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August 15, 2014

RE: June 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,

A handwritten signature in blue ink that reads "Michael Bisaga".

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

June 2014

Prepared By:



July 29, 2014

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

Table of Contents	Page		Page
Introduction	3	Calibration Reports	97
Calibration Procedure	4	• Sulphur Dioxide	98
Monthly Continuous Summary	5	• Total Reduced Sulphur	103
Monthly Non-Continuous Summary	6	• Total Hydrocarbons	108
General Monthly Summary	7	• Particulate Matter 2.5	116
Continuous Monitoring	10	• Nitrogen Dioxide	119
• Monthly Summaries, Graphs & Wind Roses	11	• Ozone	123
○ Sulphur Dioxide	13	Passive Bubble Maps	126
○ Total Reduced Sulphur	21	Passive Field Data	131
○ Total Hydrocarbons	29	• Field Notes	132
○ Particulate Matter 2.5	37	Passive Monitoring Laboratory Analysis	134
○ Nitrogen Dioxide	42		
○ Nitric Oxide	50		
○ Oxides of Nitrogen	57		
○ Ozone	65		
○ Ambient Temperature	73		
○ Relative Humidity	76		
○ Vector Wind Speed	79		
○ Vector Wind Direction	86		
○ Standard Deviation Wind Direction	89		
Non-Continuous Monitoring	92		

Introduction

The following Ambient Air Monitoring report was prepared for:

Mr. Mike Bisaga
Lakeland Industry & Community Association
Box 8237
5107W – 50 Street
Bonnyville, Alberta
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Monitoring Location: Cold Lake
Data Period: June 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 – June 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	0.03	2	30	7, 8	9.2, 9.2	318(NW), 318(NW)	0.5	30	99.2
TRS (PPB)	-	-	-	-	0.16	4	28	2, 5	0.9, 0.6	251(WSW), 249(WSW)	1.0	28	92.1
NO ₂ (PPB)	159	-	0	-	1.67	8	12	21	1.3	68(ENE)	2.9	2	100.0
NO (PPB)	-	-	-	-	0.19	9.9	3	5	1	50(NE)	0.9	3	100.0
NO _x (PPB)	-	-	-	-	1.86	16.5	3	5	1	50(NE)	3.8	3	100.0
O ₃ (PPB)	82	-	0	-	25.9	58	3	16, 17	7.8, 7.9	162(SSE), 186(S)	35.1	13	100.0
THC (PPM)	-	-	-	-	1.99	3.1	11	1, 5	1, 3.4	216(SW), 241(WSW)	2.4	10	95.8
PM 2.5 (UG/M ³)	-	30	-	0	10.63	115	21	11	3.7	328(NNW)	35.4	30	83.2
TEMPERATURE (DEG C)	-	-	-	-	14.77	25.7	28	11, 15	2.1, 5.9	235(SW), 239(WSW)	20.4	28, 29	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	72.47	100	VAR	VAR	VAR	VAR	95.3	19	100.0
VECTOR WS (KPH)	-	-	-	-	5.09	16.0	29	14	-	344(NNW)	8.8	29	100.0
VECTOR WD (DEGREES)	-	-	-	-	30(NNE)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS NA: NOT AVAILABLE

Monthly Non-Continuous Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Passive Ambient Monitoring Network – June 2014

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO ₂	#8	1.4	0.3
H ₂ S	#27	0.28	0.15
NO ₂	#6, #28	2.2	0.9
O ₃	#11	41.30	23.77

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 analyzer was working well throughout the month. The monthly calibration was performed on June 11th. The inlet filter was changed before the monthly calibration. It was found that the analyzer took long time to reach the first span point check. The analyzer was put into the Maintenance mode on June 12th to check potential issues that might cause the slow response. It was determined that the issue was from the calibrator. Another full calibration was performed on June 13th after the tubing inside the calibrator was replaced. The analyzer responded well with no issue. This issue did not affect data quality. 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

The analyzer did not span on June 7th due to the sample pump failure. The pump was replaced on June 8th following an as found points check. A post-repair calibration was performed on June 9th. Data was invalidated back to the last good calibration, which was June 6th. A total of 56 hours of data was invalidated due to this event. Data was corrected using daily zero information.

Ozone (PPB)

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

The analyzer was working well throughout the month. The monthly calibration was performed on June 9th. The inlet filter was changed before the monthly calibration. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – COLD LAKE SOUTH

Total Hydrocarbon (PPM)

- Analyzer make / model - Thermo 51C, S/N: AMU1634

The monthly calibration was performed on June 9th. Due to high daily zero result, the analyzer was checked on June 11th. The internal pressures for fuel/air were adjusted. A post repair calibration was then performed. The analyzer read lower than expected after the daily zero/span check on June 12th. It was found that the analyzer had a service alarm (Flow Reg Fail). Performed troubleshooting on June 13th by restarting the analyzer to clear out the alarm and recalibrating the analyzer. A total of 30 hours of data was invalidated due to this issue. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

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

The analyzer was working well throughout the month. The monthly calibration was performed on June 9th. The inlet filter was changed before the monthly calibration. Data was corrected using daily zero information.

Particulate Matter 2.5 (UG/M3)

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

Two Teom audits were performed this month: one was completed on June 11th, and the other audit was performed on June 26th. The Teom filter and the FDMS filter were replaced during both trips. The cooler was cleaned on June 26th. Time was given to the unit to stabilize overnight after the maintenance. The unit started recording many negative values on June 21st. It is likely caused by the failing dryer. The replacement dryer supplied by CD Nova via AESRD was the incorrect part. The part was shipped back to CD Nova, and we are still waiting for the part. The dryer was replaced using St. Lina's dryer on July 3rd to improve the Teom unit functionality. 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. 100 hours of data were invalidated as the data were below –3 ug/m3. The total operational uptime was 83.2%.

General Monthly Summary

AQM STATION – LICA – COLD LAKE SOUTH

Relative Humidity (PERCENT)

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

Ambient Temperature (DEGC)

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

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.

General Monthly Summary

AQM STATION – LICA – COLD LAKE SOUTH

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 June 11th.

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

JUNE 2014

SULPHUR DIOXIDE (SO2) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
DAY																														
1		0	0	0	0	0	0	0	0	0	0	0	0	S	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	1	1	1	S	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
3		0	0	0	0	0	0	0	0	0	0	0	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	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	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	24	
11		0	0	S	0	0	0	0	C	C	C	C	C	C	C	C	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	Y	Y	Y	Y	Y	Y	0	0	0	0	0	0	0	0	0	0	0.0	18	
13		S	0	0	0	0	0	0	C	C	C	C	C	C	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	0	0	0	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	0	0	S	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	S	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	0.0	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	0.0	24	
19		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	0.0	24	
20		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	0.0	24	
21		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	0.0	24	
22		0	0	0	0	0	0	0	0	1	1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
23		0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	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	S	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	S	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	S	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	S	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	S	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.0	24	
30		1	1	1	1	1	1	S	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.5	24		
HOURLY MAX		1	1	1	1	1	1	0	2	2	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1				
HOURLY AVG		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

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

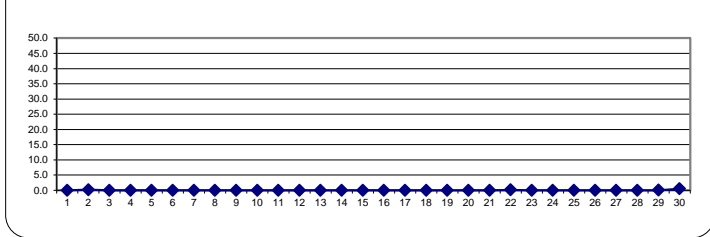
OBJECTIVE LIMIT:

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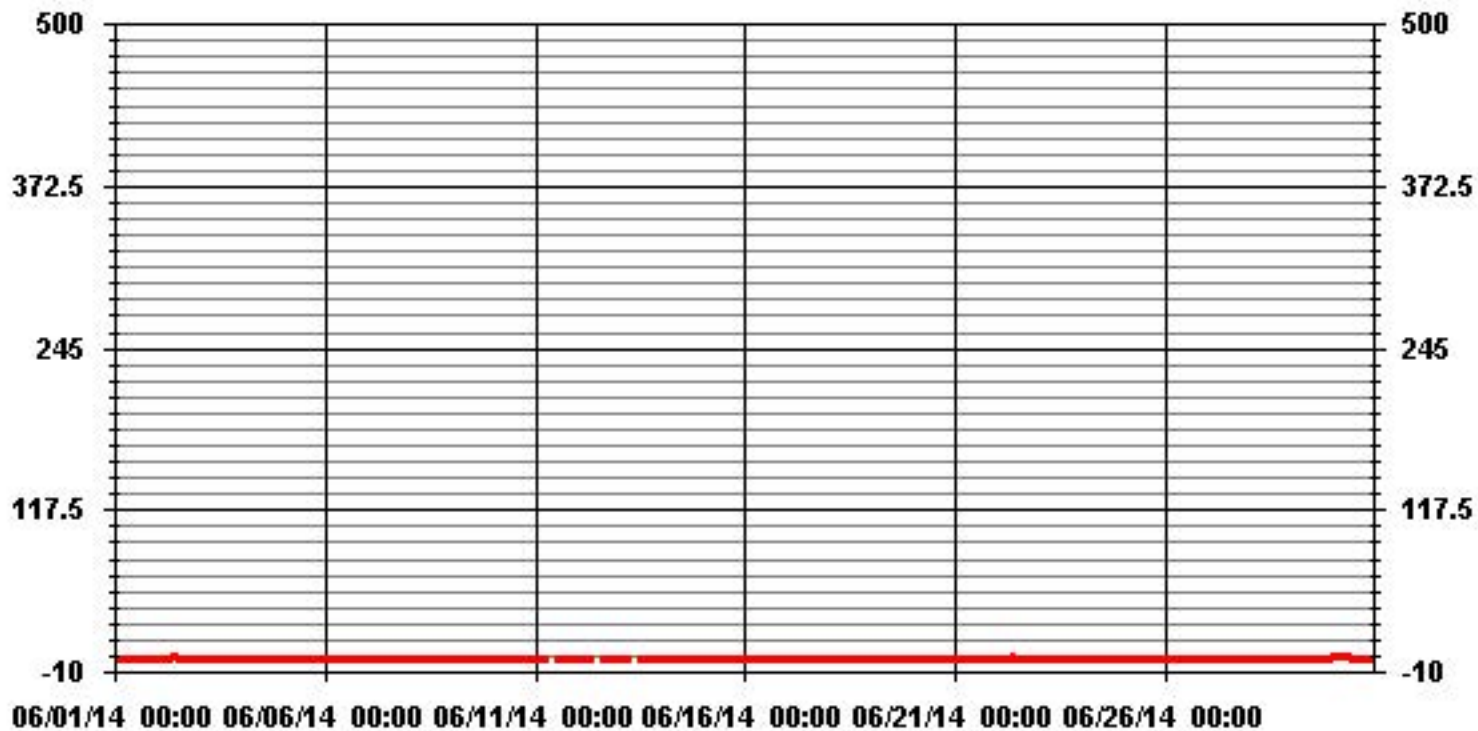
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	18					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	7, 8	ON DAY(S)	30
MAXIMUM 24-HR AVERAGE:	0.5	PPB			ON DAY(S)	30
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	714	HRS	
MONTHLY CALIBRATION TIME:	13	HRS	AMD OPERATION UPTIME:	99.2	%	
STANDARD DEVIATION:	0.19		MONTHLY AVERAGE:	0.03	PPB	

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



— LICA SO2_ PPB

Lakeland Industry & Community Association - Cold Lake South Site

JUNE 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	0	0	0	0	0	S	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	1	1	1	1	S	1	1	1	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	0	S	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	S	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	S	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	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
7	0	0	0	0	0	0	S	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	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	
9	0	0	0	0	S	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	
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	0.0	24	
11	0	0	S	0	0	0	0	C	C	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
12	0	S	0	1	0	0	0	0	1	Y	Y	Y	Y	Y	Y	Y	1	1	0	0	0	1	0	0	0	1	0.3	18		
13	S	0	0	0	0	0	0	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	S	0	0.0	24		
14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	S	0	1	0.2	24			
15	0	0	0	0	0	0	0	1	0	1	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	0	S	0	0	0	0	0.0	24		
17	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	S	0	1	0	0	1	0.2	24			
18	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0	0	1	0.1	24			
19	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	0.0	24		
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	S	0	0	0	0	0	0	0	1	0.0	24			
21	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	S	0	1	1	1	1	1	0	0	1	0.3	24			
22	0	0	0	0	0	0	1	1	2	2	1	1	1	1	S	0	1	0	0	0	0	1	0	0	2	0.5	24			
23	0	0	0	0	0	0	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.0	24			
24	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0	0	0	0	0	0	0	1	0.0	24			
25	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0	0	0	0	0	0	0	0	0	1	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	0.0	24		
27	0	0	0	0	0	0	1	1	1	S	0	0	0	0	0	1	1	1	1	1	0	0	0	0	1	0.3	24			
28	0	0	0	0	0	0	1	0	S	0	1	1	1	0	0	1	0	1	0	1	1	1	1	1	1	1	0.5	24		
29	1	0	0	0	0	0	1	S	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	0	2	0.4	24			
30	2	2	2	1	1	2	S	3	2	2	2	2	1	1	1	1	0	1	0	0	0	0	0	0	3	1.0	24			
HOURLY MAX		2	2	2	1	1	2	1	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2			
HOURLY AVG		0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.3	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.0	0.1	0.1				

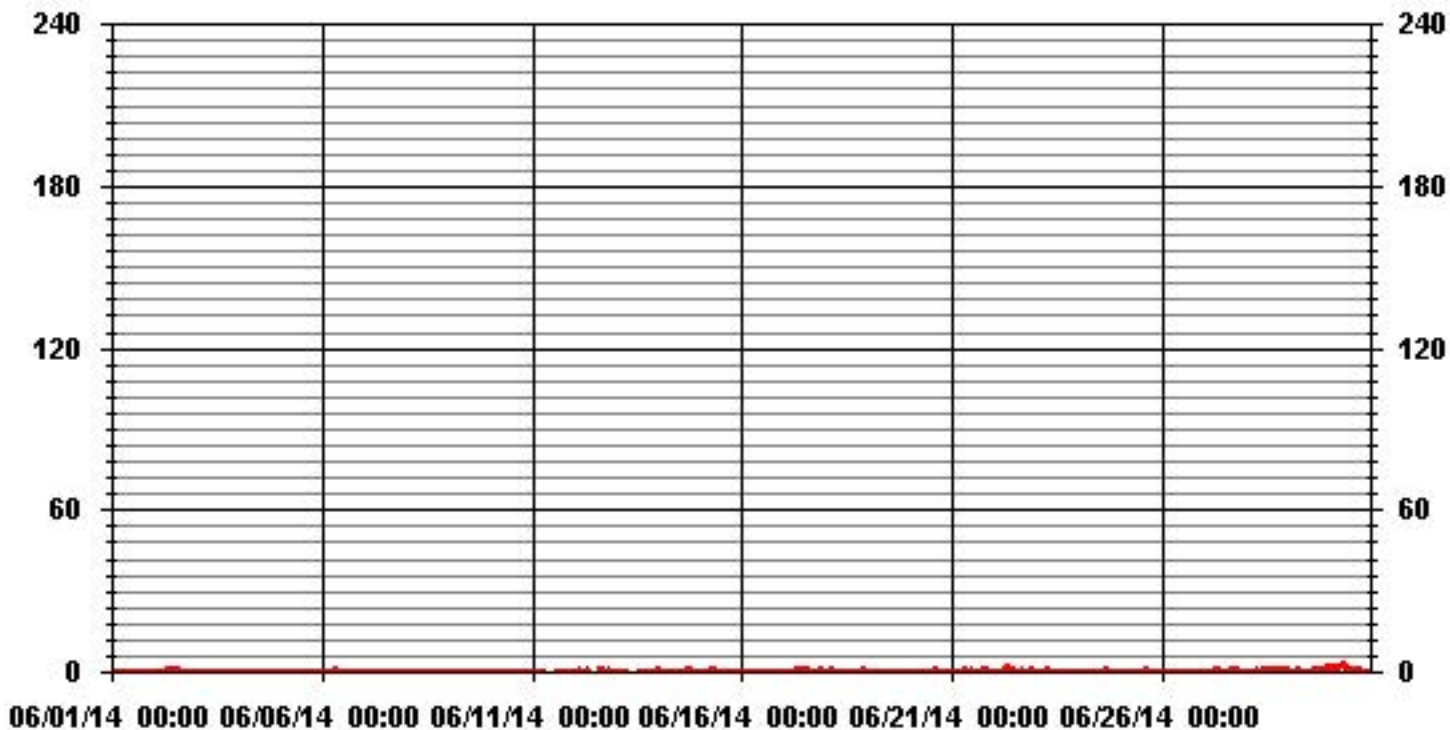
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	89					
MAXIMUM INSTANTANEOUS VALUE:	3	PPB	@ HOUR(S)	7	ON DAY(S)	30
	VAR-VARIOUS					
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	714	HRS	
MONTHLY CALIBRATION TIME:	15	HRS				
STANDARD DEVIATION:	0.41					

01 Hour Averages



LICA
 SO2_ / WDR Joint Frequency Distribution (Percent)

June 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	7.31	7.16	7.01	5.07	5.37	8.95	15.82	5.22	2.08	2.23	2.53	6.71	6.71	2.98	6.26	8.50	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	7.31	7.16	7.01	5.07	5.37	8.95	15.82	5.22	2.08	2.23	2.53	6.71	6.71	2.98	6.26	8.50	

Calm : .00 %

Total # Operational Hours : 670

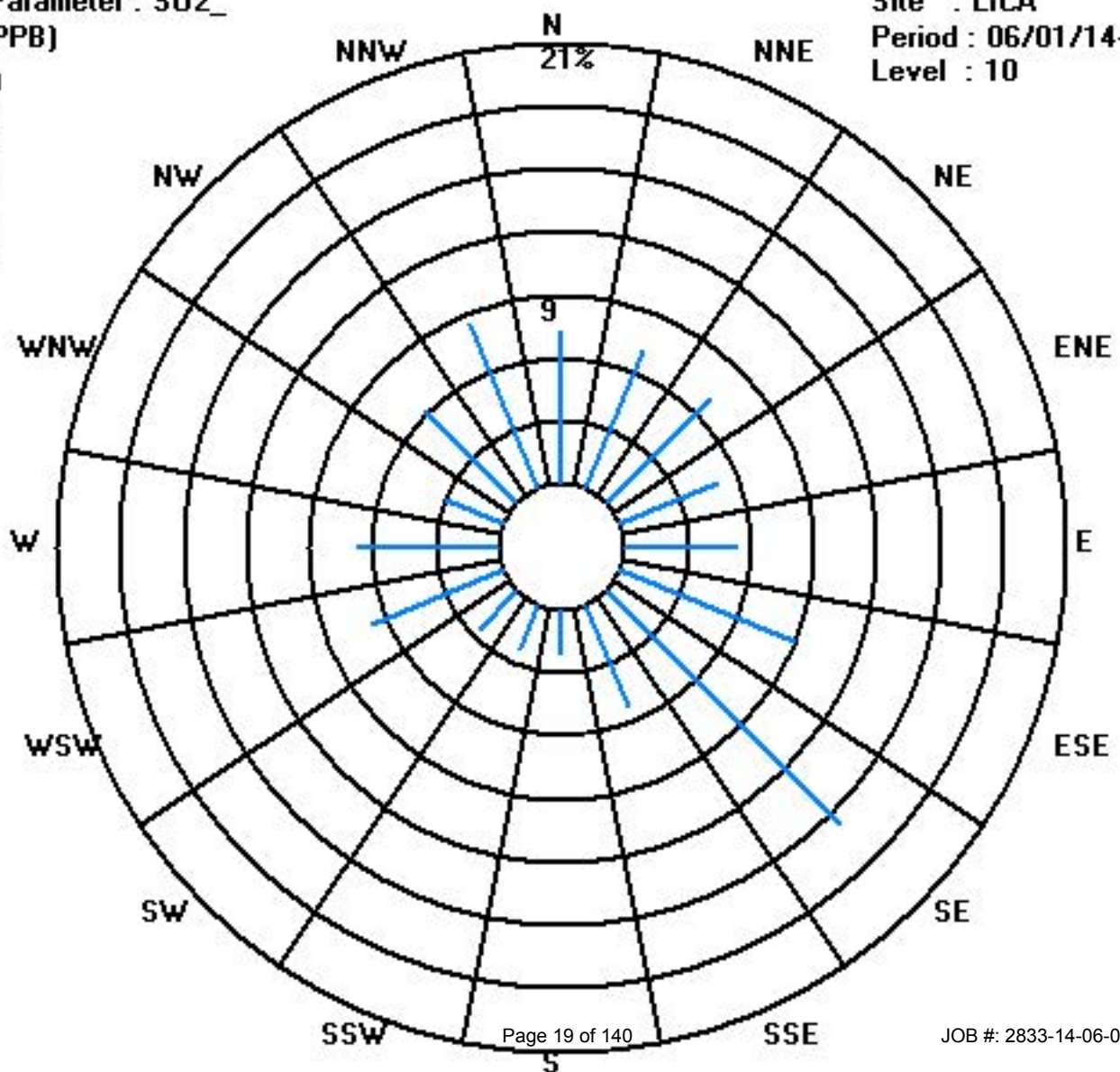
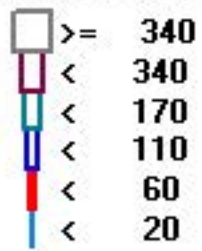
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	49	48	47	34	36	60	106	35	14	15	17	45	45	20	42	57	670
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	49	48	47	34	36	60	106	35	14	15	17	45	45	20	42	57	

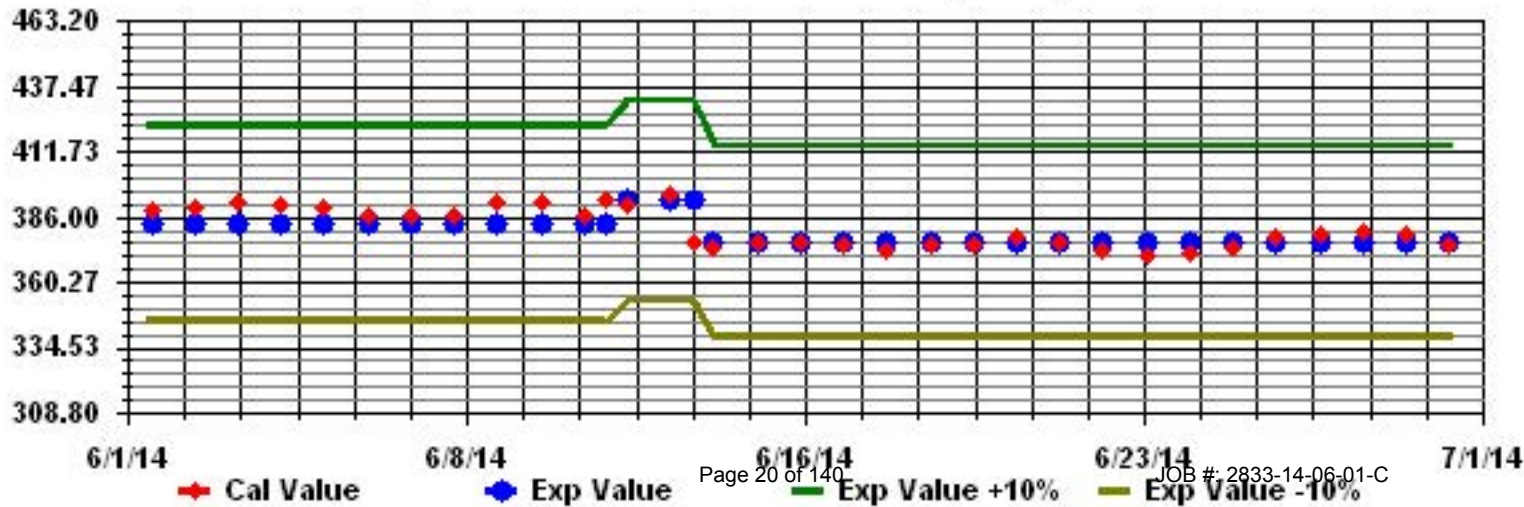
Calm : .00 %

Total # Operational Hours : 670

Class Limits (PPB)



Calibration Graph for Site: LICA Parameter: SO2_ Sequence: S02 Phase: SPAN



Total Reduced Sulphur

Lakeland Industry & Community Association - Cold Lake South Site

JUNE 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	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
2			1	1	1	1	1	1	1	1	1	1	0	0	S	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0.5	24
3			1	1	1	1	1	1	1	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24		
4			1	0	0	0	0	0	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24		
5			0	0	0	0	0	0	0	0	0	S	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	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0.0	8		
7			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	0.0	7		
8			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	C	C	0	0	0	0	0	0	0.0	7		
9			0	0	0	0	S	0	0	0	0	0	0	0	C	C	C	C	C	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	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24		
12			0	S	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	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	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	0.1	24	
15			1	1	1	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.4	24	
16			1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.2	24	
17			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	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	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	1	1	0	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	1	0.2	24		
24			1	0	0	0	0	0	0	0	0	0	S	0	S	0	0	0	0	0	0	0	0	0	0	0	1	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	1	1	1	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.2	24		
27			2	1	1	1	1	1	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0.6	24		
28			3	3	4	3	2	4	2	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	1.0	24		
29			0	0	0	1	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24		
30			0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3	0.2	24		
HOURLY MAX			3	3	4	3	2	4	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3				
HOURLY AVG			0.4	0.3	0.4	0.5	0.4	0.4	0.3	0.2	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	0.1	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

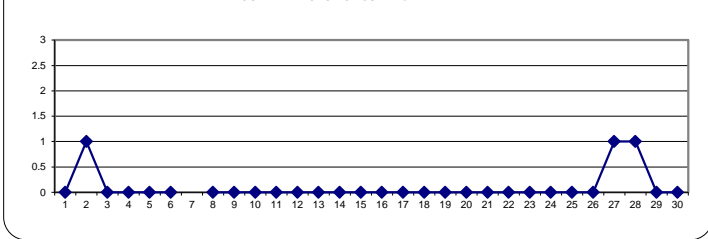
OBJECTIVE LIMIT:

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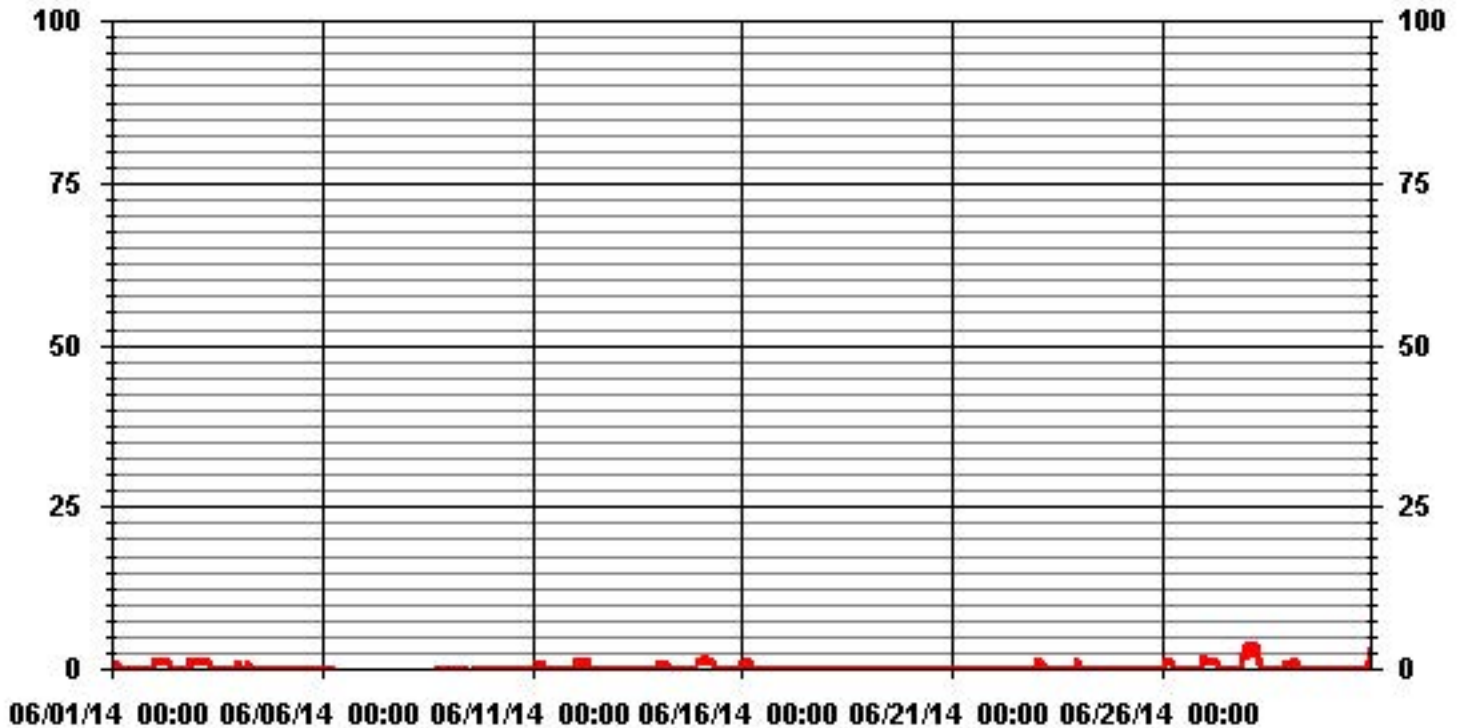
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF 24-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	79					
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	2, 5	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	1.0	PPB			ON DAY(S)	28
					VAR-VARIOUS	
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	663 HRS		
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	92.1 %		
STANDARD DEVIATION:	0.48		MONTHLY AVERAGE:	0.16 PPB		

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



Lakeland Industry & Community Association - Cold Lake South Site

JUNE 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	1.0	24
2		1	1	1	2	1	1	2	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
3		2	1	1	2	2	2	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.2	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	1	S	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	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1	1.0	8	
7		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1	0.3	7
8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	C	C	C	C	1	0	0	0	1	0.6	24	
9		1	0	1	1	S	1	1	0	0	1	1	C	C	C	C	C	1	1	1	0	0	0	0	1	0.5	24		
10		1	1	0	S	1	1	0	0	1	0	0	1	0	0	1	0	0	0	0	1	1	1	1	1	1	0.9	24	
11		1	1	S	1	1	1	1	1	1	0	1	0	1	1	0	0	1	1	1	1	1	1	1	1	1	1.0	24	
12		1	S	2	3	3	1	1	1	1	1	1	0	0	1	1	1	0	0	1	1	1	1	1	1	3	1.0	24	
13		S	1	1	1	1	1	0	0	0	1	0	1	1	1	0	0	0	0	1	1	1	1	1	S	1	0.6	24	
14		1	4	1	1	1	1	1	1	0	0	1	1	0	0	0	1	1	0	0	1	3	S	2	4	1.0	24		
15		2	2	2	4	2	4	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	S	1	1	4	1.0	24	
16		2	1	2	2	2	1	0	1	1	0	0	1	1	0	1	0	1	0	1	0	1	S	1	0	0	0.8	24	
17		1	0	1	1	1	1	1	1	0	0	1	0	1	0	0	1	1	1	1	S	1	1	1	1	1	0.7	24	
18		0	0	1	1	1	1	1	1	0	0	1	0	0	1	0	0	0	0	S	1	1	1	0	0	1	0.5	24	
19		1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	1	0	S	1	1	0	0	1	0	1	0.4	24	
20		1	1	0	0	1	0	0	0	1	0	1	0	0	0	0	S	1	1	0	0	1	0	0	1	0.3	24		
21		0	0	1	1	0	1	0	1	0	0	1	0	1	0	S	1	1	0	1	1	0	1	1	1	1	0.5	24	
22		1	1	1	1	1	1	1	1	0	1	1	1	1	S	1	0	0	0	0	1	1	1	1	1	1	0.8	24	
23		1	2	2	1	1	2	1	1	0	0	0	1	1	S	0	1	0	0	0	1	1	1	1	4	4	1.0	24	
24		4	1	1	1	1	1	1	1	1	0	S	1	S	1	1	1	1	0	0	0	1	1	0	1	4	0.9	24	
25		1	1	1	1	1	1	1	1	1	1	1	S	1	1	0	1	0	0	1	1	1	1	0	2	2	0.9	24	
26		1	1	3	4	2	4	2	1	1	1	S	1	0	0	1	0	1	1	1	1	1	1	1	3	4	1.4	24	
27		5	4	2	3	3	2	1	1	1	S	1	1	0	0	0	0	0	0	0	1	1	2	6	5	6	1.7	24	
28		8	8	6	6	5	14	3	2	S	1	0	0	1	0	1	0	0	0	1	1	1	1	1	3	14	2.7	24	
29		2	1	1	4	2	1	1	S	1	1	0	0	0	0	0	1	0	0	0	1	0	1	1	4	4	0.8	24	
30		1	1	1	1	1	1	S	1	1	1	1	1	1	1	0	0	0	1	0	0	1	1	1	6	6	1.0	24	
HOURLY MAX		8	8	6	6	5	14	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	6	6			
HOURLY AVG		1.6	1.4	1.4	1.7	1.4	1.8	1.0	0.8	0.6	0.6	0.7	0.7	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.7	0.9	0.9	0.9	1.4				

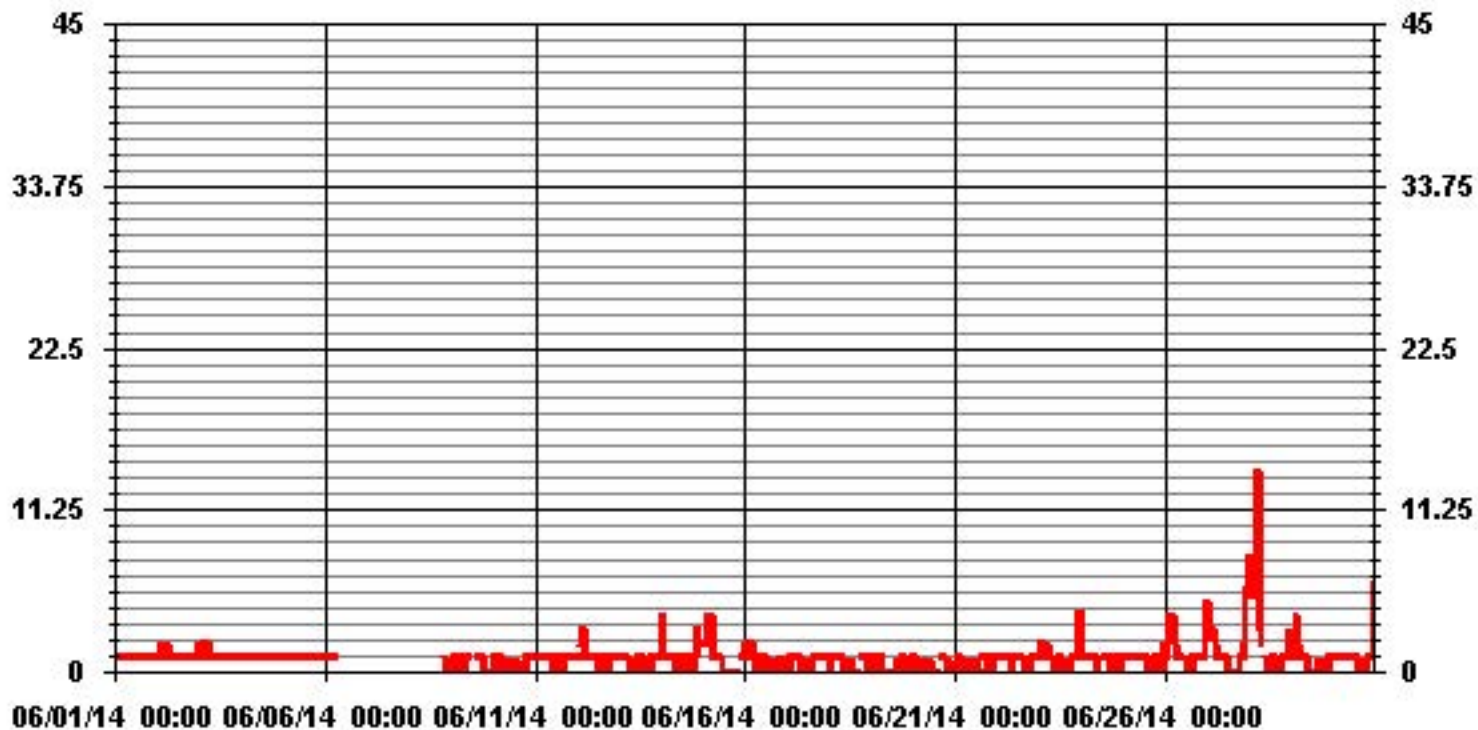
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	452
MAXIMUM INSTANTANEOUS VALUE:	14 PPB @ HOUR(S) 5 ON DAY(S) 28
	VAR-VARIOUS
IZS CALIBRATION TIME:	30 HRS
MONTHLY CALIBRATION TIME:	8 HRS
STANDARD DEVIATION:	1.08
OPERATIONAL TIME:	663 HRS

01 Hour Averages



LICA
 TRS_ / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	7.34	6.38	7.18	5.27	5.27	8.94	15.65	5.11	2.71	1.91	2.07	6.86	7.02	3.03	6.07	8.14	99.04
< 10	.00	.00	.00	.00	.00	.00	.15	.00	.00	.15	.00	.31	.00	.15	.00	.15	.95
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	7.34	6.38	7.18	5.27	5.27	8.94	15.81	5.11	2.71	2.07	2.07	7.18	7.02	3.19	6.07	8.30	

Calm : .00 %

Total # Operational Hours : 626

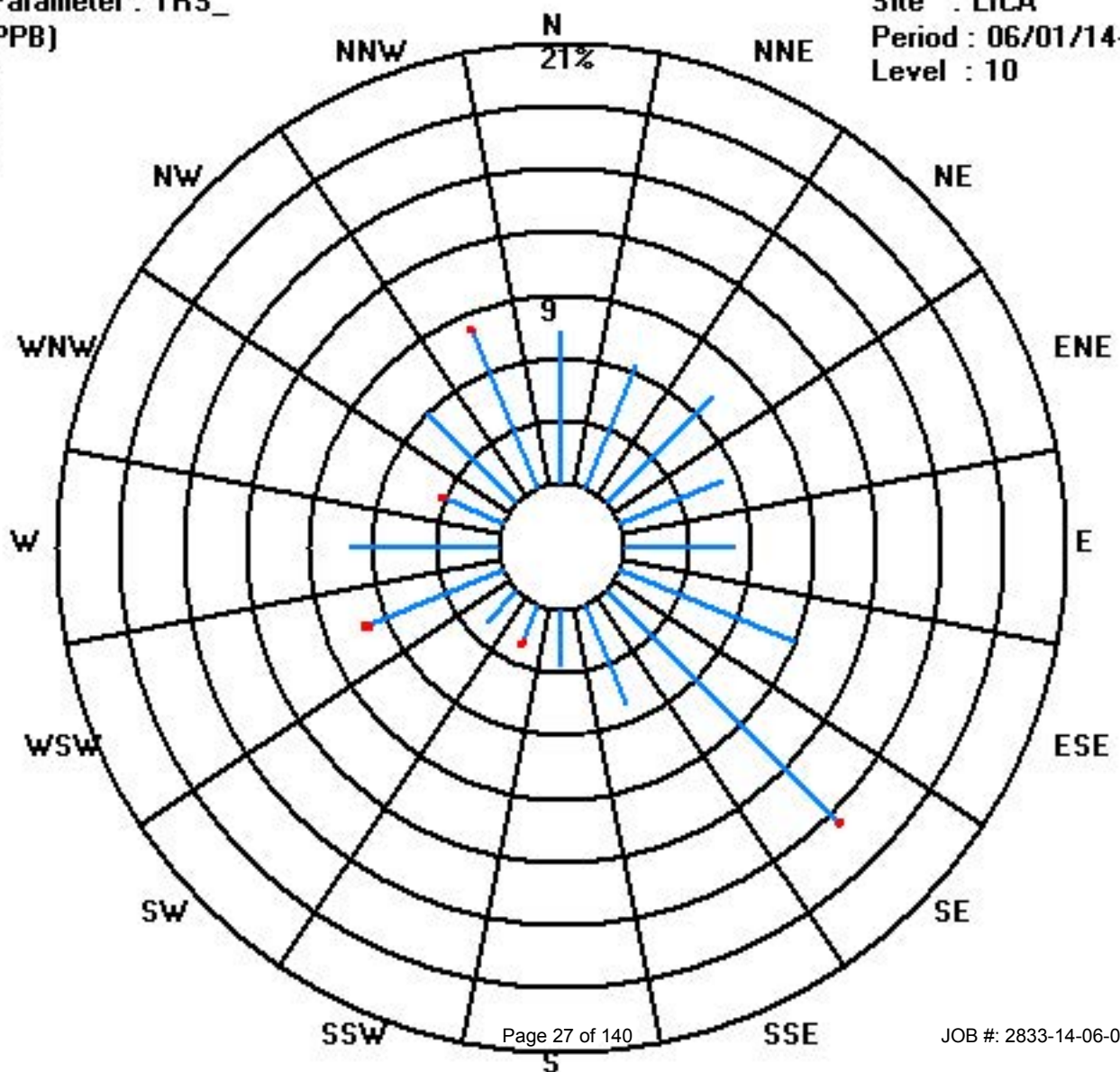
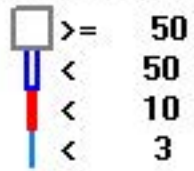
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	46	40	45	33	33	56	98	32	17	12	13	43	44	19	38	51	620
< 10							1				1		2		1		6
< 50																	
>= 50																	
Totals	46	40	45	33	33	56	99	32	17	13	13	45	44	20	38	52	

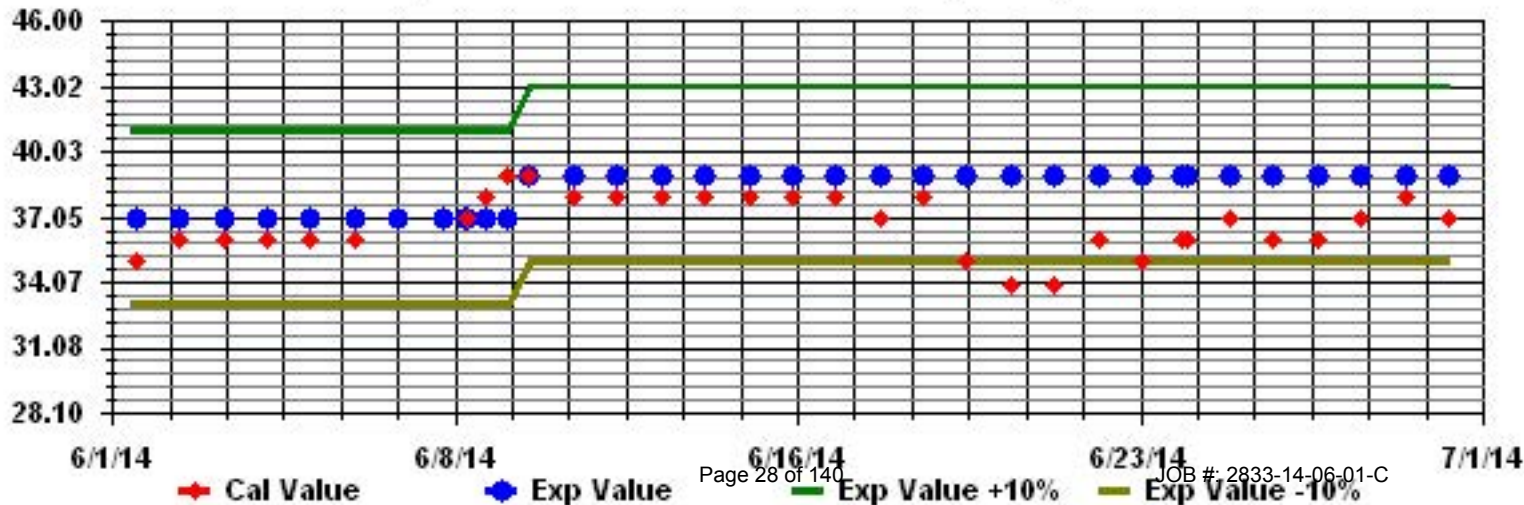
Calm : .00 %

Total # Operational Hours : 626

Class Limits (PPB)



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



Total Hydrocarbons

Lakeland Industry & Community Association - Cold Lake South Site

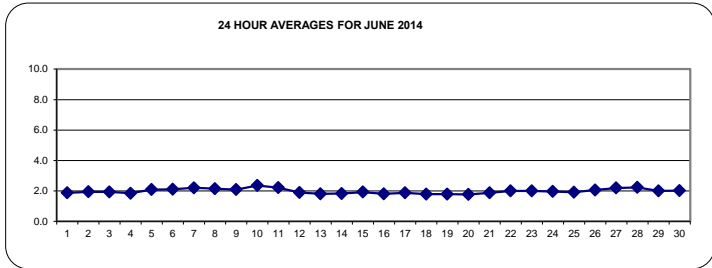
JUNE 2014

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

STATUS FLAG CODES

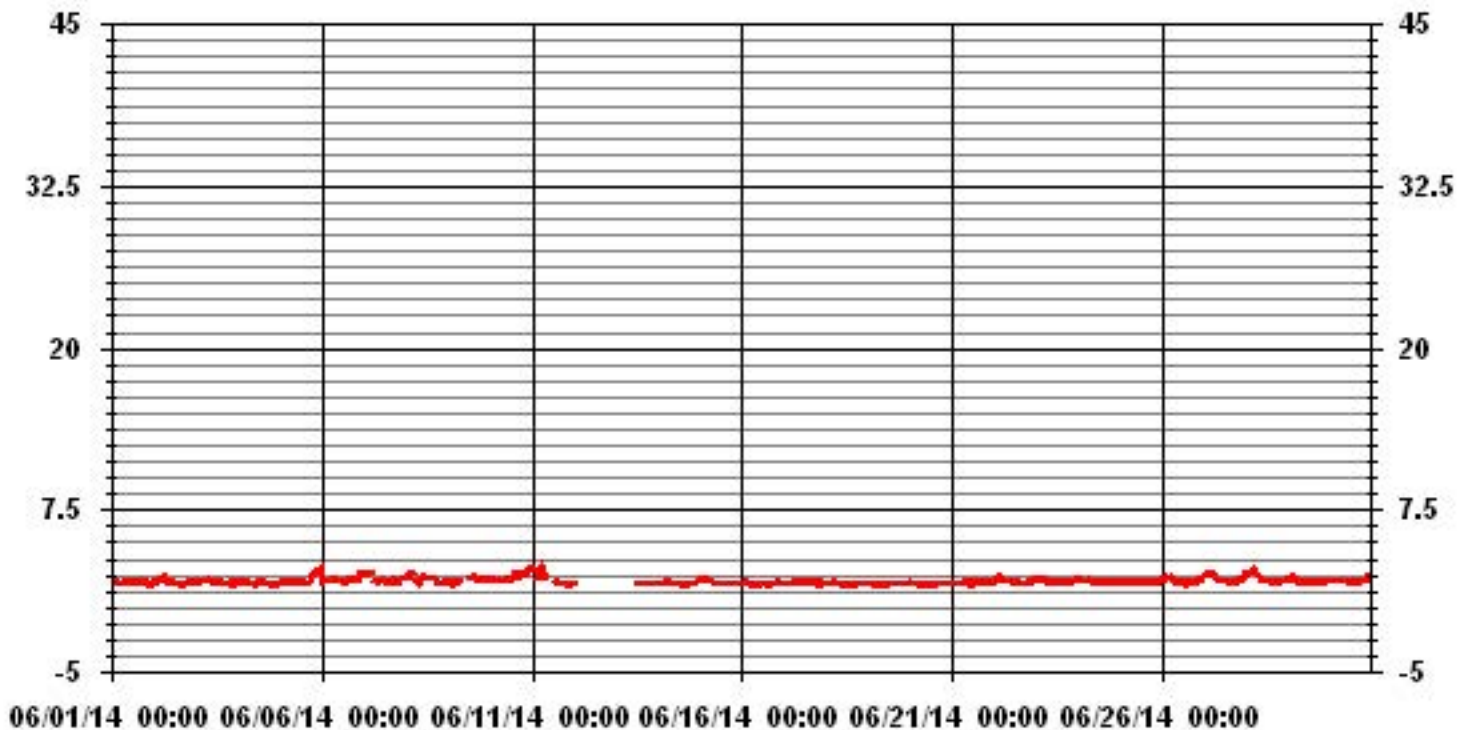
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	643					
MAXIMUM 1-HR AVERAGE:	3.1	PPM	@ HOUR(S)	1, 5	ON DAY(S)	11
MAXIMUM 24-HR AVERAGE:	2.4	PPM			ON DAY(S)	10
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	690	HRS	
MONTHLY CALIBRATION TIME:	16	HRS	AMD OPERATION UPTIME:	95.8	%	
STANDARD DEVIATION:	0.24		MONTHLY AVERAGE:	1.99	PPM	

01 Hour Averages



— LICA — THC — PPM

Lakeland Industry & Community Association - Cold Lake South Site

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

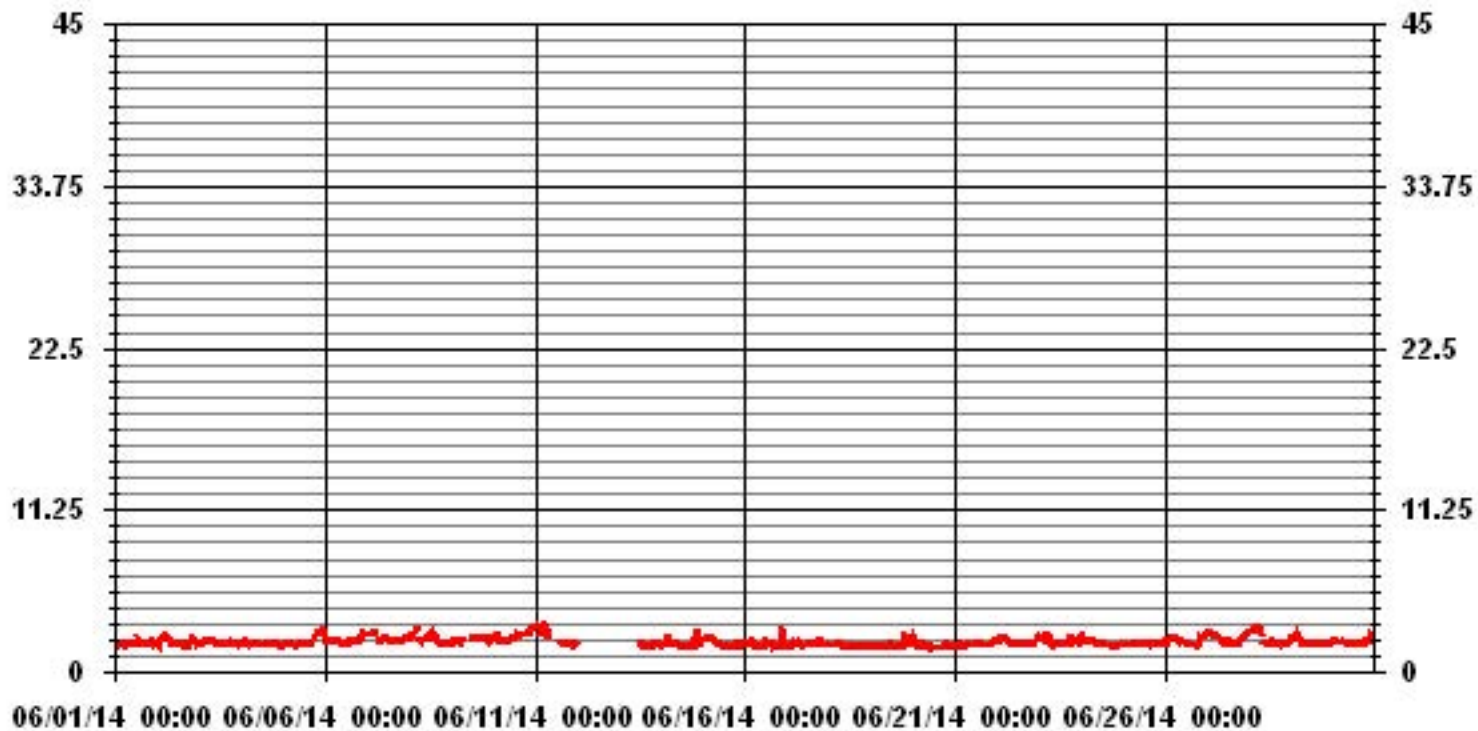
STATUS FLAG CODES

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:	643
MAXIMUM INSTANTANEOUS VALUE:	3.3 PPM @ HOUR(S) 1, 5 ON DAY(S) 11
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	16 HRS
STANDARD DEVIATION:	0.29
OPERATIONAL TIME:	690 HRS

01 Hour Averages



— LICA THCMAX PPM

LICA
 THC / WD Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	7.46	7.46	6.84	4.35	5.13	8.86	16.17	4.82	2.17	2.02	2.33	6.37	6.84	3.26	6.53	8.70	99.37
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15	.46	.00	.00	.00	.00	.62
< 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	7.46	7.46	6.84	4.35	5.13	8.86	16.17	4.82	2.17	2.02	2.48	6.84	6.84	3.26	6.53	8.70	

Calm : .00 %

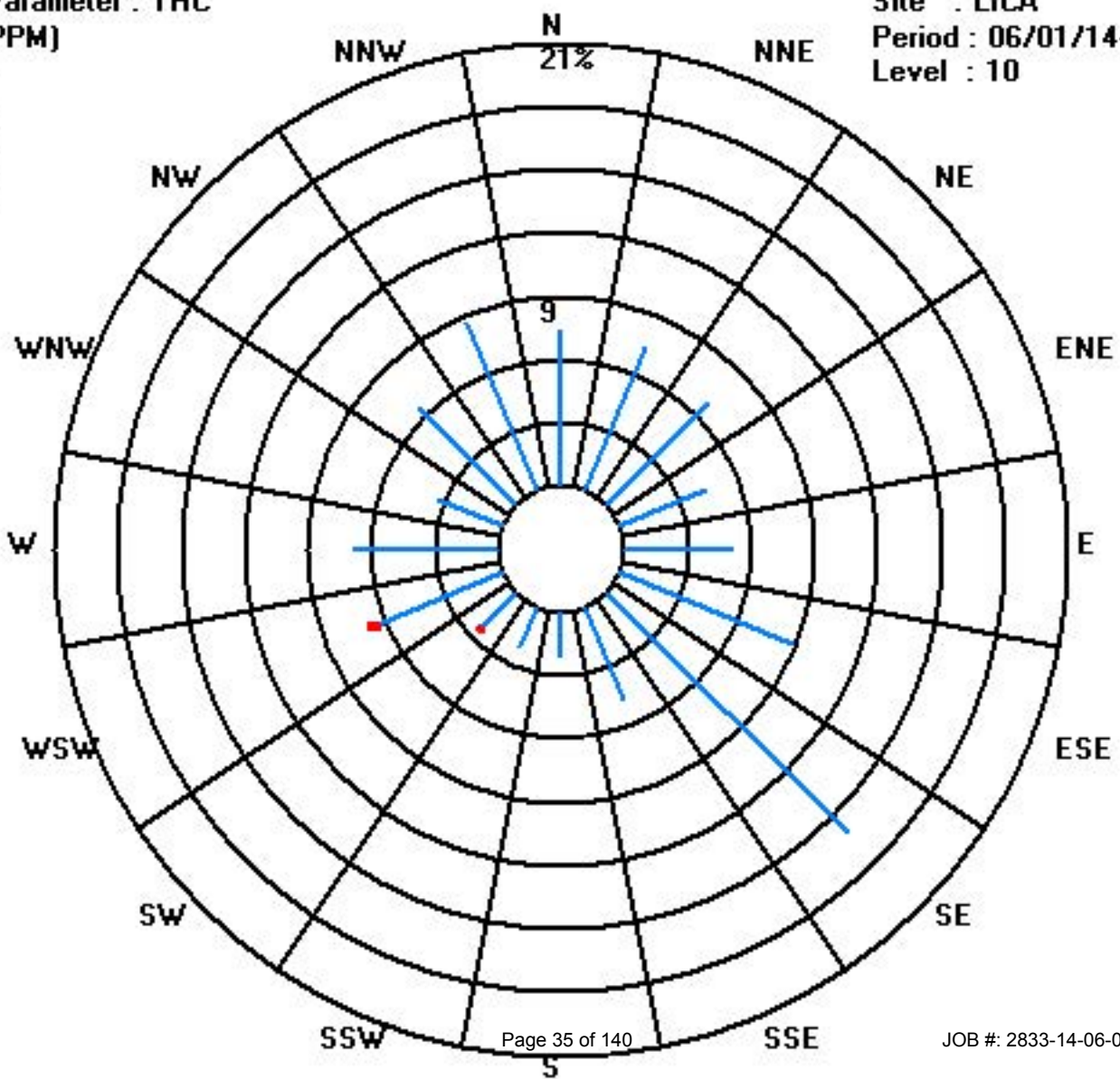
Total # Operational Hours : 643

Distribution By Samples

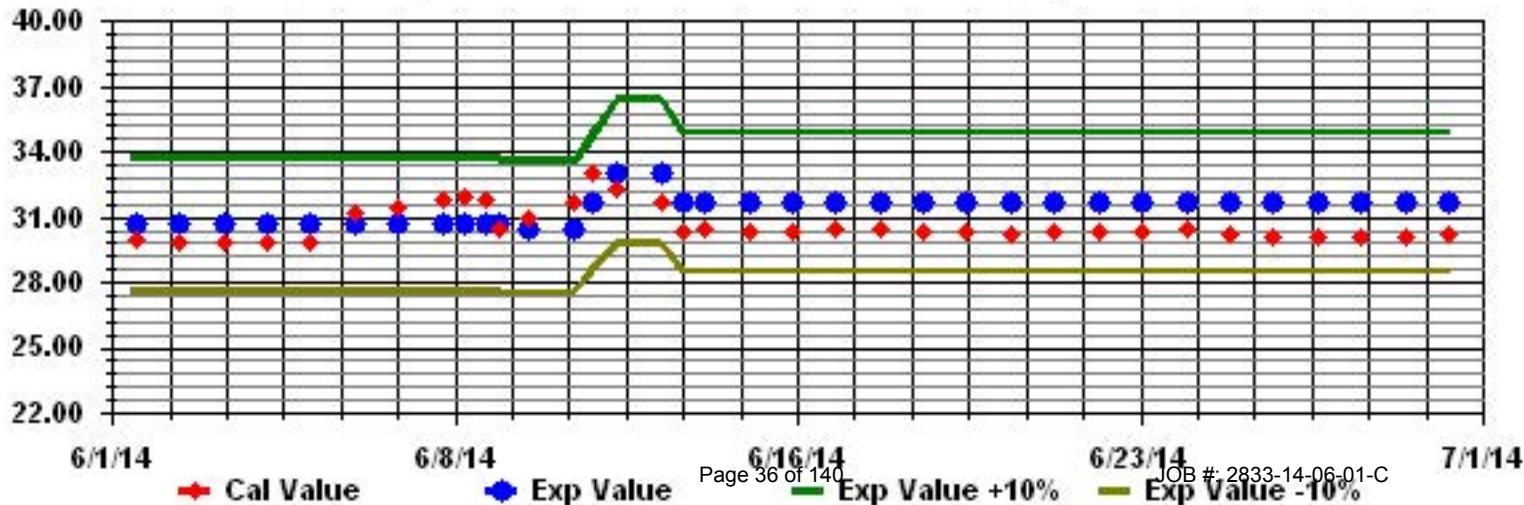
Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	48	48	44	28	33	57	104	31	14	13	15	41	44	21	42	56	639
< 10.0											1	3					4
< 50.0																	
>= 50.0																	
Totals	48	48	44	28	33	57	104	31	14	13	16	44	44	21	42	56	

Calm : .00 %

Total # Operational Hours : 643



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



Particulate Matter 2.5

Lakeland Industry & Community Association - Cold Lake South Site

JUNE 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.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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	1	2	1	7	1	0	0	0	0	0	4	0	1	0	X	8	8	X	1	0	2	9	1	0	9	2.0	22																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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	29	17	16	17	X	X	0	X	X	X	43	31	X	X	X	X	X	X	X	X	X	X	0	X	X	43	17.7	7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
	30	X	X	X	X	X	X	3	5	38	33	38	39	34	24	23	17	31	31	24	25	35	36	33	23	39	27.3	18																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
	HOURLY MAX	19	24	21	51	45	36	24	41	40	43	38	115	34	24	79	39	34	44	24	93	52	36	33	23																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
	HOURLY AVG	6.6	7.4	7.6	10.0	9.0	9.5	8.8	10.7	11.7	13.3	12.2	17.4	9.3	7.8	13.0	9.6	10.4	13.4	10.2	13.7	13.8	11.5	10.3	9.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	

STATUS FLAG CODES

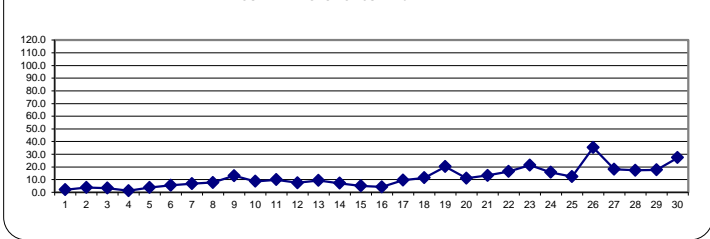
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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

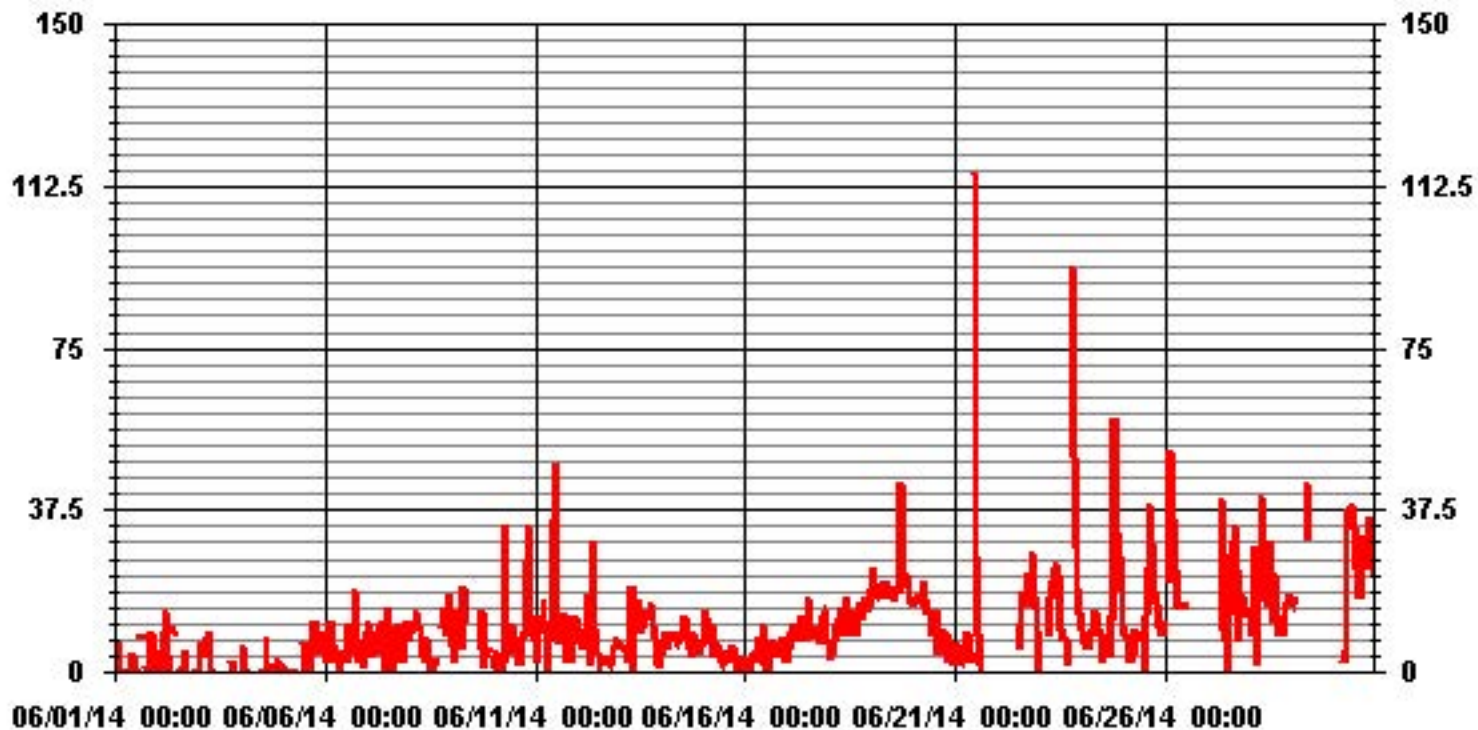
MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	1				
NUMBER OF NON-ZERO READINGS:	539				
MAXIMUM 1-HR AVERAGE:	115 ug/m3	@ HOUR(S)	11	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	35.4 ug/m3			ON DAY(S)	30
				VAR-VARIOUS	
MONTHLY CALIBRATION TIME:	4 HRS	OPERATIONAL TIME:	599 HRS		
STANDARD DEVIATION:	11.16	AMD OPERATION UPTIME:	83.2 %		
		MONTHLY AVERAGE:	10.63 ug/m3		

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



LICA
PM2 / WD Joint Frequency Distribution (Percent)

June 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	6.97	7.64	8.30	5.64	5.98	10.13	15.78	3.65	2.49	2.15	2.82	4.98	5.31	2.99	3.32	5.98	94.18
< 60	.49	.33	.33	.00	.00	.16	1.16	.16	.00	.00	.00	.66	.83	.16	.49	.49	5.31
< 80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00	.16
< 120	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00	.00	.00	.00	.00	.00	.16	.33
< 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	7.47	7.97	8.63	5.64	5.98	10.29	17.10	3.82	2.49	2.15	2.82	5.64	6.31	3.15	3.82	6.64	

Calm : .00 %

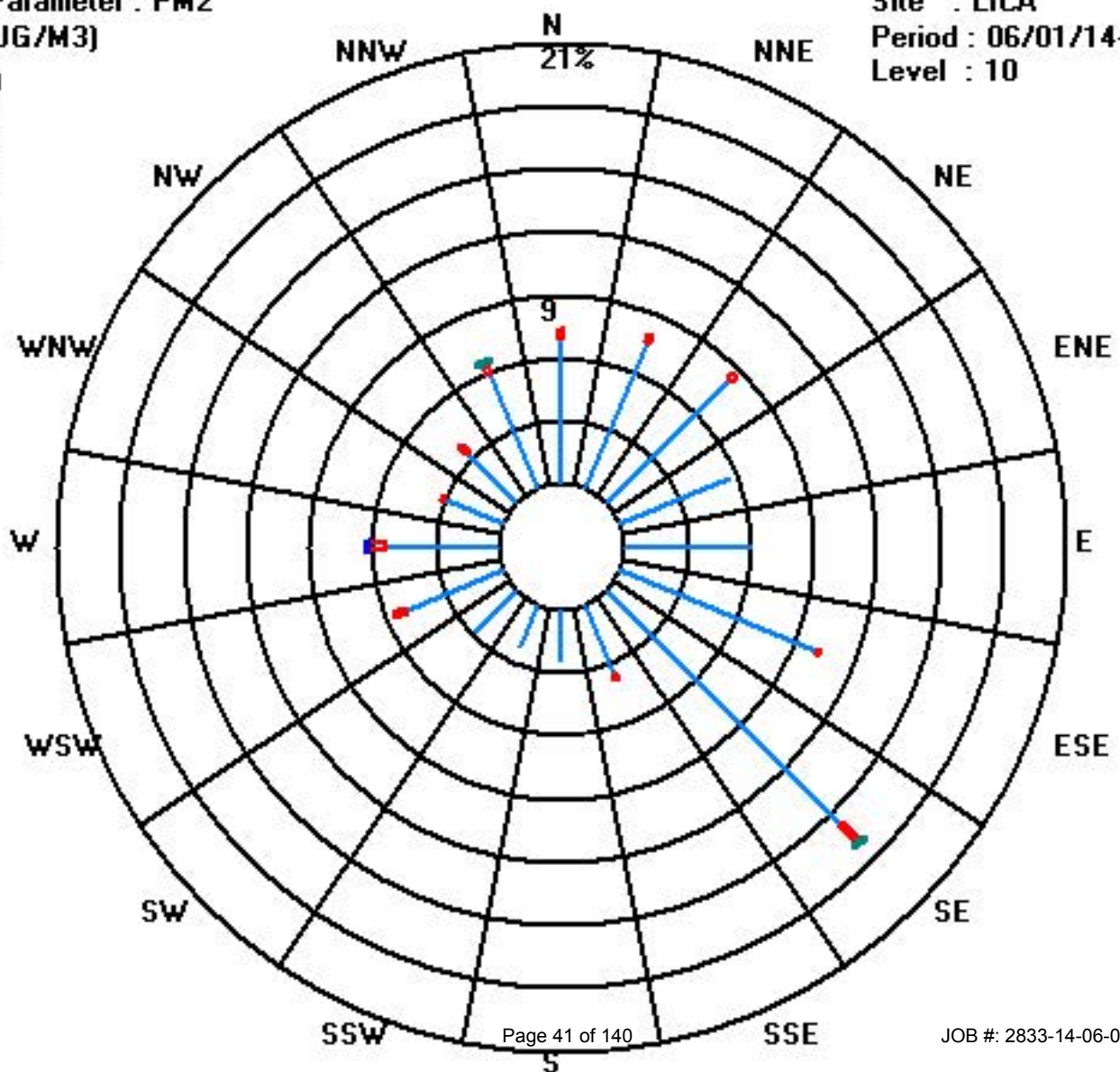
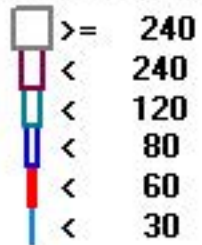
Total # Operational Hours : 602

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30	42	46	50	34	36	61	95	22	15	13	17	30	32	18	20	36	567
< 60	3	2	2			1	7	1				4	5	1	3	3	32
< 80													1				1
< 120							1								1		2
< 240																	
>= 240																	
Totals	45	48	52	34	36	62	103	23	15	13	17	34	38	19	23	40	

Calm : .00 %

Total # Operational Hours : 602



Nitrogen Dioxide

Lakeland Industry & Community Association - Cold Lake South Site

JUNE 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	1.8	2	2.1	3	2.5	1.4	0.6	0.5	0.3	0.2	0.5	0.5	S	0.7	0.7	1.3	1.1	2.3	3.2	1.5	1.3	1.6	1.4	2.1	3.2	1.4	24	
2	2.2	1.8	2.4	2.6	3.6	3.2	3.4	3	4.1	3.5	2.7	S	1.9	1.6	1.3	2.7	2.3	2.3	3.4	2.5	3.2	4.5	3.8	4.2	4.5	2.9	24	
3	3.4	4	5.9	4.1	4.5	6.6	6.3	4.4	2.9	1.4	S	1.1	1.5	1.4	2.6	1.5	0.8	0.7	1.2	2.8	1.9	1.9	3	1.9	6.6	2.9	24	
4	1.4	1.6	2.3	2.7	1.8	3	2.5	1.7	1.8	S	1.5	0.7	0.6	1.1	0.7	0.5	0.5	0.3	0.9	1.2	1	0.5	0.7	0.9	3	1.3	24	
5	1	1.6	0.6	0.3	0.4	0.6	0.9	2.2	S	1.9	1.2	1.3	0.8	0.9	0.6	0.5	0.7	0.7	0.9	1.3	1.1	1.1	1.1	1.1	1.7	2.2	1.0	24
6	3.2	2.9	2.8	2.7	2.8	2.5	4.6	S	3.4	2.1	1.4	0.6	0.4	1.1	1	0.9	0.9	0.7	1.1	1.1	1.8	2.6	3	3.1	4.6	2.0	24	
7	3.7	4.4	2.9	5.5	5.8	4.2	S	3.6	2.5	1.4	1.5	1.9	2	1.4	0.8	0.7	0.5	0.5	0.8	0.8	1.8	2.1	2.6	2.4	5.8	2.3	24	
8	1.6	3.1	3.7	3	2	S	2.4	2	1.3	1.2	1.2	1.4	1.4	1.1	0.7	0.6	0.7	1.1	0.8	1.5	1.4	1.1	0.6	0.8	3.7	1.5	24	
9	0.6	0.7	0.9	1.7	S	2.2	2.1	2.4	3.3	C	C	C	C	C	C	0.6	0.6	0	0.7	1	0.1	0	0	0	3.3	1.0	24	
10	0	0	0.6	S	1.5	2.3	1.8	0.5	0.3	0.4	0.5	0.2	0.4	0.4	0.6	0.4	0.4	0.2	0.5	0.2	1.2	3.1	2.7	2.9	3.1	0.9	24	
11	2.2	2.6	S	2.4	3.8	5	4.3	3.3	3	1.5	0.9	0.7	0.6	0.5	0.5	1.8	1.5	0.7	0.6	1.1	3.1	2	1.5	1.8	5	2.0	24	
12	1.7	S	2.4	2.2	2.3	2.4	4.6	5.1	4.3	2	1.3	0.8	0.8	0.7	1	0.6	0.7	0.8	0.8	1.9	3.9	8	6.7	1.9	8	2.5	24	
13	S	1.7	1.7	2.2	4.3	2.2	1.8	1.9	1.5	1	1.7	0.9	1.3	1.3	1.6	1.2	0.9	0.8	1.7	2.7	1.3	1.6	4.4	S	4.4	1.8	24	
14	1.2	1.1	1	1.3	2.8	2	0.9	0.6	0.9	0.7	0.5	0.5	0.4	0.3	0.3	0.2	0.4	0.3	1.5	2	2.6	S	7.6	7.6	1.3	24		
15	2.8	3.2	3.5	3.2	2.8	2.7	2.1	2.5	2.1	1	1	0.9	0.6	0.9	0.8	0.5	0.7	1	1	1.2	1.4	S	1.2	0.3	3.5	1.6	24	
16	0.6	1.1	1.5	1.9	2.3	2.8	1.1	5.3	1.1	0.5	1.1	1.4	1.2	1.8	2.4	2.4	1.5	1.6	1.5	1.9	S	1.6	0.9	0.6	5.3	1.7	24	
17	0.7	0.7	0.9	1.2	0.7	2.7	2.3	3.6	3.2	0.9	1.1	1.6	1.9	2.1	0.9	1.5	1.7	1.6	2.1	S	4.8	4.2	3.4	0.9	4.8	1.9	24	
18	0.8	1.1	2.4	1.7	2.1	2.4	3.3	3.9	1.5	1.4	1.4	1.3	1.4	1.7	2.8	2.5	1.9	1.3	S	2.9	1.3	0.7	0.6	0.7	3.9	1.8	24	
19	1	1.1	1.2	1.8	2	2.9	3.3	2	1.4	1.1	2	1	1.3	1.3	1.4	1.2	1.5	S	1.9	1.5	1.6	2.5	1.4	1.1	3.3	1.6	24	
20	2.1	1.1	1	0.5	1.5	1.3	1.7	0.7	0.6	0.5	0.8	0.6	0.4	0.4	0.6	0.7	S	0.7	0.4	0.4	0.2	0.1	0.1	0.4	2.1	0.7	24	
21	0.2	0.1	0.2	0.7	0.9	0.5	0.5	0.6	0.5	0.4	0.8	1.3	0.4	0.8	0.5	S	0.8	1.1	1.8	1.1	0.9	1	1.1	1.7	1.8	0.8	24	
22	1.7	2.3	2.5	3.7	4.2	3.7	2	1.6	1.9	2.7	1.5	0.9	0.5	0.4	S	0.5	0.6	0.6	0.9	1.7	1.5	1.9	1.6	1.8	4.2	1.8	24	
23	1.3	1	0.9	1.1	1.4	2	3.5	1.8	1.4	1.4	1.1	0.4	0.7	S	1.5	1	0.6	0.9	1	1.2	2.1	2.5	1.6	1.3	3.5	1.4	24	
24	0.9	0.6	1.2	1.2	1	0.8	1.1	1.9	1.2	0.7	0.7	0.6	S	0.7	0.5	0.5	0.9	0.5	0.9	0.8	0.5	1	2.8	0.7	2.8	0.9	24	
25	0.5	0.5	0.5	0.8	1.4	1.1	1	0.9	0.7	1	1.3	S	1.3	1.2	1.4	1.3	1	0.8	0.9	0.8	0.7	1.8	0.5	1.1	1.8	1.0	24	
26	1.1	1.2	1.9	1.9	1.8	2.7	3	2.2	1.2	1.7	S	1.8	1	1.4	1.5	1.5	1.2	1	1.2	1.8	2	2.7	3.1	3	3.1	1.8	24	
27	2.5	2	2.4	2.7	3.2	3.6	4.2	6.8	4.1	S	1.2	1	0.8	1.1	1.1	0.9	0.8	0.8	1	2.7	2.5	2.3	2.8	3.7	6.8	2.4	24	
28	3.2	2.7	2	1.7	1.7	1.5	3.5	5.1	S	1.2	0.8	0.8	1.5	1	1.1	1	0.6	1.2	0.7	2.2	3.7	2.5	3.1	3.2	5.1	2.0	24	
29	2.7	5.2	5.5	4.7	4	2.4	0.9	S	0.5	0.3	0.1	0.1	0.1	0.3	0.2	0.4	0.4	0.4	0.4	0.6	0.6	0.8	0.7	4.6	5.5	1.6	24	
30	3.3	3.9	3	1.5	1.8	3.7	S	5.3	4.2	2.9	2.2	0.7	0.5	0.5	1.2	1.8	1.1	0.7	1.8	0.9	1.6	2.4	2.9	1.8	5.3	2.2	24	
HOURLY MAX		4	5	6	6	7	6	7	4	4	3	2	2	2	3	3	2	2	3	3	5	8	7	8				
HOURLY AVG		1.7	1.9	2.1	2.2	2.4	2.6	2.5	2.7	2.0	1.3	1.2	0.9	1.0	1.0	1.1	1.1	0.9	0.9	1.2	1.5	1.7	2.1	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

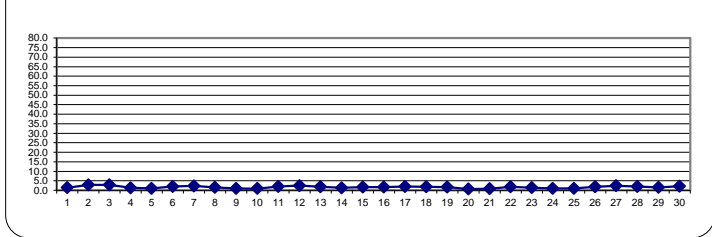
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

