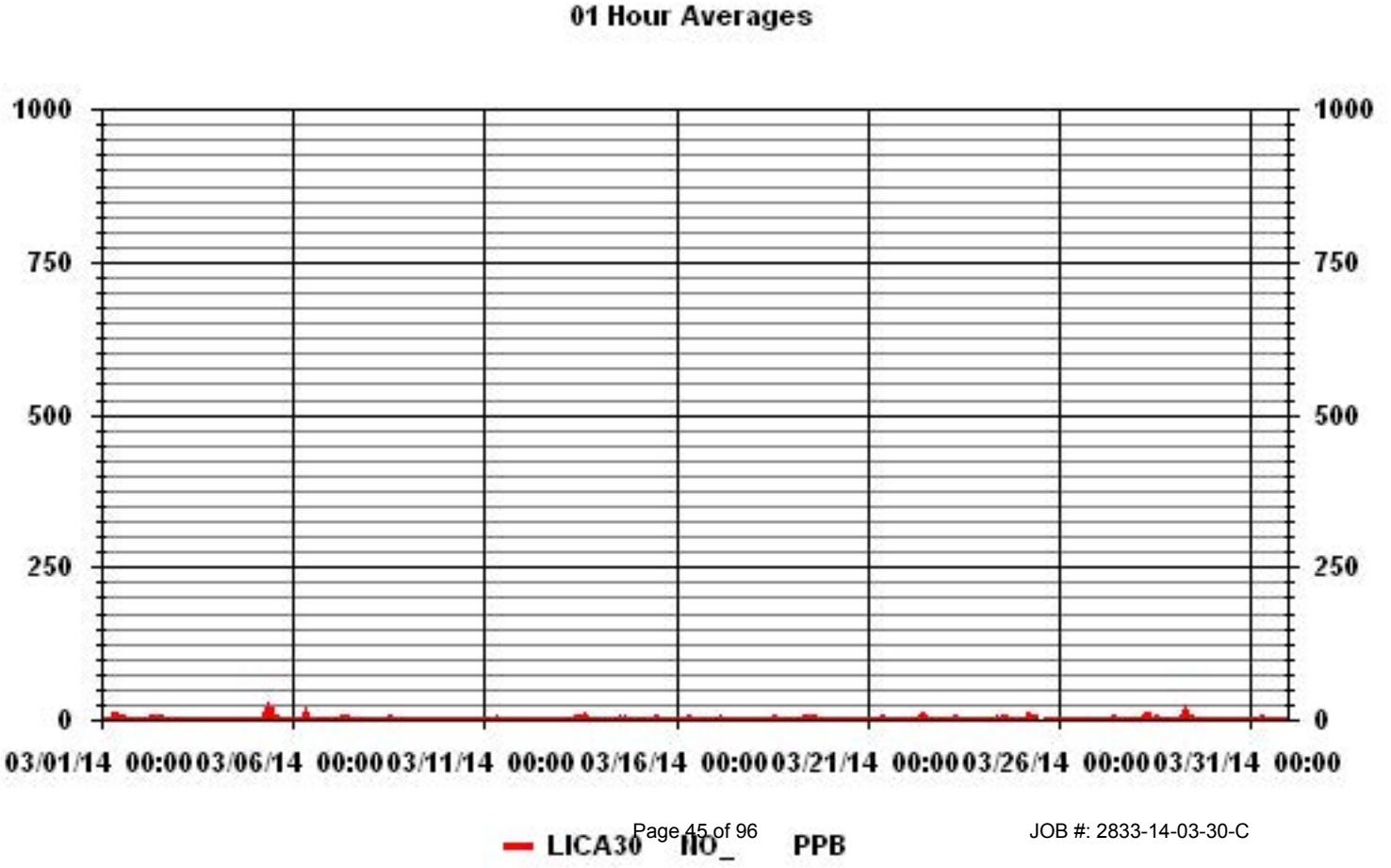
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	389					
MAXIMUM 1-HR AVERAGE:	20.4	PPB	@ HOUR(S)	10	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	3.5	PPB			ON DAY(S)	5
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	1.81		MONTHLY AVERAGE:		0.79	PPB



JOB #: 2833-14-03-30-C

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

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	0.5	0.5	0.5	0.3	0.2	0.6	0.6	7.7	20.5	15.7	10.5	9.2	6.9	5.7	3.3	3.1	2.3	1.3	0.3	0.1	0.1	**S**	0.4	0.5	20.5	3.9	24
2	0.6	0.6	0.6	0.6	0.3	0.3	0.7	3	6	6.8	7	10.9	5.9	6.1	4.2	3.8	1.4	0.6	2.2	0	**S**	0.4	0.2	0.3	10.9	2.7	24
3	0.4	0.5	0.4	0.4	0.7	0.5	0.6	1.2	2	1.5	3.2	5.1	2	1.4	2.1	1.4	1.1	0	0	**S**	0.6	0.6	0.6	0.5	5.1	1.2	24
4	0.7	0.4	0.6	0.6	0.6	0.6	0.6	0.4	1.6	1.6	1.8	1.4	20.1	6.6	2.9	1	1	0.6	**S**	0.8	0.8	0.8	0.8	0.9	20.1	2.1	24
5	1.1	0.9	1.1	1	1	1	2.8	56.2	27.8	22.3	48.3	7.2	3	3.3	2.7	2.8	2.7	**S**	0.9	6.9	1.4	1.1	1	1.1	56.2	8.6	24
6	1	1.1	1.3	1.1	1.8	1.1	7.1	11.9	14.7	4.9	1.9	1.2	1.1	1.1	1.1	2	**S**	0.1	0	0.3	0.5	0.5	0.5	0.5	14.7	2.5	24
7	0.3	0.4	0.5	0.5	0.6	0.6	0.8	6.3	8.1	9.3	3.2	2.7	2.3	2.4	1.7	**S**	1.8	1.6	2.3	0.5	0.4	0.5	0.8	0.8	9.3	2.1	24
8	0.6	0.9	0.5	0.4	0.8	0.8	0.7	2	1	1.6	2.1	1.6	1.7	2.2	**S**	1.4	0.9	0.9	0.4	0.2	0.1	0.1	0.3	0.3	2.2	0.9	24
9	0.3	0.4	0.1	0.3	0.1	0.1	0.5	0.2	0.9	2.1	0.8	1.8	1.2	**S**	1.9	1.4	1	0.5	0	0	0	0.2	0	0	2.1	0.6	24
10	0	0	0.2	0	0.2	0	0	0.5	28.8	28.8	10.2	0.4	**S**	0.8	6.4	2.3	2.5	2.5	0.4	0.4	0.4	0.4	0.4	0.5	28.8	3.7	24
11	0.4	0.4	0.4	0.5	3.1	1.2	2	3.7	3.1	2.3	1.2	**S**	1.1	0.5	0.5	0.9	0.3	0.4	0.3	0.3	0.2	0.8	0.4	0.5	3.7	1.1	24
12	0.5	0.3	0.3	0.3	0.5	1.6	0.8	1.9	2.4	2.1	**S**	1	0.9	0.8	1	1.2	11.7	0.3	0.3	0.3	0.6	0.5	0.3	0.1	11.7	1.3	24
13	0.4	0.4	0.3	0.3	0.3	0.2	0.3	1.5	6.2	**S**	9.3	8.2	11.4	11.3	8.5	14.8	10.8	0.1	0.1	0.1	0.4	0.3	0.2	0	14.8	3.7	24
14	0	0	0	0	0	0	0	0.8	**S**	1	1.2	1.3	2.2	2.2	1	1.7	3.3	2.4	1.8	1	1	0.8	0.6	0.7	3.3	1.0	24
15	0.3	0.5	0.3	0.4	0.6	0.5	0.3	**S**	0.4	0.7	1.2	2.2	1.9	1.6	1.4	1.5	1.3	1.2	1	0.9	0.8	0.5	0.6	0.7	2.2	0.9	24
16	0.5	0.3	0.5	0.5	0.3	0	**S**	2.4	5	3.8	2.3	1.6	1.9	1.4	2.4	1	0.8	0.8	0.9	1	1.1	1	1	0.9	5	1.4	24
17	1.5	1.1	1.2	1	14	**S**	3	0.5	4.1	1.2	1.7	2.5	19.2	2.9	0.8	1	0.7	0.6	0.5	0.3	0.1	0	0	0	19.2	2.5	24
18	0	0	0	0	**S**	1.9	3.3	0.9	2.2	1.2	1.6	2.3	8.5	3.1	5.6	21.8	1.8	1.5	2.9	1.7	1.3	0.6	0.6	0.3	21.8	2.7	24
19	0.1	0.3	0.7	**S**	0.6	17.5	2.1	4.6	4.4	2.9	3.7	3.2	2.6	2.5	2.2	2.3	2.3	1.8	1.7	1.3	1.3	1.3	1.1	0.8	17.5	2.7	24
20	0.2	0.3	**S**	0.6	1	1.3	1	0.7	0.8	0.9	1	1	1.2	0.7	1	1.4	1.4	1	0.8	1	1.1	1.2	1.1	1.3	1.4	1.0	24
21	1.2	**S**	0.2	0	0	0.3	0.6	3.3	4.5	10.1	23.5	9.1	2.8	4.1	0.1	0.4	0.1	0	0	0	0	0.1	0	0.1	23.5	2.6	24
22	**S**	0.5	0.7	0.5	5.3	0.8	1.1	1.6	1.5	1.5	8.5	9.8	5.1	2.3	1.9	15.3	1.1	0.6	0.3	0	0.4	0.6	1.5	**S**	15.3	2.8	24
23	6.1	0.4	0.3	0.4	4.4	1.2	2.6	5.7	9.3	3.1	7.7	3.3	0.3	1	4.5	8.1	3.1	7	3.6	0	0	0	**S**	1.1	9.3	3.2	24
24	0.9	0.9	1.3	1.3	1.3	1.4	2.3	1.3	1.8	4.6	5.3	9.1	4.4	5.1	4.9	5.4	5.4	3.5	2.3	1.3	1	**S**	0.7	0.7	9.1	2.9	24
25	0.6	4.5	0.5	0.5	1.4	***131***	13.4	13.5	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2.1	1.1	0.8	0.8	0.5	**S**	0.4	0.8	0.4	***131***	***10.8***	24
26	0.5	0.5	0.5	0.6	0.5	0.8	0.5	0.6	0.7	0.6	0.5	0.3	0	1.3	1	1.6	1.1	0.6	0.6	**S**	24.2	75	74.9	0.7	75	8.2	24
27	0.4	0.8	0.5	0.5	0.8	0.7	2.6	3.3	4	7	6.5	4.4	0.7	1.9	5.2	1.9	2.4	2.9	**S**	0.3	0.2	0.3	0.4	0.7	7	2.1	24
28	0.6	0.8	0.4	0.7	0.8	4.3	14.6	15.4	11.1	4.6	2.8	2.4	2.3	2	2.6	1.2	0.8	**S**	0.7	0.5	1.6	0.4	0.7	0.5	15.4	3.1	24
29	0.5	0.7	0.6	0.6	0.8	0.6	31.5	15.8	9.2	9.9	6.9	3.3	4.4	1.7	3.3	4.8	**S**	1	0.3	0.4	0.5	0.5	0.5	0.5	31.5	4.3	24
30	0.4	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.7	0.9	0.9	2.9	0.8	1.3	1.1	**S**	0.8	0.8	0.4	0.4	0.4	0.5	0.6	0.6	2.9	0.8	24
31	0.5	0.6	0.6	0.7	0.8	0.8	1.4	7.3	9.4	2.2	1.6	1.4	1.3	2.1	**S**	1.1	1.3	0.6	0.5	0.2	0.3	0.4	0.5	0.4	9.4	1.6	24
HOURLY MAX	6	5	1	1	14	131	32	56	29	29	48	11	20	11	9	22	12	7	4	7	24	75	75	1			
HOURLY AVG	0.7	0.7	0.5	0.5	1.5	5.7	3.3	5.8	6.6	5.4	6.1	3.8	4.0	2.7	2.7	3.7	2.3	1.2	0.9	0.7	1.4	3.1	3.1	0.5			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 663

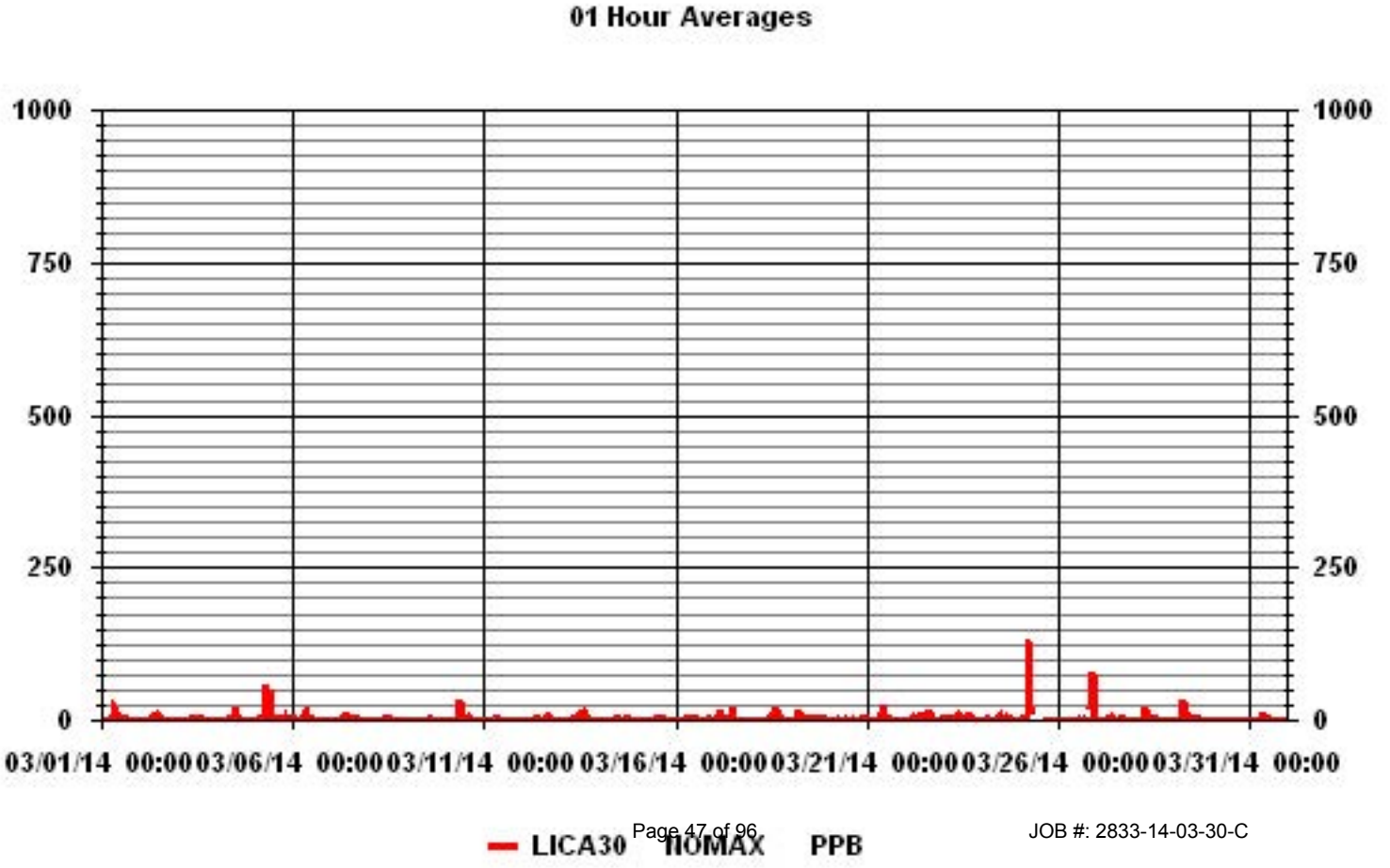
MAXIMUM INSTANTANEOUS VALUE: 131 PPB @ HOUR(S) 5 ON DAY(S) 25

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 7 HRS

STANDARD DEVIATION: 7.79



JOB #: 2833-14-03-30-C

LICA30
NO_ / WDR Joint Frequency Distribution (Percent)

March 2014

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
<	50.0	6.09	6.65	5.38	4.81	2.26	4.39	2.69	4.39	9.34	15.72	9.34	4.81	7.08	7.50	5.09	4.39	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	6.09	6.65	5.38	4.81	2.26	4.39	2.69	4.39	9.34	15.72	9.34	4.81	7.08	7.50	5.09	4.39	

Calm : .00 %

Total # Operational Hours : 706

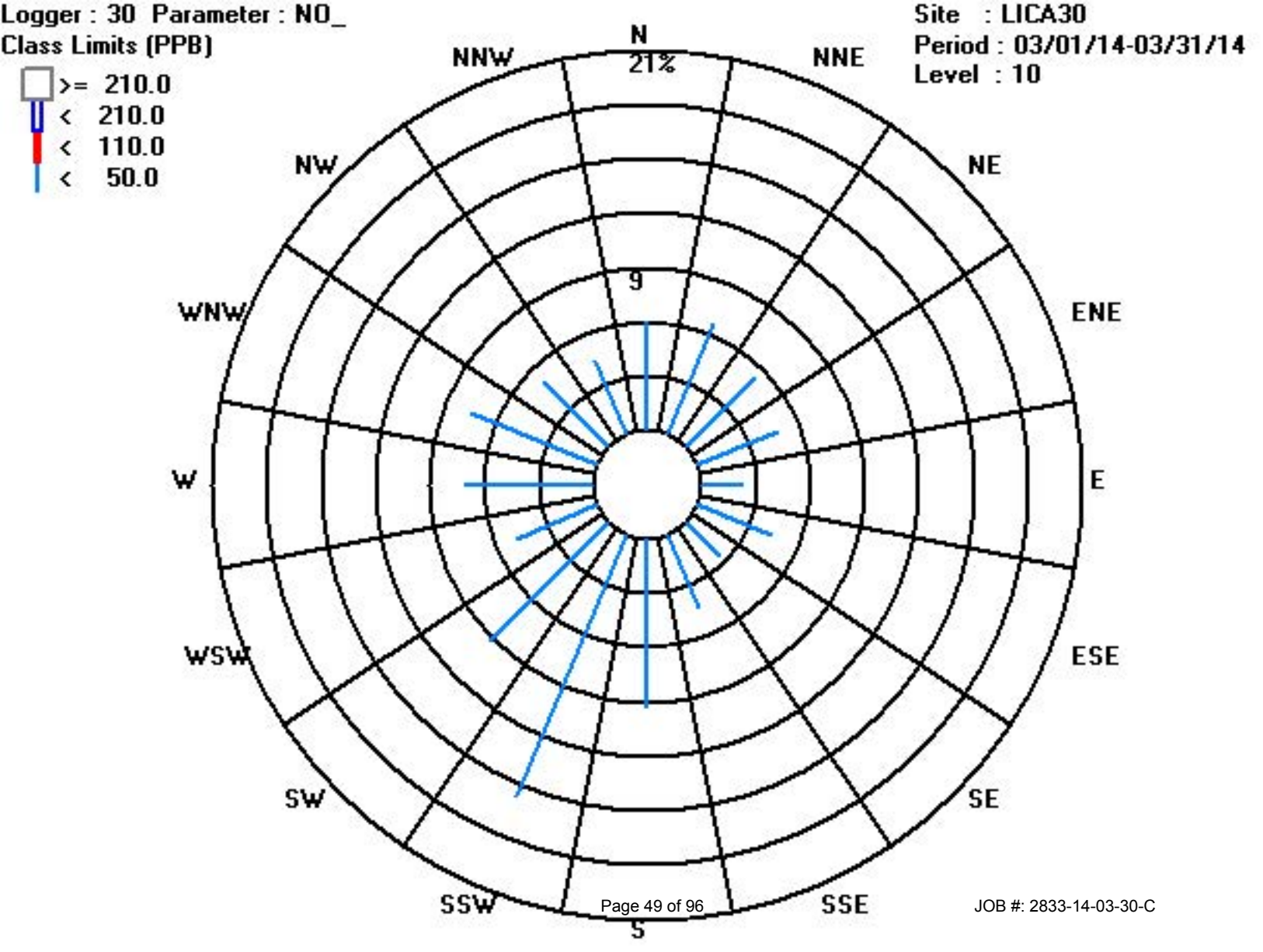
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	43	47	38	34	16	31	19	31	66	111	66	34	50	53	36	31	706
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	43	47	38	34	16	31	19	31	66	111	66	34	50	53	36	31	

Calm : .00 %

Total # Operational Hours : 706



JOB #: 2833-14-03-30-C

Oxides of Nitrogen

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

OXIDES OF NITROGEN (NOx) hourly averages in ppb

MST

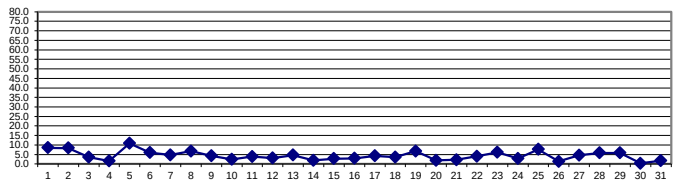
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	6.9	10.2	10.4	10.5	12.1	11.1	7.8	9.5	20	19.1	8.5	10.3	7.7	5.1	4.8	4.6	4.6	4.6	3.5	4.1	5.3	**S**	7.2	8.4	20	8.5	24
2	8	7.5	7.3	5.1	7.8	7.8	11.7	12.8	13.4	12.5	8.1	10	10	10.5	8.7	6.5	4.8	4.8	8.7	6.4	**S**	7.3	6.5	5.8	13.4	8.3	24
3	7.8	8.5	8.3	7.7	7.9	5.9	3.9	3.8	4.4	2.4	1.5	4.7	1.2	1	2.2	1.6	1.3	1.6	1.9	**S**	1.7	1.5	0.9	0.4	8.5	3.6	24
4	0.5	0.4	0.7	0.6	0.7	0.5	0.5	0.3	2.8	2.1	2.4	0.9	2.3	6.4	3.8	2.3	2.4	1	**S**	1.8	0.9	1.1	1.1	1.8	6.4	1.6	24
5	4.6	3.6	6.2	6.4	6.3	7.5	10.7	31.4	***38.2***	27.6	36.8	8.2	3.8	5.3	3.9	3.7	4.1	**S**	6.1	8.6	7.6	6	5.5	7.8	***38.2***	***10.9***	24
6	7.3	9.2	8.8	8.3	11.3	10	16.5	20.9	23.7	4.7	2.4	1.3	1.1	0.9	1.1	2.1	**S**	0.4	0.3	0.8	1.2	1.5	1.2	1.6	23.7	5.9	24
7	1.6	1.1	0.9	1.1	1.4	2.7	4.6	11.4	10.6	14.8	7.6	5.3	4.6	4	3.9	**S**	5.1	4.9	4.9	4.3	3.6	3.4	3.2	3.4	14.8	4.7	24
8	3.8	4.4	4.7	7.6	5.1	4.9	3.8	5.2	6.4	7.1	7.1	5.7	6.1	6.5	**S**	6.8	8.3	9.3	9.3	9.1	9	8.7	8.3	7.3	9.3	6.7	24
9	7.2	6.5	6.1	6.6	6.8	6.5	7.6	4.2	3.7	5.8	3.7	5.1	4.5	**S**	7.2	7.5	6.4	2.4	0.2	0	0	0	0	0	7.6	4.3	24
10	0	0.2	0.5	0.1	0.1	2.2	5.5	6	5.1	6.6	1.1	0.4	**S**	0.8	2.6	2.1	4.1	6	0.8	0.9	2.2	3	2.6	2.1	6.6	2.4	24
11	2.5	3.7	4.6	3.2	4.5	8.4	8.6	10.1	8.9	4.8	1.7	**S**	1.4	0.9	0.8	0.8	0.4	0.5	1.3	2.6	2.3	2.7	5.6	9.6	10.1	3.9	24
12	6.2	2.6	1.3	0.5	2.8	6.3	10.2	11.5	8.5	5.3	**S**	0.6	0.7	0.4	0.4	0.7	0.4	0.2	2.3	3.1	4.1	2.3	0.4	0.5	11.5	3.1	24
13	0.2	0.3	0	0	0	0.1	0.9	4.5	9.1	**S**	13.5	12	10.6	14.5	8.6	17.6	11.4	0	0	0.4	0.9	1	0.9	0.3	17.6	4.6	24
14	0.5	0.5	0.5	0.4	0.4	0.2	2	4.2	**S**	0.9	0.8	1.2	2.6	2.9	1	1.4	5.1	9.6	2.2	1.1	0.9	0.3	0.8	2.8	9.6	1.8	24
15	0	0.6	0.6	1.1	1.5	1.1	0.9	**S**	1.3	1.8	2.5	3.5	3.9	3.9	3.7	3.8	3.7	4.6	5.9	5	3.8	3.3	3.3	4.2	5.9	2.8	24
16	3.1	2	2.4	2.9	1.8	2.1	**S**	7.8	11.7	7.8	4.2	1.8	1.6	1.5	1.5	1.4	1.2	1.1	1.3	3.3	1.4	1.3	3	1.8	11.7	3.0	24
17	8.6	2.4	2	7.4	27.1	**S**	7.1	3.9	8.2	3.4	3.1	2.8	6.4	1.4	1.2	1.5	2	2	1.6	0.9	0.5	3	1.9	0.9	27.1	4.3	24
18	0.4	0.7	0.1	2.4	**S**	11.9	9.6	2.9	3.4	2	2	2.2	7.3	3.4	5.6	6.2	2	2.6	2.2	5.8	3.9	3.5	1.2	1.4	11.9	3.6	24
19	1.2	1.6	5.9	**S**	10	13.7	17.7	12.3	8.3	7.3	8.3	6.9	4.9	4.9	4.7	6	5.8	5.1	5.3	5.7	5.4	5.5	4.3	4	17.7	6.7	24
20	3.7	3.2	**S**	1.5	1.1	1.1	0.9	0.7	0.5	0.7	0.7	0.7	0.7	0.6	0.9	1.3	2.1	1.9	2.4	3.1	3.6	4.6	3.8	2.1	4.6	1.8	24
21	1.8	**S**	0.1	0.3	0.5	1.2	5	5.8	5.9	6.5	4.3	4.4	3.4	2.6	0.2	0.9	0.7	0.9	0	0	1.1	1.8	1.8	1.3	6.5	2.2	24
22	**S**	2.6	2.6	2.4	3.9	3.1	2.9	4.8	1.9	2.4	10.3	15.7	6.8	4	3.2	2.8	2.4	2.5	2.1	1.7	2	3.3	4.7	**S**	15.7	4.0	24
23	9	6	6.5	8.2	11.7	14.1	16	16.9	11.2	3.7	5	2.5	0.4	0.6	4.1	7.6	4.2	9.2	2	1	0	0.5	**S**	1.1	16.9	6.2	24
24	1.1	1.2	1.3	1.2	2	4.6	2.8	1.8	1.5	2.1	2.6	5.5	3	5.6	3	4.3	7.1	1.7	4.2	3.4	1.6	**S**	2.2	2.2	7.1	2.9	24
25	2.1	5.9	6.3	8.4	9.8	20.3	24.2	14.5	14.4	**C**	**C**	**C**	**C**	**C**	**C**	3.3	1.9	2.8	2.6	2.7	**S**	2.4	4.5	4.7	24.2	7.7	24
26	2.6	0.6	0.4	0.1	0.8	0.1	0	0	0	0	0	0	0	0.8	0.6	2.7	1.9	0.6	0.2	**S**	6.2	3.4	7.5	1.8	7.5	1.3	24
27	1.8	5.5	4.5	5.6	5.4	9.1	10.2	8	5.6	11	4.2	3.9	0.9	1.8	4.9	1.9	3.9	3.6	**S**	2.9	1.6	1.3	2.4	4.1	11	4.5	24
28	1.4	1.1	1.5	2.6	5.3	10.3	26.4	24.6	17.5	8.1	2.9	5	3.5	3.6	4.5	1.6	1.4	**S**	1.6	2	2.8	1.3	1.8	3.1	26.4	5.8	24
29	2.4	3.1	3.5	3.6	3.1	3.2	21.8	32.5	13.3	16.7	11.9	3.5	4.6	0.5	2.9	3.3	**S**	1.4	0.3	0.7	0.7	0.2	0.1	0	32.5	5.8	24
30	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.7	0.2	0.4	0.3	**S**	0.3	0.4	0.2	0	0.3	0.7	0.8	1.2	1.2	0.3	24
31	0.7	0.9	0.9	1.1	1.4	2.7	3	4.4	4.4	2.9	2	1.6	1.4	1.3	**S**	1.7	1.5	0.9	1	1	0.8	0.9	1.1	1.2	4.4	1.7	24
HOURLY MAX	9	10	10	11	27	20	26	33	38	28	37	16	11	15	9	18	11	10	9	9	9	9	8	10			
HOURLY AVG	3.2	3.2	3.3	3.6	5.1	5.8	8.1	9.2	8.8	6.6	5.5	4.4	3.6	3.3	3.2	3.7	3.5	3.0	2.6	2.8	2.6	2.6	3.0	2.9			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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

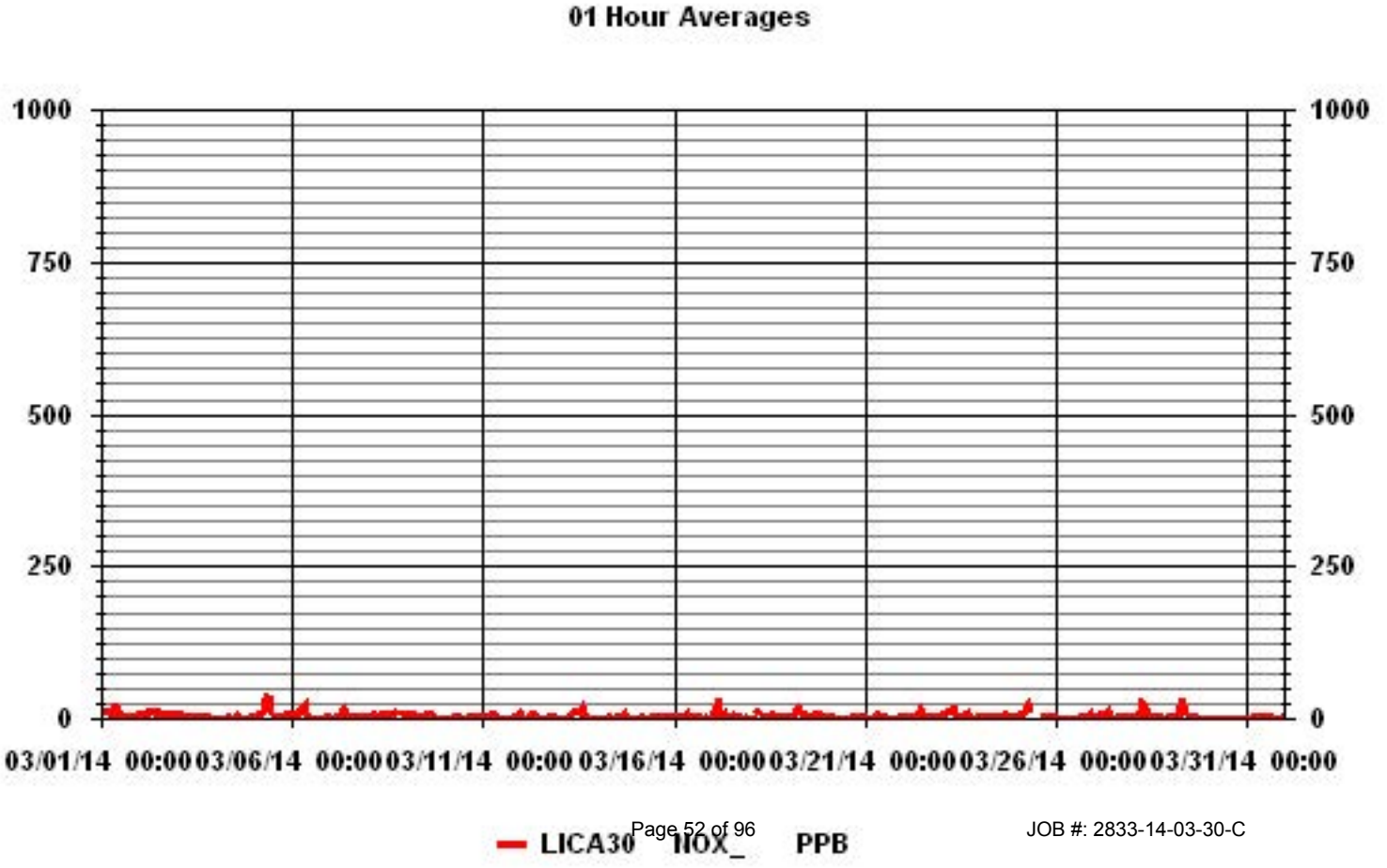
24 HOUR AVERAGES FOR MARCH 2014



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	682					
MAXIMUM 1-HR AVERAGE:	38.2	PPB	@ HOUR(S)	8	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	10.9	PPB			ON DAY(S) VAR-VARIOUS	5

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	4.83		MONTHLY AVERAGE:	4.33	PPB



JOB #: 2833-14-03-30-C

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	8.5	13.1	12.5	13.6	13.7	13.5	10.2	20.1	37.9	25.6	17.6	15.5	12.4	10.7	7.3	7.2	6.9	6.8	4.5	5.6	6.7	**S**	8.4	9.4	37.9	12.5	24
2	9.2	9	9.1	6.1	13.3	9	14.1	20	18.6	16.5	13.7	20.7	12.2	12.3	10	9.5	6.1	5.5	17.6	8.9	**S**	8.3	8.1	7.1	20.7	11.5	24
3	12.2	13	10.1	9.5	9.1	8.2	5.7	4.8	5.7	4.3	7.1	11.3	4.5	3.2	5.9	4.3	3.9	3.1	3.5	**S**	3	2.7	1.9	1.4	13	6.0	24
4	1.3	1.6	1.6	1.4	1.5	1.3	1.2	1.1	8.8	7.9	4.5	2.7	36.7	18.4	10.2	4	4	2.8	**S**	4	1.7	2.2	2	13.2	36.7	5.8	24
5	16.9	5.6	9.5	8.1	7.2	11.7	20.2	91.1	52.6	42	77.8	14.4	6	6.4	6.4	7.2	7.1	**S**	9.1	28.5	13.9	8.8	7.3	9.1	91.1	20.3	24
6	9	11.7	10.3	10	18.2	12.3	30.1	32.2	36.9	11.7	3.6	2.1	1.9	1.8	2.1	6.6	**S**	1.7	1	1.5	2.3	2.5	2.2	2.7	36.9	9.3	24
7	2.4	1.8	1.7	2.2	2.2	4.2	7	20.9	17.4	19.6	9.6	6.4	6.4	6.5	5	**S**	6.2	6.7	10.4	5.1	4.3	4.1	4.1	4.2	20.9	6.9	24
8	4.7	5.2	6.6	9.5	6.9	10	4.9	8.7	7.3	8.2	9.5	6.8	7.1	7.5	**S**	8.4	10.1	10.6	10.7	9.8	9.7	10.1	9	8.1	10.7	8.2	24
9	8	7.8	7.1	7.4	7.7	7.4	17.3	5.6	9.1	13.4	5.2	8	5.6	**S**	8.7	8.7	8.4	9.1	1.2	0.7	0.8	0.7	0.9	0.4	17.3	6.5	24
10	0.6	1.5	2.2	0.8	1	9.1	10.8	12	53.1	53	21.9	2.1	**S**	1.7	17.8	11.9	14.7	16.2	1.8	1.7	3.6	3.9	3.5	3	53.1	10.8	24
11	4.9	5	9.6	4.3	13.9	16	16.6	17.2	15.7	8.2	3.4	**S**	2.7	1.8	2.1	2.7	1.2	1.5	3.4	3.4	3.1	4.9	9.6	12	17.2	7.1	24
12	9.2	4.8	3.8	1.7	5.5	12.9	14.8	14.7	11.2	8.8	**S**	1.7	2.1	1.9	2.5	4	23.1	1.6	4.5	4.1	6	4.2	1.6	2	23.1	6.4	24
13	1	1.1	0.8	0.8	0.9	1	2.8	13	21.2	**S**	26.3	24.1	25.7	25.1	21.6	33.2	30.7	0.8	0.8	1.2	1.7	1.8	2	2.1	33.2	10.4	24
14	2.3	2.5	1.8	1.9	1.9	2.1	9.8	9.7	**S**	2.1	1.4	2.2	5.2	5.4	1.7	3.9	12.2	14.3	11	2.9	1.8	1.6	2.9	5.8	14.3	4.6	24
15	1.1	1.7	1.8	2.9	2.8	2.3	2.3	**S**	2.8	3.1	3.7	4.7	4.9	5.1	4.5	4.7	4.6	7.3	7.5	6.2	4.8	4.7	4.6	7.2	7.5	4.1	24
16	6.3	2.9	5.5	5	3.9	4.1	**S**	13.1	16	11.2	6.4	3.7	3.8	2.7	4.9	2.6	1.8	1.9	2.5	6.9	2.2	3.4	4.8	4.1	16	5.2	24
17	15.3	7.8	4.7	14.7	48.6	**S**	20.4	5.6	21	4.8	5.1	7.3	29.9	8.2	2.4	3.3	3	2.8	2.5	2.1	2.2	6.1	3.3	2.5	48.6	9.7	24
18	2	2.7	2.2	10	**S**	15.5	14.6	5.9	6.5	3.1	3.1	5	23.1	6.7	16.4	48.4	3.7	5.6	6.4	17.8	5.9	8.5	2.7	3.3	48.4	9.5	24
19	3	3.3	14	**S**	15.6	41.1	22.9	17.7	14.9	8.6	9.5	8.6	6.3	5.8	5.8	7.5	7.3	6.5	7.4	6.9	6.6	6.5	5.9	5.5	41.1	10.3	24
20	5.7	4.8	**S**	3.2	2	2	1.9	1.5	1.6	1.6	1.4	1.4	1.4	1.5	2.1	2.2	2.9	2.9	3.5	4	4.8	5.6	5.7	3.4	5.7	2.9	24
21	2.6	**S**	0.8	1.1	1.2	3.4	7.5	10.2	11.1	20.8	30.6	18.7	7.3	10.7	1.7	3.2	1.8	2.2	1.1	0.6	3.5	3.1	2.5	2.3	30.6	6.4	24
22	**S**	3.4	3.4	3.7	16.2	7	7	8.4	3.1	3.2	18.1	20.9	12.2	6.1	6	28.1	3.7	3.7	3.9	2.7	3.3	6.4	11.1	**S**	28.1	8.3	24
23	26.9	13	8.4	10.5	21.7	19.2	22.9	22	24.4	10.1	18.7	10.1	2.8	3.3	11.6	26.2	12.1	25.3	18.8	2.6	0.4	3.6	**S**	2.5	26.9	13.8	24
24	2	2.1	2.1	2.5	4	6	4.9	2.9	2.8	9	10.8	17.3	10.1	11.8	11.5	13	14.6	10.9	13.2	9.7	2.6	**S**	2.9	3.2	17.3	7.4	24
25	2.9	21.7	8.8	11.2	12.7	***171.2***	35.4	30.9	**C**	**C**	**C**	**C**	**C**	**C**	**C**	6.8	4	4.7	4.6	3.4	**S**	4.2	7.7	6.5	***171.2***	***21.0***	24
26	4.2	2.4	1.4	0.9	1.8	1.1	0.2	0.6	0.6	0.8	0.8	0.8	0.7	3.4	2.4	4.6	3.1	1.4	1	**S**	56.1	108.9	108.8	2.7	108.9	13.4	24
27	3.7	7.2	5.5	6.5	6.3	12.4	12.6	13.3	10.5	16.6	15.8	11.4	1.8	5.9	15.1	7.1	11.2	13	**S**	4.9	4.7	2.3	5.5	6.2	16.6	8.7	24
28	2.1	2.1	2.6	4.2	11.6	27.9	38	39.6	26.6	10.4	7	6.5	5.9	5.6	7.1	3.3	2.8	**S**	2.8	3.6	7.5	2.6	2.9	8.5	39.6	10.1	24
29	3.3	4.8	4.5	4.6	4.2	4.8	61.4	38.3	25.1	26.2	19.5	8.5	11.9	4.5	9.6	11.6	**S**	7.2	1.2	2	1.7	1	0.9	0.7	61.4	11.2	24
30	0.8	0.8	1.2	0.9	0.8	0.8	1.2	1.1	0.9	1	1	4.4	0.9	1.7	1	**S**	1.9	3	1.6	0.7	1.3	1.4	1.9	2	4.4	1.4	24
31	1.5	1.5	1.6	2	2.2	4	3.9	11.8	15	4.1	3	2.4	2.2	3.7	**S**	2.8	2.9	1.7	1.8	1.7	1.7	1.5	1.9	2.2	15	3.4	24
HOURLY MAX	27	22	14	15	49	171	61	91	53	53	78	24	37	25	22	48	31	25	19	29	56	109	109	13			
HOURLY AVG	5.8	5.5	5.2	5.4	8.6	14.7	14.1	16.5	16.5	12.3	12.3	8.6	8.7	6.5	7.3	9.9	7.4	6.2	5.5	5.3	5.8	7.8	7.9	4.8			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 705

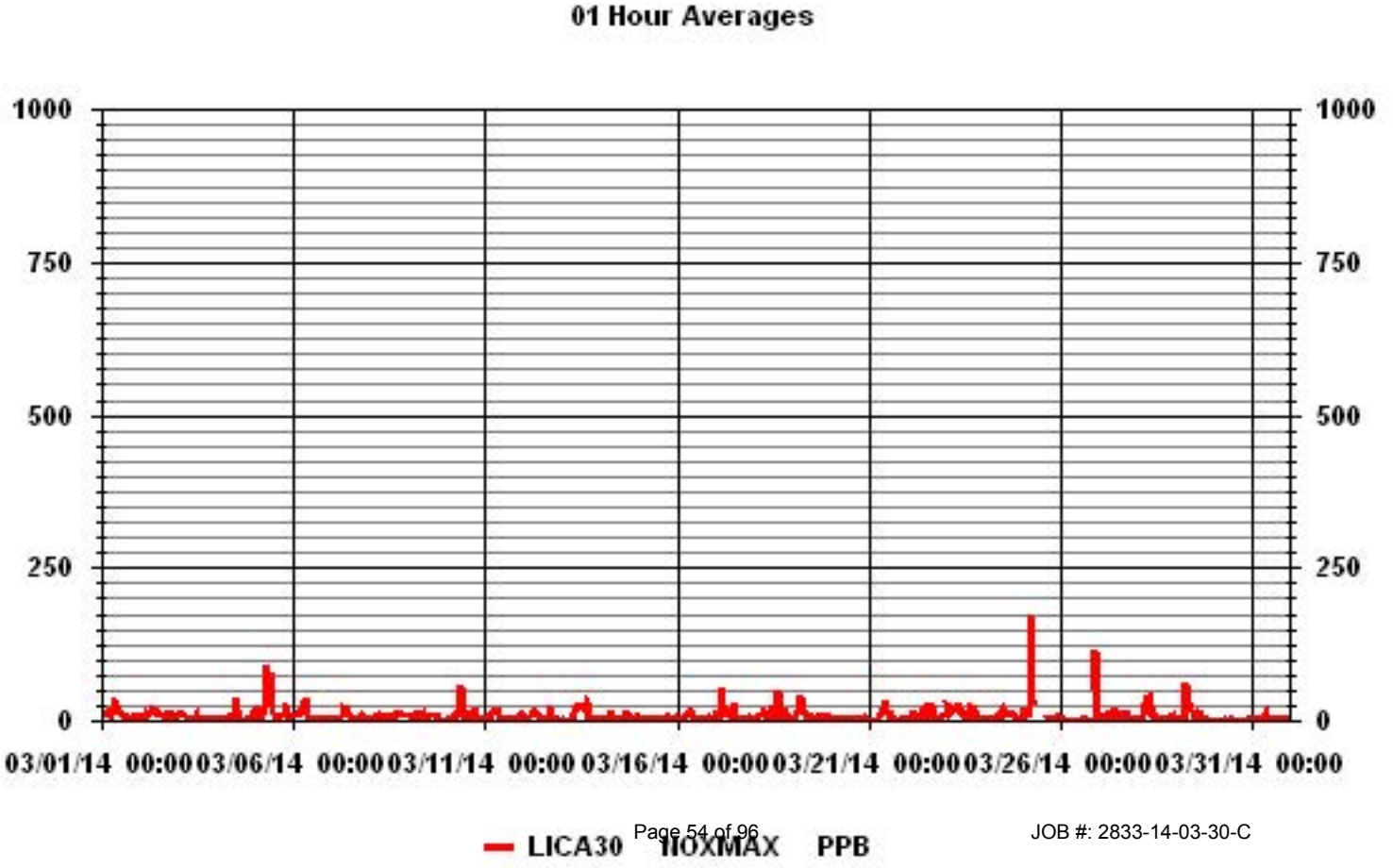
MAXIMUM INSTANTANEOUS VALUE: 171.2 PPB @ HOUR(S) 5 ON DAY(S) 25

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 7 HRS

STANDARD DEVIATION: 12.45



JOB #: 2833-14-03-30-C

LICA30
NOX_ / WDR Joint Frequency Distribution (Percent)

March 2014

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
<	50.0	6.09	6.65	5.38	4.81	2.26	4.39	2.69	4.39	9.34	15.72	9.34	4.81	7.08	7.50	5.09	4.39	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	6.09	6.65	5.38	4.81	2.26	4.39	2.69	4.39	9.34	15.72	9.34	4.81	7.08	7.50	5.09	4.39	

Calm : .00 %

Total # Operational Hours : 706

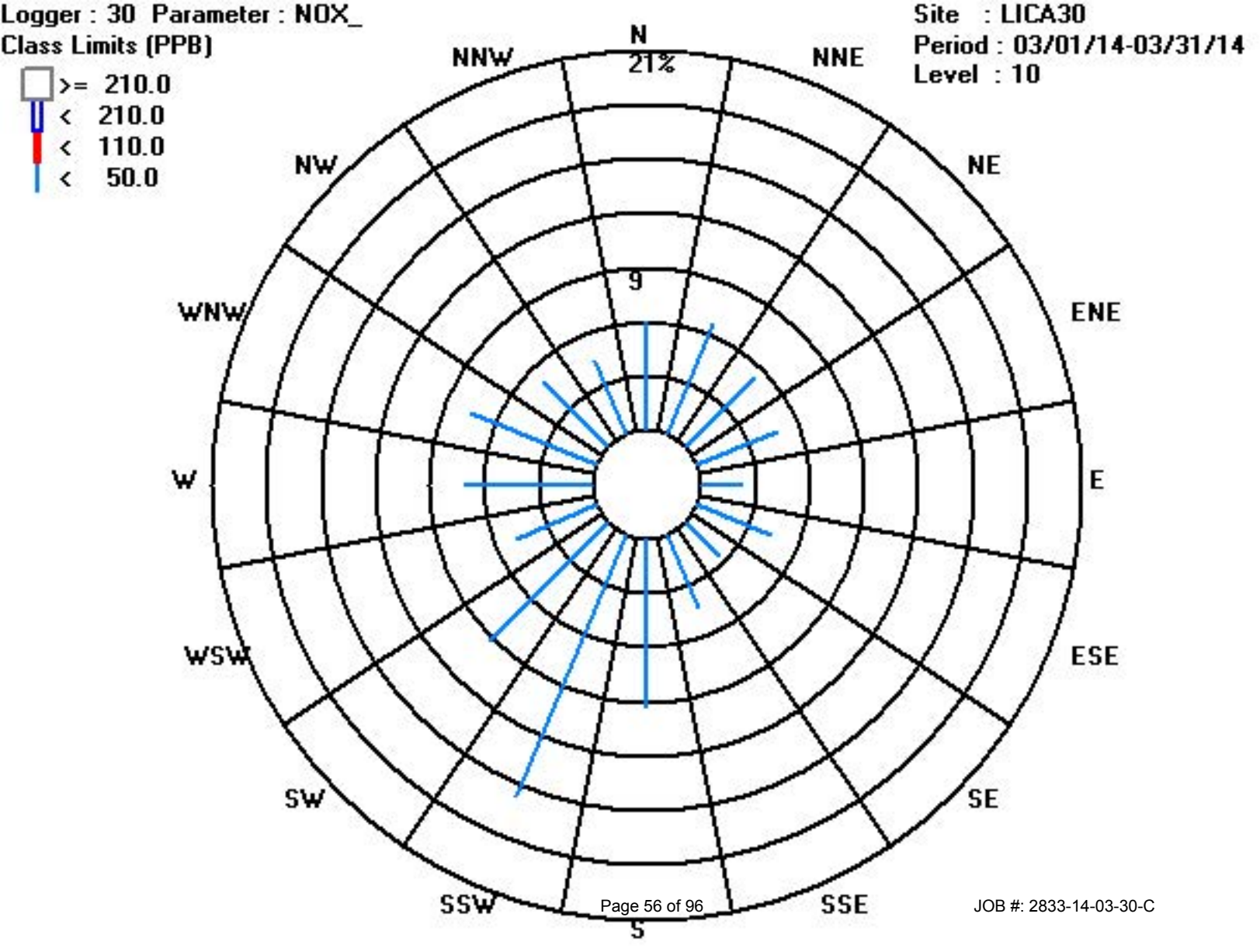
Distribution By Samples

Direction

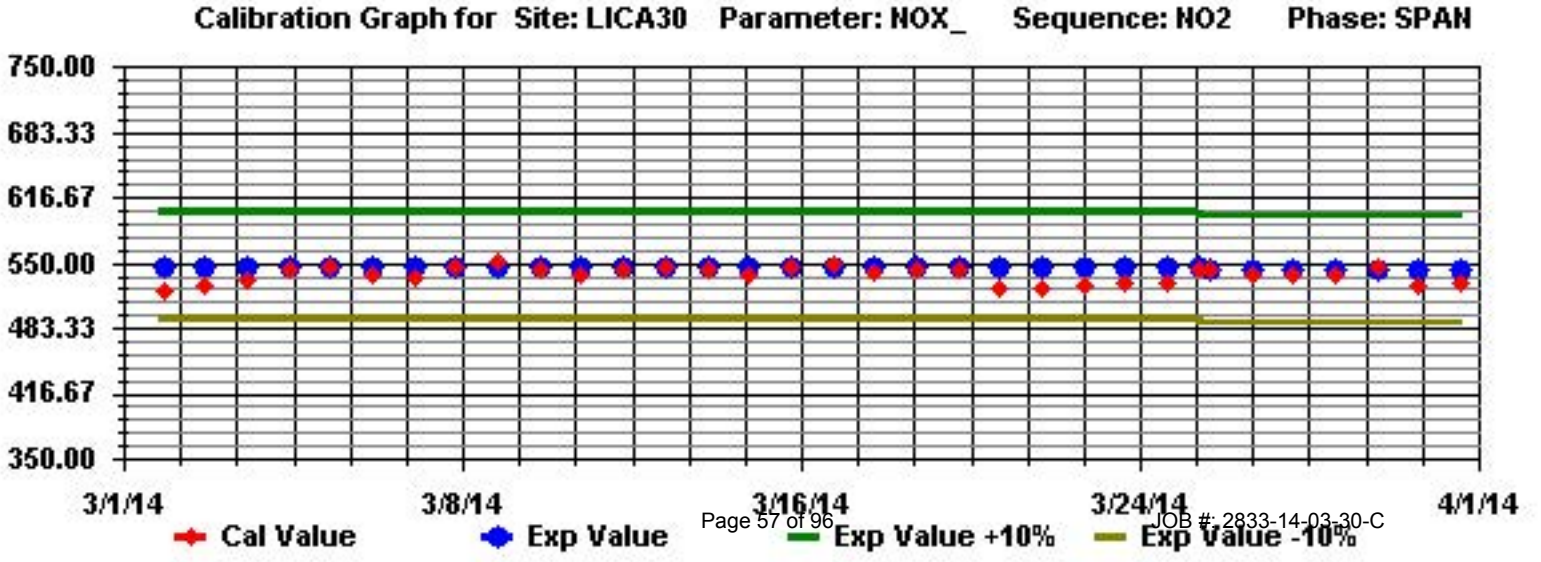
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	43	47	38	34	16	31	19	31	66	111	66	34	50	53	36	31	706
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	43	47	38	34	16	31	19	31	66	111	66	34	50	53	36	31	

Calm : .00 %

Total # Operational Hours : 706



JOB #: 2833-14-03-30-C


Calibration Graph for Site: LICA30 Parameter: NOX_ Sequence: NO2 Phase: SPAN
750.00
683.33
616.67
550.00
483.33
416.67
350.00
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Temperature

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

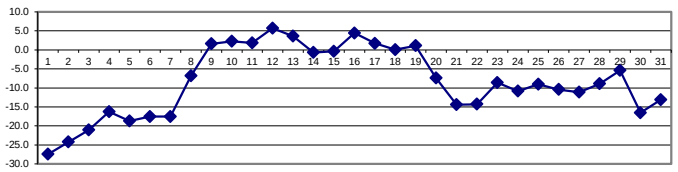
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	-34.7	-35.8	-35.8	-35.7	-35.9	-36.2	-36.4	***-36.6***	-32.2	-27	-22.7	-19.7	-17.8	-16.4	-15.9	-18.1	-19.7	-21.6	-23.5	-24.9	-26.2	-27.4	-28.4	-30.5	-15.9	-27.5	24
2	-31.7	-32.3	-31.7	-32.1	-31.3	-32.1	-33.2	-32.9	-27.2	-21.1	-16	-13.5	-13.5	-13	-13	-13.1	-15	-18	-21.5	-24.7	-27	-28.6	-29	-29.7	-13	-24.2	24
3	-30.6	-31.6	-32.1	-32.9	-32.2	-31.2	-30.3	-29.7	-24.4	-19	-15	-12.5	-11.8	-12.4	-12.1	-11.3	-13.3	-16.2	-16.8	-17.1	-18	-18.3	-18.8	-18	-11.3	-21.1	24
4	-18.1	-18.2	-18.4	-18.7	-18.9	-19	-19.1	-18.9	-17.8	-16.1	-14.4	-12.9	-11.9	-11.6	-11.7	-12.2	-13.3	-13.9	-15.1	-15.7	-16.2	-17	-19.6	-22.1	-11.6	-16.3	24
5	-23.5	-24.7	-25.7	-26.4	-27.6	-28	-26.9	-25.6	-21.8	-13.6	-10.9	-10.3	-8.8	-8.9	-9.8	-10.2	-11.7	-14.1	-17.1	-18.9	-20.9	-21.2	-20.4	-22.3	-8.8	-18.7	24
6	-23.1	-21.5	-22.5	-24.1	-24.8	-26.1	-25	-23.2	-18	-13	-10.6	-9.3	-9.5	-9.4	-9.2	-9.1	-10	-10.8	-14.7	-17.4	-19.8	-22.1	-23.5	-24.8	-9.1	-17.6	24
7	-26.3	-27.5	-28.5	-29	-29.7	-29.5	-29.9	-28.6	-21.5	-15.2	-12.3	-9.9	-9.1	-8.6	-8.3	-7.8	-8.7	-10.3	-11.5	-12.1	-12.8	-14.4	-14.7	-14.7	-7.8	-17.5	24
8	-13.3	-12.7	-12.3	-12.3	-12.4	-11.9	-11.3	-10.9	-10.4	-8.5	-7.1	-5.4	-3.8	-1.6	-0.9	-0.9	-1.3	-2.2	-3.3	-3.7	-4.1	-4.4	-4.4	-5.4	-0.9	-6.9	24
9	-5.2	-5.3	-6	-5	-4.3	-4	-2.9	-3.6	-2.6	0.3	1.3	3.5	5	7.1	7.9	7	8.3	8.4	6.4	5.4	5.1	4.5	3.7	2.8	8.4	1.6	24
10	2.5	1.9	0.4	0.6	-0.2	-1.1	-2.2	-1.7	2.4	5.1	7	8.3	9.1	8.7	9.5	8.2	3.7	4	0.8	-1.3	-3.1	-3.3	-3.7	-2.2	9.5	2.2	24
11	-1.5	-1.9	-2.2	-2.2	-3.4	-3.8	-4	-2.2	-0.1	3.3	5.3	6.2	6.8	7.8	8.3	8.2	7	4.7	2.9	2.2	1.5	0.7	0.3	0.3	8.3	1.8	24
12	1	0.5	1.4	1.7	0.8	0.3	-0.7	0.1	2.8	5.3	8.1	11.1	11.9	***12.7***	***12.7***	12.6	11.8	9.4	7.7	5.5	4.5	4.9	5.4	5.4	***12.7***	***5.7***	24
13	5.1	4.7	4.2	3.7	3.4	3	2.4	2.5	2.8	3	3.1	4.2	6.5	8	7.9	7.7	6.6	4.2	3.4	2.1	1.3	0.5	-1.3	-2.6	8	3.6	24
14	-3.9	-2.4	-2	-3.4	-2.9	-3.7	-4.3	-3.2	-0.9	0.7	2.1	2.7	4.3	4.7	3.1	3.6	1.8	0	-1.1	-1.4	-1.8	-2.2	-2.9	-3.1	4.7	-0.7	24
15	-3.2	-3.3	-3.6	-3.6	-3.5	-4	-4.4	-4.5	-4	-3	-1.1	1.9	3.9	4.9	5.6	5.6	5	2.7	1.6	1.1	0	-1.1	-1.3	-1.4	5.6	-0.4	24
16	-1.7	-1.3	-1	-1	-1.9	-2.8	-2.1	-0.5	2.7	6.3	9.6	10.6	10.9	11.4	11.1	11.1	9.6	8.1	6.5	5.7	4.8	4	2.7	2.6	11.4	4.4	24
17	2.7	2.6	2.1	0.6	0.6	0.9	0.7	1.1	2.1	4.1	5.3	7.2	6.9	4.1	4.7	2.7	3.5	3	1.5	-0.9	-2.6	-3.3	-4.1	-4.7	7.2	1.7	24
18	-5.6	-6.5	-6.8	-6.4	-3.6	-2.7	-2.1	-0.8	0.3	2.6	3.8	4.7	5.1	5.3	5.3	5.6	5.7	4	2.1	1.1	-0.3	-2.6	-3.4	-3.5	5.7	0.1	24
19	-4.4	-5.2	-4.3	-4.4	-4.6	-4.5	-4	-2.6	-0.4	2.2	4.1	5.3	6.5	7.4	7.3	6.5	7	5.5	4.4	3.8	3.3	1.1	-1.3	-2.4	7.4	1.1	24
20	-3.2	-3.8	-3.9	-2.2	-0.5	-1.5	-3.5	-5.6	-6.4	-6.4	-5.7	-5.3	-5.6	-6	-6.6	-7	-7.8	-9.8	-11.8	-13.3	-14.5	-15.3	-16.1	-16.9	-0.5	-7.4	24
21	-17.7	-18.5	-19.3	-20.1	-20.9	-21.2	-21.2	-19	-16.3	-14.1	-11.7	-10.2	-8.6	-7.7	-7.6	-7.2	-7.8	-9.3	-10.9	-12.2	-13.5	-15.3	-17.1	-18.9	-7.2	-14.4	24
22	-19.7	-20.5	-20.9	-21.6	-22.5	-23.4	-23.8	-20.4	-17.7	-14.5	-10.9	-9	-6.8	-6.5	-6	-6.5	-6.9	-8.5	-9.9	-11.5	-12.2	-13.5	-14.8	-15	-6	-14.3	24
23	-14.4	-16	-16	-17.4	-17.7	-18	-17.5	-13.9	-9.7	-6	-4.3	-2.7	-1.8	-1.2	-0.9	-1.5	-2.3	-3.3	-4.7	-5.9	-6.8	-7.2	-8.4	-9.4	-0.9	-8.6	24
24	-9.9	-10.9	-12.4	-13.4	-14.3	-15.3	-15.9	-15	-13.7	-12.2	-10.1	-8.3	-6.7	-5.8	-5.6	-5.1	-5.3	-6.6	-8.6	-11.3	-12.3	-13.2	-13.4	-15.6	-5.1	-10.9	24
25	-17.1	-17.6	-17.9	-18.5	-18	-16.6	-16.7	-13.2	-8.4	-6.9	-5.7	-3.6	-3.8	-2.5	-1.4	-0.5	-0.9	-3.1	-4.1	-5.5	-6.8	-7.6	-9.4	-10.9	-0.5	-9.0	24
26	-10.2	-10.3	-10.9	-11.8	-12.9	-13.8	-14	-13.6	-13	-11.9	-10.8	-8.4	-6.9	-5.7	-5.3	-5.2	-5.3	-6.9	-8.5	-10.3	-11.7	-13	-14.1	-15.7	-5.2	-10.4	24
27	-17	-17.5	-18.6	-19.9	-21	-21.4	-21.5	-15.8	-9.6	-5.9	-4	-3.1	-3.3	-3.3	-3.4	-3.4	-4.8	-5.1	-6.5	-8.9	-10.7	-12.7	-14.6	-15.7	-3.1	-11.2	24
28	-16.3	-17.2	-18	-18.7	-19.3	-20.2	-19.6	-13.2	-8.4	-4.6	-2.4	-1.5	-0.8	-1	-1.1	-1.2	-1.8	-3.3	-4.6	-5.8	-7	-8.8	-10.3	-9.7	-0.8	-9.0	24
29	-8.9	-8.1	-10.7	-12.9	-14.4	-15	-14	-10.3	-5.1	-1.7	0.9	2.6	2.3	2.8	3	3	2.3	0.2	-1.3	-3.4	-7	-9.5	-11.1	-13	3	-5.4	24
30	-14.6	-15.9	-17.3	-19.3	-20.6	-21.7	-22.2	-21.5	-20.1	-18.3	-15.8	-14.2	-12.9	-11.1	-10.9	-10.3	-10.5	-11.4	-13.3	-16	-18.4	-20.3	-21.8	-18.7	-10.3	-16.5	24
31	-18.2	-22	-23.5	-25	-25.6	-26.2	-25.7	-19.1	-12.5	-11.3	-9.1	-7.2	-5.8	-5.6	-5.3	-4.7	-5	-5.8	-7.3	-9.3	-9.7	-10.1	-10.2	-10.2	-4.7	-13.1	24
HOURLY MAX	5.1	4.7	4.2	3.7	3.4	3	2.4	2.5	2.8	6.3	9.6	11.1	11.9	12.7	12.7	12.6	11.8	9.4	7.7	5.7	5.1	4.9	5.4	5.4			
HOURLY AVG	-12.3	-12.9	-13.4	-13.9	-14.2	-14.5	-14.6	-13.0	-10.0	-7.0	-4.8	-3.2	-2.3	-1.7	-1.6	-1.7	-2.6	-4.1	-5.8	-7.2	-8.5	-9.6	-10.5	-11.2			

STATUS FLAG CODES

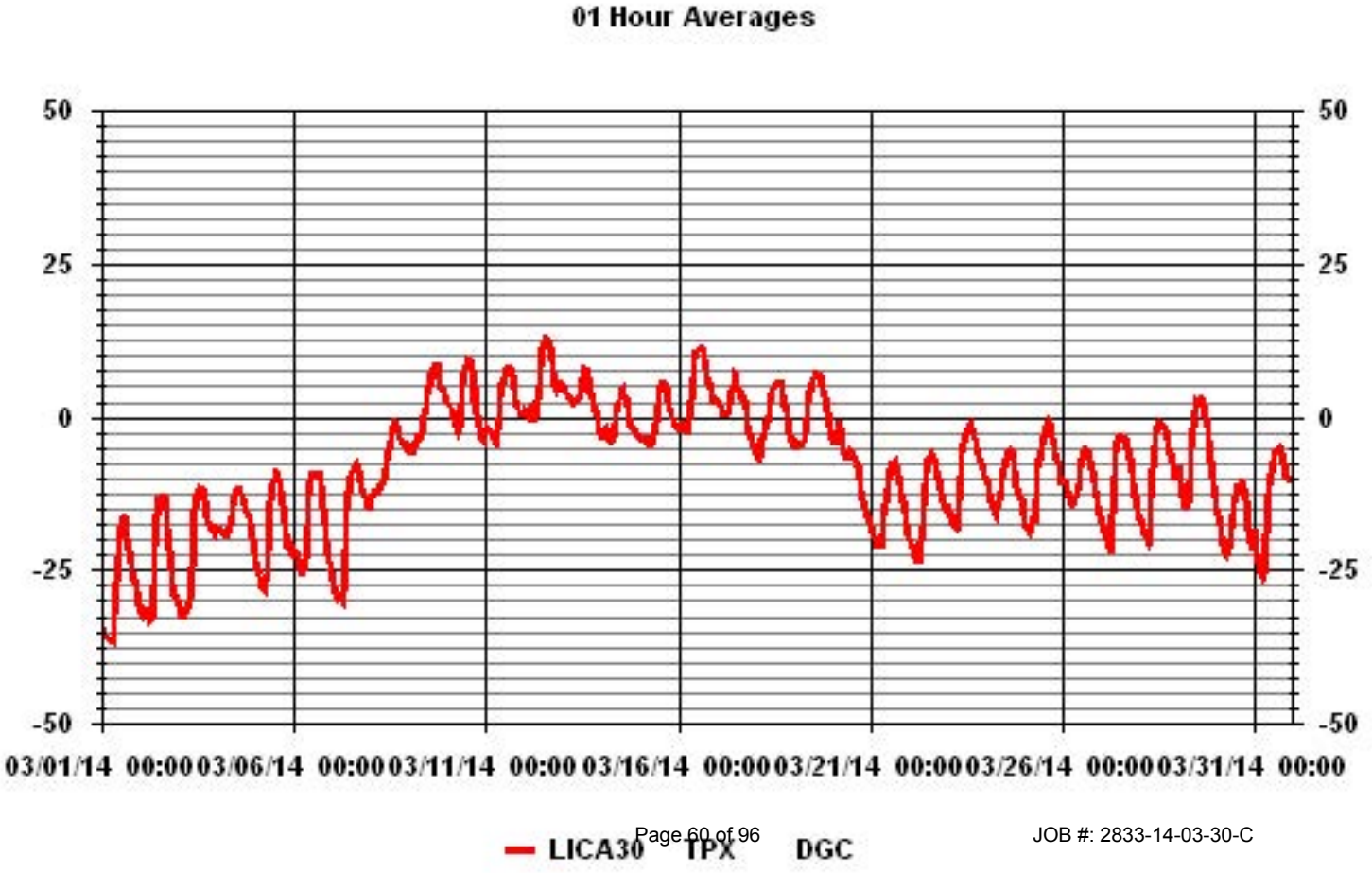
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

24 HOUR AVERAGES FOR MARCH 2014



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-36.6	°C	@ HOUR(S)	7	ON DAY(S)	1
MAXIMUM 1-HR AVERAGE:	12.7	°C	@ HOUR(S)	13, 14	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	5.7	°C			ON DAY(S)	12
					VAR-VARIOUS	
OPERATIONAL TIME:					744	HRS
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	10.51		MONTHLY AVERAGE:		-8.35	°C



JOB #: 2833-14-03-30-C

Precipitation

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

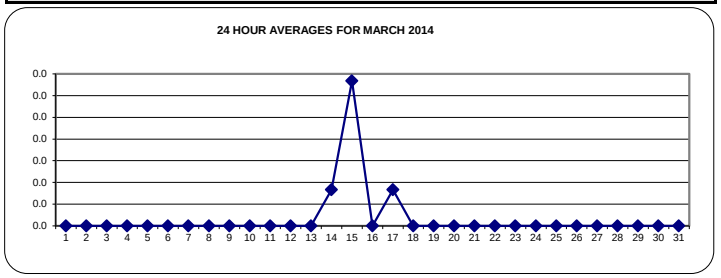
PRECIPITATION hourly averages in millimeter

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	0	0	0	0	0	0.0	24
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	24
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	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	24
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	24
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0.0	24
15	0.1	***0.2***	***0.2***	0	0	0.1	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	***0.2***	***0.0***	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	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	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	0.1	0.2	0.2	0	0	0.1	0	0.1	0	0.1	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0.1	0.1			
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

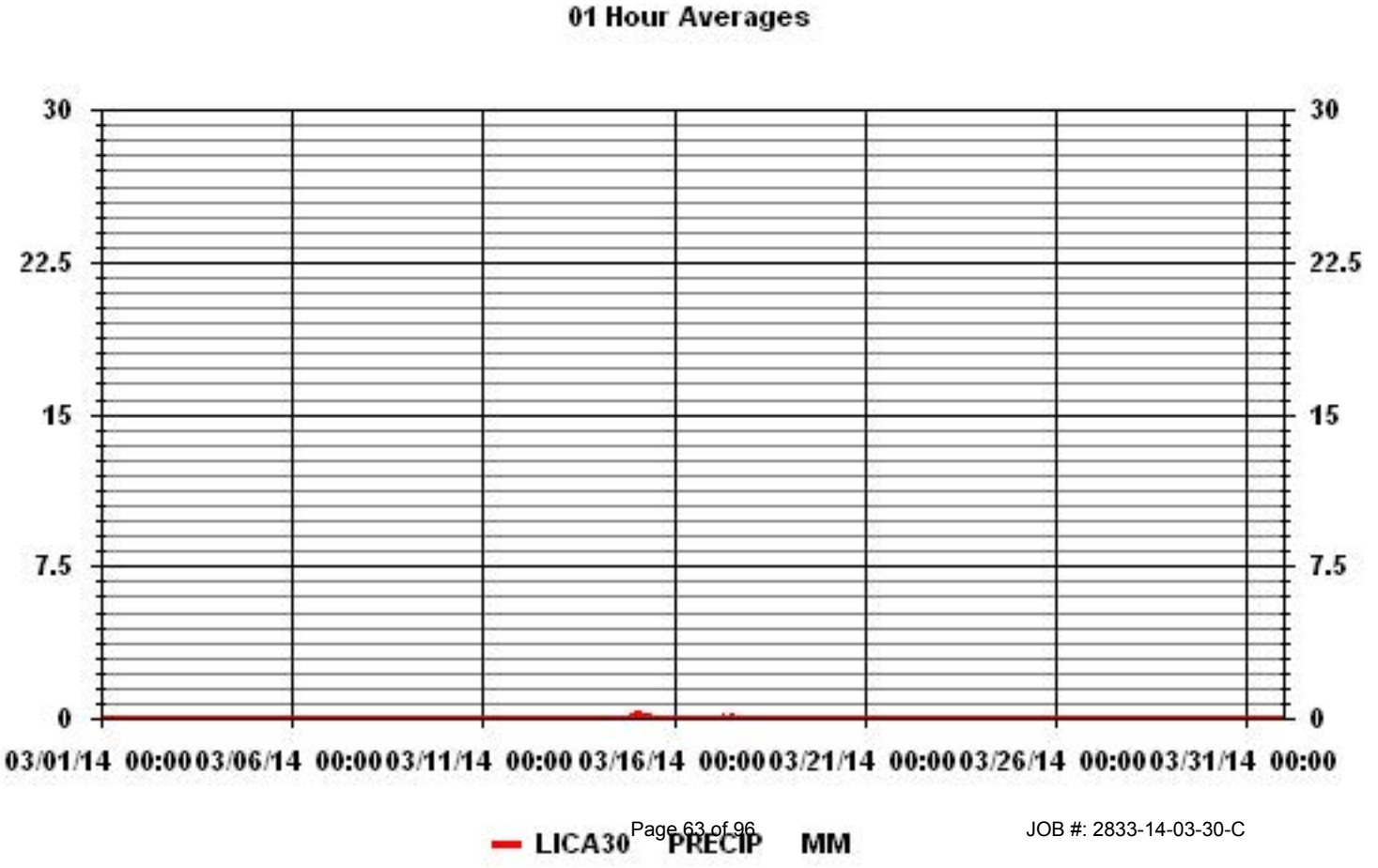
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:		0.2	MM	@ HOUR(S)	1, 2	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:		0.0	MM			ON DAY(S)	ALL
MONTHLY TOTAL	1.2	MM				VAR-VARIOUS	
						VAR-VARIOUS	
				OPERATIONAL TIME:		744	HRS
				AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.01			MONTHLY AVERAGE:		0.00	MM



JOB #: 2833-14-03-30-C

Relative Humidity

Lakeland Industry & Community Association - Maskwa Site

FEBRUARY 2014

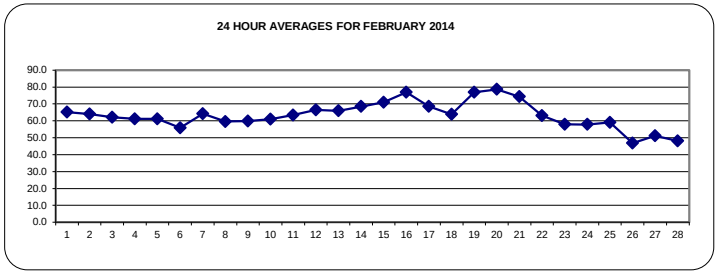
RELATIVE HUMIDITY (RH) hourly averages in %

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	67	68	69	69	70	71	71	72	73	70	61	57	55	53	53	56	58	61	65	74	75	72	65	60	75	65.2	24
2	63	62	64	65	67	67	67	68	68	66	64	62	59	61	56	54	54	63	67	67	66	68	69	70	70	64.0	24
3	72	73	69	66	70	63	63	65	65	63	59	57	55	55	54	51	62	63	59	59	61	62	62	62	73	62.1	24
4	63	64	64	63	64	64	64	64	63	60	58	56	53	54	48	51	55	59	61	65	68	70	69	68	70	61.2	24
5	68	68	68	67	68	69	69	68	68	65	58	52	48	45	44	45	52	57	60	62	64	66	67	68	69	61.1	24
6	69	69	69	68	69	68	68	68	68	67	59	45	40	37	31	30	37	43	47	50	55	59	60	63	69	55.8	24
7	65	65	65	67	69	70	71	72	71	67	60	58	54	53	53	55	58	62	64	66	67	68	73	69	73	64.3	24
8	65	61	61	63	65	67	69	69	67	61	55	50	47	43	43	44	50	57	66	68	67	65	64	63	69	59.6	24
9	63	62	61	61	59	60	60	60	60	62	61	56	51	48	47	48	53	60	65	68	68	68	67	68	68	59.8	24
10	64	63	63	62	62	61	61	60	61	63	64	58	54	53	52	52	55	61	63	65	64	66	68	69	69	61.0	24
11	70	70	69	69	69	70	70	70	69	64	58	53	49	50	50	53	55	59	66	71	70	67	66	64	71	63.4	24
12	64	63	64	67	67	68	68	68	68	67	65	64	63	63	65	66	67	68	68	69	68	68	69	69	69	66.5	24
13	68	68	68	68	69	70	69	69	68	65	61	58	56	56	58	63	66	68	70	68	68	68	69	70	70	65.9	24
14	71	70	70	71	71	72	72	72	72	65	57	57	55	58	56	59	65	71	77	78	78	76	75	75	78	68.5	24
15	76	76	76	76	76	76	76	76	76	76	73	64	58	56	55	58	60	66	73	74	75	76	78	77	78	71.0	24
16	76	77	77	78	78	79	78	78	77	77	77	76	76	74	73	74	75	77	78	78	78	78	79	79	79	77.0	24
17	80	79	79	79	79	78	79	77	76	65	60	57	51	52	53	55	57	64	67	67	70	71	74	75	80	68.5	24
18	75	74	75	76	80	78	74	79	76	63	51	47	45	42	40	40	44	54	60	57	68	76	78	80	80	63.8	24
19	81	***82***	81	81	79	79	79	80	80	79	76	68	65	63	65	68	74	79	81	81	80	80	81	***82***	***82***	76.8	24
20	80	78	79	80	80	81	80	80	80	80	79	76	73	71	72	73	78	***82***	***82***	***82***	81	80	80	80	***82***	***78.6***	24
21	80	80	80	80	80	81	80	80	79	75	71	70	69	69	68	68	70	71	73	72	70	72	74	71	81	74.3	24
22	72	70	73	73	74	72	71	69	69	62	55	50	47	47	49	54	58	59	64	62	63	66	65	70	74	63.1	24
23	71	70	69	69	67	65	66	65	63	55	47	42	37	37	38	39	43	51	58	64	67	68	69	69	71	57.9	24
24	70	69	69	67	67	66	66	65	64	60	53	42	39	37	37	39	44	51	57	58	60	64	72	72	72	57.8	24
25	70	69	67	65	63	63	63	62	63	66	60	51	46	46	46	47	49	54	58	62	64	65	62	56	70	59.0	24
26	58	61	61	65	67	68	69	69	61	46	35	27	21	18	21	29	34	35	42	48	48	50	52	40	69	46.9	24
27	38	42	48	59	54	54	57	58	59	55	50	46	44	43	45	51	51	54	53	52	55	53	53	54	59	51.2	24
28	55	56	58	61	62	63	64	64	59	50	42	37	33	31	29	29	31	34	38	44	49	53	56	57	64	48.1	24
HOURLY MAX	81	82	81	81	80	81	80	80	80	80	79	76	76	74	73	74	78	82	82	82	81	80	81	82			
HOURLY AVG	68.4	68.2	68.4	69.1	69.5	69.4	69.4	69.5	68.7	64.8	59.6	54.9	51.5	50.5	50.0	51.8	55.5	60.1	63.6	65.4	66.7	67.7	68.4	67.9			

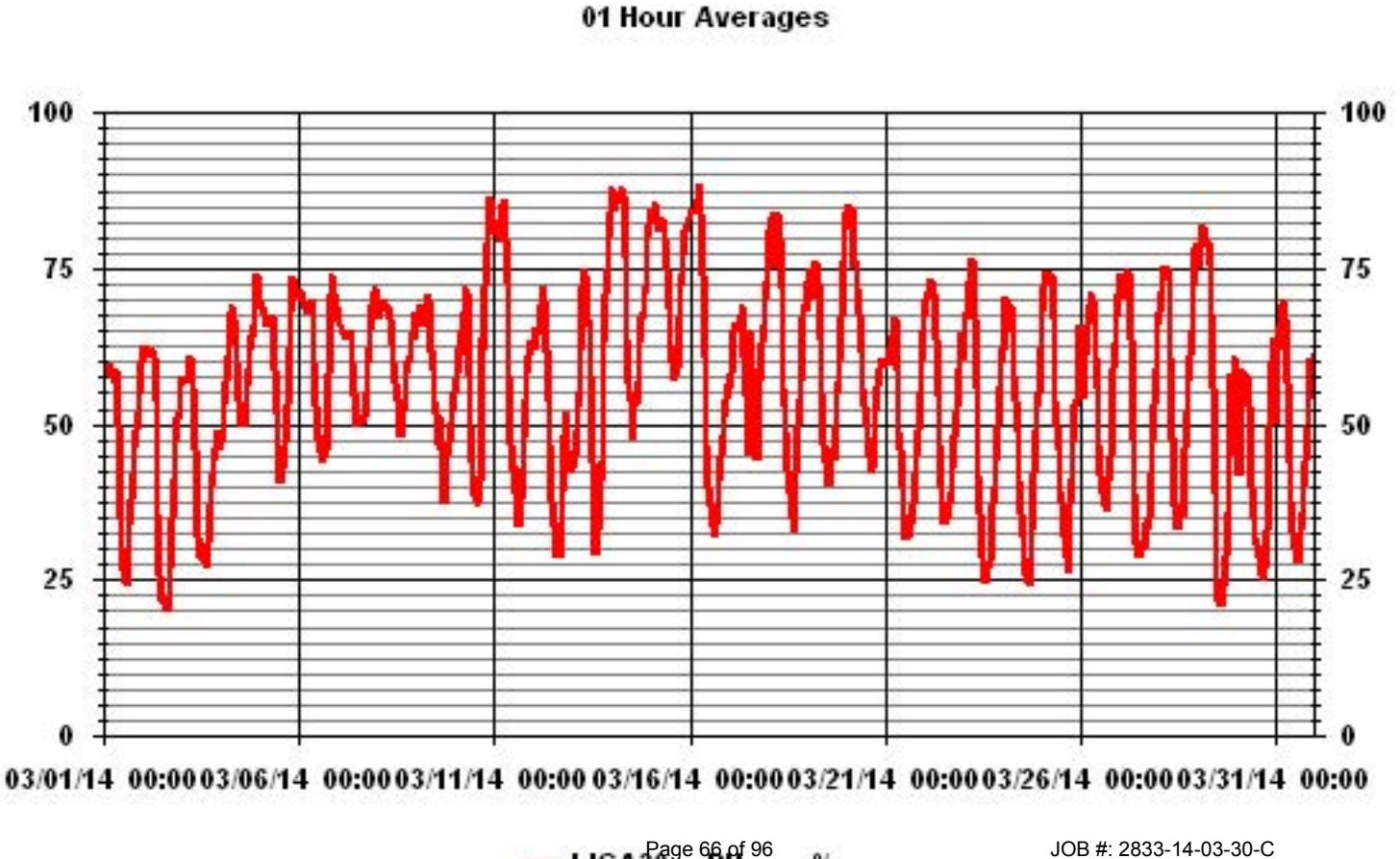
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	82	%	@ HOUR(S)	VAR	ON DAY(S)	19, 20
MAXIMUM 24-HR AVERAGE:	78.6	%			ON DAY(S)	20
				VAR-VARIOUS		
			OPERATIONAL TIME:		672	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	11.45		MONTHLY AVERAGE:		63.29	%



JOB #: 2833-14-03-30-C

Barometric Pressure

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

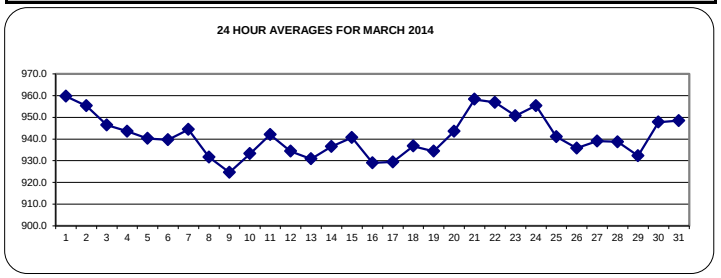
BAROMETRIC PRESSURE (BP) hourly averages in millibar

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	962	***963***	***963***	***963***	961	***963***	***963***	***963***	962	961	960	959	959	958	957	957	957	957	957	957	958	958	958	957	***963***	***959.7***	24
2	956	958	959	958	958	958	959	959	958	957	956	956	956	955	954	953	953	952	952	952	952	952	952	951	959	955.3	24
3	948	949	950	949	949	949	949	948	948	947	947	947	946	946	945	945	944	944	944	944	943	944	944	944	950	946.4	24
4	944	944	944	944	944	944	944	944	944	944	944	944	944	944	943	943	943	943	943	943	942	943	943	943	944	943.5	24
5	943	943	943	943	944	943	943	942	942	941	941	941	940	940	939	938	938	938	938	937	937	937	938	938	944	940.3	24
6	937	937	937	937	937	937	939	938	938	938	939	939	939	939	940	940	941	941	942	942	943	944	944	945	945	939.7	24
7	945	945	946	946	946	946	947	947	946	946	946	945	945	945	944	944	944	943	943	942	942	941	941	940	947	944.4	24
8	939	939	938	937	936	935	935	933	933	932	932	931	930	930	929	929	929	928	928	928	928	927	927	927	939	931.7	24
9	927	926	925	925	925	924	924	924	924	924	924	924	923	923	923	923	923	924	924	925	926	926	927	927	927	924.6	24
10	928	929	929	929	930	930	930	931	932	932	932	933	933	933	933	934	934	935	937	937	938	939	939	940	940	933.2	24
11	940	941	941	941	942	943	943	943	942	944	945	945	945	944	944	943	943	942	941	940	940	939	939	938	945	942.0	24
12	938	938	937	937	938	938	937	937	937	937	937	936	936	935	934	933	933	932	931	929	929	929	929	928	938	934.4	24
13	928	927	927	926	927	927	928	928	929	930	931	931	932	932	932	933	933	933	934	934	935	935	934	935	935	930.9	24
14	935	935	935	935	935	935	935	935	935	936	936	936	937	937	937	937	937	937	936	937	939	940	940	940	940	936.5	24
15	941	941	941	941	942	942	942	942	942	942	943	943	943	943	943	942	942	940	939	938	938	937	936	934	943	940.7	24
16	933	932	932	931	931	930	930	930	930	930	931	930	929	929	929	928	928	927	927	927	926	926	925	925	933	929.0	24
17	925	925	925	924	924	925	925	926	927	928	928	928	929	930	930	930	932	934	934	935	935	935	936	936	936	929.4	24
18	936	936	936	936	936	936	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	936.8	24
19	936	936	936	936	936	935	935	936	936	936	935	935	935	934	934	933	933	933	933	933	933	932	932	932	936	934.4	24
20	932	932	932	933	933	935	937	938	940	941	942	944	945	946	947	948	949	950	951	952	953	954	955	955	955	943.5	24
21	956	957	957	958	958	958	959	959	959	959	959	959	959	959	958	958	958	958	958	958	958	958	959	959	959	958.3	24
22	959	959	959	959	959	960	960	960	959	959	959	958	958	957	957	956	955	955	954	954	953	951	952	952	960	956.8	24
23	952	952	951	951	951	951	950	950	950	950	951	950	950	950	950	950	949	949	950	950	951	952	953	953	953	950.7	24
24	954	955	955	956	956	957	957	957	957	958	958	958	958	957	956	955	955	955	954	953	953	952	951	951	958	955.3	24
25	950	949	948	948	947	946	945	944	944	944	943	942	940	939	939	938	937	936	935	935	935	934	934	933	950	941.0	24
26	934	934	934	934	934	935	935	936	936	936	936	937	937	937	936	936	936	936	936	937	936	936	937	937	937	935.8	24
27	938	938	938	938	938	939	939	939	939	939	940	940	940	939	939	939	939	939	939	940	940	940	940	939	940	939.1	24
28	940	941	941	941	940	941	941	941	941	941	941	941	940	940	939	938	938	937	936	935	935	934	934	933	941	938.7	24
29	933	933	932	931	931	930	930	930	931	931	931	931	931	931	931	931	931	932	932	934	935	937	937	938	938	932.3	24
30	940	941	943	944	944	945	947	948	948	949	949	949	949	949	949	949	949	949	950	950	951	951	952	952	952	947.8	24
31	952	952	952	952	952	952	952	951	951	951	951	950	949	948	947	947	946	945	945	944	944	944	943	943	952	948.5	24
HOURLY MAX	962	963	963	963	961	963	963	963	962	961	960	959	959	959	958	958	958	958	958	958	958	958	959	959			
HOURLY AVG	941.3	941.5	941.5	941.4	941.4	941.6	941.8	941.8	941.8	941.9	942.1	941.9	941.7	941.5	941.1	940.9	940.8	940.7	940.6	940.6	940.8	940.8	940.9	940.7			

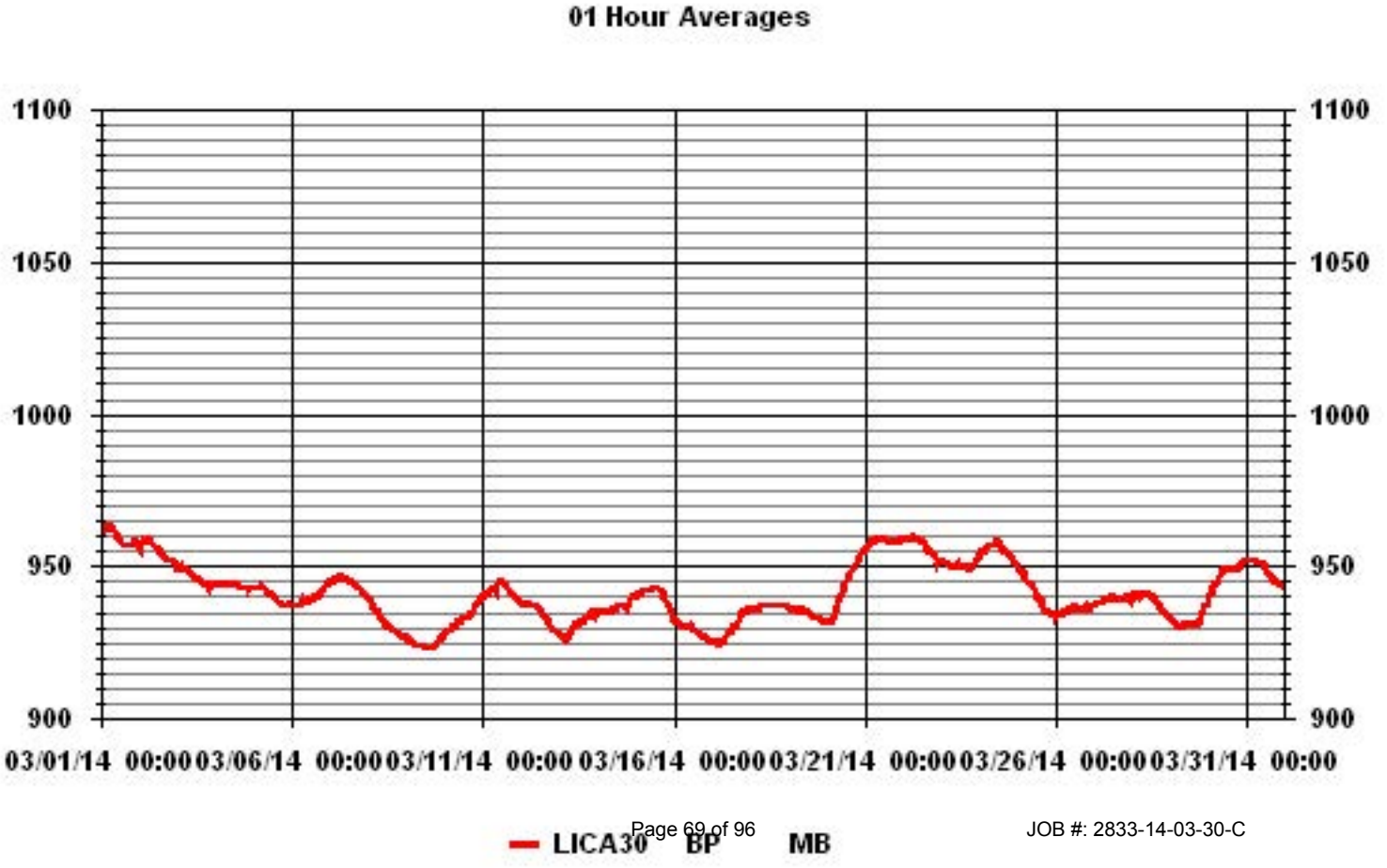
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	963	MB	@ HOUR(S)	VAR	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	959.7	MB			ON DAY(S)	1
				VAR-VARIOUS		
OPERATIONAL TIME:					744	HRS
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	9.59		MONTHLY AVERAGE:		941.3	MB



JOB #: 2833-14-03-30-C

Vector Wind Speed

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

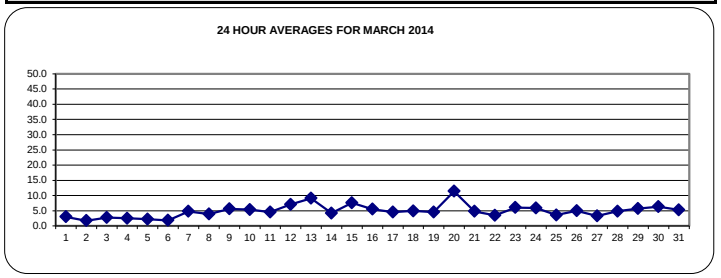
WIND SPEED (WS) hourly averages in km/hr

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	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	0.9	0.4	0.7	1.3	0.9	1.1	0.9	1	1.4	2.8	5.4	4.4	4	4.1	3.5	7.2	8.7	5.9	4.2	3.4	2.8	2.9	3.3	1.3	8.7	3.0	24
2	0.7	1	1.4	1.3	1.3	0.4	0	0.8	0.7	0.9	1.2	1.5	3.1	3.4	4.4	4.1	6.3	4.6	2	0.9	1.2	0.1	0.2	0.2	6.3	1.7	24
3	0.2	0.2	1.8	1.9	2.4	3	2.1	1.4	3.2	3.9	4.6	3.6	4.2	5.3	5.2	5	4	2.4	2.6	2.2	1.6	1	1.9	2	5.3	2.7	24
4	2.6	2.4	2.5	2.8	3.6	2	2.7	3.5	3.5	3.2	2.6	3.7	2.4	1.7	3.1	3.6	4	2.4	2.1	1.8	1.2	2	0.4	0.3	4.0	2.5	24
5	0.3	0.2	0.3	0.9	0.2	0.2	0.5	0.3	0.5	1.1	1.3	3.1	2.9	5.1	6.7	5.2	6.9	5.7	2.1	1.1	1.8	2.3	3.5	1.2	6.9	2.2	24
6	0.8	0.4	0.3	0.6	0.2	0.2	0.9	0.6	1.4	3	5.8	6.6	6.1	4.1	2.5	1.6	2.1	2.1	1.8	1.6	0.5	0.2	0.4	0.2	6.6	1.8	24
7	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.5	4.6	8.4	10.2	10.2	10.3	9.9	11.1	10.9	8.7	7	6.7	4.7	2.7	3.6	4	11.1	4.8	24
8	3.6	2.4	1.9	3	2.2	3.1	4	4.7	5	5	5.5	6.4	6.3	6.1	6	6.9	6.9	4.6	2.2	1.9	1.3	2.5	2	1.1	6.9	3.9	24
9	0.9	1.7	2.1	2.5	2.1	1.3	3.8	4	4.4	4.4	4.3	4.4	7.4	6.9	8.7	8.6	7.2	11.6	7.6	7.2	9.5	9.8	8.5	5.8	11.6	5.6	24
10	5.6	5	3.7	6.9	5.6	5.3	2.5	2.1	2.1	7.4	8.5	9.1	7.1	10.2	10.3	10.2	6.4	2.8	5.4	3	1	1.1	2.2	5.2	10.3	5.4	24
11	4.8	0.2	2	1.9	0.1	0.9	2.6	5.6	4.4	4.6	6	5.4	4.7	5	6	6.1	5.8	4.2	3.7	7.7	7.8	6.6	6.1	6.1	7.8	4.5	24
12	5.2	4.1	5	3.8	4.3	5.3	5.7	5.1	5.5	4.4	7	10.6	13.3	11.6	11.7	9.4	10	4.2	6.3	6.6	5.2	7.3	8.7	8.6	13.3	7.0	24
13	7.4	9.1	11.4	11.8	11.8	10.4	10.1	10.7	11.9	11.5	12.1	13.2	11.2	13.8	11.4	12.6	8.9	5.2	4.9	6.1	5.2	4	2.9	0.7	13.8	9.1	24
14	0.2	1.4	1.4	0.5	1	1.1	1.6	1.2	2.7	6.1	6.2	4.8	2.9	5.4	7.4	7.4	6.7	5.5	6	7.8	6	6.5	5.7	5.2	7.8	4.2	24
15	5.2	5.5	7.2	6.3	8.3	9.8	9.4	8.6	7.1	8	6.4	8.1	8.8	10.5	10.7	12.4	7.9	6.1	8.2	7	4.4	5.3	4.8	7	12.4	7.6	24
16	4.9	2	1.8	1.3	0.7	1.4	4.3	5.8	4.3	5.1	8.3	11.4	13.2	11.5	11.2	9.7	6.4	5.1	3.7	4.5	4.3	3.8	3.4	3.6	13.2	5.5	24
17	3	3.8	4.2	3.2	3.1	2.4	4.1	4.3	3.9	5.4	5.2	5.5	7.4	7.9	8.6	11.2	6.3	7.1	4.5	2.5	0.6	0.9	1.1	1.9	11.2	4.5	24
18	1.2	1.9	1.7	2	3.9	4.6	3.7	3.4	4.8	7.8	9.2	9.4	8.5	7.5	8.9	8	8.6	9.1	4.5	2.8	2	1.9	2.4	0.6	9.4	4.9	24
19	1.7	2.4	4.2	3.2	2	0.8	1	0.1	4.5	4	5.6	5.4	10.7	9.9	9.7	8.1	8	7.8	5.6	3.9	4.5	3.1	1.1	2.3	10.7	4.6	24
20	0.3	0.9	3.3	6.2	12.5	14	16.9	16.2	15.1	16.4	15.8	15.2	13.2	14.5	14.9	14.2	12.1	12.2	12.4	11.3	8.9	8.8	10.2	8.7	16.9	***11.4***	24
21	6.8	6.7	6.1	3.9	2.6	2.2	2.9	3.6	4.6	5	4.9	6	7	6.1	7.7	6.8	7.2	6.5	4.6	3.7	3.6	2.8	2.6	0.6	7.7	4.8	24
22	0.3	0.6	0.2	0.4	0.3	0.2	1.3	4.3	5.5	3.2	1.5	1.9	2.2	3.5	4.4	6.7	8.3	10	7.9	5	5.5	4	2.7	3	10.0	3.5	24
23	4.5	2.8	3.8	2.4	2.3	2.9	3	3.6	3.6	7.2	8.9	7.8	7.9	7.1	7.1	7.8	8.7	8.8	6.6	6.3	5	6.7	10	10.4	10.4	6.1	24
24	6.5	7.9	9.5	6.6	5.7	4.9	7	6.9	7.5	8.1	7.9	7.2	7	8	8	6.7	7.1	6	3.2	1.6	2.2	2.8	2	0.8	9.5	5.9	24
25	1	1.4	0.9	0.6	1.3	2.4	1	2.8	3.8	7.1	6.9	5.2	7.9	6.3	4.7	4.2	2.9	6.2	5.1	4.8	4	3.2	0.8	0.8	7.9	3.6	24
26	6.8	11.4	10.1	10.9	11.7	7.1	5.5	7.9	7.5	5.2	6.3	3.4	2.1	2.7	1.3	4	2.6	5.8	3.6	0.6	0.6	0.3	0.7	0.8	11.7	5.0	24
27	1.4	2.7	1.7	0.5	1.1	0.8	0.2	1.5	0.9	4	5.6	6.8	6.1	5.1	6.1	5.5	6.3	7.7	5.1	2.2	1.7	1.2	2.7	2.1	7.7	3.3	24
28	2	1.9	2.1	1	1.1	1.1	1.6	4.5	4.2	5.8	6.3	7.5	8.2	10.5	11.1	10.6	8.4	9.6	5.3	3.6	2.7	2.9	1.6	2.3	11.1	4.8	24
29	3	1.3	1	0.3	0.2	0.7	1	0.5	2	3.2	3.6	5.5	6.4	6.2	6.2	6.5	6.6	6.6	7.2	14.3	***17.6***	14.1	9.6	12.5	***17.6***	5.7	24
30	14.6	11.3	8.2	6.9	12	9.5	9.2	9.1	9.1	7.2	4.3	4.9	4.9	4.5	5.5	4.6	4.8	5.5	4.6	1.8	0.6	1.4	1.8	5.8	14.6	6.3	24
31	3.5	1.1	0.7	0.2	0.7	1	0.9	1.3	4.7	8.6	7.8	8.9	8.2	9.4	9.9	8.3	8.4	7.3	6.4	3.7	5.3	6.5	7	6.3	9.9	5.3	24
HOURLY MAX	14.6	11.4	11.4	11.8	12.5	14.0	16.9	16.2	15.1	16.4	15.8	15.2	13.3	14.5	14.9	14.2	12.1	12.2	12.4	14.3	17.6	14.1	10.2	12.5			
HOURLY AVG	3.2	3.0	3.3	3.1	3.4	3.2	3.6	4.0	4.5	5.6	6.2	6.7	7.0	7.2	7.5	7.6	6.9	6.4	5.0	4.4	4.0	3.8	3.7	3.6			

STATUS FLAG CODES

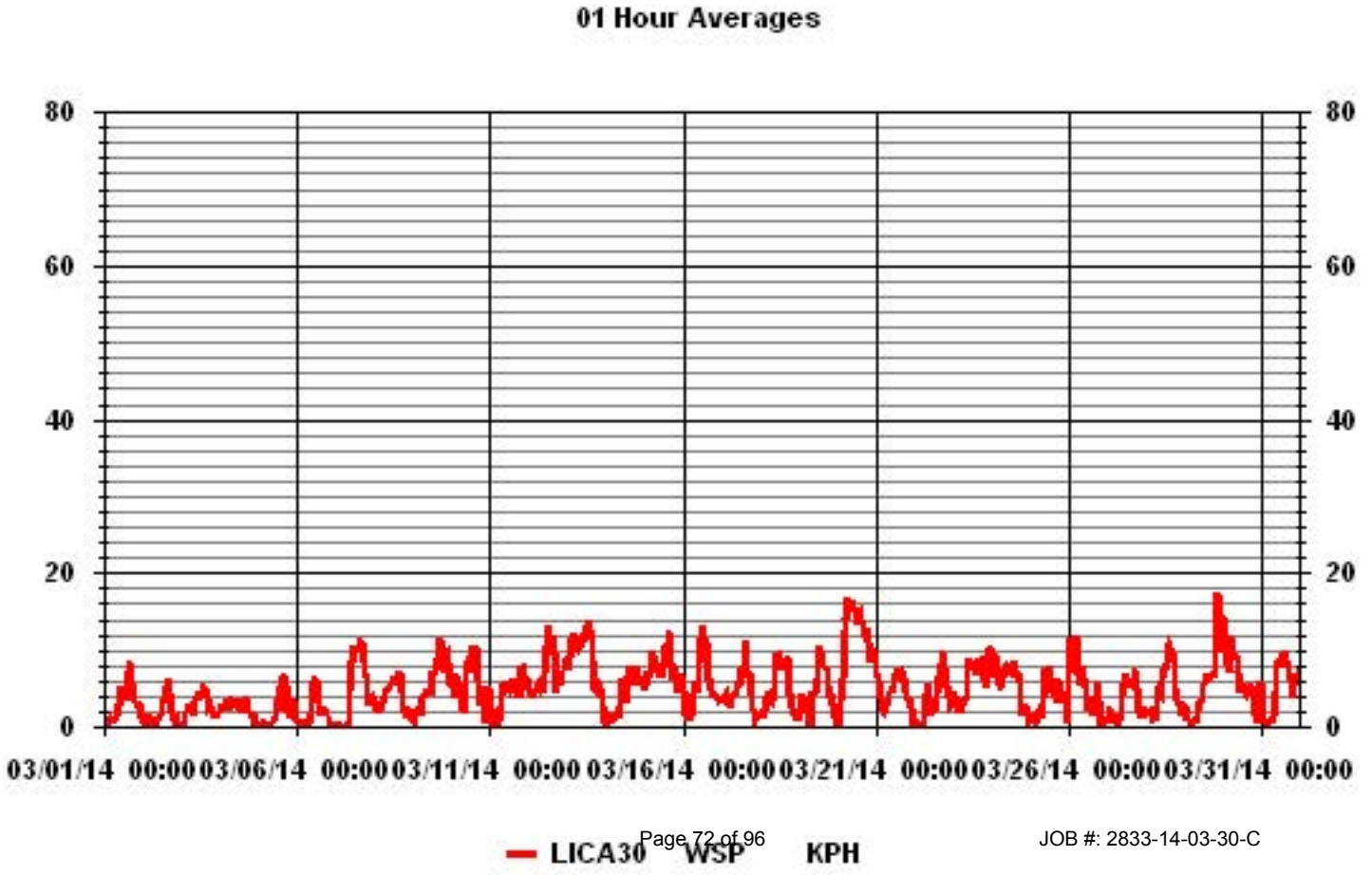
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



LAST CALIBRATION:	February 5, 2014
DECLINATION :	19 DEGREE FROM MAGNETIC NORTH

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	743						
MAXIMUM 1-HR AVERAGE:	17.6	KPH	@ HOUR(S)	20	ON DAY(S)	29	
MAXIMUM 24-HR AVERAGE:	11.4	KPH			ON DAY(S)	20	
					VAR-VARIOUS		
			OPERATIONAL TIME:		744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	3.50		MONTHLY AVERAGE:		4.88	KPH	



JOB #: 2833-14-03-30-C

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

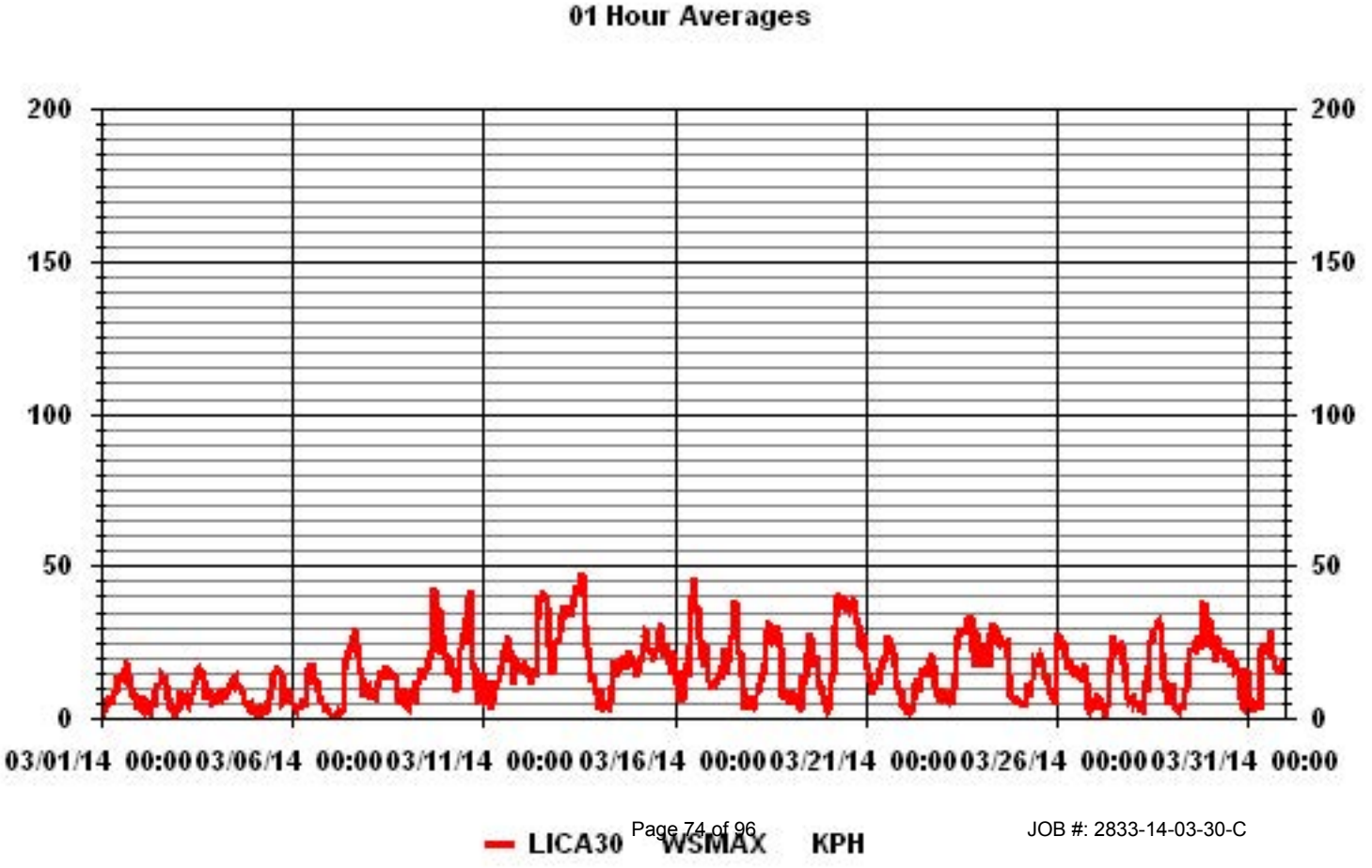
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	3.8	2.8	4.8	5.7	4.1	6	6	4.6	8.3	8.6	13.4	13.2	13.9	13.2	16.7	15.7	18.7	14.6	11.1	10.5	8.3	7.6	8.5	3.9	19	9.3	24
2	3.9	3.2	7.6	5.7	5.6	3	2.4	4.3	5.1	4.8	8.8	10.8	11.8	15.1	14.6	11	13.6	11.7	7.1	2.9	3.8	2.8	1.3	1.6	15	6.8	24
3	2.1	2.8	8.8	6.4	7.1	7.7	5.7	4.6	6.6	7.9	11.4	12	15.8	16.6	15.1	16.1	13.1	6.2	9.6	8	9.5	4.7	4.8	5.2	17	8.7	24
4	6.6	7.5	8	7.2	9.7	6.5	8.5	8.4	9.7	11.8	11.2	12.6	13.4	11	11.7	11.2	9.4	8.2	4.9	4.9	3.7	4.5	2.6	2.2	13	8.1	24
5	2.8	1.7	2.7	3.5	1.6	2.1	3	2.5	2.7	5.8	8.6	10.5	14.5	15.6	17.3	14.2	16.2	15	4.9	5.4	6	6	9.7	6.2	17	7.4	24
6	5.6	3.6	2.7	4.1	2.5	4.1	6.1	3.3	6.4	10.7	15.9	17.2	17.3	11.4	12.2	12.2	9.4	8.3	6.2	5.4	4.3	1.8	3	2	17	7.3	24
7	1.9	0.2	0.2	0.2	1.6	0.2	1.3	2.6	3.6	15.8	19.4	21.5	22.2	23.5	27.4	29.5	24.2	20.6	16.6	15.2	13.6	7.2	10.2	9.5	30	12.0	24
8	10.3	7.2	7	7.6	7.2	10.5	12.3	13.1	15.7	13.5	12.6	17.4	15.8	16.7	12.3	14.8	14.3	13.3	7.1	6.3	4.3	7.1	9.8	4.8	17	10.9	24
9	4	6.2	7.8	6.5	7	6.6	12.4	11	14.7	16.6	12.6	14.9	17.4	16.5	21.4	21	36.5	43.1	23.6	23.2	35.9	29.7	28.2	21.5	43	18.3	24
10	20.1	21.1	14	20.2	15	15.4	10.3	8.9	15.1	22.6	23.3	26.9	26.4	33.3	37.7	37	42.1	18.7	16.8	10.4	5.9	6.3	8.6	14.2	42	19.6	24
11	14.1	6.2	6.8	12.1	3	5.3	9.9	12.5	11	12.3	14	17.1	18.1	22.2	24.4	27.2	22.7	18.7	10.8	17.3	20.6	17.5	16.3	16.2	27	14.8	24
12	17.2	15.4	16.7	15.4	14.3	13	11.4	15.6	15.4	15.2	32.6	39.8	40.4	41.7	37.8	40.2	36.6	24.3	15.5	15.8	17.4	24.8	25.3	25.8	42	23.7	24
13	28.2	33.5	37	34.3	35.1	37.2	33.2	35.4	36.8	40.6	43.3	43.1	40.9	43.7	***47.8***	40.2	31.5	23.8	19.6	15.7	12.1	13.8	9.2	8.1	***48***	***31.0***	24
14	2.4	10.2	8.3	3.6	4	4	3.6	5.3	10.3	18.3	18.5	13.9	15.3	18.6	18.9	19.4	17.7	15.8	17.8	22.1	21	18.6	17.7	14.9	22	13.3	24
15	14.5	15.2	18.4	20.3	24.6	28.1	27.3	23.8	22.5	21.6	20.3	20.8	21.9	22.8	29.1	31.4	25.9	19.6	22.6	24.3	18.2	14.9	14.9	21.9	31	21.9	24
16	16.6	11.8	5.2	6.3	6	6.4	15.7	18	13.3	23.9	40.2	38.2	45.9	34.8	37.2	32.2	26.4	20.1	16.4	24.9	19	12.3	10.6	10.7	46	20.5	24
17	12	11.3	13.4	12.8	14.1	13.9	17.5	22.7	14.2	18.9	19.6	25.8	27.1	33.1	38.8	37.1	21.9	21.5	14.2	11	3.5	3.6	4.5	7.5	39	17.5	24
18	4.3	3.6	4.6	7.6	10.4	10.1	12.1	14.6	17.8	25.4	28.8	31.7	25.9	25	25.9	23.9	30.1	28.8	23.7	7.7	7.5	6.3	9.1	7.7	32	16.4	24
19	4.9	6.6	9.1	6.7	6.1	5.6	3.9	2.4	13.7	10.8	13.7	21	27.9	27.1	21.3	17.4	18.5	20.5	13.2	10.3	11.3	8.2	4.7	5.5	28	12.1	24
20	3.1	4.1	12.2	14.6	30.5	32.9	39.8	40.4	40.4	40	36.9	36.4	37.7	36.3	37.6	36.3	38.2	37.2	33.3	31.1	24.5	23.6	26.6	25.9	40	30.0	24
21	18.5	16.8	15.2	12.6	8.2	9.6	11	12.2	12	16.1	18.3	18.8	20.2	22.7	26.7	25.3	24.1	21.7	17.4	12.8	10.1	8.6	9.6	4.2	27	15.5	24
22	2.5	4.7	1.3	3.4	2.2	2.8	5.7	11.2	13	10.7	9	15.5	15.4	13.6	16.2	15.7	19.9	21.4	17.8	10.9	8.7	8	6.4	6.8	21	10.1	24
23	9.7	6.8	7.6	6.2	5.5	7.3	6.6	9.3	14.6	22.6	27	29.5	27.7	29.8	27.6	32.8	30.3	31.3	34.1	22.7	17	27.4	26.8	23.1	34	20.1	24
24	16.7	19.9	24.8	16.5	20.2	16.5	27.8	28.3	30.9	26.4	25.6	26.9	25.3	26.5	23.7	25.1	25.5	20.4	14.6	7.7	6.6	6.5	6.4	4.1	31	19.7	24
25	5.8	5.3	4.8	4.5	4.5	11.2	7	8.6	12.5	19.2	18.6	16.7	19.6	20.9	19.6	17.3	13.7	13.7	12.2	10.7	8.5	7	6.4	4.1	21	11.4	24
26	25.8	27.8	24.7	22.8	25.1	21	15.8	18.7	18.7	17.3	15.4	13.9	16.8	14.5	13	14.5	12.2	17.9	12.7	3.7	2.6	4.5	3.5	3.7	28	15.3	24
27	6	7.2	6.8	2.7	5.2	3.5	0.2	3.3	5.3	14.9	19.7	27	21.9	22	24	24.4	22	22.6	18.6	12.6	7.2	5.5	5.9	6.6	27	12.3	24
28	4.8	5.8	4.8	4.8	3.3	2.9	6	11.1	10.7	17.6	24.6	25.2	28.4	29.1	31.1	30.9	31.8	29.8	22.6	13	9.1	5.9	4.6	7.1	32	15.2	24
29	9.6	11.5	3.4	2.8	2.1	3.5	3.6	3.8	8.2	10	17.7	23.1	21.5	23.3	22.7	25.5	26.9	24.9	22.3	38.7	36.1	38.3	23	29.7	39	18.0	24
30	33.2	25.9	22.9	18	27.2	22.1	20.7	22.8	20.9	22.6	19.6	19.6	20.2	16.7	18.7	18.6	15.6	16.1	15.1	6.7	3.6	3.2	9.7	16.3	33	18.2	24
31	11.5	7.1	4.2	2	4.3	5	4.3	4	22.3	22.1	24.4	23.2	22.3	24.5	28.7	21.2	20.4	16.4	16.4	15.4	15.3	17.6	17.6	18.1	29	15.3	24
HOURLY MAX	33	34	37	34	35	37	40	40	40	41	43	43	46	44	48	40	42	43	34	39	36	38	28	30			
HOURLY AVG	10.4	10.1	10.2	9.6	10.2	10.5	11.3	12.5	14.6	17.6	20.2	22.1	22.9	23.3	24.4	23.8	22.9	20.2	16.1	13.8	12.1	11.4	11.1	10.9			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	48	KPH	@ HOUR(S)	14	ON DAY(S)	13
					VAR-VARIOUS	
OPERATIONAL TIME:					744	HRS



JOB #: 2833-14-03-30-C

LICA30
WSP / WDR Joint Frequency Distribution (Percent)

March 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	2.15	3.09	3.76	4.83	2.28	3.62	1.61	3.76	4.70	11.96	8.46	4.30	3.49	1.88	1.88	2.55	64.38
<	12.0	2.41	2.15	1.34	.00	.00	.53	.94	.80	4.30	4.70	1.20	.40	3.36	4.83	2.95	1.74	31.72
<	20.0	1.47	1.34	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00	.67	.13	.00	3.76
<	29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	6.04	6.58	5.10	4.83	2.28	4.16	2.55	4.56	9.13	16.66	9.67	4.70	6.85	7.39	4.97	4.30	

Calm : .13 %

Total # Operational Hours : 744

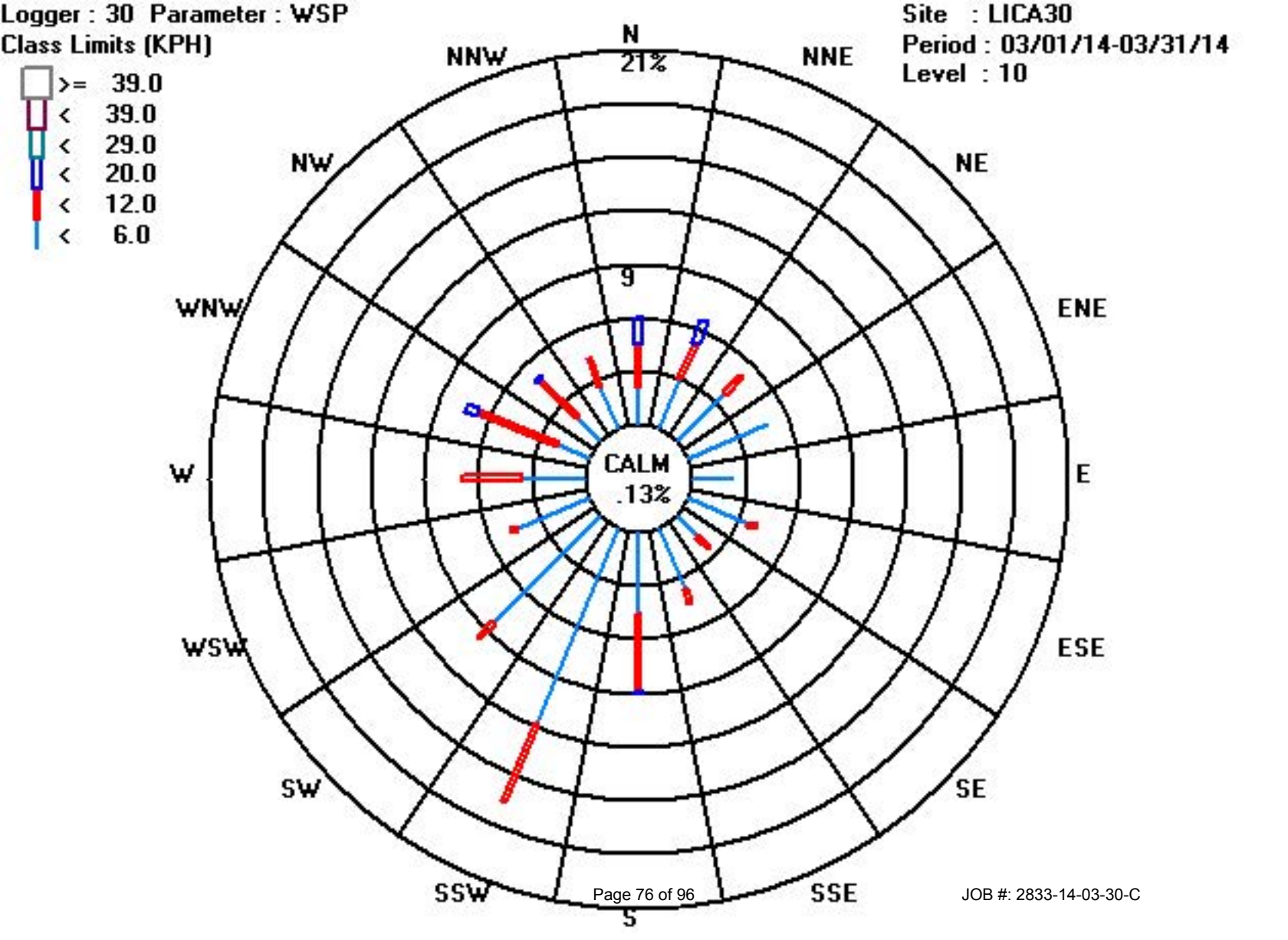
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	16	23	28	36	17	27	12	28	35	89	63	32	26	14	14	19	479
<	12.0	18	16	10			4	7	6	32	35	9	3	25	36	22	13	236
<	20.0	11	10							1					5	1		28
<	29.0																	
<	39.0																	
>=	39.0																	
	Totals	45	49	38	36	17	31	19	34	68	124	72	35	51	55	37	32	