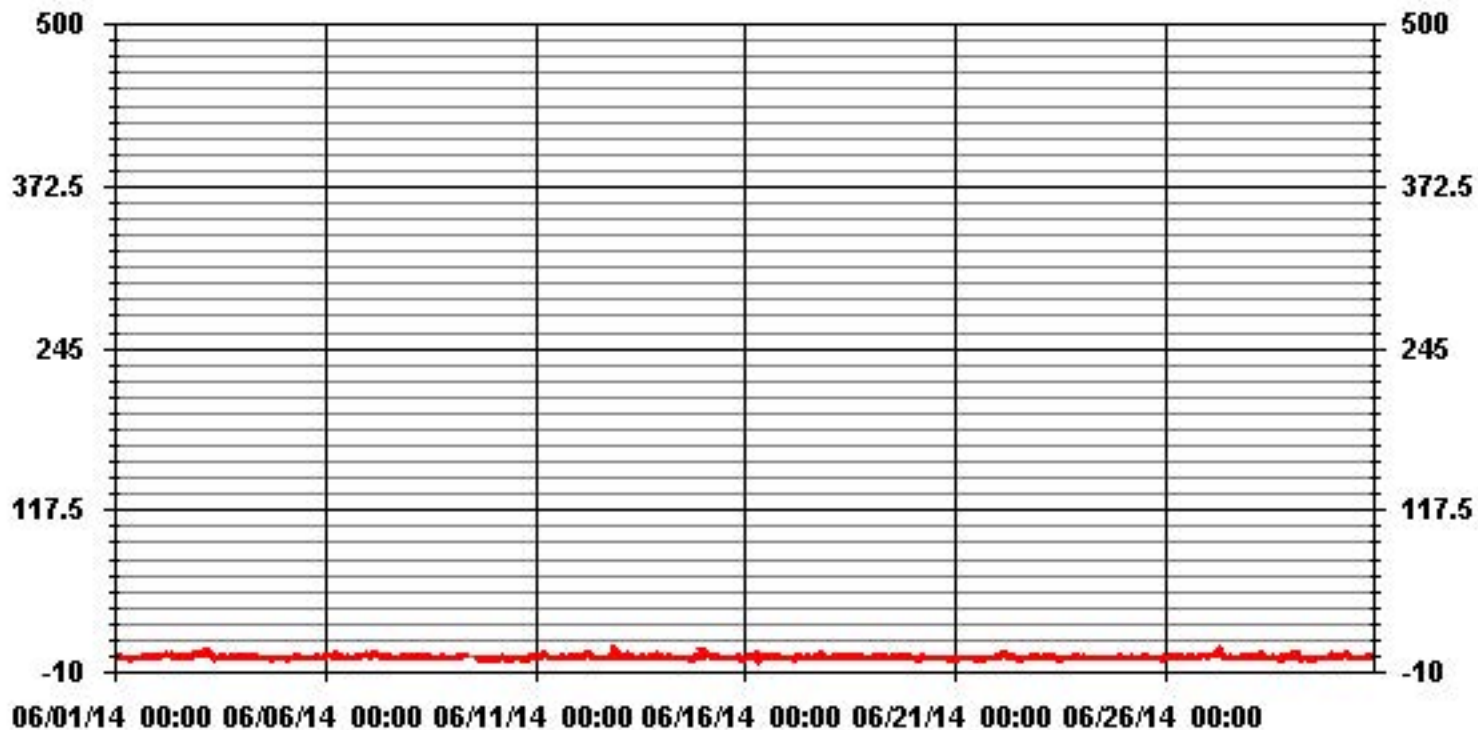
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	677					
MAXIMUM 1-HR AVERAGE:	8	PPB	@ HOUR(S)	21	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	2.9	PPB			ON DAY(S)	2
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	1.23		MONTHLY AVERAGE:	1.67	PPB	

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



— LICA NO2_ PPB

Lakeland Industry & Community Association - Cold Lake South Site

JUNE 2014

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00			
1	2.6	4.6	5.1	5.1	6.6	2.6	0.6	0.6	1.1	0.6	5.1	1.6	S	3.7	1.7	6.2	4.2	4.2	4.7	2.7	3.7	2.7	2.2	3.2	6.6	3.3	24
2	3.2	2.7	3.2	5.2	7.7	4.2	4.2	7.7	7.7	5.7	4.6	S	6.6	4.1	2.7	4.7	5.2	4.2	6.7	3.2	13.2	15.7	4.7	5.7	15.7	5.8	24
3	4.7	8.2	9.2	5.2	9.7	10.2	9.7	9.7	7.2	2.1	S	3.1	4.6	3.2	4.7	10.7	2.2	1.7	3.2	6.2	5.7	4.7	5.7	3.2	10.7	5.9	24
4	3.2	2.7	2.7	3.7	2.3	4.2	3.7	3.2	2.7	S	7.2	1.2	1.2	5.2	2.7	0.7	1.2	0.7	1.7	2.2	2.2	1.2	1.2	1.2	7.2	2.5	24
5	1.7	2.7	1.7	1.7	0.7	1.2	1.2	9.7	S	2.7	1.7	1.7	1.7	1.2	1.2	1.2	1.2	1.7	1.7	2.2	1.7	1.7	1.7	3.7	9.7	2.1	24
6	5.2	3.7	3.7	4.2	5.7	4.2	5.2	S	6.2	3.2	2.2	1.2	0.7	12.2	2.7	1.7	1.7	2.2	1.7	1.7	3.2	4.2	3.7	4.7	12.2	3.7	24
7	4.2	6.2	6.7	6.7	8.7	8.2	S	4.2	3.2	2.2	4.7	6.7	4.7	2.2	1.2	2.2	2.7	1.2	1.7	3.2	3.7	3.2	3.7	3.7	8.7	4.1	24
8	2.7	5.7	5.2	3.7	4.7	S	2.7	2.7	1.7	2.2	1.7	2.2	2.7	3.2	1.2	1.2	1.2	6.2	2.1	4.2	2.7	1.7	1.2	1.7	6.2	2.8	24
9	1.2	1.2	1.2	5.7	S	3.2	2.7	3.2	C	C	C	C	C	C	C	1.1	1.6	1.2	2.2	2.2	1.7	0.7	0.7	0.7	5.7	1.9	24
10	0.7	1.2	1.7	S	1.2	3.2	3.7	0.7	0.2	0.2	1.2	0.2	0.7	2.2	1.2	1.2	1.2	0.2	1.7	1.2	2.2	5.2	4.2	3.2	5.2	1.7	24
11	3.2	2.7	S	2.7	4.7	5.2	6.7	4.2	4.7	1.6	3.6	3.6	0.6	0.6	0.7	2.7	2.7	0.7	0.7	1.2	5.2	2.7	1.7	2.2	6.7	2.8	24
12	1.7	S	2.2	2.7	2.2	3.7	5.2	6.2	6.7	2.1	3.1	2.1	2.1	1.6	2.6	1.1	1.1	2.6	0.7	6.2	11.7	13.7	9.2	3.7	13.7	4.1	24
13	S	2.7	3.7	4.2	10.2	3.7	2.2	1.7	1.1	2.1	1.6	0.6	3.6	1.1	3.7	3.7	1.2	1.2	6.2	6.7	2.2	2.6	5.7	S	10.2	3.3	24
14	1.7	1.2	1.2	2.7	7.7	2.7	2.2	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	1.2	1.2	0.6	2.7	2.7	3.7	S	15.7	15.7	2.3	24
15	3.2	3.7	4.2	4.2	2.7	2.7	1.7	2.2	1.7	1.1	0.6	1.6	1.1	1.2	2.2	0.7	3.2	1.7	2.2	1.7	1.7	S	2.2	0.2	4.2	2.1	24
16	1.2	1.7	3.2	2.2	6.2	4.7	1.2	19.6	3.7	0.2	4.7	2.2	7.7	6.7	4.2	2.7	1.7	1.7	3.2	1.6	S	3.2	1.2	0.7	19.6	3.7	24
17	1.7	1.2	1.2	3.2	1.2	3.2	9.2	9.7	8.2	2.7	7.2	5.2	5.7	6.2	3.7	3.7	3.2	4.7	3.7	S	7.1	9.2	3.7	1.7	9.7	4.6	24
18	1.2	1.2	3.2	2.7	3.2	3.7	5.7	11.2	2.1	4.2	4.2	8.7	3.2	3.7	4.2	3.7	8.2	2.2	S	10.2	1.7	1.2	1.7	2.2	11.2	4.1	24
19	1.2	1.2	1.7	2.7	3.7	4.2	7.2	1.7	1.2	2.2	4.7	1.7	7.6	2.7	1.7	1.2	2.7	S	3.2	3.7	2.7	3.2	1.7	1.7	7.6	2.8	24
20	2.7	1.2	1.2	0.7	7.1	1.2	1.7	1.2	0.7	1.2	1.2	0.6	0.2	1.2	0.6	0.6	S	1.1	0.6	0.6	0.1	0.1	0.2	0.2	7.1	1.1	24
21	0.2	0.2	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.1	1.1	1.1	0.6	1.1	0.6	S	1.1	1.1	1.6	1.6	0.7	1.2	1.2	2.2	2.2	0.9	24
22	2.2	2.7	3.2	4.2	4.2	4.2	1.7	1.2	2.6	3.1	1.6	1.1	1.1	0.6	S	0.6	0.6	0.6	1.1	3.2	2.2	3.1	2.2	2.7	4.2	2.2	24
23	1.2	0.7	0.7	1.2	1.7	2.7	4.2	2.2	1.2	1.1	1.1	0.2	2.1	S	8.6	2.1	0.6	1.1	2.1	2.1	4.1	4.6	2.2	2.2	8.6	2.2	24
24	1.2	0.7	1.2	1.2	3.7	0.7	1.2	17.6	9.1	0.6	0.7	1.1	S	1.1	0.6	0.6	3.1	0.6	4.1	1.1	0.6	4.6	7.6	1.1	17.6	2.8	24
25	0.2	0.2	0.7	1.2	3.2	1.2	1.2	1.1	1.6	2.1	4.1	S	1.6	2.2	2.7	1.6	1.1	0.6	0.6	1.1	1.1	2.6	0.6	1.1	4.1	1.5	24
26	1.1	1.2	2.2	2.7	2.2	3.7	9.2	3.7	1.6	4.6	S	1.6	0.6	3.6	7.6	1.6	1.1	1.1	1.6	2.2	2.2	3.7	4.1	5.2	9.2	3.0	24
27	4.6	2.1	2.6	3.2	7.7	4.1	4.1	12.1	7.1	S	1.1	1.1	4.6	2.1	1.6	1.6	1.6	1.1	0.6	3.1	3.1	3.1	5.2	4.6	12.1	3.6	24
28	3.2	2.7	1.7	1.2	1.7	1.7	3.2	6.2	S	1.1	2.6	2.6	2.1	1.6	1.6	1.6	0.6	1.6	0.6	3.2	3.7	2.6	3.7	4.2	6.2	2.4	24
29	2.6	7.1	6.2	4.7	4.2	3.7	0.7	S	0.6	0.2	0.2	0.2	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.6	0.6	0.6	1.6	5.2	7.1	1.8	24
30	4.1	4.1	3.2	1.6	1.7	5.7	S	5.7	4.1	3.1	2.2	1.6	0.6	0.6	4.1	3.1	1.6	1.1	5.7	1.6	2.1	3.1	3.1	2.1	5.7	2.9	24
HOURLY MAX	5	8	9	7	10	10	10	20	9	6	7	9	8	12	9	11	8	6	7	10	13	16	9	16			
HOURLY AVG	2.3	2.7	2.9	3.1	4.4	3.6	3.7	5.4	3.3	2.0	2.8	2.1	2.6	2.7	2.5	2.2	2.0	1.7	2.3	2.9	3.3	3.8	3.0	3.1			

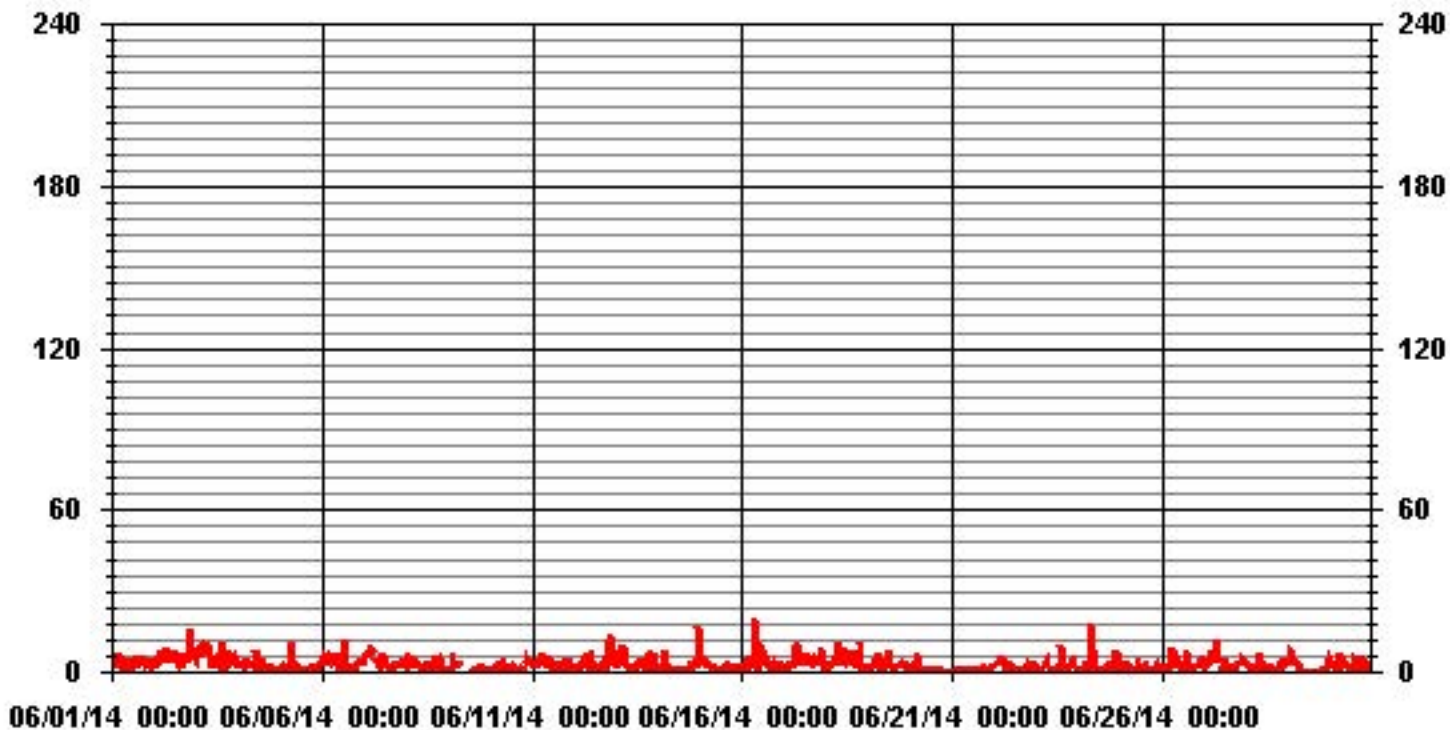
STATUS FLAG CODES

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:	682
MAXIMUM INSTANTANEOUS VALUE:	19.6 PPB @ HOUR(S) 7 ON DAY(S) 16
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	2.53
OPERATIONAL TIME:	720 HRS

01 Hour Averages



— LICA NO2MAX PPB

LICA
 NO2_ / WD Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	7.17	7.17	6.88	4.97	5.12	8.93	15.66	5.12	2.48	2.34	2.63	7.17	6.73	3.22	6.00	8.34	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	7.17	7.17	6.88	4.97	5.12	8.93	15.66	5.12	2.48	2.34	2.63	7.17	6.73	3.22	6.00	8.34	

Calm : .00 %

Total # Operational Hours : 683

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	49	49	47	34	35	61	107	35	17	16	18	49	46	22	41	57	683
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	49	49	47	34	35	61	107	35	17	16	18	49	46	22	41	57	

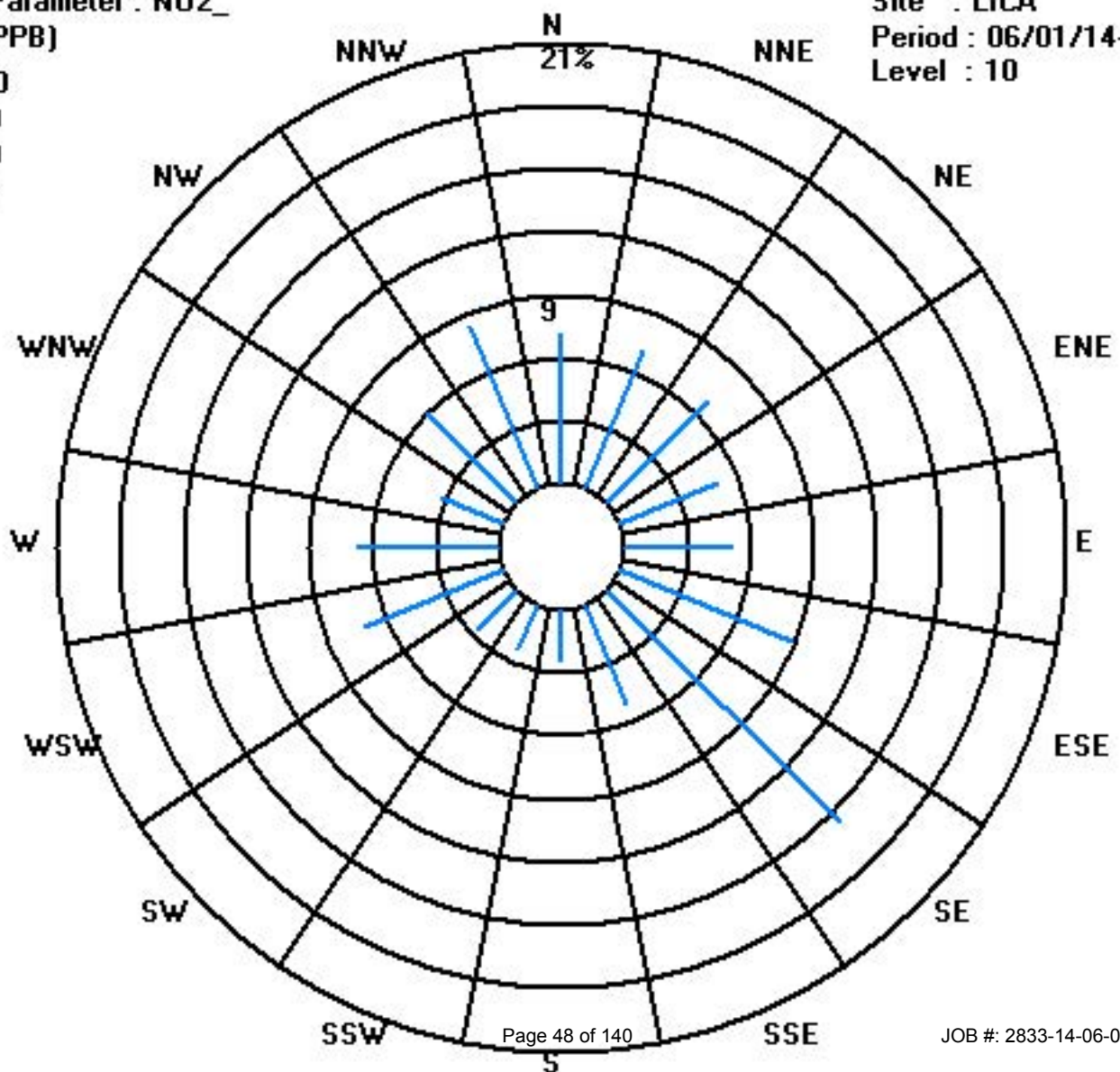
Calm : .00 %

Total # Operational Hours : 683

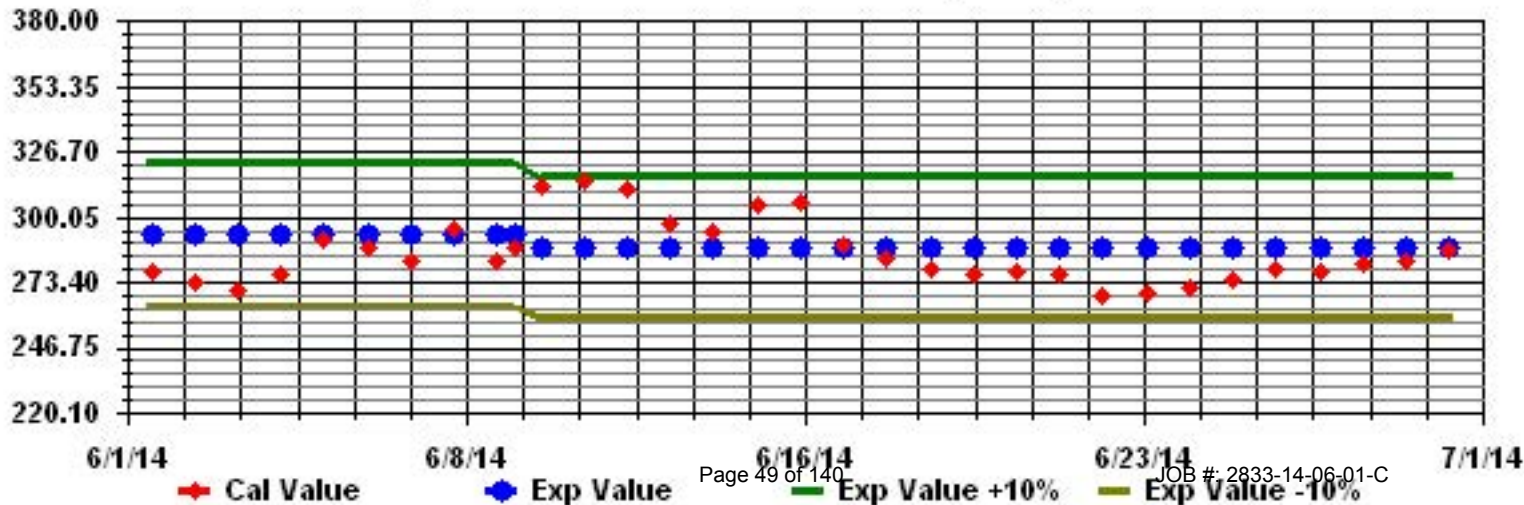
Class Limits (PPB)

Period : 06/01/14-06/30/14

Level : 10



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



Nitric Oxide

Lakeland Industry & Community Association - Cold Lake South Site

JUNE 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	0.1	0.3	0.1	0	0	0	0	0	0.1	S	0	0	0	0	0	0	0	0	0	0	0	0.3	0.0	24	
	2	0	0	0	0	0.8	0.7	0.7	0.5	0.9	0.6	0.4	S	0.2	0	0	0.1	0	0	0.1	0	0.1	0.2	0	0	0.9	0.2	24	
	3	0	0.1	0.2	0.4	3.6	9.9	4.2	1.6	0.7	0	S	0	0	0	0.1	0	0	0	0	0	0	0	0	0	9.9	0.9	24	
	4	0	0	0	0	0	0	0	0	0	0	S	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0.1	0.0	24	
	5	0	0	0	0	0	0	0	1.4	S	0.3	0.3	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	1.4	0.1	24
	6	0	0	0	0	0	0.2	1.3	S	1.5	0.6	0.1	0	0	0.6	0	0	0	0	0	0	0	0	0	0	0	1.5	0.2	24
	7	0.5	0.9	0.1	0.8	1.2	1	S	2.1	0.8	0.2	0.2	0	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	2.1	0.4	24
	8	0	1.1	2	0.9	3	S	1.4	0.8	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.4	24
	9	0	0	0	0	S	0	0	0	0.4	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0.4	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	0.0	24
	11	0	0.2	S	0.5	1.3	3	2.4	2.7	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.5	24	
	12	0	S	0.1	1.1	1.5	2.8	2.6	1.9	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.8	0.5	24
	13	S	0	0	0	0.1	0.1	0.1	0.2	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.2	0.0	24
	14	0	0	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.5	0.5	0.0	24
	15	0	0	0	0	0.5	1	0.2	0.3	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.1	24
	16	0	0	0	0	0	0	0	3.2	0	0	0.2	0	0	0.1	0.4	0.1	0	0	0	0	0	0	S	0	0	3.2	0.2	24
	17	0	0	0	0	0	0.3	1.2	3.3	2.4	0	0.1	0.1	0.5	0.4	0	0	0	0.3	0	S	0	0	0	0	0	3.3	0.4	24
	18	0	0	0	0	0	0	0.6	2	0.6	0.2	0.4	0.3	0.3	0.8	0.2	0.3	0.2	0	S	0.1	0	0	0	0	0	2	0.3	24
	19	0	0	0	0	0.1	0.1	0.2	0	0	0.4	0.5	0.2	0	0.1	0.1	0	0.2	S	0.2	0	0	0	0	0	0	0.5	0.1	24
	20	0.3	0	0	0	0.8	0.1	0.5	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.8	0.1	24
	21	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0	S	0	0	0	0	0	0	0	0	0	0.2	0.0	24
	22	0	0	0	0	0.2	0.9	0.2	0.2	0.2	0.8	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.9	0.1	24
	23	0	0	0	0.3	0.6	0.8	1.6	0.5	0.2	0	0	0	0	S	0.1	0	0	0	0	0	0	0	0	0	0	1.6	0.2	24
	24	0	0	0	0	0	0	0.1	0.4	0.1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.0	24
	25	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0.3	0.0	24
	26	0	0	0	0	0	0	0.3	0.1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.0	24
	27	0.8	0	0	0	0.8	1.7	2.9	4.9	1.2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.9	0.5	24
	28	0	0	0.1	0.6	2.7	1.8	1.3	1.6	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.7	0.4	24
	29	0	0	0	0	0.1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
	30	0	0	0	0	0	0	S	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
HOURLY MAX		1	1	2	1	4	10	4	5	2	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1			
HOURLY AVG		0.1	0.1	0.1	0.2	0.6	0.8	0.8	1.0	0.4	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

STATUS FLAG CODES

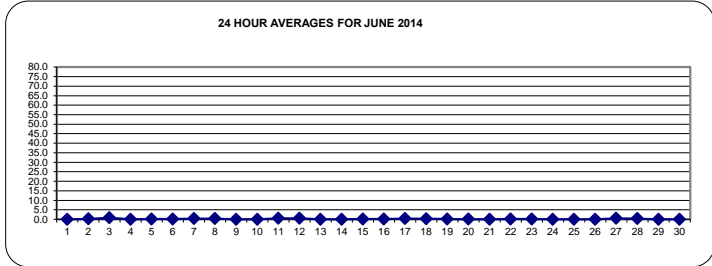
C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR

OBJECTIVE LIMIT:

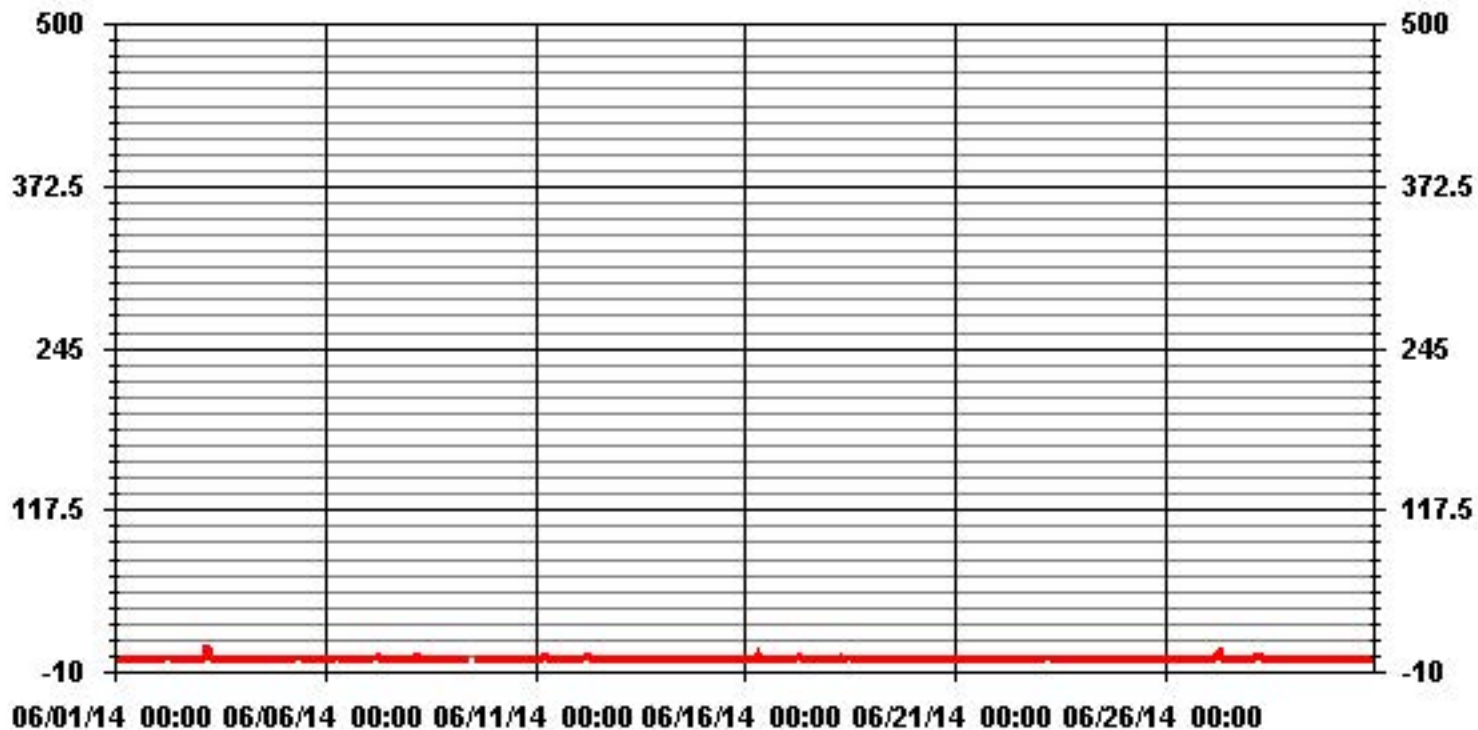
ALBERTA ENVIRONMENT: 1-HR NA PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	158					
MAXIMUM 1-HR AVERAGE:	9.9	PPB	@ HOUR(S)	5	ON DAY(S)	3
MAXIMUM 24-HR AVERAGE:	0.9	PPB			ON DAY(S)	3
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.65		MONTHLY AVERAGE:	0.19	PPB	



01 Hour Averages



— LICA NO_ PPB

Lakeland Industry & Community Association - Cold Lake South Site

JUNE 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	1	0	3	2	0.5	0	0	0.5	1	0.5	1	S	1.8	0.8	6.8	0.8	3.3	1.3	1.8	0.8	0	0.3	0	6.8	1.2	24
2		0	0	0	1.8	2.8	1.3	1.3	2.3	1.8	2.3	2.2	S	2.9	0.8	0.4	0.9	1.4	0.9	1.4	0.9	6.4	7.9	0.4	0.9	7.9	1.8	24
3		1.9	0.9	0.9	2.4	25.4	39.4	10.4	4.9	3.9	0.4	S	1.4	1.3	0.9	0.9	2.4	1.4	0.4	0.9	0.4	0.4	0	0.4	0	39.4	4.4	24
4		0	0.4	0	0	0	0	0.4	0.4	0.9	S	3.3	0.3	0.3	0.3	3.3	1.8	0	0	0.3	0.3	0.3	0.3	0	0	3.3	0.5	24
5		0	0	0.3	0.8	0	0	0	10.8	S	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0	10.8	0.7	24
6		0.3	0.3	0.3	0.3	0.3	0.8	1.8	S	2.8	1.3	0.8	0.3	0.3	13.8	2.3	1.8	0.3	1.3	0.3	0	0	0	0.3	0.8	13.8	1.3	24
7		1.3	4.8	2.3	2.3	7.3	3.3	S	2.8	2.3	0.3	2.3	1.3	2.8	0.3	0.3	4.3	2.3	0	0.3	1.3	0.3	0	0.8	0.3	7.3	1.9	24
8		0.8	5.3	3.3	2.8	21.3	S	2.8	1.8	0.3	0.3	0.3	2.8	0.3	0.8	0.3	0.3	1.3	1.8	0.8	0.3	0	0	0	0	21.3	2.1	24
9		0	0	0	0.3	S	0.8	0.3	0.8	C	C	C	C	C	C	C	0.3	0.3	0	0.3	0.8	0	0	0	0	0.8	0.2	24
10		0	0	0	S	0	0.2	0.2	0	0.7	0	0.7	0.2	0.2	0.7	0.7	0.2	1.2	0.7	5.7	0.2	0.2	0.2	2.2	0.7	5.7	0.6	24
11		0.2	2.2	S	3.2	4.7	3.7	4.2	3.7	3.7	0.2	2.1	1.6	0	0	0.2	0.7	0.7	0	0	0	0.2	0.2	0	0.7	4.7	1.4	24
12		0.2	S	0.7	5.2	2.7	6.2	5.7	2.7	2.7	0.6	0.6	0.6	0.6	0.2	1.1	0	0.2	0.6	0	5.7	1.7	0.2	0.2	0	6.2	1.7	24
13		S	0	0.7	0.2	1.7	1.2	0.7	0.7	0.6	0.6	12.2	0.2	0.6	1.1	0.7	0.2	0.2	0	0.7	1.2	0.2	0	0	S	12.2	1.1	24
14		0	0	0	1.2	5.7	0.7	5.2	0.2	1.1	0.2	0.2	0.2	0.6	0.6	5.6	0.2	0.2	0.7	1.7	0.7	0	0.7	S	4.7	5.7	1.3	24
15		0.2	0.7	0.7	1.7	1.2	2.7	0.7	0.7	0.7	0.2	0.2	0.6	0.6	3.2	0.7	0.7	0.7	0.2	0.7	0.7	0.2	S	0.2	0	3.2	0.8	24
16		0	0	0.2	0	1.2	1.2	0	18.7	1.7	0	15.7	3.2	4.7	6.2	7.7	1.2	0.2	0.7	0.7	0.2	S	1.2	0.2	0.2	18.7	2.8	24
17		0.7	0	0.2	2.7	0.2	3.2	18.7	13.7	10.7	6.7	2.7	4.2	4.2	3.7	1.2	1.2	2.7	4.7	0.7	S	2.2	3.2	0	0	18.7	3.8	24
18		0	0.2	0.2	1.2	2.2	0.7	3.7	13.7	15.7	2.7	9.7	7.2	7.7	12.7	1.2	5.7	8.7	0.7	S	2.7	1.2	0	0.7	0.2	15.7	4.3	24
19		0.2	0.7	0.7	0.2	3.7	1.2	4.2	0.7	0.2	11.7	9.2	6.7	4.2	5.7	0.7	1.7	5.2	S	1.7	3.2	1.2	0.2	0.2	0.7	11.7	2.8	24
20		1.2	0.7	0.2	0.7	13.7	0.2	1.2	0.2	0.2	0.2	1.2	1.2	0.2	1.2	0.2	0.6	S	0	0	0.1	0	0	0	0	13.7	1.0	24
21		0	0	0	0	0	0.1	0.1	0.1	0.5	0.1	0.5	0.5	0.1	0	0.1	S	0.1	0.1	0.1	0.1	0	0	0	0	0.5	0.1	24
22		0.1	0.1	0.1	0.1	1.1	1.6	0.6	0.6	1	1.5	0.1	0.1	0.5	0	S	0.2	2.2	0.2	0.7	1.1	0.2	0	0.2	0.2	2.2	0.5	24
23		0.2	0.2	0.7	1.2	1.2	1.7	2.7	1.2	0.6	0.6	0.2	0.2	2.1	S	4.2	0.6	0.2	0.2	0.6	0	0.6	0.6	0	0.6	4.2	0.9	24
24		0.2	0	0	0	2.2	0.7	0.2	7.6	6.7	0.6	0.6	0.2	S	0.1	0	0.1	8.5	0	1.5	0.5	0	0.5	1.5	0	8.5	1.4	24
25		0	0	0	0	0.6	0.1	0.6	2.5	0.1	6.1	6.1	S	0.2	0.6	11.7	1.6	3.1	0	0.2	0	0.2	3.7	0	0	11.7	1.6	24
26		0	0	0.2	0.2	0.2	0.7	5.7	4.7	0.6	4.7	S	2.5	0.1	2	4.6	0.1	0	0	0.1	0	0.5	0	0.1	0.5	5.7	1.2	24
27		8	0.1	0.6	0.1	7.1	10.6	4.6	10.5	4.1	S	0	0	0.1	0.1	0.5	0.1	0.1	0.1	0	0.1	0.1	0.1	3.6	7	10.6	2.5	24
28		0.6	1.1	0.6	1.6	10.1	3.1	1.6	2.6	S	0	0	1.1	0	0	0.2	2.1	0	0.2	0	0	0	0	0	0	10.1	1.1	24
29		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	S	0	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.1	24
30		0	0	0	0	0.2	S	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0	1	1	0	0.1	6.1	0.1	0	0.5	0.1	0.1	6.1	0.5	24
HOURLY MAX		8	5	3	5	25	39	19	19	16	12	16	7	8	14	12	7	9	5	6	6	6	8	4	7			
HOURLY AVG		0.6	0.7	0.5	1.2	4.1	3.0	2.8	3.9	2.4	1.6	2.7	1.4	1.3	2.1	1.8	1.2	1.4	0.6	1.0	0.8	0.6	0.7	0.4	0.6			

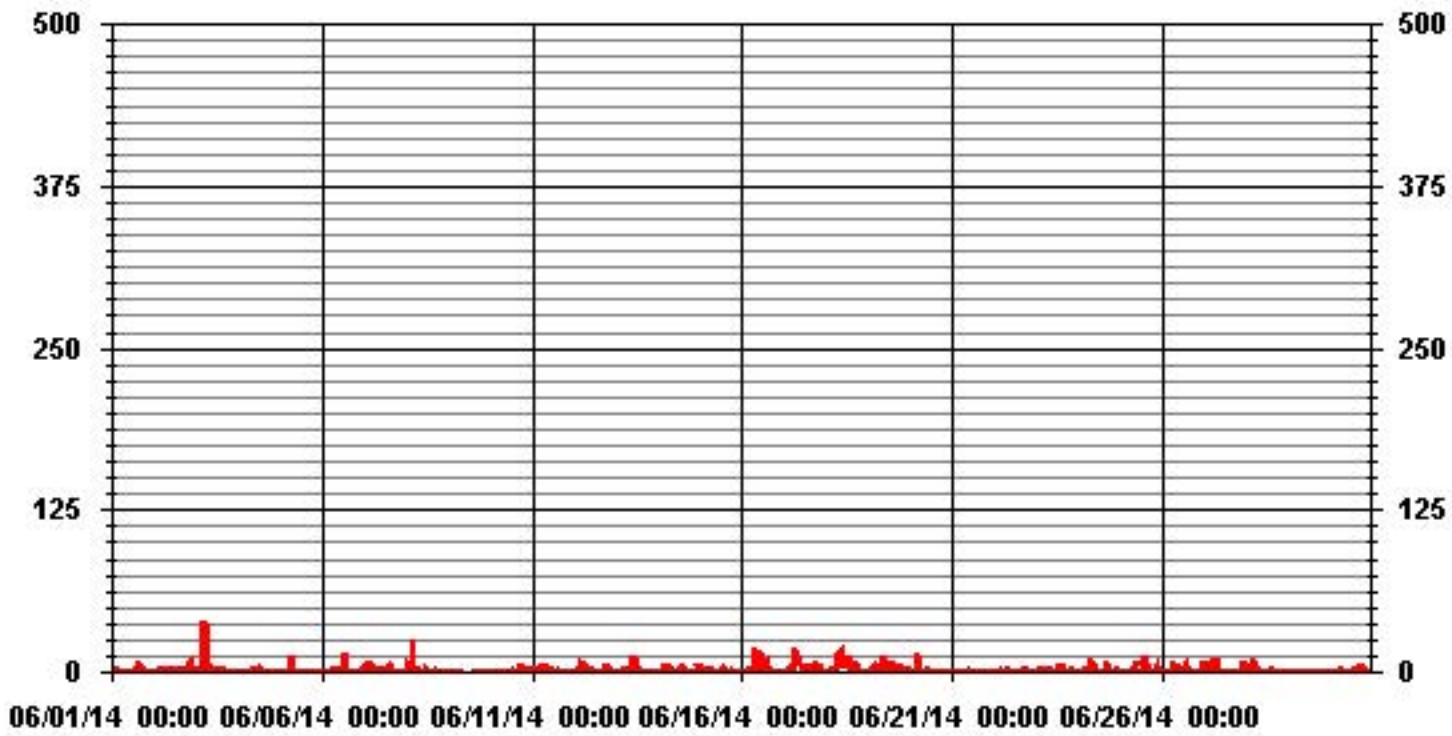
STATUS FLAG CODES

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:	526					
MAXIMUM INSTANTANEOUS VALUE:	39.4	PPB	@ HOUR(S)	5	ON DAY(S)	3
	VAR-VARIOUS					
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	3.19					

01 Hour Averages



— LICA NOMAX PPB

LICA
 NO_ / WD Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	7.17	7.17	6.88	4.97	5.12	8.93	15.66	5.12	2.48	2.34	2.63	7.17	6.73	3.22	6.00	8.34	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	7.17	7.17	6.88	4.97	5.12	8.93	15.66	5.12	2.48	2.34	2.63	7.17	6.73	3.22	6.00	8.34	

Calm : .00 %

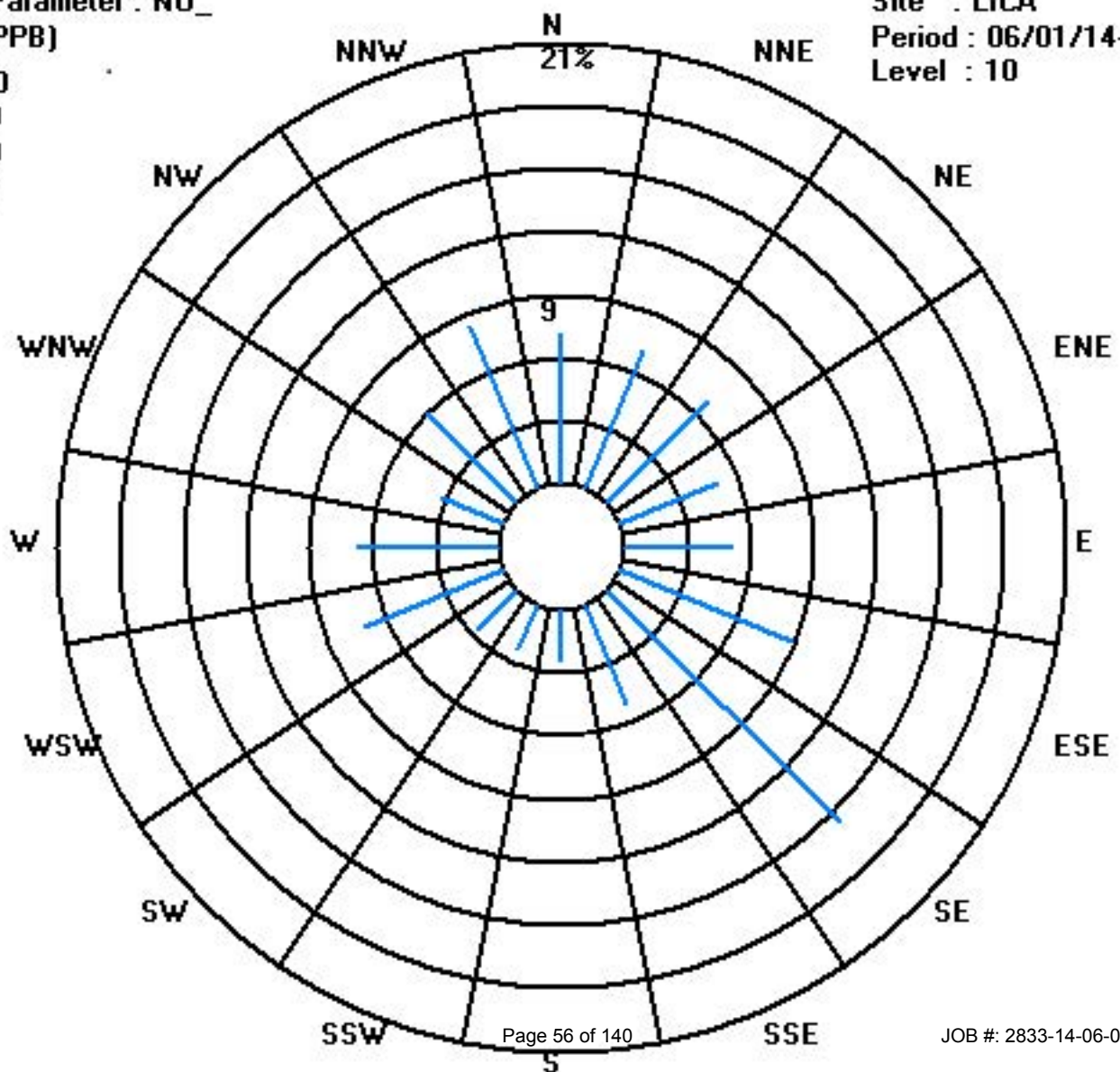
Total # Operational Hours : 683

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	49	49	47	34	35	61	107	35	17	16	18	49	46	22	41	57	683
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	49	49	47	34	35	61	107	35	17	16	18	49	46	22	41	57	

Calm : .00 %

Total # Operational Hours : 683



Oxides of Nitrogen

Lakeland Industry & Community Association - Cold Lake South Site

JUNE 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	1.8	2	2.1	3.1	2.8	1.5	0.6	0.5	0.3	0.2	0.5	0.6	S	0.7	0.7	1.3	1.1	2.3	3.2	1.5	1.3	1.6	1.4	2.1	3.2	1.4	24
	2	2.2	1.8	2.4	2.6	4.4	3.9	4.1	3.5	5	4.1	3.1	S	2.1	1.6	1.3	2.8	2.3	2.3	3.5	2.5	3.3	4.7	3.8	4.2	5	3.1	24
	3	3.4	4.1	6.1	4.5	8.1	16.5	10.5	6	3.6	1.4	S	1.1	1.5	1.4	2.7	1.5	0.8	0.7	1.2	2.8	1.9	1.9	3	1.9	16.5	3.8	24
	4	1.4	1.6	2.3	2.7	1.8	3	2.5	1.7	1.8	S	1.6	0.7	0.6	1.2	0.7	0.5	0.5	0.3	0.9	1.2	1	0.5	0.7	0.9	3	1.3	24
	5	1	1.6	0.6	0.3	0.4	0.6	0.9	3.6	S	2.2	1.5	1.6	0.8	0.9	0.6	0.5	0.7	0.7	0.9	1.3	1.1	1.1	1.1	1.1	3.6	1.1	24
	6	3.2	2.9	2.8	2.7	2.8	2.7	5.9	S	4.9	2.7	1.5	0.6	0.4	1.7	1	0.9	0.9	0.7	1.1	1.1	1.8	2.6	3	3.1	5.9	2.2	24
	7	4.2	5.3	3	6.3	7	5.2	S	5.7	3.3	1.6	1.7	1.9	2.4	1.5	0.8	0.7	0.5	0.5	0.8	0.8	1.8	2.1	2.6	2.4	7	2.7	24
	8	1.6	4.2	5.7	3.9	5	S	3.8	2.8	1.3	1.2	1.3	1.4	1.4	1.1	0.7	0.6	0.7	1.1	0.8	1.5	1.4	1.1	0.6	0.8	5.7	1.9	24
	9	0.6	0.7	0.9	1.7	S	2.2	2.1	2.4	3.7	C	C	C	C	C	C	0.6	0.6	0	0.7	1	0.1	0	0	0	3.7	1.0	24
	10	0	0	0.6	S	1.5	2.3	1.8	0.5	0.3	0.4	0.5	0.2	0.4	0.4	0.6	0.4	0.4	0.2	0.5	0.2	1.2	3.1	2.7	2.9	3.1	0.9	24
	11	2.2	2.8	S	2.9	5.1	8	6.7	6	4.3	1.5	0.9	0.7	0.6	0.5	0.5	1.8	1.5	0.7	0.6	1.1	3.1	2	1.5	1.8	8	2.5	24
	12	1.7	S	2.5	3.3	3.8	5.2	7.2	7	5.4	2	1.3	0.8	0.8	0.7	1	0.6	0.7	0.8	0.8	1.9	3.9	8	6.7	1.9	8	3.0	24
	13	S	1.7	1.7	2.2	4.4	2.3	1.9	2.1	1.6	1	1.7	0.9	1.3	1.3	1.6	1.2	0.9	0.8	1.7	2.7	1.3	1.6	4.4	S	4.4	1.8	24
	14	1.2	1.1	1	1.3	3.2	2	0.9	0.6	0.9	0.7	0.5	0.5	0.4	0.3	0.3	0.2	0.4	0.3	1.5	2	2.6	S	8.1	8.1	1.3	24	
	15	2.8	3.2	3.5	3.2	3.3	3.7	2.3	2.8	2.2	1	1	0.9	0.6	0.9	0.8	0.5	0.7	1	1	1.2	1.4	S	1.2	0.3	3.7	1.7	24
	16	0.6	1.1	1.5	1.9	2.3	2.8	1.1	8.5	1.1	0.5	1.3	1.4	1.2	1.9	2.8	2.5	1.5	1.6	1.5	1.9	S	1.6	0.9	0.6	8.5	1.8	24
	17	0.7	0.7	0.9	1.2	0.7	3	3.5	6.9	5.6	0.9	1.2	1.7	2.4	2.5	0.9	1.5	1.7	1.9	2.1	S	4.8	4.2	3.4	0.9	6.9	2.3	24
	18	0.8	1.1	2.4	1.7	2.1	2.4	3.9	5.9	2.1	1.6	1.8	1.6	1.7	2.5	3	2.8	2.1	1.3	S	3	1.3	0.7	0.6	0.7	5.9	2.0	24
	19	1	1.1	1.2	1.8	2.1	3	3.5	2	1.4	1.5	2.5	1.2	1.3	1.4	1.5	1.2	1.7	S	2.1	1.5	1.6	2.5	1.4	1.1	3.5	1.7	24
	20	2.4	1.1	1	0.5	2.3	1.4	2.2	0.7	0.6	0.5	0.8	0.6	0.4	0.4	0.6	0.7	S	0.7	0.4	0.4	0.2	0.1	0.1	0.4	2.4	0.8	24
	21	0.2	0.1	0.2	0.7	0.9	0.5	0.5	0.6	0.5	0.4	0.8	1.5	0.4	0.8	0.5	S	0.8	1.1	1.8	1.1	0.9	1	1.1	1.7	1.8	0.8	24
	22	1.7	2.3	2.5	3.7	4.4	4.6	2.2	1.8	2.1	3.5	1.5	0.9	0.5	0.4	S	0.5	0.6	0.6	0.9	1.7	1.5	1.9	1.6	1.8	4.6	1.9	24
	23	1.3	1	0.9	1.4	2	2.8	5.1	2.3	1.6	1.4	1.1	0.4	0.7	S	1.6	1	0.6	0.9	1	1.2	2.1	2.5	1.6	1.3	5.1	1.6	24
	24	0.9	0.6	1.2	1.2	1	0.8	1.2	2.3	1.3	0.7	0.7	0.6	S	0.7	0.5	0.5	0.9	0.5	0.9	0.8	0.5	1	2.8	0.7	2.8	1.0	24
	25	0.5	0.5	0.5	0.8	1.4	1.1	1	0.9	0.7	1	1.3	S	1.3	1.2	1.7	1.3	1	0.8	0.9	0.8	0.7	1.8	0.5	1.1	1.8	1.0	24
	26	1.1	1.2	1.9	1.9	1.8	2.7	3.3	2.3	1.2	1.7	S	1.8	1	1.4	1.5	1.5	1.2	1	1.2	1.8	2	2.7	3.1	3	3.3	1.8	24
	27	3.3	2	2.4	2.7	4	5.3	7.1	11.7	5.3	S	1.2	1	0.8	1.1	1.1	0.9	0.8	0.8	1	2.7	2.5	2.3	2.8	3.7	11.7	2.9	24
	28	3.2	2.7	2.1	2.3	4.4	3.3	4.8	6.7	S	1.2	0.8	0.8	1.5	1	1.1	1	0.6	1.2	0.7	2.2	3.7	2.5	3.1	3.2	6.7	2.4	24
	29	2.7	5.2	5.5	4.7	4.1	2.4	0.9	S	0.5	0.3	0.1	0.1	0.1	0.3	0.2	0.4	0.4	0.4	0.4	0.6	0.6	0.8	0.7	4.6	5.5	1.6	24
	30	3.3	3.9	3	1.5	1.8	3.7	S	5.4	4.3	2.9	2.2	0.7	0.5	0.5	1.2	1.8	1.1	0.7	1.8	0.9	1.6	2.4	2.9	1.8	5.4	2.2	24
	HOURLY MAX	4	5	6	6	8	17	11	12	6	4	3	2	2	3	3	3	2	2	4	3	5	8	7	8			
	HOURLY AVG	1.8	2.0	2.2	2.4	3.1	3.4	3.3	3.7	2.4	1.4	1.3	1.0	1.0	1.1	1.1	1.1	0.9	0.9	1.2	1.5	1.7	2.1	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

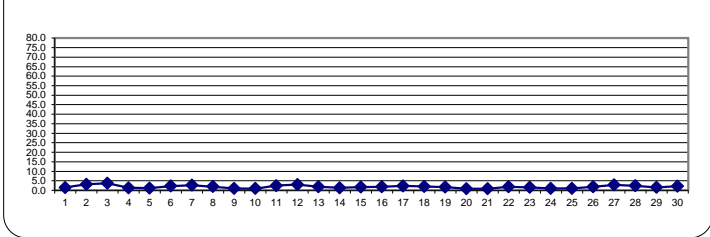
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

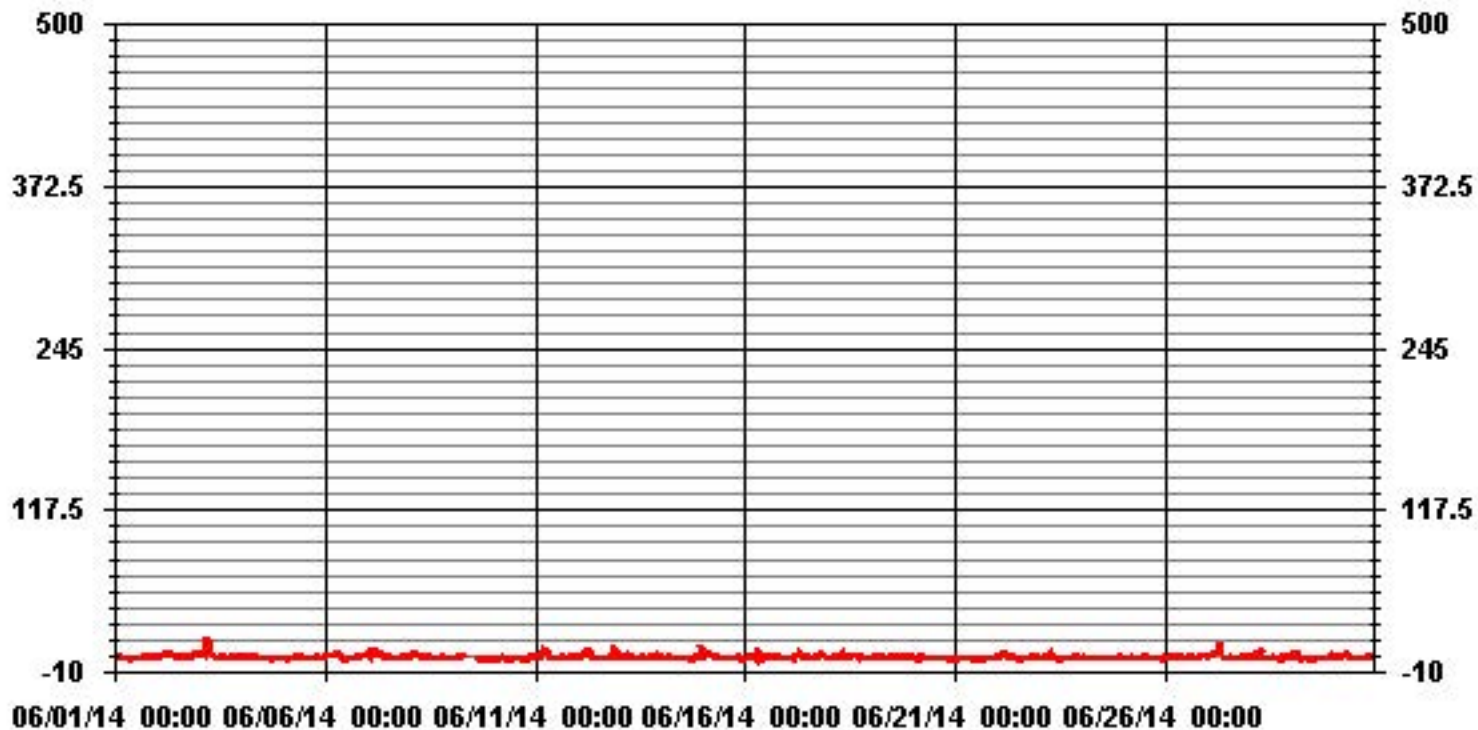
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA				
NUMBER OF NON-ZERO READINGS:	677				
MAXIMUM 1-HR AVERAGE:	16.5	PPB	@ HOUR(S)	5	ON DAY(S) 3
MAXIMUM 24-HR AVERAGE:	3.8	PPB			ON DAY(S) 3
					VAR-VARIOUS
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	1.65		MONTHLY AVERAGE:	1.86	PPB

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



— LICA NOX_ PPB

Lakeland Industry & Community Association - Cold Lake South Site

JUNE 2014

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
1	2.6	5.1	5.1	7.6	8.6	2.6	0.6	1.1	1.1	1.6	5.6	2.6	S	4	2.5	12	5	4.5	5	4	5	2.5	2	3.5	12	4.1	24	
2	3	2.5	3	6.5	10	5	5	9.5	9.5	6.9	6.9	S	9.5	5	3	5	6.5	4.5	7	4	19.5	23.5	5	6.5	23.5	7.3	24	
3	6.5	9	9.5	7	35	46	19.5	14.5	10.5	3	S	5	6	4	5.5	12.5	4	2	3.5	6.5	6	5	5.5	3	46	10.0	24	
4	3	3	2.5	3.5	2	4	3.5	3.5	3	S	10.5	1	1.5	8.5	4.5	1	1	0.5	2	2.5	2.5	1	1	1	10.5	2.9	24	
5	1.5	2.5	1.5	2.5	1	1	1	20	S	3	2.5	2	1.5	1.5	1.5	1	1.5	2	1.5	2.5	1.5	2	2	3.5	20	2.6	24	
6	5	3.5	3.5	4.5	5.5	5	7	S	9	5	2.5	1	0.5	16.5	4	3	2	3.5	2	1.5	3	4	4	5	16.5	4.4	24	
7	5.5	10.5	8.5	8.5	14.5	12	S	7	5.5	2.5	6.5	7.5	7.5	2	1	4.5	4.5	1	1.5	4.5	3.5	3.5	4.5	4	14.5	5.7	24	
8	2.5	11.5	8	6	22	S	5.5	4	2	2	2	2	5	3	4	1.5	1.5	1	7.5	3.5	5	3	1.5	1	1.5	22	4.5	24
9	1	1.5	1	6	S	3.5	3	4	C	C	C	C	C	C	C	1	1.1	0.6	2.1	1.6	1.1	0	0	0.1	6	1.7	24	
10	0.1	0.6	0.6	S	1.5	4	5	1	1	0.5	2.5	1	1	3	2	1.5	3	1	6	1.5	2.5	6	6	4.5	6	2.4	24	
11	3.5	5	S	6	9.5	9	11.5	8.5	9	2.5	4.4	4.4	1	1	1.5	4	4	1	1	1.5	6	3.5	2.5	3	11.5	4.5	24	
12	2.5	S	3.1	8.6	5.1	10.6	10.1	9.6	9.6	3.5	4.6	3.5	3.1	3.1	3.5	1.5	2	3.5	1.1	12.6	13.6	14.6	10.1	4.1	14.6	6.2	24	
13	S	3.2	4.7	4.7	12.2	4.7	3.7	2.7	2.2	3.1	12.1	1.6	4.7	2.6	5.2	4.2	2.7	1.7	7.7	8.2	3.2	3.2	6.2	S	12.2	4.8	24	
14	2	1.5	1.5	4	10	4	6	2	1.9	1.4	1	1	1.4	1.9	1.9	1.5	2	2.5	1	3.5	3	4	S	19.8	19.8	3.4	24	
15	4.3	4.8	5.3	6.3	4.8	6.3	3.3	3.8	3.3	2.2	2.2	2.7	2.2	4.8	3.8	1.8	4.8	2.8	3.8	2.8	2.8	S	2.8	0.8	6.3	3.6	24	
16	1.8	2.3	4.3	3.3	7.8	5.8	1.8	39.3	5.8	0.8	16.3	4.3	12.3	13.8	12.3	4.3	2.3	3.3	4.8	3.2	S	4.5	1.5	2	39.3	6.9	24	
17	3	1.5	1.5	6.5	1.5	7	19.5	23.5	17.5	4.5	10	10	10.5	10	5.5	5.5	6	9	5.5	S	10	12	4	2	23.5	8.1	24	
18	1.5	2	4	4	5.5	4.5	8.5	25	14	7.5	14.5	15	11	9.5	5.5	9.5	16.5	3	S	13.5	3	1.5	3	3	25	8.0	24	
19	1.5	2	2.5	3	5.5	5.5	12	3	2	8.5	14	7.9	12	7	3.5	3.5	4.5	S	5.5	7	3	4	2.5	3	14	5.3	24	
20	4	2	2	1.5	20.5	1.5	3.5	2	1.5	1.5	2.5	2	1	2.5	1.5	1.9	S	1.5	1	1	0.5	0.5	0.5	0.5	20.5	2.5	24	
21	0.5	0.5	1	1	1.5	1	1.5	1.4	1.4	0.9	1.9	2.4	1.5	1.4	0.9	S	1.5	1.5	2.4	2	1	1	1.5	2.5	2.5	1.4	24	
22	2.5	3	3.5	4.5	5.5	6	2.5	2.5	4.5	5	2.4	1.4	1.9	0.9	S	1.5	3.5	1	1.9	4.5	3	3.5	2.5	3	6	3.1	24	
23	2	1.5	1.5	3	3	5.5	7.5	4	2.4	2.4	1.5	1	4.5	S	12.5	3.5	1.5	1.6	3.6	2.5	6.1	6.6	2.6	3.1	12.5	3.6	24	
24	1.6	1.1	2.1	1.6	6.6	1.6	1.6	26	16	1.1	1.5	2	S	1.5	0.5	1.4	7.9	1	5.5	2.4	1	5	10	1.5	26	4.4	24	
25	0.5	0.5	0.5	1.5	4.5	2	2	3.9	2.4	5	6.5	S	2.9	3	9.5	3	2.5	1	1.5	1.4	1.5	6	1	1.5	9.5	2.8	24	
26	1.5	1.5	2.5	3.5	3	5	15.5	9.5	3	8.4	S	3.1	1.6	5.6	12.6	2	1.6	1.6	2	2.6	3.6	4.1	5.1	6.6	15.5	4.6	24	
27	11.5	2.6	3.6	3.6	15.6	13.1	9.1	23.1	11.5	S	1.6	1.6	5.6	2.5	2.5	2.5	3	1.6	1.1	3.5	4.1	4.1	9	11.6	23.1	6.4	24	
28	4.1	4.1	2.6	3.6	12.1	4.6	5.6	9.6	S	1.5	3	4.5	2.5	1.9	1.9	4	1	1.9	1	3.5	4	3.5	4	4.5	12.1	3.9	24	
29	3	7.5	6.5	5.5	5	4.5	1.5	S	1	0.5	1.4	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	1	1	1	1.9	5.5	7.5	2.2	24	
30	4.5	4.5	3.5	1.9	2	6	S	6.5	5	4	3	1.9	1.5	0.5	6	5	2.4	1.5	12.5	1.9	2.9	4	4	3	12.5	3.8	24	
HOURLY MAX	12	12	10	9	35	46	20	39	18	9	16	15	12	17	13	13	17	9	13	14	20	24	10	20				
HOURLY AVG	3.0	3.5	3.4	4.5	8.3	6.6	6.3	9.7	5.8	3.3	5.3	3.6	4.2	4.4	4.2	3.6	3.4	2.4	3.4	3.9	4.2	4.7	3.6	3.9				

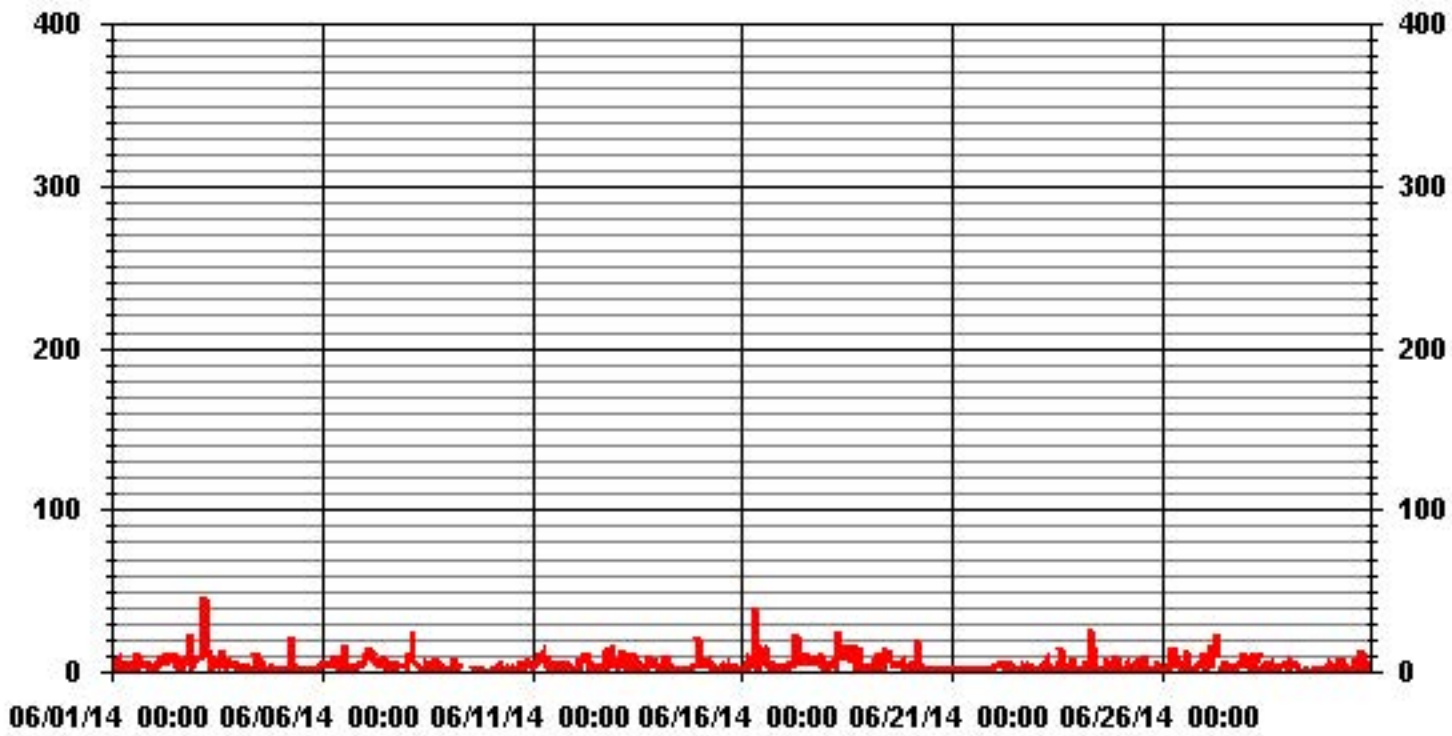
STATUS FLAG CODES

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:	680
MAXIMUM INSTANTANEOUS VALUE:	46 PPB @ HOUR(S) 5 ON DAY(S) 3
VAR-VARIOUS	
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	4.67
OPERATIONAL TIME:	720 HRS

01 Hour Averages



— LICA NOXMAX PPB

LICA
 NOX_ / WD Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	7.17	7.17	6.88	4.97	5.12	8.93	15.66	5.12	2.48	2.34	2.63	7.17	6.73	3.22	6.00	8.34	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	7.17	7.17	6.88	4.97	5.12	8.93	15.66	5.12	2.48	2.34	2.63	7.17	6.73	3.22	6.00	8.34	

Calm : .00 %

Total # Operational Hours : 683

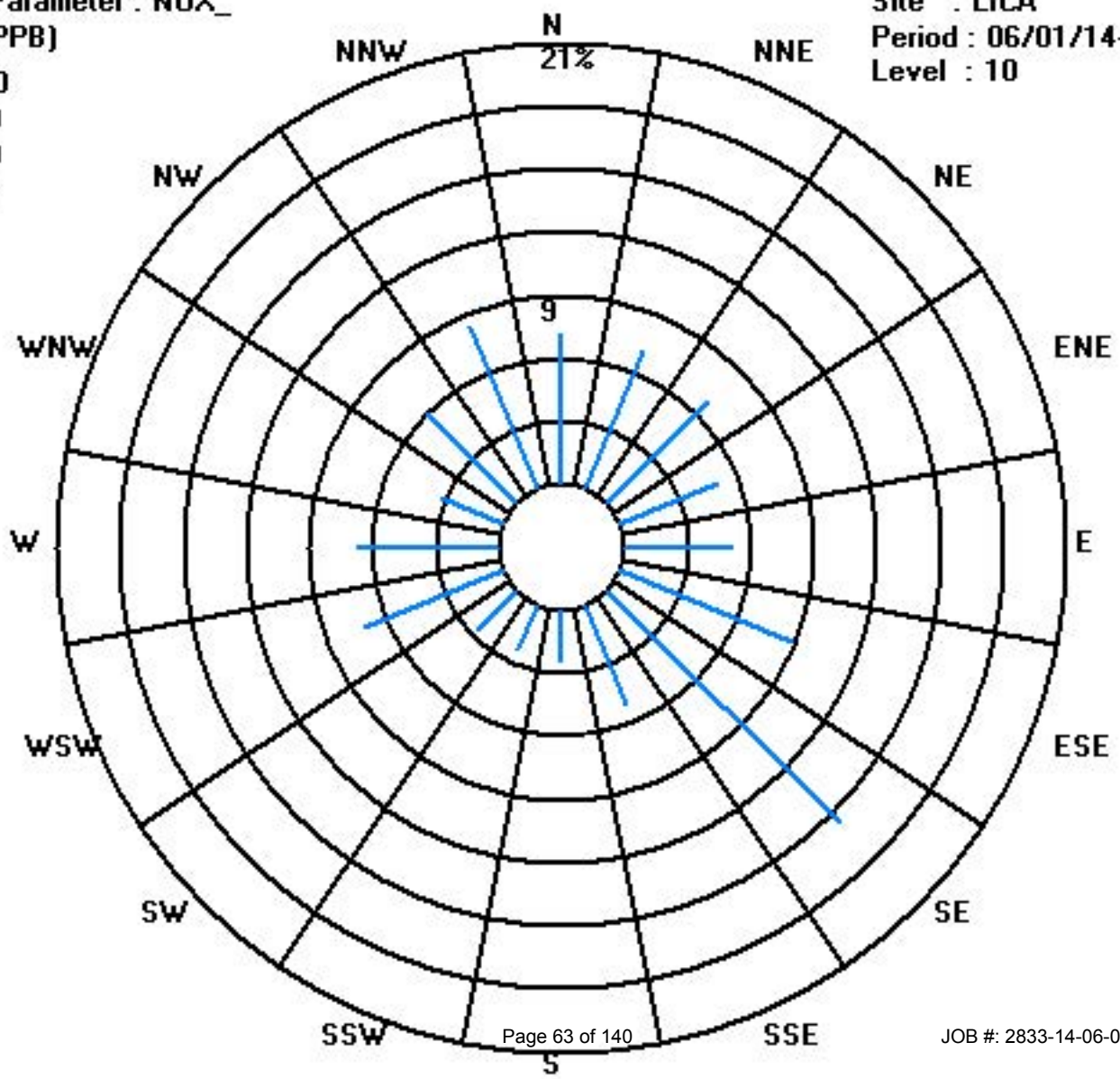
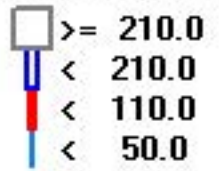
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	49	49	47	34	35	61	107	35	17	16	18	49	46	22	41	57	683
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	49	49	47	34	35	61	107	35	17	16	18	49	46	22	41	57	

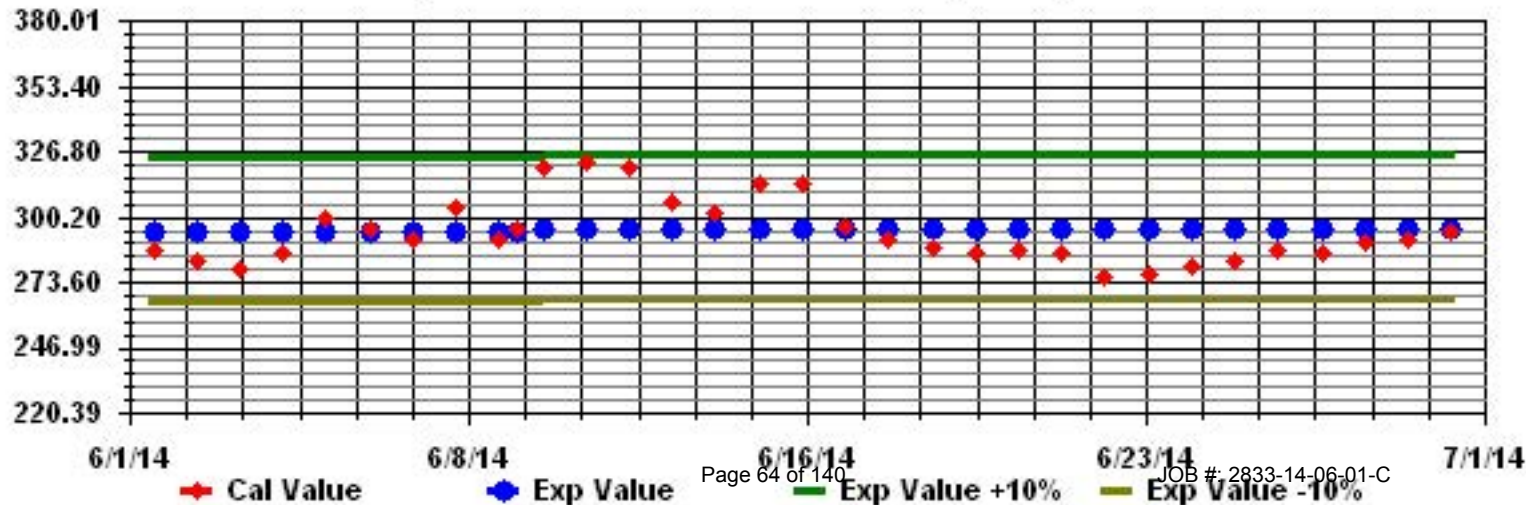
Calm : .00 %

Total # Operational Hours : 683

Class Limits (PPB)



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



Ozone

Lakeland Industry & Community Association - Cold Lake South Site

JUNE 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	MAX.	AVG.	RDGS.		
DAY	1	26	26	24	18	17	28	34	35	35	37	37	38	S	41	46	51	45	47	41	39	38	34	28	27	51	34.4	24	
	2	22	23	23	16	8	13	28	38	42	47	50	S	54	55	55	50	48	47	42	42	36	23	14	9	55	34.1	24	
	3	10	9	7	4	3	5	17	30	37	47	S	51	51	50	48	53	58	58	52	45	42	30	34	39	58	33.9	24	
	4	27	28	28	27	23	20	30	37	39	S	35	29	27	28	32	33	34	37	34	28	25	22	24	24	39	29.2	24	
	5	20	18	19	19	18	17	16	17	S	19	19	20	21	22	30	34	33	32	30	27	15	17	24	25	34	22.3	24	
	6	23	19	17	16	15	14	13	S	21	27	30	33	36	35	36	37	37	38	34	31	23	14	11	8	38	24.7	24	
	7	3	3	8	5	5	8	S	16	30	37	41	40	36	35	34	33	35	38	39	37	28	18	12	8	41	23.9	24	
	8	5	2	1	1	2	S	15	25	38	42	43	43	44	45	45	45	45	46	47	42	39	39	40	40	47	31.9	24	
	9	39	37	36	32	S	31	29	27	25	23	20	20	21	C	C	C	C	C	32	27	24	25	25	27	25	39	27.6	24
	10	25	28	28	S	26	24	24	25	30	32	31	31	32	33	34	34	35	35	31	29	18	8	7	3	35	26.2	24	
	11	3	2	S	1	3	7	11	14	24	35	39	40	41	42	42	33	33	36	39	36	20	13	9	7	42	23.0	24	
	12	5	S	2	2	3	4	16	25	33	40	45	47	47	46	46	49	50	50	50	48	38	21	19	33	50	31.3	24	
	13	S	33	32	31	27	28	29	30	30	34	38	40	40	42	44	42	42	41	40	38	37	31	24	S	44	35.1	24	
	14	24	20	21	19	15	19	25	26	28	32	34	34	36	37	39	39	42	42	39	37	34	27	S	10	42	29.5	24	
	15	12	10	6	6	4	11	23	28	34	39	40	43	44	44	43	43	42	38	36	32	34	S	33	42	44	29.9	24	
	16	36	28	22	19	23	29	30	26	28	30	29	29	28	27	27	28	25	25	24	22	S	19	19	19	36	25.7	24	
	17	17	15	11	12	13	11	13	13	17	20	25	24	24	28	29	26	24	26	25	S	17	12	11	17	29	18.7	24	
	18	16	9	5	13	16	15	15	19	25	24	27	32	30	27	26	26	25	25	S	23	23	22	20	17	32	20.9	24	
	19	18	19	17	15	16	18	16	16	16	19	18	19	18	17	16	15	16	S	12	14	11	9	9	4	19	15.1	24	
	20	2	5	7	7	3	4	7	17	20	22	21	20	20	20	21	22	S	21	20	19	18	18	18	18	22	15.2	24	
	21	16	16	15	14	14	14	13	12	11	10	9	11	20	20	25	S	22	19	18	17	19	19	16	11	25	15.7	24	
	22	11	8	9	9	8	9	13	15	16	22	29	26	26	26	S	27	28	29	29	24	22	19	13	10	29	18.6	24	
	23	5	3	2	2	2	3	7	14	17	25	32	31	32	S	34	31	30	31	29	24	20	16	14	9	34	18.0	24	
	24	10	12	13	14	16	18	17	19	23	25	26	28	S	30	31	32	31	32	31	31	32	32	30	27	29	32	24.3	24
	25	27	26	25	24	20	22	23	26	28	32	35	S	30	31	32	34	34	34	31	32	37	30	30	24	37	29.0	24	
	26	21	17	16	15	18	15	18	24	27	37	S	39	41	41	42	41	41	39	40	35	26	18	12	6	42	27.3	24	
	27	4	3	3	3	4	7	8	14	24	S	37	39	40	41	41	38	40	40	39	27	17	13	8	5	41	21.5	24	
	28	4	2	2	2	2	3	12	20	S	41	47	48	49	45	46	46	44	40	41	37	34	34	30	25	49	28.4	24	
	29	22	20	16	12	12	20	29	S	32	32	34	36	38	38	38	38	39	41	42	44	45	44	39	32	45	32.3	24	
	30	31	30	31	31	30	28	S	29	31	33	37	38	38	37	36	36	35	34	30	18	14	10	17	38	30.0	24		
HOURLY MAX		39	37	36	32	30	31	34	38	42	47	50	51	54	55	55	53	58	58	52	48	45	44	40	42				
HOURLY AVG		16.7	16.2	15.4	13.4	12.6	15.3	19.0	22.8	27.2	30.8	32.4	33.2	34.4	35.2	36.3	36.3	36.2	36.3	34.3	31.6	27.3	22.0	20.1	18.7				

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

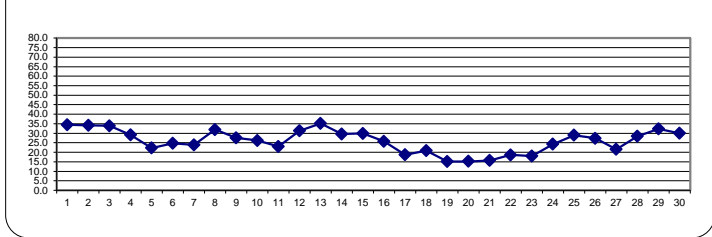
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 82 PPB

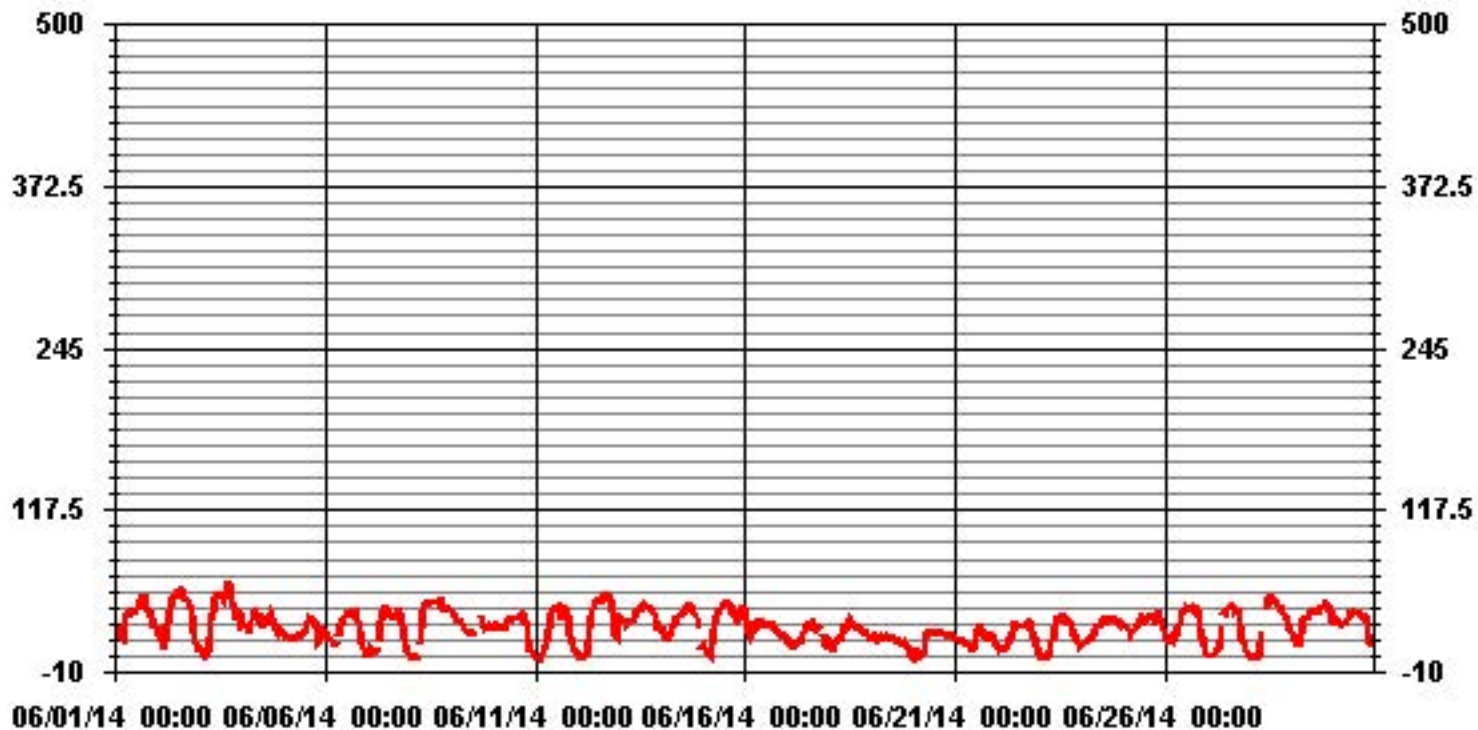
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	685				
MAXIMUM 1-HR AVERAGE:	58	PPB	@ HOUR(S)	16, 17	ON DAY(S) 3
MAXIMUM 24-HR AVERAGE:	35.1	PPB			ON DAY(S) 13
				VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	12.47		MONTHLY AVERAGE:	25.9	PPB

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



— LICA 03_ PPB

Lakeland Industry & Community Association - Cold Lake South Site

JUNE 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	32	28	27	25	22	35	35	36	37	38	39	41	S	45	52	54	50	50	45	40	41	39	35	30	54	38.1	24	
	2	27	31	28	24	13	19	34	41	46	50	52	S	55	58	58	52	50	49	47	45	42	30	20	13	58	38.4	24	
	3	18	17	12	7	5	7	31	34	46	49	S	54	54	54	51	59	60	62	55	55	46	40	47	45	62	39.5	24	
	4	36	33	32	29	26	24	36	40	44	S	39	33	29	30	34	34	37	38	30	27	23	25	25	44	44	32.3	24	
	5	22	20	20	20	19	18	17	18	S	20	21	22	22	23	34	35	35	34	34	33	20	23	25	27	35	24.4	24	
	6	26	21	18	18	17	16	15	S	25	31	32	36	37	37	38	39	39	39	37	36	31	18	15	12	39	27.5	24	
	7	6	7	12	6	8	14	S	23	38	40	43	42	39	38	36	35	38	40	40	39	37	28	16	11	43	27.7	24	
	8	8	4	3	3	3	S	21	31	44	45	44	45	46	46	47	47	47	48	48	48	42	40	41	41	48	34.4	24	
	9	40	38	37	36	S	33	30	29	28	25	23	23	23	C	C	C	C	C	C	30	25	27	27	28	26	40	29.3	24
	10	27	29	29	S	27	26	26	26	33	34	33	32	34	34	35	35	37	36	34	31	25	12	9	5	37	28.2	24	
	11	4	4	S	3	3	3	9	14	19	30	38	40	41	42	43	45	39	36	39	40	39	33	17	14	10	45	26.3	24
	12	7	S	4	4	5	6	22	31	38	45	48	49	48	47	49	50	51	52	52	53	46	27	29	37	53	34.8	24	
	13	S	36	34	33	32	29	31	31	32	38	40	42	43	46	47	45	43	42	42	41	39	38	29	S	47	37.9	24	
	14	26	24	24	23	21	24	27	28	33	34	38	36	39	39	40	41	45	45	41	40	37	31	S	14	45	32.6	24	
	15	39	13	8	8	6	24	26	32	42	41	43	45	47	46	45	45	44	42	37	35	35	S	43	44	47	34.3	24	
	16	41	32	26	23	27	34	32	33	31	32	30	31	30	29	29	27	27	26	23	S	21	20	21	41	28.4	24	24	
	17	21	17	14	15	15	14	14	16	22	24	27	28	28	31	31	30	25	28	28	S	20	17	17	20	31	21.8	24	
	18	19	12	9	18	19	17	18	24	29	28	29	35	33	30	28	28	28	27	S	25	24	24	21	18	35	23.6	24	
	19	19	20	20	17	17	19	18	17	18	21	20	20	20	18	18	17	19	S	14	15	14	11	11	7	21	17.0	24	
	20	4	7	8	8	6	5	13	22	23	24	24	22	21	24	23	25	S	23	21	21	19	19	20	19	25	17.4	24	
	21	17	17	16	15	15	15	14	13	12	11	11	14	24	25	26	S	26	20	19	20	20	20	19	15	26	17.6	24	
	22	15	11	11	10	9	12	14	17	17	17	30	29	28	27	S	29	30	31	30	28	27	22	17	14	31	21.1	24	
	23	9	6	4	4	4	4	10	16	20	31	37	33	34	S	37	33	32	32	32	27	24	18	19	13	37	20.8	24	
	24	14	15	15	15	18	19	18	21	25	26	27	30	S	33	32	33	34	33	32	33	33	32	29	30	34	26.0	24	
	25	29	27	26	25	21	23	26	28	30	34	36	S	34	33	36	38	38	36	33	38	38	34	32	28	38	31.4	24	
	26	23	19	19	20	21	18	23	27	32	42	S	43	44	43	44	44	44	43	42	39	32	22	20	11	44	31.1	24	
	27	8	7	6	7	7	9	10	22	28	S	41	41	43	43	43	43	43	43	42	34	23	19	11	8	43	25.3	24	
	28	6	4	4	4	4	8	15	27	S	46	50	52	54	52	51	49	49	43	44	40	35	36	33	29	54	32.0	24	
	29	25	23	19	16	17	28	31	S	33	34	36	38	40	40	39	39	40	43	44	45	47	46	42	36	47	34.8	24	
	30	32	32	32	32	31	30	S	31	33	35	39	39	39	39	38	39	37	37	36	35	26	21	13	22	39	32.5	24	
	HOURLY MAX	41	38	37	36	32	35	36	41	46	50	52	54	55	58	58	59	60	62	55	55	47	46	47	45				
	HOURLY AVG	20.7	19.1	17.8	16.1	15.2	18.6	22.2	26.2	31.0	33.7	34.7	35.6	36.8	37.6	38.8	38.8	38.7	38.6	36.7	34.9	31.4	26.0	24.1	21.8				

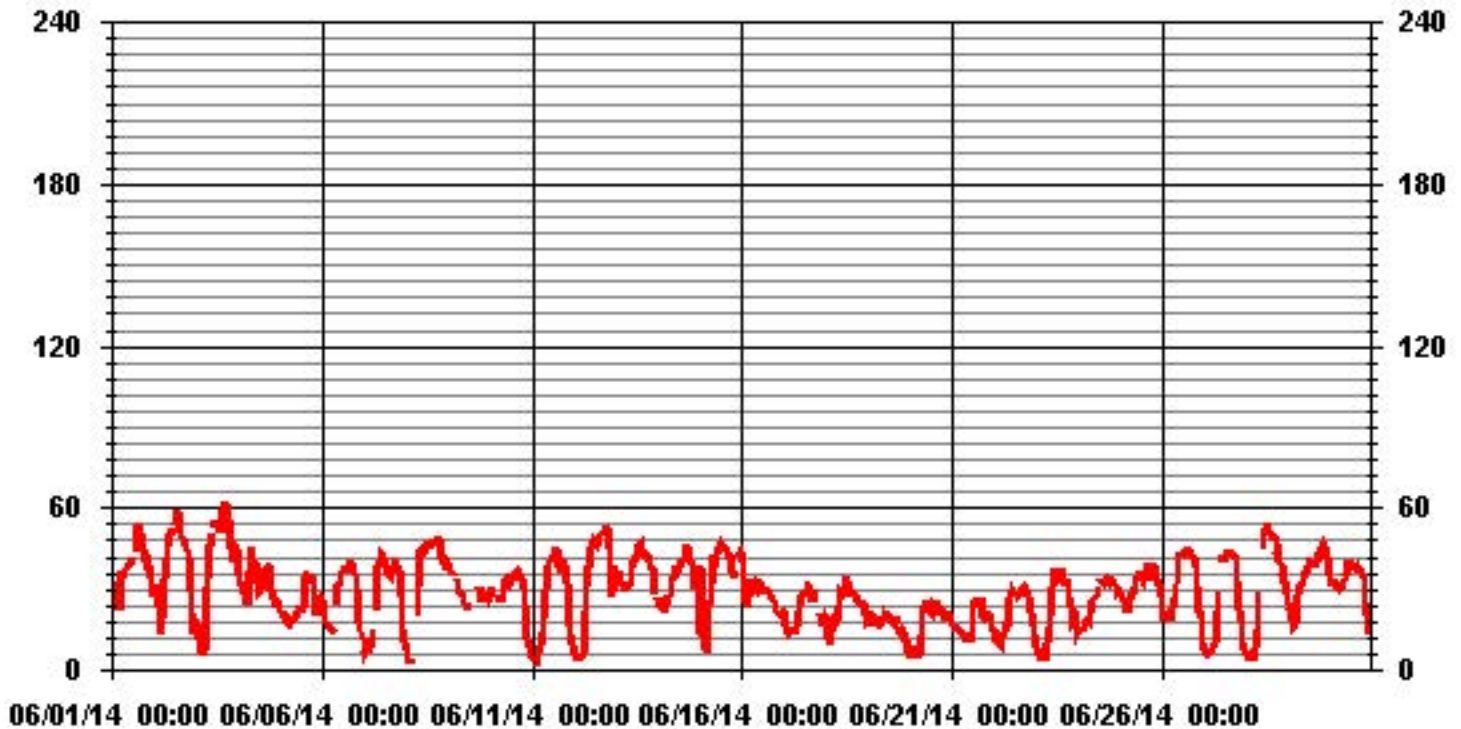
STATUS FLAG CODES

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:	684					
MAXIMUM INSTANTANEOUS VALUE:	62	PPB	@ HOUR(S)	17	ON DAY(S)	3
	VAR-VARIOUS					
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	12.51					

01 Hour Averages



— LICA O3MAX PPB

LICA
O3_ / WD Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

Logger Id : 01
Site Name : LICA
Parameter : O3_
Units : PPB

Wind Parameter : WD
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50	7.15	7.00	7.00	5.10	5.25	8.90	15.47	4.23	2.33	2.04	2.48	6.86	6.71	3.06	5.69	8.32	97.66
< 110	.00	.14	.00	.00	.14	.00	.14	.87	.14	.29	.14	.29	.00	.14	.00	.00	2.33
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	7.15	7.15	7.00	5.10	5.40	8.90	15.62	5.10	2.48	2.33	2.62	7.15	6.71	3.21	5.69	8.32	

Calm : .00 %

Total # Operational Hours : 685

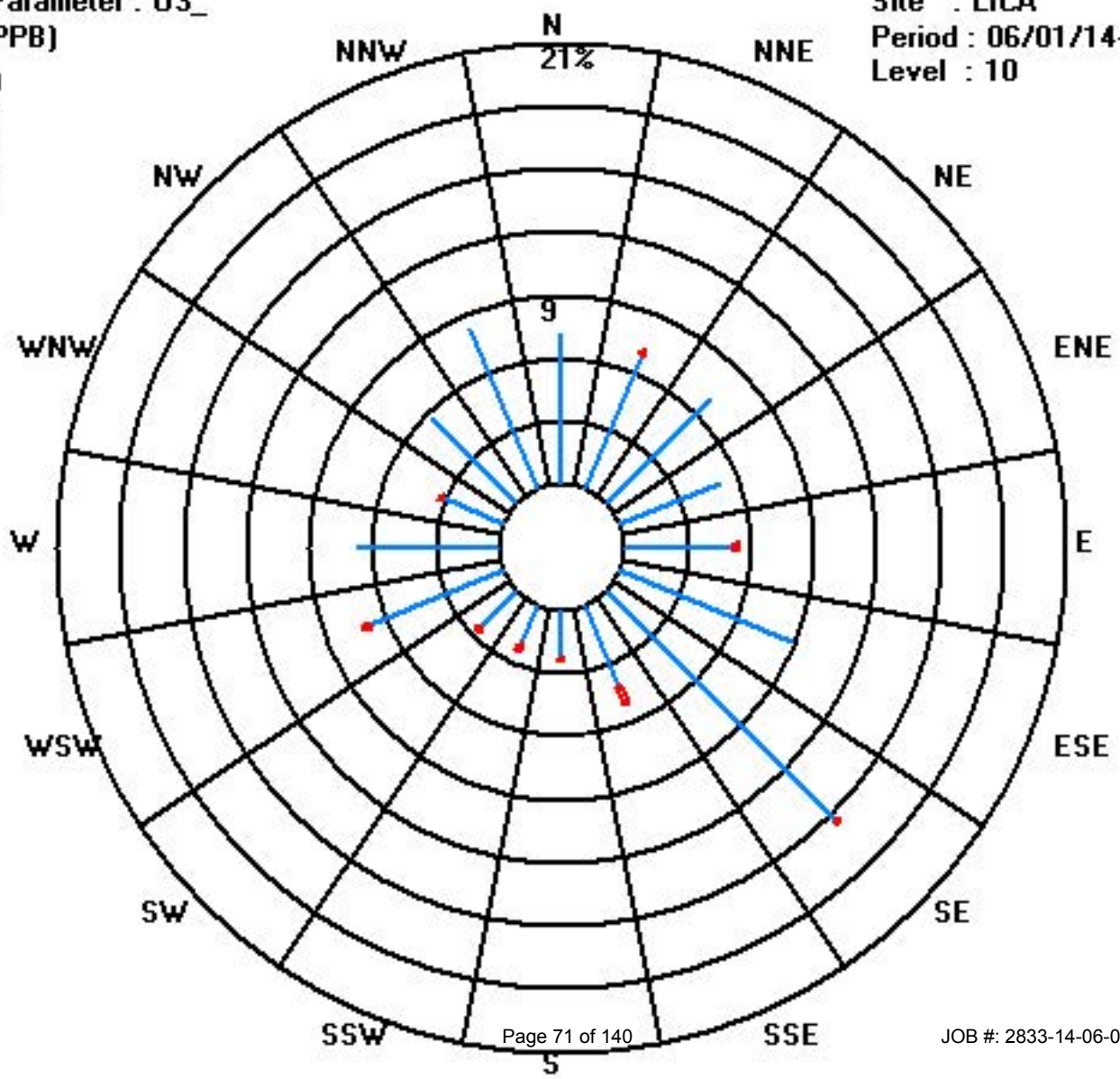
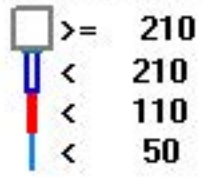
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50	49	48	48	35	36	61	106	29	16	14	17	47	46	21	39	57	669
< 110		1			1		1	6	1	2	1	2		1			16
< 210																	
>= 210																	
Totals	49	49	48	35	37	61	107	35	17	16	18	49	46	22	39	57	

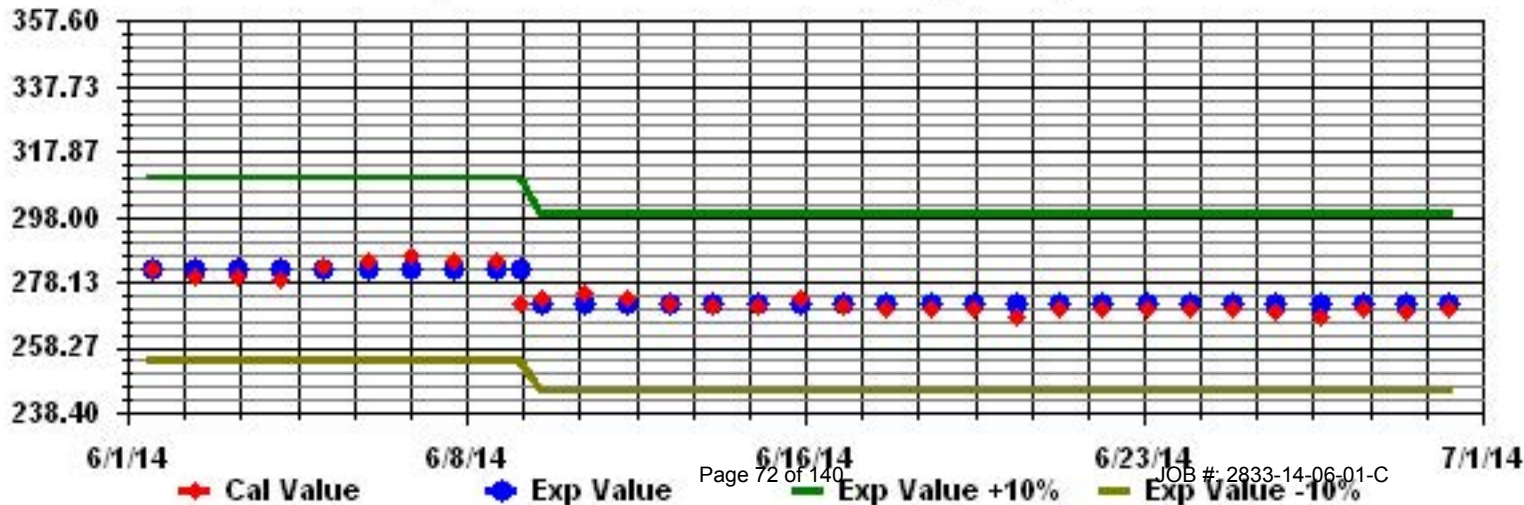
Calm : .00 %

Total # Operational Hours : 685

Class Limits (PPB)

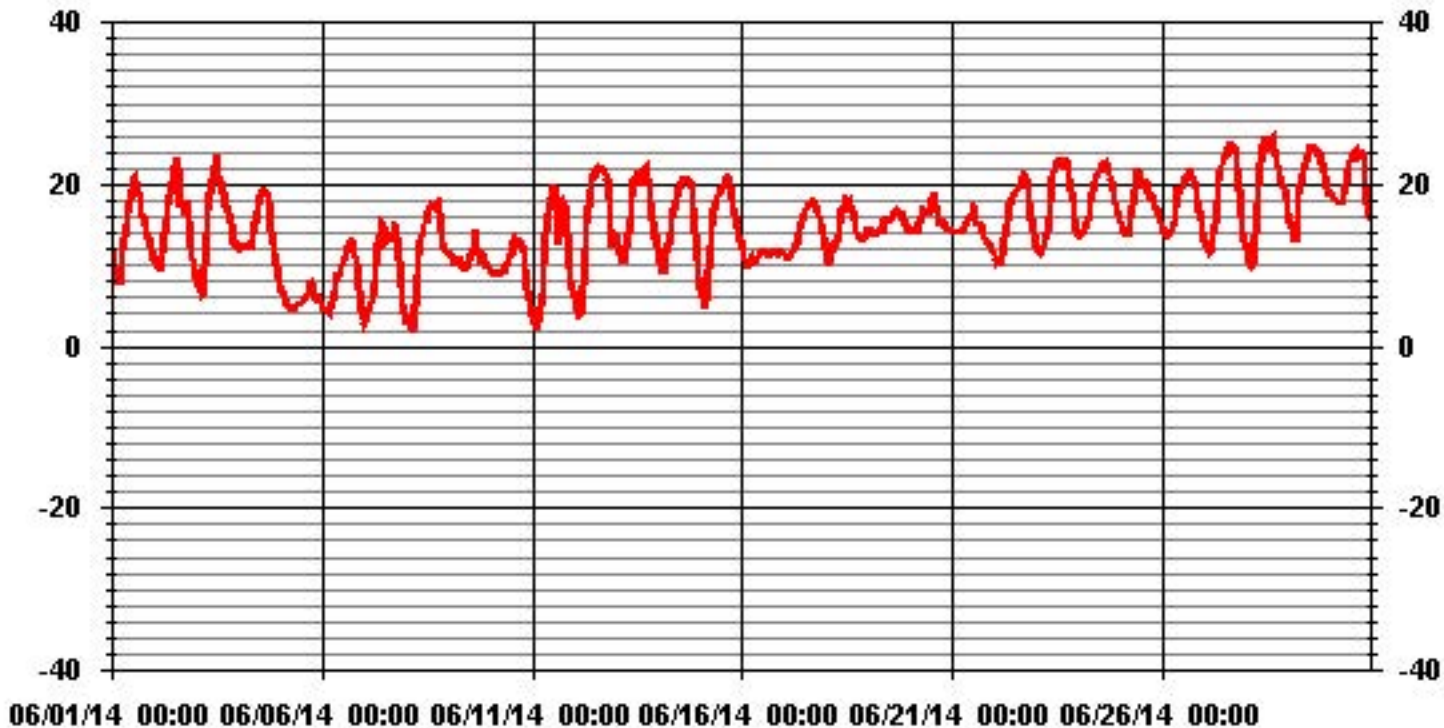


Calibration Graph for Site: LICA Parameter: 03_ Sequence: 03 Phase: SPAll



Ambient Temperature

01 Hour Averages



Relative Humidity

Lakeland Industry & Community Association - Cold Lake South Site

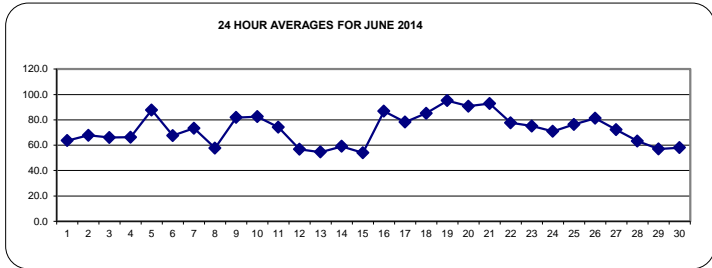
JUNE 2014

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	79	83	85	80	83	70	62	57	53	48	45	43	41	39	40	42	49	62	68	74	76	78	83	86	86	63.6	24	
	2	90	91	92	94	95	88	76	68	61	54	47	41	37	35	37	53	57	62	64	59	68	82	86	90	95	67.8	24	
	3	93	93	93	94	92	83	76	67	61	49	41	37	36	45	49	47	40	50	59	63	69	82	81	86	94	66.1	24	
	4	92	92	92	91	91	90	84	82	87	76	66	52	46	39	35	35	34	33	39	51	60	68	72	84	92	66.3	24	
	5	92	95	94	93	94	93	92	90	91	89	87	86	84	83	83	82	77	79	80	85	93	94	86	84	95	87.8	24	
	6	87	89	89	90	90	89	85	79	70	62	58	50	44	47	45	42	40	38	47	54	65	81	88	92	92	67.5	24	
	7	93	94	94	94	95	94	88	79	62	54	49	51	64	67	61	65	69	52	46	52	70	83	91	94	95	73.4	24	
	8	95	95	95	95	96	92	78	67	55	49	44	40	41	37	33	32	33	32	39	47	52	53	52	96	96	57.7	24	
	9	54	56	62	81	75	73	74	75	85	91	95	96	95	91	86	76	70	79	91	93	89	92	93	93	96	81.9	24	
	10	92	88	86	88	89	90	94	94	92	90	85	82	77	67	62	66	63	62	70	74	86	93	95	96	96	82.5	24	
	11	96	97	96	97	98	99	99	86	67	54	49	47	43	40	47	82	75	59	49	50	72	90	93	94	99	74.1	24	
	12	95	96	96	96	96	90	74	63	56	46	38	30	30	30	31	30	28	29	30	33	46	65	73	64	96	56.9	24	
	13	65	69	73	75	79	77	71	65	60	53	44	42	40	41	32	34	33	32	34	38	49	63	72	69	79	54.6	24	
	14	76	84	87	90	87	80	75	69	64	60	54	48	41	38	35	35	31	30	32	37	45	61	77	84	90	59.2	24	
	15	87	91	91	92	89	77	72	64	55	43	39	36	32	32	32	30	29	34	38	42	38	46	53	55	92	54.0	24	
	16	63	71	77	78	79	83	91	94	94	92	92	85	84	87	90	92	93	91	91	90	91	94	91	90	94	86.8	24	
	17	91	94	95	93	92	91	89	87	82	78	71	69	67	62	62	64	67	64	65	69	74	82	85	85	95	78.3	24	
	18	89	94	95	94	90	92	90	86	80	73	71	62	65	66	68	69	80	93	94	97	98	99	100	99	100	85.2	24	
	19	98	97	97	99	100	100	100	100	100	97	94	92	93	92	90	89	87	88	93	91	94	97	98	100	100	95.3	24	
	20	100	100	100	100	100	100	97	83	84	84	84	81	75	71	73	77	91	96	94	94	96	98	100	100	100	90.8	24	
	21	100	100	100	100	100	100	100	98	94	96	98	87	95	91	87	85	86	90	88	82	80	83	88	100	100	92.8	24	
	22	89	94	91	90	90	87	78	73	74	73	71	70	69	66	63	61	63	70	78	86	92	94	94	94	94	77.6	24	
	23	97	98	98	99	99	99	97	88	80	68	63	60	56	56	51	56	60	56	53	59	67	74	81	88	99	75.1	24	
	24	90	90	90	91	90	87	84	78	73	68	64	61	56	54	56	54	55	58	58	63	71	77	78	91	70.9	24		
	25	81	85	85	86	87	81	77	72	67	61	57	64	71	70	76	70	75	79	78	77	77	81	83	92	92	76.3	24	
	26	96	98	98	99	99	98	97	92	83	68	72	68	63	63	62	64	62	66	67	72	82	91	95	96	99	81.3	24	
	27	97	98	98	99	99	96	92	80	71	64	58	55	49	53	47	40	48	46	44	58	74	84	89	93	99	72.2	24	
	28	95	96	97	96	94	85	76	69	57	47	42	40	46	48	43	43	47	49	55	58	59	63	70	97	63.3	24		
	29	78	80	85	92	93	83	70	66	61	59	55	50	44	43	43	42	41	39	38	39	37	39	45	49	93	57.1	24	
	30	52	52	51	52	56	58	61	62	64	63	59	52	49	48	46	48	48	46	46	52	75	83	88	81	88	58.0	24	
HOURLY MAX		100	100	100	100	100	100	100	100	100	97	96	98	95	95	91	92	93	96	94	97	98	99	100	100	100			
HOURLY AVG		86.7	88.7	89.4	90.6	90.6	87.5	83.3	77.8	72.9	66.9	63.0	59.6	57.6	57.0	55.8	57.1	57.5	58.2	60.1	63.8	70.6	78.3	82.2	84.2				

STATUS FLAG CODES

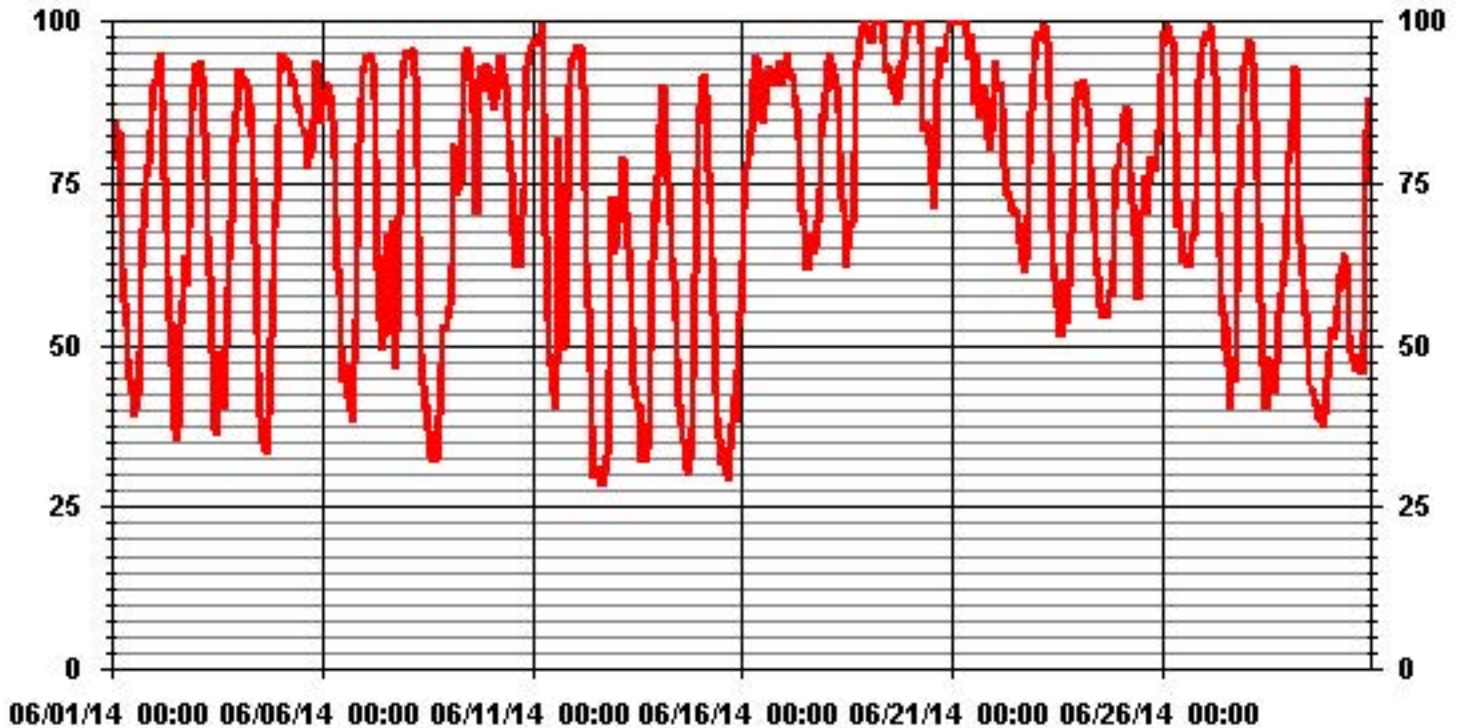
C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	100	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	95.3	%			ON DAY(S)	19
					VAR-VARIOUS	
OPERATIONAL TIME:					720	HRS
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	20.39				MONTHLY AVERAGE:	72.47 %

01 Hour Averages



Vector Wind Speed

Lakeland Industry & Community Association - Cold Lake South Site

JUNE 2014

WIND SPEED (WS) hourly averages in km/hr

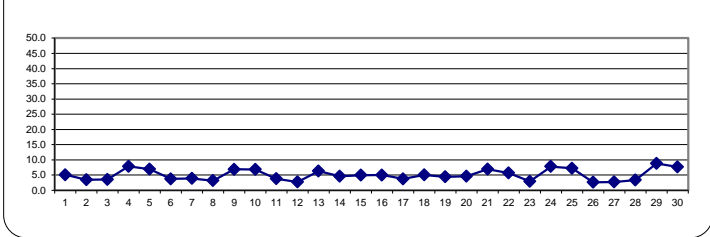
MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00			
1	1.8	1.3	2	2	0.3	4.4	6.9	11.3	9.7	9.6	7.4	8.2	6.7	9.7	8.5	5	4.3	0.9	5.9	7.1	4	1.9	2	1.5	11.3	5.1	24	
2	2	1.8	0.9	0.5	0.5	1.5	3.9	4.9	4.2	4.5	4.8	6	7.4	9.3	4.5	7.3	2.7	7.7	0.6	3.1	2.5	0.6	1.1	0.5	9.3	3.5	24	
3	0.7	1	1.1	0.7	0.6	1	1.8	2.7	4.4	6.4	7.6	5.8	4	2.3	5.4	8.7	7.8	7.9	7.4	0.7	2.1	1	2.8	2.4	8.7	3.6	24	
4	1.8	1.6	2.3	3.9	5.1	6.3	9	6.6	7.3	9.3	11.5	12.5	13.3	11.9	12.2	9	8.6	10.5	7.5	8.6	7.8	9	8.1	5	13.3	7.9	24	
5	5.3	4.7	5.2	5.5	7	8.1	8.1	9.2	7.2	11.2	11.5	12.2	13.4	11	10.7	8.1	5.4	4.6	2.4	1.8	1.3	1.9	5.4	6.5	13.4	7.0	24	
6	5.9	5.4	4.6	4	4.5	2.9	3.6	3.3	4	6.1	5.4	7.6	10.6	5.2	2.6	4	0.8	1.3	2.2	2.2	0.7	1.4	1.4	0.1	10.6	3.7	24	
7	0.1	1.3	0.5	1.4	1	1	1	1.1	3.4	5.4	6.3	7.5	6.4	8.2	10.3	8.9	7.1	6.5	7.4	5.7	0.9	0.4	0.8	1.1	10.3	3.9	24	
8	0.4	0.5	0.5	0.7	0.3	1	0.9	1.7	2.6	3.6	3.3	1.1	5	2.4	3.2	1.3	4.4	8	6.2	4.9	5	5.5	6.4	7	8.0	3.2	24	
9	7.4	8.3	7.3	4.3	7.2	9	8.9	4.4	4.5	4.2	4.1	3.7	1.1	2.9	5.6	8.3	9.9	10.3	8.3	8.1	9.7	10	9.9	7.9	10.3	6.9	24	
10	8.1	9.8	10	8.5	7	7.6	8.4	8	9.3	8.6	9.9	10	7.2	6.6	7.1	8.1	9.1	7.7	5.1	3.2	0.9	1.4	2	0.7	10.0	6.8	24	
11	0.6	1	0.3	0.7	0.9	3.4	5.3	4.3	4.6	6.2	7.2	8.4	9.3	9.9	7.9	1.8	2.4	4.5	5.3	4.1	1.2	1.1	0.8	0.8	9.9	3.8	24	
12	0.4	0.4	0.6	0.2	1.2	0.5	1.1	1.7	3.2	3.8	3.4	5.4	5.3	2.7	4.7	4.7	4.6	5.2	3.6	3.9	1.8	1.3	1.8	5.1	5.4	2.8	24	
13	5.8	2.8	4.2	3.7	2.8	5.7	8.5	7.4	6.9	6.7	8.9	11.6	6.4	10.8	9	10.6	9.5	7.4	5.9	6.8	3.3	0.4	2.6	4.1	11.6	6.3	24	
14	2.4	2.9	3.3	3.5	1.6	2	7.5	7	6.1	7.4	7.8	7	5.1	5.7	5.4	5.8	7.3	6.2	5.8	4.9	4.1	1.8	0.1	0.6	7.8	4.6	24	
15	0.3	0.3	0.5	0.4	0.6	1.7	3.6	3	4	6.3	9.5	8.1	10.6	7.8	7.3	6.9	6.8	9.6	7.9	4.8	5.5	2.3	5.5	5.5	10.6	5.0	24	
16	0.9	0.9	0.3	0.6	0.6	2	4.3	5.6	7.5	7.9	7.2	7.8	9.4	7.8	7.7	6.9	7.2	6.4	5.9	5.3	3.9	4.3	5	4.6	9.4	5.0	24	
17	2.4	2	1.1	1.8	1.6	2.2	4	5.6	5.3	7.5	7.6	3.9	3.3	6.3	6.5	4.1	5.7	5.2	4	2.5	1.7	1	1.3	3.2	7.6	3.7	24	
18	2.3	1.1	1.5	3.3	2.9	2.5	4.3	5.3	3.7	4.3	5.7	8.9	8.3	8.4	8.1	7.4	8.1	7.4	7.1	4.7	4.6	4.4	4.1	3	8.9	5.1	24	
19	4.6	5	3.7	2.8	3.3	4.4	3.4	4.1	5.1	9.3	6.8	8.8	7.4	6	4.6	5.2	5.1	3.9	3.6	3.6	1.5	2.5	1.7	0.6	9.3	4.5	24	
20	0.7	1.7	2.9	2.4	1	1.6	2.2	3.9	5.8	6	6.8	7.3	5.6	7.4	8.8	8	6.2	4.2	5.8	4.4	4.6	5.1	5	4.1	8.8	4.6	24	
21	4.1	3.6	3.9	4.3	4.4	6	4.9	6	7.3	8.4	6.1	3.7	4.5	10.4	13.6	15.9	14.3	13.7	9.4	6.4	5.4	4.1	2.8	3	15.9	6.9	24	
22	3.1	2.8	3.5	5.3	6.1	5.9	5.7	6.6	6.4	9	9.5	8.7	7.9	9.6	11	9.5	8	5.9	4.8	2.3	2.1	2.1	0.6	0.3	11.0	5.7	24	
23	0.6	0.4	0.6	0.3	1.2	1.6	1	2.4	1.7	1.7	2.7	5.3	5.6	11	7.6	5	4.3	1.7	4.1	3.1	3	2.3	1.7	0.8	11.0	2.9	24	
24	2.4	3.7	3.5	4.1	5.3	8.6	8.8	8.5	9.2	8.3	12.2	12.5	14.1	9.3	6.6	6.9	11	11	8.2	8.6	8.2	6.2	4.2	6.1	14.1	7.8	24	
25	5.9	5.8	7.4	7	5.2	5.9	10	10.6	10.7	12.6	12.8	8.1	4	4.8	7.2	6.5	10.7	7.6	6.4	5.5	4.2	4.4	7.5	2.8	12.8	7.2	24	
26	4.6	2.7	1.9	1.6	1.9	0.4	2.1	4.7	1.8	1	3.2	3.9	4	3.6	4.2	2.5	2.7	5.4	1.9	2.5	1.4	2.7	1.4	0.9	5.4	2.6	24	
27	0.7	0.7	1.6	1.2	1.1	2.4	3.9	3.3	3.1	3.5	2.9	4.6	6.6	4.5	4	3.5	6.1	3	3.8	2.1	1.8	0.8	0.3	1.1	6.6	2.8	24	
28	0.4	0.7	0.9	0.5	0.2	0.6	1.3	3.1	3.6	3.5	3.6	2.1	2.2	2.9	3.3	5.9	6.3	6.3	10.1	6.1	4.6	5.5	4	2.8	10.1	3.4	24	
29	4.2	4.9	3.4	2.7	3.3	2.8	6.7	7.9	8.9	9.5	9.4	8.8	10.4	13.9	16	15.8	13	13	11.6	9.4	9.5	10.2	8.5	8.4	16.0	8.8	24	
30	11	11.1	10.4	9.5	9.4	10	9.1	9.2	9.2	12.3	13.7	15.2	13.4	10.4	7	5.2	4.2	3.7	2.4	1.6	1.9	1.3	1.6	1.9	15.2	7.7	24	
HOURLY MAX	11.0	11.1	10.4	9.5	9.4	10.0	10.0	11.3	10.7	12.6	13.7	15.2	14.1	13.9	16.0	15.9	14.3	13.7	11.6	9.4	9.7	10.2	9.9	8.4				
HOURLY AVG	3.0	3.0	3.0	2.9	2.9	3.8	5.0	5.4	5.7	6.8	7.3	7.5	7.3	7.4	7.4	6.9	6.8	6.6	5.7	4.6	3.6	3.2	3.3	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

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

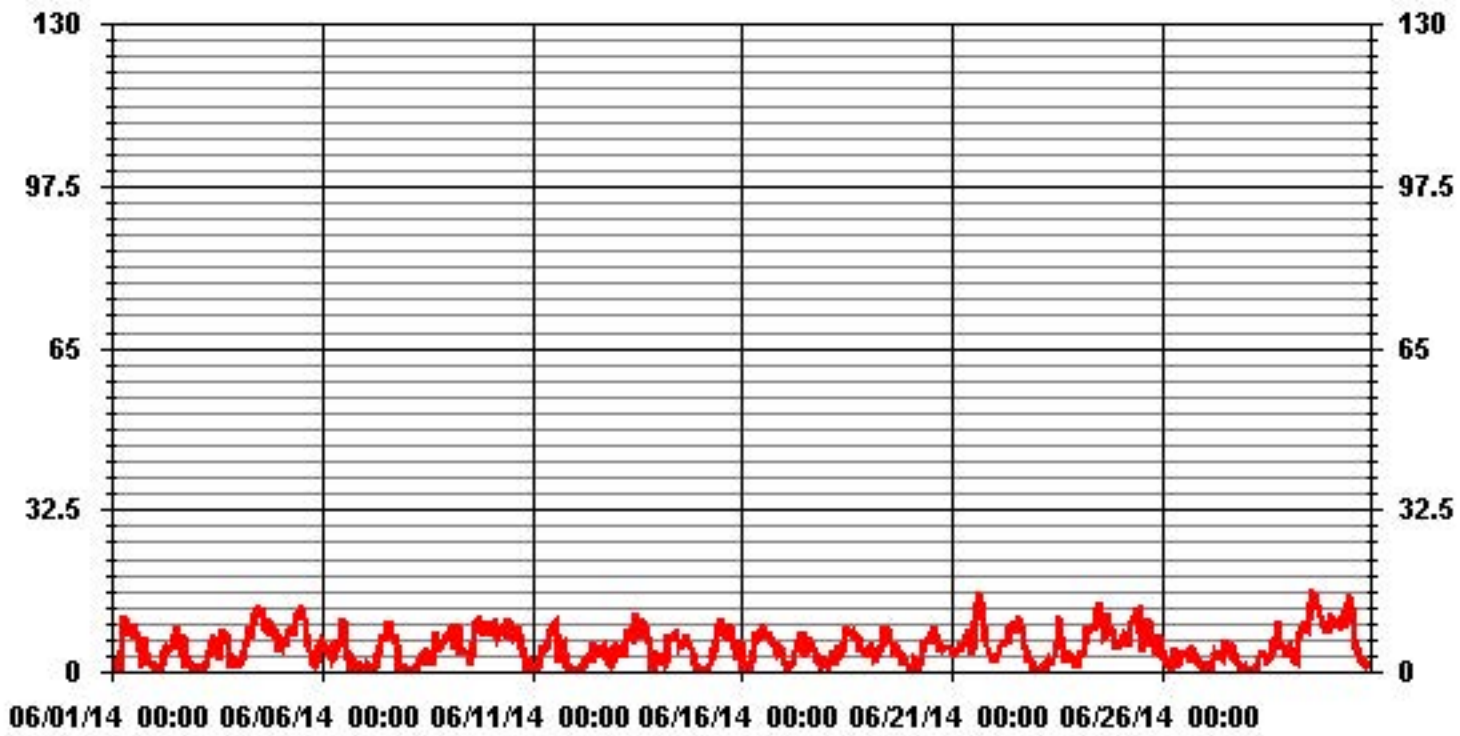
24 HOUR AVERAGES FOR JUNE 2014



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	720
MAXIMUM 1-HR AVERAGE:	16.0 KPH @ HOUR(S) 14 ON DAY(S) 29
MAXIMUM 24-HR AVERAGE:	8.8 KPH ON DAY(S) 29
	VAR-VARIOUS
MONTHLY CALIBRATION TIME:	0 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	3.33
MONTHLY AVERAGE:	5.09 KPH

01 Hour Averages



— LICA WSP KPH

Lakeland Industry & Community Association - Cold Lake South Site

JUNE 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST																									DAILY	24-HOUR	
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	4.7	4	4.2	5.1	3	10.9	11.9	22	16.6	16.1	13.1	14.4	17.8	16.8	17	12.6	19.7	10.3	10.1	8.9	8.2	5.2	4.3	4.7	22	10.9	24
2	6.5	3.8	3.3	4.3	3.6	3.1	8.5	8.9	8.6	10.2	13.5	14.4	14.5	20	17.7	13	12.7	19.9	14.4	7.7	5.5	2.4	2.4	2.6	20	9.2	24
3	2.6	2.4	2.2	2.9	1.9	3	5.2	7.8	8.8	15.3	11.2	12	12.9	8.8	9.3	18.5	13.4	18	12.7	7	5.6	3.4	10.6	6	19	8.4	24
4	4.6	7.9	5.3	7.7	10.2	11.4	17	10.3	14.8	16.9	18.4	18	21.4	21.4	19.8	17.3	14.2	14.9	14.2	12.3	12.5	13.2	13	9.7	21	13.6	24
5	7.8	8.1	9.3	9.3	11.2	11.8	14.1	16.1	14.3	17.3	20.1	20.1	18.8	17	18.3	14.5	11.7	9.8	7.9	8.5	3.6	7.9	8.5	9.8	20	12.3	24
6	7.6	7.5	6.7	7.2	6.7	6.1	5.9	7	7.7	11.2	9.6	16.9	17.1	13.8	10.2	9.9	7.8	8	6.3	7.7	2.1	3.5	3.9	2.6	17	8.0	24
7	2.2	3.2	2.5	5.6	5.7	4.7	3.7	4.7	8.4	12.2	14	13.5	12.9	18.9	23.4	15.7	11.3	11.9	13.3	9.9	5.5	3.9	3	3.1	23	8.9	24
8	3.2	2.6	3	2.4	2.8	4.2	5	5	8.7	10	9.7	8.2	10.6	10.3	11.3	6.5	10	13.1	12.7	7.6	6.7	6.9	8.9	10.9	13	7.5	24
9	10.2	11	11.5	7.4	14.2	13.6	14.7	10	9.7	7	8.9	8.1	4.5	6.3	9.1	15	15.8	20.9	12.6	14	15.5	16	14.6	13.6	21	11.8	24
10	12.6	14.4	16.5	14.1	10.5	11.4	13.8	11.7	15	15.9	15.2	15.2	14.6	13.7	12.4	12.4	14.6	12.2	8.2	6.5	4.1	4.1	4.4	3.7	17	11.6	24
11	5.9	3.9	3.1	2.6	3	6	9.3	8.6	11.5	12.6	12.4	15.8	16.1	19	31.5	8.3	5.6	8.7	8.8	7.8	2.9	4.5	1.6	2.8	32	8.8	24
12	1.8	2.7	1.9	2.3	2.7	1.9	3.2	5.1	7.3	10.4	13.7	13.7	15.1	11.9	14.4	12.3	12.6	10.6	6.5	5.5	5.5	2.5	5.4	9.5	15	7.4	24
13	8.5	7.5	6.4	6.2	5.1	8.9	12.4	11.2	10.5	9.9	13.6	16.8	17	19.2	19.4	18	14	13.1	10.5	13.3	9.8	4.2	7	15.7	19	11.6	24
14	4.7	5.7	5.6	5.6	4.7	5.3	13.9	11.2	11.4	13	16	14.4	12.8	17.6	14.4	12.2	15	11	13	9.8	8.6	6.5	2.7	2.4	18	9.9	24
15	1.9	2	2.7	3.2	2.2	4	7.4	6.6	11.9	12.9	15.2	15.9	19	16.2	14.7	16.1	16.7	17.7	10.9	11.6	11	6.5	11.6	10.7	19	10.4	24
16	2.6	3.7	2.8	5.2	4.2	5.9	7.7	9.9	11.7	11.2	12.4	12.8	15	13.7	12.9	10.2	13	10.5	10.3	9.4	6.6	6.9	8.1	8.5	15	9.0	24
17	5	5.1	3.2	4.6	5.2	5.2	7.3	9	11.5	11.6	12.6	10	9	11.3	12.2	9.8	8.1	8.9	7.7	5	3	2.9	3.7	4.7	13	7.4	24
18	4.3	2.9	4.1	5.7	6	4.2	7.7	9.6	6.6	8.7	10.1	15.5	14.6	13	13.1	14.9	13	14.3	12.7	9.1	7.2	8.8	8.9	6.2	16	9.2	24
19	7.6	9	7.3	4.9	6	7.6	6.5	6.8	14.2	14.5	14.2	15.4	18	12.2	8.2	9.4	9.1	9.4	7.4	7	4.5	5.2	4.3	2.7	18	8.8	24
20	3	3.8	5.6	4.8	2.8	3.3	6	6.5	9.8	10.3	12.5	12.9	9.8	14.2	14	13.3	13.6	7.7	8.8	7.2	6.6	8.6	7.4	6.9	14	8.3	24
21	7.3	5.6	6.3	7.4	8.4	13.1	9	10.9	14.9	11.4	10.1	9.9	10.8	20.3	19.8	26.8	22.7	24.2	15.8	11.3	11.3	9.6	6.2	4.7	27	12.4	24
22	5.1	5	6.9	7.2	8	8.8	9.3	11.4	9.3	14.1	17.1	14.1	12.2	17.8	16.3	17.1	14.9	12.7	10.3	5.3	9.6	5.1	3	3.5	18	10.2	24
23	2.8	2.1	2.3	2.3	2.3	4	3.2	5.3	6	7.1	9.4	10.8	13.8	18	12.9	16.7	8	8.5	11.4	7.6	5.7	4.6	4.7	3.2	18	7.2	24
24	4.2	5.6	5.9	6.2	8.1	11.1	14	13.7	15.3	15.9	20.6	18.7	21.1	18.6	14.5	16.6	19.7	16.3	14.7	14.3	11.7	10.6	6.3	10.5	21	13.1	24
25	9.4	8.9	11.8	12.5	9.5	10.7	18.2	16	16.2	20.6	23.3	19.8	9.3	10.4	19.9	10.4	17.8	16.6	10.7	12.3	9.1	10	14.6	5.2	23	13.5	24
26	8.1	5.6	3.6	4.3	4.9	3.8	6.7	7.5	5.4	5.8	7.1	10.5	8	8.7	8.5	7.7	10	10.5	6.3	4.2	3.6	4.3	3.5	2.8	11	6.3	24
27	2.8	2.4	3.9	3.9	3	5.4	5.8	7.1	8	8	11.8	10.4	14.3	10.2	10.4	11.6	18.8	8.3	7.6	4.7	3.5	2.8	6.5	3.2	19	7.3	24
28	2.2	3.2	2.3	4.1	2.9	2.6	4.4	7.5	8.6	9.4	9.3	8.2	12.8	9.4	9.9	10.9	18.4	13	15.2	13.2	7.5	10.8	7.2	5	18	8.3	24
29	5.9	6.8	5.5	3.8	4.5	5.3	11.4	13	13.9	15.2	15.8	13.6	19.6	20.4	26	22.1	19.4	18.8	16.9	14	13.7	15.8	12	14.2	26	13.7	24
30	15.1	16.2	15.6	14.1	15.1	15.7	15.6	15	16.9	17.3	19.9	22.3	22.1	20.4	16.7	9.3	7.5	7.4	7.2	7.9	4.7	3	4.7	6	22	13.2	24
HOURLY MAX	15	16	17	14	15	16	18	22	17	21	23	22	22	21	32	27	23	24	17	14	16	16	15	16			
HOURLY AVG	5.7	5.8	5.7	5.9	5.9	7.1	9.3	9.8	11.1	12.4	13.7	14.1	14.5	15.0	15.3	13.6	13.6	12.9	10.8	9.0	7.2	6.7	6.8	6.5			

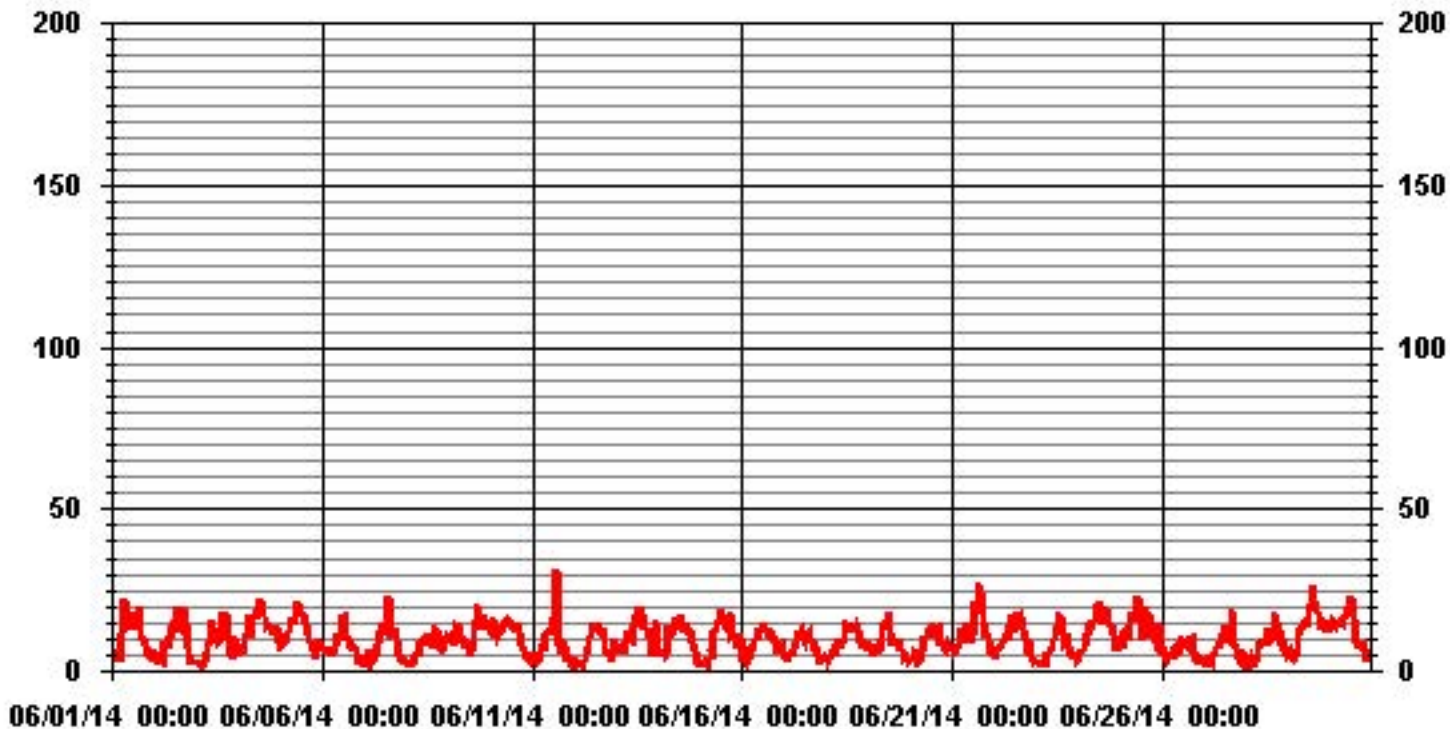
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS VALUE:	32	KPH	@ HOUR(S)	14	ON DAY(S)	11
					VAR-VARIOUS	
			OPERATIONAL TIME:			720 HRS

01 Hour Averages



LICA
WSP / WD Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	4.30	3.88	4.86	3.88	4.02	5.55	7.50	3.19	2.22	2.22	2.08	6.25	5.69	1.52	.97	2.63	60.83
< 12.0	2.36	3.05	2.08	1.25	.97	3.19	6.80	1.66	.13	.00	.41	.55	1.11	1.80	4.44	4.16	34.02
< 20.0	.27	.00	.00	.00	.00	.00	.69	.00	.00	.00	.00	.00	.00	.00	.97	1.25	3.19
< 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	6.94	6.94	6.94	5.13	5.00	8.75	15.00	4.86	2.36	2.22	2.50	6.80	6.80	3.33	6.38	8.05	

Calm : 1.94 %

Total # Operational Hours : 720

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	31	28	35	28	29	40	54	23	16	16	15	45	41	11	7	19	438
< 12.0	17	22	15	9	7	23	49	12	1		3	4	8	13	32	30	245
< 20.0	2						5								7	9	23
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	50	50	50	37	36	63	108	35	17	16	18	49	49	24	46	58	

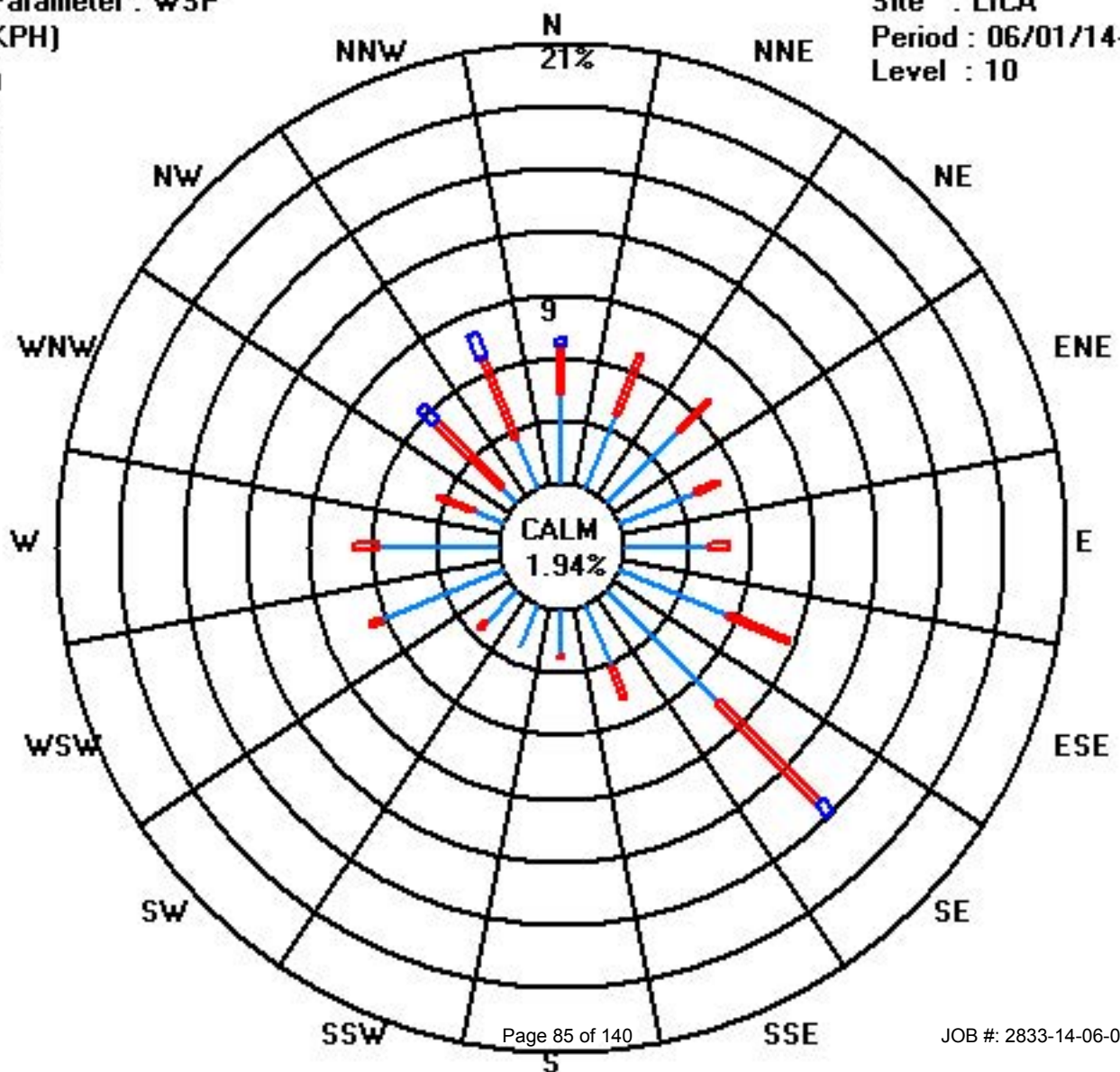
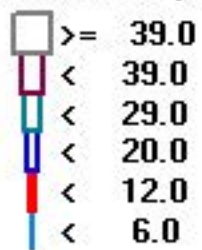
Calm : 1.94 %

Total # Operational Hours : 720

Class Limits (KPH)

Period : 06/01/14-06/30/14

Level : 10



Vector Wind Direction

Lakeland Industry & Community Association - Cold Lake South Site

JUNE 2014

WIND DIRECTION (WD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	24-HOUR	24-HOUR	
DAY	AVG.	QUADRANT	RDGS.																										
1	331	77	51	89	48	106	114	130	132	146	145	136	133	147	162	164	251	248	110	138	147	235	169	198	331	NNW	24		
2	251	187	206	235	131	184	234	245	248	254	241	229	228	251	302	26	21	36	160	157	136	122	61	87	302	WNW	24		
3	73	94	92	111	93	50	105	101	111	116	114	130	91	206	147	150	162	186	153	175	169	335	21	96	335	NNW	24		
4	186	269	304	301	306	329	331	323	310	326	324	328	322	334	338	352	352	355	27	50	48	39	20	4	355	N	24		
5	318	329	360	353	339	321	324	331	325	327	333	332	337	331	334	336	357	346	327	32	213	251	280	271	360	N	24		
6	265	270	278	281	265	256	256	275	254	279	285	327	312	27	24	28	21	340	135	205	153	168	213	135	340	NNW	24		
7	112	218	115	81	130	131	5	35	309	293	232	242	21	17	5	19	356	342	330	14	345	90	240	221	356	N	24		
8	195	100	239	266	225	273	45	6	17	69	113	152	103	101	215	106	135	135	145	144	144	143	141	139	273	W	24		
9	142	138	149	128	109	124	123	117	114	95	90	77	40	319	280	310	306	288	269	263	277	282	288	289	319	NW	24		
10	286	304	301	301	296	306	321	334	10	19	22	16	37	29	58	36	20	23	350	338	280	233	259	244	350	N	24		
11	238	216	234	202	213	241	255	290	258	282	263	259	247	248	319	164	189	238	243	260	198	229	137	158	319	NW	24		
12	165	30	156	147	231	330	360	247	269	240	214	186	197	182	176	209	199	152	154	141	119	68	74	107	360	N	24		
13	107	94	62	69	57	52	53	32	47	67	111	125	85	38	51	31	19	30	58	89	144	178	88	110	178	S	24		
14	91	126	131	137	116	110	138	130	123	113	130	107	102	115	134	112	140	135	136	121	119	145	177	138	177	S	24		
15	137	5	79	159	113	137	131	108	95	114	105	109	129	115	127	134	110	107	136	135	125	137	131	140	159	SSE	24		
16	117	8	36	56	56	42	355	346	359	10	24	69	71	84	83	76	52	59	52	76	60	72	86	83	359	N	24		
17	36	41	25	130	150	79	107	108	111	142	131	111	78	120	137	48	7	24	34	40	76	45	104	129	150	SSE	24		
18	128	106	101	125	129	127	71	92	106	47	64	123	126	115	104	103	122	111	98	70	39	39	44	56	129	SE	24		
19	79	78	54	35	38	66	44	29	50	66	72	46	101	123	58	51	87	45	24	30	18	61	38	71	123	ESE	24		
20	12	355	21	3	271	280	333	357	25	345	20	33	17	26	36	50	46	353	5	10	3	7	6	5	357	N	24		
21	4	5	349	347	354	357	344	347	345	308	317	328	10	313	311	316	313	318	315	295	284	277	269	250	357	N	24		
22	250	249	255	259	262	262	265	282	297	317	327	339	6	343	355	353	2	19	43	88	2	355	6	266	355	N	24		
23	265	194	274	119	259	278	15	40	39	328	74	27	73	62	94	103	269	328	128	138	134	117	126	131	328	NNW	24		
24	134	141	105	132	134	138	141	136	143	135	136	139	141	151	160	155	146	141	143	142	138	135	130	129	160	SSE	24		
25	131	132	132	127	115	118	133	136	136	136	143	160	175	226	149	138	138	147	141	150	142	118	135	156	226	SW	24		
26	139	144	143	153	145	104	141	145	154	27	40	85	88	60	11	239	270	258	358	156	276	244	162	184	358	N	24		
27	198	238	238	244	233	257	262	252	258	269	244	255	283	13	344	296	356	13	263	252	230	180	88	177	356	N	24		
28	292	195	251	143	83	249	261	266	298	285	328	235	35	173	240	239	336	341	313	313	279	309	296	240	341	NNW	24		
29	260	261	276	258	259	310	337	335	332	346	6	14	5	356	344	342	340	342	337	328	343	338	318	311	356	N	24		
30	317	315	322	326	325	318	318	318	318	317	323	339	352	358	28	38	23	20	61	151	250	259	264	333	358	N	24		

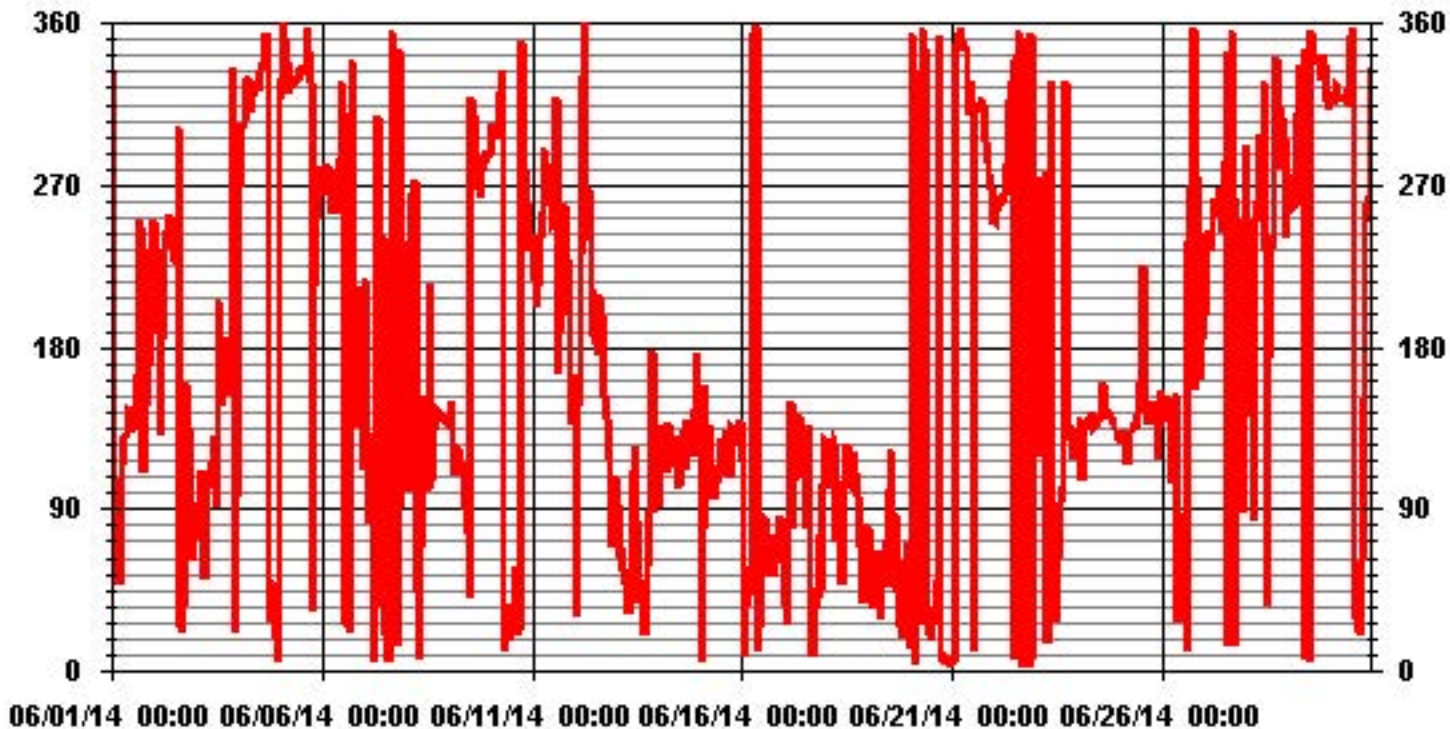
STATUS FLAG CODES

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:	720	HRS
STANDARD DEVIATION:	107.21		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	30	DEG

01 Hour Averages



— LICA WDR DEG

Standard Deviation Wind Direction

Lakeland Industry & Community Association - Cold Lake South Site

JUNE 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																									
1		34	35	26	26	68	22	22	21	23	26	32	38	42	26	37	36	37	34	22	12	26	47	29	45
2		43	35	59	70	45	37	36	29	44	43	45	40	36	32	36	22	43	25	37	42	29	54	32	51
3		59	33	34	38	60	38	41	41	34	28	28	43	54	45	24	22	29	36	26	45	48	43	53	41
4		52	25	36	23	22	17	18	22	19	25	23	25	26	27	23	28	27	20	22	19	21	21	20	26
5		18	16	21	18	16	15	16	16	21	18	19	18	16	18	21	20	30	22	35	44	27	57	19	18
6		17	18	19	19	18	23	25	36	32	28	29	29	21	35	50	43	64	63	29	39	55	54	45	51
7		89	28	75	41	52	64	59	63	61	39	38	34	30	27	25	25	27	27	22	21	39	44	53	44
8		38	45	49	63	59	47	41	61	60	49	61	70	35	53	58	66	30	20	26	12	10	11	12	13
9		13	13	24	21	22	22	24	46	26	22	22	28	50	28	26	23	20	20	21	20	20	21	21	22
10		21	18	19	19	19	17	16	17	19	21	23	21	26	32	30	24	30	24	20	19	41	42	45	53
11		42	36	77	54	53	24	26	28	36	34	33	32	32	30	25	44	36	30	29	19	27	46	45	36
12		58	66	30	47	28	41	45	47	42	40	58	52	47	59	45	45	46	36	27	16	39	23	27	29
13		23	26	18	22	24	21	18	24	25	28	27	24	41	23	27	22	22	24	22	20	29	55	35	24
14		26	22	14	14	52	42	14	23	29	28	30	31	48	39	50	42	38	29	25	24	19	37	66	65
15		61	57	64	62	64	34	26	38	43	31	28	36	25	35	36	38	33	24	16	18	19	25	31	14
16		42	56	70	80	61	26	20	19	20	19	22	22	23	22	23	22	19	20	20	22	19	19	20	23
17		23	25	44	44	52	26	23	25	30	22	25	38	37	28	24	34	20	25	25	29	29	37	37	12
18		11	21	13	13	19	19	22	24	34	42	30	26	22	24	23	24	19	23	22	21	19	23	23	26
19		22	20	20	21	21	19	23	21	25	20	21	23	23	26	24	21	24	21	28	23	41	38	27	42
20		54	38	32	27	43	31	22	30	20	22	23	24	33	26	23	23	21	21	20	21	17	17	17	17
21		17	18	18	20	18	21	19	30	24	21	17	34	25	27	19	16	19	17	17	21	23	25	30	18
22		16	33	27	13	13	14	21	22	21	19	21	20	23	23	23	24	29	27	25	28	52	19	69	43
23		64	59	54	57	24	27	50	40	60	66	51	35	37	23	27	36	31	68	38	21	19	22	19	48
24		22	14	20	15	13	14	17	20	23	22	20	19	17	30	37	32	24	17	18	16	12	13	16	19
25		16	16	16	19	23	24	19	18	20	19	21	33	34	35	25	21	15	26	21	31	17	21	14	31
26		14	38	32	29	49	64	47	16	53	59	40	45	39	41	43	44	63	30	47	21	45	16	38	47
27		59	36	31	45	57	34	27	40	52	43	64	44	38	46	47	49	31	39	38	14	25	29	43	47
28		68	45	54	52	58	41	62	37	38	43	51	57	53	40	48	29	26	18	17	17	19	31	21	27
29		12	10	15	13	9	22	19	18	22	21	24	26	28	21	19	19	18	17	16	16	18	16	14	15
30		15	15	16	16	15	14	17	18	20	18	20	19	22	21	28	27	27	29	34	39	36	59	45	39

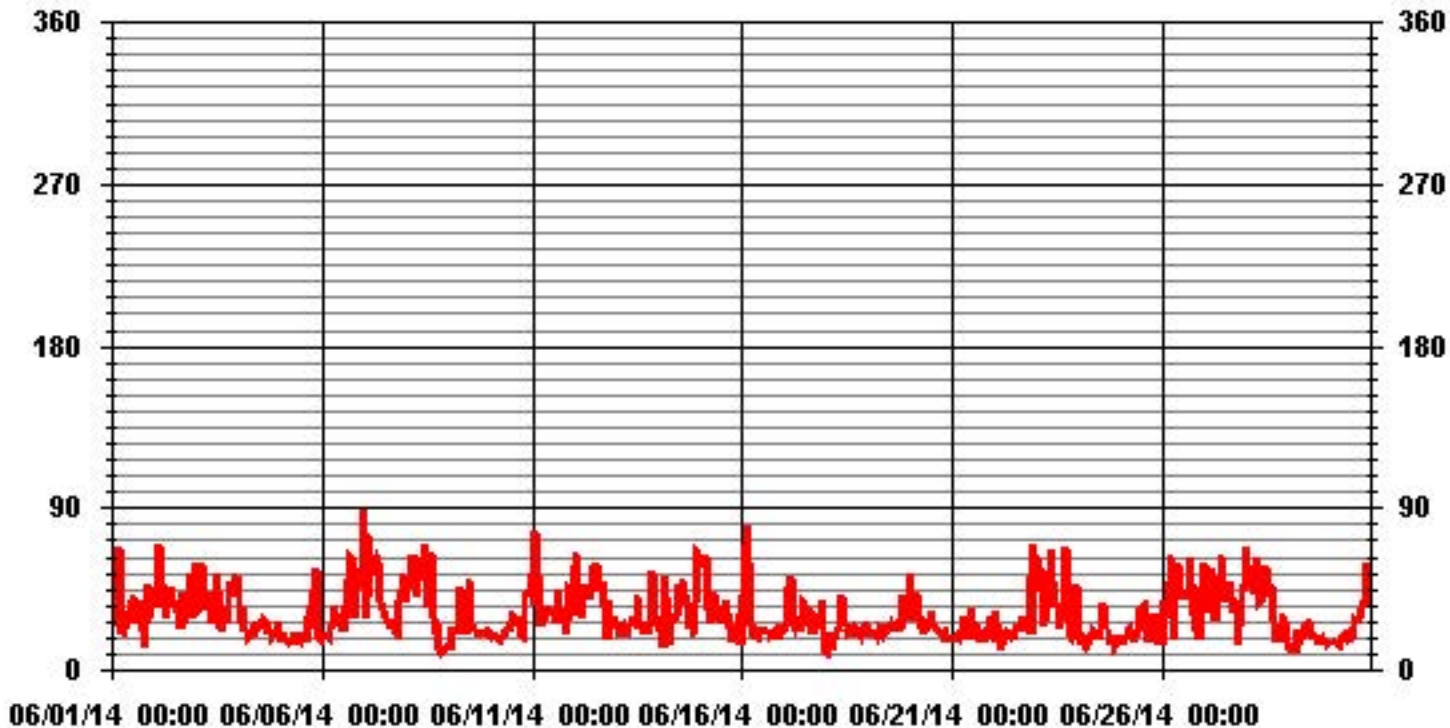
STATUS FLAG CODES

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: 720 HRS

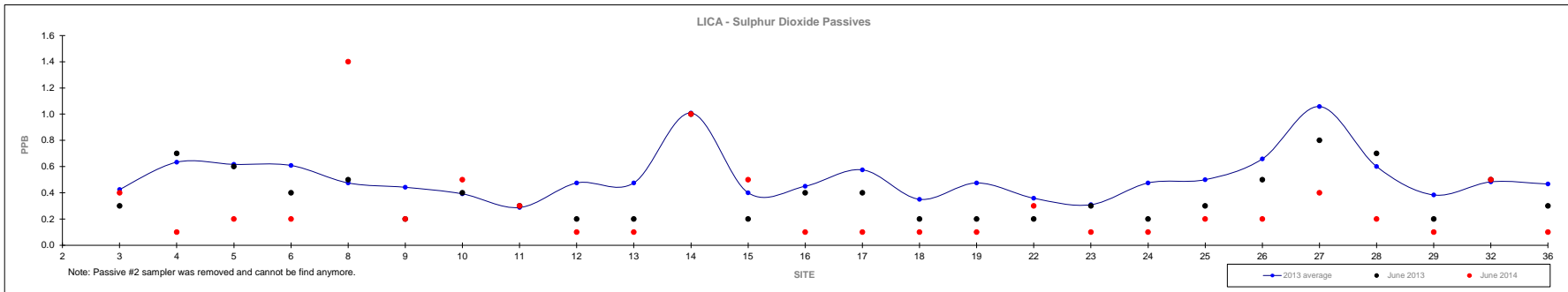
01 Hour Averages



Non-Continuous Monitoring

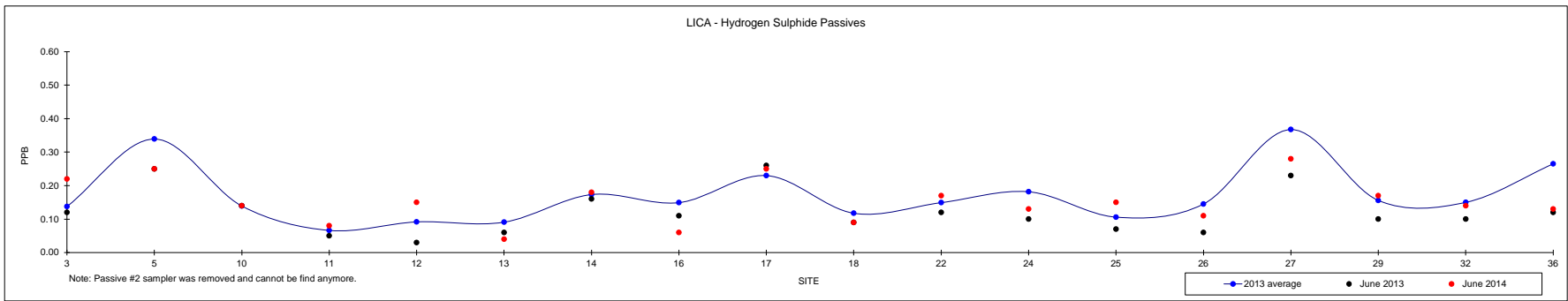
Passive Summary Results for June 2014 Lakeland Industry & Community Association

	Sulphur Dioxide ppb																																June 2014	Site
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	25	26	27	28	29	32	36	Reading						
Mean	NA	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	0.3	-					
Minimum	NA	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	<0.1	VAR					
Maximum	NA	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	1.4	#8					



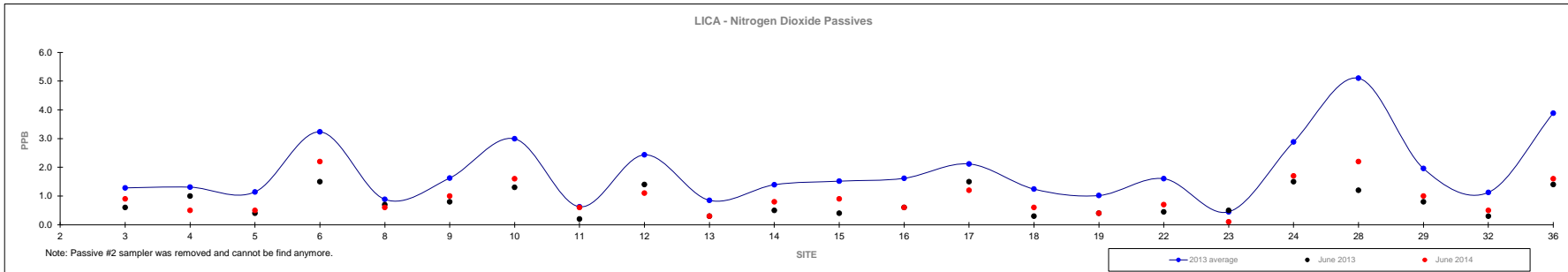
Passive Summary Results for June 2014 Lakeland Industry & Community Association

	Hydrogen Sulphide ppb																June 2014			
	3	5	10	11	12	13	14	2013 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	0.15	-
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	#13
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	0.28	#27



Passive Summary Results for June 2014 Lakeland Industry & Community Association

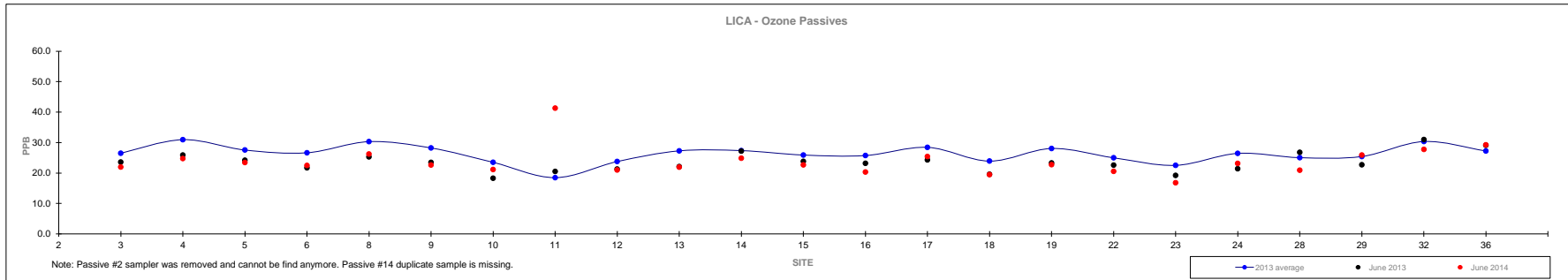
	Nitrogen Dioxide ppb																												June 2014	
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	28	29	32	36	Reading	Site				
Mean	NA	1.3	1.3	1.1	3.2	0.9	1.6	3.0	0.6	2.4	0.9	1.4	1.5	1.6	2.1	1.2	1.0	1.6	0.5	2.9	5.1	2.0	1.1	3.9	0.9	-				
Minimum	NA	0.2	0.2	0.1	1.5	0.1	0.3	0.8	0.1	0.6	0.1	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	#23				
Maximum	NA	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	2.2	#6, #28				



Passive Summary Results for June 2014

Lakeland Industry & Community Association

	Ozone ppb																												Reading	June 2014	Site
	2	3	4	5	6	8	9	10	11	12	2013 13	14	15	16	17	18	19	22	23	24	28	29	32	36	23.77	-					
Mean	NA	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							
Minimum	NA	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	16.80	#23					
Maximum	NA	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	41.30	#11					



Calibration Reports

Sulphur Dioxide

Maxxam Thermo 43i SO2 Analyzer Calibration

Date: 11-Jun-14
Company: LICA
Start/End Time (mst): 8:30/13:17
Station Name/Location: Cold Lake South
Performed by: Kevin Hope
Calibration Purpose: Monthly Calibration
Converter Make & Model: NA
Converter Serial #: NA
Application H₂S/TRS/SO₂: SO₂
Cal Gas Expiry Date: 4-Feb-18

Analyzer:
Serial Number: AMU1771
Last Calibration Date: 12-May-14
Previous Cal High Point C.F.: 0.996
Range ppb: 500
As Found C.F.: 1.021
New C.F.: 1.006

	As found:	As left:
BKG:	7.2	7.0
COEF:	1.107	1.119
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: -632.3	PMT: -632.3
	FLASH: 715	FLASH: 715
	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 23.8	24.0 23.8
INTERNAL:	28.4	INTERNAL: 28.4
CHAMBER:	45	CHAMBER: 45
PERM OVEN GAS:	45	PERM OVEN GAS: 45
PERM OVEN HEATER:	44.20	PERM OVEN HEATER: 44.20
PRESSURE:	679.5	PRESSURE: 679.5
SAMPLE FLOW:	0.450	SAMPLE FLOW: 0.450
LAMP INTENSITY:	75	LAMP INTENSITY: 75
CONVERTER:	NA	CONVERTER: NA
CONVERTER SET:	NA	CONVERTER SET: NA
Internal Span:	383.5	Internal Span: 392.6

Calibrator:		Calibrator Flow Targets:			
Flow Meter ID's:	NA	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
Make & Model:	Enviroconics 6100	zero	5000	0	5000
Serial #:	4760	high	5000	39	5039
Cal Gas Cylinder I.D. #:	BLM000711	mid	5000	19	5019
Cal Gas Conc. (ppm):	48.2	low	5000	10	5010

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	4995	38.79	5034	371.4	364.0	1.021
adjusted high	4995	38.79	5034	371.4	372.0	0.999
mid	4996	18.96	5015	182.2	181.7	1.004
low	4996	9.98	5006	96.1	94.7	1.016
calibrator zero	4996	0.00	4996	0	0.1	NA
Average C.F. =						1.006

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	> or = 0.995	PASS
Slope =	0.997	0.85-1.15	PASS
b (Intercept as % of full scale) =	0.14%	± 3% F.S.	PASS
% change in C.F. from last cal	-2.48%	± 15%	PASS

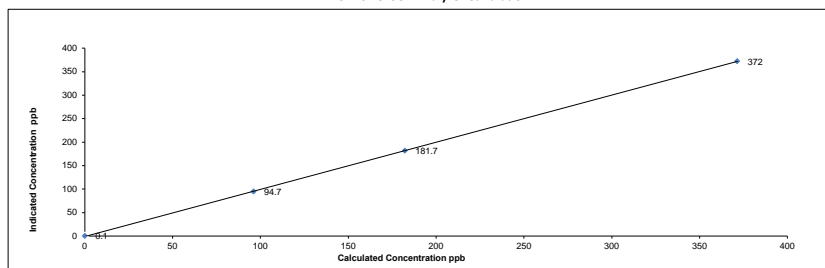
Converter Efficiency Check for H₂S/TRS application:

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

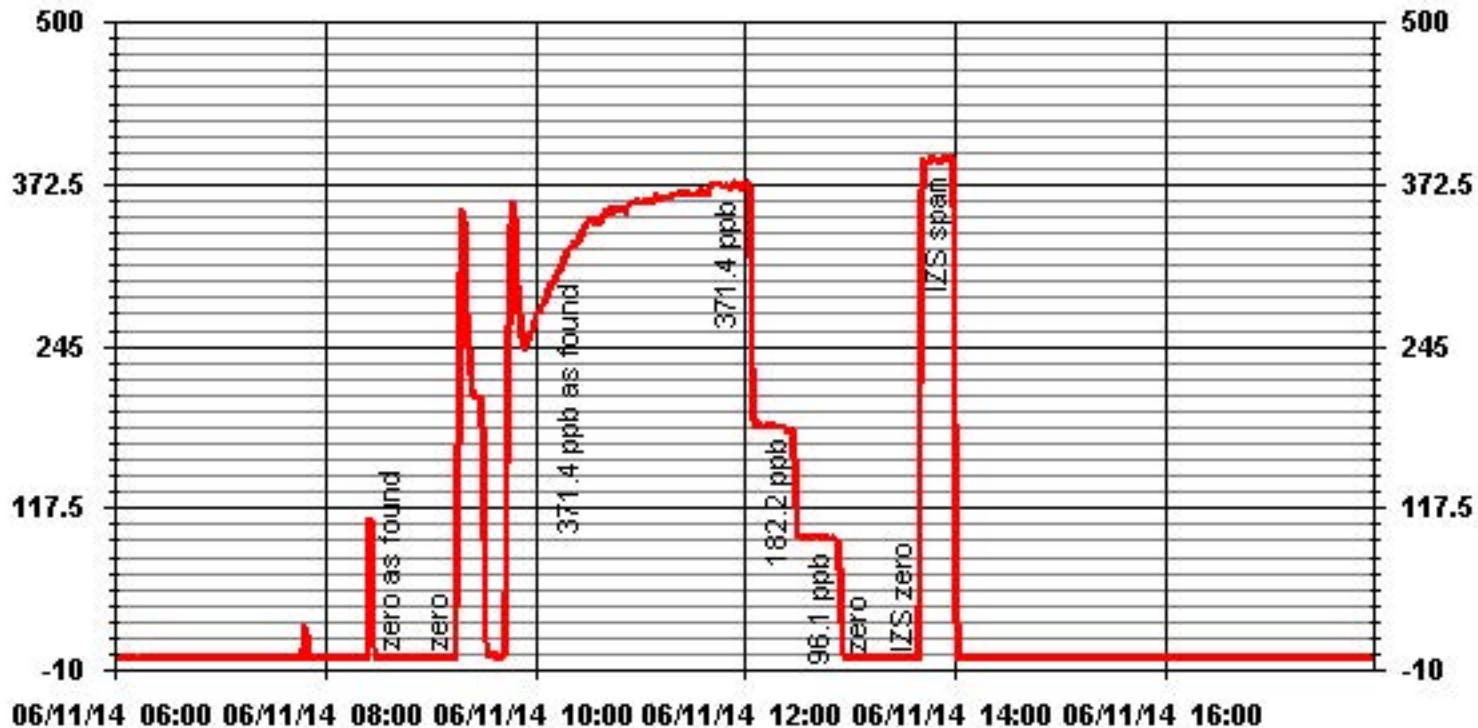
SO₂ High Point gas concentration: na Time gas run (mst): na
 Zero corrected analyzer response: na

Comments:
 Sample filter changed.
 Analyzer response too slow (most likely due to calibration system problem). Calibration rejected - to be repeated.