Calm : .13 %

Total # Operational Hours : 744



JOB #: 2833-14-03-30-C

Vector Wind Direction

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

WIND DIRECTION (WD) hourly averages in degrees

MST

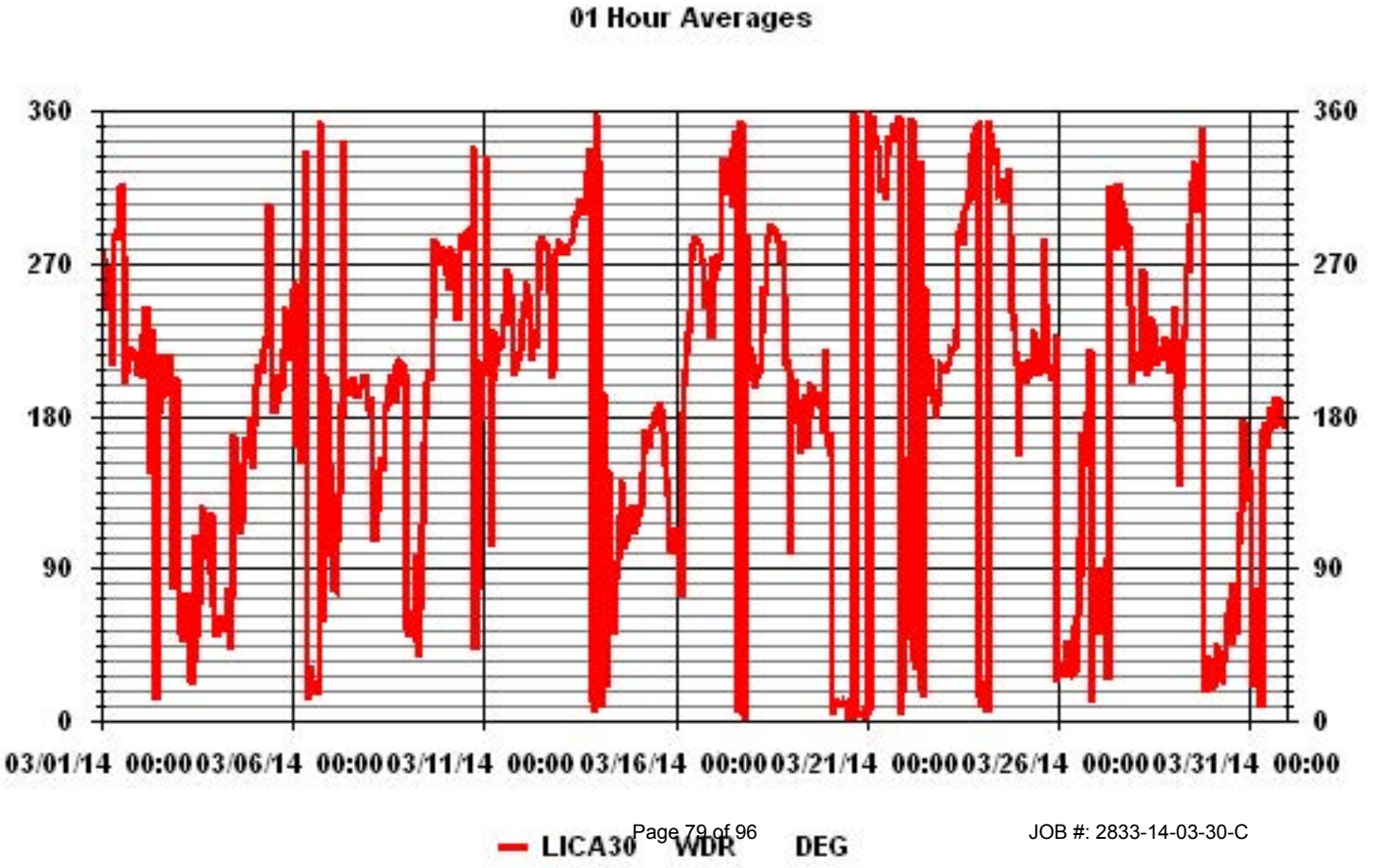
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	278	242	273	243	270	251	250	209	287	283	291	314	315	318	276	199	205	212	220	216	219	215	215	203	318	NW	24
2	213	202	228	219	245	243	146	199	231	14	14	180	182	217	190	192	200	193	217	212	130	77	198	203	245	WSW	24
3	157	50	73	46	64	74	74	52	24	21	34	110	49	68	106	127	120	113	113	97	86	123	68	53	157	SSE	24
4	49	58	57	62	56	55	52	57	79	42	73	169	158	153	118	110	118	150	154	168	159	161	179	148	179	S	24
5	174	198	210	205	206	206	220	227	298	306	271	198	181	205	189	189	196	197	219	244	222	212	216	225	306	NW	24
6	255	259	161	213	193	152	250	278	336	13	16	33	25	15	21	21	16	355	58	74	204	128	196	152	355	N	24
7	98	78	78	77	105	134	187	180	342	200	192	195	201	199	203	194	190	196	197	198	204	199	205	187	342	NNW	24
8	188	181	150	106	128	123	133	155	150	148	183	186	198	205	188	192	191	210	213	212	197	212	206	54	213	SSW	24
9	64	49	65	59	53	47	98	37	65	116	164	179	200	208	201	203	238	284	273	269	274	278	278	275	284	WNW	24
10	274	264	254	280	274	276	246	236	250	286	286	287	278	284	285	289	292	339	43	45	214	77	176	203	339	NNW	24
11	208	333	225	217	103	231	201	210	222	220	221	227	240	233	267	265	254	246	219	203	207	212	217	219	333	NNW	24
12	237	248	260	252	240	220	213	225	224	231	254	283	286	281	283	279	277	253	202	206	230	279	282	282	286	WNW	24
13	275	281	280	279	278	281	283	284	291	298	300	306	306	300	305	299	317	325	338	13	13	5	359	293	359	N	24
14	330	7	163	195	19	79	148	89	63	53	51	84	95	122	142	128	102	105	120	123	126	128	110	116	330	NNW	24
15	116	121	127	147	158	170	170	161	168	174	175	182	183	185	188	185	172	152	144	133	115	102	99	105	188	S	24
16	113	113	85	73	182	208	198	216	229	242	271	281	284	284	284	282	273	270	244	253	257	260	225	274	284	WNW	24
17	260	266	276	272	276	332	316	332	310	328	332	338	303	348	341	4	344	355	5	0	287	220	200	221	355	N	24
18	218	202	196	203	205	211	228	257	251	284	284	287	293	287	291	289	282	285	270	283	252	209	214	208	293	WNW	24
19	98	196	202	198	185	177	157	178	189	193	188	161	178	197	196	189	188	191	194	187	178	170	219	166	219	SW	24
20	167	157	4	11	12	12	12	10	10	12	10	11	1	7	3	2	359	353	4	6	2	5	3	2	359	N	24
21	360	4	7	358	351	346	341	338	316	317	312	319	307	334	345	341	352	349	343	343	358	3	17	39	360	N	24
22	155	48	132	328	356	36	49	31	31	18	330	13	256	212	218	215	193	188	191	179	185	196	210	209	356	N	24
23	207	207	210	212	219	218	219	220	231	285	289	293	281	301	305	312	309	311	335	347	350	351	15	11	351	N	24
24	8	18	23	5	355	348	338	334	335	329	312	313	315	306	318	318	315	326	287	242	231	219	211	156	355	N	24
25	201	210	212	199	204	206	213	210	231	206	207	210	203	223	226	284	247	205	210	200	206	211	229	23	284	WNW	24
26	35	28	30	28	28	45	45	27	41	57	28	29	63	108	85	170	150	183	181	202	220	10	60	91	220	SW	24
27	75	57	51	70	63	90	96	24	316	288	284	294	278	318	294	308	304	281	294	277	294	246	199	207	318	NW	24
28	209	216	207	217	221	267	211	203	214	207	239	234	223	211	211	213	220	218	224	226	214	205	211	212	267	W	24
29	222	244	177	215	138	196	225	233	270	264	293	319	307	330	299	309	317	325	350	18	18	19	38	27	350	N	24
30	23	19	31	46	26	27	26	35	41	46	63	71	44	82	52	74	50	104	123	141	178	130	133	150	178	S	24
31	146	20	27	54	76	76	30	8	172	176	172	161	170	186	176	172	189	189	191	177	176	175	176	178	191	S	24

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION:	February 5, 2014
DECLINATION :	19 DEGREE FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	96.81		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	270	DEG



JOB #: 2833-14-03-30-C

Standard Deviation Wind Direction

Lakeland Industry & Community Association - Maskwa Site

MARCH 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

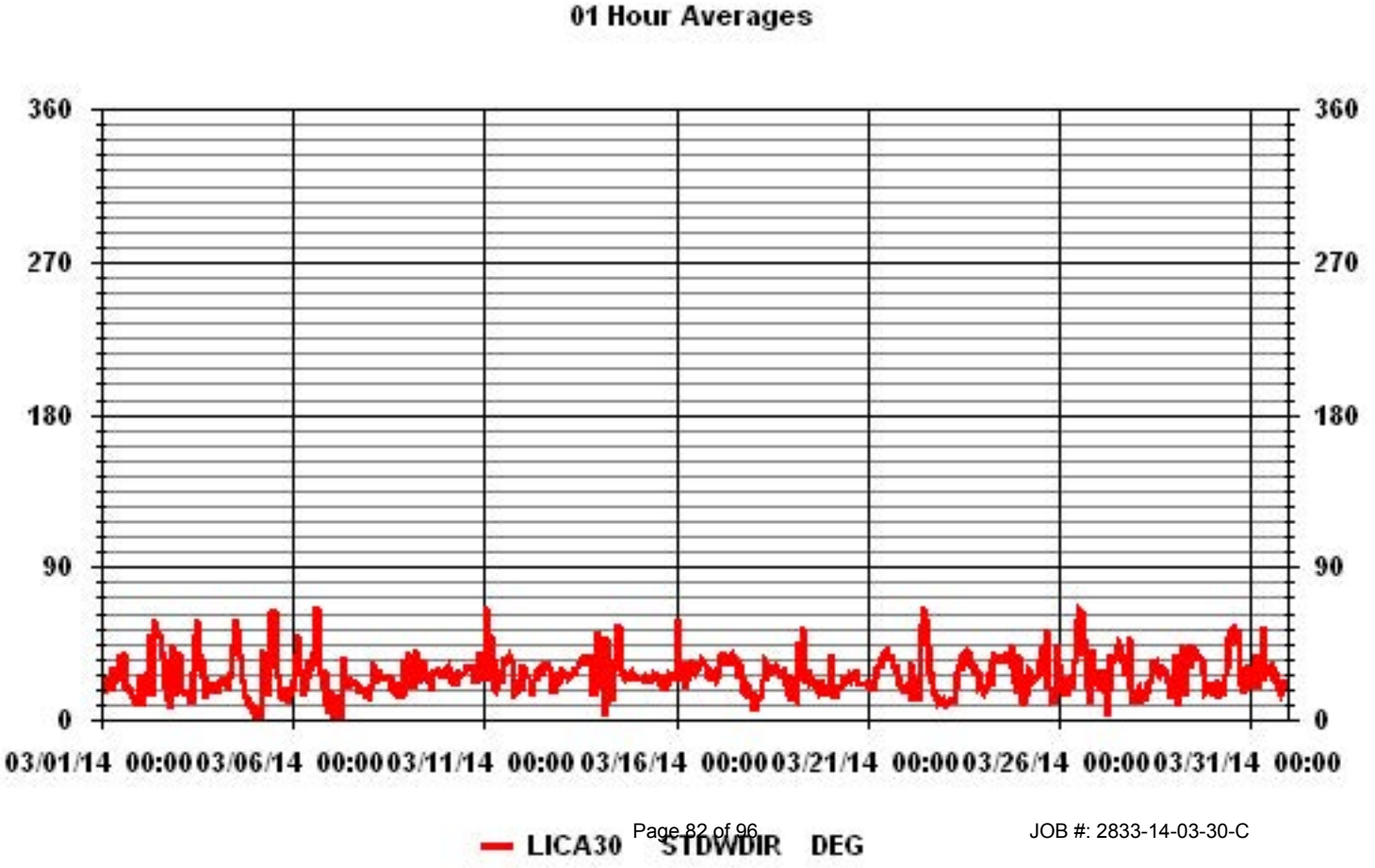
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY									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

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: February 5, 2014

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS



JOB #: 2833-14-03-30-C

Calibration Reports

Sulphur Dioxide

API 100E SO2 Analyzer Calibration

Date:	26-Mar-14	**Start/End Time (mst):**	8:25/11:18
Company:	LICA	**Calibration Purpose:**	Monthly
Station Name/Location:	Maskwa	**Converter Make & Model:**	NA
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	SO2	**Cal Gas Expiry Date:**	29-Dec-16

Analyzer:

Serial Number:	508	**Range ppb:**	1000
Last Calibration Date:	14-Feb-14	**As Found C.F.**	1.018
Previous Cal High Point C.F.:	1.000	**New C.F.:**	1.005

	As found:	As left:
SLOPE:	1.228	1.247
OFFSET:	79.1	77.0
HVPS:	491	491
RCELL TEMP:	50	50.0
BOX TEMP:	31.6	31.0
PMT TEMP:	7.7	7.7
IZS TEMP:	45	45.0
TEST:	NA	NA
STABIL:	0.2	0.2
PRES:	23.5	23.5
SAMP FL:	573	573
PMT:	70.7	70.7
NORM PMT:	80.9	80.9
UV LAMP:	2776	2776
LAMP RATIO:	92.4	92.4
STR. LGT	48.6	48.6
DRK PMT:	11.8	11.8
DRK LMP:	1.7	1.7
Internal Span:	251	253.8

Calibrator:

Flow Meter ID's:	NA
Make & Model:	Environics 6100
Serial #:	4760
Cal Gas Cylinder I.D. # :	BAL3165
Cal Gas Conc. (ppm):	49.7

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	5000	80	5080
mid	5000	40	5040
low	5000	20	5020

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	-1.0	NA
adjusted zero	5000	0.0	5000	0	0.3	NA
as found high	4995	79.80	5075	781.5	767.9	1.018
adjusted high	4995	79.80	5075	781.5	781.1	1.001
mid	4995	39.80	5035	392.9	391.9	1.003
low	4995	20.00	5015	198.2	196.5	1.010
calibrator zero	4995	0.00	4995	0	0.3	NA
					Average C.F.=	1.005

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.000**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.06%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-1.81%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

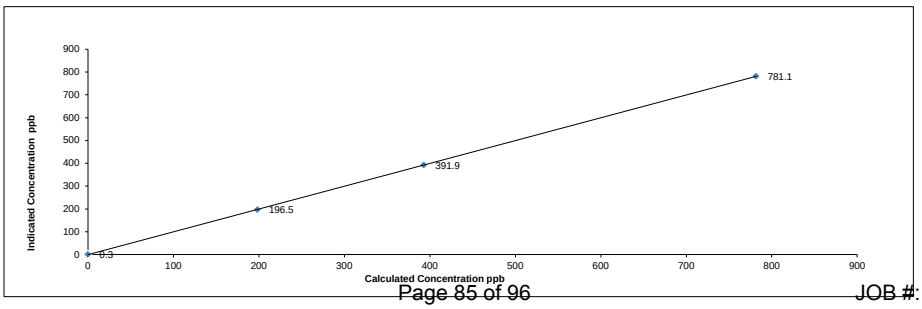
****run converter effeciency test immediately following zero adjust****

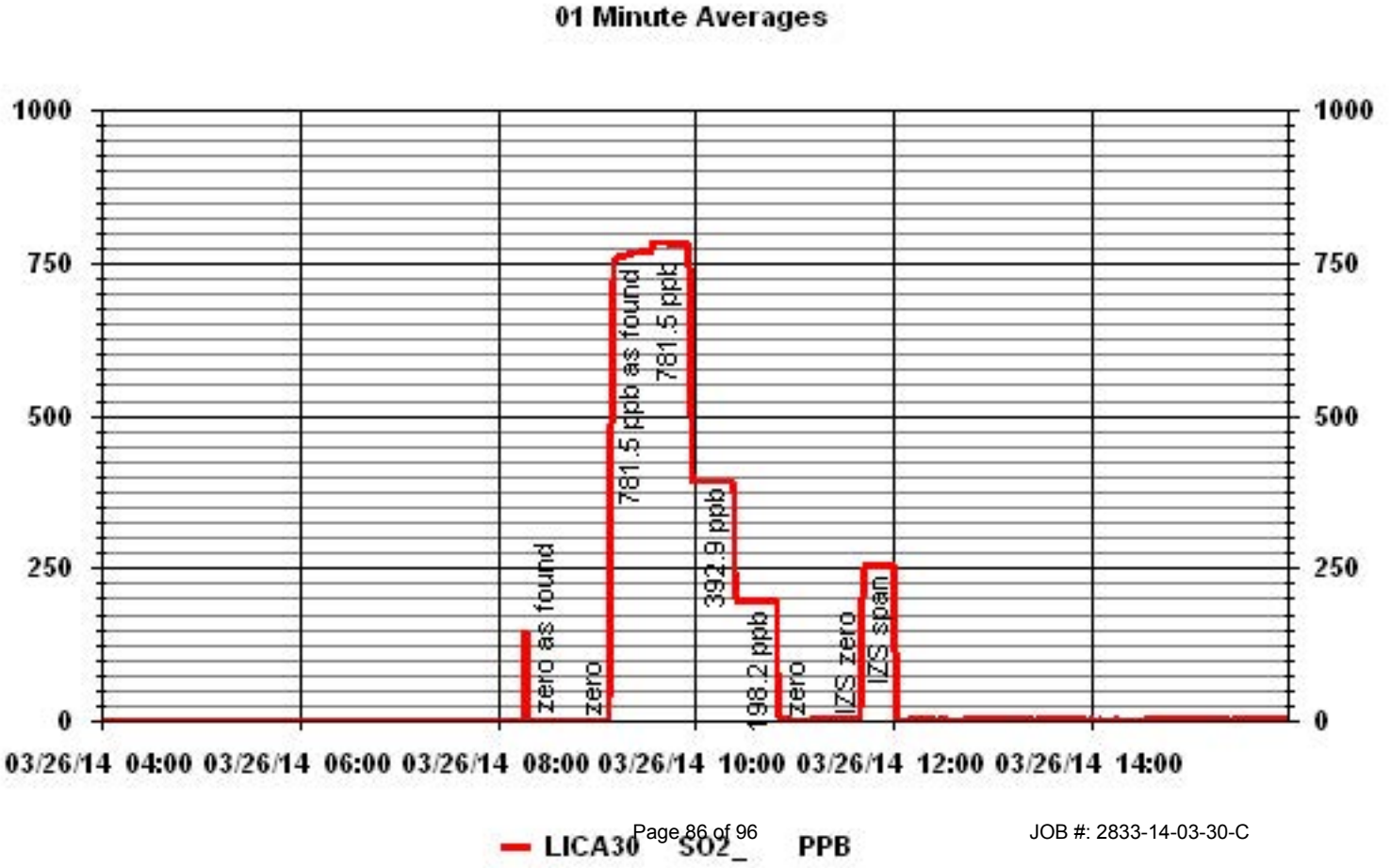
SO_2 High Point gas concentration:	781.1	Time gas run (mst):	na
Zero corrrected analyzer response:	na		

Comments:

Routine monthly calibration and filter change completed. No issues.

API 100E SO2 Analyzer Calibration





JOB #: 2833-14-03-30-C

Hydrogen Sulphide

API 101E H2S Analyzer Calibration

Date:	26-Mar-14	**Start/End Time (mst):**	8:25/11:18
Company:	LICA	**Calibration Purpose:**	Monthly
Station Name/Location:	Maskwa	**Converter Make & Model:**	NA
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	H2S	**Cal Gas Expiry Date:**	29-Dec-15

Analyzer:

Serial Number:	511	**Range ppb:**	100
Last Calibration Date:	14-Feb-14	**As Found C.F.**	1.000
Previous Cal High Point C.F.:	1.001	**New C.F.:**	1.000

	As found:	As left:
SLOPE:	1.156	1.158
OFFSET:	31.6	30.6
HVPS:	584	584
RCELL TEMP:	50	50
BOX TEMP:	34.4	33.2
PMT TEMP:	7.9	7.9
IZS TEMP:	45	45
TEST:	314.5	314.5
STABIL:	0.2	0.2
PRES:	28.8	28.8
SAMP FL:	644	644
PMT:	57.5	57.5
NORM PMT:	31.7	31.7
UV LAMP:	3398.6	3398.6
LAMP RATIO:	94.4	94.4
STR. LGT	18.2	18.2
DRK PMT:	29.5	29.5
DRK LMP:	6.4	6.4
Internal Span:	49.59	48.64

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	831
Cal Gas Cylinder I.D. # :	BLM005049
Cal Gas Conc. (ppm):	10.1

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	5000	40	5040
mid	5000	20	5020
low	5000	11	5011

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	-0.4	NA
adjusted zero	5000	0.0	5000	0	0.0	NA
as found high	4996	39.80	5036	79.8	79.1	1.010
adjusted high	4996	39.80	5036	79.8	79.9	1.000
mid	4996	19.80	5016	39.9	39.9	1.000
low	4996	11.00	5007	22.2	22.2	1.001
calibrator zero	4996	0.00	4996	0	-0.1	NA
					Average C.F.=	1.000

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.999**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.02%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**0.14%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

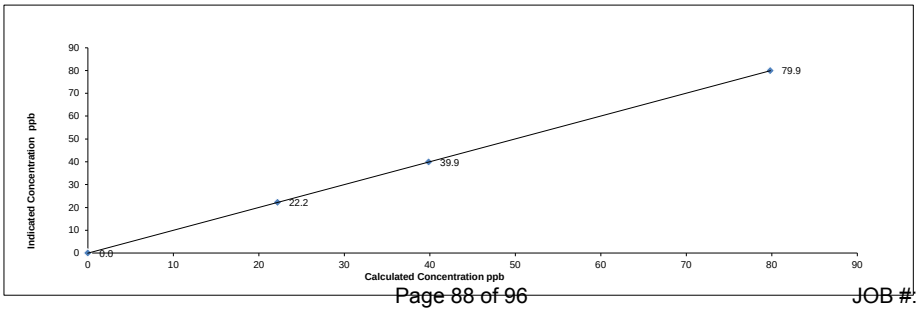
****run converter effeciency test immediately following zero adjust****

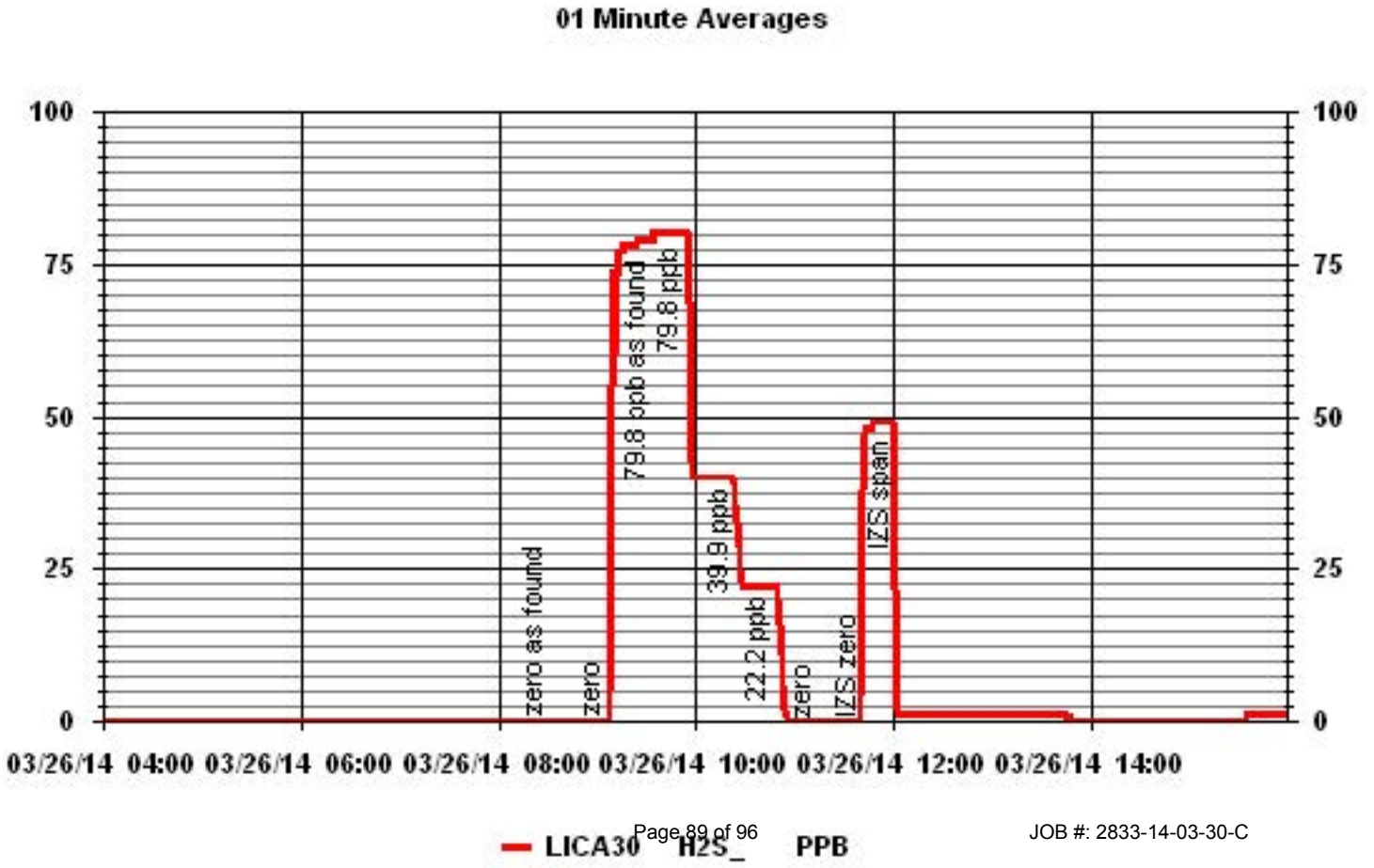
SO_2 High Point gas concentration:	79.9	Time gas run (mst):	na
Zero corrrected analyzer response:	na		

Comments:

Routine monthly calibration and filter change completed. No issues.

API 101E H2S Analyzer Calibration





JOB #: 2833-14-03-30-C

Total Hydrocarbons

Thermo 51C THC Analyzer Calibration

Date:	26-Mar-14	**Start Time (mst):**	11:28
Company:	LICA	**End Time (mst):**	14:08
Station Name/Location:	Maskwa	**Calibration Purpose:**	Monthly
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	7-Nov-21

Analyzer:

Serial Number:	436609738	**Range ppm:**	50
Last Calibration Date:	14-Feb-14	**As Found C.F.**	1.010
Previous Cal High Point C.F.:	0.999	**New C.F.:**	1.009

		As found:	As left:
	H_2 cylinder (psi):	2000	2000
	H_2 cylinder reg set (psi):	25	25
	Span Cylinder (psi):	1650	1650
	Span Cylinder Reg Set (psi):	27	27
	Zero Air Gen Pressure:	32	32
	measurement alarms:	none	none
	service alarms:	none	none
FID status:	cnt:	2531	7568
	rng:	1	1
	try:	3	3
	flm:	178.8	180.2
	det:	125.6	125.2
Oven Readings:	Flame:	178	180
	Filter:	125	125
	Base:	125	125
	Pump:	7.52	7.48
Voltages:	+5	4.9	4.9
	+15	14.8	14.8
	-15	-15.0	-15.0
	Internal Span:	33.1	32.8

Calibrator:

Flow Meter ID's:	NA	
Make & Model:	API 700	
Serial #:	831	
Cal Gas Cylinder I.D. # :	LL36542	
CH_4/C_3H_8 Cylinder Conc. (ppm):	609.0	201.0
CH_4 as propane/total CH_4 equivilants (ppm):	552.8	1161.8

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	2000	0	2000
high	2000	65	2065
mid	2000	33	2033
low	2000	15	2015

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppm)	(ppm)	
as found zero	2000	0.00	2000	0	-0.38	NA
adjusted zero	2000	0.00	2000	0	-0.01	NA
as found high	1997	65.00	2062	36.62	36.25	1.010
adjusted high	1997	65.00	2062	36.62	36.66	0.999
mid	1997	33.00	2030	18.89	18.60	1.015
low	1997	15.00	2012	8.66	8.53	1.014
calibrator zero	1997	0.00	1997	0	0.01	NA
					Average C.F.=	1.009

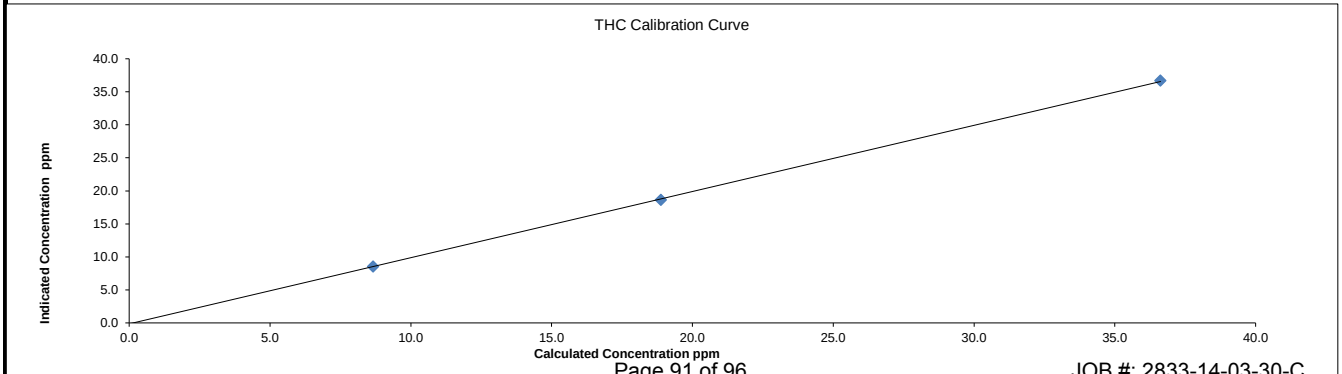
Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.998**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.242%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-1.10%**	**± 15%**	**PASS**

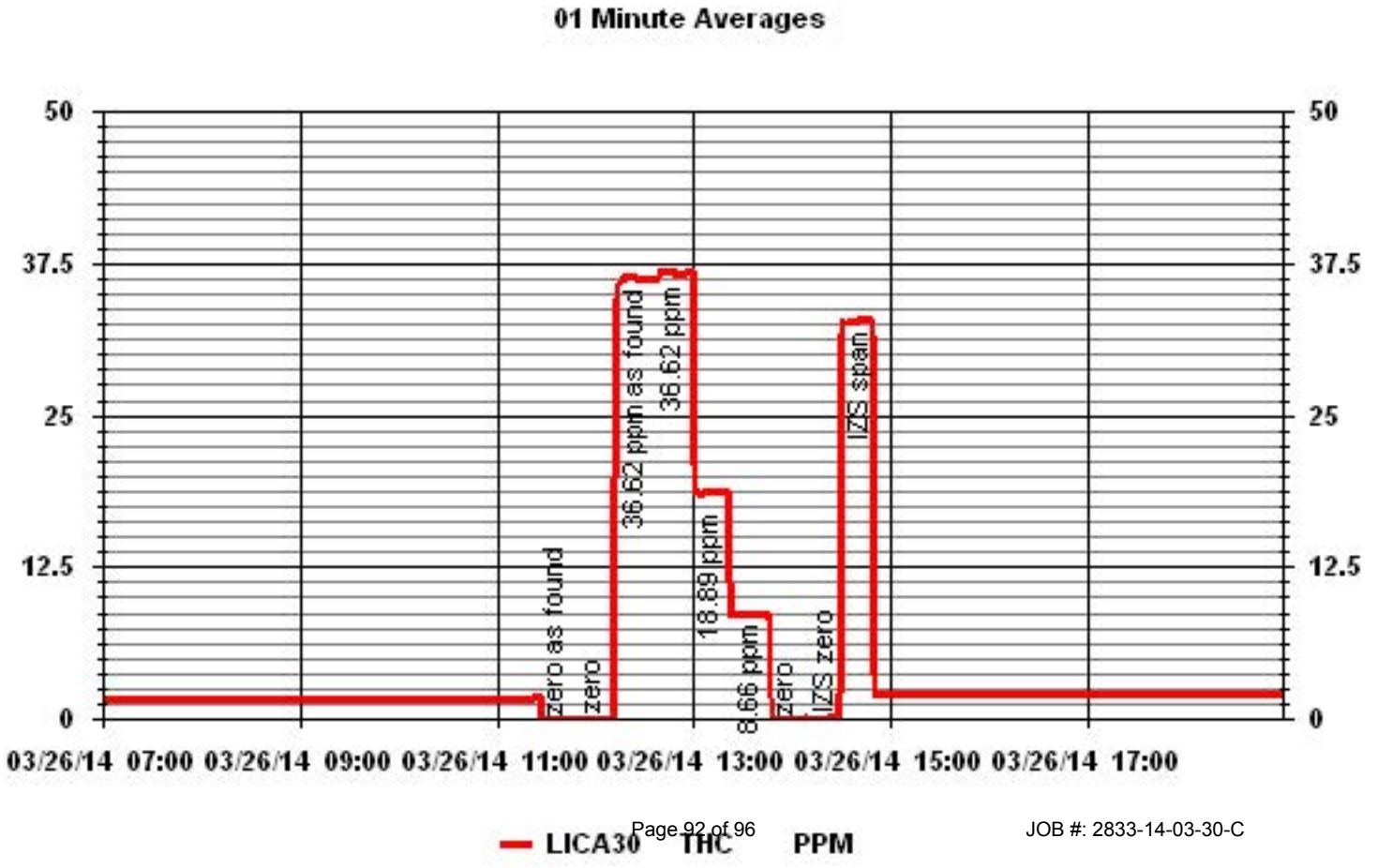
Comments:

Routine monthly calibration and filter changed. No issues.

Thermo 51C THC Analyzer Calibration



JOB #: 2833-14-03-30-C



JOB #: 2833-14-03-30-C

Nitrogen Dioxide

API 200E NOx Analyzer Calibration

Date:	25-Mar-14	**Start Time (mst):**	9:12
Company:	LICA	**End Time (mst):**	13:47
Station Name/Location:	Maskwa	**Calibration Purpose:**	Monthly
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	29-Dec-16

Analyzer Serial Number:	594
Last Calibration Date:	14-Feb-14
Range ppb:	1000

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	0.997	1.001
NOx=	1.001	1.000
NO_2=	0.991	0.991

As found:		**As left:**	
NOx SLOPE:	1.052	NOx SLOPE:	1.053
NOx OFFS:	0.8	NOx OFFS:	0.8
NO SLOPE:	1.050	NO SLOPE:	1.049
NO OFFS:	0.5	NO OFFS:	0.5
TEST:	NA	TEST:	NA
SAMP FLW:	451	SAMP FLW:	452
OZONE FL:	78	OZONE FL:	79
PMT:	17.6	PMT:	1054.2
NORM PMT:	11.3	NORM PMT:	1184.4
AZERO:	15.7	AZERO:	15.1
HVPS:	750	HVPS:	750
RCELL TEMP:	49.9	RCELL TEMP:	49.8
BOX TEMP:	33.8	BOX TEMP:	31.3
PMT TEMP:	6.7	PMT TEMP:	6.6
IZS TEMP:	42	IZS TEMP:	42.1
MOLY TEMP:	315.3	MOLY TEMP:	314.1
RCEL:	4.9	RCEL:	5.1
SAMP:	26.4	SAMP:	26.7
Internal Span:	547.4/541.7	Internal Span:	543.8/538.3

Calibrator Flow Targets:

Make & Model:	Environics 6100
Serial #:	4760
Cal Gas Cylinder I.D. # :	BAL3165
NO Cylinder Conc. (ppm):	48.9
NOx Cylinder Conc. (ppm):	49.0

point	diluent (cc/min)	cal gas (cc/min)	O_3 setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	5000	80	550.00	5080
mid	5000	40	275.00	5040
low	5000	20	140.00	5020

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	5000	0.0	5000	0	0	0.5	0.1	NA	NA
adjusted zero	5000	0.0	5000	0	0	0.6	0.2	NA	NA
as found high	4996	79.80	5076	768.8	770.4	772	770	0.997	1.001
adjusted high	4996	79.80	5076	768.8	770.4	769	771	1.001	1.000
mid	4996	39.80	5036	386.5	387.3	386	386	1.004	1.004
low	4996	19.90	5016	194.0	194.4	194	194	1.001	1.002
calibrator zero	4996	0.00	4996	0	0	0.0	0.0	NA	NA
							Average C.F.=	1.002	1.002

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO_2	NO drop	NO_2 increase	NO_2 C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4996	79.80	5076	0.0	771.1	771.6	0.6	0.6	-0.4	
as found NO_2	4996	79.80	5076	550.0	187.2	776.8	589.8	583.9	589.2	0.991
adjusted NO_2	4996	79.80	5076	275.0	187.2	776.8	589.8	583.9	589.2	0.991
gpt mid	4996	79.80	5076	140.0	476.0	776.9	301.2	295.1	300.6	0.982
gpt low	4996	79.80	5076	0.0	617.2	776.0	158.8	153.9	158.2	0.973
									Average NO_2 C.F.=	0.982

Linear Regression/Calibration Results:

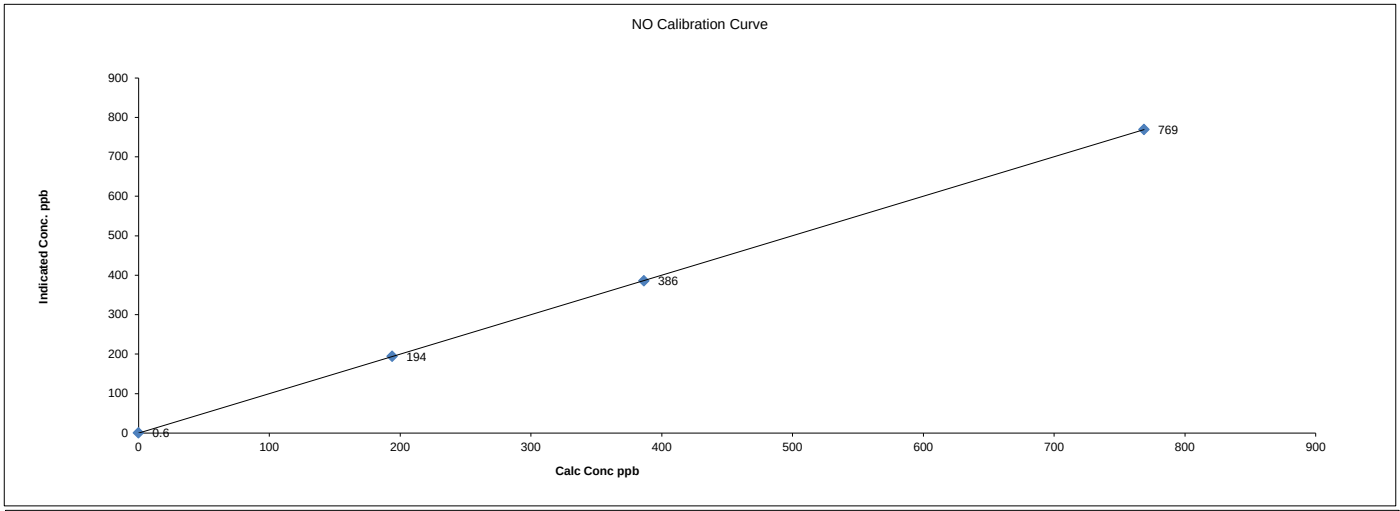
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.001**	**1.000**	**0.991**	**0.85-1.15**
b (Intercept as % of full scale)=	**-0.03%**	**0.02%**	**-0.11%**	**± 3% F.S.**
% change in C.F. from last cal=	**0.37%**	**-0.10%**	**0.00%**	**+/-15%**
NO2 converter effeciency			**101.8%**	**>85%**

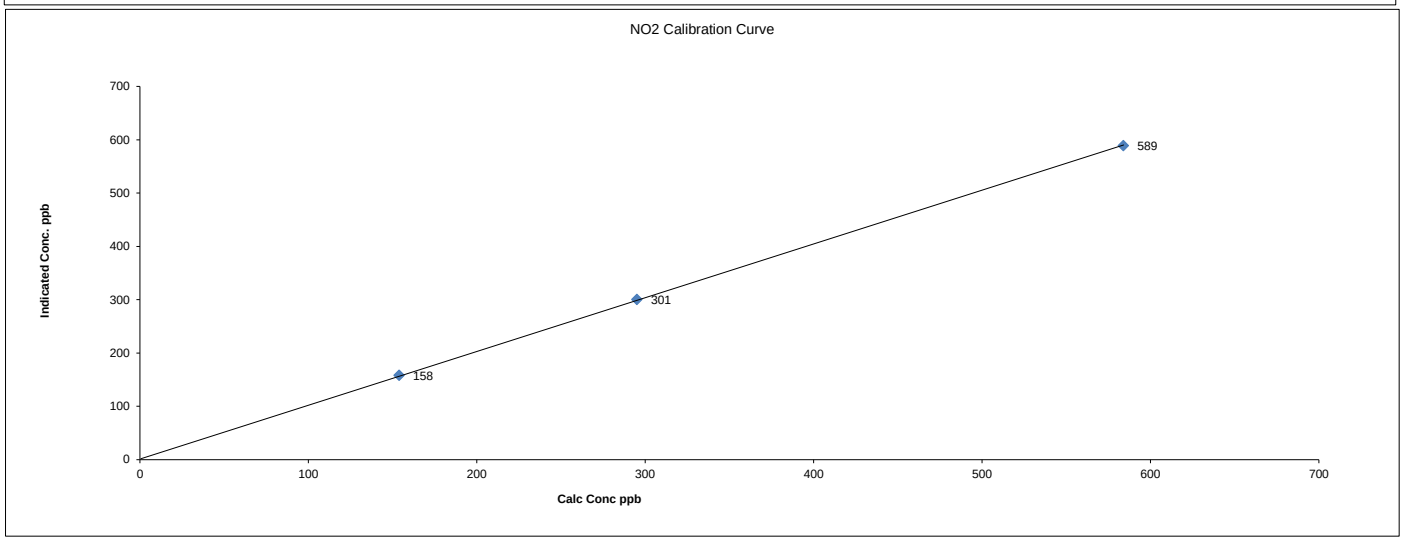
Comments:

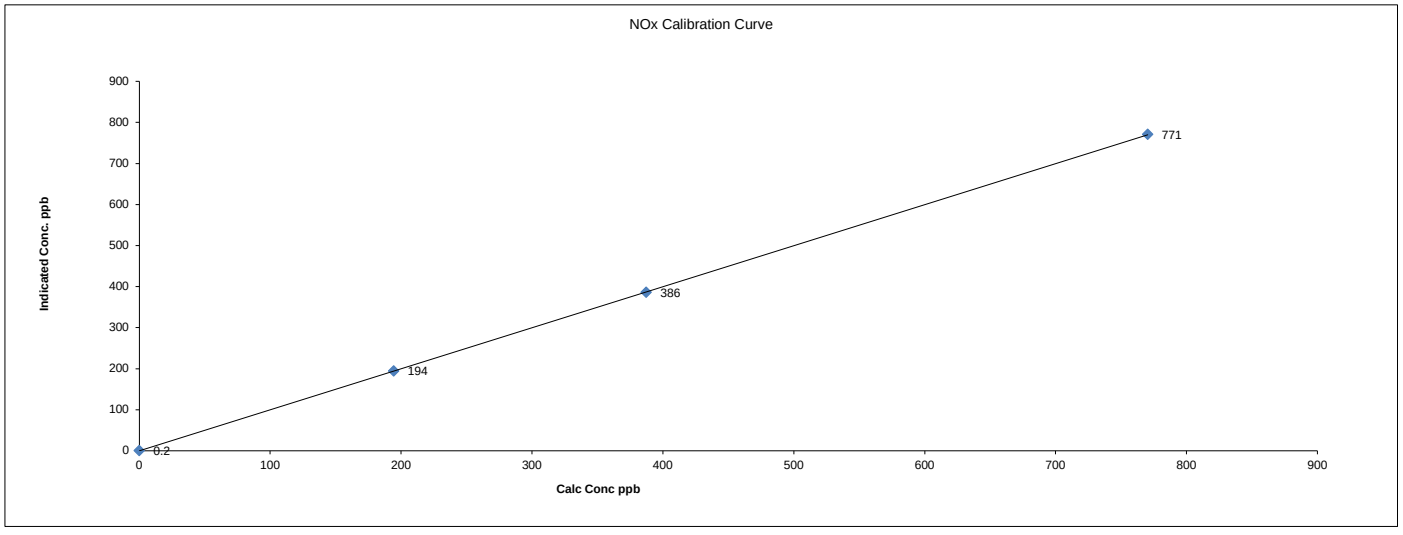
Routine monthly calibration & filter change completed. No issues.

Date:	25-Mar-14	**Start Time (mst):**	9:12
Company:	LICA	**End Time (mst):**	13:47
Station Name/Location:	Maskwa	**Calibration Purpose:**	Monthly
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	29-Dec-16

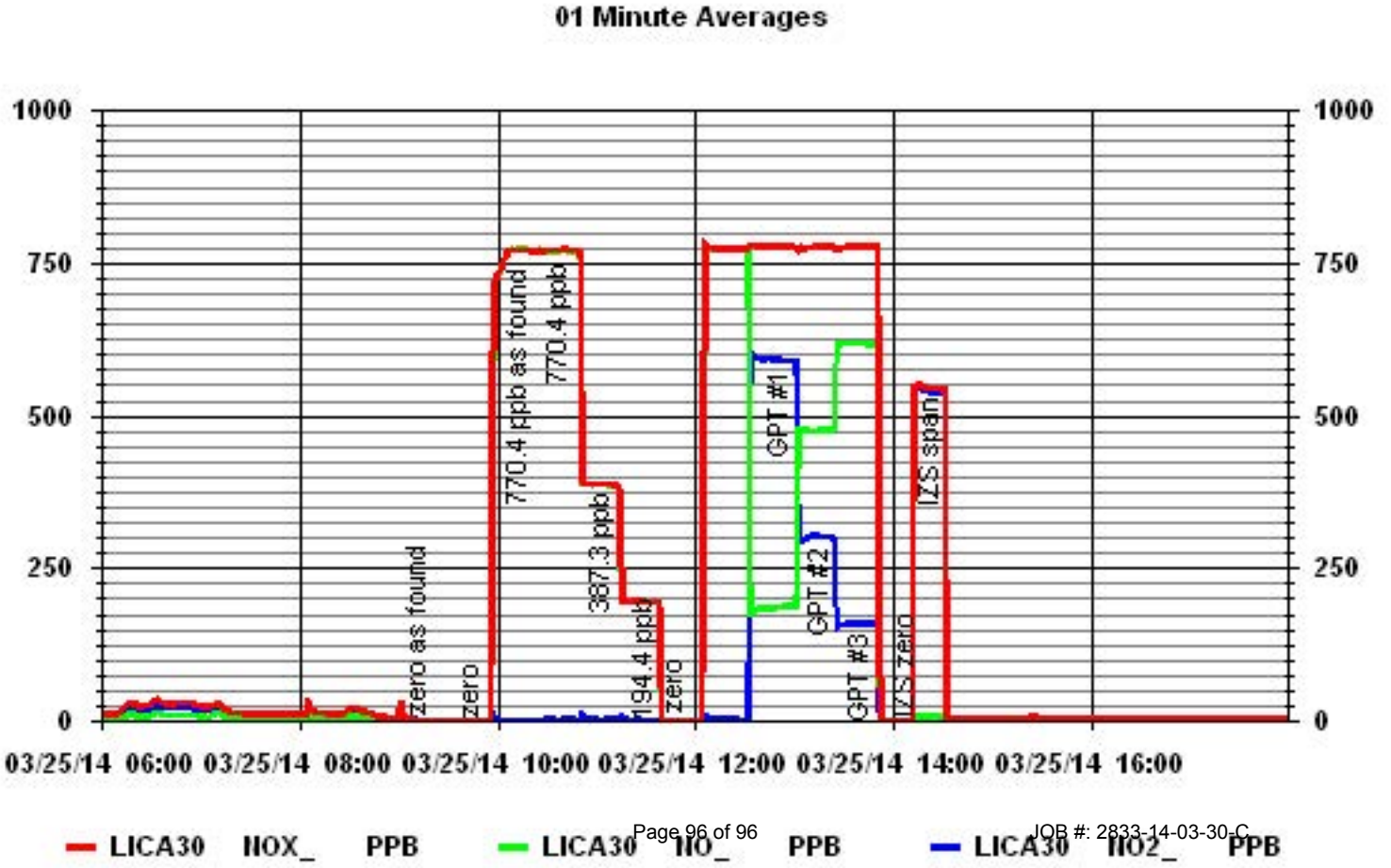
API 200E NOx Analyzer Calibration







JOB #: 2833-14-03-30-C


01 Minute Averages
1000
750
500
250
0
zero as foumd
zero
770.4 ppb as found
770.4 ppb
387.3 ppb
194.4 ppb
zero
GPT #1
GPT #2
GPT #3
IZS zero
IZS span
03/25/14 06:00
03/25/14 08:00
03/25/14 10:00
03/25/14 12:00
03/25/14 14:00
03/25/14 16:00
LICA30 NOX_ PPB
LICA30 NO_ PPB
LICA30 NO2_ PPB

Lakeland Industry & Community Association

St. Lina Monitoring Site
Ambient Air Monitoring
Data Report
For
March 2014

Prepared By:

April 30, 2014

Lakeland Industry & Community Association
St. Lina
Ambient Air Monitoring

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Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: St. Lina
Data Period: March 2014

The monthly ambient data report:

- Prepared by Ernestine Tangang
- Reviewed by Lily Lin

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:

- AIR SOP-00211
- AIR SOP-00209
- AIR SOP-00213
- AIR SOP-00214
- AIR SOP-00208
- AIR 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 – March 2014

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	0.40	27	12	8	16.7	254(WSW)	3.2	7	98.3
H2S (PPB)	10	3	0	0	1.43	3	VAR	VAR	VAR	VAR	2.7	9	91.0
THC (PPM)	-	-	-	-	2.16	3.9	7	12	17.7	213(SSW)	2.6	3	94.8
OZONE (PPB)	82	-	0	-	38.13	53	12	17	10.8	239(WSW)	46.3	29	98.5
NOx (PPB)	-	-	-	-	2.47	13.1	27	5	7.4	31 NNE)	6.8	8	96.1
NO (PPB)	-	-	-	-	0.58	5.5	3	9	17.5	266(W)	2.6	3	96.1
NO_2 (PPB)	159	-	0	-	1.88	12.7	27	5	7.4	31(NNE)	6.3	8	96.1
PM2.5 (ug/m3)	-	30	-	0	3.64	39	21	10	8.2	353(N)	13.8	8	84.5
TEMPERATURE (DEGREE C)	-	-	-	-	-7.05	10.3	12	15	16.1	255(WSW)	5.2	12	98.9
BP (MILLIBAR)	-	-	-	-	925.2	943	1	VAR	VAR	VAR	941.4	1	98.9
RH (%)	-	-	-	-	54.2	86	18	4	9.2	274(W)	69.7	14	98.9
PRECIPITATION (MM)	-	-	-	-	0.0	0.3	4	12	7.7	112(ESE)	0.0	ALL	99.2
VECTOR WS (KPH)	-	-	-	-	10.86	36.6	1	2	-	112(ESE)	18.6	13	98.9
VECTOR WD (DEGREES)	-	-	-	-	268(W)	-	-	-	-	-	-	-	98.9

VAR-VARIOUS

General Monthly Summary

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

AQM STATION – LICA – St. Lina

Sulphur Dioxide (PPB)
Analyzer make / model - API 100E, S/N: 468
The analyzer was working well throughout the month. The monthly calibration was performed on March 7th. The inlet filter was changed before the calibration was started. Another full calibration was performed on March 10th. The analyzer was put into Maintenance mode on March 12th for the Ozone calibration. Nine hours of data are missing due to power failures this month. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)
Analyzer make / model - API 101E, S/N: 510
The monthly calibration was performed on March 7th. The inlet filter was changed before the calibration was started. The analyzer spanned high after the calibration was completed. The analyzer was recalibrated on March 10th. The daily zero result was outside the limited range on March 21st due to loosen wire. The issue was fixed on March 22nd following a post repair calibration. Data was invalidated back to the last good daily zero/span check which was March 20th. A total of 54 hours of data was discarded. Another full calibration was performed on March 27th to verify the analyzer's functionality, and the result was good. Nine hours of data are missing due to power failures this month. Hourly data collected on March 10th hour 9 was invalidated as the analyzer was recovering from the power failure. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – St. Lina

Total Hydrocarbon (PPM)
Analyzer make / model – Thermo 51C-LT, S/N: 04366-09739
The analyzer read low during the hour 6 to hour 10 on March 4th, and the functionality went back to normal after hour 10. Reason unknown. Data during this period of time was invalidated. The analyzer started reading below 1.5 ppm background concentration on March 10th. A 3- point calibration was completed on March 11th. No issue was found. 23 hours of data was invalidated as the data was below 1.5 ppm. The THC channel was put into the Maintenance mode while troubleshooting was performed on the NO2 analyzer on March 17th. Nine hours of data are missing due to power failures this month. Data collected on March 7th at hour 12 went above the full scale. The real reading may be higher than the indicated. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)
Analyzer make / model - API 200E, S/N: 592
The monthly calibration was performed on March 11th. The inlet filter was changed before the calibration was started. A trip was made on March 17th to verify the analyzer's functionality as the daily zero result showed its downwind drift. Following the as found points check on March 17th, maintenance was performed, including replacing the exhaust pump, cleaning the reaction cell, cleaning the valve for the zero/span system, and cleaning tubing. The orifices were cleaned and the sinters were replaced as well. The analyzer was allowed time to stabilize. A post-repair calibration was completed on March 18th. The zero value was adjusted again on March 27th following an as found points check. Nine hours of data are missing due to power failures this month. Hourly data collected on March 10th hour 9 was invalidated as the analyzer was recovering from the power failure. Data was corrected using daily zero information.

Ozone (PPB)
Analyzer make / model - Thermo 49i, S/N: 1002240371
The analyzer was working fine throughout the month. The monthly calibration was performed on March 12th. Nine hours of data are missing due to power failures this month. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – St. Lina

Particulate Matter 2.5 (UG/M3)
Analyzer make / model – Thermo Teom 1405F, S/N: 1405A207691003
Two Teom audits were performed this month: one was one March 12th and the other was on March 28th. The Teom filter and the sample filter were replaced on March 11th. The unit failed the leak check on March 12th. Performed troubleshooting by replacing the O-rings in switching valve. After the part replacement, the unit passed the audit requirements. The unit started recording many negative readings after the audit on March 12th. The filters were replaced again on March 17th to improve the analyzer's functionality. The PM2.5 channel was put into the Maintenance mode on March 18th from hour 10 to hour 15 to monitor the unit functionality. No issue was detected. 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. Ninety-eight hourly data were invalidated as the data were below –3 ug/m3. Nine hours of data are missing due to power failure this month.

Temperature (Degree C)
Analyzer make / model – Met One 060
The temperature sensor was working well throughout the month. Nine hours of data are missing due to power failure this month.

Barometric Pressure (Millibar)
Analyzer make / model - Met One 092
The BP sensor was working well throughout the month. Nine hours of data are missing due to power failure this month.

Relative Humidity (%)
Analyzer make / model - Met One 083
The RH sensor was working well throughout the month. Nine hours of data are missing due to power failure this month.

General Monthly Summary

AQM STATION – LICA – St. Lina

Precipitation (MM)
Analyzer make / model - Met One 387
No issues were recorded this month. Nine hours of data are missing due to power failure this month.

Vector Wind Speed (KPH) & Vector Wind Direction (DEG)
System make / model –MetOne 50.5H Sonic, S/N: H12635
The wind system is reported as vector wind speed and vector wind direction. The last wind system calibration was performed on June 12th, 2012 by the manufacturer.
The wind system was working well throughout the month. Nine hours of data are missing due to power failure this month.
Four hours of wind speed maximum data were invalidated as the readings were above the full scale.

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 glass manifold was cleaned on March 11th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

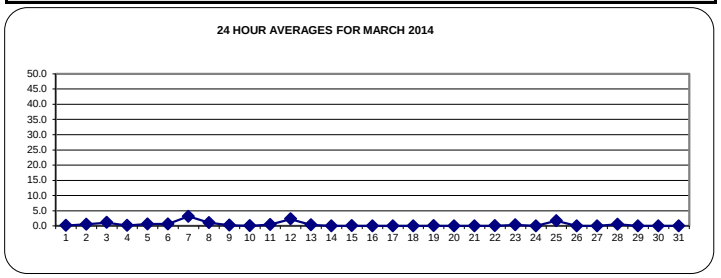
SULPHUR DIOXIDE (SO2) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	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	S	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0.1	24
2	0	1	1	1	0	1	0	1	0	1	0	0	0	0	0	0	1	1	1	1	1	2	S	0	2	0.6	24
3	0	0	0	0	0	0	1	2	2	2	3	3	2	3	2	2	2	1	1	0	0	S	0	0	3	1.1	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	2	2	0.2	24
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	S	0	0	0	0	1	0.7	24
6	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	S	0	0	0	1	1	1	0.6	24
7	1	1	1	1	1	2	2	2	2	1	C	C	C	C	0	3	5	S	8	10	8	6	4	2	10	***3.2***	24
8	1	1	1	1	1	1	2	1	1	1	0	1	1	1	1	1	S	1	1	1	1	1	1	2	2	1.0	24
9	2	1	0	0	0	0	0	0	1	1	1	0	0	0	0	S	0	0	0	0	0	0	0	0	2	0.3	24
10	0	0	0	0	0	0	0	0	P	1	C	C	C	C	C	0	0	0	0	0	0	0	0	0	1	0.1	23
11	0	0	0	0	0	0	0	0	0	0	0	0	0	S	9	Y	0	0	0	0	0	0	0	0	9	0.4	23
12	0	0	0	0	0	0	0	1	***27***	1	0	0	Y	Y	Y	1	1	1	1	3	3	4	3	2	***27***	2.3	21
13	1	1	1	1	1	2	S	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
14	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
15	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.0	24
16	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17	0	0	0	0	0	0	0	S	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	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
19	0	0	0	0	0	S	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
20	0	0	0	0	S	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	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
22	0	0	S	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
23	0	S	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
24	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.0	24
25	0	0	0	0	0	0	0	0	P	P	P	P	P	P	P	P	4	5	4	4	4	4	S	0	5	1.7	16
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	0	0	0	0	0.0	24
28	0	0	0	0	0	0	0	0	0	1	6	2	0	0	0	0	0	0	0	S	1	1	1	0	6	0.5	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	0	0	0	0	0	0	0	0.0	24
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	2	1	1	1	1	2	2	2	27	2	6	3	2	3	9	3	5	5	8	10	8	6	4	2			
HOURLY AVG	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	1.3	0.4	0.5	0.3	0.1	0.2	0.5	0.3	0.4	0.3	0.6	0.7	0.6	0.7	0.4	0.3			

STATUS FLAG CODES

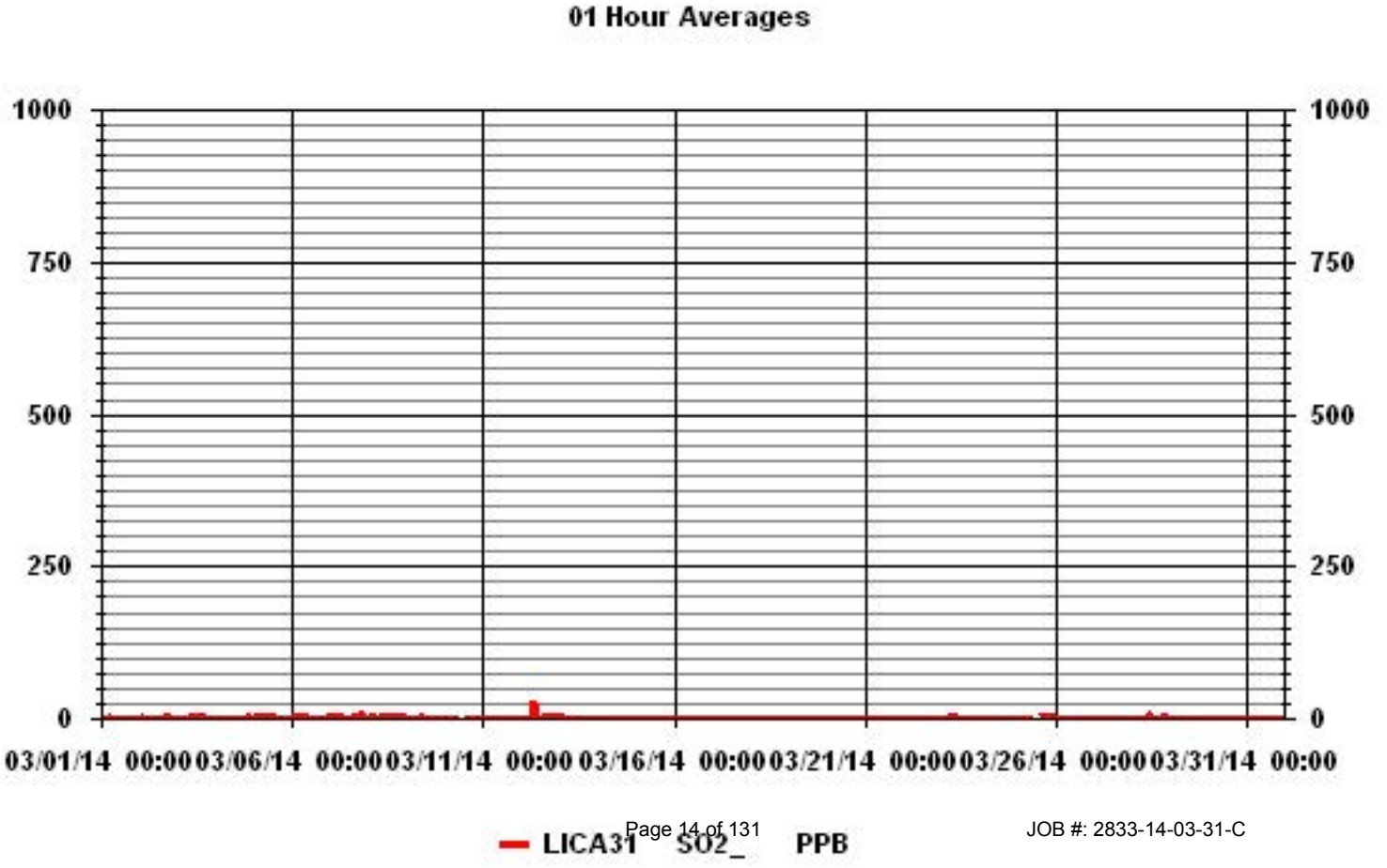
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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:	147					
MAXIMUM 1-HR AVERAGE:	27	PPB	@ HOUR(S)	8	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	3.2	PPB			ON DAY(S)	7
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		731	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		98.3	%
STANDARD DEVIATION:	1.43		MONTHLY AVERAGE:		0.40	PPB



JOB #: 2833-14-03-31-C

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

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	**S**	2	2	2	1	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	2	2	1	**S**	2	1.4	24
2	1	2	2	2	2	2	2	2	1	2	1	1	1	1	1	2	2	2	2	2	3	3	**S**	1	3	1.7	24
3	0	0	0	0	1	1	2	3	3	4	4	4	3	4	3	3	3	3	2	2	1	**S**	1	0	4	2.0	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	2	3	3	3	0.3	24
5	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	**S**	1	1	1	2	3	1.8	24
6	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	0	0	0	**S**	1	1	2	2	2	2	1.6	24
7	2	2	2	2	2	3	3	3	3	**C**	**C**	**C**	**C**	**C**	2	7	7	**S**	10	11	10	7	6	4	11	4.8	24
8	3	2	2	3	2	3	4	2	2	2	2	2	2	2	2	2	**S**	2	2	2	2	2	3	3	4	2.3	24
9	3	2	1	1	1	1	1	2	2	2	2	2	1	1	1	**S**	0	0	0	0	0	0	0	0	3	1.0	24
10	0	0	0	0	0	0	0	0	**P**	20	**C**	**C**	**C**	**C**	**C**	1	1	1	1	0	0	0	0	0	20	1.3	23
11	0	0	0	1	1	1	**S**	1	1	1	4	1	1	**Y**	**Y**	**Y**	11	0	0	0	0	1	1	0	11	1.3	21
12	0	0	0	0	0	0	0	17	***31***	21	1	1	**Y**	**Y**	**Y**	2	2	2	3	4	5	5	4	3	***31***	***4.8***	21
13	2	2	2	3	2	3	**S**	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	3	0.6	24
14	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
15	0	0	0	0	0	0	0	0	0	**S**	1	1	0	1	0	1	1	1	1	1	1	1	1	2	2	0.6	24
16	1	1	2	1	2	2	1	1	**S**	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	0.7	24
17	1	1	1	1	1	1	1	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
18	0	0	0	0	0	0	**S**	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
19	0	0	1	1	1	**S**	1	0	1	1	1	2	2	1	1	2	1	1	1	0	0	0	0	0	2	0.8	24
20	0	0	0	0	**S**	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	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
22	0	0	**S**	0	0	0	1	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
23	1	**S**	1	1	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	**S**	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	**S**	2	1.0	24
25	0	0	0	0	1	0	1	1	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	6	6	5	5	5	5	**S**	0	6	2.3	16
26	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	1	1	1	0.1	24
27	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	**S**	0	0	0	1	0.8	24
28	0	0	0	0	0	0	1	1	1	4	12	4	0	0	0	1	0	1	1	**S**	2	3	2	1	12	1.5	24
29	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0	0	0	**S**	0	0	4	0	0	4	0.7	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0.0	24
31	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	**S**	0	0	0	0	0	0	0	1	0.6	24
HOURLY MAX	3	2	2	3	2	3	4	17	31	21	12	4	3	4	3	7	11	6	10	11	10	7	6	4			
HOURLY AVG	0.7	0.7	0.8	0.9	0.9	0.9	1.1	1.5	2.1	2.5	1.5	1.1	0.7	0.7	0.7	1.0	1.3	0.8	1.1	1.1	1.3	1.4	1.0	0.8			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 369

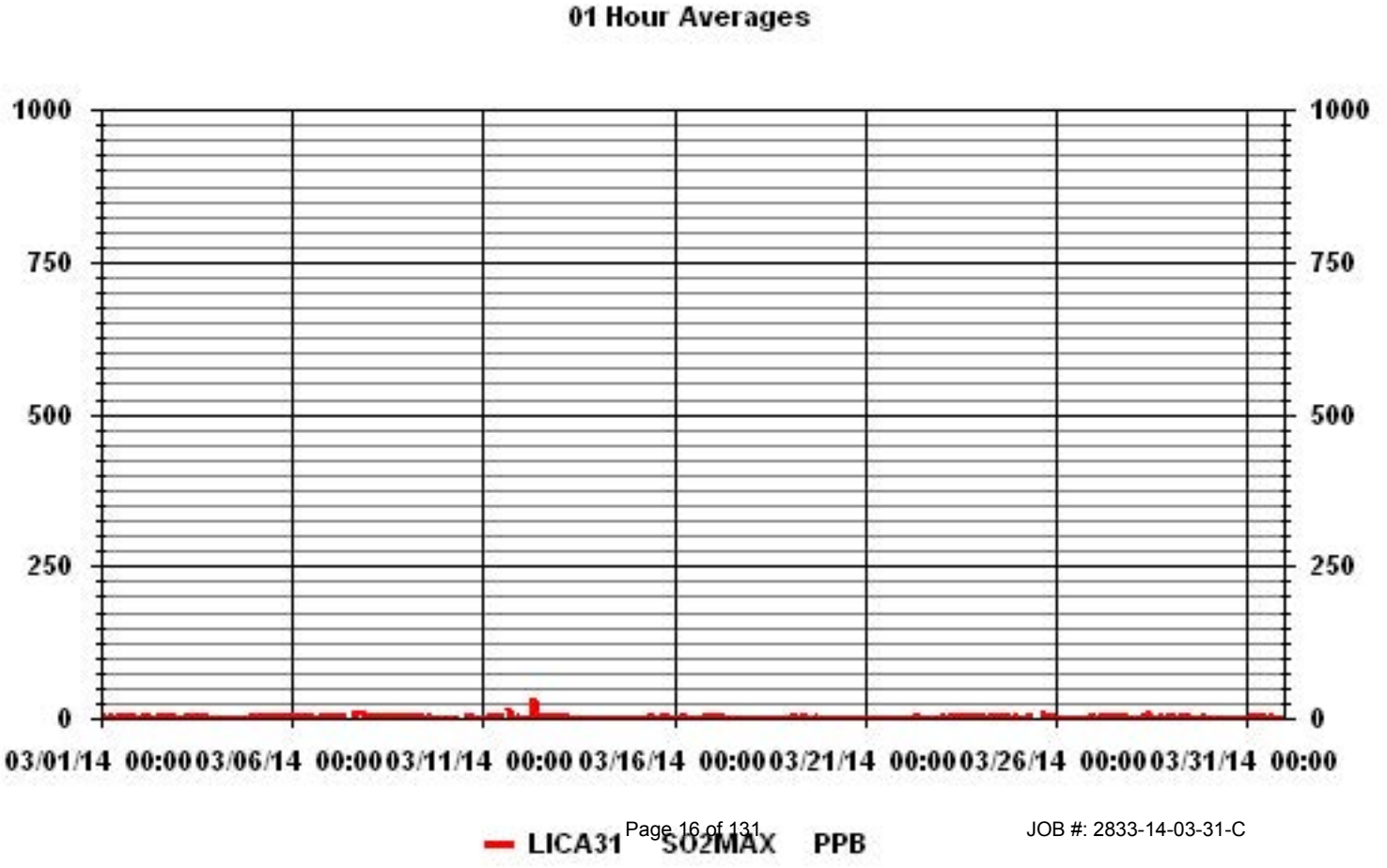
MAXIMUM INSTANTANEOUS VALUE: 31 PPB @ HOUR(S) 8 ON DAY(S) 12

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 729 HRS

MONTHLY CALIBRATION TIME: 10 HRS

STANDARD DEVIATION: 2.20



JOB #: 2833-14-03-31-C

LICA31
SO2_ / WDR Joint Frequency Distribution (Percent)

March 2014

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	4.63	3.91	4.63	3.33	3.18	5.50	1.88	3.62	6.95	8.98	9.85	8.69	11.01	7.82	8.69	7.10	99.85
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.14
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.63	3.91	4.63	3.33	3.18	5.50	1.88	3.62	6.95	8.98	9.85	8.84	11.01	7.82	8.69	7.10	

Calm : .00 %

Total # Operational Hours : 690

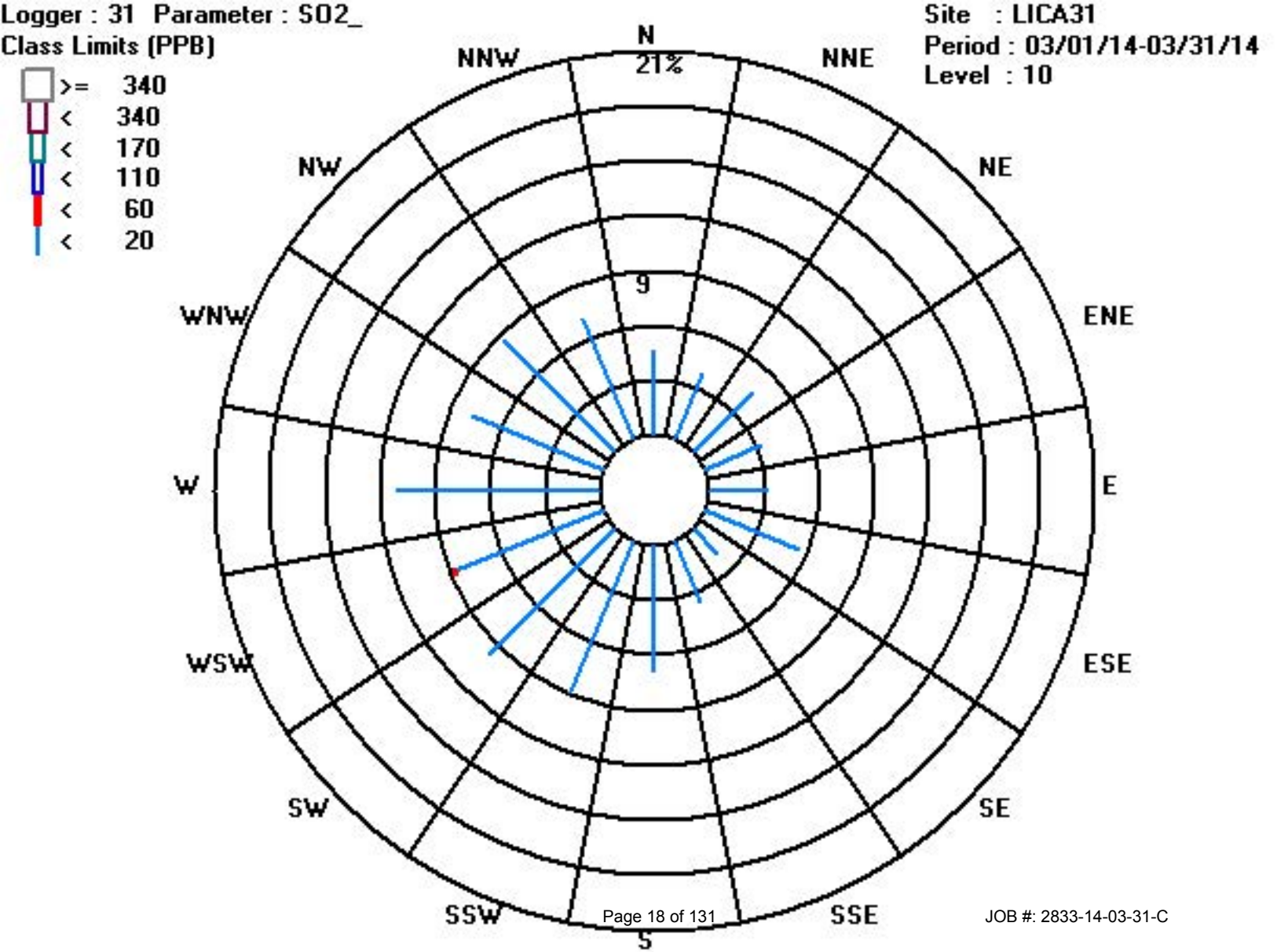
Distribution By Samples

Direction

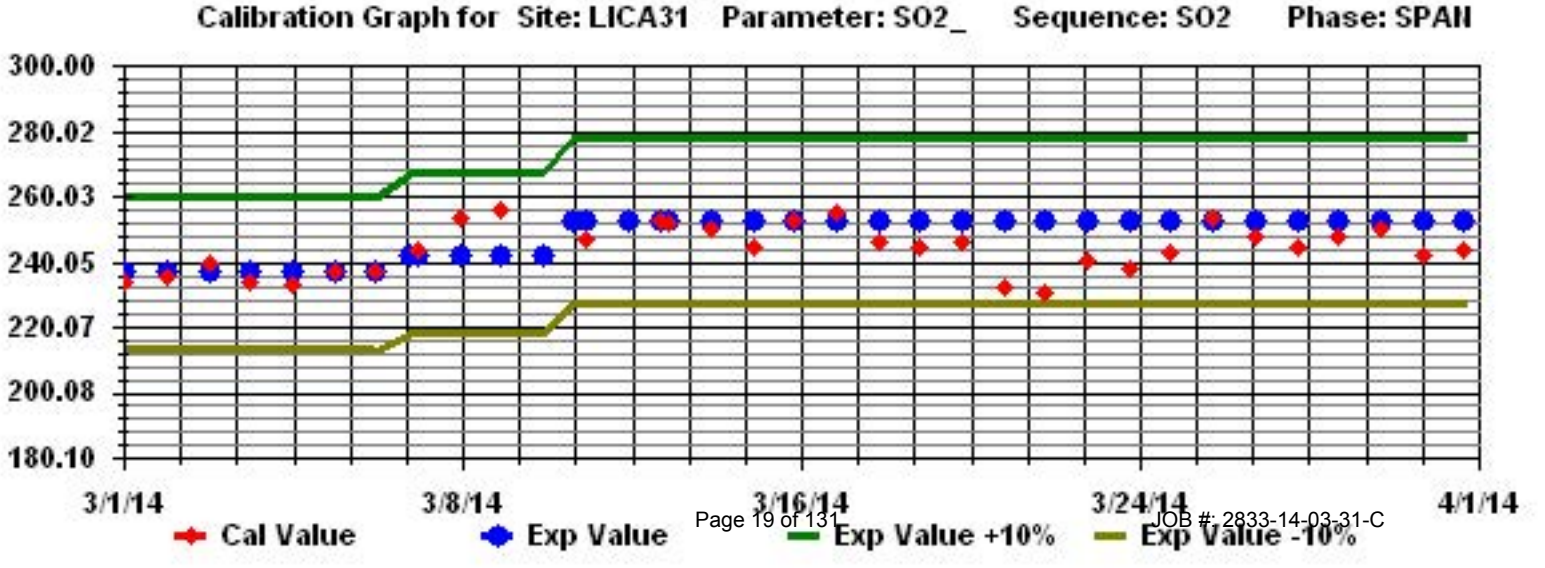
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	32	27	32	23	22	38	13	25	48	62	68	60	76	54	60	49	689
<	60												1					1
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	32	27	32	23	22	38	13	25	48	62	68	61	76	54	60	49	

Calm : .00 %

Total # Operational Hours : 690



JOB #: 2833-14-03-31-C


Calibration Graph for Site: LICA31 Parameter: SO2_ Sequence: SO2 Phase: SPAN
300.00
280.02
260.03
240.05
220.07
200.08
180.10
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

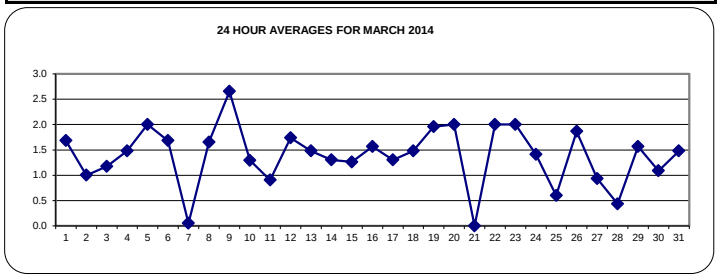
HYDROGEN SULPHIDE (H2S) hourly averages in ppb

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	S	2	1	1	2	1	1	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	S	2	1.7	24
2	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	2	1.0	24
3	2	2	2	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	S	1	1	2	1.2	24
4	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	2	2	2	1	2	S	2	2	2	2	1.5	24
5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2.0	24
6	2	2	2	2	2	2	2	2	2		2	2	2	2	2	2	2	2	S	1	1	0	1	0	2	1.7	23
7	0	0	0	0	1	0	0	0	0	0	C	C	C	C	0	0	0	S	0	0	0	0	0	0	1	0.1	24
8	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	1.7	24
9	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	S	2	2	2	2	2	2	2	2	*3*	*2.7*	24
10	2	2	2	1	1	2	1	1	P	R	C	C	C	C	C	2	1	1	1	1	1	1	1	1	2	1.3	22
11	1	1	1	1	1	0	1	1	0	1	1	1	1	S	Y	Y	1	1	1	1	1	1	1	1	1	0.9	22
12	1	1	1	1	1	1	1	1	2	2	2	2	S	2	2	2	2	2	2	*3*	*3*	2	2	2	*3*	1.7	24
13	*3*	2	2	2	2	2	2	2	2	2	2	S	0	1	1	1	1	1	1	1	1	1	1	1	*3*	1.5	24
14	1	1	1	0	0	1	1	1	1	1	S	2	2	2	2	2	1	1	2	1	1	2	2	2	2	1.3	24
15	1	1	1	1	1	1	1	1	1	S	1	1	1	1	2	1	1	1	2	1	2	2	2	2	2	1.3	24
16	2	2	2	2	2	2	2	2	S	1	1	1	1	2	1	1	1	1	1	2	2	1	2	2	2	1.6	24
17	1	2	2	2	2	2	2	S	2	2	1	2	1	1	1	1	1	1	1	1	1	0	1	0	2	1.3	24
18	0	1	0	0	0	0	S	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	1.5	24
19	2	2	2	2	2	S	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	24
20	2	2	2	2	S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	2.0	5
21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			0
22	X	X	X	X	X	X	X	X	X	X	X	C	C	C	C	C	C	2	2	2	2	2	2	2	2	2.0	13
23	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	24
24	S	2	2	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	2	2	2	2	2	S	2	1.4	24
25	0	0	0	0	0	0	0	0	P	P	P	P	P	P	P	P	1	1	1	1	1	1	S	*3*	*3*	0.6	16
26	*3*	*3*	*3*	*3*	*3*	*3*	S	*3*	2	1	2	1	1	2	1	2	2	1	1	1	1	1	S	1	1	*3*	1.9	24
27	1	1	2	1	1	1	S	S	1	C	C	C	C	C	C	1	1	1	1	2	S	0	0	0	2	0.9	24
28	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	S	1	1	1	1	1	0.4	24
29	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	1	1	S	2	2	2	2	2	2	1.6	24
30	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	1	2	0	1	1	2	1.1	24
31	1	1	1	2	2	1	2	2	1	2	2	2	2	2	2	2	S	1	1	1	1	1	1	1	2	1.5	24
HOURLY MAX	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	3	3	2	2	3			
HOURLY AVG	1.4	1.4	1.4	1.3	1.3	1.2	1.2	1.4	1.4	1.4	1.6	1.7	1.5	1.7	1.5	1.5	1.3	1.4	1.4	1.5	1.5	1.3	1.5	1.4			

STATUS FLAG CODES

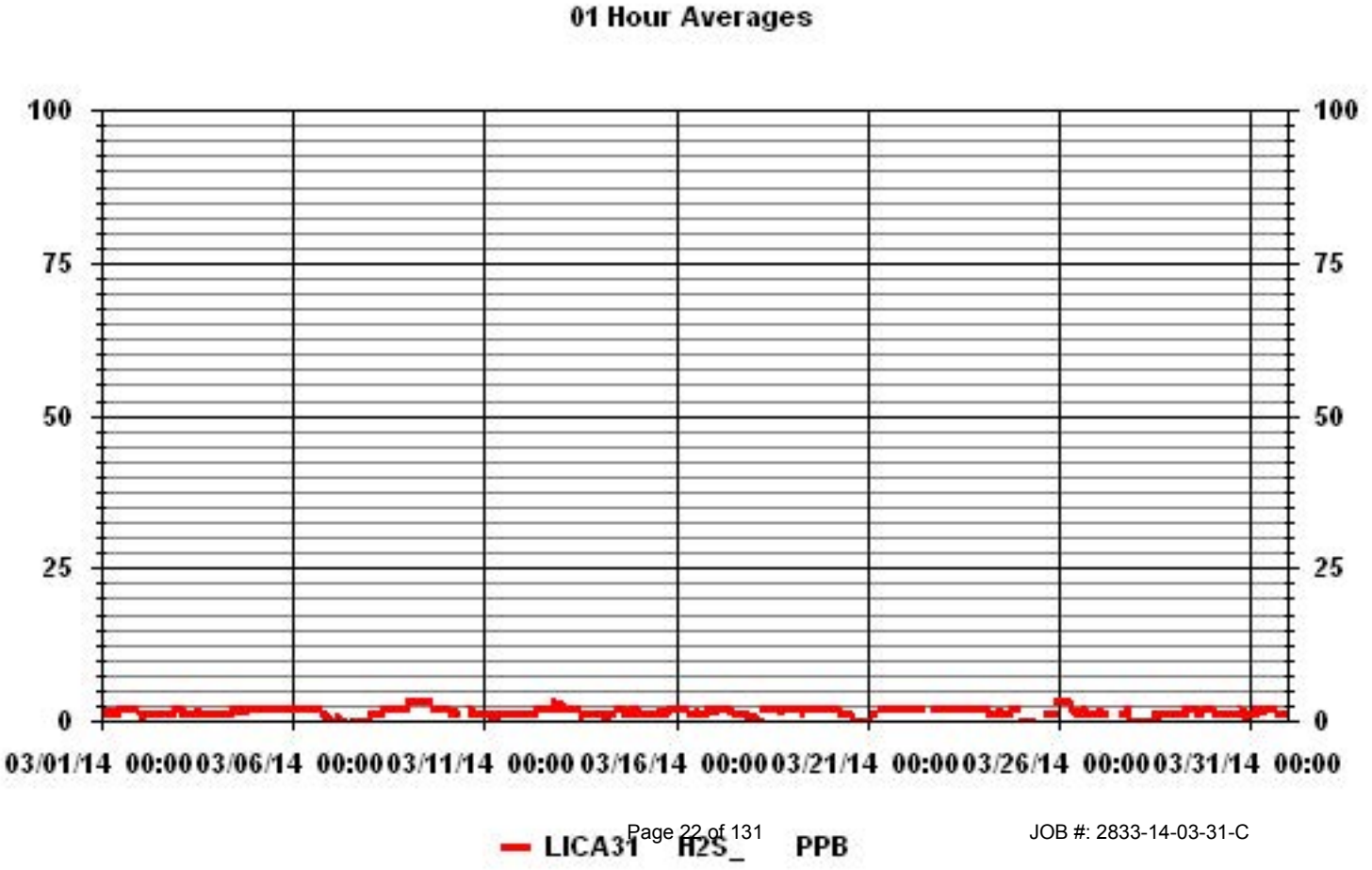
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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:	565						
MAXIMUM 1-HR AVERAGE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S)		VAR
MAXIMUM 24-HR AVERAGE:	2.7	PPB			ON DAY(S)		9
					VAR-VARIOUS		
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:			677	HRS
MONTHLY CALIBRATION TIME:	21	HRS	AMD OPERATION UPTIME:			91.0	%
STANDARD DEVIATION:	0.72		MONTHLY AVERAGE:			1.43	PPB



JOB #: 2833-14-03-31-C

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

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	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2.0	24
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1	2	S	2	2	1.2	24
3	2	2	2	2	2	2	2	*5*	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	*5*	2.1	24
4	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2.0	24
5	2	3	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	S	2	2	2	2	3	2.3	24
6	3	2	3	3	3	2	2	2	3			2	2	2	3	2	2	2	S	1	1	1	1	1	3	2.0	22
7	1	1	1	1	1	1	1	1	1	C	C	C	C	C	1	1	1	S	1	1	1	1	1	1	1	1.0	24
8	1	1	1	1	2	2	2	2	2	2	2	2	2	3	3	2	S	3	3	2	2	3	3	3	3	2.1	24
9	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	S	2	2	2	2	2	2	2	2	3	*2.7*	24
10	2	2	2	2	2	2	2	2	P	R	C	C	C	C	C	2	2	2	1	2	2	1	4	4	4	2.0	22
11	1	1	1	1	1	1	1	2	1	2	2	2	1	S	Y	Y	1	1	1	2	1	2	2	2	2	1.4	22
12	1	2	2	2	2	2	2	2	3	2	2	2	S	2	3	2	3	2	3	3	4	3	3	2	4	2.3	24
13	3	3	3	3	3	3	3	3	3	3	3	S	1	2	2	1	1	1	2	1	1	1	1	1	3	2.1	24
14	2	1	1	1	1	1	1	2	1	1	S	2	2	3	2	2	2	2	2	2	2	2	2	2	3	1.7	24
15	2	1	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	3	2	2	2	2	2	3	2.0	24
16	2	3	3	3	3	3	3	3	S	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2.3	24
17	2	2	2	2	2	2	2	S	3	3	2	2	2	2	2	2	1	2	1	1	1	1	1	1	3	1.8	24
18	1	2	2	0	1	1	S	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	3	1.8	24
19	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2.0	24
20	2	2	2	2	S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	2.0	5
21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			0
22	X	X	X	X	X	X	X	X	X	X	X	C	C	C	C	C	C	2	2	2	2	2	2	2	2	2.0	13
23	2	S	2	2	2	3	2	2	3	2	3	3	3	2	2	3	3	2	3	3	3	2	2	2	3	2.4	24
24	S	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	3	2	2	S	3	2.0	24
25	0	0	0	0	0	0	0	0	P	P	P	P	P	P	P	P	2	1	1	1	1	1	S	3	3	0.7	16
26	3	3	3	3	3	3	S	S	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	3	2.3	24
27	2	2	2	2	2	2	S	S	1	C	C	C	C	C	C	2	2	2	2	2	S	1	0	1	2	1.7	24
28	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	1	2	2	2	1.1	24
29	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	3	3	2	2	2	3	2.1	24
30	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	S	2	2	*5*	2	2	2	*5*	1.6	24
31	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	S	1	2	2	2	2	2	2	3	2.0	24
HOURLY MAX	3	3	3	3	3	3	3	5	3	3	3	3	3	3	3	3	3	3	3	3	5	3	3	4			
HOURLY AVG	1.8	1.9	1.9	1.8	1.9	1.9	1.8	2.0	1.9	1.9	2.0	2.0	1.9	2.0	2.1	1.9	1.9	1.9	2.0	1.9	2.0	1.8	1.8	2.0			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 609

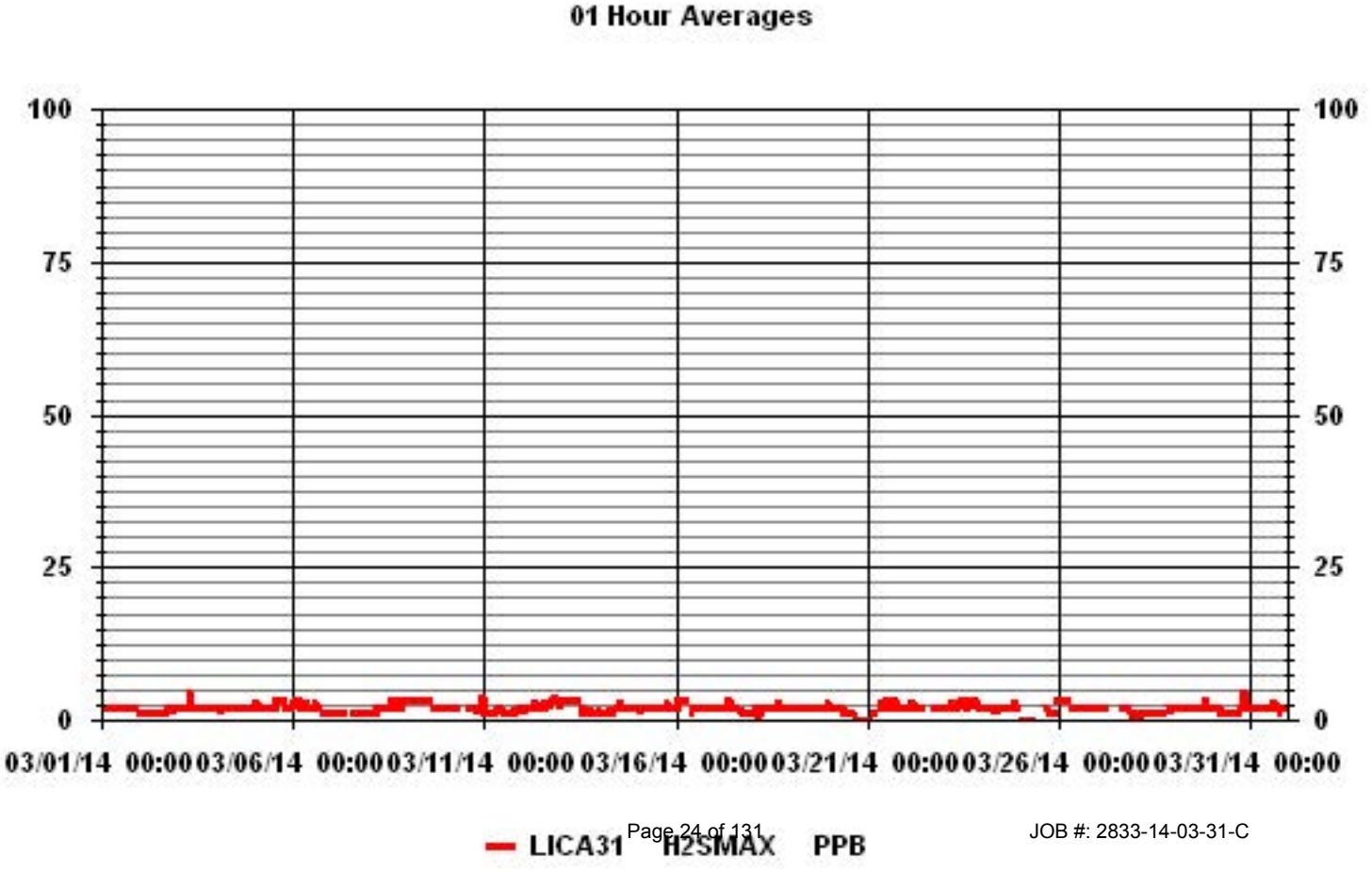
MAXIMUM INSTANTANEOUS VALUE: 5 PPB @ HOUR(S) 7, 20 ON DAY(S) 3, 30

VAR-VARIOUS

IZS CALIBRATION TIME: 34 HRS OPERATIONAL TIME: 676 HRS

MONTHLY CALIBRATION TIME: 22 HRS

STANDARD DEVIATION: 0.68



JOB #: 2833-14-03-31-C

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

March 2014

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	3.68	3.83	1.84	1.07	9.04	10.58	5.06	3.37	3.22	1.53	2.60	10.73	16.10	12.57	10.88	3.83	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	3.68	3.83	1.84	1.07	9.04	10.58	5.06	3.37	3.22	1.53	2.60	10.73	16.10	12.57	10.88	3.83	

Calm : .00 %

Total # Operational Hours : 652

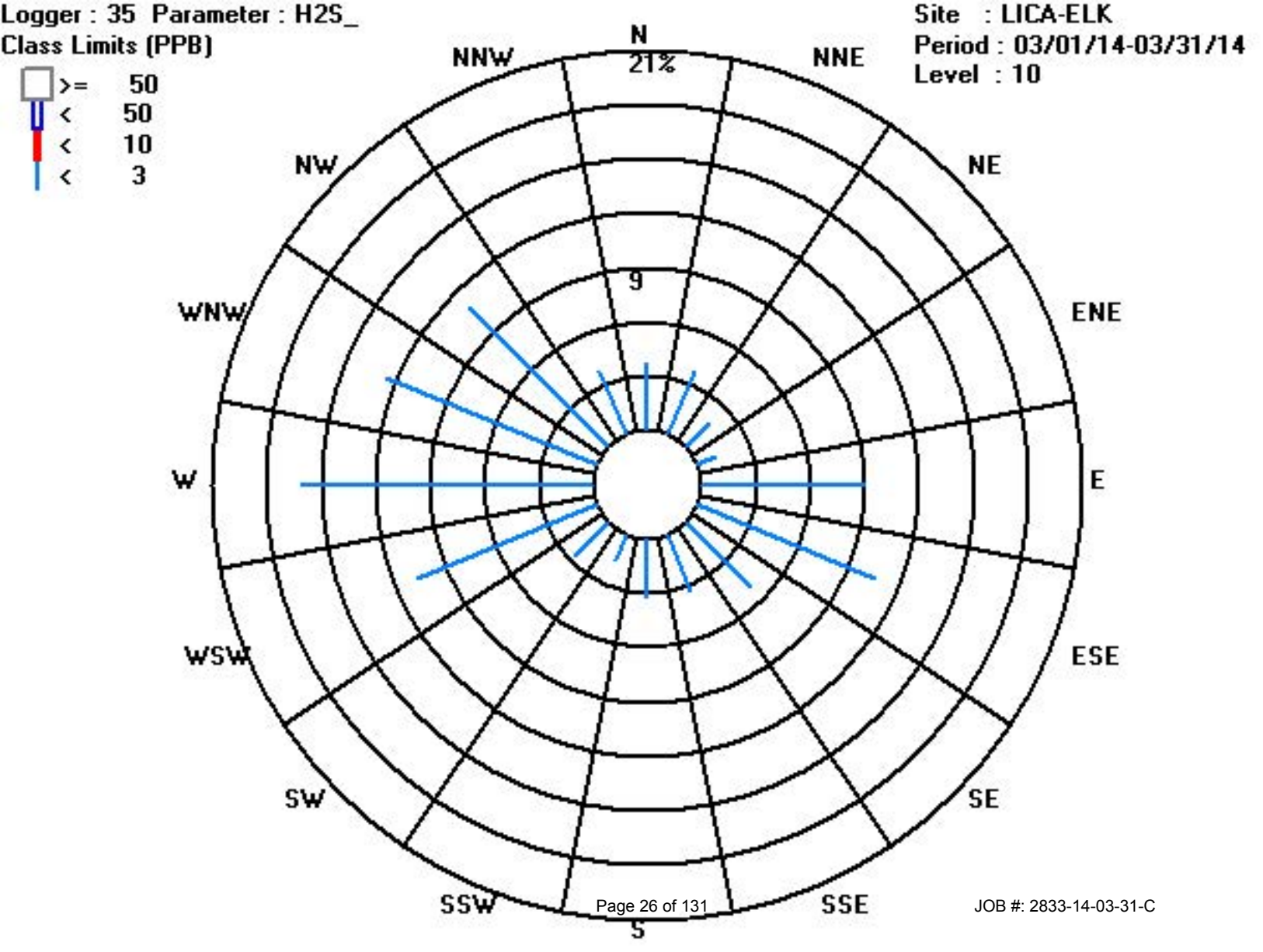
Distribution By Samples

Direction

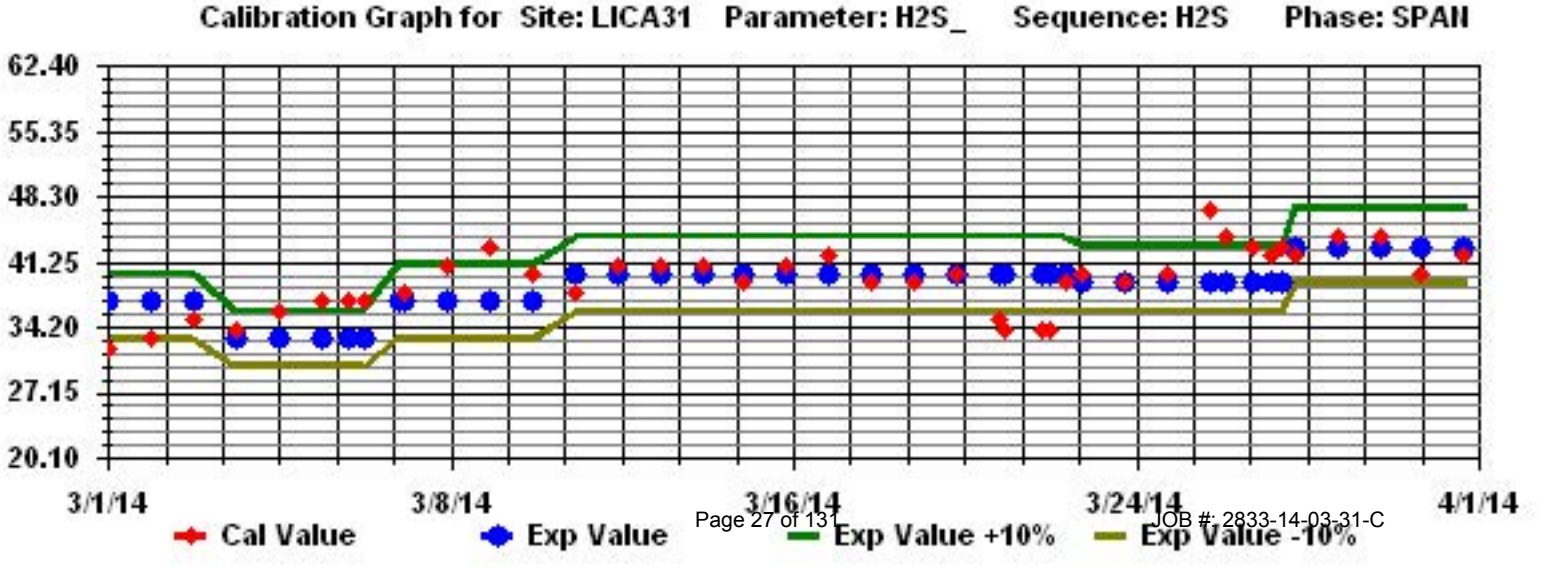
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3	24	25	12	7	59	69	33	22	21	10	17	70	105	82	71	25	652
<	10																	
<	50																	
>=	50																	
	Totals	24	25	12	7	59	69	33	22	21	10	17	70	105	82	71	25	

Calm : .00 %

Total # Operational Hours : 652



JOB #: 2833-14-03-31-C


Calibration Graph for Site: LICA31 Parameter: H2S_ Sequence: H2S Phase: SPAN
62.40
55.35
48.30
41.25
34.20
27.15
20.10
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

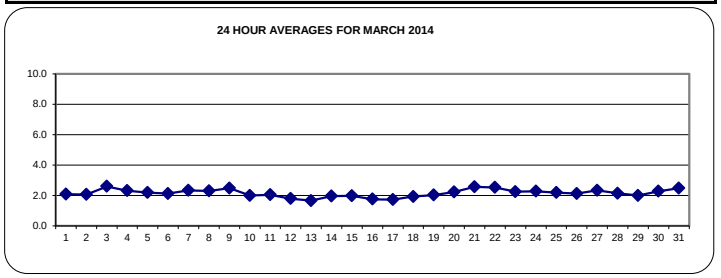
TOTAL HYDROCARBONS (THC) hourly averages in ppm

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	**S**	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	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**S**	2.1	2.1	24
2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	**S**	2.0	2.2	2.1	24
3	2.1	2.0	2.0	2.1	2.4	2.5	2.6	2.7	3.0	3.0	2.9	2.9	2.9	2.9	2.8	2.9	2.7	2.6	2.6	2.7	2.7	**S**	2.4	2.4	3.0	***2.6***	24
4	2.5	2.3	2.2	2.3	2.4	2.4	**X**	**X**	**X**	**X**	**X**	2.2	2.0	**S**	2.4	2.4	2.4	2.4	2.4	2.5	**S**	2.2	2.3	2.3	2.5	2.3	19
5	2.3	2.4	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.3	2.3	2.2	2.1	2.0	1.9	1.9	1.9	1.9	1.9	**S**	2.2	2.3	2.3	2.4	2.4	2.2	24
6	2.3	2.3	2.3	2.3	2.2	2.2	2.3	2.2	2.2	2.2	2.1	2.1	2.0	1.9	1.9	1.9	1.9	1.9	**S**	2.0	2.2	2.2	2.2	2.2	2.3	2.1	24
7	2.3	2.3	2.3	2.4	2.3	2.3	2.4	2.4	2.4	2.5	2.4	2.4	***3.9***	2.2	2.1	2.1	2.1	**S**	2.2	2.2	2.2	2.2	2.2	2.2	***3.9***	2.3	24
8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	**S**	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.4	2.3	24
9	2.2	2.2	2.0	2.1	2.3	2.6	2.8	2.9	3.2	3.1	2.7	2.5	2.2	2.0	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	3.2	2.5	14
10	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**C**	**C**	**C**	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	10
11	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	**C**	**C**	**C**	**C**	**C**	**C**	1.9	1.9	1.9	2.0	1.9	2.0	2.0	1.9	2.2	2.1	24
12	1.9	1.8	1.8	1.8	1.8	1.8	1.8	2.1	1.9	1.8	1.8	1.8	**S**	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.7	2.1	1.8	24
13	1.7	1.6	1.6	1.6	1.7	1.6	1.6	1.6	1.6	1.7	1.7	**S**	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	24
14	1.7	1.8	1.8	1.8	1.8	1.9	1.9	2.0	2.0	1.9	**S**	1.9	1.9	2.0	2.0	2.0	2.0	2.0	1.9	2.1	2.4	2.2	2.0	2.0	2.4	2.0	24
15	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.1	**S**	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.8	1.8	1.8	2.0	2.0	2.0	2.1	2.0	24
16	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.9	**S**	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.0	1.8	24
17	1.7	1.8	1.6	1.6	1.6	1.6	1.6	**S**	1.6	1.6	1.7	1.7	1.7	1.7	1.7	**Y**	**Y**	1.8	1.8	1.9	1.9	1.9	1.9	2.0	2.0	1.7	22
18	2.0	2.0	2.0	2.0	2.0	2.0	**S**	2.0	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	1.9	24
19	2.1	2.1	2.1	2.1	2.1	**S**	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	1.9	1.9	2.0	2.0	2.0	2.2	2.0	24
20	2.0	2.0	2.0	2.1	**S**	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.2	24
21	2.5	2.6	2.6	**S**	2.7	2.7	2.7	2.7	2.7	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.7	2.6	24
22	2.6	2.6	**S**	2.7	2.8	3.0	3.1	3.2	3.0	2.8	2.7	2.6	2.4	2.3	2.3	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	3.2	2.5	24
23	2.2	**S**	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.4	2.3	24
24	**S**	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.3	2.2	**S**	2.4	2.3	24
25	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	2.2	2.2	2.2	2.2	2.2	2.2	**S**	2.1	2.2	2.2	16
26	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	**S**	2.2	2.1	2.2	2.1	24
27	2.3	2.6	2.9	3.0	3.0	2.9	2.7	2.7	2.4	2.2	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	**S**	2.1	2.1	2.1	3.0	2.3	24
28	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	**S**	2.0	2.0	2.0	2.0	2.3	2.1	24
29	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	**S**	1.9	2.0	2.0	2.0	2.1	2.1	2.0	24
30	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.3	**S**	2.3	2.3	2.3	2.4	2.4	2.5	2.5	2.3	24
31	2.6	2.7	2.8	2.9	2.9	2.9	3.0	2.8	2.7	2.6	2.8	2.5	2.3	2.2	2.2	2.2	**S**	2.1	2.1	2.1	2.2	2.3	2.2	2.1	3.0	2.5	24
HOURLY MAX	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	3			
HOURLY AVG	2.1	2.2	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1			

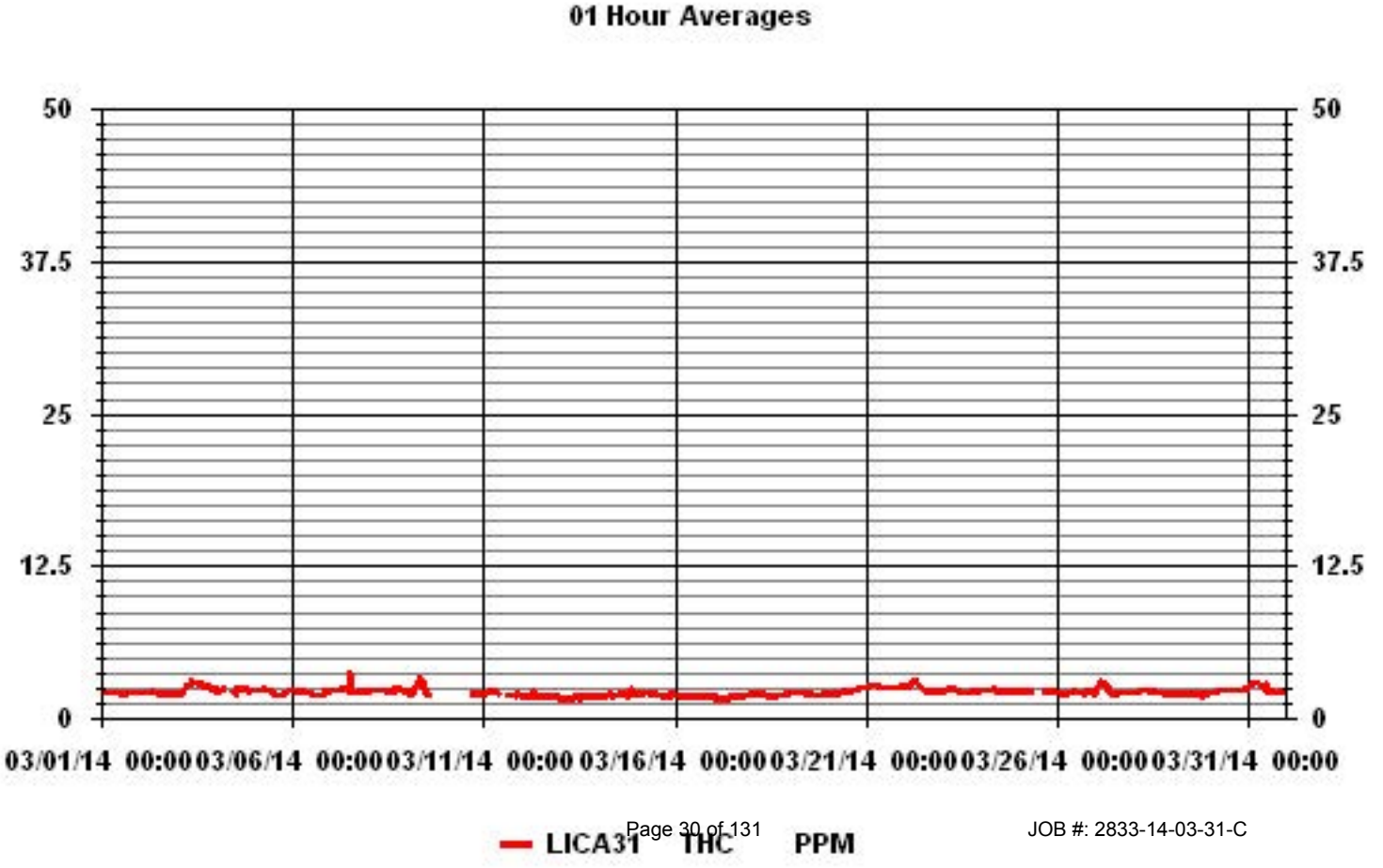
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	665					
MAXIMUM 1-HR AVERAGE:	3.9	PPM	@ HOUR(S)	12	ON DAY(S)	7
MAXIMUM 24-HR AVERAGE:	2.6	PPM			ON DAY(S)	3
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		705	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		94.8	%
STANDARD DEVIATION:	0.30		MONTHLY AVERAGE:		2.16	PPM



JOB #: 2833-14-03-31-C

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

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	**S**	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	**S**	2.2	2.1	24
2	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.2	2.1	2.1	2.1	2	2	2	2	2	2	2	2	**S**	2.1	2.3	2.1	24
3	2.1	2.1	2.1	2.3	2.5	2.6	2.7	2.8	3.1	3.1	3	3.1	3	3.1	2.9	2.9	2.9	2.7	2.7	2.8	2.8	**S**	2.4	2.5	3.1	2.7	24
4	2.5	2.4	2.3	2.4	2.5	2.5	2.3	**X**	**X**	**X**	**X**	2.3	2	**S**	2.5	2.4	2.4	2.4	2.6	2.6	**S**	2.3	2.3	2.3	2.6	2.4	20
5	2.4	2.5	2.4	2.4	2.4	2.4	3.2	3.1	2.3	2.5	2.4	2.3	2.1	2	1.9	1.9	2	2	2	**S**	2.3	2.3	2.4	2.4	3.2	2.3	24
6	2.4	2.4	2.4	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.1	2.1	2.1	2	1.9	1.9	1.9	1.9	**S**	2.1	2.2	2.2	2.3	2.3	2.4	2.2	24
7	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	***54.2***	3	2.2	2.1	2.2	**S**	2.2	2.2	2.2	2.3	2.3	2.3	***54.2***	***4.6***	24
8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	**S**	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.3	24
9	2.3	2.3	2.1	2.2	2.5	2.7	2.9	3.1	3.3	3.3	3	2.7	2.4	2.2	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	3.3	2.6	14
10	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**C**	**C**	**C**	2	2	2	2	2	2	2	2	2.0	10
11	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	**C**	**C**	**C**	**C**	**C**	**C**	1.9	2	2	2	2	2	2	1.9	2.3	2.1	24
12	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.5	2.2	1.9	1.8	1.8	**S**	1.8	1.7	1.8	1.8	1.8	2	1.8	1.9	1.9	1.9	1.8	3.5	1.9	24
13	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	**S**	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	24
14	1.8	1.8	1.8	1.8	2	2.1	2	2.4	2.2	2.2	**S**	2.2	2.1	2.1	2.1	2.1	2	2	2.1	2.4	2.4	2.3	2.1	2.1	2.4	2.1	24
15	2.1	2.1	2	2	2.1	2.1	2.1	2.2	2.2	**S**	2.1	2	2.1	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2.1	2.2	2.0	24
16	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	**S**	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.1	1.8	24
17	1.7	1.9	1.7	1.6	1.6	1.6	1.7	**S**	1.7	1.7	1.7	1.7	1.8	1.8	1.8	**Y**	**Y**	1.9	1.8	1.9	2	2	2	2	2	1.8	22
18	2.1	2.1	2	2	2	2	**S**	2.1	2.1	2	2	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	2	2	2	2.1	2.1	2.1	2.0	24
19	2.2	2.2	2.2	2.2	2.2	**S**	2.2	2.2	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2.1	2.2	2.1	24
20	2	2	2.1	2.1	**S**	2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5	2.5	2.6	2.6	2.6	2.3	24
21	2.6	2.6	2.6	**S**	2.7	2.7	2.8	2.8	2.7	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.7	2.8	2.6	24
22	2.9	2.7	**S**	2.8	2.9	3	3.2	3.3	3.2	2.9	2.8	2.8	2.5	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	3.3	2.6	24
23	2.3	**S**	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.3	24
24	**S**	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.5	2.4	2.4	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.5	2.4	2.3	2.3	2.2	**S**	2.5	2.3	24
25	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	2.2	2.2	2.2	2.4	2.3	2.2	**S**	2.3	2.4	2.2	16
26	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.5	2.4	2.2	2.2	2.2	**S**	2.2	2.2	2.5	2.2	24
27	2.5	2.7	3	3	3.1	3.1	2.9	2.7	2.6	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	**S**	2.2	2.2	2.2	3.1	2.4	24
28	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.3	2.2	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	**S**	2.1	2.1	2.1	2.1	2.4	2.2	24
29	2.1	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	**S**	2	2	2.1	2.1	2.1	2.1	2.1	24
30	2.1	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.4	2.4	2.5	2.5	2.4	2.5	2.4	2.4	**S**	2.3	2.7	2.4	2.7	2.4	2.7	2.7	2.4	24
31	2.7	2.8	2.9	2.9	2.9	2.9	3.1	3	2.8	2.7	2.9	2.9	2.3	2.3	2.3	2.2	**S**	2.1	2.1	2.2	2.2	2.3	2.3	2.2	3.1	2.6	24
HOURLY MAX	3	3	3	3	3	3	3	4	3	3	3	3	54	3	3	3	3	3	3	3	3	3	3	3			
HOURLY AVG	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.4	2.3	2.3	2.3	4.1	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 666

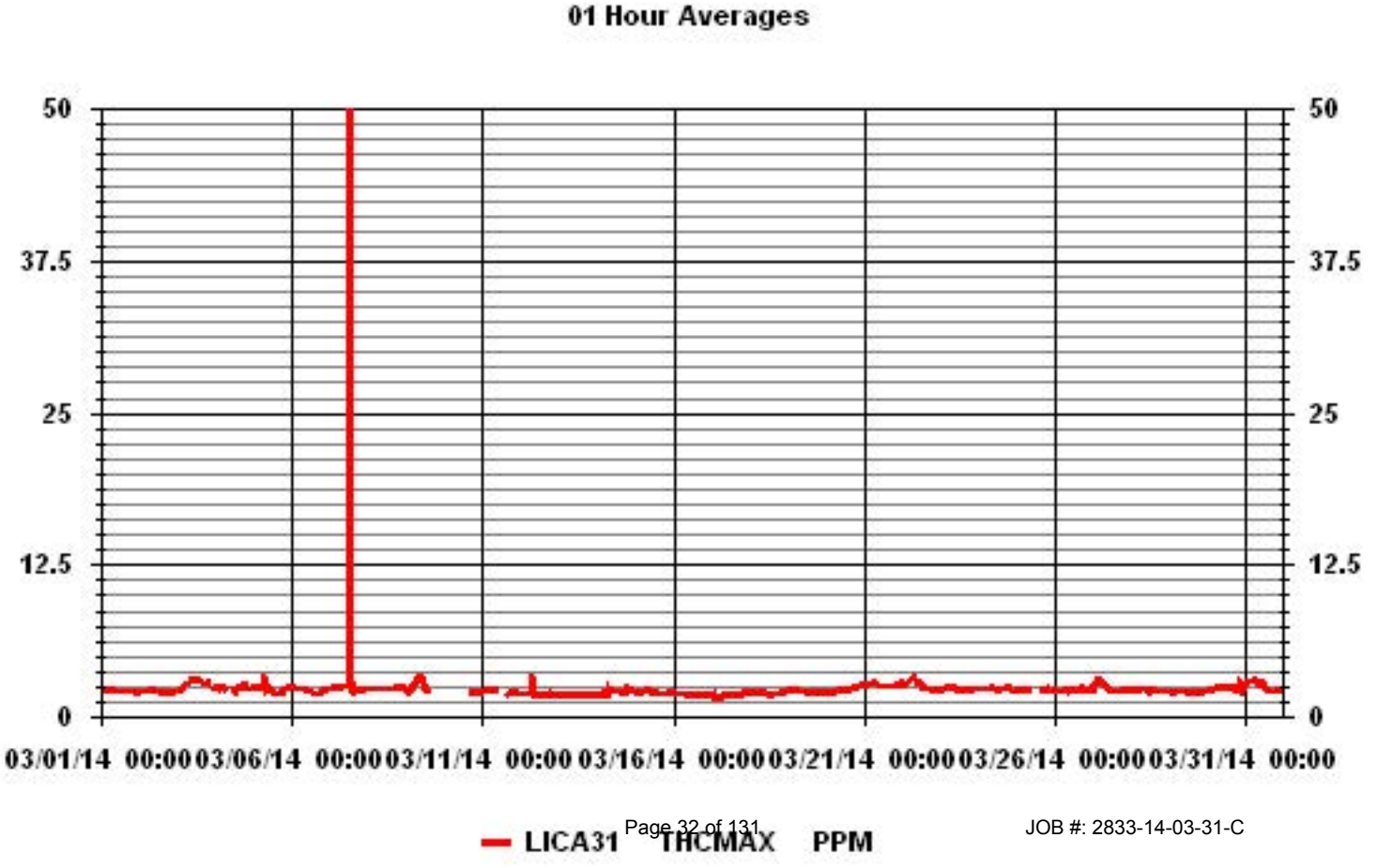
MAXIMUM INSTANTANEOUS VALUE: 54.2 PPM @ HOUR(S) 12 ON DAY(S) 7