Thermo 43i SO2 Analyzer Calibration



01 Minute Averages



Maxxam Thermo 43i SO2 Analyzer Calibration

Date: 13-Jun-14
Company: LICA
Start/End Time (mst): 8:39/12:18
Calibration Purpose: peatedMonthly Calibrati
Station Name/Location: Cold Lake South
Converter Make & Model: NA
Performed by: Kevin Hope
Converter Serial #: NA
Application H₂S/TRS/SO₂: SO2
Cal Gas Expiry Date: 4-Feb-14

Analyzer:
Serial Number: AMU1771
Range ppb: 500
Last Calibration Date: 11-Jun-14
As Found C.F.: 0.966
Previous Cal High Point C.F.: 0.999
New C.F.: 1.001

	As found:	As left:
BKG:	7.0	6.8
COEF:	1.119	1.066
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 24.0
	-3.3 -3.2	-3.3 -3.2
INTERFACE BOARD:	PMT: -632	PMT: -632.3
	FLASH: 715	FLASH: 716
	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 23.8	24.0 23.8
INTERNAL:	27.5	INTERNAL: 27.5
CHAMBER:	45.2	CHAMBER: 45.2
PERM OVEN GAS:	44.99	PERM OVEN GAS: 44.99
PERM OVEN HEATER:	44.19	PERM OVEN HEATER: 44.19
PRESSURE:	678.6	PRESSURE: 678.6
SAMPLE FLOW:	0.449	SAMPLE FLOW: 0.449
LAMP INTENSITY:	76	LAMP INTENSITY: 76
CONVERTER:	NA	CONVERTER: NA
CONVERTER SET:	NA	CONVERTER SET: NA
Internal Span:	392.6	Internal Span: 392.6

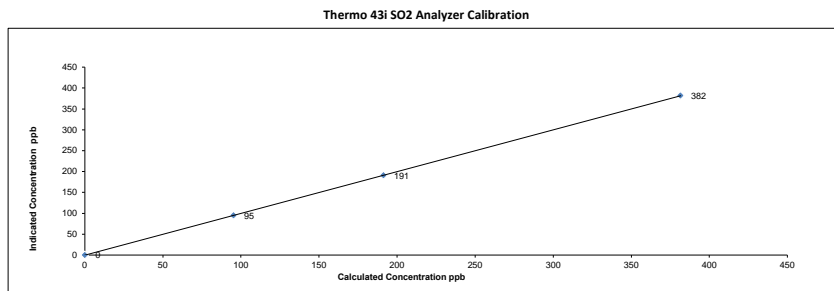
Calibrator:	Calibrator Flow Targets:
Flow Meter ID's: NA	point diluent (cc/min) cal gas (cc/min) total (cc/min)
Make & Model: Environics 6100	zero 5000 0 5000
Serial #: 4760	high 5000 40 5040
Cal Gas Cylinder I.D. #: BML000711	mid 5000 20 5020
Cal Gas Conc. (ppm): 48.2	low 5000 11 5011

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4996	0.0	4996	0	0.1	NA
adjusted zero	4996	0.0	4996	0	0.0	NA
as found high	4995	39.85	5035	381.5	395.0	0.966
adjusted high	4995	39.85	5035	381.5	382.0	0.999
mid	4995	19.90	5015	191.3	191.0	1.001
low	4995	9.90	5005	95.3	95.0	1.004
calibrator zero	4995	0.00	4995	0	0.0	NA
Average C.F.=						1.001

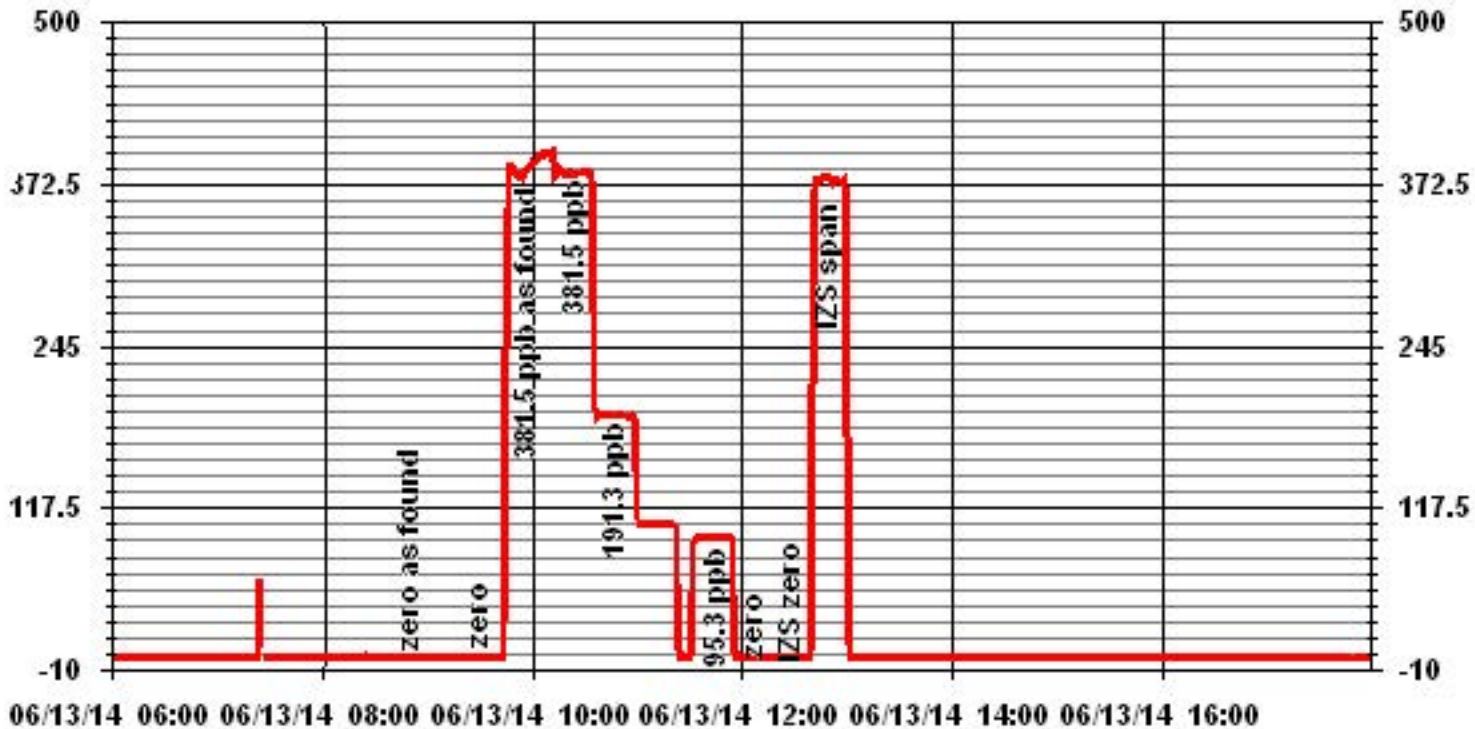
Linear Regression/Calibration Results:
 Correlation Coefficient = 1.000 > or = 0.995 PASS
 Slope = 0.998 0.85-1.15 PASS
 b (Intercept as % of full scale) = 0.06% ± 3% F.S. PASS
 % change in C.F. from last cal = 3.32% ± 15% PASS

Converter Efficiency Check for H₂S/TRS application:
****run converter efficiency test immediately following zero adjust****
 SO₂ High Point gas concentration: na Time gas run (mst): na
 Zero corrected analyzer response: na

Comments:
 Monthly Calibration repeated due to yesterday's failing.



01 Minute Averages



Total Reduced Sulphur

Maxxam Thermo 450i TRS Analyzer Calibration

Date: 8-Jun-14
Company: LICA
Station Name/Location: Cold Lake South
Performed by: Chris Wesson
Application H₂S/TRS/SO₂: TRS
Start/End Time (mst): 17:20 - 18:19
Calibration Purpose: Post-Repair (1-point)
Converter Make & Model: Internal
Converter Serial #: NA
Cal Gas Expiry Date: 8-Jul-16

Analyzer:		Serial Number: 812728560		Range ppb: 100	
Last Calibration Date: N/A		As Found C.F.: N/A		As Found C.F.: NA	
Previous Cal High Point C.F.: N/A		New C.F.: NA			
As found:					
MOTHERBOARD:	BKG:	12.5		BKG:	13.3
	COEF:	0.918		COEF:	0.960
	3.3	3.3		3.3	3.3
	5.0	5.0		5.0	5.0
	15.0	15.0		15.0	15.0
INTERFACE BOARD:	24.0	23.9		24.0	23.0
	-3.3	-3.2		-3.3	-3.2
	PMT:	-650.8		PMT:	-650.8
	FLASH:	742		FLASH:	743
	3.3	3.2		3.3	3.2
5.0	5.0		5.0	5.0	
15.0	14.7		15.0	14.7	
-15.0	-15.0		-15.0	-15.0	
24.0	23.5		24.0	23.5	
INTERNAL:	31.4		INTERNAL:	31.2	
CHAMBER:	45.1		CHAMBER:	45.0	
CONVERTER TEMP:	810		CONVERTER TEMP:	810	
CONVERTER SET:	810		CONVERTER SET:	810	
PERM OVEN GAS:	45.00		PERM OVEN GAS:	45.0	
PERM OVEN HTR:	44.39		PERM OVEN HTR:	44.39	
PRESSURE:	656		PRESSURE:	656	
SAMPLE FLOW:	511		SAMPLE FLOW:	510	
LAMP INTENSITY:	92		LAMP INTENSITY:	92	
Internal Span:	36.85		Internal Span:	36.85	

Calibrator:		Calibrator Flow Targets:			
Flow Meter ID's:	NA	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
Make & Model:	EnviroNics 2000	zero	5000	0	5000
Serial #:	1991	high	4960	40	5000
Cal Gas Cylinder I.D. #:	BAL4853	mid	4960	20	5000
Cal Gas Conc. (ppm):	10.4	low	4990	11	5001

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero						
adjusted zero	4989	0.0	4989	0	0.0	NA
as found high		na				
adjusted high	4979	37.37	5016	77.8	77.8	1.000
mid						
low						
calibrator zero						

Average C.F. =

Linear Regression/Calibration Results:

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

Converter Efficiency Check for H₂S/TRS application:

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

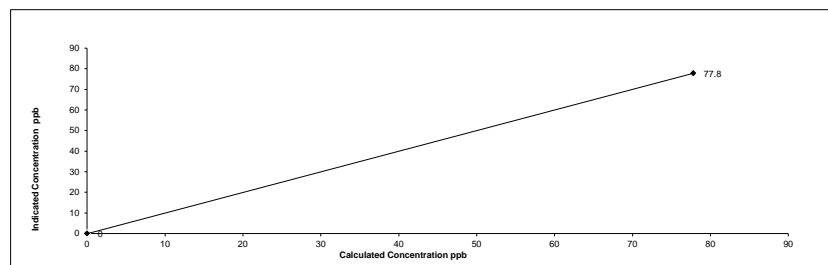
SO₂ High Point gas concentration: NA Time gas run (mst): NA

Zero corrected analyzer response: NA

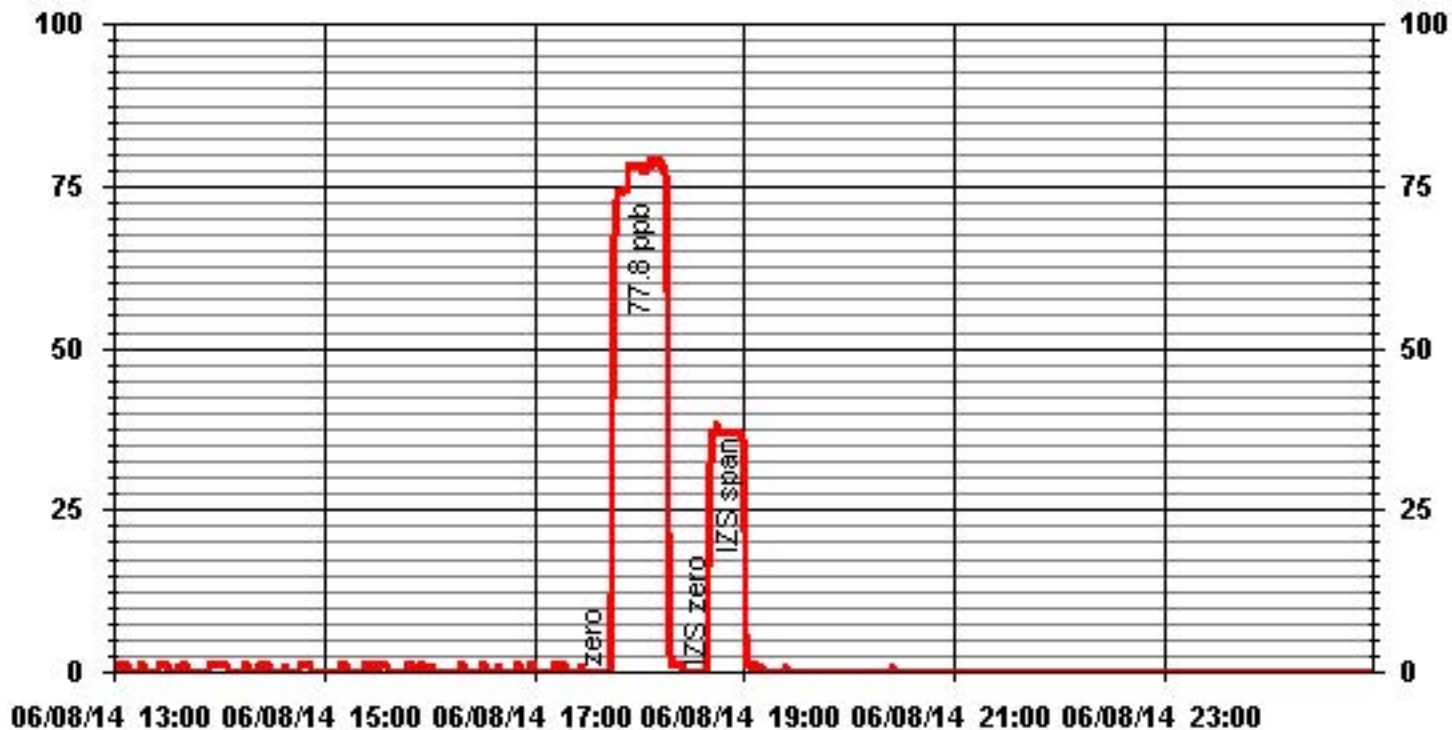
Comments:

Post-repair following pump replacement.
1-point only (and no scrubber challenge) due to time constraints.

Thermo 450i TRS Analyzer Calibration



01 Minute Averages



Maxxam Thermo 450i TRS Analyzer Calibration

Date: 9-Jun-14
 Company: LICA
 Station Name/Location: Cold Lake South
 Performed by: Kevin Hope
 Application H₂S/TRS/SO₂: TRS

Start/End Time (mst): 11:49/15:07
 Calibration Purpose: Monthly Calibration
 Converter Make & Model: Thermo CND-101
 Converter Serial #: 501
 Cal Gas Expiry Date: 25-Dec-15

Analyzer:		
Serial Number:	812728560	Range ppb: 100
Last Calibration Date:	8-Jun-14	As Found C.F.: 1.015
Previous Cal High Point C.F.:	1.000	New C.F.: 1.011
	As found:	As left:
MOTHERBOARD:	BKG: 13.3	BKG: 13.6
	COEF: 0.960	COEF: 0.973
	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: -650.1	PMT: -650.1
	FLASH: 740	FLASH: 740
	3.3 3.2	3.3 3.2
	5.0 5.0	5.0 5.0
	15.0 14.6	15.0 14.6
	-15.0 -15.0	-15.0 -15.0
	24.0 23.5	24.0 23.5
	INTERNAL: 32.2	INTERNAL: 32.2
	CHAMBER: 44.9	CHAMBER: 44.9
	CONVERTER TEMP: 323.6	CONVERTER TEMP: 323.6
	CONVERTER SET: 325	CONVERTER SET: 325
	PERM OVEN GAS: 44.99	PERM OVEN GAS: 44.99
	PERM OVEN HTR: 44.37	PERM OVEN HTR: 44.37
	PRESSURE: 648.0	PRESSURE: 648.0
	SAMPLE FLOW: 0.504	SAMPLE FLOW: 0.504
	LAMP INTENSITY: 91	LAMP INTENSITY: 91
	Internal Span: 36.85	Internal Span: 38.99

Calibrator:		Calibrator Flow Targets:			
Flow Meter ID's:	NA	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
Make & Model:	API 700	zero	5000	0	5000
Serial #:	830	high	5000	39	5039
Cal Gas Cylinder I.D. #:	BLM005049	mid	5000	19	5019
Cal Gas Conc. (ppm):	10.1	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	-0.1	NA
adjusted zero	5000	0.0	5000	0	0.0	NA
as found high	5000	39.00	5039	78.2	77.0	1.015
adjusted high	5000	39.00	5039	78.2	78.5	0.996
mid	5000	19.00	5019	38.2	37.8	1.012
low	5000	11.00	5011	22.2	21.7	1.024
calibrator zero	5000	0.00	5000	0	0.1	NA
Average C.F. =						1.011

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	> or = 0.995	PASS
Slope =	0.994	0.85-1.15	PASS
b (Intercept as % of full scale) =	0.34%	± 3% F.S.	PASS
% change in C.F. from last cal	-1.52%	± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

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

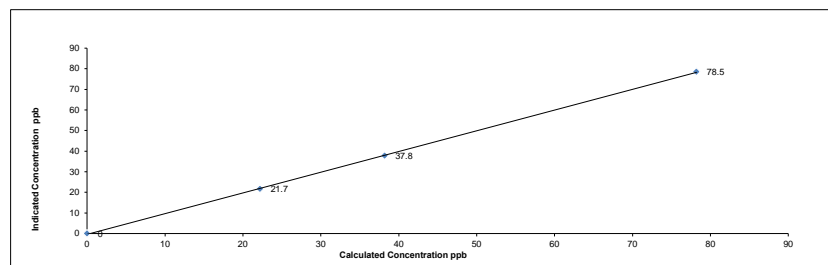
SO₂ High Point gas concentration: na Time gas run (mst): na

Zero corrected analyzer response: na

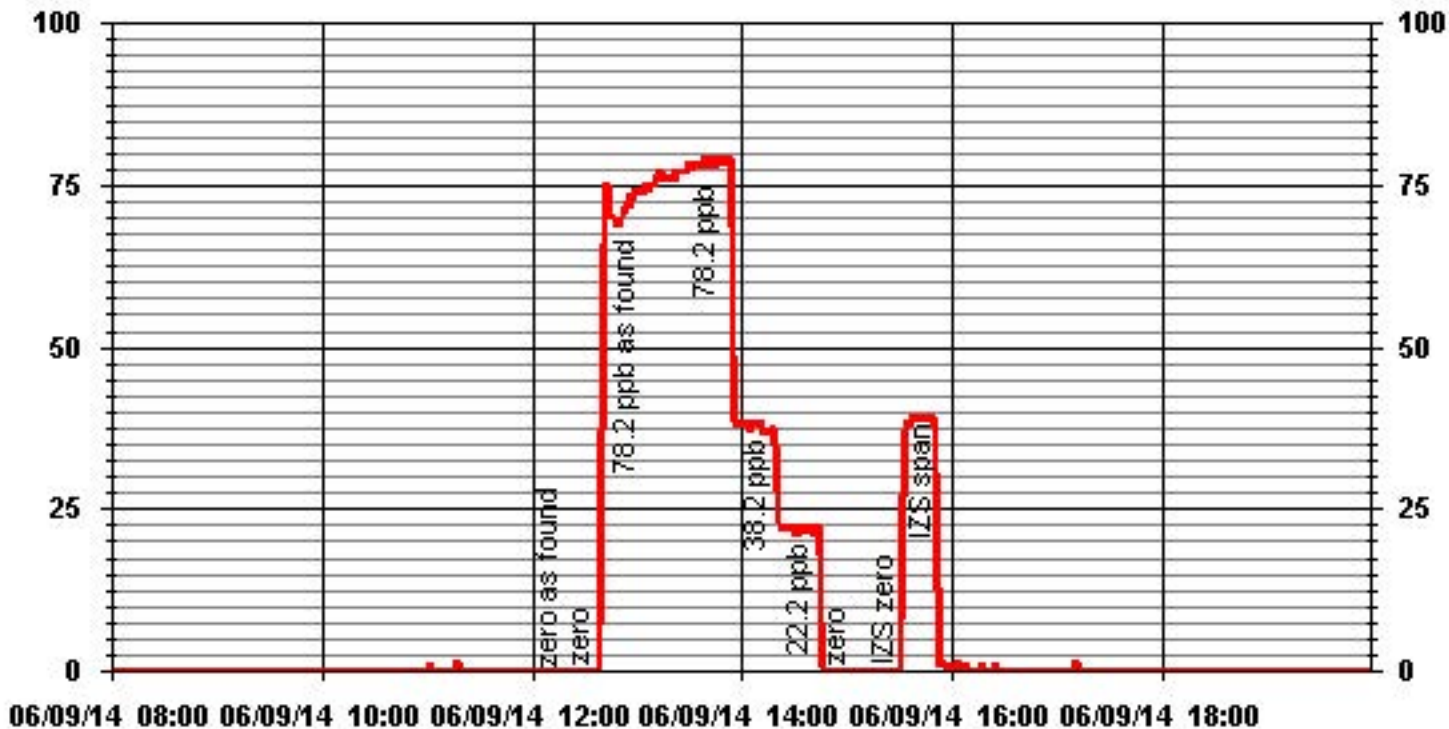
Comments:

Filter changed

Thermo 450i TRS Analyzer Calibration



01 Minute Averages



Total Hydrocarbons

Maxxam Thermo 51C THC Analyzer Calibration

Date: 9-Jun-14
Company: LICA
Station Name/Location: Cold Lake South
Performed by: Kevin Hope
Start Time (mst): 8:45
End Time (mst): 11:28
Calibration Purpose: Monthly Calibration
Cal Gas Expiry Date: 26-Mar-17

Analyzer:
Serial Number: 51CLT-77021-384
Last Calibration Date: 26-May-14
Previous Cal High Point C.F.: 1.016
Range ppm: 50
As Found C.F.: 0.962
New C.F.: 1.011

	As found:	As left:
H ₂ cylinder (psi):	1500	1500
H ₂ cylinder reg set (psi):	35	35
Span Cylinder (psi):	600	600
Span Cylinder Reg Set (psi):	20	20
Zero Air Gen Pressure:	35	35
measurement alarms:	none	none
service alarms:	none	none
FID status:	cnt: 4935	cnt: 4935
	rng: 1	rng: 1
	try: 3	try: 3
	flm: 208.1	flm: 208.1
	det: 126.1	det: 126.1
Oven Readings:	Flame: 208	Flame: 208
	Filter: 125	Filter: 125
	Base: 126	Base: 126
	Pump: 6.90	Pump: 6.90
Voltages:	+5 4.9	+5 4.9
	+15 14.8	+15 14.8
	-15 -14.9	-15 -14.9
	Internal Span: 30.68	Internal Span: 30.52

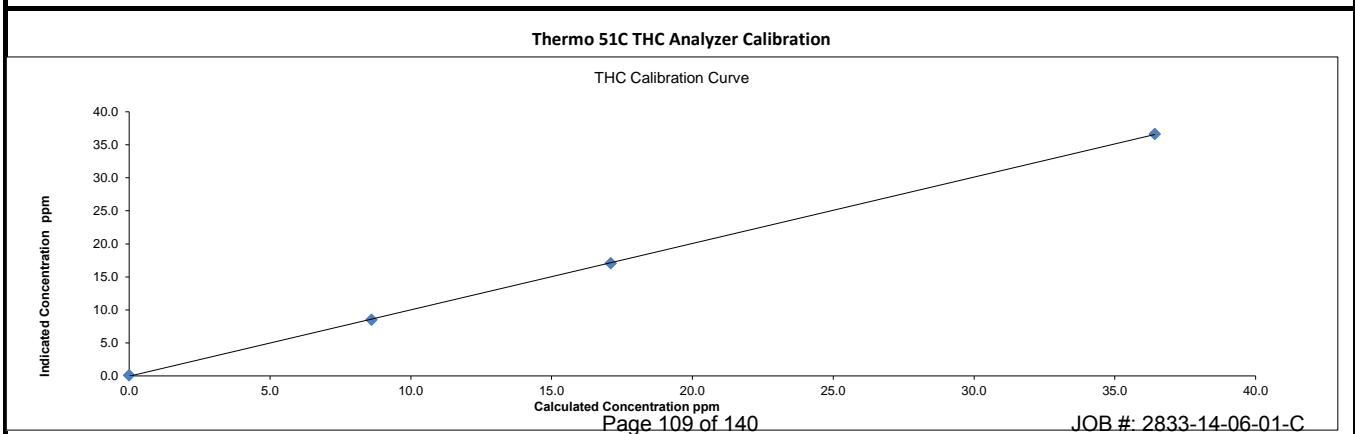
Calibrator:	Flow Meter ID's: NA	Calibrator Flow Targets:			
	Make & Model: API 700	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
	Serial #: 830	zero	2000	0	2000
	Cal Gas Cylinder I.D. #: LL33674	high	2000	65	2065
	CH ₄ /C ₃ H ₈ Cylinder Conc. (ppm): 601.4 202.0	mid	2000	30	2030
	CH ₄ as propane/total CH ₄ equivalents (ppm): 555.5 1156.9	low	2000	15	2015

Point	Calibrator Flow Rates (cc/min)			Calculated Concentration:	Indicated Concentration:	Correction Factors:
	Diluent	Cal Gas	Total	(ppm)	(ppm)	
as found zero	2000	0.00	2000	0	2.10	NA
adjusted zero	2000	0.00	2000	0	0.10	NA
as found high	2000	65.00	2065	36.42	37.95	0.962
adjusted high	2000	65.00	2065	36.42	36.60	0.998
mid	2000	30.00	2030	17.10	17.03	1.010
low	2000	15.00	2015	8.61	8.50	1.025
calibrator zero	2000	0.00	2000	0	0.10	NA
Average C.F.=						1.011

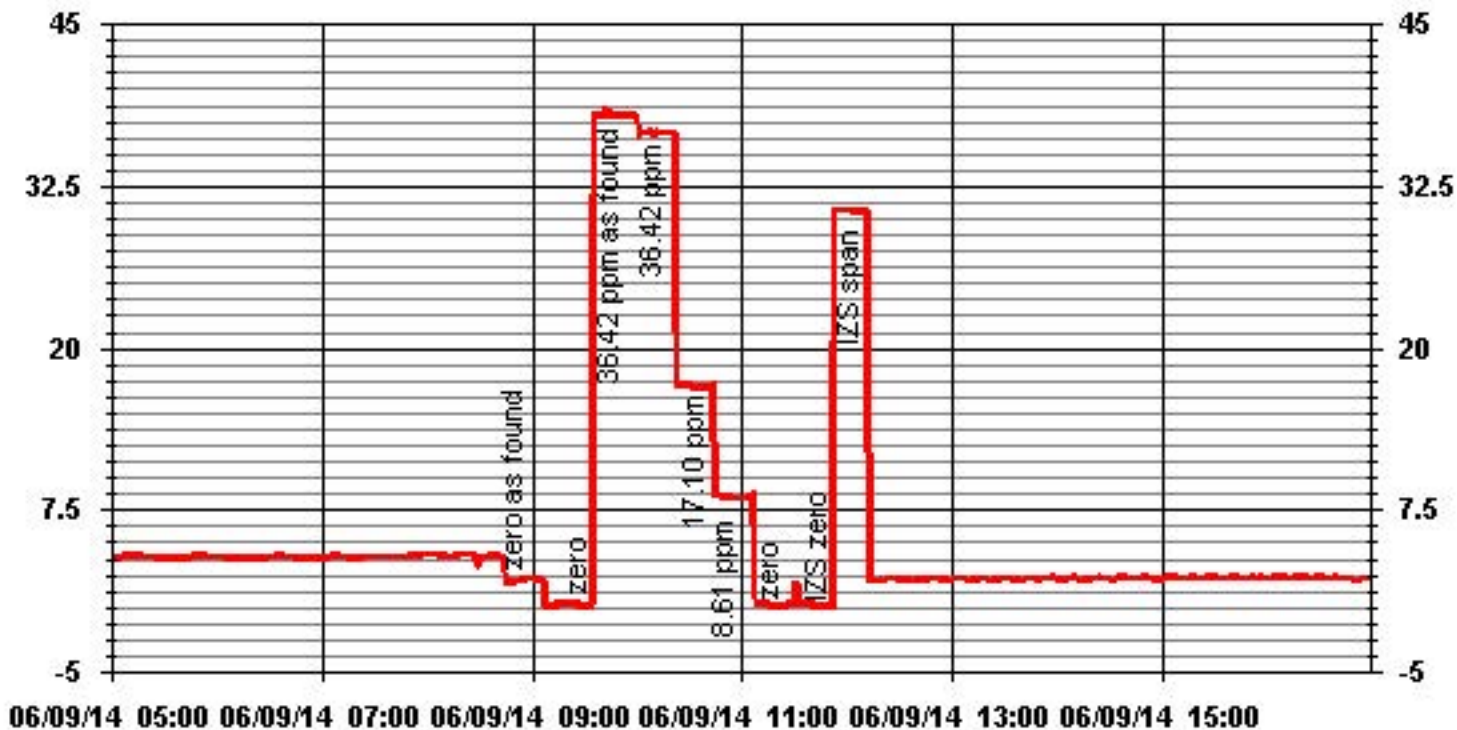
Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	Pass/Fail ?
Slope =	1.004	> or = 0.995	PASS
b (Intercept as % of full scale) =	-0.072%	± 3% F.S.	PASS
% change in C.F. from last cal	5.31%	± 15%	PASS

Comments:
Filter changed.



01 Minute Averages



Maxxam Thermo 51C THC Analyzer Calibration

Date: 11-Jun-14
 Company: LICA
 Station Name/Location: Cold Lake South
 Performed by: Kevin Hope

Start Time (mst): 8:47
 End Time (mst): 9:30
 Calibration Purpose: As Finds
 Cal Gas Expiry Date: 26-Mar-17

Analyzer: 15CLT-77021-384 Range ppm: 50
 Serial Number: 9-Jun-14 As Found C.F.: 0.951
 Last Calibration Date: 0.998 New C.F.: #VALUE!
 Previous Cal High Point C.F.:

	As found:	As left:
H ₂ cylinder (psi):	<u>1400</u>	<u>1400</u>
H ₂ cylinder reg set (psi):	<u>35</u>	<u>21</u>
Span Cylinder (psi):	<u>550</u>	<u>550</u>
Span Cylinder Reg Set (psi):	<u>20</u>	<u>20</u>
Zero Air Gen Pressure:	<u>35</u>	<u>35</u>
measurement alarms:	<u>none</u>	<u>none</u>
service alarms:	<u>none</u>	<u>none</u>
FID status:	cnt: <u>5909</u>	cnt: <u>5909</u>
	rng: <u>1</u>	rng: <u>1</u>
	try: <u>3</u>	try: <u>3</u>
	flm: <u>212.3</u>	flm: <u>212.3</u>
	det: <u>125.5</u>	det: <u>125.5</u>
Oven Readings:	Flame: <u>212</u>	Flame: <u>212</u>
	Filter: <u>125</u>	Filter: <u>125</u>
	Base: <u>125</u>	Base: <u>125</u>
	Pump: <u>6.92</u>	Pump: <u>6.92</u>
Voltages:	+5 <u>4.9</u>	+5 <u>4.9</u>
	+15 <u>14.8</u>	+15 <u>14.8</u>
	-15 <u>-14.9</u>	-15 <u>-14.9</u>
	Internal Span: <u>31.73</u>	Internal Span: <u>31.73</u>

Calibrator:	Flow Meter ID's: <u>NA</u>	Calibrator Flow Targets:			
	Make & Model: <u>API 700</u>	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
	Serial #: <u>830</u>	zero	<u>2000</u>	<u>0</u>	<u>2000</u>
	Cal Gas Cylinder I.D. #: <u>LL33674</u>	high	<u>2000</u>	<u>65</u>	<u>2065</u>
	CH ₄ /C ₃ H ₈ Cylinder Conc. (ppm): <u>601.4</u> <u>202.0</u>	mid	<u>2000</u>	<u>30</u>	<u>2030</u>
	CH ₄ as propane/total CH ₄ equivalents (ppm): <u>555.5</u> <u>1156.9</u>	low	<u>2000</u>	<u>15</u>	<u>2015</u>

Point	Calibrator Flow Rates (cc/min)			Calculated Concentration:	Indicated Concentration:	Correction Factors:
	Diluent	Cal Gas	Total	(ppm)	(ppm)	
as found zero	2000	0.00	2000	0	1.57	NA
adjusted zero	NA	0.00	#####	0		NA
as found high	2000	65.00	2065	36.42	38.30	0.951
adjusted high	NA		#####	#VALUE!		#VALUE!
mid	NA		#####	#VALUE!		#VALUE!
low	NA		#####	#VALUE!		#VALUE!
calibrator zero	NA	0.00	#####	0		NA
Average C.F.=						#VALUE!

Linear Regression/Calibration Results:

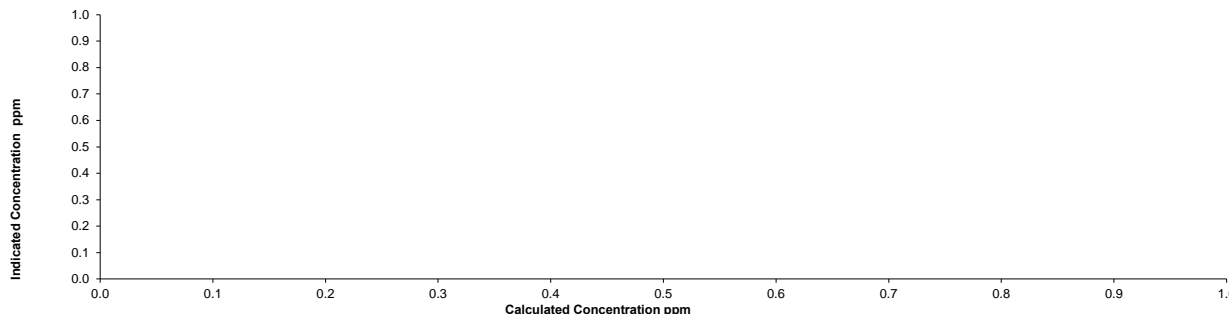
Correlation Coefficient =	<u>#DIV/0!</u>	LIMITS	Pass/Fail ?
Slope =	<u>#DIV/0!</u>	> or = 0.995	#DIV/0!
b (Intercept as % of full scale)=	<u>#DIV/0!</u>	0.85-1.15	#DIV/0!
% change in C.F. from last cal	<u>4.73%</u>	± 3% F.S.	#DIV/0!
		± 15%	PASS

Comments:

As finds due to high zero and hourly readings. Adjusted Pressures: Air: 19.5, Hydrogen: 11, sample bag pressure: 27

Thermo 51C THC Analyzer Calibration

THC Calibration Curve



Maxxam Thermo 51C THC Analyzer Calibration

Date: 11-Jun-14
 Company: LICA
 Station Name/Location: Cold Lake South
 Performed by: Kevin Hope

Start Time (mst): 10:30
 End Time (mst): 12:32
 Calibration Purpose: Post repair calibration
 Cal Gas Expiry Date: 26-Mar-17

Analyzer:
 Serial Number: 15CLT-77021-384 **Range ppm:** 50
 Last Calibration Date: 9-Jun-14 **As Found C.F.:** #VALUE!
 Previous Cal High Point C.F.: 0.998 **New C.F.:** 1.022

	As found:		As left:
H ₂ cylinder (psi):	<u>1400</u>	H ₂ cylinder (psi):	<u>1400</u>
H ₂ cylinder reg set (psi):	<u>21</u>	H ₂ cylinder reg set (psi):	<u>21</u>
Span Cylinder (psi):	<u>550</u>	Span Cylinder (psi):	<u>550</u>
Span Cylinder Reg Set (psi):	<u>20</u>	Span Cylinder Reg Set (psi):	<u>20</u>
Zero Air Gen Pressure:	<u>35</u>	Zero Air Gen Pressure:	<u>35</u>
measurement alarms:	<u>none</u>	measurement alarms:	<u>none</u>
service alarms:	<u>none</u>	service alarms:	<u>none</u>
FID status:	cnt: <u>5909</u>	FID status:	cnt: <u>5909</u>
	rng: <u>1</u>		rng: <u>1</u>
	try: <u>3</u>		try: <u>3</u>
	flm: <u>212.3</u>		flm: <u>212.3</u>
	det: <u>125.5</u>		det: <u>125.5</u>
Oven Readings:	Flame: <u>212</u>	Oven Readings:	Flame: <u>212</u>
	Filter: <u>125</u>		Filter: <u>125</u>
	Base: <u>125</u>		Base: <u>125</u>
	Pump: <u>6.92</u>		Pump: <u>6.92</u>
Voltages:	+5 <u>4.9</u>	Voltages:	+5 <u>4.9</u>
	+15 <u>14.8</u>		+15 <u>14.8</u>
	-15 <u>-14.9</u>		-15 <u>-14.9</u>
	Internal Span: <u>31.73</u>		Internal Span: <u>33.06</u>

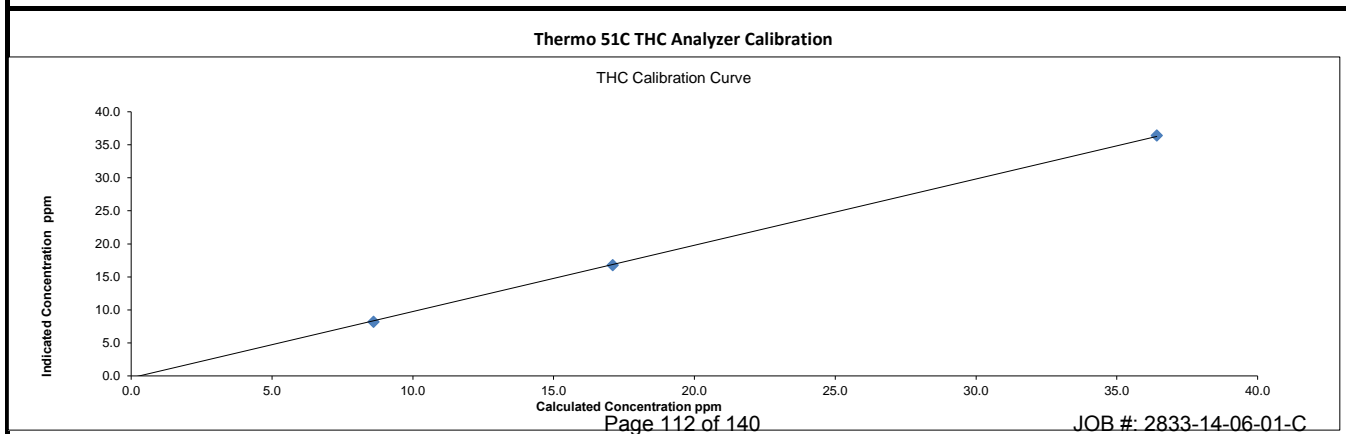
Calibrator:	Flow Meter ID's: <u>NA</u>	Calibrator Flow Targets:			
	Make & Model: <u>API 700</u>	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
	Serial #: <u>830</u>	zero	2000	0	2000
	Cal Gas Cylinder I.D. #: <u>LL33674</u>	high	2000	65	2065
	CH ₄ /C ₃ H ₈ Cylinder Conc. (ppm): <u>601.4</u> <u>202.0</u>	mid	2000	30	2030
	CH ₄ as propane/total CH ₄ equivalents (ppm): <u>555.5</u> <u>1156.9</u>	low	2000	15	2015

Point	Calibrator Flow Rates (cc/min)			Calculated Concentration:	Indicated Concentration:	Correction Factors:
	Diluent	Cal Gas	Total	(ppm)	(ppm)	
as found zero	NA	0.00	#####	0		NA
adjusted zero	2000	0.00	2000	0	-0.05	NA
as found high	NA		#####	#VALUE!		#VALUE!
adjusted high	2000	65.00	2065	36.42	36.38	1.000
mid	2000	30.00	2030	17.10	16.75	1.018
low	2000	15.00	2015	8.61	8.16	1.049
calibrator zero	2000	0.00	2000	0	-0.06	NA
Average C.F. =						1.022

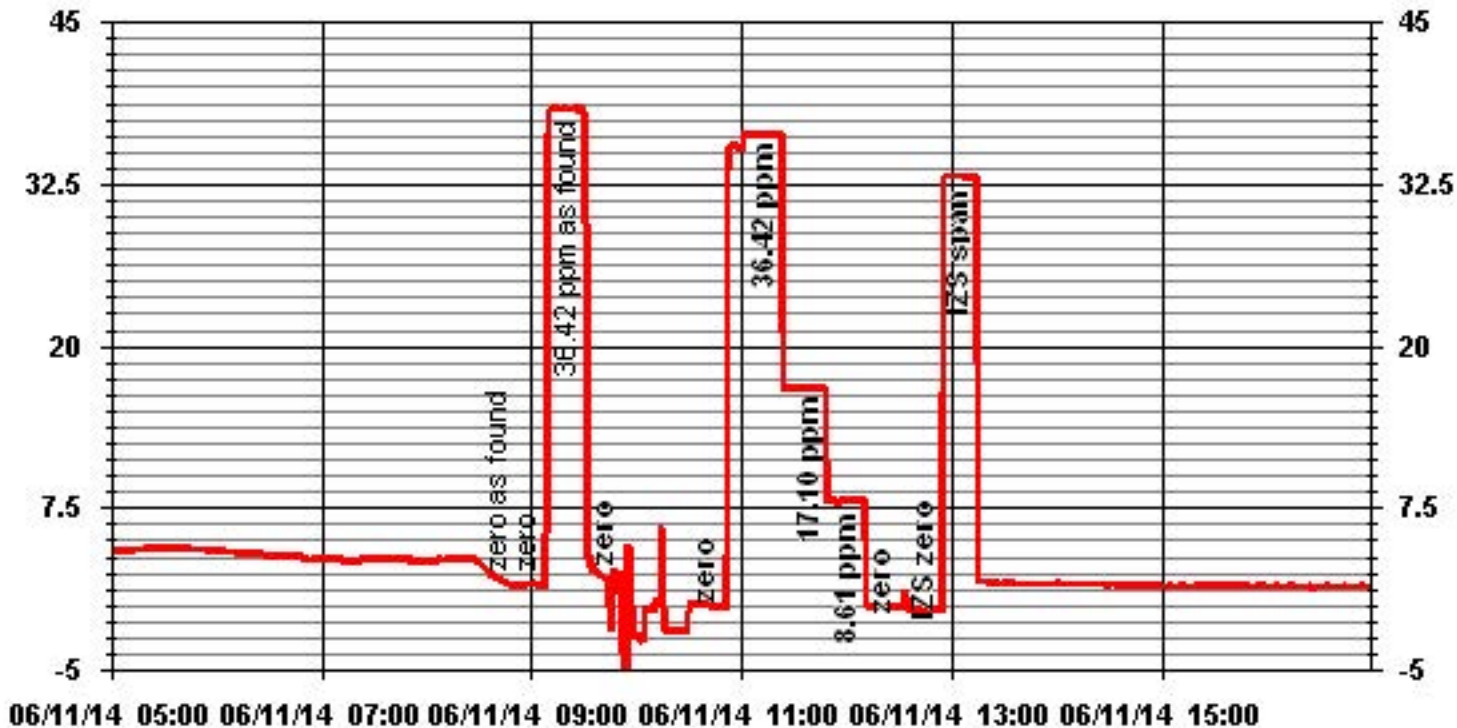
Linear Regression/Calibration Results:

Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>1.003</u>	> or = 0.995	PASS
b (Intercept as % of full scale) =	<u>-0.552%</u>	0.85-1.15	PASS
% change in C.F. from last cal	<u>#VALUE!</u>	± 3% F.S.	PASS
		± 15%	#####

Comments:
 Post repair calibration



01 Minute Averages



Maxxam Thermo 51C THC Analyzer Calibration

Date: 13-Jun-14
 Company: LICA
 Station Name/Location: Cold Lake South
 Performed by: Kevin Hope

Start Time (mst): 8:39
 End Time (mst): 12:00
 Calibration Purpose: 3 Point Calibration
 Cal Gas Expiry Date: 26-Mar-17

Analyzer:
 Serial Number: 51CLT-77021-384 **Range ppm:** 50
 Last Calibration Date: June 11,2014 **As Found C.F.:** 0.958
 Previous Cal High Point C.F.: 1.000 **New C.F.:** 1.016

	As found:		As left:
H ₂ cylinder (psi):	<u>1350</u>	H ₂ cylinder (psi):	<u>1300</u>
H ₂ cylinder reg set (psi):	<u>11</u>	H ₂ cylinder reg set (psi):	<u>11</u>
Span Cylinder (psi):	<u>500</u>	Span Cylinder (psi):	<u>500</u>
Span Cylinder Reg Set (psi):	<u>19.5</u>	Span Cylinder Reg Set (psi):	<u>19.5</u>
Zero Air Gen Pressure:	<u>35</u>	Zero Air Gen Pressure:	<u>35</u>
measurement alarms:	<u>None</u>	measurement alarms:	<u>None</u>
service alarms:	<u>None</u>	service alarms:	<u>None</u>
FID status:	cnt: <u>2201</u>	FID status:	cnt: <u>2130</u>
	rng: <u>1</u>		rng: <u>1</u>
	try: <u>1</u>		try: <u>1</u>
	flm: <u>196.3</u>		flm: <u>194.7</u>
	det: <u>122.5</u>		det: <u>125.4</u>
Oven Readings:	Flame: <u>196</u>	Oven Readings:	Flame: <u>194</u>
	Filter: <u>121</u>		Filter: <u>125</u>
	Base: <u>123</u>		Base: <u>125</u>
	Pump: <u>6.90</u>		Pump: <u>6.90</u>
Voltages:	+5 <u>4.9</u>	Voltages:	+5 <u>4.9</u>
	+15 <u>14.8</u>		+15 <u>14.8</u>
	-15 <u>-14.9</u>		-15 <u>-14.9</u>
	Internal Span: <u>33.06</u>		Internal Span: <u>31.71</u>

Calibrator: **Calibrator Flow Targets:**

Flow Meter ID's:	<u>NA</u>	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
Make & Model:	<u>API 700</u>	zero	<u>2000</u>	<u>0</u>	<u>2000</u>
Serial #:	<u>830</u>	high	<u>2000</u>	<u>65</u>	<u>2065</u>
Cal Gas Cylinder I.D. #:	<u>LL33674</u>	mid	<u>2000</u>	<u>30</u>	<u>2030</u>
CH ₄ /C ₃ H ₈ Cylinder Conc. (ppm):	<u>601.4</u> <u>202.0</u>	low	<u>2000</u>	<u>15</u>	<u>2015</u>
CH ₄ as propane/total CH ₄ equivalents (ppm):	<u>555.5</u> <u>1156.9</u>				

Calibration:

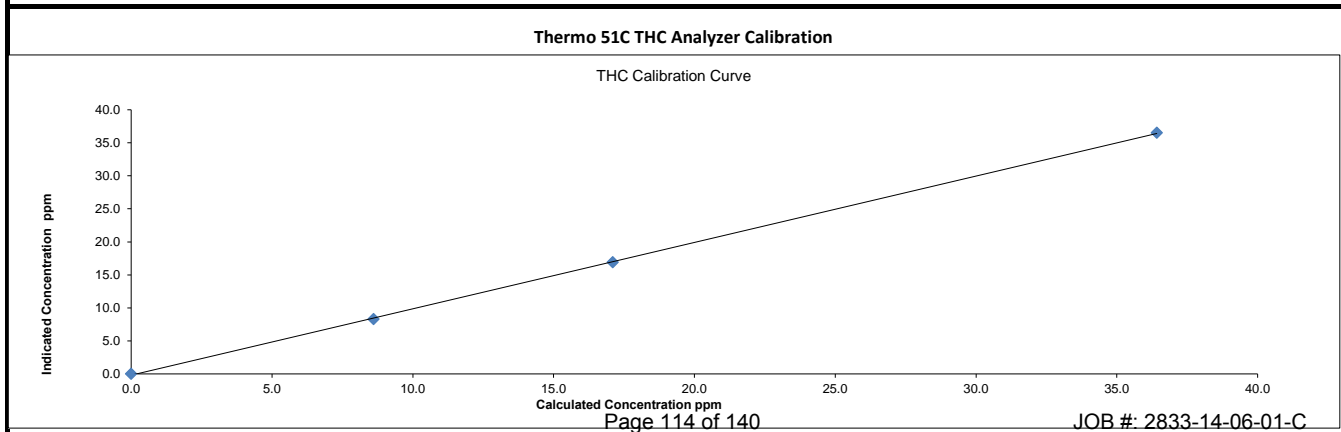
Point	Calibrator Flow Rates (cc/min)			Calculated Concentration:		Indicated Concentration:		Correction Factors:
	Diluent	Cal Gas	Total	(ppm)	(ppm)	(ppm)	(ppm)	
as found zero	2000	0.00	2000	0	-1.35		NA	
adjusted zero	2000	0.00	2000	0	0.00		NA	
as found high	2000	65.00	2065	36.42	38.00		0.958	
adjusted high	2000	65.00	2065	36.42	36.50		0.998	
mid	2000	30.00	2030	17.10	16.90		1.012	
low	2000	15.00	2015	8.61	8.30		1.038	
calibrator zero	2000	0.00	2000	0	0.00		NA	
Average C.F. =								1.016

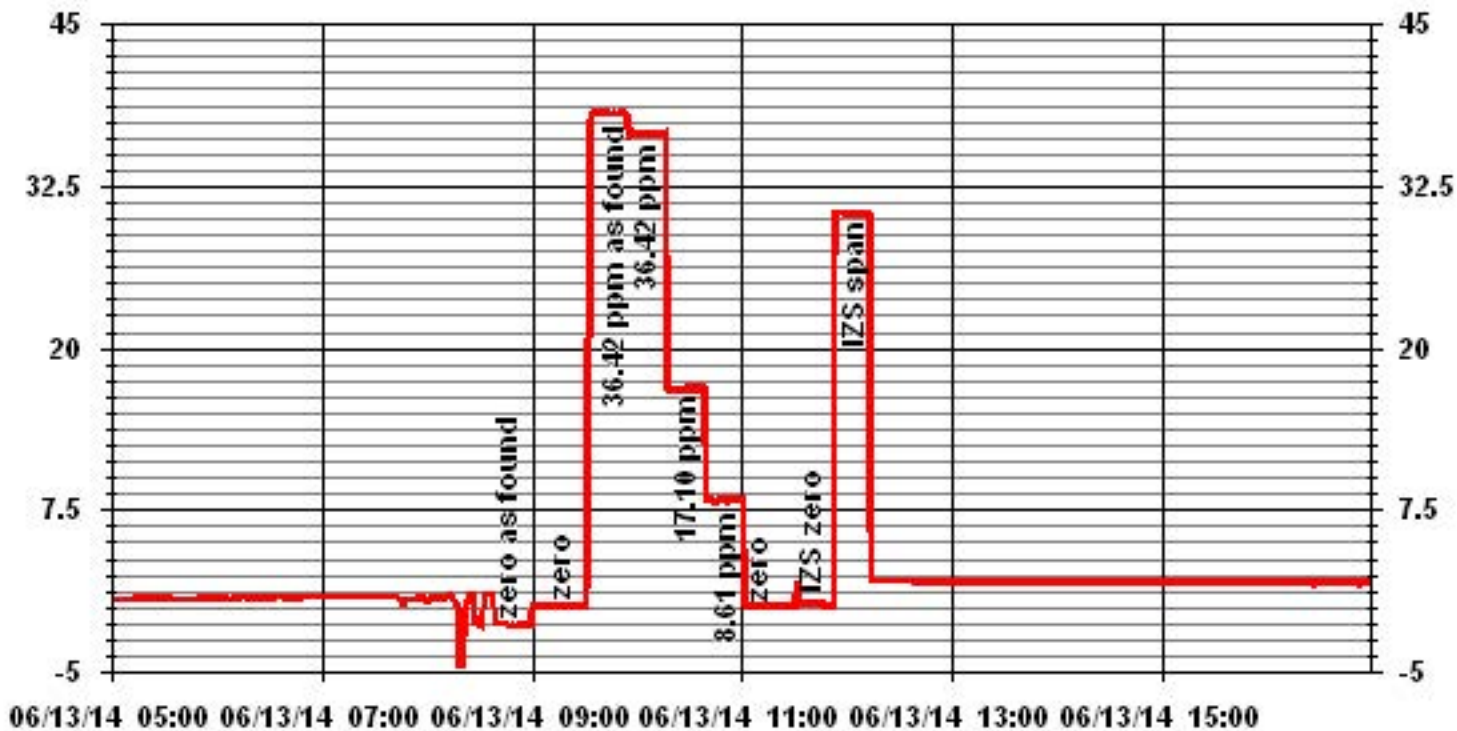
Linear Regression/Calibration Results:

Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>1.005</u>	> or = 0.995	PASS
b (Intercept as % of full scale) =	<u>-0.365%</u>	± 3% F.S.	PASS
% change in C.F. from last cal	<u>4.17%</u>	± 15%	PASS

Comments:

Found service alarm (flow reg fail). Restarted analyzer and it cleared. Proceeded to complete 3-point calibration.





Particulate Matter 2.5



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: 11-Jun-14
 Company: LICA
 Station Name/Location: Cold Lake South
 Previous Audit Date: 21-May-14

Parameter: PM 2.5
 Performed by: Kevin Hope
 Start/End Time (mst): 12:36/13:06
 Calibration Purpose: Monthly Calibration I

1400A Information and Status:

Serial Number: 1405A201620804 As Found Filter Loading %: 18.99
 Ko Factor: NA As Left Filter Loading %: 17.30
 Ambient Temperature °C: 19.8 As Found Noise: 0.006
 Ambient Pressure atm: 0.949 As Left Noise: 0.000
 Main Flow Reading lpm: 2.93 Pump Vacuum: 0.40
 Aux Flow Reading lpm: 16.27 Warnings: None

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	<u>Dwyer</u>	<u>Fisher Scientific</u>	<u>Fisher Scientific</u>
Model:	<u>475 Mark III</u>	<u>FB61291</u>	<u>FB61291</u>
Serial Number:	<u>NA</u>	<u>130168457</u>	<u>130168457</u>
Calibration Date:	<u>NA</u>	<u>11-Apr-14</u>	<u>11-Apr-14</u>

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.07	0.07	0.23	0.07
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	2.59	-0.20	2.13	-0.20
	limit	0.60	0.60	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	0.07	0.10	0.07
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.35	-0.20	0.29	-0.20
	limit	0.60	0.60	0.60	0.60

As found temperature and pressure:

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>20.9</u>	1405F pressure atm:	<u>0.946</u>
reference temperature °C:	<u>19.8</u>	reference pressure:	<u>0.949</u>
difference °C:	<u>-1.1</u>	difference :	<u>-0.003</u>

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

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>19.8</u>	1405F pressure atm:	<u>0.946</u>
reference temperature °C:	<u>19.8</u>	reference pressure:	<u>0.949</u>
difference °C:	<u>0.0</u>	difference :	<u>0.003</u>

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>16.67</u>
reference main flow lpm: <u>2.93</u>	reference total/aux flow lpm: <u>16.27</u>
difference lpm: <u>-0.07</u>	difference lpm: <u>-0.40</u>

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

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>16.67</u>
reference main flow lpm: <u>2.93</u>	reference total/aux flow lpm: <u>16.27</u>
difference lpm: <u>-0.07</u>	difference lpm: <u>-0.40</u>

K_o Audit:

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

Comments:



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: 26-Jun-14
 Company: LICA
 Station Name/Location: Cold Lake South
 Previous Audit Date: 11-Jun-14

Parameter: PM 2.5
 Performed by: Kevin Hope
 Start/End Time (mst): 8:48/9:15
 Calibration Purpose: Monthly Audit

1400A Information and Status:

Serial Number: 1405A201620804 As Found Filter Loading %: 17.56
 Ko Factor: NA As Left Filter Loading %: 15.01
 Ambient Temperature °C: 15.0 As Found Noise: 0.003
 Ambient Pressure atm: 0.935 As Left Noise: 0.000
 Main Flow Reading lpm: 3.06 Pump Vacuum: 0.39
 Aux Flow Reading lpm: 16.99 Warnings: Vacuum Pressure

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	<u>Dwyer</u>	<u>Fisher Scientific</u>	<u>Fisher Scientific</u>
Model:	<u>475 Mark III</u>	<u>FB61291</u>	<u>FB61291</u>
Serial Number:	<u>NA</u>	<u>130168457</u>	<u>130168457</u>
Calibration Date:	<u>NA</u>	<u>11-Apr-14</u>	<u>11-Apr-14</u>

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.01	0.07	0.04	0.07
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.87	-0.20	0.73	-0.20
	limit	0.60	0.60	0.60	0.60

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

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	-0.01	0.08	0.00	0.08
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.48	-0.20	0.46	-0.20
	limit	0.60	0.60	0.60	0.60

As found temperature and pressure:

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>15.0</u>	1405F pressure atm:	<u>0.935</u>
reference temperature °C:	<u>15.0</u>	reference pressure:	<u>0.939</u>
difference °C:	<u>0.1</u>	difference :	<u>-0.004</u>

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

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>15.0</u>	1405F pressure atm:	<u>0.935</u>
reference temperature °C:	<u>15.0</u>	reference pressure:	<u>0.939</u>
difference °C:	<u>0.1</u>	difference :	<u>0.004</u>

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>16.66</u>
reference main flow lpm: <u>3.06</u>	reference total/aux flow lpm: <u>17.00</u>
difference lpm: <u>0.06</u>	difference lpm: <u>0.34</u>

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

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>16.66</u>
reference main flow lpm: <u>3.09</u>	reference total/aux flow lpm: <u>16.99</u>
difference lpm: <u>0.09</u>	difference lpm: <u>0.33</u>

K_o Audit:

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

Comments:

Nitrogen Dioxide



Thermo 42C NOx Analyzer Calibration

Date: 9-Jun-14
Company: LICA
Station Name/Location: Cold Lake South
Performed by: Kevin Hope

Start Time (mst): 9:01
End Time (mst): 13:28
Calibration Purpose: Monthly Calibration
Cal Gas Expiry Date: 4-Feb-18

Correction Factors:

Analyzer Serial Number: 427408716
Last Calibration Date: 12-May-14
Range ppb: 500

As found C.F.	Previous Cal High Point C.F.:
NO= <u>1.086</u>	NO= <u>1.000</u>
NOx= <u>1.077</u>	NOx= <u>1.000</u>
NO ₂ = <u>1.004</u>	NO ₂ = <u>0.997</u>

As found:

NO Bkg ppb: 4.8
 NOx Bkg ppb: 5.2
 NO Coef: 1.234
 NOx Coef: 1.034
 NO₂ Coef: 0.997
 PMT: -821
 +15: 15.1
 +5: 5.0
 -15: 15.1
 -15: -15.1
 Battery: 3.2
 Internal: 28.6
 Chamber: 49.9
 Cooler: -2.5
 Converter: 317
 Converter Set: 319
 Pressure: 190.1
 Sample Flow: 0.602
 Ozonator Flow: ok
 Internal Span: 294.9/1.95/293

As left:

NO Bkg ppb: 5.7
 NOx Bkg ppb: 6.7
 NO Coef: 1.344
 NOx Coef: 1.023
 NO₂ Coef: 0.997
 PMT: -821
 +15: 15.1
 +5: 5.0
 -15: 15.1
 -15: -15.1
 Battery: 3.2
 Internal: 28.6
 Chamber: 49.9
 Cooler: -2.5
 Converter: 317
 Converter Set: 319
 Pressure: 190.1
 Sample Flow: 0.598
 Ozonator Flow: ok
 Internal Span: 295.8/8.43/287.5

Calibrator Flow Targets:

Make & Model: NA
Serial #: EnviroNics 6100
Cal Gas Cylinder I.D. #: BLM000711
NO Cylinder Conc. (ppm): 50.1
NOx Cylinder Conc. (ppm): 50.2

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	19	140.00	5019
low	5000	9	75.00	5009

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	0.6	NA	NA
adjusted zero	5000	0.0	5000	0	0	0.0	0.1	NA	NA
as found high	4995	39.85	5035	396.5	397.3	365	369	1.086	1.077
adjusted high	4996	39.86	5036	396.6	397.3	397	397	0.999	1.001
mid	4996	18.95	5015	189.3	189.7	189	189	1.002	1.003
low	4996	8.98	5005	89.9	90.1	89	90	1.009	1.007
calibrator zero	4996	0.00	4996	0	0	0.5	1.0	NA	NA
Average C.F.=								1.003	1.004

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	4994	39.85	5034	0.0	395.0	394.0	-0.1	0.0	0.1	
as found NO ₂	4996	39.88	5036	300.0	80.6	394.0	313.0	314.4	313.1	1.004
adjusted NO ₂	4996	39.88	5036	300.0	80.6	394.0	313.0	314.4	313.1	1.004
gpt mid	4996	39.88	5036	140.0	243.5	394.0	150.7	151.5	150.8	1.005
gpt low	4996	39.88	5036	75.0	315.6	393.0	77.3	79.4	77.4	1.026
Average NO₂ C.F.=										1.012

Linear Regression/Calibration Results:

	NO	NOx	NO ₂
Correlation Coefficient =	<u>1.000</u>	<u>1.000</u>	<u>1.000</u>
Slope =	<u>1.002</u>	<u>0.999</u>	<u>0.997</u>
b (Intercept as % of full scale) =	<u>-0.09%</u>	<u>-0.04%</u>	<u>-0.12%</u>
% change in C.F. from last cal =	<u>-8.64%</u>	<u>-7.70%</u>	<u>-0.72%</u>
NO ₂ converter efficiency			<u>98.9%</u>

LIMITS
 > or = 0.995
 0.85-1.15
 ± 3% F.S.
 +/- 15%
 >85%

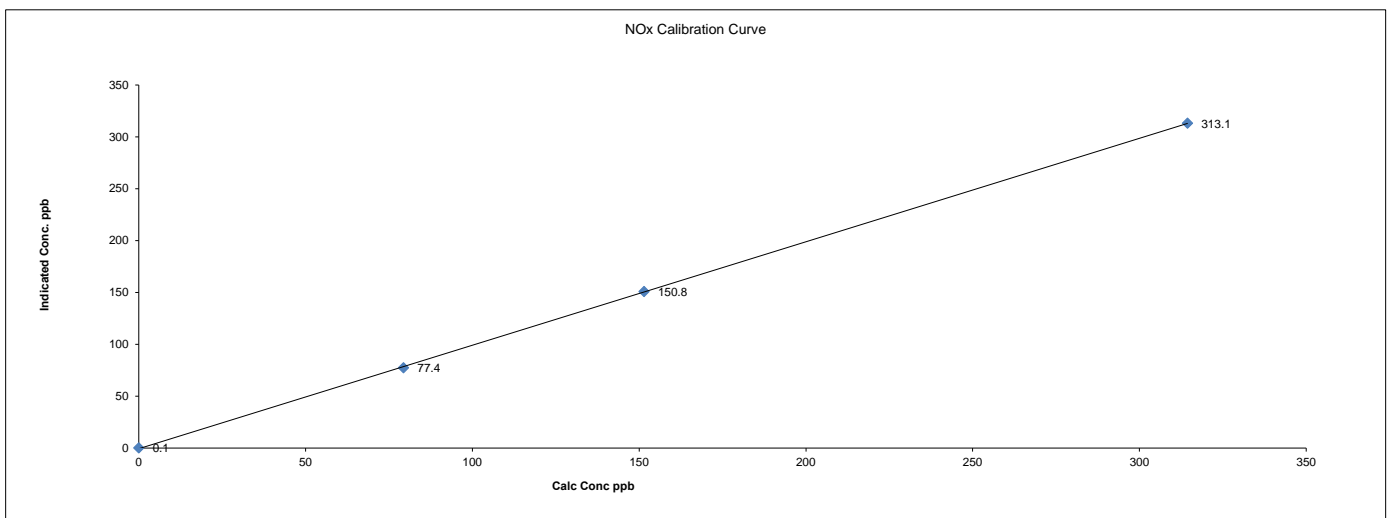
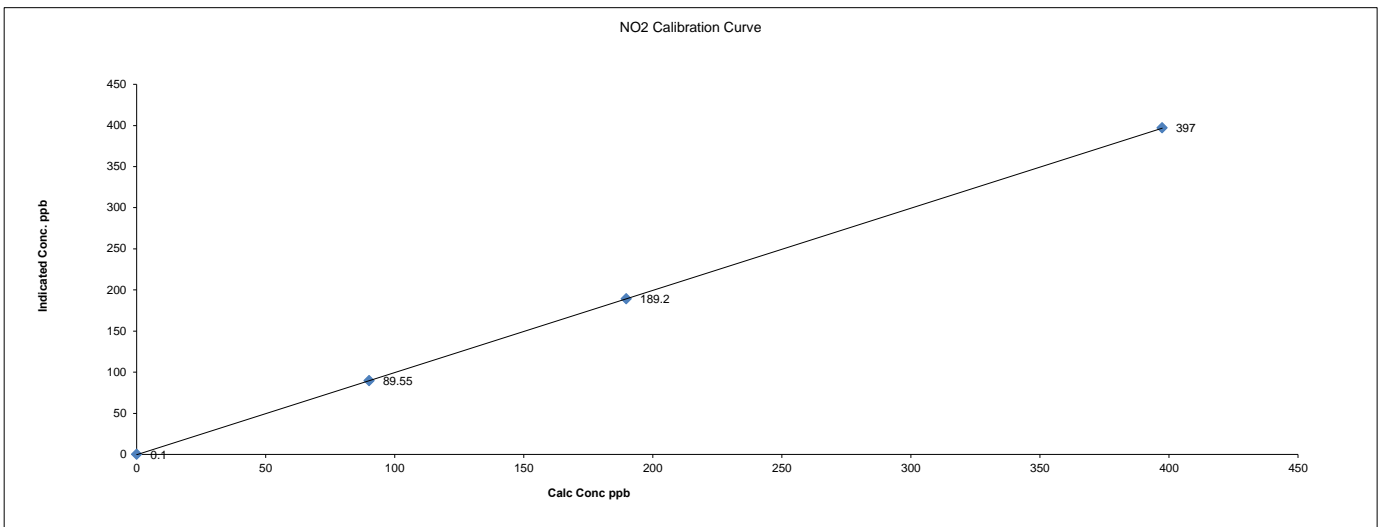
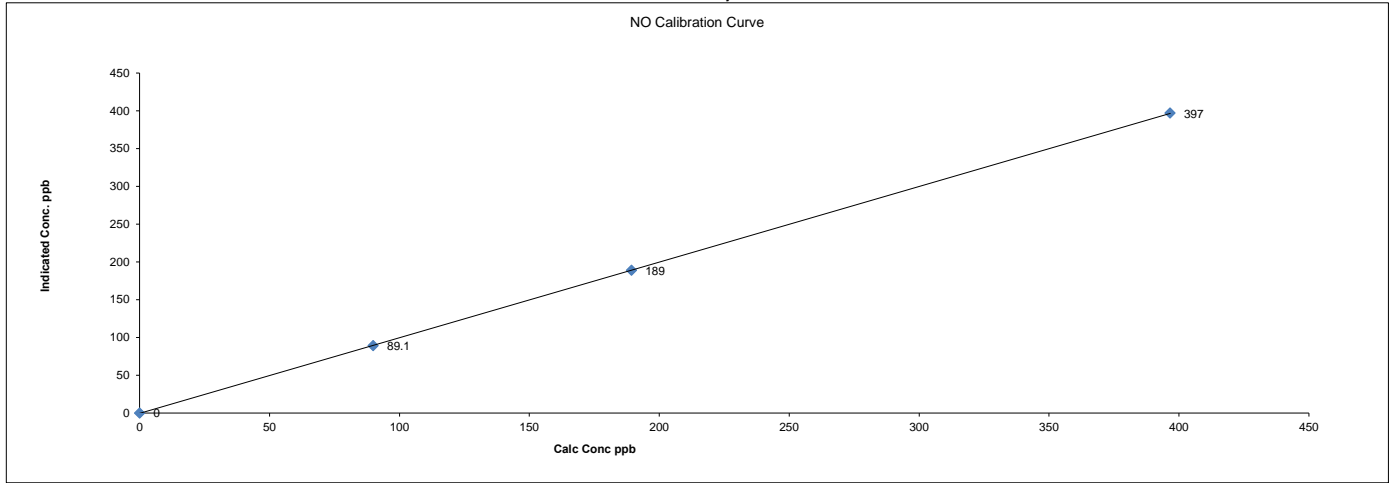
Comments:

As found due to 10% difference between morning izations and EV

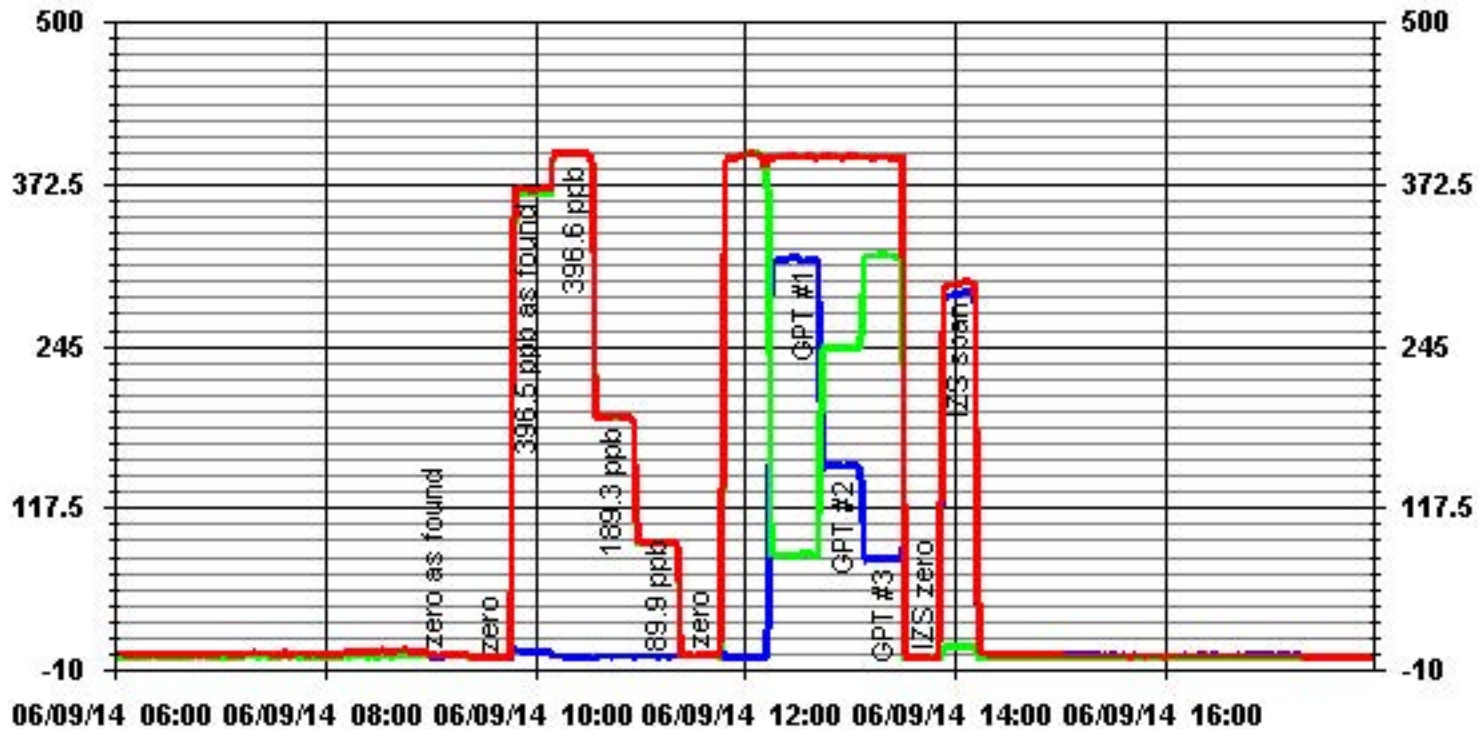
Date: 9-Jun-14
Company: LICA
Station Name/Location: Cold Lake South
Performed by: Kevin Hope

Start Time (mst): 9:01
End Time (mst): 13:28
Calibration Purpose: Monthly Calibration
Cal Gas Expiry Date: 4-Feb-18

Thermo 42C NOx Analyzer Calibration



01 Minute Averages



— LICA

NOX_

PPB

— LICA

Page 122 of 140

NO_

PPB

— LICA

JOB #: 2833-14-06-01-C

NO2_

PPB

Ozone

Maxxam Thermo 49i O₃ Analyzer Calibration

Date: 9-Jun-14 Start Time (mst): 13:38
 Company: LICA End Time (mst): 16:25
 Station Name/Location: Cold Lake South Calibration Purpose: Monthly Calibration
 Performed by: Kevin Hope G.P.T. Date: 9-Jun-14

Analyzer:		Range ppm: <u>500</u>	
Serial Number:	<u>700419951</u>	As Found C.F.:	<u>0.970</u>
Last Calibration Date:	<u>12-May-14</u>	New C.F.:	<u>1.018</u>
Previous Cal High Point C.F.:	<u>1.000</u>		
As found:		As left:	
O ₃ Bkg:	<u>0.2</u>	O ₃ Bkg:	<u>-0.2</u>
O ₃ Coef:	<u>1.070</u>	O ₃ Coef:	<u>1.036</u>
Motherboard:	<u>3.3</u>		<u>3.3</u>
	<u>15.0</u>		<u>4.9</u>
	<u>24.0</u>		<u>15.1</u>
	<u>-3.3</u>		<u>-3.2</u>
Interface Board:	<u>3.3</u>		<u>3.2</u>
	<u>5.0</u>		<u>4.9</u>
	<u>15.0</u>		<u>14.8</u>
	<u>-15.0</u>		<u>-14.8</u>
Photo Lamp:	<u>8.7</u>	Photo Lamp:	<u>8.7</u>
	<u>24.0</u>		<u>23.7</u>
O ₃ Lamp:	<u>9.0</u>	O ₃ Lamp:	<u>9.0</u>
Bench:	<u>27.1</u>	Bench:	<u>27.1</u>
Bench Lamp:	<u>53.4</u>	Bench Lamp:	<u>53.4</u>
O ₃ Lamp:	<u>67.3</u>	O ₃ Lamp:	<u>67.3</u>
Pressure:	<u>697.7</u>	Pressure:	<u>697.7</u>
Cell A lpm:	<u>0.707</u>	Cell A lpm:	<u>0.707</u>
Cell B lpm:	<u>0.746</u>	Cell B lpm:	<u>0.746</u>
O ₃ ppb:	<u>21.9</u>	O ₃ ppb:	<u>21.9</u>
Cell A ppb:	<u>15.7</u>	Cell A ppb:	<u>15.7</u>
Cell B ppb:	<u>28.0</u>	Cell B ppb:	<u>28.0</u>
Cell A int:	<u>64947</u>	Cell A int:	<u>64947</u>
Cell B int:	<u>61111</u>	Cell B int:	<u>61111</u>
Internal Span:	<u>282.2</u>	Internal Span:	<u>271.7</u>

Calibrator:	Calibrator Flow Targets:
Make & Model: <u>Enviroics 6100</u>	point total flow (cc/min) O ₃ setting (v or ppb)
Serial #: <u>4760</u>	zero 5040 0
NOx Gas Cylinder I.D. #: <u>BLM000711</u>	high 5040 300
NOx Cylinder Conc. (ppm): <u>50.2</u>	mid 5040 140
	low 5040 75

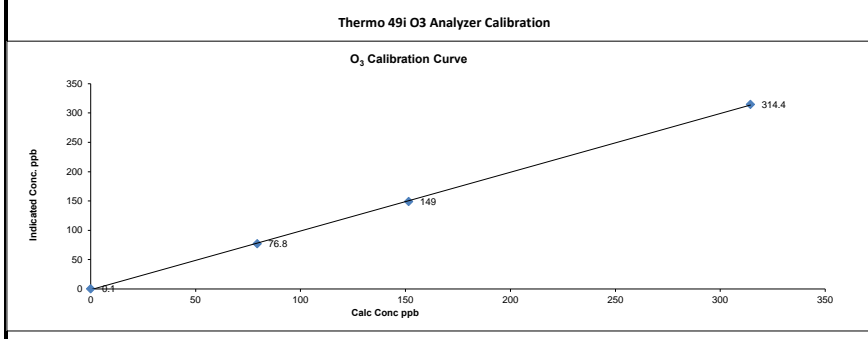
Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5040	0.0	5040	0.0	-0.1	NA
adjusted zero	5040	0.0	5040	0.0	0.1	NA
as found high	5040	0.00	5040	314.4	324.2	0.970
adjusted high	5040	0.00	5040	314.4	314.4	1.000
mid	504	0.00	504	151.5	149.0	1.018
low	5040	0.00	5040	79.4	76.8	1.036
calibrator zero	5040	0.00	5040	0.0	0.2	NA
** copy and paste flows and NO decrease from NOx cal in to calculated concentration**						Average C.F. = 1.018

Linear Regression/Calibration Results:

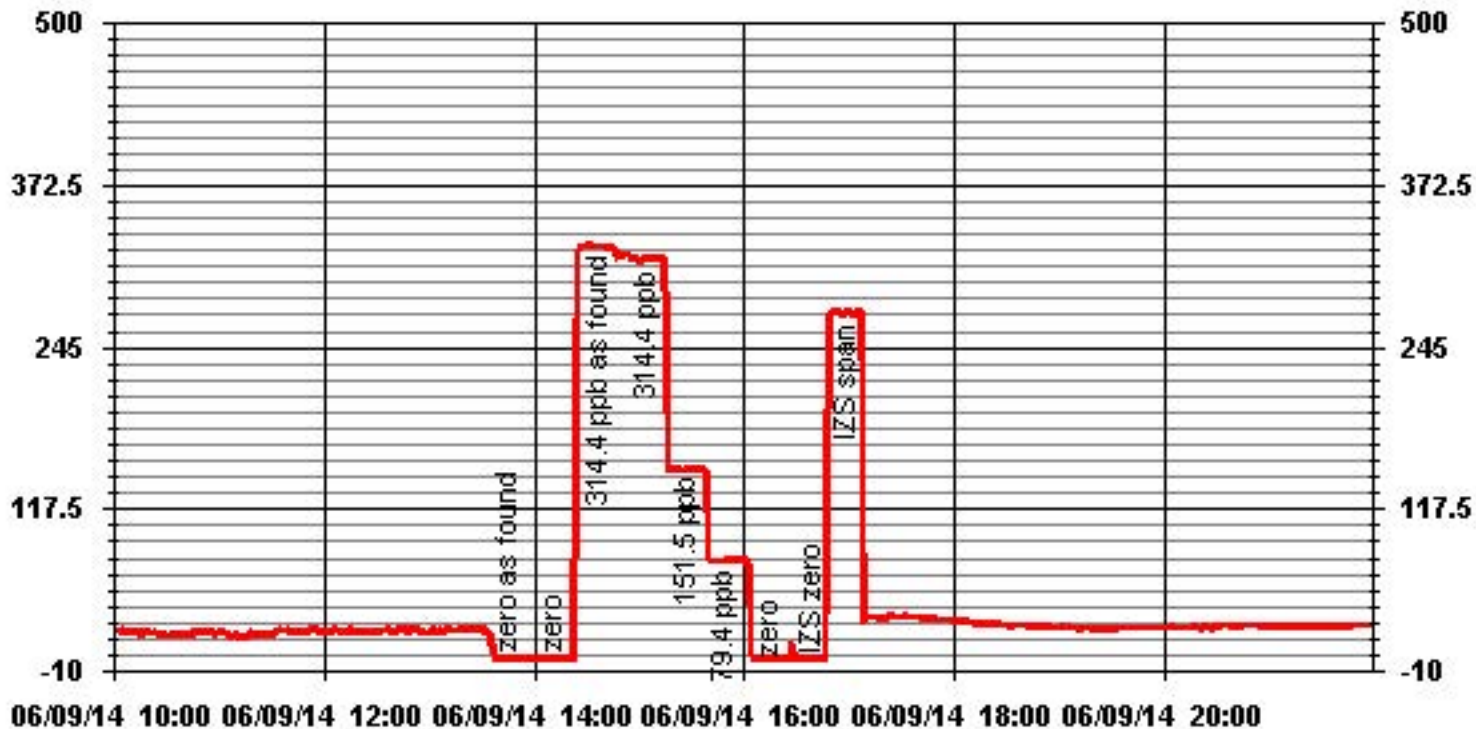
Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>1.002</u>	> or = 0.995	PASS
b (Intercept as % of full scale) =	<u>-0.299%</u>	0.85-1.15	PASS
% change in C.F. from last cal	<u>3%</u>	± 3% F.S.	PASS
		± 15%	PASS

Comments:

Filter changed



01 Minute Averages



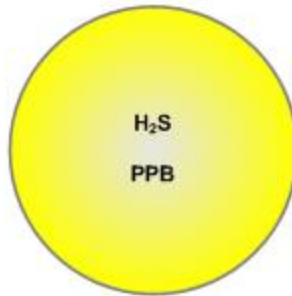
Passive Bubble Maps

Lakeland Industry & Community Association H₂S Passive Bubble Map

JUNE 2014

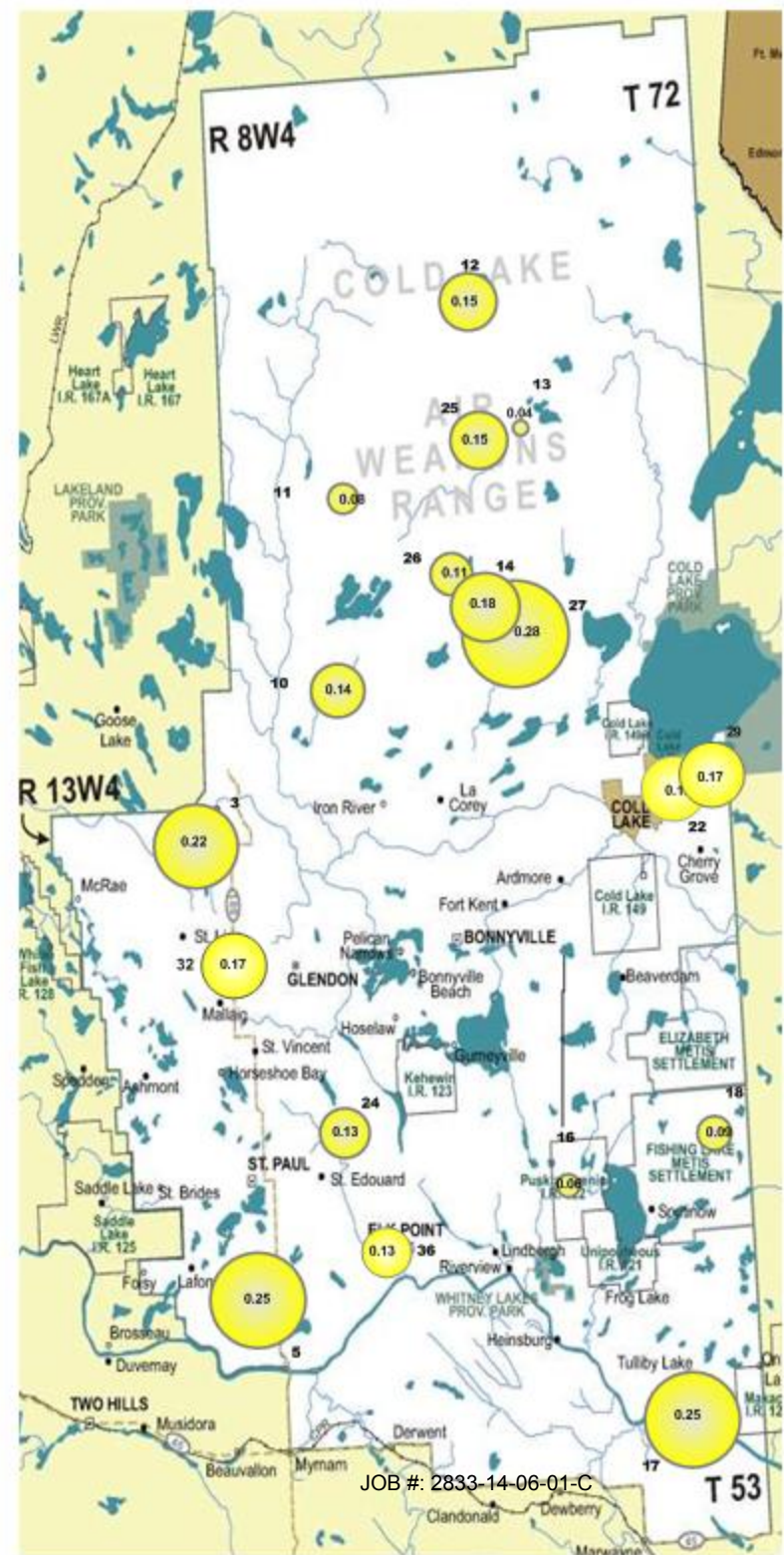
PASSIVE STATIONS

Station	Reading	Duplicate
3 – Therien	0.22 PPB	NA
5 – Lake Eliza	0.25 PPB	NA
10 – La Corey	0.14 PPB	NA
11 – Wolf Lake	0.08 PPB	NA
12 – Foster Creek	0.15 PPB	NA
13 – Primrose	0.04 PPB	NA
14 – Maskwa	0.17 PPB	0.18 PPB
16 – Frog Lake	0.06 PPB	NA
17 – Clear Range	0.25 PPB	NA
18 – Fishing Lake	0.09 PPB	NA
22 – Cold Lake South	0.17 PPB	NA
24 – Fort George	0.13 PPB	NA
25 – Burnt Lake	0.15 PPB	NA
26 – Mahihkan	0.11 PPB	NA
27 – Mahkeses	0.28 PPB	NA
29 – Cold Lake South 2	0.17 PPB	NA
32 – St. Lina	0.14 PPB	NA
36 – Elk Point	0.13 PPB	NA



Summary

Minimum : 0.04 PPB – Primrose
Maximum: 1.77 PPB – Lake Eliza
Average: 0.24 PPB (Includes Duplicates)

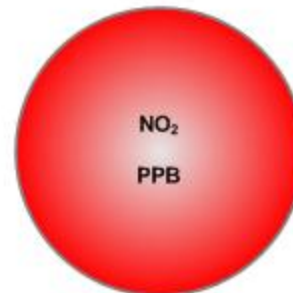


Lakeland Industry & Community Association NO₂ Passive Bubble Map

JUNE 2014

PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	0.9 PPB	NA
4 – Flat Lake	0.5 PPB	NA
5 – Lake Eliza	0.5 PPB	NA
6 – Telegraph Creek	2.2 PPB	NA
8 – Muriel-Kehewin	0.6 PPB	NA
9 – Dupre	1.0 PPB	NA
10 – La Corey	1.6 PPB	NA
11 – Wolf Lake	0.6 PPB	NA
12 – Foster Creek	1.1 PPB	NA
13 – Primrose	0.3 PPB	0.3 PPB
14 – Maskwa	0.8 PPB	0.7 PPB
15 – Ardmore	0.9 PPB	NA
16 – Frog Lake	0.6 PPB	NA
17 – Clear Range	1.2 PPB	NA
18 – Fishing Lake	0.6 PPB	NA
19 – Beaverdam	0.4 PPB	NA
22 – Cold Lake South	0.7 PPB	NA
23 – Medley-Martineau	< 0.1 PPB	NA
24 – Fort George	1.7 PPB	NA
28 – Town of Bonnyville	2.2 PPB	NA
29 – Cold Lake South 2	1.0 PPB	NA
32 – St. Lina	0.5 PPB	NA
36 – Elk Point	1.6 PPB	NA



Summary

Minimum : <0.1 PPB – Medley-Martineau
Maximum: 2.2 PPB – Telegraph Creek and Town of Bonnyville

Average: 0.9 PPB *Includes Duplicates

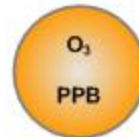


Lakeland Industry & Community Association O₃ Passive Bubble Map

JUNE 2014

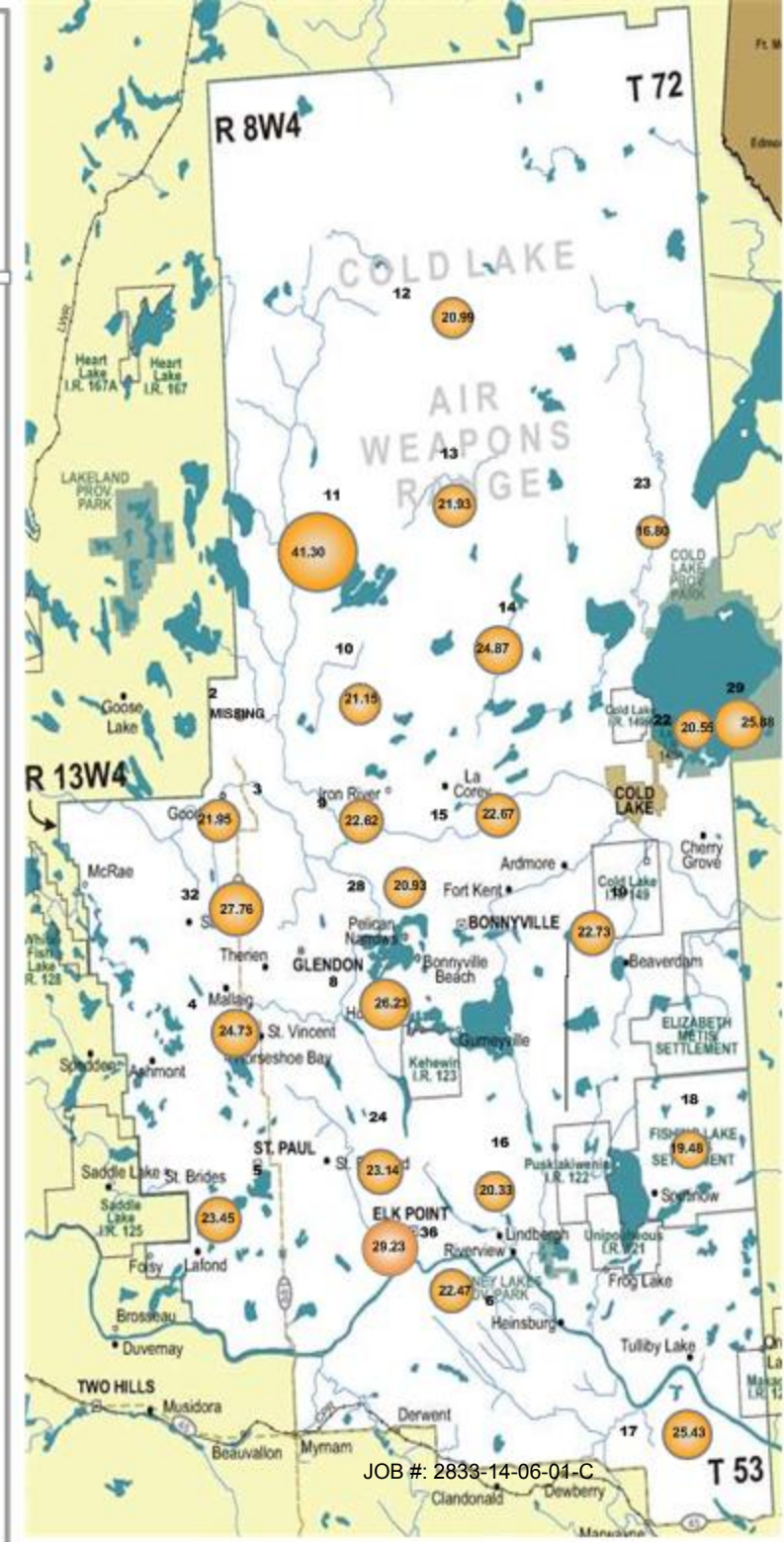
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	21.95 PPB	NA
4 – Flat Lake	24.73 PPB	NA
5 – Lake Eliza	23.45 PPB	NA
6 – Telegraph Creek	22.47 PPB	NA
8 – Muriel-Kehewin	26.23 PPB	NA
9 – Dupre	22.62 PPB	NA
10 – La Corey	21.15 PPB	NA
11 – Wolf Lake	41.30 PPB	NA
12 – Foster Creek	20.99 PPB	NA
13 – Primrose	21.93 PPB	21.26 PPB
14 – Maskwa	24.87 PPB	MISSING
15 – Ardmore	22.67 PPB	NA
16 – Frog Lake	20.33 PPB	NA
17 – Clear Range	25.43 PPB	NA
18 – Fishing Lake	19.48 PPB	NA
19 – Beaverdam	22.73 PPB	NA
22 – Cold Lake South	20.55 PPB	NA
23 – Medley-Martineau	16.80 PPB	NA
24 – Fort George	23.14 PPB	NA
28 – Town of Bonnyville	20.93 PPB	NA
29 – Cold Lake South 2	25.88 PPB	NA
32 – St. Lina	27.88 PPB	NA
36 – Elk Point	29.23 PPB	NA



Summary

Minimum : 16.75 PPB – Medley-Martineau
 Maximum: 41.30 PPB – Wolf Lake
 Average: 23.77 PPB *Includes Duplicates



Lakeland Industry & Community Association SO₂ Passive Bubble Map

JUNE 2014

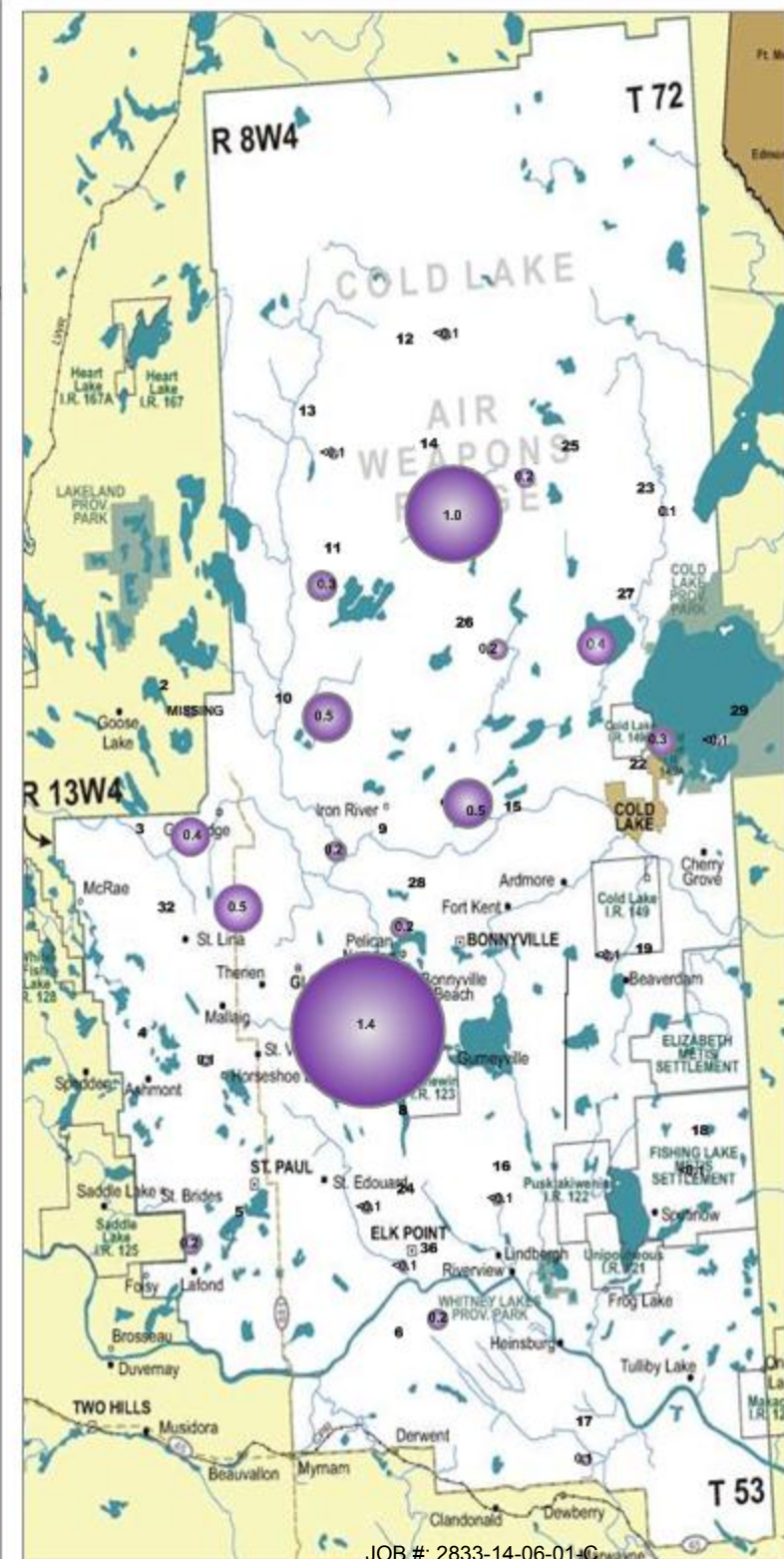
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	0.4 PPB	NA
4 – Flat Lake	0.1 PPB	NA
5 – Lake Eliza	0.2 PPB	NA
6 – Telegraph Creek	0.2 PPB	NA
8 – Muriel-Kehewin	1.2 PPB	1.5 PPB
9 – Dupre	<0.1 PPB	0.3 PPB
10 – La Corey	0.6 PPB	0.4 PPB
11 – Wolf Lake	0.3 PPB	NA
12 – Foster Creek	<0.1 PPB	NA
13 – Primrose	<0.1 PPB	NA
14 – Maskwa	1.0 PPB	NA
15 – Ardmore	0.5 PPB	NA
16 – Frog Lake	<0.1 PPB	NA
17 – Clear Range	0.1 PPB	NA
18 – Fishing Lake	<0.1 PPB	NA
19 – Beaverdam	<0.1 PPB	NA
22 – Cold Lake South	0.3 PPB	NA
23 – Medley-Martineau	0.1 PPB	NA
24 – Fort George	<0.1 PPB	NA
25 – Burnt Lake	0.2 PPB	NA
26 – Mahikan	0.2 PPB	NA
27 – Mahkeses	0.4 PPB	NA
28 – Town of Bonnyville	0.2 PPB	NA
29 – Cold Lake South 2	<0.1 PPB	NA
32 – St. Lina	0.5 PPB	NA
36 – Elk Point	<0.1 PPB	NA



Summary

Minimum : <0.1 PPB – Various stations
Maximum: 1.4 PPB – Muriel-Kehewin
Average: 0.3 PPB *Includes Duplicates



Passive Field Data

Passive Sampler Data Sheet for LICA June 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 samplers were installed.
3	H ₂ S/SO ₂ /NO ₂ /O ₃	06/02/2014	16:54	06/30/2014	12:18	
4	SO ₂ /NO ₂ /O ₃	05/28/2014	17:02	07/02/2014	17:38	
5	H ₂ S/SO ₂ /NO ₂ /O ₃	05/28/2014	16:00	07/02/2014	17:01	
6	SO ₂ /NO ₂ /O ₃	05/28/2014	12.:57	07/02/2014	15:51	
8	SO ₂ /NO ₂ /O ₃	05/28/2014	18.:05	07/02/2014	17:59	
9	SO ₂ /NO ₂ /O ₃	06/02/2014	16:19	06/30/2014	10:20	
10	H ₂ S/SO ₂ /NO ₂ /O ₃	05/29/2014	14:00	06/30/2014	13:16	
11	H ₂ S/SO ₂ /NO ₂ /O ₃	NA	NA	06/30/2014	14:00	Could not access due to deep mud (May). June: collected May samples and deployed July.
12	H ₂ S/SO ₂ /NO ₂ /O ₃	05/29/2014	10:35	06/30/2014	15:01	
13	H ₂ S/SO ₂ /NO ₂ /O ₃	05/29/2014	15:17	07/02/2014	09:26	
14	H ₂ S/SO ₂ /NO ₂ /O ₃	05/29/2014	16:59	06/30/2014	16:44	
15	SO ₂ /NO ₂ /O ₃	06/02/2014	17:50	06/30/2014	09:33	
16	H ₂ S/SO ₂ /NO ₂ /O ₃	05/28/2014	10:32	07/02/2014	14:19	
17	H ₂ S/SO ₂ /NO ₂ /O ₃	05/28/2014	12:00	07/02/2014	15:06	
18	H ₂ S/SO ₂ /NO ₂ /O ₃	05/28/2014	9:40	07/02/2014	13:33	
19	SO ₂ /NO ₂ /O ₃	05/28/2014	8:15	07/02/2014	12:37	
22	H ₂ S/SO ₂ /NO ₂ /O ₃	06/03/2014	18:19	06/30/2014	08:45	
23	SO ₂ /NO ₂ /O ₃	06/02/2014	18:38	07/02/2014	11:28	
24	H ₂ S/SO ₂ /NO ₂ /O ₃	05/28/2014	13:31	07/02/2014	16:21	
25	H ₂ S/SO ₂	05/29/2014	12:03	06/30/2014	16:04	
26	H ₂ S/SO ₂	05/29/2014	16:36	07/02/2014	10:01	
27	H ₂ S/SO ₂	05/29/2014	18:00	07/02/2014	10:24	
28	SO ₂ /NO ₂ /O ₃	06/02/2014	15:56	06/30/2014	10:40	
29	H ₂ S/SO ₂ /NO ₂ /O ₃	06/03/2014	18:20	06/30/2014	08:48	
32	H ₂ S/SO ₂ /NO ₂ /O ₃	06/03/2014	19:00	06/30/2014	11:41	
36	H ₂ S/SO ₂ /NO ₂ /O ₃	05/28/2014	15:13	07/02/2014	16:21	

Passive Sampler Data Sheet for LICA June 2014

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
Duplicate # 8	SO2	05/28/2014	18.:05	07/02/2014	17:59	
Duplicate # 9	SO2	06/02/2014	16:19	06/30/2014	10:20	
Duplicate # 10	SO2	05/29/2014	14:00	06/30/2014	13:16	
Duplicate # 14	H2S	05/29/2014	16:59	06/30/2014	16:44	
Duplicate # 15	H2S	06/02/2014	17:50	06/30/2014	09:33	
Duplicate # 13	NO2	05/29/2014	15:17	07/02/2014	09:26	
Duplicate # 14	NO2	05/29/2014	16:59	06/30/2014	16:44	
Duplicate # 13	O3	05/29/2014	15:17	07/02/2014	09:26	
Duplicate # 14	O3	05/29/2014	16:59	06/30/2014	16:44	

Passive Network Laboratory Analysis

Your Project #: 2014/05/28 - 2014/07/02
 Site Location: LICA

Attention:MICHAEL BISAGA

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

Report Date: 2014/07/25
 Report #: R1609920
 Version: 2R

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B456357

Received: 2014/07/04, 12:59

Sample Matrix: Air
 # Samples Received: 31

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
H2S Passive Analysis (1)	19	2014/07/09	2014/07/11	PTC SOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (1)	11	2014/07/10	2014/07/11	PTC SOP-00148	Passive NO2 in ATM
NO2 Passive Analysis (1)	14	2014/07/11	2014/07/11	PTC SOP-00148	Passive NO2 in ATM
O3 Passive Analysis (1)	25	2014/07/10	2014/07/11	PTC SOP-00197	EPA 300 R2.1
SO2 Passive Analysis (1)	29	2014/07/10	2014/07/11	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 Job #: B456357
 Report Date: 2014/07/25

 LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2014/05/28 - 2014/07/02
 Site Location: LICA
 Sampler Initials: WA

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		KA0620	KA0621	KA0622	KA0623		KA0624	KA0625		
Sampling Date		2014/06/02 16:54	2014/05/28 17:02	2014/05/28 16:00	2014/05/28 12:57		2014/05/28 18:05	2014/06/02 16:19		
	Units	3	4	5	6	QC Batch	8	9	RDL	QC Batch

Passive Monitoring

Calculated H2S	ppb	0.22		0.25		7557996			0.02	7557996
Calculated NO2	ppb	0.9	0.5	0.5	2.2	7559446	0.6	1.0	0.1	7559446
Calculated O3	ppb	21.95	24.73	23.45	22.47	7559506	26.23	22.62	0.1	7559515
Calculated SO2	ppb	0.4	0.1	0.2	0.2	7559270	1.2	<0.1	0.1	7559270

RDL = Reportable Detection Limit

Maxxam ID		KA0626	KA0627	KA0628	KA0629	KA0630		KA0631		
Sampling Date		2014/05/29 14:00	2014/06/02 16:54	2014/05/29 10:35	2014/05/29 15:17	2014/05/29 16:59		2014/06/02 17:50		
	Units	10	11	12	13	14	QC Batch	15	RDL	QC Batch

Passive Monitoring

Calculated H2S	ppb	0.14	0.08	0.15	0.04	0.17	7557996		0.02	7557996
Calculated NO2	ppb	1.6	0.6	1.1	0.3	0.8	7559446	0.9	0.1	7560841
Calculated O3	ppb	21.15	41.30	20.99	22.59	24.87	7559515	22.67	0.1	7559515
Calculated SO2	ppb	0.6	0.3	<0.1	<0.1	1.0	7559270	0.5	0.1	7559270

RDL = Reportable Detection Limit

Maxxam ID		KA0632	KA0633	KA0634	KA0635		KA0636	KA0637		
Sampling Date		2014/05/28 10:32	2014/05/28 12:00	2014/05/28 09:40	2014/05/28 08:15		2014/06/03 18:20	2014/06/02 18:39		
	Units	16	17	18	19	QC Batch	22	23	RDL	QC Batch

Passive Monitoring

Calculated H2S	ppb	0.06	0.25	0.09		7557996	0.17		0.02	7557996
Calculated NO2	ppb	0.6	1.2	0.6	0.4	7560841	0.7	<0.1	0.1	7560841
Calculated O3	ppb	20.33	25.43	19.48	22.73	7559515	20.55	16.80	0.1	7559515
Calculated SO2	ppb	<0.1	0.1	<0.1	<0.1	7559270	0.3	0.1	0.1	7559284

RDL = Reportable Detection Limit

Maxxam ID		KA0638	KA0639	KA0640	KA0641	KA0642	KA0643	KA0644		
Sampling Date		2014/05/28 13:31	2014/05/29 12:03	2014/05/29 16:36	2014/05/29 18:00	2014/06/02 15:56	2014/06/03 18:20	2014/06/03 19:00		
	Units	24	25	26	27	28	29	32	RDL	QC Batch

Passive Monitoring

Calculated H2S	ppb	0.13	0.15	0.11	0.28		0.17	0.14	0.02	7557996
Calculated NO2	ppb	1.7				2.2	1.0	0.5	0.1	7560841
Calculated O3	ppb	23.14				20.93	25.88	27.76	0.1	7559515
Calculated SO2	ppb	<0.1	0.2	0.2	0.4	0.2	<0.1	0.5	0.1	7559284

RDL = Reportable Detection Limit

Maxxam Job #: B456357
 Report Date: 2014/07/25

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2014/05/28 - 2014/07/02
 Site Location: LICA
 Sampler Initials: WA

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		KA0645	KA0648	KA0649	KA0650	KA0651	KA0652		
Sampling Date		2014/05/28 15:13	2014/05/29 03:17	2014/05/29 16:59	2014/06/02 15:11	2014/06/02 16:19	2014/05/29 14:00		
	Units	36	13 DUP	14 DUP	8 DUP	9 DUP	10 DUP	RDL	QC Batch

Passive Monitoring									
Calculated H2S	ppb	0.13		0.18				0.02	7557996
Calculated NO2	ppb	1.6	0.3	0.7				0.1	7560841
Calculated O3	ppb	29.23	21.26	MISSING				0.1	7559515
Calculated SO2	ppb	<0.1			1.5	0.3	0.4	0.1	7559284
RDL = Reportable Detection Limit									

Maxxam Job #: B456357
Report Date: 2014/07/25

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/05/28 - 2014/07/02
Site Location: LICA
Sampler Initials: WA

GENERAL COMMENTS

SO2 travel blank (KA0646) outside QA acceptability criteria, default blank value used in calculation of final result.SS

Sample KA0649 (#14Dup) for O3 parameter was not returned to the lab. - OZ

Results relate only to the items tested.

Maxxam Job #: B456357
 Report Date: 2014/07/25

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2014/05/28 - 2014/07/02
 Site Location: LICA
 Sampler Initials: WA

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
7557996	JPF	Spiked Blank	Calculated H2S	2014/07/09		100	%	90 - 110
7559270	SS6	Spiked Blank	Calculated SO2	2014/07/10		100	%	90 - 110
7559270	SS6	Method Blank	Calculated SO2	2014/07/10	<0.1		ppb	
7559284	SS6	Spiked Blank	Calculated SO2	2014/07/10		101	%	90 - 110
7559284	SS6	Method Blank	Calculated SO2	2014/07/10	<0.1		ppb	
7559446	SS6	Spiked Blank	Calculated NO2	2014/07/10		100	%	90 - 110
7559446	SS6	Method Blank	Calculated NO2	2014/07/10	<0.1		ppb	
7559506	OZ	Spiked Blank	Calculated O3	2014/07/10		100	%	90 - 110
7559506	OZ	Method Blank	Calculated O3	2014/07/10	<0.1		ppb	
7559515	OZ	Spiked Blank	Calculated O3	2014/07/10		100	%	90 - 110
7559515	OZ	Method Blank	Calculated O3	2014/07/10	<0.1		ppb	
7560841	SS6	Spiked Blank	Calculated NO2	2014/07/11		98	%	90 - 110
7560841	SS6	Method Blank	Calculated NO2	2014/07/11	<0.1		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.

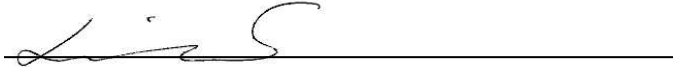
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Maxxam Job #: B456357
Report Date: 2014/07/25

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/05/28 - 2014/07/02
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

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.

Lakeland Industry & Community Association

Maskwa Monitoring Site
Ambient Air Monitoring
Data Report
For
June 2014

Prepared By:



July 28, 2014

Lakeland Industry & Community Association Ambient Air Monitoring Maskwa

Table of Contents

	Page		Page
Introduction	3	Calibration Reports	83
Calibration Procedure	4	• Sulphur Dioxide	84
Monthly Continuous Summary	5	• Hydrogen Sulphide	90
General Monthly Summary	6	• Total Hydrocarbons	93
Continuous Monitoring	9	• Nitrogen Dioxide	96
• Monthly Summaries, Graphs & Wind Roses	10		
• Sulphur Dioxide	11		
• Hydrogen Sulphide	19		
• Total Hydrocarbons	27		
• Nitrogen Dioxide	35		
• Nitric Oxide	43		
• Oxides of Nitrogen	50		
• Temperature	58		
• Precipitation	61		
• Relative Humidity	64		
• Barometric Pressure	67		
• Vector Wind Speed	70		
• Vector Wind Direction	77		
• Standard Deviation Wind Direction	80		

Introduction

The following Ambient Air Monitoring report was prepared for:

Mr. Mike Bisaga

Lakeland Industry & Community Association

Box 8237

5107W – 50 Street

Bonnyville, Alberta

T9N 2J5

Monitoring Location: Maskwa

Data Period: June 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.

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 – June 2014

LICA MASKWA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						OBJECTIVES					1-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO2 (PPB)	172	48	0	0	0.63	17	21	21	5.3	306(NW)	2.5	21	99.4
H2S (PPB)	10	3	0	0	0.19	3	VAR	VAR	VAR	VAR	0.7	7	100.0
THC (PPM)	-	-	-	-	2.17	4.9	28	6	0.1	91(E)	2.5	28	100.0
NO2 (PPB)	159	-	0	-	2.02	23.3	29	0	2.3	292(WNW)	4.2	21	100.0
NO (PPB)	-	-	-	-	0.80	22.3	15	5	2.3	35(NE)	3.8	21	100.0
NO _x (PPB)	-	-	-	-	2.82	33.8	15	5	2.3	35(NE)	8.0	21	100.0
VECTOR WS (KPH)	-	-	-	-	4.06	12.0	29	13	-	5(N)	6.8	29	100.0
VECTOR WD (DEGREES)	-	-	-	-	44(NE)	-	-	-	-	-	-	-	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	71.90	94	VAR	VAR	VAR	VAR	91.0	19	100.0
TEMPERATURE (DEG C)	-	-	-	-	14.36	26.0	28	9, 11	2.6, 2.8	307(NW), 252(WSW)	20.2	29	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	939.5	949	23	VAR	VAR	VAR	947.4	23	100.0
PRECIPITATION (MM)	-	-	-	-	0.17	7.1	27	12	4.8	26(NNE)	0.7	16, 21	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

The monthly calibration attempted to be performed on June 10th. However, the analyzer took long time to reach the first span point. The calibration was aborted to check the connection between the calibrator and the analyzer. No issue was noticed. A full calibration was restarted. The inlet filter was changed before the calibration was started. The analyzer was put into the Maintenance mode on June 13th to check potential issues that might cause the analyzer to respond slowly. Suspected the issue was from the calibrator. The tubing inside the calibrator was replaced on June 20th. The 3- point calibration was repeated on June 20th after the tubing inside the calibrator was replaced. No further issue was identified. 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 June 10th. 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 monthly calibration was performed on June 11th. 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

The analyzer spanned low on June 5th. An as found points check was performed on June 10th. The analyzer passed the as found points check. No troubleshooting was performed and no data was discarded due to this event. The monthly calibration was performed on June 10th. The inlet filter was changed before the calibration was started. The analyzer kept spanning low after the calibration. It was determined that the permeation tube required to be replaced. Following the as found points check on June 20th, the perm tube was replaced. The expected span value was adjusted on June 22nd. No data was discarded due to this issue. 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.

Barometric Pressure (MILLIBAR)

- System make / model - Met One 092

No operation issues were observed during the month.

General Monthly Summary

AQM STATION – LICA – Maskwa

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 system was cleaned on June 10th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - Maskwa Site

JUNE 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	MAX.	AVG.	RDGS.		
	DAY																												
1	2	2	2	2	2	2	2	6	6	3	3	2	2	2	3	2	2	2	2	2	3	2	S	0	0	6	2.3	24	
2	0	0	0	0	0	0	0	1	2	3	2	1	1	1	1	1	0	1	1	1	S	0	0	0	3	0.7	24		
3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	S	0	0	0	1	2	0.1	24		
4	0	0	0	2	2	0	0	0	0	1	1	4	1	0	1	1	0	0	S	0	0	0	0	0	4	0.6	24		
5	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		
6	0	0	2	3	8	3	5	6	3	4	4	2	5	0	0	1	S	2	1	0	0	0	0	0	8	2.1	24		
7	0	0	0	0	0	0	1	2	2	1	1	1	2	2	0	S	2	2	0	0	0	0	0	0	2	0.7	24		
8	0	0	0	0	0	0	0	2	3	1	0	2	1	1	S	0	0	0	0	0	0	0	0	0	3	0.4	24		
9	0	0	0	0	0	0	1	2	1	1	0	0	0	S	0	1	1	0	0	0	0	1	2	3	3	0.6	24		
10	8	10	6	1	0	0	0	0	3	C	C	C	C	C	C	C	C	0	0	0	0	0	0	0	10	1.8	24		
11	0	0	0	0	0	0	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24		
12	0	0	0	0	0	0	0	1	3	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.2	24		
13	0	0	0	0	0	0	0	0	0	S	0	0	1	Y	Y	Y	Y	0	0	0	3	3	0	0	3	0.4	20		
14	0	0	0	0	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24		
15	0	0	0	0	0	0	2	S	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	2	0.2	24		
16	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		
17	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.0	24		
18	0	0	0	0	S	0	0	1	2	1	2	2	2	2	3	2	2	2	1	0	0	0	0	1	3	1.0	24		
19	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
20	0	0	S	0	0	0	0	C	C	C	C	C	C	C	C	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	2	2	3	3	0	0	7	13	17	9	2	17	2.5	24		
22	S	0	0	1	0	3	3	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	7	0.7	24	
23	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	1	0	0	0	0	0	0	S	1	3	0.3	24	
24	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	S	0	0	1	0.1	24		
25	0	0	0	0	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	3	0.3	24		
26	0	0	0	0	0	0	0	1	1	1	1	2	1	0	1	3	2	1	0	S	0	0	0	0	3	0.6	24		
27	0	0	0	0	0	0	0	2	1	0	0	0	0	0	1	0	0	0	S	0	0	0	0	0	2	0.2	24		
28	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	S	4	0	1	7	0	3	7	0.8	24		
29	14	8	1	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	14	1.0	24		
30	0	0	0	0	0	8	9	1	1	3	1	0	0	0	0	S	0	0	0	0	0	0	0	0	9	1.0	24		
HOURLY MAX		14	10	6	3	8	8	9	7	3	4	4	4	5	3	3	3	3	2	4	7	13	17	9	3				
HOURLY AVG		0.9	0.7	0.4	0.3	0.5	0.7	1.0	1.3	1.0	1.0	0.7	0.6	0.6	0.5	0.4	0.5	0.5	0.4	0.3	0.4	0.7	1.0	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

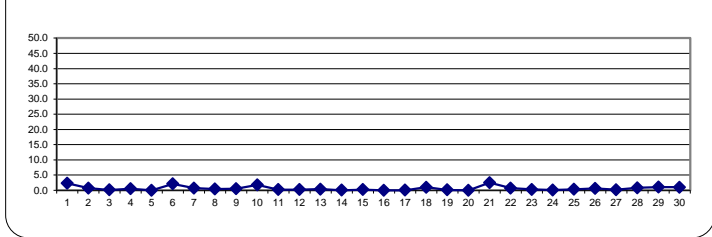
OBJECTIVE LIMIT:

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

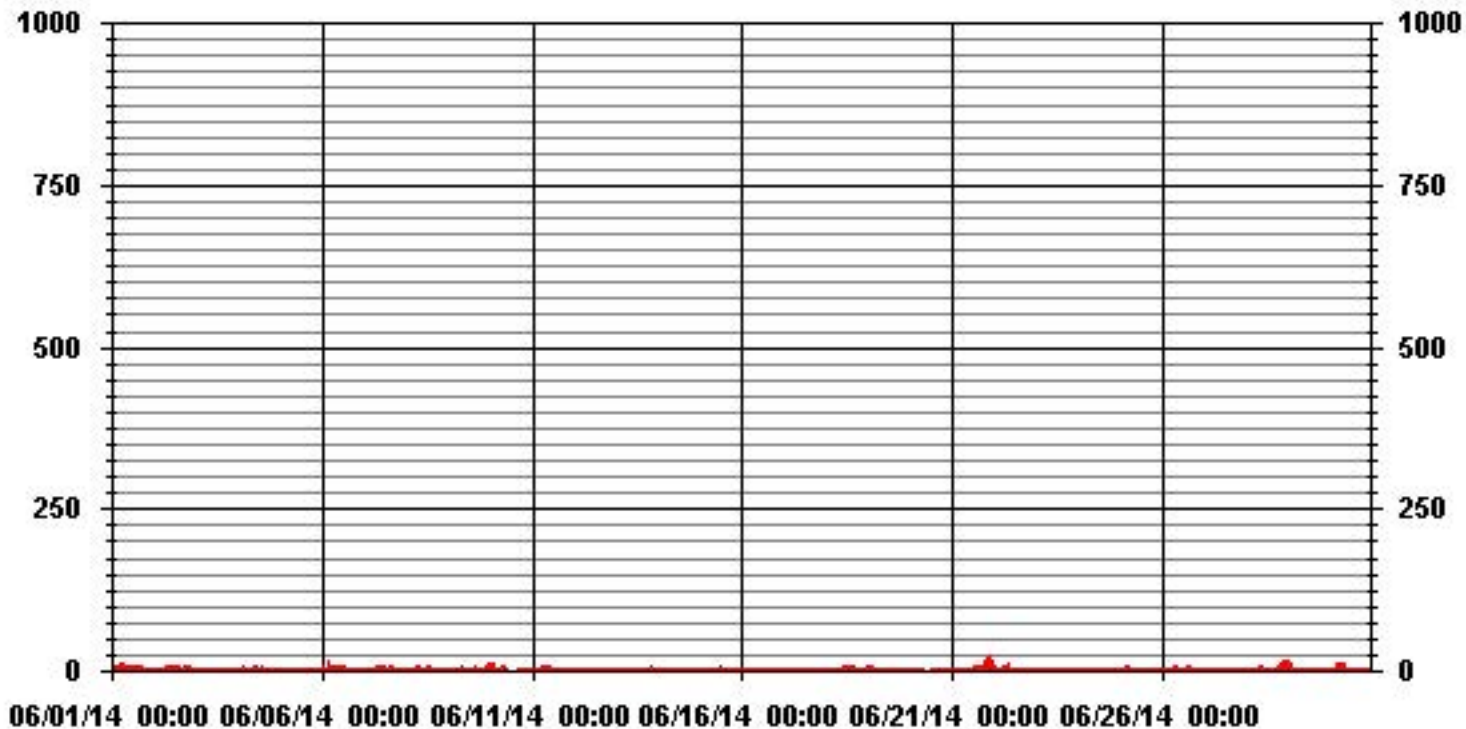
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	175					
MAXIMUM 1-HR AVERAGE:	17	PPB	@ HOUR(S)	21	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	2.5	PPB			ON DAY(S)	21
					VAR-VARIOUS	
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	716	HRS	
MONTHLY CALIBRATION TIME:	15	HRS	AMD OPERATION UPTIME:	99.4	%	
STANDARD DEVIATION:	1.64		MONTHLY AVERAGE:	0.63	PPB	

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



— LICA30 SO2_ PPB

Lakeland Industry & Community Association - Maskwa Site

JUNE 2014

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.	
DAY																												
1		3	3	2	2	2	7	9	10	7	5	3	3	3	6	3	3	3	3	3	3	3	S	1	0	10	3.8	24
2		0	0	0	0	1	1	2	4	4	3	2	1	1	2	2	5	1	2	2	1	S	0	0	0	5	1.5	24
3		0	0	0	0	0	0	0	0	2	4	2	1	1	1	0	0	0	0	0	S	0	0	0	1	4	0.5	24
4		0	0	1	8	6	1	0	4	1	6	6	9	5	1	4	7	0	0	S	0	0	0	0	0	9	2.6	24
5		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	S	1	1	1	2	1	1	2	0.3	24
6		1	1	12	11	15	5	11	12	8	10	10	9	16	1	1	4	S	5	7	1	1	1	1	1	16	6.3	24
7		1	1	1	1	1	1	1	3	3	2	1	3	7	12	1	S	6	9	1	1	1	1	1	1	12	2.6	24
8		1	1	1	1	1	1	1	7	5	3	1	9	3	3	S	0	0	0	0	0	0	0	0	0	9	1.7	24
9		0	0	0	0	0	0	5	5	3	1	1	1	1	S	1	2	4	2	1	1	1	2	7	10	10	2.1	24
10		14	16	13	4	1	1	1	1	C	C	C	C	C	C	C	C	C	1	1	1	1	1	1	1	16	3.9	24
11		1	1	1	1	1	1	3	3	1	1	1	S	1	1	1	2	1	1	1	1	1	1	1	1	3	1.2	24
12		1	1	1	1	1	1	1	3	4	2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.7	24
13		0	0	0	0	0	0	0	0	S	1	0	3	Y	Y	Y	Y	0	0	0	0	12	17	0	0	17	1.7	20
14		0	1	0	0	0	0	0	0	S	3	1	1	1	4	1	1	3	0	0	2	1	0	0	4	0.9	24	
15		0	0	0	0	0	2	4	S	1	1	2	1	3	4	1	2	2	6	5	0	0	0	0	6	1.5	24	
16		0	0	0	0	0	S	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24	
17		0	0	0	0	0	S	0	0	1	2	1	1	0	0	0	3	2	0	2	0	3	1	1	3	0.9	24	
18		0	0	0	0	S	1	1	3	5	2	5	5	7	4	6	5	4	3	3	1	1	1	1	7	2.6	24	
19		1	1	1	S	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0.2	24	
20		0	0	S	0	0	0	0	C	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0.0	24	
21		0	S	0	0	0	0	0	0	0	0	0	1	1	5	4	6	7	1	2	15	20	28	28	8	28	5.5	24
22		S	0	0	6	2	14	7	17	2	8	6	2	0	0	0	0	0	0	0	0	0	0	0	S	17	2.9	24
23		0	0	0	0	0	0	0	0	4	4	3	4	0	0	2	4	0	0	0	0	0	0	S	3	4	1.0	24
24		0	0	0	0	0	0	0	0	0	3	5	3	0	0	0	1	5	4	4	0	S	0	0	5	1.1	24	
25		0	0	0	2	5	5	4	0	0	2	3	0	1	0	0	0	1	1	1	1	S	0	1	1	5	1.2	24
26		1	1	1	1	1	1	1	2	2	2	3	6	1	1	4	6	4	1	1	S	0	0	0	0	6	1.7	24
27		0	0	0	0	0	0	5	6	3	1	1	0	0	3	0	1	1	S	1	0	0	0	0	6	1.0	24	
28		0	0	0	0	0	0	2	2	2	4	3	1	1	1	1	0	2	S	10	1	4	15	3	24	24	3.3	24
29		25	18	3	1	1	1	1	1	0	0	0	0	0	0	0	S	0	1	1	0	0	1	0	25	2.3	24	
30		1	1	1	1	1	3I	24	3	3	11	5	0	0	0	0	S	1	1	1	1	1	1	0	3I	3.8	24	
HOURLY MAX		25	18	13	11	15	31	24	17	8	11	10	9	16	12	6	7	7	9	10	15	20	28	28	24			
HOURLY AVG		1.7	1.6	1.3	1.4	1.3	2.6	2.9	3.1	2.1	2.9	2.4	2.3	2.3	1.8	1.3	1.9	1.7	1.6	1.7	1.3	1.9	2.6	1.7	1.9			

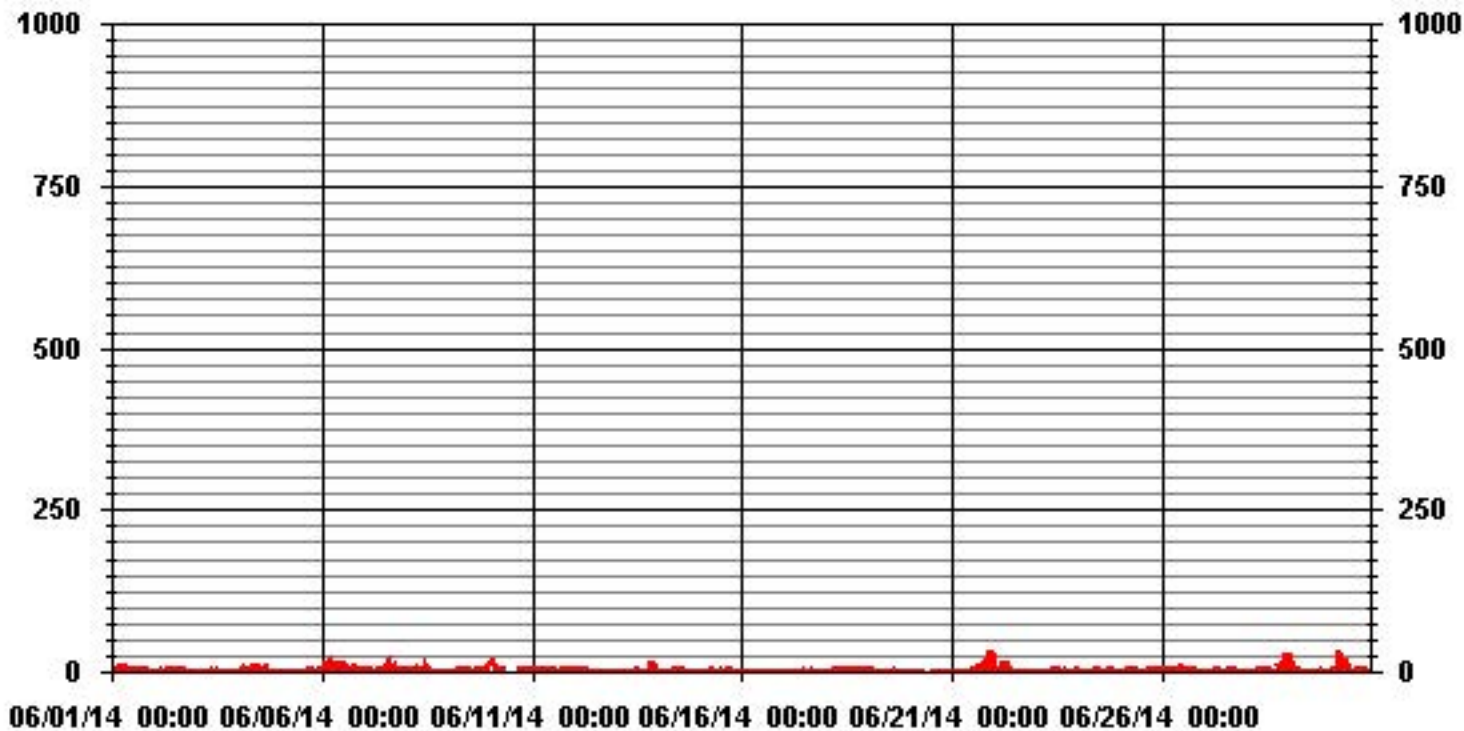
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	376
MAXIMUM INSTANTANEOUS VALUE:	31 PPB @ HOUR(S) 5 ON DAY(S) 30
	VAR-VARIOUS
IZS CALIBRATION TIME:	30 HRS
MONTHLY CALIBRATION TIME:	16 HRS
STANDARD DEVIATION:	3.77
OPERATIONAL TIME:	716 HRS

01 Hour Averages



LICA30
 SO2_ / WDR Joint Frequency Distribution (Percent)

June 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	10.13	6.25	11.77	6.70	6.40	8.19	8.94	4.47	5.21	9.38	2.08	1.49	2.38	2.38	7.30	6.85	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	10.13	6.25	11.77	6.70	6.40	8.19	8.94	4.47	5.21	9.38	2.08	1.49	2.38	2.38	7.30	6.85	

Calm : .00 %

Total # Operational Hours : 671

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	68	42	79	45	43	55	60	30	35	63	14	10	16	16	49	46	671
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	68	42	79	45	43	55	60	30	35	63	14	10	16	16	49	46	

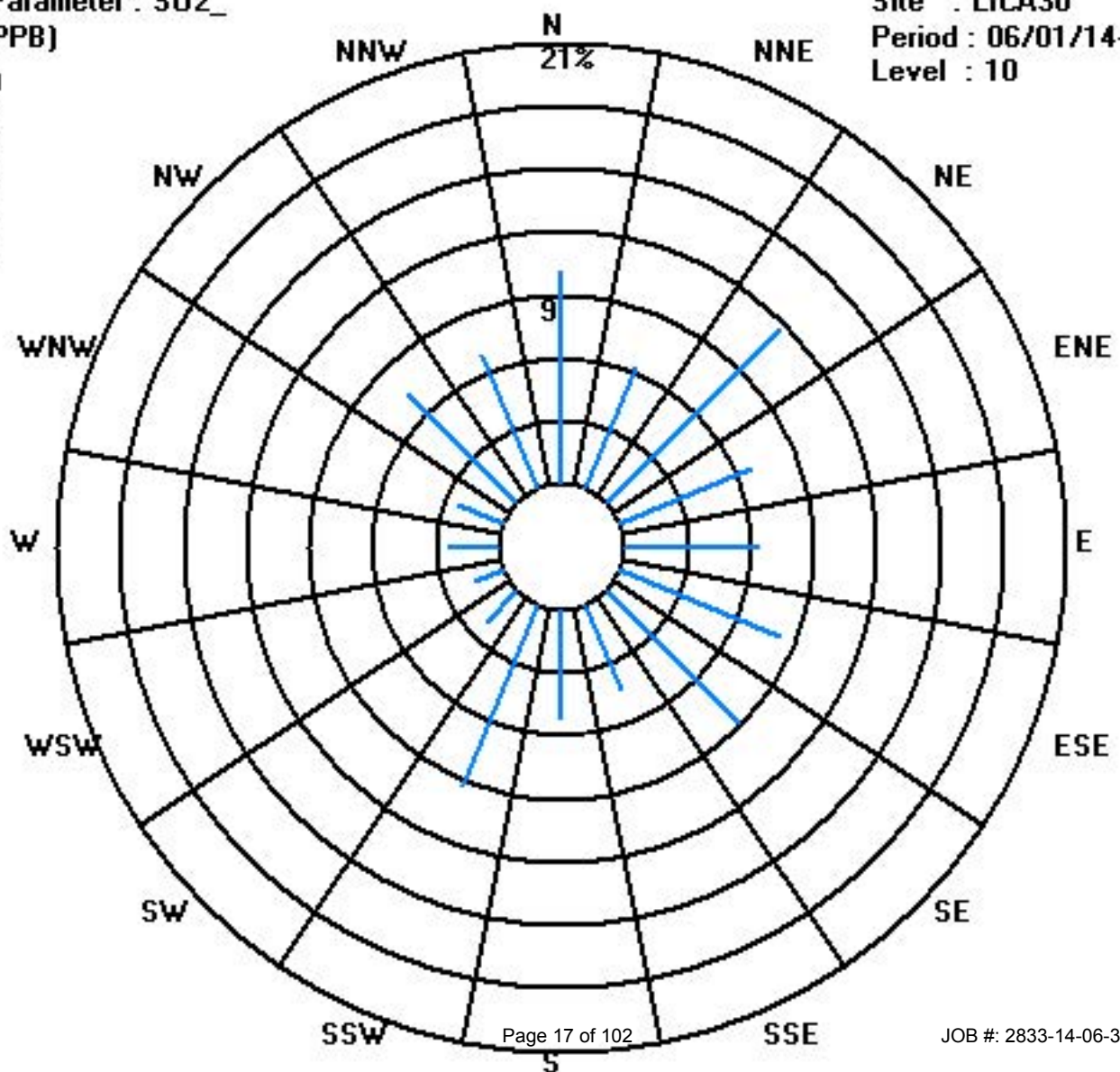
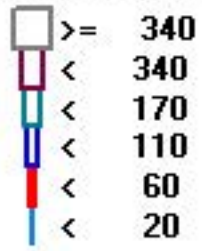
Calm : .00 %

Total # Operational Hours : 671

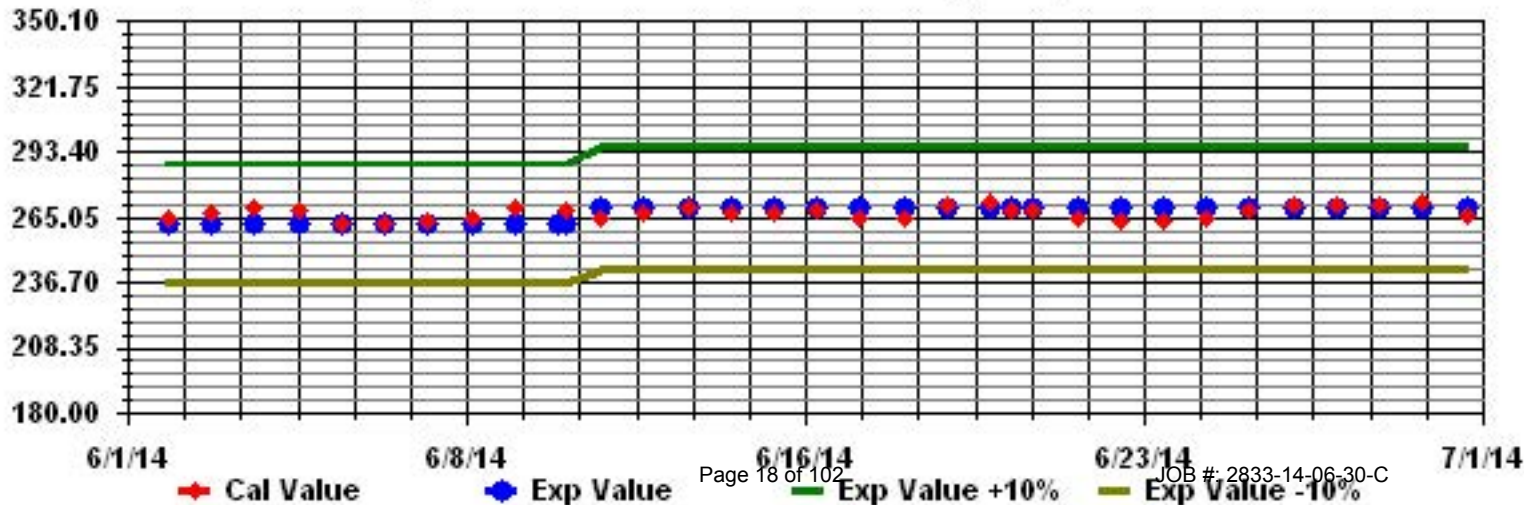
Class Limits (PPB)

Period : 06/01/14-06/30/14

Level : 10



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



Hydrogen Sulphide

Lakeland Industry & Community Association - Maskwa Site

JUNE 2014

HYDROGEN SULPHIDE (H2S) hourly averages in ppb

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

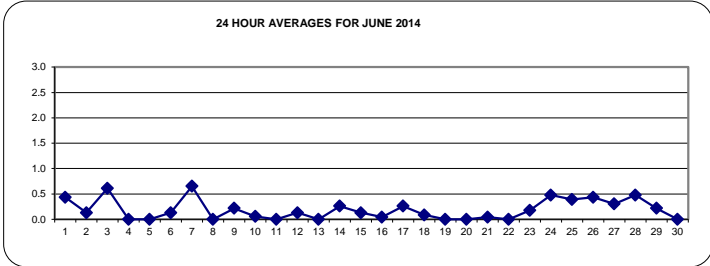
STATUS FLAG CODES

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

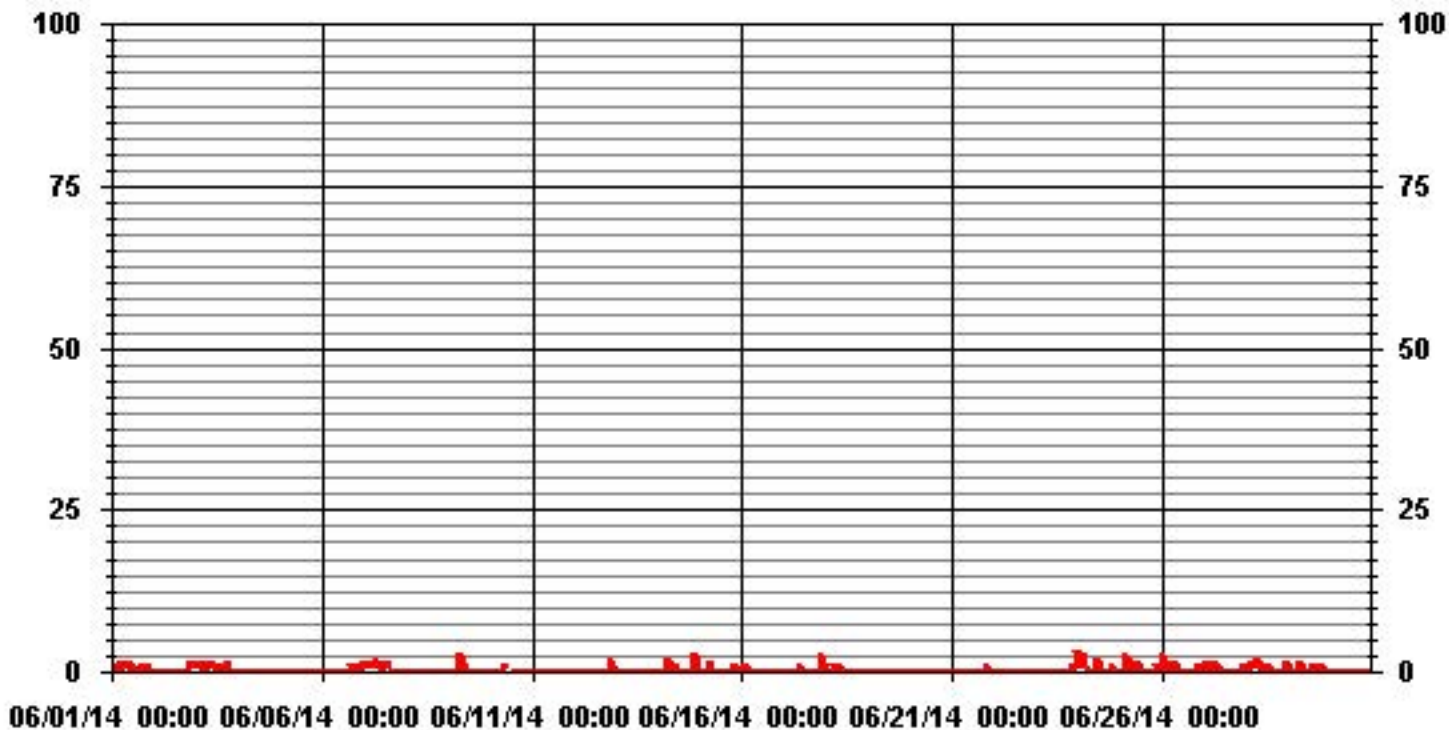
OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: 1-HR 10 PPB | 24-HR 3 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	109
MAXIMUM 1-HR AVERAGE:	3 PPB @ HOUR(S) VAR ON DAY(S) VAR
MAXIMUM 24-HR AVERAGE:	0.7 PPB ON DAY(S) VAR
VAR-VARIOUS	
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	5 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.49
MONTHLY AVERAGE:	0.19 PPB



01 Hour Averages



Lakeland Industry & Community Association - Maskwa Site

JUNE 2014

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																													
1		1	1	1	1	1	2	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	S	0	0	2	1.0	24	
2		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	2	2	1	2	0.2	24	
3		1	1	2	1	2	1	2	2	1	2	2	1	1	1	1	1	1	1	1	S	0	0	1	1	2	1.2	24	
4		0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	S	0	0	0	0	0	1	0.0	24	
5		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	
6		0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	2	2	1	1	2	0.5	24	
7		2	1	1	1	2	1	2	4	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	4	0.9	24	
8		0	0	1	1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.1	24
9		0	0	0	0	1	0	1	8	3	3	0	0	0	S	1	1	0	0	1	0	0	0	1	0	8	0.9	24	
10		1	1	0	0	0	0	0	1	C	C	C	C	C	C	0	1	1	S	S	0	0	0	1	1	1	0.4	24	
11		0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0	0	0	0	0	0	0	0	0	1	0.0	24
12		0	1	1	0	1	1	1	0	0	0	S	1	1	0	0	0	0	0	0	0	1	4	4	0	4	0.7	24	
13		0	1	0	0	0	0	1	1	1	S	1	1	0	1	1	1	0	0	0	1	1	1	1	2	1	2	0.7	24
14		0	0	1	0	0	1	3	1	S	2	1	1	1	1	0	0	1	1	1	1	1	7	0	1	7	1.1	24	
15		0	1	1	1	1	3	3	S	1	1	1	1	1	1	1	0	0	1	1	1	2	1	2	2	3	1.2	24	
16		1	1	2	0	0	1	S	0	0	1	0	1	0	0	1	1	1	0	1	1	0	0	0	2	0.5	24		
17		0	0	0	0	0	S	0	0	2	2	1	1	1	0	1	1	1	0	0	1	8	5	2	8	1.2	24		
18		0	0	0	0	S	1	1	2	2	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	2	0.6	24	
19		0	0	1	S	1	1	1	0	1	1	1	0	1	1	1	0	0	0	2	0	1	1	0	0	2	0.6	24	
20		0	1	S	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	0.8	24	
21		1	S	1	1	0	1	1	1	1	0	0	0	1	1	1	1	0	1	1	1	1	1	1	0	1	0.7	24	
22		S	0	0	0	0	1	0	1	0	1	1	0	0	1	0	0	0	0	0	0	1	1	1	0	S	1	0.4	24
23		1	0	0	0	1	0	1	1	1	0	1	0	0	0	0	1	1	0	0	0	3	S	7	7	0.8	24		
24		6	1	5	7	4	1	0	1	1	1	2	4	1	1	1	0	1	1	1	1	1	S	0	0	7	1.8	24	
25		0	0	1	7	1	2	3	1	1	2	1	1	1	1	1	0	2	1	1	1	S	1	1	1	7	1.3	24	
26		7	1	1	4	1	2	1	5	2	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	7	1.7	24	
27		1	2	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	2	1.1	24	
28		1	1	1	1	1	1	3	3	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	3	1.2	24	
29		2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	0	1	1	2	0	1	1	2	1.0	24		
30		1	1	1	1	1	1	1	1	1	1	1	0	0	1	S	1	1	1	1	1	1	0	0	1	0.8	24		
HOURLY MAX		7	2	5	7	4	3	3	8	3	3	2	4	1	1	1	1	2	2	1	2	8	5	7					
HOURLY AVG		0.9	0.6	0.9	1.0	0.7	0.9	1.0	1.3	0.9	0.9	0.7	0.8	0.6	0.6	0.7	0.5	0.5	0.6	0.6	0.5	0.7	1.3	0.9	0.8				

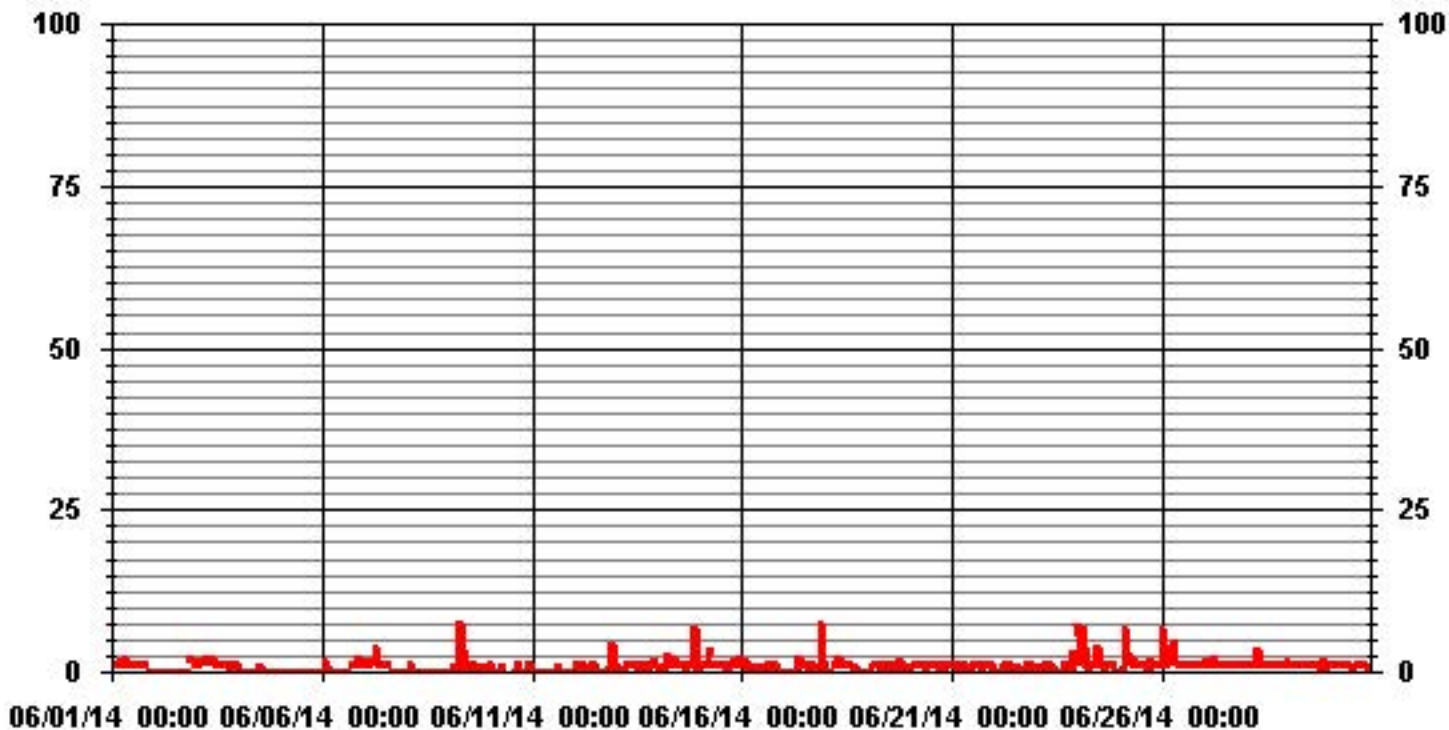
STATUS FLAG CODES

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:	399
MAXIMUM INSTANTANEOUS VALUE:	8 PPB @ HOUR(S) 7, 21 ON DAY(S) 9, 17
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	6 HRS
OPERATIONAL TIME:	720 HRS
STANDARD DEVIATION:	1.04