VAR-VARIOUS

IZS CALIBRATION TIME: 31 HRS OPERATIONAL TIME: 706 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 2.04



JOB #: 2833-14-03-31-C

LICA31
THC / WDR Joint Frequency Distribution (Percent)

March 2014

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	4.51	4.06	4.51	3.00	2.40	5.56	1.80	3.60	6.91	9.77	10.07	9.17	9.92	6.61	8.87	7.36	98.19
<	10.0	.00	.00	.30	.45	.45	.00	.00	.00	.30	.15	.15	.00	.00	.00	.00	.00	1.80
<	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.51	4.06	4.81	3.45	2.85	5.56	1.80	3.60	7.21	9.92	10.22	9.17	9.92	6.61	8.87	7.36	

Calm : .00 %

Total # Operational Hours : 665

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	30	27	30	20	16	37	12	24	46	65	67	61	66	44	59	49	653
<	10.0			2	3	3				2	1	1						12
<	50.0																	
>=	50.0																	
	Totals	30	27	32	23	19	37	12	24	48	66	68	61	66	44	59	49	

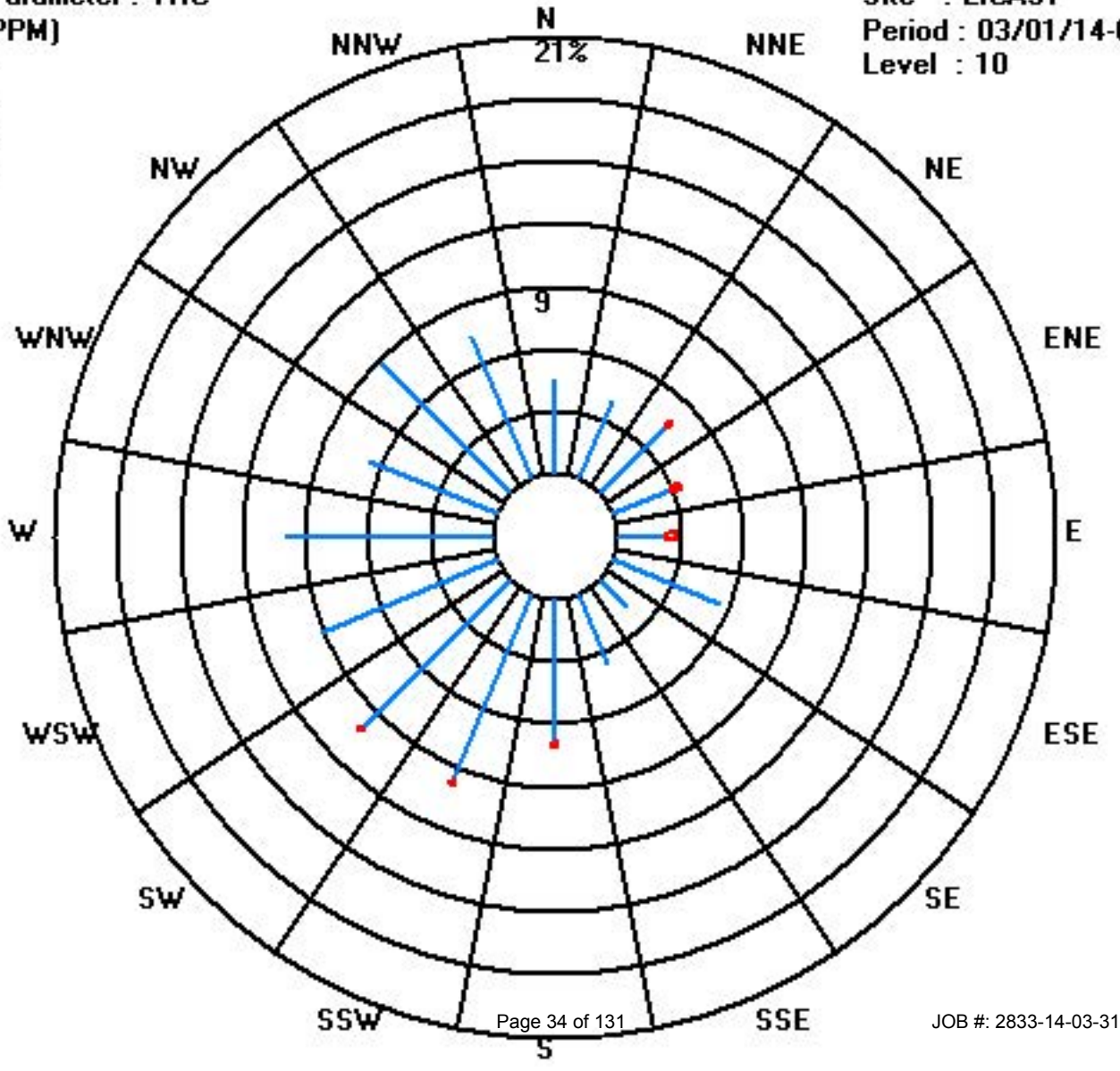
Calm : .00 %

Total # Operational Hours : 665

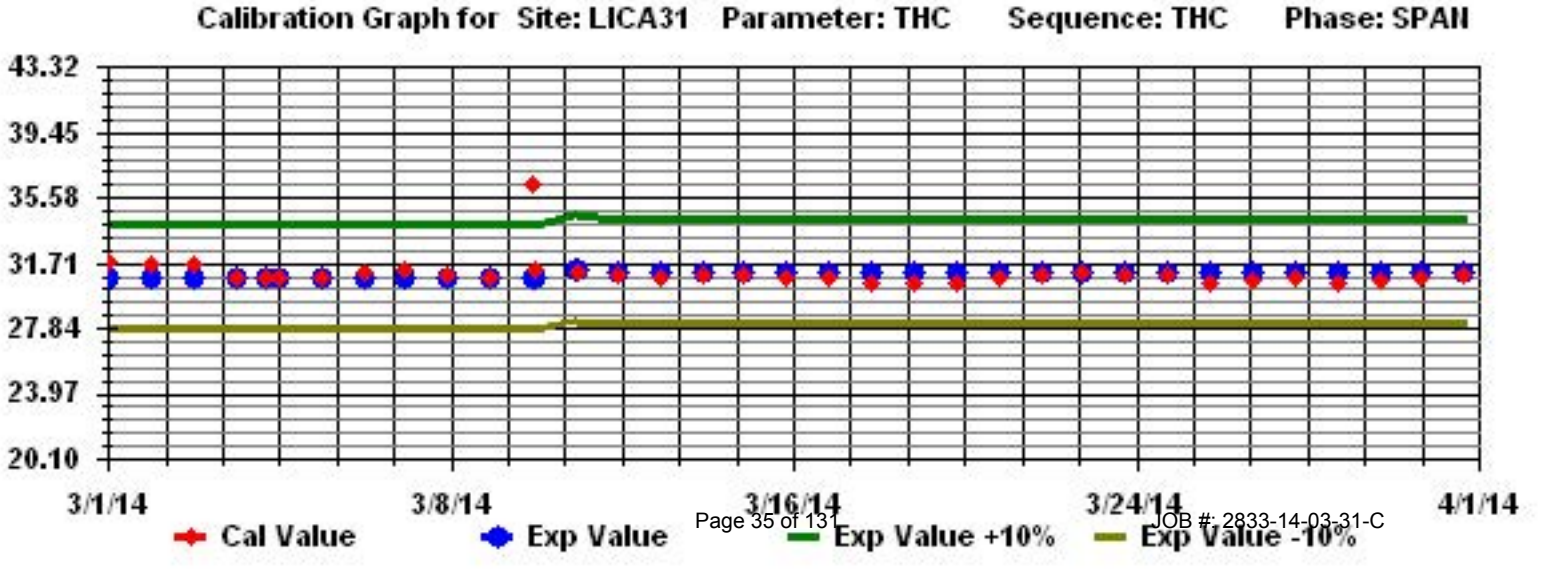
Logger : 31 Parameter : THC
Class Limits (PPM)

>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA31
Period : 03/01/14-03/31/14
Level : 10



JOB #: 2833-14-03-31-C


Calibration Graph for Site: LICA31 Parameter: THC Sequence: THC Phase: SPAN
43.32
39.45
35.58
31.71
27.84
23.97
20.10
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

OZONE (O3) 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	S	26	25	25	24	24	25	25	25	25	26	28	31	34	35	37	34	31	31	31	31	30	29	S	37	28.7	24
2	28	29	29	30	30	29	29	29	28	28	30	32	33	33	36	36	35	35	35	34	34	33	S	33	36	31.7	24
3	32	31	30	32	33	33	33	31	27	30	33	34	34	35	35	35	35	36	38	38	38	S	37	36	38	33.7	24
4	36	37	38	37	33	34	34	35	36	36	37	39	40	41	40	40	40	40	39	37	S	34	34	34	41	37.0	24
5	35	36	34	35	35	35	35	35	35	34	35	38	40	40	41	41	40	40	40	S	39	39	38	37	41	37.3	24
6	37	37	36	36	35	34	32	31	31	32	33	34	35	37	38	38	39	38	S	39	36	35	34	35	39	35.3	24
7	34	35	35	32	35	37	39	36	34	36	38	38	42	S	44	44	45	S	48	49	48	46	45	45	49	40.2	24
8	43	43	43	43	43	42	42	43	43	42	43	43	44	45	45	44	S	45	44	44	43	43	40	37	45	42.9	24
9	37	38	40	41	40	38	37	38	38	39	40	43	45	47	47	S	45	45	45	45	45	44	44	44	47	42.0	24
10	44	43	43	42	42	41	41	40	P	41	43	43	44	S	S	45	45	45	44	44	44	44	43	43	45	43.0	22
11	42	41	41	40	40	39	S	39	39	41	35	26	29	S	23	Y	34	36	36	35	32	29	29	34	42	35.2	23
12	35	35	34	33	33	33	33	C	C	C	C	C	C	C	C	C	C	***53***	50	42	40	40	41	47	***53***	39.2	24
13	49	49	48	47	47	46	S	45	44	43	43	S	44	45	45	46	46	45	45	44	44	44	43	43	49	45.2	24
14	43	42	42	41	40	37	39	38	37	36	S	35	36	38	40	41	41	40	39	38	37	35	34	33	43	38.3	24
15	32	33	36	36	36	36	36	35	34	S	36	38	40	40	43	45	44	45	45	44	43	40	39	39	45	38.9	24
16	39	38	37	35	35	34	32	33	S	41	43	45	46	48	49	50	49	48	48	47	46	45	44	44	50	42.4	24
17	43	41	42	41	41	41	40	S	39	41	42	43	44	44	44	43	41	41	42	41	40	41	41	40	44	41.6	24
18	36	35	37	38	37	37	S	39	40	42	43	45	45	45	44	44	44	43	43	43	42	41	41	40	45	41.0	24
19	36	36	34	33	31	S	30	33	37	38	37	37	37	36	36	37	37	36	35	38	40	40	38	37	40	36.0	24
20	37	36	35	32	S	38	37	35	36	36	36	36	37	37	38	38	37	38	37	36	35	34	34	38	38	36.2	24
21	37	37	36	S	35	35	34	33	33	34	36	37	38	41	41	40	40	42	42	42	42	40	40	41	42	38.1	24
22	43	41	S	37	33	29	29	30	33	34	36	38	39	40	41	42	43	43	42	41	40	40	40	40	43	38.0	24
23	39	S	37	37	36	35	34	31	33	37	40	42	43	44	44	44	44	44	44	43	42	42	41	41	44	39.9	24
24	S	40	40	39	39	37	36	34	36	36	36	36	36	36	37	38	38	39	39	37	37	36	36	S	40	37.2	24
25	35	35	35	35	34	37	36	35	P	P	P	P	P	P	P	P	49	48	48	46	45	43	S	44	49	40.3	16
26	44	41	39	39	40	39	38	39	39	39	39	40	41	41	42	42	41	42	41	40	40	S	38	39	44	40.1	24
27	36	30	25	23	21	22	28	29	35	40	41	42	43	43	43	44	44	43	43	43	S	42	42	40	44	36.6	24
28	39	39	38	38	37	34	32	30	30	34	37	43	48	51	50	50	50	50	50	S	48	48	46	44	51	42.0	24
29	43	43	43	45	46	47	47	46	45	46	49	50	51	49	49	49	49	49	S	47	48	43	41	39	51	***46.3***	24
30	38	37	36	36	35	33	30	25	20	19	21	22	26	27	27	27	28	S	29	29	28	28	26	24	38	28.3	24
31	24	23	21	20	21	22	23	26	28	30	30	33	37	36	36	37	S	39	39	37	36	35	34	34	39	30.5	24
HOURLY MAX	49	49	48	47	47	47	47	46	45	46	49	50	51	51	50	50	50	53	50	49	48	48	46	47			
HOURLY AVG	37.8	36.9	36.3	35.9	35.6	35.3	34.3	34.4	34.6	36.1	37.1	37.9	39.6	40.5	40.5	41.4	41.3	42.0	41.4	40.5	40.1	39.1	38.3	38.8			

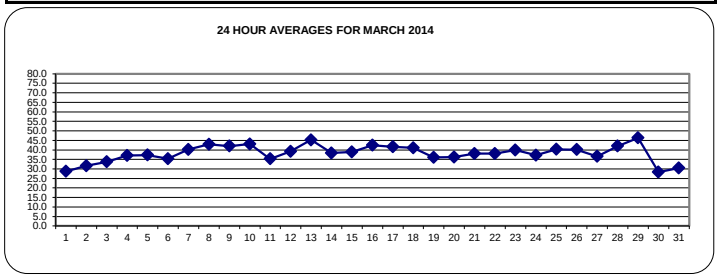
STATUS FLAG CODES

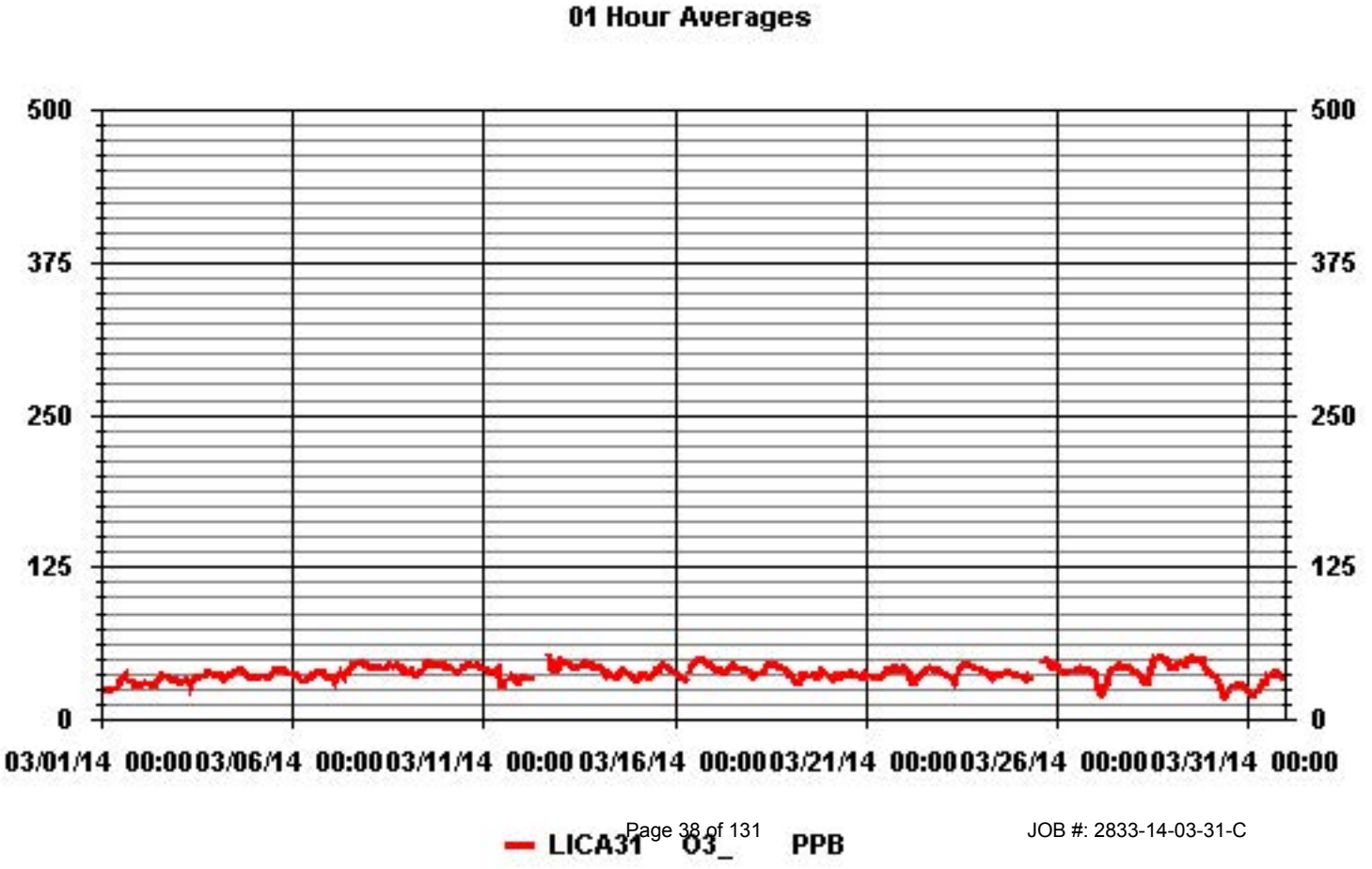
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	688					
MAXIMUM 1-HR AVERAGE:	53	PPB	@ HOUR(S)	17	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	46.3	PPB			ON DAY(S)	29
					VAR-VARIOUS	
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:		733	HRS
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:		98.5	%
STANDARD DEVIATION:	5.94		MONTHLY AVERAGE:		38.13	PPB





JOB #: 2833-14-03-31-C

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

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	**S**	27	26	26	25	24	26	26	26	26	26	31	34	37	37	39	35	34	32	32	32	30	29	**S**	39	30.0	24
2	29	30	29	30	30	30	30	30	31	29	32	33	34	35	37	37	36	35	35	35	34	34	**S**	33	37	32.5	24
3	33	32	32	33	34	33	33	32	30	32	34	35	35	35	36	36	36	37	39	39	39	**S**	38	37	39	34.8	24
4	36	38	38	39	35	35	35	36	36	37	39	40	40	41	41	40	41	40	39	38	**S**	35	35	35	41	37.8	24
5	37	37	36	36	36	36	35	36	36	36	37	41	41	41	42	42	41	41	41	**S**	39	39	38	37	42	38.3	24
6	37	37	37	36	36	35	34	33	32	35	34	34	36	38	39	39	40	39	**S**	39	39	35	35	37	40	36.3	24
7	35	36	36	35	35	39	39	38	35	38	38	40	43	**S**	45	45	47	**S**	50	50	49	47	46	46	50	41.5	24
8	45	44	44	43	43	43	44	44	43	43	43	44	45	46	46	45	**S**	46	45	45	44	43	42	39	46	43.9	24
9	39	40	41	41	41	39	38	39	39	40	41	44	47	47	48	**S**	46	46	46	45	45	45	45	45	48	43.0	24
10	44	44	43	43	42	42	42	41	**P**	42	43	44	44	**S**	**S**	45	45	45	45	45	45	44	44	43	45	43.6	23
11	43	42	42	41	40	40	**S**	40	42	42	43	29	30	**S**	30	**Y**	38	39	39	39	35	32	33	37	43	37.9	23
12	37	37	37	36	36	36	34	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	***54***	53	45	40	40	45	49	***54***	41.4	24
13	49	50	49	48	47	47	**S**	45	45	44	44	**S**	45	45	46	46	46	46	45	45	44	44	44	43	50	45.8	24
14	43	42	42	42	41	38	40	39	37	37	**S**	35	37	39	41	42	41	41	40	38	38	36	35	34	43	39.0	24
15	33	36	37	37	37	36	36	35	35	**S**	37	40	42	41	44	46	46	46	47	45	44	41	40	40	47	40.0	24
16	39	39	38	36	35	35	33	36	**S**	42	44	46	47	49	50	50	50	49	48	47	47	46	45	44	50	43.3	24
17	44	44	42	42	42	42	40	**S**	39	43	44	44	44	45	45	44	42	42	42	42	42	41	41	42	45	42.5	24
18	37	36	39	39	38	38	**S**	39	41	43	44	45	46	45	44	44	44	44	43	43	43	42	42	41	46	41.7	24
19	37	36	35	33	33	**S**	32	36	38	38	38	38	39	37	37	37	38	37	38	39	40	40	39	38	40	37.1	24
20	38	37	35	37	**S**	39	39	36	36	37	36	37	38	38	39	39	39	39	39	37	36	35	35	39	39	37.4	24
21	38	37	37	**S**	36	36	35	34	34	35	37	38	40	42	42	41	41	43	43	43	43	41	41	43	43	39.1	24
22	46	42	**S**	40	35	30	30	34	34	35	38	38	39	41	42	43	43	43	43	42	40	41	41	40	46	39.1	24
23	40	**S**	38	38	36	36	35	33	34	39	42	43	43	45	44	45	45	44	44	44	43	42	42	42	45	40.7	24
24	**S**	41	40	40	39	38	37	36	37	36	37	37	37	37	39	39	39	40	39	38	38	36	36	**S**	41	38.0	24
25	36	36	36	36	36	38	37	36	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	50	49	49	49	47	45	**S**	46	50	41.7	16
26	44	42	40	41	40	40	39	40	40	40	39	40	42	42	42	42	42	43	42	42	40	**S**	39	40	44	40.9	24
27	39	32	28	24	22	24	30	32	40	42	42	43	43	44	46	44	44	44	44	44	**S**	43	43	42	46	38.2	24
28	40	41	39	39	38	36	33	32	32	38	40	47	52	52	51	51	51	52	52	**S**	49	48	48	45	52	43.7	24
29	44	44	45	48	47	48	48	47	47	48	50	51	51	51	50	49	50	49	**S**	49	48	48	42	40	51	***47.6***	24
30	39	38	36	37	36	34	32	29	22	20	23	24	27	27	28	28	29	**S**	30	30	28	29	27	25	39	29.5	24
31	25	24	22	20	22	23	24	28	30	32	32	36	38	37	37	38	**S**	40	39	38	37	36	35	35	40	31.7	24
HOURLY MAX	49	50	49	48	47	48	48	47	47	48	50	51	52	52	51	51	51	54	53	50	49	48	48	49			
HOURLY AVG	38.8	38.0	37.3	37.2	36.4	36.3	35.4	35.9	36.0	37.5	38.5	39.2	40.7	41.4	41.7	42.1	42.3	43.0	42.4	41.7	40.9	39.9	39.5	39.9			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 688

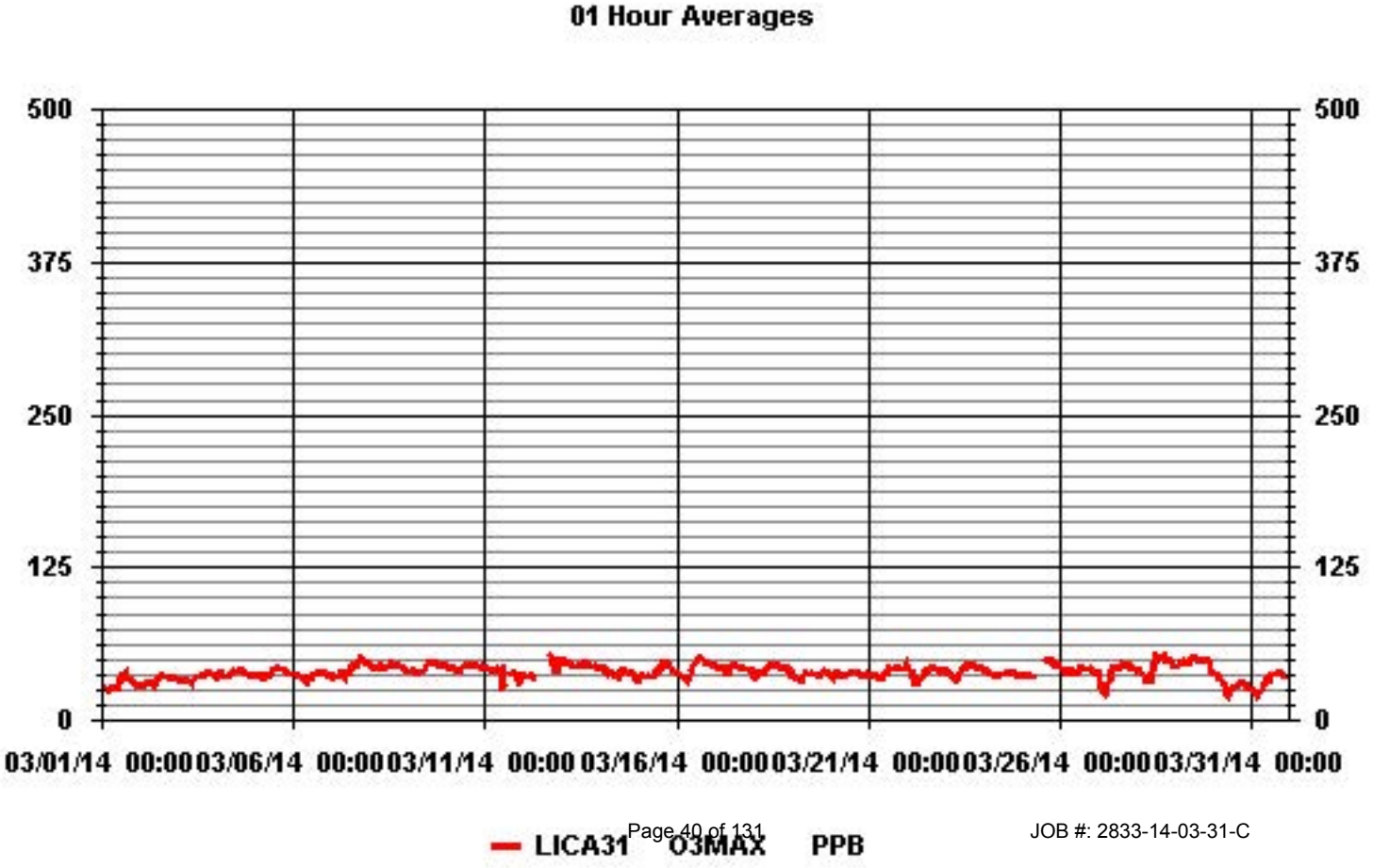
MAXIMUM INSTANTANEOUS VALUE: 54 PPB @ HOUR(S) 17 ON DAY(S) 12

VAR-VARIOUS

IZS CALIBRATION TIME: 36 HRS OPERATIONAL TIME: 734 HRS

MONTHLY CALIBRATION TIME: 10 HRS

STANDARD DEVIATION: 5.81



JOB #: 2833-14-03-31-C

LICA31
O3_ / WDR Joint Frequency Distribution (Percent)

March 2014

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	4.65	3.92	4.65	3.34	3.19	5.52	1.88	3.63	6.97	9.44	9.15	7.41	11.04	7.99	8.57	6.97	98.40
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.72	.58	.00	.00	.14	.14	1.59
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.65	3.92	4.65	3.34	3.19	5.52	1.88	3.63	6.97	9.44	9.88	7.99	11.04	7.99	8.72	7.12	

Calm : .00 %

Total # Operational Hours : 688

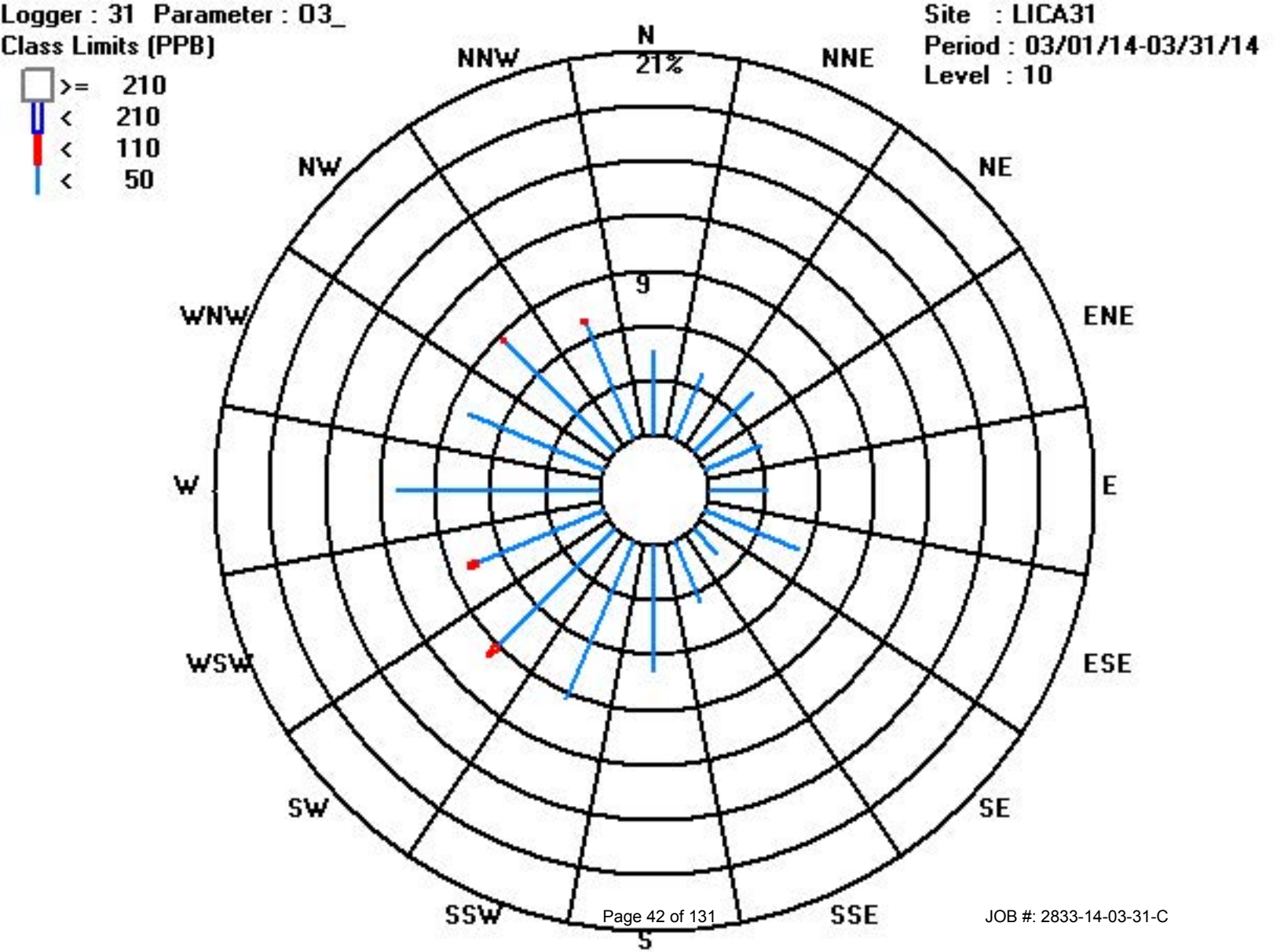
Distribution By Samples

Direction

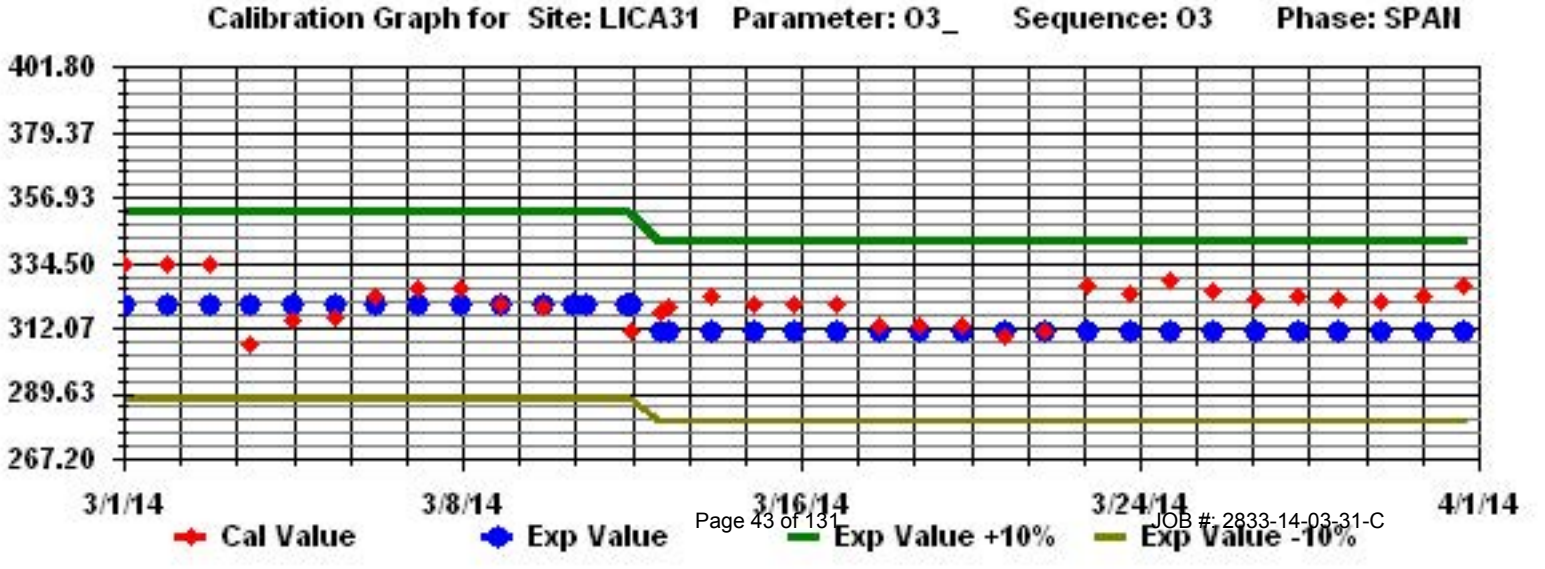
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	32	27	32	23	22	38	13	25	48	65	63	51	76	55	59	48	677
< 110											5	4			1	1	11
< 210																	
>= 210																	
Totals	32	27	32	23	22	38	13	25	48	65	68	55	76	55	60	49	

Calm : .00 %

Total # Operational Hours : 688



JOB #: 2833-14-03-31-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
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitrogen Dioxide

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST

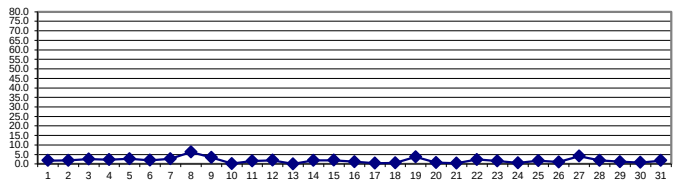
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	**S**	1.7	2.1	2.3	3.4	3.1	2.8	2.6	2.2	1.4	1	1.4	1.1	0.9	0.8	0.4	1.5	2.2	1.7	2	1.3	1.7	1.8	**S**	3.4	1.8	24
2	1.8	2.2	2.5	2	2	2.1	2.4	2	2.2	2.6	1.6	1.6	1.4	1.7	1.3	1.3	1.2	1.5	1.5	1.6	2	2	**S**	1.6	2.6	1.8	24
3	1.5	2.6	3.2	2.1	1.9	2	1.8	2.1	5.1	4.2	3.1	2.9	2.8	2.5	2.7	2.7	2.8	2.1	1.5	1.6	1.2	**S**	1.9	3	5.1	2.5	24
4	2.8	2.2	1.6	1.7	3.8	3.3	2.7	2.3	1.8	1.9	1.7	1.5	1.4	1.3	1.1	1.6	1.6	1.7	2.3	2.8	**S**	3.8	3.9	3.8	3.9	2.3	24
5	3.2	2.8	3.9	3.2	2.6	2.8	2.7	2.7	2.5	2.5	2.9	2.8	2.4	2.8	2.2	2.1	2.4	2.7	2.9	**S**	2.1	2.4	2.7	2.9	3.9	2.7	24
6	2.9	2.5	2.4	2.2	2.4	2.7	3.3	3.4	2.4	1.9	1.5	1.7	1.4	1.4	1.2	1.3	1.2	1.4	**S**	0.5	1.9	2	2.2	1.5	3.4	2.0	24
7	2.8	1.7	1.2	3.7	1.5	1	0.6	1.2	2.7	2.1	0.4	3.1	2.9	3	3.6	3.9	2.9	**S**	3.2	4.2	4.5	4.4	4.4	4	4.5	2.7	24
8	4.9	4.7	4	4.4	4	4.6	4.5	4.2	4.3	4.9	5	5.3	5.9	6.3	7.2	8.7	**S**	7.9	8.2	7.7	8.6	8.5	9.3	11.2	11.2	***6.3***	24
9	10.4	8.5	5.3	4.3	4.7	5.4	5.7	5.5	6	5.4	4.8	4.6	4	2.9	2.2	**S**	0.2	0	0	0	0	0	0	0	10.4	3.5	24
10	0	0	0	0	0	0	0	0	**P**	**R**	0	0	0	0	**S**	0.1	0.2	0	0.6	0.5	0.6	0.6	0.6	0.7	0.7	0.2	22
11	0.7	0.7	0.7	0.9	0.9	0.8	0.8	0.9	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1.4	1.3	1.5	2.9	3.8	4.7	1.2	4.7	1.5	24
12	0.2	0	0	0	0.1	0.1	0	**C**	**C**	5.4	1.5	1.2	**S**	1	0.1	0.2	0.4	1.1	2	6.7	6.5	7.1	5.6	1.3	7.1	1.9	24
13	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0.2	0	0	0.1	0.2	0.1	0	0	0	0.2	0.0	24
14	0.2	0.4	0.3	0.3	0.3	2.1	1.3	1.6	2.4	2.3	**S**	2.9	3.1	2.3	2.1	2.1	2.1	2.2	1.8	2	3.2	2.7	2.1	2	3.2	1.8	24
15	2	2	0.5	1.2	1	1.4	1.8	1.9	2.6	**S**	1.9	2.7	2.5	3.2	2.7	1.5	1.9	2.2	1.8	1.3	1.6	2.4	2.3	2.3	3.2	1.9	24
16	1.9	1.6	1.7	2.1	2.3	2.7	3	3.1	**S**	1.1	0.7	0.7	0.1	0	0.2	0	0.2	0.9	0.9	0.5	0.7	0.8	0.6	0.6	3.1	1.1	24
17	0.1	0.6	0	0	0	0	0	**S**	0.5	0.6	1.4	1.7	**C**	**C**	**C**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	1.7	0.4	15
18	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**C**	**C**	**C**	**C**	**C**	**C**	0.3	0.6	0.5	0.7	0.4	0.5	0.7	0.9	0.9	0.6	14
19	2.1	1.7	2.7	3.7	4.4	**S**	3.8	3.8	2.1	2	2.4	3.5	3.6	4.1	4.4	5	5.3	5.9	6.2	4.3	3.8	3.4	3.4	3.8	6.2	3.7	24
20	3	3.1	3.6	3.8	**S**	0	0	0	0.1	0	0	0.1	0	0	0	0.4	0.8	0.6	0.3	0.1	0	0	0.4	0.1	3.8	0.7	24
21	0	0	0	**S**	0.6	1	**S**	**S**	0.9	0.7	0.6	0.6	0.6	0.4	0.3	0.5	0.6	0.2	0.5	0.4	0.4	0.3	0.4	0.4	1	0.4	24
22	0.6	0.3	**S**	2.9	5.2	7	7.1	7.1	4.6	4.2	3.1	2.8	2.6	1.9	0.8	0.2	0.1	0	0.1	0.8	0.5	0.3	0.7	0.9	7.1	2.3	24
23	1.1	**S**	1.6	1.9	2.8	2.6	2.5	3.4	3.1	2.9	2.8	1.9	1.3	0.9	0.8	0.8	0.8	0.7	0.6	0.6	0.4	0.5	0.5	0.3	3.4	1.5	24
24	**S**	0.2	0.3	0.4	0.5	0.8	0.7	0.7	0.5	0.2	0.4	0.3	0.3	0.4	0.4	0.2	0.2	0.3	0.5	0.6	0.6	1.5	1.8	**S**	1.8	0.5	24
25	1.1	1.2	1	1.1	1.7	1	1.1	1.6	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	2.1	2.2	2.4	2.3	2.4	2.7	**S**	2.5	2.7	1.8	16
26	1.6	1.7	1.9	1.3	1.3	1.4	1.7	1.4	1.1	1.2	1.3	1	0.6	0.4	0.1	0.1	0.6	0.2	0.5	1.1	1.3	**S**	1.5	0.9	1.9	1.1	24
27	3.3	6.4	9.9	11.2	12.3	***12.7***	**S**	**S**	4	**C**	**C**	**C**	**C**	**C**	0.8	0.8	0.6	0.6	0.8	0.6	**S**	0.7	0.7	0.9	***12.7***	4.1	24
28	1.1	1.2	1.7	1.9	2.1	3.3	7.1	**S**	5.8	**S**	**S**	2.9	1	1.2	1	0.6	0.5	0.4	0.5	**S**	0.8	1	1.5	1.6	7.1	1.9	24
29	1.3	1.3	1.1	1	1	1.1	1.4	1.5	1.6	2.1	2.1	2.2	1.6	1.1	0.7	0.5	0.8	0.6	**S**	0.5	0.1	1.4	0.9	0.9	2.2	1.2	24
30	0.8	0.4	0.4	0.7	0.9	1.2	1.4	0.9	0.6	0.6	0.4	0.5	0.6	0.7	0.8	0.6	0.4	**S**	0.4	0.7	0.8	1.2	1.5	1.5	1.5	0.8	24
31	1.8	2.7	3.2	3.5	3.2	2.8	3	2.2	1.7	1.6	1.7	1.2	0.9	0.9	0.9	0.9	**S**	0.5	0.5	1.1	1.4	2	1.9	1.4	3.5	1.8	24
HOURLY MAX	10	9	10	11	12	13	7	7	6	5	5	5	6	6	7	9	5	8	8	8	9	9	9	11			
HOURLY AVG	1.9	1.9	2.0	2.2	2.3	2.4	2.3	2.2	2.4	2.2	1.7	2.0	1.7	1.6	1.5	1.4	1.2	1.4	1.6	1.7	1.8	2.1	2.1	1.9			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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

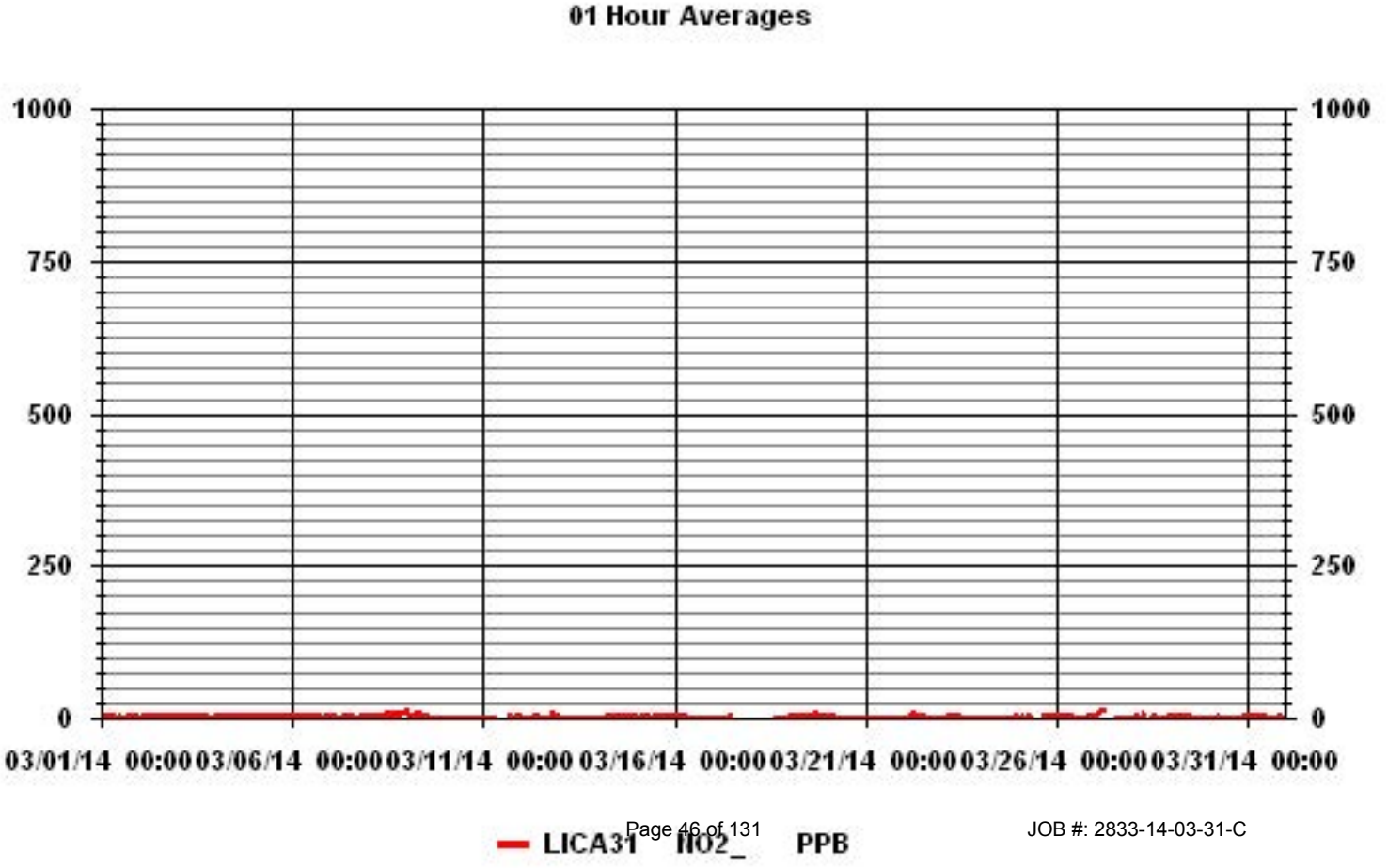
24 HOUR AVERAGES FOR MARCH 2014



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	588					
MAXIMUM 1-HR AVERAGE:	12.7	PPB	@ HOUR(S)	5	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	6.3	PPB			ON DAY(S) VAR-VARIOUS	8

IZS CALIBRATION TIME:	38	HRS	OPERATIONAL TIME:	715	HRS
MONTHLY CALIBRATION TIME:	25	HRS	AMD OPERATION UPTIME:	96.1	%
STANDARD DEVIATION:	1.89		MONTHLY AVERAGE:	1.88	PPB



JOB #: 2833-14-03-31-C

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

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	**S**	3	3.1	3.4	4.8	3.9	3.5	4	3.7	2.5	1.9	1.9	2.1	2.6	1.9	1.7	6.1	3.7	3.3	3.1	2.6	2.8	2.9	**S**	6.1	3.1	24
2	2.6	3.4	3.5	3.2	3	3.3	3.8	2.8	3.5	3.4	2.6	2.4	2.2	2.4	2	2.1	2	3.5	2.3	2.4	2.8	3.1	**S**	2.7	3.8	2.8	24
3	2.4	3.9	4.7	3.4	3.5	3.9	3.9	5	8.3	7.1	5.9	6	5.5	5.7	5.2	5.3	5.5	4.7	4.4	4.2	3.9	**S**	2.8	4	8.3	4.7	24
4	3.6	3.3	2.5	3.4	5.1	4.4	3.7	3.6	3	3	2.6	2	1.6	1.9	1.6	1.6	2.2	2.4	3.2	3.5	**S**	4.9	4.6	4.8	5.1	3.2	24
5	4.6	3.8	5.4	4.1	3.7	5.8	4.3	4.6	5.5	3.7	3.7	3.3	3.1	10.7	3.5	2.7	3	3.4	4.8	**S**	3.3	3.3	4.1	4.4	10.7	4.3	24
6	3.8	3.7	3.4	3.5	3.5	3.9	5	6.8	4.3	3.3	3.3	2.7	2.3	2.4	1.8	2.5	2.1	2.9	**S**	1.5	3.2	3.2	3.6	3.7	6.8	3.3	24
7	4.9	3.6	2.7	6.4	3.5	2.9	2.6	3.6	4.7	4.1	4	5.7	4.8	4.6	4.9	4.8	3.8	**S**	3.9	5.5	5.6	5.2	5.2	5	6.4	4.4	24
8	6.8	6.5	5	5.3	5.2	5.5	5.4	5.2	5.4	5.8	6.2	6.2	7	7.5	8.1	23.9	**S**	9.3	9.7	8.9	9.7	9.7	10.6	12.5	23.9	***8.1***	24
9	11.7	9.8	6.7	4.8	5.6	6.1	6.6	6.3	6.5	6.3	5.6	5.3	4.8	3.9	3.4	**S**	1.6	1.1	0.8	0.7	1	0.7	0.9	0.5	11.7	4.4	24
10	0.7	0.9	0.7	0.8	1.1	1	1.1	0.8	**P**	**R**	0.4	0.7	0.6	0.3	**S**	0.8	1.3	0.9	7.7	1.1	1.2	1.3	1.2	1.4	7.7	1.2	22
11	1.6	1.4	1.8	2	2	1.8	1.8	7.9	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2.3	2.3	2.9	3.7	5.8	6.7	2.9	7.9	3.1	24
12	1.3	1	1	1	1.3	0.9	0.7	**C**	**C**	***27.2***	2.2	2.7	**S**	3	1.1	1.3	1.7	2.6	5.6	8.4	7.9	8.7	7.8	4.3	***27.2***	4.4	24
13	1.1	0.9	1.1	0.7	1	1.1	0.9	0.7	1	0.8	0.8	**S**	0.8	0.9	0.9	1	1.1	0.9	1.1	0.9	1	1.1	0.9	1.1	1.1	0.9	24
14	1.4	1.2	1.3	1.2	2.1	3.4	2.6	2.7	3.8	3.5	**S**	4.2	3.9	3.3	3	3	3	3	2.7	3.7	3.8	3.8	3.3	3	4.2	2.9	24
15	3.2	3	2.3	2.3	2.3	2.3	3.3	3.3	4	**S**	2.8	3.3	3.3	4.1	3.9	2.5	2.9	3.2	2.9	2.1	2.5	3.4	2.8	3	4.1	3.0	24
16	2.8	2.4	2.5	2.9	3	3.6	3.5	4.1	**S**	2.2	1.9	2.5	1.3	1.3	1.3	1.6	1.5	2.5	2.1	2.4	2.2	2.3	2.2	1.9	4.1	2.3	24
17	1.8	1.8	1.5	1	1	1	1.4	**S**	1.5	1.9	3.4	**C**	**C**	**C**	**C**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	3.4	1.6	15
18	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1.3	1.5	1.9	1.3	1.4	1.9	2.8	2.8	1.7	14
19	3.3	3	4.7	4.8	6.1	**S**	4.7	7.5	2.8	2.6	3.1	4.4	4.3	4.8	5	5.6	6.6	6.4	6.9	15.6	4.4	3.8	4.2	4.8	15.6	5.2	24
20	3.4	3.6	4	5.3	**S**	1.1	0.8	0.9	1	0.8	0.9	0.9	0.8	0.8	0.9	1.3	1.7	1.5	1.5	1	0.9	1.1	1.7	1.6	5.3	1.6	24
21	1.1	1.2	1.3	**S**	1.4	1.8	**S**	**S**	1.3	1.1	1	1	1.2	0.9	0.9	1.2	1.3	1.2	2.8	2.6	1.3	1.2	1.1	1.3	2.8	1.3	24
22	4.9	0.9	**S**	5.4	7	7.8	7.7	8.5	5.2	4.8	3.9	3.2	2.6	2.1	1.4	1.2	1	1	1.2	2.6	2.4	1.4	2.4	1.8	8.5	3.5	24
23	2.2	**S**	2.6	3	4.1	4.2	3.9	10.2	4.3	4	4	2.9	2.4	1.9	1.7	1.6	2.1	1.7	1.7	1.4	1.5	1.3	1.6	1	10.2	2.8	24
24	**S**	1.2	0.9	0.9	1.1	1.6	1.2	1.3	1.2	0.9	0.9	0.8	0.9	0.8	0.8	0.7	0.9	1	1.1	1.6	1.4	2	2.5	**S**	2.5	1.2	24
25	1.8	1.9	1.9	1.9	3.5	2.3	1.9	2.2	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	3.2	3.7	4.4	3.6	3.4	3.7	**S**	4.8	4.8	2.9	16
26	2	2.2	2.6	2.1	2	2.1	2.1	2.1	1.7	1.9	2.1	1.7	1.4	1.3	1	1	1.4	0.8	1.4	3.6	2.8	**S**	2.3	1.6	3.6	1.9	24
27	5.4	8.6	11.5	12.3	13	13.5	**S**	**S**	5.9	**C**	**C**	**C**	**C**	**C**	1.8	2.1	1.6	1.6	2.1	1.6	**S**	1.7	1.4	2	13.5	5.4	24
28	1.9	1.9	2.2	2.5	2.7	4.4	**S**	**S**	5.8	**S**	**S**	4.7	1.2	1.5	6.8	0.9	1	6.6	0.9	**S**	2.3	2	2.8	3.2	6.8	2.9	24
29	3.3	2	2	1.7	1.6	2.4	3	2.9	3.1	3	3	2.8	2.4	2.4	1.6	1.3	1.7	1.7	**S**	1.9	1	2.4	1.9	1.7	3.3	2.2	24
30	1.7	1.4	1.2	1.7	1.8	1.9	2.1	2.1	1.5	1.3	1.3	1.2	1.2	1.5	1.2	1.2	1.1	**S**	1.2	1.2	1.2	2.2	2.6	2.4	2.6	1.6	24
31	2.3	3.7	4.1	4.1	4.1	3.6	4.1	3.3	2.5	2.7	3	2.1	1.4	1.4	1.4	1.4	**S**	1.1	1.4	1.7	2.1	2.5	2.4	1.9	4.1	2.5	24
HOURLY MAX	12	10	12	12	13	14	8	10	8	27	6	6	7	11	8	24	7	9	10	16	10	10	11	13			
HOURLY AVG	3.1	2.9	3.0	3.3	3.5	3.5	3.2	4.1	3.7	4.1	2.8	3.0	2.5	2.8	2.6	2.9	2.4	2.7	3.0	3.3	2.9	3.1	3.2	3.1			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 649

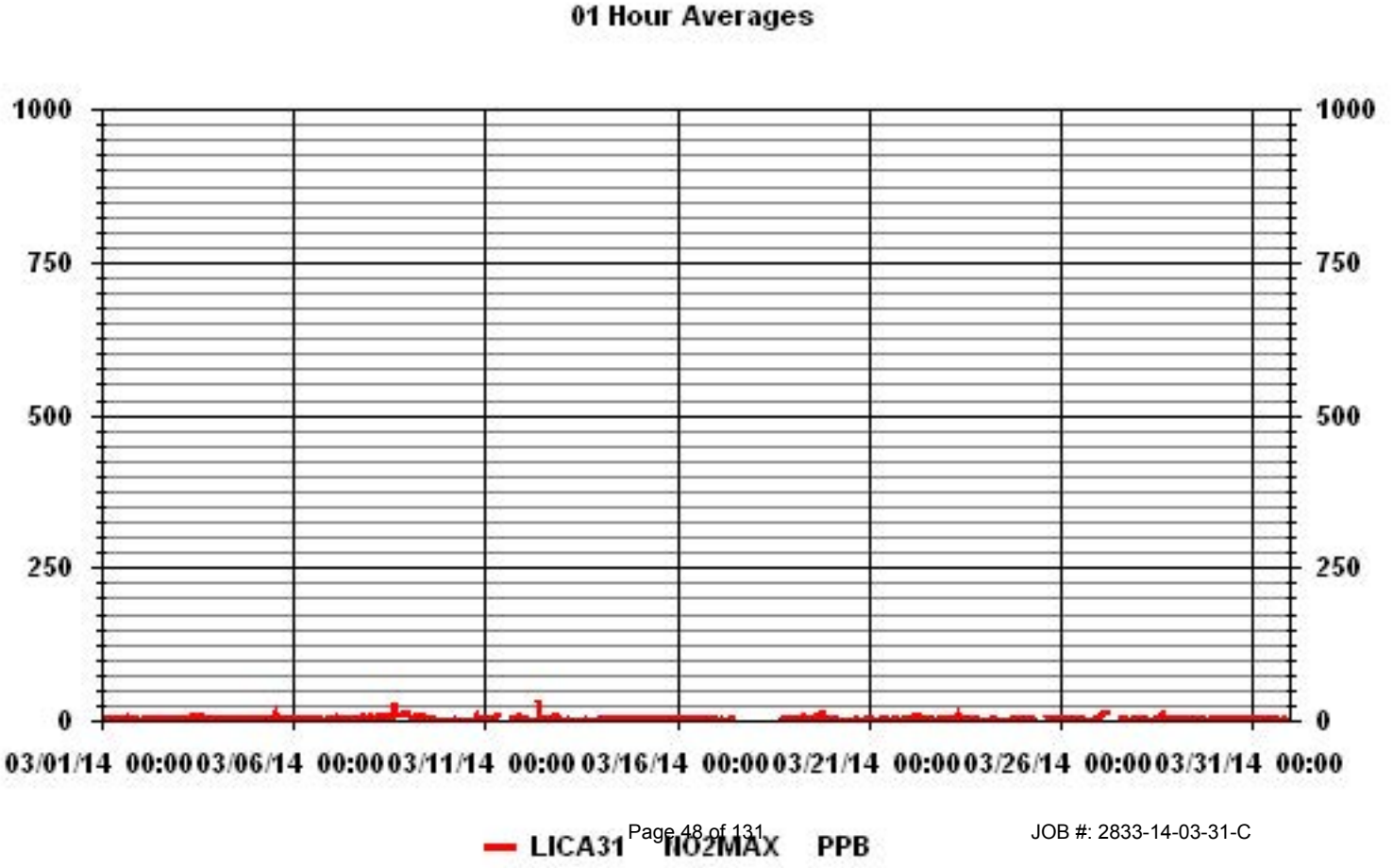
MAXIMUM INSTANTANEOUS VALUE: 27.2 PPB @ HOUR(S) 9 ON DAY(S) 12

VAR-VARIOUS

IZS CALIBRATION TIME: 39 HRS OPERATIONAL TIME: 715 HRS

MONTHLY CALIBRATION TIME: 27 HRS

STANDARD DEVIATION: 2.48



JOB #: 2833-14-03-31-C

LICA31
NO2_ / WDR Joint Frequency Distribution (Percent)

March 2014

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
<	50.0	4.14	3.83	4.44	3.52	3.37	5.82	1.99	3.83	7.36	10.12	10.12	8.89	9.81	7.05	8.58	7.05	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.14	3.83	4.44	3.52	3.37	5.82	1.99	3.83	7.36	10.12	10.12	8.89	9.81	7.05	8.58	7.05	

Calm : .00 %

Total # Operational Hours : 652

Distribution By Samples

Direction

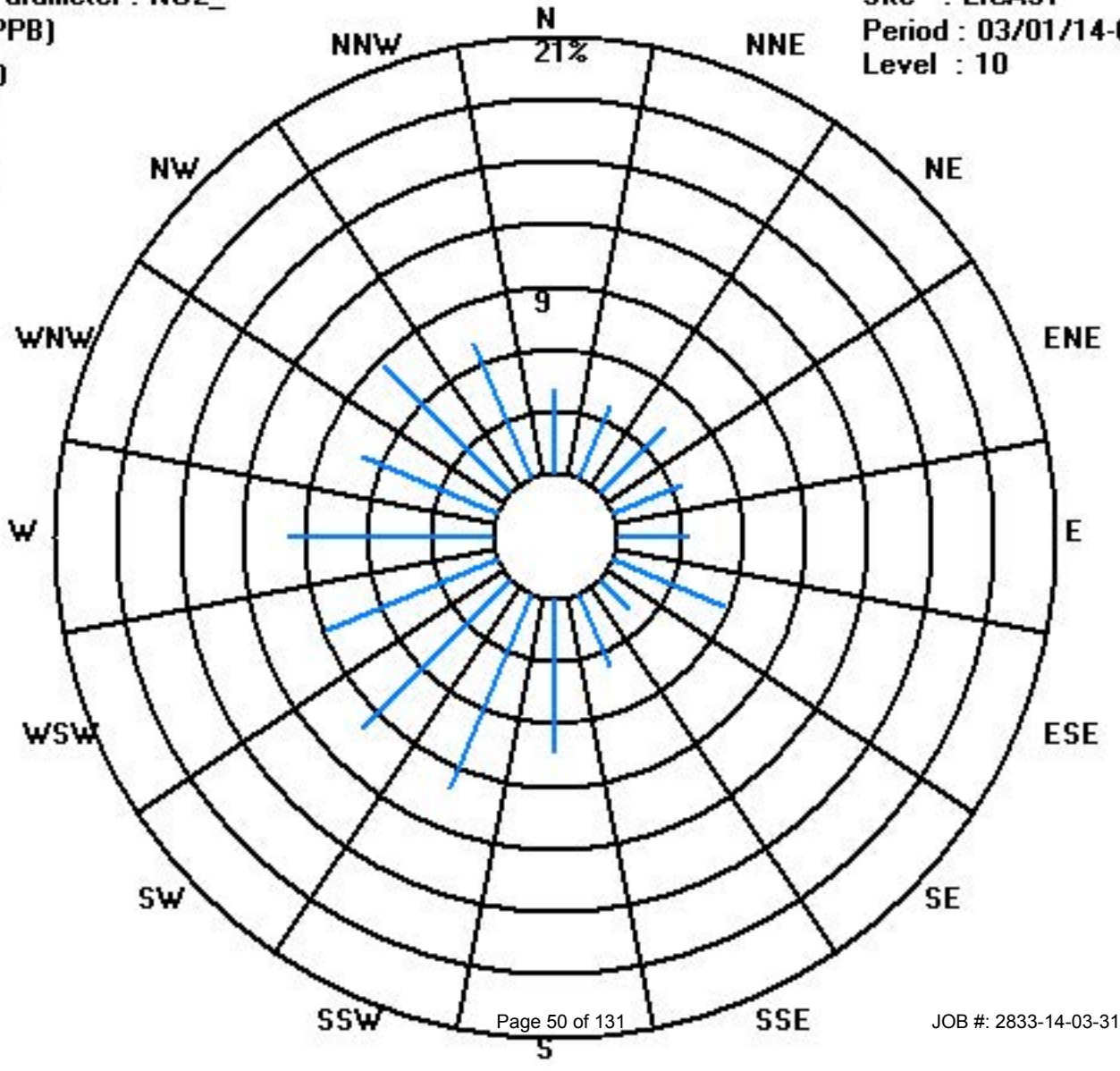
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	27	25	29	23	22	38	13	25	48	66	66	58	64	46	56	46	652
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	27	25	29	23	22	38	13	25	48	66	66	58	64	46	56	46	

Calm : .00 %

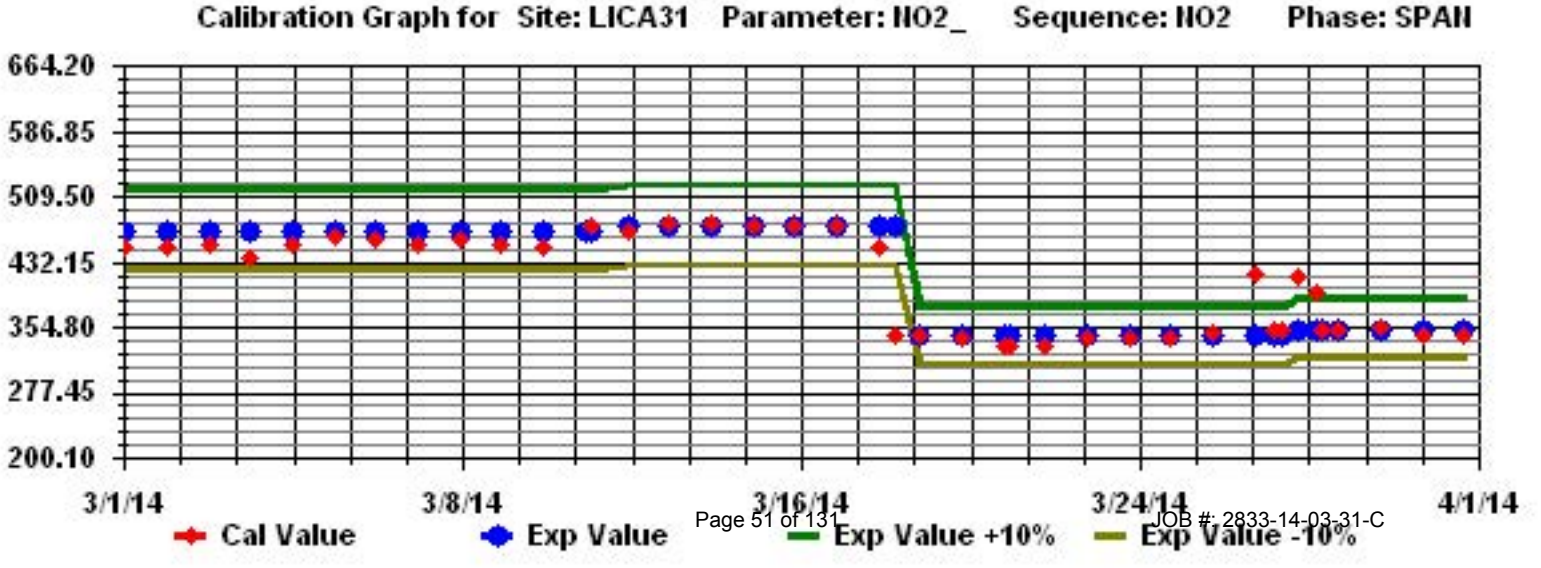
Total # Operational Hours : 652

Logger : 31 Parameter : NO2_
Class Limits (PPB)
>= 210.0
< 210.0
< 110.0
< 50.0

Site : LICA31
Period : 03/01/14-03/31/14
Level : 10



JOB #: 2833-14-03-31-C


Calibration Graph for Site: LICA31 Parameter: NO2_ Sequence: NO2 Phase: SPAN
664.20
586.85
509.50
432.15
354.80
277.45
200.10
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

NITRIC OXIDE (NO) hourly averages in ppb

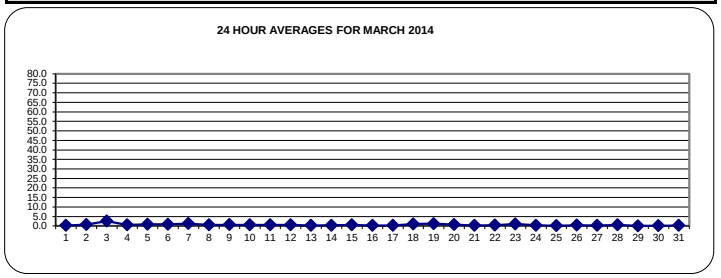
MST

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	**S**	0.6	0.3	0	0.4	0.3	0.3	0.2	0.6	0.7	0.8	0.3	0.2	0.2	0	0	0	0	0	0	0	0	0	**S**	0.8	0.2	24
2	1.3	0.9	0.5	0.7	0.4	0.6	0.3	0.8	1.1	2.1	1.6	1	1.3	0.5	0.1	0.5	0.2	0.4	0.2	0	0	0	**S**	0.9	2.1	0.7	24
3	0.5	0.7	0.8	0.7	0.8	1.1	1.7	2.5	4.2	***5.5***	5.3	5.2	4.8	5.1	4.3	4	3.2	2.7	2.3	1.9	2	**S**	0.7	0.2	***5.5***	***2.6***	24
4	0.4	0.5	0.4	0.1	0.4	0.6	0.4	0.8	0.8	1.1	1.3	0.4	0.6	0	0	0	0	0	0	0	**S**	1.7	1	0.8	1.7	0.5	24
5	1.2	0.8	0.6	0.9	0.9	0.6	0.6	0.6	1.6	1.6	1.6	1.2	0.4	1.3	1	0.4	0.6	0.4	0.7	**S**	1.4	0.8	0.9	0.7	1.6	0.9	24
6	0.7	0.8	0.9	0.5	0.9	0.7	0.9	1.2	1.3	1.5	1.6	0.9	1.1	0.6	0.2	0.2	0	0	**S**	1.3	1	0.9	0.8	0.9	1.6	0.8	24
7	0.9	1.3	1.1	1.5	1.4	1.3	1.2	1.4	2	2.4	1.7	2.3	1.9	1.7	1.6	0.9	0.4	**S**	0.9	0.4	0.3	0.6	0.4	0.4	2.4	1.2	24
8	0.1	0.2	0.2	0	0	0	0.2	0	0.5	0.1	0.5	0.8	1	0.7	1.1	1.3	**S**	1.3	1.1	0.5	0.4	0.6	0.7	0.6	1.3	0.5	24
9	0.6	0.1	0	0.4	0.3	0.2	0.1	0.1	0.7	1.7	1.3	1.4	1.1	0.7	0.4	**S**	1.3	0.7	0.9	0.5	0.4	0.9	0.3	0.3	1.7	0.6	24
10	0.5	0.3	0.5	0.3	0.7	1	0.7	0.6	**P**	**R**	0.3	0.6	0.9	0.5	**S**	1.3	1	0.7	0.4	0.3	0.1	0.4	0.5	0.4	1.3	0.6	22
11	0.1	0.4	0.4	0.5	0.7	1.2	0.8	1.2	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0.4	0.2	0.6	0.6	0.2	0.3	1.2	0.5	24
12	0	0	0	0.3	0.1	0	0	**C**	**C**	0.9	0	0	**S**	0.5	0.5	0.3	1	0.9	0.9	0.9	0.8	1.3	1.2	0.7	1.3	0.5	24
13	0.7	0.2	0.3	0.5	0.8	0.3	0.4	0.5	0.7	0.8	0.7	**S**	0.6	0.1	0	0	0	0	0	0	0.1	0	0	0	0.8	0.3	24
14	0	0.2	0.1	0.2	0	0.2	0	0.3	0.6	1.4	**S**	1.6	1.2	0.8	0.3	0.3	0	0	0	0	0	0	0	0	1.6	0.3	24
15	0	0.1	0	0	0	0	0.1	0.3	0.2	**S**	1.9	1.8	1.4	1.6	0.9	0.8	0.6	0.8	0.5	0.2	0.6	0.1	0.6	0.8	1.9	0.6	24
16	0.2	0.2	0.8	0.4	0.5	0.3	0.7	0.7	**S**	0.7	0.1	0.1	0	0	0	0	0	0.2	0	0	0	0	0	0	0.8	0.2	24
17	0	0	0	0	0	0	0	**S**	0.6	0.4	0.6	1.3	**C**	**C**	**C**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	1.3	0.3	15
18	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**C**	**C**	**C**	**C**	**C**	**C**	0.2	0.4	0.9	1	1.1	1.3	1.4	1.6	1.6	1.0	14
19	1.5	1.8	1.8	1.9	2.1	**S**	0	0.2	0.5	0.8	1.4	1.9	1.7	1.3	1.5	1.3	1	0.7	0.6	1	0.5	0.7	1	1.2	2.1	1.1	24
20	1	1	1.1	1.3	**S**	0	0	0	0.1	0.4	0.5	0.5	0.7	0.5	0.7	0.9	0.9	0.9	0.8	0.8	1.1	1.2	1.5	1.5	1.5	0.8	24
21	1.6	1.8	1.7	**S**	0.4	0.1	**S**	**S**	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.8	0.3	24
22	0	0	**S**	0	0	0	0.1	1.6	2.3	2.6	1.9	1.1	0.5	0	0	0	0	0	0	0	0	0	0	0	2.6	0.4	24
23	0	**S**	0.8	0.8	0.8	0.8	1	1.7	1.6	1.7	1.7	1.3	1	0.9	0.8	0.9	0.9	0.9	0.9	1	0.9	1.1	1.1	1.1	1.7	1.0	24
24	**S**	0.3	0.1	0.1	0	0	0.1	0.2	0.3	0.4	0.2	0.2	0.4	0.3	0.3	0.4	0.5	0.6	0.8	0.6	0.5	0.3	0.3	**S**	0.8	0.3	24
25	0.2	0	0	0	0	0	0	0.2	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	0.2	0	0.2	0.2	0.1	0	**S**	0.2	0.2	0.1	16
26	0	0	0	0.1	0.1	0	0.1	0.3	0.5	0.8	0.9	1	1	0.8	0.5	0.4	0.6	0.4	0.5	0.5	0.4	**S**	0.4	0.2	1	0.4	24
27	0.1	0.1	0.3	0.4	0.3	0.4	**S**	**S**	1.7	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	**S**	0	0	0	1.7	0.2	24
28	0	0.4	1.4	1.3	1.4	1.4	0.2	**S**	0	**S**	**S**	0.4	0.4	0.6	0.8	0.8	0.8	0.9	0.7	**S**	0	0	0	0	1.4	0.6	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0.0	24
30	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	**S**	0.3	0.2	0.1	0.1	0.2	0.3	0.3	0.1	24
31	0.3	0.4	0.3	0.3	0.4	0.5	0.5	0.4	0.5	0.4	0.6	0.1	0	0	0.3	0.2	**S**	0	0	0	0	0	0	0	0.6	0.2	24
HOURLY MAX	2	2	2	2	2	1	2	3	4	6	5	5	5	5	4	4	3	3	2	2	2	2	2	2			
HOURLY AVG	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.6	0.9	1.2	1.1	1.0	0.9	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5			

STATUS FLAG CODES

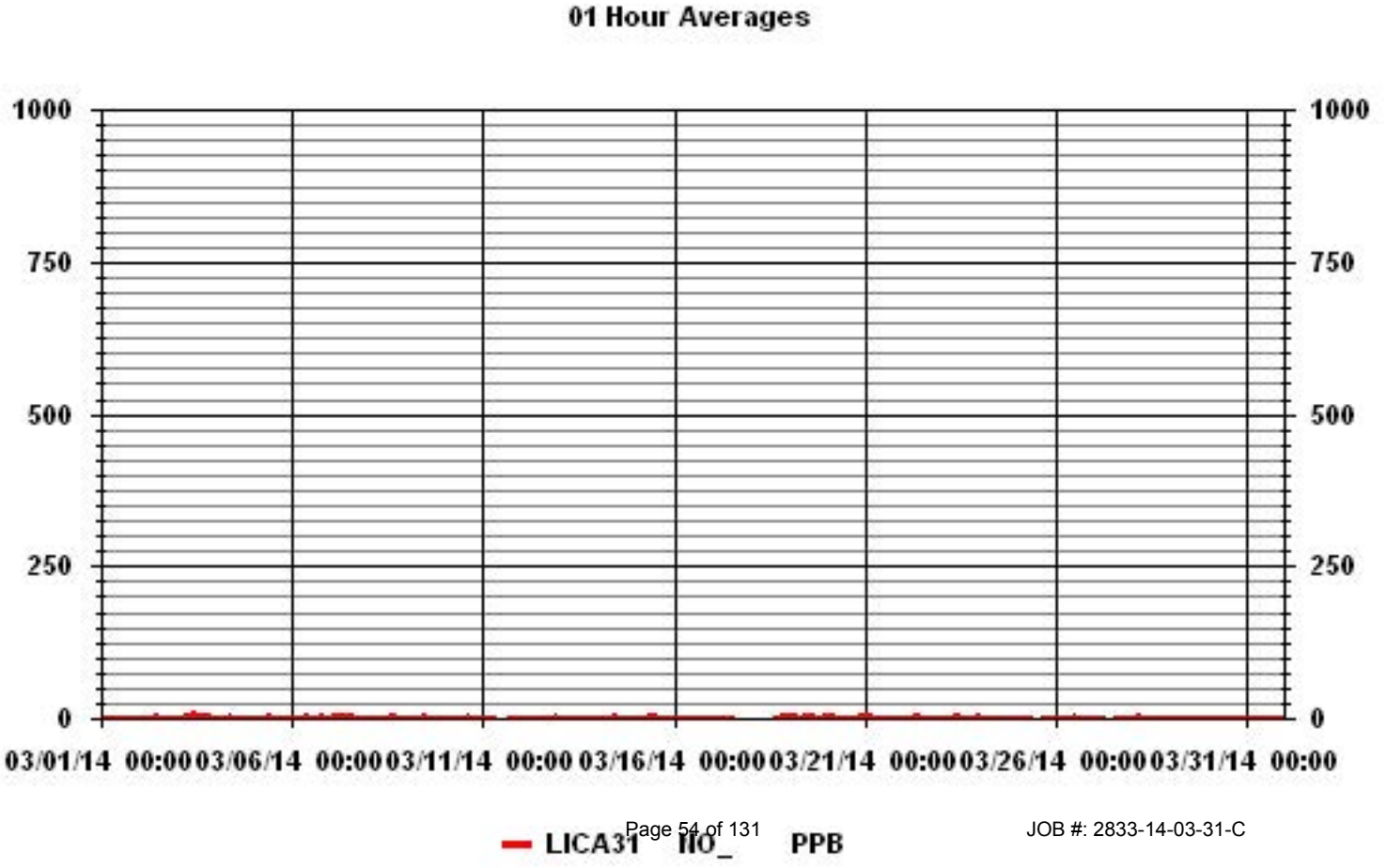
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	461					
MAXIMUM 1-HR AVERAGE:	5.5	PPB	@ HOUR(S)	9	ON DAY(S)	3
MAXIMUM 24-HR AVERAGE:	2.6	PPB			ON DAY(S) VAR-VARIOUS	3
IZS CALIBRATION TIME:	38	HRS	OPERATIONAL TIME:	715	HRS	
MONTHLY CALIBRATION TIME:	25	HRS	AMD OPERATION UPTIME:	96.1	%	
STANDARD DEVIATION:	0.73		MONTHLY AVERAGE:	0.58	PPB	



JOB #: 2833-14-03-31-C

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

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	**S**	1.6	1.2	1.1	1.1	1	1.1	1.4	2.3	1.4	1.5	1.3	1.1	1.5	0.8	0.4	14.7	2	0.9	1	1.2	1	0.9	**S**	14.7	1.8	24
2	2.4	2.1	1.5	1.5	1.5	1.5	1	1.6	2.3	4.1	2.9	1.9	3.2	1.4	1.2	1.4	1.1	1.5	1.4	0.4	0.8	0.6	**S**	2.3	4.1	1.7	24
3	1.3	1.8	1.6	1.3	1.7	1.9	2.6	3.3	6.2	6.2	6.3	6	5.8	5.9	5.1	5.1	4.4	3.6	3.6	3.2	2.7	**S**	1.7	0.8	6.3	***3.6***	24
4	1.2	1	1.1	1	1.5	1.5	1.5	1.8	1.5	1.9	2.3	1.4	1.4	0.6	0.7	0.6	0.2	0	0	0.1	**S**	3.1	1.7	1.7	3.1	1.2	24
5	2.2	1.9	1.4	2	1.8	1.6	1.3	1.7	3	2.6	3	2.1	1.5	11.6	3.3	1.5	1.3	1	2.4	**S**	3.1	2.1	2.1	1.9	11.6	2.5	24
6	1.6	1.6	1.8	1.4	2	1.7	1.9	3.4	2.1	2.3	3	2	2.2	1.3	1.2	1.3	0.7	0.5	**S**	2.4	2	1.9	1.8	2	3.4	1.8	24
7	1.9	2	2.3	2.4	2.3	2.2	2.3	2.6	3	3.3	3.1	3.8	3.4	2.7	3.7	1.9	1.2	**S**	2.7	1.4	1.7	1.5	1.4	1.4	3.8	2.4	24
8	1.1	1.2	1	0.8	0.6	0.7	1	1	1.7	1.3	1.6	1.6	2.6	1.6	1.9	***21.6***	**S**	2.3	2.4	1.6	1.2	1.6	1.7	1.5	***21.6***	2.3	24
9	1.6	0.9	1.1	1.2	1.2	0.9	1.1	1.1	1.7	3.3	2.1	2.6	2.3	2	1.5	**S**	3	1.8	1.9	1.4	1.5	2.1	1.5	1.5	3.3	1.7	24
10	1.4	1.6	1.4	1.2	1.6	2.1	2.1	1.8	**P**	**R**	1.9	1.8	2.4	1.2	**S**	2.3	2.9	1.9	5.4	1.3	0.9	1.1	1.4	1.1	5.4	1.8	22
11	0.9	1.3	1.2	1.5	2	2.4	1.5	7.3	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0.7	1.6	1.3	1.5	1.7	0.9	1.1	7.3	1.8	24
12	1.1	0.9	0.6	1.4	1	0.7	0.6	**C**	**C**	11.3	0.9	0.8	**S**	1.5	2.1	1.1	2	2.2	2	1.7	1.9	2	2.2	1.5	11.3	1.9	24
13	1.9	1.1	1.1	1.7	1.7	1.4	1.4	1.8	1.7	1.8	1.7	**S**	1.6	0.9	0.9	1.2	0.7	0.7	0.9	0.9	1.1	0.7	0.3	0.9	1.9	1.2	24
14	0.8	1	0.7	0.9	0.9	1.6	1	1.1	1.4	2.5	**S**	2.5	2.3	1.8	1.5	1.3	0.7	0.7	0.8	0.8	0.7	0.5	0.7	0.5	2.5	1.2	24
15	0.5	0.9	0.9	0.8	0.7	1.1	1.4	1.1	1.7	**S**	5	2.9	2.2	2.4	1.6	1.6	1.4	1.8	1.4	1.2	1.6	1.2	1.4	1.7	5	1.6	24
16	1.2	1.2	1.6	1.4	1.3	1.2	1.4	2.1	**S**	2	1.3	0.8	0.7	1.2	0.5	0.4	0.8	1.1	0.9	0.3	0.6	0.9	0.6	0.6	2.1	1.0	24
17	0.4	0.8	0.7	0.9	0.8	0.7	0.7	**S**	1.8	1.3	2.3	**C**	**C**	**C**	**C**	**C**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	2.3	1.0	16
18	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	2	2.3	1.9	2	2.1	2.3	2.3	1.9	14
19	2.1	2.3	2.6	2.7	2.9	**S**	1.1	0.9	1.2	1.7	2.2	2.6	2.8	2	2.2	2.1	1.5	1.6	1.4	15.3	1.1	1.3	1.9	3.3	15.3	2.6	24
20	1.6	1.6	1.7	1.8	**S**	1.1	0.1	0.2	0.8	1.1	1.1	1.3	1.3	1.2	1.3	1.4	1.8	1.4	1.4	1.5	1.7	2	2.1	2.1	2.1	1.4	24
21	2.2	2.3	2.3	**S**	1	0.5	**S**	**S**	1	0.5	0.3	0.2	0.1	0	0	0	0	0	0.6	0.4	0	0	0	0.1	2.3	0.5	24
22	0.3	0.3	**S**	0.7	0.3	0.4	1.1	2.4	3.2	3.2	3	2	1.4	0.3	0	0	0	0	0	0	0	0	0	0	3.2	0.8	24
23	0	**S**	1.4	1.4	1.4	2.1	2.3	11.9	2.4	3	2.4	2.4	1.6	1.5	1.6	1.5	1.7	1.6	2	1.8	1.5	1.6	1.7	1.7	11.9	2.2	24
24	**S**	0.9	0.8	0.6	0.6	0.7	1	0.7	0.9	1.2	0.9	0.8	1	0.9	0.8	1.4	1.2	1	1.4	1.1	1.1	0.8	0.9	**S**	1.4	0.9	24
25	0.7	0.5	0.4	0.5	0.3	0.5	0.8	0.9	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	0.8	0.7	1.5	0.9	0.9	0.6	**S**	1.1	1.5	0.7	16
26	0.5	0.7	0.6	0.7	0.5	0.6	0.8	0.9	1	1.6	1.6	1.6	1.5	1.5	1.1	1.3	1.1	1.1	1.2	1.1	1.1	**S**	1.6	0.7	1.6	1.1	24
27	0.8	0.8	1.1	1.4	0.9	1.3	**S**	**S**	2.9	**C**	**C**	**C**	**C**	**C**	0.3	0.7	0.3	0.3	0.2	0.3	**S**	0.8	0.5	0.2	2.9	0.8	19
28	0.4	1.7	2	1.9	2.1	1.9	**S**	**S**	1	**S**	**S**	1.6	1.4	1.5	9.3	1.5	1.5	5.8	1.2	**S**	0.2	0.2	0.5	0.5	9.3	1.9	24
29	0.3	0.3	0.3	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.2	0.4	0.4	0.3	0.3	0.3	0.6	0.6	**S**	1	0.2	0.3	0.2	0.3	1	0.4	24
30	0.5	0.4	0.4	0.6	0.4	0.6	0.5	0.5	0.7	0.7	0.6	0.4	0.7	0.6	0.6	0.4	0.5	**S**	1	0.7	0.7	0.7	0.7	0.8	1	0.6	24
31	1.1	1.1	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.3	0.7	0.7	0.6	0.9	0.8	**S**	0.5	0.4	0.6	0.4	0.4	0.4	0.4	1.3	0.8	24
HOURLY MAX	2	2	3	3	3	2	3	12	6	11	6	6	6	12	9	22	15	6	5	15	3	3	2	3			
HOURLY AVG	1.1	1.2	1.2	1.2	1.2	1.2	1.2	2.1	1.9	2.5	2.1	1.8	1.8	1.8	1.7	2.0	1.8	1.3	1.5	1.6	1.2	1.2	1.2	1.2			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 628

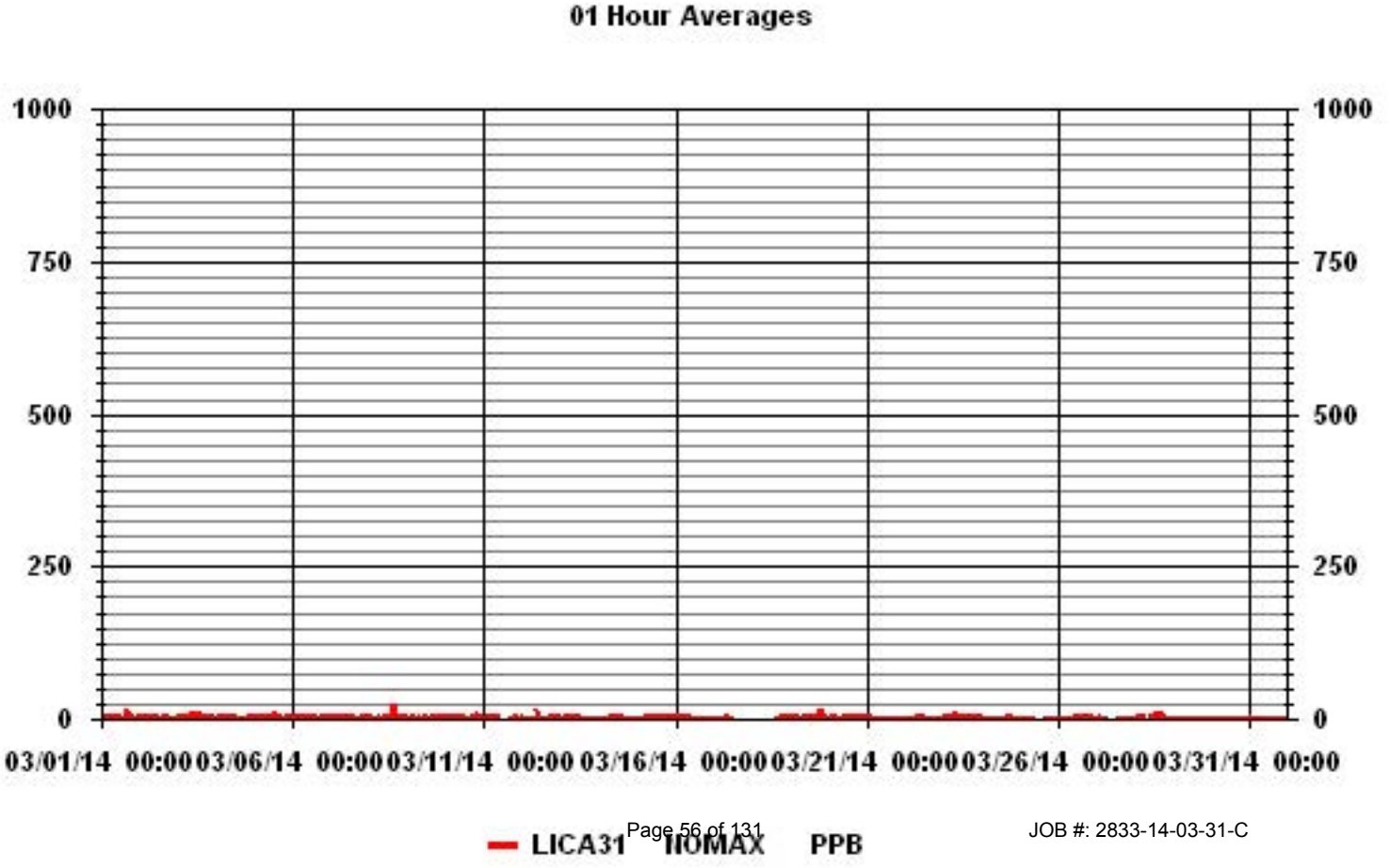
MAXIMUM INSTANTANEOUS VALUE: 21.6 PPB @ HOUR(S) 16 ON DAY(S) 8

VAR-VARIOUS

IZS CALIBRATION TIME: 39 HRS OPERATIONAL TIME: 711 HRS

MONTHLY CALIBRATION TIME: 23 HRS

STANDARD DEVIATION: 1.65



JOB #: 2833-14-03-31-C

LICA31
NO_ / WDR Joint Frequency Distribution (Percent)

March 2014

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
<	50.0	4.14	3.83	4.44	3.52	3.37	5.82	1.99	3.83	7.36	10.12	10.12	8.89	9.81	7.05	8.58	7.05	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.14	3.83	4.44	3.52	3.37	5.82	1.99	3.83	7.36	10.12	10.12	8.89	9.81	7.05	8.58	7.05	

Calm : .00 %

Total # Operational Hours : 652

Distribution By Samples

Direction

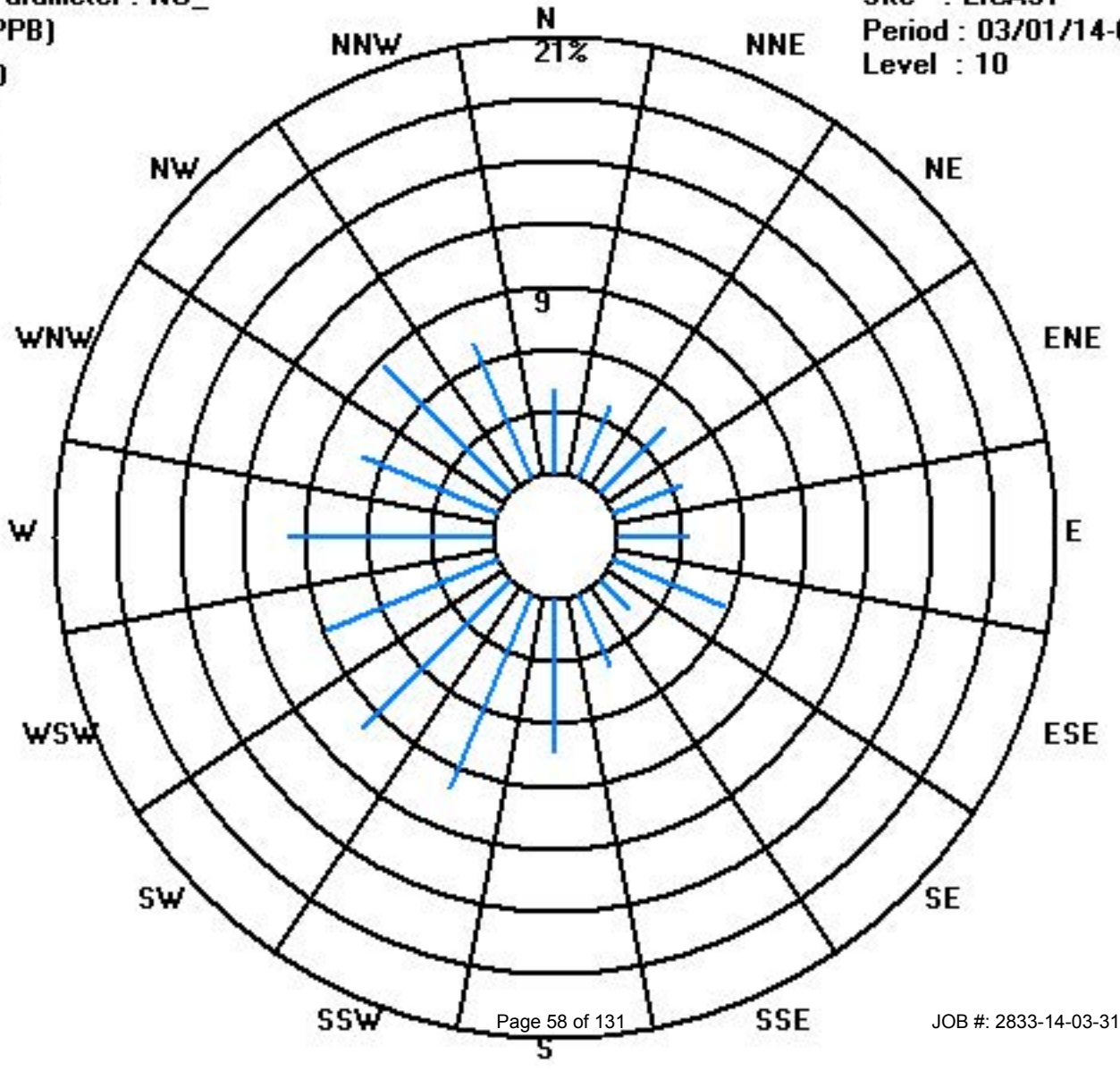
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	27	25	29	23	22	38	13	25	48	66	66	58	64	46	56	46	652
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	27	25	29	23	22	38	13	25	48	66	66	58	64	46	56	46	

Calm : .00 %

Total # Operational Hours : 652

Logger : 31 Parameter : NO_
Class Limits (PPB)
>= 210.0
< 210.0
< 110.0
< 50.0

Site : LICA31
Period : 03/01/14-03/31/14
Level : 10



JOB #: 2833-14-03-31-C

Oxides of Nitrogen

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

OXIDES OF NITROGEN (NOx) hourly averages in ppb

MST

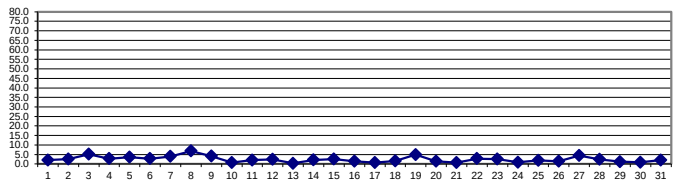
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	**S**	2.3	2.4	2.3	3.8	3.4	3.1	2.8	2.8	2.1	1.8	1.7	1.3	1.1	0.8	0.4	1.5	2.2	1.7	2	1.3	1.7	1.8	**S**	3.8	2.0	24
2	3.1	3.1	3	2.7	2.4	2.7	2.7	2.8	3.3	4.7	3.2	2.6	2.7	2.2	1.4	1.8	1.4	1.9	1.7	1.6	2	2	**S**	2.5	4.7	2.5	24
3	2	3.3	4	2.8	2.7	3.1	3.5	4.6	9.3	9.7	8.4	8.1	7.6	7.6	7	6.7	6	4.8	3.8	3.5	3.2	**S**	2.6	3.2	9.7	5.1	24
4	3.2	2.7	2	1.8	4.2	3.9	3.1	3.1	2.6	3	3	1.9	2	1.3	1.1	1.6	1.6	1.7	2.3	2.8	**S**	5.5	4.9	4.6	5.5	2.8	24
5	4.4	3.6	4.5	4.1	3.5	3.4	3.3	3.3	4.1	4.1	4.5	4	2.8	4.1	3.2	2.5	3	3.1	3.6	**S**	3.5	3.2	3.6	3.6	4.5	3.6	24
6	3.6	3.3	3.3	2.7	3.3	3.4	4.2	4.6	3.7	3.4	3.1	2.6	2.5	2	1.4	1.5	1.2	1.4	**S**	1.8	2.9	2.9	3	2.4	4.6	2.8	24
7	3.7	3	2.3	5.2	2.9	2.3	1.8	2.6	4.7	4.5	2.1	5.4	4.8	4.7	5.2	4.8	3.3	**S**	4.1	4.6	4.8	5	4.8	4.4	5.4	4.0	24
8	5	4.9	4.2	4.4	4	4.6	4.7	4.2	4.8	5	5.5	6.1	6.9	7	8.3	10	**S**	9.2	9.3	8.2	9	9.1	10	11.8	11.8	***6.8***	24
9	11	8.6	5.3	4.7	5	5.6	5.8	5.6	6.7	7.1	6.1	6	5.1	3.6	2.6	**S**	1.5	0.7	0.9	0.5	0.4	0.9	0.3	0.3	11	4.1	24
10	0.5	0.3	0.5	0.3	0.7	1	0.7	0.6	**P**	**R**	0.3	0.6	0.9	0.5	**S**	1.4	1.2	0.7	1	0.8	0.7	1	1.1	1.1	1.4	0.8	22
11	0.8	1.1	1.1	1.4	1.6	2	1.6	2.1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1.4	1.7	1.7	3.5	4.4	4.9	1.5	4.9	2.1	24
12	0.2	0	0	0.3	0.2	0.1	0	**C**	**C**	6.3	1.5	1.2	**S**	1.5	0.6	0.5	1.4	2	2.9	7.6	7.3	8.4	6.8	2	8.4	2.4	24
13	0.7	0.2	0.3	0.5	0.8	0.3	0.4	0.5	0.7	0.8	0.7	**S**	0.6	0.1	0	0.2	0	0	0.1	0.2	0.2	0	0	0	0.8	0.3	24
14	0.2	0.6	0.4	0.5	0.3	2.3	1.3	1.9	3	3.7	**S**	4.5	4.3	3.1	2.4	2.4	2.1	2.2	1.8	2	3.2	2.7	2.1	2	4.5	2.1	24
15	2	2.1	0.5	1.2	1	1.4	1.9	2.2	2.8	**S**	3.8	4.5	3.9	4.8	3.6	2.3	2.5	3	2.3	1.5	2.2	2.5	2.9	3.1	4.8	2.5	24
16	2.1	1.8	2.5	2.5	2.8	3	3.7	3.8	**S**	1.8	0.8	0.8	0.1	0	0.2	0	0.2	1.1	0.9	0.5	0.7	0.8	0.6	0.6	3.8	1.4	24
17	0.1	0.6	0	0	0	0	0	**S**	1.1	1	2	3	**C**	**C**	**C**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	3	0.7	15
18	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**C**	**C**	**C**	**C**	**C**	**C**	0.5	1	1.4	1.7	1.5	1.8	2.1	2.5	2.5	1.6	14
19	3.6	3.5	4.5	5.6	6.5	**S**	3.8	4	2.6	2.8	3.8	5.4	5.3	5.4	5.9	6.3	6.3	6.6	6.8	5.3	4.3	4.1	4.4	5	6.8	4.9	24
20	4	4.1	4.7	5.1	**S**	0	0	0	0.2	0.4	0.5	0.6	0.7	0.5	0.7	1.3	1.7	1.5	1.1	0.9	1.1	1.2	1.9	1.6	5.1	1.5	24
21	1.6	1.8	1.7	**S**	1	1.1	**S**	**S**	1.3	0.7	0.6	0.6	0.6	0.4	0.3	0.5	0.6	0.2	0.5	0.4	0.4	0.3	0.4	0.4	1.8	0.7	24
22	0.6	0.3	**S**	2.9	5.2	7	7.2	8.7	6.9	6.8	5	3.9	3.1	1.9	0.8	0.2	0.1	0	0.1	0.8	0.5	0.3	0.7	0.9	8.7	2.8	24
23	1.1	**S**	2.4	2.7	3.6	3.4	3.5	5.1	4.7	4.6	4.5	3.2	2.3	1.8	1.6	1.7	1.7	1.6	1.5	1.6	1.3	1.6	1.6	1.4	5.1	2.5	24
24	**S**	0.5	0.4	0.5	0.5	0.8	0.8	0.9	0.8	0.6	0.6	0.5	0.7	0.7	0.7	0.6	0.7	0.9	1.3	1.2	1.1	1.8	2.1	**S**	2.1	0.9	24
25	1.3	1.2	1	1.1	1.7	1	1.1	1.8	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	2.3	2.2	2.6	2.5	2.5	2.7	**S**	2.7	2.7	1.8	16
26	1.6	1.7	1.9	1.4	1.4	1.4	1.8	1.7	1.6	2	2.2	2	1.6	1.2	0.6	0.5	1.2	0.6	1	1.6	1.7	**S**	1.9	1.1	2.2	1.5	24
27	3.4	6.5	10.2	11.6	12.6	***13.1***	**S**	**S**	5.7	**C**	**C**	**C**	**C**	**C**	0.8	0.8	0.6	0.6	0.8	0.6	**S**	0.7	0.7	0.9	***13.1***	4.4	24
28	1.1	1.6	3.1	3.2	3.5	4.7	7.3	**S**	5.8	**S**	**S**	3.3	1.4	1.8	1.8	1.4	1.3	1.3	1.2	**S**	0.8	1	1.5	1.6	7.3	2.4	24
29	1.3	1.3	1.1	1	1	1.1	1.4	1.5	1.6	2.1	2.1	2.2	1.6	1.1	0.7	0.5	0.8	0.6	**S**	0.5	0.1	1.4	0.9	0.9	2.2	1.2	24
30	0.8	0.4	0.4	0.7	0.9	1.2	1.4	0.9	0.6	0.8	0.4	0.5	0.6	0.7	0.8	0.6	0.4	**S**	0.7	0.9	0.9	1.3	1.7	1.8	1.8	0.8	24
31	2.1	3.1	3.5	3.8	3.6	3.3	3.5	2.6	2.2	2	2.3	1.3	0.9	0.9	1.2	1.1	**S**	0.5	0.5	1.1	1.4	2	1.9	1.4	3.8	2.0	24
HOURLY MAX	11	9	10	12	13	13	7	9	9	10	8	8	8	8	8	10	6	9	9	8	9	9	10	12			
HOURLY AVG	2.3	2.3	2.5	2.7	2.8	2.8	2.6	2.9	3.3	3.3	2.8	2.9	2.6	2.3	2.1	2.0	1.7	1.9	2.1	2.1	2.2	2.5	2.5	2.3			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

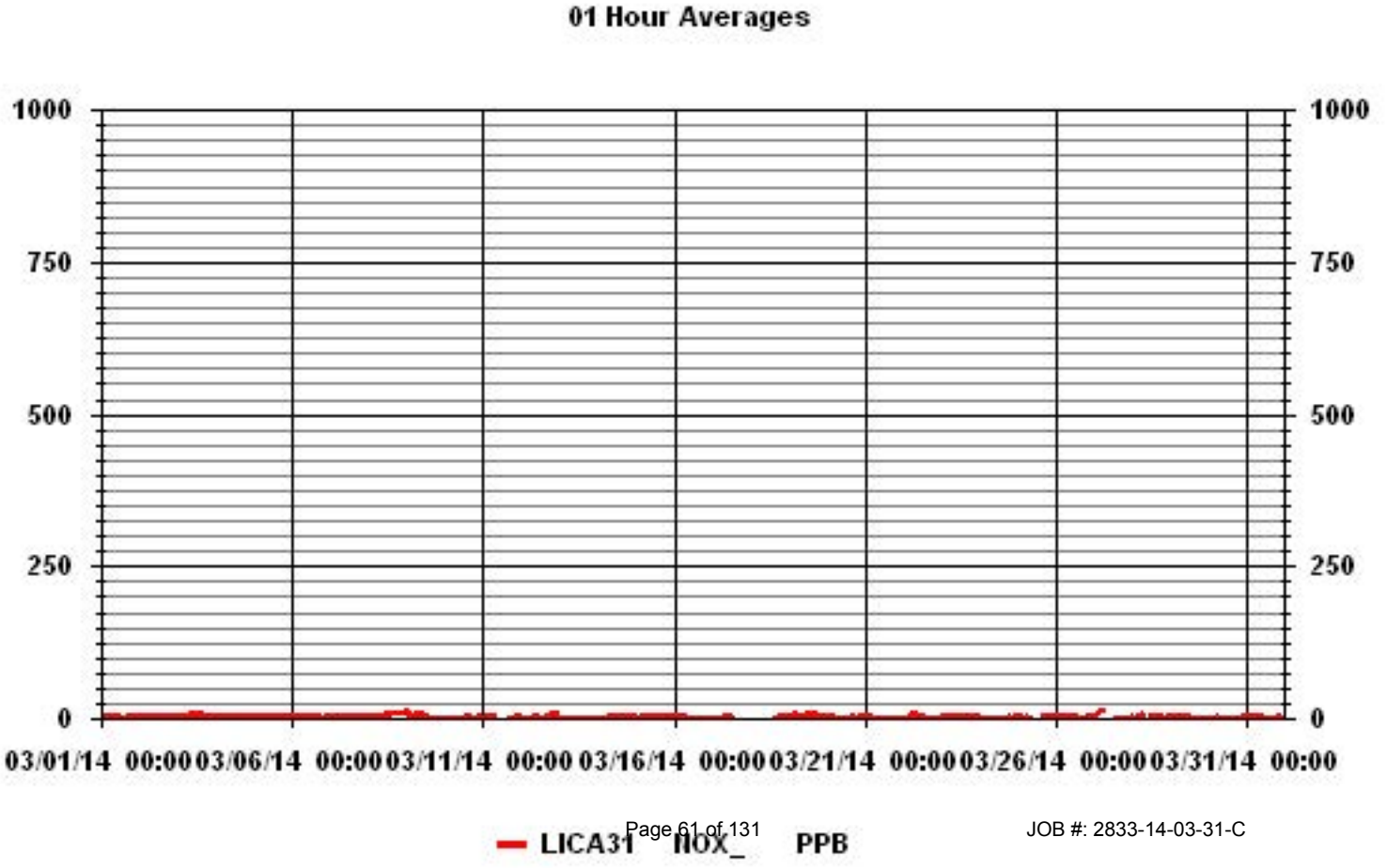
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR NA PPB

24 HOUR AVERAGES FOR MARCH 2014



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	632					
MAXIMUM 1-HR AVERAGE:	13.1	PPB	@ HOUR(S)	5	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	6.8	PPB			ON DAY(S)	8
					VAR-VARIOUS	
IZS CALIBRATION TIME:	38	HRS	OPERATIONAL TIME:		715	HRS
MONTHLY CALIBRATION TIME:	25	HRS	AMD OPERATION UPTIME:		96.1	%
STANDARD DEVIATION:	2.18		MONTHLY AVERAGE:		2.47	PPB



JOB #: 2833-14-03-31-C

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

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	**S**	3.1	3.5	3.4	5.1	4.2	3.9	4.3	4.4	3.5	2.7	2.7	2.3	2.6	1.8	1.3	20.7	4.5	3.4	3.3	3.2	3.3	2.9	**S**	20.7	4.1	24
2	3.9	4.1	3.9	4	3.6	4	4.2	3.6	5.3	6.8	5	3.6	5	3.1	2.2	2.8	2.7	4.8	2.8	2.4	2.9	3	**S**	4.2	6.8	3.8	24
3	2.9	4.3	5.2	3.7	3.8	4	4.7	5.9	11.9	11.2	9.5	9.6	8.7	8.5	7.8	7.6	7.4	5.5	5.1	4.8	4.2	**S**	3.2	4.2	11.9	6.2	24
4	4.2	3.8	2.7	3.1	5.4	5.4	4	4.8	3.4	3.7	4	3	2.8	2.4	2	2.6	2.5	2.5	3.3	3.9	**S**	6.9	5.6	5.6	6.9	3.8	24
5	5.4	4.5	6.1	5.4	4.4	6.7	5.5	5	8	5.7	6.5	5.1	3.9	20.3	6.6	3.5	4	4.2	7.1	**S**	5.1	4.5	5.7	5	20.3	6.0	24
6	4.7	4.4	4.1	3.6	4.2	4.3	5.6	9.4	4.6	4.4	5.7	4	4	2.9	2.3	3.5	2.3	3.1	**S**	2.6	4.2	4.2	4.2	4.3	9.4	4.2	24
7	4.8	4.5	3	7.6	4.1	3.4	3.4	3.9	5.9	5.4	5.5	8.7	7.8	6.3	7.9	6.6	4.6	**S**	6	5.8	6.6	5.8	5.8	5.3	8.7	5.6	24
8	6.9	6.7	5.2	5.3	4.9	5.4	5.6	5.5	6	6.6	7.1	7.1	9.1	8.9	9.7	***44.7***	**S**	10.8	12	9.9	10.2	10	11.3	13.1	***44.7***	***9.7***	24
9	12.9	10.1	6.1	5.7	6.2	6.5	6.8	6.5	8	9.3	7	6.8	6.7	5.4	3.9	**S**	3.4	1.8	1.8	1.5	1.6	2	1.9	0.9	12.9	5.3	24
10	1.2	1.2	1.1	1.1	1.6	2.7	2.5	1.8	**P**	**R**	1.1	1.1	1.9	0.8	**S**	2.2	3.6	2	11.8	1.8	1.7	1.9	2.2	1.9	11.8	2.2	22
11	1.6	1.9	2	2.3	2.9	3.5	2.5	12.4	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2.4	3.2	3.5	4.6	5.6	6.6	3.4	12.4	3.9	24
12	0.9	0.8	1	1.2	1.2	0.8	0.4	**C**	**C**	38.4	2.4	3.2	**S**	3	1.9	1.5	2.5	3.5	6.2	8.6	8.5	9.7	8.5	4.7	38.4	5.2	24
13	1.7	1.1	0.9	1.2	1.4	1.2	1	1.4	1.2	1.5	1.3	**S**	1.5	0.9	1	1.5	1.1	0.7	1.2	1.3	1.3	1	0.4	0.7	1.7	1.2	24
14	1.1	1.7	1.1	1.4	1.2	3.9	2.5	2.7	4.2	4.9	**S**	5.4	5.6	4.2	3.2	3.4	3.2	3	2.9	3.2	4.1	3.6	3.2	3	5.6	3.2	24
15	2.9	3.2	2.2	2.2	2	2.8	4	3.8	5	**S**	6.1	5.8	5.1	5.9	4.9	3.5	3.8	4.9	4.1	2.2	3.1	3.8	3.9	4	6.1	3.9	24
16	3.4	2.8	3.4	3.7	3.6	3.9	4.6	4.9	**S**	3.2	1.9	2.5	1.3	1.2	1.4	0.9	1.5	2.5	1.8	1.4	1.7	2.3	1.7	1.5	4.9	2.5	24
17	0.9	1.8	1.2	1.1	0.3	0.8	1.2	**S**	1.8	2.2	5.1	**C**	**C**	**C**	**C**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	5.1	1.6	15
18	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1.9	2.8	3.9	2.3	2.6	3	3.8	3.9	2.9	14
19	4.6	4.2	5.7	6.2	8	**S**	5	7.9	3.3	3.6	4.9	6.4	6.8	6.2	6.9	6.9	7.6	7.7	8.1	29.2	5.1	4.6	5.6	7.9	29.2	7.1	24
20	4.8	4.9	5.4	6.8	**S**	1.7	0.2	0.4	1.2	1.1	1.1	1.3	1.3	1.3	1.4	1.9	2.7	2.1	1.7	1.5	1.6	2.2	2.3	2.3	6.8	2.2	24
21	2.1	2.1	2.1	**S**	1.6	1.9	**S**	**S**	1.8	1.4	1.3	1.3	1.2	1.2	0.9	1.2	1.2	0.9	3.6	2.9	1.2	1	1	1.2	3.6	1.6	24
22	4.7	0.8	**S**	5.7	7.3	7.8	8.3	10.3	7.6	7.8	6.6	4.8	4.1	2.9	1.6	1	1	0.8	0.8	3	2.7	1.5	2	1.5	10.3	4.1	24
23	1.9	**S**	3.4	3.6	4.5	5.5	5.4	17.7	5.8	5.5	5.5	4.1	3.3	2.7	2.2	2.4	2.9	2.6	2.7	2.2	2	2.3	2.3	2.1	17.7	4.0	24
24	**S**	1.4	1	1.1	1.3	1.8	1.7	1.5	1.5	1.4	1.2	1.1	1.5	1.2	1.1	1.4	1.3	1.6	1.8	2.1	1.7	2.4	3	**S**	3	1.6	24
25	2	1.8	1.7	1.7	3.1	2	2	2.5	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	3.1	3.1	5.2	3.9	3.1	3.5	**S**	5.4	5.4	2.9	16
26	2.2	2.5	2.8	2.4	2.2	2.2	2.4	2.8	2.2	2.9	2.9	2.7	2.4	2	1.5	1.8	2.1	1.3	2	4.3	3.2	**S**	3.5	1.7	4.3	2.4	24
27	5.5	8.8	11.8	12.8	13.7	14.1	**S**	**S**	8.7	**C**	**C**	**C**	**C**	**C**	1.9	2.3	1.3	1.5	2.1	1.3	**S**	1.6	1.3	1.6	14.1	5.6	19
28	1.5	3.1	3.5	3.8	4.3	5.6	**S**	**S**	7.7	**S**	**S**	5.7	2.5	2.6	15.9	2.2	2.5	11.9	2.2	**S**	2.1	1.6	2.9	3.6	15.9	4.5	24
29	3.3	1.9	1.9	1.9	1.6	1.9	3.1	2.8	2.7	3	3	2.9	2.3	2.4	1.5	1.1	1.7	1.7	**S**	2.7	1.1	2.2	1.7	1.7	3.3	2.2	24
30	1.5	1.1	1.2	1.7	1.5	1.8	2.1	2.1	1.4	1.5	1.2	1.2	1.3	1.2	1.3	1.2	1	**S**	1.6	1.5	1.5	2	2.6	2.7	2.7	1.6	24
31	2.7	3.8	4.2	4.4	4.5	4	4.2	3.4	2.8	2.8	4	2.4	1.8	1.6	1.8	1.7	**S**	1.3	1.1	1.8	2.1	2.6	2.7	2	4.5	2.8	24
HOURLY MAX	13	10	12	13	14	14	8	18	12	38	10	10	9	20	16	45	21	12	12	29	10	10	11	13			
HOURLY AVG	3.4	3.3	3.4	3.7	3.8	3.9	3.6	5.1	4.7	5.7	4.1	4.1	3.8	3.9	3.6	4.3	3.5	3.4	3.9	4.2	3.3	3.5	3.6	3.5			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 649

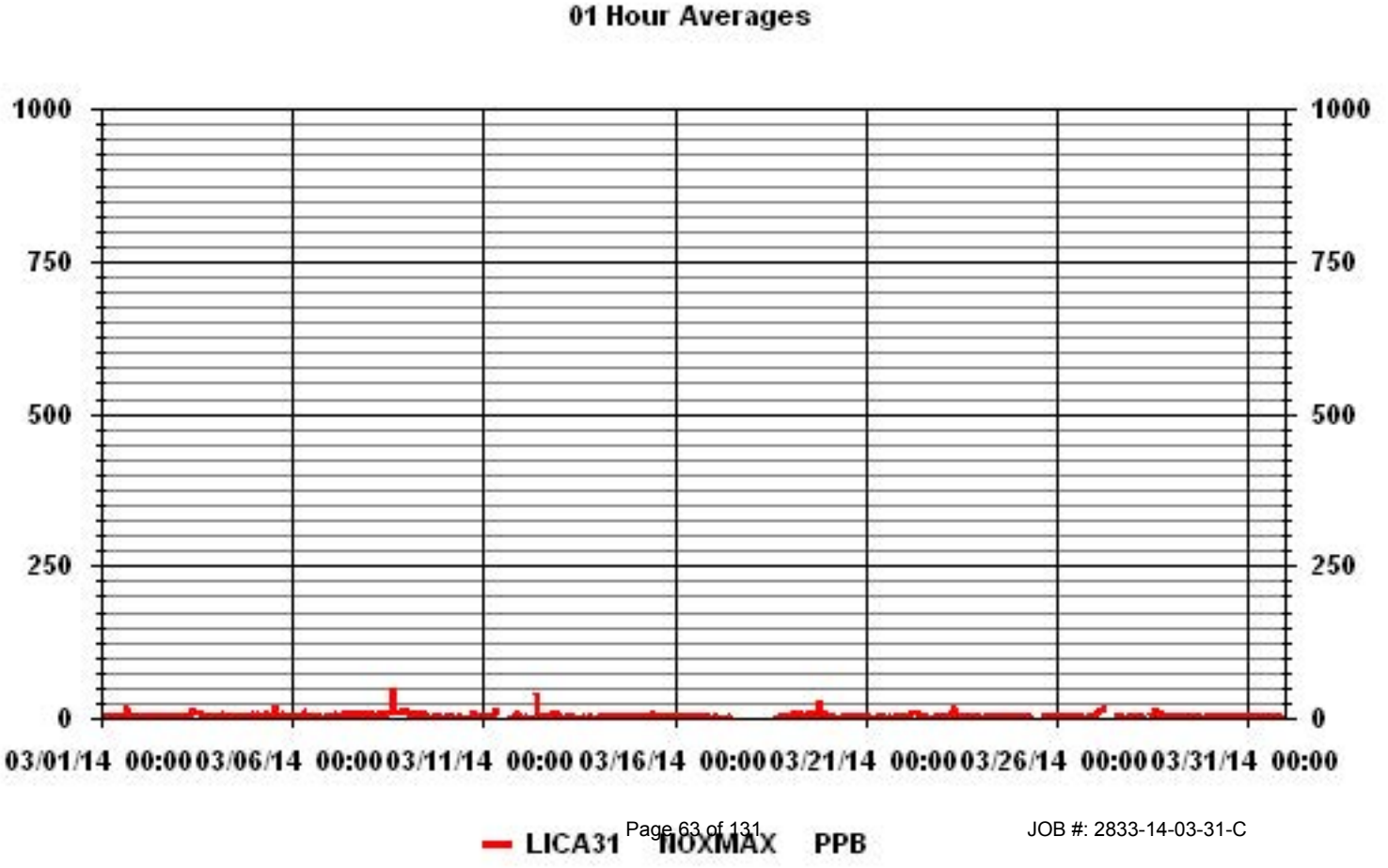
MAXIMUM INSTANTANEOUS VALUE: 44.7 PPB @ HOUR(S) 15 ON DAY(S) 8

VAR-VARIOUS

IZS CALIBRATION TIME: 39 HRS OPERATIONAL TIME: 710 HRS

MONTHLY CALIBRATION TIME: 22 HRS

STANDARD DEVIATION: 3.57



JOB #: 2833-14-03-31-C

LICA31
NOX_ / WDR Joint Frequency Distribution (Percent)

March 2014

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
<	50.0	4.14	3.83	4.44	3.52	3.37	5.82	1.99	3.83	7.36	10.12	10.12	8.89	9.81	7.05	8.58	7.05	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.14	3.83	4.44	3.52	3.37	5.82	1.99	3.83	7.36	10.12	10.12	8.89	9.81	7.05	8.58	7.05	

Calm : .00 %

Total # Operational Hours : 652

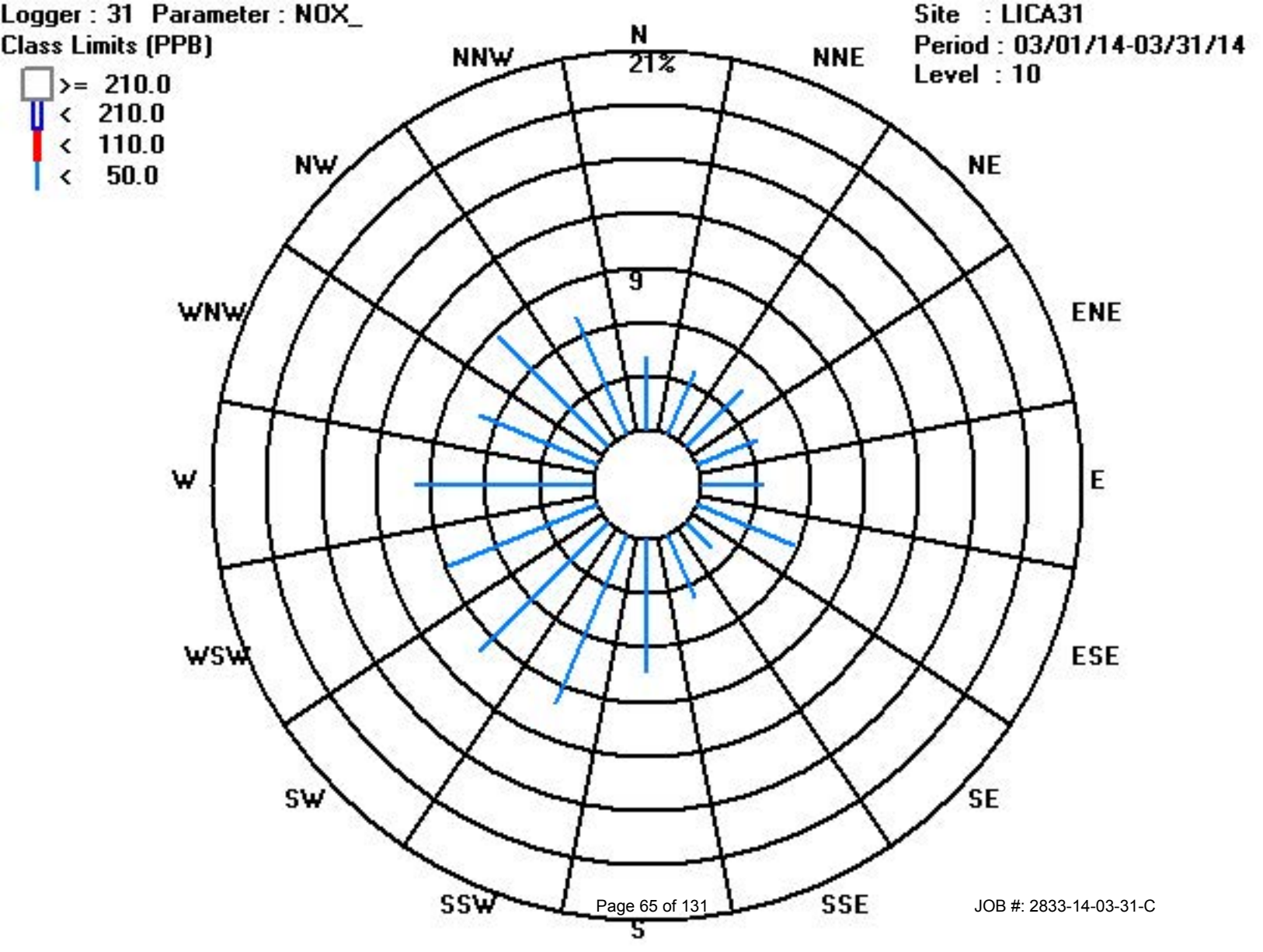
Distribution By Samples

Direction

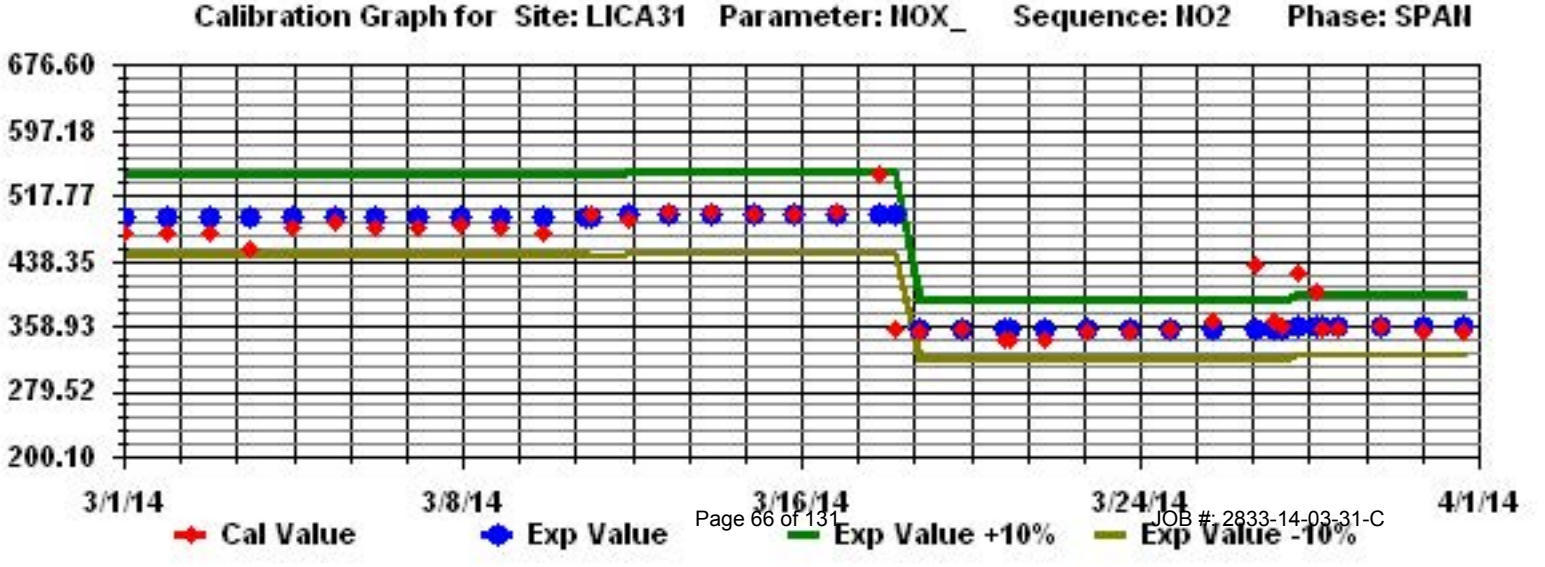
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	27	25	29	23	22	38	13	25	48	66	66	58	64	46	56	46	652
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	27	25	29	23	22	38	13	25	48	66	66	58	64	46	56	46	

Calm : .00 %

Total # Operational Hours : 652



JOB #: 2833-14-03-31-C


Calibration Graph for Site: LICA31 Parameter: NOX_ Sequence: NO2 Phase: SPAN
676.60
597.18
517.77
438.35
358.93
279.52
200.10
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

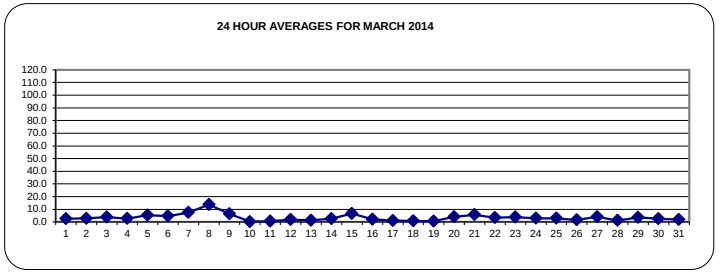
PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5) hourly averages in ug/m3

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	6	3	3	1	2	1	3	1	4	3	0	0	2	0	6	2	2	3	2	6	3	3	4	2	6	2.6	24
2	2	1	2	0	3	5	4	3	6	1	8	4	2	5	4	1	1	7	5	0	0	0	3	1	8	2.8	24
3	7	2	7	5	1	5	2	1	1	4	5	6	8	7	6	1	4	6	5	8	1	2	0	0	8	3.9	24
4	7	2	5	0	1	2	1	3	6	0	0	0	2	6	0	4	3	0	7	3	4	4	4	1	7	2.7	24
5	4	5	3	4	5	8	9	4	2	4	8	10	5	3	2	5	4	6	4	5	7	8	7	4	10	5.3	24
6	6	7	1	3	8	0	8	10	2	2	8	8	8	4	2	0	5	5	3	2	5	5	4	5	10	4.6	24
7	5	5	4	1	3	7	0	5	6	4	7	1	7	6	12	8	14	9	12	13	13	12	10	15	15	7.5	24
8	15	4	14	14	13	14	4	9	11	12	19	18	9	8	14	12	9	12	16	17	16	17	24	30	30	***13.8***	24
9	24	18	6	9	11	0	12	9	13	6	7	3	10	1	0	0	**X**	0	0	1	3	**X**	0	**X**	24	6.3	21
10	0	**X**	3	**X**	0	0	0	**X**	**P**	0	**X**	**X**	0	**X**	**X**	0	0	**X**	**X**	**X**	0	0	0	**X**	3	0.3	12
11	0	**X**	**X**	0	1	0	0	0	0	0	0	0	2	2	0	0	0	0	3	0	0	0	4	0	4	0.5	22
12	0	0	0	0	0	0	**X**	0	**X**	3	0	**C**	**C**	**C**	**C**	**C**	**C**	0	4	1	8	8	2	3	8	1.8	22
13	4	0	0	0	1	1	0	0	6	1	0	1	0	**X**	0	0	2	0	2	4	0	1	2	4	6	1.3	23
14	3	3	1	0	3	0	3	1	0	**X**	3	2	3	2	1	2	2	1	2	1	3	8	8	7	8	2.6	23
15	5	6	3	7	10	10	11	10	11	9	1	8	5	0	2	1	8	12	13	8	0	3	8	9	13	6.7	24
16	6	9	6	0	4	0	4	9	0	**X**	**X**	0	0	0	1	0	0	0	**X**	3	**X**	0	0	**X**	9	2.2	19
17	0	2	**X**	0	0	0	1	4	0	0	1	4	0	**Y**	**Y**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	4	1.0	12
18	0	0	**X**	**X**	**X**	**X**	**X**	**X**	**X**	0	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	0	1	1	0	0	0	6	1	6	0.8	11
19	0	2	2	0	2	2	0	**X**	0	0	0	0	1	0	0	2	0	1	0	0	0	0	2	2	2	0.7	23
20	0	0	3	**X**	0	5	0	1	0	3	10	**X**	1	**X**	0	15	**X**	0	7	19	0	5	9	3	19	4.1	20
21	4	5	6	0	2	4	3	7	15	0	***39***	4	10	6	1	0	1	**X**	10	5	0	1	0	8	***39***	5.7	23
22	1	0	0	6	0	5	3	4	10	14	4	3	3	**X**	**X**	**X**	**X**	0	**X**	4	0	0	0	8	14	3.4	19
23	4	1	**X**	**X**	3	**X**	0	**X**	**X**	4	7	0	0	6	4	**X**	0	**X**	16	6	6	5	**X**	0	16	3.9	16
24	**X**	0	0	0	5	1	0	0	1	**X**	**X**	11	1	18	2	0	2	**X**	0	9	**X**	0	3	**X**	18	2.9	18
25	0	2	4	2	0	0	0	**X**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	0	**X**	25	0	2	3	0	**X**	25	2.9	13
26	0	2	1	**X**	2	0	0	5	6	**X**	0	2	0	1	0	4	4	0	0	1	0	0	9	0	9	1.7	22
27	0	0	0	**X**	6	**X**	2	8	2	0	5	0	28	**X**	12	**X**	0	**X**	8	0	0	**X**	2	1	28	4.1	18
28	**X**	0	0	**X**	4	**X**	0	**X**	**X**	**X**	0	**C**	0	0	0	0	0	0	0	6	0	**X**	**X**	8	8	1.2	16
29	2	0	2	1	13	9	7	18	3	8	**X**	2	1	0	2	**X**	0	0	2	**X**	**X**	0	0	3	18	3.7	20
30	**X**	3	1	5	3	0	0	0	0	12	**X**	**X**	3	0	0	0	0	18	2	1	0	2	2	2	18	2.6	21
31	0	1	1	4	7	5	0	**X**	2	**X**	2	0	0	0	0	0	6	0	**X**	0	**X**	2	**X**	6	7	1.9	19
HOURLY MAX	24	18	14	14	13	14	12	18	15	14	39	18	28	18	14	15	14	18	25	19	16	17	24	30			
HOURLY AVG	3.8	2.9	2.9	2.6	3.8	3.1	2.7	4.7	4.3	3.8	5.6	3.6	4.0	3.4	2.8	2.5	2.6	3.4	5.7	4.4	2.7	3.3	4.2	4.9			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

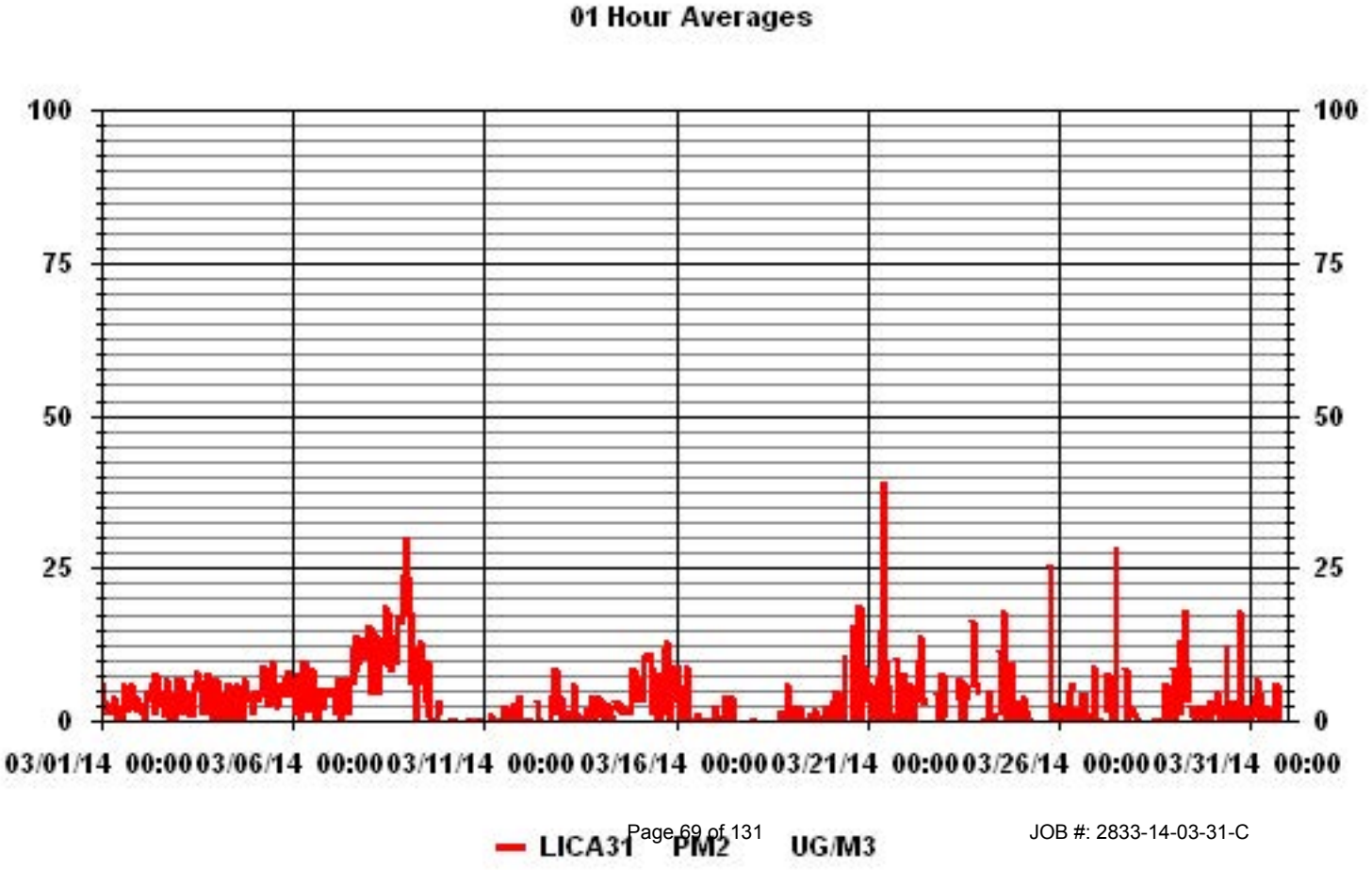


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 24-HR 30 ug/m3

MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	411					
MAXIMUM 1-HR AVERAGE:	39	ug/m3	@ HOUR(S)	10	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	13.8	ug/m3			ON DAY(S)	8
					VAR-VARIOUS	
			OPERATIONAL TIME:		629	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:		84.5	%
STANDARD DEVIATION:	4.76		MONTHLY AVERAGE:		3.64	ug/m3

JOB #: 2833-14-03-31-C



JOB #: 2833-14-03-31-C

LICA31
PM2 / WDR Joint Frequency Distribution (Percent)

March 2014

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	4.16	3.84	4.48	2.72	3.36	6.40	2.08	3.84	7.04	10.56	10.56	8.48	10.08	6.88	8.32	6.88	99.68
<	60	.16	.00	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00	.00	.00	.00	.00	.32
<	80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.32	3.84	4.48	2.72	3.36	6.40	2.08	3.84	7.20	10.56	10.56	8.48	10.08	6.88	8.32	6.88	

Calm : .00 %

Total # Operational Hours : 625

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30	26	24	28	17	21	40	13	24	44	66	66	53	63	43	52	43	623
<	60	1								1								2
<	80																	
<	120																	
<	240																	
>=	240																	
	Totals	27	24	28	17	21	40	13	24	45	66	66	53	63	43	52	43	

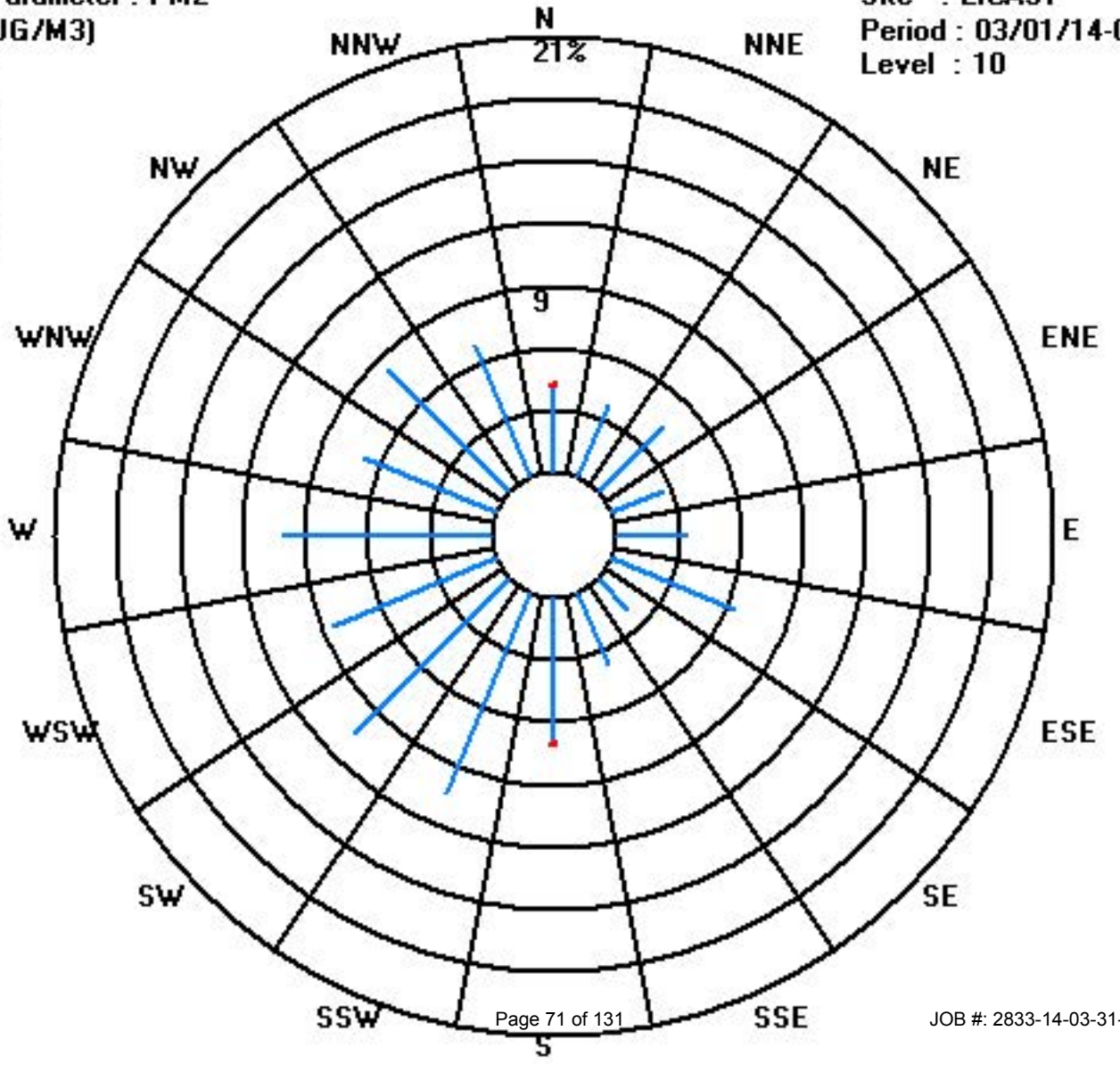
Calm : .00 %

Total # Operational Hours : 625

Logger : 31 Parameter : PM2
Class Limits (UG/M3)

>= 240
< 240
< 120
< 80
< 60
< 30

Site : LICA31
Period : 03/01/14-03/31/14
Level : 10



JOB #: 2833-14-03-31-C

Temperature

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

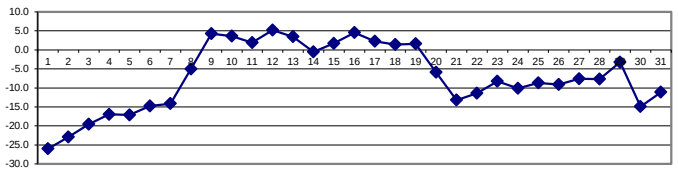
MST

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	-30.9	-31.2	-31.4	-31.5	-31.4	-31.7	***-32.7***	-31.1	-26.4	-23.8	-22.2	-19.6	-16.9	-16.4	-17.1	-19.5	-21	-22.7	-25.3	-26.6	-27.8	-28.7	-29.3	-29.6	-16.4	-26.0	24
2	-29.8	-28.9	-29.4	-28.8	-28.8	-28.9	-29.9	-27.4	-25.8	-23.7	-18.5	-16.6	-15.4	-14.7	-14.7	-16.2	-17.1	-19.8	-22	-22.1	-22.8	-22.8	-22.9	-23.4	-14.7	-22.9	24
3	-23.6	-23.9	-24.5	-24.6	-24.4	-24	-24.1	-25.2	-24.1	-20.2	-16.7	-17.1	-15.3	-13.5	-14	-14.3	-15.4	-16.4	-18.1	-17.9	-17.7	-18	-18.3	-18.6	-13.5	-19.6	24
4	-18.7	-18.7	-18.8	-18.9	-19	-18.9	-18.9	-18.8	-17.9	-16.3	-16	-14.3	-13.4	-13	-13.3	-13.7	-13	-15.8	-16.9	-17.6	-17.9	-18.7	-19.3	-19.5	-13	-17.0	24
5	-19.9	-20.2	-20.8	-21.5	-20.9	-20.1	-20.5	-21.4	-17.8	-15	-13	-12.2	-10.8	-10.7	-11	-11.7	-14.8	-16.1	-17.4	-18.2	-19	-19.3	-19.4	-18.8	-10.7	-17.1	24
6	-19	-19	-19.8	-19.3	-19.4	-20.1	-21	-20.2	-18.7	-14.5	-10	-8.2	-6.8	-5.9	-6.1	-6.9	-8.3	-10.6	-14.4	-15.2	-17.2	-17.1	-18.5	-17.8	-5.9	-14.8	24
7	-19.7	-20.3	-20.6	-20	-19.6	-18.4	-17.5	-17.6	-16.9	-14.8	-12.4	-9.4	-8.8	-8.5	-8.1	-8.6	-10.3	-11.4	-12.2	-12.3	-13	-13.4	-13	-12.3	-8.1	-14.1	24
8	-11.5	-11.3	-11.2	-10.7	-10.3	-10.4	-10.7	-10.5	-9.8	-7.8	-6.2	-4	-2.3	-0.3	0.7	1	0	-0.7	-1.2	-1.2	-1.1	-1.1	-0.4	0.4	1	-5.0	24
9	1.5	1.4	2.4	1.9	1	0.1	-0.6	-0.8	-0.5	2.1	5.5	7.3	9	9.7	9	10.1	9.5	8.6	6.7	5	3.9	3.3	3.3	3.2	10.1	4.3	24
10	2.2	1.2	1.2	1	0.3	-0.4	-1.3	-0.1	**P**	4.6	7.4	8.3	8.2	8.8	8.6	8.1	7.7	6.3	4.5	2.8	2.2	1.3	0.6	-0.2	8.8	3.6	23
11	-1.4	-2	-2.1	-2.4	-2.5	-3	-2.6	-2.2	0.7	3.4	4.8	5.8	6.2	7.1	6.8	5.9	4.8	3.6	2.8	2.3	2	2	2.2	2.8	7.1	1.9	24
12	3.2	2.9	2.2	1.7	1.1	1	1.3	2.1	4.3	6.5	7.5	8.1	8.5	9.6	10.2	***10.3***	9.2	8.7	6	4.6	3.6	4.3	3.6	3.7	***10.3***	***5.2***	24
13	3.8	4.5	3.7	3.1	3.1	2.9	2.2	2.2	2.4	3.2	5.1	5.7	6.1	6.4	6.5	6.1	5.1	4.7	3.3	2.5	1	0.1	-0.6	-1	6.5	3.4	24
14	-1.5	-1.8	-2.1	-2.5	-3	-3.9	-4.7	-2.7	-0.7	0	1.5	1.4	1.6	3.1	3.3	2.2	1.6	0.9	-0.3	-0.7	-0.7	-1	-1.4	-1.7	3.3	-0.5	24
15	-1.8	-1.8	-1.8	-2	-2.2	-2.3	-2.8	-2.6	-1.1	0.8	3.1	4.8	6.1	5.7	6.7	6.7	5.6	4.3	3.4	3.2	2.8	2.3	1.9	1.7	6.7	1.7	24
16	1.6	1.5	1.1	0.7	1.1	1	0.8	1.9	4.6	6.6	7.5	8.5	8.6	8.8	8.8	8.7	8.5	7.3	5.3	4.3	3.4	2.8	2.4	2.3	8.8	4.5	24
17	1.6	1.2	1.7	1.2	0.9	0.1	-0.2	-0.3	1.6	4.4	3.7	5.1	6.2	7	5.5	2.1	4.1	4.1	2.3	0.6	0	0.6	0.6	0.2	7	2.3	24
18	-0.3	0.1	0.1	-0.7	-1.5	-1.3	-1.5	-0.5	1.7	2.9	4.1	5.3	6	5.4	4.3	3.8	3.6	2.9	1.7	0.7	0	-0.6	-1.1	-1.4	6	1.4	24
19	-2.2	-2.1	-1.8	-1.4	-1.6	-2	-2.1	-1.6	-0.3	1	2.8	5	5.8	5.5	5.8	5.1	4.9	4.3	3	2.4	2.4	2.2	1.7	1.3	5.8	1.6	24
20	1.3	1.2	0.8	-1	-1.2	-1.3	-2.3	-4.3	-5.8	-5.9	-5.5	-5.2	-4.6	-4.7	-5.1	-5.9	-6.9	-8.4	-10.4	-11.5	-12.4	-13.3	-14.1	-15.3	1.3	-5.9	24
21	-16.1	-16.7	-17.3	-18	-18.6	-19.2	-18.9	-15.8	-13.7	-12.4	-11.4	-9.7	-9.2	-8.6	-8.3	-7.8	-7.8	-8.9	-11	-12.1	-12.5	-13.6	-14.4	-14.8	-7.8	-13.2	24
22	-14.7	-14.7	-15.1	-16.6	-17.5	-18.3	-18.4	-16.1	-13.6	-11.7	-9.1	-6.6	-6.2	-6.3	-5.3	-5	-6	-7.1	-9	-10.2	-11	-11.5	-11.9	-12.3	-5	-11.4	24
23	-12.7	-13.2	-14.4	-14.6	-14.9	-15.2	-15.2	-13.3	-10.5	-7.3	-4.5	-3.6	-3	-3	-2.5	-2.1	-2.4	-3.4	-5.2	-6.4	-7.1	-7.7	-8.4	-8.3	-2.1	-8.3	24
24	-9.2	-10	-10.9	-12.3	-13	-12.9	-13.4	-12.1	-13	-12.3	-10.3	-8.4	-8.3	-7	-5.9	-5.5	-5.7	-6.8	-9.3	-10.7	-10.8	-11.3	-11.6	-12	-5.5	-10.1	24
25	-12.7	-12.9	-13.2	-13.4	-13.3	-13.1	-13	-11.7	-10.2	**P**	**P**	**P**	**P**	**P**	**P**	**P**	-0.6	-2.2	-4	-4.7	-5.1	-5.4	-5.8	-6.1	-0.6	-8.7	17
26	-6.2	-6.9	-9	-10.5	-10.9	-11.6	-12.1	-12.1	-11.7	-10.6	-10	-8.9	-7.8	-7	-6.4	-6.3	-6.5	-7.2	-8.4	-9.1	-9.5	-9.9	-10.2	-10.3	-6.2	-9.1	24
27	-10.9	-11.6	-12	-12.5	-13.3	-14	-12.4	-8.3	-4.8	-3.4	-2.8	-2.9	-2.6	-3.7	-3.2	-2.9	-3.2	-4.3	-6.6	-8.2	-8.7	-9.6	-9.9	-10.8	-2.6	-7.6	24
28	-11.5	-12.1	-13	-13.3	-13.5	-14.9	-13.9	-11.7	-8.9	-5.7	-4.9	-3.3	-2.8	-3.2	-4.1	-2.9	-2.5	-3.6	-5.1	-6.3	-7.2	-7.2	-6.8	-6.8	-2.5	-7.7	24
29	-6.6	-6.3	-6.1	-6.3	-7.1	-7.7	-7.4	-6.3	-3	-0.7	1	1.9	1.8	2.2	2.1	1.8	1.3	-0.1	-1.5	-2.4	-3.5	-6.2	-8.7	-10	2.2	-3.2	24
30	-11.5	-13.4	-15.3	-16.1	-17.4	-18.5	-19.1	-18.3	-17.9	-16.5	-15.2	-13.8	-13.1	-11.7	-11.1	-11	-11.1	-12.3	-14.1	-15.3	-16.2	-16.4	-16.2	-16.3	-11	-14.9	24
31	-16.6	-17	-17.2	-17.7	-17.5	-17.3	-16.3	-13.9	-11.9	-11.1	-10	-8.7	-7.8	-7.2	-6.5	-5.6	-5.3	-6.2	-7	-8.2	-9.3	-9.8	-9.3	-9.3	-5.3	-11.1	24
HOURLY MAX	3.8	4.5	3.7	3.1	3.1	2.9	2.2	2.2	4.6	6.6	7.5	8.5	9	9.7	10.2	10.3	9.5	8.7	6.7	5	3.9	4.3	3.6	3.7			
HOURLY AVG	-9.5	-9.7	-10.1	-10.5	-10.8	-11.1	-11.3	-10.3	-9.0	-6.6	-4.8	-3.5	-2.7	-2.2	-2.1	-2.5	-3.0	-4.1	-5.8	-6.7	-7.4	-7.9	-8.2	-8.4			

STATUS FLAG CODES

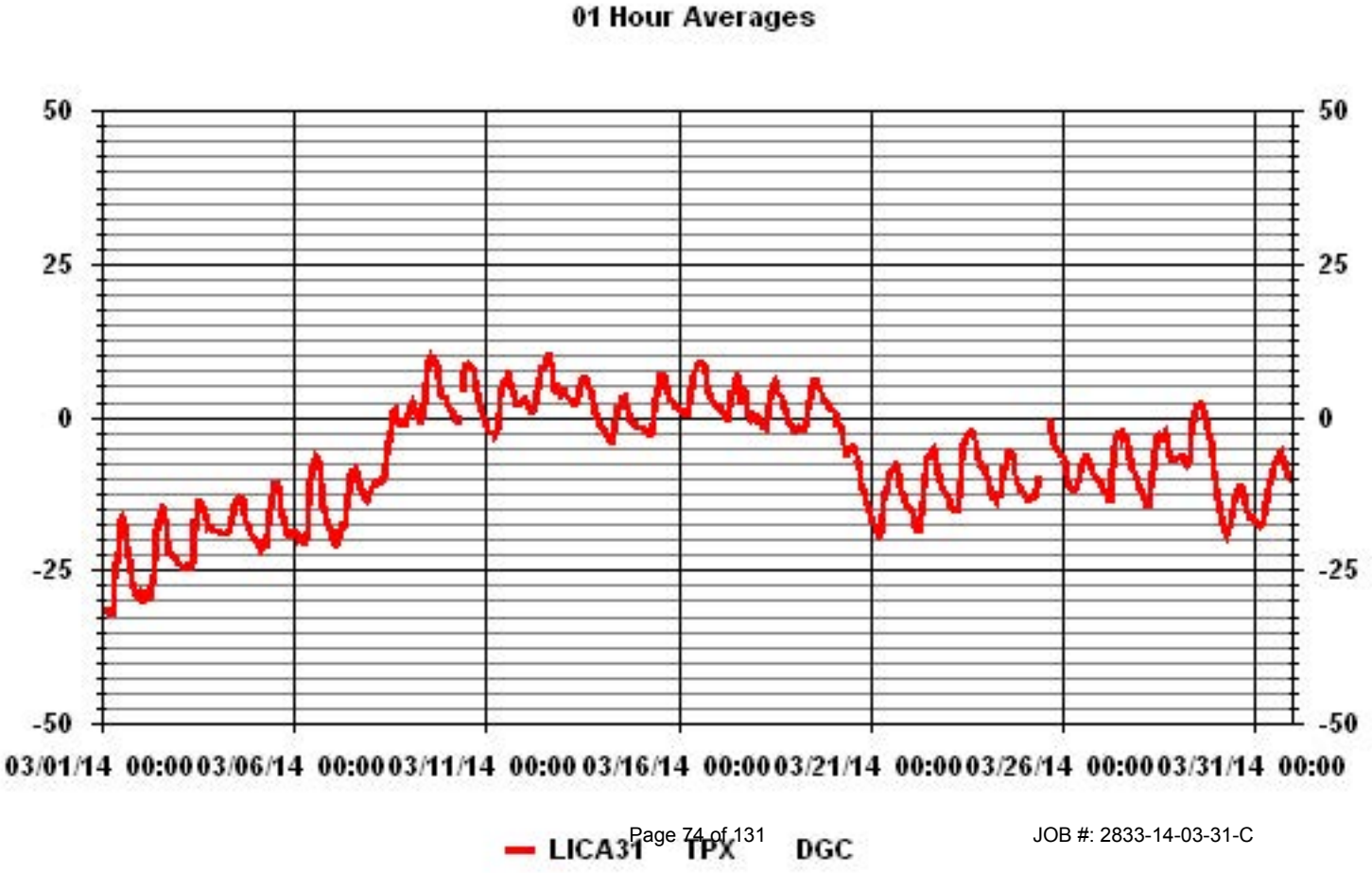
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

24 HOUR AVERAGES FOR MARCH 2014



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-32.7	°C	@ HOUR(S)	6	ON DAY(S)	1
MAXIMUM 1-HR AVERAGE:	10.3	°C	@ HOUR(S)	15	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	5.2	°C			ON DAY(S)	12
					VAR-VARIOUS	
OPERATIONAL TIME:					736	HRS
AMD OPERATION UPTIME:					98.9	%
STANDARD DEVIATION:	9.44		MONTHLY AVERAGE:		-7.05	°C



JOB #: 2833-14-03-31-C

Barometric Pressure

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

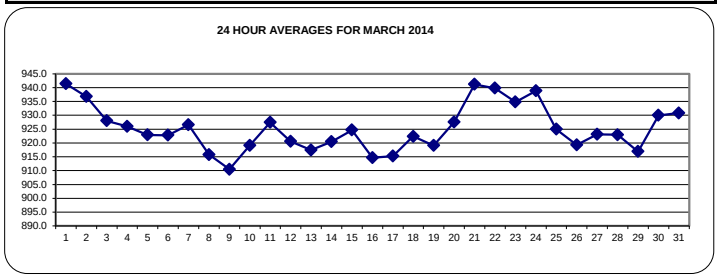
BAROMETRIC PRESSURE (BP) hourly averages in millibar

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	942	***943***	***943***	***943***	***943***	***943***	***943***	***943***	942	942	942	942	942	941	941	940	940	940	940	940	940	940	940	939	***943***	***941.4***	24
2	940	939	939	939	939	939	939	939	939	939	938	938	938	937	937	936	936	935	934	934	933	933	932	931	940	936.8	24
3	931	930	930	929	929	929	929	929	929	928	929	929	928	928	928	927	927	927	926	926	926	926	926	926	931	928.0	24
4	926	926	926	925	925	926	926	926	926	926	926	927	927	926	926	926	926	926	926	926	926	926	926	925	927	926.0	24
5	925	925	925	925	925	925	925	924	924	924	924	924	923	923	922	922	921	921	921	920	920	920	921	920	925	922.9	24
6	920	920	920	920	919	920	921	920	921	921	922	923	923	924	924	924	925	925	925	925	926	926	926	927	927	922.8	24
7	927	927	927	927	927	927	927	927	928	928	928	928	928	928	928	927	927	926	926	925	924	924	924	923	928	926.6	24
8	922	922	921	920	919	918	917	917	916	915	916	915	915	915	914	914	914	914	913	913	913	912	912	912	922	915.8	24
9	911	911	910	910	909	909	***908***	***908***	***908***	909	909	910	910	910	910	910	911	911	911	912	913	913	914	914	914	910.5	24
10	915	915	915	916	916	916	916	916	**P**	917	918	918	919	919	919	920	921	921	922	923	924	924	925	925	925	919.1	23
11	926	926	926	927	927	928	928	928	929	929	930	930	930	929	929	928	928	927	927	926	925	925	925	925	930	927.4	24
12	925	924	924	924	924	924	924	923	923	923	923	922	921	921	920	919	919	918	917	915	915	915	915	915	925	920.5	24
13	914	914	914	914	914	915	915	916	916	917	918	918	918	918	919	919	919	920	920	920	920	920	920	920	920	917.4	24
14	920	920	920	920	919	919	919	919	919	919	920	920	920	920	920	920	920	921	921	922	922	923	924	924	924	920.5	24
15	924	924	925	925	925	925	926	926	926	927	927	927	928	927	927	927	926	925	924	922	922	920	919	918	928	924.7	24
16	917	917	916	916	916	916	916	916	916	916	916	916	916	915	915	914	914	914	913	912	912	911	911	911	917	914.7	24
17	911	911	910	910	910	910	911	912	912	913	914	915	916	916	917	917	918	919	920	920	920	921	921	922	922	915.3	24
18	922	922	922	922	922	922	922	922	922	922	923	923	923	923	923	923	923	923	922	922	922	922	922	922	923	922.4	24
19	922	922	921	921	921	921	920	920	920	919	919	919	919	919	918	918	918	918	918	917	917	917	917	917	922	919.1	24
20	917	917	917	918	919	920	921	922	923	925	926	927	929	930	931	932	933	934	935	935	936	937	938	938	938	927.5	24
21	939	939	940	940	940	941	941	941	942	942	942	942	942	942	942	942	942	942	941	941	941	941	941	942	942	941.2	24
22	942	942	942	941	941	941	941	941	941	942	942	941	941	941	940	940	939	938	937	937	937	936	936	936	942	939.8	24
23	935	935	935	934	934	934	934	934	934	934	935	935	935	934	934	935	935	935	935	935	935	936	936	937	937	934.8	24
24	938	938	938	939	939	940	940	940	941	941	941	941	941	941	940	940	940	939	938	937	936	935	935	934	941	938.8	24
25	933	932	931	931	930	929	928	927	927	**P**	**P**	**P**	**P**	**P**	**P**	**P**	922	921	920	919	919	919	918	918	933	924.9	17
26	917	917	917	917	917	918	918	919	919	920	920	920	920	920	920	920	920	920	920	920	920	921	921	921	921	919.3	24
27	921	921	921	921	921	922	922	922	923	923	924	924	924	924	924	924	924	924	924	924	924	924	925	925	925	923.1	24
28	925	925	925	925	925	925	925	925	925	925	925	925	925	924	923	923	922	922	920	920	919	918	918	917	925	923.0	24
29	917	917	916	916	915	915	915	915	915	916	916	916	916	916	917	917	917	917	917	918	919	920	921	922	922	916.9	24
30	923	924	925	925	926	927	928	929	930	930	931	931	932	932	932	932	932	932	933	933	933	933	933	933	933	930.0	24
31	933	934	933	933	933	933	933	932	933	933	933	933	932	931	931	930	930	929	928	927	927	927	926	926	934	930.8	24
HOURLY MAX	942	943	943	943	943	943	943	943	942	942	942	942	942	942	942	942	942	942	941	941	941	941	941	942			
HOURLY AVG	925.2	925.1	925.0	924.9	924.8	925.1	925.1	925.1	925.6	925.5	925.9	926.0	926.0	925.8	925.7	925.5	925.5	925.3	925.0	924.7	924.7	924.7	924.8	924.7			

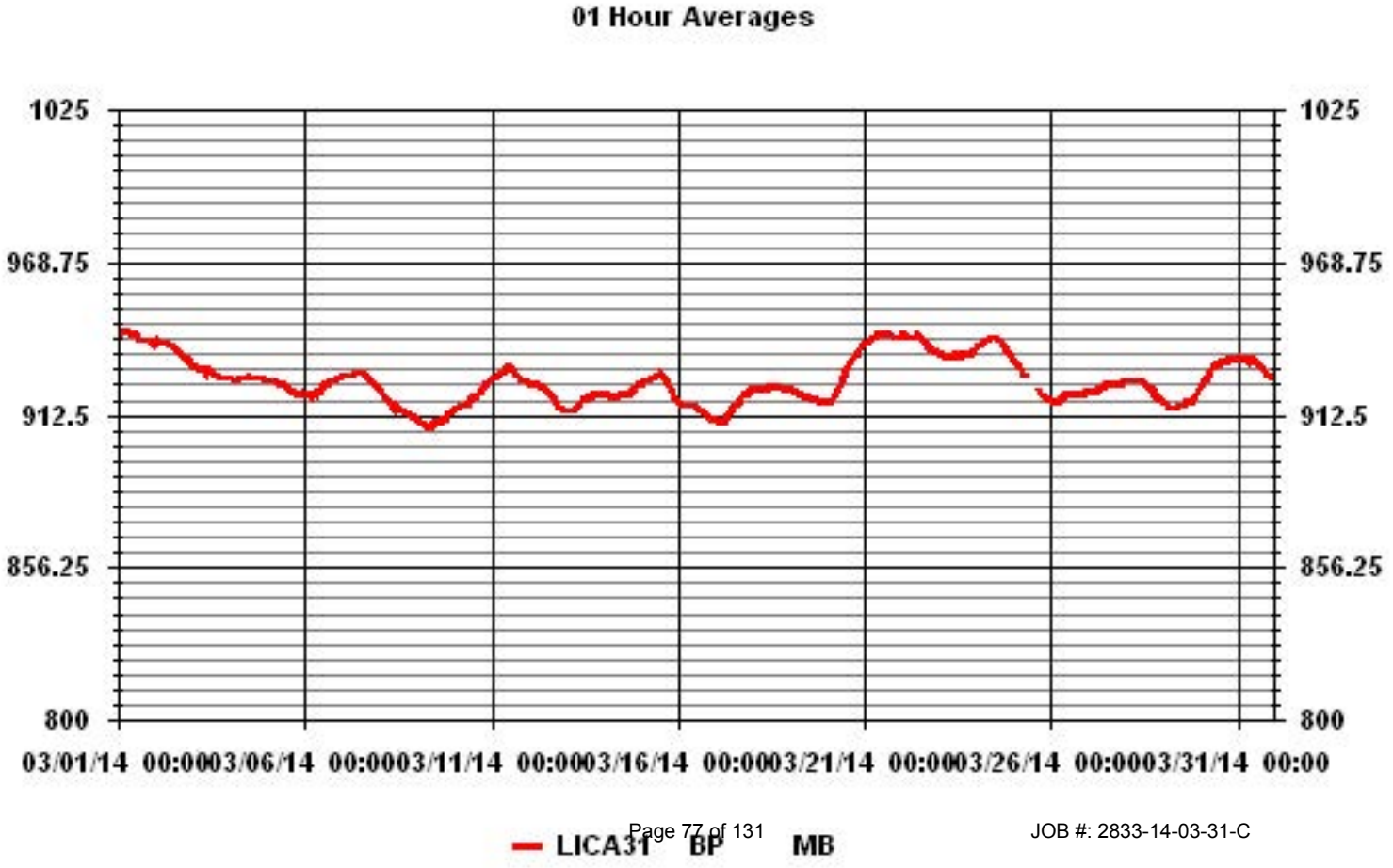
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	943	MB	@ HOUR(S)	VAR	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	941.4	MB			ON DAY(S)	1
				VAR-VARIOUS		
			OPERATIONAL TIME:		736	HRS
			AMD OPERATION UPTIME:		98.9	%
STANDARD DEVIATION:	8.58		MONTHLY AVERAGE:		925.2	MB



JOB #: 2833-14-03-31-C

Relative Humidity

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

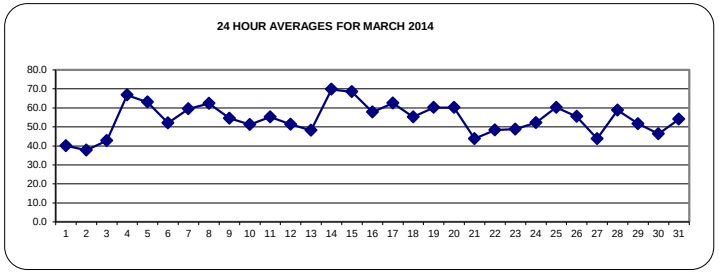
RELATIVE HUMIDITY (RH) hourly averages in %

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	46	48	49	50	50	51	53	49	36	30	28	25	23	23	25	31	33	36	41	44	44	47	49	51	53	40.1	24
2	52	52	54	50	49	49	54	46	38	34	25	23	23	***22***	***22***	26	26	31	36	36	38	39	39	41	54	37.7	24
3	43	45	47	46	43	42	43	48	46	37	29	31	31	29	31	33	37	39	44	46	49	54	63	69	69	42.7	24
4	71	71	72	72	72	72	72	72	71	69	68	65	59	53	53	55	53	61	65	67	68	72	75	74	75	66.8	24
5	74	73	73	72	73	72	71	70	71	66	60	53	44	44	44	45	53	57	61	64	67	68	69	68	74	63.0	24
6	67	67	68	70	71	73	71	71	67	51	39	38	33	28	27	29	30	38	46	47	53	53	57	55	73	52.0	24
7	63	66	68	67	66	58	54	56	61	61	57	50	49	48	48	49	53	58	61	64	66	67	68	69	69	59.5	24
8	69	70	69	69	69	69	70	69	66	62	59	55	53	49	49	50	54	59	62	65	65	66	65	64	70	62.4	24
9	64	66	62	64	67	70	73	73	70	60	52	48	46	47	49	43	38	37	41	44	47	49	49	49	73	54.5	24
10	52	56	55	57	60	63	66	61	**P**	49	42	39	40	35	35	34	35	38	44	56	61	63	66	70	70	51.2	23
11	73	73	72	67	63	64	63	62	54	47	44	41	39	37	40	42	47	51	53	57	60	60	59	57	73	55.2	24
12	56	59	62	64	67	67	67	63	56	49	46	44	42	38	34	34	36	37	46	54	59	52	52	49	67	51.4	24
13	47	45	49	52	54	62	69	63	60	54	48	43	39	36	35	35	39	38	41	44	48	50	52	54	69	48.2	24
14	56	58	61	65	67	74	72	72	71	70	69	70	70	65	62	64	67	71	74	75	76	80	80	84	84	***69.7***	24
15	85	83	82	82	82	83	83	80	73	67	59	55	53	56	52	51	54	57	60	62	66	71	73	73	85	68.4	24
16	73	75	76	79	76	75	75	70	59	52	48	43	40	40	39	39	41	46	52	54	57	59	60	59	79	57.8	24
17	61	63	61	63	64	67	68	69	63	61	68	63	59	51	53	77	69	60	56	61	62	59	59	62	77	62.5	24
18	66	70	77	84	***86***	80	73	61	49	46	42	34	30	34	41	41	44	47	48	50	52	55	57	59	***86***	55.3	24
19	65	67	68	67	67	70	69	67	61	59	55	49	48	52	52	54	54	56	60	60	59	59	62	64	70	60.2	24
20	65	66	67	75	84	80	77	75	72	66	60	56	49	48	44	42	43	45	51	55	57	57	58	51	84	60.1	24
21	51	52	54	56	56	56	56	49	43	41	40	36	35	30	30	32	33	34	39	41	41	47	49	50	56	43.8	24
22	48	49	52	56	60	63	62	54	49	47	42	36	35	36	33	33	37	41	47	51	56	57	57	59	63	48.3	24
23	62	64	68	69	71	72	72	64	59	53	41	35	30	26	26	26	28	31	36	40	41	45	54	58	72	48.8	24
24	67	64	62	64	67	70	69	57	58	56	51	46	43	41	35	32	33	36	43	48	49	51	53	57	70	52.2	24
25	61	64	65	66	65	63	65	63	61	**P**	**P**	**P**	**P**	**P**	**P**	**P**	39	44	54	59	61	63	65	66	66	60.2	17
26	66	63	54	58	60	63	65	65	65	62	60	57	52	49	46	45	44	43	48	49	52	55	57	53	66	55.5	24
27	56	63	66	67	67	66	58	44	38	31	28	27	28	32	36	30	29	31	36	40	40	43	45	48	67	43.7	24
28	53	56	61	62	64	69	68	61	57	53	49	40	39	51	58	53	52	55	61	66	69	71	71	72	72	58.8	24
29	73	73	73	73	75	77	76	72	61	53	46	42	35	28	***22***	23	25	28	31	37	43	58	59	57	77	51.7	24
30	57	53	50	49	52	56	59	55	50	47	44	42	40	37	36	36	36	37	40	43	48	47	46	50	59	46.3	24
31	54	55	56	59	61	62	59	52	47	44	45	46	48	52	52	50	47	47	49	53	58	65	66	69	69	54.0	24
HOURLY MAX	85	83	82	84	86	83	83	80	73	70	69	70	70	65	62	77	69	71	74	75	76	80	80	84			
HOURLY AVG	61.2	62.2	63.0	64.3	65.4	66.4	66.2	62.4	57.7	52.6	48.1	44.4	41.8	40.6	40.3	41.1	42.2	44.8	49.2	52.6	55.2	57.5	59.2	60.0			

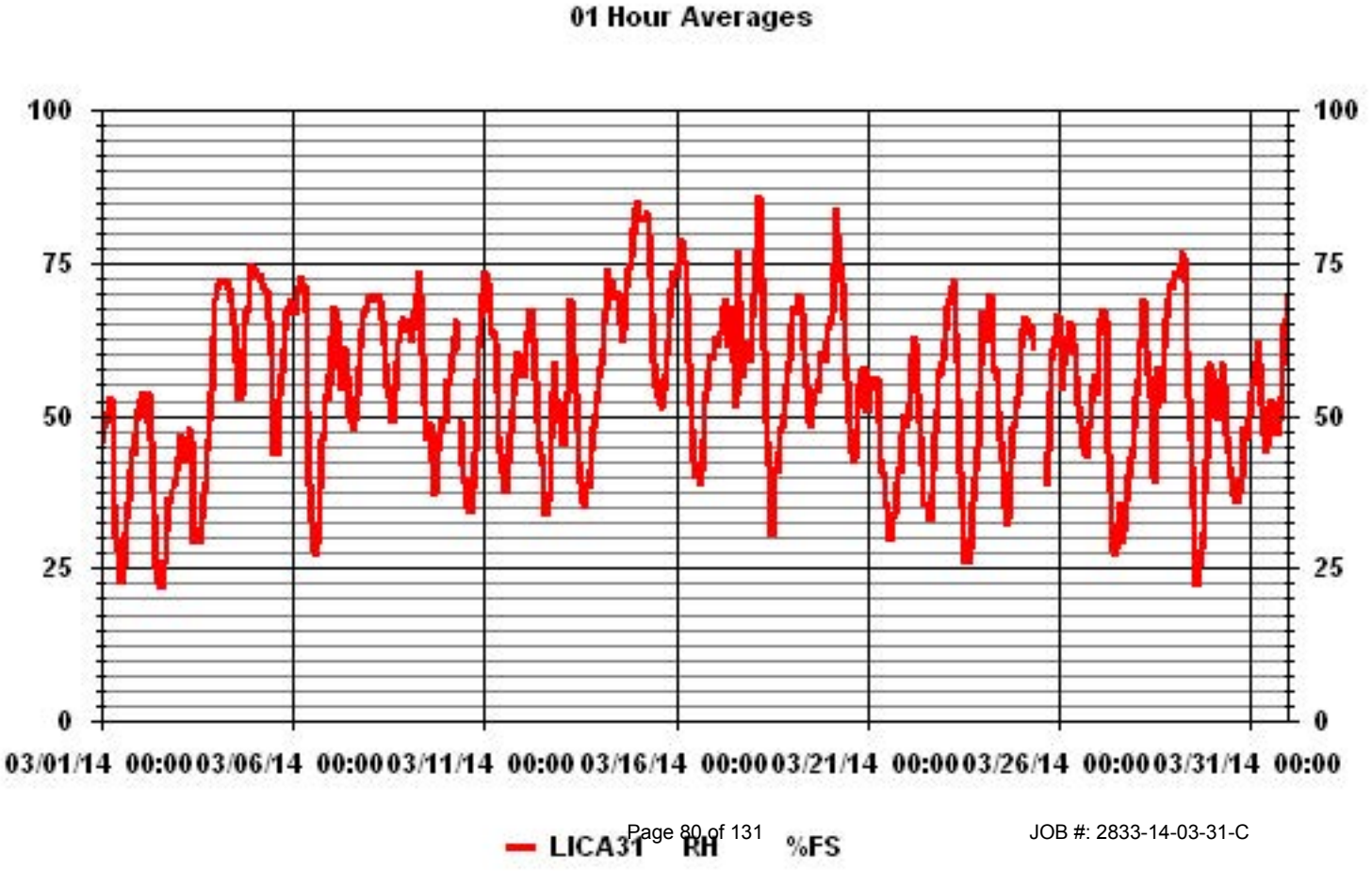
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	86	%	@ HOUR(S)	4	ON DAY(S)	18
MAXIMUM 24-HR AVERAGE:	69.7	%			ON DAY(S)	14
					VAR-VARIOUS	
OPERATIONAL TIME:					736	HRS
AMD OPERATION UPTIME:					98.9	%
STANDARD DEVIATION:	13.56		MONTHLY AVERAGE:		54.20	%



JOB #: 2833-14-03-31-C

Precipitation

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

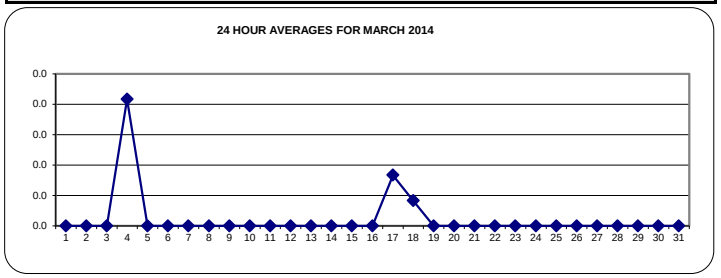
PRECIPITATION hourly averages in millimeter

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	0	0	0	0	0	0.0	24
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
4	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0	**0.3**	0.0	24
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	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	24
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	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	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0.2	0.0	24
18	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	0.0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	24
25	0	0	0	0	0	0	0	0	0	**P**	**P**	**P**	**P**	**P**	**P**	**P**	0	0	0	0	0	0	0	0	0	0.0	18
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	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	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	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	0.1	0.1	0	0.1	0	0	0	0	0	0	0	0	0.3	0	0	0.2	0	0	0	0	0	0	0	0			
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

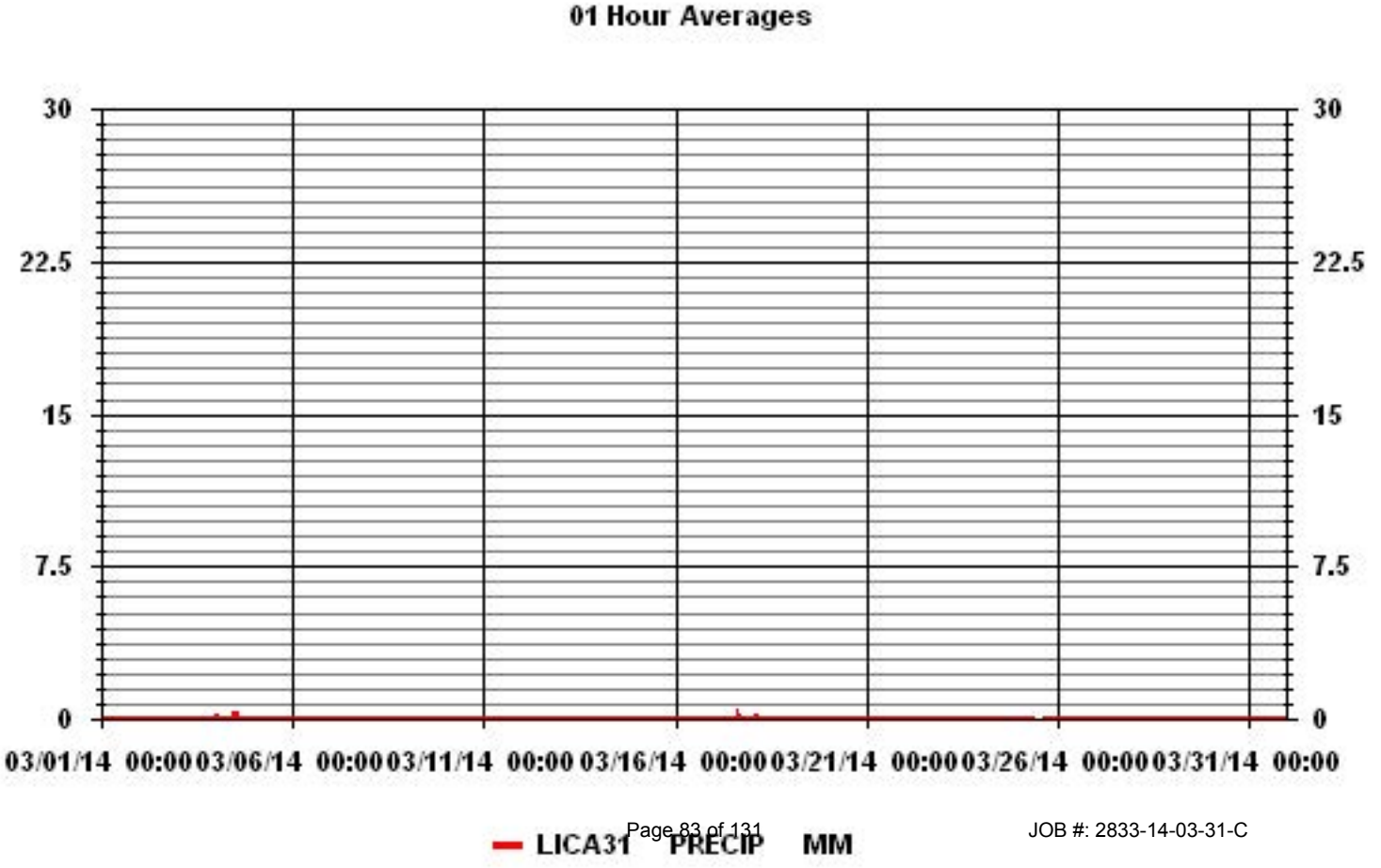
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	0.3	MM	@ HOUR(S)	12	ON DAY(S)	4
MAXIMUM 24-HR AVERAGE:	0.0	MM			ON DAY(S)	ALL
					VAR-VARIOUS	
			OPERATIONAL TIME:		738	HRS
			AMD OPERATION UPTIME:		99.2	%
STANDARD DEVIATION:	0.01		MONTHLY AVERAGE:		0.00	MM



JOB #: 2833-14-03-31-C

Vector Wind Speed

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

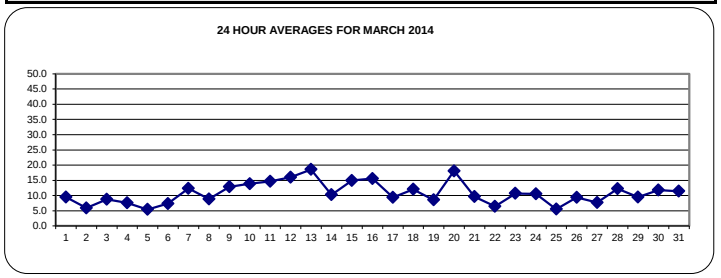
WIND SPEED (WS) hourly averages in km/hr

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	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	6.3	26	***36.6***	8.4	9	6.4	2	7	4.1	6.6	7.3	6.4	3.9	3	5.9	9.3	10.7	9.2	9.5	10.8	11.2	8.4	9.7	9.4	***36.6***	9.5	24
2	8.8	10.5	10.3	9.3	8.8	8.5	6.3	5.7	5.8	4.5	2.8	4.8	4.8	4.6	3.8	6.9	4.6	2.8	1.1	4.9	5.2	5.5	4	6.5	10.5	5.9	24
3	9.4	8.9	9.7	9.6	9	9.4	12.9	10.5	8.3	8.1	8.4	9.1	8.8	8	9.5	8.7	9.4	7.8	8.2	6.9	7.9	6.8	8.2	7.4	12.9	8.8	24
4	7.9	8.2	8.5	9.3	10	9.2	10.4	10.4	10	7.5	7.4	5.6	7.7	8.7	8.2	7.4	5	5.5	4.2	7.4	7.3	7.6	3.5	4.9	10.4	7.6	24
5	3.5	4.6	6.3	4.8	4.6	3.9	3.5	4.6	1.8	5	3.5	4.5	4.7	7.8	6	6.3	7.1	5.6	5	6.9	8.9	7.6	7.2	6.5	8.9	5.4	24
6	7.6	6.8	6.3	9.3	11.4	7.3	9.1	13.2	9.3	8	7.1	8.3	7.5	5.6	5.2	3.9	5.2	3.9	4.7	6	7.8	9.2	7.7	5.7	13.2	7.3	24
7	5.3	7.3	8.6	9.5	9.8	10.2	10.1	11.6	10.9	11.5	13	12.8	17.7	16.3	16.4	15.7	16.2	14.3	14.6	16.4	14.4	11.8	10.3	10.7	17.7	12.3	24
8	11.2	7.7	8.5	8.6	9.8	11.7	15	14	10.9	8.2	6	5.1	9.6	8.5	7.9	6.2	8.5	8.5	8.6	8.8	8.8	7.3	6.6	7	15.0	8.9	24
9	7.7	10	12.3	12.6	12.3	11.5	10.9	10.8	7.8	9.5	6.3	11.3	12.9	19.1	24.2	24.8	16.7	13.6	14.9	9.6	10.4	11.5	13.2	14.3	24.8	12.8	24
10	17.4	17.6	15.4	14.1	10.8	9.1	9.9	10.2	**P**	17.5	18.1	17	17	17.4	14.2	20.6	17.4	15.7	12.5	10.2	8.7	9	9.9	9.6	20.6	13.9	23
11	11.2	10.7	10.4	11.6	10.9	12.4	10.7	10.8	11.7	13.7	15.7	17.1	17.7	18.6	19.5	23.2	18.3	16.3	14.8	18.5	14.8	13	14.9	15.5	23.2	14.7	24
12	14.3	17.4	16.4	15.7	15	17.5	18.7	16.2	16.7	18.4	21.2	23.3	23.7	23.1	19.4	16.1	15.1	10.8	11.2	9.8	11.4	11.4	9.3	11.5	23.7	16.0	24
13	13.9	17.4	19.2	21.2	20.1	20.6	22.7	24.4	24.1	24.3	22	22.7	24.9	24.5	23	24.4	20	15	13.3	10.8	8.4	9.5	9.5	10	24.9	***18.6***	24
14	6.7	7	5.6	6.4	8.8	7.1	7.3	9.5	11.1	12.1	12.4	12.1	13.3	13.3	13.8	11.9	11.7	8.8	9.8	8.7	10.9	11.8	13.6	12.8	13.8	10.3	24
15	12.1	16.7	17.1	18.3	18.1	19.4	17.9	17.7	15.1	13.6	12.1	11.6	11.4	13.7	17.1	16.8	12	12.7	12.9	12.4	14.4	15.3	14.6	15.5	19.4	14.9	24
16	17.5	9.7	9.5	10.3	9.3	10.7	10.6	10.7	13.7	20.8	23.8	23.9	28.8	25.3	26	24.4	20.6	16.8	15.3	10.1	9	9	9.7	8.4	28.8	15.6	24
17	7.8	9.6	8.8	9.4	11	10.2	11.4	12.5	10.4	8.9	7.9	10	12.5	12.9	14.8	16.1	10.4	8.3	8.4	6.2	5.5	3.7	2.9	6.1	16.1	9.4	24
18	8	10.1	13.5	10.4	9.2	12.2	12.3	11.6	15	16.6	17.7	16.1	15.3	17.2	17.1	15.5	13.2	11.6	7.7	8	8.2	8.4	7	7.5	17.7	12.1	24
19	7.4	7.1	7.7	6.8	6.9	7.8	7.9	9.6	11.3	12.9	12.4	9	10	9.4	9	8.9	7.1	8	8.4	8.7	7.1	6.8	8	7.1	12.9	8.6	24
20	8	8.7	9.9	15.2	14.7	20.4	20.2	23.8	24.3	22.9	22.5	21.7	20.9	20.1	20.3	22.2	21.4	19.8	16.5	16.2	15	16.6	13.8	18.9	24.3	18.1	24
21	15.7	14.2	11.2	10	9.8	9.1	7.4	6.7	6.9	7.9	8.2	8.1	10.1	12.7	13.3	11.9	11.3	11.6	8	6.8	8.4	9.8	7	4.9	15.7	9.6	24
22	3.4	4.6	6.5	8.2	9.3	9.9	10.5	8.8	7.3	6.9	3	2.1	3.8	4	2.6	4.3	7.1	7.4	7.8	7.5	8.1	8.6	6.6	6.9	10.5	6.5	24
23	6.7	7.1	7.4	6.9	6.6	7.1	8	6.8	9.6	12.1	10.1	12.9	13.8	16.7	14.8	15.1	14.2	15	10.9	10	10.5	9.6	11.4	13.4	16.7	10.7	24
24	12.6	11.2	10.8	11.1	10.6	9.4	11.6	13	15.3	16.4	14.7	13.6	14.3	12	10.6	10.6	10.1	9.6	5.7	4.1	3.8	7.4	6.8	6.5	16.4	10.5	24
25	8.2	7.4	7.2	7.6	7.8	9.1	9.1	7.2	7.4	**P**	**P**	**P**	**P**	**P**	**P**	**P**	2.7	2.5	6.5	1.9	2.7	3.6	0.8	2.4	9.1	5.5	17
26	6.2	10	19.1	21.4	18.4	11.8	9.4	11.4	14.5	11	10.4	9.6	10.2	8.6	6.7	6.9	2.7	1	4.8	5.5	5.3	6.8	6.4	6	21.4	9.3	24
27	6.3	6.1	7.8	7.4	7.1	7.4	5.6	2.4	3.2	5.9	5.2	9.3	9.2	9.4	10.3	12.2	12.7	11	9.7	6	6.2	7.7	7.7	8.6	12.7	7.7	24
28	9.5	9.2	10.8	11.4	9.3	8.3	8.8	7.4	8.4	10.4	16.9	16.5	17.1	21.6	20.2	18.3	17	16.6	13.1	9.7	11.7	10.9	5.9	5.5	21.6	12.3	24
29	6	2.9	4.3	4.4	4.3	6.2	6.4	4.7	5.4	4.6	5.7	7.8	10.8	11.9	13.3	14	10.7	11.3	9.3	10	11.8	22.4	21.4	18.5	22.4	9.5	24
30	18.3	17	17.3	15.1	14.2	14.7	14.9	16.1	15.1	14.5	12.3	9.2	9.6	8	7.7	7.8	7.9	8.4	6.7	5.8	9.8	10.9	11.5	10.6	18.3	11.8	24
31	10.1	11.4	12.1	11.9	12.4	13	11.9	10.2	10.4	12.1	13.1	13.1	12.9	12.9	13.8	12	12.2	12	9.8	8.1	10.1	10.3	8.4	9.8	13.8	11.4	24
HOURLY MAX	18.3	26.0	36.6	21.4	20.1	20.6	22.7	24.4	24.3	24.3	23.8	23.9	28.8	25.3	26.0	24.8	21.4	19.8	16.5	18.5	15.0	22.4	21.4	18.9			
HOURLY AVG	9.5	10.4	11.5	10.8	10.6	10.7	10.8	11.0	10.9	11.7	11.6	11.8	12.8	13.2	13.2	13.4	11.6	10.4	9.5	8.8	9.2	9.6	9.0	9.3			

STATUS FLAG CODES

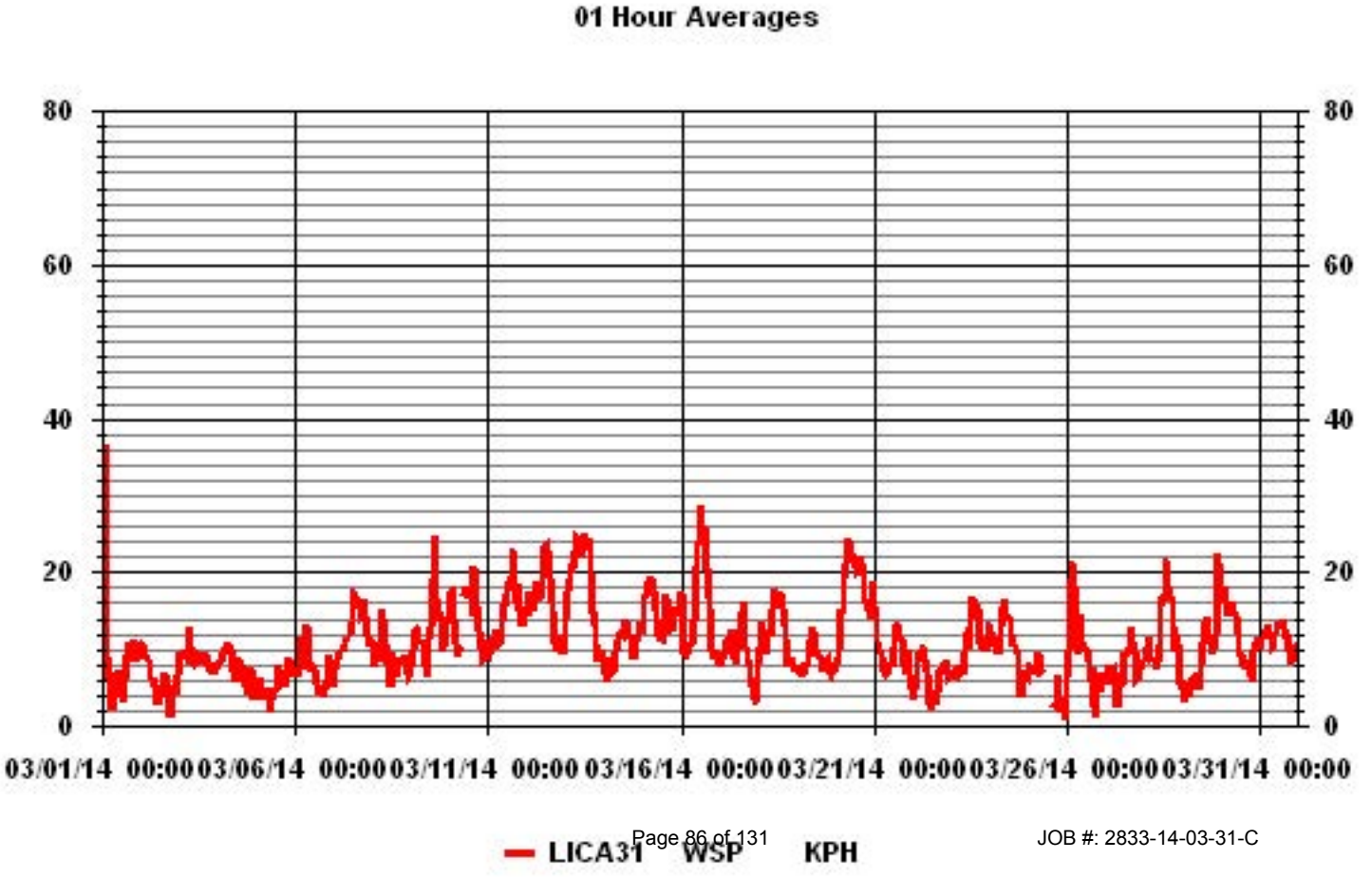
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



LAST CALIBRATION:	June 12, 2012
DECLINATION :	MAGNETIC DECLINATION 19 DEGREE EAST

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	736						
MAXIMUM 1-HR AVERAGE:	36.6	KPH	@ HOUR(S)	2	ON DAY(S)	1	
MAXIMUM 24-HR AVERAGE:	18.6	KPH			ON DAY(S)	13	
					VAR-VARIOUS		
			OPERATIONAL TIME:			736	HRS
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:			98.9	%
STANDARD DEVIATION:	5.03		MONTHLY AVERAGE:			10.86	KPH



JOB #: 2833-14-03-31-C

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

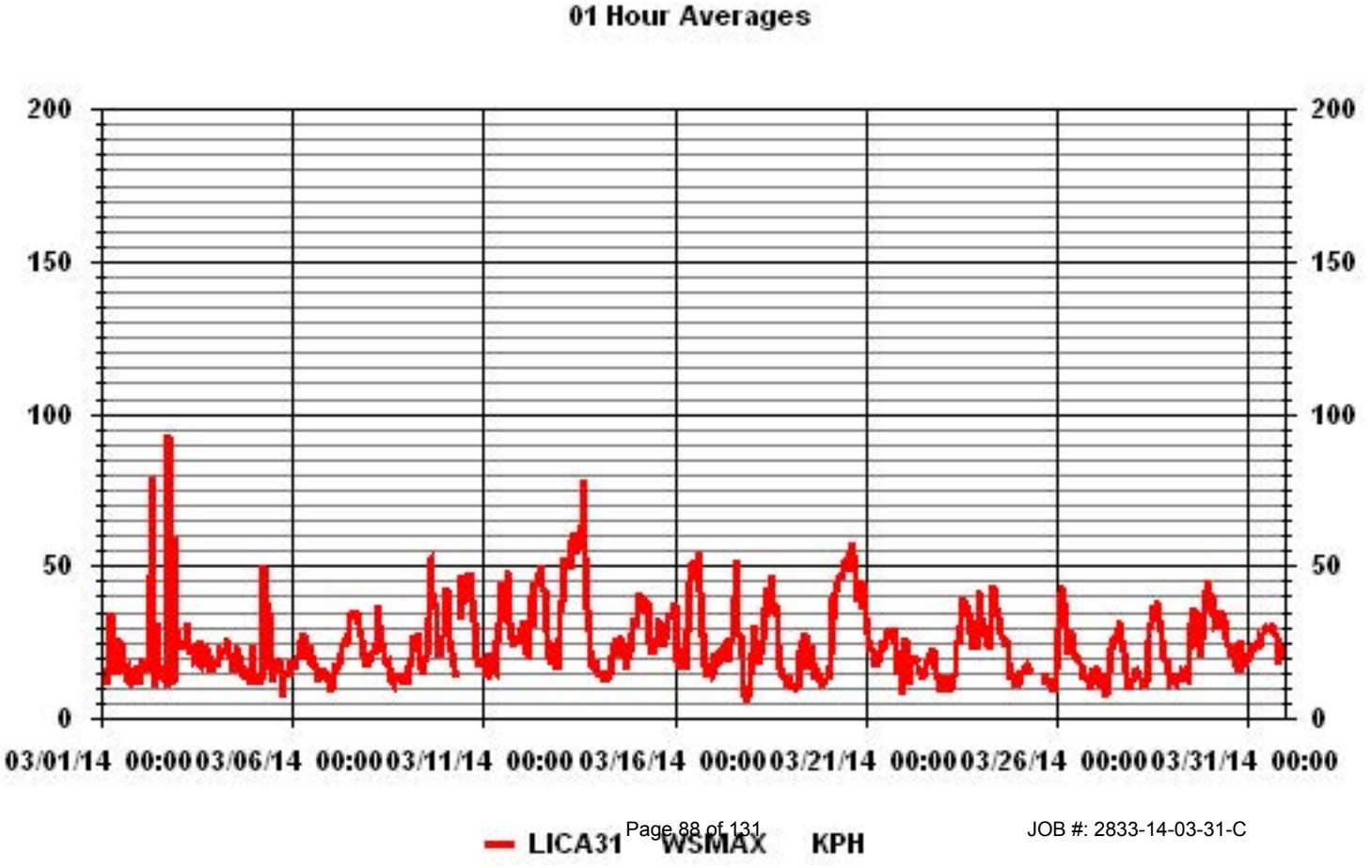
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	71	**X**	**X**	11.7	16.1	14.3	34.7	14.3	25.5	14.1	15.8	25.2	24.8	17.1	14.9	16.3	17.1	13	12.3	15.2	15.8	12.5	13.2	11.2	71	19.4	22
2	14.7	19.6	18.7	17.6	16.1	16.3	28.6	46.7	78.9	10.1	24.8	31.2	16.3	14.3	14.7	16.8	12.8	9.9	***93.5***	21.5	14.7	11.2	58.3	**X**	***94***	26.4	23
3	28.3	24.1	25.7	23.5	**X**	24.1	31	22.2	22	22.8	19.1	19.8	18.7	18	25.5	21.9	22.6	18.3	23.7	16.5	21.1	15.2	17.4	17.4	31	21.7	23
4	17.8	16.9	23.5	20.4	21.1	22.2	23.3	25.9	21.8	19.3	21.7	15.4	18.5	23.9	20.9	18.9	17.6	14.1	12.8	16.7	15.4	15.8	11.2	23.5	26	19.1	24
5	12.3	13.6	13.6	12.6	12.1	12.8	50.6	19.8	38.3	35.1	16.3	12.1	14.8	16.5	18.4	18	19.4	15.8	6.9	14.7	14.9	14.7	14.7	17.8	51	18.2	24
6	18	17	15.8	20.4	23.5	22.6	19.1	27.9	24.4	20.6	19.8	23.9	21.3	19.8	18.3	16.7	13.2	13.4	14.5	14.1	16.3	15	13.4	13.6	28	18.4	24
7	8.4	9.5	14.7	16.7	16.7	17.8	21.5	23.9	24.4	25.3	23.9	28.1	33.6	33.8	35.1	32	35.7	31.6	26.3	29	25.9	20.9	18.2	18	36	23.8	24
8	20.9	18.7	21.5	21.7	24.6	31.1	36.8	31.4	25.7	22.6	18.9	18	18.9	17.3	13	11.9	14	13.4	13.6	13.8	12.5	11	13.8	13.4	37	19.1	24
9	11	16.9	19.3	21.3	27	22.8	21.7	27.8	21.5	16.7	14.1	18.2	20.6	32.7	52.5	53	42.1	35.5	37.9	23.9	19.7	24.5	27	27.4	53	26.5	24
10	33.3	42.5	33.3	26.1	22.2	17.3	13.8	14.9	**P**	33.4	47.3	39.7	37.7	46	42.9	48	46.4	39.7	32.4	20.4	19.7	16.7	20	18.4	48	31.0	23
11	18.4	14.7	14.3	21.1	16	18.9	16.5	15.8	25	25.2	31.3	44.2	42.7	35.5	36.8	49	31.8	26.9	23	27.4	24.5	26.7	25.2	29.4	49	26.7	24
12	24.1	31.8	28.1	22.1	21.5	30.9	40.3	30.1	44.7	43.1	46	47.5	49.9	43.1	42.3	28.7	26.5	19.3	22.8	17.5	21.5	25	15.6	26.7	50	31.2	24
13	34.6	38.3	46.2	52.3	49	52.1	48.8	58.5	60.9	59.1	54.1	55.8	60.9	63.1	55.4	78.1	53.4	36.6	28.9	23.1	17.5	16.9	14.9	19.3	78	***44.9***	24
14	13.2	14.9	14.7	14.7	11.6	14	13.4	14.5	20.4	24.5	21.4	21.3	26.7	24.8	26.9	25.4	20.9	16	18.4	19.3	21.7	27.6	30.9	32.7	33	20.4	24
15	30	40.6	40.4	36.4	35.7	39.4	35.7	38.6	25	21.7	21.7	22.6	23.5	26.1	32	31.8	23.2	29.6	30.1	25.8	32.2	34.8	32	35.9	41	31.0	24
16	38.2	19.5	16.2	23	16.2	18	17.1	17.1	28.5	44.5	51.4	45.6	51	51.2	47.1	54.3	42.3	27.8	27.9	17.8	13.6	17.3	16.7	14	54	29.8	24
17	14.7	21.5	18.2	17.3	22.4	21	22.8	23.9	21.9	19.5	18.7	26.5	25.4	29.2	39.7	51.5	28.3	27.6	20.8	9.2	9.7	5.7	7.3	9.7	52	21.4	24
18	14.5	21	30.7	20.8	17.8	19.5	21	25.9	34.9	34.6	42.7	34.8	35.1	46.7	36.6	36.6	33.5	24.3	16.9	14.3	14.3	13.8	10.3	13.2	47	25.6	24
19	13	10.6	10.5	10.6	9.9	10.6	20	19.3	25.4	27.2	27	17.1	16.9	22.4	23.4	18.9	13	14.3	14.9	13	10.3	12.5	11.9	12.6	27	16.1	24
20	15.8	15.1	20.6	39.7	32.2	41.2	44	47.1	45.6	47.4	51	51	52.1	50.6	47.8	57.8	54.5	51.1	40.1	38.4	41.7	45	35.5	44.1	58	42.1	24
21	33.3	28.6	26.5	21.5	23.1	19.6	16.7	19.1	19.3	22	25.3	22.4	23.5	27.6	27.2	29.4	28.1	28.5	25	14.5	22.6	16	12.6	7.9	33	22.5	24
22	13	26.5	15.2	10.8	17.8	18.7	17.6	20.3	18.2	16.7	15.2	12.5	13.6	14.5	17.8	18.7	21.5	19.3	23.2	16.9	13.8	13.8	9.5	9.7	27	16.5	24
23	8.8	13	14.3	8.4	10.1	9	13.4	13.8	15.2	24.8	25	30.7	32.9	39.5	34	38.1	34.2	34.2	27.8	24.1	23.7	23.7	32.2	41.9	42	23.9	24
24	33.6	32.7	29.8	27.6	23.9	22.4	30.3	34.2	43.8	35.5	37.3	33.6	28.1	27.4	26.3	23.7	25.4	25.2	18.9	13.2	14.5	14	9.9	13.2	44	26.0	24
25	15.4	11.2	15.4	16.5	16	17.4	16.7	16	**P**	**P**	**P**	**P**	**P**	**P**	**P**	**P**	14.3	10.8	12.7	11	12.1	11.9	8.1	12.7	17	13.6	16
26	15.6	29.4	40.8	43.4	38.4	34.2	20.8	24.6	26.8	28.5	23	19.1	21.5	19.1	18.5	18	13	14.9	13.2	13.4	10.8	10.6	14.1	16.7	43	22.0	24
27	15.4	17.1	12.1	11	9.9	14.7	7.1	10.6	10.1	15	22.8	25.2	25.4	27.2	29.7	31.8	30.3	25.9	22.4	16	14	9.7	10.8	11.9	32	17.8	24
28	12.7	16.7	13.2	14.9	13.8	11.9	12.6	9.9	11.6	25.2	29.4	31.4	36.6	36.8	33.5	38.4	32.9	29.2	26.1	19.8	18.9	18.9	14.7	11.6	38	21.7	24
29	12.1	12.1	11.6	14.5	12.3	13.8	16	15.4	13.2	12.7	17.3	22.6	31.4	30.3	36	31.1	23.2	26.5	19.5	25.9	34.6	42.3	45.1	36.4	45	23.2	24
30	39.7	41	33.6	30.8	31.6	29.4	32.7	35.5	32.5	29	29.8	25	23.7	20	21.5	22.4	19.3	20	14.9	25.9	21.3	18.7	16.8	21.5	41	26.5	24
31	18	23.3	23.9	22.6	23.5	24.4	24.3	23	27.8	28.1	29.8	30.5	30.1	29.4	28.7	31.1	30	28.1	27	18	20	23.9	21.9	22.6	31	25.4	24
HOURLY MAX	71	43	46	52	49	52	51	59	79	59	54	56	61	63	55	78	55	51	94	38	42	45	58	44			
HOURLY AVG	21.6	21.9	22.1	21.7	21.1	22.0	24.8	24.8	28.7	26.8	28.1	28.4	29.2	30.1	30.6	32.3	27.1	23.9	24.1	19.0	19.0	18.9	19.5	20.1			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	93.5	KPH	@ HOUR(S)	18	ON DAY(S)	2
					VAR-VARIOUS	
OPERATIONAL TIME:					731	HRS



JOB #: 2833-14-03-31-C

LICA31
WSP / WDR Joint Frequency Distribution (Percent)

March 2014

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	.81	.54	.67	.40	.13	.54	.13	.27	.40	2.03	2.17	.95	.67	.67	1.08	.95	12.50
<	12.0	2.44	1.22	2.30	1.49	2.58	4.07	1.63	1.90	4.21	4.75	5.57	4.34	5.97	3.94	3.39	4.75	54.61
<	20.0	.81	1.22	1.08	1.08	.27	.67	.13	1.22	2.17	2.85	2.17	2.17	3.66	2.85	2.58	1.08	26.08
<	29.0	.54	1.08	.27	.13	.00	.00	.00	.00	.00	.00	.00	1.49	.95	.40	1.63	.00	6.52
<	39.0	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.61	4.07	4.34	3.12	2.98	5.43	1.90	3.39	6.79	9.64	9.91	8.96	11.27	7.88	8.69	6.79	

Calm : .13 %

Total # Operational Hours : 736

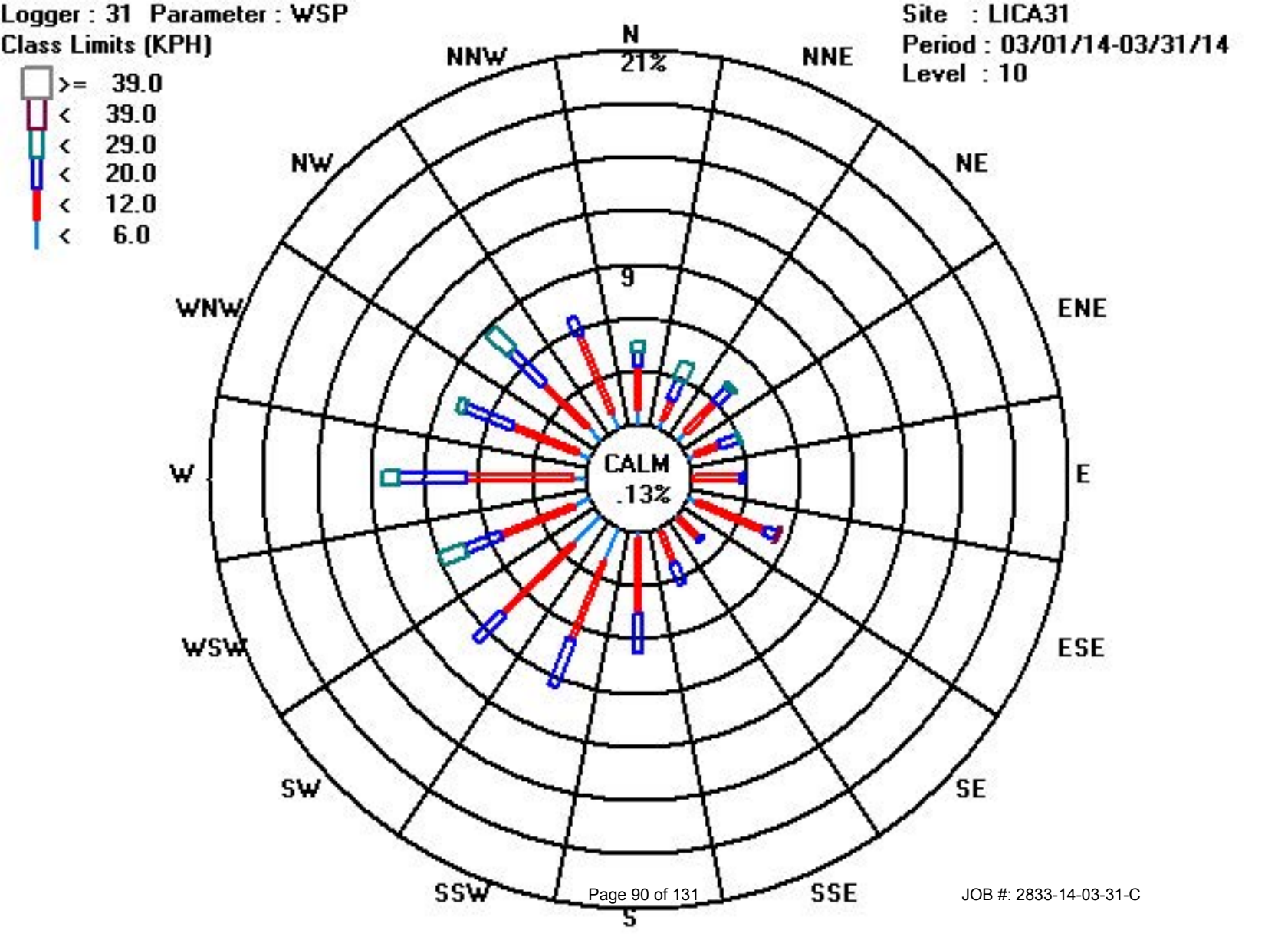
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	6	4	5	3	1	4	1	2	3	15	16	7	5	5	8	7	92
<	12.0	18	9	17	11	19	30	12	14	31	35	41	32	44	29	25	35	402
<	20.0	6	9	8	8	2	5	1	9	16	21	16	16	27	21	19	8	192
<	29.0	4	8	2	1								11	7	3	12		48
<	39.0						1											1
>=	39.0																	
	Totals	34	30	32	23	22	40	14	25	50	71	73	66	83	58	64	50	

Calm : .13 %

Total # Operational Hours : 736



JOB #: 2833-14-03-31-C

Vector Wind Direction

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

WIND DIRECTION (WD) hourly averages in degrees

MST

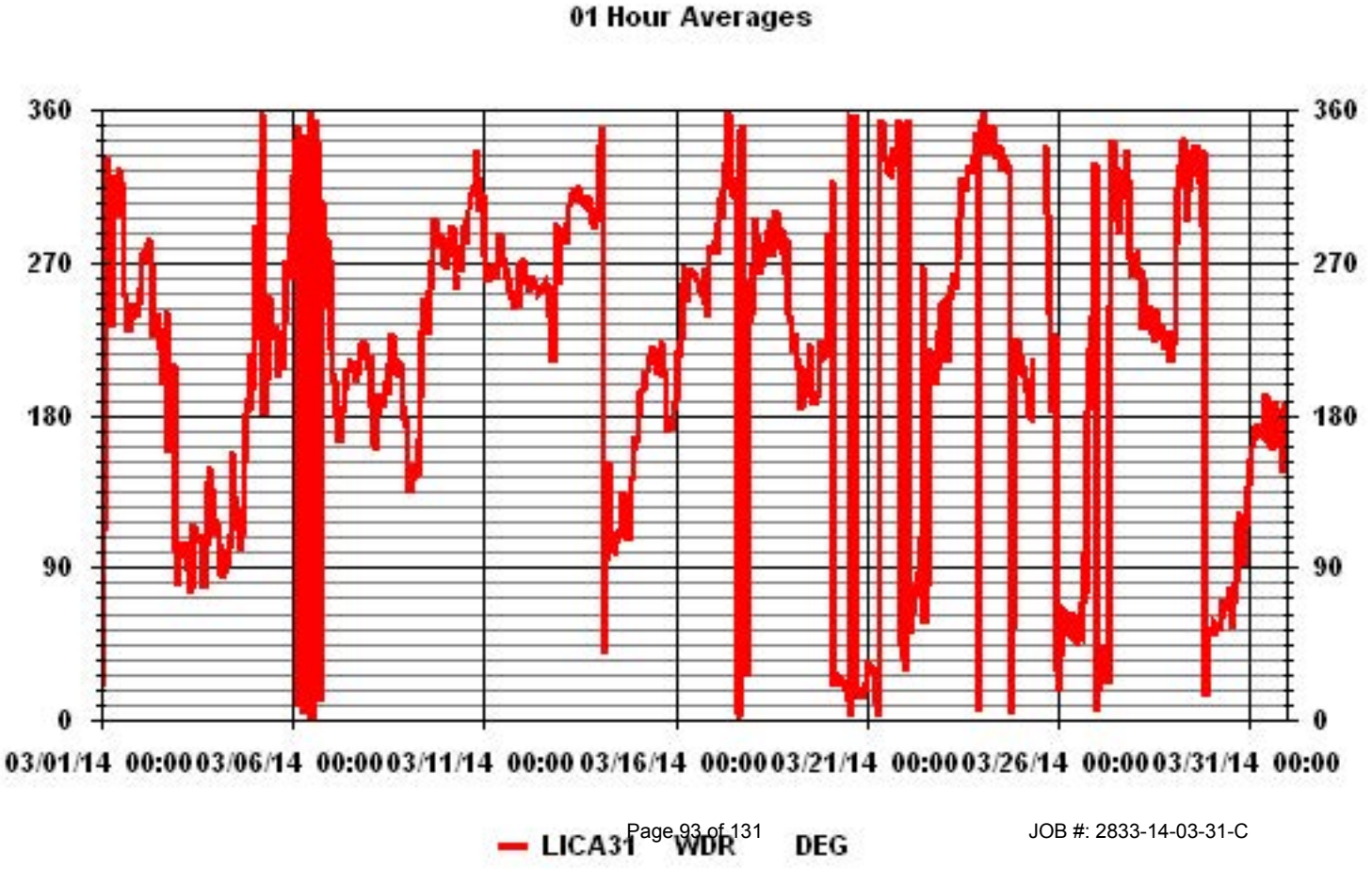
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	22	240	112	315	332	323	232	298	310	309	322	326	297	318	252	250	232	229	238	236	246	244	238	245	332	NNW	24
2	255	275	270	277	280	280	285	270	226	229	237	238	232	220	197	226	223	242	157	211	209	209	198	101	285	WNW	24
3	79	101	95	105	100	105	89	75	77	99	116	109	111	104	109	105	77	105	103	141	150	137	130	120	150	SSE	24
4	109	115	105	87	83	87	92	90	101	110	159	134	112	126	115	100	108	119	152	181	190	183	217	194	217	SW	24
5	224	292	266	283	325	359	180	205	200	251	239	229	225	233	204	202	209	206	229	234	271	262	260	286	359	N	24
6	322	342	322	352	7	345	318	3	343	331	346	359	0	9	355	342	317	10	307	284	243	284	256	273	359	N	24
7	219	206	201	180	174	164	168	182	185	194	208	206	213	206	206	199	203	212	222	219	222	222	214	210	222	SW	24
8	211	186	162	165	159	180	193	191	184	193	197	196	211	225	228	204	208	213	202	210	209	186	179	173	228	SW	24
9	152	133	141	151	149	144	145	166	190	230	249	234	227	232	254	271	292	296	288	285	279	287	285	269	296	WNW	24
10	267	273	281	285	292	281	254	261	**P**	266	280	292	280	295	301	310	310	313	315	336	322	300	302	311	336	NNW	23
11	275	264	258	267	266	262	270	260	265	275	287	283	274	268	260	262	254	250	246	242	249	248	269	270	287	WNW	24
12	271	269	264	259	253	258	262	260	254	256	252	253	255	256	258	255	250	239	216	211	257	294	257	277	294	WNW	24
13	288	291	282	282	293	303	308	307	308	313	314	314	308	306	306	305	304	309	302	292	295	289	294	302	314	NW	24
14	326	339	350	39	94	120	152	113	102	101	106	104	108	112	120	135	123	117	105	121	143	144	159	168	350	N	24
15	163	179	193	194	195	205	206	209	214	217	221	214	210	204	217	224	203	206	179	170	176	173	173	182	224	SW	24
16	188	216	216	224	258	268	255	247	261	265	267	263	263	260	256	257	253	250	252	267	238	276	280	275	280	W	24
17	283	275	293	297	308	295	313	329	339	358	348	319	310	308	320	5	1	348	352	49	44	26	260	234	358	N	24
18	239	268	296	287	274	263	268	273	281	289	292	292	295	273	281	301	291	278	290	277	277	263	284	240	301	WNW	24
19	236	217	226	228	215	208	183	190	189	206	205	208	223	191	188	186	190	194	212	224	214	215	220	242	242	WSW	24
20	287	283	319	20	27	25	27	26	25	22	19	18	12	2	356	355	354	358	12	15	19	13	17	22	358	N	24
21	35	32	30	30	28	22	10	2	355	349	353	332	331	324	323	331	334	337	334	327	354	44	46	37	355	N	24
22	28	331	355	50	62	78	79	78	88	108	103	268	56	62	78	220	205	202	197	201	206	229	230	246	355	N	24
23	247	234	210	237	248	257	264	256	254	271	297	320	317	312	316	322	326	326	322	333	337	347	5	353	353	N	24
24	353	359	346	336	334	342	349	349	340	331	338	338	324	335	328	331	328	323	3	54	205	203	223	223	359	N	24
25	216	208	208	203	194	181	180	186	212	**P**	**P**	**P**	**P**	**P**	**P**	**P**	338	299	241	212	181	201	229	30	338	NNW	17
26	17	37	53	65	64	58	52	50	52	63	49	48	53	51	50	69	99	74	182	193	219	238	269	329	329	NNW	24
27	4	16	37	44	34	31	43	21	244	335	343	313	306	295	286	307	323	322	324	336	320	273	261	268	343	NNW	24
28	273	274	264	265	267	230	260	242	233	232	245	229	223	243	238	234	233	226	220	220	230	224	211	220	274	W	24
29	230	221	281	314	328	342	343	342	293	311	323	321	336	339	333	340	318	318	290	337	13	52	54	53	343	NNW	24
30	52	49	58	57	53	55	60	71	68	64	69	69	79	53	68	81	117	123	121	104	90	105	115	138	138	SE	24
31	154	161	170	169	172	174	169	169	169	168	192	189	178	162	159	166	188	185	179	162	145	166	187	177	192	S	24

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION:	June 12, 2012
DECLINATION :	MAGNETIC DECLINATION 19 DEGREE EAST

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	736	HRS
STANDARD DEVIATION:	94.45		AMD OPERATION UPTIME:	98.9	%
			MONTHLY AVERAGE:	268	DEG



JOB #: 2833-14-03-31-C

Standard Deviation Wind Direction

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

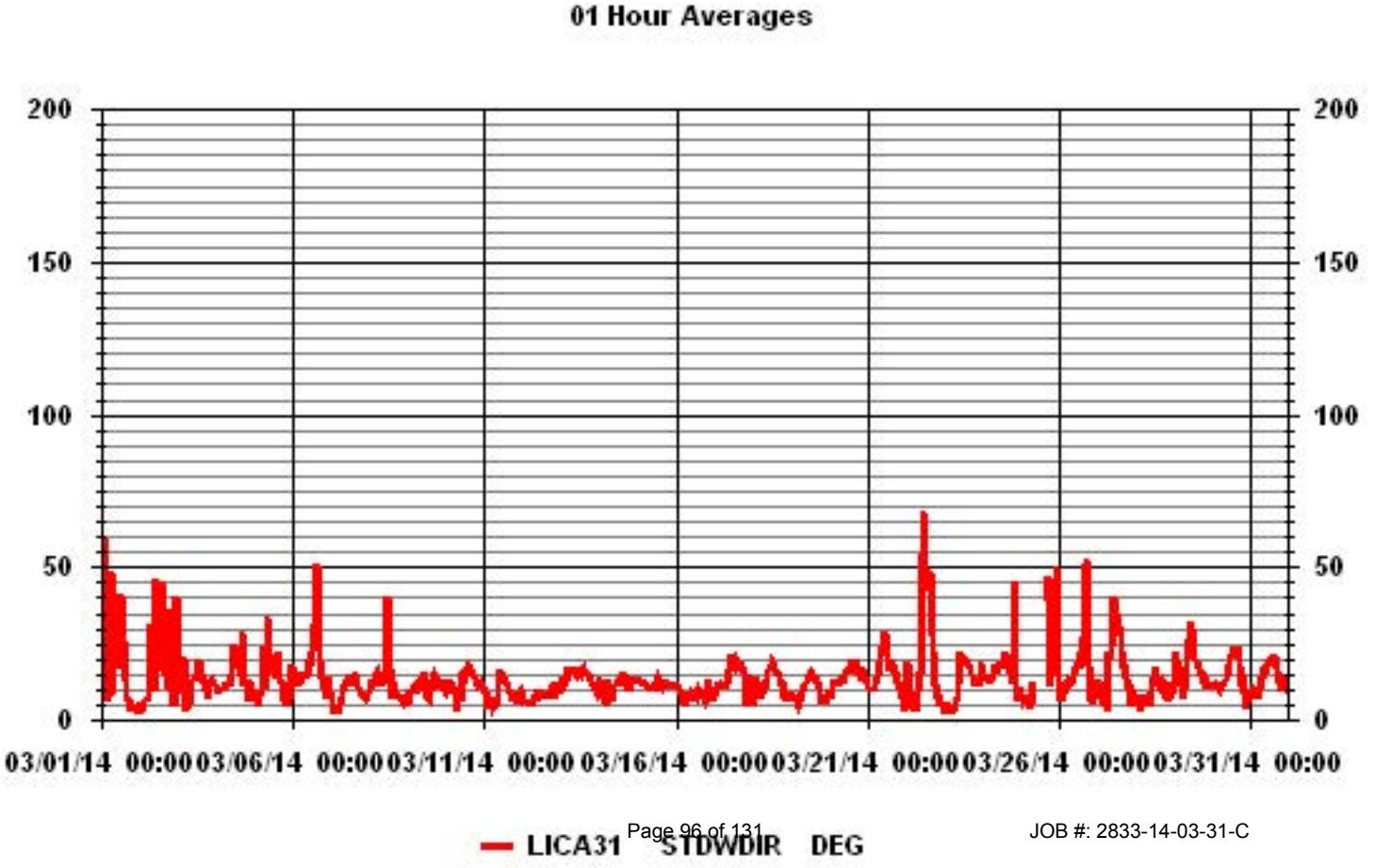
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	27	60	44	7	7	8	49	8	18	19	17	21	41	39	26	13	8	7	4	4	4	4	3	3
2	5	5	3	6	7	6	17	30	30	9	46	25	19	41	45	17	15	10	36	10	7	4	24	40
3	11	15	15	8	21	3	4	5	10	13	15	13	15	20	15	15	13	10	7	12	13	11	13	12
4	9	9	10	10	10	11	11	12	11	15	17	25	20	17	19	14	29	11	13	7	7	13	7	7
5	9	10	4	10	8	11	24	10	34	16	16	20	20	13	21	21	12	13	6	7	4	8	8	18
6	12	11	15	11	15	15	14	15	15	14	20	18	22	31	35	51	25	20	14	11	11	7	14	10
7	8	3	3	3	3	5	7	9	11	12	12	15	14	14	15	15	12	11	9	9	8	7	8	9
8	10	12	12	13	15	16	14	11	12	15	24	40	13	17	7	12	10	8	8	7	6	8	5	6
9	5	9	9	9	11	12	11	13	14	9	16	9	8	7	9	13	15	14	14	13	10	12	12	10
10	9	10	12	12	11	9	3	5	**P**	7	15	16	15	17	19	16	16	15	14	12	13	10	12	11
11	9	4	5	7	6	4	5	4	7	12	16	15	14	13	12	9	9	7	7	6	6	8	9	7
12	8	7	6	5	5	5	6	7	7	9	9	9	9	8	8	8	9	10	8	8	10	12	10	9
13	12	14	12	13	16	16	16	16	16	15	16	16	15	16	17	15	15	15	14	13	12	10	9	11
14	14	10	8	6	5	13	9	6	9	11	12	12	12	14	15	15	13	11	9	11	13	13	13	13
15	13	13	12	12	12	11	11	10	10	10	10	12	14	13	12	11	13	11	11	12	11	11	11	11
16	11	11	9	10	6	6	5	9	8	9	8	9	8	10	9	9	9	8	6	7	13	11	7	7
17	8	9	11	11	12	11	11	11	12	16	21	19	18	20	19	16	19	18	16	6	5	12	15	5
18	5	9	14	13	8	8	9	10	13	16	17	17	19	18	16	16	15	12	12	8	8	6	8	8
19	6	9	6	7	5	6	9	10	11	12	14	15	13	16	15	14	13	11	8	5	7	5	8	9
20	10	7	12	12	12	12	12	13	13	14	15	16	17	20	17	16	16	20	15	15	13	17	14	13
21	11	10	10	10	10	12	14	19	21	24	28	28	22	16	17	20	19	16	13	10	12	8	6	3
22	10	19	11	4	6	4	4	9	16	15	54	68	42	45	49	48	28	23	12	8	8	5	5	3
23	3	6	5	3	3	4	4	6	7	12	22	19	21	18	20	17	18	15	14	11	12	12	14	19
24	15	15	14	13	13	14	13	18	16	15	19	18	17	20	22	19	21	15	16	12	45	7	7	11
25	8	6	7	7	7	4	5	11	11	**P**	**P**	**P**	**P**	**P**	**P**	**P**	40	47	11	34	17	14	50	36
26	6	8	10	9	11	13	12	13	13	16	16	18	18	22	27	19	51	53	18	7	6	6	7	10
27	12	12	8	6	5	5	3	22	20	24	40	29	35	31	28	23	18	18	14	10	12	4	10	6
28	5	8	4	3	6	6	8	5	5	9	12	14	17	12	11	12	13	11	10	8	6	9	12	10
29	11	22	19	18	15	7	10	16	20	26	32	30	21	20	19	18	17	15	13	14	13	11	11	11
30	11	12	11	11	11	10	11	12	13	14	18	20	21	23	23	22	24	18	11	15	9	4	6	9
31	9	11	9	8	8	7	10	14	17	16	18	19	20	19	20	20	19	16	13	10	11	13	12	10

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: June 12, 2012

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 736 HRS



JOB #: 2833-14-03-31-C

Calibration Reports

Sulphur Dioxide

API 100E SO2 Analyzer Calibration

Date:	7-Mar-14	**Start/End Time (mst):**	1012/1300
Company:	LICA	**Calibration Purpose:**	Routine
Station Name/Location:	St.Lina	**Converter Make & Model:**	NA
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	SO2	**Cal Gas Expiry Date:**	29-Dec-16

Analyzer:

Serial Number:	468	**Range ppb:**	1000
Last Calibration Date:	13-Feb-14	**As Found C.F.**	1.024
Previous Cal High Point C.F.:	1.001	**New C.F.:**	1.001

	As found:	As left:
SLOPE:	1.009	1.034
OFFSET:	141.0	141.7
HVPS:	560	560
RCELL TEMP:	50.0	50.0
BOX TEMP:	22.3	27.9
PMT TEMP:	7.8	7.9
IZS TEMP:	40.0	40.0
TEST:	NA	NA
STABIL:	0.1	0.8
PRES:	24.2	24.0
SAMP FL:	587	575
PMT:	127.3	133.2
NORM PMT:	141.2	146.5
UV LAMP:	1794.6	1793.3
LAMP RATIO:	97.8	97.7
STR. LGT	71.2	73.3
DRK PMT:	10.8	12.3
DRK LMP:	4.0	4.1
Internal Span:	236.8	242.3

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	831
Cal Gas Cylinder I.D. # :	BAL3165
Cal Gas Conc. (ppm):	49.7

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	5000	80	5080
mid	5000	40	5040
low	5000	20	5020

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4995	0.0	4995	0	0.5	NA
adjusted zero	4995	0.0	4995	0	0.0	NA
as found high	4995	79.80	5075	781.5	763.0	1.024
adjusted high	4995	79.80	5075	781.5	781.6	1.000
mid	4995	39.90	5035	393.9	392.9	1.003
low	4996	19.90	5016	197.2	196.9	1.002
calibrator zero	4995	0.00	4995	0	-1.1	NA
					Average C.F.=	1.001

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.000**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.03%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-2.33%**	**± 15%**	**PASS**

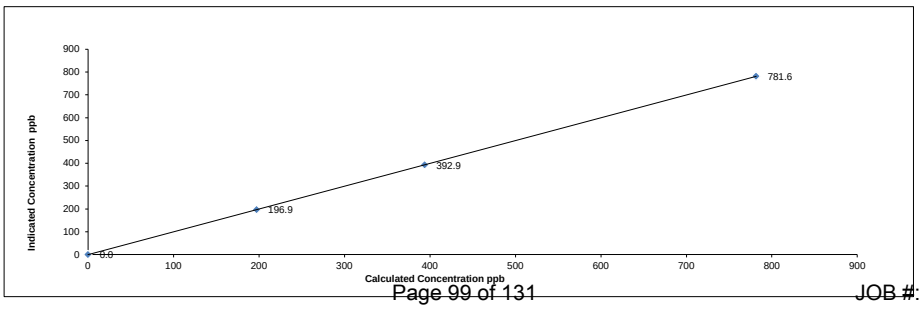
Converter Effeciency Check for H_2S/TRS application:

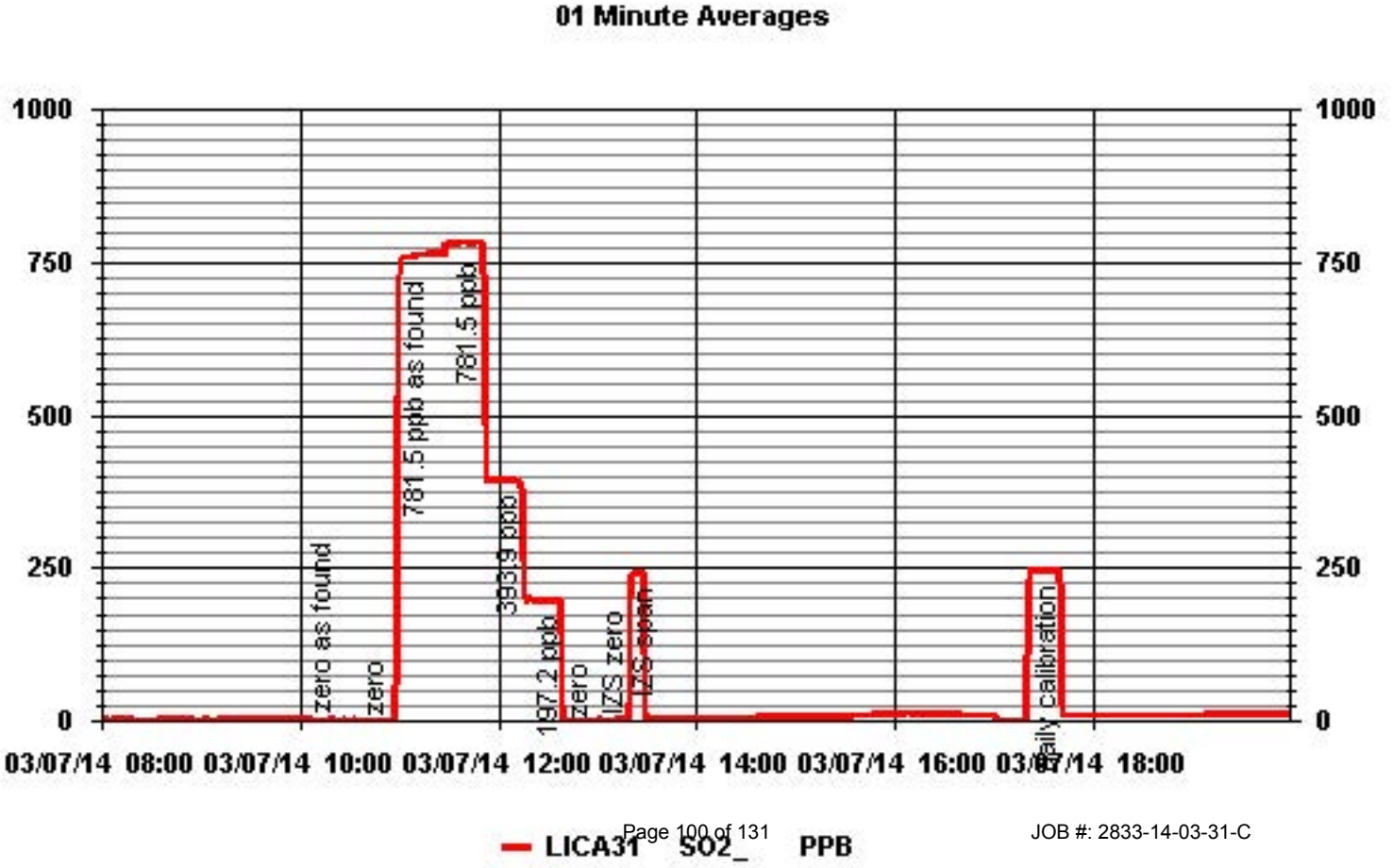
****run converter effeciency test immediately following zero adjust****

SO_2 High Point gas concentration:	781.6	Time gas run (mst):	NA
Zero corrrected analyzer response:	NA		

Comments:

API 100E SO2 Analyzer Calibration





JOB #: 2833-14-03-31-C

API 100E SO2 Analyzer Calibration

Date:	10-Mar-14	**Start/End Time (mst):**	1140/
Company:	LICA	**Calibration Purpose:**	Routine
Station Name/Location:	St.Lina	**Converter Make & Model:**	NA
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application $H_2S/TRS/SO_2$:	SO2	**Cal Gas Expiry Date:**	29-Dec-16

Analyzer:

Serial Number:	468	**Range ppb:**	1000
Last Calibration Date:	7-Mar-14	**As Found C.F.**	1.000
Previous Cal High Point C.F.:	1.000	**New C.F.:**	1.001

	As found:	As left:
SLOPE:	1.034	1.020
OFFSET:	141.7	137.0
HVPS:	560	560
RCELL TEMP:	50.0	50.0
BOX TEMP:	33.1	33.1
PMT TEMP:	7.9	7.9
IZS TEMP:	40.0	40.0
TEST:	NA	NA
STABIL:	0.1	0.1
PRES:	23.6	23.6
SAMP FL:	562	562
PMT:	123.8	123.8
NORM PMT:	137.6	137.6
UV LAMP:	1794.2	1794.2
LAMP RATIO:	97.9	97.9
STR. LGT	73.3	73.3
DRK PMT:	18.0	18.0
DRK LMP:	3.6	3.6
Internal Span:	242.3	252.7

Calibrator:

Flow Meter ID's:	NA
Make & Model:	Environics 6100
Serial #:	4760
Cal Gas Cylinder I.D. # :	BAL3165
Cal Gas Conc. (ppm):	49.7

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	5000	80	5080
mid	5000	40	5040
low	5000	20	5020

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4995	0.0	4995	0	-2.4	NA
adjusted zero	4995	0.0	4995	0	0.2	NA
as found high	4995	79.80	5075	781.5	782.0	1.000
adjusted high	4995	79.80	5075	781.5	782.0	1.000
mid	4996	39.85	5036	393.3	393.3	1.001
low	4996	19.94	5016	197.6	197.5	1.001
calibrator zero	4996	0.00	4996	0	0.7	NA
					Average C.F.=	1.001

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.000**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.00%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**0.03%**	**± 15%**	**PASS**

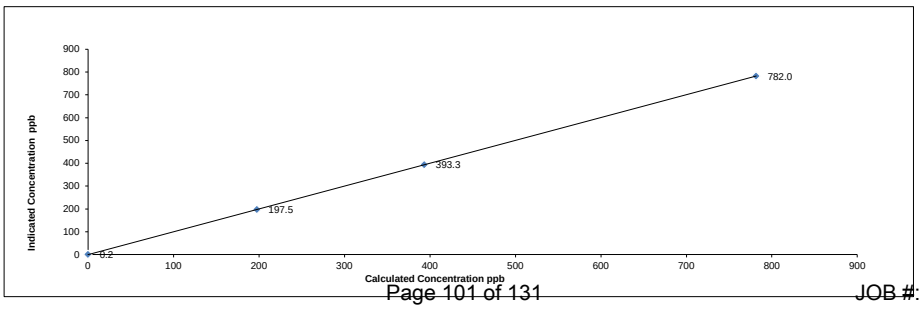
Converter Effeciency Check for H_2S/TRS application:

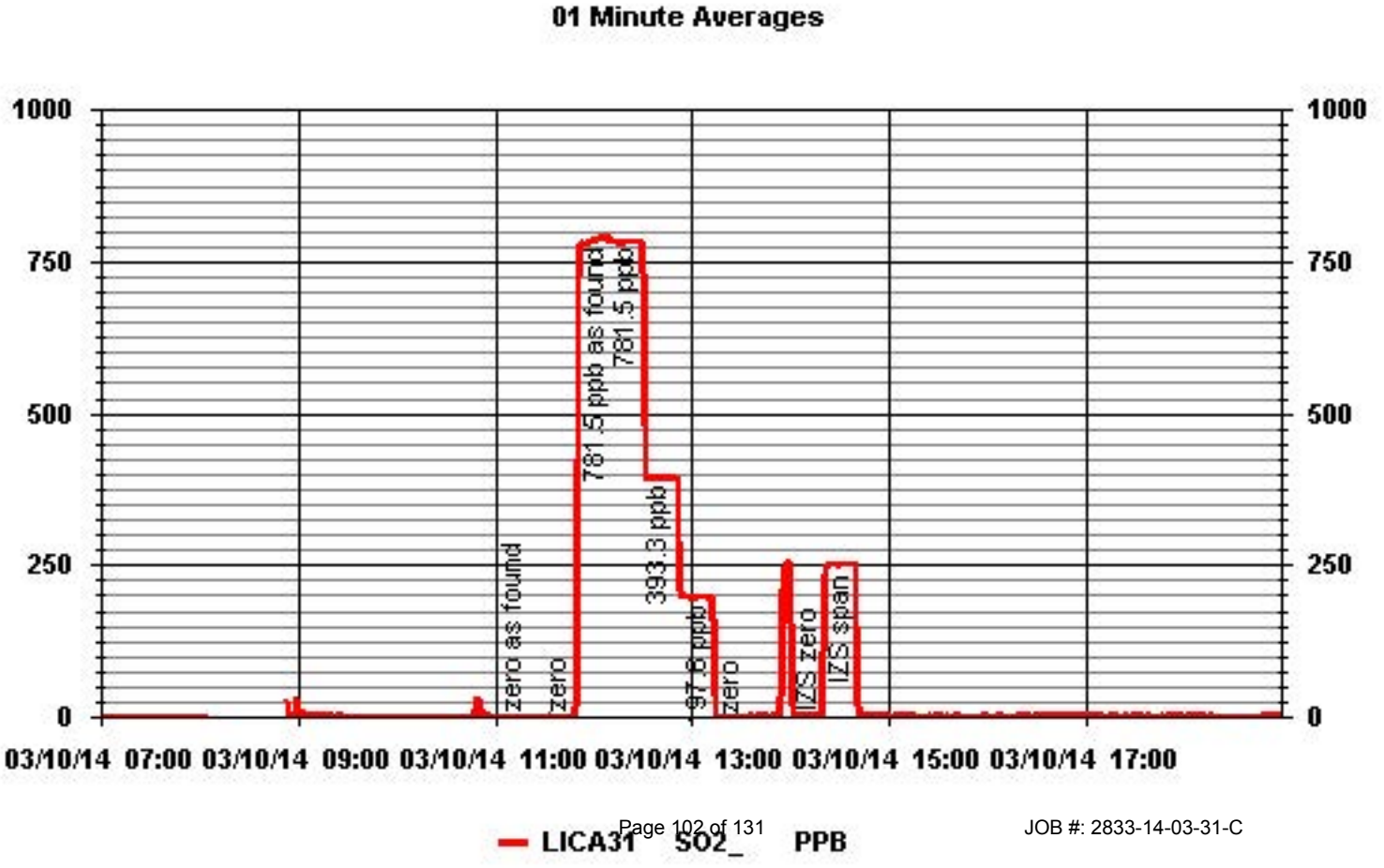
****run converter effeciency test immediately following zero adjust****

SO_2 High Point gas concentration:	782.0	Time gas run (mst):	NA
Zero corrrected analyzer response:	NA		

Comments:

API 100E SO2 Analyzer Calibration





JOB #: 2833-14-03-31-C

Hydrogen Sulphide

API 101E H2S Analyzer Calibration

Date:	7-Mar-14	**Start/End Time (mst):**	1012/1300
Company:	LICA	**Calibration Purpose:**	Routine
Station Name/Location:	St.Lina	**Converter Make & Model:**	Internal
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	H2S	**Cal Gas Expiry Date:**	25-Dec-15

Analyzer:

Serial Number:	510	**Range ppb:**	100
Last Calibration Date:	13-Feb-14	**As Found C.F.**	0.997
Previous Cal High Point C.F.:	1.002	**New C.F.:**	1.002

	As found:	As left:
SLOPE:	1.076	1.089
OFFSET:	120.3	121.1
HVPS:	542	542
RCELL TEMP:	50.0	50.0
BOX TEMP:	25.3	30.4
PMT TEMP:	8.3	8.4
IZS TEMP:	45.0	45.0
TEST:	NA	NA
STABIL:	0.1	0.7
PRES:	21.1	21.0
SAMP FL:	558	552
PMT:	116.7	116.1
NORM PMT:	121.1	121.3
UV LAMP:	1509.8	1504.1
LAMP RATIO:	98.4	98.2
STR. LGT	64.7	65.9
DRK PMT:	31.6	33.7
DRK LMP:	5.5	5.2
Internal Span:	33	36.92

Calibrator:

Flow Meter ID's:	NA
Make & Model:	Environics 6100
Serial #:	4760
Cal Gas Cylinder I.D. # :	BLM05049
Cal Gas Conc. (ppm):	10.1

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	5000	39	5039
mid	5000	19	5019
low	5000	11	5011

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4994	0.0	4994	0	0.8	NA
adjusted zero	4994	0.0	4994	0	0.3	NA
as found high	4994	39.80	5034	79.9	79.8	1.004
adjusted high	4994	39.80	5034	79.9	80.4	0.997
mid	4994	19.00	5013	38.3	38.3	1.006
low	4994	11.00	5005	22.2	22.4	1.004
calibrator zero	4994	0.00	4994	0	0.1	NA
					Average C.F.=	1.002

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.996**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.13%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**0.54%**	**± 15%**	**PASS**

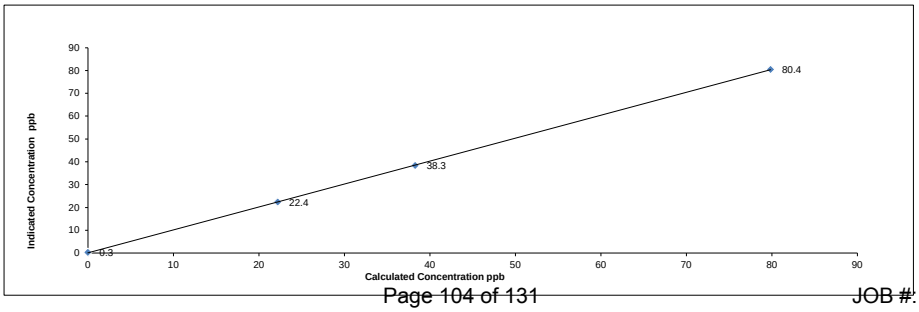
Converter Effeciency Check for H_2S/TRS application:

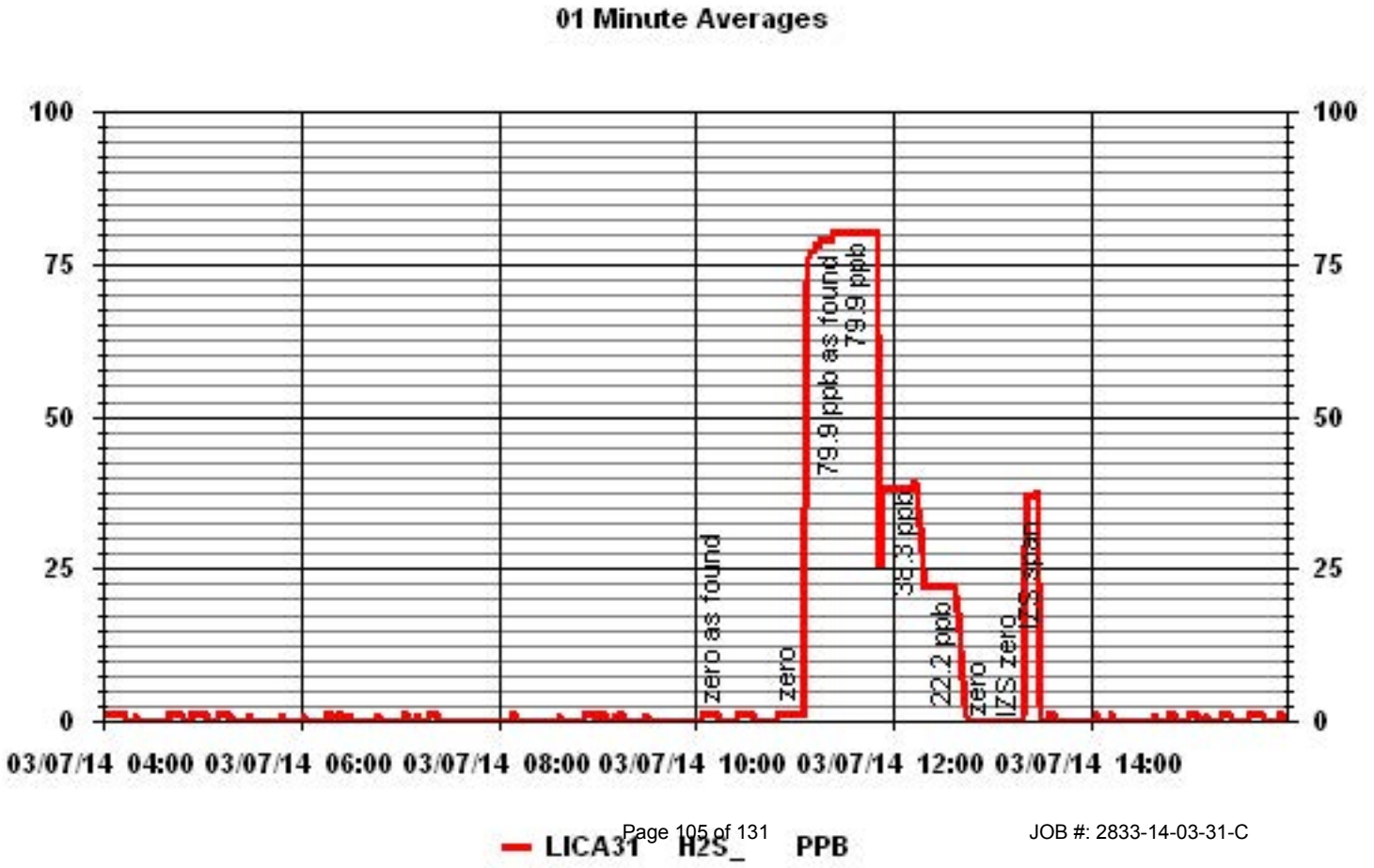
****run converter effeciency test immediately following zero adjust****

SO_2 High Point gas concentration:	80.4	Time gas run (mst):	NA
Zero corrrected analyzer response:	NA		

Comments:

API 101E H2S Analyzer Calibration





JOB #: 2833-14-03-31-C

API 101E H2S Analyzer Calibration

Date:	22-Mar-14	**Start/End Time (mst):**	1135/1538
Company:	LICA	**Calibration Purpose:**	Routine
Station Name/Location:	St.Lina	**Converter Make & Model:**	Internal
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	H2S	**Cal Gas Expiry Date:**	25-Dec-15

Analyzer:

Serial Number:	510	**Range ppb:**	100
Last Calibration Date:	10-Mar-14	**As Found C.F.**	1.001
Previous Cal High Point C.F.:	1.006	**New C.F.:**	1.005

	As found:	As left:
SLOPE:	1.073	1.087
OFFSET:	123.6	119.3
HVPS:	542	542
RCELL TEMP:	50.0	50.0
BOX TEMP:	23.6	23.6
PMT TEMP:	8.4	8.4
IZS TEMP:	45.0	45.0
TEST:	NA	NA
STABIL:	0.1	0.1
PRES:	21.6	21.6
SAMP FL:	572	572
PMT:	119.5	119.5
NORM PMT:	119.3	119.3
UV LAMP:	1497.8	1497.8
LAMP RATIO:	97.7	97.7
STR. LGT	66.3	66.3
DRK PMT:	31.0	31.0
DRK LMP:	-5.5	-5.5
Internal Span:	39.76	

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	831
Cal Gas Cylinder I.D. # :	BLM05049
Cal Gas Conc. (ppm):	10.1

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	5000	39	5039
mid	5000	19	5019
low	5000	11	5011

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	-2.0	NA
adjusted zero	5000	0.0	5000	0	0.3	NA
as found high	4994	39.00	5033	78.3	75.3	1.044
adjusted high	4994	39.00	5033	78.3	78.5	1.001
mid	4994	19.00	5013	38.3	38.1	1.012
low	4994	11.00	5005	22.2	22.5	1.000
calibrator zero	4994	0.00	4994	0	0.5	NA
					Average C.F.=	1.005

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.002**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.22%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**0.47%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

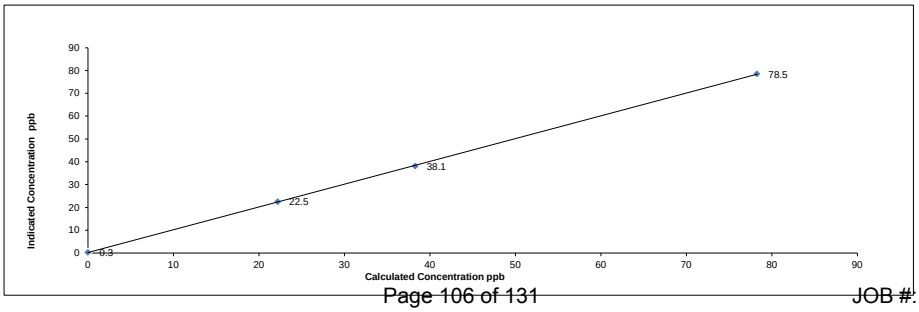
****run converter effeciency test immediately following zero adjust****

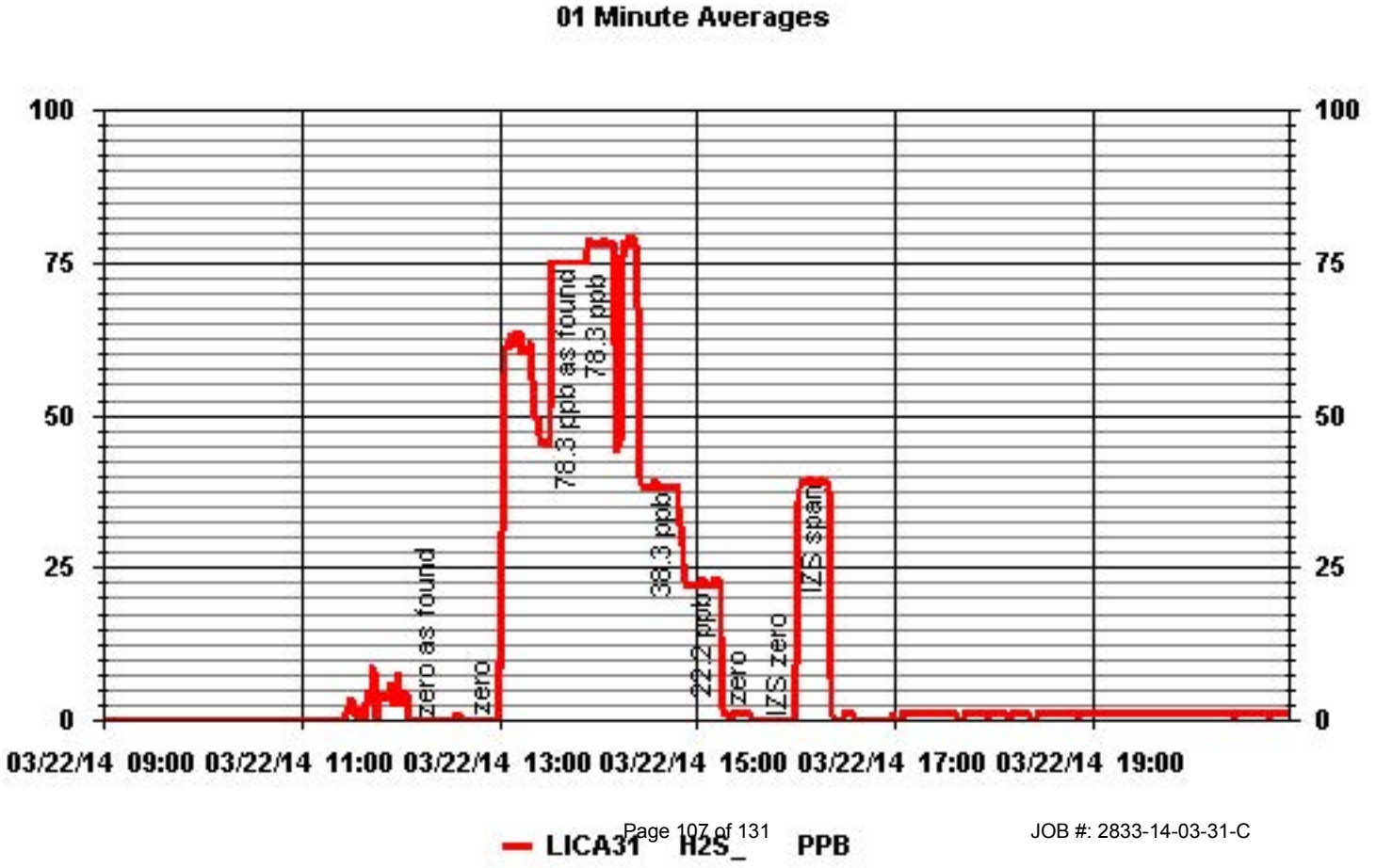
SO_2 High Point gas concentration:	78.5	Time gas run (mst):	NA
Zero corrrected analyzer response:	NA		

Comments:

3-point calibartion due to negative zero reading and drifting span during daily zs check. Had issues with loose connection wires from analyzer to logger during af zero and af high.