01 Hour Averages



LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3	10.10	7.46	11.85	6.73	6.29	7.17	8.63	4.39	5.12	9.22	2.04	1.46	2.34	2.34	7.17	6.58	98.97
< 10	.00	.00	.00	.00	.00	.87	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.02
< 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	10.10	7.46	11.85	6.73	6.29	8.05	8.78	4.39	5.12	9.22	2.04	1.46	2.34	2.34	7.17	6.58	

Calm : .00 %

Total # Operational Hours : 683

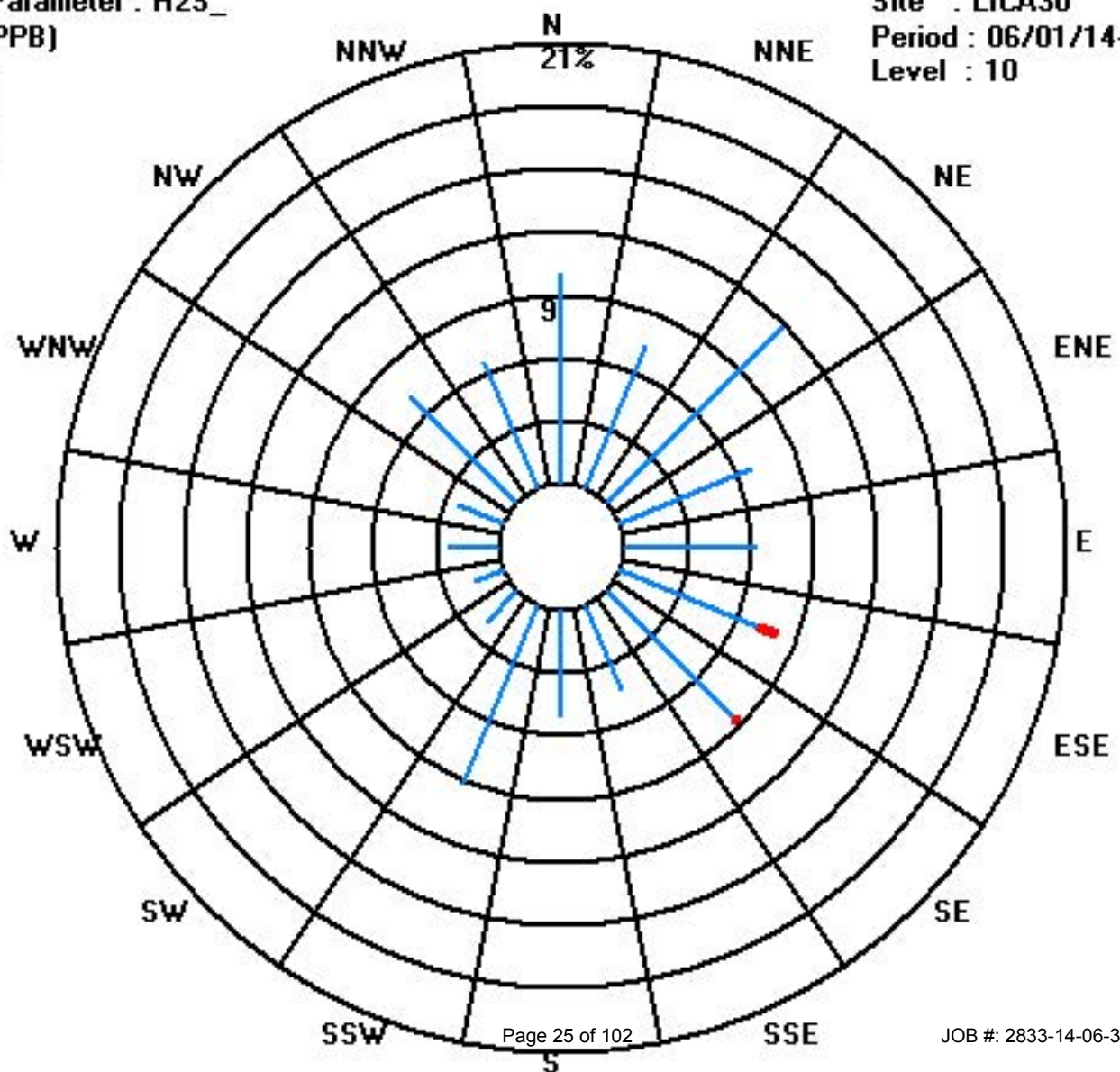
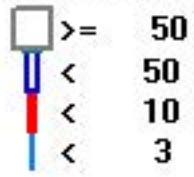
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3	69	51	81	46	43	49	59	30	35	63	14	10	16	16	49	45	676
< 10						6	1										7
< 50																	
>= 50																	
Totals	69	51	81	46	43	55	60	30	35	63	14	10	16	16	49	45	

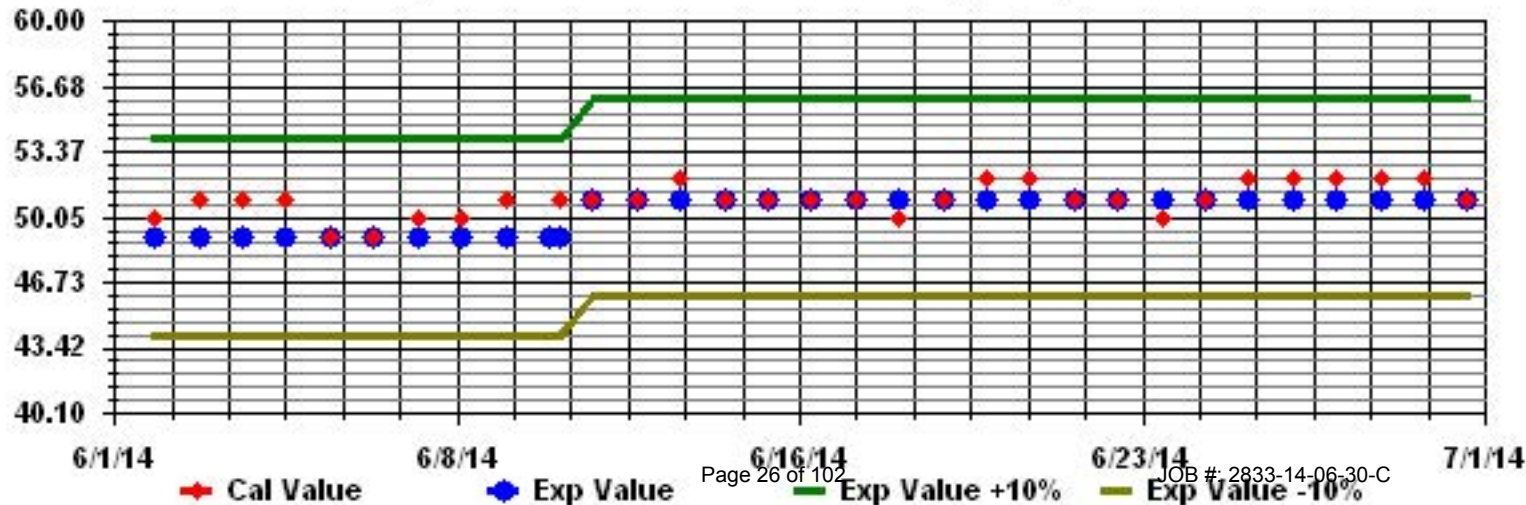
Calm : .00 %

Total # Operational Hours : 683

Class Limits (PPB)



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



Total Hydrocarbons

Lakeland Industry & Community Association - Maskwa Site

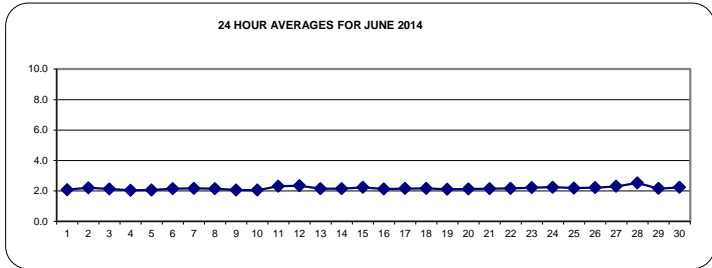
JUNE 2014

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	MAX.	AVG.	RDGS.		
DAY	1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	S	2.2	2.2	2.2	2.2	2.1	24	
	2	2.3	2.4	2.5	2.5	2.4	2.3	2.3	2.3	2.3	2.4	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	S	2.1	2.2	2.2	2.5	2.2	2.4		
	3	2.2	2.1	2.3	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	S	2.0	2.1	2.1	2.2	2.3	2.1	24		
	4	2.2	2.1	2.1	2.2	2.1	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	2.0	2.0	2.0	2.0	2.0	2.2	2.0	24		
	5	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.0	2.0	2.0	S	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	24		
	6	2.1	2.1	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.3	24		
	7	2.3	2.3	2.5	2.5	2.6	2.4	2.2	2.2	2.1	2.1	2.2	2.1	2.0	2.0	S	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.6	2.2	24	
	8	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.0	2.0	2.0	2.0	S	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.4	24	
	9	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	S	2.1	2.1	2.1	2.0	1.9	1.9	2.0	2.1	2.1	2.1	2.2	2.1	24	
	10	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	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.2	2.4	2.4	2.0	24		
	11	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.4	2.9	2.4	S	2.1	2.1	C	C	C	C	2.2	2.2	2.2	2.3	2.4	2.9	2.3	24		
	12	2.5	2.5	2.8	2.6	2.6	2.6	2.6	2.5	2.3	2.2	S	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.8	2.3	24	
	13	2.2	2.2	2.2	2.3	2.2	2.2	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	2.3	2.1	24		
	14	2.1	2.2	2.2	2.2	2.2	2.2	2.2	S	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	2.2	2.1	24	
	15	2.3	2.4	2.7	2.6	2.5	2.5	2.5	S	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.7	2.2	24	
	16	2.1	2.1	2.2	2.2	2.2	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	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24	
	17	2.1	2.2	2.2	2.1	2.1	S	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.2	2.2	2.2	2.3	2.2	24	
	18	2.2	2.2	2.3	2.3	S	2.4	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.2	24	
	19	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	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24	
	20	2.1	2.1	S	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	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24	
	21	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	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.3	2.1	24	
	22	S	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.2	2.2	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	S	2.3	2.2	24	
	23	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	S	2.3	2.4	2.2	24	
	24	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	S	2.2	2.2	2.3	2.2	24	
	25	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	S	2.1	2.2	2.2	2.3	2.2	24
	26	2.2	2.2	2.3	2.4	2.4	2.4	2.4	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.2	2.3	2.3	2.4	2.2	24	
	27	2.3	2.4	2.6	2.5	2.7	2.8	2.8	2.3	2.4	2.3	2.2	2.1	2.1	2.0	2.1	2.1	2.1	2.1	S	2.1	2.1	2.2	2.2	2.3	2.8	2.3	24	
	28	2.6	2.6	2.7	2.9	3.1	3.3	4.9	3.5	2.5	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.2	2.2	4.9	2.5	24	
	29	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	24	
	30	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	S	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.2	24	
HOURLY MAX		3	3	3	3	3	3	5	4	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	24	
HOURLY AVG		2.2	2.2	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	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	24	

STATUS FLAG CODES

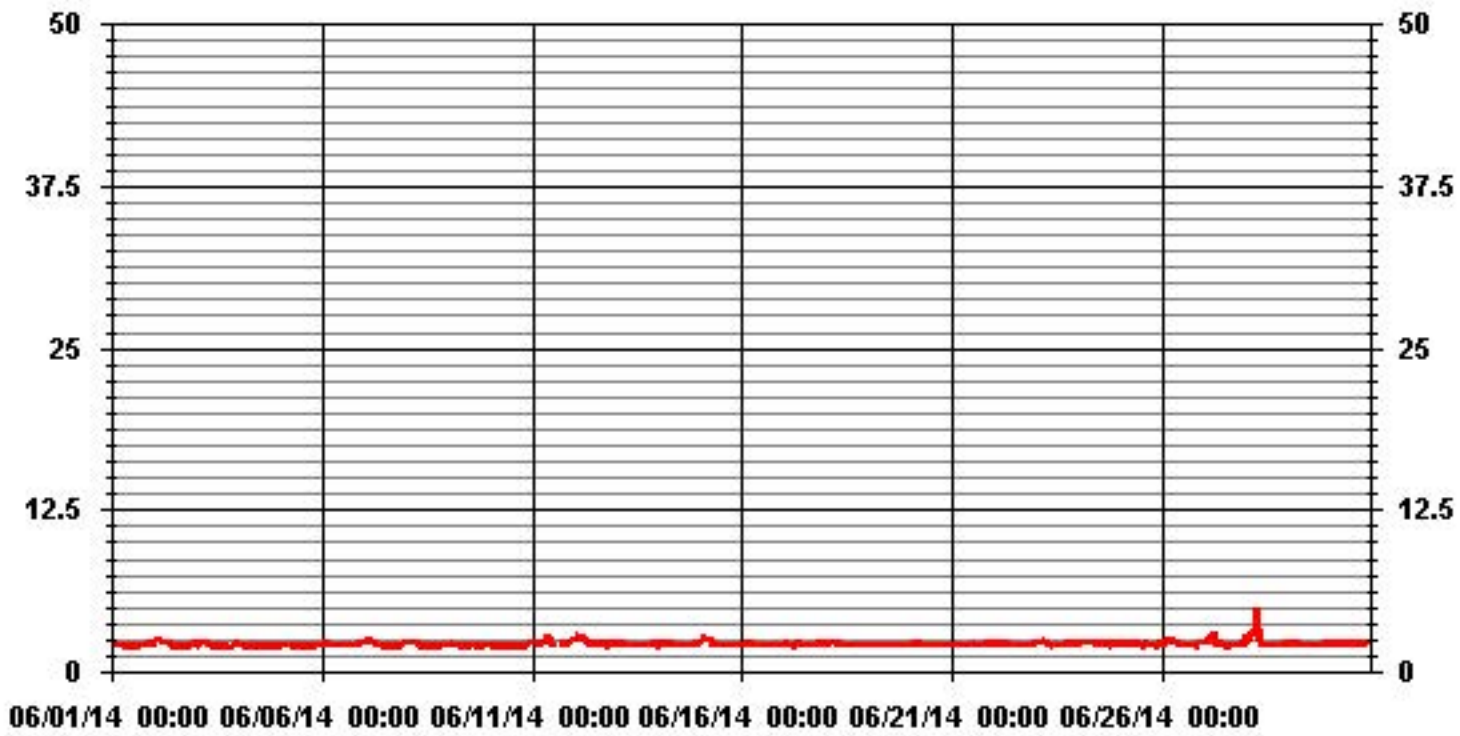
C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	685					
MAXIMUM 1-HR AVERAGE:	4.9	PPM	@ HOUR(S)	6	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	2.5	PPM			ON DAY(S)	28
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.19		MONTHLY AVERAGE:	2.17	PPM	

01 Hour Averages



— LICA30 THC PPM

Lakeland Industry & Community Association - Maskwa Site

JUNE 2014

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		2.1	2.7	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2	2.1	2	2.1	2.1	2.1	2.4	2.2	2.2	S	2.2	2.3	2.7	2.2	24		
2		2.4	2.4	2.5	2.6	2.5	2.4	2.4	2.3	2.4	2.4	2.3	2.1	2	2	2.1	2.1	2	2.1	2.3	2.3	S	2.2	2.2	2.2	2.6	2.3	24	
3		2.2	2.2	2.4	2.6	2.4	2.4	2.5	2.5	2.2	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2	2.2	2.2	2.3	2.6	2.2	24		
4		2.3	2.2	2.4	2.4	2.1	2	2	3	2	2.1	2.2	2.1	2.1	2	2.1	2	2	S	2	2	2	2	2.1	3	2.1	24		
5		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2.1	S	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	24		
6		2.2	2.2	2.6	2.4	2.3	2.4	2.2	2.2	2.2	2.1	2.2	2.1	2.4	2.1	2.1	2.2	S	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.6	2.2	24	
7		2.3	2.4	3	2.6	2.6	2.3	2.4	2.2	2.2	2.2	2.2	2.1	2.1	2	S	2.1	2.1	2	2	2.1	2.1	2.1	2.2	3	2.3	24		
8		2.3	2.4	2.4	2.4	2.3	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	S	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.2	24	
9		2.2	2.2	2.2	2.3	2.2	2.1	2.2	2.2	2.1	2.1	2	2	2	S	2.3	2.2	2.1	2.1	1.9	2	2	2.2	2.2	2.2	2.3	2.1	24	
10		2.2	2.2	2.1	2	2	2	2	2	2	2	2	S	2	2	2	2	2.1	2	2.3	2.1	2.1	2.2	2.3	2.6	2.6	2.1	24	
11		2.4	2.3	2.3	2.4	2.4	2.3	2.4	2.4	2.6	3.1	2.8	S	2.1	2.1	C	C	C	C	2.2	2.2	2.2	2.4	2.5	2.5	3.1	2.4	24	
12		2.6	2.6	4.3	2.6	2.7	2.8	2.7	2.5	2.4	2.3	S	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	4.3	2.5	24	
13		2.3	2.2	2.2	2.4	2.3	2.2	2.2	2.2	2.2	S	2.1	2.1	2.2	2.1	2.1	2.3	2.1	2.2	2.1	2.1	2.3	2.4	2.2	2.2	2.4	2.2	24	
14		2.2	2.4	2.3	2.2	2.3	2.5	2.2	2.3	S	2.2	2.2	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.5	2.2	24	
15		2.3	2.6	3	3.1	2.5	2.6	2.5	S	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	2.4	2.3	3.1	2.3	24	
16		2.1	2.2	2.2	2.3	2.3	2.3	S	2.7	2.1	2.4	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.7	2.2	24	
17		2.2	2.2	2.2	2.2	2.2	S	2.2	2.4	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.3	2.1	2.2	2.2	2.2	2.4	2.2	2.3	2.3	2.4	2.2	24	
18		2.2	2.5	2.4	2.4	S	2.7	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.2	2.1	2.1	2.1	2.2	2.7	2.3	24	
19		2.2	2.2	2.2	S	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.1	2.2	2.2	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	24	
20		2.1	2.2	S	2.3	2.3	2.3	2.2	2.2	2.3	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.2	24	
21		2.1	S	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.4	2.4	2.1	2.2	2.1	2.2	2.1	2.4	2.5	2.6	2.6	2.2	2.6	2.2	24	
22		S	2.2	2.2	2.3	2.3	2.6	2.3	2.5	2.5	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	S	2.6	2.3	24	
23		2.3	2.4	2.3	2.5	2.6	2.5	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.3	S	2.4	2.6	2.3	24	
24		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.4	2.2	S	2.2	2.2	2.4	2.3	24
25		2.2	2.2	2.3	2.3	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	S	2.2	2.2	2.4	2.2	24
26		2.2	2.3	2.3	2.4	2.5	2.5	2.4	2.5	2.3	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.1	2.1	S	2.2	2.3	2.4	2.4	2.5	2.3	24	
27		2.3	2.7	2.7	2.7	2.9	2.9	2.9	2.6	2.6	2.5	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.2	2.3	2.3	2.3	2.9	2.4	24	
28		3	2.8	2.8	3.4	3.7	3.8	6.4	5.1	2.8	2.3	2.1	2.2	2.1	2.1	2.1	2.1	2.1	S	2.2	2.1	2.2	2.3	2.2	2.3	6.4	2.8	24	
29		2.4	2.3	2.2	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	S	2.1	2.2	2.2	2.1	2.2	2.2	2.2	2.4	2.2	24	
30		2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	S	2.2	2.2	2.2	2.2	2.3	2.4	2.4	2.4	2.4	2.3	24	
HOURLY MAX		3	3	4	3	4	4	6	5	3	3	3	2	2	2	2	2	2	2	2	2	3	3	3	3				
HOURLY AVG		2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3				

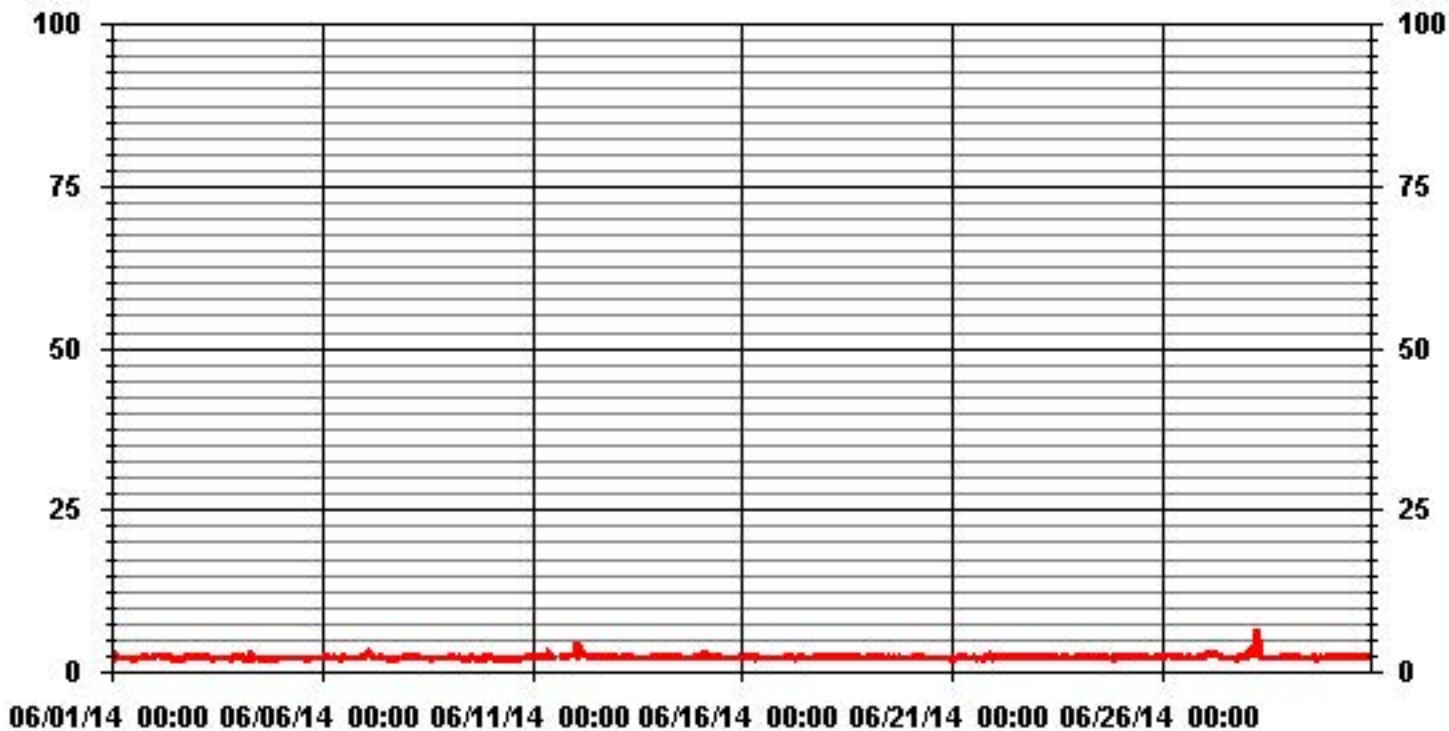
STATUS FLAG CODES

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:	685					
MAXIMUM INSTANTANEOUS VALUE:	6.4	PPM	@ HOUR(S)	6	ON DAY(S)	28
				VAR-VARIOUS		
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	0.29					

01 Hour Averages



— LICA30 THCMAX PPM

LICA30
 THC / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	10.21	7.73	11.82	6.71	6.13	8.02	8.46	4.37	4.96	8.90	2.04	1.45	2.33	2.33	7.15	6.71	99.41
< 10.0	.00	.00	.14	.00	.14	.00	.14	.00	.00	.14	.00	.00	.00	.00	.00	.00	.58
< 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	10.21	7.73	11.97	6.71	6.27	8.02	8.61	4.37	4.96	9.05	2.04	1.45	2.33	2.33	7.15	6.71	

Calm : .00 %

Total # Operational Hours : 685

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	70	53	81	46	42	55	58	30	34	61	14	10	16	16	49	46	681
< 10.0			1		1		1			1							4
< 50.0																	
>= 50.0																	
Totals	70	53	82	46	43	55	59	30	34	62	14	10	16	16	49	46	

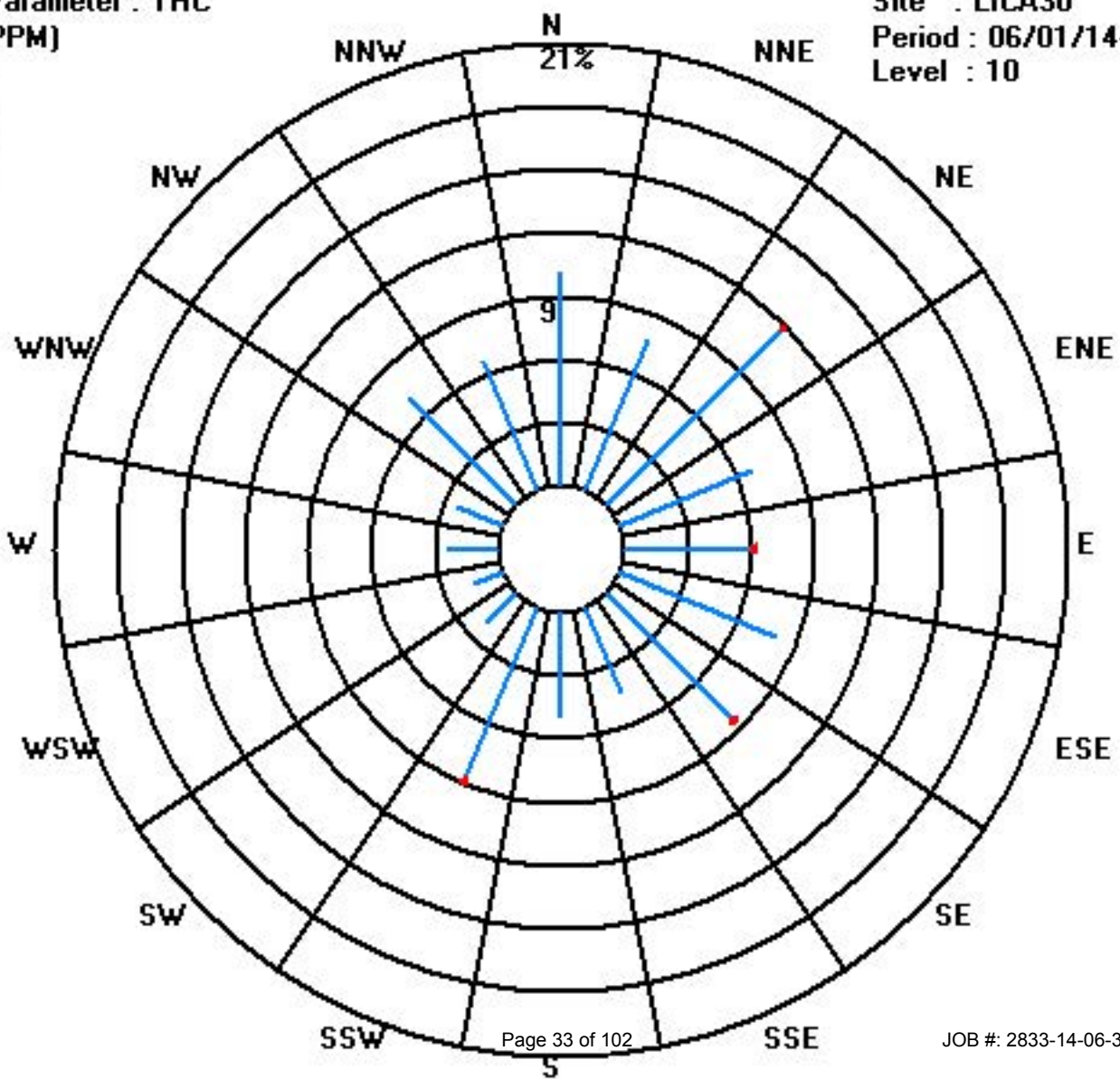
Calm : .00 %

Total # Operational Hours : 685

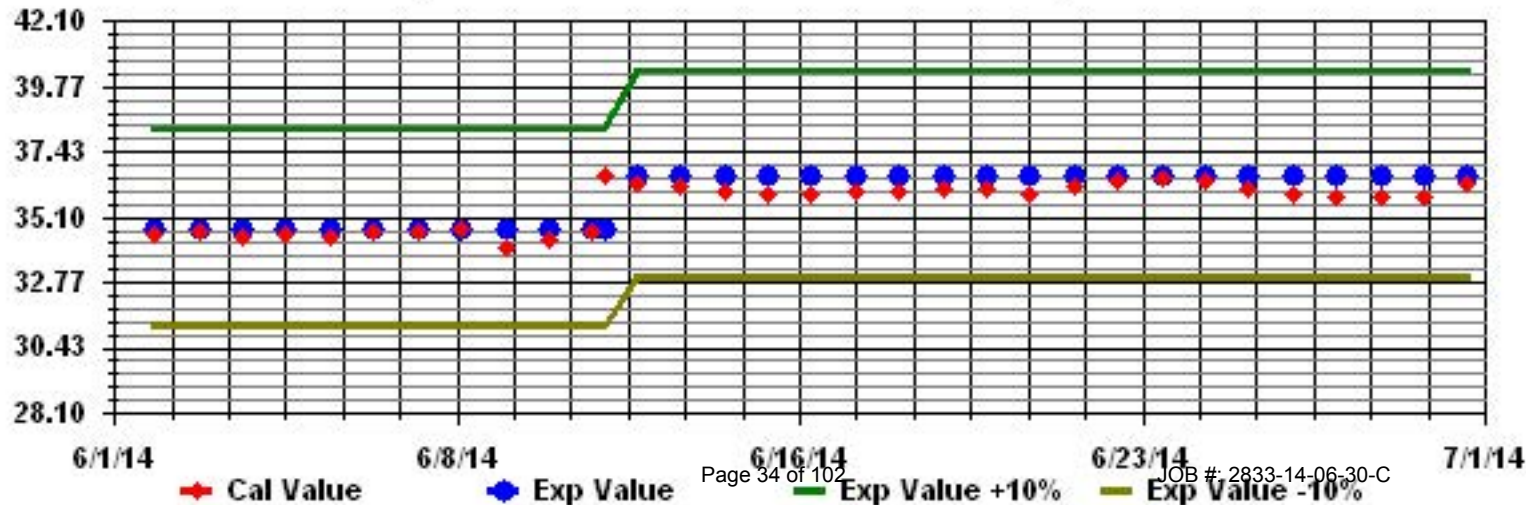
Class Limits (PPM)

Period : 06/01/14-06/30/14

Level : 10

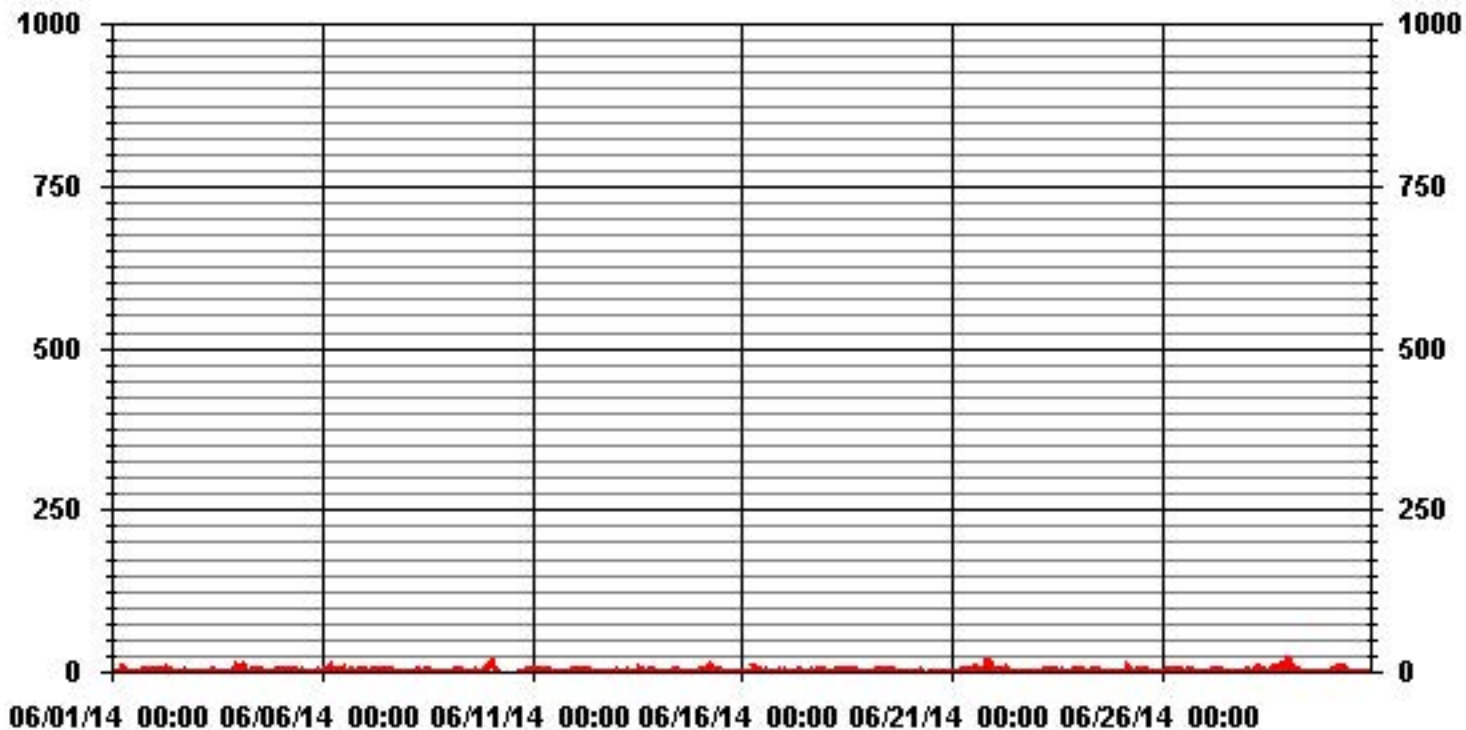


Calibration Graph for Site: LICA30 Parameter: THC Sequence: THC Phase: SPAN



Nitrogen Dioxide

01 Hour Averages



— LICA30 NO2_ PPB

Lakeland Industry & Community Association - Maskwa Site

JUNE 2014

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00			
1	3.4	2.4	1.6	1.6	1.8	13.2	13.2	12.5	8.2	3.9	1.3	1.2	1.2	4.7	1.2	4.2	2	2.3	4.1	4.4	2.5	S	2.3	2.7	13.2	4.2	24
2	2.6	2.9	3.3	4.3	4.6	4.4	8.4	8.8	8.8	5.8	3.3	2.2	1.7	1.8	7.3	8.1	2.1	13.3	13.7	2.1	S	2.4	1.7	1.2	13.7	5.0	24
3	1.3	1.8	3.4	2.5	2.9	2.5	2.1	2.4	4.3	8.3	3.9	3	3	2.1	1.5	1.3	1.3	1.4	1.2	S	1.5	31.6	3.1	11.8	31.6	4.3	24
4	5.9	5	7.3	18.4	12	1.9	1.7	14.4	3.7	10	5.3	7.3	4.7	1.6	4.5	6	0.5	0.7	S	0.9	0.4	1.2	1.3	2	18.4	5.1	24
5	2.1	3.6	3	1.8	3.2	3.5	6.6	8.2	6.4	4.1	3.6	1.8	2.6	2.1	2.1	1.8	1.7	S	1	0.7	1.8	4.3	2.2	0.8	8.2	3.0	24
6	1.1	3.2	18.5	17.8	16.7	6.8	S	S	9.3	10.6	11.6	7	16.3	1.2	1.4	4.4	S	5.7	4.6	0	0.2	2.2	1.8	1.3	18.5	6.7	24
7	0.6	0.7	0.7	2.7	4.3	1.7	3.3	5.6	4	2	1.6	3.6	8.2	8.9	0	S	7.4	10.7	0.4	0.4	0.6	0.6	3	1.3	10.7	3.1	24
8	2.9	1.7	1.6	1.4	1.1	1.9	2	9.4	7.8	4.3	1.6	6.2	3.3	4.2	S	2.3	1	1.1	1.2	1.2	2.3	2.4	1.5	2.1	9.4	2.8	24
9	2.3	1.9	1.7	2.5	2.9	1.9	15.3	S	S	4.7	2.5	1.4	1.4	S	2.7	5	7.6	2.2	0.8	0.7	0.8	9.7	19.2	19.2	19.2	5.1	24
10	20.2	24.4	19	4.4	1.2	1.4	S	S	C	C	C	C	C	C	C	C	C	C	0.3	1.8	2.4	2.8	9.3	24.4	7.9	24	
11	6.5	8.7	5.8	3.9	3.2	5.4	9.1	7.8	3.5	5.4	4.9	S	1.8	1.7	1.8	4.9	1.5	1.2	1.3	1.4	1.7	1.8	2.4	3	9.1	3.9	24
12	5.6	4.2	4.5	4.6	6.2	10.2	7.8	7.7	7.8	2.4	S	1.6	1.3	1.5	2.8	1.3	0.8	0.8	0.9	1.1	1.6	0.9	1.2	1.3	10.2	3.4	24
13	8.5	4.4	3.4	1.1	1.2	1.7	4.3	6.3	1.3	S	2.5	1.7	4.3	19.7	12.8	19.5	4.1	0.8	0.9	1.5	19.6	26.1	1.2	1.4	26.1	6.4	24
14	0.8	6.4	3.6	1.4	4.2	4.9	2.7	3.2	S	6.6	3.2	3.4	2.9	4.7	2.2	1.9	2.5	3.5	0.8	1.1	5	2.1	2.9	3	6.6	3.2	24
15	2.2	6.5	5.7	7.4	4	76.2	51.6	S	21	16.9	3.1	2.8	4	6.3	2.5	10.5	2.7	6.6	5.5	0.9	1.4	0.7	1.2	1.2	76.2	10.5	24
16	0.8	3.4	4.6	2.7	4.6	22.2	S	26.9	11.8	10	11	1.5	5.3	1.6	3.5	1.2	1.3	2	1.7	0.9	1.4	2.2	1.8	1.5	26.9	5.4	24
17	2.8	3.3	2	2	1.2	S	3.6	4	10.9	4.7	4.1	4.1	1.3	1.8	1.2	5.8	4	1.3	3.7	1.6	8.6	3.3	4.3	7.2	10.9	3.8	24
18	1.1	2.2	2.2	2.2	S	4.8	18.8	6	17.1	6.1	6.6	5.6	9.2	4.4	7	5	6.1	5.2	6.2	2	1.5	2.3	2.1	2.6	18.8	5.5	24
19	1	2	1.9	S	1.9	11.4	4.3	17.8	15.8	12.9	5.9	20.7	12.1	4	4.2	4.7	1.4	0.8	2.1	1.3	2.2	0.5	2.5	0.6	20.7	5.7	24
20	2.5	4.4	S	1.8	2.3	22.2	23.3	C	C	C	C	C	2.7	2.2	1.3	1	1	1.3	1.9	1.5	1.8	2.3	0.7	0.5	23.3	4.2	24
21	0.5	S	0.2	0.2	0.3	29.6	11.3	14.3	21.8	3.1	10.8	6.1	5.6	11.8	10.5	9.6	8.5	3.1	2.9	16.8	18.7	18.7	17.7	5.6	29.6	9.9	24
22	S	1.1	1.2	9.6	5.3	9.5	7.3	13.9	8.7	6.3	5	1.7	0.6	4.1	2.2	2.1	1	0.8	0.7	0.9	2	1.1	0.8	S	13.9	3.9	24
23	2.1	0.9	0.9	1	8.8	18.9	18.2	2.7	3.7	7	7.2	4.7	4.9	1.7	0.8	4.7	6.7	1	0.9	0.8	2.4	1.1	S	12.1	18.9	4.9	24
24	1.5	6.2	4.1	2.5	2.5	1.8	1.3	1.9	8.5	1.9	5.4	9.5	4.8	1.4	2	1.7	3.3	6.3	5.9	7.6	2.1	S	1.3	1.3	9.5	3.7	24
25	1.1	1.1	1.2	13.1	13.7	13.2	7.9	1.3	1.5	3.1	2.7	1.7	1.7	1.5	14.7	15.4	1.4	1.5	1.4	1.5	S	1	0.8	1.5	15.4	4.5	24
26	1.3	2.5	3.4	2.9	2.9	3.1	3.1	5.1	2.8	3.5	5.2	10.2	2.5	1.7	6.9	8.7	6.4	2.8	1.7	S	1.6	2.1	2	1.8	10.2	3.7	24
27	1.1	1.7	1.5	2.4	1.8	3.2	8.9	9.6	5.2	5.7	3.1	2	1.7	0.9	5.1	0.9	1.2	3.4	S	2.3	1.5	1	0.9	2.8	9.6	3.0	24
28	4.3	3.4	2.4	1.5	1.6	1.1	6.3	9.8	7.4	8.8	6.3	3.3	2	3	8.4	1.5	4.7	S	17.3	1.9	16.2	25.6	4.8	28.7	28.7	7.4	24
29	31.5	27.8	4.4	3.9	2.8	3.1	3.3	3.4	1.3	0.9	0.8	0.9	0.9	1	1.2	1.2	S	1	1.4	1.4	1.2	1.9	3.4	1.4	31.5	4.4	24
30	2.1	2	3.3	5	4.8	24.4	21.2	3.7	3.2	13.6	6.4	1.4	1.3	1.2	1.4	S	1.2	2.1	1.1	1	0.8	0.7	0.9	1.4	24.4	4.5	24
HOURLY MAX	32	28	19	18	17	76	52	27	22	17	12	21	16	20	15	20	9	13	17	17	20	32	19	29			
HOURLY AVG	4.1	4.8	4.0	4.4	4.3	10.6	9.9	8.3	7.9	6.4	4.8	4.3	3.9	3.7	4.0	5.0	3.1	3.1	3.2	2.1	3.7	5.4	3.2	4.5			

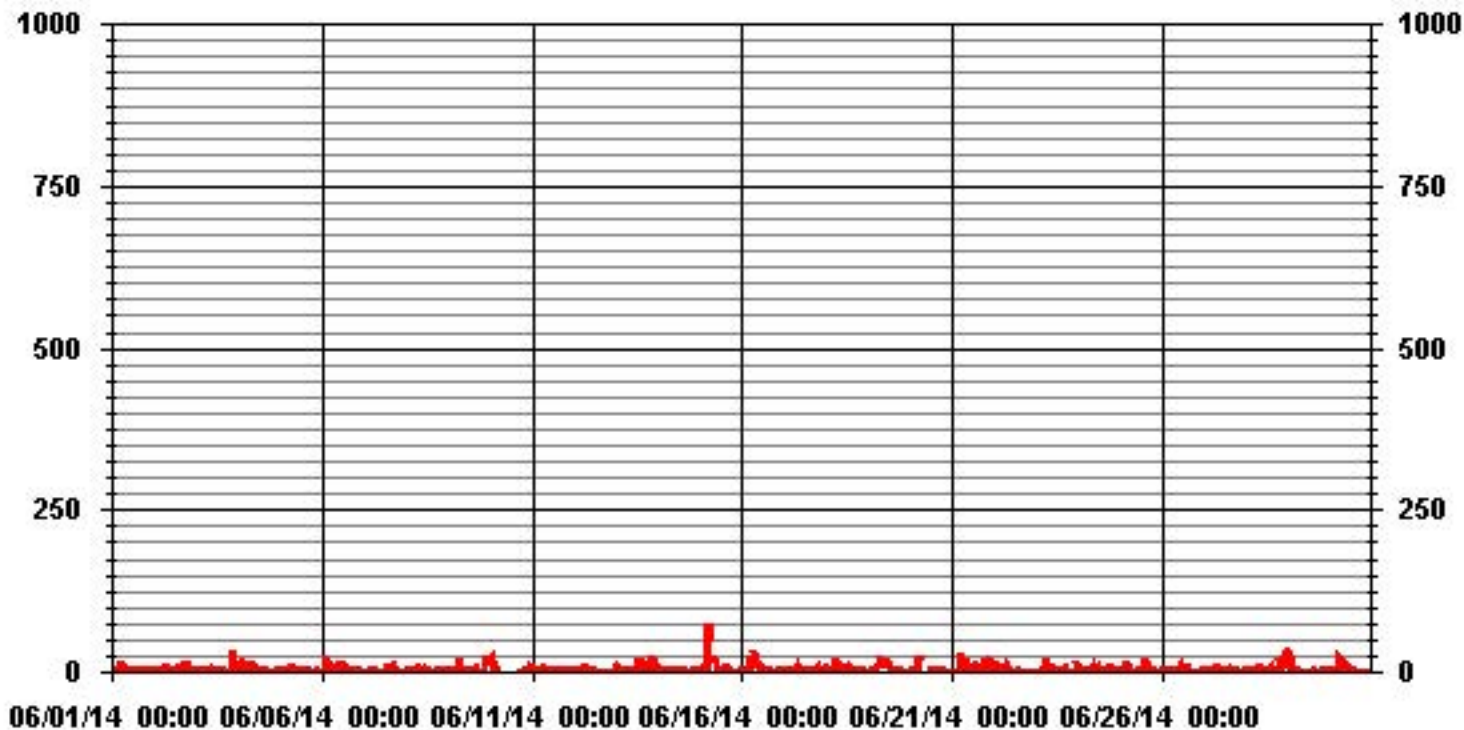
STATUS FLAG CODES

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:	666
MAXIMUM INSTANTANEOUS VALUE:	76.2 PPB @ HOUR(S) 5 ON DAY(S) 15
	VAR-VARIOUS
IZS CALIBRATION TIME:	36 HRS
MONTHLY CALIBRATION TIME:	16 HRS
OPERATIONAL TIME:	720 HRS
STANDARD DEVIATION:	6.23

01 Hour Averages



LICA30
 NO2_ / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	9.68	6.85	12.07	6.70	6.40	8.04	8.94	4.47	5.21	9.38	2.08	1.49	2.38	2.38	7.00	6.85	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	9.68	6.85	12.07	6.70	6.40	8.04	8.94	4.47	5.21	9.38	2.08	1.49	2.38	2.38	7.00	6.85	

Calm : .00 %

Total # Operational Hours : 671

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	65	46	81	45	43	54	60	30	35	63	14	10	16	16	47	46	671
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	65	46	81	45	43	54	60	30	35	63	14	10	16	16	47	46	

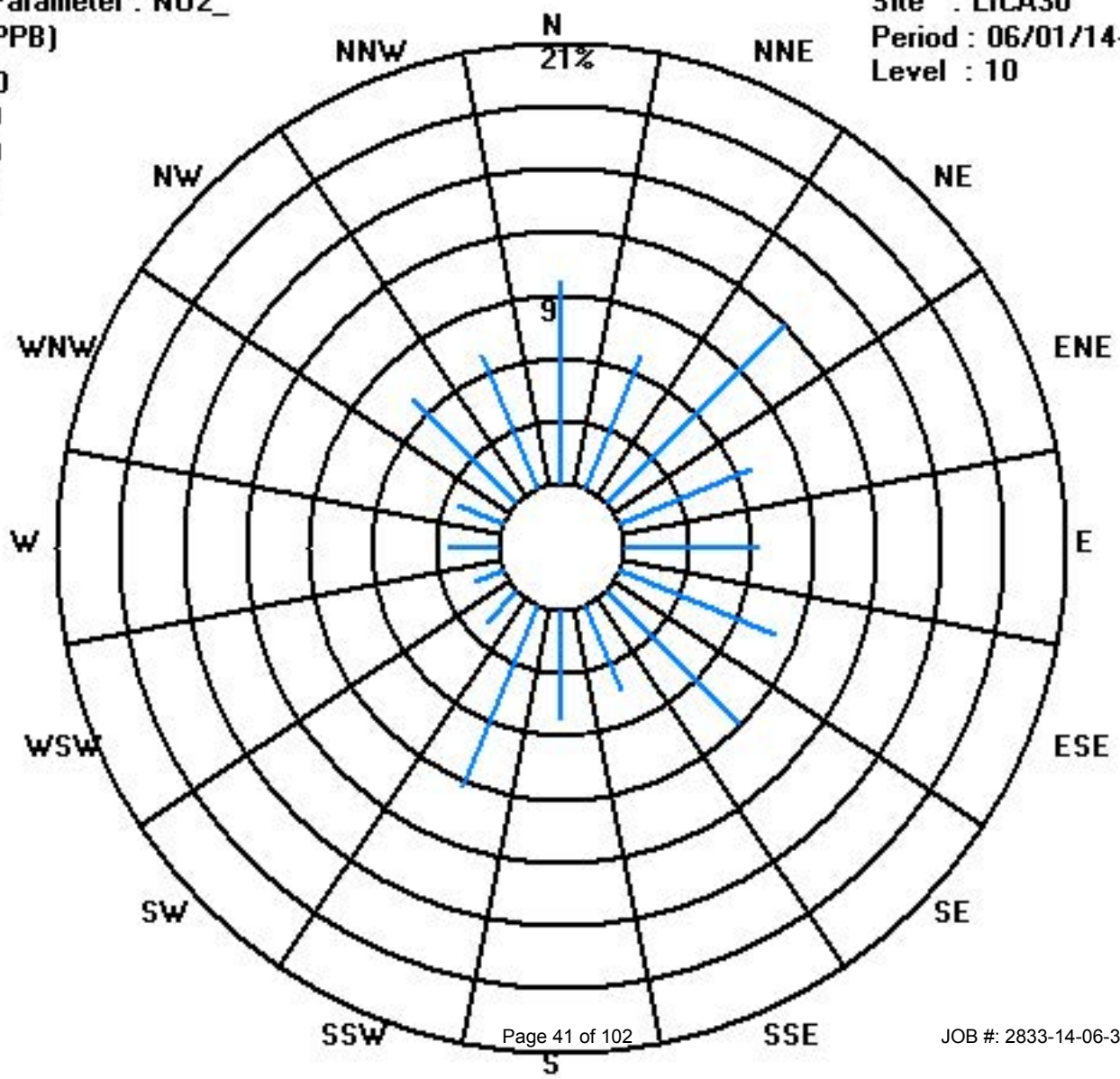
Calm : .00 %

Total # Operational Hours : 671

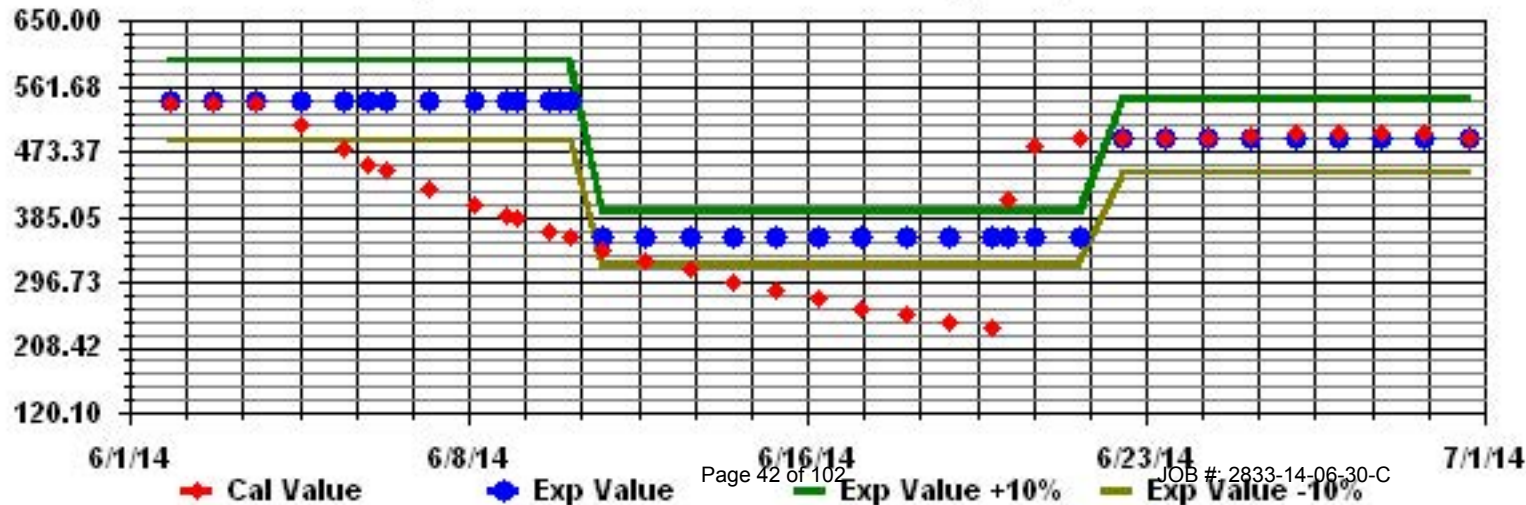
Class Limits (PPB)

Period : 06/01/14-06/30/14

Level : 10



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



Nitric Oxide

Lakeland Industry & Community Association - Maskwa Site

JUNE 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 MAX.	24-HOUR AVG.	RDGS.
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
1	0	0	0.4	0.5	0.7	1.1	2.4	3.5	1.2	0.8	0	0	0	0	0	0	0	0	0	0	0	S	0	0	3.5	0.5	24	
2	0	0	0.1	0.1	0.3	0.4	1.5	2.2	2.1	0.9	0	0	0	0	0	0	0	0	0	0	S	0.1	0.4	0.5	2.2	0.4	24	
3	0.8	1.1	1.2	1.3	1.4	1.8	1.6	1.4	1.4	1.6	0.2	0	0.1	0.1	0	0	0	0	0	S	0	1.7	0	0.2	1.8	0.7	24	
4	0.2	0.2	0.4	3.5	2.2	0.5	0.4	0.8	0.9	1.5	1.7	4	0.8	0.2	0.6	0.5	0	0	S	0.1	0.2	0.2	0.2	0.4	0.7	4	0.9	24
5	0.9	1	1	0.9	1.3	1.4	2.4	4.2	3.4	3.5	1.8	1.7	2	1.6	1.5	1.4	1.3	S	0.2	0.2	0.2	0.3	0.3	0.3	4.2	1.4	24	
6	0.4	0.4	2.1	1.8	4.1	1.4	S	S	2.5	2.3	2.7	0.8	3.1	0	0.1	0.2	S	0	0	0	0	0	0	0	4.1	1.0	24	
7	0	0	0	0	0	0	0.6	0.4	0.5	0	0	0	0	0	0	S	0.8	0.6	0	0	0	0	0	0.4	0.5	0.8	0.2	24
8	0.7	0.8	0.8	0.9	1	1.2	1.5	2.5	2.2	1	0.4	0.4	0.3	0	S	0.2	0	0	0	0	0	0	0	0	0	2.5	0.6	24
9	0.2	0.3	0.2	0.4	0.5	0.6	1.6	S	0.8	0.2	0	0	0	S	0.5	0.8	0.3	0	0	0	0	0.3	1.8	2.9	2.9	0.5	24	
10	5.3	5.4	2.5	0.1	0	0	S	S	0.6	C	C	C	C	C	C	C	C	0.4	0.2	0.3	0.6	0.8	1.6	5.4	1.4	24		
11	1.2	1.2	1.4	1.5	1.9	3.3	6.9	4.5	3.5	5.2	2.4	S	0	0	0	0.1	0	0	0	0	0	0	0	0	0.2	6.9	1.4	24
12	0.5	0.4	0.5	0.6	1.2	3	3.1	2.9	2.5	0.3	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.1	0.7	24
13	0	0.2	0.4	0.4	0.6	0.7	1.6	1.5	0.4	S	0.2	0	0	3.4	3.3	3.3	0	0	0	0	0	0	0	0	0	3.4	0.7	24
14	0	0	0.2	0.5	0.6	1.2	1	0.8	S	1.8	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.8	0.3	24
15	0	0.3	0.5	0.6	0.9	22.3	14.8	S	4.2	2.2	0.1	0	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	22.3	2.0	24
16	0	0	0.1	0.1	0.2	1.6	S	8.5	3.9	3.6	4.8	0	0.3	0	0.3	0	0	0	0	0	0	0	0	0	0	8.5	1.0	24
17	0	0.1	0	0.1	0.2	S	0.8	1.3	1.8	1.6	1	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	1.8	0.3	24
18	0	0	0	0.1	S	1.8	6.6	0.6	2.5	0.9	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.6	0.5	24
19	0	0	0	S	0	0.8	1.4	2.8	6	2.2	1.7	5.3	2.9	0.4	0	0	0	0	0	0	0	0	0	0	0	6	1.0	24
20	0	0	S	0	0	1.5	5.5	C	C	C	C	C	0.7	0.5	0	0	0	0	0.2	0.3	0.1	0.1	0	0	5.5	0.5	24	
21	0	S	0	0	0	2	7.8	7.5	6	1.6	3	2.8	1	3.8	2.3	3.6	3.7	0.1	0	6.8	13.5	14.9	7.4	0.2	14.9	3.8	24	
22	S	0	0.1	1	0.9	3.6	2.6	7.4	3.2	1	0.6	0	0	0.7	0.1	0	0	0	0	0	0	0	0	0	0	7.4	1.0	24
23	0	0	0	0	0.5	0.9	2.9	0.7	0.7	2.4	2.6	0.5	0.5	0	0	0.2	0.9	0	0	0	0	0	0	S	0.5	2.9	0.6	24
24	0.3	0.2	0	0.1	0.2	0.3	0.4	0.6	0.7	0.4	1	2.6	1.1	0.1	0.3	0.1	0.4	0.9	0.4	0.4	0	S	0	0	2.6	0.5	24	
25	0	0	0	0.1	2.2	2.6	1	0.1	0.2	0.4	0.2	0	0	0	0.1	0	0	0	0	0	0	S	0	0	2.6	0.3	24	
26	0	0	0.1	0	0.1	0	0.2	0.7	0.4	0.2	0.7	1	0.1	0	0.2	1.3	0.1	0.1	0	S	0.2	0	0.2	0.2	1.3	0.3	24	
27	0.2	0	0	0	0.4	1	2.2	2.3	1.7	1	0.5	0.2	0.2	0.2	0.7	0.1	0.1	0.4	S	0	0	0	0	0	2.3	0.5	24	
28	0	0	0	0	0	0.2	1.4	2.7	1.2	0.8	0.4	0	0	0	0	0	0	0	S	1	0	0	2	0	0.4	2.7	0.4	24
29	6.5	2.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	6.5	0.4	24	
30	0	0	0	0	0	3.5	3.7	0.1	0.2	1.4	0.3	0	0	0	0	S	0	0	0	0	0	0	0	0	3.7	0.4	24	
HOURLY MAX	7	5	3	4	4	22	15	9	6	5	5	5	3	4	3	4	4	1	1	7	14	15	7	3				
HOURLY AVG	0.6	0.5	0.4	0.5	0.7	2.0	2.8	2.4	2.0	1.4	1.0	0.7	0.5	0.4	0.4	0.4	0.3	0.1	0.1	0.3	0.5	0.7	0.4	0.3				

STATUS FLAG CODES

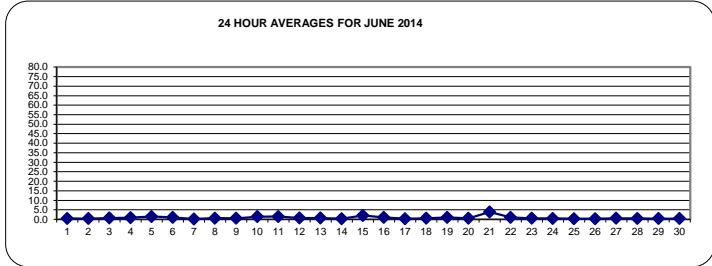
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

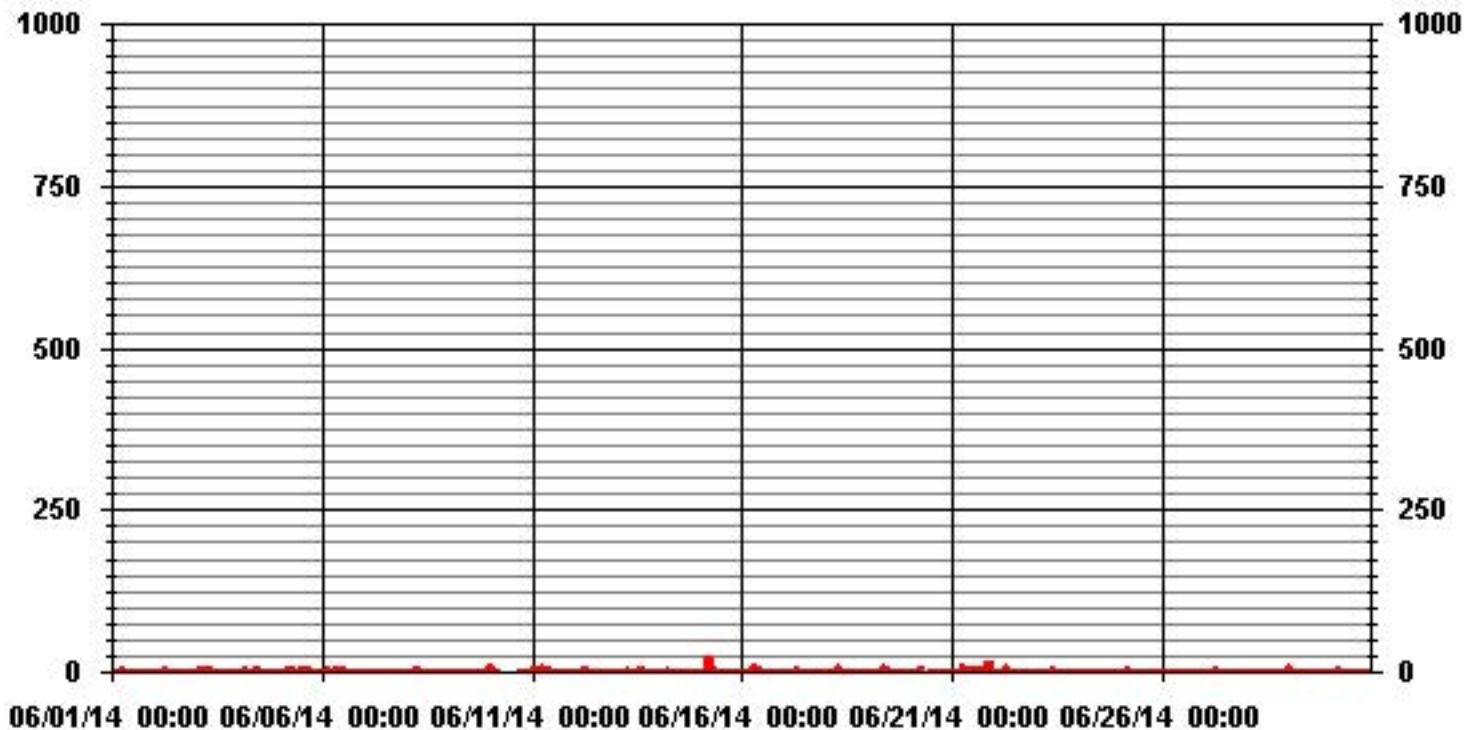
ALBERTA ENVIRONMENT: 1-HR NA PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA				
NUMBER OF NON-ZERO READINGS:	352				
MAXIMUM 1-HR AVERAGE:	22.3	PPB	@ HOUR(S)	5	ON DAY(S) 15
MAXIMUM 24-HR AVERAGE:	3.8	PPB			ON DAY(S) 21
					VAR-VARIOUS
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	14	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	1.79		MONTHLY AVERAGE:	0.80	PPB



01 Hour Averages



— LICA30 NO_ PPB

Lakeland Industry & Community Association - Maskwa Site

JUNE 2014

NITRIC OXIDE MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	0.4	0.7	0.9	1	1.2	4	4	6.9	4.2	2.2	0.7	0.5	0.1	1.2	0.1	0.6	0	0.3	0.2	0.1	0.1	S	0.2	0.1	6.9	1.3	24
2	0.5	0.5	0.8	0.9	1	1.3	3.3	3.8	3.6	2	0.9	0	0	0	2	1.3	0	0.6	0.7	0	S	0.7	1	1.2	3.8	1.1	24
3	1.4	1.7	1.7	1.9	2.2	2.3	2.4	2.4	2.9	3.5	1.6	0.9	1.2	0.8	0.7	0.9	0.5	0.6	0.7	S	0.7	33.1	0.7	0.8	33.1	2.9	24
4	0.9	1	1.2	14.8	7.8	1.4	1.2	2.8	2	5.7	5.1	9.9	5.2	2	3.3	4.6	0.6	0.3	S	0.7	0.8	0.8	0.9	1.3	14.8	3.2	24
5	1.6	1.6	1.5	1.6	2	2.1	7.2	8.6	5.7	5.3	2.6	2.5	2.6	2.5	2.1	2	1.9	S	1	0.9	0.9	1.5	2.1	0.9	8.6	2.6	24
6	0.9	1.2	13.3	11.5	8.4	2.6	S	S	21.7	8.9	9.4	3.8	10.8	0.7	0.9	1.8	S	0.7	0.1	0	0	0	0	0	21.7	4.6	24
7	0	0	0	0	0.1	0.2	2.1	2.5	2.2	0.4	0	1.7	2.9	7.3	0	S	3.7	5.9	0.2	0.1	0.7	0.7	0.9	1	7.3	1.4	24
8	1.1	1.5	1.3	1.5	1.6	1.9	2.2	5.6	4.8	2.5	1.1	3	1.7	1.3	S	1	0.6	0.6	0.4	0.4	0.5	0.7	0.6	0.7	5.6	1.6	24
9	0.8	0.8	0.8	1.1	1.2	1.2	4.5	S	S	0.7	0.5	0.6	0.6	S	1.2	2.9	3	0.4	0.2	0.1	0.2	1.8	10.6	11.6	11.6	2.1	24
10	10.5	12.7	7	0.9	0.4	0.4	S	S	C	C	C	C	C	C	C	C	C	C	C	0.9	1.1	1.2	1.3	3.5	12.7	3.6	24
11	2.1	1.9	2	2.2	2.4	5.6	11.7	8.6	4.6	6.7	4.2	S	0.5	0.5	0.3	1.6	0.5	1.2	0	0	0.2	0.5	0.9	11.7	2.5	24	
12	1.2	1	1.2	1.2	1.8	7.4	6	4.2	4.2	1	S	0.6	0.2	0.6	0.3	0	0	0	0	0	0	0	0.2	0.4	7.4	1.4	24
13	1	1	1.1	1	1.2	1.3	4.2	7.9	1	S	2	0.5	1	20.3	10.4	18.1	1.9	7.7	0	0	1.1	2.2	0	0	20.3	3.7	24
14	0.4	0.6	0.7	1.2	1.6	2.4	1.7	1.4	S	3.4	1.1	0.8	1.5	1.6	0.6	0.2	0.4	0.5	0	0	0	0	0	0.2	3.4	0.9	24
15	0.5	1	1	1.2	2.4	153.9	73	S	27.3	16	1.5	0.6	3.3	2.5	0.4	9.6	0.2	1	0.4	0	0	0.1	0	0	153.9	12.9	24
16	0.2	0.6	0.7	0.8	1.2	31.1	S	39	12.9	10.8	9.8	0.9	1.9	0.8	2.1	0.8	0.6	0.4	0.4	0.3	0.6	0.6	0.4	0.7	39	5.1	24
17	0.5	0.9	0.6	0.8	0.8	S	2.4	4.3	20.1	4.5	2.7	3	0.6	0.4	0	2.9	0.8	0	0.2	0	0	0	0.3	0.4	20.1	2.0	24
18	0.2	0.5	0.6	0.8	S	4.4	38.6	3.8	24.6	5.6	2.5	2.3	2	0.7	1.8	0.5	0.3	0.3	0.1	0	0	0	0.1	0.2	38.6	3.9	24
19	0	0	0	S	0.8	12.2	3.2	23.6	21.2	9.3	5.8	22.3	16.9	3.9	0.9	1.9	0.2	0.1	0.6	0.1	0.1	0.1	0.9	0.1	23.6	5.4	24
20	1.2	1.4	S	0	0.5	40.2	36.1	C	C	C	C	C	3.5	2.8	0.7	0.4	0.6	0.8	0.8	0.9	0.8	0.8	0.6	0.6	40.2	5.2	24
21	0.6	S	0.2	0	0	42.9	24.4	44.3	27.8	3.5	18.6	18.1	3.5	8.6	6.6	8.5	12.9	6.3	1	17.4	23.7	29.9	26.8	3.7	44.3	14.3	24
22	S	0.6	0.8	4.4	1.8	13.5	5.8	19.6	11.2	7.4	4.8	1.7	0.1	3.6	2.1	1.1	0.5	0.4	0.2	0.2	0.2	0.3	0.6	S	19.6	3.7	24
23	0.3	0.3	0.3	0.4	2	24.7	26	2.9	4.1	4.1	4.2	3.3	3	1	0.5	1.6	3.4	0.5	0.4	0.4	0.2	0.2	S	1.8	26	3.7	24
24	1	1	0.7	0.6	0.8	1	1	1.1	16.7	1.1	2.8	5.8	4.4	0.7	0.8	0.6	1.4	3.2	2.7	2.5	0.5	S	0.3	0.5	16.7	2.2	24
25	0.7	0.5	0.5	1.6	4.8	4.5	4.1	0.7	1	1.8	1.1	0.5	0.6	0.7	4	4.4	0.6	0.6	0.2	0.4	S	0.4	0.6	0.8	4.8	1.5	24
26	0.4	0.5	0.6	0.6	0.7	0.6	0.7	2	1.1	1	2.5	3.8	0.8	0.3	2	2.9	1	1.2	0.4	S	0.7	0.8	0.9	0.8	3.8	1.1	24
27	0.7	0.5	0.6	0.6	1.2	2.5	7.6	8	11.1	3.2	1.2	0.9	0.9	0.7	2.4	0.8	0.8	1.2	S	0.4	0.1	0.2	0.1	0	11.1	2.0	24
28	0.4	0.2	0.2	0.2	0.6	0.8	2.9	3.9	2.3	3	1.6	0.3	0.4	0.6	5.2	0.3	0.6	S	3.4	0.3	1.1	7.8	0	11.2	11.2	2.1	24
29	13.9	11.3	0.2	0.2	0.2	0.7	0.9	0.8	0.3	0.2	0	0.3	0.2	0.2	0.2	0.3	S	0.6	0.4	0.4	0.6	0.4	0.5	0.3	13.9	1.4	24
30	0.4	0.4	0.2	0.2	0.6	19.3	15.3	0.8	1.6	9.1	2.8	0.4	0.4	0.4	S	0.4	0.4	0.3	0.5	0.1	0.2	0.3	0.2	19.3	2.4	24	
HOURLY MAX	14	13	13	15	8	154	73	44	28	16	19	22	17	20	10	18	13	8	3	17	24	33	27	12			
HOURLY AVG	1.5	1.6	1.4	1.8	1.8	13.3	10.8	8.4	9.2	4.6	3.4	3.3	2.4	2.4	1.9	2.7	1.4	1.3	0.6	1.0	1.2	3.0	1.8	1.5			

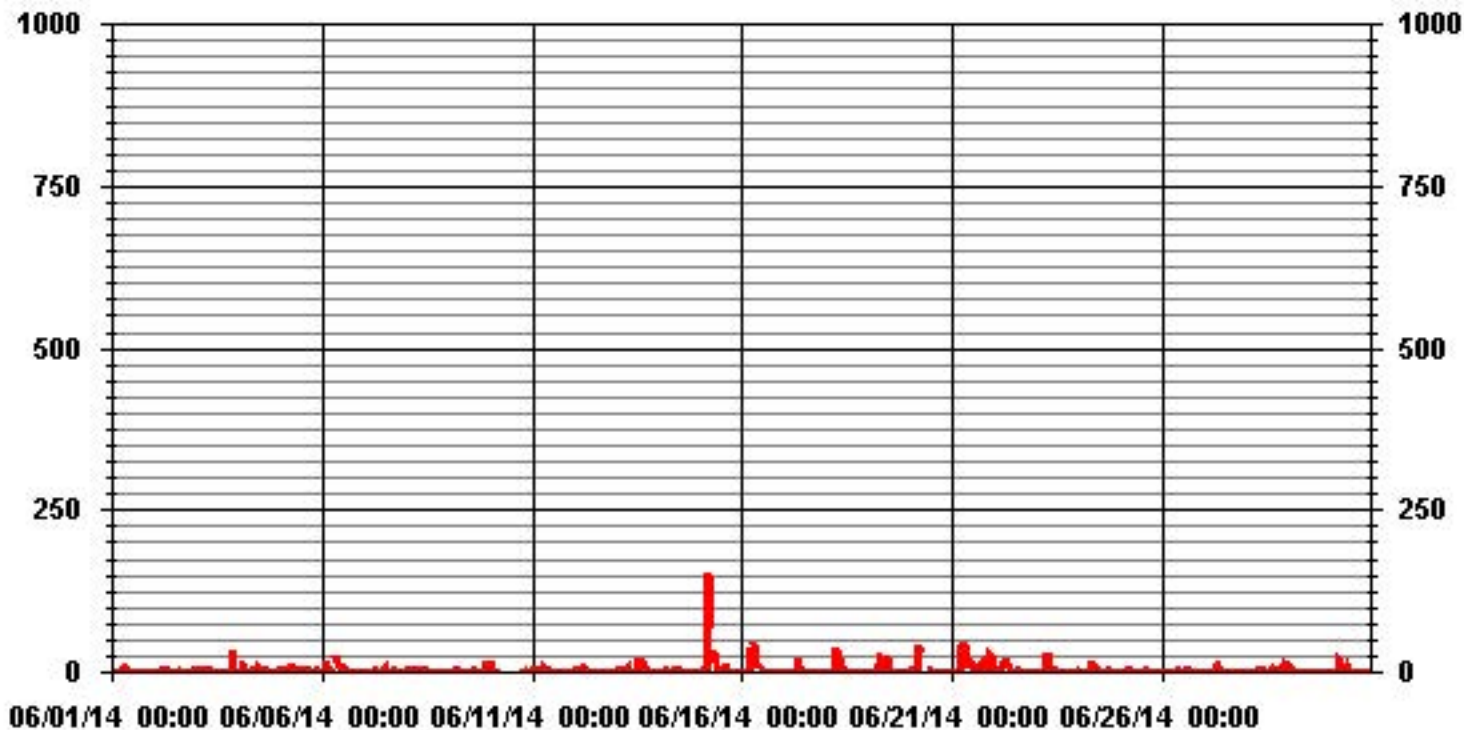
STATUS FLAG CODES

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:	610
MAXIMUM INSTANTANEOUS VALUE:	153.9 PPB @ HOUR(S) 5 ON DAY(S) 15
VAR-VARIOUS	
IZS CALIBRATION TIME:	36 HRS
MONTHLY CALIBRATION TIME:	16 HRS
STANDARD DEVIATION:	8.81
OPERATIONAL TIME:	720 HRS

01 Hour Averages



LICA30
 NO_ / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	9.68	6.85	12.07	6.70	6.40	8.04	8.94	4.47	5.21	9.38	2.08	1.49	2.38	2.38	7.00	6.85	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	9.68	6.85	12.07	6.70	6.40	8.04	8.94	4.47	5.21	9.38	2.08	1.49	2.38	2.38	7.00	6.85	

Calm : .00 %

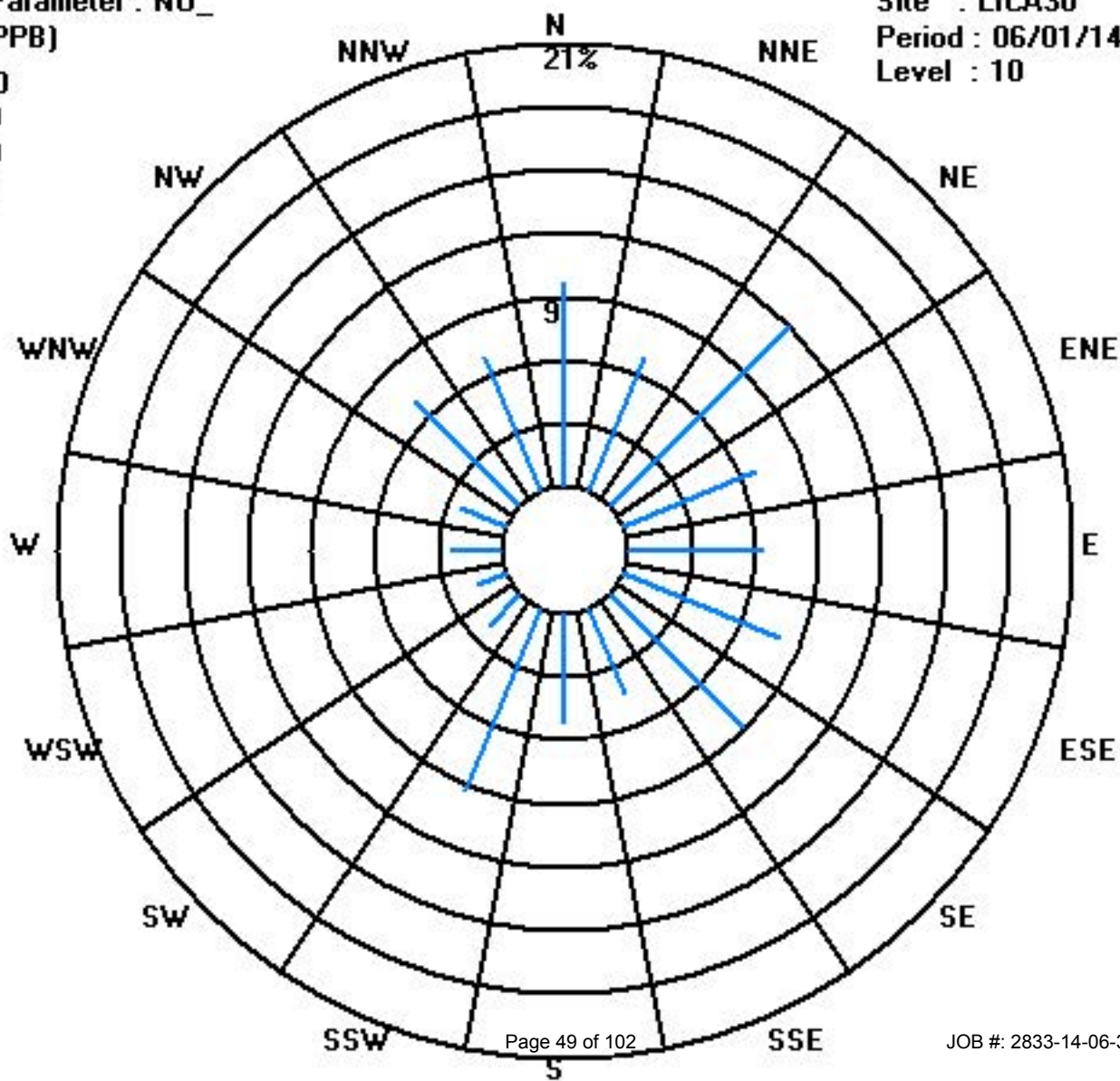
Total # Operational Hours : 671

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	65	46	81	45	43	54	60	30	35	63	14	10	16	16	47	46	671
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	65	46	81	45	43	54	60	30	35	63	14	10	16	16	47	46	