API 101E H2S Analyzer Calibration





JOB #: 2833-14-03-31-C

API 101E H2S Analyzer Calibration

Date:	27-Mar-14	**Start/End Time (mst):**	9:48 - 14:26
Company:	LICA	**Calibration Purpose:**	Repeat Calibration
Station Name/Location:	St. Lina	**Converter Make & Model:**	Internal
Performed by:	Chris Wesson	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	H2S	**Cal Gas Expiry Date:**	2-Apr-16

Analyzer:

Serial Number:	510	**Range ppb:**	100
Last Calibration Date:	22-Mar-14	**As Found C.F.**	1.004
Previous Cal High Point C.F.:	1.001	**New C.F.:**	1.000

	As found:	As left:
SLOPE:	1.087	1.150
OFFSET:	119.3	122.3
HVPS:	542	542
RCELL TEMP:	50.0	50
BOX TEMP:	27.6	29.9
PMT TEMP:	8.3	8.4
IZS TEMP:	45.0	45.0
TEST:	Conv = 315.2	Conv = 314.8
STABIL:	0.1	0.1
PRES:	21.0	21.0
SAMP FL:	554	552
PMT:	118.4	119.5
NORM PMT:	122.2	123.0
UV LAMP:	1493	1491
LAMP RATIO:	97.4	97.2
STR. LGT	64.8	70.3
DRK PMT:	34.9	35.2
DRK LMP:	-5.4	-5.5
Internal Span:	39.5	43.0

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	690
Cal Gas Cylinder I.D. # :	LL47542
Cal Gas Conc. (ppm):	10.0

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	4960	40	5000
mid	4980	20	5000
low	4990	12	5002

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4999	0.0	4999	0	1.9	NA
adjusted zero	4999	0.0	4999	0	0.3	NA
as found high	4955	39.50	4995	79.1	76.0	1.045
adjusted high	4955	39.50	4995	79.1	79.1	1.004
mid	4977	19.40	4996	38.8	39.0	1.003
low	4981	10.95	4992	21.9	22.4	0.993
calibrator zero	4999	0.00	4999	0	0.6	NA
					Average C.F.=	1.000

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.005**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.40%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-0.26%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

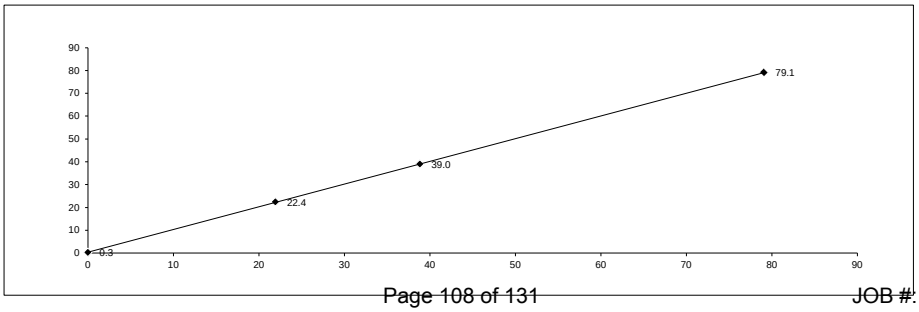
****run converter effeciency test immediately following zero adjust****

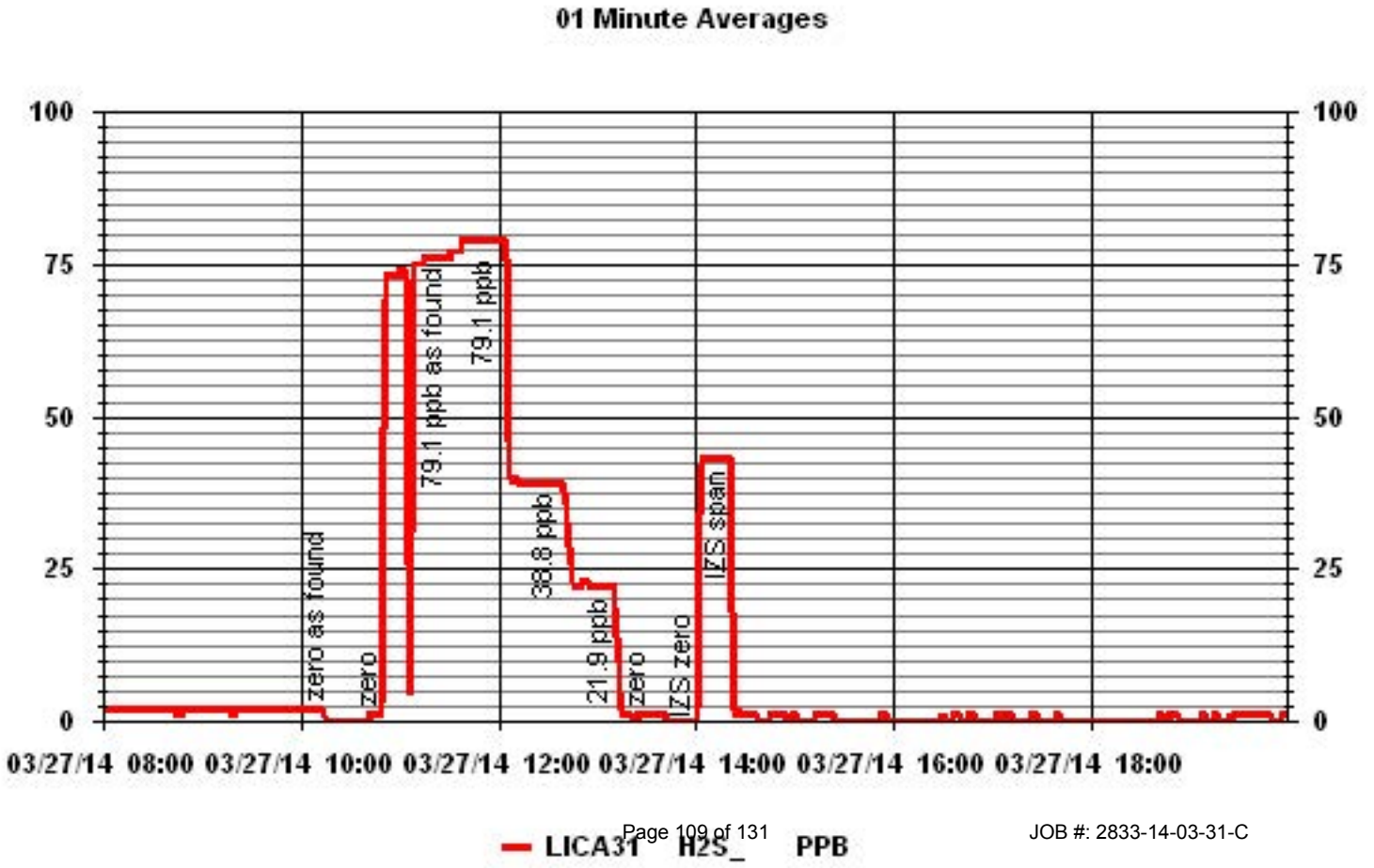
SO_2 High Point gas concentration:	92.0	Time gas run (mst):	9:40 - 09:45
Zero corrrected analyzer response:	1.2		

Comments:

Repeat calibration due to errors on March 22, 2014
Cal-gas pressure error 11:04-11:07 (as-found high). Point restarted.

API 101E H2S Analyzer Calibration





JOB #: 2833-14-03-31-C

Total Hydrocarbons

Thermo 51C THC Analyzer Calibration

Date:	10-Mar-14	**Start Time (mst):**	1344
Company:	LICA	**End Time (mst):**	1650
Station Name/Location:	St.Lina	**Calibration Purpose:**	Routine
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	7-Nov-21

Analyzer:

Serial Number:	436609739	**Range ppm:**	50
Last Calibration Date:	13-Feb-14	**As Found C.F.**	1.006
Previous Cal High Point C.F.:	1.001	**New C.F.:**	

		As found:		**As left:**
	H_2 cylinder (psi):	1300	H_2 cylinder (psi):	600
	H_2 cylinder reg set (psi):	25	H_2 cylinder reg set (psi):	25
	Span Cylinder (psi):	1500	Span Cylinder (psi):	1500
	Span Cylinder Reg Set (psi):	17	Span Cylinder Reg Set (psi):	17
	Zero Air Gen Pressure:	35	Zero Air Gen Pressure:	35
	measurement alarms:	none	measurement alarms:	none
	service alarms:	none	service alarms:	none
FID status:	cnt:	3821	cnt:	2108
	rng:	1	rng:	1
	try:	2	try:	1
	flm:	205	flm:	204.6
	det:	125.9	det:	125.1
Oven Readings:	Flame:	205	Flame:	204
	Filter:	125	Filter:	125
	Base:	125	Base:	125
	Pump:	6.82	Pump:	6.77
Voltages:	+5	4.9	+5	4.9
	+15	14.9	+15	14.9
	-15	-15	-15	-15.0
	Internal Span:	30.9	Internal Span:	

Calibrator:

Flow Meter ID's:	NA	
Make & Model:	API 700	
Serial #:	831	
Cal Gas Cylinder I.D. # :	LL36542	
CH_4/C_3H_8 Cylinder Conc. (ppm):	609.0	201.0
CH_4 as propane/total CH_4 equivilants (ppm):	552.8	1161.8

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	2000	0	2000
high	2000	65	2065
mid	2000	33	2033
low	2000	15	2015

Calibration:

Calibrator Flow Rates (cc/min)				**Calculated Concentration:**	**Indicated Concentration:**	**Correction Factors:**
Point	Diluent	Cal Gas	Total	(ppm)	(ppm)	
as found zero	1994	0.00	1994	0	0.15	NA
adjusted zero	1994	0.00	1994	0	-0.01	NA
as found high	1995	65.00	2060	36.66	36.43	1.006
adjusted high						
mid						
low						
calibrator zero						NA
					Average C.F.=	

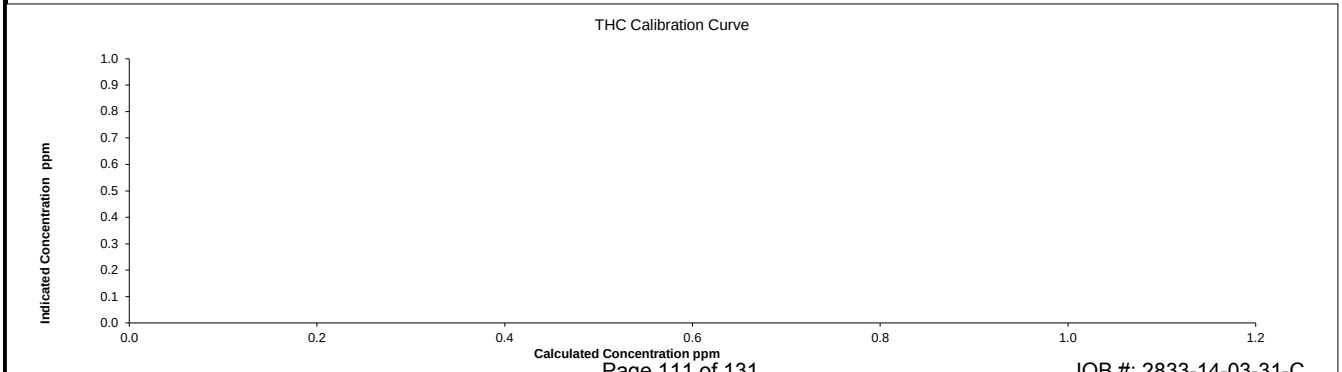
Linear Regression/Calibration Results:

		LIMITS	**Pass/Fail ?**
Correlation Coeffecient =		**> or = 0.995**	
Slope =		**0.85-1.15**	
b (Intercept as % of full scale)=		**± 3% F.S.**	
% change in C.F. from last cal	**-0.50%**	**± 15%**	**PASS**

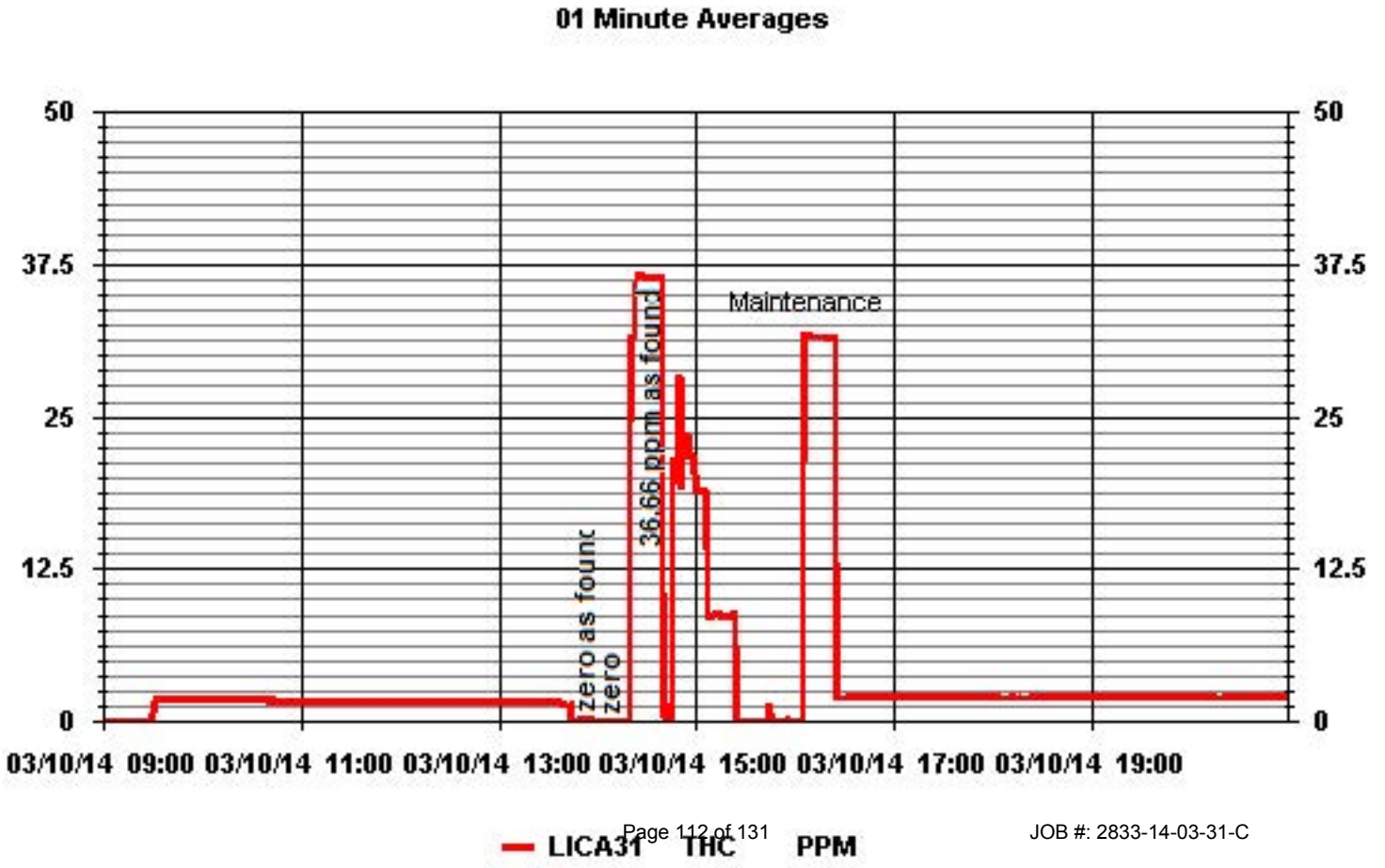
Comments:

As found points was performed after pump replacement.

Thermo 51C THC Analyzer Calibration



JOB #: 2833-14-03-31-C



JOB #: 2833-14-03-31-C

Thermo 51C THC Analyzer Calibration

Date:	11-Mar-14	**Start Time (mst):**	1011
Company:	LICA	**End Time (mst):**	1434
Station Name/Location:	St.Lina	**Calibration Purpose:**	Routine
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	7-Nov-21

Analyzer:

Serial Number:	436609739	**Range ppm:**	50
Last Calibration Date:	10-Mar-14	**As Found C.F.**	0.975
Previous Cal High Point C.F.:	1.006	**New C.F.:**	1.020

		As found:	As left:
	H_2 cylinder (psi):	600	550
	H_2 cylinder reg set (psi):	25	25
	Span Cylinder (psi):	1500	1450
	Span Cylinder Reg Set (psi):	25	25
	Zero Air Gen Pressure:	35	35
	measurement alarms:	none	none
	service alarms:	none	none
FID status:	cnt:	2138	2189
	rng:	1	1
	try:	1	1
	flm:	204.9	205.0
	det:	125.6	125.9
Oven Readings:	Flame:	205	205
	Filter:	125	125
	Base:	125	125
	Pump:	6.78	6.82
Voltages:	+5	4.9	4.9
	+15	14.9	14.9
	-15	-15.0	-15.0
	Internal Span:	31.44	30.08

Calibrator:

Flow Meter ID's:	NA	
Make & Model:	API 700	
Serial #:	831	
Cal Gas Cylinder I.D. # :	LL36542	
CH_4/C_3H_8 Cylinder Conc. (ppm):	609.0	201.0
CH_4 as propane/total CH_4 equivilants (ppm):	552.8	1161.8

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	2000	0	2000
high	2000	65	2065
mid	2000	33	2033
low	2000	15	2015

Calibration:

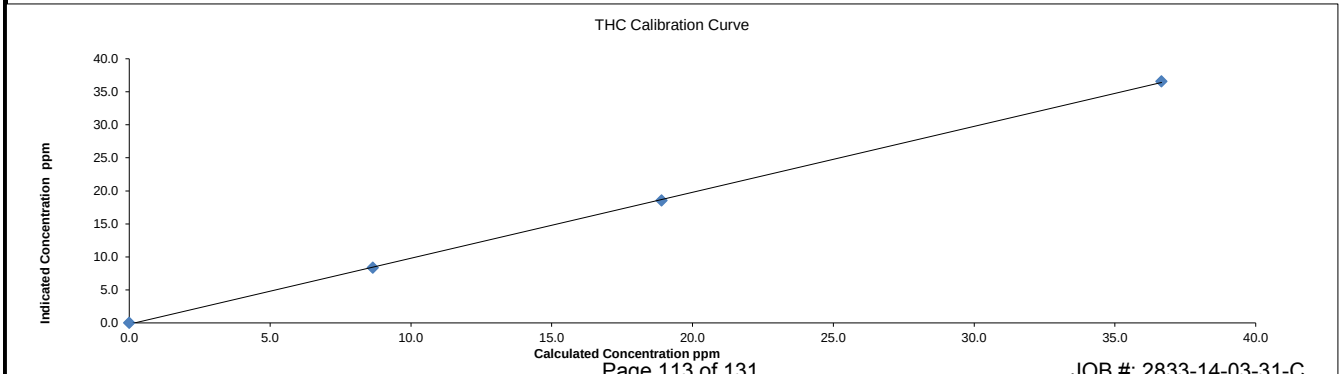
Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppm)	(ppm)	
as found zero	1995	0.00	1995	0	0.15	NA
adjusted zero	1995	0.00	1995	0	0.01	NA
as found high	1995	65.00	2060	36.66	37.61	0.975
adjusted high	1995	65.00	2060	36.66	36.54	1.003
mid	1995	33.00	2028	18.90	18.51	1.022
low	1999	15.00	2014	8.65	8.36	1.036
calibrator zero	1999	0.00	1999	0	-0.01	NA
					Average C.F.=	1.020

Linear Regression/Calibration Results:

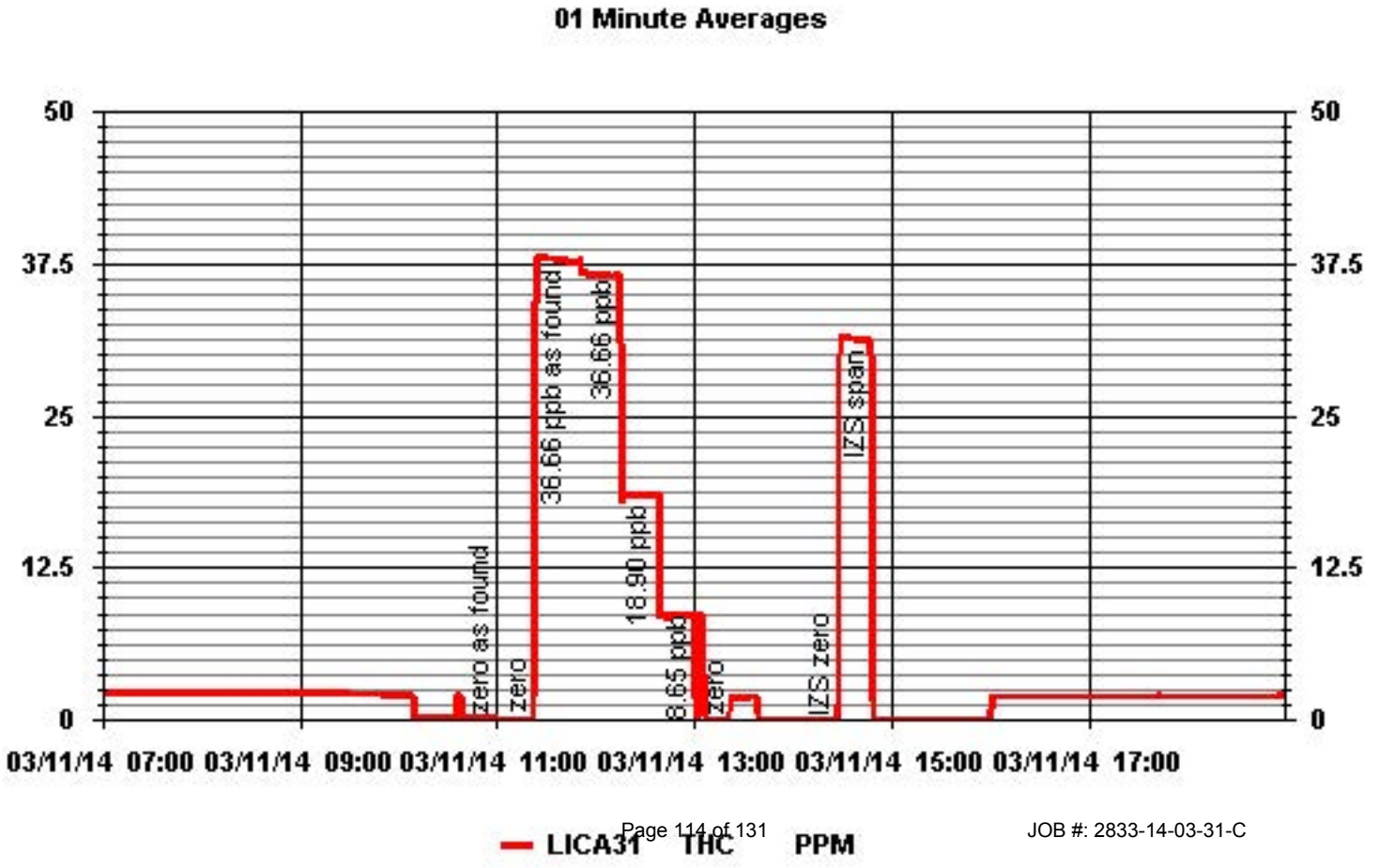
		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.002**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.341%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**3.10%**	**± 15%**	**PASS**

Comments:

Thermo 51C THC Analyzer Calibration



JOB #: 2833-14-03-31-C



JOB #: 2833-14-03-31-C

Nitrogen Dioxide

API 200E NOx Analyzer Calibration

Date:	11-Mar-14	**Start Time (mst):**	908
Company:	LICA	**End Time (mst):**	1700
Station Name/Location:	St.Lina	**Calibration Purpose:**	Routine
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	29-Dec-16

Analyzer Serial Number:	592
Last Calibration Date:	13-Feb-14
Range ppb:	1000

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	1.042	1.000
NOx=	1.043	1.000
NO_2=	1.000	1.000

As found:		**As left:**	
NOx SLOPE:	1.074	NOx SLOPE:	1.125
NOx OFFS:	-1.2	NOx OFFS:	3.3
NO SLOPE:	1.070	NO SLOPE:	1.111
NO OFFS:	-2.0	NO OFFS:	0.6
TEST:	130	TEST:	129.9
SAMP FLW:	483	SAMP FLW:	481
OZONE FL:	73	OZONE FL:	73
PMT:	22.2	PMT:	24.0
NORM PMT:	-0.2	NORM PMT:	4.5
AZERO:	21.8	AZERO:	22.8
HVPS:	650	HVPS:	650
RCELL TEMP:	50.0	RCELL TEMP:	50.0
BOX TEMP:	31.6	BOX TEMP:	34.1
PMT TEMP:	6.9	PMT TEMP:	6.9
IZS TEMP:	40.0	IZS TEMP:	40.0
MOLY TEMP:	313.9	MOLY TEMP:	315.2
RCEL:	10.1	RCEL:	9.7
SAMP:	26.9	SAMP:	26.9
Internal Span:	470.6/493.5	Internal Span:	475.2/496.5

Calibrator Flow Targets:

Make & Model:	Environics 6100
Serial #:	4760
Cal Gas Cylinder I.D. # :	BAL3165
NO Cylinder Conc. (ppm):	48.9
NOx Cylinder Conc. (ppm):	49.0

point	diluent (cc/min)	cal gas (cc/min)	O_3 setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	5000	80	500.00	5080
mid	5000	40	230.00	5040
low	5000	20	100.00	5020

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	4984	0.0	4984	0	0	2.0	1.9	NA	NA
adjusted zero	4995	0.0	4995	0	0	0.1	0.6	NA	NA
as found high	4995	79.70	5075	768.0	769.6	737	739	1.042	1.043
adjusted high	4995	79.70	5075	768.0	769.6	766	776	1.003	0.992
mid	4996	39.80	5036	386.5	387.3	388	395	0.996	0.983
low	4995	19.90	5015	194.0	194.4	196	200	0.993	0.976
calibrator zero	4999	0.00	4999	0	0	0.9	3.6	NA	NA
							Average C.F.=	0.997	0.984

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO_2	NO drop	NO_2 increase	NO_2 C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4996	79.80	5076	0.0	767.9	777.7	9.3	0.1	0.6	
as found NO_2	4996	79.80	5076	500.0	250.8	777.9	526.6	517.1	517.3	1.000
adjusted NO_2	4996	79.80	5076	500.0	250.8	777.9	526.6	517.1	517.3	1.000
gpt mid	4995	79.80	5075	230.0	526.6	779.1	252.1	241.3	242.8	0.994
gpt low	4995	79.80	5075	100.0	666.1	779.3	112.9	101.8	103.6	0.983
									Average NO_2 C.F.=	0.992

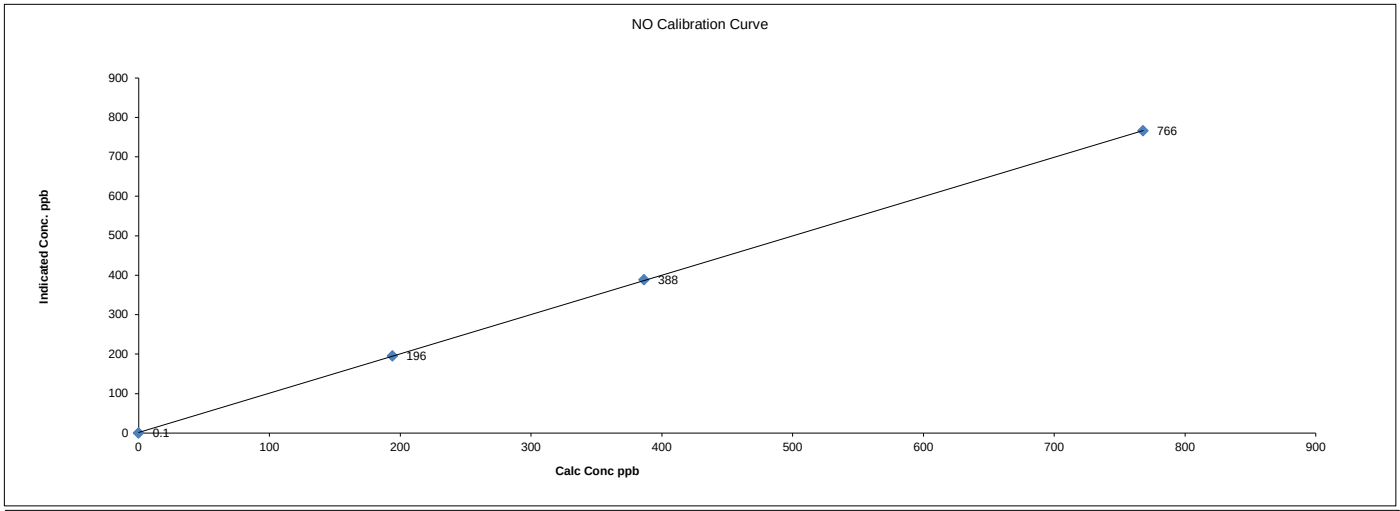
Linear Regression/Calibration Results:

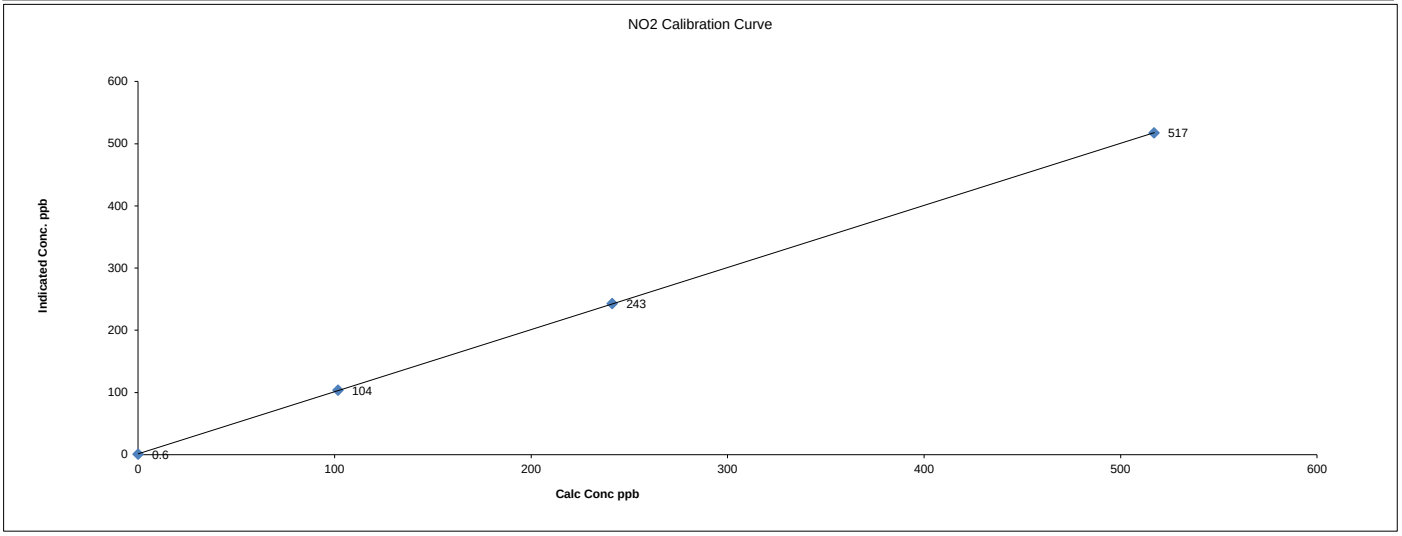
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.003**	**0.993**	**1.001**	**0.85-1.15**
b (Intercept as % of full scale)=	**-0.14%**	**-0.27%**	**-0.13%**	**± 3% F.S.**
% change in C.F. from last cal=	**-4.20%**	**-4.29%**	**0.04%**	**+/-15%**
NO2 converter effeciency			**100.8%**	**>85%**

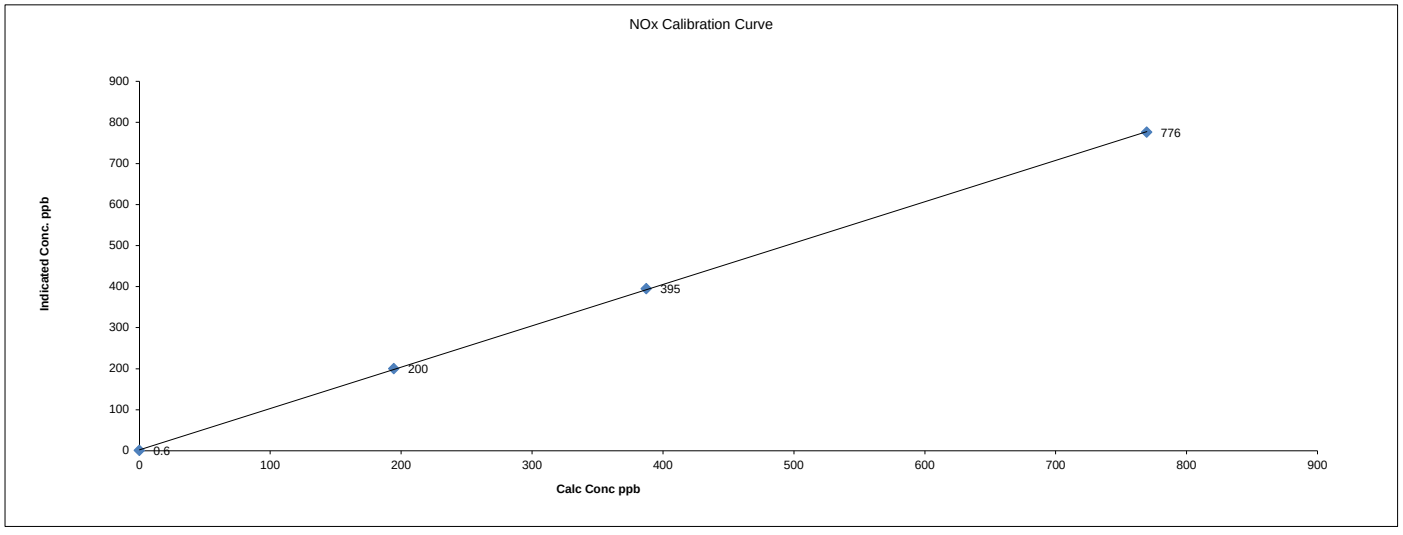
Comments:

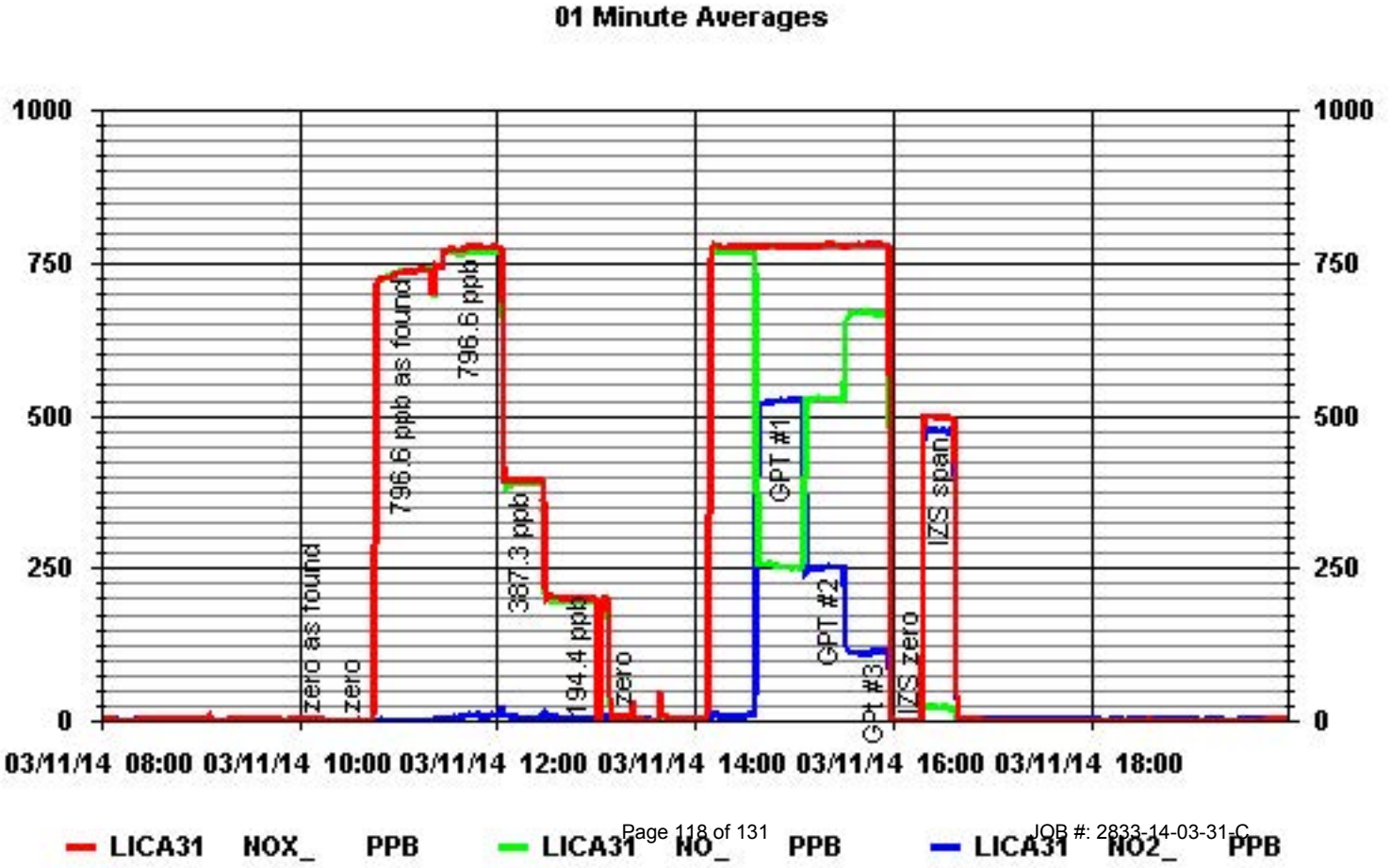
Date:	11-Mar-14	**Start Time (mst):**	908
Company:	LICA	**End Time (mst):**	1700
Station Name/Location:	St.Lina	**Calibration Purpose:**	Routine
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	29-Dec-16

API 200E NOx Analyzer Calibration








01 Minute Averages
1000
750
500
250
0
zero as found
zero
796.6 ppb as found
796.6 ppb
387.3 ppb
194.4 ppb
zero
GPT #1
GPT #2
Gpt #3
IZS zero
IZS span
03/11/14 08:00
03/11/14 10:00
03/11/14 12:00
03/11/14 14:00
03/11/14 16:00
03/11/14 18:00
LICA31 NOX_ PPB
LICA31 NO_ PPB
LICA31 NO2_ PPB

API 200E NOx Analyzer Calibration

Date:	17-Mar-14	**Start Time (mst):**	12:42
Company:	LICA	**End Time (mst):**	14:22
Station Name/Location:	St Lina	**Calibration Purpose:**	As Found
Performed by:	Chris Wesson	**Cal Gas Expiry Date:**	15-Oct-17

Analyzer Serial Number:	592
Last Calibration Date:	11-Mar-14
Range ppb:	1000

Correction Factors:

As found C.F.		Previous Cal High Point C.F.:	
NO=	1.061	NO=	1.003
NOx=	1.057	NOx=	0.992
NO_2=	0.984	NO_2=	1.000

As found:		**As left:**	
NOx SLOPE:	1.125	NOx SLOPE:	1.121
NOx OFFS:	3.3	NOx OFFS:	-0.7
NO SLOPE:	1.111	NO SLOPE:	1.109
NO OFFS:	0.6	NO OFFS:	-2.5
TEST:	130.0	TEST:	130.0
SAMP FLW:	477	SAMP FLW:	477
OZONE FL:	73	OZONE FL:	73
PMT:	20.8	PMT:	26.0
NORM PMT:	-5.7	NORM PMT:	4.6
AZERO:	21.9	AZERO:	21.6
HVPS:	650	HVPS:	649
RCELL TEMP:	50.0	RCELL TEMP:	50.0
BOX TEMP:	31.5	BOX TEMP:	29.9
PMT TEMP:	6.9	PMT TEMP:	6.9
IZS TEMP:	40.2	IZS TEMP:	40.1
MOLY TEMP:	316.6	MOLY TEMP:	316.4
RCEL:	9.8	RCEL:	9.8
SAMP:	26.8	SAMP:	26.9
Internal Span:	NA	Internal Span:	NA

Calibrator Flow Targets:

Make & Model:	Environics 6100
Serial #:	5212
Cal Gas Cylinder I.D. # :	BAL1119
NO Cylinder Conc. (ppm):	51.3
NOx Cylinder Conc. (ppm):	51.3

point	diluent (cc/min)	cal gas (cc/min)	O_3 setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	4920	80	570.00	5000
mid	4960	40	270.00	5000
low	4980	20	100.00	5000

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	4997	0.0	4997	0	0	-1.0	-2.0	NA	NA
adjusted zero	4997	0.0	4997	0	0	0.0	0.0	NA	NA
as found high	4922	75.98	4998	779.9	779.9	735	738	1.061	1.057
adjusted high									
mid									
low									
calibrator zero								NA	NA
							Average C.F.=		

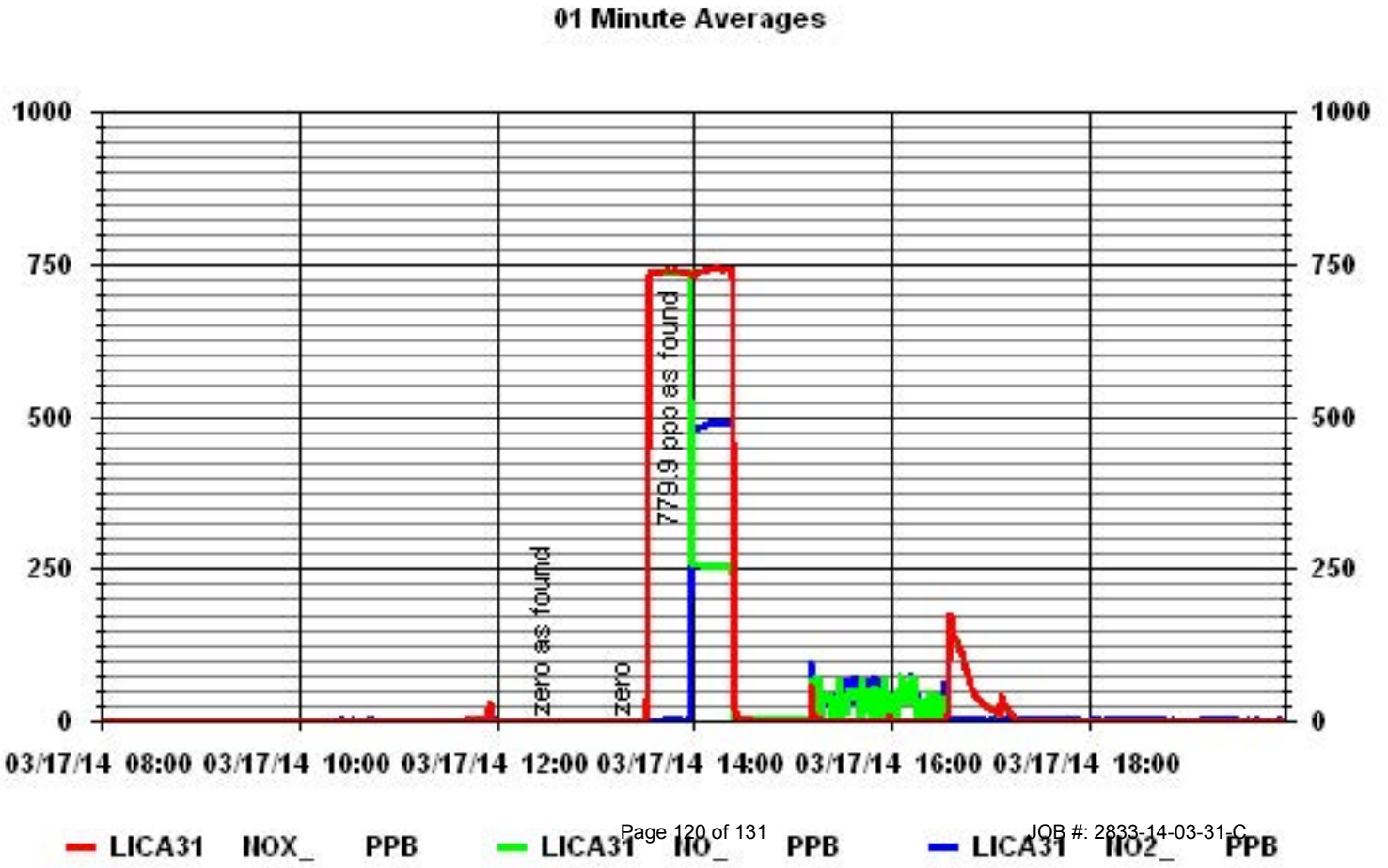
Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO_2	NO drop	NO_2 increase	NO_2 C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4922	75.98	4998	0.0	735.0	737.0	-2.0	0.0	0.0	
as found NO_2	4922	75.98	4998	570.0	254.0	741.0	487.0	481.0	489.0	0.984
adjusted NO_2										
gpt mid										
gpt low										
									Average NO_2 C.F.=	

Linear Regression/Calibration Results:

	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =				**> or = 0.995**
Slope =				**0.85-1.15**
b (Intercept as % of full scale)=				**± 3% F.S.**
% change in C.F. from last cal=	**-5.79%**	**-6.53%**	**1.64%**	**+/-15%**
NO2 converter effeciency				**>85%**

Comments:

As-found due to repeated negative values.
(Zero-adjusted in error. No effect on validity of as-found.)


01 Minute Averages
1000
750
500
250
0
zero as found
zero
779.9 ppb as found
03/17/14 08:00
03/17/14 10:00
03/17/14 12:00
03/17/14 14:00
03/17/14 16:00
03/17/14 18:00
LICA31 NOX_ PPB
LICA31 NO_ PPB
LICA31 NO2_ PPB

API 200E NOx Analyzer Calibration

Date:	18-Mar-14	**Start Time (mst):**	10:25
Company:	LICA	**End Time (mst):**	16:02
Station Name/Location:	St Lina	**Calibration Purpose:**	Post-Repair
Performed by:	Chris Wesson	**Cal Gas Expiry Date:**	15-Oct-17

Analyzer Serial Number:	592
Last Calibration Date:	NA
Range ppb:	1000

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	NA	NA
NOx=	NA	NA
NO_2=	0.994	NA

	As found:	**As left:**
NOx SLOPE:	0.986	0.981
NOx OFFS:	-13.6	-13.6
NO SLOPE:	0.987	0.982
NO OFFS:	-14.0	-13.5
TEST:	130.8	130.6
SAMP FLW:	475	474
OZONE FL:	74	74
PMT:	29.0	31.1
NORM PMT:	-12.7	-16.0
AZERO:	42.5	47.2
HVPS:	654	654
RCELL TEMP:	50.0	50.0
BOX TEMP:	27.0	30.0
PMT TEMP:	6.8	6.9
IZS TEMP:	40.2	40.0
MOLY TEMP:	315.1	314.1
RCEL:	4.4	4.4
SAMP:	26.7	26.7
Internal Span:	NOx:497, NO:21,NO2:475	NOx:355,NO:10.7,NO2:345

Calibrator Flow Targets:

Make & Model:	Environics 6100
Serial #:	5212
Cal Gas Cylinder I.D. # :	BAL1119
NO Cylinder Conc. (ppm):	51.3
NOx Cylinder Conc. (ppm):	51.3

point	diluent (cc/min)	cal gas (cc/min)	O_3 setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	4920	80	600.00	5000
mid	4960	40	320.00	5000
low	4980	20	100.00	5000

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero		NA						NA	NA
adjusted zero	4997	0.0	4997	0	0	0.5	0.3	NA	NA
as found high		NA							
adjusted high	4922	75.96	4998	779.7	779.7	780	780	1.000	1.000
mid	4960	37.98	4998	389.8	389.8	395	396	0.988	0.985
low	4978	18.50	4997	189.9	189.9	194	194	0.982	0.981
calibrator zero	4997	0.00	4997	0	0	-1.0	-1.0	NA	NA
							Average C.F.=	0.990	0.989

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO_2	NO drop	NO_2 increase	NO_2 C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4922	75.96	4998	0.0	781.0	783.0	2.0	0.5	-0.2	
as found NO_2	4922	75.96	4998	600.0	302.0	786.0	484.0	479.0	482.0	0.994
adjusted NO_2	4922	75.96	4998	320.0	302.0	786.0	484.0	479.0	482.0	0.994
gpt mid	4922	75.96	4998	100.0	538.0	787.0	250.0	243.0	248.0	0.980
gpt low	4922	75.96	4998	0.0	689.0	785.0	96.0	92.0	94.0	0.979
									Average NO_2 C.F.=	0.984

Linear Regression/Calibration Results:

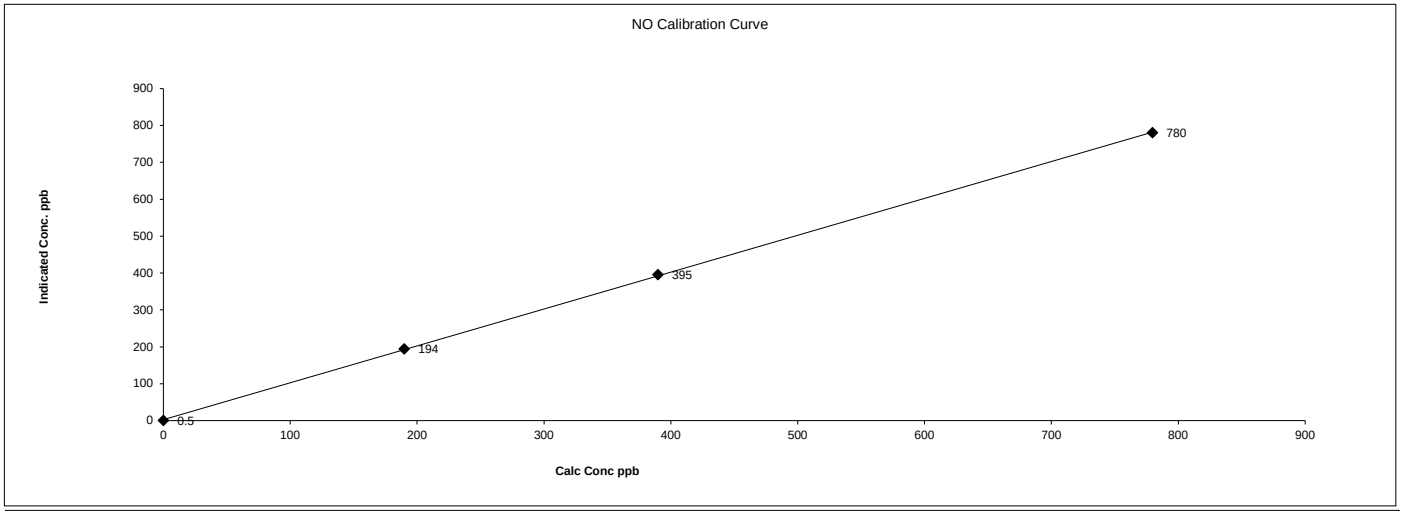
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.001**	**1.001**	**0.993**	**0.85-1.15**
b (Intercept as % of full scale)=	**-0.29%**	**-0.30%**	**-0.08%**	**± 3% F.S.**
% change in C.F. from last cal=	**NA**	**NA**	**NA**	**+/-15%**
NO2 converter effeciency			**101.6%**	**>85%**

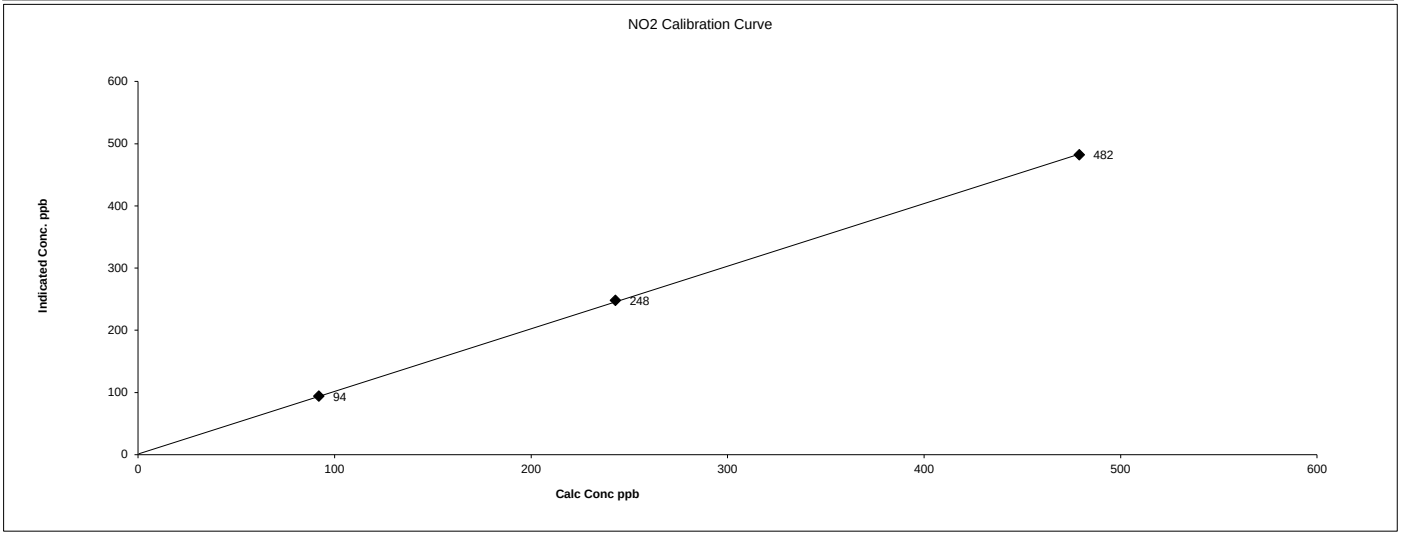
Comments:

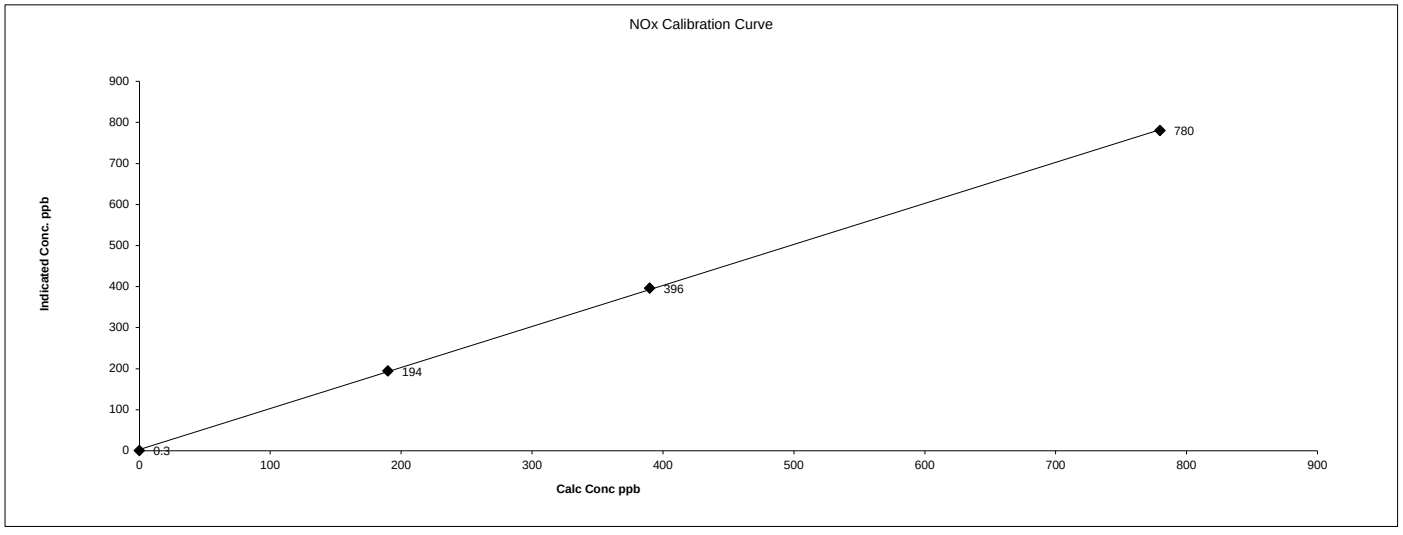
Post-repair calibration following pump replacement, RX Cell and sinter cleaning, factory calibration etc.
No NO2 adjustment made. Values copied from As-found NO2 for calculation purposes only.

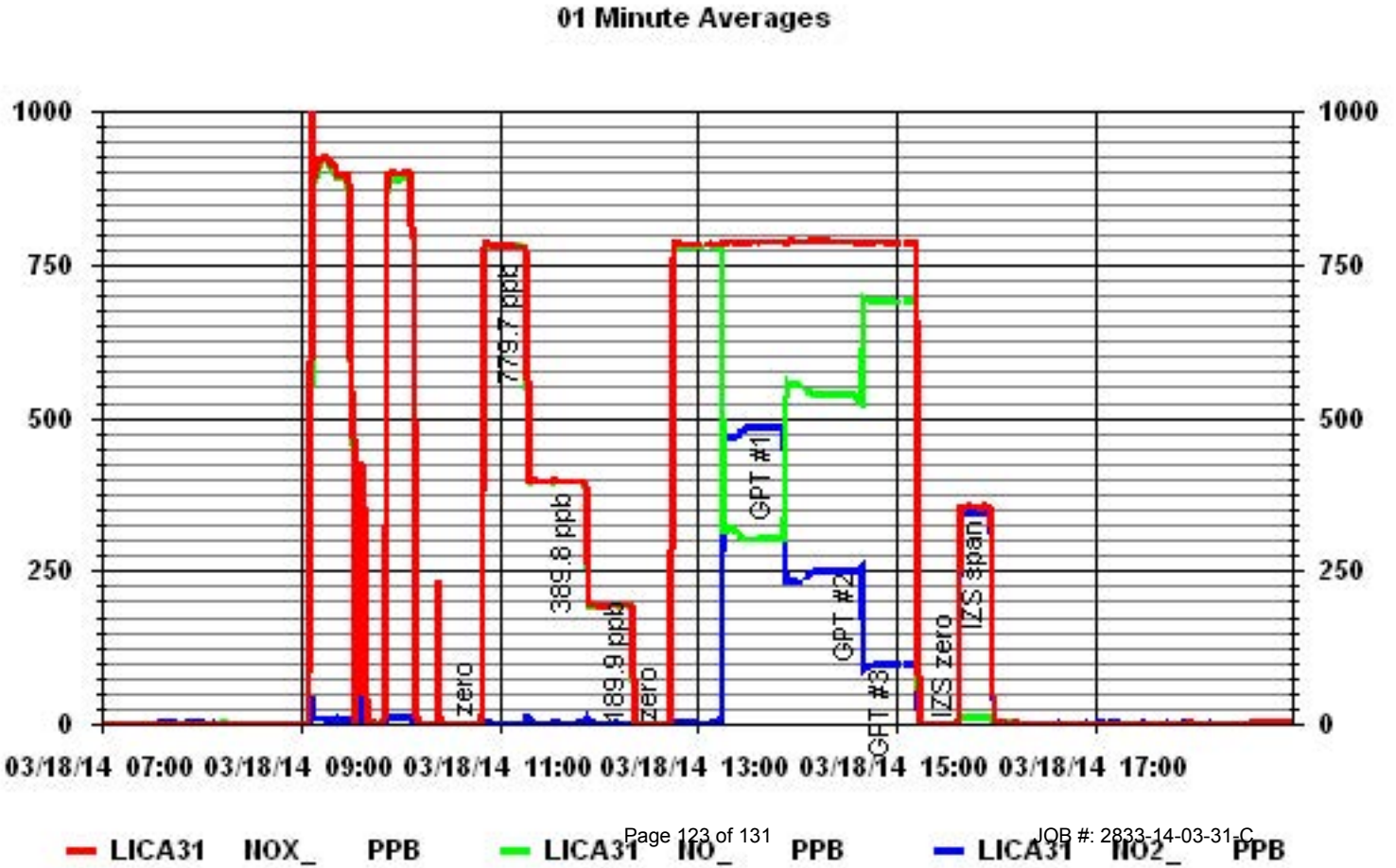
Date:	18-Mar-14	**Start Time (mst):**	10:25
Company:	LICA	**End Time (mst):**	16:02
Station Name/Location:	St Lina	**Calibration Purpose:**	Post-Repair
Performed by:	Chris Wesson	**Cal Gas Expiry Date:**	15-Oct-17

API 200E NOx Analyzer Calibration








01 Minute Averages
1000
750
500
250
0
03/18/14 07:00
03/18/14 09:00
03/18/14 11:00
03/18/14 13:00
03/18/14 15:00
03/18/14 17:00
zero
779.7 ppb
388.8 ppb
189.9 ppb
zero
GPT #1
GPT #2
GPT #3
IZS zero
IZS span
LICA31 NOX_ PPB
LICA31 NO_ PPB
LICA31 NO2_ PPB

API 200E NOx Analyzer Calibration

Date:	27-Mar-14	**Start Time (mst):**	9:48
Company:	LICA	**End Time (mst):**	12:15
Station Name/Location:	St Lina	**Calibration Purpose:**	As-Found
Performed by:	Chris Wesson	**Cal Gas Expiry Date:**	15-Oct-17

Analyzer Serial Number:	592
Last Calibration Date:	18-Mar-14
Range ppb:	1000

Correction Factors:

As found C.F.		Previous Cal High Point C.F.:	
NO=	1.005	NO=	1.000
NOx=	1.005	NOx=	1.000
NO_2=	1.000	NO_2=	0.994

As found:		**As left:**	
NOx SLOPE:	0.981	NOx SLOPE:	0.987
NOx OFFS:	-13.6	NOx OFFS:	-2.8
NO SLOPE:	0.982	NO SLOPE:	0.988
NO OFFS:	-13.5	NO OFFS:	-3.5
TEST:	130.8	TEST:	130.8
SAMP FLW:	476	SAMP FLW:	476
OZONE FL:	74	OZONE FL:	74
PMT:	19.9	PMT:	22.4
NORM PMT:	1.9	NORM PMT:	-1.5
AZERO:	22.5	AZERO:	24.0
HVPS:	654	HVPS:	654
RCELL TEMP:	50.0	RCELL TEMP:	50.0
BOX TEMP:	25.0	BOX TEMP:	26.2
PMT TEMP:	6.8	PMT TEMP:	6.9
IZS TEMP:	40.0	IZS TEMP:	40.0
MOLY TEMP:	314.5	MOLY TEMP:	313.8
RCEL:	4.4	RCEL:	4.4
SAMP:	26.3	SAMP:	26.4
Internal Span:	NOx:355, NO:10.7,NO2:345	Internal Span:	NOx:360,NO:8.3,NO2:353

Calibrator Flow Targets:

Make & Model:	Environics 6100
Serial #:	5212
Cal Gas Cylinder I.D. # :	BAL1119
NO Cylinder Conc. (ppm):	51.3
NOx Cylinder Conc. (ppm):	51.3

point	diluent (cc/min)	cal gas (cc/min)	O_3 setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	4920	80	600.00	5000
mid	4960	40	320.00	5000
low	4980	20	100.00	5000

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	4997	0.0	4997	0	0	6.0	6.0	NA	NA
adjusted zero	4997	0.0	4997	0	0	1.0	1.0	NA	NA
as found high	4921	75.97	4997	779.9	779.9	777	777	1.005	1.005
adjusted high		NA							
mid		NA							
low		NA							
calibrator zero								NA	NA
							Average C.F.=		

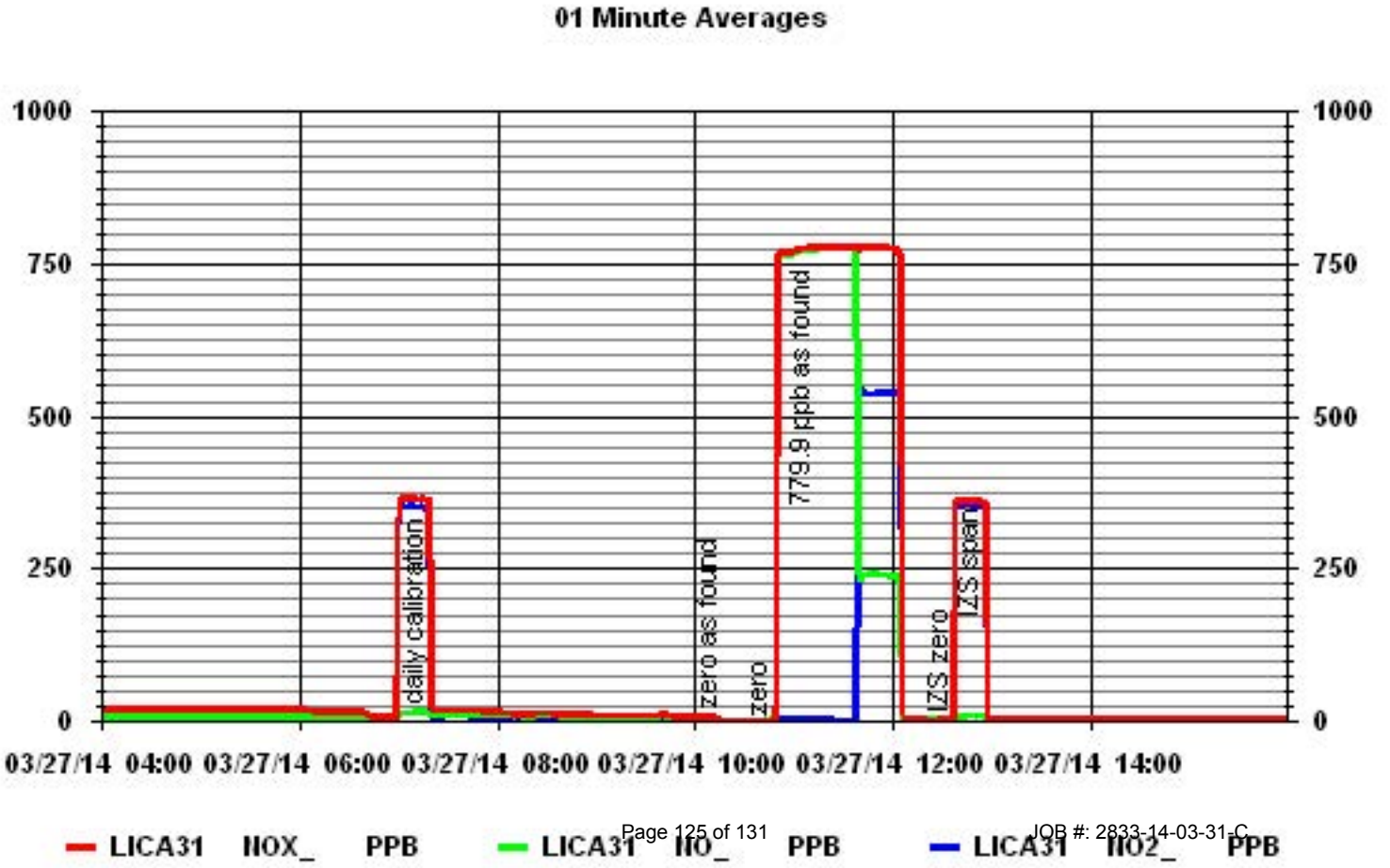
Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO_2	NO drop	NO_2 increase	NO_2 C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4922	75.96	4998	0.0	777.0	777.0	0.0	1.0	0.0	
as found NO_2	4922	75.96	4998	600.0	239.0	777.0	538.0	538.0	538.0	1.000
adjusted NO_2		NA								
gpt mid		NA								
gpt low		NA								
									Average NO_2 C.F.=	

Linear Regression/Calibration Results:

	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =				**> or = 0.995**
Slope =				**0.85-1.15**
b (Intercept as % of full scale)=				**± 3% F.S.**
% change in C.F. from last cal=	**-0.51%**	**-0.51%**	**-0.60%**	**+/-15%**
NO2 converter effeciency				**>85%**

Comments:

As-found due to IZS variance


01 Minute Averages
1000
750
500
250
0
daily calibration
zero as found
zero
779.9 ppb as found
IZS zero
IZS span
03/27/14 04:00
03/27/14 06:00
03/27/14 08:00
03/27/14 10:00
03/27/14 12:00
03/27/14 14:00
LICA31 NOX_ PPB
LICA31 NO_ PPB
LICA31 NO2_ PPB

Ozone

Thermo 49i O_3 Analyzer Calibration

Date:	12-Mar-14	**Start Time (mst):**	903
Company:	LICA	**End Time (mst):**	11:49
Station Name/Location:	St.Lina	**Calibration Purpose:**	Routine
Performed by:	Kevin Hope	**G.P.T. Date:**	12-Mar-14

Analyzer:

Serial Number:	1002240371	**Range ppm:**	500
Last Calibration Date:	13-Feb-14	**As Found C.F.**	1.007
Previous Cal High Point C.F.:	1.002	**New C.F.:**	1.003

		As found:		As left:
	O_3 Bkg:	0.0	O_3 Bkg:	-0.1
	O_3 Coef:	0.959	O_3 Coef:	0.964
Motherboard:	3.3	3.3	3.3	3.3
	15.0	14.8	15.0	14.8
	24.0	23.7	24.0	23.7
	-3.3	-3.2	-3.3	-3.2
Interface Board:	3.3	3.2	3.3	3.2
	5.0	4.9	5.0	4.9
	15.0	14.7	15.0	14.7
	-15.0	-15.0	-15.0	-15.0
	Photo Lamp	9.4	Photo Lamp	9.4
	24.0	23.6	24.0	23.6
	O_3 Lamp	8.3	O_3 Lamp	5.7
	Bench:	29.6	Bench:	32.1
	Bench Lamp:	53.7	Bench Lamp:	53.8
	O_3 Lamp:	67.9	O_3 Lamp:	68.1
	Pressure:	668.7	Pressure:	680.0
	Cell A lpm:	0.729	Cell A lpm:	0.737
	Cell B lpm:	0.724	Cell B lpm:	0.732
	O_3 ppb:	7.6	O_3 ppb:	32.1
	Cell A ppb:	8.7	Cell A ppb:	35.1
	Cell B ppb:	6.5	Cell B ppb:	29.5
	Cell A int:	72577	Cell A int:	72627
	Cell B int:	82276	Cell B int:	82317
	Internal Span:	320	Internal Span:	311.4

Calibrator:

Make & Model:	Environics 6100
Serial #:	4760
NOx Gas Cylinder I.D. # :	BAL3165
NOx Cylinder Conc. (ppm):	49.0

Calibrator Flow Targets:

point	total flow (cc/min)	O_3 setting (v or ppb)
zero	5075	0
high	5075	325
mid	5075	150
low	5075	80

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5070	0.0	5070	0.0	-0.1	NA
adjusted zero	5070	0.0	5070	0.0	0.1	NA
as found high	5070	0.00	5070	339.2	337.1	1.007
adjusted high	5070	0.00	5070	339.2	338.8	1.001
mid	5070	0.00	5070	161.9	159.5	1.016
low	5070	0.00	5070	80.1	80.8	0.992
calibrator zero	5075	0.00	5075	0.0	0.0	NA

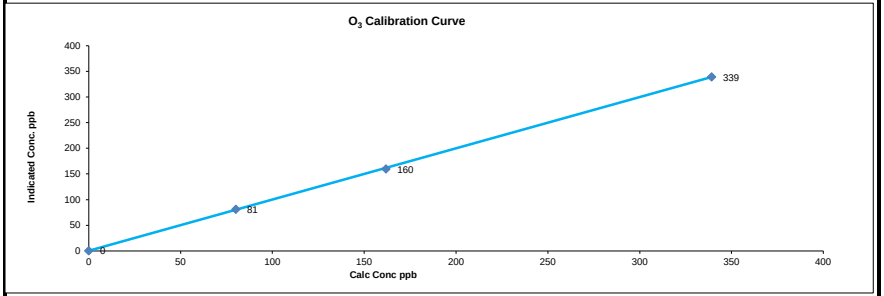
copy and paste flows and NO decrease from NOx cal in to calculated concentration **Average C.F.=** 1.003

Linear Regression/Calibration Results:

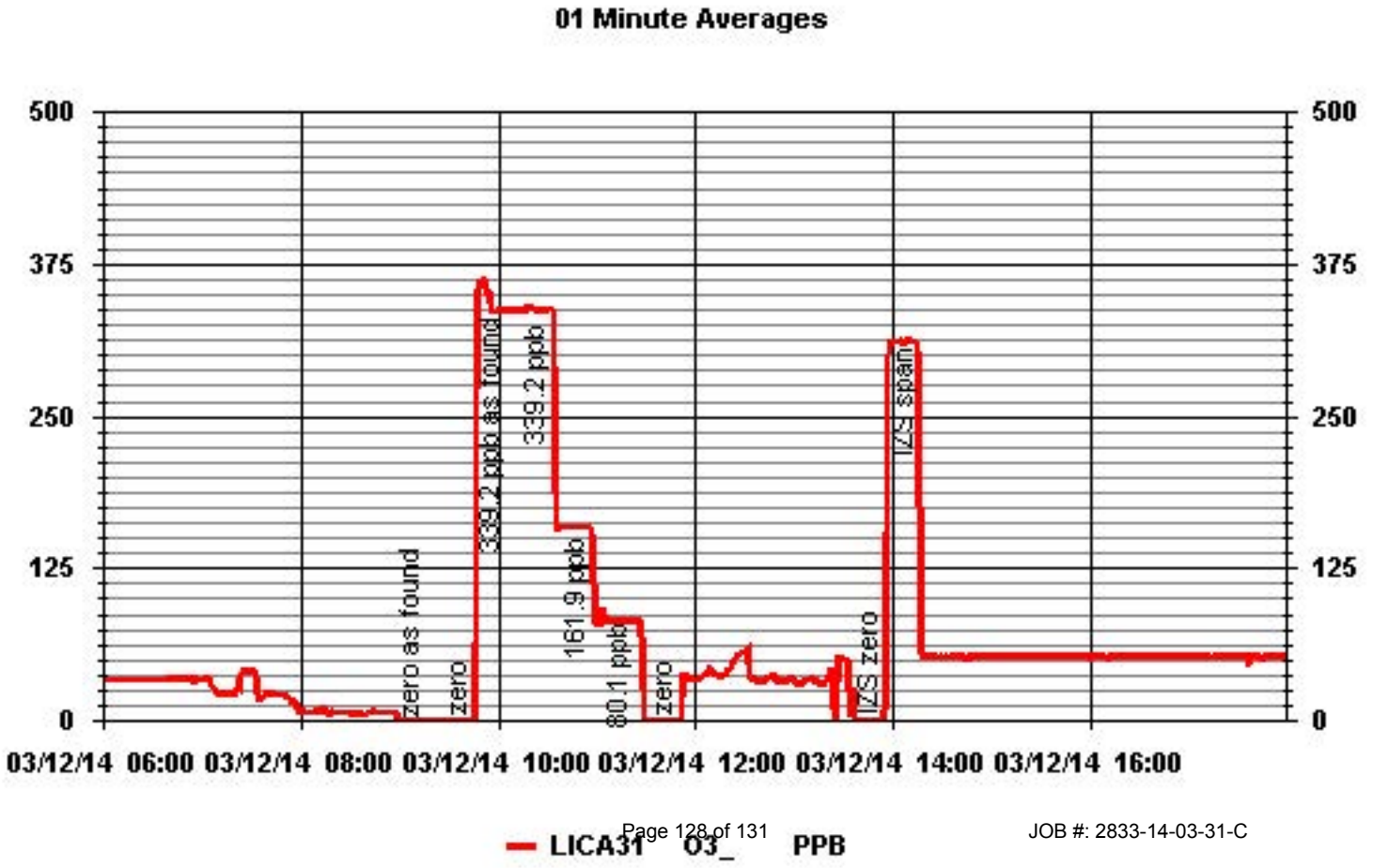
		LIMITS	Pass/Fail ?
Correlation Coeffecient =	1.000	> or = 0.995	PASS
Slope =	1.003	0.85-1.15	PASS
b (Intercept as % of full scale)=	-0.016%	± 3% F.S.	PASS
% change in C.F. from last cal	0%	± 15%	PASS

Comments:

Thermo 49i O3 Analyzer Calibration



JOB #: 2833-14-03-31-C



JOB #: 2833-14-03-31-C

Particulate Matter 2.5

R & P 1405F PM2.5 Monitor Audit/Calibration

Date:	12-Mar-14	**Performed by:**	Kevin Hope
Company:	LICA	**Start/End Time (mst):**	1139/1742
Station Name/Location:	St.Lina	**Calibration Purpose:**	Routine
Serial Number:	1405A207691003	**Filter Loading %:**	19

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	Dwyer	Brunton	Fluke
Model:	475 Mark III	ADC Summit	1551A Stik Thermometer
Serial Number:	na	na	4295
Calibration Date:	unknown	2-Dec-13	unknown

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.01	0.03	2.17	0.03
	limit	0.15		0.15	
Bypass Flow	actual	0.00	-0.68	12.59	-0.68
	limit	0.60		0.60	

As left leak check (same as above if as found passes):

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.02	0.03	0.02	0.03
	limit	0.15		0.15	
Bypass Flow	actual	0.00	-0.68	0.00	-0.68
	limit	0.60		0.60	

As found temperature and pressure:

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	8.7	**1405F pressure atm:**	0.916
reference temperature °C:	8.8	**reference pressure:**	0.917
difference °C:	0.1	**difference :**	-0.001

As left temperature and pressure (same as above if as found adequate):

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	8.7	**1405F pressure atm:**	0.916
reference temperature °C:	8.8	**reference pressure:**	0.917
difference °C:	0.1	**difference :**	0.001

As found flows:

	main flow tolerance 3.00 lpm +/- 0.20 lpm		**total flow tolerance 16.67 lpm +/- 1.00 lpm**
1405F main flow lpm:	3.00	**1405F total flow lpm:**	16.68
reference main flow lpm:	3.20	**reference total flow lpm:**	16.97
difference °C:	-0.20	**difference °C:**	-0.30

As left flows (same as above if as found adequate):

	main flow tolerance 3.00 lpm +/- 0.20 lpm		**total flow tolerance 16.67 lpm +/- 1.00 lpm**
1405F main flow lpm:	3.00	**1405F total flow lpm:**	16.68
reference main flow lpm:	3.20	**reference total flow lpm:**	16.97
difference °C:	-0.20	**difference °C:**	-0.30

K_o Audit:

Last K_o audit date:	
1405F K_o factor:	
Measured K_o factor:	
% difference:	

Comments:

Leak check failed (reference). Replaced O-rings in switch valve and leak check passed.

R & P 1405F PM2.5 Monitor Audit/Calibration

Date:	28-Mar-14	**Performed by:**	Kevin Hope
Company:	LICA	**Start/End Time (mst):**	12:55/13:39
Station Name/Location:	St.Lina	**Calibration Purpose:**	Routine
Serial Number:	1405A207691003	**Filter Loading %:**	19

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	Dwyer	Brunton	Fluke
Model:	475 Mark III	ADC Summit	1551A Stik Thermometer
Serial Number:	na	na	4295
Calibration Date:	unknown	2-Dec-13	unknown

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	2.97	0.03	2.96	0.04
	limit	0.15		0.15	
Bypass Flow	actual	14.35	-0.68	14.36	-0.68
	limit	0.60		0.60	

As left leak check (same as above if as found passes):

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.14	0.02	0.14	0.03
	limit	0.15		0.15	
Bypass Flow	actual	1.12	-0.68	1.11	-0.68
	limit	0.60		0.60	

As found temperature and pressure:

	tolerance +/- 2.0°C		tolerance +/- 0.01 atm
1405F temperature °C:	-2.2	**1405F pressure atm:**	0.917
reference temperature °C:	-1.8	**reference pressure:**	0.921
difference °C:	0.4	**difference :**	-0.004

As left temperature and pressure (same as above if as found adequate):

	tolerance +/- 2.0°C		tolerance +/- 0.01 atm
1405F temperature °C:	-2.2	**1405F pressure atm:**	0.917
reference temperature °C:	-1.8	**reference pressure:**	0.921
difference °C:	0.4	**difference :**	0.004

As found flows:

	main flow tolerance 3.00 lpm +/- 0.20 lpm		total flow tolerance 16.67 lpm +/- 1.00 lpm
1405F main flow lpm:	3.00	**1405F total flow lpm:**	16.68
reference main flow lpm:	3.12	**reference total flow lpm:**	16.61
difference °C:	-0.12	**difference °C:**	0.06

As left flows (same as above if as found adequate):

	main flow tolerance 3.00 lpm +/- 0.20 lpm		total flow tolerance 16.67 lpm +/- 1.00 lpm
1405F main flow lpm:	3.00	**1405F total flow lpm:**	16.68
reference main flow lpm:	3.12	**reference total flow lpm:**	16.61
difference °C:	-0.12	**difference °C:**	0.06

K_o Audit:

Last K_o audit date:	
1405F K_o factor:	
Measured K_o factor:	
% difference:	

Comments:

Leak check, flow audit, and filter change. Failed first leak check but passed second.

Lakeland Industry & Community Association

Portable / Elk Point Airport Monitoring Site
Ambient Air Monitoring Data Report
For
March 2014

Prepared By:

April 29, 2014

JOB #: 2833-14-03-35-C

Lakeland Industry & Community Association
Portable / Elk Point Airport
Ambient Air Monitoring

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Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: Portable / Elk Point Airport
Data Period: March 2014

The monthly ambient data report:

- Prepared by Lili Zhou
- Reviewed by Lily Lin

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 – March 2014

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PORTABLE / 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	0.30	6	28	17	15.1	208(SSW)	1.7	8	100.0
H_2S (PPB)	10	3	0	0	0.14	2	5, 26	VAR	VAR	VAR	1.0	25	93.0
THC (55i) (PPM)	-	-	-	-	2.73	8.4	5	4	1.5	236(SW)	4.8	5	100.0
Methane (PPM)	-	-	-	-	2.71	8.1	5	4	1.5	236(SW)	4.7	5	100.0
NMHC (PPM)	-	-	-	-	0.02	0.3	VAR	VAR	VAR	VAR	0.1	VAR	100.0
NO_2 (PPB)	159	-	0	-	9.01	39.6	8	19	3.2	107(ESE)	23.1	5	100.0
NO (PPB)	-	-	-	-	3.18	82.8	5	7	1.5	227(SW)	26.5	5	100.0
NOx (PPB)	-	-	-	-	12.19	120.4	5	7	1.5	227(SW)	49.6	5	100.0
O_3 (PPB)	82	-	0	-	30.71	56	29	13	18.9	317(NW)	42.2	29	100.0
PM 2.5 (UG/M^3)	-	30	-	0	10.13	60	20	16	29.5	351(N)	16.5	15	89.1
VECTOR WS (KPH)	-	-	-	-	10.56	37.8	13	8	-	290(WNW)	25.9	13	100.0
VECTOR WD (DEGREES)	-	-	-	-	283(W)	-	-	-	-	-	-	-	100.0

NA: NOT APPLICABLE VAR-VARIOUS

General Monthly Summary

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

AQM STATION – LICA – PORTABLE

Sulphur Dioxide (PPB)
- Analyzer make / model – API 100E, S/N: 467

The analyzer was working well throughout the month. The monthly calibration was performed on March 20th. The inlet filter was changed before the calibration was started. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)
- Analyzer make / model –API 101E, S/N: 509
- Converter - Internal

The daily zero drifted outside the limited range on March 12th. The analyzer did not pass the as found point check on March 13th. The UV lamp was replaced on March 15th. The inlet filter was changed before the as found points check was started. The analyzer was left overnight for stabilizing. The factory calibration procedure and the post repair calibration were performed on March 14th. During the QC review, we have to invalid the hourly data back to the last good daily calibration, which was March 12th. A total of 34 hours of data was invalidated due to this issue. An as found points check was performed on March 20th to verify the analyzer's functionality and the result was good. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

THC 55i (PPM)

- Analyzer make / model –Thermo 55i, S/N: (12)36656107

The analyzer was working well throughout the month. The monthly calibration was performed on March 20th. The inlet filter was changed before the calibration was started.. 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 monthly calibration was performed on March 21st. The inlet filter was changed before the calibration was started. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

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

The analyzer was working well throughout the month. The monthly calibration was performed on March 20th. The inlet filter was changed before the calibration was started. A GPT point check was performed on March 21st for the O3 calibration. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Particulate Matter 2.5 (ug/m^3)

- Analyzer make / model – TEOM 1405F, S/N: 1405A208301003

Two Teom audits were performed this month: one was done on March 20th and the other was completed on March 28th. The sample inlet was cleaned and the filter was replaced on March 20th. The leak check and flow audit were performed on March 20th and March 28th. 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. 81 hours of data were invalidated as the data were below –3 ug/m^3. The operational uptime was 89.1%

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

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

The wind system is reported as vector wind speed and vector wind direction. The most recent wind system calibration was done on February 21st, 2014.
No operational issues were observed during the month.

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 system was cleaned on March 20th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

SULPHUR DIOXIDE (SO2) hourly averages in ppb

MST

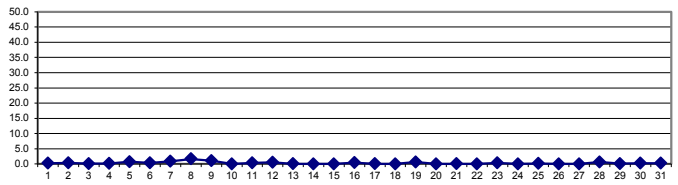
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	0	0	0	0	0	1	1	2	1	0	**S**	0	0	0	0	0	0	0	0	0	2	0.2	24
2	0	0	0	0	1	0	0	1	1	1	1	1	1	**S**	0	0	0	0	0	0	0	0	0	0	1	0.3	24
3	0	0	0	0	0	0	0	0	0	0	1	1	**S**	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
4	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	1	2	1	0	0	0	0	0	2	0.2	24
5	0	0	0	1	1	1	1	1	1	1	**S**	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0.7	24
6	1	1	1	0	0	0	0	0	1	**S**	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
7	0	0	0	1	0	0	0	0	**S**	0	0	1	1	0	1	1	1	1	0	1	4	4	3	1	4	0.9	24
8	1	1	1	1	2	1	1	**S**	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2	***1.7***	24
9	1	1	1	1	1	1	**S**	2	2	2	2	2	2	2	1	1	1	1	0	0	0	0	1	0	2	1.1	24
10	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
11	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	0.3	24
12	0	0	0	**S**	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0.5	24
13	1	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
14	0	**S**	0	0	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	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0.0	24
16	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	**S**	0	1	0.4	24
17	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**S**	0	0	1	0.0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0.0	24
19	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	2	3	2	1	**S**	1	0	0	0	3	0.6	24
20	0	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	0	0	0	0	**S**	0	0	0	0	0	0	0.0	24
21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	1	0.0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0.0	24
23	0	0	0	0	0	0	0	0	0	1	1	3	2	1	0	**S**	0	0	0	0	0	0	0	0	3	0.3	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	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	**S**	0	0	0	0	0	1	1	0	1	0	1	0.1	24
26	0	0	0	0	0	0	0	0	0	0	0	0	**S**	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	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
28	0	0	0	0	0	0	0	1	1	1	**S**	1	0	0	0	2	1	***6***	1	0	0	0	0	0	***6***	0.6	24
29	0	0	0	0	0	0	0	0	0	**S**	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0.1	24
30	0	0	0	0	0	0	0	0	**S**	0	1	0	1	1	0	0	0	1	1	0	0	0	0	0	1	0.3	24
31	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	1	0	1	1	1	1	0	0	0	1	1	0.3	24
HOURLY MAX	1	1	1	1	2	1	1	2	2	2	2	3	2	2	2	2	3	6	2	2	4	4	3	2			
HOURLY AVG	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.3	0.3	0.4	0.6	0.5	0.4	0.4	0.4	0.5	0.7	0.3	0.3	0.4	0.2	0.3	0.2			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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

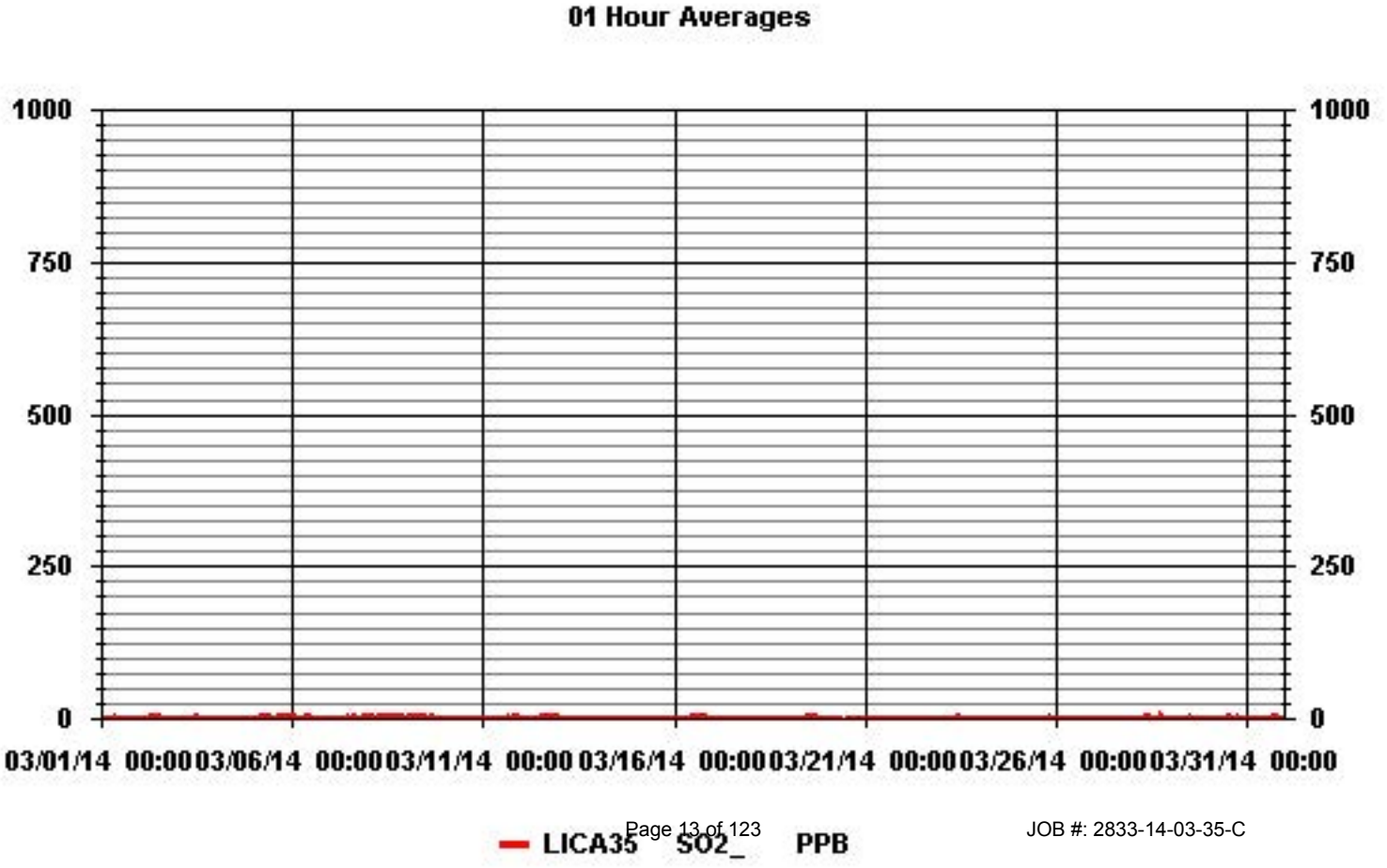
24 HOUR AVERAGES FOR MARCH 2014



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	164					
MAXIMUM 1-HR AVERAGE:	6	PPB	@ HOUR(S)	17	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	1.7	PPB			ON DAY(S)	8
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.63		MONTHLY AVERAGE:		0.30	PPB

JOB #: 2833-14-03-35-C



JOB #: 2833-14-03-35-C

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

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	1	1	1	1	1	2	3	3	1	**S**	1	1	1	1	0	1	1	1	1	3	1.2	24
2	1	2	1	2	2	1	1	2	2	2	2	2	2	**S**	1	1	1	1	1	1	1	1	1	1	2	1.4	24
3	1	1	1	1	1	1	1	1	1	1	2	2	**S**	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
4	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	3	4	2	2	1	1	1	1	4	1.3	24
5	1	2	2	2	3	2	2	2	2	2	**S**	1	1	2	3	2	2	2	2	1	1	1	2	2	3	1.8	24
6	1	1	1	1	1	1	1	1	2	**S**	1	4	2	1	1	1	1	1	1	1	1	1	1	1	4	1.2	24
7	1	1	2	2	1	1	1	1	**S**	1	1	2	1	1	1	1	2	1	1	2	5	5	4	2	5	1.7	24
8	2	2	2	2	3	2	2	**S**	3	3	3	3	2	3	4	3	3	3	3	3	3	2	2	2	4	***2.6***	24
9	3	2	2	2	2	2	**S**	3	3	3	2	2	3	3	2	2	2	2	1	1	1	2	1	1	3	2.0	24
10	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
11	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	1	2	2	2	1.2	24
12	1	1	1	**S**	1	1	1	1	1	1	1	1	2	1	2	1	1	2	2	2	2	1	2	2	2	1.3	24
13	2	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
14	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1.0	24
15	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1.0	24
16	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	2	2	2	2	2	1	**S**	1	2	1.4	24
17	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	**S**	1	1	2	1.0	24
18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1.0	24
19	1	1	1	1	1	1	1	1	1	1	1	3	2	3	3	3	4	4	2	**S**	1	1	1	1	4	1.7	24
20	1	1	1	1	1	1	1	1	1	**C**	**C**	**C**	**C**	**C**	0	0	0	0	**S**	1	1	1	1	1	1	0.8	24
21	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	**S**	0	1	1	0	0	0	1	0.8	24
22	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	**S**	0	0	0	0	0	0	0	1	0.2	24
23	0	0	0	1	1	1	1	0	1	3	2	4	4	2	1	**S**	0	0	0	1	0	0	0	0	4	1.0	24
24	0	1	1	1	0	0	0	0	0	0	0	1	0	0	**S**	0	0	0	0	0	0	0	0	0	1	0.2	24
25	0	1	1	1	0	1	1	0	0	1	1	1	1	**S**	1	1	1	1	1	2	2	1	2	1	2	1.0	24
26	1	1	2	1	1	1	1	0	0	1	1	1	**S**	1	0	0	0	0	0	0	0	0	1	1	2	0.6	24
27	0	1	0	0	1	0	0	0	1	1	1	**S**	1	1	1	0	1	1	1	1	1	0	0	0	1	0.6	24
28	0	0	0	0	1	1	1	2	2	2	**S**	3	1	1	2	4	2	***10***	6	1	1	0	1	1	***10***	1.8	24
29	1	0	1	1	1	1	1	1	1	**S**	1	1	2	2	1	1	1	1	1	1	1	0	1	1	2	1.0	24
30	0	0	0	0	0	0	0	0	**S**	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	2	0.7	24
31	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	2	2	1.1	24
HOURLY MAX	3	2	2	2	3	2	2	3	3	3	3	4	4	3	4	4	4	10	6	3	5	5	4	2			
HOURLY AVG	0.9	1.0	1.0	1.0	1.1	1.0	0.9	1.0	1.2	1.3	1.2	1.7	1.5	1.3	1.3	1.1	1.3	1.6	1.2	1.1	1.2	0.9	1.1	1.0			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 609

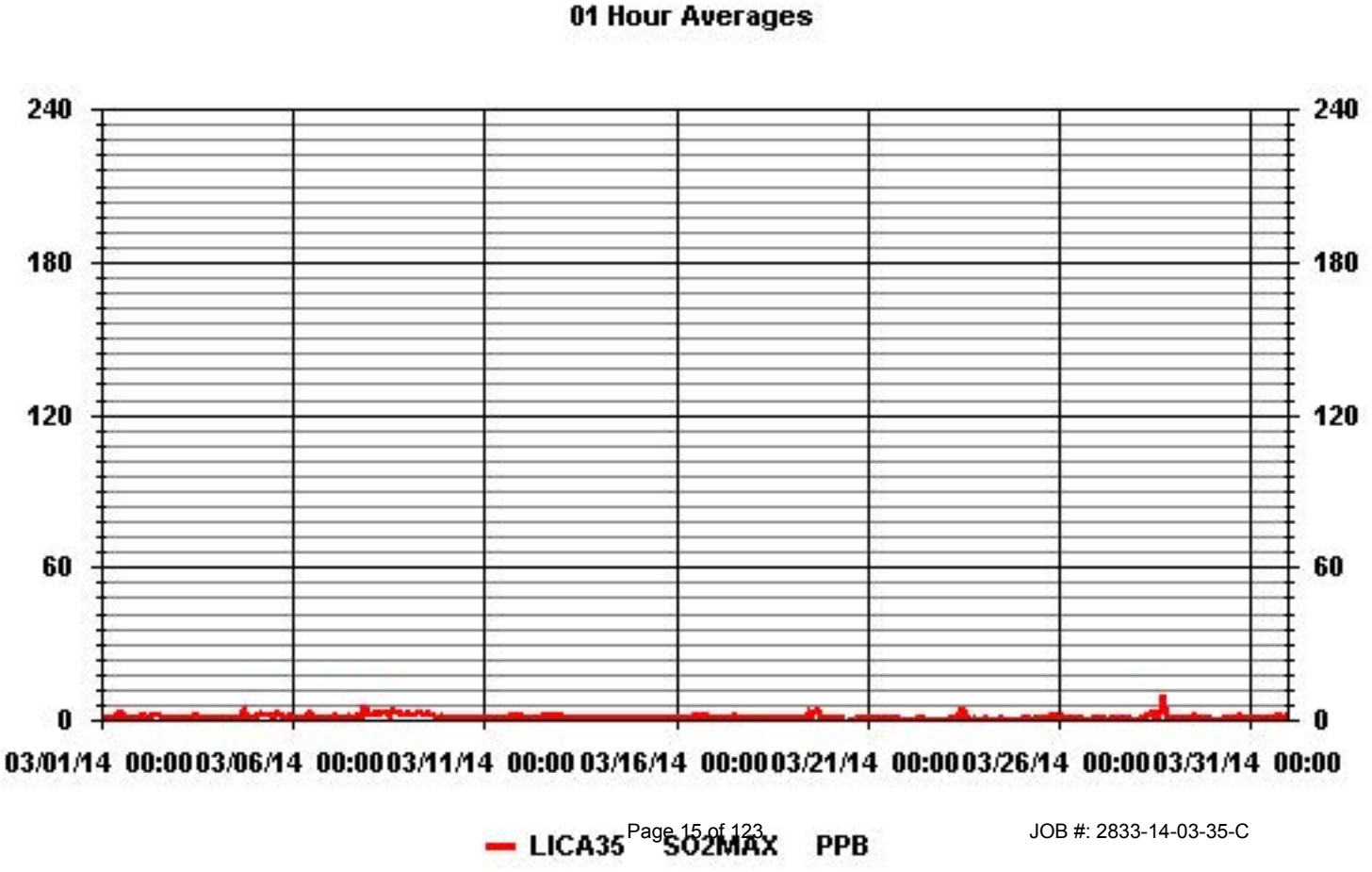
MAXIMUM INSTANTANEOUS VALUE: 10 PPB @ HOUR(S) 17 ON DAY(S) 28

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 0.86



JOB #: 2833-14-03-35-C

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

March 2014

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	2.97	3.53	1.69	.99	8.76	10.46	4.66	3.11	2.97	1.41	2.54	11.88	16.97	14.00	10.18	3.81	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	2.97	3.53	1.69	.99	8.76	10.46	4.66	3.11	2.97	1.41	2.54	11.88	16.97	14.00	10.18	3.81	