Calm : .00 %

Total # Operational Hours : 671



Oxides of Nitrogen

Lakeland Industry & Community Association - Maskwa Site

JUNE 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		1.9	1.2	0.8	0.8	1	3.3	8.7	10.1	3.4	2.2	0.6	0.6	0.2	2	0.2	1.3	0.8	1.3	2	2.4	1.5	S	1.5	1.6	10.1	2.1	24
2		1.9	1.8	2.3	3.2	3.1	3.5	6.9	8.2	8.5	5.6	2.6	1.3	0.6	0.7	1.1	2.1	0.7	2.4	1.7	0.7	S	1.8	1.4	1.1	8.5	2.7	24
3		1.2	1.6	2.9	2.1	2.9	2.5	2.2	2.2	3.2	6.3	1.8	1.3	1.5	1	1.1	1.1	0.9	1	0.8	S	1.3	6.7	2.8	8.4	8.4	2.5	24
4		4.1	4.2	4.3	12.9	7.9	2	1.6	4.2	2.6	4	3.4	7.8	2.2	1	2.3	2	0.2	0.2	S	0.9	0.8	1.3	1.6	2.1	12.9	3.2	24
5		2.4	3.1	2.7	2	2.9	3.4	4.7	8.5	6.6	5.7	3.2	2.6	3.1	2.6	2.2	2.1	2.2	S	1.3	0.9	1	1.6	1.7	0.9	8.5	2.9	24
6		1.1	1.9	6.7	8.7	14.8	5.8	S	S	5.6	5.7	7.5	2.3	8.1	0.1	0.6	1.5	S	3.6	1.6	0.3	0.7	1.5	1.8	1.8	14.8	3.9	24
7		1.6	1.5	1.6	2.1	4.5	2.7	4.6	4.8	4.9	3.2	2.5	3.1	3.7	3.3	0.4	S	2.9	3.2	0	0	0.3	0.2	1.6	1.1	4.9	2.3	24
8		1.9	1.5	1.3	1.2	1.1	1.6	2.4	5.9	5.9	2.6	1	2.1	1.9	1.8	S	1.3	0.4	0.5	0.6	0.6	0.9	1.2	0.9	0.9	5.9	1.7	24
9		1.6	1.2	1	1.6	1.6	1.5	8.4	S	3.3	3.1	0.9	0.3	0.5	S	2.6	3.8	3.4	0.6	0.1	0.1	0.1	5.2	8.3	12.2	12.2	2.8	24
10		19.8	21.2	11.3	1.7	0.5	0.7	S	S	0.9	C	C	C	C	C	C	C	C	C	0.6	0.4	0.8	2.3	2.1	6.5	21.2	5.3	24
11		4.2	6.7	5.3	3.7	3.2	6.1	12.3	8.1	6	9.6	5.6	S	0.9	0.7	0.3	1.5	0.1	0	0	0	0.1	0.4	1.2	2.3	12.3	3.4	24
12		3.9	3.1	2.7	3.2	5.3	7.6	7.2	7.3	7.5	1.6	S	0.8	0.4	0.1	0.1	0	0	0	0	0	0.4	0	0.3	0.5	7.6	2.3	24
13		2.3	2.1	1	0.6	0.7	1.1	3.1	2.6	0.9	S	1.2	0	1.4	10.7	8.9	8.4	0.9	0	0	0	6.7	5.7	0	0	10.7	2.5	24
14		0	1.6	1.2	0.5	1.5	2.6	2	1.6	S	5.5	1.7	1.4	1.3	1	0	0	0	0	0	0	0.5	0	0.4	1.7	5.5	1.1	24
15		1.1	3.8	2.5	2.7	1.7	33.8	29	S	9.6	5.6	1.3	1	2.3	2.1	0.3	1.4	0	1.3	0.1	0	0	0	0	0	33.8	4.3	24
16		0	0	1.5	0.2	1.2	4	S	18.9	9.3	8	11	0.9	2.3	1.1	1.7	0.6	0.8	0.6	0.8	0.5	0.7	1.1	1.1	1	18.9	2.9	24
17		1.5	1.9	0.8	1.1	0.8	S	1	2.2	3.3	3.4	2.5	1.7	0.6	0.3	0	1.3	1.1	0	0.6	0	3.7	0	2.2	2.3	3.7	1.4	24
18		0.1	0.5	0.7	1	S	5.3	11.6	3.1	7.9	4.5	3.1	2	2.8	1.6	3.7	1.9	1.8	2.3	1.7	0	0.4	1	0.8	1.3	11.6	2.6	24
19		0.4	0.8	1	S	1.4	3.2	4.3	6.1	10.5	4.8	4.1	9.9	5.9	1.7	1.3	1.6	0.5	0	0.8	0	0.3	0	0.7	0	10.5	2.6	24
20		0.8	1.6	S	0.2	0.4	2.8	10.2	C	C	C	C	C	1.5	1.1	0.4	0.1	0.4	0.4	0.9	0.8	0.8	0.5	0	0	10.2	1.3	24
21		0	S	0	0	0	3.7	13.2	11.6	10.1	4.1	5.2	4.9	3.3	10.9	7.5	9.1	7.9	1.2	0.3	15.2	27.8	29.6	16.2	2	29.6	8.0	24
22		S	0.6	0.9	4.1	4.3	7.5	6.4	14.8	6.6	2.8	1.7	0.7	0.1	2.3	0.9	1.2	0.5	0.2	0.2	0.1	1	0.4	0.4	S	14.8	2.6	24
23		0.8	0.3	0.4	0.5	3.4	2.9	6.4	2.3	2.4	7.4	8.1	2.4	2.3	0.7	0.3	1.9	3.9	0.6	0.5	0.4	0.7	0.3	S	5.8	8.1	2.4	24
24		1.1	3.3	2.5	1.4	1.4	1.1	1.3	1.7	2.1	1.6	3.3	7.1	2.9	1	1.3	0.8	1.4	3.1	1.1	2.6	1.2	S	0.8	0.7	7.1	1.9	24
25		0.7	0.6	0.8	4	13.3	10.4	4	1.1	1.3	2.2	1.7	1.1	1.5	1.1	1.3	1.5	1.2	0.9	0.7	0.9	S	0.6	0.7	1	13.3	2.3	24
26		0.9	1.1	2.9	2.5	2.6	2.5	2.9	3.7	2.8	2.1	3.6	5.5	1.8	0.9	2	6.6	3.5	2.1	1.3	S	1.5	1.7	1.6	1.1	6.6	2.5	24
27		0.9	0.9	1	1.6	1.5	2.7	5.4	6.3	5.6	3.5	2.2	1.1	1	0.6	3.1	0.5	0.6	1.8	S	1.1	0.8	0.5	0.4	1.2	6.3	1.9	24
28		2.3	1.7	1.5	0.9	1.1	0.7	4.9	10.2	6.8	5.7	4.1	1.3	0.9	1.7	1.3	0.6	2.9	S	9.8	0.9	6.9	18.9	0.8	6.3	18.9	4.0	24
29		29.8	15.8	3	3	1.8	2.7	2.8	2.4	0.7	0.3	0	0.3	0.5	0.5	0.5	0.5	S	0.9	0.9	1.1	0.9	1.1	1.9	1	29.8	3.1	24
30		1.5	1.6	2.1	3.7	3.4	12.4	13.7	3.2	2.8	5.7	2.6	1	0.9	0.7	0.8	S	0.8	1	0.8	0.4	0.4	0.3	0.5	0.8	13.7	2.7	24
HOURLY MAX		30	21	11	13	15	34	29	19	11	10	11	10	8	11	9	9	8	4	10	15	28	30	16	12			
HOURLY AVG		3.1	3.0	2.3	2.5	3.1	4.8	6.7	6.0	5.0	4.3	3.2	2.4	1.9	1.9	1.7	2.0	1.5	1.1	1.0	1.1	2.2	3.0	1.9	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

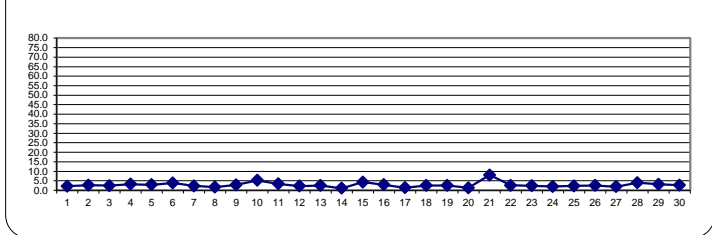
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

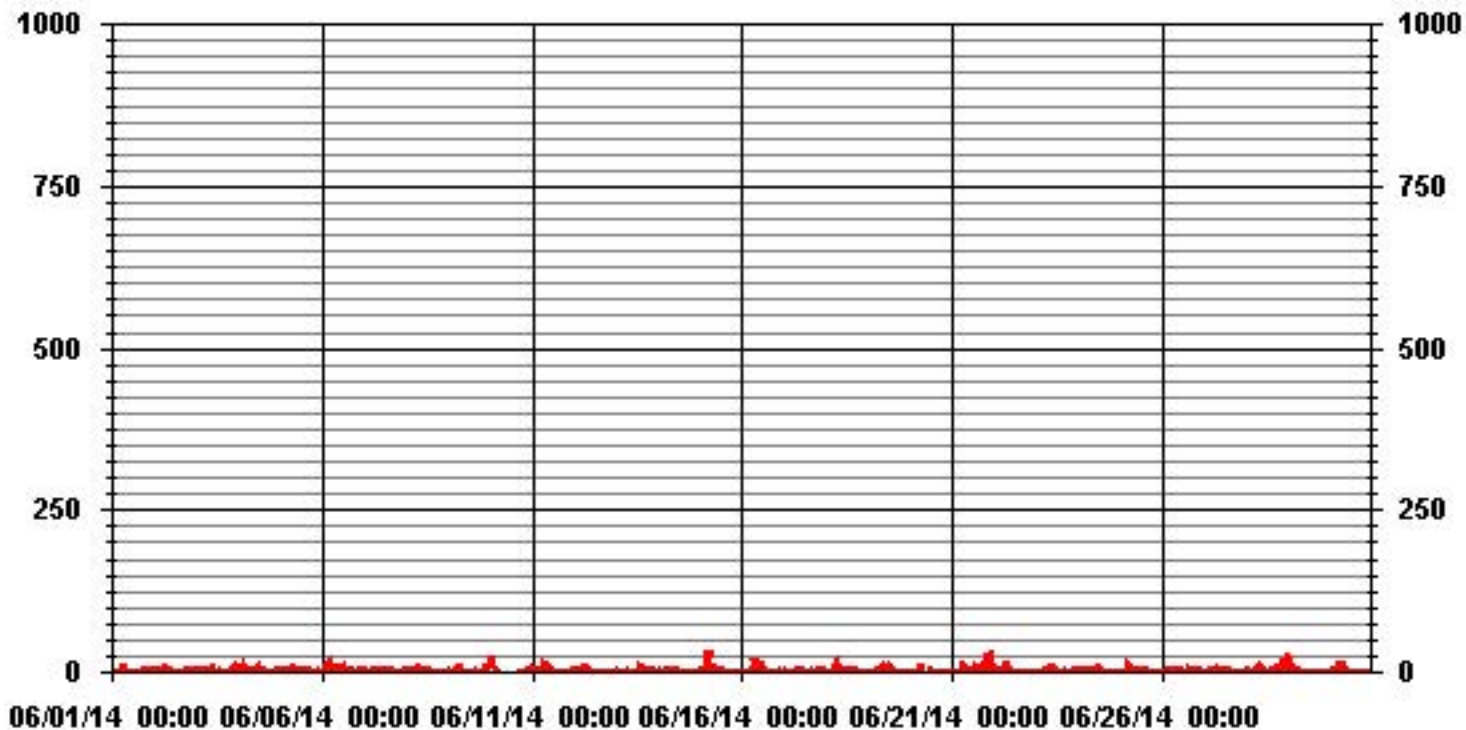
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA				
NUMBER OF NON-ZERO READINGS:	622				
MAXIMUM 1-HR AVERAGE:	33.8	PPB	@ HOUR(S)	5	ON DAY(S) 15
MAXIMUM 24-HR AVERAGE:	8.0	PPB			ON DAY(S) 21
					VAR-VARIOUS
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	14	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	3.91		MONTHLY AVERAGE:	2.82	PPB

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



— LICA30 NOX_ PPB

Lakeland Industry & Community Association - Maskwa Site

JUNE 2014

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	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	2.1	1.5	1.5	1.7	16.1	16.4	18.9	11.8	5.6	1.6	1.1	0.8	6.1	1.2	4.6	2	2.6	4.1	4.6	2.3	S	2.2	2.4	18.9	5.0	24	
2		2.6	2.9	3.3	4.4	4.4	5.2	10.9	12.3	12.2	7.9	4.1	2.5	1.9	1.7	9.9	10	2.1	14.2	14.7	2	S	3	2.2	1.8	14.7	5.9	24	
3		1.9	2.4	4.1	3.6	4	3.7	3.3	3.9	7.1	12.1	5.4	4.6	4.4	2.8	2	2	2	1.8	1.8	S	2.4	65.2	3.8	12.5	65.2	6.8	24	
4		6.5	5.5	8.7	33.2	19.4	3.1	2.5	17.2	5.6	15.9	10	16.4	10.3	4.2	8.8	11.1	1.5	1	S	1.7	1.4	2.1	2.1	3	33.2	8.3	24	
5		3.2	4.6	4.2	2.7	4.3	4.9	13.5	16	11.1	8.8	5.1	3.3	4.3	3.6	3.3	2.6	2.9	S	2	1.8	2.5	5.9	4.1	1.5	16	5.1	24	
6		1.9	4.4	31.7	29.6	25.3	9.2	S	S	25.3	19.6	20.6	10.7	26.9	1.9	2.5	6.3	S	9.2	7.2	1	1.6	3.7	3.4	3	31.7	11.7	24	
7		2.2	2.1	2.1	4.4	6.1	3.6	7.2	10	8.4	4.2	3.9	7.7	11.6	19.1	1.1	S	11.2	17	0.7	0.5	1.1	0.9	3.4	1.8	19.1	5.7	24	
8		3.4	2.4	2.1	2.2	1.7	2.7	2.9	14.5	12.2	6.3	2.7	9.4	5.1	5.8	S	3	1	1.3	1.3	1.3	2.3	2.3	1.6	2.2	14.5	3.9	24	
9		2.6	2.1	1.6	3.1	3.3	2.2	19.3	S	S	5	2.4	1.2	1.2	S	3.6	8.2	11.4	2.8	0.9	0.7	0.9	11.6	30	30.7	30.7	6.9	24	
10		30.3	37.2	26.1	5.3	1.3	1.4	S	S	C	C	C	C	C	C	C	C	C	C	1.3	2.9	2.8	3.5	12.4	37.2	11.3	24		
11		8.4	9.8	6.8	4.9	4.5	10.1	19.8	16.1	7.2	11.5	9.2	S	1.8	1.6	1.4	6.2	1.9	0.9	1	1.1	1.2	1.4	1.8	2.9	19.8	5.7	24	
12		5.6	4	4.2	4.6	6.2	16.2	12.4	10.8	10.9	2.4	S	2.2	1.4	2.2	3.8	1.4	0.8	0.7	0.8	0.8	1.6	0.9	1.5	1.2	16.2	4.2	24	
13		9.4	4.9	4	1.2	1.3	2.1	6.7	13.4	1.9	S	4.6	2	5.3	35.9	23.6	37.8	6.2	7.9	0.7	1.2	20.7	28.6	0.8	0.9	37.8	9.6	24	
14		0.6	6.2	3.2	1.1	4.2	6.1	3.1	3.2	S	9.2	4	4	4	6.4	2.8	2.3	2.9	4.3	0.8	1.2	4.9	1.7	2.5	2.7	9.2	3.5	24	
15		1.7	6.4	5.5	7.2	5.1	221.8	118.2	S	44.2	32.1	4.1	3.4	7	9	3.1	20.4	3.3	7.7	6.2	0.4	1.2	0.3	0.7	0.8	221.8	22.2	24	
16		0.4	3	4.6	2.5	4.6	48.9	S	60.7	24.7	20.9	21.1	2.5	7.5	2.5	5.9	2.1	1.8	2.4	2.4	1.3	2.1	2.5	2.4	1.9	60.7	9.9	24	
17		3.5	4.2	2.6	2.5	2	S	4.9	7.5	26.6	8.5	6	6.6	1.6	2.1	0.6	8.8	4.7	1.1	4	1.4	8.5	2.9	4.4	7.5	26.6	5.3	24	
18		0.7	1.9	2	2.1	S	8.3	56.6	10.4	37.3	12.6	10.2	9.5	12.4	6.6	10	6.2	7.7	7	7.7	2.3	2.1	3	2.9	3.6	56.6	9.7	24	
19		1.7	2.6	2.6	S	2.7	22.9	7.4	36.2	35.1	20.7	12.2	36.8	28.9	8.6	5.6	7.1	2.2	1.6	3.4	1.8	2.9	0.9	3.8	1	36.8	10.8	24	
20		4.1	6.3	S	1.2	2.6	58.3	58.1	C	C	C	C	C	6.3	4.9	1.9	1	1.3	1.6	2.2	2.2	2.2	2.6	0.5	0.8	58.3	8.8	24	
21		0.6	S	0.2	0.1	0.2	72.6	33.7	56.3	49.9	6.7	28.2	24.5	9.5	20.7	17.4	18.3	21.7	8.2	3.9	34.4	42.3	48.6	44.7	9.5	72.6	24.0	24	
22		S	1.5	1.5	14.3	7	22.8	12.7	33.5	20	14.2	10.4	3.7	0.7	8.1	4.4	3.1	1.5	1.4	1	1.3	2.5	1.2	1.4	S	33.5	7.6	24	
23		2.3	1	1.2	1.3	10.9	43.9	43.5	5.8	8.3	11.3	11.6	8.2	8.3	2.7	1.2	6.5	10.5	1.3	1.2	0.9	2.5	1.1	S	13.8	43.9	8.7	24	
24		2	7.3	4.1	2.6	2.8	2.6	2	2.7	25.1	2.8	8.3	15.5	8.6	2	2.9	2.2	4.7	9.2	8.4	10.2	2.3	S	1.5	1.6	25.1	5.7	24	
25		1.5	1.1	1.4	14.8	18.6	17.8	12	1.8	1.9	4.5	4	1.9	2.2	2.2	19.1	19.9	1.9	1.9	1.6	1.8	S	1.2	1.3	1.7	19.9	5.9	24	
26		1.5	2.9	4	3.3	3.4	3.7	3.9	7.3	3.9	4.7	8	14.4	3.3	2.3	9	11.5	7.3	4.2	2.1	S	2.1	2.5	2.3	2	14.4	4.8	24	
27		1.5	1.7	1.7	2.3	2.3	5.3	16.4	17.4	15.7	8.8	4.1	2.9	2.1	1.3	7.5	1.1	1.7	4.4	S	2.7	1.6	1.1	1.1	2.7	17.4	4.7	24	
28		4.3	3.5	2.2	1.6	1.7	1.4	9.2	13.5	9.5	12.1	7.9	3.5	2.2	3.6	14.2	1.4	5.2	S	20.8	2	17.2	33.2	5.1	40.3	40.3	9.4	24	
29		45.4	39.2	4.7	4.1	2.6	3.7	3.7	4	1.7	1	0.7	1.2	1.2	1.2	1.2	1.3	S	1.6	1.5	1.9	1.6	2.2	3.8	1.6	45.4	5.7	24	
30		2.3	2.4	3.4	5	5	43.5	36.6	4.5	4.7	22.9	9.6	1.7	1.7	1.4	1.6	S	1.6	3	1.5	1.3	1	0.9	1.2	1.6	43.5	6.9	24	
HOURLY MAX		45	39	32	33	25	222	118	61	50	32	28	37	29	36	24	38	22	17	21	34	42	65	45	40				
HOURLY AVG		5.4	6.1	5.0	5.7	5.5	22.9	19.9	15.9	16.2	10.8	8.1	7.5	6.3	6.1	6.1	7.6	4.6	4.5	3.8	3.0	4.9	8.4	4.8	5.8				

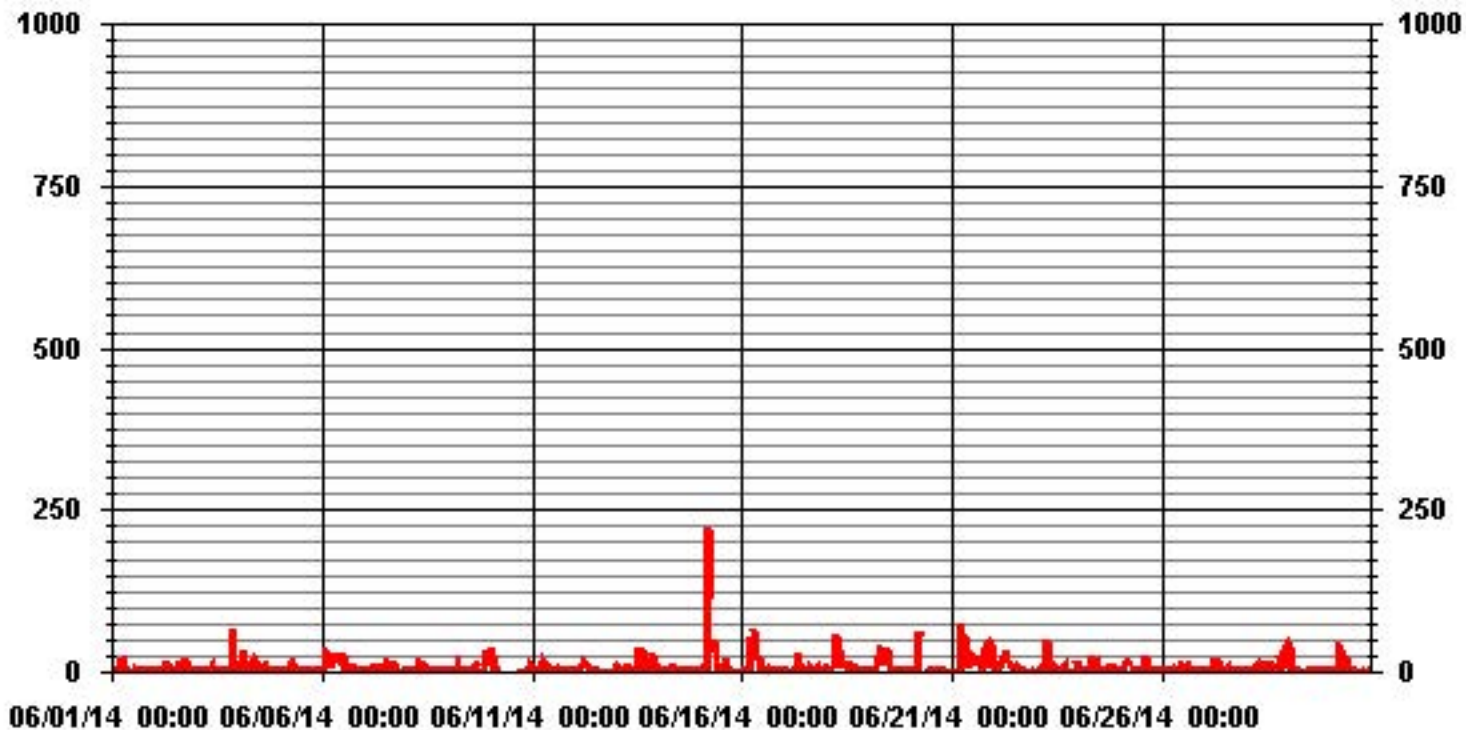
STATUS FLAG CODES

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:	668					
MAXIMUM INSTANTANEOUS VALUE:	221.8	PPB	@ HOUR(S)	5	ON DAY(S)	15
				VAR-VARIOUS		
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	16	HRS				
STANDARD DEVIATION:	13.98					

01 Hour Averages



— LICA30 NOXMAX PPB

LICA30
NOX_ / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	9.68	6.85	12.07	6.70	6.40	8.04	8.94	4.47	5.21	9.38	2.08	1.49	2.38	2.38	7.00	6.85	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	9.68	6.85	12.07	6.70	6.40	8.04	8.94	4.47	5.21	9.38	2.08	1.49	2.38	2.38	7.00	6.85	

Calm : .00 %

Total # Operational Hours : 671

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	65	46	81	45	43	54	60	30	35	63	14	10	16	16	47	46	671
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	65	46	81	45	43	54	60	30	35	63	14	10	16	16	47	46	

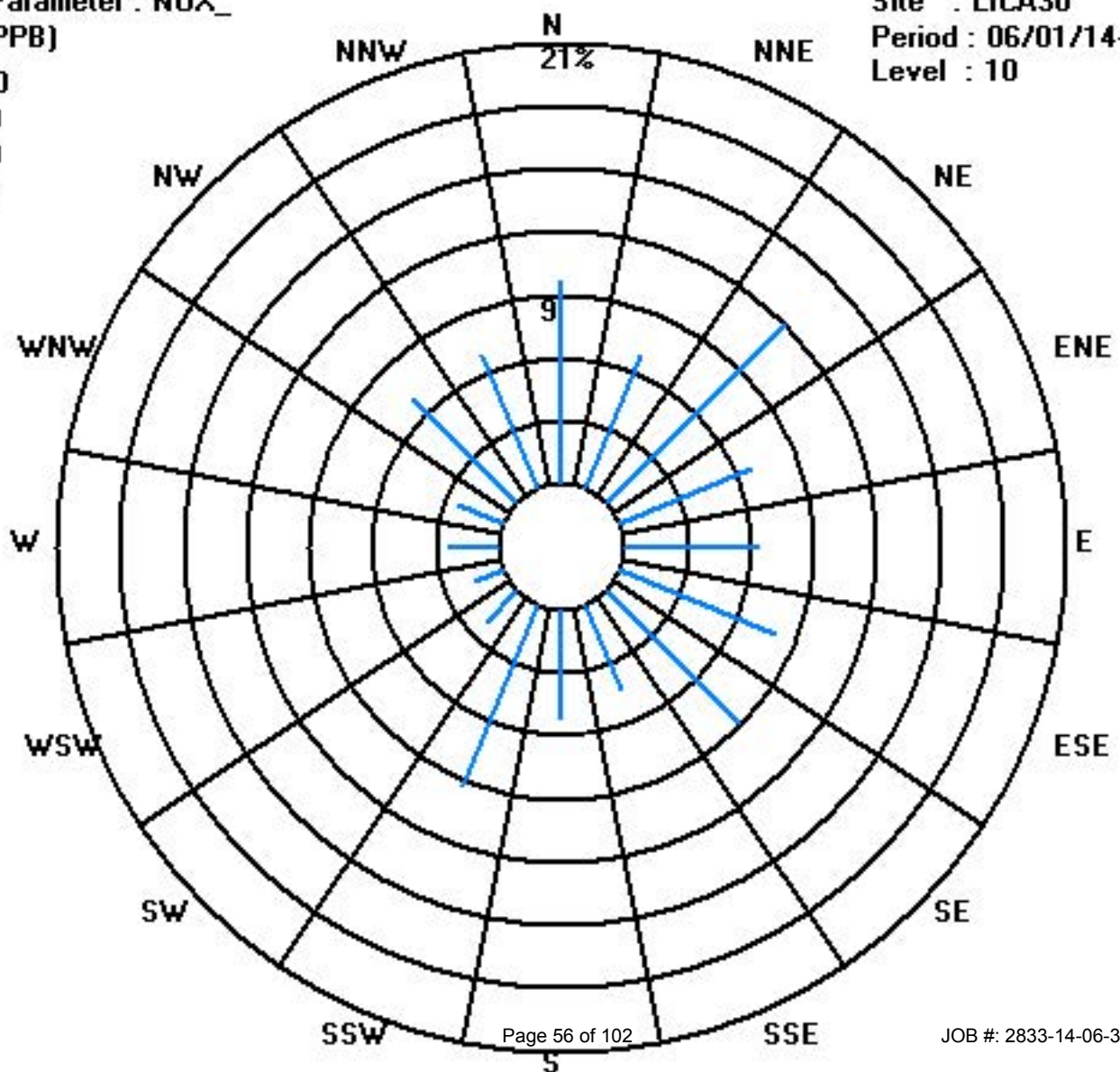
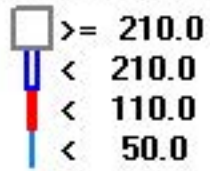
Calm : .00 %

Total # Operational Hours : 671

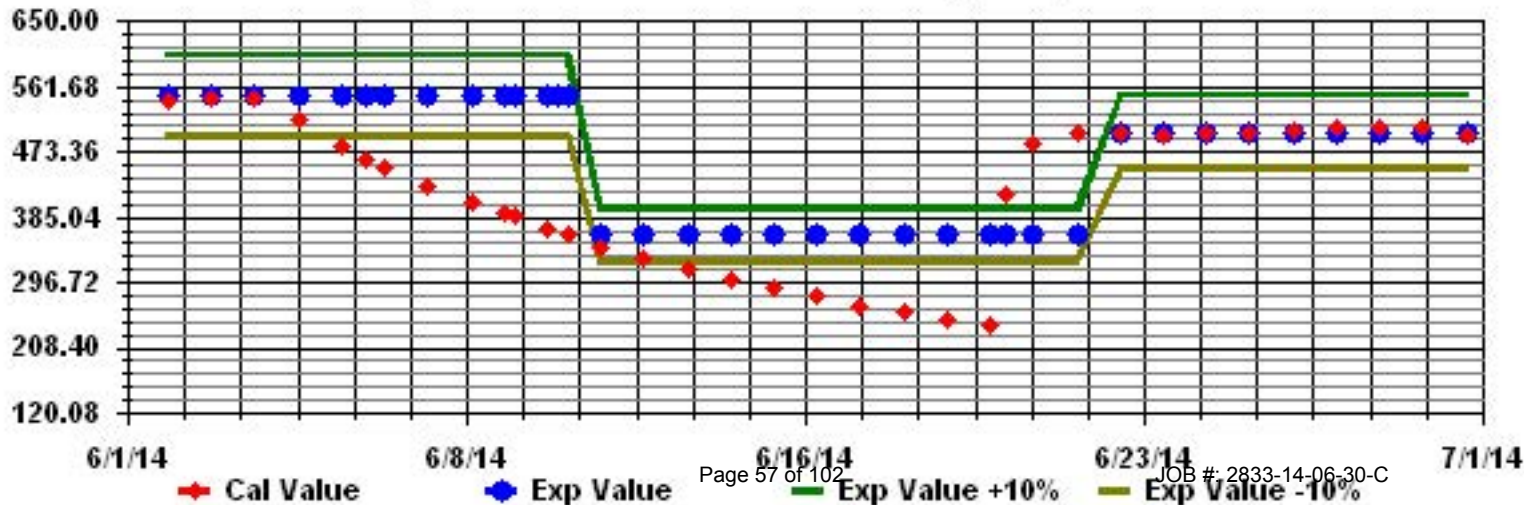
Class Limits (PPB)

Period : 06/01/14-06/30/14

Level : 10



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



Temperature

Lakeland Industry & Community Association - Maskwa Site

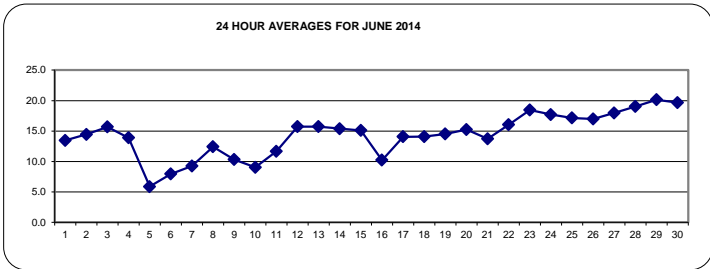
JUNE 2014

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		9.1	7.8	7	5.6	5.2	8.3	12.2	14.3	16.2	17.9	19.1	21	22.2	22.5	18.5	13.7	13.7	14.4	15	13.6	12.2	11.5	11	10.7	22.5	13.4	24
2		9.8	8.4	7.4	8.4	8.7	10.9	13.2	15.1	17	18.9	20.6	21.7	22.6	21.9	18.9	18.1	16.6	12.9	17.2	16.8	13	10.9	9.3	8.4	22.6	14.4	24
3		7.5	7.6	6.3	5.3	5.6	8	11.8	16.3	19.5	22.3	24	24.8	25.4	23.6	22.4	22.5	21.9	18.5	17.8	16.7	13.9	11.4	11.7	11.7	25.4	15.7	24
4		11.6	11.7	11.5	11.6	11.9	11.5	11.3	10.7	12	13.5	15.6	16.4	18.1	19	19.8	20	18.9	17.8	16.9	14.5	12.7	10.8	8.7	7.1	20	13.9	24
5		6.5	5.9	5.4	4.9	4.6	4.6	4.2	4.2	4.5	4.8	4.7	5.1	5.7	5.5	6.8	7.9	8.1	8.1	8.7	7.1	6.6	6.3	5.9	4.8	8.7	5.9	24
6		4.1	4	3.8	3.7	3.8	4.4	5.3	7.2	8.7	9.7	10	10.8	11	12	12.3	13	12.7	13.4	12.7	11.8	8	4.4	2.4	1.8	13.4	8.0	24
7		1.2	2.5	3.5	3.5	4.3	4.7	7.1	11.1	14.1	15.3	14.4	13.3	13.3	13.6	12.6	11.2	14.4	14.4	14	12.4	7.8	6	4.1	3	15.3	9.2	24
8		2.4	2.7	1.6	I	1.2	4.8	8.7	12.7	15	16.2	16.9	17.2	19.4	19.4	18.2	18.5	18.6	18.8	18.3	15.6	12.8	12.5	12.5	12.5	19.4	12.4	24
9		12.1	11.5	11.1	9.6	8.6	8.6	9	9.4	9.1	8.7	8.7	8.7	9.4	10.6	12.4	13.8	14.1	11.6	10.8	11.1	10.3	9.8	9.5	9.3	14.1	10.3	24
10		8.9	8.6	8.4	8.3	8.2	8.3	8.2	8.4	8.4	9	9.5	9.7	10.6	13	13.5	11.1	11.1	10.1	10.5	9.8	7.1	5.8	5.1	4.9	13.5	9.0	24
11		4	3.1	3.1	3	3.7	6.2	8.3	11.5	14.4	16.4	18.4	17.8	19.4	15.6	12.4	15.1	17.5	16.4	17	15.8	11.9	10.3	9.5	8.9	19.4	11.7	24
12		8.8	8.4	6.1	5.9	6	9.9	13.9	16.7	18.8	20.1	20.8	21.7	21.8	21.5	21.9	22.6	22.7	22.1	21.4	19	15	12.3	10.6	9.6	22.7	15.7	24
13		9.3	9.2	8.1	7.1	7.4	10.1	12.7	15.4	17.9	19.2	21.4	21.5	23	18.1	19.5	20.9	22	21.8	20.8	19.4	16.9	15	11.2	9.9	23	15.7	24
14		8.7	7.8	6.6	5.8	6.1	9.9	14	15.7	17.4	19.2	19.8	20.2	21.7	21.7	21.7	22.1	22.2	21.4	20.6	18.4	14.4	12.9	12.2	8.8	22.2	15.4	24
15		6.4	5	5.2	4.4	4	8.2	13.8	16.4	18.1	19.7	21	21.3	22	22.1	22.5	22.1	22.2	21.6	18.2	16.5	14.3	13.1	11.6	12.2	22.5	15.1	24
16		11.5	9.6	9.4	8.8	8.9	9.4	9.2	9.4	9.7	10.3	10.8	11.4	10.6	11	10.8	10.6	10.8	10.7	11	10.6	10.3	10.1	10.1	10	11.5	10.2	24
17		10	10	10.1	10	10	10.4	11.1	11.3	12.6	14.7	15.4	17.1	17.9	18.4	17.9	19.8	18.3	17	16.9	15.8	14.3	13.8	13.2	13.1	18.4	14.1	24
18		11.3	9.6	8.6	7.9	9.6	10.5	12.3	15.3	16.1	15.8	18.4	19.8	19.5	18.3	18.6	17.1	16.1	14.8	13.6	13.3	12.7	12.8	13	13	19.8	14.1	24
19		13.1	13.3	13.4	13.4	13.4	13.5	13.6	14	14.1	14.3	14.6	15	15.8	15.6	15.5	15.8	16	16	15.7	15.4	14.7	14.1	14.1	14	16	14.5	24
20		13.7	13.8	14.1	13.9	13.8	15.4	16.2	16.3	16	15.1	15.5	15.9	17.3	18	18.1	17.4	15.1	14.7	14.8	14.7	14.4	14.1	13.9	13.7	18.1	15.2	24
21		13.5	13.4	13.3	13.2	13.2	13.3	13.8	14.4	14.9	14.9	15.4	16	15.9	14.5	14.2	14.5	14	13.1	13	12.9	12.7	12.2	11.6	11.7	16	13.7	24
22		11	11	10.3	10.7	9.1	13.2	15.1	14.3	16	17.2	19.2	18.6	18.4	18.6	21.3	19.8	21.3	22.2	20.7	20.7	15.8	14.2	13.5	13.2	22.2	16.1	24
23		12.9	11.9	11.2	11.8	12	12.9	13.7	15.7	19.7	22.4	23.8	25	25.1	22.6	22.9	25.3	24.9	22.7	22.4	20.2	17.3	16.6	15.3	14.4	25.3	18.4	24
24		14.5	13.2	12.2	12.7	13.4	14.7	15.7	17.9	19.8	20.7	20.9	20.3	21.3	18.6	20.6	21.3	20.6	22.7	20.5	19.2	17.9	16.1	15.3	14.8	22.7	17.7	24
25		14.5	13.9	13.4	12.6	12.4	14.6	16.6	18.4	20.1	21.4	22.8	20.6	18.1	17.1	18.6	20.1	21.4	18.6	17.5	17.2	16.3	15.4	15.4	14.8	22.8	17.2	24
26		14.2	14	13.8	13.4	13.5	13.7	13.7	14.5	16.5	19	20.1	21.2	20.9	19.8	20.3	22.4	19.7	17.9	19.5	18.6	16.9	15.5	14.8	13.5	22.4	17.0	24
27		13.1	12.9	12.1	11.6	11.8	13.1	14.8	19.3	20.1	21.5	22.3	21	17.1	21.9	24.6	20.9	24.4	24.8	24.7	22.4	17.7	14.7	12.8	11.5	24.8	18.0	24
28		10.8	10.4	9.9	9.5	9.7	12.5	18.1	20.3	23	26	25.8	26	23.5	25.6	25.7	23.8	22.2	22.3	20.8	19.2	18.5	18.6	18.1	16.5	26	19.0	24
29		15.7	15.1	14.3	13.1	12.6	15.6	17.8	19.7	21.2	21.9	22.7	23.8	24.5	24.7	24.8	25.1	24.1	24.1	23.2	22.3	21.4	19.9	18.5	17.7	25.1	20.2	24
30		17.6	17.5	17.1	16.6	16.1	16.1	16.4	17.8	19.1	19.9	22.1	22.7	24.1	24.8	24.9	24.7	24.7	24.2	23.2	21.2	17.2	15.7	15.1	13.4	24.9	19.7	24
HOURLY MAX		17.6	17.5	17.1	16.6	16.1	16.1	18.1	20.3	23	26	25.8	26	25.4	25.6	25.7	25.3	24.9	24.8	24.7	22.4	21.4	19.9	18.5	17.7			
HOURLY AVG		10.3	9.8	9.3	8.9	9.0	10.6	12.4	14.1	15.7	16.9	17.8	18.2	18.5	18.3	18.4	18.3	18.3	17.6	17.2	16.1	13.8	12.6	11.7	11.0			

STATUS FLAG CODES

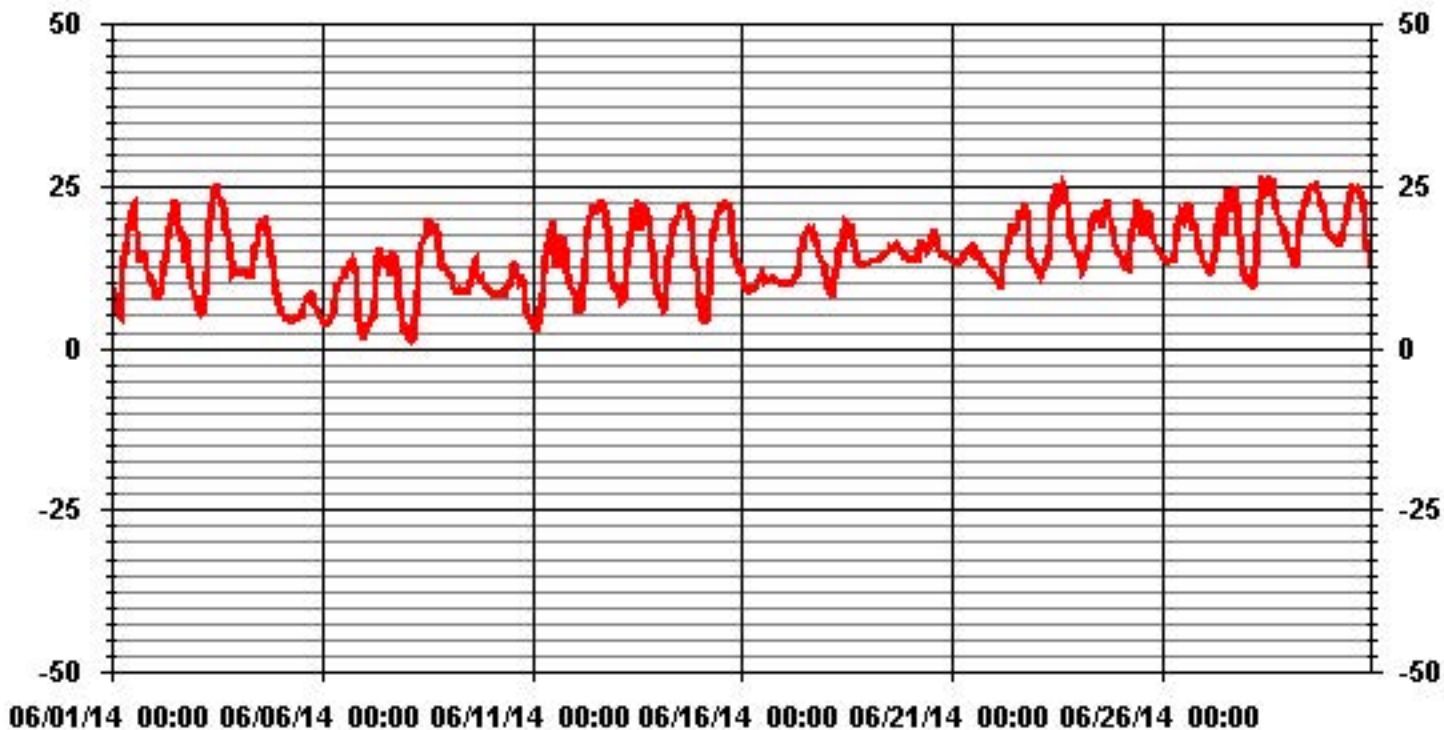
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	1	°C	@ HOUR(S)	3	ON DAY(S)	8
MAXIMUM 1-HR AVERAGE:	26.0	°C	@ HOUR(S)	9, 11	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	20.2	°C			ON DAY(S)	29
					VAR-VARIOUS	
OPERATIONAL TIME:						720 HRS
AMD OPERATION UPTIME:						100.0 %
STANDARD DEVIATION:	5.49					MONTHLY AVERAGE: 14.36 °C

01 Hour Averages



Precipitation

Lakeland Industry & Community Association - Maskwa Site

JUNE 2014

PRECIPITATION hourly averages in millimeter

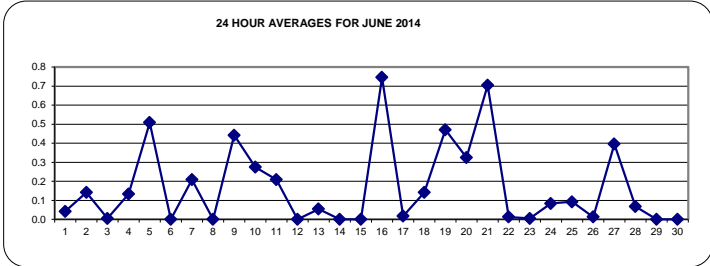
MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00			
1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	0.1	0	0	0	0	0	0	0	0	0.9	0.0	0
2		0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.6	1.3	0.1	0	0	0.1	0	0	0	1.6	0.1	0
3		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0.0	0
4		0.4	0.3	0.4	0	0	0.2	0.2	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.8	0.6	0.8	0.1	0
5		3.3	2.3	0.9	1.4	1	0.9	0.8	0.7	0.5	0.1	0	0	0	0.3	0	0	0	0	0	0	0	0	0	0	3.3	0.5	0
6		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
7		0	0	0	0	0	0	0	0	0	0	0.1	0.1	0.2	1.6	0.7	2.3	0	0	0	0	0	0	0	0	2.3	0.2	0
8		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
9		0	0	0	0.3	0	0	0	0.2	1.7	3.5	2.8	0.7	0.1	0	0	0	0	0.2	0.4	0	0.6	0.1	0	0	3.5	0.4	0
10		0	0	0	0	0	0.3	0.6	0.6	0.4	0.2	0.9	0.3	1.1	0	0.2	1.8	0.1	0.1	0	0	0	0	0	0	1.8	0.3	0
11		0	0	0	0	0	0	0	0	0	0	0	0	0	1.3	3.7	0	0	0	0	0	0	0	0	0	3.7	0.2	0
12		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
13		0	0	0	0	0	0	0	0	0	0	0	0	0.1	1.1	0.1	0	0	0	0	0	0	0	0	0	1.1	0.1	0
14		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
15		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
16		0	0	0	0	0	0.4	1.5	1.3	1.9	1.4	1.6	0.5	1.3	0.9	1.7	0.7	0.7	2.6	1.2	0	0	0	0.2	0	2.6	0.7	0
17		0.2	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.0	0
18		0	0	0	0	0	0.3	0.1	0	0	0	0	0	0	0	0	0	0.1	1.2	0.6	0.1	0.7	0.3	0	0	1.2	0.1	0
19		0	0.1	0.1	0.8	0.3	2.3	3.3	1.3	1.6	0.2	0	0	0.1	0.4	0	0	0.2	0.5	0.1	0	0	0	0	0	3.3	0.5	0
20		0	0	0	0	0	0	0	0	0.1	2.7	1.1	0	0.5	0	0	0	0.4	0.5	0.4	0	0.2	0.3	0.2	1.4	2.7	0.3	0
21		0.9	1.7	0.8	0.7	0.4	0.1	0	0.1	0.1	0.1	4.2	2.5	0.9	3.2	1.1	0	0	0.1	0	0	0	0	0	0	4.2	0.7	0
22		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0.3	0.0	0
23		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	0
24		0	0	0	0	0	0	0	0	0	0	0.1	1.8	0	0	0.1	0	0	0	0	0	0	0	0	0	1.8	0.1	0
25		0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	0.3	0	0	0	0	0	0	0	0	0.3	1.6	0.1	0
26		0.2	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.0	0
27		0	0.1	0	0	0	0	0	0	0	0	0	2.1	7.1	0	0	0.2	0	0	0	0	0	0	0	0	7.1	0.4	0
28		0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	0	0	0	0	0	0	0	0	0	0	1.6	0.1	0
29		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
30		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
HOURLY MAX		3.3	2.3	0.9	1.4	1	2.3	3.3	1.3	1.9	3.5	4.2	2.5	7.1	3.2	3.7	2.3	1.6	2.6	1.2	0.1	0.7	0.3	0.8	1.4			
HOURLY AVG		0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.5	0.3	0.3	0.2	0.1	0.2	0.1	0.0	0.1	0.0	0.0	0.1			

STATUS FLAG CODES

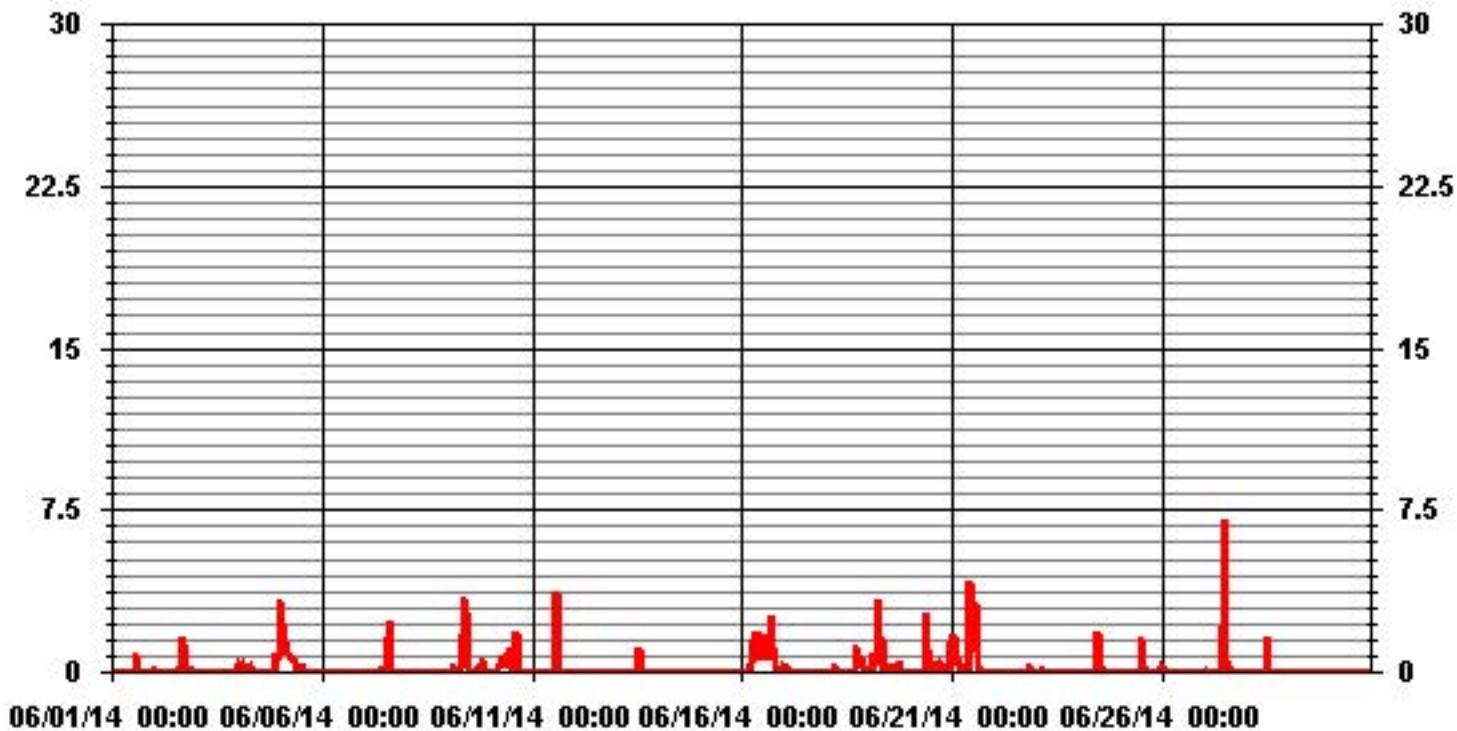
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	7.1	MM	@ HOUR(S)	12	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	0.7	MM			ON DAY(S)	16, 21
MONTHLY TOTAL	122.1	MM			VAR-VARIOUS	
OPERATIONAL TIME:					0	HRS
AMD OPERATION UPTIME:					0.0	%
STANDARD DEVIATION:	0.57				MONTHLY AVERAGE:	0.17 MM



01 Hour Averages



Relative Humidity

Lakeland Industry & Community Association - Maskwa Site

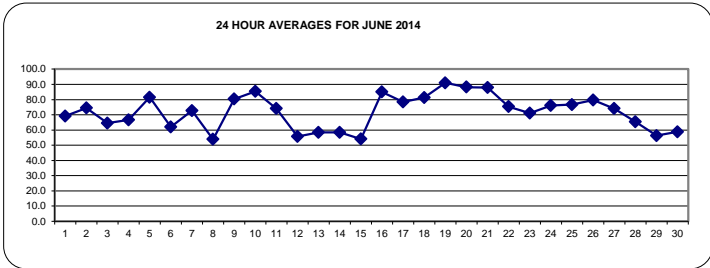
JUNE 2014

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	83	86	85	89	89	79	61	55	50	48	46	41	40	39	53	80	76	73	68	75	83	87	87	87	89	69.2	24	
	2	91	92	93	93	93	87	77	71	63	58	52	46	41	42	54	60	66	87	72	80	91	92	93	93	93	74.5	24	
	3	93	93	93	93	93	93	87	73	63	47	37	33	29	35	41	42	40	49	49	55	70	80	79	81	93	64.5	24	
	4	87	89	88	90	89	89	85	82	81	75	62	54	46	41	39	36	36	39	44	55	61	68	76	86	90	66.6	24	
	5	88	89	89	89	89	89	88	88	87	84	83	79	79	81	74	72	72	72	70	77	80	78	78	81	89	81.5	24	
	6	83	82	83	81	80	77	73	66	58	53	51	45	42	43	43	40	41	39	41	45	63	80	88	90	90	62.0	24	
	7	91	92	91	91	91	90	83	65	55	53	56	61	62	65	75	74	61	53	49	50	72	83	90	91	92	72.7	24	
	8	92	92	92	92	92	91	77	58	48	41	33	31	28	27	28	29	30	32	35	44	53	51	49	48	92	53.9	24	
	9	50	53	57	78	84	83	80	81	85	89	90	90	89	85	80	75	72	80	87	86	89	89	89	88	90	80.4	24	
	10	86	86	87	87	87	88	89	90	89	87	86	85	82	70	70	81	83	84	83	84	91	92	92	92	92	85.5	24	
	11	92	92	92	91	92	92	93	89	76	71	68	58	55	48	68	75	74	58	58	56	58	75	79	80	81	93	74.1	24
	12	82	84	90	92	91	81	67	57	49	43	37	34	33	34	34	32	29	30	30	38	57	65	72	78	92	55.8	24	
	13	78	80	83	86	86	79	71	62	54	51	44	41	37	65	53	40	34	31	31	35	48	59	76	79	86	58.5	24	
	14	84	88	91	92	92	87	71	65	61	54	52	44	40	39	35	33	34	34	33	38	50	53	59	75	92	58.5	24	
	15	84	89	89	91	91	83	66	59	51	39	34	36	34	33	29	31	29	31	41	44	48	50	59	58	91	54.1	24	
	16	61	71	73	76	79	81	87	89	89	89	88	86	87	87	88	88	89	90	89	89	91	91	91	91	91	85.0	24	
	17	91	92	92	91	91	91	88	89	85	78	75	69	65	62	65	63	61	66	67	74	79	81	84	83	92	78.4	24	
	18	88	91	92	93	93	93	91	79	75	76	65	58	57	63	63	69	74	83	90	90	92	92	92	92	93	81.3	24	
	19	92	93	93	93	93	93	93	92	92	91	90	89	87	88	89	88	88	87	90	91	92	93	93	94	94	91.0	24	
	20	94	94	94	94	94	91	86	84	85	88	87	87	82	79	77	77	85	89	90	91	91	92	93	93	94	88.2	24	
	21	93	93	93	93	93	93	93	92	91	90	90	88	89	89	88	86	85	84	83	80	80	80	82	81	93	87.9	24	
	22	84	84	88	85	90	75	68	74	75	73	67	70	72	71	61	66	61	58	62	63	85	91	92	93	93	75.3	24	
	23	93	93	93	93	93	94	93	87	73	61	57	49	48	57	50	41	48	58	57	64	75	73	77	81	94	71.2	24	
	24	81	87	92	90	87	84	82	77	71	69	68	75	74	77	72	64	70	62	70	71	70	76	79	81	92	76.2	24	
	25	82	84	85	88	88	80	74	69	64	62	58	64	76	84	80	73	67	74	77	78	79	82	84	88	88	76.7	24	
	26	91	92	92	92	93	93	92	91	82	71	66	61	60	64	64	55	68	80	71	77	84	91	92	93	93	79.8	24	
	27	93	93	93	93	93	94	93	75	72	67	62	67	79	64	53	67	48	44	44	52	71	82	88	91	94	74.1	24	
	28	92	93	93	93	93	92	74	64	56	45	42	38	56	50	44	46	52	53	56	64	68	68	66	71	93	65.4	24	
	29	75	77	79	84	87	78	72	66	59	58	53	48	44	44	43	40	39	37	38	39	37	44	52	58	87	56.3	24	
	30	58	57	57	59	62	64	66	65	64	63	59	56	47	43	42	43	44	46	47	57	72	77	78	85	85	58.8	24	
HOURLY MAX		94	94	94	94	94	94	93	92	92	91	90	90	89	89	89	88	89	90	90	91	92	93	93	94				
HOURLY AVG		84.4	86.0	87.1	88.4	88.9	86.2	80.5	74.7	69.9	65.7	61.6	59.3	58.4	59.6	58.7	58.8	58.0	60.1	60.7	64.8	73.2	77.3	80.3	82.8				

STATUS FLAG CODES

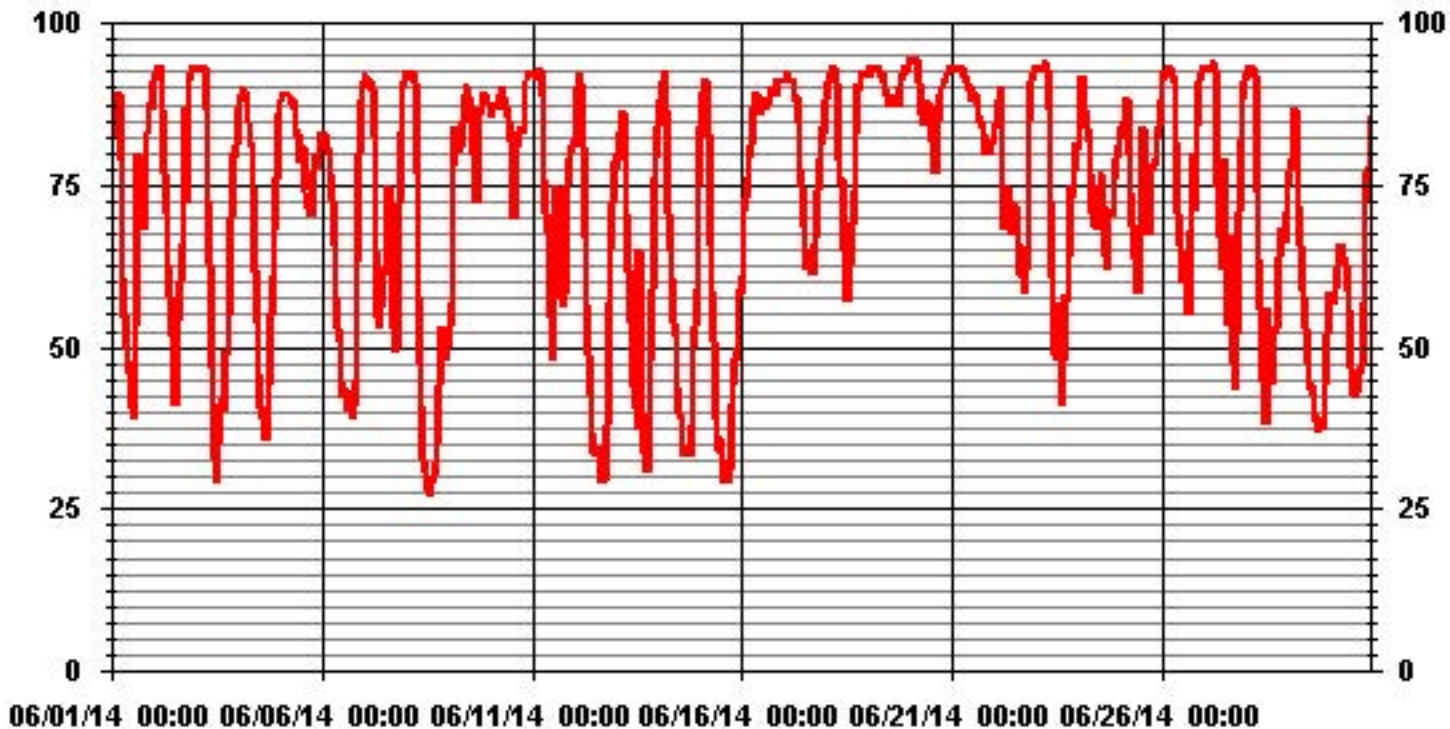
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	94	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	91.0	%			ON DAY(S)	19
					VAR-VARIOUS	
OPERATIONAL TIME:					720	HRS
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	18.85				MONTHLY AVERAGE:	71.90 %

01 Hour Averages



— LICA30 RH %

JOB #: 2833-14-06-30-C

Barometric Pressure

Lakeland Industry & Community Association - Maskwa Site

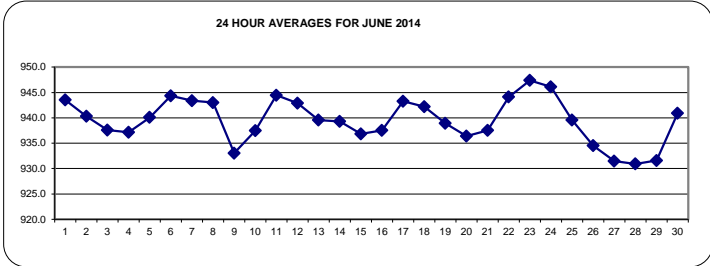
JUNE 2014

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	943	943	943	943	944	944	945	945	945	945	945	944	944	943	943	943	942	943	943	943	943	942	942	942	945	943.5	24	
	2	942	941	941	941	941	942	942	942	942	942	941	941	940	940	940	939	939	938	939	938	938	938	938	938	942	940.3	24	
	3	938	937	937	937	937	938	938	939	939	939	939	938	938	938	937	937	937	937	937	937	937	937	937	937	939	937.6	24	
	4	937	937	937	937	937	937	937	936	934	937	938	938	938	938	937	937	937	937	937	937	937	938	938	938	938	937.2	24	
	5	938	938	938	938	938	938	938	936	937	938	939	939	940	941	941	942	942	942	943	943	943	943	944	943	944	940.1	24	
	6	943	944	944	943	943	944	944	945	945	945	945	945	945	945	945	945	945	945	945	945	944	944	943	943	945	944.3	24	
	7	943	943	943	943	943	943	943	944	944	944	943	943	943	943	944	944	944	944	944	944	944	944	943	943	944	943.4	24	
	8	943	943	943	943	943	944	945	945	946	946	945	945	945	944	944	943	943	942	941	941	940	940	939	939	946	943.0	24	
	9	937	937	937	936	935	934	934	933	933	933	932	932	932	931	932	932	932	932	931	931	931	932	932	932	937	933.0	24	
	10	932	932	932	932	933	933	934	934	935	936	937	938	938	939	940	941	941	941	942	942	942	942	942	942	942	942	937.5	24
	11	943	940	941	943	943	944	945	945	946	946	946	945	945	945	945	946	946	945	945	945	944	944	944	944	946	944.5	24	
	12	944	944	944	943	944	944	945	945	945	945	945	944	943	943	942	942	941	941	941	941	940	940	939	945	942.9	24		
	13	939	939	939	939	939	939	939	940	940	940	940	940	940	940	940	939	939	939	939	940	940	940	940	940	940	939.5	24	
	14	939	939	939	939	939	940	940	940	941	941	940	940	940	940	939	939	939	939	939	939	938	938	938	938	941	939.3	24	
	15	937	937	937	937	937	937	938	938	938	938	938	937	937	937	937	936	936	936	936	936	936	936	936	936	938	936.8	24	
	16	936	936	936	936	936	936	937	937	936	936	936	936	937	937	938	938	939	939	939	939	940	940	941	940	941	937.5	24	
	17	941	941	942	942	942	941	941	943	944	944	944	944	945	945	945	944	944	944	944	944	944	944	944	943	945	943.3	24	
	18	943	942	942	942	943	943	942	943	943	943	943	943	942	942	942	942	942	942	942	941	941	941	941	943	942.2	24		
	19	941	940	940	939	939	939	939	939	939	939	938	938	939	939	939	939	939	939	939	939	939	938	938	938	941	938.9	24	
	20	937	936	936	937	936	936	937	937	937	936	937	936	937	937	937	937	936	936	936	936	936	936	936	935	937	936.4	24	
	21	935	935	935	935	935	935	935	936	936	936	937	937	937	938	939	939	940	940	941	941	941	941	941	941	941	937.5	24	
	22	942	942	942	942	942	943	944	944	944	945	945	945	945	945	945	945	945	945	945	944	944	945	945	945	945	944.1	24	
	23	945	945	946	946	946	947	947	948	948	949	949	949	948	948	948	948	948	948	948	948	947	947	947	947	949	947.4	24	
	24	947	947	947	947	947	947	948	948	948	948	947	947	947	946	946	945	945	945	944	944	944	943	942	942	948	946.1	24	
	25	942	942	942	941	941	941	941	941	941	941	940	940	940	939	939	939	938	938	938	937	937	936	936	942	939.5	24		
	26	936	936	935	935	935	935	935	935	935	935	935	935	935	935	934	934	934	934	934	934	933	933	933	936	934.5	24		
	27	932	932	932	932	932	932	932	932	932	932	932	932	932	931	932	931	931	931	931	931	931	930	930	930	932	931.5	24	
	28	930	930	930	930	930	931	931	931	931	932	932	932	932	931	931	931	931	931	931	931	931	931	931	931	932	930.9	24	
	29	930	930	930	930	930	931	931	931	931	931	931	932	932	931	931	931	931	932	932	932	933	934	934	934	934	931.6	24	
	30	935	935	935	936	937	938	938	939	940	940	941	941	942	942	943	943	944	944	944	945	944	945	945	946	946	940.9	24	
	HOURLY MAX	947	947	947	947	947	947	948	948	948	949	949	949	948	948	948	948	948	948	948	948	947	947	947	947	946	940.9	24	
	HOURLY AVG	939.0	938.8	938.8	938.8	938.9	939.2	939.5	939.7	939.9	940.1	940.1	940.0	939.9	939.8	939.8	939.7	939.8	939.7	939.6	939.7	939.5	939.5	939.4	939.2	946	940.9	24	

STATUS FLAG CODES

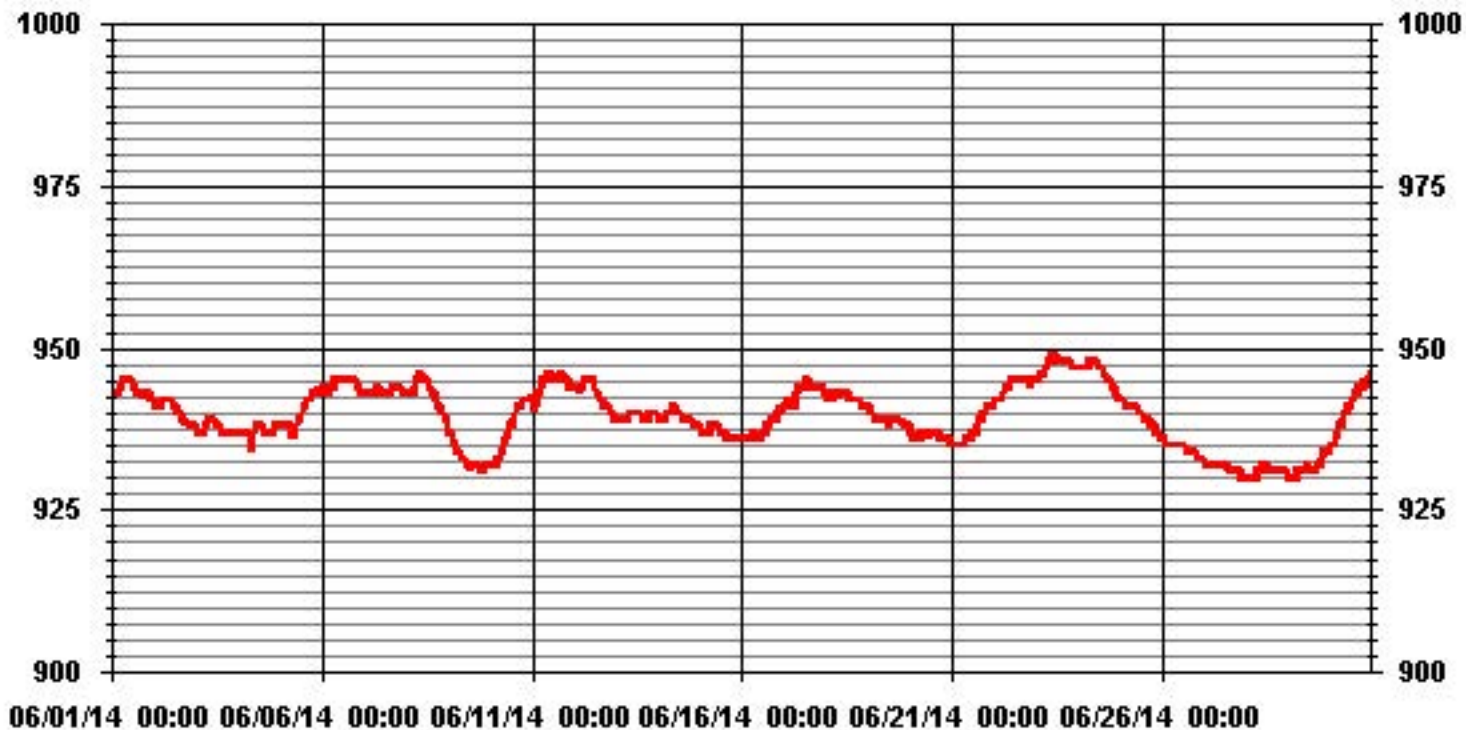
C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	949	MB	@ HOUR(S)	VAR	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	947.4	MB			ON DAY(S)	23
					VAR-VARIOUS	
				OPERATIONAL TIME:	720	HRS
				AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	4.61			MONTHLY AVERAGE:	939.5	MB

01 Hour Averages



Vector Wind Speed

Lakeland Industry & Community Association - Maskwa Site

JUNE 2014

WIND SPEED (WS) hourly averages in km/hr

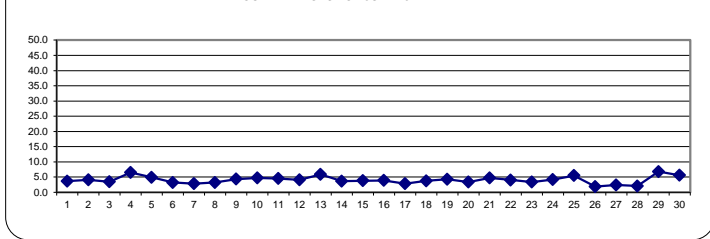
MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY	1	2.3	3.2	3.1	2.2	2.2	3.3	5.8	5.7	6.2	5	4.9	5.1	6.1	5.1	6.3	3.5	3	4.5	1.8	1.6	0.4	2.3	2.5	1.1	6.3	3.6	24
	2	2.2	2.2	1.4	4.9	4.1	4.5	4.8	5.3	6.2	6	6.5	8.8	8.1	8.8	6.3	4.3	6	0.6	1.4	1.4	2	1	0.3	0.7	8.8	4.1	24
	3	0.9	1.3	0.8	0.6	1.2	1.8	2.9	3.7	4.1	3.8	5.3	4.8	4.2	5.7	6.1	7.3	6.9	9.7	3.9	3.7	1.1	0.6	0.6	2.7	9.7	3.5	24
	4	1.1	3	2.5	4.4	7.2	5.8	7.5	4.8	5.7	5.8	7.8	7	7.3	7.7	7	8	8.7	6.6	6.3	9.4	9.9	9.9	6.8	5.5	9.9	6.5	24
	5	4.4	4.7	3.9	4.8	4.1	4.3	5.3	3.5	5.1	7.1	6.8	8.5	7.6	7.8	6.6	6.2	6.2	4.7	3.4	2.2	0.7	3.6	3.2	3.7	8.5	4.9	24
	6	3.5	3.8	3.2	3.1	1.9	2.3	2.8	3	3.7	4.7	4.9	5.2	7.5	7.7	2	1.3	1.4	2.6	3.1	3.3	1.7	2.1	0.6	1.9	7.7	3.2	24
	7	0.7	2	0.4	2.6	0.9	3.1	0.6	1.3	1.8	3.7	3.8	1.9	6	6	3.2	7.6	3.4	5.5	5	4	1.2	0.5	2	1.7	7.6	2.9	24
	8	1	0.3	0.7	0.8	0.6	1.4	0.8	1.2	1.5	4.4	5	3.1	3.4	2.7	1.1	5.4	4.5	5	5.1	3.9	4.1	6.2	7.2	8.2	8.2	3.2	24
	9	6.6	4.6	5.8	3	4.9	5.4	3.7	3.7	2.1	2	4.3	4	3.7	1.8	2.3	4.3	3.5	5.5	4.2	4.7	6.6	6.5	5.5	5.2	6.6	4.3	24
	10	6.5	4.7	5.8	4.8	4	4.3	5.2	6.9	9.3	8.5	7.5	8.9	7.2	4.9	4.2	4.4	3.5	4.4	1.9	1.2	1.1	1.5	1.3	1.2	9.3	4.7	24
	11	0.7	2	1.9	2.5	3.4	3.1	3.9	3.8	5.1	6.8	6.7	5.9	8	7.5	5.4	4.2	5.9	7	5.8	3.3	3.6	4.7	4.4	3.9	8.0	4.6	24
	12	4.9	4	1.2	4	1.7	0.8	0.1	3.5	4.3	6	7.6	5.6	6.1	6.5	5.3	5.4	6.5	4.1	4.8	3.1	2.7	2.5	3.5	4	7.6	4.1	24
	13	4.9	4.5	4	4.1	4.4	5.1	7.2	6.7	7.4	9	7.1	7.7	6.5	4.7	7.9	7.8	7.1	8.4	8.9	5.9	4	3.3	1.5	2.2	9.0	5.8	24
	14	2.1	2.6	1.8	2.4	2.4	1.9	3.5	4.3	3.2	4.9	4.9	5.3	4.1	4.4	3.3	3.7	4.9	5.3	4.4	4	3.7	4.3	5.1	1.8	5.3	3.7	24
	15	0.9	0.3	1	1	0.8	2.3	1.7	4.1	5.6	5.8	5.6	5.5	5.2	5.7	4.9	4.9	4.6	5.3	5.5	4.4	4.7	4	1.4	6.4	6.4	3.8	24
	16	3.6	1.1	1.2	2	1.7	2.3	2.4	5.1	5.9	5.9	8.2	4.2	5.1	6.2	4.9	5.4	4.8	3.3	4.3	4.1	3	2.8	3.3	3.5	8.2	3.9	24
	17	2.3	2.4	1.9	2.1	2	2.7	3.4	3.1	2.9	3.6	3.3	3.2	5.2	4.5	3.6	3.1	5	2.4	2.1	0.8	2.1	2.6	1.6	3.1	5.2	2.9	24
	18	3.2	1.2	0.9	0.5	2.7	2	2.8	2.2	2.8	4.6	4.5	6.3	5.6	6	4.9	4.4	4.3	5.1	4	4.3	4.1	4.9	4.6	4.1	6.3	3.8	24
	19	3.5	4.3	3.8	4.4	3.9	3.6	4	5.6	7.1	7.4	6.3	8.3	10.8	4.7	2.9	4.2	3.1	2.1	1.8	1.4	2.2	2.3	2.9	1.7	10.8	4.3	24
	20	1.7	1.5	2.1	0.9	0.7	2.1	3	2.7	3.7	3.5	4.8	3.8	2.8	3.6	6.4	6.7	5.5	3.8	4.5	4.7	3.8	3	2.8	3	6.7	3.4	24
	21	3.2	2.1	2.5	3.1	2.8	3.7	3.3	3.4	3.6	3.5	4.1	2.6	4.5	6.9	8.3	9.6	8.6	7.8	6.1	4.8	4.9	5.3	4.4	3.6	9.6	4.7	24
	22	2.5	2.6	1.4	1.3	1.5	3.5	4.2	3.8	4.7	5.1	6.2	5.8	5.2	7.2	7.3	7.8	5.5	4.4	4.6	3.9	7.2	0.5	0.6	0.5	7.8	4.1	24
	23	0.3	0.8	1.6	0.9	0.7	1.5	2.3	3.4	0.3	2.9	3.1	4.3	6.4	8.7	7.5	5.2	5.9	7.2	3.3	2.3	2.7	3.9	3	3	8.7	3.4	24
	24	4	1.6	3	4	3.5	2.6	4.2	4.4	6.1	5.2	5.9	5.9	4.4	3.3	1.2	6.6	1.4	4.3	4.3	4.5	5.3	4.7	5.1	5.3	6.6	4.2	24
	25	6.3	5.9	5.5	3.8	4	3.8	4.8	6	6.7	6.1	8.1	7.6	9.1	7.8	6.5	5.9	4.6	6.4	3.8	4.9	4.4	2.9	4	3.4	9.1	5.5	24
	26	2.2	3.1	1	2	1.6	1.3	1.8	1.9	1.5	1.1	2.2	2.1	0.6	4.2	1.9	0.9	2.9	3.7	2	3.2	1.9	1.3	0.4	0.9	4.2	1.9	24
	27	0.9	1.6	2	1	1.1	1	0.9	2.2	4.2	3.6	5.6	0.6	4.8	2.9	3.8	5.5	3.5	3	1.3	2.5	2.6	1.4	1.9	0.7	5.6	2.4	24
	28	1.2	0.9	1.8	0.9	1.1	0.8	0.1	1.5	0.9	2.6	2.3	2.8	3.3	1.1	5.3	2.3	3.3	3.9	3.4	0.3	2	3.4	3.2	2.4	5.3	2.1	24
	29	2.3	2.6	2.3	2	2.3	2.4	3.4	3.9	7	10.6	11.9	11.2	11.7	12	10.3	9.5	9.2	9.4	7.6	5.9	10.2	5.6	4.4	5.5	12.0	6.8	24
	30	5.3	5	5.2	4.6	4.4	5.6	5.8	5.8	5.7	7.3	6	8.3	10.5	11	7.1	7.6	7.7	8.3	4.5	3.4	1.7	1.7	1.5	0.3	11.0	5.6	24
HOURLY MAX		6.6	5.9	5.8	4.9	7.2	5.8	7.5	6.9	9.3	10.6	11.9	11.2	11.7	12.0	10.3	9.6	9.2	9.7	8.9	9.4	10.2	9.9	7.2	8.2			
HOURLY AVG		2.8	2.7	2.5	2.6	2.6	2.9	3.4	3.9	4.5	5.2	5.7	5.5	6.0	5.9	5.1	5.4	5.0	5.1	4.1	3.6	3.5	3.3	3.0	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