Calm : .00 %

Total # Operational Hours : 707

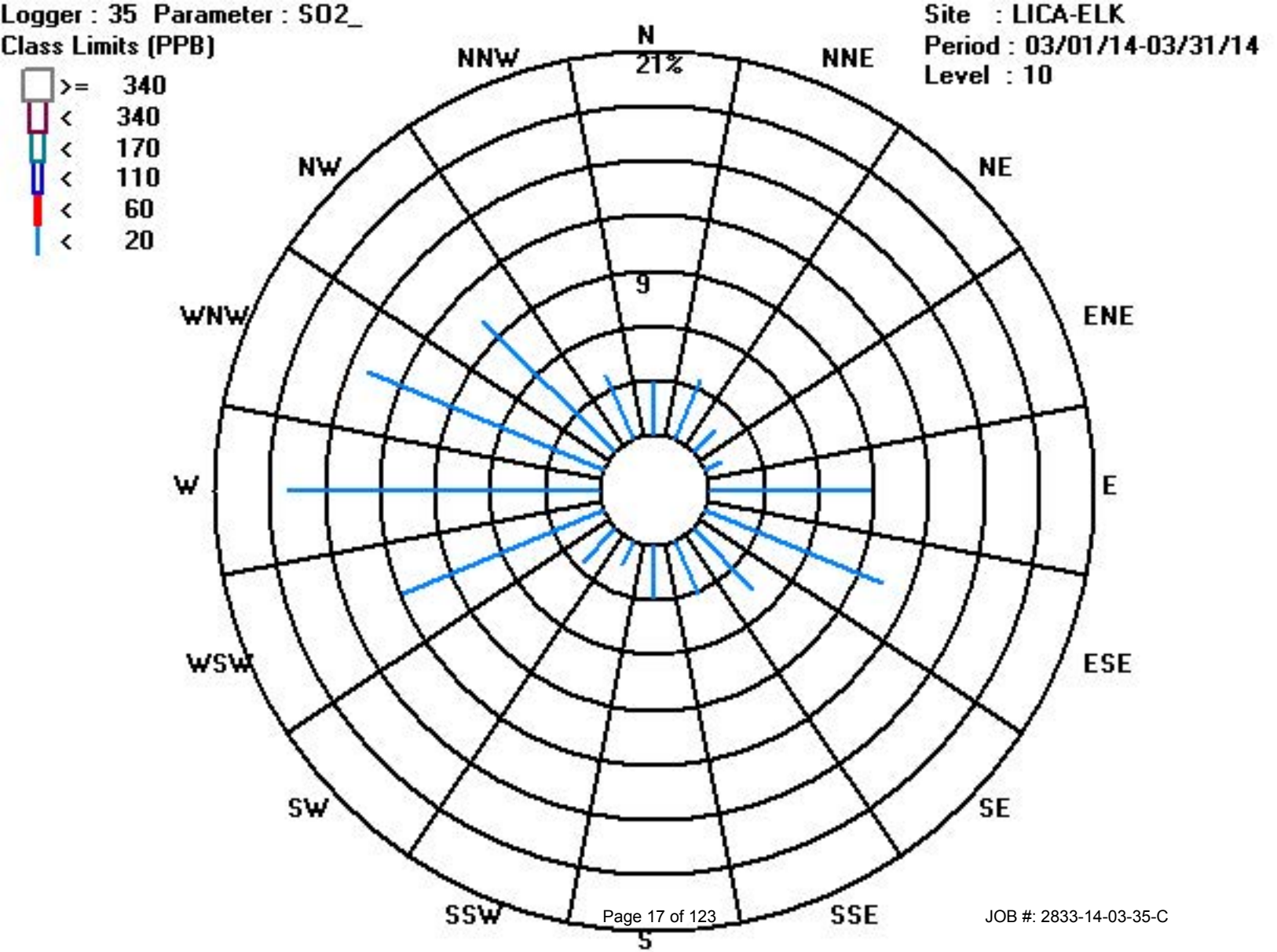
Distribution By Samples

Direction

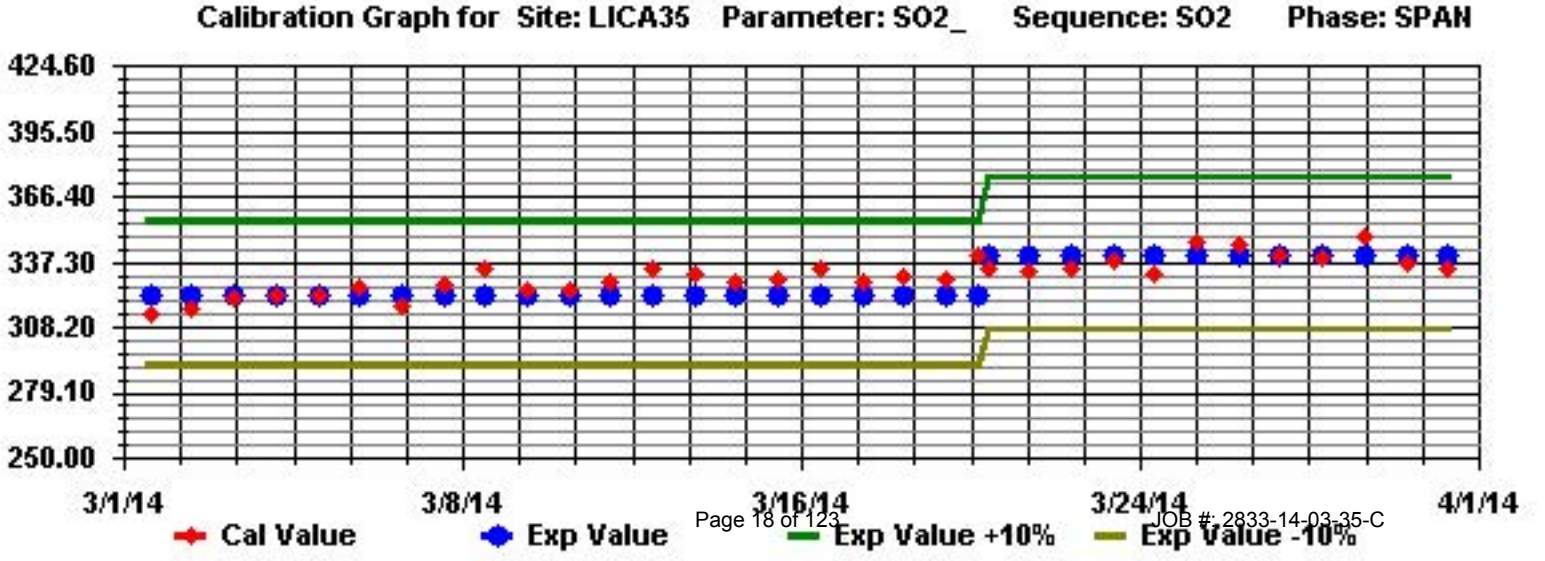
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	21	25	12	7	62	74	33	22	21	10	18	84	120	99	72	27	707
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	21	25	12	7	62	74	33	22	21	10	18	84	120	99	72	27	

Calm : .00 %

Total # Operational Hours : 707



JOB #: 2833-14-03-35-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
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

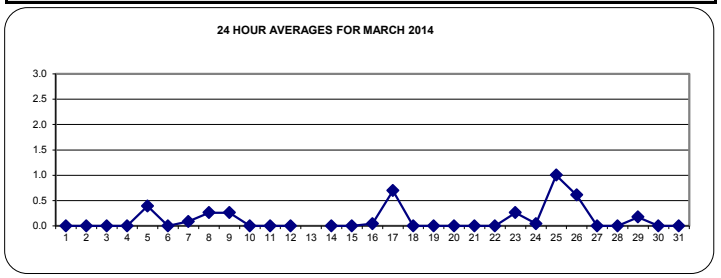
HYDROGEN SULPHIDE (H2S) hourly averages in ppb

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

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

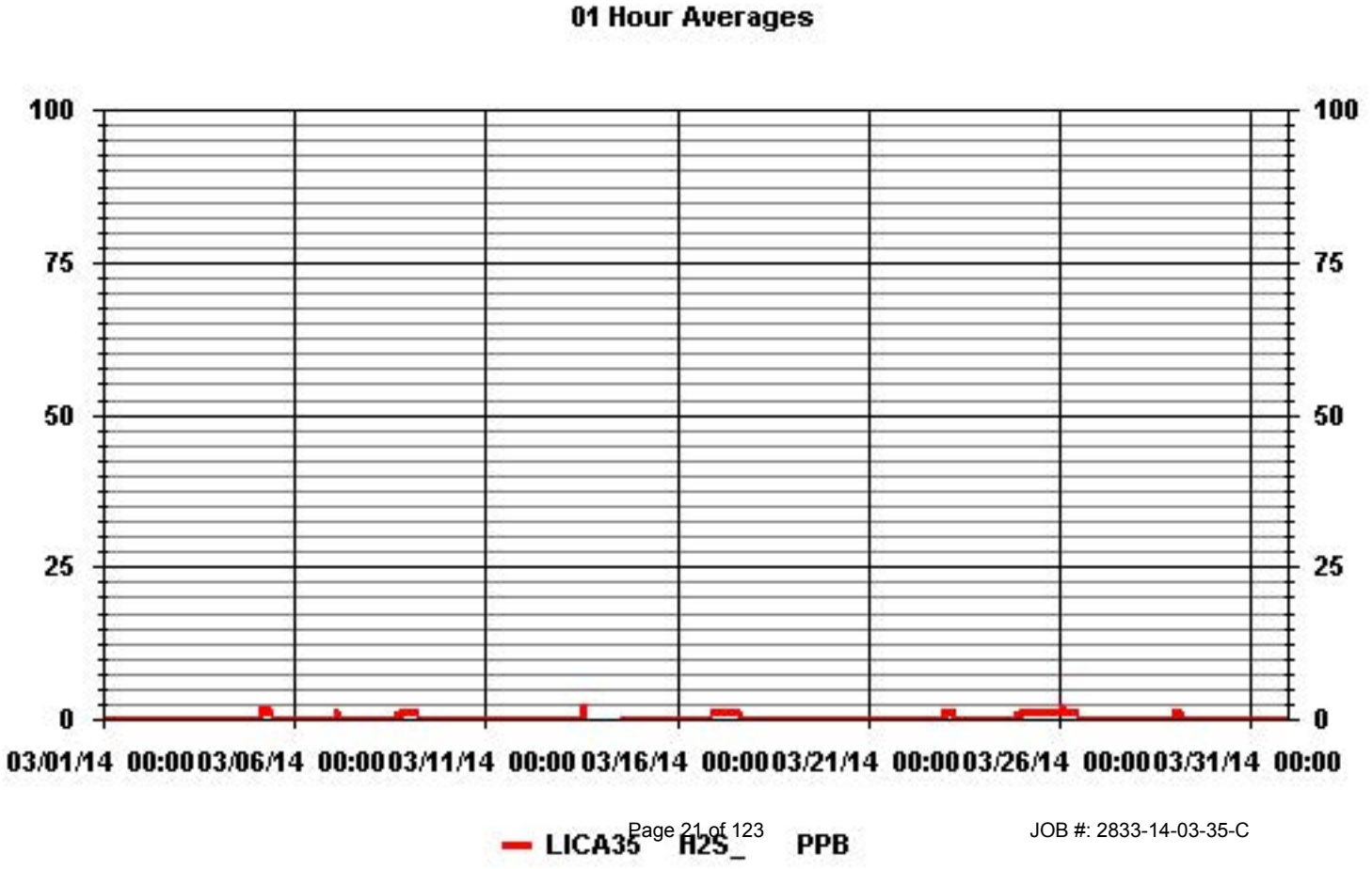


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 10 PPB 24-HR 3 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	84					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	5, 26
MAXIMUM 24-HR AVERAGE:	1.0	PPB			ON DAY(S)	25
				VAR-VARIOUS		
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:		692	HRS
MONTHLY CALIBRATION TIME:	11	HRS	AMD OPERATION UPTIME:		93.0	%
STANDARD DEVIATION:	0.36		MONTHLY AVERAGE:		0.14	PPB

JOB #: 2833-14-03-35-C



JOB #: 2833-14-03-35-C

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST

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

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 169

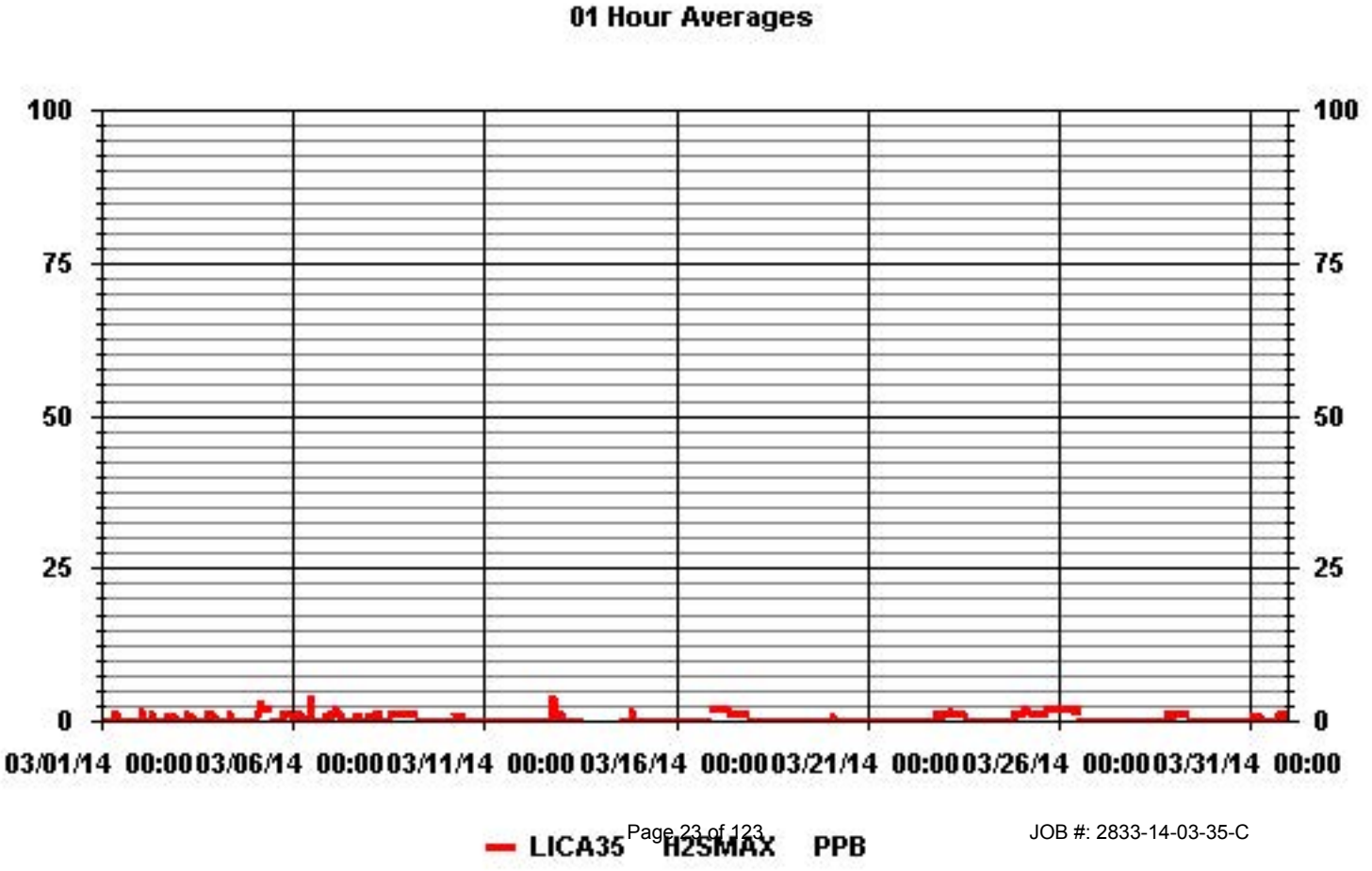
MAXIMUM INSTANTANEOUS VALUE: 4 PPB @ HOUR(S) 11 ON DAY(S) 6

VAR-VARIOUS

IZS CALIBRATION TIME: 30 HRS OPERATIONAL TIME: 692 HRS

MONTHLY CALIBRATION TIME: 11 HRS

STANDARD DEVIATION: 0.62



JOB #: 2833-14-03-35-C

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

March 2014

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	3.50	3.65	1.75	1.02	8.62	10.08	4.82	3.21	3.07	1.46	2.63	12.13	16.81	13.15	10.38	3.65	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	3.50	3.65	1.75	1.02	8.62	10.08	4.82	3.21	3.07	1.46	2.63	12.13	16.81	13.15	10.38	3.65	

Calm : .00 %

Total # Operational Hours : 684

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	24	25	12	7	59	69	33	22	21	10	18	83	115	90	71	25	684
< 10																	
< 50																	
>= 50																	
Totals	24	25	12	7	59	69	33	22	21	10	18	83	115	90	71	25	

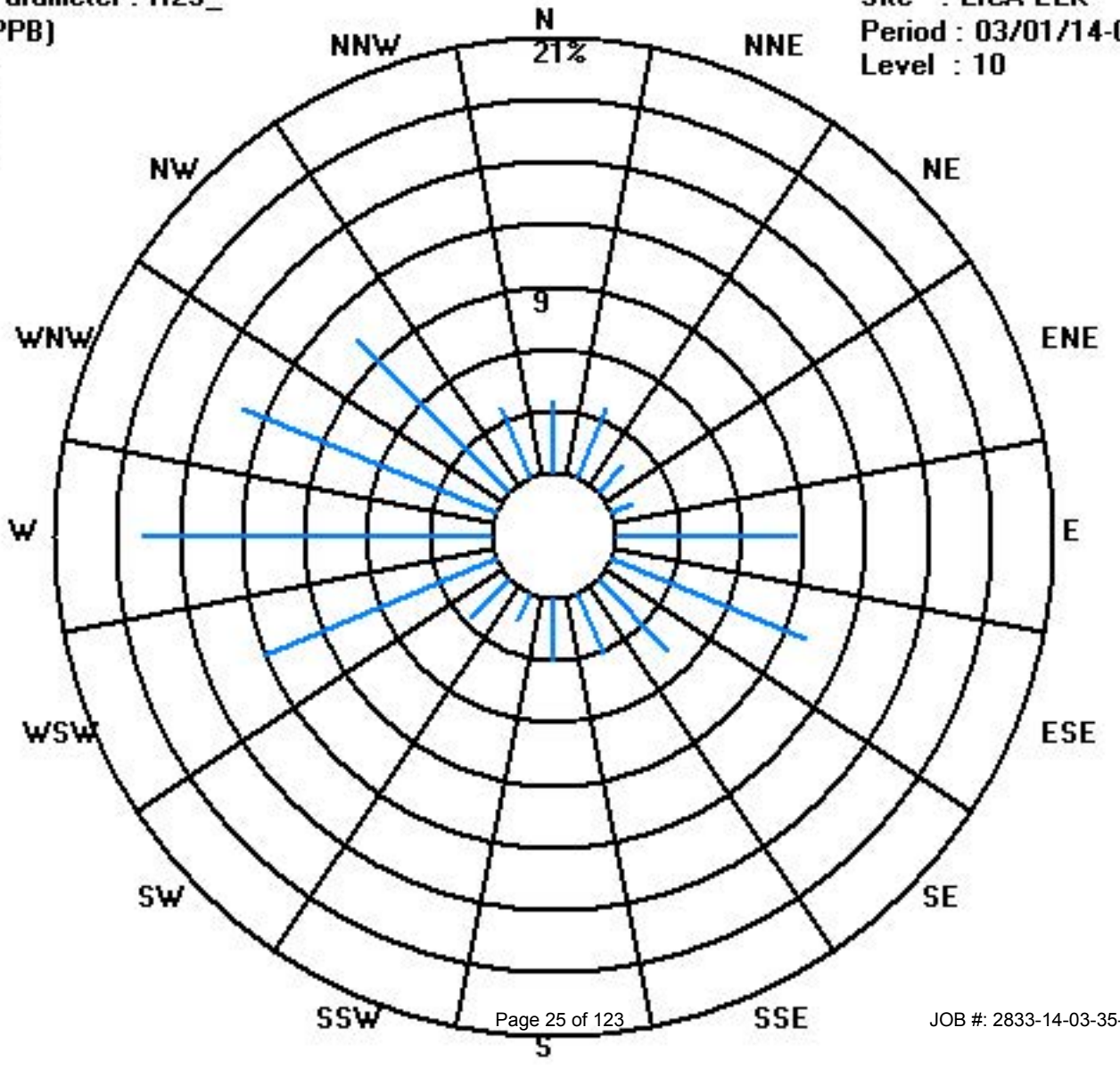
Calm : .00 %

Total # Operational Hours : 684

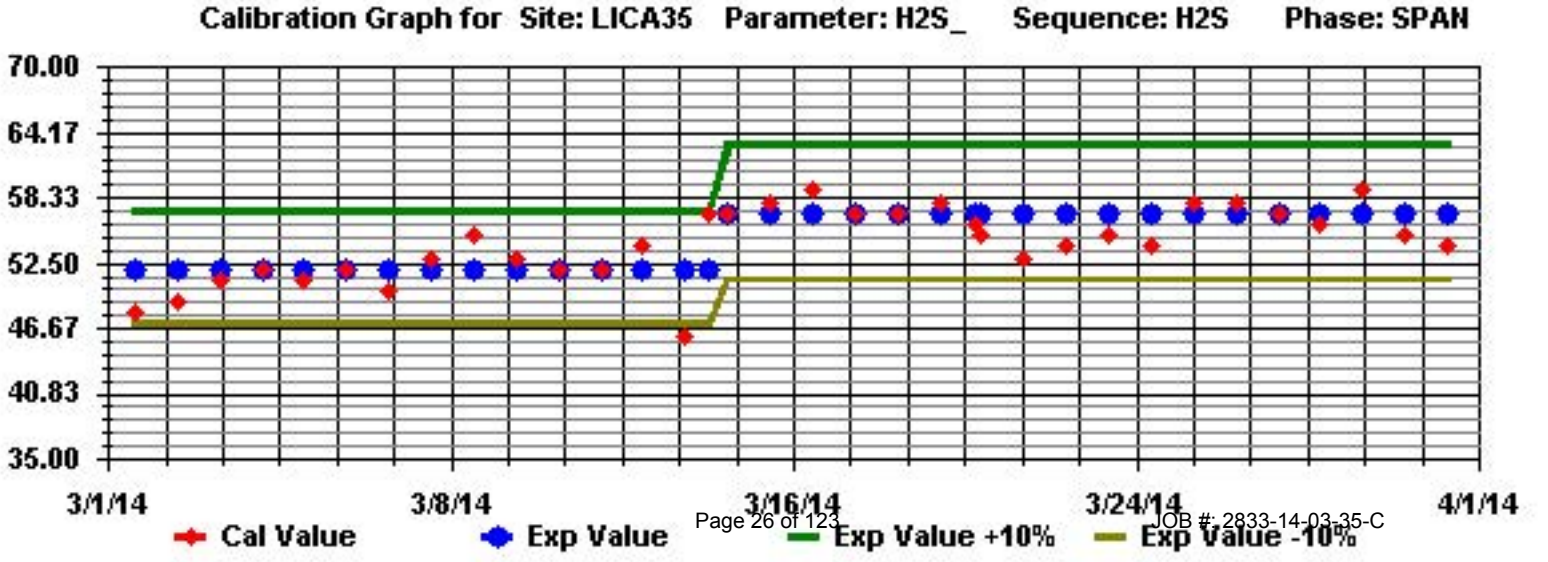
Logger : 35 Parameter : H2S_
Class Limits (PPB)

>= 50
< 50
< 10
< 3

Site : LICA-ELK
Period : 03/01/14-03/31/14
Level : 10



JOB #: 2833-14-03-35-C


Calibration Graph for Site: LICA35 Parameter: H2S_ Sequence: H2S Phase: SPAN
70.00
64.17
58.33
52.50
46.67
40.83
35.00
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

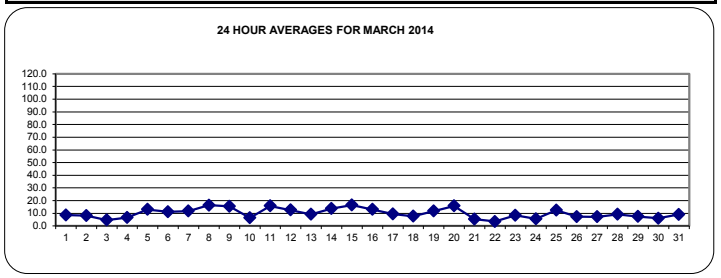
PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5) hourly averages in ug/m3

MST

HOUR START / HOUR END	0:00 1:00	1:00 2:00	2:00 3:00	3:00 4:00	4:00 5:00	5:00 6:00	6:00 7:00	7:00 8:00	8:00 9:00	9:00 10:00	10:00 11:00	11:00 12:00	12:00 13:00	13:00 14:00	14:00 15:00	15:00 16:00	16:00 17:00	17:00 18:00	18:00 19:00	19:00 20:00	20:00 21:00	21:00 22:00	22:00 23:00	23:00 0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																											
1	5	7	8	11	12	11	10	5	9	4	14	14	7	0	X	1	2	X	9	11	15	11	11	13	15	8.6	22
2	15	9	9	9	6	9	4	16	9	12	25	11	10	6	0	X	X	X	0	X	0	5	3	3	25	8.1	20
3	9	6	8	6	8	10	5	6	0	0	6	11	X	X	X	X	X	0	X	0	0	5	3	0	11	4.6	18
4	0	X	1	X	X	X	0	3	3	X	2	X	2	0	X	8	22	12	12	4	14	12	13	5	22	6.6	17
5	10	1	11	10	0	10	19	25	17	23	24	4	0	14	7	X	22	10	15	20	11	18	17	12	25	13.0	23
6	17	13	11	27	21	24	27	14	11	12	2	7	10	9	8	0	0	3	7	X	9	13	3	8	27	11.1	23
7	10	0	13	1	0	8	11	16	8	15	13	12	2	13	0	12	18	12	11	19	22	22	24	19	24	11.7	24
8	23	23	17	16	0	6	18	16	11	14	15	3	4	0	12	24	27	28	22	22	27	19	22	24	28	16.4	24
9	18	18	29	17	19	20	23	26	19	17	9	8	8	0	26	22	20	5	31	14	17	3	0	1	31	15.4	24
10	3	4	0	X	0	5	2	X	10	1	0	1	13	10	3	29	19	15	5	0	X	9	0	X	29	6.5	20
11	3	13	27	19	27	31	31	15	12	10	4	11	10	0	0	X	17	7	X	25	24	34	17	11	34	15.8	22
12	21	27	20	30	25	19	15	19	X	0	5	0	7	6	12	2	6	X	0	17	19	11	11	4	30	12.5	22
13	10	14	0	18	23	11	X	2	3	X	0	14	12	8	X	34	6	0	0	X	7	9	4	8	34	9.2	20
14	9	26	14	15	10	18	7	16	19	X	22	9	19	22	X	4	10	3	X	1	11	17	11	26	26	13.8	21
15	22	17	20	1	2	7	16	13	9	52	21	12	13	17	10	20	8	8	29	20	8	23	27	22	52	***16.5***	24
16	29	18	30	25	17	25	25	13	6	11	X	1	0	2	2	2	0	8	0	2	12	19	28	24	30	13.0	23
17	24	17	19	15	7	15	8	5	10	14	8	1	6	11	1	6	0	2	2	X	0	12	18	16	24	9.4	23
18	20	6	11	13	16	10	7	8	12	0	7	0	2	3	X	0	X	4	1	1	2	21	16	10	21	7.7	22
19	1	5	9	16	23	9	15	16	14	X	2	5	5	14	11	7	12	4	X	10	9	22	21	27	27	11.7	22
20	32	15	11	12	11	11	1	0	8	0	X	X	48	13	C	53	***60***	10	10	6	3	5	8	14	***60***	15.8	22
21	13	14	15	7	0	12	2	6	X	6	1	0	X	X	7	9	5	3	0	8	1	0	2	1	15	5.3	21
22	0	7	0	3	2	7	9	X	0	0	10	7	X	13	0	0	1	4	5	3	3	0	0	3	13	3.5	22
23	X	6	0	6	0	11	3	6	12	15	19	9	38	22	15	0	5	1	5	6	7	5	0	1	38	8.3	23
24	5	0	14	12	2	0	14	5	3	1	5	6	0	0	1	3	6	8	17	5	2	X	12	7	17	5.6	23
25	X	X	X	X	0	X	4	7	6	13	8	26	0	12	21	30	4	14	13	9	14	21	15	18	30	12.4	19
26	15	17	21	5	X	X	1	X	2	X	X	8	0	9	0	X	X	X	X	X	8	8	9	0	21	7.4	14
27	9	0	13	X	2	X	5	0	C	9	7	16	3	19	9	2	3	6	5	10	10	0	12	12	19	7.2	22
28	3	11	6	9	3	9	12	17	26	X	4	13	6	13	3	10	8	9	6	X	5	X	6	14	26	9.2	21
29	X	8	4	2	X	0	0	X	8	5	6	7	23	16	17	6	2	9	2	19	1	X	2	11	23	7.4	20
30	4	X	7	22	X	5	8	6	13	5	2	7	5	4	X	4	10	3	0	2	5	3	3	8	22	6.0	21
31	X	0	0	X	8	22	15	10	10	13	14	14	12	9	9	X	6	7	10	7	4	3	9	8	22	9.0	21
HOURLY MAX	32	27	30	30	27	31	31	26	26	52	25	26	48	22	26	53	60	28	31	25	27	34	28	27			
HOURLY AVG	12.2	10.8	11.6	12.6	9.0	12.0	10.6	10.8	9.6	10.1	9.1	8.2	9.5	9.1	7.6	11.5	11.1	7.2	8.3	9.6	9.0	11.8	10.5	11.0			

STATUS FLAG CODES

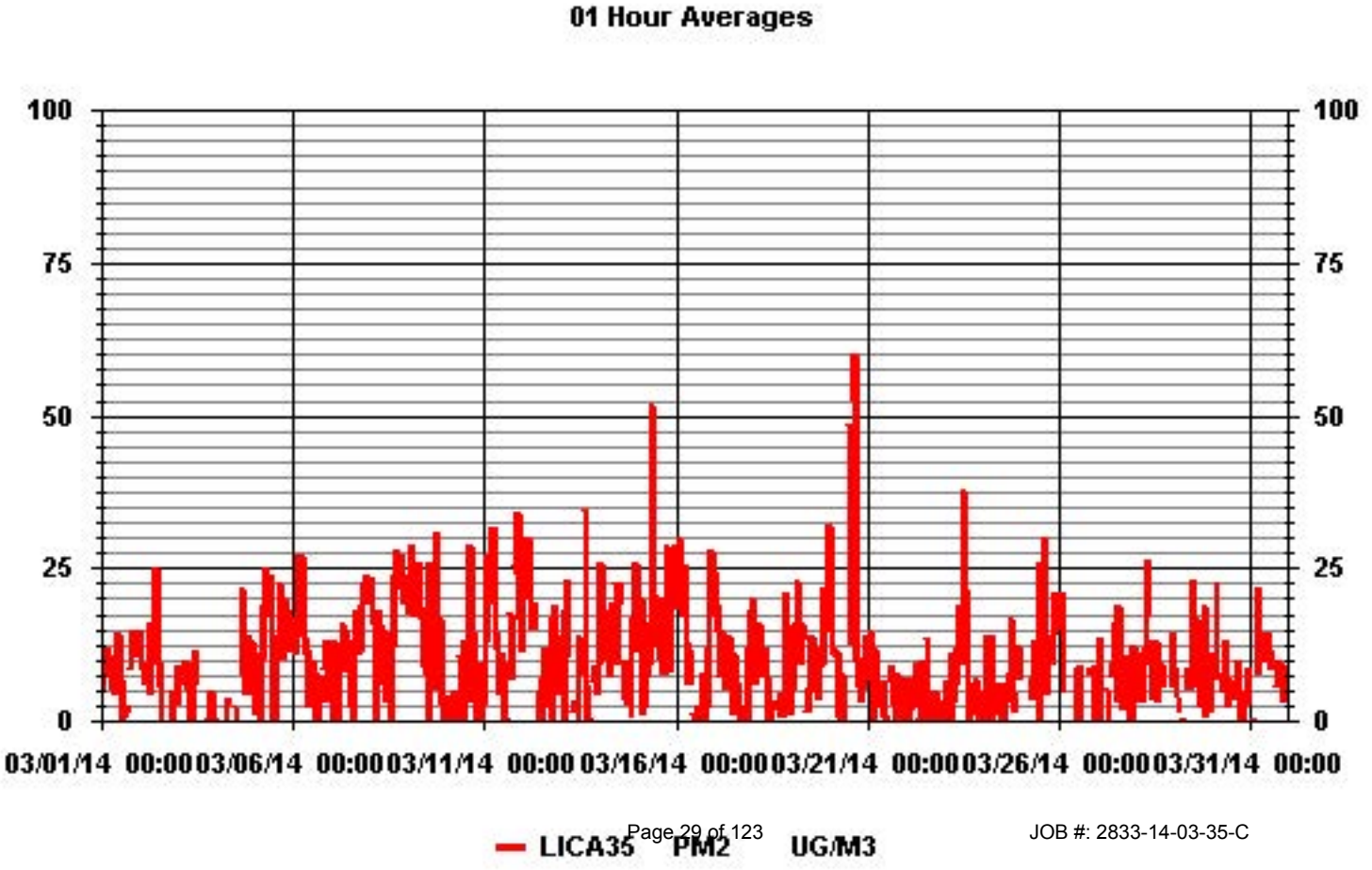
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	0						
NUMBER OF NON-ZERO READINGS:	580						
MAXIMUM 1-HR AVERAGE:	60	ug/m3	@ HOUR(S)	16	ON DAY(S)	20	
MAXIMUM 24-HR AVERAGE:	16.5	ug/m3			ON DAY(S) VAR-VARIOUS	15	
			OPERATIONAL TIME:			663	HRS
MONTHLY CALIBRATION TIME:	2	HRS	AMD OPERATION UPTIME:			89.1	%
STANDARD DEVIATION:	8.55		MONTHLY AVERAGE:			10.13	ug/m3



JOB #: 2833-14-03-35-C

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

March 2014

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	2.87	2.57	1.21	.90	8.47	9.83	4.68	3.17	3.02	1.36	2.57	11.19	17.24	14.06	10.89	3.78	97.88
<	60	.15	.00	.00	.00	.00	.15	.00	.15	.00	.00	.15	.45	.30	.30	.15	.15	1.96
<	80	.15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15
<	120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.17	2.57	1.21	.90	8.47	9.98	4.68	3.32	3.02	1.36	2.72	11.64	17.54	14.37	11.04	3.93	

Calm : .00 %

Total # Operational Hours : 661

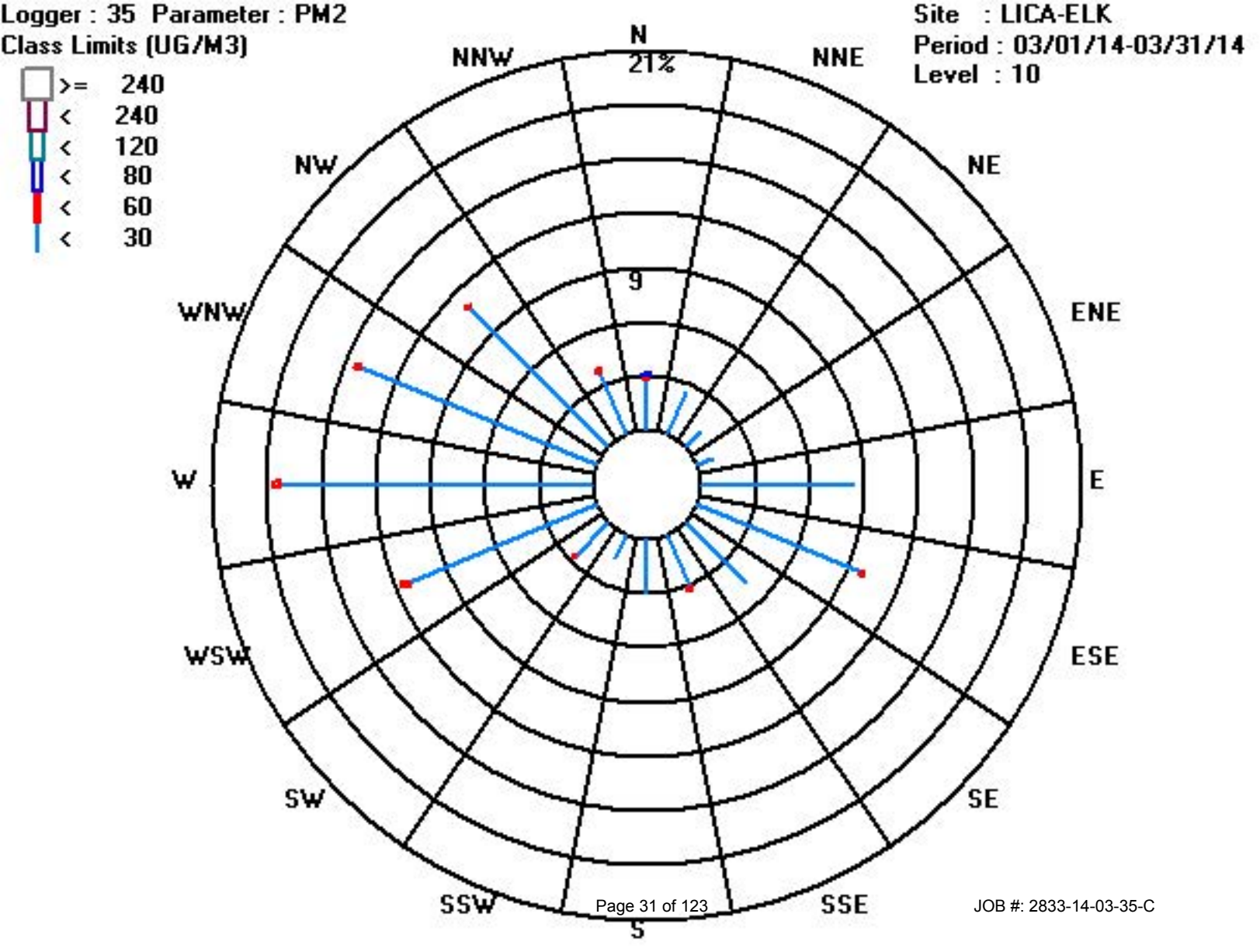
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30	19	17	8	6	56	65	31	21	20	9	17	74	114	93	72	25	647
<	60	1					1		1			1	3	2	2	1	1	13
<	80	1																1
<	120																	
<	240																	
>=	240																	
	Totals	21	17	8	6	56	66	31	22	20	9	18	77	116	95	73	26	

Calm : .00 %

Total # Operational Hours : 661



JOB #: 2833-14-03-35-C

Nitrogen Dioxide

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

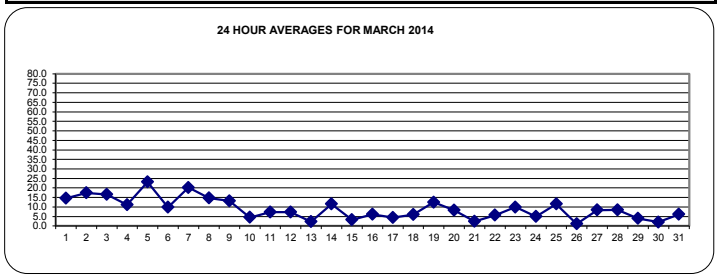
MST

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	27.1	18.1	28.2	22.6	28.6	29.2	26.5	21.3	17.9	17.2	9.1	4	2.6	1.3	**S**	2.5	0.9	1.1	13.9	18.1	10	11.2	9.7	13	29.2	14.5	24
2	12.2	21	16.1	21.2	19.7	27.3	17.7	23.9	17	5.8	3.7	3.3	4.7	**S**	4.2	3.9	4.8	17.2	27.9	28.9	17.2	31.1	37.5	33.7	37.5	17.4	24
3	27.1	30.9	32.5	33.3	33.2	30.6	30.1	19.1	10.5	12.9	7.7	5.9	**S**	2.7	2.3	2.3	3.8	4.6	11.9	22.2	18.1	15.7	9.8	12.9	33.3	16.5	24
4	12.8	10.7	10.6	5.3	5.9	3.9	2.4	8.2	8.1	6	3.4	**S**	2.1	2.1	2.4	2.6	5.1	9.7	17.6	20	21	26.7	34.1	35.5	35.5	11.1	24
5	36.3	36.6	34.8	38.8	37.5	38.6	38	37.6	31.1	28	**S**	12.3	9.3	6.5	5.3	5.4	4.9	8	12.7	31.2	29.8	20.1	17	11.3	38.8	***23.1***	24
6	2.1	2.6	5.4	8.9	12.4	5.8	6.1	2.7	3.5	**S**	3.1	11.6	2.2	1.2	1.2	1.4	1.5	1.5	13	22.7	24.7	27.6	30.1	33.6	33.6	9.8	24
7	39.2	36.7	39.4	36.3	35.2	32.9	31.8	21.5	**S**	13.7	11.1	9.7	8	6.1	5.5	7.6	7.9	20.6	21.9	21	19.6	9.5	11.9	16.6	39.4	20.2	24
8	15.1	11.6	10.2	9	9.8	8.4	8.2	**S**	8.8	6.1	5.7	5.6	6.6	7.5	9.9	13.9	17.7	18.9	21.5	***39.6***	32	26.7	24.8	19.2	***39.6***	14.6	24
9	20.5	26.9	29.5	26.7	20.5	13.9	**S**	16.3	11.9	10.7	9.8	11.6	14.4	13	9.6	7.1	5.9	4.9	6.7	9.8	11.7	9.5	7	5.6	29.5	13.2	24
10	3	3.3	0.1	0.3	1.8	**S**	13.3	5	4.2	3.2	1.4	1.6	2.2	2.8	4.7	3.1	2.1	11.4	12	6.9	1.8	1.7	7.6	9.7	13.3	4.5	24
11	9.9	7.8	5.7	3.9	**S**	20.8	11.7	7	4.1	2.2	1.6	1.6	1.6	1.9	1.6	1.7	3.7	6.4	8.4	11	15.4	16.4	16.9	7.3	20.8	7.3	24
12	4.6	4	3.8	**S**	6.7	15.6	6.8	4.1	2.9	2.7	2.7	2.7	3.2	2.9	3.7	5.7	7.7	10	17.6	13.8	24.9	7.6	5.1	7.3	24.9	7.2	24
13	8.8	1.1	**S**	1.2	0.8	3.2	2.2	0.3	0.2	0	0	0	0	0	0	0	0	0.4	2.3	2.6	4.1	10.6	3.9	9.2	10.6	2.2	24
14	11	**S**	19.2	20.9	31.5	32.3	33.8	29.1	19	13.9	9.5	5	2.7	1.3	1.5	2.4	4	4.8	6.9	5.1	3	2.4	2.8	3.3	33.8	11.5	24
15	**S**	2.6	2.1	0.6	0.5	1.3	0.6	1.3	1.4	2.2	1.8	1.7	2.2	1.9	2.3	2.8	6.4	8.9	9.9	5	6.5	4.9	4.6	**S**	9.9	3.3	24
16	5.3	6.4	5.6	7.9	8.3	17.2	15.8	13	4.7	3	1.6	1.5	1.4	1.3	1.7	1.3	2.2	2.3	5.7	9.2	8.4	3.3	**S**	12.4	17.2	6.1	24
17	5.8	5.7	7.9	7.6	7.8	8.8	11.5	3.4	0.6	0.9	1.1	0.4	0.4	0.2	0.2	0.1	0	0.1	0.3	2.2	6.2	**S**	12.9	16.4	16.4	4.4	24
18	15.6	10.5	13.8	12.1	6.3	5.5	5.5	3.8	1.9	0.9	0.4	0.6	0.4	0.3	0.2	1	2	5.5	5.9	10.6	**S**	13.2	10.7	10.2	15.6	6.0	24
19	15.4	9.1	8	14.1	18.3	23.2	23.2	15.2	13.9	10.4	5.8	4.4	6.2	4.6	5.4	7.6	9.2	13	9.7	**S**	19.6	20.7	14.5	15.8	23.2	12.5	24
20	25.1	23.3	23.7	19.2	16.9	2.8	1.2	0.1	0.5	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1.3	**S**	2.1	2.2	1.9	2.2	2.4	25.1	8.3	24
21	2.8	2.1	2.6	2.4	2.1	2	2.2	2.9	**C**	**C**	1.2	1	1	1.3	0.6	0.9	1	**S**	1.3	7.1	8.3	2	2.7	2.8	8.3	2.4	24
22	2.2	2.5	3.5	3.2	3.5	7.4	11.9	7.7	5.1	4.4	2.7	1.6	0.6	0.3	0.3	0.2	**S**	0.4	2.6	14.6	14.9	16.6	9.1	15	16.6	5.7	24
23	29.2	27.8	30.1	27.7	27.3	27.2	15	6.6	2.4	3.5	2.5	2.6	3.1	2.1	1.7	**S**	0.1	0	2.1	8.8	4	1.7	2	0.3	30.1	9.9	24
24	0.5	0.2	0.1	1.2	0	0.2	0	0	0	0	0	0	0	0	**S**	0.5	0.4	0.2	1.2	5.6	16.7	26.6	30.7	30	30.7	5.0	24
25	29.6	29.3	26.1	27.3	26.6	24.6	20	14.8	12.9	10.6	4.7	4	4.1	**S**	3.2	2.2	2.2	2.5	1.6	2	2.6	3.8	5.1	5.4	29.6	11.5	24
26	4.5	5.9	4.1	1.6	0	0	0.3	0.9	0.1	0	0	0	**S**	0.3	0.1	0	0	0.2	0.5	0.3	0.5	1.3	1.3	3	5.9	1.1	24
27	2.5	8.8	6.3	9.9	14.8	18.3	17.6	12.6	16.2	8.6	1	**S**	0.7	0.6	0.6	0.5	0.5	1.2	1.7	1.3	9.6	16	22.6	20.6	22.6	8.4	24
28	11.5	16.3	14.6	17.2	16	15.2	19.4	13.6	9.1	6.9	**S**	2.3	1.7	1.4	1.6	2.6	1.7	2.1	1.1	11.8	9.3	4.5	8.2	6.1	19.4	8.4	24
29	7.9	9.8	9.7	8.1	7.8	6	3.2	0.9	0.1	**S**	1.5	1.6	1.2	1.5	1.2	0.6	0.2	0.1	0.9	12.3	13.3	3.6	0	0	13.3	4.0	24
30	0	0	0	0	0	0.1	0.3	0.1	**S**	0.4	0.1	0.1	0.2	0.1	0	0	0	0.6	2.4	6.2	7.5	8.4	9	11.1	11.1	2.0	24
31	17.7	11.5	12.9	10.9	14	15.9	14.8	**S**	5.2	1.3	1	1.4	0.8	0.8	0.9	1.2	1.7	1.9	2.9	5.1	5.6	4.7	3.7	4.3	17.7	6.1	24
HOURLY MAX	39	37	39	39	38	39	38	38	31	28	11	12	14	13	10	14	18	21	28	40	32	31	38	36			
HOURLY AVG	13.5	12.8	13.6	13.3	13.8	14.6	13.0	10.1	7.6	6.5	3.4	3.5	3.0	2.4	2.6	2.8	3.4	5.3	8.1	11.9	12.3	11.7	11.9	12.5			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

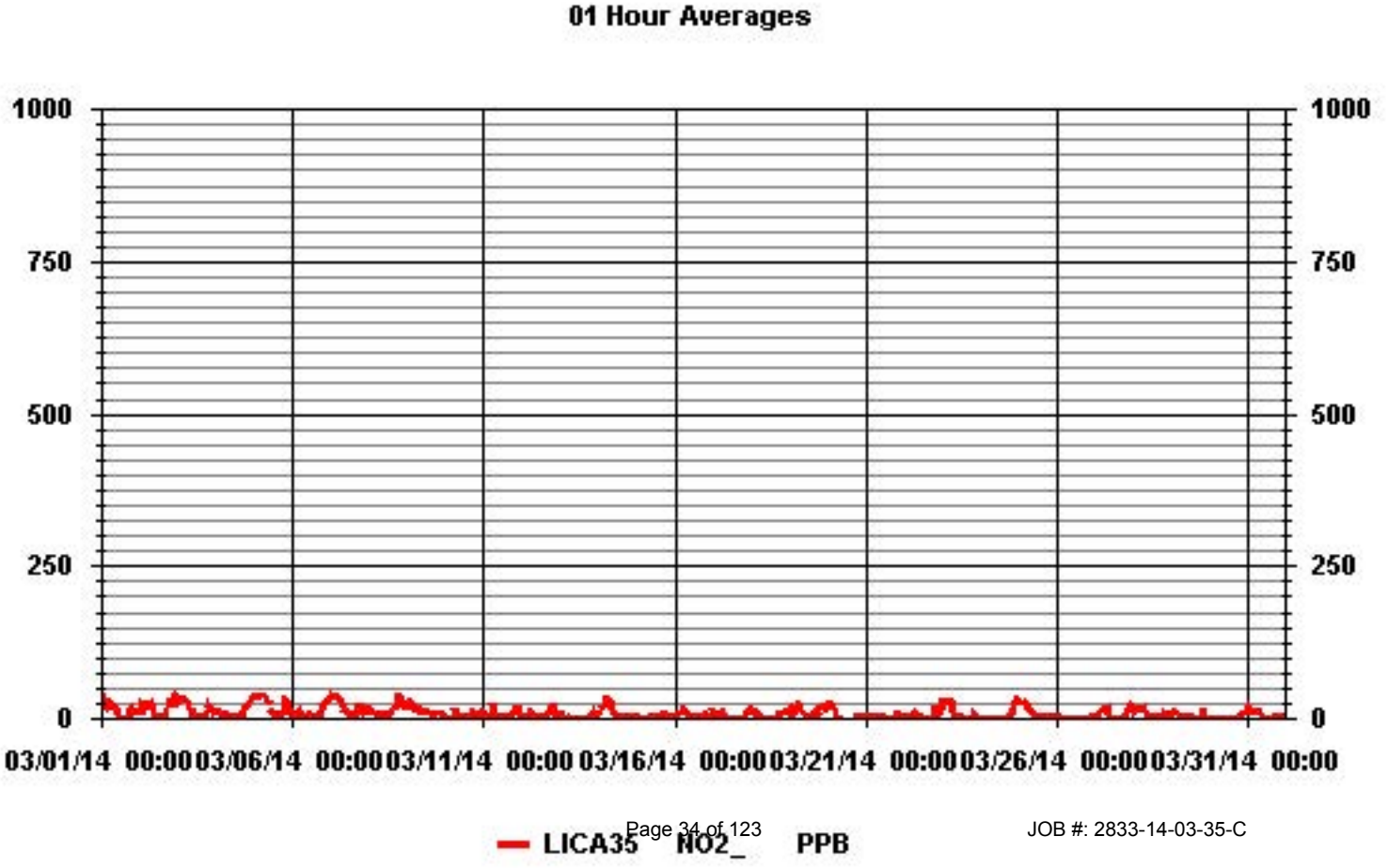
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 159 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	666					
MAXIMUM 1-HR AVERAGE:	39.6	PPB	@ HOUR(S)	19	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	23.1	PPB			ON DAY(S) VAR-VARIOUS	5

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	9.52		MONTHLY AVERAGE:	9.01	PPB



JOB #: 2833-14-03-35-C

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

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	30.7	29.9	35.3	29	30.3	31.8	29.4	24.1	21.5	20.8	17.9	5.4	3.5	1.4	**S**	2.5	0	1.1	29.4	26.3	12.2	11.3	12.3	15.1	35.3	18.3	24
2	14.4	37.6	19.9	30.2	21	29.3	23.2	26.7	23.2	6.2	3.2	2.7	4.6	**S**	3.1	3.2	6.4	37.9	45.5	38.2	22.3	34.8	41.2	38.8	45.5	22.3	24
3	29.4	31.7	32.2	32.7	32.5	33.3	34.1	28	12.2	24.9	6.7	6.2	**S**	2.2	2.3	3.3	6.1	18	21.6	35.6	38.7	21.6	13.7	13.9	38.7	20.9	24
4	12.5	12.4	12.4	5.7	8.4	3.7	3.1	12.1	11	21.5	2.7	**S**	2.1	3.2	3.4	2.3	24.2	16.9	32.8	30.6	47.2	47.4	38.3	40.5	47.4	17.1	24
5	37.7	42.3	36.7	38.6	43	41.2	41.5	39.8	33.5	29.3	**S**	12.9	11.5	7.4	5.2	6.6	5.8	11.2	30.4	45.1	34	27.4	19.9	16.5	45.1	***26.8***	24
6	2.3	3.9	9.9	12.9	20.8	11.5	7.8	2.3	3.3	**S**	4.2	***188.7***	2.5	0	0	0	0	0	32.5	29	40	39.8	33.8	39.5	***188.7***	21.1	24
7	39.1	38.9	54	36.1	38.2	32.7	36.6	24.8	**S**	12.5	10.2	8.8	7.2	6.2	5.9	12.9	11.2	31.5	41.8	32.5	26.7	12.2	15.9	17	54	24.0	24
8	16.1	12	10.2	10.5	11	9.2	9.6	**S**	9.7	7.1	5.8	5.8	6.9	7.7	11.9	18.8	21	28.4	33	42.5	37.9	30.2	48.5	28.6	48.5	18.4	24
9	25	33.8	34.3	37.2	25.9	16	**S**	20.7	13.7	12	10.3	12.2	16.3	13.1	12.3	7.2	6.8	7.2	8.1	11.2	15.1	38.9	10	6.5	38.9	17.1	24
10	5.3	6.8	0.1	0.2	9.6	**S**	15.5	4.7	4.1	2.2	0	0	0.8	2.3	4	2.7	2	19.5	23.8	10.5	6	2.7	33.3	13.1	33.3	7.4	24
11	12.3	9.2	10.6	5.1	**S**	26.3	16.6	11.1	3.1	2.7	0.8	1.8	2.4	2.1	1.9	1.9	3.9	33.3	9.8	16.2	17.9	19.2	18.1	11.9	33.3	10.4	24
12	4.7	5	2.9	**S**	7.2	25.5	8.9	4.7	2.6	2.1	1.9	1.8	3	2.5	3.1	5.5	10.2	17.6	23.2	18.4	33.4	14.3	9	10.8	33.4	9.5	24
13	16.4	1.7	**S**	0.3	0	6.8	5	0	0	0	0	0	0	0	0	0	0	1.3	8.4	3.2	7	18.4	4.9	15.7	18.4	3.9	24
14	13.3	**S**	22.6	25.4	32.8	35.6	33.7	33.1	21.9	16.9	11	5.5	2.5	0.5	0.6	2.9	4.9	5.7	6.8	6.5	2.2	1.7	1.9	3.1	35.6	12.7	24
15	**S**	3.4	2.9	1.8	0.6	1.9	0.8	2.7	3.1	4.2	2.5	2.9	4.7	2.8	3.2	3.5	19.6	20.8	16.5	9.9	11.1	7.3	5.9	**S**	20.8	6.0	24
16	6.1	6.7	9.5	13.1	19	21.8	25.3	20.8	4.5	3.4	1.5	2.5	1.3	1.1	1.6	1	2.9	2.9	9.4	12.2	13.1	4.8	**S**	19.9	25.3	8.9	24
17	8.4	6.1	9.9	8.4	8.2	11.1	16.9	6.6	0	0	0	0	0	0	0	0	0	0	0	2.5	20.5	**S**	14.2	21.2	21.2	5.8	24
18	19.5	15	23.8	24.4	8.7	7.4	8.6	4.5	1.2	0	0	0	0	0	0	1.2	2.9	12.8	14.8	15.6	**S**	12.6	10.6	11.7	24.4	8.5	24
19	16.9	11.3	9	19.9	24	26.6	26.7	17.8	14	10.9	6.4	4	7	4.3	5.8	10.5	15.7	17.3	10.7	**S**	25.2	23	21.4	16.2	26.7	15.0	24
20	30.9	26.2	26.2	19.8	24.5	4.5	0.6	0	0	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1.7	**S**	2.7	2.9	2.5	2.7	3.3	30.9	9.9	24
21	3.7	3.5	3.7	3.2	2.9	2.7	3.2	3.1	**C**	**C**	1.7	1.6	1.4	1.7	1.1	1.3	1.5	**S**	2.5	18.4	18.6	3.6	4.3	4.8	18.6	4.2	24
22	4.3	3.6	6.3	6.8	9.5	21.4	26	12.9	6.1	5.7	4.8	2.6	1.6	1	0.8	1	**S**	1.8	10.7	31.6	21.2	23.7	16.8	27.6	31.6	10.8	24
23	35.6	33	36.2	31	33.2	30.9	19.7	11.7	3.8	6	4	3.9	4.7	3.5	2.9	**S**	2.3	1.4	38.7	37	12.4	4.4	4.9	4.3	38.7	15.9	24
24	4.7	2.3	2.2	4.7	1.2	2	1.7	1.7	1.9	1	1.1	1	0.9	0.8	**S**	1.5	1.2	0.9	3.3	12.5	35	35	33.9	33.3	35	8.0	24
25	33.3	34.8	29.3	29.4	29.4	29.2	24.1	17.8	14.4	12.9	6.5	6	5.1	**S**	4.9	4.1	4	6.4	3	3.9	6.3	6.6	7.9	7.6	34.8	14.2	24
26	9.9	8.6	7.1	4.9	1.8	1	2.3	2.3	2.1	1.4	1.3	1.3	**S**	1.7	1.1	1.2	1.3	1.3	1.5	1.3	1.8	3	3.5	5.9	9.9	2.9	24
27	4.4	14.5	10.3	12.9	30.7	21.6	22.5	19.8	19.2	14	5.9	**S**	1.4	1.2	1.2	1.3	1.3	3.6	3.7	2.4	19.7	25.4	25.9	28.8	30.7	12.7	24
28	14.5	20.2	16.5	31.7	29.5	22.6	24.5	18.5	13	8.2	**S**	4.5	3.4	3.8	4.9	8.7	5.2	8.2	3	50.8	37.1	20.6	19.5	11.2	50.8	16.5	24
29	12.9	12.7	12.1	11.7	9.7	10.1	5.3	2.5	1.5	**S**	2.6	2.9	2.2	2.5	2.7	1.8	1.7	1.5	4.8	37.6	28.1	24.9	1.1	1.2	37.6	8.4	24
30	1.1	1.1	1.2	1.2	1.2	1.5	1.7	1.2	**S**	1.5	1.1	1	0.9	1	0.8	0.7	0.8	1.9	6.4	10.5	12.4	13	13.1	18.9	18.9	4.1	24
31	21.9	14.3	16.8	13.9	17.8	18.9	19	**S**	8.4	3.3	3.3	3.9	1.7	1.5	1.6	2	2.6	2.9	5.8	7.9	8.6	9	6.5	5.7	21.9	8.6	24
HOURLY MAX	39	42	54	39	43	41	42	40	34	29	18	189	16	13	12	19	24	38	46	51	47	47	49	41			
HOURLY AVG	16.2	16.1	16.8	16.8	17.8	17.9	16.5	13.0	9.0	8.5	4.2	10.4	3.6	2.7	3.1	3.8	5.7	10.5	16.1	20.1	20.5	18.0	16.4	16.4			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 664

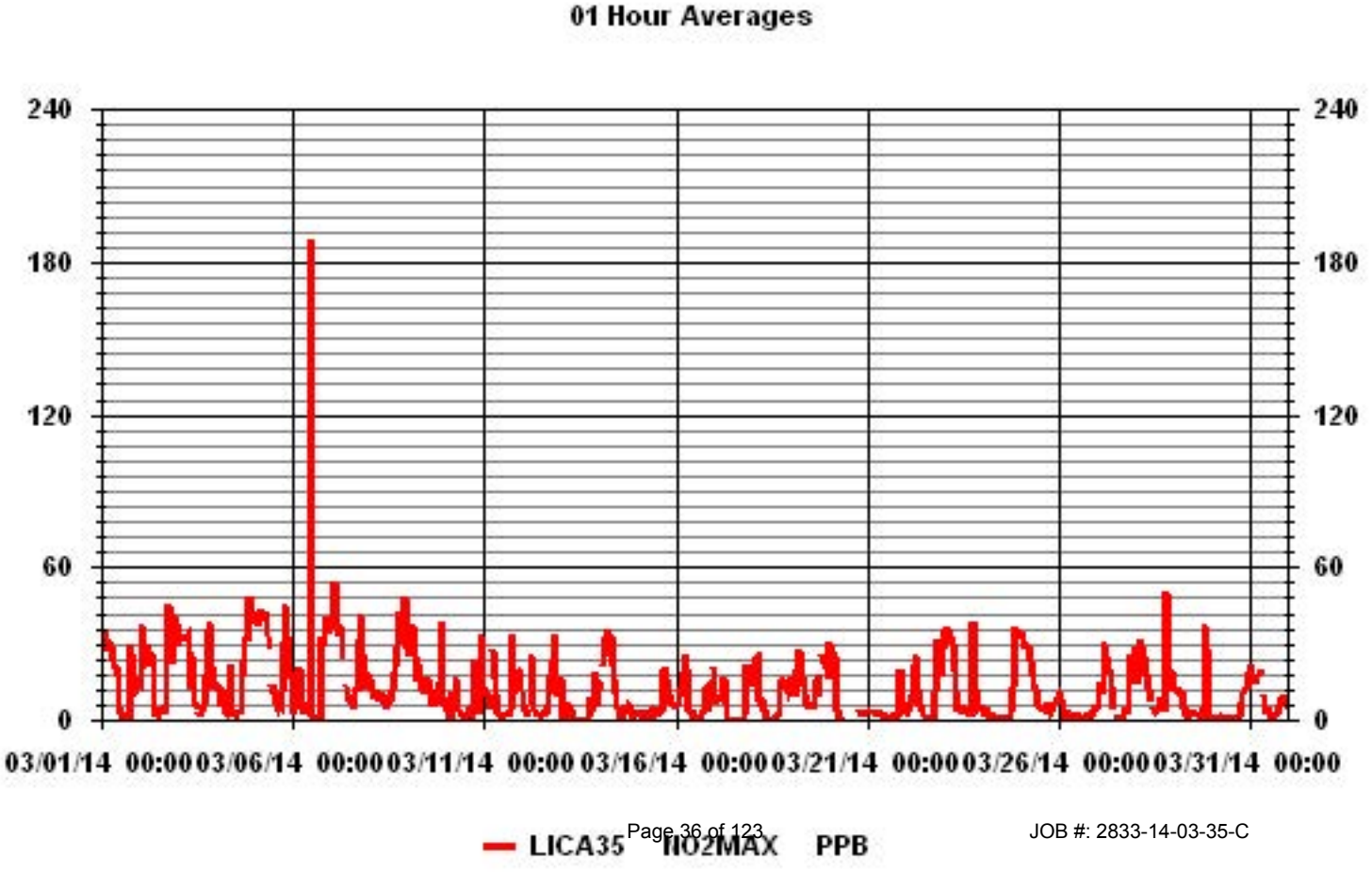
MAXIMUM INSTANTANEOUS VALUE: 188.7 PPB @ HOUR(S) 11 ON DAY(S) 6

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 10 HRS

STANDARD DEVIATION: 13.77



JOB #: 2833-14-03-35-C

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

March 2014

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
<	50.0	2.85	3.56	1.71	.99	8.84	10.55	4.70	3.13	2.85	1.42	2.56	11.98	17.11	14.12	10.12	3.42	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.85	3.56	1.71	.99	8.84	10.55	4.70	3.13	2.85	1.42	2.56	11.98	17.11	14.12	10.12	3.42	

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
<	50.0	20	25	12	7	62	74	33	22	20	10	18	84	120	99	71	24	701
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	20	25	12	7	62	74	33	22	20	10	18	84	120	99	71	24	

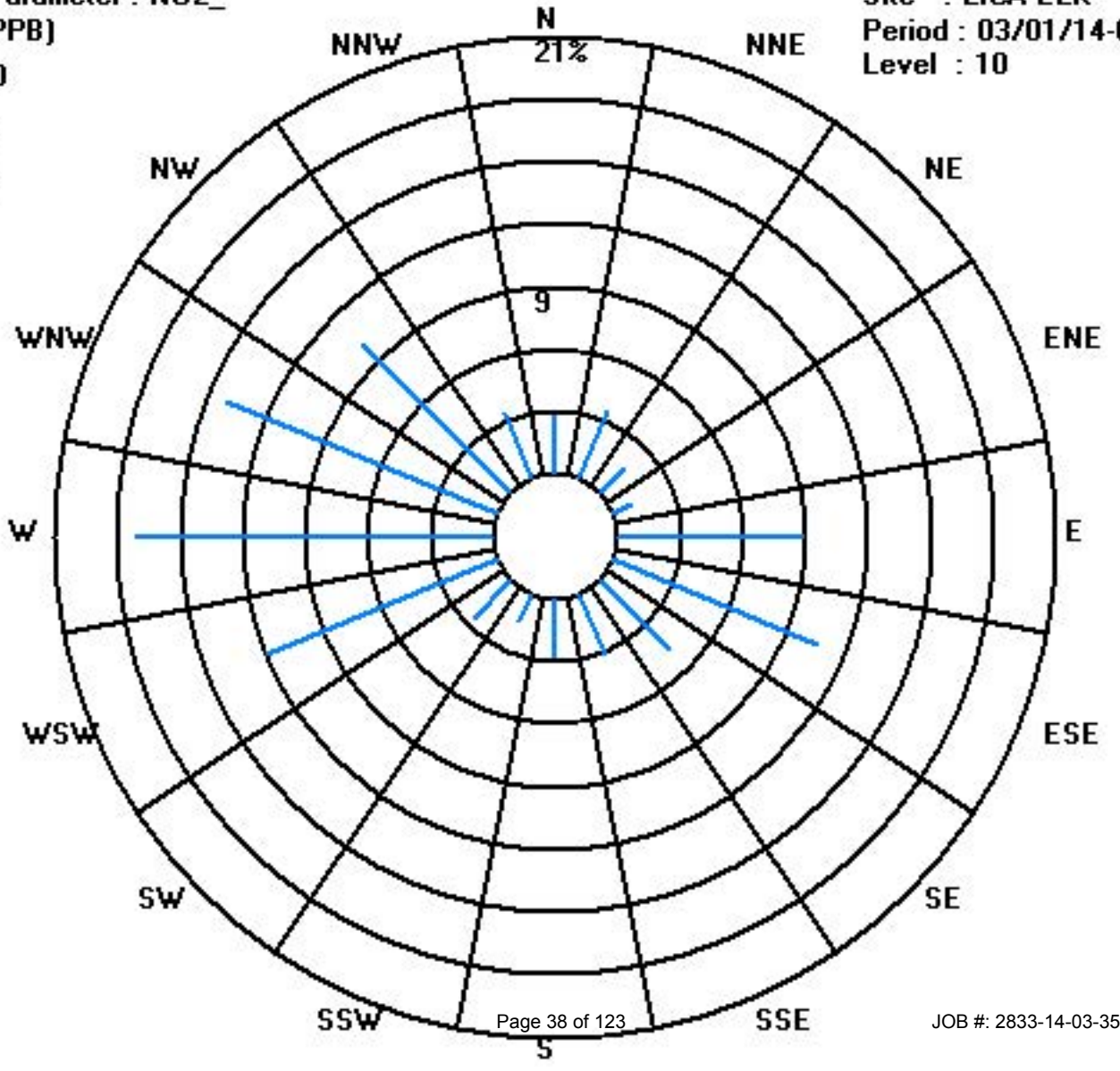
Calm : .00 %

Total # Operational Hours : 701

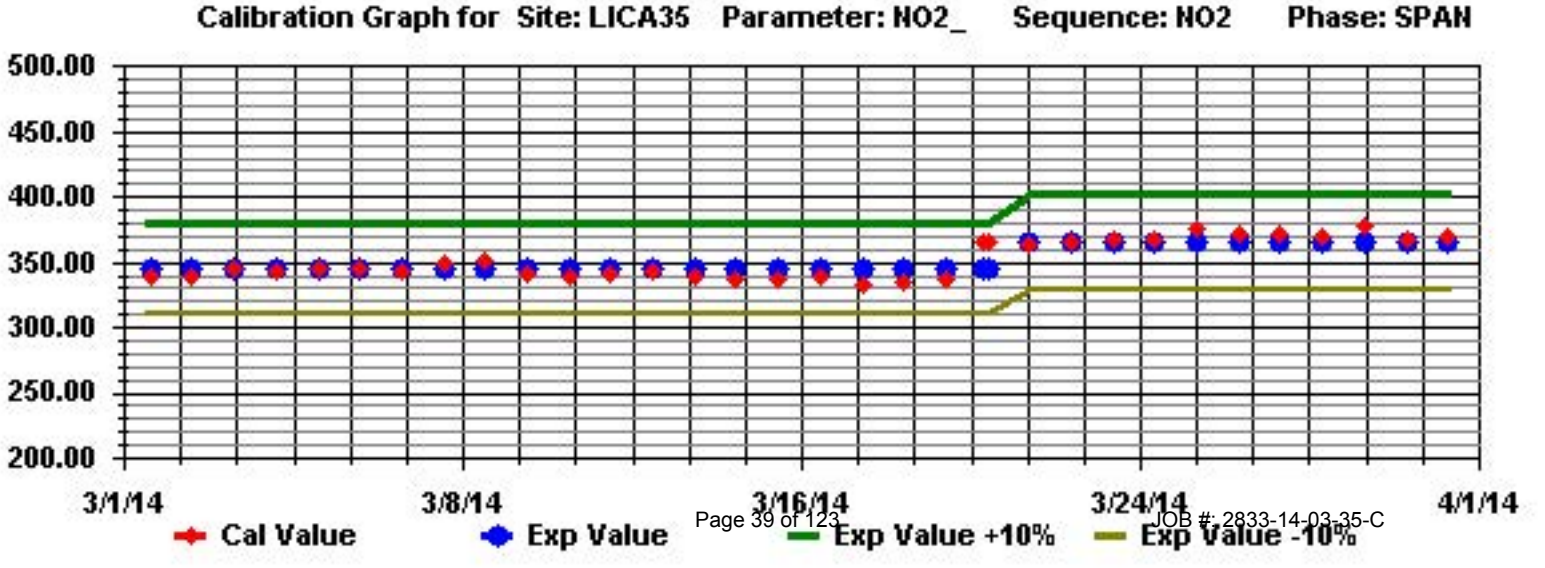
Logger : 35 Parameter : NO2_
Class Limits (PPB)

>= 210.0
< 210.0
< 110.0
< 50.0

Site : LICA-ELK
Period : 03/01/14-03/31/14
Level : 10



JOB #: 2833-14-03-35-C


Calibration Graph for Site: LICA35 Parameter: NO2_ Sequence: NO2 Phase: SPAN
500.00
450.00
400.00
350.00
300.00
250.00
200.00
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

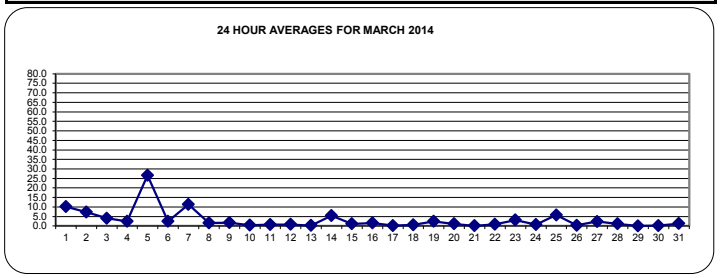
NITRIC OXIDE (NO) hourly averages in ppb

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	14.5	5.2	17.5	7.7	18.2	19.5	18.2	14.8	33.3	46.1	20.8	6.4	3.4	0.8	S	2.1	0.4	0.1	1.7	1.8	0.7	0.7	0.4	0.4	46.1	10.2	24
2	0.5	14.6	1	4.5	2.6	8.5	2.8	18.8	29	7.2	5.3	4.2	6.4	S	4.3	3.2	2.5	8.3	9.1	12.3	2.5	4.1	11.4	5	29	7.3	24
3	1.6	3.2	4.2	5	3.3	4	10	6.6	7.4	18.4	9.1	6.3	S	2.6	2.1	1.7	1.6	1	0.2	2.5	1.6	0.6	0	0	18.4	4.0	24
4	0.1	0	0	0	0	0	0	1.5	3.6	3.1	2	S	2.4	2.3	2	1.7	2.7	3.2	5.5	3.4	3.8	3.8	8.1	7.4	8.1	2.5	24
5	9.8	20.3	24.8	74.8	81	74	62.7	***82.8***	62.8	67.8	S	18.6	12	7	3.7	2.1	1.2	0.5	0	3.4	1.2	0.2	0.1	0	***82.8***	***26.6***	24
6	0	0	0	0	0	0	0	0	0.6	S	2.5	19.7	1.9	0.8	0.4	0.2	0.1	0	3.2	1.5	7.8	6.3	5.2	4.8	19.7	2.4	24
7	11.1	11.9	33.4	53.3	28.2	16.1	11.4	8	S	14.5	12.3	12.2	8.9	4.6	3.7	4.4	3.3	8.8	6.4	3	2.9	0	0	0	53.3	11.2	24
8	0	0	0	0	0	0	0	S	3.1	2.6	2.7	2.5	3.2	3.4	3.6	4.4	4	1.8	0.3	1.6	0.7	0.6	1.6	0.3	4.4	1.6	24
9	0.2	0.7	0.6	1.1	0.3	0	S	1.7	2.2	4.1	4.8	5.9	7.7	4.7	1.9	1.2	0.7	0	0	0	0.3	0	0	0	7.7	1.7	24
10	0	0.1	0	0.2	0.2	S	0.2	0	1	1.2	0.1	0	0.5	0.9	1.9	0.5	0	0.8	0.3	0	0	0	0.7	0	1.9	0.4	24
11	0	0	0	0	S	1.4	0.9	1	1.7	1.3	1.1	1.2	1.3	1.4	1	0.6	0.7	0.9	0.4	0.4	0.5	0.6	0.5	0.2	1.7	0.7	24
12	0	0	0	S	0	0.5	0	0.2	0.7	1.5	1.6	1.6	2	1.7	1.7	2	2.2	1.3	0.6	0.4	0.3	0	0	0	2.2	0.8	24
13	0	0	S	0	0	0	0.3	0.3	0.2	0.3	0.3	0.5	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.1	0.1	0.2	0	0.2	0.5	0.2	24
14	0.4	S	0.4	1.2	5.4	13.8	25.3	27.5	17.5	13.7	9.2	3.3	1.6	0.7	0.9	1.1	1.1	0.6	0.7	0.8	0.1	0	0	0	27.5	5.4	24
15	S	0.6	0.3	0.1	0.2	0.2	0.3	0.5	0.7	1.5	1.6	2.1	2.2	1.8	1.7	1.7	2.7	2.5	1.7	0.4	0.4	0.2	0	S	2.7	1.1	24
16	0.3	0.1	0.2	0.3	0.7	2.3	7.6	6.1	2.5	2.3	1.5	1.7	1.5	1.4	1.5	1	1.2	0.8	0.4	0.5	0.4	0.1	S	0.5	7.6	1.5	24
17	0	0	0.2	0	0	0	0.6	0	0	0.4	0.4	0.1	0.2	0.2	0.1	0	0	0	0	0	0	S	0.4	0.6	0.6	0.1	24
18	0.6	0.5	0.8	0.7	0.3	0.4	0.8	0.7	1	1	0.8	0.9	0.7	0.5	0.2	0.9	0.8	1.1	0.4	0.3	S	0.1	0	0	1.1	0.6	24
19	0.2	0	0	0.6	2.5	2.4	2.7	6.6	8.3	6.6	2.8	2.6	4.3	2.8	2.6	3.7	3.2	2.7	0.1	S	0.7	0.7	0.1	0.6	8.3	2.5	24
20	3.6	2.2	5.1	2.6	2.1	0.1	0.1	0.1	0.3	C	C	C	C	C	C	C	C	0	S	0	0	0	0	0	5.1	1.1	24
21	0	0	0	0	0	0	0	0.1	C	C	0.4	0.2	0	0.2	0	0	0	S	0.1	0.1	0.1	0	0	0	0.4	0.1	24
22	0	0	0	0.1	0	0.6	2.5	2.5	2.7	3	2	1	0.3	0	0	0	S	0.2	0.2	1.6	0.9	1.4	0.3	0.3	3	0.9	24
23	6.4	3.3	7.1	15.8	13	10.5	2.3	3.2	1.5	2.2	0.8	1.1	1.5	0.8	0.3	S	0.1	0	0.6	0.6	0	0	0	0	15.8	3.1	24
24	0	0	0	0	0	0	0	0.1	0.4	0.3	0.4	0.4	0.3	0.3	S	0.2	0	0	0	0.3	1.8	3	3.1	4.2	4.2	0.6	24
25	4.4	22.1	22.8	14.7	9.8	14.6	6.5	10	9.8	7.8	2.4	1.5	1.5	S	1.4	0.7	0.5	0.4	0	0	0	0	0.1	0.1	22.8	5.7	24
26	0.2	0	0	0	0.1	0	0	0.2	0.4	0.5	0.6	0.6	S	0.9	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.9	0.3	24
27	0.4	0.8	0.6	1.1	3.7	1.7	6.7	8.9	18.3	7.9	1.4	S	0.2	0	0	0	0	0	0	0	0.3	0.6	0.3	0.7	18.3	2.3	24
28	0	0	0.1	1.2	0.3	0.1	3.4	5.1	4.1	3	S	1.5	0.8	0.5	0.4	0.6	0.3	0.3	0	2.2	0.8	0.1	0.9	0	5.1	1.1	24
29	0	0	0	0	0	0	0	0	0	S	0.2	0.3	0	0	0	0	0	0	0	0.5	0.1	0	0	0	0.5	0.0	24
30	0	0	0	0	0	0	0	0	S	0.6	0.3	0.1	0.2	0.1	0	0	0	0.1	0.3	0.5	0.2	0.4	0.4	1.1	1.1	0.2	24
31	2	0.4	1.4	0.3	2.3	4.5	8.3	S	4.8	1.1	0.9	1.5	0.8	0.4	0.3	0.1	0.2	0.3	0.3	0	0	0	0	0	8.3	1.3	24
HOURLY MAX	15	22	33	75	81	74	63	83	63	68	21	20	12	7	4	4	4	9	9	12	8	6	11	7			
HOURLY AVG	1.9	2.9	4.0	6.2	5.8	5.8	5.8	7.1	7.8	8.1	3.2	3.5	2.4	1.5	1.3	1.2	1.0	1.2	1.1	1.3	0.9	0.8	1.1	0.9			

STATUS FLAG CODES

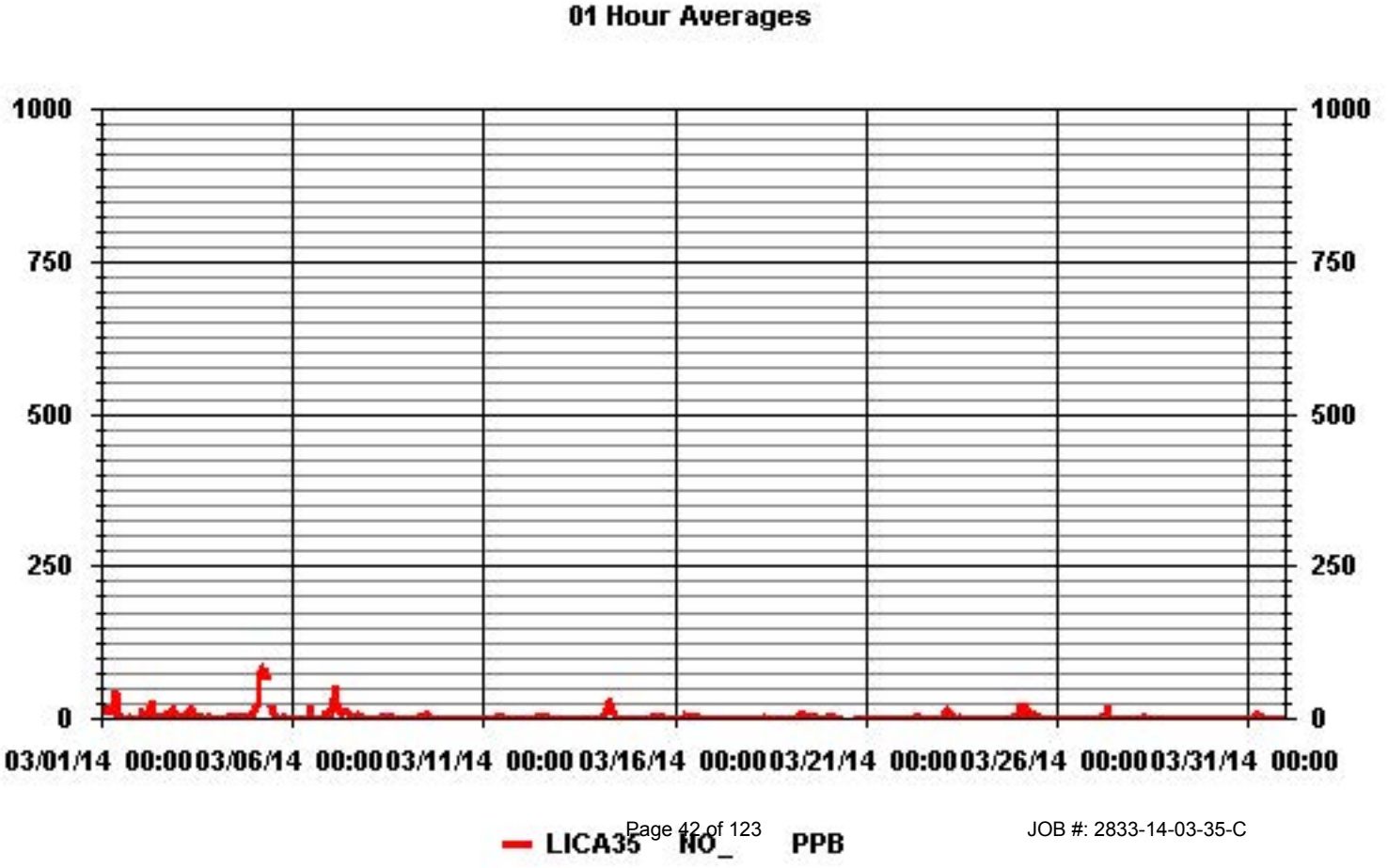
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0						
NUMBER OF NON-ZERO READINGS:	521						
MAXIMUM 1-HR AVERAGE:	82.8	PPB	@ HOUR(S)	7	ON DAY(S)	5	
MAXIMUM 24-HR AVERAGE:	26.6	PPB			ON DAY(S) VAR-VARIOUS	5	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		744	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	8.74		MONTHLY AVERAGE:		3.18	PPB	



JOB #: 2833-14-03-35-C

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

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	28.5	27.2	43.5	25.6	33.6	35.3	36.5	26.6	60.5	63.6	59.3	10.1	5.8	1.3	**S**	5.2	2.3	1.8	9.4	6.8	3.2	3.7	2.6	2.3	63.6	21.5	24
2	2.9	97.7	3.5	34.7	5.8	16.5	10.2	43.1	54.3	11	8.5	7.4	11.5	**S**	6.4	5.7	6	45.1	43.1	23.3	8.8	9.6	19.4	16.7	97.7	21.4	24
3	4.3	8.6	8.3	8.9	9.9	11.1	21.6	13.4	10	52.6	11.5	10.3	**S**	6.1	6.2	5	4.9	18.4	2.6	20.2	19.9	6.3	1.7	1.8	52.6	11.5	24
4	1.7	1.7	1.9	1.5	1.7	1.4	1.7	5.3	8.6	16.7	4.1	**S**	5.3	5.8	4.7	4.6	23.7	7.4	27.7	34.6	49.1	24.9	19.6	19.8	49.1	11.9	24
5	16	44.3	59.6	92.3	137.2	119	93.4	100.7	79	77.3	**S**	27.8	19.8	12.4	7.6	5.1	4.3	3.3	3.5	34.4	4.2	3	2.6	1.9	137.2	***41.2***	24
6	1.3	1.3	1.5	1.5	2	2.8	2	1.9	3	**S**	9.6	***571.3***	5.5	2.4	1.9	1.8	1.6	1.3	17.2	7.1	77.4	26.9	17.6	13.3	***571.3***	33.6	24
7	16.4	32.4	70.6	76.8	61.3	31	59.5	14.8	**S**	18.8	14.8	15.3	14.1	9	7.3	13.4	9	34.6	28.4	13.2	7.9	2.2	2	2.1	76.8	24.1	24
8	1.9	1.8	1.5	1.5	2.8	1.9	2.5	**S**	5.7	4.8	4.9	4.5	5.1	5	6.3	7.8	6.8	4.8	2.3	6.1	2.8	2.8	30	2.7	30	5.1	24
9	1.6	2.5	2.3	6.6	1.7	1.4	**S**	4.9	3.8	7.4	7.4	7.8	12.3	6.6	4.9	2.9	2.5	1.3	1	1.2	1	20.8	1.1	1.2	20.8	4.5	24
10	1.2	1.3	1.3	1.4	1.5	**S**	2.8	2	3	3.7	2.2	2	2.7	3.9	4.7	3.1	1.6	3.1	3.6	1.2	1.3	1.3	21.5	1.4	21.5	3.1	24
11	1.3	2.1	1.1	1.1	**S**	4.3	2.8	2.1	3.5	3.5	2.9	3.5	4.1	3.7	3.1	3	2.1	23.8	3.7	1.9	1.8	1.9	1.6	1.4	23.8	3.5	24
12	1.1	1	1.1	**S**	1.4	3.5	1.4	1.5	2.6	3.2	3.3	3.3	3.8	3.6	3.3	3.6	5.2	3.9	3.4	2.3	2.4	1.3	1.1	1.3	5.2	2.5	24
13	1.3	1.2	**S**	1.3	0.8	1.2	1.5	1.4	1.4	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.1	1.1	1.3	1.1	1.3	1.6	1.3	24
14	2.5	**S**	2.3	6	11.1	37.7	40.7	42.3	22.9	23	14.7	6.3	4.2	2.7	2.6	3.4	3.2	2.5	2.7	2.7	1.7	1.2	1.5	1.5	42.3	10.4	24
15	**S**	1.9	1.7	1.4	1.6	1.8	1.6	1.9	2.7	3.5	3.8	3.8	5.3	3.5	3.2	3.1	11.1	11.1	5.3	3.7	2.2	2.7	1.3	**S**	11.1	3.6	24
16	1.7	1.3	2.9	3.2	5.8	9	26.9	18.8	4.9	3.8	3	4.2	3.1	2.8	2.8	2.3	2.4	2.3	1.8	2.1	1.7	1.2	**S**	4.2	26.9	4.9	24
17	1.4	1.4	3.5	1.4	1.2	1.2	3.8	1.9	1.7	1.9	1.9	1.6	1.5	1.7	1.5	1.4	1.5	1.4	1.4	1.3	1.9	**S**	1.5	2.5	3.8	1.8	24
18	2.2	2.2	3.8	4.1	1.5	1.7	2.6	2.1	2.7	2.3	2.4	2.2	2.4	2.1	1.5	2.5	2.1	2.8	2.3	1.4	**S**	1.5	1.4	1.8	4.1	2.2	24
19	2	1.8	1.2	5.6	16.3	11.2	6	14	12	9.9	6.4	5.6	8.9	5.8	5.7	7.6	8.2	9.6	2.3	**S**	4	3.7	1.4	3.1	16.3	6.6	24
20	12.3	6.1	23.9	7.1	10.5	1.4	1.4	1.4	1.5	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1.1	**S**	0.9	0.8	0.9	0.9	0.9	23.9	4.7	24
21	0.8	0.8	0.7	0.8	0.8	0.8	0.9	1.3	**C**	**C**	1.6	1.4	1.1	1.3	0.8	1	0.8	**S**	0.9	0.9	0.8	0.7	0.7	0.7	1.6	0.9	24
22	0.6	0.6	0.7	0.8	0.7	4.4	9.2	3.8	3.9	4	3.2	2.1	1.2	0.6	0.6	0.5	**S**	0.8	0.8	17.9	2.9	4.5	0.8	3.4	17.9	3.0	24
23	15.2	8.9	17.6	23.1	21.4	23.6	4.5	6.7	2.3	4	1.5	1.7	2.5	1.5	1	**S**	1.2	0.8	13.7	8.1	1	0.6	0.5	0.5	23.6	7.0	24
24	0.6	0.7	0.6	0.6	0.7	0.7	0.5	0.7	1.1	0.9	1.1	1.1	0.9	0.9	**S**	1.1	0.8	0.7	0.6	2.6	10.1	10.1	6.2	7.9	10.1	2.2	24
25	30.4	58.8	27.3	32.1	16.7	56.2	17.6	13.1	12.5	10.9	4.4	3.1	2.7	**S**	2.1	1.2	1	1.2	0.6	0.2	0.3	0.3	0.3	0.6	58.8	12.8	24
26	0.9	0.8	0.4	0.4	0.5	0.4	0.4	0.6	0.8	0.9	0.9	0.9	**S**	1.1	0.8	0.6	0.6	0.5	0.5	0.5	0.5	0.6	0.5	0.5	1.1	0.6	24
27	0.6	3.1	1	4.1	35.5	2.8	13.7	16.3	23.7	13.7	4.8	**S**	1.4	1	0.8	1	0.8	0.8	0.6	0.6	4.8	2.8	1.8	3.7	35.5	6.1	24
28	1	0.9	1.3	6.8	5.2	1.5	8.8	8	6.5	4.4	**S**	2.7	2.1	1.6	1.6	3.1	1.9	2.2	0.6	38.4	14.7	3.8	5.4	0.7	38.4	5.4	24
29	0.7	0.5	0.5	0.3	0.5	0.4	0.3	0.6	0.6	**S**	1.1	1.3	0.9	0.9	0.8	0.8	0.7	0.7	0.6	10.3	3.1	1.7	0.6	0.5	10.3	1.2	24
30	0.6	0.6	0.6	0.4	0.6	0.7	0.7	1	**S**	1.3	1.3	0.8	0.9	0.9	0.5	0.8	0.8	1.1	2	3.2	1.6	2.7	3.2	8.2	8.2	1.5	24
31	5.9	1.7	5.7	3.8	9.3	9	14	**S**	7.3	3.5	4.8	4.9	2.1	1.4	1.4	1.2	1.6	1.5	2.3	1.4	2.4	0.8	1.1	0.9	14	3.8	24
HOURLY MAX	30	98	71	92	137	119	93	101	79	77	59	571	20	12	8	13	24	45	43	38	77	27	30	20			
HOURLY AVG	5.3	10.5	9.7	11.8	13.3	13.1	13.0	12.1	12.2	13.0	6.7	25.3	4.7	3.3	3.1	3.3	3.8	6.4	6.2	8.3	7.8	4.9	5.0	3.6			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 702

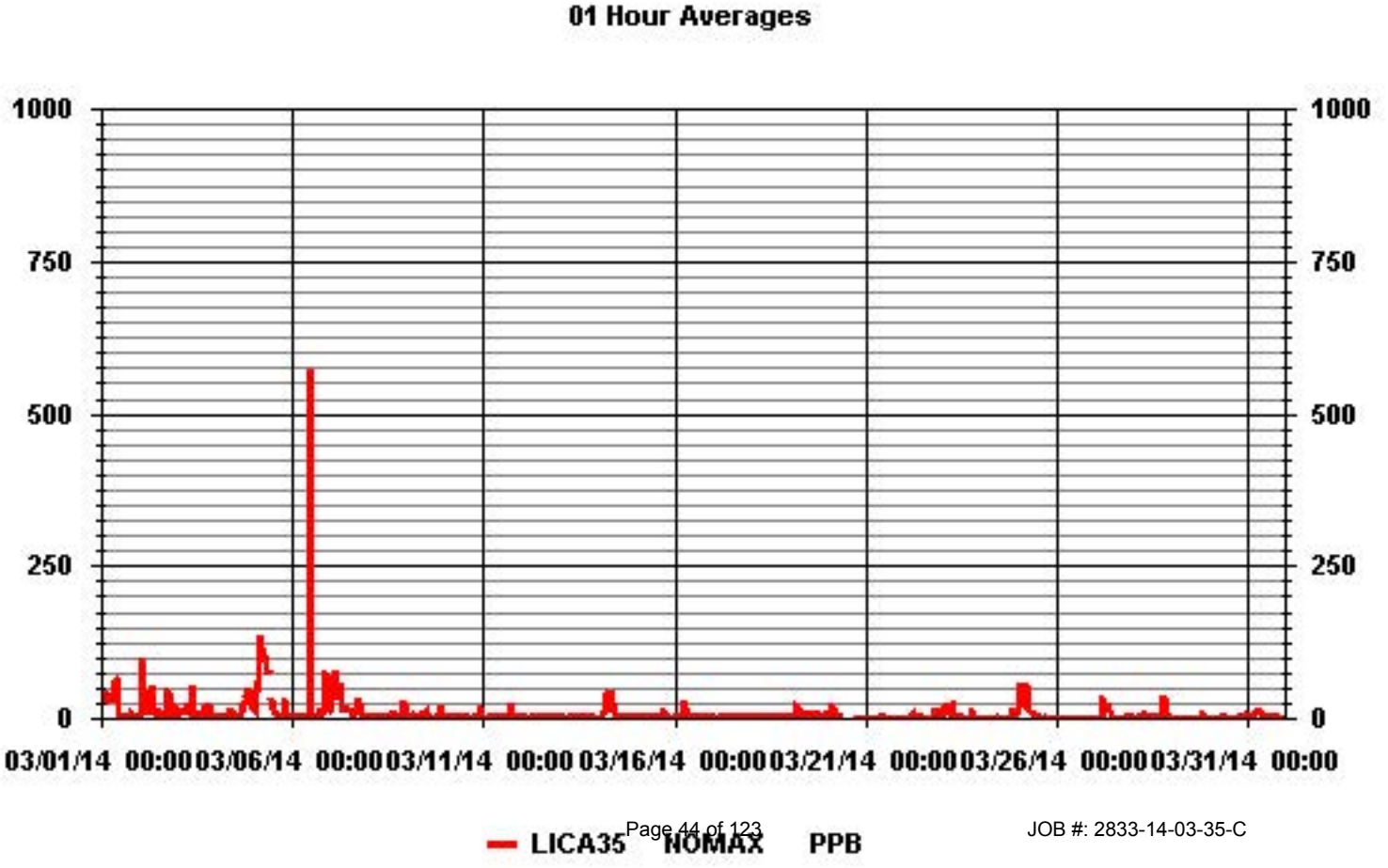
MAXIMUM INSTANTANEOUS VALUE: 571.3 PPB @ HOUR(S) 11 ON DAY(S) 6

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 10 HRS

STANDARD DEVIATION: 26.03



JOB #: 2833-14-03-35-C

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

March 2014

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
<	50.0	2.84	3.56	1.70	.99	8.68	10.54	4.70	3.13	2.99	1.42	2.27	11.96	16.95	13.81	9.97	3.27	98.86
<	110.0	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.28	.00	.14	.28	.14	.14	1.13
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.84	3.56	1.70	.99	8.83	10.54	4.70	3.13	2.99	1.42	2.56	11.96	17.09	14.10	10.11	3.41	

Calm : .00 %

Total # Operational Hours : 702

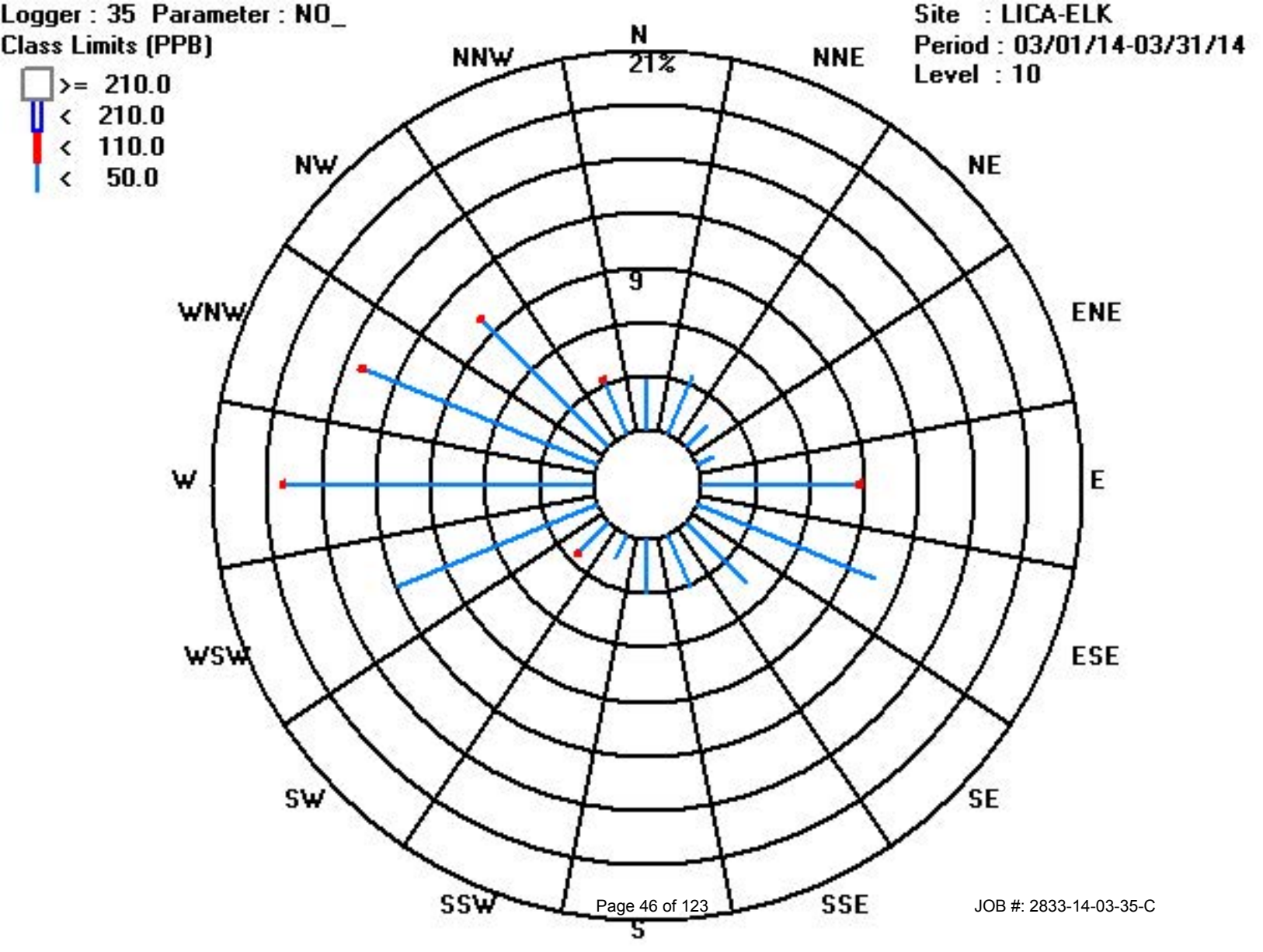
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	20	25	12	7	61	74	33	22	21	10	16	84	119	97	70	23	694
<	110.0					1						2		1	2	1	1	8
<	210.0																	
>=	210.0																	
	Totals	20	25	12	7	62	74	33	22	21	10	18	84	120	99	71	24	

Calm : .00 %

Total # Operational Hours : 702



JOB #: 2833-14-03-35-C

Oxides of Nitrogen

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

OXIDES OF NITROGEN (NOx) hourly averages in ppb

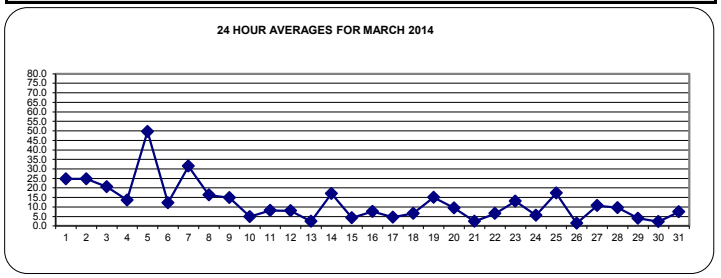
MST

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	41.6	23.3	45.7	30.3	46.8	48.7	44.7	36.1	51.2	63.3	29.9	10.4	6	2.1	**S**	4.6	1.3	1.2	15.6	19.9	10.7	11.9	10.1	13.4	63.3	24.7	24
2	12.7	35.6	17.1	25.7	22.3	35.8	20.5	42.7	46	13	9	7.5	11.1	**S**	8.5	7.1	7.3	25.5	37	41.2	19.7	35.2	48.9	38.7	48.9	24.7	24
3	28.7	34.1	36.7	38.3	36.5	34.6	40.1	25.7	17.9	31.3	16.8	12.2	**S**	5.3	4.4	4	5.4	5.6	12.1	24.7	19.7	16.3	9.8	12.9	40.1	20.6	24
4	12.9	10.7	10.6	5.3	5.9	3.9	2.4	9.7	11.7	9.1	5.4	**S**	4.5	4.4	4.4	4.3	7.8	12.9	23.1	23.4	24.8	30.5	42.2	42.9	42.9	13.6	24
5	46.1	56.9	59.6	113.6	118.5	112.6	100.7	***120.4***	93.9	95.8	**S**	30.9	21.3	13.5	9	7.5	6.1	8.5	12.7	34.6	31	20.3	17.1	11.3	***120.4***	***49.6***	24
6	2.1	2.6	5.4	8.9	12.4	5.8	6.1	2.7	4.1	**S**	5.6	31.3	4.1	2	1.6	1.6	1.6	1.5	16.2	24.2	32.5	33.9	35.3	38.4	38.4	12.2	24
7	50.3	48.6	72.8	89.6	63.4	49	43.2	29.5	**S**	28.2	23.4	21.9	16.9	10.7	9.2	12	11.2	29.4	28.3	24	22.5	9.5	11.9	16.6	89.6	31.4	24
8	15.1	11.6	10.2	9	9.8	8.4	8.2	**S**	11.9	8.7	8.4	8.1	9.8	10.9	13.5	18.3	21.7	20.7	21.8	41.2	32.7	27.3	26.4	19.5	41.2	16.2	24
9	20.7	27.6	30.1	27.8	20.8	13.9	**S**	18	14.1	14.8	14.6	17.5	22.1	17.7	11.5	8.3	6.6	4.9	6.7	9.8	11.7	9.8	7	5.6	30.1	14.9	24
10	3	3.4	0.1	0.5	2	**S**	13.5	5	5.2	4.4	1.5	1.6	2.7	3.7	6.6	3.6	2.1	12.2	12.3	6.9	1.8	1.7	8.3	9.7	13.5	4.9	24
11	9.9	7.8	5.7	3.9	**S**	22.2	12.6	8	5.8	3.5	2.7	2.8	2.9	3.3	2.6	2.3	4.4	7.3	8.8	11.4	15.9	17	17.4	7.5	22.2	8.1	24
12	4.6	4	3.8	**S**	6.7	16.1	6.8	4.3	3.6	4.2	4.3	4.3	5.2	4.6	5.4	7.7	9.9	11.3	18.2	14.2	25.2	7.6	5.1	7.3	25.2	8.0	24
13	8.8	1.1	**S**	1.2	0.8	3.2	2.5	0.6	0.4	0.3	0.3	0.5	0.3	0.4	0.4	0.4	0.4	0.8	2.6	2.7	4.2	10.8	3.9	9.4	10.8	2.4	24
14	11.4	**S**	19.6	22.1	36.9	46.1	59.1	56.6	36.5	27.6	18.7	8.3	4.3	2	2.4	3.5	5.1	5.4	7.6	5.9	3.1	2.4	2.8	3.3	59.1	17.0	24
15	**S**	3.2	2.4	0.7	0.7	1.5	0.9	1.8	2.1	3.7	3.4	3.8	4.4	3.7	4	4.5	9.1	11.4	11.6	5.4	6.9	5.1	4.6	**S**	11.6	4.3	24
16	5.6	6.5	5.8	8.2	9	19.5	23.4	19.1	7.2	5.3	3.1	3.2	2.9	2.7	3.2	2.3	3.4	3.1	6.1	9.7	8.8	3.4	**S**	12.9	23.4	7.6	24
17	5.8	5.7	8.1	7.6	7.8	8.8	12.1	3.4	0.6	1.3	1.5	0.5	0.6	0.4	0.3	0.1	0	0.1	0.3	2.2	6.2	**S**	13.3	17	17	4.5	24
18	16.2	11	14.6	12.8	6.6	5.9	6.3	4.5	2.9	1.9	1.2	1.5	1.1	0.8	0.4	1.9	2.8	6.6	6.3	10.9	**S**	13.3	10.7	10.2	16.2	6.5	24
19	15.6	9.1	8	14.7	20.8	25.6	25.9	21.8	22.2	17	8.6	7	10.5	7.4	8	11.3	12.4	15.7	9.8	**S**	20.3	21.4	14.6	16.4	25.9	15.0	24
20	28.7	25.5	28.8	21.8	19	2.9	1.3	0.2	0.8	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1.3	**S**	2.1	2.2	1.9	2.2	2.4	28.8	9.4	24
21	2.8	2.1	2.6	2.4	2.1	2	2.2	3	**C**	**C**	1.6	1.2	1	1.5	0.6	0.9	1	**S**	1.4	7.2	8.4	2	2.7	2.8	8.4	2.5	24
22	2.2	2.5	3.5	3.3	3.5	8	14.4	10.2	7.8	7.4	4.7	2.6	0.9	0.3	0.3	0.2	**S**	0.6	2.8	16.2	15.8	18	9.4	15.3	18	6.5	24
23	35.6	31.1	37.2	43.5	40.3	37.7	17.3	9.8	3.9	5.7	3.3	3.7	4.6	2.9	2	**S**	0.2	0	2.7	9.4	4	1.7	2	0.3	43.5	13.0	24
24	0.5	0.2	0.1	1.2	0	0.2	0	0.1	0.4	0.3	0.4	0.4	0.3	0.3	**S**	0.7	0.4	0.2	1.2	5.9	18.5	29.6	33.8	34.2	34.2	5.6	24
25	34	51.4	48.9	42	36.4	39.2	26.5	24.8	22.7	18.4	7.1	5.5	5.6	**S**	4.6	2.9	2.7	2.9	1.6	2	2.6	3.8	5.2	5.5	51.4	17.2	24
26	4.7	5.9	4.1	1.6	0.1	0	0.3	1.1	0.5	0.5	0.6	0.6	**S**	1.2	0.7	0.5	0.5	0.6	0.9	0.6	0.8	1.7	1.7	3.4	5.9	1.4	24
27	2.9	9.6	6.9	11	18.5	20	24.3	21.5	34.5	16.5	2.4	**S**	0.9	0.6	0.6	0.5	0.5	1.2	1.7	1.3	9.9	16.6	22.9	21.3	34.5	10.7	24
28	11.5	16.3	14.7	18.4	16.3	15.3	22.8	18.7	13.2	9.9	**S**	3.8	2.5	1.9	2	3.2	2	2.4	1.1	14	10.1	4.6	9.1	6.1	22.8	9.6	24
29	7.9	9.8	9.7	8.1	7.8	6	3.2	0.9	0.1	**S**	1.7	1.9	1.2	1.5	1.2	0.6	0.2	0.1	0.9	12.8	13.4	3.6	0	0	13.4	4.0	24
30	0	0	0	0	0	0.1	0.3	0.1	**S**	1	0.4	0.2	0.4	0.2	0	0	0	0.7	2.7	6.7	7.7	8.8	9.4	12.2	12.2	2.2	24
31	19.7	11.9	14.3	11.2	16.3	20.4	23.1	**S**	10	2.4	1.9	2.9	1.6	1.2	1.2	1.3	1.9	2.2	3.2	5.1	5.6	4.7	3.7	4.3	23.1	7.4	24
HOURLY MAX	50	57	73	114	119	113	101	120	94	96	30	31	22	18	14	18	22	29	37	41	33	35	49	43			
HOURLY AVG	15.4	15.6	17.6	19.5	19.6	20.4	18.8	17.3	15.4	14.6	6.5	7.0	5.3	3.8	3.9	4.0	4.4	6.5	9.2	13.2	13.2	12.5	13.1	13.4			

STATUS FLAG CODES

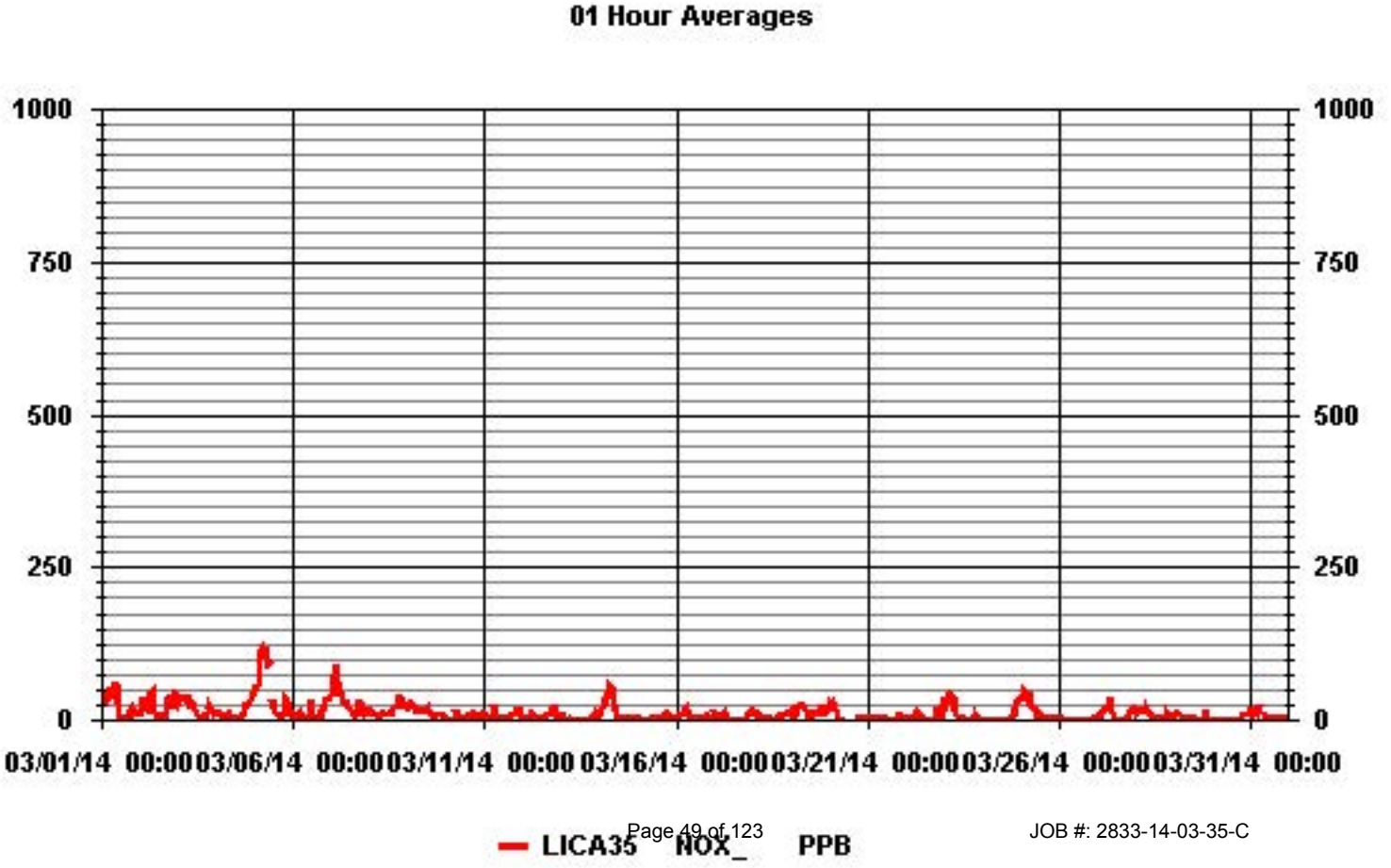
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	687					
MAXIMUM 1-HR AVERAGE:	120.4	PPB	@ HOUR(S)	7	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	49.6	PPB			ON DAY(S) VAR-VARIOUS	5
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	16.04		MONTHLY AVERAGE:		12.19	PPB



JOB #: 2833-14-03-35-C

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

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	59.1	57.2	74.7	54.3	63.4	62.8	65.6	49.1	82	84.1	76.7	15.7	9.4	2.8	**S**	7.1	1.4	1.9	38.5	30.9	14	14.1	14	16.6	84.1	38.9	24
2	16	121.6	22.6	54.5	25.5	43.5	30.8	65.6	74.9	16.6	10.8	9.5	15.8	**S**	9	8.2	12	82.2	88.4	61.4	29.6	43.9	57.9	51.8	121.6	41.4	24
3	32.7	39.9	39.8	40.8	41.7	44.2	51.4	40.7	20.3	72.4	17.2	16.1	**S**	7.2	7.8	7.5	10.1	35.3	23.5	54.1	54.8	27	14.4	14.9	72.4	31.0	24
4	13.1	12.9	13.2	5.9	9.3	4	3.3	14.8	18.7	34.6	5.8	**S**	7.2	9	7.9	6.7	48.2	23.1	60.1	65.3	92	72.1	57.5	55.9	92	27.9	24
5	54	83.9	96.4	130.3	179.6	152.7	132.5	139.3	112.1	106.7	**S**	38.9	29.4	18	11.2	10.4	8.4	12.6	32.2	74.8	36.4	28.5	20.7	16.4	179.6	***66.3***	24
6	1.7	3.3	9.4	12.4	20.9	12	7.7	2.4	4.3	**S**	12.1	***687.4***	6.3	1.8	1	1.1	1.2	1	49.5	35.5	114.8	65.9	51.4	52.9	***687.4***	50.3	24
7	55.1	70.4	123.5	110.4	96.9	62.3	95.9	34.6	**S**	30.5	24.2	23.4	20.8	14.5	12.4	24.8	19.5	63.2	67.3	44.4	33.9	13.4	16.3	18.3	123.5	46.8	24
8	17	12.5	10.6	11	12.9	10	10.9	**S**	14.9	11.2	9.9	9.4	11.3	12.4	17.7	26.4	27.7	32.9	34.8	45.6	40.1	31.1	74.4	30.9	74.4	22.4	24
9	26	35.2	35.8	43.4	27.2	16.9	**S**	24.7	16.1	18.4	17	19.3	28.1	19	16.4	9.6	9	8	8.4	11.6	15.4	58.5	10	6.8	58.5	20.9	24
10	5.4	6.9	0.2	0.2	9.9	**S**	17.3	6.2	7	5.5	1.8	1.6	3.3	6.2	8.8	5.7	3.6	22.5	26.8	11.3	7	3.4	52.7	14.1	52.7	9.9	24
11	13.5	10.1	11.2	5.8	**S**	31.6	20	13.8	7	6.7	4.2	5.9	7	6.1	5.5	5.7	6.6	57.3	14.5	18.3	20.2	21.5	20.5	14	57.3	14.2	24
12	6.4	6.9	4.5	**S**	8.5	29.2	10	6.4	5	5.2	5.1	4.9	6.3	5.9	5.8	8.1	14.7	20.1	24.9	20	35.8	15.8	10.3	11.9	35.8	11.8	24
13	17.7	2.7	**S**	2.3	1.2	8.9	6.7	0.5	0.4	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	3	10.4	4.6	8.6	20.7	6.4	17.6	20.7	4.9	24
14	16.3	**S**	25.2	30.9	43.1	70.2	73.4	76	45.3	40.1	26	11.6	6.5	3.1	3.1	6.1	8.5	8.3	9.5	9.3	4.2	3.1	3.5	5	76	23.0	24
15	**S**	4.3	3.3	2	0.8	2.6	1.1	3.5	4.2	6.5	5.2	5.4	8.7	4.7	4.9	5.1	30.3	30.9	20.6	12.8	12	8.1	6.1	**S**	30.9	8.3	24
16	6.8	7.6	11.9	15.2	24.6	29.6	51.6	39.5	9	6.6	4	6.2	4.1	3.3	3.8	2.5	4.4	4.5	10.7	13.3	14.3	5.4	**S**	23.9	51.6	13.2	24
17	9.1	7	13.2	9.4	9.1	11.8	19.9	8.2	0.3	1	1	0.5	0.3	0.3	0	0	0	0	0	3.1	22.4	**S**	16.2	24.2	24.2	6.8	24
18	22	17	28.4	29	10.7	9.4	11.9	7.3	4.2	2.6	2.5	2.4	2.4	1.9	0.8	3.9	5.3	16.3	17.6	17.2	**S**	13.9	12	13.5	29	11.0	24
19	18.3	12.7	10.4	24.4	40.5	38.1	33.2	32.2	24.8	21	13.2	9.6	15.9	9.8	11.4	17.8	24.1	27.4	12.2	**S**	29.3	26.8	22.5	18.5	40.5	21.5	24
20	43.1	32.4	50.1	26.3	34.8	5	1.4	0.6	0.6	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1.1	**S**	1.9	2.2	1.8	2.1	2.6	50.1	13.7	24
21	2.8	2.6	2.8	2.4	2.1	1.8	2.5	3.2	**C**	**C**	2	1.4	1.3	1.3	0.8	0.7	0.9	**S**	2.1	18.4	18.8	3.1	3.8	4.1	18.8	3.8	24
22	3.7	3	6	6.6	9.1	24.8	34.1	16	8.8	8.6	6.9	3.4	1.6	0.7	0.6	0.8	**S**	1.4	10.3	45.3	22.1	27.3	16.6	30.2	45.3	12.5	24
23	50.3	41.2	48.8	53.2	53.8	52.3	22.4	17.4	4.8	8.6	4.2	4.5	5.8	4	2.6	**S**	1.5	0.2	49.5	43.6	11.5	2.9	3.3	3.1	53.8	21.3	24
24	3.4	0.8	0.6	3.4	0	0.5	0.3	0.3	0.5	0	0.1	0	0	0	**S**	1.1	0.4	0.5	2.5	13.5	44.2	43.8	39.1	39.2	44.2	8.4	24
25	62.9	89.9	53.1	59	45.2	77.9	41.2	26.7	25.8	23	9.7	8.2	6.7	**S**	5.9	4.1	3.8	6.3	2.4	3	5.5	6.1	7	7.1	89.9	25.2	24
26	9.6	8.6	6.1	4	1.1	0.1	1.6	1.7	1.5	0.8	0.7	0.9	**S**	2.6	1.7	1.2	1.3	1.5	1.6	1.4	1.9	3.2	3.7	6.1	9.6	2.7	24
27	4.5	17.6	10.5	16.3	65.3	24.3	36	32.7	42.6	27.6	10.5	**S**	1.4	0.6	0.6	0.7	0.7	2.8	3	1.5	23.2	26.2	25.7	30.7	65.3	17.6	24
28	14.1	19.8	16	37.4	33.8	22.8	30.9	25.1	18.4	11.3	**S**	5.9	4.2	3.6	5.4	10.6	5.8	9.1	2.5	86.7	50	23.2	22.2	10.4	86.7	20.4	24
29	11.9	11.9	11	10.7	8.7	8.9	4.4	1.5	0.4	**S**	2.1	2.7	1.4	1.5	1.5	0.8	0.5	0.1	3.8	44	29.9	25.8	0	0	44	8.0	24
30	0	0	0	0	0	0.4	0.5	0.3	**S**	1.4	0.6	0.6	0.5	0.5	0.2	0	0.2	1.8	6.5	11.9	12.9	14.5	13.8	25.8	25.8	4.0	24
31	26.8	14.7	20.8	16.4	26	26	30	**S**	14.5	5.2	6.8	7.3	0	1.4	1.7	1.9	2.7	3.3	6.3	7.6	9.7	8.5	6.3	4.9	30	10.8	24
HOURLY MAX	63	122	124	130	180	153	133	139	112	107	77	687	29	19	18	26	48	82	88	87	115	72	74	56			
HOURLY AVG	20.8	25.2	25.3	27.3	30.2	29.5	28.3	23.8	20.3	20.6	10.0	32.2	7.4	5.1	5.3	6.2	8.7	16.0	21.3	27.1	27.2	22.0	20.3	19.0			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 683

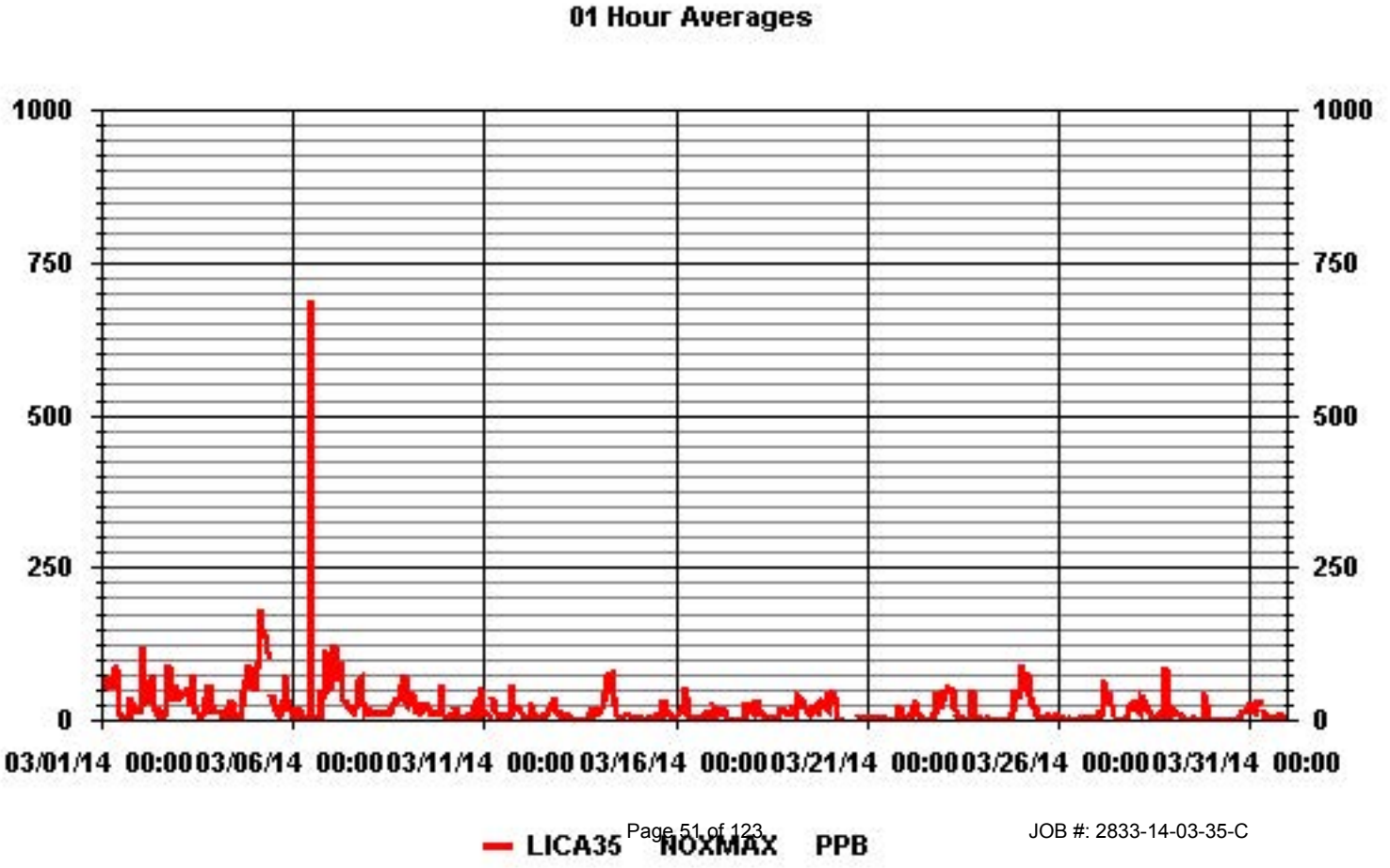
MAXIMUM INSTANTANEOUS VALUE: 687.4 PPB @ HOUR(S) 11 ON DAY(S) 6

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 10 HRS

STANDARD DEVIATION: 34.86



JOB #: 2833-14-03-35-C

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

March 2014

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
<	50.0	2.85	3.56	1.71	.85	8.41	10.55	4.70	3.13	2.99	1.42	2.28	11.98	16.83	12.98	9.84	3.28	97.43
<	110.0	.00	.00	.00	.14	.42	.00	.00	.00	.00	.00	.00	.00	.28	.99	.14	.00	1.99
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.28	.00	.00	.14	.00	.14	.57
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.85	3.56	1.71	.99	8.84	10.55	4.70	3.13	2.99	1.42	2.56	11.98	17.11	14.12	9.98	3.42	

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
<	50.0	20	25	12	6	59	74	33	22	21	10	16	84	118	91	69	23	683
<	110.0				1	3								2	7	1		14
<	210.0											2			1		1	4
>=	210.0																	
	Totals	20	25	12	7	62	74	33	22	21	10	18	84	120	99	70	24	

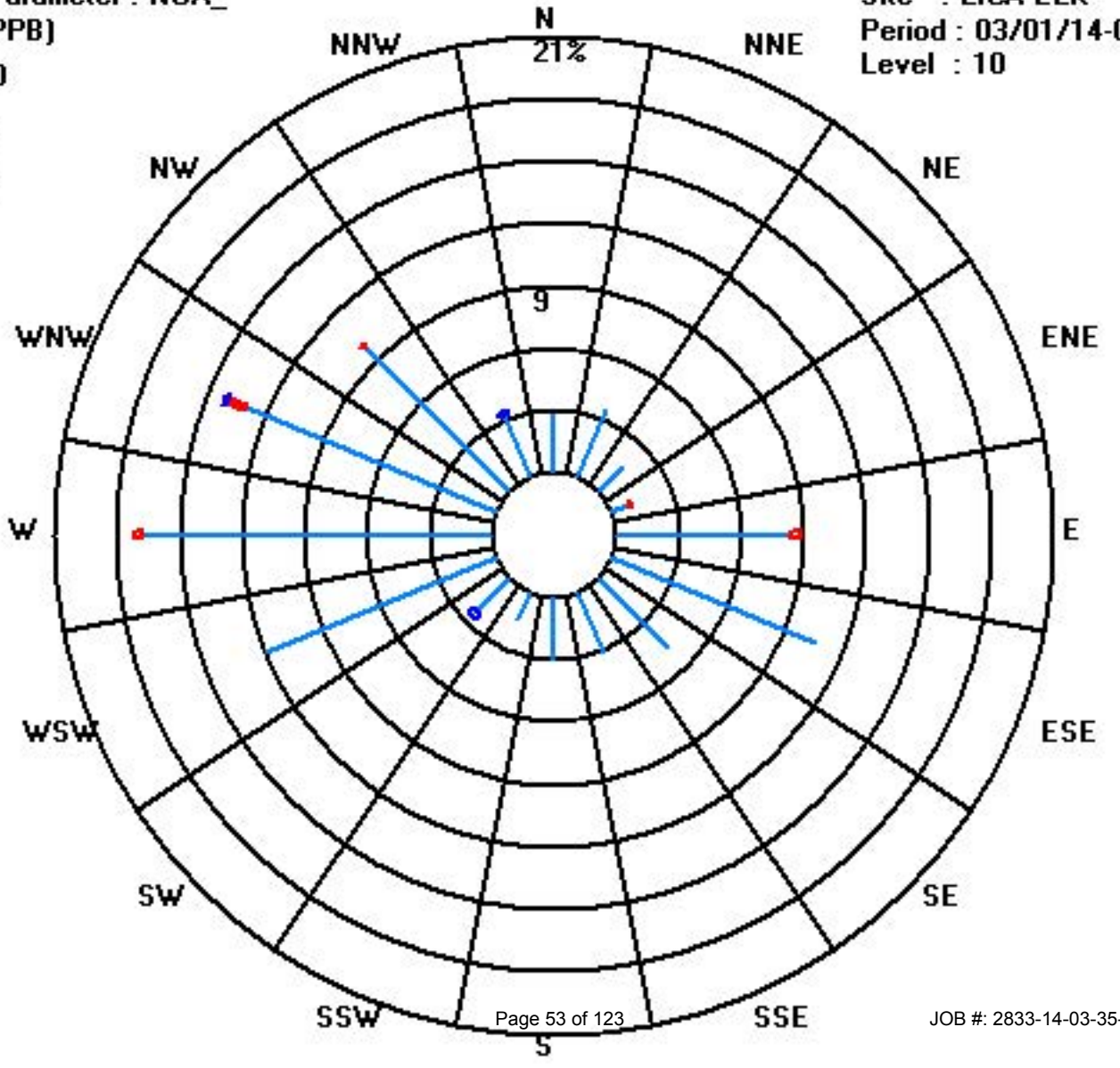
Calm : .00 %

Total # Operational Hours : 701

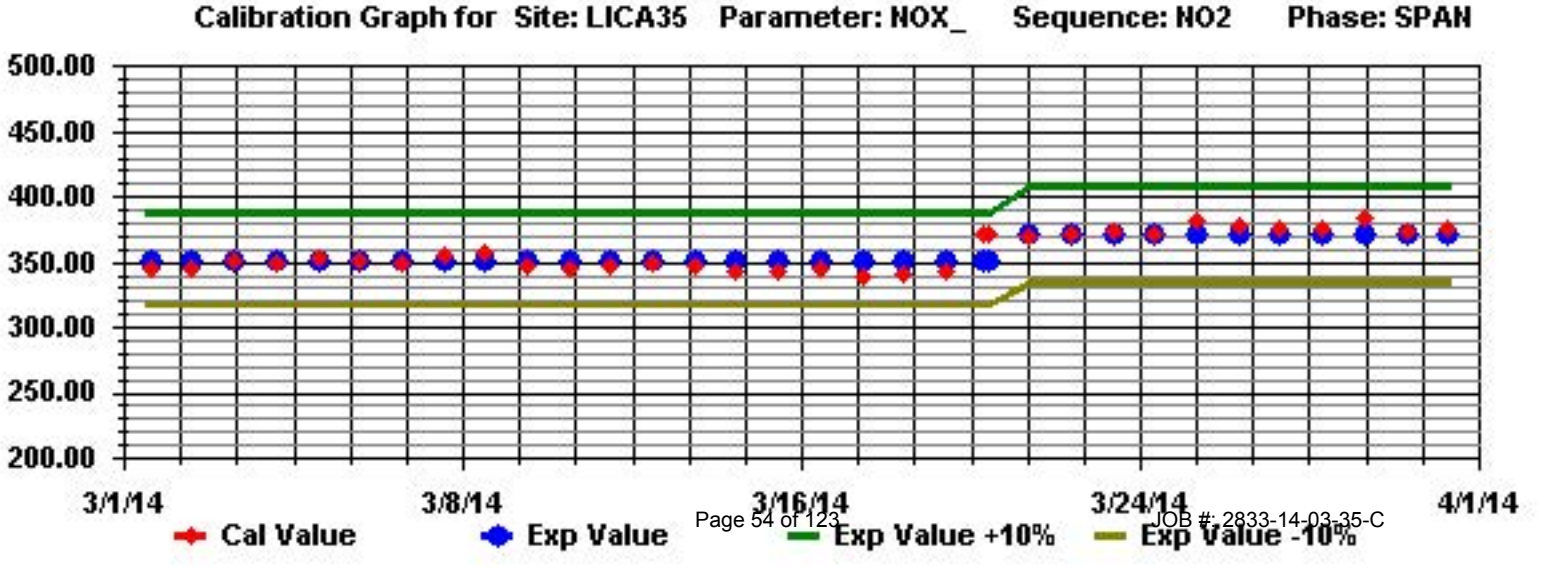
Logger : 35 Parameter : NOX_
Class Limits (PPB)

>= 210.0
< 210.0
< 110.0
< 50.0

Site : LICA-ELK
Period : 03/01/14-03/31/14
Level : 10



JOB #: 2833-14-03-35-C


Calibration Graph for Site: LICA35 Parameter: NOX_ Sequence: NO2 Phase: SPAN
500.00
450.00
400.00
350.00
300.00
250.00
200.00
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

Lakeland Industry & Community Association - St. Lina Site

MARCH 2014

OZONE (O3) hourly averages in ppb

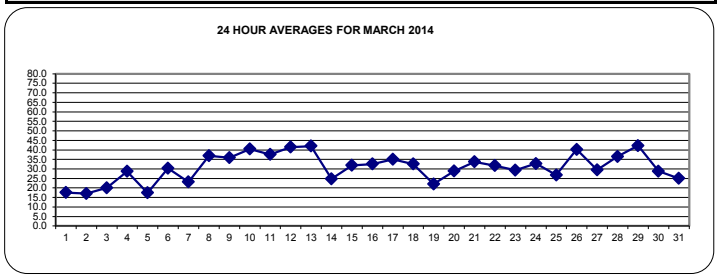
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	3	11	2	7	1	1	2	7	11	12	20	23	27	31	**S**	36	38	38	26	20	25	22	23	19	38	17.6	24
2	20	11	16	11	12	4	12	7	14	25	28	29	30	**S**	32	33	32	21	12	11	20	6	1	3	33	17.0	24
3	7	3	2	1	1	2	2	11	19	19	28	32	**S**	38	38	38	37	36	27	19	22	24	28	26	38	20.0	24
4	25	26	27	33	33	35	36	31	32	35	36	**S**	39	39	39	40	36	30	24	22	18	15	6	3	40	28.7	24
5	1	3	2	0	0	0	1	3	8	12	**S**	26	31	36	38	38	39	35	28	13	12	21	24	30	39	17.4	24
6	38	37	34	30	27	33	32	35	34	**S**	35	34	38	40	42	41	41	41	28	18	14	11	8	6	42	30.3	24
7	1	1	0	1	1	1	2	13	**S**	22	26	28	34	41	42	42	42	30	31	30	33	42	38	31	42	23.1	24
8	32	36	38	40	39	39	40	**S**	40	43	44	45	45	46	45	42	39	38	34	17	22	25	26	32	46	36.8	24
9	29	21	19	20	27	34	**S**	31	36	38	41	42	42	45	49	46	45	45	41	36	32	35	35	37	49	35.9	24
10	39	39	43	42	40	**S**	30	38	39	40	43	44	45	46	45	47	47	37	36	38	42	42	36	33	47	40.5	24
11	32	34	35	36	**S**	21	29	34	37	40	42	43	44	45	46	48	47	45	41	38	32	30	29	37	48	37.6	24
12	42	42	41	**S**	38	28	39	42	44	44	46	47	48	49	49	47	44	42	33	35	25	43	45	40	49	41.4	24
13	39	47	**S**	47	46	42	43	44	44	43	43	44	44	44	44	44	45	44	41	40	37	31	37	32	47	42.0	24
14	28	**S**	17	12	3	2	1	6	13	21	27	33	36	39	40	39	37	35	32	31	31	31	29	27	40	24.8	24
15	**S**	26	26	30	30	29	31	31	33	32	33	36	37	39	40	41	35	31	28	30	26	28	29	**S**	41	31.9	24
16	30	27	26	23	18	10	10	17	29	35	40	43	44	45	45	47	47	45	37	32	33	38	**S**	27	47	32.5	24
17	32	31	29	28	29	29	26	35	39	40	42	44	44	44	45	44	42	41	39	34	29	**S**	23	18	45	35.1	24
18	18	21	17	22	24	28	27	32	35	39	41	42	44	45	44	43	41	37	36	31	**S**	26	27	28	45	32.5	24
19	22	26	24	14	12	7	7	11	13	20	30	34	33	36	36	33	31	28	30	**S**	16	13	18	13	36	22.0	24
20	4	4	2	4	12	34	36	38	34	35	35	35	34	35	38	39	40	39	**S**	36	34	34	32	30	40	28.9	24
21	28	31	31	32	31	31	29	30	30	32	**C**	**C**	**C**	**C**	41	42	42	**S**	40	32	30	36	36	36	42	33.7	24
22	33	31	31	28	26	23	20	26	31	34	38	41	43	44	45	45	**S**	45	40	28	22	15	23	18	45	31.7	24
23	3	3	3	0	2	2	**S**	22	33	37	44	43	41	44	46	**S**	47	46	43	34	36	38	38	39	47	29.3	24
24	40	40	37	36	40	38	38	37	36	37	36	36	37	38	**S**	41	41	40	38	32	19	12	4	1	41	32.8	24
25	1	0	0	1	1	1	4	11	17	22	38	40	41	**S**	45	47	47	48	50	46	43	40	38	35	50	26.8	24
26	32	31	33	41	43	44	42	41	41	42	42	42	**S**	44	45	45	45	43	42	40	36	34	31	45	40.2	24	
27	28	19	21	15	13	9	9	14	18	30	43	**S**	45	46	47	47	47	45	43	41	32	27	19	20	47	29.5	24
28	27	23	23	19	22	21	18	25	32	37	**S**	45	48	52	53	52	51	51	51	37	37	39	38	38	53	36.5	24
29	32	28	27	28	27	30	34	42	48	**S**	52	54	55	***56***	55	52	52	51	48	37	33	43	44	43	***56***	***42.2***	24
30	41	39	39	39	38	33	29	26	**S**	27	29	30	29	30	31	30	31	29	27	22	19	16	15	13	41	28.8	24
31	7	13	8	8	6	4	6	**S**	20	29	31	32	33	34	36	38	39	40	37	33	31	31	30	28	40	25.0	24
HOURLY MAX	42	47	43	47	46	44	43	44	48	44	52	54	55	56	55	52	52	51	51	46	43	43	45	43			
HOURLY AVG	23.8	23.5	21.8	21.6	21.4	20.5	21.9	25.5	29.7	31.8	36.9	38.1	39.7	41.8	42.8	42.2	41.6	39.3	35.5	30.5	28.2	28.3	27.1	25.8			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

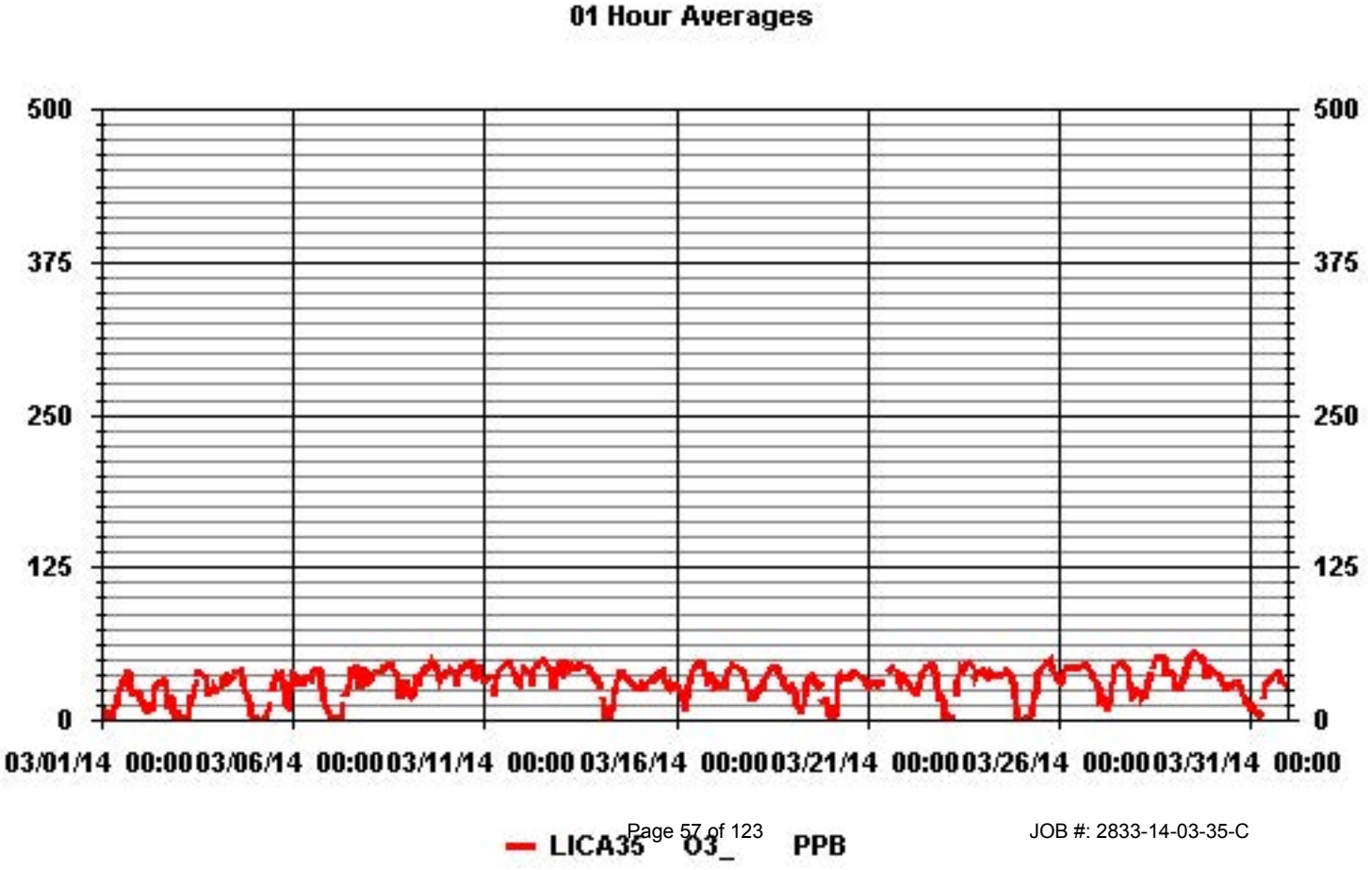
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 82 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	700					
MAXIMUM 1-HR AVERAGE:	56	PPB	@ HOUR(S)	13	ON DAY(S)	29
MAXIMUM 24-HR AVERAGE:	42.2	PPB			ON DAY(S) VAR-VARIOUS	29

IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	13.05		MONTHLY AVERAGE:	30.71	PPB



JOB #: 2833-14-03-35-C

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

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	12	21	10	15	2	1	7	13	15	17	24	24	33	33	**S**	39	39	39	35	26	28	25	26	22	39	22.0	24
2	24	24	24	16	17	11	17	15	24	27	29	30	32	**S**	32	35	35	29	26	25	28	17	7	5	35	23.0	24
3	9	7	3	2	3	4	6	16	20	25	30	35	**S**	40	39	39	39	39	36	29	32	31	32	29	40	23.7	24
4	26	29	32	36	36	37	37	36	35	38	38	**S**	40	41	41	41	40	37	34	33	31	26	16	9	41	33.4	24
5	4	13	7	1	1	1	1	6	11	16	**S**	29	37	38	39	40	41	38	37	20	20	29	31	37	41	21.6	24
6	39	38	38	36	36	37	35	35	35	**S**	36	37	39	42	42	42	42	42	41	25	25	23	20	14	42	34.7	24
7	2	4	1	1	1	1	7	20	**S**	25	27	31	42	44	44	47	47	44	44	39	47	47	44	34	47	28.0	24
8	35	39	41	42	41	41	43	**S**	43	45	46	46	46	47	47	46	45	44	42	26	32	35	35	40	47	41.2	24
9	32	28	24	25	37	38	**S**	36	38	39	43	43	47	47	50	49	47	47	45	39	36	40	39	38	50	39.4	24
10	42	43	43	43	42	**S**	37	39	40	42	44	45	47	48	48	49	48	46	45	45	43	44	42	36	49	43.5	24
11	36	36	38	38	**S**	28	36	37	38	42	43	44	45	48	48	49	49	49	43	43	38	36	35	40	49	40.8	24
12	43	43	43	**S**	39	39	42	44	45	46	47	49	50	50	50	50	48	48	44	42	39	46	48	45	50	***45.2***	24
13	45	48	**S**	47	47	46	45	45	45	44	44	44	44	45	45	45	45	45	45	42	41	41	41	38	48	44.2	24
14	35	**S**	24	22	18	10	3	10	16	25	32	35	38	41	41	42	40	38	37	34	33	33	30	29	42	29.0	24
15	**S**	28	28	32	31	31	32	35	34	33	36	37	39	40	41	41	41	35	35	32	30	30	30	**S**	41	34.1	24
16	31	30	29	26	26	23	23	27	33	38	43	45	45	46	47	48	48	46	43	37	38	40	**S**	36	48	36.9	24
17	37	34	33	31	32	33	33	39	40	42	43	45	45	45	46	45	43	42	41	37	36	**S**	26	26	46	38.0	24
18	26	27	23	30	27	34	32	35	38	41	43	44	45	46	46	45	44	43	41	37	**S**	29	33	34	46	36.7	24
19	28	33	31	22	16	14	13	14	16	25	35	36	36	38	39	38	34	34	34	**S**	25	19	23	16	39	26.9	24
20	10	8	4	8	26	36	38	40	35	36	36	35	36	37	39	41	41	40	**S**	37	35	35	33	32	41	31.2	24
21	29	34	33	33	32	32	31	30	32	**C**	**C**	**C**	**C**	**C**	42	42	42	**S**	41	39	35	38	37	38	42	35.6	24
22	37	33	33	30	29	26	27	31	32	36	41	43	44	45	45	45	**S**	45	45	40	30	20	29	27	45	35.3	24
23	7	6	7	1	7	11	**S**	31	35	42	45	44	43	45	47	**S**	47	47	45	41	39	40	39	41	47	32.3	24
24	41	41	40	41	41	39	39	37	38	38	36	37	38	39	**S**	42	42	41	40	37	28	27	13	3	42	35.6	24
25	3	1	1	2	4	2	7	15	19	33	40	41	42	**S**	46	48	48	50	50	49	48	44	43	40	50	29.4	24
26	37	36	42	42	44	44	43	42	42	42	42	43	**S**	45	46	46	47	47	44	42	41	39	35	32	47	41.9	24
27	31	24	24	21	21	16	15	16	24	36	44	**S**	46	47	47	47	47	46	45	42	38	36	23	32	47	33.4	24
28	33	31	24	30	26	30	22	30	34	41	**S**	47	49	53	53	54	53	53	53	49	40	43	44	43	54	40.7	24
29	36	31	28	28	28	34	40	46	50	**S**	53	54	56	***57***	56	52	52	51	51	46	41	47	45	43	***57***	44.6	24
30	42	40	39	40	39	37	31	27	**S**	28	31	31	31	30	32	31	31	31	29	25	22	20	20	18	42	30.7	24
31	11	16	13	9	9	6	9	**S**	25	31	32	33	34	35	39	39	41	41	39	35	33	33	32	29	41	27.1	24
HOURLY MAX	45	48	43	47	47	46	45	46	50	46	53	54	56	57	56	54	53	53	53	49	48	47	48	45			
HOURLY AVG	27.4	27.5	25.3	25.0	25.3	24.7	25.9	29.2	32.1	34.8	38.7	39.5	41.8	43.3	44.0	43.9	43.5	42.6	41.0	36.4	34.4	33.8	31.7	30.2			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 706

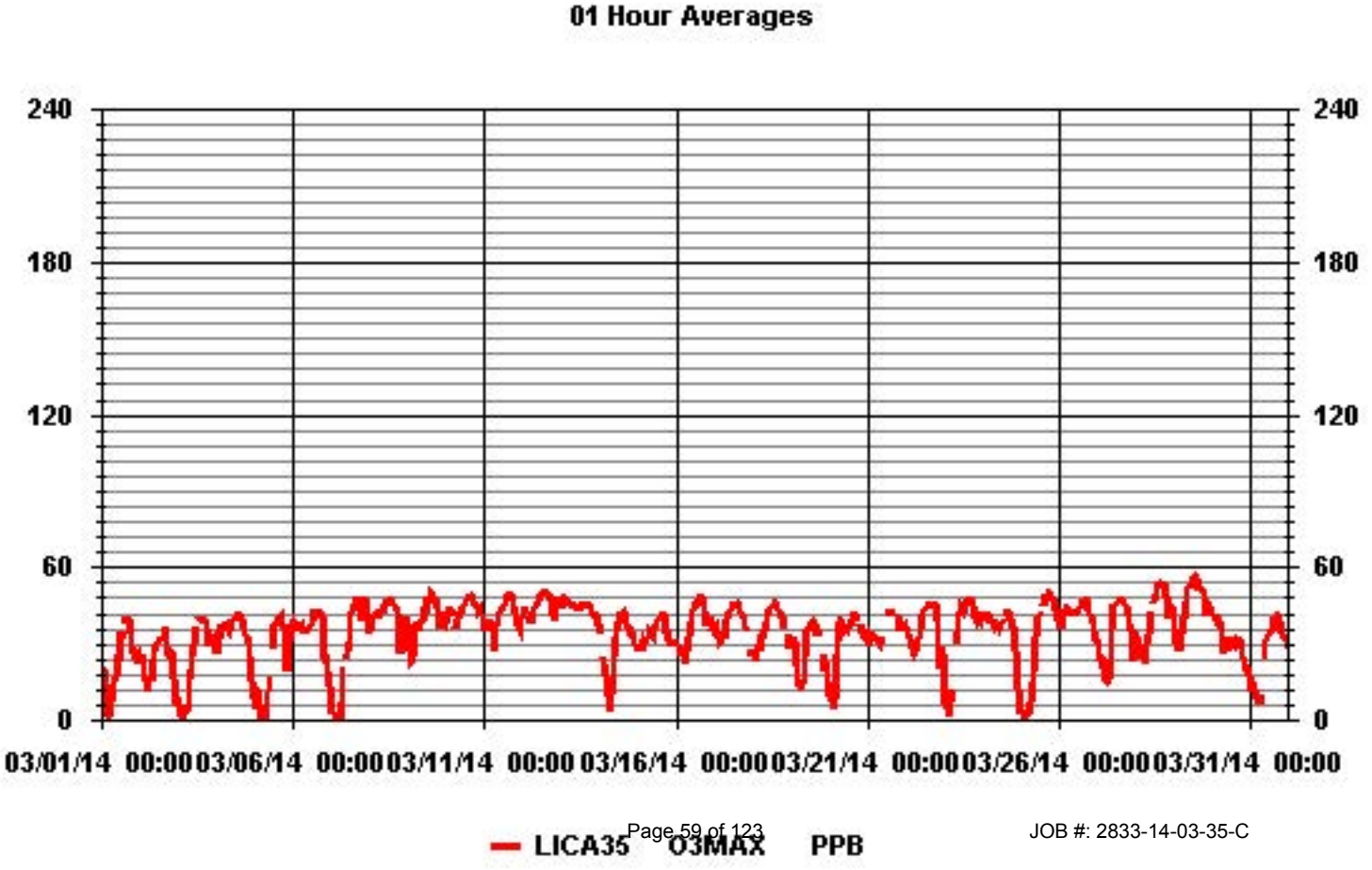
MAXIMUM INSTANTANEOUS VALUE: 57 PPB @ HOUR(S) 13 ON DAY(S) 29

VAR-VARIOUS

IZS CALIBRATION TIME: 33 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 12.04



JOB #: 2833-14-03-35-C

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

March 2014

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	3.53	3.53	1.69	.99	8.76	10.46	4.66	3.11	2.97	.84	2.26	11.88	16.83	13.57	8.76	3.96	97.87
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.56	.28	.00	.00	.28	.99	.00	2.12
<	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	3.53	3.53	1.69	.99	8.76	10.46	4.66	3.11	2.97	1.41	2.54	11.88	16.83	13.86	9.75	3.96	

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	25	25	12	7	62	74	33	22	21	6	16	84	119	96	62	28	692
<	110										4	2			2	7		15
<	210																	
>=	210																	
	Totals	25	25	12	7	62	74	33	22	21	10	18	84	119	98	69	28	

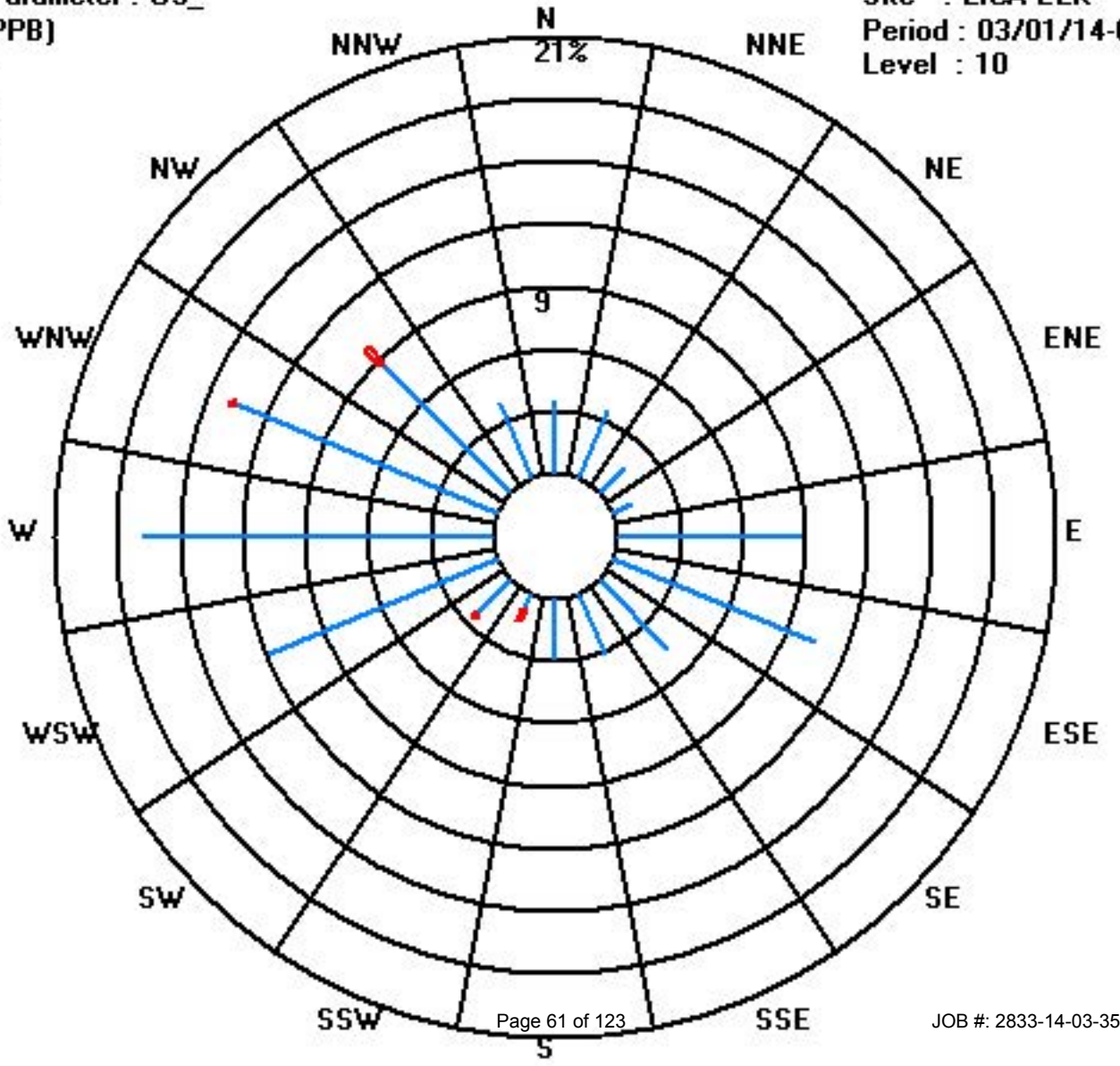
Calm : .00 %

Total # Operational Hours : 707

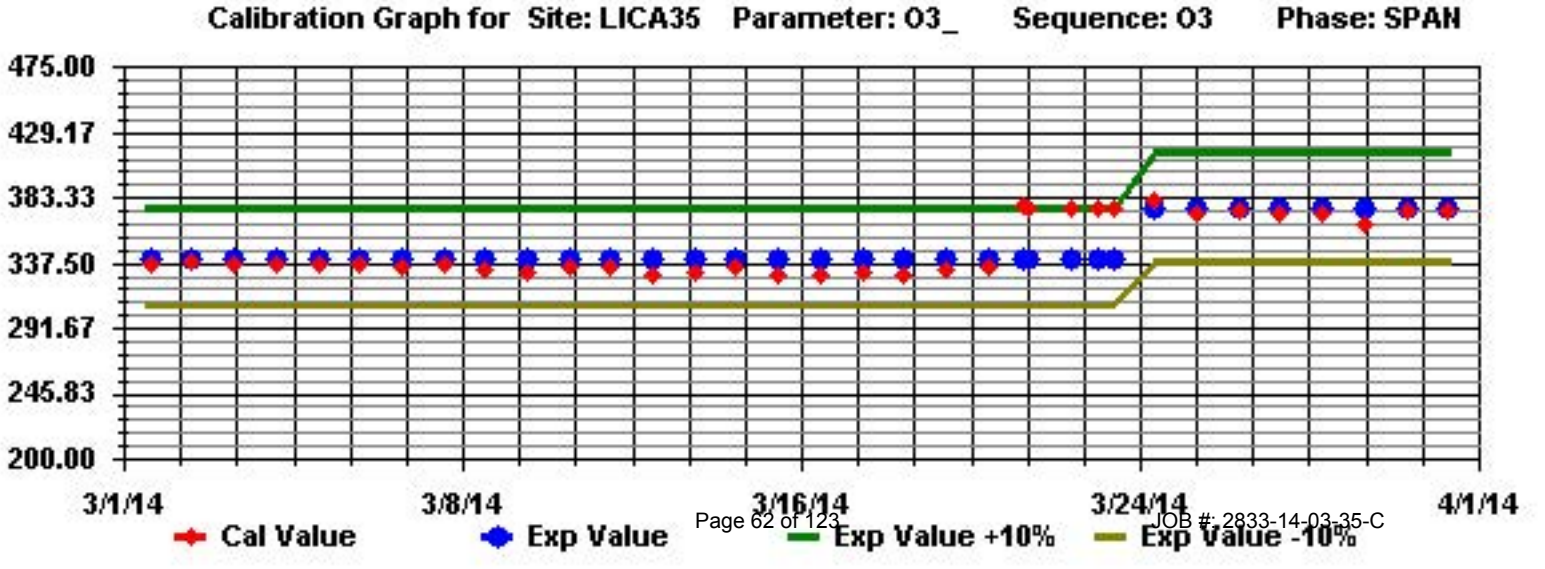
Logger : 35 Parameter : 03_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA-ELK
Period : 03/01/14-03/31/14
Level : 10



JOB #: 2833-14-03-35-C


Calibration Graph for Site: LICA35 Parameter: O3_ Sequence: O3 Phase: SPAN
475.00
429.17
383.33
337.50
291.67
245.83
200.00
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons (55i)

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

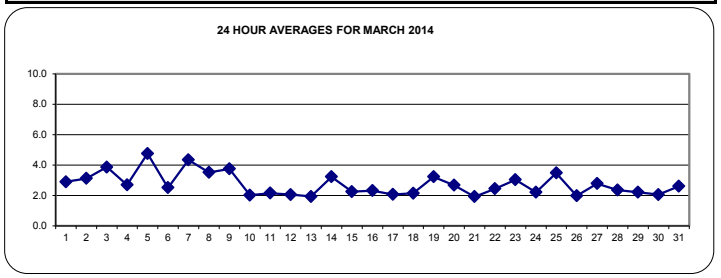
TOTAL HYDROCARBONS (THC) hourly averages in ppm

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	3.0	3.3	3.5	3.5	4.7	4.4	3.9	3.6	4.5	4.9	2.8	2.0	1.9	1.9	**S**	2.0	1.9	1.9	2.6	2.2	2.0	2.1	2.0	2.1	4.9	2.9	24
2	2.1	4.1	2.5	3.6	2.8	3.4	2.6	4.0	4.0	2.2	2.2	2.0	2.3	**S**	2.2	2.2	2.3	2.5	3.1	3.1	2.9	4.2	5.2	6.4	6.4	3.1	24
3	4.9	5.5	5.5	5.6	5.5	5.6	5.1	5.1	4.2	5.0	3.3	2.7	**S**	2.2	2.1	2.0	2.1	2.2	2.8	3.6	3.6	3.1	3.4	3.8	5.6	3.9	24
4	3.5	3.4	3.1	2.8	2.2	2.7	2.2	2.3	2.4	2.2	2.1	**S**	2.1	2.1	2.1	2.1	2.3	2.9	2.4	2.3	2.7	3.2	3.7	5.1	5.1	2.7	24
5	5.6	5.7	5.9	7.7	***8.4***	7.4	7.2	7.7	8.0	7.0	**S**	3.6	3.2	2.8	2.6	2.3	2.3	2.8	3.5	3.2	3.8	3.6	2.7	2.5	***8.4***	***4.8***	24
6	2.1	2.3	2.4	2.5	2.7	2.4	2.3	2.2	2.1	**S**	2.0	2.1	2.0	1.9	1.9	1.9	1.9	1.9	2.4	3.5	2.9	4.2	4.0	4.2	4.2	2.5	24
7	4.9	4.7	7.2	8.1	6.9	7.8	5.7	5.4	**S**	4.8	4.5	4.5	3.6	2.6	2.5	2.5	2.4	3.0	2.9	3.1	2.8	2.5	3.7	3.9	8.1	4.3	24
8	3.8	3.5	3.4	2.7	2.8	3.0	2.9	**S**	2.9	2.7	2.6	2.7	2.9	3.0	3.2	3.3	3.4	3.7	4.2	4.0	4.9	5.0	5.2	5.0	5.2	3.5	24
9	5.2	5.9	5.7	5.9	6.0	5.0	**S**	4.5	4.8	4.7	4.9	4.7	3.9	3.6	2.6	2.0	1.9	1.9	2.1	2.4	2.5	2.1	2.1	2.0	6.0	3.8	24
10	1.9	2.0	1.9	1.9	2.0	**S**	2.1	1.9	1.9	1.9	1.8	1.8	1.8	2.0	2.1	2.0	1.9	2.3	2.3	2.4	2.0	2.0	2.4	2.3	2.4	2.0	24
11	2.2	2.2	2.1	2.1	**S**	3.5	2.2	2.0	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.8	1.9	1.9	2.2	2.6	2.7	2.8	2.1	3.5	2.2	24
12	2.0	1.9	1.9	**S**	2.2	2.2	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.9	2.0	2.1	2.2	2.5	2.4	3.3	2.1	1.9	2.1	3.3	2.1	24
13	2.3	1.9	**S**	1.8	1.8	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.0	2.0	2.4	2.1	2.5	2.5	1.9	24
14	2.5	**S**	4.4	3.7	4.8	3.7	5.3	7.0	5.7	4.8	3.6	2.6	2.2	1.9	2.0	2.0	2.3	2.6	2.7	2.3	2.1	2.0	2.0	2.1	7.0	3.2	24
15	**S**	2.2	2.2	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.2	2.2	2.4	2.6	2.8	2.4	2.5	2.5	2.5	**S**	2.8	2.3	24
16	2.4	3.0	2.5	2.7	2.6	2.8	3.9	3.4	2.1	2.0	1.9	1.9	1.8	1.8	1.9	1.8	1.8	1.8	1.9	2.3	2.4	2.0	**S**	2.6	3.9	2.3	24
17	2.2	2.1	2.3	2.3	2.2	2.3	2.2	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.2	2.6	**S**	2.6	2.7	2.7	2.1	24
18	2.5	2.5	3.3	2.9	2.2	2.0	1.9	1.8	1.9	1.9	1.8	1.9	1.8	1.9	1.8	1.9	1.9	2.1	2.2	2.2	**S**	2.5	2.2	2.2	3.3	2.1	24
19	2.8	2.5	2.4	2.6	4.0	4.3	4.4	4.4	4.9	3.5	2.6	2.3	2.2	2.2	2.1	2.2	2.2	2.9	2.3	**S**	4.2	5.4	3.4	4.5	5.4	3.2	24
20	4.9	5.0	5.7	5.3	4.5	2.0	1.9	1.8	1.8	**C**	**C**	**C**	**C**	1.8	1.8	1.8	1.8	1.8	**S**	1.8	1.8	1.8	1.8	1.8	5.7	2.7	24
21	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.8	1.8	1.8	**S**	1.9	2.3	2.4	2.1	2.0	2.1	2.4	1.9	24
22	2.3	2.5	2.4	2.7	2.7	3.1	2.8	2.4	2.4	2.4	2.1	2.0	1.9	1.9	1.9	1.9	**S**	1.9	1.9	2.2	2.8	2.7	2.9	4.3	4.3	2.4	24
23	5.9	5.2	5.3	6.2	5.7	4.5	3.4	2.9	2.2	2.0	1.9	1.9	1.9	1.9	1.9	**S**	1.8	1.8	2.0	2.3	2.6	2.2	2.2	2.0	6.2	3.0	24
24	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	**S**	1.8	1.8	1.8	1.9	2.1	2.9	3.4	4.5	4.6	4.6	2.2	24
25	4.9	6.2	6.8	6.5	5.8	5.6	5.0	4.4	4.2	3.8	2.4	2.2	2.2	**S**	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.2	2.3	6.8	3.5	24
26	2.4	2.7	2.5	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.8	1.8	**S**	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2.1	2.1	2.3	2.7	2.0	24
27	2.2	2.8	3.1	3.9	3.9	4.3	4.7	4.3	4.2	3.0	1.9	**S**	1.8	1.8	1.8	1.8	1.8	1.9	2.0	2.0	2.8	2.6	2.8	2.8	4.7	2.8	24
28	2.5	2.6	2.9	3.2	2.9	3.0	2.8	2.4	2.1	2.1	**S**	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.3	2.7	2.5	2.2	2.7	3.2	2.4	24
29	3.1	3.1	3.3	2.7	2.5	2.5	2.3	2.0	1.9	**S**	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.9	2.5	2.7	2.1	1.8	1.8	3.3	2.2	24
30	1.8	1.8	1.9	1.8	1.9	1.9	1.9	1.9	**S**	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.3	2.4	2.9	3.0	2.8	3.0	2.1	24	
31	3.2	3.2	3.4	3.6	3.5	4.1	4.1	**S**	3.0	2.1	2.0	2.0	2.0	2.0	1.9	1.9	1.9	2.0	2.0	2.5	2.6	2.3	2.3	2.3	4.1	2.6	24
HOURLY MAX	6	6	7	8	8	8	7	8	8	7	5	5	4	4	3	3	3	4	4	4	5	5	5	6			
HOURLY AVG	3.1	3.3	3.4	3.5	3.5	3.4	3.1	3.1	3.0	2.9	2.3	2.3	2.2	2.1	2.0	2.0	2.0	2.2	2.3	2.5	2.7	2.7	2.8	3.0			

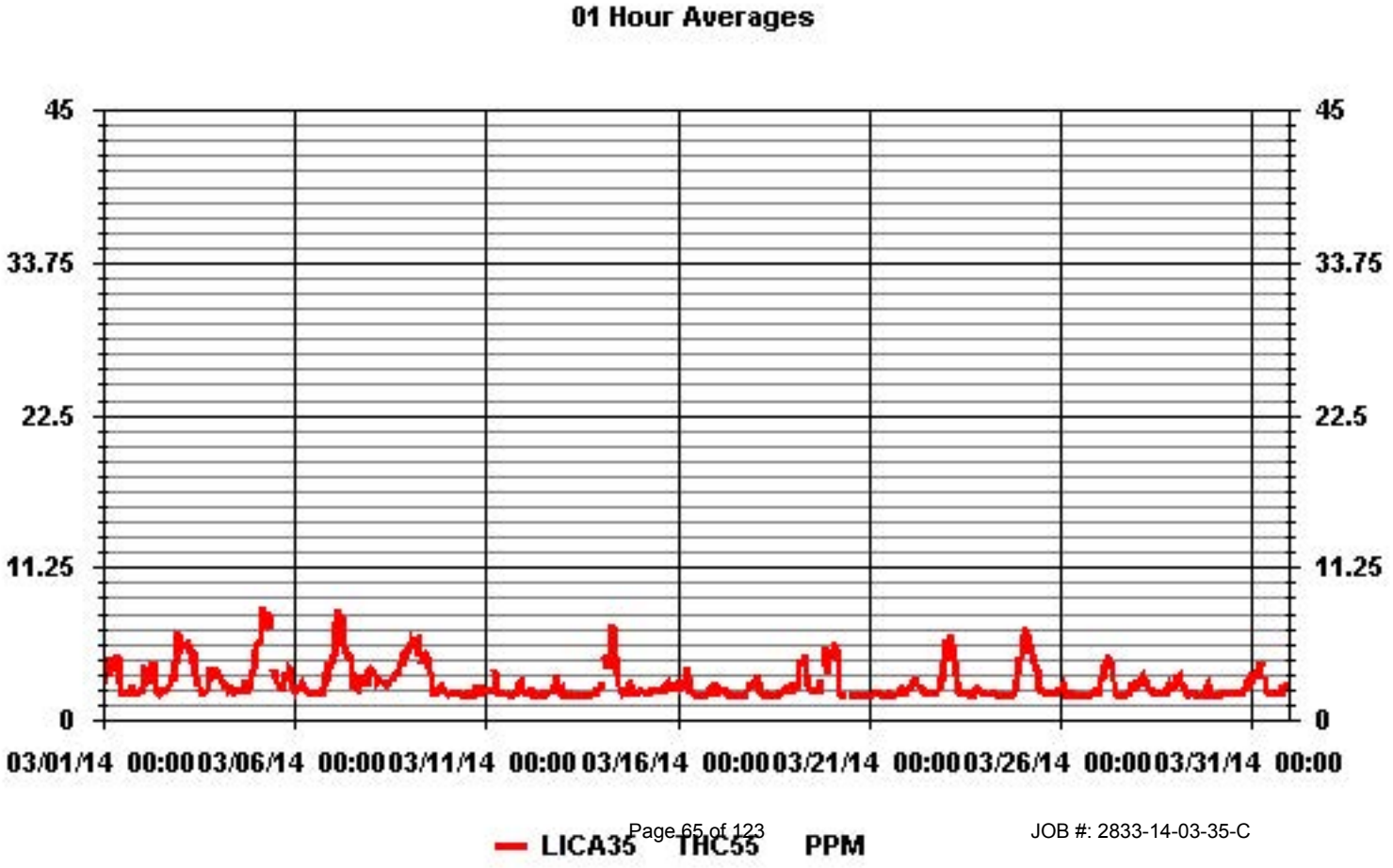
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	708						
MAXIMUM 1-HR AVERAGE:	8.4	PPM	@ HOUR(S)	4	ON DAY(S)	5	
MAXIMUM 24-HR AVERAGE:	4.8	PPM			ON DAY(S)	5	
					VAR-VARIOUS		
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		744	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	1.22		MONTHLY AVERAGE:		2.73	PPM	



JOB #: 2833-14-03-35-C

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

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	5.36	5.41	4.68	4.98	8.81	6.37	4.78	5.03	6.67	6.13	5.48	2.23	2.06	2.05	**S**	2.33	2	2.17	4.47	2.43	2.14	2.25	2.14	2.26	8.81	4.0	24
2	2.24	7.81	4.65	7.17	3.56	4.5	3.66	6.38	5.97	2.43	2.43	2.14	2.75	**S**	2.34	2.39	2.53	2.74	5.38	4.99	3.25	5.46	8.86	22.45	22.45	5.0	24
3	6.61	6.73	8.8	6.37	5.81	9.82	6.35	6.17	4.86	6.24	3.91	3.33	**S**	2.8	2.8	2.73	2.73	2.65	3.54	5.24	5.86	4.19	6.74	6.44	9.82	5.2	24
4	6.04	4.36	6.13	4.17	3.08	3.54	2.91	3.11	3.02	2.45	2.25	**S**	3.78	2.9	2.56	2.42	3.65	4.76	3.25	2.84	3.39	6.86	4.84	10.2	10.2	4.0	24
5	7.61	7.42	7.35	8.8	12.6	8.04	9.09	9.09	9.2	8.44	**S**	4.25	3.81	3.23	2.94	2.54	2.58	4.21	5.21	3.72	4.83	5.06	2.97	3.07	12.6	5.9	24
6	2.39	2.74	2.79	2.71	3.89	2.69	2.79	2.26	2.54	**S**	2.17	2.26	2.26	2.01	1.98	1.95	1.96	2.24	3.74	4.81	3.66	6.49	6.39	5.17	6.49	3.1	24
7	5.67	7.13	10.24	***23.83***	9.83	13.7	8.13	12.1	**S**	5.39	4.72	5.18	4.43	3.09	2.91	3.25	2.97	3.63	4.03	4.36	3.67	2.91	8.07	6.46	***23.83***	***6.8***	24
8	5.34	7.6	6.41	3.17	3.71	4.03	3.32	**S**	3.11	3.39	2.9	2.94	3.51	3.29	3.45	3.56	3.67	5.56	7.45	5	6.15	6.22	7.15	9.76	9.76	4.8	24
9	9.03	12.34	11.79	15.69	10.1	7.17	**S**	5.07	5.89	5.55	6.07	5.06	5	4.25	3.7	2.08	2.08	2.15	2.35	2.86	2.85	2.76	2.35	2.21	15.69	5.6	24
10	2.05	2.33	1.98	2.07	2.65	**S**	2.54	1.99	2.01	2.07	2.02	1.95	2.18	2.39	2.63	2.31	2.36	3.06	3.97	2.98	2.4	2.85	3.62	2.61	3.97	2.5	24
11	2.34	2.36	2.46	2.46	**S**	5.09	2.75	2.19	2.05	1.97	2.07	2.13	2.41	2.41	2.33	2.15	1.9	2.04	2.31	2.86	3.14	3.16	3.22	2.29	5.09	2.5	24
12	2.18	2.21	2.11	**S**	2.61	2.49	2.19	1.9	1.88	1.87	1.89	2	1.94	1.94	2.08	2.31	2.74	3.24	3.13	3.49	4.5	2.69	2.29	2.41	4.5	2.4	24
13	3.08	2.03	**S**	1.92	1.95	2.44	2.28	2.12	1.89	1.87	1.99	1.87	1.87	1.86	1.92	1.87	1.9	2.06	2.56	2.26	2.77	3.27	2.43	3.32	3.32	2.2	24
14	3.02	**S**	12.11	6.45	5.95	5.23	5.92	10.22	9.44	6.79	4.34	3.2	2.87	2.07	2.26	2.71	3.16	3.22	3.31	2.79	2.31	2.22	2.18	2.44	12.11	4.5	24
15	**S**	2.46	2.63	2.26	2.09	2.17	2.05	2.26	2.35	2.33	2.37	2.52	2.49	2.34	2.37	2.47	3.44	3.5	3.55	2.66	2.78	2.73	2.69	**S**	3.55	2.6	24
16	2.6	3.78	3.39	3.42	2.97	3.46	5.45	6.07	2.45	2.24	1.94	2.22	1.93	1.95	1.93	1.92	1.99	1.94	2.21	3.19	3.03	2.47	**S**	3.24	6.07	2.9	24
17	2.53	2.36	2.69	2.51	2.39	2.5	2.63	2.78	1.91	1.9	1.92	1.88	1.92	1.94	1.9	1.91	1.85	1.88	1.89	2.44	4.55	**S**	2.99	2.98	4.55	2.4	24
18	2.79	3.24	6.02	4.97	2.39	2.43	2.04	1.94	2.02	2.04	2.02	2	2.06	2.14	1.95	2.1	2.23	2.68	3.15	2.72	**S**	2.82	2.9	2.48	6.02	2.7	24
19	3.93	3.36	2.74	4.75	5.29	5.02	5.65	5.78	6.02	4.71	3.42	2.65	2.76	2.7	2.39	2.53	2.82	5.9	2.53	**S**	5.78	9.27	5.51	13.06	13.06	4.7	24
20	5.77	5.76	6.86	6.38	7.54	2.47	1.95	1.88	1.87	**C**	**C**	**C**	**C**	**C**	1.87	1.87	1.87	1.87	**S**	1.88	1.87	1.87	1.88	1.88	7.54	3.2	24
21	1.9	1.89	1.92	1.93	1.93	1.95	1.97	2.01	1.93	1.91	1.89	1.93	1.97	1.97	1.91	1.91	1.9	**S**	2.08	2.91	3.07	2.44	2.22	2.25	3.07	2.1	24
22	2.54	3.05	2.65	3.31	3.8	4.89	3.17	3.27	2.56	2.57	2.28	2.15	1.97	1.93	1.92	1.92	**S**	1.92	2.22	2.57	3.41	3.05	4.06	5.63	5.63	2.9	24
23	8.09	6.3	6.08	8.27	7.3	5.7	4.18	3.69	2.43	2.24	1.93	1.94	1.94	2.01	1.97	**S**	1.91	1.92	4.82	4.24	3.46	2.69	2.45	2.56	8.27	3.8	24
24	2.54	1.95	2.3	2.34	2.01	2.02	2.02	1.93	1.97	1.86	1.87	1.86	1.87	1.89	**S**	1.88	1.96	1.91	2.11	2.45	4.56	4.27	5.51	5.49	5.51	2.5	24
25	7.08	7.57	8.64	8.49	14.1	6.91	6.12	5.33	4.57	4.16	2.9	2.49	2.44	**S**	2.17	2.02	1.99	1.98	1.92	2.27	2.26	2.16	2.47	2.78	14.1	4.5	24
26	2.71	4.07	3.59	2.14	1.93	1.93	1.96	1.94	1.94	1.91	1.91	1.9	**S**	1.9	1.9	1.9	1.89	1.91	1.9	1.96	2.07	2.29	2.3	2.87	4.07	2.2	24
27	2.56	3.56	3.72	5.88	5.31	5.18	7.33	5.13	5.32	3.59	2.41	**S**	1.9	1.95	1.91	1.93	1.97	2.11	2.17	2.5	4.19	3.47	3.11	3.79	7.33	3.5	24
28	2.93	3.09	3.59	4.99	3.86	3.88	3.21	2.83	2.44	2.3	**S**	1.97	2.09	1.99	1.99	2.3	2.06	2.14	2	3.64	3.17	2.81	2.56	3.04	4.99	2.8	24
29	5.7	3.81	4.26	3.43	2.64	2.59	2.53	2.26	1.92	**S**	1.94	2.12	1.92	1.92	1.92	1.89	1.89	1.87	2.53	4.19	4.93	4.37	1.89	1.91	5.7	2.8	24
30	1.91	1.9	1.91	1.91	1.93	1.93	1.93	1.97	**S**	1.92	1.91	1.92	1.93	1.91	1.93	1.96	1.93	1.97	2.25	2.41	2.63	4.07	4.96	3.25	4.96	2.3	24
31	3.38	4.8	3.86	4.69	3.95	6.79	5.6	**S**	3.32	2.55	2.15	2.14	2.05	2.05	2.03	2.01	2.03	2.12	2.25	3.22	3.08	2.89	2.77	2.65	6.79	3.1	24
HOURLY MAX	9	12	12	24	14	14	9	12	9	8	6	5	5	4	4	4	4	6	7	5	6	9	9	22			
HOURLY AVG	4.1	4.4	4.9	5.4	4.9	4.6	3.9	4.1	3.6	3.3	2.7	2.5	2.5	2.3	2.3	2.2	2.3	2.7	3.1	3.2	3.5	3.7	3.8	4.7			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 707

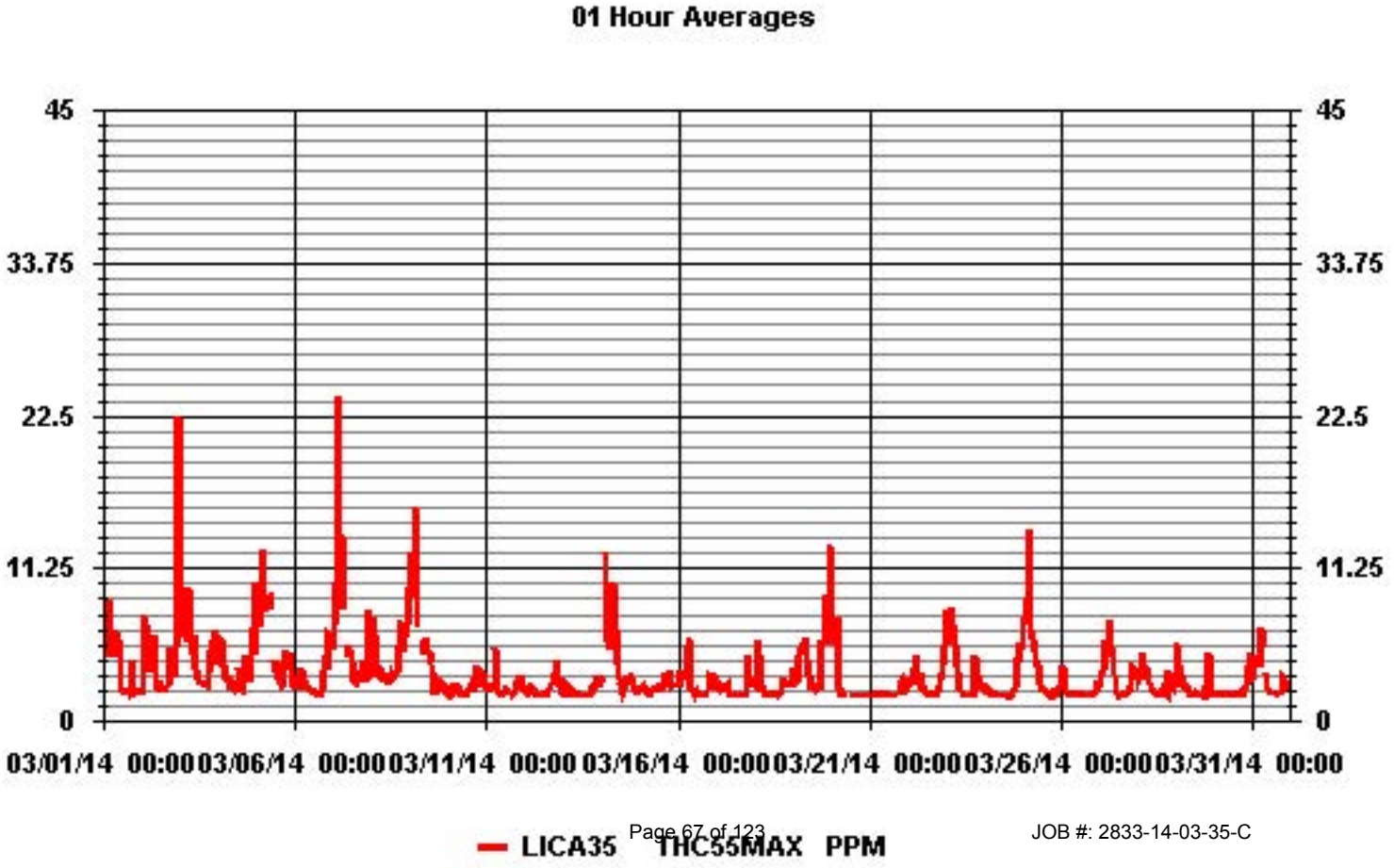
MAXIMUM INSTANTANEOUS VALUE: 23.83 PPM @ HOUR(S) 3 ON DAY(S) 7

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 2.34



JOB #: 2833-14-03-35-C

LICA35
THC55 / WDR Joint Frequency Distribution (Percent)

March 2014

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA35
Parameter : THC55
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	2.82	3.38	1.27	.42	1.41	6.49	3.53	2.82	2.68	1.27	1.83	9.88	14.68	9.88	8.61	3.53	74.57
<	10.0	.14	.14	.42	.56	7.34	3.95	1.12	.28	.28	.14	.70	1.97	2.25	4.09	1.55	.42	25.42
<	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	2.96	3.53	1.69	.98	8.75	10.45	4.66	3.10	2.96	1.41	2.54	11.86	16.94	13.98	10.16	3.95	

Calm : .00 %

Total # Operational Hours : 708

Distribution By Samples

Direction

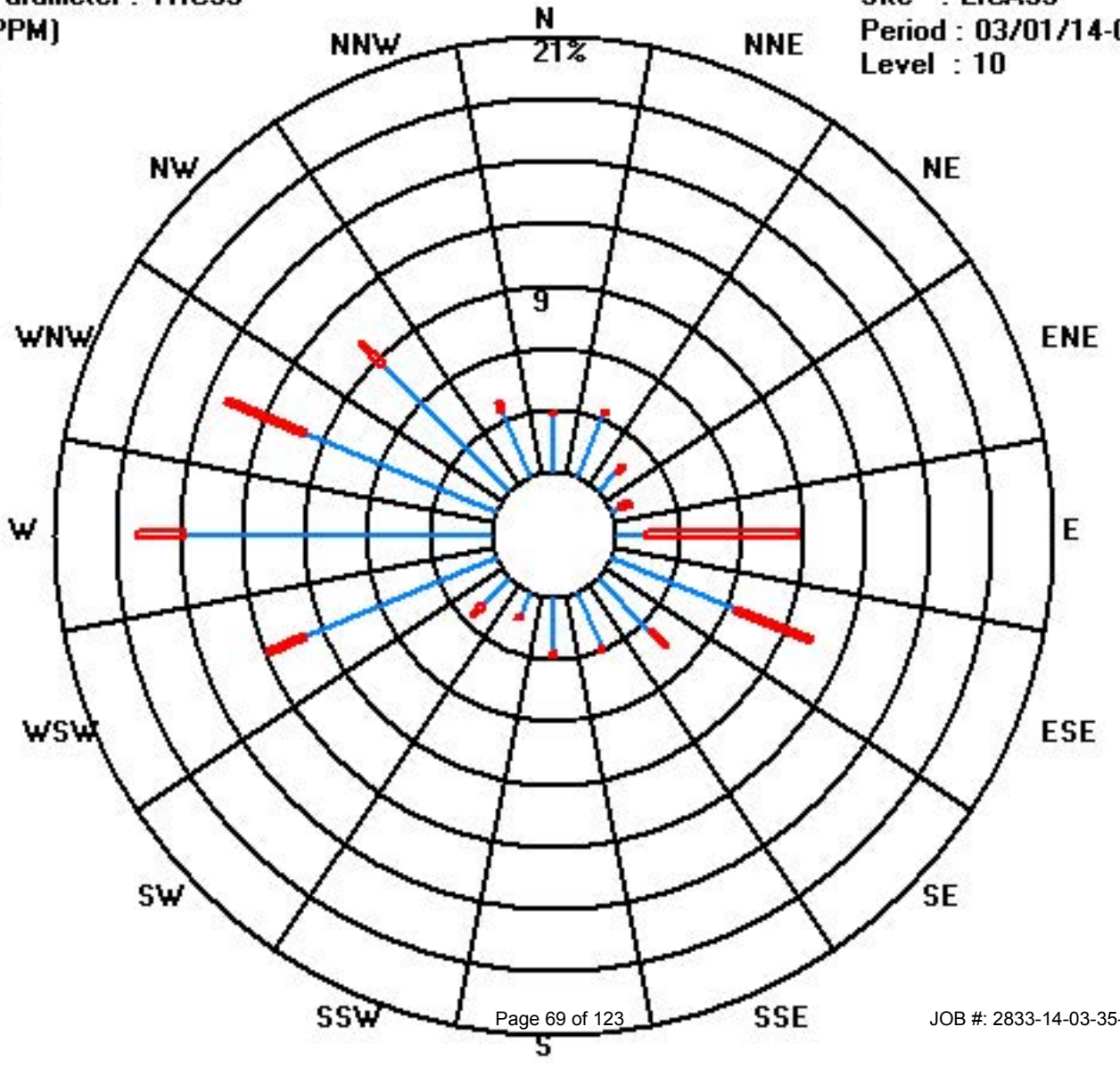
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	20	24	9	3	10	46	25	20	19	9	13	70	104	70	61	25	528
<	10.0	1	1	3	4	52	28	8	2	2	1	5	14	16	29	11	3	180
<	50.0																	
>=	50.0																	
	Totals	21	25	12	7	62	74	33	22	21	10	18	84	120	99	72	28	

Calm : .00 %

Total # Operational Hours : 708

Logger : 35 Parameter : THC55
Class Limits (PPM)
>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA35
Period : 03/01/14-03/31/14
Level : 10



JOB #: 2833-14-03-35-C

Methane

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

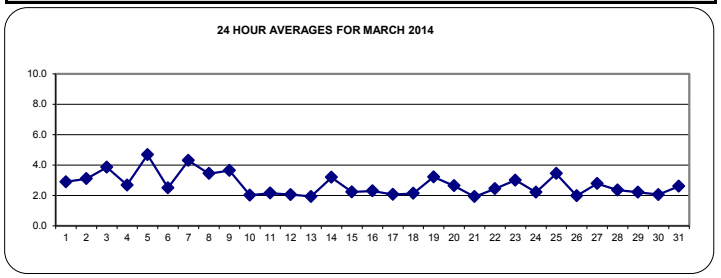
METHANE (CH4) hourly averages in ppm

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	3.0	3.3	3.5	3.5	4.7	4.4	3.9	3.6	4.5	4.9	2.8	2.0	1.9	1.9	**S**	2.0	1.9	1.9	2.6	2.2	2.0	2.1	2.0	2.1	4.9	2.9	24
2	2.1	4.0	2.5	3.6	2.8	3.4	2.6	4.0	3.9	2.2	2.2	2.0	2.3	**S**	2.2	2.2	2.3	2.5	3.0	3.1	2.9	4.2	5.1	6.3	6.3	3.1	24
3	4.9	5.5	5.5	5.6	5.5	5.6	5.1	5.0	4.2	4.9	3.3	2.7	**S**	2.2	2.1	2.0	2.1	2.2	2.8	3.6	3.6	3.1	3.4	3.8	5.6	3.9	24
4	3.5	3.4	3.1	2.8	2.2	2.7	2.2	2.3	2.4	2.2	2.1	**S**	2.1	2.1	2.1	2.1	2.3	2.9	2.4	2.3	2.7	3.1	3.7	5.1	5.1	2.7	24
5	5.4	5.6	5.8	7.5	***8.1***	7.2	7.1	7.4	7.8	6.9	**S**	3.6	3.2	2.8	2.6	2.3	2.3	2.8	3.5	3.2	3.7	3.6	2.7	2.5	***8.1***	***4.7***	24
6	2.1	2.3	2.4	2.5	2.7	2.4	2.3	2.2	2.1	**S**	2.0	2.1	2.0	1.9	1.9	1.9	1.9	1.9	2.4	3.5	2.9	4.1	4.0	4.1	4.1	2.5	24
7	4.8	4.6	6.9	7.9	6.9	7.7	5.6	5.4	**S**	4.8	4.5	4.5	3.6	2.6	2.5	2.5	2.4	3.0	2.9	3.1	2.8	2.5	3.7	3.8	7.9	4.3	24
8	3.8	3.5	3.3	2.7	2.8	2.9	2.8	**S**	2.8	2.7	2.6	2.7	2.9	2.9	3.1	3.2	3.3	3.6	4.1	3.9	4.8	4.9	5.0	4.8	5.0	3.4	24
9	5.0	5.7	5.4	5.7	5.7	4.8	**S**	4.3	4.6	4.5	4.7	4.5	3.8	3.5	2.6	2.0	1.9	1.9	2.1	2.4	2.5	2.1	2.1	2.0	5.7	3.6	24
10	1.9	2.0	1.9	1.9	2.0	**S**	2.1	1.9	1.9	1.9	1.8	1.8	1.8	2.0	2.1	2.0	1.9	2.3	2.3	2.4	2.0	2.0	2.4	2.3	2.4	2.0	24
11	2.2	2.2	2.1	2.1	**S**	3.5	2.2	2.0	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.8	1.9	1.9	2.2	2.6	2.6	2.8	2.1	3.5	2.2	24
12	2.0	1.9	1.9	**S**	2.2	2.2	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.9	2.0	2.1	2.2	2.5	2.4	3.2	2.1	1.9	2.1	3.2	2.1	24
13	2.3	1.9	**S**	1.8	1.8	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.0	2.0	2.4	2.1	2.5	2.5	1.9	24
14	2.5	**S**	4.3	3.7	4.6	3.6	5.1	6.8	5.6	4.8	3.6	2.6	2.2	1.9	2.0	2.0	2.3	2.6	2.7	2.3	2.1	2.0	2.0	2.1	6.8	3.2	24
15	**S**	2.2	2.2	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.2	2.2	2.4	2.5	2.7	2.4	2.5	2.4	2.5	**S**	2.7	2.2	24
16	2.4	2.9	2.5	2.6	2.6	2.7	3.8	3.4	2.1	2.0	1.9	1.9	1.8	1.8	1.9	1.8	1.8	1.8	1.9	2.3	2.4	2.0	**S**	2.5	3.8	2.3	24
17	2.2	2.1	2.3	2.3	2.2	2.3	2.2	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.2	2.6	**S**	2.6	2.7	2.7	2.1	24
18	2.5	2.5	3.2	2.9	2.2	2.0	1.9	1.8	1.9	1.9	1.8	1.9	1.8	1.9	1.8	1.9	1.9	2.1	2.2	2.2	**S**	2.5	2.2	2.2	3.2	2.1	24
19	2.8	2.5	2.4	2.6	4.0	4.3	4.3	4.4	4.8	3.5	2.6	2.3	2.2	2.2	2.1	2.2	2.2	2.9	2.3	**S**	4.2	5.3	3.4	4.5	5.3	3.2	24
20	4.7	4.9	5.6	5.1	4.4	2.0	1.9	1.8	1.8	**C**	**C**	**C**	**C**	1.8	1.8	1.8	1.8	1.8	**S**	1.8	1.8	1.8	1.8	1.8	5.6	2.6	24
21	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.8	1.8	1.8	**S**	1.9	2.3	2.4	2.1	2.0	2.1	2.4	1.9	24
22	2.3	2.5	2.4	2.7	2.7	3.1	2.8	2.4	2.4	2.4	2.1	2.0	1.9	1.9	1.9	1.9	**S**	1.9	1.9	2.2	2.8	2.7	2.9	4.3	4.3	2.4	24
23	5.8	5.1	5.2	6.0	5.6	4.5	3.4	2.9	2.2	2.0	1.9	1.9	1.9	1.9	1.9	**S**	1.8	1.8	2.0	2.3	2.6	2.2	2.2	2.0	6.0	3.0	24
24	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	**S**	1.8	1.8	1.8	1.9	2.1	2.9	3.4	4.4	4.5	4.5	2.2	24
25	4.8	5.9	6.5	6.5	5.7	5.5	5.0	4.4	4.2	3.8	2.4	2.2	2.2	**S**	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.2	2.3	6.5	3.4	24
26	2.4	2.7	2.5	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.8	1.8	**S**	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2.1	2.1	2.3	2.7	2.0	24
27	2.2	2.8	3.1	3.9	3.9	4.3	4.7	4.3	4.2	3.0	1.9	**S**	1.8	1.8	1.8	1.8	1.8	1.9	2.0	2.0	2.8	2.6	2.8	2.8	4.7	2.8	24
28	2.5	2.6	2.9	3.2	2.9	3.0	2.8	2.4	2.1	2.1	**S**	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.3	2.7	2.5	2.2	2.7	3.2	2.4	24
29	3.1	3.1	3.3	2.7	2.5	2.5	2.3	2.0	1.9	**S**	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.9	2.5	2.7	2.1	1.8	1.8	3.3	2.2	24
30	1.8	1.8	1.9	1.8	1.9	1.9	1.9	1.9	**S**	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.3	2.4	2.9	3.0	2.8	3.0	2.1	24	
31	3.2	3.2	3.4	3.6	3.5	4.1	4.1	**S**	3.0	2.1	2.0	2.0	2.0	2.0	1.9	1.9	1.9	2.0	2.0	2.5	2.6	2.3	2.3	2.3	4.1	2.6	24
HOURLY MAX	6	6	7	8	8	8	7	7	8	7	5	5	4	4	3	3	3	4	4	4	5	5	5	6			
HOURLY AVG	3.1	3.2	3.4	3.5	3.5	3.4	3.1	3.1	2.9	2.8	2.3	2.3	2.2	2.1	2.0	2.0	2.0	2.2	2.3	2.5	2.7	2.7	2.8	3.0			

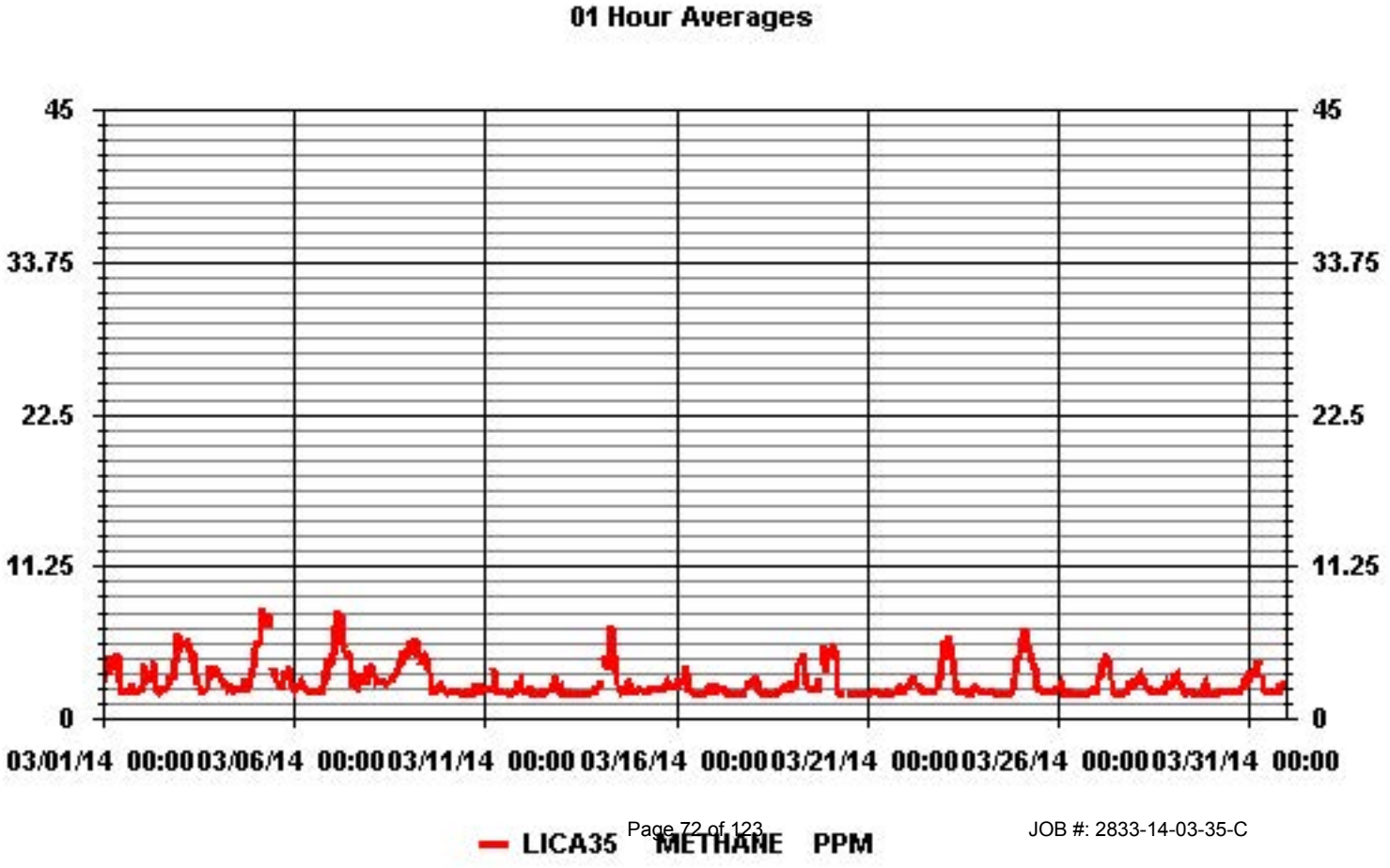
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	708					
MAXIMUM 1-HR AVERAGE:	8.1	PPM	@ HOUR(S)	4	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	4.7	PPM			ON DAY(S)	5
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	1.19		MONTHLY AVERAGE:		2.71	PPM



JOB #: 2833-14-03-35-C

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

METHANE 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	5.28	5.32	4.68	4.83	8.56	6.3	4.77	4.98	6.58	6.05	5.48	2.23	2.06	2.05	**S**	2.34	2	2.17	4.47	2.42	2.15	2.25	2.15	2.27	8.56	4.0	24
2	2.25	7.72	4.6	7.05	3.57	4.5	3.65	6.17	5.99	2.43	2.43	2.15	2.76	**S**	2.35	2.39	2.53	2.74	5.09	4.78	3.25	5.32	8.54	***20.28***	***20.28***	4.9	24
3	6.51	6.59	8.68	6.32	5.7	9.67	6.36	6.12	4.86	6.26	3.9	3.34	**S**	2.81	2.81	2.73	2.73	2.66	3.54	5.18	5.87	4.19	6.68	6.39	9.67	5.2	24
4	6	4.36	6.08	4.17	3.09	3.55	2.92	3.12	3.03	2.44	2.26	**S**	3.78	2.9	2.56	2.42	3.65	4.75	3.19	2.73	3.36	6.45	4.62	9.51	9.51	4.0	24
5	7.37	7.34	7.14	8.59	12.1	7.85	8.64	8.64	9.09	8.3	**S**	4.24	3.82	3.23	2.95	2.54	2.58	4.12	5.13	3.67	4.71	4.99	2.97	3.07	12.1	5.8	24
6	2.39	2.74	2.79	2.7	3.89	2.7	2.8	2.27	2.54	**S**	2.17	2.26	2.27	2.02	1.99	1.95	1.96	2.25	3.74	4.73	3.65	6.2	6.02	4.99	6.2	3.1	24
7	5.48	6.82	9.57	***20.28***	9.72	13.48	8.05	11.91	**S**	5.4	4.66	5.19	4.43	3.09	2.91	3.12	2.92	3.59	3.86	4.36	3.64	2.81	8.02	6.39	***20.28***	***6.5***	24
8	5.25	7.49	6.32	3.17	3.7	4.03	3.33	**S**	3	3.4	2.9	2.94	3.48	3.11	3.29	3.5	3.47	5.36	7.35	4.85	6.03	6.14	6.99	9.41	9.41	4.7	24
9	8.69	12.16	11.33	15.1	9.8	7.05	**S**	4.84	5.7	5.36	5.81	4.82	4.71	4.01	3.5	2.08	2.07	2.15	2.36	2.75	2.8	2.76	2.36	2.21	15.1	5.4	24
10	2.06	2.34	1.98	2.08	2.66	**S**	2.55	1.99	2.02	2.08	1.91	1.95	2.18	2.38	2.63	2.32	2.37	3.07	3.9	2.98	2.4	2.86	3.62	2.62	3.9	2.5	24
11	2.35	2.36	2.41	2.46	**S**	5.02	2.76	2.2	2.05	1.98	2.08	2.14	2.4	2.4	2.33	2.16	1.9	2.05	2.31	2.87	3.14	3.16	3.06	2.29	5.02	2.5	24
12	2.18	2.21	2.12	**S**	2.62	2.39	2.19	1.9	1.88	1.87	1.89	2	1.94	1.9	2.09	2.31	2.69	3.25	3.1	3.4	4.3	2.59	2.29	2.4	4.3	2.4	24
13	3.09	2.03	**S**	1.92	1.95	2.44	2.29	2.13	1.89	1.86	1.89	1.87	1.87	1.86	1.92	1.87	1.9	2.06	2.56	2.26	2.77	3.27	2.43	3.32	3.32	2.2	24
14	3.02	**S**	11.54	6.39	5.76	5.09	5.59	9.76	9.32	6.73	4.34	3.2	2.87	2.08	2.27	2.71	3.16	3.22	3.31	2.79	2.32	2.22	2.18	2.44	11.54	4.4	24
15	**S**	2.46	2.63	2.26	2.1	2.18	2.06	2.27	2.35	2.3	2.23	2.37	2.48	2.35	2.37	2.47	3.43	3.5	3.49	2.52	2.66	2.59	2.56	**S**	3.5	2.5	24
16	2.49	3.78	3.32	3.32	2.9	3.45	5.24	5.98	2.45	2.14	1.95	2.23	1.93	1.95	1.93	1.92	1.95	1.95	2.21	3.06	2.97	2.47	**S**	3.1	5.98	2.8	24
17	2.53	2.35	2.57	2.51	2.3	2.51	2.63	2.66	1.91	1.9	1.93	1.88	1.92	1.94	1.9	1.91	1.85	1.88	1.89	2.45	4.47	**S**	2.94	2.91	4.47	2.3	24
18	2.79	3.25	5.74	4.75	2.39	2.44	2.05	1.94	2.01	2.05	2.03	2	2.06	2.14	1.95	2.12	2.23	2.67	3.15	2.72	**S**	2.82	2.89	2.48	5.74	2.6	24
19	3.73	3.37	2.74	4.74	5.14	5.02	5.61	5.59	5.96	4.71	3.28	2.66	2.76	2.7	2.39	2.54	2.7	5.75	2.53	**S**	5.72	9.11	5.36	12.96	12.96	4.7	24
20	5.49	5.76	6.64	6.33	7.21	2.46	1.95	1.88	1.87	**C**	**C**	**C**	**C**	**C**	1.87	1.87	1.87	1.87	**S**	1.87	1.87	1.86	1.88	1.88	7.21	3.1	24
21	1.9	1.89	1.92	1.93	1.93	1.96	1.97	2.01	1.93	1.91	1.89	1.93	1.97	1.97	1.91	1.91	1.9	**S**	2.09	2.91	3.07	2.44	2.22	2.26	3.07	2.1	24
22	2.54	3.05	2.65	3.2	3.79	4.84	3.18	3.28	2.56	2.57	2.29	2.17	1.97	1.93	1.92	1.92	**S**	1.92	2.22	2.57	3.41	3.03	4.05	5.57	5.57	2.9	24
23	7.74	6.25	5.87	7.91	7	5.54	4.17	3.63	2.43	2.24	1.93	1.94	1.94	2.02	1.97	**S**	1.91	1.92	4.77	4.17	3.46	2.7	2.45	2.57	7.91	3.8	24
24	2.55	1.95	2.31	2.34	2.02	2.03	2.03	1.93	1.97	1.85	1.87	1.86	1.87	1.89	**S**	1.88	1.96	1.91	2.13	2.45	4.34	4.16	5.23	5.36	5.36	2.5	24
25	6.76	7.12	8.36	8.41	13.88	6.81	6.08	5.29	4.56	4.16	2.9	2.49	2.44	**S**	2.11	2.03	1.99	1.98	1.92	2.28	2.27	2.16	2.47	2.63	13.88	4.4	24
26	2.72	3.82	3.58	2.16	1.93	1.93	1.96	1.94	1.94	1.91	1.91	1.9	**S**	1.9	1.9	1.9	1.89	1.91	1.9	1.97	2.08	2.29	2.31	2.87	3.82	2.2	24
27	2.56	3.56	3.72	5.59	5.2	5.16	7.25	5.12	5.17	3.59	2.4	**S**	1.9	1.91	1.91	1.93	1.97	2.12	2.17	2.49	4.19	3.46	3.11	3.78	7.25	3.5	24
28	2.94	3.1	3.58	4.93	3.85	3.77	3.21	2.83	2.43	2.31	**S**	1.97	2.1	1.99	1.99	2.31	2.07	2.15	2	3.63	3.17	2.81	2.56	3.05	4.93	2.8	24
29	5.71	3.81	4.26	3.43	2.59	2.55	2.53	2.26	1.92	**S**	1.94	2.02	1.92	1.92	1.92	1.9	1.89	1.87	2.53	4.13	4.82	4.27	1.89	1.91	5.71	2.8	24
30	1.91	1.9	1.91	1.91	1.93	1.93	1.93	1.93	**S**	1.92	1.91	1.92	1.93	1.92	1.94	1.96	1.93	1.98	2.26	2.41	2.63	4.03	4.96	3.25	4.96	2.3	24
31	3.39	4.78	3.86	4.58	3.9	6.81	5.61	**S**	3.33	2.55	2.15	2.15	2.06	2.06	2.04	2.02	2.03	2.13	2.25	3.17	3.07	2.88	2.77	2.66	6.81	3.1	24
HOURLY MAX	9	12	12	20	14	13	9	12	9	8	6	5	5	4	4	4	4	6	7	5	6	9	9	20			
HOURLY AVG	4.0	4.4	4.8	5.2	4.8	4.5	3.8	4.0	3.5	3.3	2.7	2.5	2.5	2.3	2.3	2.2	2.3	2.7	3.1	3.2	3.5	3.6	3.7	4.6			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 707

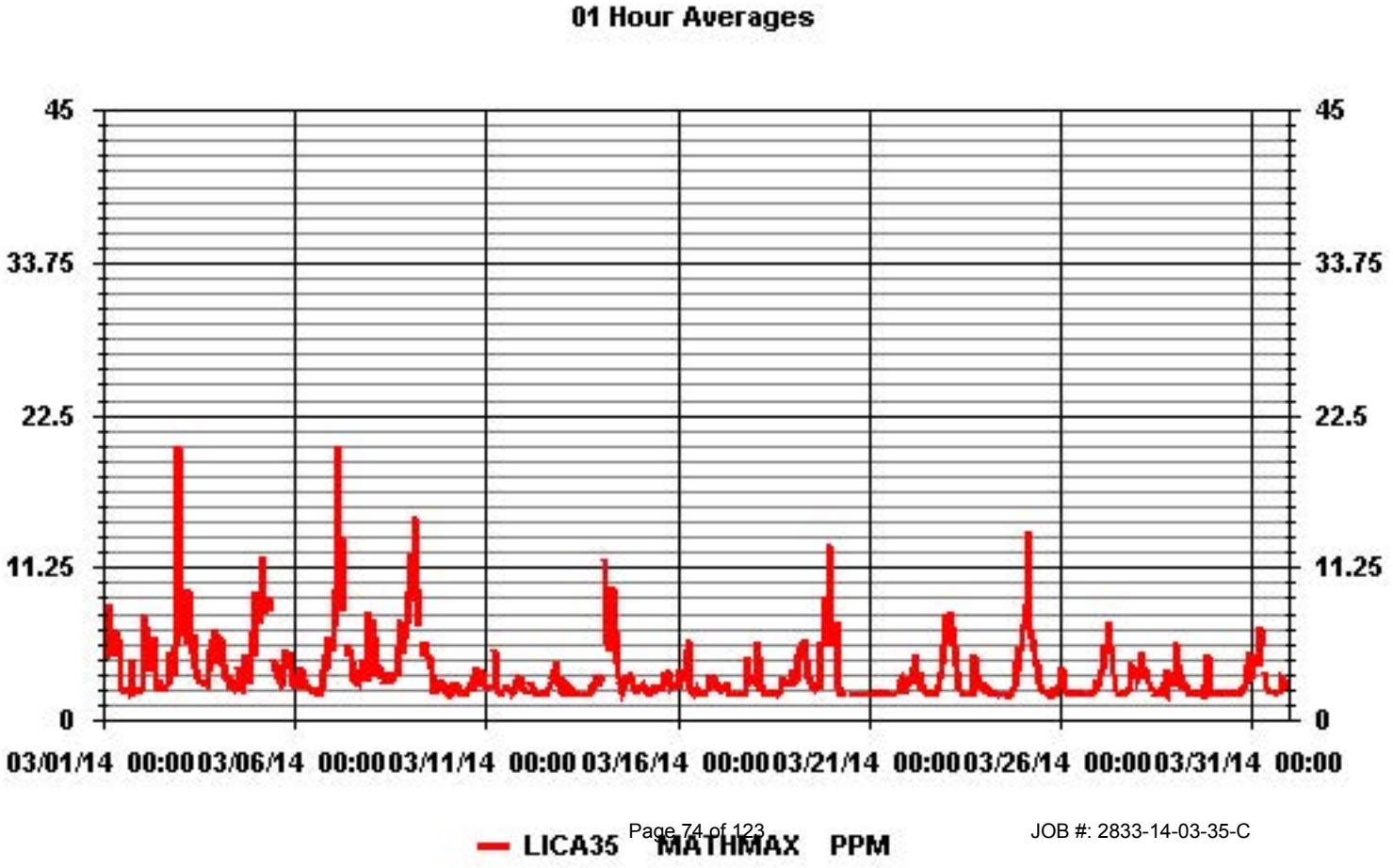
MAXIMUM INSTANTANEOUS VALUE: 20.28 PPM @ HOUR(S) 13, 3 ON DAY(S) 2,7

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 2.21



JOB #: 2833-14-03-35-C

LICA35
METHANE / WDR Joint Frequency Distribution (Percent)

March 2014

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA35
Parameter : METHANE
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	2.82	3.38	1.27	.42	1.69	6.63	3.53	2.82	2.68	1.27	1.83	9.88	14.68	9.88	8.61	3.53	75.00
<	10.0	.14	.14	.42	.56	7.06	3.81	1.12	.28	.28	.14	.70	1.97	2.25	4.09	1.55	.42	25.00
<	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	2.96	3.53	1.69	.98	8.75	10.45	4.66	3.10	2.96	1.41	2.54	11.86	16.94	13.98	10.16	3.95	

Calm : .00 %

Total # Operational Hours : 708

Distribution By Samples

Direction

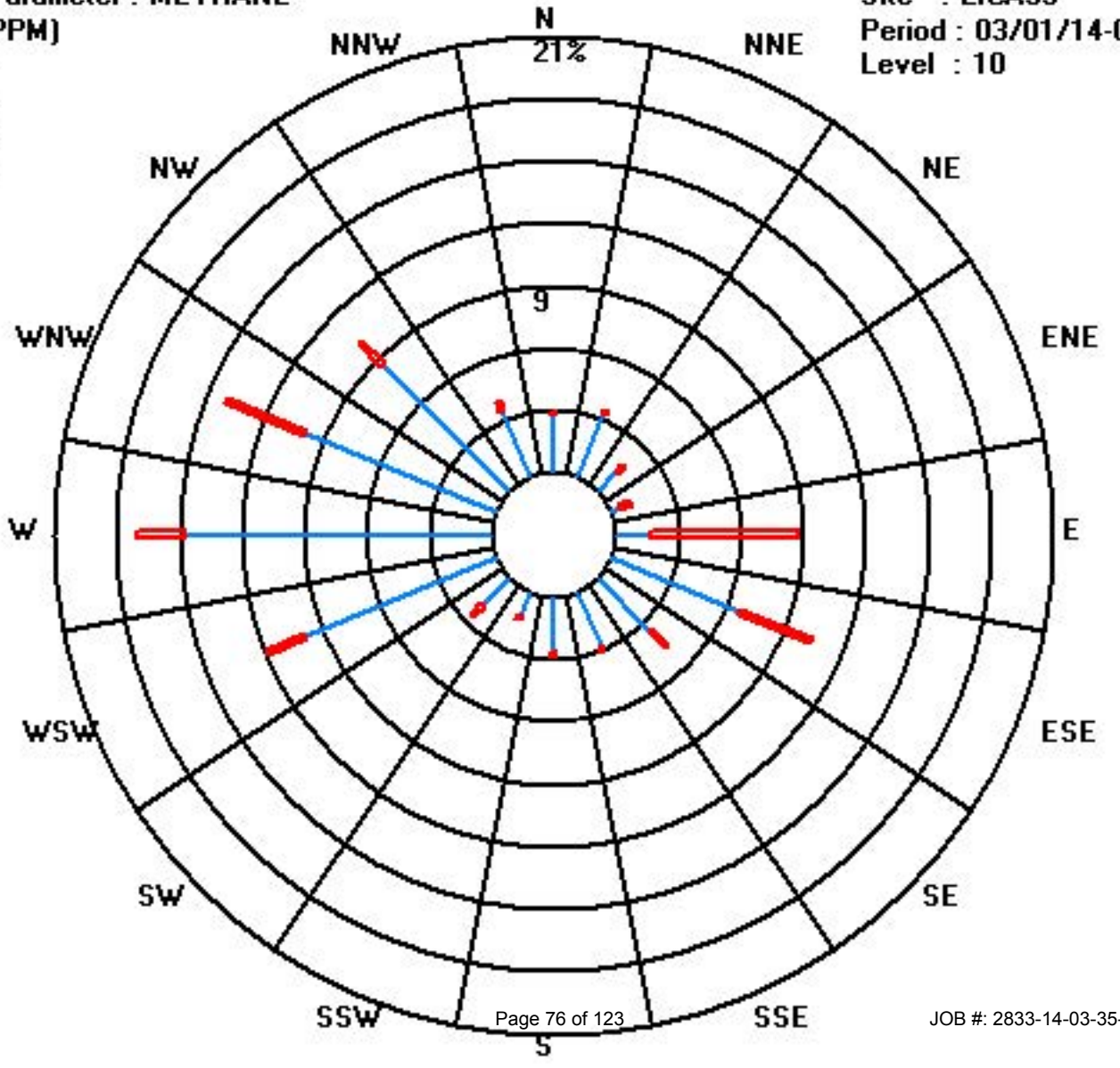
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	20	24	9	3	12	47	25	20	19	9	13	70	104	70	61	25	531
<	10.0	1	1	3	4	50	27	8	2	2	1	5	14	16	29	11	3	177
<	50.0																	
>=	50.0																	
	Totals	21	25	12	7	62	74	33	22	21	10	18	84	120	99	72	28	

Calm : .00 %

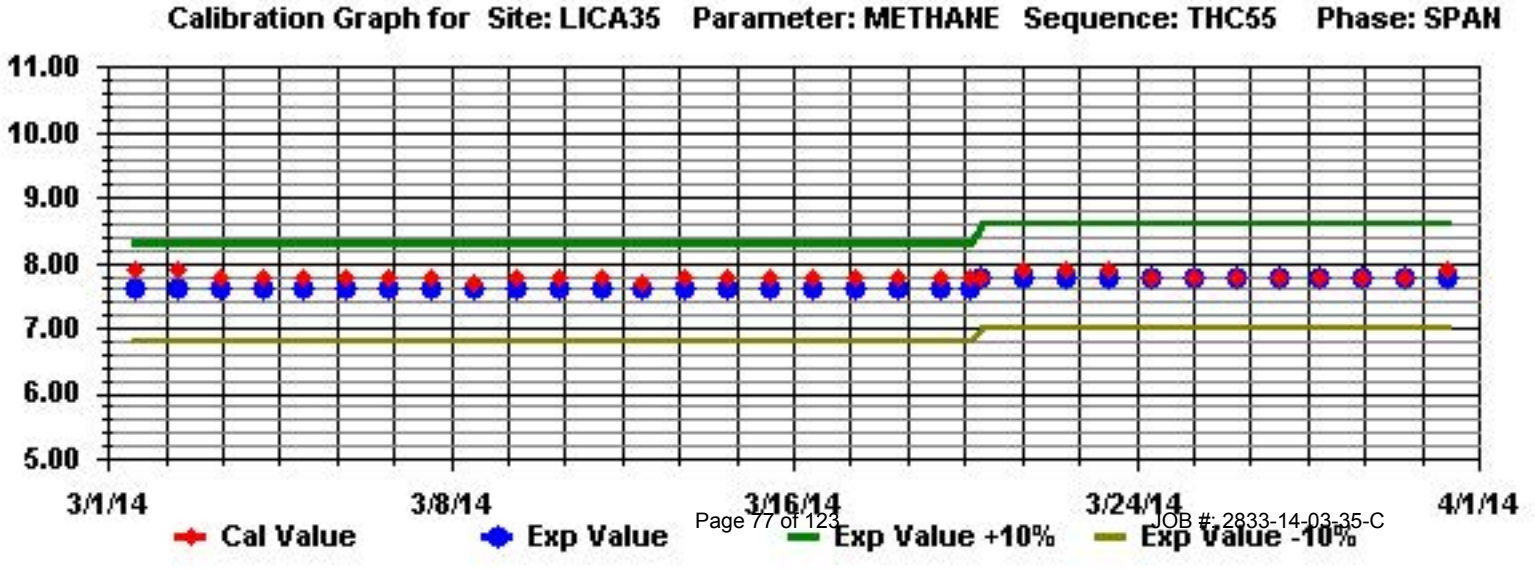
Total # Operational Hours : 708

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

Site : LICA35
Period : 03/01/14-03/31/14
Level : 10



JOB #: 2833-14-03-35-C


Calibration Graph for Site: LICA35 Parameter: METHANE Sequence: THC55 Phase: SPAN
11.00
10.00
9.00
8.00
7.00
6.00
5.00
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Non-Methane Hydrocarbons

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

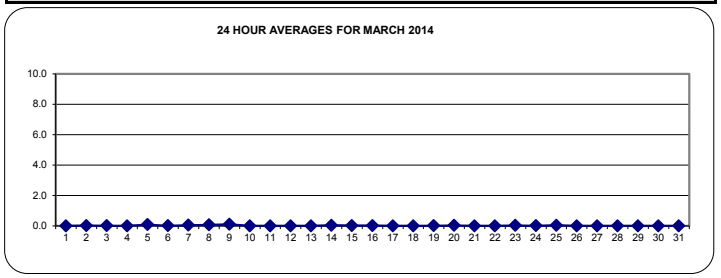
NON-METHANE HYDROCARBONS (NMHC) hourly averages in ppm

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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0.0	24
2	0	0.1	0	0	0	0	0	0	0.1	0	0	0	0	**S**	0	0	0	0	0.1	0	0	0	0.1	0.1	0.1	0.0	24
3	0	0	0	0	0	0	0	0.1	0	0.1	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
4	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	0.0	24
5	0.2	0.1	0.1	0.2	***0.3***	0.2	0.1	***0.3***	0.2	0.1	**S**	0	0	0	0	0	0	0	0	0	0.1	0	0	0	***0.3***	0.1	24
6	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0.1	0.0	24
7	0.1	0.1	***0.3***	0.2	0	0.1	0.1	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	***0.3***	0.0	24
8	0	0	0.1	0	0	0.1	0.1	**S**	0.1	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	24
9	0.2	0.2	***0.3***	0.2	***0.3***	0.2	**S**	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0	0	0	0	0	0	0	0	0	0	***0.3***	***0.1***	24
10	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
11	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	0.0	24
12	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0.1	0.0	24
13	0	0	**S**	0	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	**S**	0.1	0	0.2	0.1	0.2	0.2	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.0	24
15	**S**	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0.1	0.1	0	0	0.1	0	**S**	0.1	0.0	24
16	0	0.1	0	0.1	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0.1	0.1	0.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0.0	24
18	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0.1	0.0	24
19	0	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	**S**	0	0.1	0	0	0.1	0.0	24
20	0.2	0.1	0.1	0.2	0.1	0	0	0	0	**C**	**C**	**C**	**C**	0	0	0	0	0	**S**	0	0	0	0	0	0.2	0.0	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0.0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0.0	24
23	0.1	0.1	0.1	0.2	0.1	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0.2	0.0	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0.1	0.1	0.1	0.0	24
25	0.1	***0.3***	***0.3***	0	0.1	0.1	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	***0.3***	0.0	24
26	0	0	0	0	0	0	0	0	0	0	0	0	**S**	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	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
28	0	0	0	0	0	0	0	0	0	0	**S**	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	**S**	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	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
31	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
HOURLY AVG	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

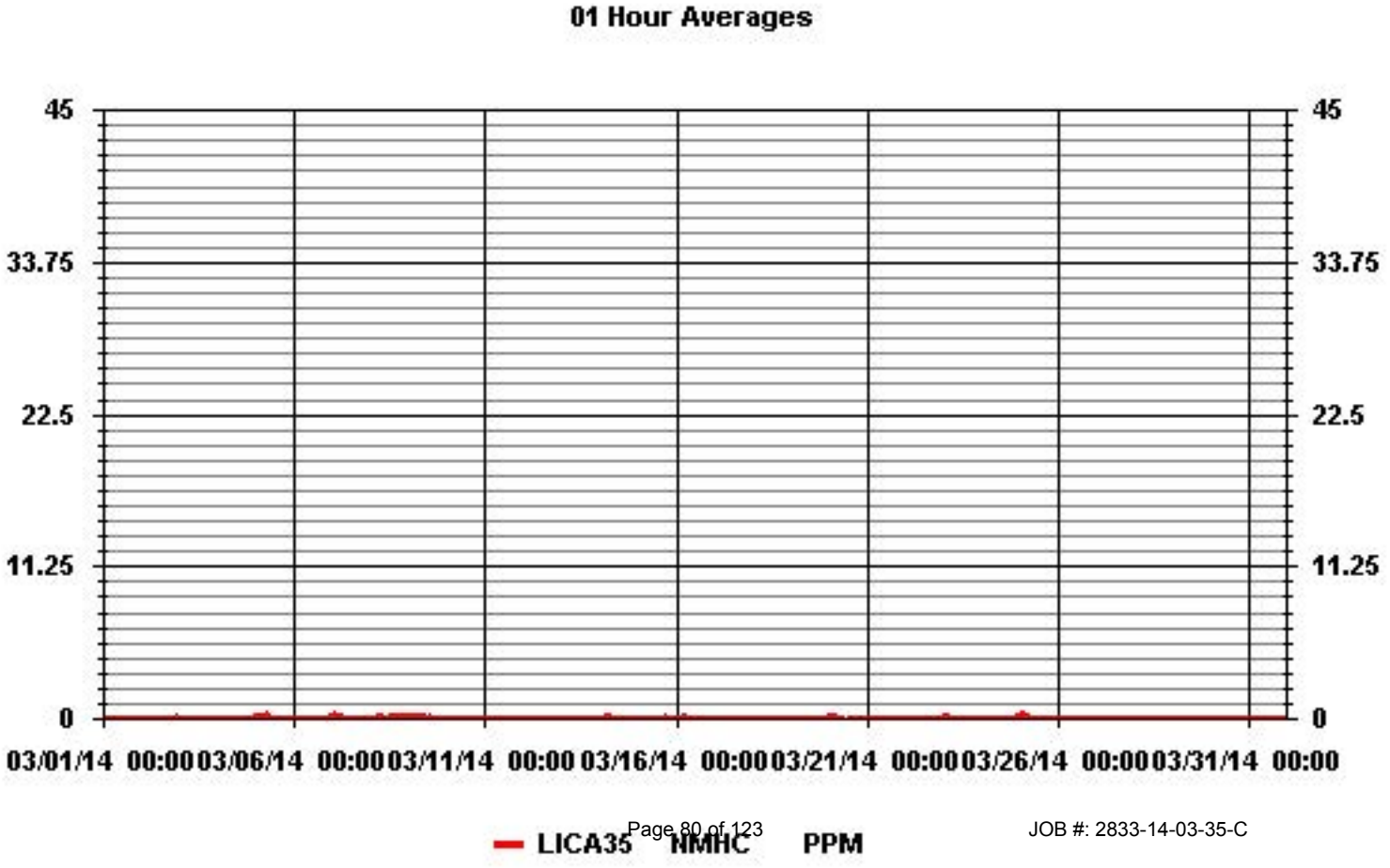
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	94						
MAXIMUM 1-HR AVERAGE:	0.3	PPM	@ HOUR(S)	VAR	ON DAY(S)		VAR
MAXIMUM 24-HR AVERAGE:	0.1	PPM			ON DAY(S)		VAR
					VAR-VARIOUS		
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:			744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	0.05		MONTHLY AVERAGE:			0.02	PPM



JOB #: 2833-14-03-35-C

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

NON-METHANE 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	0.08	0.14	0.21	0.16	0.26	0.17	0.21	0.13	0.23	0.2	0.05	0	0	0	**S**	0	0	0	0.03	0	0	0	0	0	0.26	0.1	24
2	0	0.16	0.05	0.12	0	0.06	0.07	0.22	0.22	0	0	0	0	**S**	0	0	0	0	0.3	0.21	0.02	0.21	0.34	0.2	0.34	0.1	24
3	0.1	0.18	0.18	0.19	0.18	0.23	0.18	0.18	0.09	0.15	0	0	**S**	0	0	0	0	0	0	0.05	0	0	0.07	0.06	0.23	0.1	24
4	0.15	0.02	0.09	0	0	0.04	0	0	0	0	0	**S**	0	0	0	0	0.04	0.18	0.09	0.14	0.13	0.43	0.24	**0.7**	**0.7**	0.1	24
5	0.36	0.27	0.37	0.39	0.56	0.4	0.45	0.45	0.36	0.35	**S**	0.08	0.13	0	0	0	0.13	0.19	0.08	0.12	0.19	0.1	0.04	0.07	0.56	0.2	24
6	0	0.03	0.11	0.04	0.09	0.02	0.04	0	0	**S**	0	0	0	0	0	0	0	0	0.07	0.16	0.24	0.31	0.38	0.32	0.38	0.1	24
7	0.21	0.32	0.68	0.29	0.28	0.24	0.24	0.2	**S**	0.22	0.13	0.12	0.12	0.06	0.02	0.17	0.1	0.17	0.16	0.14	0.16	0.1	0.16	0.19	0.68	0.2	24
8	0.17	0.16	0.18	0.1	0.14	0.14	0.16	**S**	0.17	0.11	0.12	0.18	0.14	0.23	0.22	0.24	0.24	0.22	0.26	0.23	0.26	0.3	0.35	0.35	0.35	0.2	24
9	0.36	0.33	0.45	0.56	0.33	0.3	**S**	0.3	0.28	0.28	0.29	0.29	0.29	0.4	0.24	0.1	0.15	0.03	0.11	0.12	0.13	0	0	0	0.56	***0.2***	24
10	0	0	0	0	0	**S**	0	0	0	0	0.13	0	0	0	0.11	0	0	0.06	0.14	0.18	0	0	0.13	0	0.18	0.0	24
11	0	0.13	0.07	0	**S**	0.21	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.11	0.18	0.16	0.18	0.1	0.21	0.1	24
12	0.15	0.01	0	**S**	0	0.17	0	0	0	0	0	0	0	0.05	0	0	0.08	0.19	0.12	0.2	0.26	0.17	0	0.11	0.26	0.1	24
13	0	0.13	**S**	0	0	0	0	0.04	0	0	0.17	0	0	0	0	0	0	0	0	0.14	0	0.05	0	0.09	0.17	0.0	24
14	0.08	**S**	0.57	0.22	0.33	0.22	0.36	0.52	0.18	0.2	0.16	0.07	0	0.02	0	0	0	0.05	0.12	0.12	0.2	0	0	0.15	0.57	0.2	24
15	**S**	0	0	0	0	0	0	0	0.14	0.12	0.16	0.19	0.14	0.13	0.12	0.11	0.15	0.19	0.19	0.17	0.19	0.17	0.17	**S**	0.19	0.1	24
16	0.15	0.21	0.15	0.17	0.15	0.21	0.27	0.25	0.13	0.13	0	0	0	0	0	0	0.08	0	0	0.16	0.17	0.03	**S**	0.22	0.27	0.1	24
17	0.12	0.01	0.13	0.12	0.11	0.09	0.08	0.17	0	0	0	0	0	0.03	0	0	0	0	0	0	0.11	**S**	0.12	0.12	0.17	0.1	24
18	0.05	0.09	0.35	0.22	0	0	0	0	0.06	0	0	0	0.01	0	0	0	0	0	0	0	0	**S**	0.02	0	0.35	0.0	24
19	0.21	0	0	0.11	0.17	0.17	0.22	0.19	0.23	0.21	0.14	0.12	0	0.12	0	0	0.12	0.16	0.07	**S**	0.22	0.22	0.2	0.19	0.23	0.1	24
20	0.32	0.24	0.29	0.28	0.35	0	0	0	0.01	**C**	**C**	**C**	**C**	**C**	0	0	0	0	**S**	0	0	0	0	0	0.35	0.1	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0.0	24
22	0	0	0	0.1	0	0.07	0	0.11	0.08	0	0	0	0	0	0	0	**S**	0	0	0	0.01	0.09	0	0.27	0.27	0.0	24
23	0.37	0.26	0.28	0.38	0.33	0.21	0.05	0.11	0	0	0	0	0	0	0	**S**	0	0	0.05	0.05	0	0	0	0	0.38	0.1	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0.22	0.27	0.29	0.21	0.29	0.0	24
25	0.34	0.47	0.38	0.25	0.22	0.2	0.19	0.15	0.11	0.02	0	0	0	**S**	0.08	0	0	0	0	0	0	0	0	0.15	0.47	0.1	24
26	0	0.25	0.16	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0.25	0.0	24
27	0	0.09	0.07	0.29	0.14	0.13	0.18	0.16	0.15	0.17	0	**S**	0	0.07	0	0	0	0	0	0	0	0.14	0	0.1	0.29	0.1	24
28	0	0.1	0.1	0.14	0.1	0.14	0	0.11	0	0	**S**	0	0	0	0	0	0	0	0	0	0.17	0	0	0	0.17	0.0	24
29	0	0.09	0.17	0.15	0.09	0.11	0	0.08	0	**S**	0	0.11	0	0	0	0	0	0	0	0.06	0.1	0.1	0	0	0.17	0.0	24
30	0	0	0	0	0	0	0	0.07	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0.11	0	0	0.11	0.0	24
31	0	0.07	0	0.13	0.05	0.13	0.07	**S**	0	0	0	0	0	0	0	0	0	0	0	0.11	0.09	0	0	0	0.13	0.0	24
HOURLY MAX	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
HOURLY AVG	0.1	0.1	0.2	0.1	0.1	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	0.1	0.1	0.1	0.1	0.1	0.1			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 343

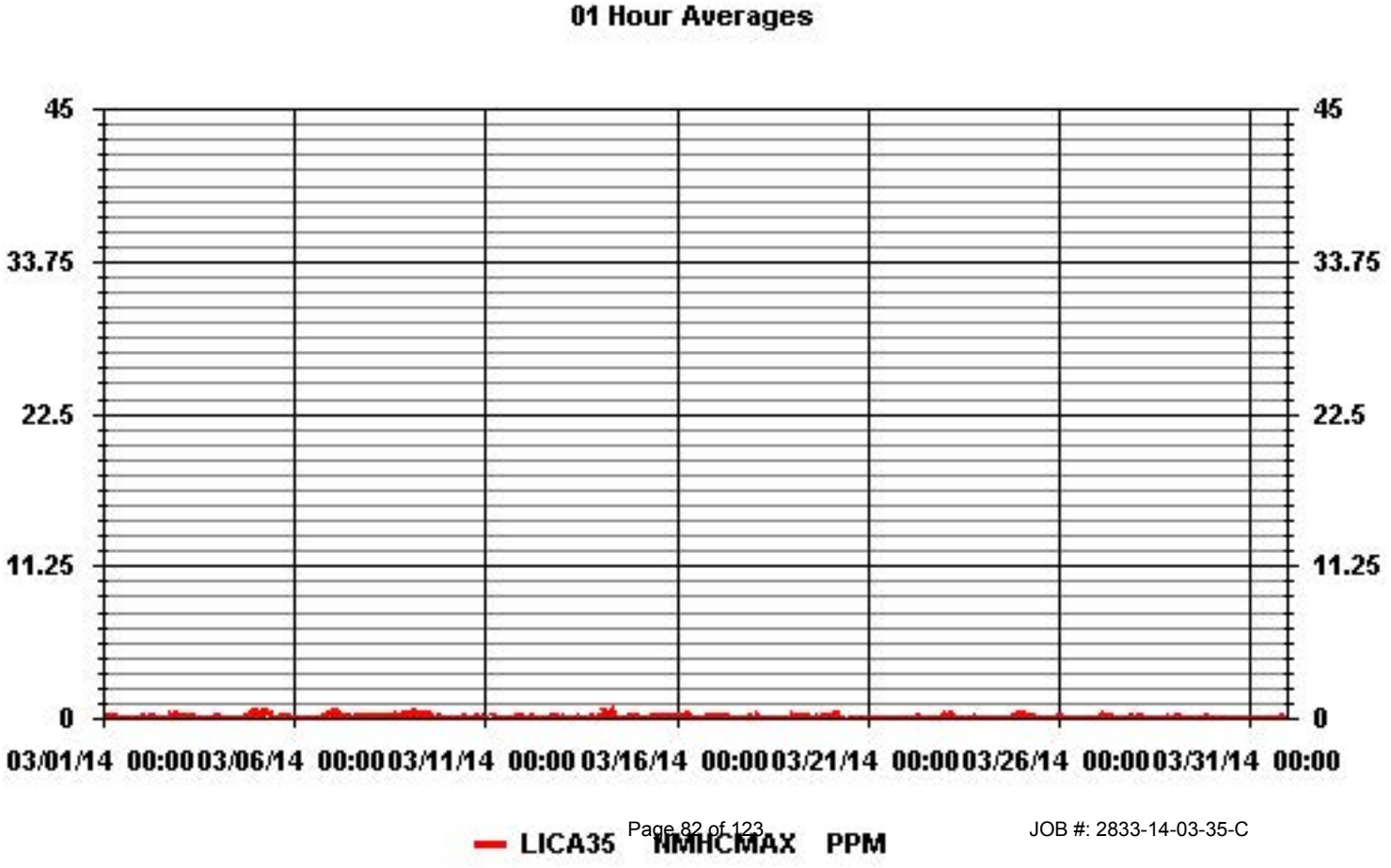
MAXIMUM INSTANTANEOUS VALUE: 0.7 PPM @ HOUR(S) 23 ON DAY(S) 3

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 0.12



JOB #: 2833-14-03-35-C

LICA35
NMHC / WDR Joint Frequency Distribution (Percent)

March 2014

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA35
Parameter : NMHC
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
< .2	2.96	3.53	1.69	.84	8.61	10.16	4.66	3.10	2.96	1.41	2.25	11.86	16.94	13.84	10.16	3.95	99.01
< .5	.00	.00	.00	.14	.14	.28	.00	.00	.00	.00	.28	.00	.00	.14	.00	.00	.98
< 1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 2.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 4.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 4.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.96	3.53	1.69	.98	8.75	10.45	4.66	3.10	2.96	1.41	2.54	11.86	16.94	13.98	10.16	3.95	

Calm : .00 %

Total # Operational Hours : 708

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< .2	21	25	12	6	61	72	33	22	21	10	16	84	120	98	72	28	701
< .5				1	1	2					2			1			7
< 1.0																	
< 2.0																	
< 4.0																	
>= 4.0																	
Totals	21	25	12	7	62	74	33	22	21	10	18	84	120	99	72	28	

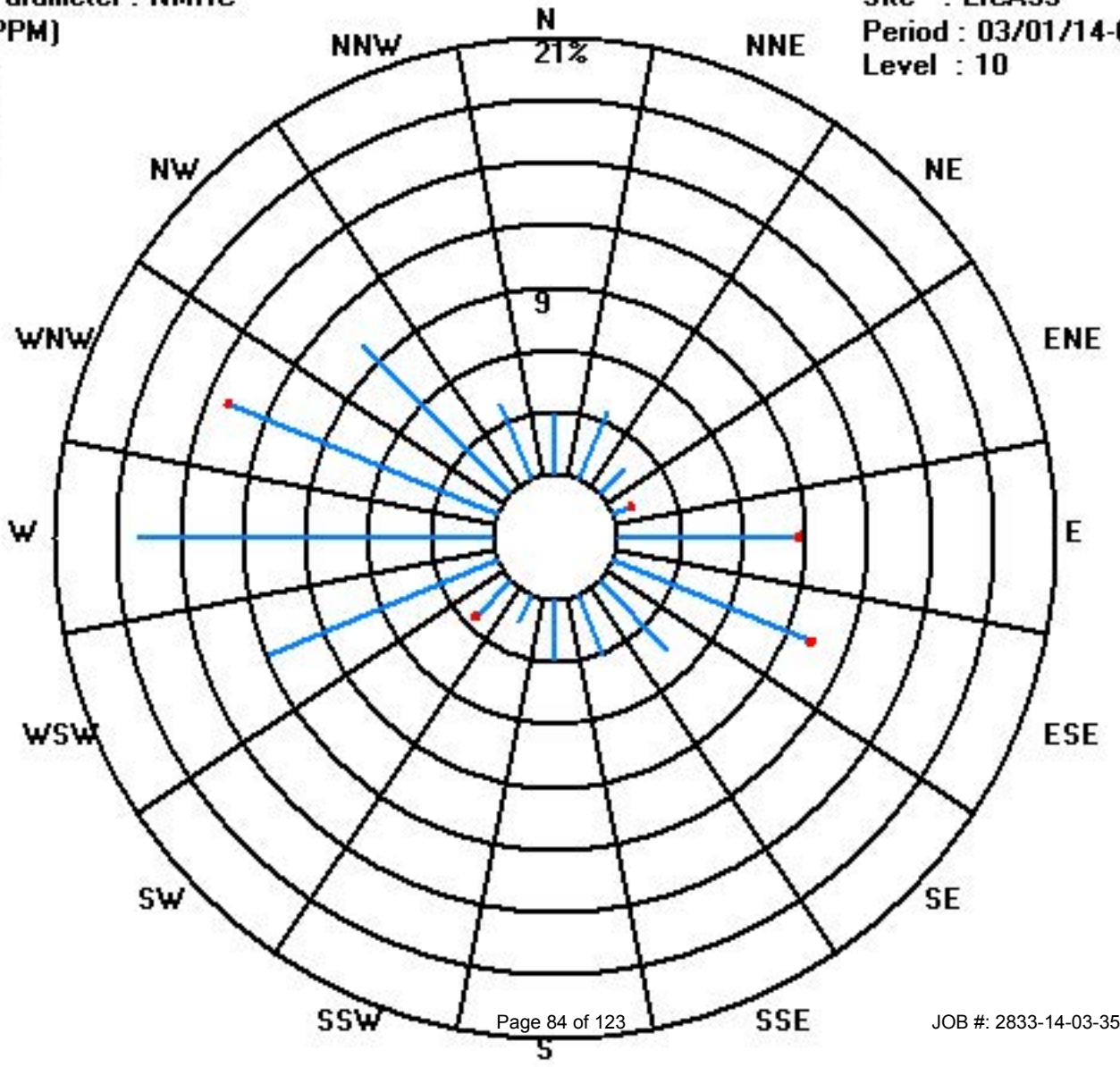
Calm : .00 %

Total # Operational Hours : 708

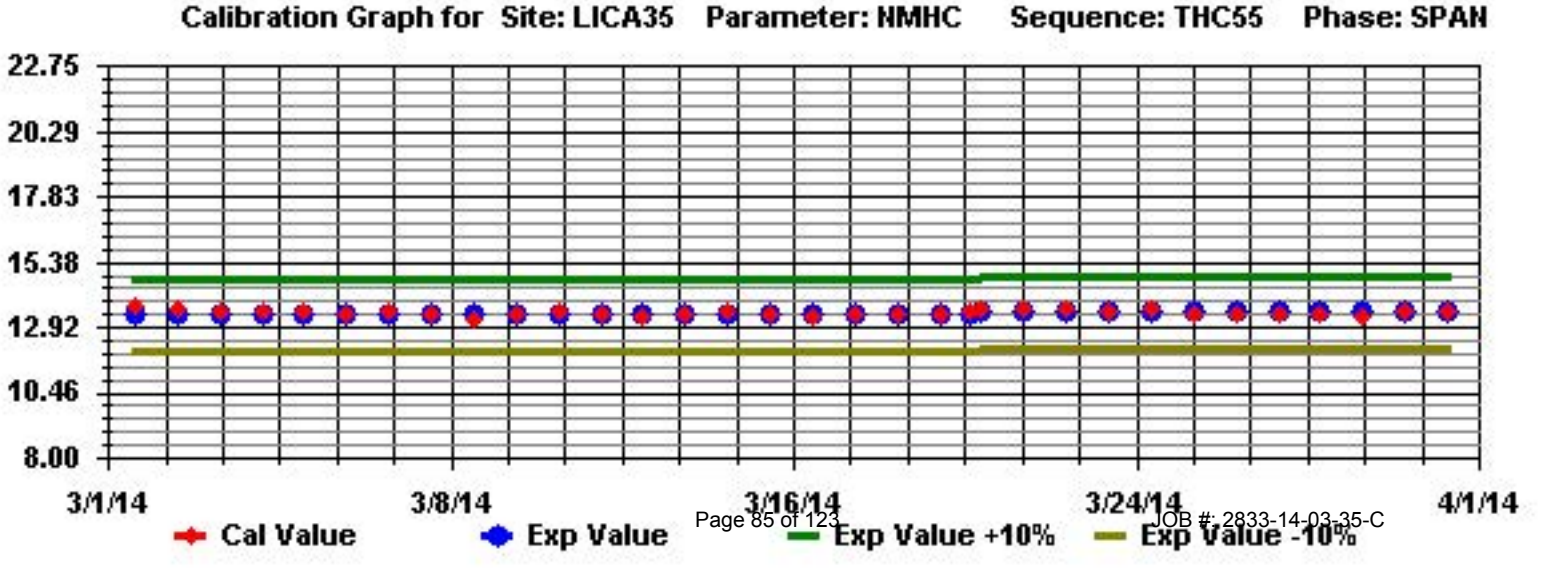
Logger : 35 Parameter : NMHC
Class Limits (PPM)

>= 4.0
< 4.0
< 2.0
< 1.0
< .5
< .2

Site : LICA35
Period : 03/01/14-03/31/14
Level : 10



JOB #: 2833-14-03-35-C


Calibration Graph for Site: LICA35 Parameter: NMHC Sequence: THC55 Phase: SPAN
22.75
20.29
17.83
15.38
12.92
10.46
8.00
3/1/14
3/8/14
3/16/14
3/24/14
4/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Vector Wind Speed

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

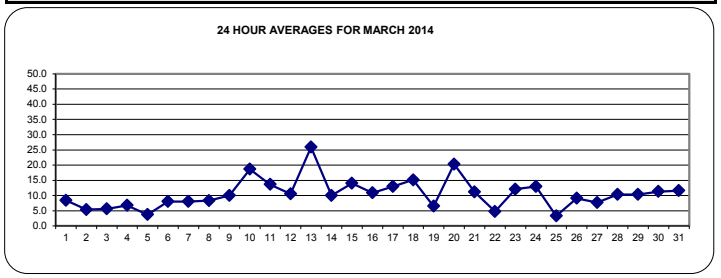
WIND SPEED (WS) hourly averages in km/hr

MST

HOUR START / HOUR END	0:00 1:00	1:00 2:00	2:00 3:00	3:00 4:00	4:00 5:00	5:00 6:00	6:00 7:00	7:00 8:00	8:00 9:00	9:00 10:00	10:00 11:00	11:00 12:00	12:00 13:00	13:00 14:00	14:00 15:00	15:00 16:00	16:00 17:00	17:00 18:00	18:00 19:00	19:00 20:00	20:00 21:00	21:00 22:00	22:00 23:00	23:00 0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																											
1	9.9	6	7	6.7	7.5	5.8	5.2	4.1	2.6	3.6	5.8	9	12.1	13.2	14.2	15.9	14	10.7	9.2	9.6	7.4	7.4	7.6	7.6	15.9	8.4	24
2	8.5	10.4	7.9	10.2	9.1	4.8	5.8	4.6	4.4	4.2	5.1	1.8	6.1	4.1	2.3	7.7	6.1	3.5	5.2	5.1	4.8	3	0.4	4	10.4	5.4	24
3	3.8	1.8	2.8	0.8	4.2	1.4	0.2	2.4	2.5	1.5	2.8	8.2	11.5	13.6	11.7	11.8	12.5	8.6	4.7	2.9	5.8	4	7	7.3	13.6	5.6	24
4	5.1	6.5	6.7	7.9	9.4	9.6	9.1	9.5	8.8	12.1	10.4	11.7	9.4	9.1	7	8.2	7.2	5.3	5.3	1.9	0.7	0.6	0.5	0.9	12.1	6.8	24
5	1.8	1.3	4.4	2.5	1.5	1	1.7	1.5	2.2	0.2	3.3	2.1	2.1	6.3	2.7	6.4	4.6	5.8	4.8	6.5	6.2	6.4	7	7.7	7.7	3.8	24
6	8.8	5.4	6.6	5.4	7.4	6.8	9.9	9.1	7.2	11.9	9.6	10.5	12.8	12.3	11.5	7.4	8.3	6	7.4	8	6.9	7.5	3.6	1.9	12.8	8.0	24
7	3.1	2.7	0.3	3.3	4	4.6	4.5	6.4	7.6	6.4	8.4	7.7	9.4	16.3	16.5	16.9	15.2	12.8	8.9	8.4	8.6	6	6.3	7.5	16.9	8.0	24
8	8.2	7.6	9.6	11	12.6	13.7	8.4	10.9	13.1	12.1	11.7	12	10.2	10.4	7.7	6	7.4	5	3.2	3.2	2.7	4.2	5.1	4.2	13.7	8.3	24
9	5.6	8	8.9	9.4	11.2	13.4	12	11.4	6.5	5.7	4.6	0.4	8.3	3.9	7.4	13.1	19	16.9	12.7	12.2	9	14.2	12.9	13.8	19.0	10.0	24
10	17.5	17.8	26	24.1	22.2	12.4	11	16.2	17.1	14.6	22.5	20.6	19.6	24.2	25.8	26.8	24.1	23.4	17.8	14	17	12.5	8.6	12	26.8	18.7	24
11	8.6	13.4	8.5	8	9.9	10	12.5	13.2	16.2	21.8	20.7	17.6	18.8	20	18.4	17	13.7	13.1	11.4	10.8	10.6	14.3	13.8	4.9	21.8	13.6	24
12	15.1	14	10.5	1.4	3	1	6.2	9.6	13.2	17.4	17.2	16.6	15	14	11.5	12.3	7.4	7.6	2.8	7.8	7.6	16.4	15.2	9.2	17.4	10.5	24
13	11.1	22.8	25.7	25	27.5	31	32.6	35.3	***37.8***	36.9	32.2	33.4	33.3	32.9	34.5	33	28.4	24	19	15.5	10.6	12.5	13.9	12.4	***37.8***	***25.9***	24
14	6.4	4.3	3.8	1.3	1.1	1.9	0.8	2.1	4.3	7.1	9.3	10.7	14.2	15.6	14.1	15.2	14.6	15	17.1	18	17.1	15.5	15.4	14.6	18.0	10.0	24
15	18.2	17.6	16.1	16	15.5	12.8	12.8	11.3	13.1	10.8	10.3	12	13.3	12.5	14	13.6	10.6	13.1	16.4	16.6	13	14.7	15.5	15.8	18.2	14.0	24
16	9.6	7.4	8.5	2.3	0.8	1.6	5.8	10	13	13.1	15.8	16.3	17.6	16.9	14.8	15.6	12.9	11.2	11.4	15.3	16.3	14.9	3.5	6.2	17.6	10.9	24
17	9.4	14.1	13.4	12.4	11.5	13.5	9.7	13.1	14.1	11.7	11.3	12.7	16	21.1	22.4	21.2	17.8	12.7	9.6	10.1	11.1	7.8	7.1	7	22.4	13.0	24
18	8.1	4.2	5.5	9.1	9.4	9.2	9.6	11.2	12.3	22.2	27.6	26.7	25.4	26.8	27.2	27.1	25.5	22.6	14.4	11.2	8.4	5.1	5.6	8.6	27.6	15.1	24
19	10.2	5.4	2.2	0.1	2.1	1.6	2.5	5.1	5.9	9.1	9.2	14.7	13.3	11.5	10.8	11.8	9.2	6.3	6.9	4.1	3.2	4.2	4.1	2.1	14.7	6.5	24
20	3.4	3	0.9	5.7	11.8	17.9	23.4	24.7	25.6	25.8	27.1	25.2	24.8	27.1	31.1	30.3	29.5	23	23.8	23.8	21.9	21.7	20.7	15	31.1	20.3	24
21	14	12.8	12.1	10.4	9.5	8.8	8.7	10.2	9.2	9.6	9.2	11.7	13	13.1	13.6	14.5	13.7	14.1	14.6	9.7	9.3	9.2	8.4	8.4	14.6	11.2	24
22	6.4	7.8	7.6	7.3	7.1	4.9	3.7	3.2	3.9	2.8	3.3	4.6	6.5	10.5	9.2	6.5	4.7	1.1	2.1	1.6	2.5	2.1	0.9	3.8	10.5	4.8	24
23	2.3	1.6	2.2	1.5	1.1	5.3	5.7	5.3	7.8	13.3	20.3	20.7	20.5	21.8	20.4	22.3	21.4	18.9	15.1	12.7	14.5	12.3	11	11.9	22.3	12.1	24
24	13.9	12.2	5.4	14.3	14.4	7.1	9.5	10.6	20	21.7	20.9	21.1	18.8	18.4	20.9	19.5	16.3	16.4	9.4	3.4	7.1	7	2.1	0.2	21.7	12.9	24
25	0.4	3	1.4	3.2	1.1	3.9	4.5	4.4	3	2.8	9.4	6.2	4.2	2.2	3	2.7	2.2	4.4	7.5	4	2.4	0.1	0.9	1.4	9.4	3.3	24
26	1.8	2.2	8.2	7.3	13.6	11.8	10.2	13.9	14.5	13.6	11.6	10.3	13.2	11.1	11.1	13.1	10.4	8.6	7.2	3.7	3.8	4.9	5	6.4	14.5	9.1	24
27	1.9	1.9	0.5	1	0.7	4.1	3.3	1.8	3.1	4.6	8.3	12.8	11.8	13.6	12.3	15.3	17.1	17.3	10.7	8.6	6	10.6	7.8	10	17.3	7.7	24
28	6.1	6.7	9.2	8.1	8.2	9.2	9.8	6.7	9	7.4	13.5	15.5	15	16.4	15.1	13.6	14.8	15.1	12.5	6.9	8.6	8.6	6.9	5.6	16.4	10.4	24
29	3.4	4.1	3.5	3.2	2.7	1.6	3.2	5.8	7.8	7.1	4.8	8.8	17.1	18.9	19.3	19.3	17.5	18.2	11.6	9.4	9.4	17.3	20.2	15	20.2	10.4	24
30	18.7	21.2	18.2	16.3	15	13	15.8	16.3	12.7	13.9	11.2	10.3	10.2	8	6.5	7.7	5.5	9.4	8.1	4.9	7.9	6.5	7.1	6.9	21.2	11.3	24
31	6.3	7.1	5.7	6	5	6.9	6.5	10.7	10.9	15.6	15.6	16.9	14.4	15.2	16.6	16.6	13.8	13.8	15.4	13.3	12.6	11.5	10.4	11.3	16.9	11.6	24
HOURLY MAX	18.7	22.8	26.0	25.0	27.5	31.0	32.6	35.3	37.8	36.9	32.2	33.4	33.3	32.9	34.5	33.0	29.5	24.0	23.8	23.8	21.9	21.7	20.7	15.8			
HOURLY AVG	8.0	8.2	8.0	7.8	8.4	8.1	8.5	9.7	10.6	11.6	12.7	13.2	14.1	14.9	14.6	15.1	13.7	12.4	10.5	9.1	8.8	9.1	8.2	7.9			

STATUS FLAG CODES

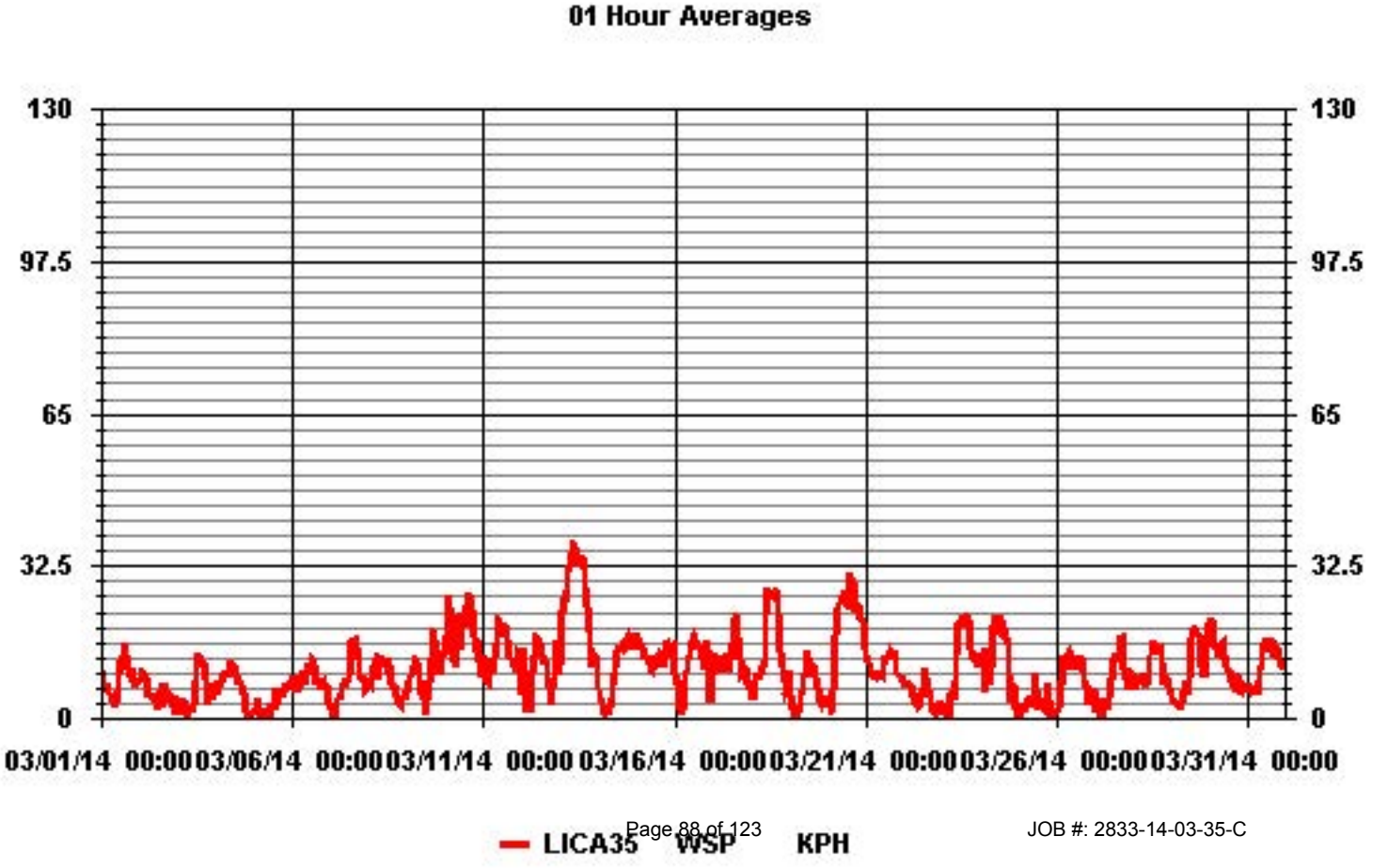
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



LAST CALIBRATION:	February 21, 2014
DECLINATION :	MAEGNETIC DECLINATION 19 DEGREES EAST

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	744						
MAXIMUM 1-HR AVERAGE:	37.8	KPH	@ HOUR(S)	8	ON DAY(S)	13	
MAXIMUM 24-HR AVERAGE:	25.9	KPH			ON DAY(S)	13	
					VAR-VARIOUS		
			OPERATIONAL TIME:		744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	6.86		MONTHLY AVERAGE:		10.56	KPH	



JOB #: 2833-14-03-35-C

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

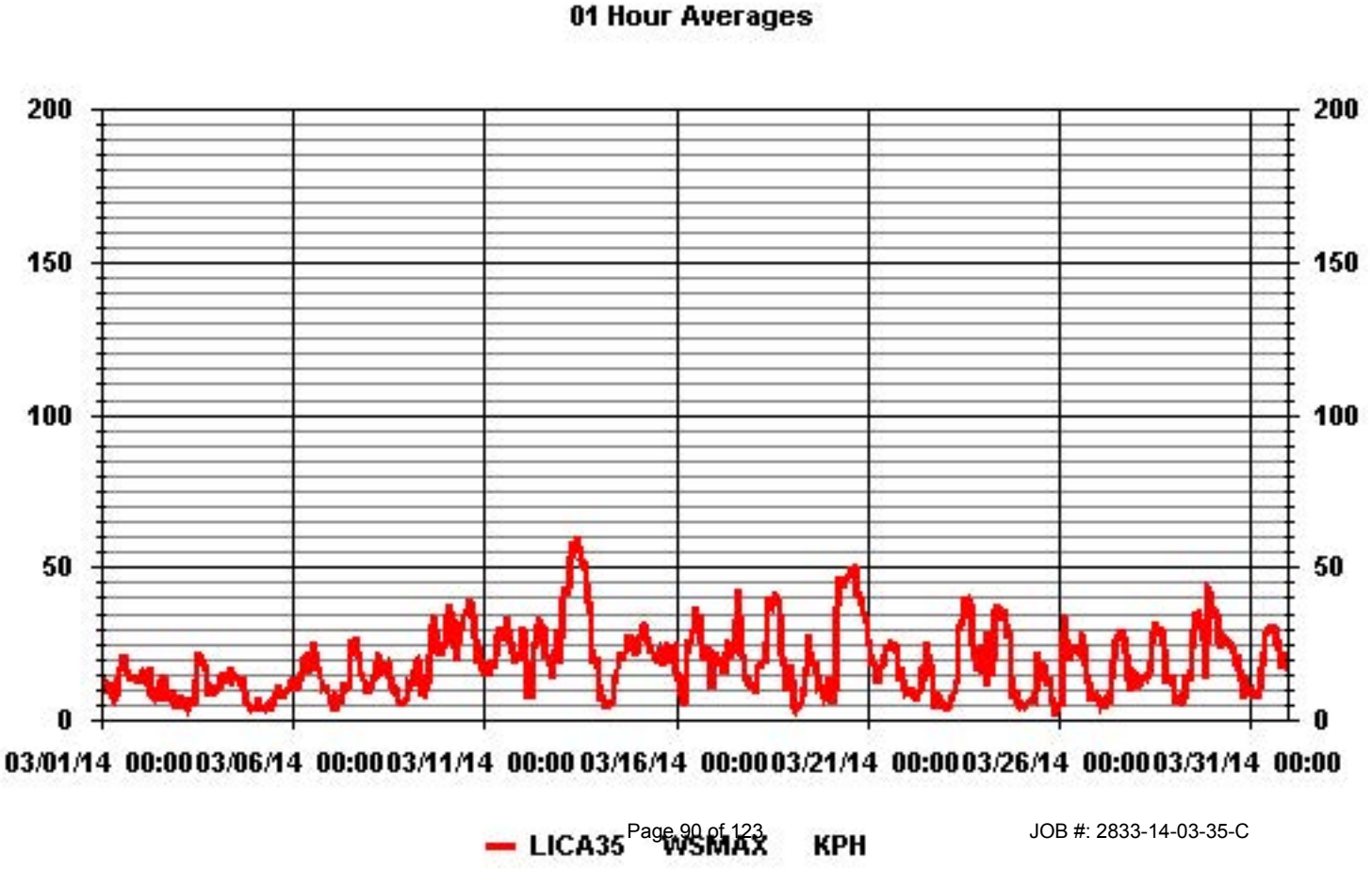
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	13.9	8.5	10.6	13.4	10.4	10.6	12.4	7.8	6.7	7.8	14	16.7	17.1	20.7	20.7	20.4	17.4	15.1	12.6	15	12.7	14.1	13.6	13.1	21	13.6	24
2	14.2	15.3	14	15.4	15.8	16.1	16.3	8.7	7.7	9.3	10.4	5.6	13.1	7.5	6.2	14.6	12.4	6	7.2	9.2	9.3	5.8	3.5	7	16	10.4	24
3	7	6.6	8.5	3.4	6.8	5	3.8	5	7.5	5.7	6	13.4	20.2	21.7	18.7	20.5	18.6	16.4	9.5	7.9	12.1	7.9	10.5	10.5	22	10.6	24
4	9.3	9.6	10.6	14.3	14.9	15.2	14.3	13	12.7	17.4	15.9	15.3	14.1	13.8	12.2	12	12.5	10	9.5	6.5	5	3.8	4.3	4.1	17	11.3	24
5	3.8	4.3	7.4	5.8	4	4.4	3.6	4.1	5.6	3	5.9	5.8	7.2	9.2	7.2	11.6	10	8.2	7.9	8.7	9.3	10.5	12.6	12.5	13	7.2	24
6	14.2	10.8	10.4	10.9	12.3	15.3	20.2	20.8	15.3	19.9	16.2	16.4	19.4	25.7	22.7	17.5	16.7	14.2	10.3	10.8	11.3	10.9	9	6.1	26	14.9	24
7	4.8	5	2.9	7.6	6.9	7	6.6	10.3	12.1	10.5	11.2	11.5	20.9	25.9	26.4	26.6	23.2	20.7	15.8	15.4	13.5	11.5	10.2	10	27	13.2	24
8	11.7	10.2	13.9	14.7	19.1	22	15.5	16.2	18.4	17.7	16.4	18.1	16.8	14.4	10.8	8.9	11.2	8.8	6.2	5.4	5.3	6	6.9	7.4	22	12.6	24
9	11.7	11	11.8	11.8	16.2	19.2	19.9	17.9	15.7	8.8	8.3	9.5	14.8	11.5	21.6	31.5	34.5	29.8	29.1	24.5	21.2	25	24	25.2	35	18.9	24
10	29.8	34.8	37.8	36.4	33.4	24.3	19.2	25.2	27	29	32.2	34.6	35.5	34.2	38.5	38.5	33.6	35	27	18.6	24.6	18.9	15.6	19.9	39	29.3	24
11	14.1	19	14	17.3	19.5	17.2	18.9	21.1	27.8	30	27.8	26.2	28.3	30.1	33.4	30.6	25.9	22.8	18.1	20.4	21.3	21.6	21	23	33	22.9	24
12	30.5	22.2	19.4	6.8	13.4	6.7	16.5	23	25.1	30.8	33.2	31.3	29.1	31	20.2	21.6	18.6	18.6	13.1	21.2	23.2	28.2	28.2	18.1	33	22.1	24
13	26.8	40.2	43.9	40.5	42.9	43.5	53.2	58.4	57.5	54.9	***60.1***	57.6	52.2	52.9	52.3	49.4	44.9	39.1	35.5	24.1	19.7	18.9	16.9	20.2	***60***	***41.9***	24
14	12.2	6	7.7	6.8	4.1	5.1	5.2	5.8	6.9	11.9	14.9	16.7	21.6	21.8	20.7	20.9	21.7	22.7	27.4	27.7	27	23.5	21.9	22.1	28	15.9	24
15	27.4	26.5	27.5	30.8	32.2	27.5	26	21.8	23.9	22.9	20.3	19.7	20	20.9	23.6	22.9	18.6	18.7	24.4	24	18.7	23.3	24.1	24.5	32	23.8	24
16	15.5	12.9	15.9	8.7	6.4	4.9	10	21.2	26.2	24.9	29.4	28.5	37.3	35.4	29.8	34.9	25.6	20.8	19	24.2	22.7	23.8	10.2	11.4	37	20.8	24
17	17.1	22.4	20.3	20.2	19.9	19.5	14.9	22.5	26.3	22.4	20.2	21.7	23.9	32.3	33.2	42.7	34.7	21.5	20.4	13.1	14.9	12	12	10.4	43	21.6	24
18	12.1	9.8	10.1	17.7	18.3	17.2	19.9	18.4	25.3	36.1	40.1	38.4	37.5	39.8	42	40.5	37.8	35.2	21.2	18.6	17.6	9.6	10.9	11.8	42	24.4	24
19	18.2	14	4.6	3.6	4.6	4.6	5.2	8	10.8	14.6	17.5	27.7	23.3	19.1	17.8	18.1	15.5	10.9	11.6	9.8	7.4	8.3	6.6	8.7	28	12.1	24
20	13.9	6.1	5.1	9.4	30.5	37.1	45.4	45	44.7	46.7	45.3	47	47	47.7	49.5	49.9	50	40.7	41.5	40.7	37.9	36.2	34.5	32	50	36.8	24
21	25.4	25.2	21.8	17.5	19.2	13.8	12	15.7	16.8	17.9	21	23.1	24.6	22.7	25.1	25	24.6	24.6	22.2	13.6	12.5	17.1	11.1	11.6	25	19.3	24
22	9.2	9.7	9.1	9.5	9.6	7.6	6	8	9.4	9.6	15.8	15.2	18	25.5	22.3	18.6	15.1	7.7	4.5	4.6	8.6	6.8	4	5.7	26	10.8	24
23	4.9	3.9	3.6	4.2	5.8	7.8	8.8	12.5	13	28.7	31.1	32.7	33.3	40.5	38.5	39.6	38.6	30.4	24.8	20.3	22.1	17.3	16.9	17.9	41	20.7	24
24	24.9	22.9	10.4	29.2	28.2	14.4	19.2	19.6	36.3	37.8	33.6	36.7	32.2	34.8	35.8	31.7	27	28.8	15.2	7	9	9.1	5.9	4.9	38	23.1	24
25	5.9	5.3	4.4	5.1	5.8	5.8	6.8	7.7	6.9	9	22	18.4	16	13.3	19.2	13.8	11.5	13.1	13	7.6	6	1.7	2.7	5.3	22	9.4	24
26	5.5	4.5	28.9	34.2	27	22.3	18.8	23.2	24.1	23.8	23.3	22.4	24.2	24	29	25.6	18.4	15.4	12.9	6.5	7.8	9	6.3	7.6	34	18.5	24
27	6.2	6.4	4.5	5.6	3.3	6.9	8.2	4.9	10.2	13.6	19.6	25.8	27.1	25.6	29.1	29.3	26.5	27.6	22	13.5	9.4	13.7	12	15.4	29	15.3	24
28	14.7	9.9	14.5	11.2	12.6	13.9	14.5	13.7	14.9	18.9	24.9	29.1	32.2	31.1	29.4	27.5	30.2	25.2	23.4	12.3	13.5	14.3	14.5	11.8	32	19.1	24
29	6.4	6.6	6.5	7.7	6.6	5.9	6.7	15	13.6	13.7	16.4	23.3	29.6	34.9	35.3	32.9	29.6	33.3	26.4	13.2	24.5	43.2	42.6	33.5	43	21.1	24
30	34.5	36.6	33	35.4	25.6	23.1	29	26.5	24.9	27	25	24.2	24.6	22.8	19.7	20.1	15.7	17.3	13.1	7.1	14.8	10.2	9.9	8.8	37	22.0	24
31	8.4	9.9	8.9	8.1	6.8	9.4	10.3	17.4	22.1	28.2	28.6	29.8	28.6	31	29.2	31.4	25.7	25.9	23.3	18.4	18.1	19.6	22.5	17.3	31	20.0	24
HOURLY MAX	35	40	44	41	43	44	53	58	58	55	60	58	52	53	52	50	50	41	42	41	38	43	43	34			
HOURLY AVG	14.7	14.1	14.3	14.9	15.6	14.6	15.7	17.4	19.2	21.0	22.8	23.9	25.5	26.5	26.5	26.7	24.1	21.4	18.3	15.2	15.5	15.5	14.4	14.1			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	60	KPH	@ HOUR(S)	10	ON DAY(S)	13
					VAR-VARIOUS	
OPERATIONAL TIME:					744	HRS



JOB #: 2833-14-03-35-C

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

March 2014

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	.13	.40	.80	.80	4.43	3.09	1.07	.53	.26	.53	1.07	1.88	3.22	5.10	2.68	1.07	27.15
<	12.0	.94	.94	.80	.13	4.03	4.56	1.20	1.07	1.34	.26	.53	5.77	5.37	3.36	3.49	1.61	35.48
<	20.0	1.20	1.74	.13	.00	.26	2.82	2.41	1.47	1.20	.53	.94	3.89	4.70	2.68	3.36	.13	27.55
<	29.0	1.07	.26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.49	1.47	.80	.80	7.93
<	39.0	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	1.34	.00	.26	1.88
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.49	3.36	1.74	.94	8.73	10.48	4.70	3.09	2.82	1.34	2.55	11.55	16.93	13.97	10.34	3.89	

Calm : .00 %

Total # Operational Hours : 744

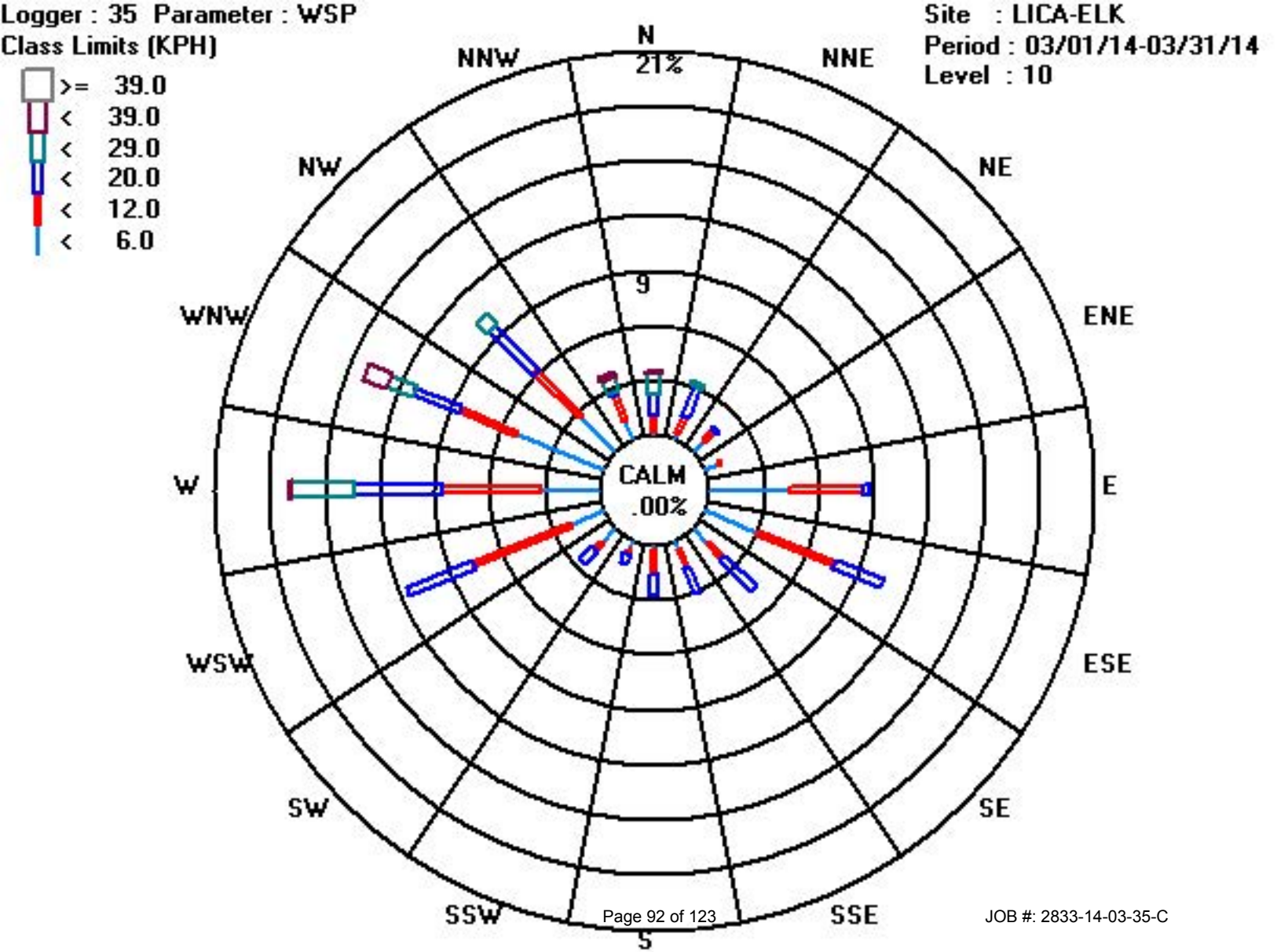
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	1	3	6	6	33	23	8	4	2	4	8	14	24	38	20	8	202
<	12.0	7	7	6	1	30	34	9	8	10	2	4	43	40	25	26	12	264
<	20.0	9	13	1		2	21	18	11	9	4	7	29	35	20	25	1	205
<	29.0	8	2											26	11	6	6	59
<	39.0	1												1	10		2	14
>=	39.0																	
	Totals	26	25	13	7	65	78	35	23	21	10	19	86	126	104	77	29	

Calm : .00 %

Total # Operational Hours : 744



JOB #: 2833-14-03-35-C

Vector Wind Direction

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

WIND DIRECTION (WD) hourly averages in degrees

MST

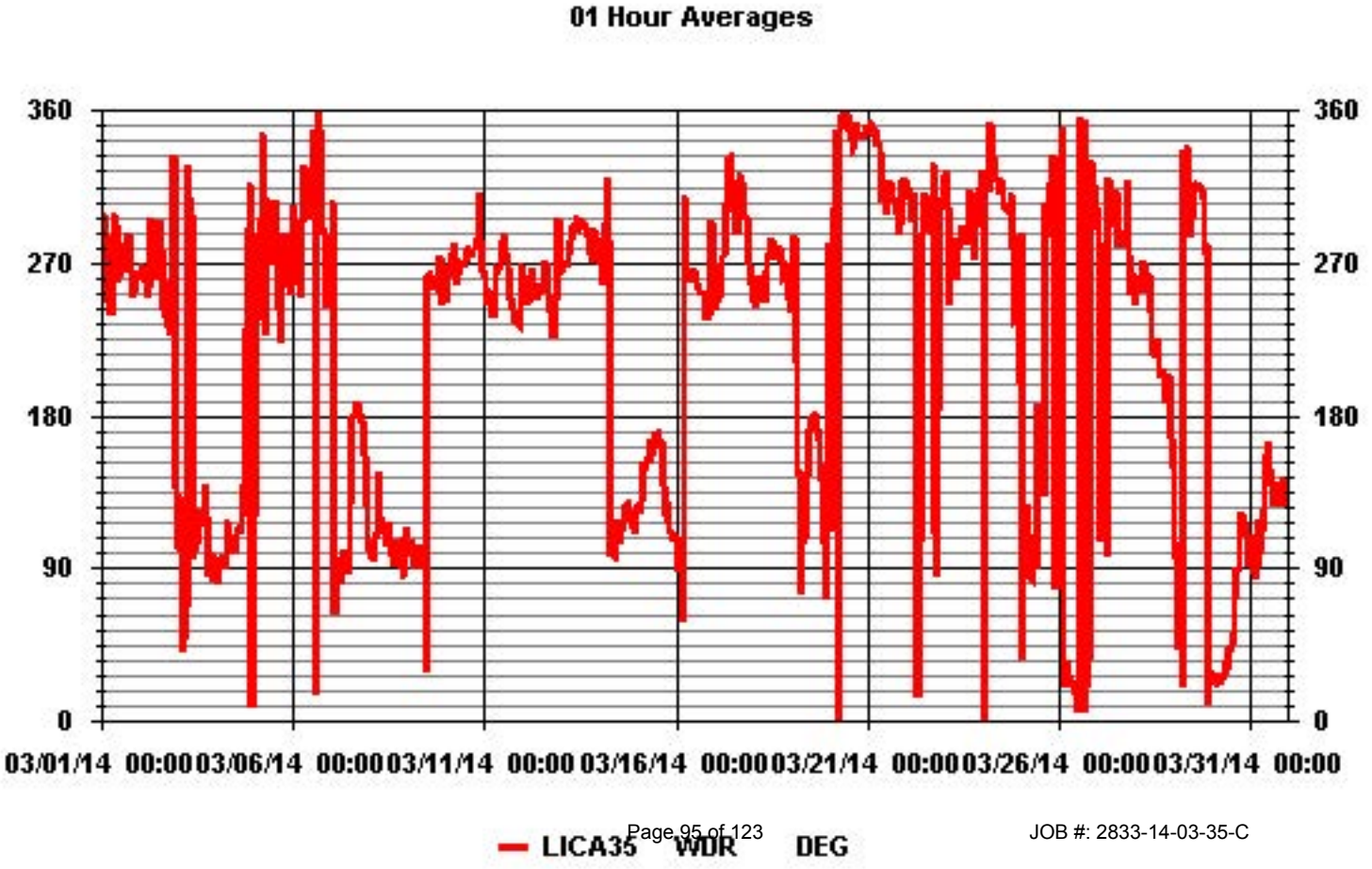
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	286	300	246	268	282	277	239	286	299	293	259	262	267	269	268	281	286	286	270	249	253	261	261	265	300	WNW	24
2	262	270	266	259	262	250	255	296	285	265	267	262	262	295	279	244	238	259	233	227	230	333	138	103	333	NNW	24
3	102	133	108	41	48	67	327	309	299	95	100	119	104	124	116	117	125	139	121	85	88	99	83	85	327	NW	24
4	93	81	96	94	98	89	94	119	109	108	106	99	104	112	112	115	120	139	201	231	290	317	8	257	317	NW	24
5	120	287	277	297	236	347	301	227	308	268	305	297	291	307	276	244	222	280	287	255	278	277	250	287	347	NNW	24
6	304	296	276	257	293	249	294	327	295	319	308	296	300	349	15	348	358	350	286	290	258	243	252	282	358	N	24
7	286	307	62	97	93	89	80	86	101	90	96	87	127	179	181	186	188	179	182	178	177	157	127	108	307	NW	24
8	101	97	94	107	110	111	147	122	111	116	105	105	117	98	94	95	107	95	94	107	93	84	108	114	147	SE	24
9	97	103	106	90	94	96	100	104	95	89	92	28	262	263	256	254	259	260	260	253	274	245	247	251	274	W	24
10	246	262	268	266	276	281	256	267	263	270	269	269	271	278	280	275	273	277	282	282	300	312	284	266	312	NW	24
11	263	245	255	249	242	238	250	267	266	267	270	283	287	277	274	268	250	244	242	236	235	234	233	270	287	WNW	24
12	261	246	248	246	262	252	267	258	257	249	251	253	257	255	271	264	252	244	245	226	246	248	296	263	296	WNW	24
13	272	267	268	269	270	275	283	290	290	293	297	295	292	294	293	292	288	287	276	270	291	276	285	281	297	WNW	24
14	268	281	256	294	286	320	285	97	99	98	109	118	111	104	111	118	127	128	125	122	120	115	110	123	320	NW	24
15	127	122	129	153	148	152	156	151	166	157	160	169	170	166	166	165	139	125	126	117	111	113	106	108	170	SSE	24
16	108	88	102	95	58	310	283	258	263	261	258	267	260	256	256	252	252	252	245	237	239	240	295	254	310	NW	24
17	256	243	246	250	269	274	275	305	310	331	332	310	301	301	286	318	323	313	317	295	298	270	269	258	332	NNW	24
18	247	254	244	252	262	256	248	248	266	274	275	280	284	274	274	278	278	278	272	261	262	264	270	250	284	WNW	24
19	241	256	286	212	144	149	74	104	107	108	144	172	179	180	181	181	173	166	153	142	115	106	71	148	286	WNW	24
20	281	140	111	303	312	349	0	358	349	356	355	358	349	343	336	337	351	351	343	345	345	345	346	351	358	N	24
21	346	350	354	347	344	350	339	341	336	307	309	298	306	307	318	315	309	308	300	287	293	319	312	318	354	N	24
22	318	315	309	306	293	312	289	13	71	106	264	299	312	291	290	299	306	329	111	85	182	202	308	302	329	NNW	24
23	321	324	304	245	278	284	273	278	259	278	284	292	288	287	281	300	312	309	290	271	291	297	313	313	324	NW	24
24	325	0	313	313	322	353	343	334	319	319	310	320	318	303	302	304	304	302	312	279	236	237	286	200	353	N	24
25	35	287	120	86	128	97	85	84	110	89	187	185	173	153	132	306	304	285	317	313	333	79	79	295	333	NNW	24
26	293	286	350	20	33	36	28	19	24	15	24	22	5	356	18	5	355	20	39	37	330	322	317	304	356	N	24
27	290	105	235	281	122	108	97	320	291	295	311	294	313	279	288	285	283	280	289	319	276	250	264	245	320	NW	24
28	262	260	255	263	253	272	252	259	264	242	226	217	214	223	226	203	203	208	201	187	201	204	167	150	272	W	24
29	107	95	104	42	45	19	336	329	340	314	285	295	314	317	316	312	317	314	309	274	282	9	26	26	340	NNW	24
30	30	24	23	25	26	21	25	27	35	30	43	41	45	52	72	89	89	120	123	115	118	110	91	104	123	ESE	24
31	109	94	88	84	91	118	98	111	124	144	157	165	150	140	126	130	140	136	126	130	132	144	142	126	165	SSE	24

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION:	February 21, 2014
DECLINATION :	MAEGNETIC DECLINATION 19 DEGREES EAST

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	93.90		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	283	DEG



JOB #: 2833-14-03-35-C

Standard Deviation Wind Direction

Lakeland Industry & Community Association - Elk Point Site

MARCH 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) 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	6	6	8	11	5	8	29	15	17	13	13	10	12	10	8	5	3	3	7	7	10	9	9	8
2	8	6	7	6	16	25	16	11	10	12	12	14	17	11	12	12	12	9	4	3	12	9	25	17
3	13	16	43	18	12	13	22	7	5	30	24	14	12	8	11	12	8	12	12	23	13	9	9	5
4	7	7	5	6	7	6	6	6	5	6	8	7	8	11	12	9	8	12	7	8	16	12	41	13
5	13	27	13	15	18	35	12	16	9	51	10	7	17	7	17	11	13	10	8	6	8	6	10	11
6	6	9	11	14	11	11	13	13	7	7	12	7	12	14	17	22	17	16	7	6	8	7	22	16
7	6	11	22	6	11	9	9	8	9	10	7	8	12	9	11	10	8	6	8	9	9	10	8	6
8	7	5	5	5	6	8	12	9	6	6	6	9	9	8	8	11	8	9	14	12	13	11	6	7
9	6	6	4	5	7	5	4	7	12	9	10	44	10	17	16	13	11	9	12	12	17	10	10	12
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14	9	6	13	13	18	18	24	42	26	10	10	10	10	9	10	7	7	7	6	7	7	7	7	7
15	8	7	9	13	12	12	12	12	11	13	15	13	10	16	12	12	13	5	6	6	6	6	6	6
16	9	11	11	35	40	23	11	13	10	11	11	10	12	13	13	13	12	11	8	7	7	6	21	12
17	8	6	7	7	8	5	9	7	8	14	14	9	8	8	6	10	8	8	6	5	6	9	8	7
18	5	14	7	10	10	10	11	11	11	8	7	7	8	7	9	7	6	5	6	9	11	10	11	5
19	7	14	19	34	14	20	13	9	17	9	15	13	12	14	12	11	11	10	7	8	10	13	16	16
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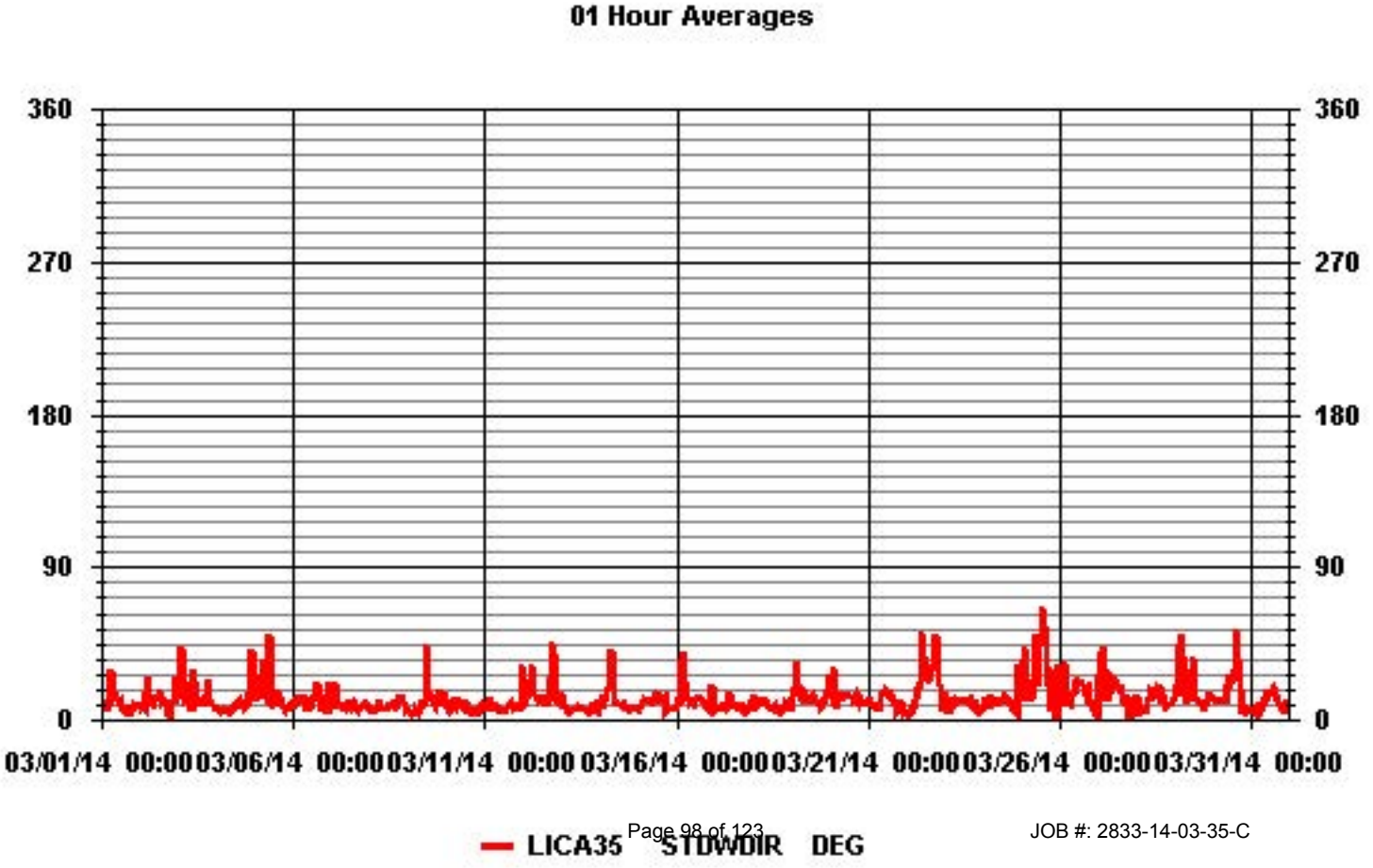
24	8	13	8	8	8	15	11	10	10	12	12	12	13	16	12	11	11	9	5	10	6	5	32	27
25	36	10	43	12	24	11	14	14	24	50	20	46	46	67	56	45	33	21	7	5	30	0	0	32
26	10	8	14	34	12	11	10	13	15	16	23	25	20	24	22	17	18	19	11	8	11	6	4	3
27	26	21	40	43	24	11	22	15	27	26	23	18	20	18	19	16	11	8	15	4	5	4	7	6
28	14	6	5	6	6	9	4	13	11	18	17	16	18	15	17	20	16	11	8	9	9	9	12	12
29	14	21	17	45	51	39	15	10	24	21	29	37	11	13	11	11	10	9	5	9	11	15	15	15
30	13	12	11	11	12	11	11	11	20	18	25	25	22	30	53	32	36	19	6	5	8	7	5	5
31	5	5	7	5	7	4	5	8	12	13	17	15	17	19	16	13	15	11	7	5	5	10	12	8

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: February 21, 2014

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS



JOB #: 2833-14-03-35-C

Calibration Reports

Sulphur Dioxide

API 100E SO2 Analyzer Calibration

Date:	20-Mar-14	**Start/End Time (mst):**	9:28 - 13:39
Company:	LICA	**Calibration Purpose:**	Monthly Calibration
Station Name/Location:	Elk Point	**Converter Make & Model:**	NA
Performed by:	Chris Wesson	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	SO2	**Cal Gas Expiry Date:**	15/10/17

Analyzer:

Serial Number:	467	**Range ppb:**	1000
Last Calibration Date:	4-Feb-14	**As Found C.F.**	1.085
Previous Cal High Point C.F.:	1.000	**New C.F.:**	0.997

	As found:	**As left:**
SLOPE:	0.973	1.050
OFFSET:	33.7	32.1
HVPS:	513	513
RCELL TEMP:	50.0	50.0
BOX TEMP:	29.5	29.0
PMT TEMP:	8.1	8.1
IZS TEMP:	45.0	45.0
TEST:	NA	NA
STABIL:	0.0	209
PRES:	24.6	24.3
SAMP FL:	624	621
PMT:	35.8	485
NORM PMT:	32.6	684
UV LAMP:	2770	2767
LAMP RATIO:	83.6	83.5
STR. LGT	16.4	16.8
DRK PMT:	13.4	13.3
DRK LMP:	3.0	2.8
Internal Span:	323	341

Calibrator:

Flow Meter ID's:	NA
Make & Model:	Environics 6100
Serial #:	5212
Cal Gas Cylinder I.D. # :	BAL1119
Cal Gas Conc. (ppm):	48.9

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	4920	80	5000
mid	4960	40	5000
low	4980	20	5000

Calibration:

Calibrator Flow Rates (cc/min)				**Calculated Concentration:**	**Indicated Concentration:**	**Correction Factors:**
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4999	0.0	4999	0	0.0	NA
adjusted zero	4999	0.0	4999	0	0.0	NA
as found high	4921	75.96	4997	743.3	685.0	1.085
adjusted high	4921	75.97	4997	743.4	743.3	1.000
mid	4960	37.98	4998	371.6	375.0	0.991
low	4979	18.50	4998	181.0	181.0	1.000
calibrator zero	4999	0.00	4999	0	0.0	NA
					Average C.F.=	0.997

Linear Regression/Calibration Results:

		LIMITS	**Pass/Fail ?**
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.000**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.07%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-8.52%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

****run converter effeciency test immediately following zero adjust****

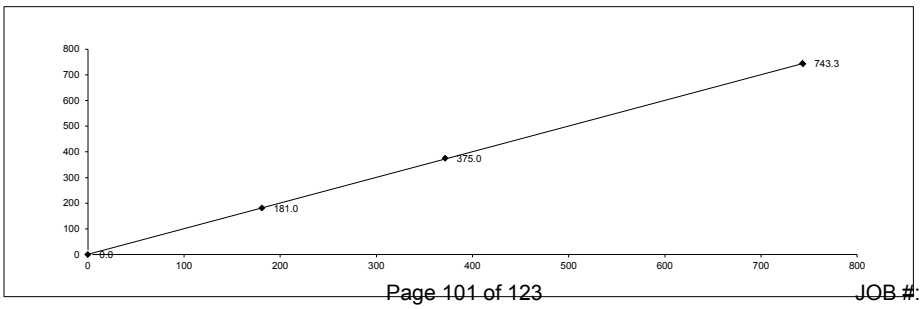
SO_2 High Point gas concentration: NA Time gas run (mst): NA

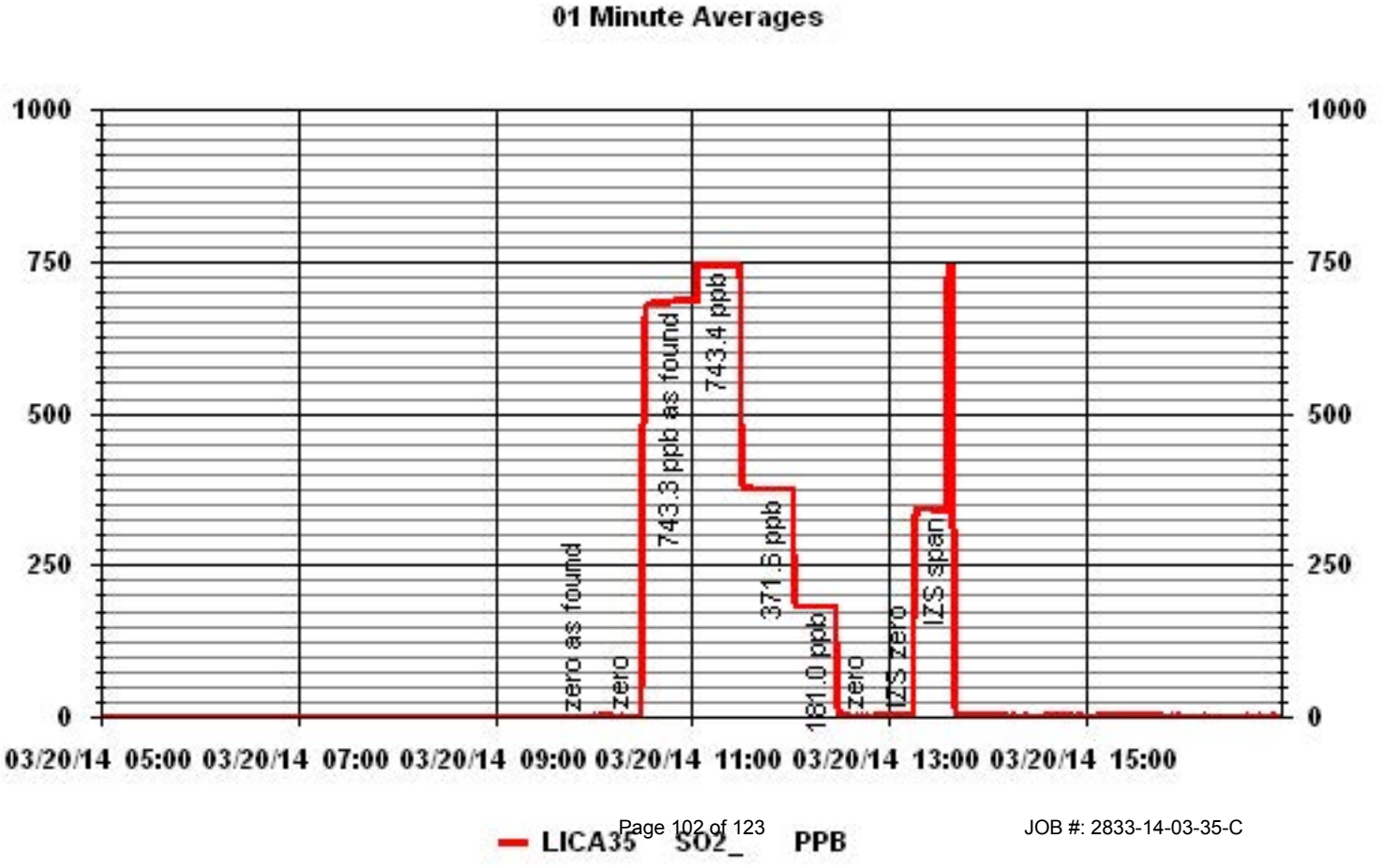
Zero corrrected analyzer response: NA

Comments:

Sample Filter Changed

API 100E SO2 Analyzer Calibration





JOB #: 2833-14-03-35-C

Hydrogen Sulphide

API 101E H2S Analyzer Calibration

Date:	13-Mar-14	**Start/End Time (mst):**	14:05 - 15:15
Company:	LICA	**Calibration Purpose:**	As Found
Station Name/Location:	Elk Point	**Converter Make & Model:**	Internal
Performed by:	Chris Wesson	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	H2S	**Cal Gas Expiry Date:**	2-Apr-16

Analyzer:

Serial Number:	509	**Range ppb:**	100
Last Calibration Date:	19-Feb-14	**As Found C.F.**	1.143
Previous Cal High Point C.F.:	0.976	**New C.F.:**	NA

	As found:	As left:
SLOPE:	1.042	1.042
OFFSET:	116.1	116.1
HVPS:	536	536
RCELL TEMP:	50.0	50.0
BOX TEMP:	28.3	28.3
PMT TEMP:	7.9	7.9
IZS TEMP:	45.0	45.0
TEST:	NA	NA
STABIL:	0.3	22.0
PRES:	27.4	27.5
SAMP FL:	569	571
PMT:	64.8	63.7
NORM PMT:	123.3	118.5
UV LAMP:	1423.1	1420
LAMP RATIO:	41.2	41.1
STR. LGT	60.5	60.5
DRK PMT:	10.8	11.7
DRK LMP:	-0.1	-0.1
Internal Span:	NA	NA

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	690
Cal Gas Cylinder I.D. # :	LL47542
Cal Gas Conc. (ppm):	10.0

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	4960	40	5000
mid	NA	NA	#VALUE!
low	NA	NA	#VALUE!

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4999	0.0	4999	0	2.5	NA
adjusted zero	4959	0.0	4959	0		NA
as found high	4959	39.00	4998	78.0	68.3	1.143
adjusted high	4959	39.00	4998	78.0	68.3	1.143
mid						
low						
calibrator zero						NA
					Average C.F.=	

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =		**> or = 0.995**	
Slope =		**0.85-1.15**	
b (Intercept as % of full scale)=		**± 3% F.S.**	
% change in C.F. from last cal	**-17.16%**	**± 15%**	**FAIL**

Converter Effeciency Check for H_2S/TRS application:

****run converter effeciency test immediately following zero adjust****

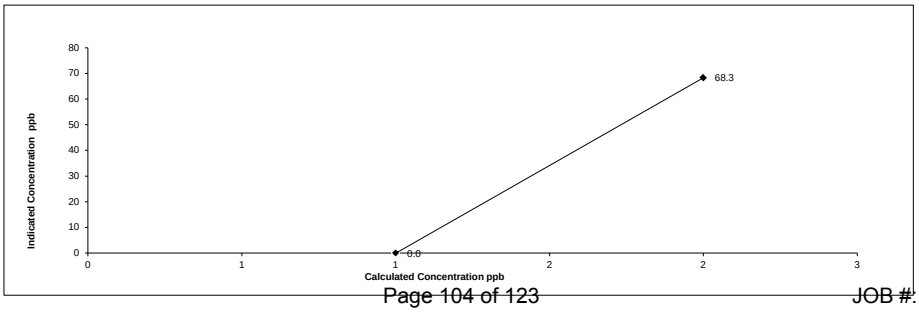
SO_2 High Point gas concentration: _____ Time gas run (mst): _____

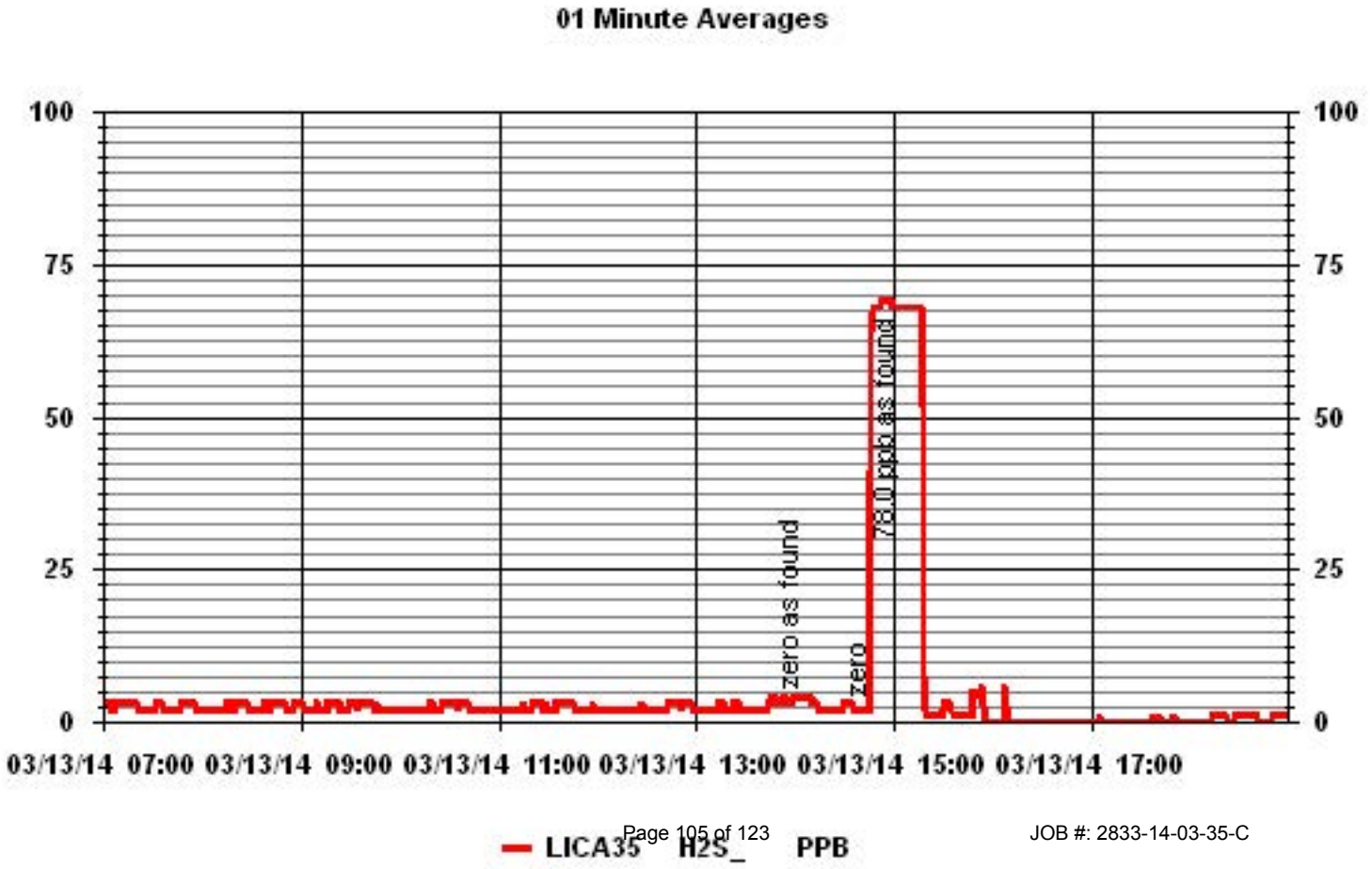
Zero corrrected analyzer response: _____

Comments:

Converter Temp = 314.8 / 314.7
As found due to variable zero during IZS
No adjustment made. Values copied from as found for calculation purposes.

API 101E H2S Analyzer Calibration





JOB #: 2833-14-03-35-C

API 101E H2S Analyzer Calibration

Date:	14-Mar-14	**Start/End Time (mst):**	11:13 - 14:32
Company:	LICA	**Calibration Purpose:**	Post Repair
Station Name/Location:	Elk Point	**Converter Make & Model:**	Internal
Performed by:	Chris Wesson	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	H2S	**Cal Gas Expiry Date:**	2-Apr-16

Analyzer:

Serial Number:	509	**Range ppb:**	100
Last Calibration Date:	NA	**As Found C.F.**	1.000
Previous Cal High Point C.F.:	NA	**New C.F.:**	0.995

	As found:	As left:
SLOPE:	1.202	1.190
OFFSET:	94.7	94.3
HVPS:	536	536
RCELL TEMP:	50.0	50.0
BOX TEMP:	27.1	27.3
PMT TEMP:	7.9	7.9
IZS TEMP:	45.0	45.0
TEST:	ConvTemp=315.9	ConvTemp=314.2
STABIL:	0.1	5.9
PRES:	27.6	27.6
SAMP FL:	572	572
PMT:	98.0	95.3
NORM PMT:	94.4	95.7
UV LAMP:	~3550	~3545
LAMP RATIO:	100.3	100.1
STR. LGT	56.9	56.1
DRK PMT:	11.1	10.5
DRK LMP:	1.6	1.0
Internal Span:	52.0	57.0

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	690
Cal Gas Cylinder I.D. # :	LL47542
Cal Gas Conc. (ppm):	10.0

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	4960	40	5000
mid	NA	NA	#VALUE!
low	NA	NA	#VALUE!

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	0.0	NA
adjusted zero	5000	0.0	5000	0	0.0	NA
as found high	4957	39.00	4996	78.1	78.1	1.000
adjusted high	4957	39.00	4996	78.1	78.1	1.000
mid	4979	19.40	4998	38.8	38.7	1.003
low	4984	10.90	4995	21.8	22.2	0.983
calibrator zero	4999	0.00	4999	0	0.5	NA
					Average C.F.=	0.995

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.001**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.11%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**#VALUE!**	**± 15%**	**######**

Converter Effeciency Check for H_2S/TRS application:

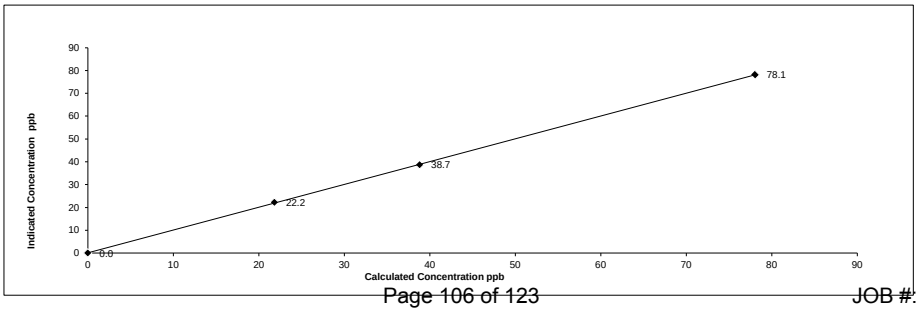
****run converter effeciency test immediately following zero adjust****

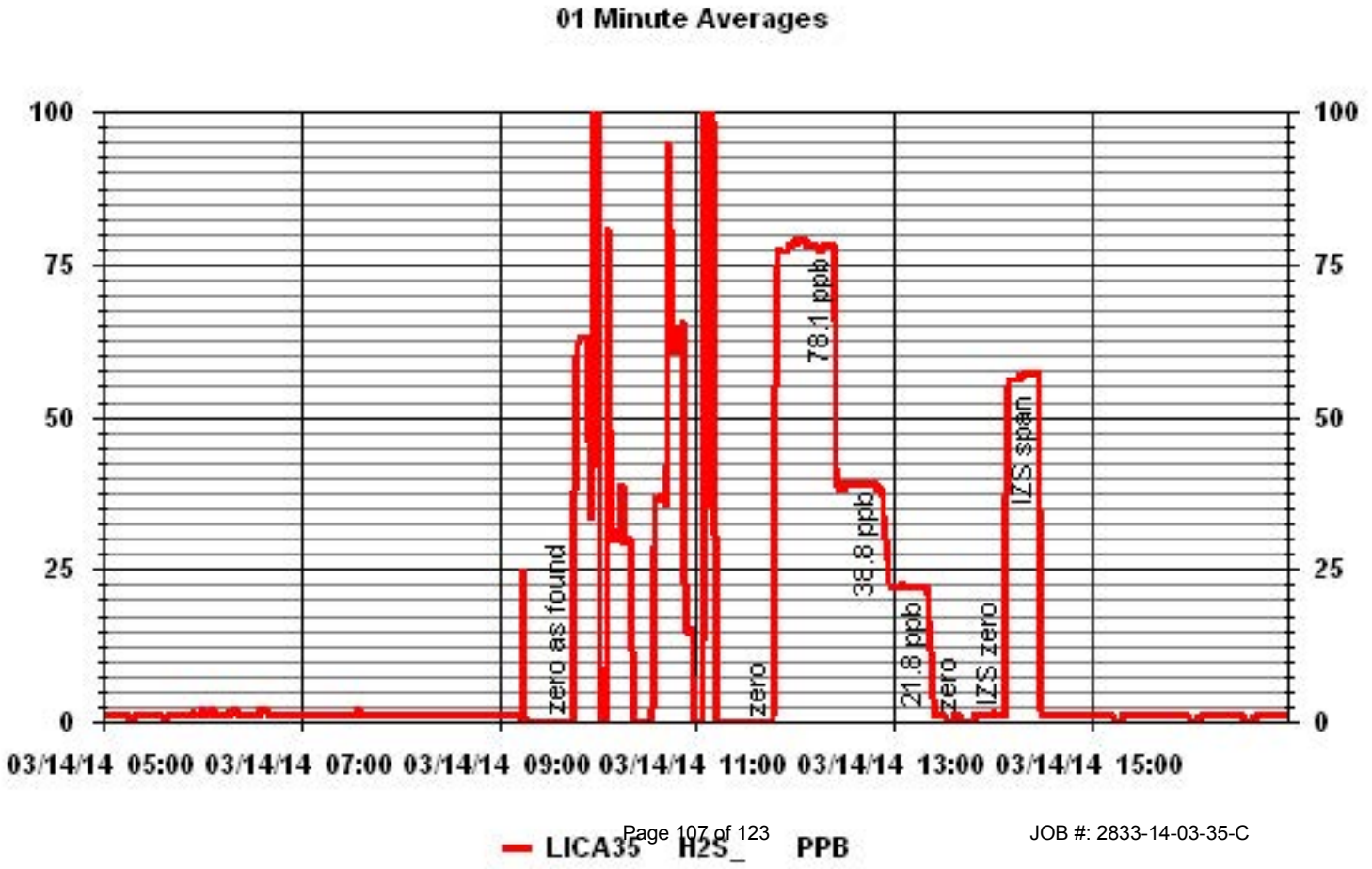
SO_2 High Point gas concentration:	NA	Time gas run (mst):	NA
Zero corrrected analyzer response:	NA		

Comments:

No AF before the post repail calibration.Post-repair calibration following lamp replacement and factory cal.
NA = not applicable

API 101E H2S Analyzer Calibration





JOB #: 2833-14-03-35-C

API 101E H2S Analyzer Calibration

Date:	20-Mar-14	**Start/End Time (mst):**	12:45
Company:	LICA	**Calibration Purpose:**	As Found / 1-pt
Station Name/Location:	Elk Point	**Converter Make & Model:**	Internal
Performed by:	Chris Wesson	**Converter Serial #:**	NA
Application $H_2S/TRS/SO_2$:	H2S	**Cal Gas Expiry Date:**	2-Apr-16

Analyzer:

Serial Number:	509	**Range ppb:**	100
Last Calibration Date:	14-Mar-14	**As Found C.F.**	1.000
Previous Cal High Point C.F.:	1.000	**New C.F.:**	NA

	As found:	As left:
SLOPE:	1.190	1.190
OFFSET:	94.3	94.3
HVPS:	536	536
RCELL TEMP:	50.0	50.0
BOX TEMP:	28.0	
PMT TEMP:	7.9	
IZS TEMP:	45.0	
TEST:	ConvTemp=315.9	ConvTemp=314.2
STABIL:	0.1	
PRES:	27.9	
SAMP FL:	576	
PMT:	96.9	
NORM PMT:	93.0	
UV LAMP:	3464	
LAMP RATIO:	97.8	
STR. LGT	56.1	
DRK PMT:	10.1	
DRK LMP:	0.9	
Internal Span:	57.0	

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	690
Cal Gas Cylinder I.D. # :	LL47542
Cal Gas Conc. (ppm):	10.0

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	4960	40	5000
mid	4980	20	5000
low	4990	10	5000

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4999	0.0	4999	0	-0.8	NA
adjusted zero	4999	0.0	4999	0	0.0	NA
as found high	4956	39.50	4996	79.1	77.0	1.027
adjusted high	4956	39.50	4996	79.1	79.1	1.000
mid						
low						
calibrator zero	4999	0.00	4999	0	0.0	NA
					Average C.F.=	

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =		**> or = 0.995**	
Slope =		**0.85-1.15**	
b (Intercept as % of full scale)=		**± 3% F.S.**	
% change in C.F. from last cal	**0.04%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

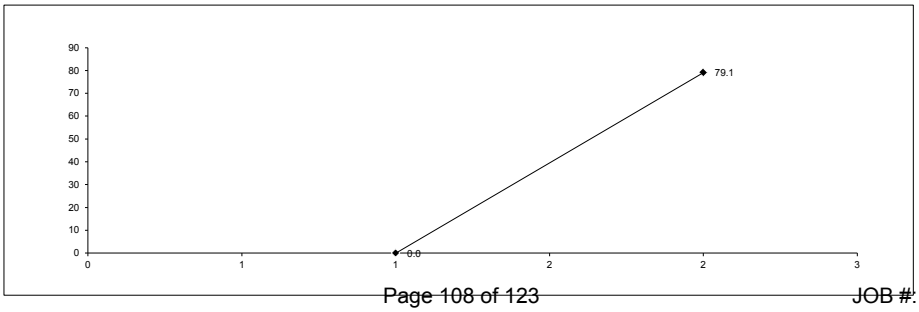
****run converter effeciency test immediately following zero adjust****

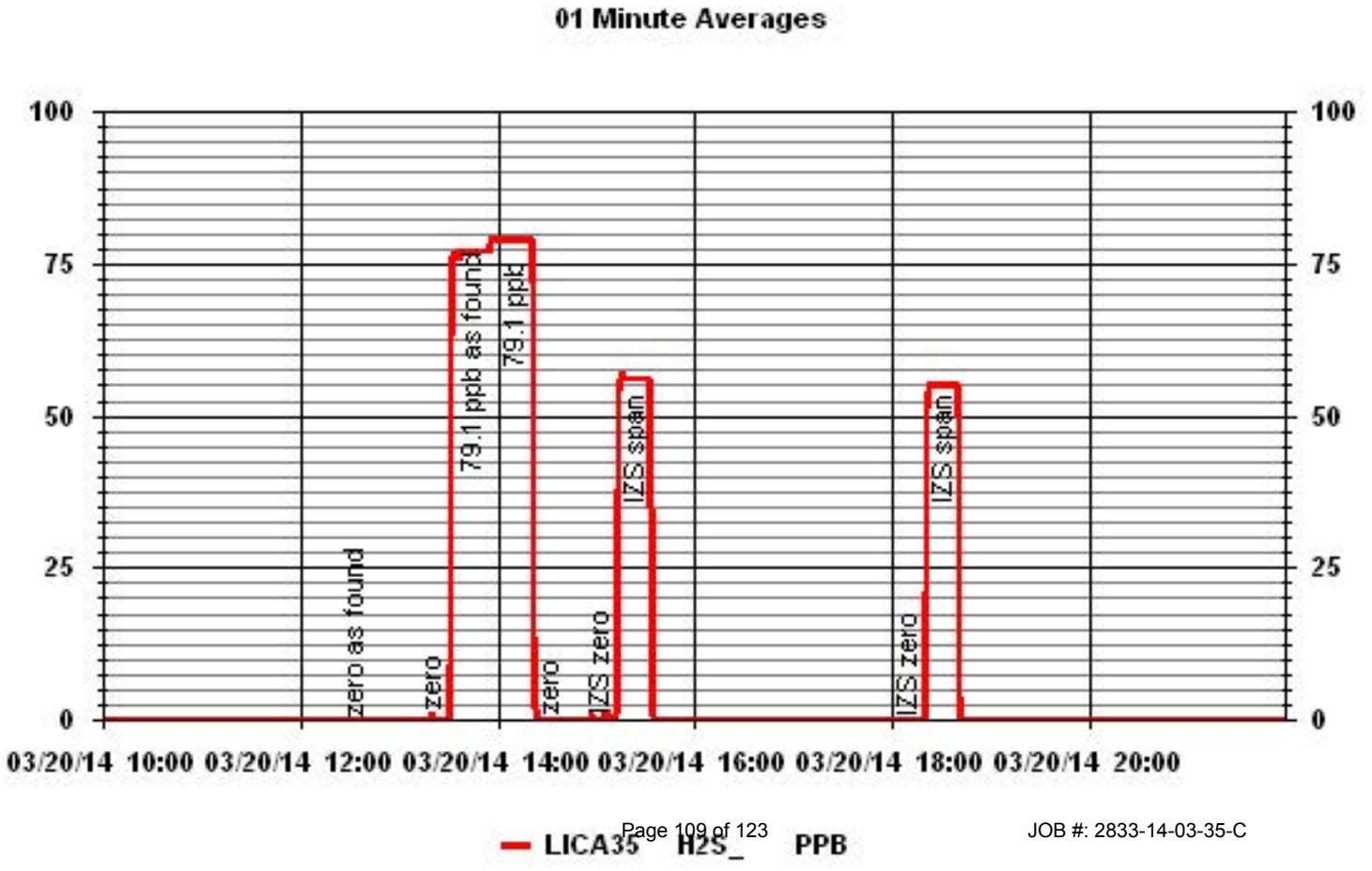
SO_2 High Point gas concentration:	NA	Time gas run (mst):	NA
Zero corrrected analyzer response:	NA		

Comments:

1-point calibration only (linearity already demonstrated this month .See Mar 14, 2014)

API 101E H2S Analyzer Calibration





JOB #: 2833-14-03-35-C

Total Hydrocarbons (55i)

Thermo 55C Methane/Non-Methane Analyzer Calibration

Date:	20-Mar-14	**Start Time (mst):**	10:00
Company:	LICA	**End Time (mst):**	13:02
Station Name:	Elk Point	**Calibration Purpose:**	Monthly Calibration
Performed by:	Chris Wesson	**Cal Gas Expiry Date:**	9-Jan-21

Analyzer & Diagnostics:

		As found C.F.	**Previous Cal High Point C.F.**	**Analyzer Range**
Serial Number:	1236656107	CH_4= 1.005	CH_4= 1.002	CH_4= 20
Last Calibration Date:	3-Feb-14	NMHC= 1.006	NMHC= 1.000	NMHC= 20
		THC= 0.962	THC= 0.991	THC= 40

Mother Board Voltages:	3.3:	3.3	Calibration History cnt'd>1:	CH_4 SP Ratio:	NA
	5.0:	4.9		CH_4 RT:	NA
	15.0:	14.9		CH_4 PK IDX:	NA
	24.0:	24.0		CH_4 PK HT:	NA
	-3.3:	-3.2		NM Span Conc:	NA
Interface Board Voltages:	3.3:	3.3		NM SP Ratio:	NA
	5.0:	5.0		NM Peak Area:	NA
	15.0:	15.0	Run History>1:	Date:	20Mar2014
	24.0:	23.5		Time:	11:47
	-15.0:	-15.1		CH_4 PK HT:	0
	Bias Supply:	-292.6		CH_4 RT:	12.2
Temperatures:	Detector Oven:	175.1		CH_4 Baseline:	2173
	Filter:	175.0		CH_4 LOD:	55
	Column Oven:	75.1		CH_4 SD:	25
	Flame:	377.3		CH_4 CONC:	0.00
	Internal:	32.6		NM PK HT:	0
Pressures cylinder/reg.:	Carrier:	1100 / 31.1		NM Peak Area:	0.00
	Fuel:	750 / 40.3		NM CONC:	0
	Air:	46 / 32.4		NM Base Start:	2231
FID Status:	Status:	lit		NM Base End:	2246
	Counts:	~26500		NM LOD:	14
	Flame:	377.4		NM Start IDX:	9
	Det Base:	175.0		NM End IDX:	82
Flame and Power Stats:	Last Power On:	02Feb2014 19:27		NM Max Slope:	8.9e-1
	Flameouts:	2		NM Min Slope:	-5.0e-1
	Det Oven at Start:	169.7		NM PT Count:	0
	Col Oven at Start:	74.4	Daily Zero/Span Values:	Previous CH4:	7.6
Calibration History>1:	Time:	NA		Previous NMHC	13.4
	Type:	NA		Previous THC:	21.0
	Status:	NA		New CH4:	7.86
	Check/Adjust:	NA		New NMHC	13.4
	CH_4 Span Conc:	NA		New THC:	21.4

Calibrator and Gas Information:

Make & Model:	API 700		
Serial #:	690		
Cal Gas Cylinder I.D. # :	LL19638		
CH_4 Cylinder Conc.=	880.0	304.0	=C_3H_8 Cylinder Conc.
CH_4 as C_3H_8=	836.0	1716.0	=total CH_4 equivilant

Calibrator Flow Targets: (cc/min):

point	diluent	cal gas	total flow
zero	4000	0	4000
high	4000	30	4030
mid	4000	18	4018
low	4000	9	4009

Calibration Data:

Calibrator Flow Rates (cc/min)				Calculated CH_4 (ppm)	Calculated NMHC (ppm)	Calculated THC (ppm)	Indicated CH_4 (ppm)	Indicated NMHC (ppm)	Indicated THC (ppm)	Correction Factors:		
Point	Diluent	Cal Gas	Total Flow							CH4	NMHC	THC
20 min as found zero	3995	0.00	3995	0.00	0.00	0.00	0.06	0.00	0.00	NA	NA	NA
20 min adjusted zero	3995	0.00	3995	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA
10 min as found mid point	3994	18.00	4012	3.95	3.75	7.70	3.93	3.73	8.00	1.005	1.006	0.962
10 min adjusted mid	3994	18.00	4012	3.95	3.75	7.70	3.95	3.75	8.00	1.000	1.000	0.962
10 min high	3993	35.00	4028	7.65	7.26	14.91	7.56	7.13	15.00	1.011	1.019	0.994
10 min low	3994	8.90	4003	1.96	1.86	3.82	2.03	1.94	4.00	0.964	0.958	0.954
10 min calibrator zero	3995	0.00	3995	0.00	0.00	0.00	0.02	0.00	0.00	NA	NA	NA
									Average C.F.=	0.992	0.992	0.970

Linear Regression/Calibration Results:

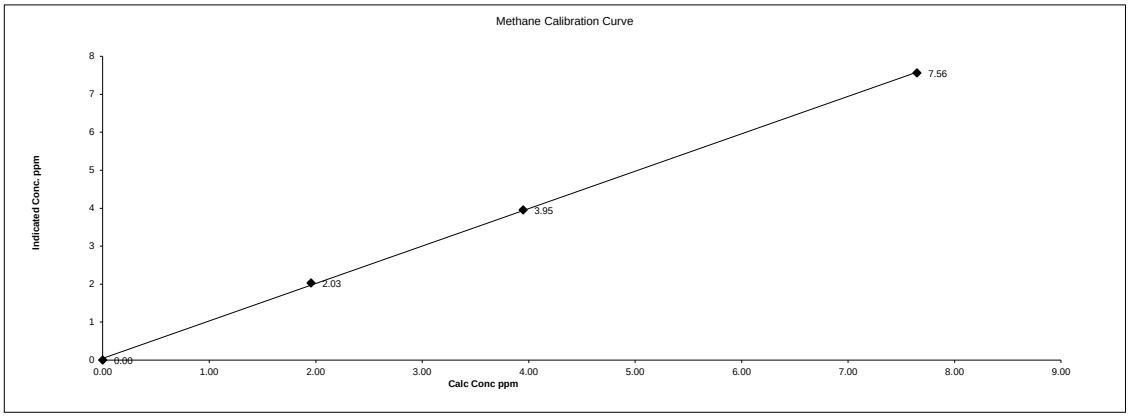
	CH_4	NMHC	THC	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**0.985**	**0.977**	**1.005**	**0.85-1.15**
b (Intercept as % of full scale)=	**-0.24%**	**-0.30%**	**-0.28%**	**± 3% F.S.**
% change in C.F. from last cal=	**-0.26%**	**0.56%**	**-2.97%**	**+/-15%**

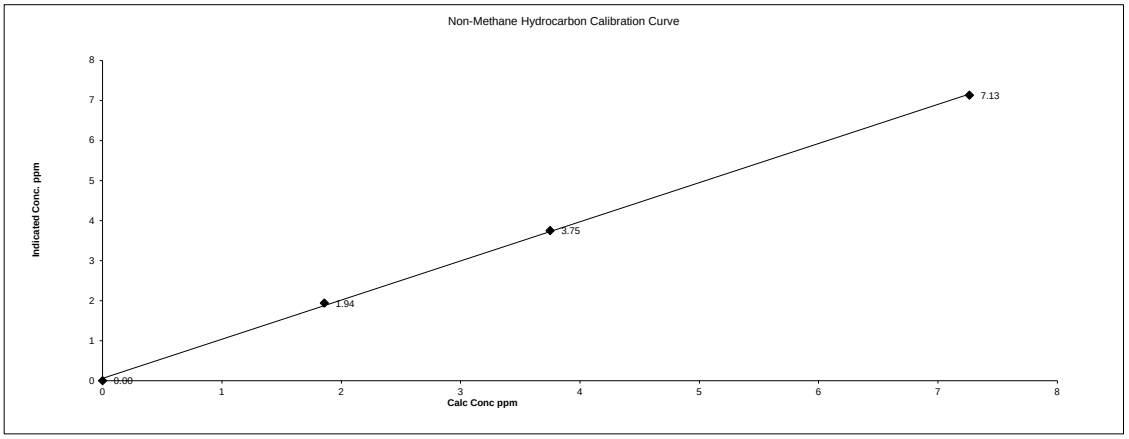
Comments:

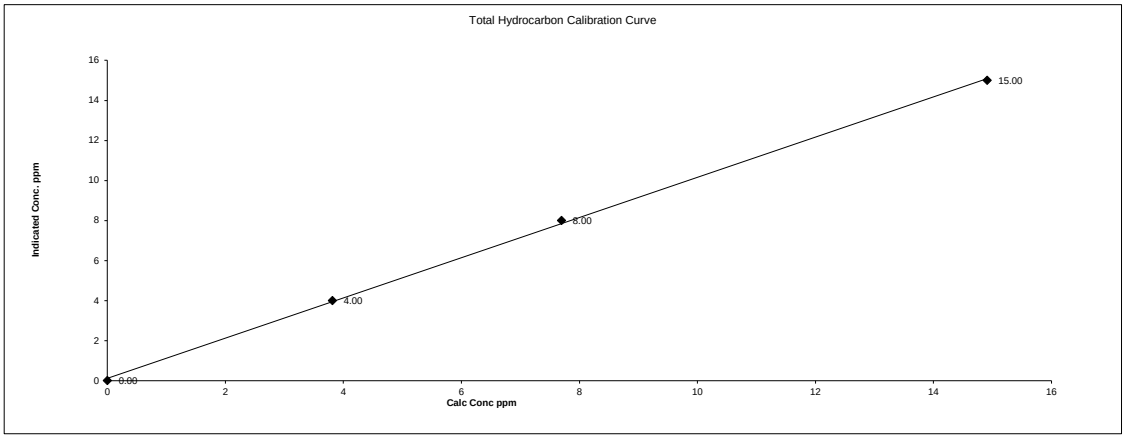
Sample Filter Changed

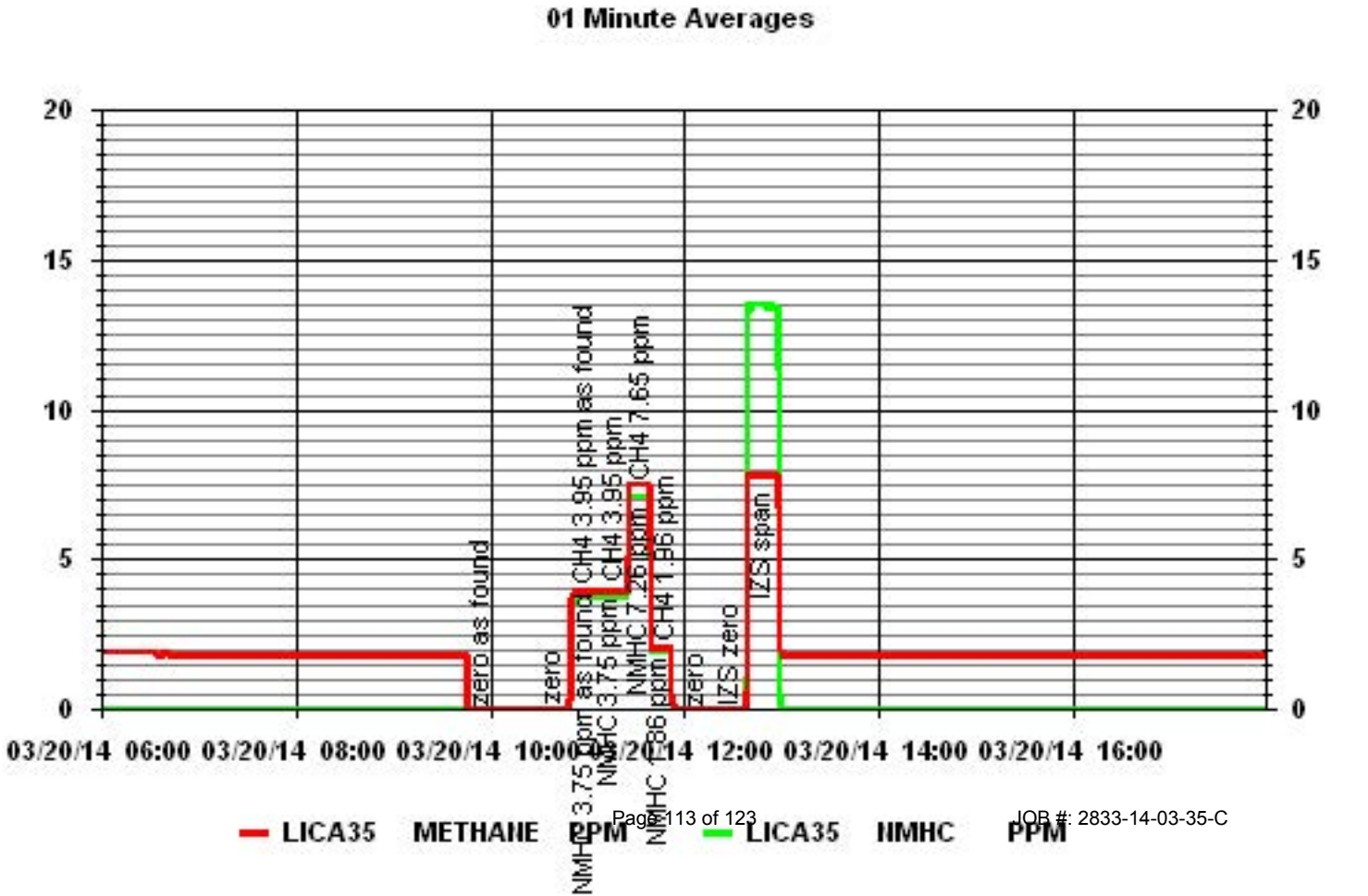
Date:	20-Mar-14	**Start Time (mst):**	10:00
Company:	LICA	**End Time (mst):**	13:02
Station Name:	Elk Point	**Calibration Purpose:**	Monthly Calibration
Performed by:	Chris Wesson	**Cal Gas Expiry Date:**	9-Jan-21

Thermo 55C Methane/Non-Methane Analyzer Calibration








01 Minute Averages
20
15
10
5
0
03/20/14 06:00
03/20/14 08:00
03/20/14 10:00
03/20/14 12:00
03/20/14 14:00
03/20/14 16:00
zero as found
zero
CH4 3.95 ppm as found
NMHC 3.75 ppm
CH4 3.95 ppm
NMHC 7.26 ppm
CH4 7.65 ppm
CH4 1.96 ppm
zero
IZS zero
IZS span
LICA35 METHANE PPM
LICA35 NMHC PPM

Particulate Matter 2.5

R & P 1405F PM2.5 Monitor Audit/Calibration

Date:	20-Mar-14	**Performed by:**	Kevin Hope
Company:	LICA	**Start/End Time (mst):**	1536/1605
Station Name/Location:	Elk Point	**Calibration Purpose:**	Routine
Serial Number:	1405A208301003	**Filter Loading %:**	26

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	Dwyer	Brunton	Fluke
Model:	475 Mark III	ADC Summit	1551A Stik Thermometer
Serial Number:	na	na	4295
Calibration Date:	unknown	2-Dec-13	unknown

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	-0.02	0.16	0.00	0.14
	limit	0.15		0.15	
Bypass Flow	actual	0.00	0.00	0.03	0.00
	limit	0.60		0.60	

As left leak check (same as above if as found passes):

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	-0.02	0.16	0.00	0.14
	limit	0.15		0.15	
Bypass Flow	actual	0.00	0.00	0.03	0.00
	limit	0.60		0.60	

As found temperature and pressure:

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	-3.4	**1405F pressure atm:**	0.935
reference temperature °C:	-5.4	**reference pressure:**	0.937
difference °C:	-2.0	**difference :**	-0.002

As left temperature and pressure (same as above if as found adequate):

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	-5.4	**1405F pressure atm:**	0.935
reference temperature °C:	-5.4	**reference pressure:**	0.937
difference °C:	0.0	**difference :**	0.002

As found flows:

	main flow tolerance 3.00 lpm +/- 0.20 lpm		**total flow tolerance 16.67 lpm +/- 1.00 lpm**
1405F main flow lpm:	3.00	**1405F total flow lpm:**	16.68
reference main flow lpm:	3.09	**reference total flow lpm:**	16.34
difference °C:	-0.09	**difference °C:**	0.33

As left flows (same as above if as found adequate):

	main flow tolerance 3.00 lpm +/- 0.20 lpm		**total flow tolerance 16.67 lpm +/- 1.00 lpm**
1405F main flow lpm:	3.00	**1405F total flow lpm:**	16.68
reference main flow lpm:	3.09	**reference total flow lpm:**	16.34
difference °C:	-0.09	**difference °C:**	0.33

K_o Audit:

Last K_o audit date:	
1405F K_o factor:	
Measured K_o factor:	
% difference:	

Comments:

Completed leak check and flow audit. All good.

R & P 1405F PM2.5 Monitor Audit/Calibration

Date:	28-Mar-14	**Performed by:**	Kevin Hope
Company:	LICA	**Start/End Time (mst):**	10:44/11:08
Station Name/Location:	Elk Point	**Calibration Purpose:**	Routine
Serial Number:	1405A208301003	**Filter Loading %:**	26

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	Dwyer	Brunton	Fluke
Model:	475 Mark III	ADC Summit	1551A Stik Thermometer
Serial Number:	na	na	4295
Calibration Date:	unknown	2-Dec-13	unknown

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	-0.03	0.16	-0.03	0.16
	limit	0.15		0.15	
Bypass Flow	actual	0.00	0.00	0.00	0.00
	limit	0.60		0.60	

As left leak check (same as above if as found passes):

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	-0.03	0.16	-0.03	0.16
	limit	0.15		0.15	
Bypass Flow	actual	0.00	0.00	0.00	0.00
	limit	0.60		0.60	

As found temperature and pressure:

	tolerance +/- 2.0°C		tolerance +/- 0.01 atm
1405F temperature °C:	-6.2	**1405F pressure atm:**	0.934
reference temperature °C:	-6.6	**reference pressure:**	0.933
difference °C:	-0.3	**difference :**	0.001

As left temperature and pressure (same as above if as found adequate):

	tolerance +/- 2.0°C		tolerance +/- 0.01 atm
1405F temperature °C:	-6.2	**1405F pressure atm:**	0.934
reference temperature °C:	-6.6	**reference pressure:**	0.933
difference °C:	-0.3	**difference :**	-0.001

As found flows:

	main flow tolerance 3.00 lpm +/- 0.20 lpm		total flow tolerance 16.67 lpm +/- 1.00 lpm
1405F main flow lpm:	3.00	**1405F total flow lpm:**	16.66
reference main flow lpm:	3.07	**reference total flow lpm:**	16.31
difference °C:	-0.07	**difference °C:**	0.36

As left flows (same as above if as found adequate):

	main flow tolerance 3.00 lpm +/- 0.20 lpm		total flow tolerance 16.67 lpm +/- 1.00 lpm
1405F main flow lpm:	3.00	**1405F total flow lpm:**	16.66
reference main flow lpm:	3.07	**reference total flow lpm:**	16.31
difference °C:	-0.07	**difference °C:**	0.36

K_o Audit:

Last K_o audit date:	
1405F K_o factor:	
Measured K_o factor:	
% difference:	

Comments:

Completed leak check and flow audit, replaced filters. All good.

Nitrogen Dioxide

API 200E NOx Analyzer Calibration

Date:	20-Mar-14	**Start Time (mst):**	9:28
Company:	LICA	**End Time (mst):**	16:31
Station Name/Location:	Elk Point	**Calibration Purpose:**	Monthly Calibration
Performed by:	Chris Wesson	**Cal Gas Expiry Date:**	15-Oct-17

Analyzer Serial Number:	593
Last Calibration Date:	3-Feb-14
Range ppb:	1000

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	1.082	1.001
NOx=	1.103	1.003
NO_2=	1.001	0.996

	As found:	**As left:**
NOx SLOPE:	1.052	1.153
NOx OFFS:	3.7	0.8
NO SLOPE:	1.066	1.149
NO OFFS:	-1.5	-0.0
TEST:	126.0	126.0
SAMP FLW:	478	482
OZONE FL:	78	78
PMT:	6.1	7.7
NORM PMT:	-0.1	2.3
AZERO:	6.3	6.2
HVPS:	630	630
RCELL TEMP:	49.9	50.2
BOX TEMP:	28.4	28.0
PMT TEMP:	6.7	6.7
IZS TEMP:	45.2	45.3
MOLY TEMP:	315.6	313.5
RCEL:	5.6	5.6
SAMP:	26.9	27.2
Internal Span:	NOx:352,NO:6.8,NO2:355	NOx:371,NO:6.2,NO2:365

Calibrator Flow Targets:

Make & Model:	Environics 6100
Serial #:	5212
Cal Gas Cylinder I.D. # :	BAL1119
NO Cylinder Conc. (ppm):	51.3
NOx Cylinder Conc. (ppm):	51.3

point	diluent (cc/min)	cal gas (cc/min)	O_3 setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	4920	80	580.00	5000
mid	4960	40	290.00	5000
low	4980	20	100.00	5000

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	4999	0.0	4999	0	0	-1.0	-2.0	NA	NA
adjusted zero	4999	0.0	4999	0	0	0.0	0.0	NA	NA
as found high	4921	75.96	4997	779.8	779.8	721	707	1.082	1.103
adjusted high	4921	75.97	4997	779.9	779.9	780	780	1.000	1.000
mid	4960	37.98	4998	389.8	389.8	394	394	0.989	0.989
low	4979	18.50	4998	189.9	189.9	190	191	0.999	0.994
calibrator zero	4999	0.00	4999	0	0	0.0	0.0	NA	NA
							Average C.F.=	0.996	0.995

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO_2	NO drop	NO_2 increase	NO_2 C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4921	75.98	4997	0.0	784.0	785.0	0.5	0.0	0.0	
as found NO_2	4921	75.98	4997	580.0	253.0	784.0	531.0	531.0	530.5	1.001
adjusted NO_2	4921	75.98	4997	290.0	253.0	784.0	531.0	531.0	530.5	1.001
gpt mid	4921	75.98	4997	100.0	511.0	782.0	283.0	273.0	282.5	0.966
gpt low	4921	75.98	4997	0.0	691.0	785.0	95.0	93.0	94.5	0.984
									Average NO_2 C.F.=	0.984

Linear Regression/Calibration Results:

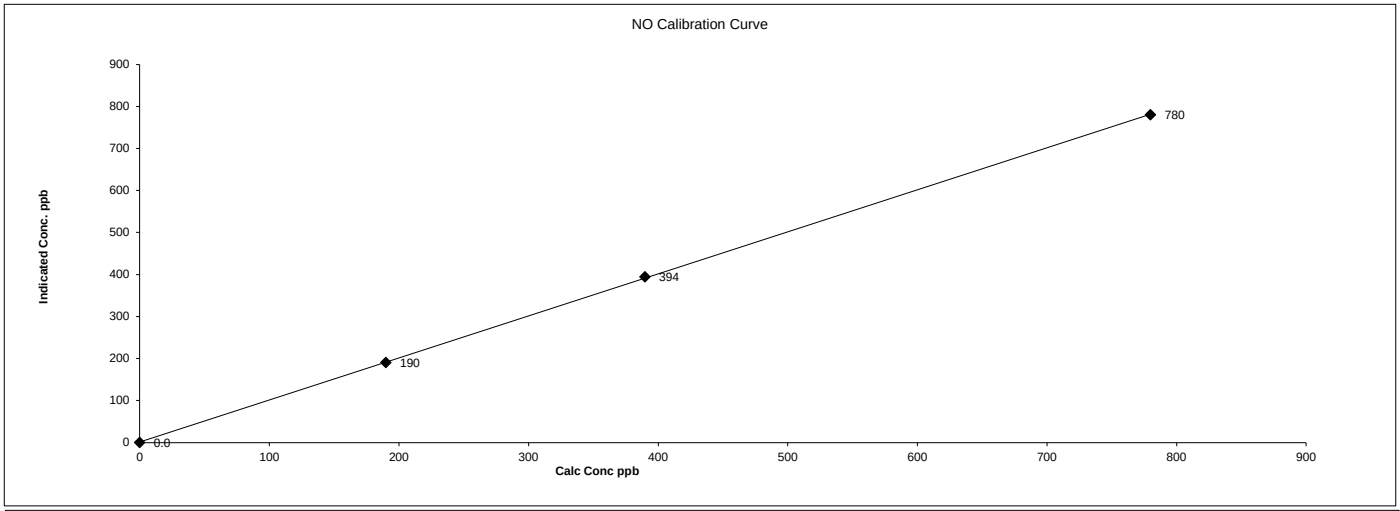
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**0.999**	**1.000**	**0.999**	**0.85-1.15**
b (Intercept as % of full scale)=	**-0.08%**	**-0.12%**	**-0.24%**	**± 3% F.S.**
% change in C.F. from last cal=	**-8.05%**	**-9.97%**	**-0.50%**	**+/-15%**
NO2 converter effeciency			**101.6%**	**>85%**

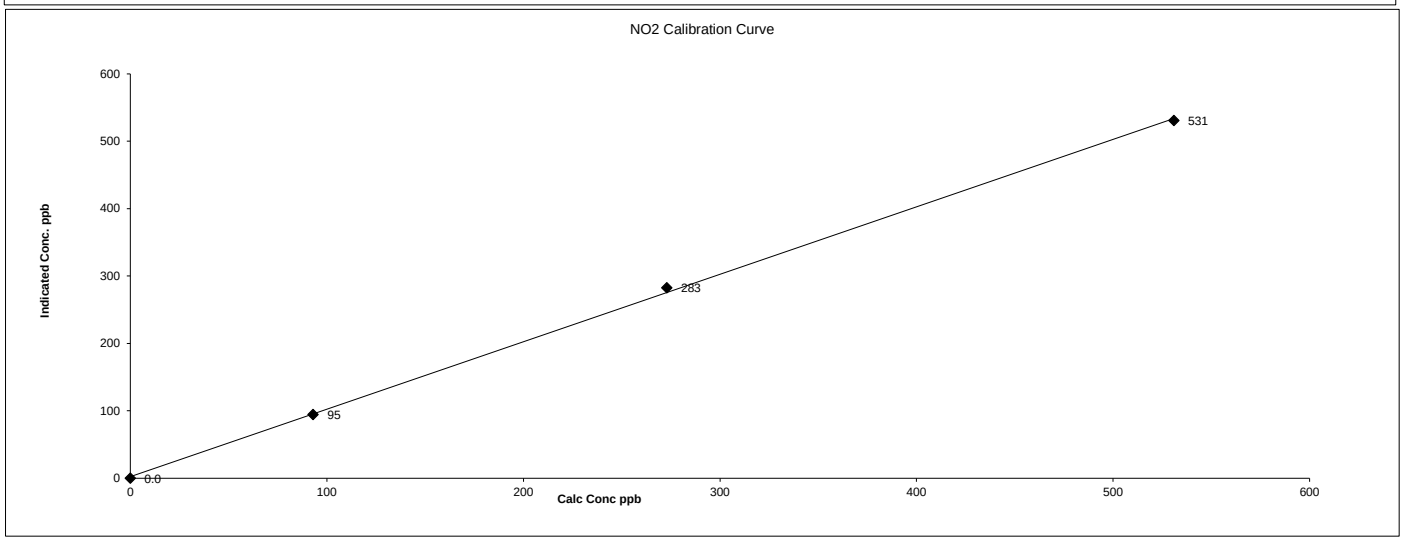
Comments:

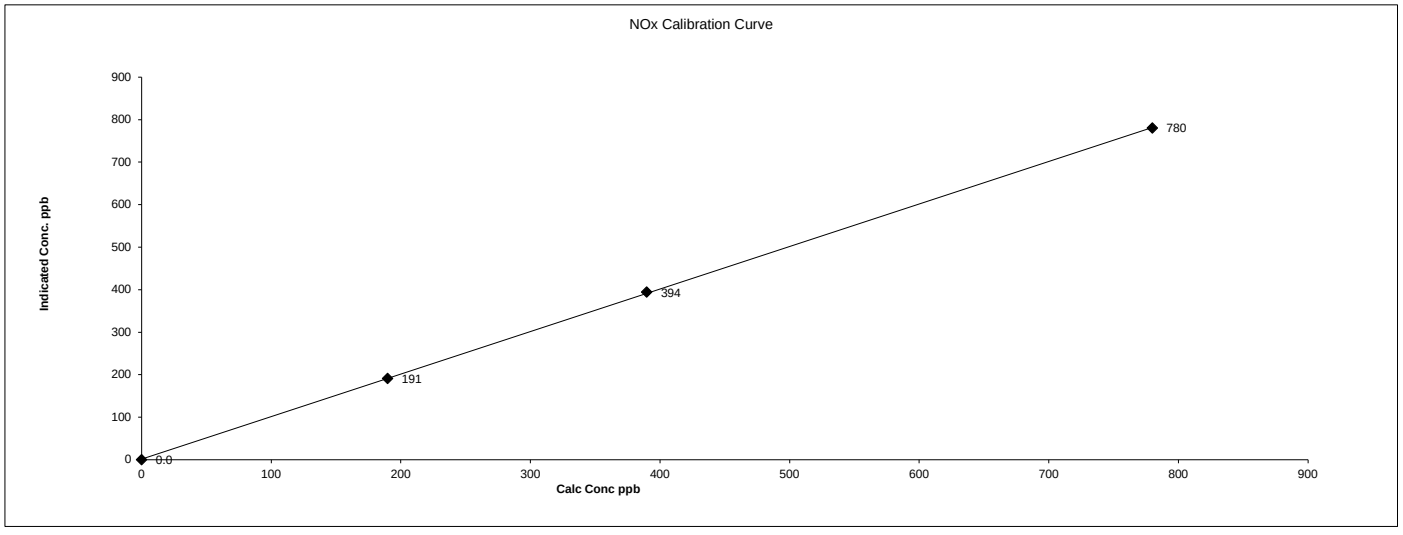
Sample Filter Changed
13:38-13:39 (NOX Reference) Drop in concentration due to adjustment to sample line. Point restarted.
No NO2 adjustment made. Values copied from as-found NO2 for calculation purposes only

Date:	20-Mar-14	**Start Time (mst):**	9:28
Company:	LICA	**End Time (mst):**	16:31
Station Name/Location:	Elk Point	**Calibration Purpose:**	Monthly Calibration
Performed by:	Chris Wesson	**Cal Gas Expiry Date:**	15-Oct-17

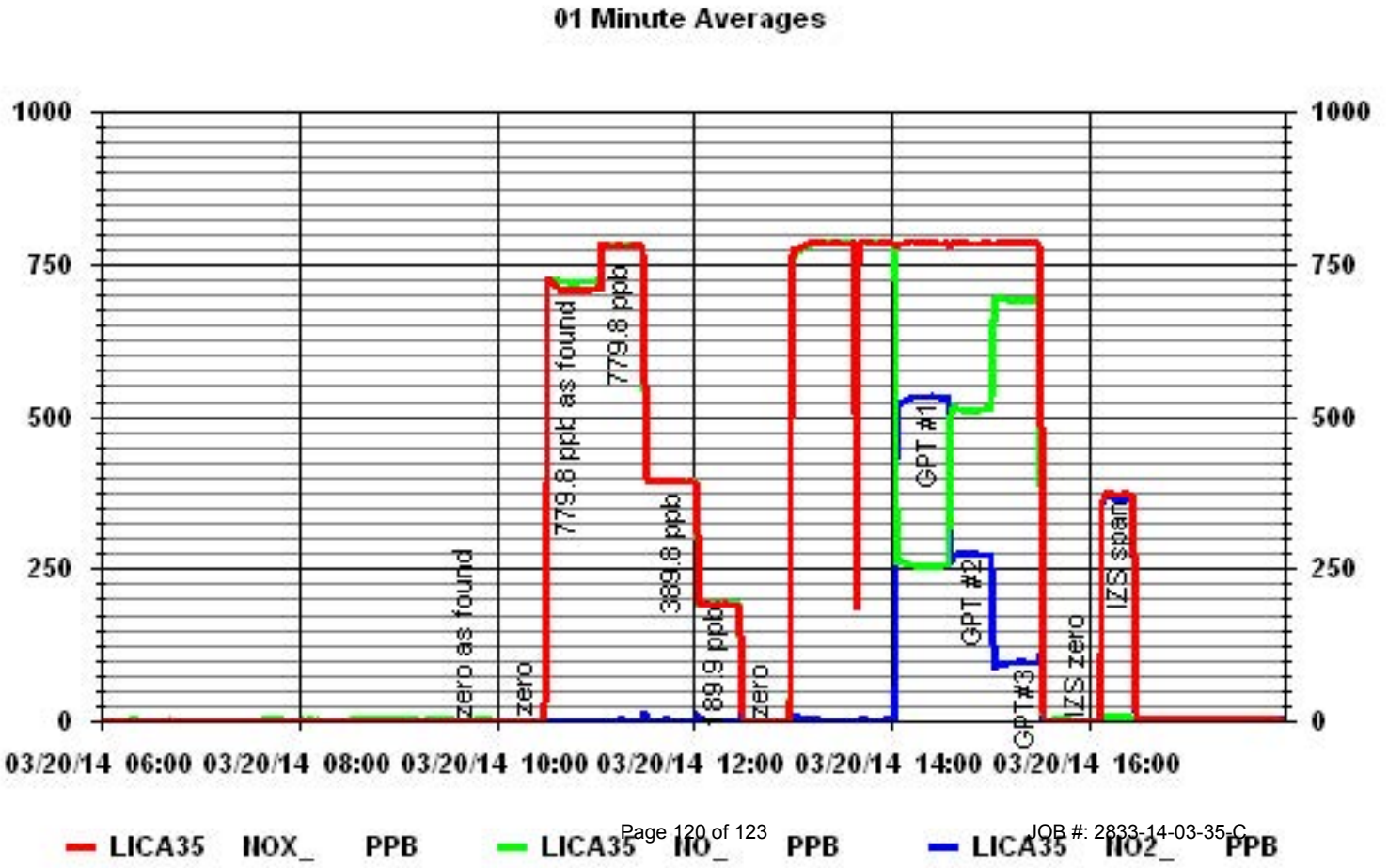
API 200E NOx Analyzer Calibration







JOB #: 2833-14-03-35-C


01 Minute Averages
1000
750
500
250
0
zero as found
zero
779.8 ppb as found
779.8 ppb
389.8 ppb
89.9 ppb
zero
GPT #1
GPT #2
GPT#3
IZS zero
IZS span
03/20/14 06:00
03/20/14 08:00
03/20/14 10:00
03/20/14 12:00
03/20/14 14:00
03/20/14 16:00
LICA35 NOX_ PPB
LICA35 NO_ PPB
LICA35 NO2_ PPB

Ozone

Maxxam Thermo 49i O_3 Analyzer Calibration

Date:	21-Mar-14	**Start Time (mst):**	10:01
Company:	LICA	**End Time (mst):**	13:57
Station Name/Location:	Elk Point	**Calibration Purpose:**	Monthly
Performed by:	Chris W/Kevin H	**G.P.T. Date:**	21-Mar-14

Analyzer:

Serial Number:	1002240372	**Range ppm:**	500
Last Calibration Date:	12-Feb-14	**As Found C.F.**	1.047
Previous Cal High Point C.F.:	0.997	**New C.F.:**	0.990

		As found:		**As left:**
	O_3 Bkg:	-0.1	O_3 Bkg:	0.0
	O_3 Coef:	0.995	O_3 Coef:	1.038
Motherboard:	3.3	3.3	3.3	3.3
	15.0	15.0	15.0	15.0
	24.0	23.9	24.0	23.9
	-3.3	-3.2	-3.3	-3.2
Interface Board:	3.3	3.3	3.3	3.3
	5.0	5.0	5.0	5.0
	15.0	14.9	15.0	14.9
	-15.0	-15.1	-15.0	-15.1
	Photo Lamp	9.8	Photo Lamp	9.8
	24.0	23.5	24.0	23.5
	O_3 Lamp	9.3	O_3 Lamp	9.3
	Bench:	28.6	Bench:	29.8
	Bench Lamp:	54.0	Bench Lamp:	54.1
	O_3 Lamp:	68.2	O_3 Lamp:	68.2
	Pressure:	713.1	Pressure:	713.4
	Cell A lpm:	0.764	Cell A lpm:	0.764
	Cell B lpm:	0.772	Cell B lpm:	0.772
	O_3 ppb:	0.0	O_3 ppb:	0.0
	Cell A ppb:	365	Cell A ppb:	-2.0
	Cell B ppb:	377	Cell B ppb:	2.0
	Cell A int:	52818	Cell A int:	52957
	Cell B int:	52740	Cell B int:	52881
	Internal Span:	340.7	Internal Span:	*

Calibrator:

Make & Model:	Environics 6100
Serial #:	5212
NOx Gas Cylinder I.D. # :	BAL1119
NOx Cylinder Conc. (ppm):	51.3

Calibrator Flow Targets:

point	total flow (cc/min)	O_3 setting (v or ppb)
zero	5000	0
high	5000	400
mid	5000	200
low	5000	100

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0.0	-0.1	NA
adjusted zero	5000	0.0	5000	0.0	0.0	NA
as found high	4997	0.00	4997	372.0	355.3	1.047
adjusted high	4997	0.00	4997	372.0	372.8	0.998
mid	4997	0.00	4997	189.0	189.7	0.996
low	4997	0.00	4997	93.0	95.4	0.975
calibrator zero	4997	0.00	4997	0.0	-0.1	NA

copy and paste flows and NO decrease from NOx cal in to calculated concentration **Average C.F.=** 0.990

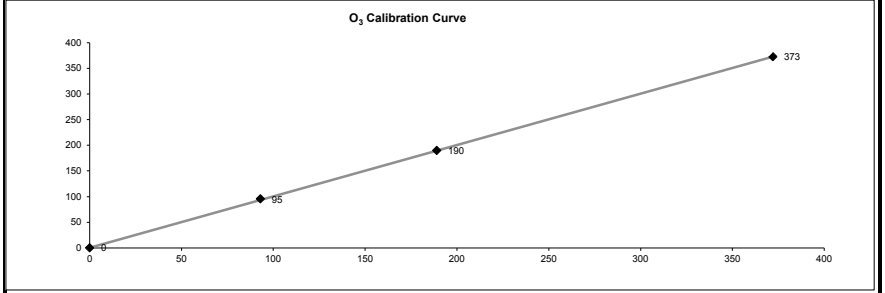
Linear Regression/Calibration Results:

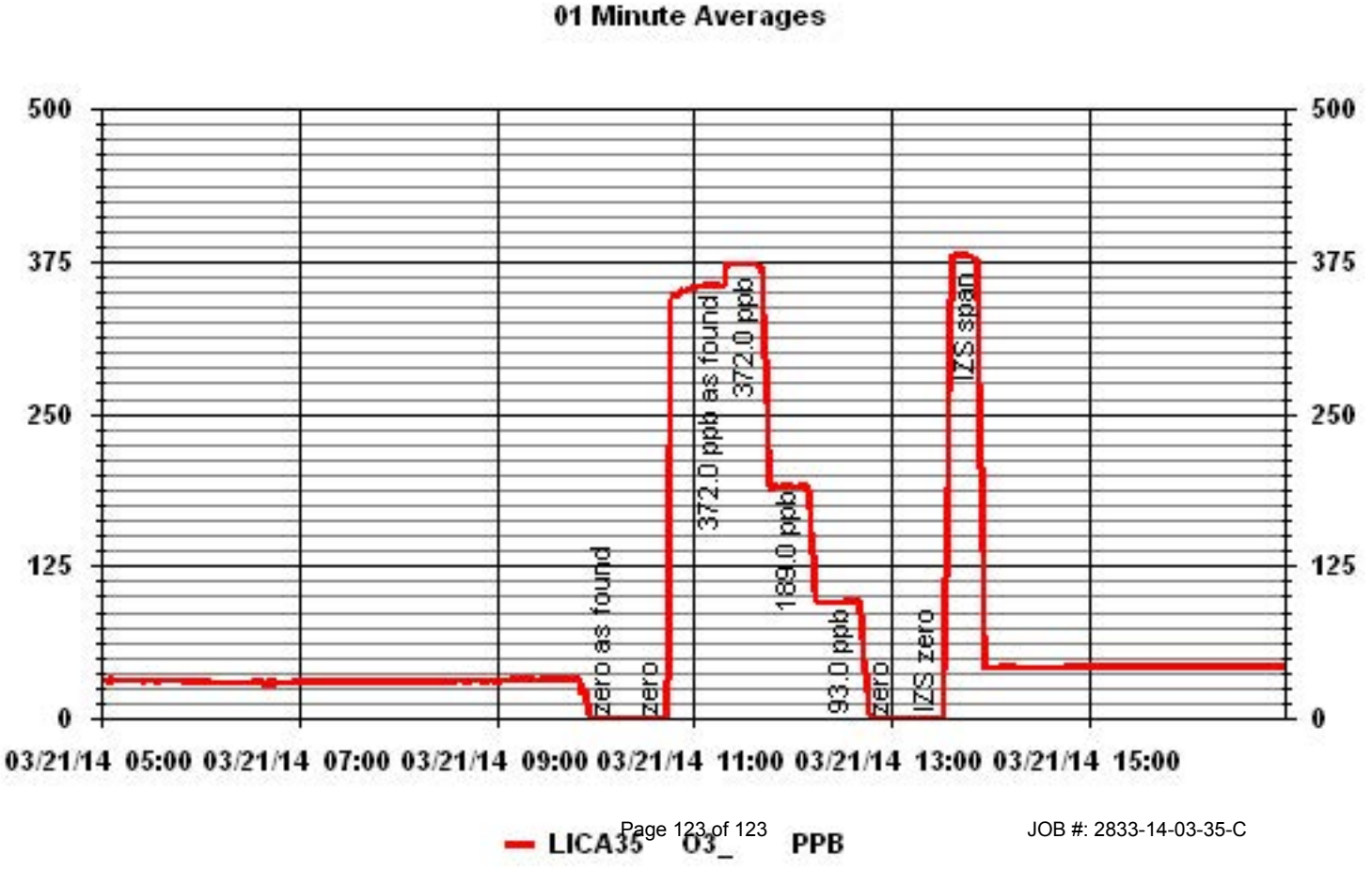
		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.000**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.188%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-5%**	**± 15%**	**PASS**

Comments:

Sample Filter Changed
* = To be set remotely

Thermo 49i O3 Analyzer Calibration





JOB #: 2833-14-03-35-C