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

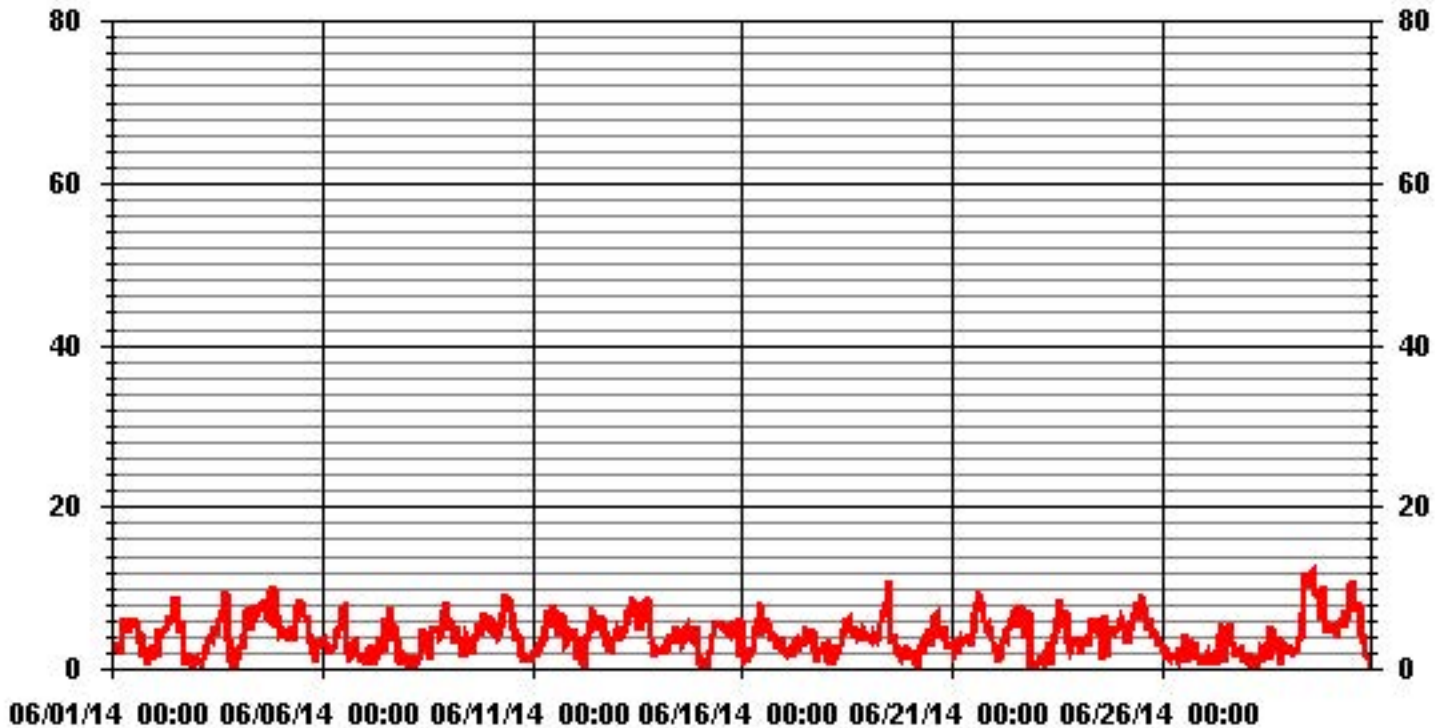
24 HOUR AVERAGES FOR JUNE 2014



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	720
MAXIMUM 1-HR AVERAGE:	12.0 KPH @ HOUR(S) 13 ON DAY(S) 29
MAXIMUM 24-HR AVERAGE:	6.8 KPH ON DAY(S) 29
	VAR-VARIOUS
MONTHLY CALIBRATION TIME:	0 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	2.29
MONTHLY AVERAGE:	4.06 KPH

01 Hour Averages



— LICA30 WSP KPH

Lakeland Industry & Community Association - Maskwa Site

JUNE 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	9.9	9.5	8.5	6.5	6.4	15.6	22.4	19.5	19.4	15.9	19.6	23.3	26.7	20.7	28.7	18.5	14.7	18.4	9.8	8	4.3	5.7	6.3	5.7	29	14.3	24
2	6.1	6.5	4.6	14.4	10.7	11.2	11.4	12.2	17.6	19.4	18.6	22.5	23.6	28.3	26.5	18.6	33.8	16.2	17.8	7	8.5	4.5	2.8	4.5	34	14.5	24
3	3.9	4	4.6	2.9	5.9	5	6	7.6	11.1	15.5	21	18.9	20.8	20.3	21.9	24.8	26.8	22.5	20.4	17.7	5.8	4.4	5.2	10.8	27	12.8	24
4	7.5	12.7	10.1	24.2	27	22.4	32.1	19.9	20.9	26.8	24.2	27.5	27.8	30.1	24.5	31.6	25.6	20.4	20	21.5	21.9	27.8	19.5	21	32	22.8	24
5	14.8	16.2	14.9	17.8	14.4	16.2	16.6	14	25	24.8	29.9	33.5	29.8	36.8	29.9	25.8	19.5	13.8	14.3	7.2	6.1	20.6	16	12.1	37	19.6	24
6	13.5	13.9	12	10.7	11.5	13.1	11.4	14.1	17.2	17	18.2	21.3	27.8	24.6	14	10.8	11.4	16	12.4	9.8	6.2	5.2	3.2	6.2	28	13.4	24
7	4.9	7.8	4.9	6	7.7	9.1	6	7.4	11.9	20.5	16.8	21.2	35.3	26.9	21.6	35.8	19.5	19.8	15.4	13.9	7.9	5.8	7.8	8	36	14.2	24
8	4.1	3.3	3.5	4.2	3.6	4.4	6.2	8	9.6	18	19.5	20.6	24.5	15.7	16.8	13.8	19.9	19.4	15.1	9.5	12.9	18.5	21.2	24.8	25	13.2	24
9	20.7	17.4	18.3	20.4	14.3	16.6	16.2	17	7.3	8.6	13.2	11.9	8.9	5.8	10.8	18.2	14.3	22.1	19.6	20.8	25.5	27.2	21.1	21.6	27	16.6	24
10	25	18.3	22.2	21	14.8	17.1	18.7	18.8	23.3	22.3	22.6	21.3	17.7	16.2	14.2	18.3	13.9	15.9	8.3	6.4	4.8	4.9	5.2	8	25	15.8	24
11	7.9	4.9	5.1	5.4	8.7	10.8	10.8	11.5	12.2	18.5	19.4	22.4	25.7	34.2	20	12.4	16.8	21.3	15.5	9.1	7.3	10.1	8.7	12.6	34	13.8	24
12	10.6	8.6	6	7.6	5.7	4.8	6.2	10.5	12.3	18.7	23.8	20.7	23.9	21.4	19.8	20.5	22.5	17.4	13.1	9.8	6	5.2	9.6	9.4	24	13.1	24
13	9.8	10.2	9.7	8.5	9.9	14.9	18.3	23	20.2	25.2	23.9	25.8	28.3	19.4	24.4	21.2	20.9	23.6	22.6	19.4	15.6	14.7	5.4	5.7	28	17.5	24
14	5.6	8.4	6.3	5.7	7.6	5.9	12.4	13.9	12.8	20.8	17.9	20.7	17.8	22.4	20.2	16.8	20	19.3	16.6	15.3	12.4	10.5	11.7	5.8	22	13.6	24
15	6.5	6.8	9	5.1	4.1	5.1	5	10.6	14.5	21.9	21.5	24.1	22.5	21.9	22.4	20.9	16.9	17.4	28	13.5	18.9	11.7	5.4	18.5	28	14.7	24
16	12.9	7.8	6.9	5.1	8.1	8.1	13.8	11.6	17.3	15.2	22.3	17	17.7	19.5	18.2	19	14.6	12	16.3	16.4	9.7	8.8	8.4	9.9	22	13.2	24
17	5.9	6.6	5.2	5.7	6.1	9.1	11.1	9.3	11.4	15.4	13.2	15.2	18.4	15.4	14.5	13.2	15.4	9	8.4	4.7	8.3	9.4	5.8	9.7	18	10.3	24
18	8.7	6.3	5.8	5.2	9.4	7.3	8.1	11.3	9.2	12.4	20.5	27.4	19	21	21	19.6	14.9	22.8	18.3	14	10.9	11.4	13.1	10.2	27	13.7	24
19	11.5	11.1	10.7	14.4	11.4	13.4	11.7	13.6	17.7	23.9	18.8	23.6	30.3	17.1	11.5	12.7	10.8	9.4	6.7	7.1	7.2	7	8.4	6.5	30	13.2	24
20	7	6.5	6.1	5.7	6	6.9	8.3	8.9	10.4	13.4	12.1	16.7	13	11.9	19.1	23.1	16.7	12	9.5	12.2	10.8	12.9	7.5	7.4	23	11.0	24
21	7.5	7.1	8.9	8	8.6	9.5	9.6	10.2	14.2	13.4	16.5	11.8	21.3	33.3	38.8	32.1	33.8	32.6	24.9	19.5	22.6	20.8	14.7	15.5	39	18.1	24
22	11.6	8.6	8.2	11	5.7	15	16.7	13.8	17.4	20.1	24.6	22.7	25.6	23.5	27.3	21.7	21.5	18.8	15.5	22.5	31	5.6	3.8	4.6	31	16.5	24
23	2.1	3.5	4.7	6.1	2.6	6	8.4	10.7	9.2	11.1	14	17.2	26.7	24.9	24	22	27.6	18.3	12.6	11.5	10.7	11.5	11.1	8.6	28	12.7	24
24	10.9	8.7	11.2	13.2	11.9	13.4	14.9	13.9	21.5	21.3	21.2	19	16.4	15	9.7	25.6	10.6	23.5	15.6	19.3	15.1	12.9	13.7	17.9	26	15.7	24
25	17.2	17.5	16.4	16.7	15.4	14.3	18.6	19	25.7	27.8	28.9	23.7	33	18.1	17.5	19.1	19.7	23.4	14.2	22.2	13.8	15.3	14.4	12	33	19.3	24
26	7.7	7.7	5.6	6.3	8.3	6.6	6.3	7.7	7.5	12.8	13.6	9.1	8	15.1	9.2	9	15.2	9.3	6.3	7	5.5	4.3	3.8	3.6	15	8.1	24
27	4.3	4.4	6.3	5.7	3.5	4.2	6.9	8.5	13.4	14.9	18.2	14.9	31.6	10	16.9	16.2	12.6	11.3	8.4	10.9	6	6.6	4.7	3.5	32	10.2	24
28	4	5.6	4.8	4	3.9	7.1	2.8	7.5	4.9	12.1	13.6	15.4	24.1	10.6	15.5	18	9.7	19.1	17.4	9.3	11.3	16.7	14.4	9.9	24	10.9	24
29	10.8	12.3	8.5	7.4	7.5	12	13.3	15	24.5	33	32.5	30.7	35.7	35	39.3	34.6	34.9	34.5	31.2	21.7	31.9	19.8	17.7	22.6	39	23.6	24
30	21.7	22.5	23.2	22.7	19.8	18.9	22.7	22.6	22.4	32.7	25.6	32.1	33.8	31.9	31.5	27.3	23.2	27.3	23.3	13.4	5.8	4.8	5.6	2.8	34	21.6	24
HOURLY MAX	25	23	23	24	27	22	32	23	26	33	33	34	36	37	39	36	35	35	31	23	32	28	21	25			
HOURLY AVG	9.8	9.5	9.1	9.9	9.4	10.8	12.4	13.1	15.4	19.1	20.2	21.1	23.9	21.6	21.0	20.7	19.3	18.9	15.9	13.4	12.2	11.5	9.9	10.6			

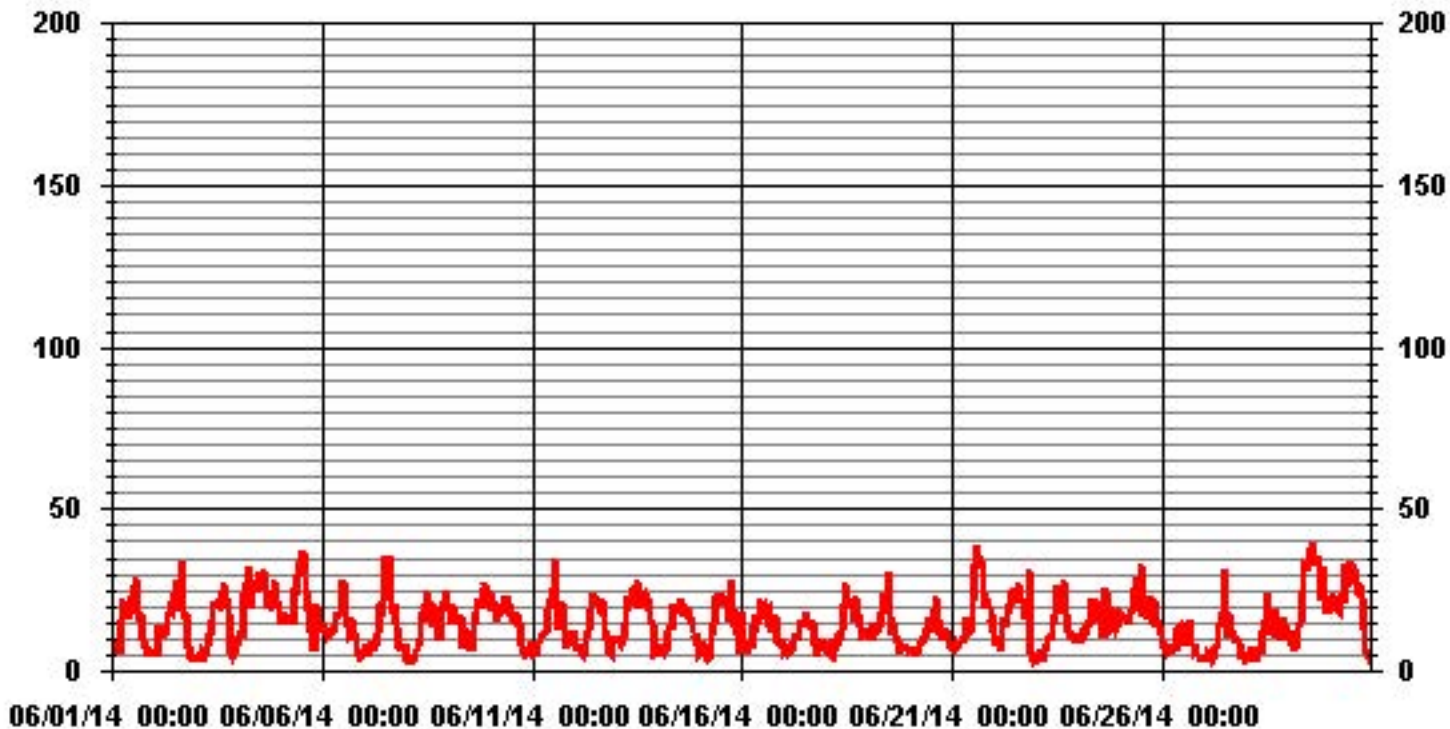
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS VALUE:	39	KPH	@ HOUR(S)	14	ON DAY(S)	29
					VAR-VARIOUS	
			OPERATIONAL TIME:			720 HRS

01 Hour Averages



— LICA30 WSMAX KPH

LICA30
WSP / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	6.66	5.69	9.44	5.83	5.69	7.63	7.91	2.63	3.88	7.22	2.08	1.52	2.08	2.36	5.41	4.72	80.83
< 12.0	3.88	2.08	2.36	.69	.27	.41	.97	1.66	1.25	1.66	.00	.00	.13	.13	1.52	1.94	19.02
< 20.0	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13
< 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	10.69	7.77	11.80	6.52	5.97	8.05	8.88	4.30	5.13	8.88	2.08	1.52	2.22	2.50	6.94	6.66	

Calm : .00 %

Total # Operational Hours : 720

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	48	41	68	42	41	55	57	19	28	52	15	11	15	17	39	34	582
< 12.0	28	15	17	5	2	3	7	12	9	12			1	1	11	14	137
< 20.0	1																1
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	77	56	85	47	43	58	64	31	37	64	15	11	16	18	50	48	

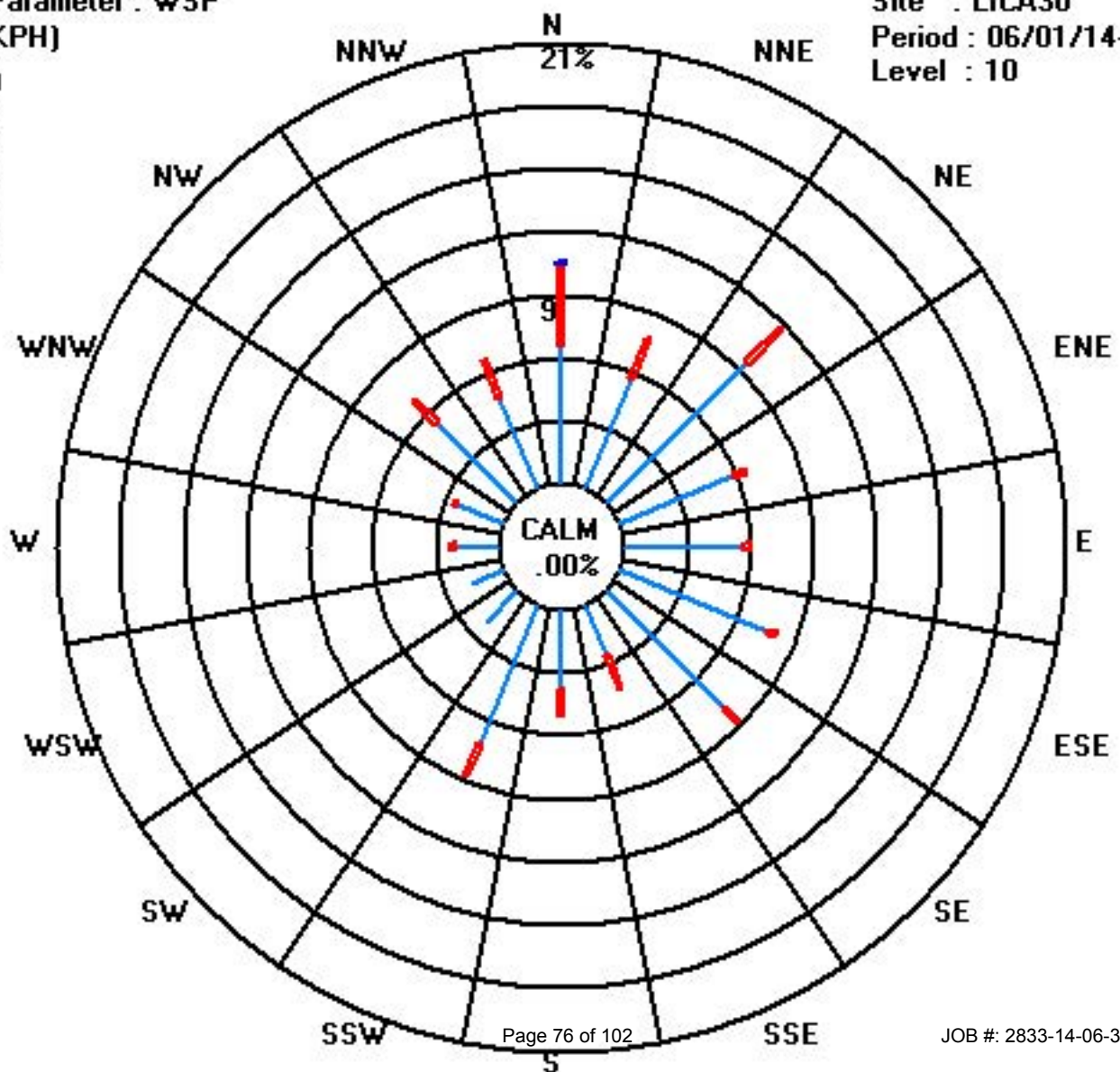
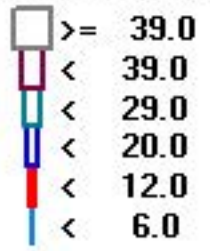
Calm : .00 %

Total # Operational Hours : 720

Class Limits (KPH)

Period : 06/01/14-06/30/14

Level : 10



Vector Wind Direction

Lakeland Industry & Community Association - Maskwa Site

JUNE 2014

WIND DIRECTION (WD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	24-HOUR AVG.	24-HOUR QUADRANT	RDGS.
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																													
1		65	58	59	58	47	79	103	105	110	137	138	139	158	131	159	251	232	214	24	41	195	177	184	202	251	WSW	24	
2		200	196	199	203	208	212	206	201	200	196	208	199	212	207	61	128	29	63	202	29	127	90	21	48	212	SSW	24	
3		84	84	71	64	78	33	22	27	26	98	117	136	129	134	151	145	150	195	157	161	165	218	330	122	330	NNW	24	
4		116	229	259	299	315	330	345	337	325	324	323	317	328	344	342	353	1	355	3	21	24	11	6	3	355	N	24	
5		351	358	357	350	354	339	3	349	331	342	343	344	350	344	351	19	17	25	40	41	241	283	281	267	358	N	24	
6		272	271	277	275	291	302	316	318	303	305	310	322	332	12	321	327	239	301	326	13	133	170	181	192	332	NNW	24	
7		179	202	79	118	153	49	208	49	293	209	218	351	335	360	35	344	318	318	355	7	58	41	167	188	360	N	24	
8		176	171	102	171	176	27	45	265	356	10	8	305	321	299	288	184	193	136	132	147	144	149	148	148	356	N	24	
9		149	133	142	143	57	41	86	105	52	68	54	38	27	8	298	320	332	277	262	267	279	286	291	294	332	NNW	24	
10		309	304	318	321	332	345	356	9	17	20	18	26	32	42	24	73	9	352	333	341	210	201	215	251	356	N	24	
11		262	177	202	194	203	210	198	214	200	199	205	214	209	188	19	146	172	197	197	207	200	196	202	204	262	W	24	
12		201	203	229	202	211	223	48	207	217	199	187	186	185	179	169	160	188	162	171	153	122	116	52	50	229	SW	24	
13		41	42	53	59	52	54	44	54	50	42	60	69	101	35	27	34	33	43	34	35	93	129	90	83	129	SE	24	
14		66	83	56	50	44	51	123	129	120	111	115	108	107	106	101	143	137	141	123	124	117	134	154	172	172	S	24	
15		186	67	198	75	54	35	27	34	33	45	110	128	92	109	110	71	79	119	127	137	129	136	96	143	198	SSW	24	
16		133	83	76	74	63	43	9	24	14	13	37	74	60	65	67	70	47	48	58	53	48	51	46	45	133	SE	24	
17		42	41	52	60	55	60	65	54	91	98	116	118	126	121	125	116	133	120	98	94	105	114	68	117	133	SE	24	
18		116	69	60	97	124	29	51	99	89	44	80	117	122	120	106	90	87	110	85	71	47	34	33	37	124	ESE	24	
19		51	44	41	40	47	53	43	40	39	41	46	35	39	62	100	38	57	70	60	20	44	62	56	81	100	E	24	
20		59	28	3	26	311	339	10	6	27	26	19	32	20	15	39	44	40	20	28	21	18	14	10	6	339	NNW	24	
21		11	7	354	1	1	7	0	354	343	336	335	325	300	304	315	313	315	317	323	310	306	306	312	336	354	N	24	
22		343	358	354	304	207	305	310	304	5	332	328	338	344	358	330	6	341	336	10	18	36	13	185	109	358	N	24	
23		78	101	58	78	27	46	54	41	93	177	111	108	91	52	69	105	120	191	166	124	91	121	112	114	191	S	24	
24		119	77	105	118	117	104	129	125	156	126	116	101	106	187	166	172	136	84	85	135	143	142	139	133	187	S	24	
25		133	134	130	107	97	84	114	133	126	129	129	155	154	181	185	169	153	156	153	139	145	119	130	130	185	S	24	
26		112	138	120	138	139	127	130	99	131	81	189	160	255	21	91	235	252	191	173	202	198	204	261	196	261	W	24	
27		201	197	195	213	214	198	240	308	197	220	200	341	26	14	1	7	352	341	313	227	207	181	187	150	352	N	24	
28		164	178	194	165	138	47	91	210	243	307	296	252	37	154	206	23	242	285	315	266	263	297	332	309	332	NNW	24	
29		292	311	307	315	356	353	351	337	5	14	13	8	8	5	358	351	356	1	358	356	3	353	327	332	358	N	24	
30		335	333	338	345	331	315	316	322	323	314	327	0	0	8	350	1	4	5	354	2	349	353	340	257	354	N	24	

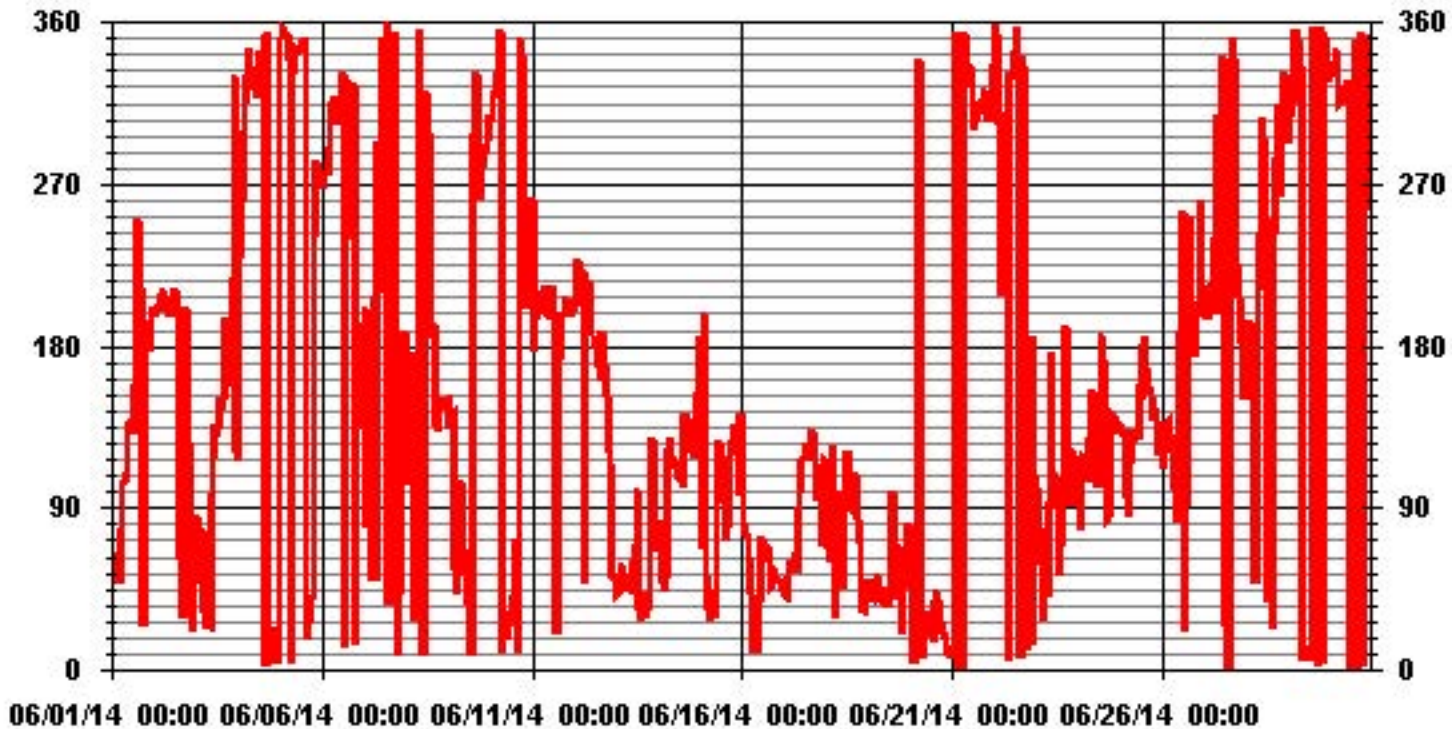
STATUS FLAG CODES

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:	720 HRS
STANDARD DEVIATION:	110.43	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	44 DEG

01 Hour Averages



— LICA30 WDR DEG

Standard Deviation Wind Direction

Lakeland Industry & Community Association - Maskwa Site

JUNE 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

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

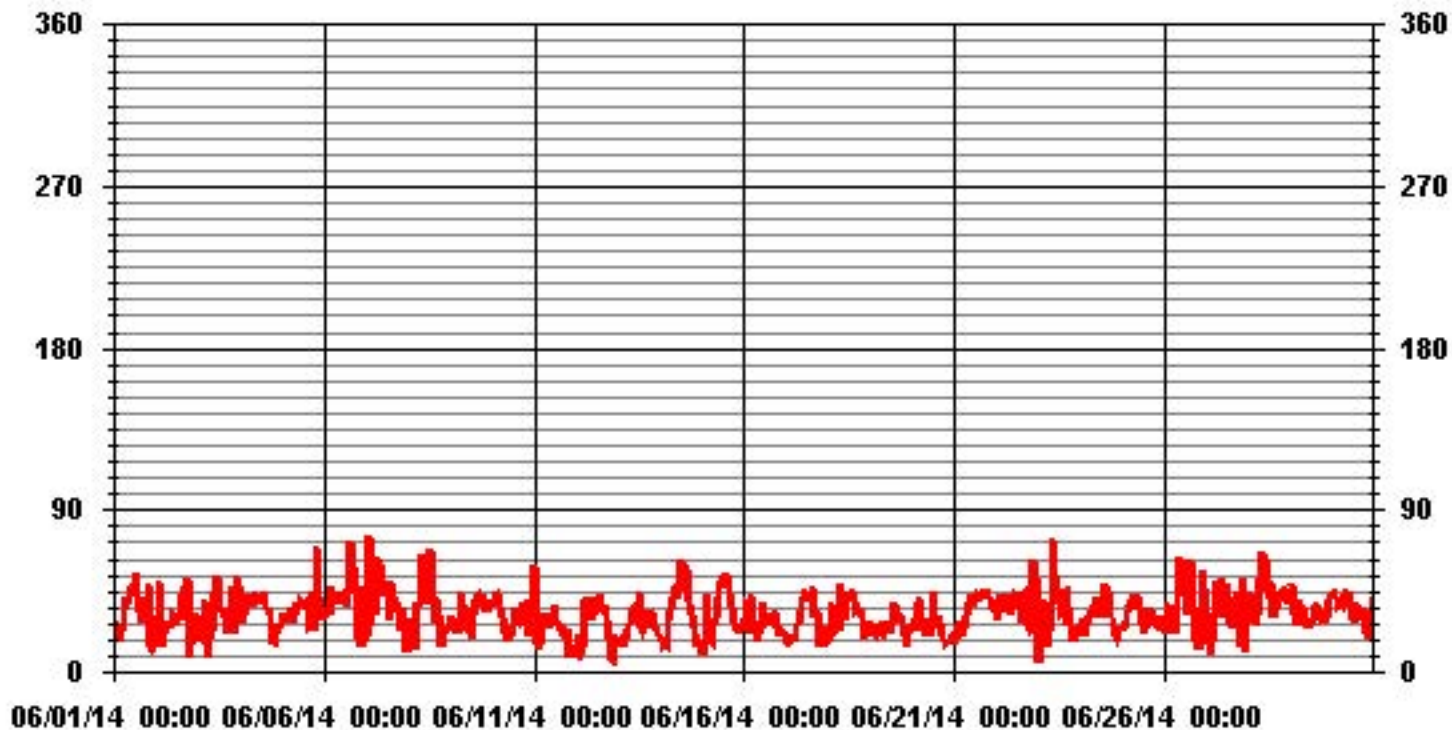
STATUS FLAG CODES

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: 0 HRS

01 Hour Averages



Calibration Reports

Sulphur Dioxide



API 100E SO2 Analyzer Calibration

Date: 10-Jun-14 Start/End Time (mst): 12:08/15:46
 Company: LICA Calibration Purpose: Monthly Calibration
 Station Name/Location: Makswa Converter Make & Model: NA
 Performed by: Kevin Hope Converter Serial #: NA
 Application H₂S/TRS/SO₂: SO2 Cal Gas Expiry Date: 4-Feb-18

Analyzer:
 Serial Number: 508 Range ppb: 1000
 Last Calibration Date: 14-May-14 As Found C.F.: 1.018
 Previous Cal High Point C.F.: 1.001 New C.F.: 1.027

As found:		As left:	
SLOPE:	<u>1.276</u>	SLOPE:	<u>1.301</u>
OFFSET:	<u>78.5</u>	OFFSET:	<u>82.0</u>
HVPS:	<u>491</u>	HVPS:	<u>491</u>
RCELL TEMP:	<u>50.0</u>	RCELL TEMP:	<u>50.0</u>
BOX TEMP:	<u>27.5</u>	BOX TEMP:	<u>27.5</u>
PMT TEMP:	<u>7.7</u>	PMT TEMP:	<u>7.7</u>
IZS TEMP:	<u>45.0</u>	IZS TEMP:	<u>45.0</u>
TEST:	<u>NA</u>	TEST:	<u>NA</u>
STABIL:	<u>0.1</u>	STABIL:	<u>0.1</u>
PRES:	<u>24.3</u>	PRES:	<u>24.3</u>
SAMP FL:	<u>584</u>	SAMP FL:	<u>584</u>
PMT:	<u>70.0</u>	PMT:	<u>70.0</u>
NORM PMT:	<u>82.3</u>	NORM PMT:	<u>82.3</u>
UV LAMP:	<u>2567</u>	UV LAMP:	<u>2567</u>
LAMP RATIO:	<u>85.5</u>	LAMP RATIO:	<u>85.5</u>
STR. LGT	<u>50.1</u>	STR. LGT	<u>50.1</u>
DRK PMT:	<u>11.3</u>	DRK PMT:	<u>11.3</u>
DRK LMP:	<u>-1.8</u>	DRK LMP:	<u>-1.8</u>
Internal Span:	<u>261.9</u>	Internal Span:	<u>268.5</u>

Calibrator:	Flow Meter ID's: <u>NA</u>	Calibrator Flow Targets:			
	Make & Model: <u>EnviroNics 6100</u>	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
	Serial #: <u>4760</u>	zero	<u>5000</u>	<u>0</u>	<u>5000</u>
	Cal Gas Cylinder I.D. #: <u>BLM000711</u>	high	<u>5000</u>	<u>80</u>	<u>5080</u>
	Cal Gas Conc. (ppm): <u>48.2</u>	mid	<u>5000</u>	<u>40</u>	<u>5040</u>
		low	<u>5000</u>	<u>20</u>	<u>5020</u>

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	2.6	NA
adjusted zero	5000	0.0	5000	0	0.4	NA
as found high	4995	79.77	5075	757.7	745.0	1.018
adjusted high	4995	79.77	5075	757.7	757.4	1.001
mid	4996	39.89	5036	381.8	369.0	1.036
low	4996	19.94	5016	191.6	184.0	1.044
calibrator zero	4996	0.00	4996	0	0.5	NA
Average C.F. =						1.027

Linear Regression/Calibration Results:

Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>0.999</u>	> or = 0.995	PASS
b (Intercept as % of full scale) =	<u>0.54%</u>	0.85-1.15	PASS
% change in C.F. from last cal	<u>-1.65%</u>	± 3% F.S.	PASS
		± 15%	PASS

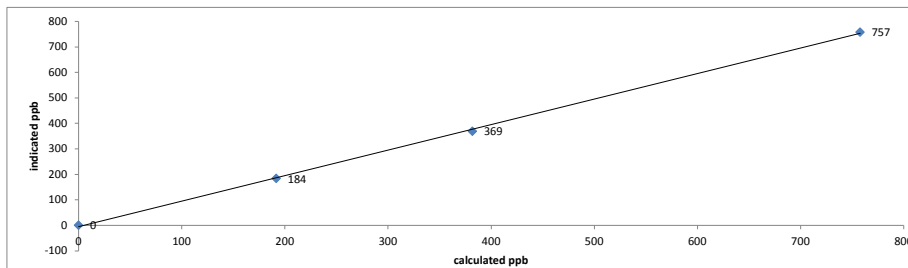
Converter Efficiency Check for H₂S/TRS application:

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

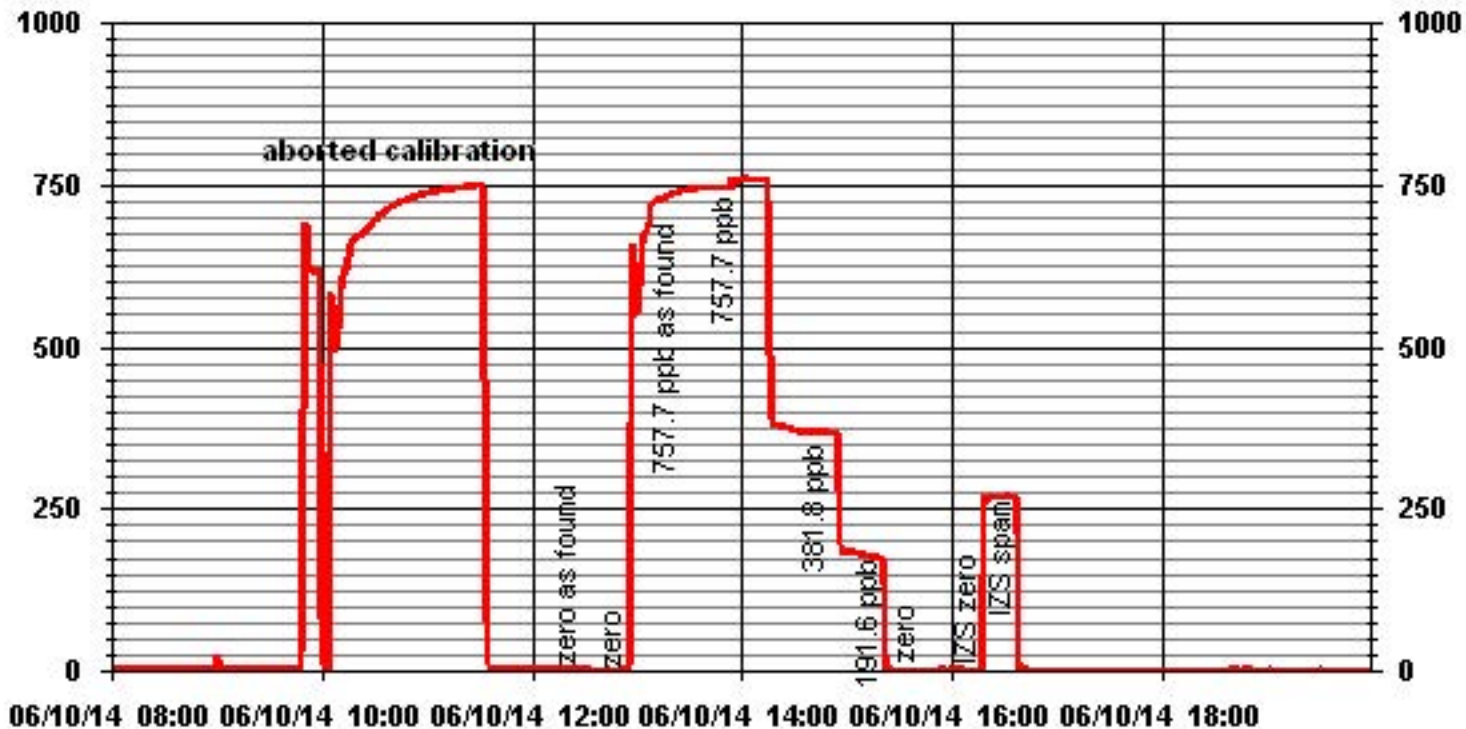
SO₂ High Point gas concentration: na Time gas run (mst): na
 Zero corrected analyzer response: na

Comments:
 Sample filter changed.
 Response too slow. Calibration rejected.

API 100E SO2 Analyzer Calibration



01 Minute Averages





API 100E SO2 Analyzer Calibration

Date: 20-Jun-14
Company: LICA
Station Name/Location: Maskwa
Performed by: Limin Li/Raja Abid
Application H₂S/TRS/SO₂: SO2
Start/End Time (mst): 07:42/09:42
Calibration Purpose: As Found
Converter Make & Model: NA
Converter Serial #: NA
Cal Gas Expiry Date: 4-Feb-18

Analyzer:
Serial Number: 508
Last Calibration Date: 14-May-14
Previous Cal High Point C.F.: 1.001
Range ppb: 1000
As Found C.F.: 0.994
New C.F.: NA

As found:		As left:	
SLOPE:	1.302	SLOPE:	1.302
OFFSET:	82.4	OFFSET:	83.2
HVPS:	491	HVPS:	491
RCELL TEMP:	50.0	RCELL TEMP:	50.0
BOX TEMP:	30.4	BOX TEMP:	30.4
PMT TEMP:	7.7	PMT TEMP:	7.7
IZS TEMP:	45.0	IZS TEMP:	45.0
TEST:	na	TEST:	na
STABIL:	0.1	STABIL:	0.1
PRES:	24.2	PRES:	24.2
SAMP FL:	587	SAMP FL:	587
PMT:	71.4	PMT:	71.4
NORM PMT:	83.3	NORM PMT:	83.3
UV LAMP:	2538.9 (84.6%)	UV LAMP:	2538.9 (84.6%)
LAMP RATIO:	84.5	LAMP RATIO:	84.5
STR. LGT	53.6	STR. LGT	53.6
DRK PMT:	12	DRK PMT:	12
DRK LMP:	3.7	DRK LMP:	3.7
Internal Span:	268.5	Internal Span:	268.5

Calibrator:	Flow Meter ID's: NA	Calibrator Flow Targets:																				
Make & Model: Environics 6100	Serial #: 4760	<table border="1"> <thead> <tr> <th>point</th> <th>diluent (cc/min)</th> <th>cal gas (cc/min)</th> <th>total (cc/min)</th> </tr> </thead> <tbody> <tr><td>zero</td><td>5000</td><td>0</td><td>5000</td></tr> <tr><td>high</td><td>4922</td><td>78</td><td>5000</td></tr> <tr><td>mid</td><td>4962</td><td>38</td><td>5000</td></tr> <tr><td>low</td><td>4981</td><td>19</td><td>5000</td></tr> </tbody> </table>	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)	zero	5000	0	5000	high	4922	78	5000	mid	4962	38	5000	low	4981	19	5000
point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)																			
zero	5000	0	5000																			
high	4922	78	5000																			
mid	4962	38	5000																			
low	4981	19	5000																			
Cal Gas Cylinder I.D. #: BLM711	Cal Gas Conc. (ppm): 48.2																					

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4996	0.0	4996	0	0.6	NA
adjusted zero	4996	0.0	4996	0	0.1	NA
as found high	4916	77.61	4994	749.1	754.0	0.994
adjusted high		na				
mid		na				
low		na				
calibrator zero	na	0.00	4996	0		NA

Average C.F. =

Linear Regression/Calibration Results:

Correlation Coefficient = _____ **LIMITS** **Pass/Fail ?**
 Slope = _____ **> or = 0.995**
 b (Intercept as % of full scale) = _____ **0.85-1.15**
 % change in C.F. from last cal **0.73%** **± 3% F.S.**
± 15% PASS

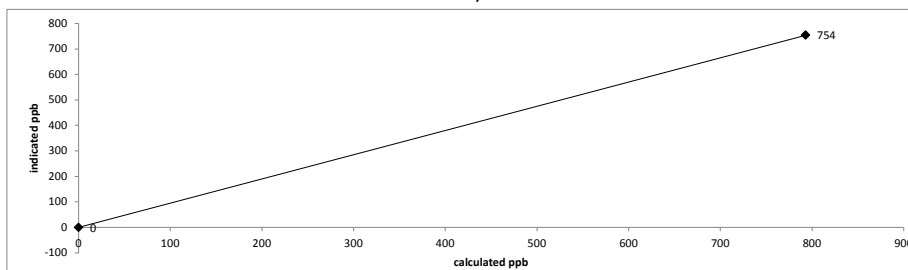
Converter Efficiency Check for H₂S/TRS application:

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

SO₂ High Point gas concentration: NA Time gas run (mst): NA
 Zero corrected analyzer response: NA

Comments:

API 100E SO2 Analyzer Calibration





API 100E SO2 Analyzer Calibration

Date: 20-Jun-14
Company: LICA
Station Name/Location: Maskwa
Performed by: Limin Li/Raja Abid
Application H₂S/TRS/SO₂: SO2
Start/End Time (mst): 10:10/13:50
Calibration Purpose: Redo 3 point cal.
Converter Make & Model: NA
Converter Serial #: NA
Cal Gas Expiry Date: 4-Feb-18

Analyzer:
Serial Number: 508
Last Calibration Date: 14-May-14
Previous Cal High Point C.F.: 1.001
Range ppb: 1000
As Found C.F.: NA
New C.F.: 1.009

As found:		As left:	
SLOPE:	1.302	SLOPE:	1.289
OFFSET:	83.2	OFFSET:	83.1
HVPS:	491	HVPS:	491
RCELL TEMP:	50.0	RCELL TEMP:	50.0
BOX TEMP:	30.4	BOX TEMP:	29.5
PMT TEMP:	7.7	PMT TEMP:	7.7
IZS TEMP:	45.0	IZS TEMP:	45.0
TEST:	na	TEST:	na
STABIL:	0.1	STABIL:	0.0
PRES:	24.2	PRES:	24.3
SAMP FL:	587	SAMP FL:	587
PMT:	71.4	PMT:	71.3
NORM PMT:	83.3	NORM PMT:	83.4
UV LAMP:	2538.9 (84.6%)	UV LAMP:	2538.5 (84.5%)
LAMP RATIO:	84.5	LAMP RATIO:	54.6
STR. LGT	53.6	STR. LGT	53.6
DRK PMT:	12	DRK PMT:	11.8
DRK LMP:	3.7	DRK LMP:	1.8
Internal Span:	268.5	Internal Span:	268.5

Calibrator:	Calibrator Flow Targets:																				
Flow Meter ID's: NA	<table border="1"> <thead> <tr> <th>point</th> <th>diluent (cc/min)</th> <th>cal gas (cc/min)</th> <th>total (cc/min)</th> </tr> </thead> <tbody> <tr><td>zero</td><td>5000</td><td>0</td><td>5000</td></tr> <tr><td>high</td><td>4922</td><td>78</td><td>5000</td></tr> <tr><td>mid</td><td>4962</td><td>38</td><td>5000</td></tr> <tr><td>low</td><td>4981</td><td>19</td><td>5000</td></tr> </tbody> </table>	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)	zero	5000	0	5000	high	4922	78	5000	mid	4962	38	5000	low	4981	19	5000
point		diluent (cc/min)	cal gas (cc/min)	total (cc/min)																	
zero		5000	0	5000																	
high		4922	78	5000																	
mid		4962	38	5000																	
low	4981	19	5000																		
Make & Model: Environics 6100																					
Serial #: 4760																					
Cal Gas Cylinder I.D. #: BLM711																					
Cal Gas Conc. (ppm): 48.2																					

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	na	0.0	#####	0	0.6	NA
adjusted zero	4996	0.0	4996	0	0.3	NA
as found high		na				
adjusted high	4916	77.61	4994	749.1	750.0	0.999
mid	4957	37.81	4995	364.9	362.0	1.009
low	4976	18.95	4995	182.9	180.0	1.018
calibrator zero	4996	0.00	4996	0	0.3	NA
Average C.F. =						1.009

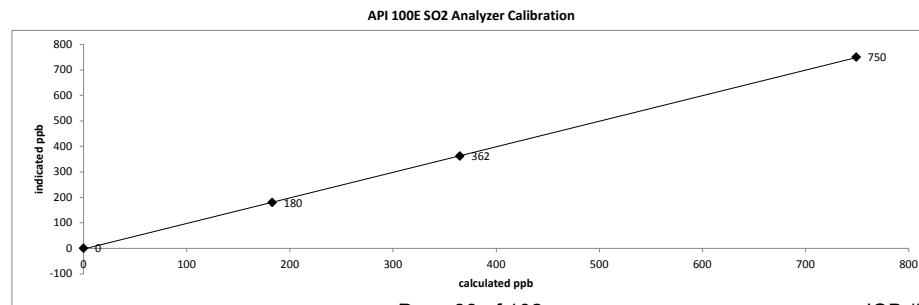
Linear Regression/Calibration Results:

Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>0.998</u>	> or = 0.995	PASS
b (Intercept as % of full scale) =	<u>0.19%</u>	0.85-1.15	PASS
% change in C.F. from last cal	<u>#VALUE!</u>	± 3% F.S.	PASS
		± 15%	#####

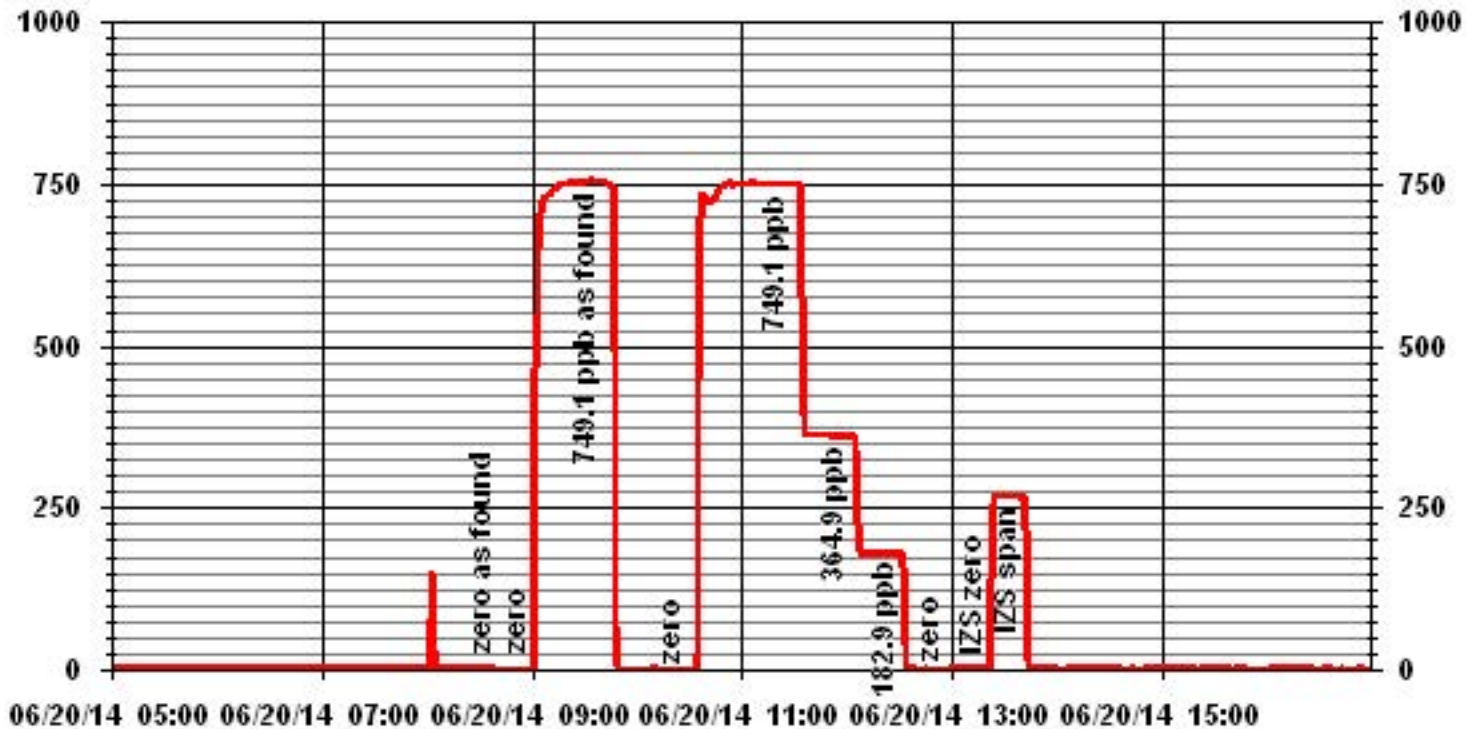
Converter Efficiency Check for H₂S/TRS application:
****run converter efficiency test immediately following zero adjust****

SO₂ High Point gas concentration: NA
 Time gas run (mst): NA
 Zero corrected analyzer response: NA

Comments:



01 Minute Averages



Hydrogen Sulphide



API 101E H2S Analyzer Calibration

Date: 10-Jun-14
Company: LICA
Station Name/Location: Maskwa
Performed by: Kevin Hope
Application H₂S/TRS/SO₂: H2S
Start/End Time (mst): 9:25/12:57
Calibration Purpose: Monthly Calibration
Converter Make & Model: NA
Converter Serial #: NA
Cal Gas Expiry Date: 25-Dec-15

Analyzer:
Serial Number: 511
Last Calibration Date: 14-May-14
Previous Cal High Point C.F.: 1.002
Range ppb: 100
As Found C.F.: 1.034
New C.F.: 1.049

As found:	As left:
SLOPE: 1.189	SLOPE: 1.236
OFFSET: 31.5	OFFSET: 32.8
HVPS: 584	HVPS: 584
RCELL TEMP: 50.0	RCELL TEMP: 50.0
BOX TEMP: 28.8	BOX TEMP: 28.8
PMT TEMP: 7.9	PMT TEMP: 7.9
IZS TEMP: 45.0	IZS TEMP: 45.0
TEST: NA	TEST: NA
STABIL: 0.1	STABIL: 0.1
PRES: 29.0	PRES: 29.0
SAMP FL: 658	SAMP FL: 658
PMT: 58.0	PMT: 58.0
NORM PMT: 32.2	NORM PMT: 32.2
UV LAMP: 3246	UV LAMP: 3246
LAMP RATIO: 90.1	LAMP RATIO: 90.1
STR. LGT: 18.7	STR. LGT: 18.7
DRK PMT: 28.6	DRK PMT: 28.6
DRK LMP: 5.8	DRK LMP: 5.8
Internal Span: 49.53	Internal Span: 50.85

Calibrator: Flow Meter ID's: NA Make & Model: API 700 Serial #: 830 Cal Gas Cylinder I.D. #: BLM005049 Cal Gas Conc. (ppm): 10.1	Calibrator Flow Targets: <table border="1"> <thead> <tr> <th>point</th> <th>diluent (cc/min)</th> <th>cal gas (cc/min)</th> <th>total (cc/min)</th> </tr> </thead> <tbody> <tr><td>zero</td><td>5000</td><td>0</td><td>5000</td></tr> <tr><td>high</td><td>5000</td><td>39</td><td>5039</td></tr> <tr><td>mid</td><td>5000</td><td>19</td><td>5019</td></tr> <tr><td>low</td><td>5000</td><td>11</td><td>5011</td></tr> </tbody> </table>	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
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	0.8	NA
adjusted zero	5000	0.0	5000	0	0.4	NA
as found high	5000	39.00	5039	78.2	76.0	1.034
adjusted high	5000	39.00	5039	78.2	78.2	1.005
mid	5000	19.00	5019	38.2	37.0	1.045
low	5000	11.00	5011	22.2	20.6	1.098
calibrator zero	5000	0.00	5000	0	-0.4	NA
Average C.F. =						1.049

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	Pass/Fail ?
Slope =	0.999	> or = 0.995	PASS
b (Intercept as % of full scale) =	0.57%	0.85-1.15	PASS
% change in C.F. from last cal	-3.19%	± 3% F.S.	PASS
		± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

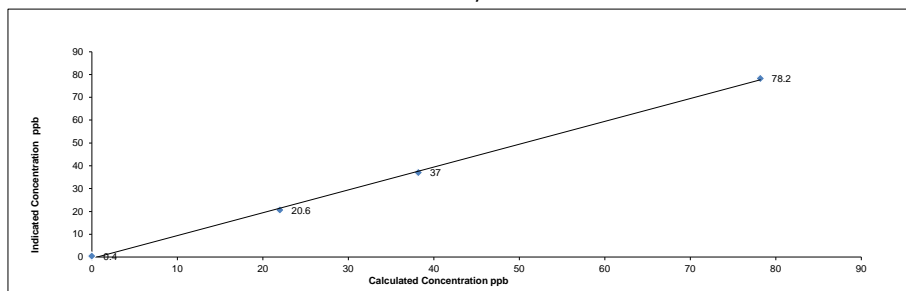
****run converter efficiency test immediately following zero adjust****

SO₂ High Point gas concentration: na Time gas run (mst): na
 Zero corrected analyzer response: na

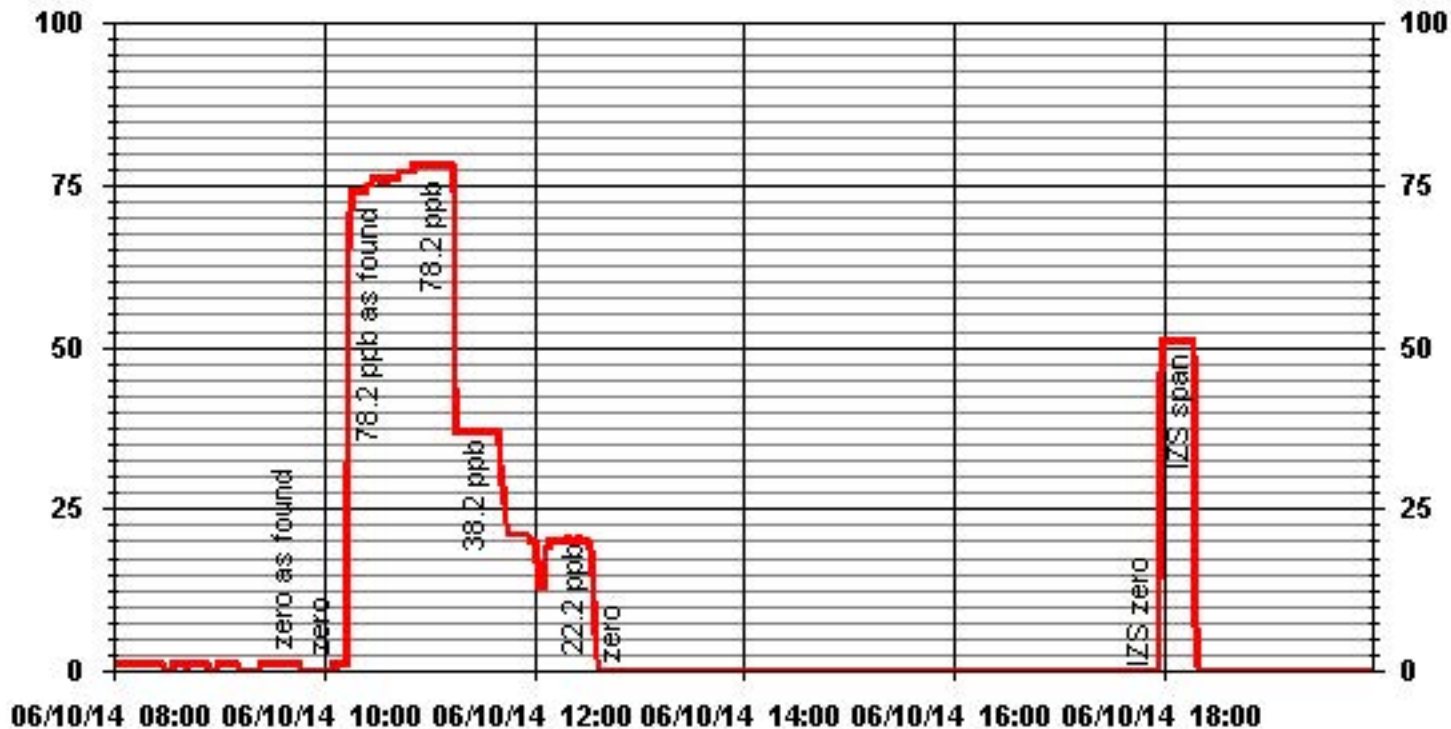
Comments:

Sample filter changed.

API 101E H2S Analyzer Calibration



01 Minute Averages



Total Hydrocarbons

Maxxam Thermo 51C THC Analyzer Calibration

Date: 11-Jun-14
 Company: LICA
 Station Name/Location: Maskwa
 Performed by: Kevin Hope

Start Time (mst): 14:52
 End Time (mst): 17:03
 Calibration Purpose: Monthly Calibration
 Cal Gas Expiry Date: 26-Mar-17

Analyser:
 Serial Number: 436609738 Range ppm: 50
 Last Calibration Date: 15-May-14 As Found C.F.: 1.026
 Previous Cal High Point C.F.: 1.004 New C.F.: 1.007

	As found:	As left:
H ₂ cylinder (psi):	350	350
H ₂ cylinder reg set (psi):	26	26
Span Cylinder (psi):	850	850
Span Cylinder Reg Set (psi):	25	25
Zero Air Gen Pressure:	35	35
measurement alarms:	None	None
service alarms:	None	None
FID status:	cnt: 2415	cnt: 2415
	rng: 1	rng: 1
	try: 3	try: 3
	flm: 179.1	flm: 179.1
	det: 125.6	det: 125.6
Oven Readings:	Flame: 179	Flame: 179
	Filter: 125	Filter: 125
	Base: 125	Base: 125
	Pump: 7.49	Pump: 7.49
Voltages:	+5 4.9	+5 4.9
	+15 14.8	+15 14.8
	-15 -15.0	-15 -15.0
	Internal Span: 34.72	Internal Span: 36.6

Calibrator:	Flow Meter ID's:	NA	Calibrator Flow Targets:			
	Make & Model:	API 700				
	Serial #:	830	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
	Cal Gas Cylinder I.D. #:	LL33674	zero	2000	0	2000
	CH ₄ /C ₃ H ₈ Cylinder Conc. (ppm):	601.4 202.0	high	2000	65	2065
CH ₄ as propane/total CH ₄ equivalents (ppm):	555.5 1156.9	mid	2000	33	2033	
		low	2000	15	2015	

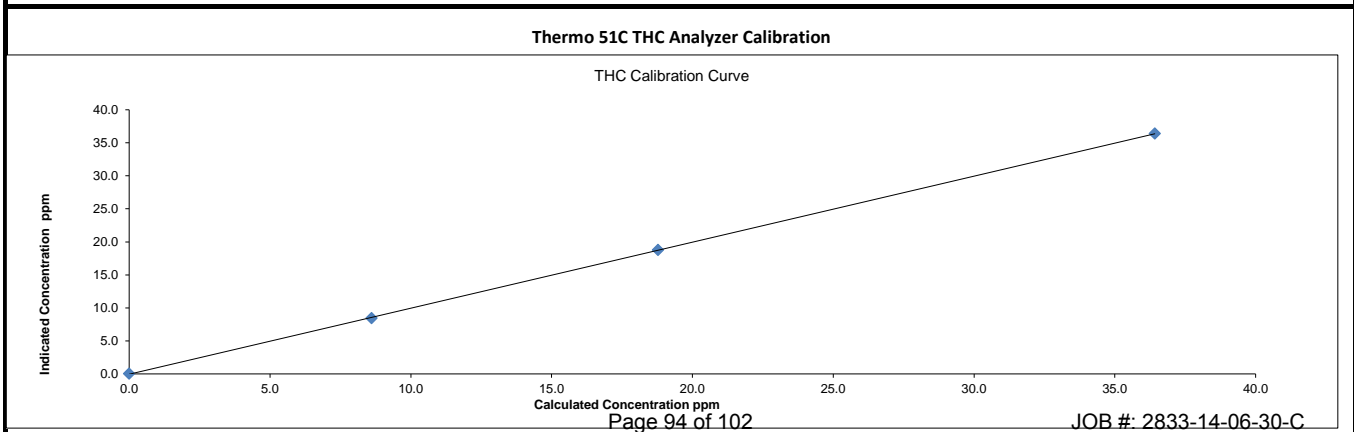
Point	Calibrator Flow Rates (cc/min)			Calculated Concentration:		Indicated Concentration:		Correction Factors:
	Diluent	Cal Gas	Total	(ppm)	(ppm)	(ppm)	(ppm)	
as found zero	2000	0.00	2000	0	0.03			NA
adjusted zero		NA						
as found high	2000	65.00	2065	36.42	35.50			1.026
adjusted high	2000	65.00	2065	36.42	36.38			1.001
mid	2000	33.00	2033	18.78	18.77			1.001
low	2000	15.00	2015	8.61	8.44			1.020
calibrator zero	2000	0.00	2000	0	0.00			NA
Average C.F. =								1.007

Linear Regression/Calibration Results:

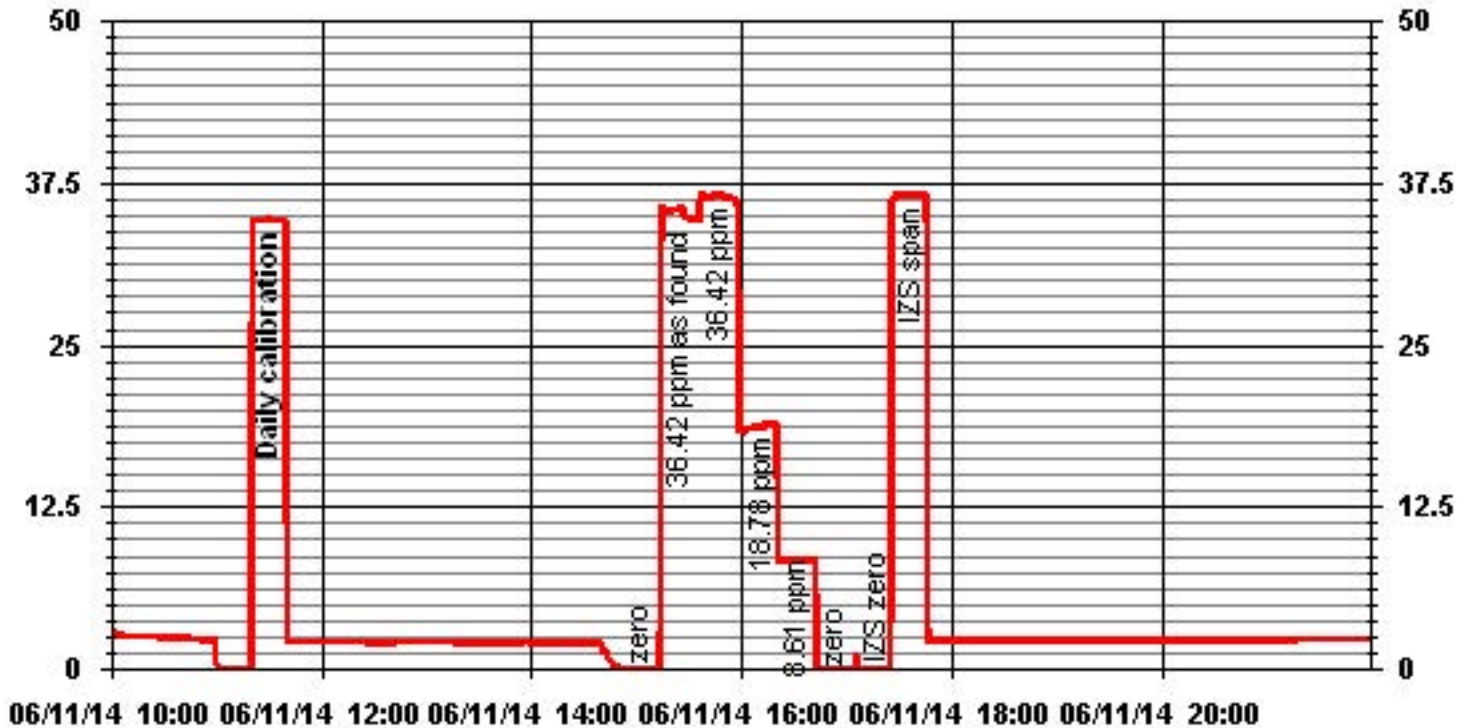
Correlation Coefficient =	1.000	LIMITS	Pass/Fail ?
Slope =	1.000	> or = 0.995	PASS
b (Intercept as % of full scale) =	-0.092%	± 3% F.S.	PASS
% change in C.F. from last cal	-2.17%	± 15%	PASS

Comments:

Sample filter changed.



01 Minute Averages



Nitrogen Dioxide



API 200E NOx Analyzer Calibration

Date: 10-Jun-14
 Company: LICA
 Station Name/Location: Maskwa
 Performed by: Kevin Hope

Start Time (mst): 9:25
 End Time (mst): 10:30
 Calibration Purpose: As Found
 Cal Gas Expiry Date: 4-Feb-18

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

Correction Factors:
 As found C.F. Previous Cal High Point C.F.:
 NO= 1.021 NO= 1.000
 NOx= 1.022 NOx= 1.001
 NO₂= NA NO₂= 0.993

As found:
 NOx SLOPE: 1.072
 NOx OFFS: -0.3
 NO SLOPE: 1.069
 NO OFFS: -0.3
 TEST: NA
 SAMP FLW: 453
 OZONE FL: 78
 PMT: 12.2
 NORM PMT: -0.9
 AZERO: 14.8
 HVPS: 750
 RCELL TEMP: 50.2
 BOX TEMP: 27.9
 PMT TEMP: 6.6
 IZS TEMP: 42.1
 MOLY TEMP: 316.7
 RCEL: 5.3
 SAMP: 26.36
 Internal Span: 548.8/5.63/542.2

As left:
 NOx SLOPE: 1.072
 NOx OFFS: -0.3
 NO SLOPE: 1.069
 NO OFFS: -0.3
 TEST: NA
 SAMP FLW: 453
 OZONE FL: 78
 PMT: 12.2
 NORM PMT: -0.9
 AZERO: 14.8
 HVPS: 750
 RCELL TEMP: 50.2
 BOX TEMP: 27.9
 PMT TEMP: 6.6
 IZS TEMP: 42.1
 MOLY TEMP: 316.7
 RCEL: 5.3
 SAMP: 26.36
 Internal Span: 548.8/5.63/542.2

Calibrator Flow Targets:

Make & Model: Envirocnis 6100
 Serial #: 4760
 Cal Gas Cylinder I.D. #: BLM000711
 NO Cylinder Conc. (ppm): 50.1
 NOx Cylinder Conc. (ppm): 50.2

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	0.6	0.7	NA	NA
adjusted zero		NA						NA	NA
as found high	4995	79.77	5075	787.5	789.1	771	772	1.021	1.022
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										
as found NO ₂										
adjusted NO ₂										
gpt mid										
gpt low										
Average NO ₂ C.F.=										

Linear Regression/Calibration Results:			LIMITS
NO	NOx	NO ₂	
Correlation Coefficient =			> or = 0.995
Slope =			0.85-1.15
b (Intercept as % of full scale) =			± 3% F.S.
% change in C.F. from last cal =	<u>-2.14%</u>	<u>-2.11%</u>	+/-15%
NO ₂ converter efficiency		<u>#VALUE!</u>	>85%

Comments:

As Found due to variable readings.



API 200E NOx Analyzer Calibration

Date: 10-Jun-14
 Company: LICA
 Station Name/Location: Maskwa
 Performed by: Kevin Hope

Start Time (mst): 12:08
 End Time (mst): 15:46
 Calibration Purpose: Monthly Calibration
 Cal Gas Expiry Date: 4-Feb-18

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

Correction Factors:
 As found C.F. Previous Cal High Point C.F.:
 NO= 1.007 NO= 1.000
 NOx= 1.008 NOx= 1.001
 NO₂= 0.997 NO₂= 0.993

As found:
 NOx SLOPE: 1.072
 NOx OFFS: -0.3
 NO SLOPE: 1.069
 NO OFFS: -0.3
 TEST: NA
 SAMP FLW: 453
 OZONE FL: 78
 PMT: 12.2
 NORM PMT: -0.9
 AZERO: 14.8
 HVPS: 750
 RCELL TEMP: 50.2
 BOX TEMP: 27.9
 PMT TEMP: 6.6
 IZS TEMP: 42.1
 MOLY TEMP: 316.7
 RCEL: 5.3
 SAMP: 26.36
 Internal Span: 548.8/5.63/542.2

As left:
 NOx SLOPE: 1.078
 NOx OFFS: 0.1
 NO SLOPE: 1.075
 NO OFFS: -0.1
 TEST: NA
 SAMP FLW: 453
 OZONE FL: 78
 PMT: 12.2
 NORM PMT: -0.9
 AZERO: 14.8
 HVPS: 750
 RCELL TEMP: 50.2
 BOX TEMP: 27.9
 PMT TEMP: 6.6
 IZS TEMP: 42.1
 MOLY TEMP: 316.7
 RCEL: 5.3
 SAMP: 26.36
 Internal Span: 360.9/4.49/356.8

Calibrator Flow Targets:

Make & Model: Envirocnis 6100
 Serial #: 4760
 Cal Gas Cylinder I.D. #: BLM000711
 NO Cylinder Conc. (ppm): 50.1
 NOx Cylinder Conc. (ppm): 50.2

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	0.3	0.1	NA	NA
adjusted zero	5000	0.0	5000	0	0	-0.2	-0.1	NA	NA
as found high	4995	79.77	5075	787.5	789.1	782	783	1.007	1.008
adjusted high	4995	79.77	5075	787.5	789.1	787	789	1.000	1.000
mid	4996	39.89	5036	396.8	397.6	396	397	1.002	1.001
low	4996	19.94	5016	199.2	199.6	200	200	0.995	0.997
calibrator zero	4996	0.00	4996	0	0	-0.4	-0.4	NA	NA
Average C.F.=								0.999	0.999

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	79.70	5076	0.0	795.0	793.8	1.0	-0.2	0.1	
as found NO ₂	4996	79.70	5076	550.0	190.0	798.0	607.8	605.0	606.8	0.997
adjusted NO ₂	4996	79.70	5076	550.0	190.0	798.0	607.8	605.0	606.8	0.997
gpt mid	4996	79.70	5076	275.0	486.0	796.0	308.0	309.0	307.0	1.007
gpt low	4996	79.70	5076	140.0	650.0	797.0	145.0	145.0	144.0	1.007
Average NO₂ C.F.=										1.003

Linear Regression/Calibration Results:			
	NO	NOx	NO ₂
Correlation Coefficient =	1.000	1.000	1.000
Slope =	0.999	1.000	1.003
b (Intercept as % of full scale)=	0.01%	0.01%	-0.10%
% change in C.F. from last cal=	-0.68%	-0.66%	-0.41%
NO ₂ converter efficiency			99.7%

LIMITS
 > or = 0.995
 0.85-1.15
 ± 3% F.S.
 +/-15%
 >85%

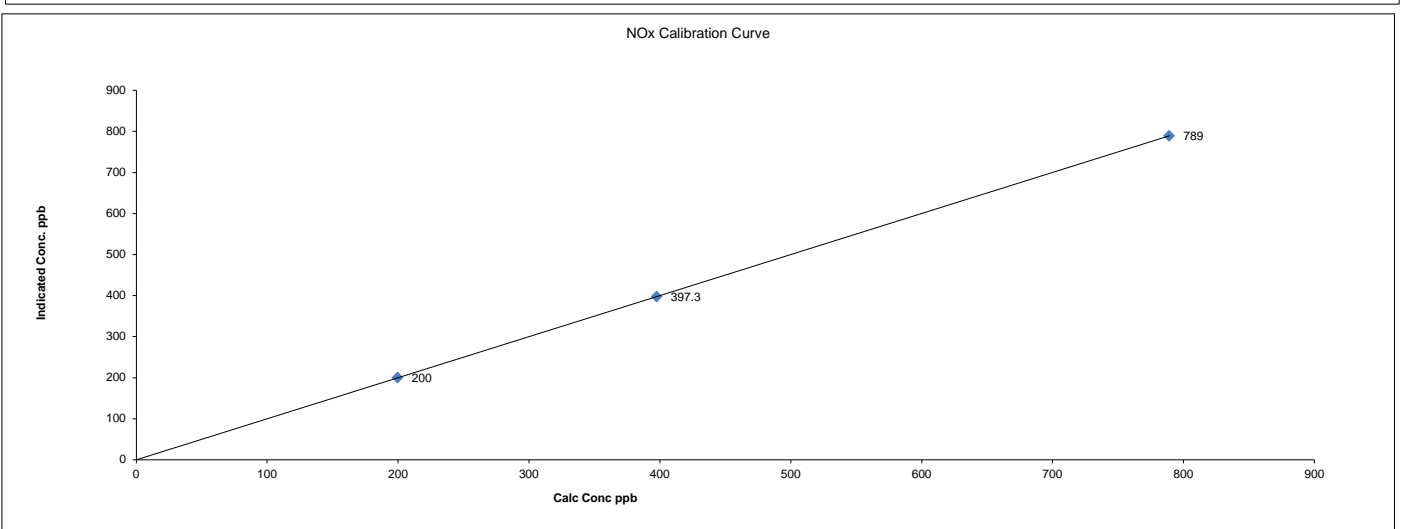
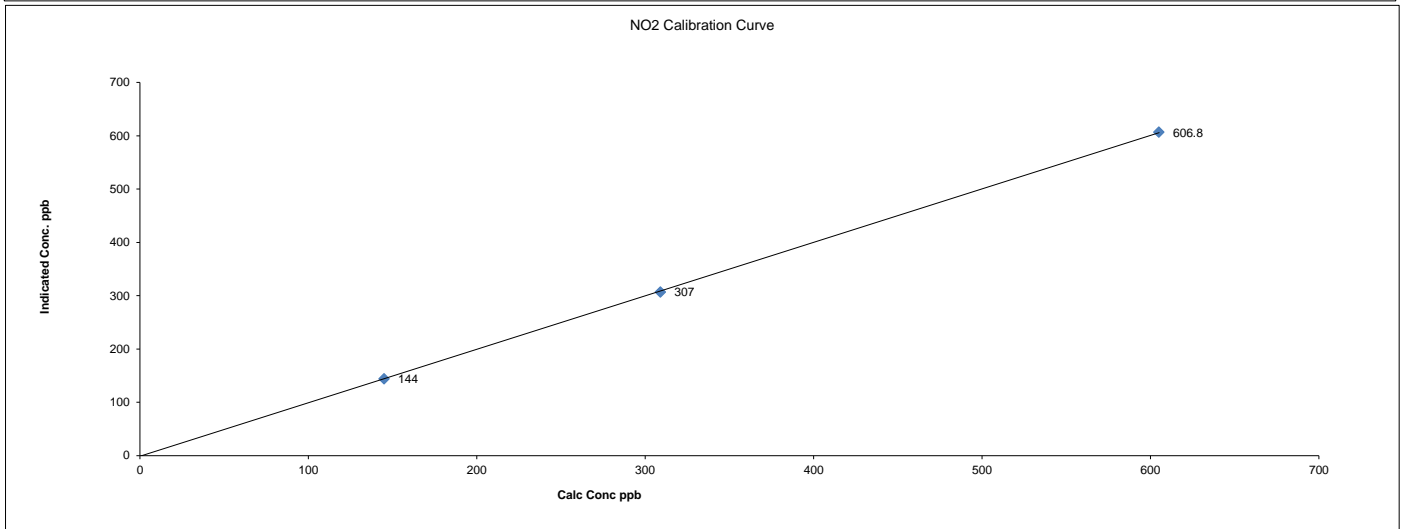
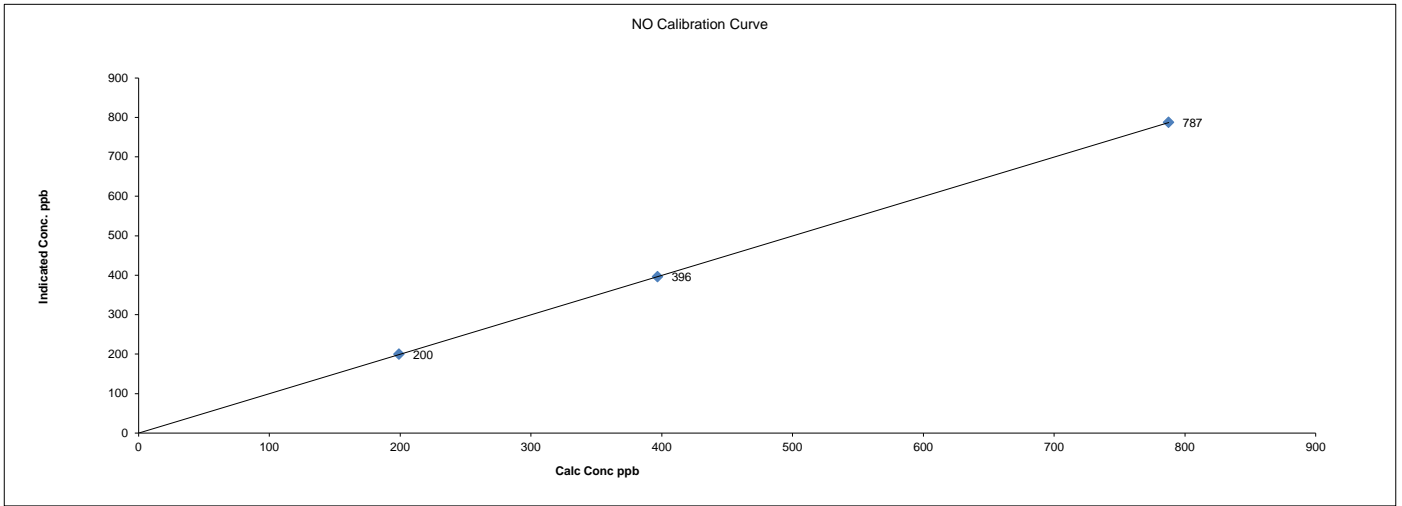
Comments:

Sample filter changed.

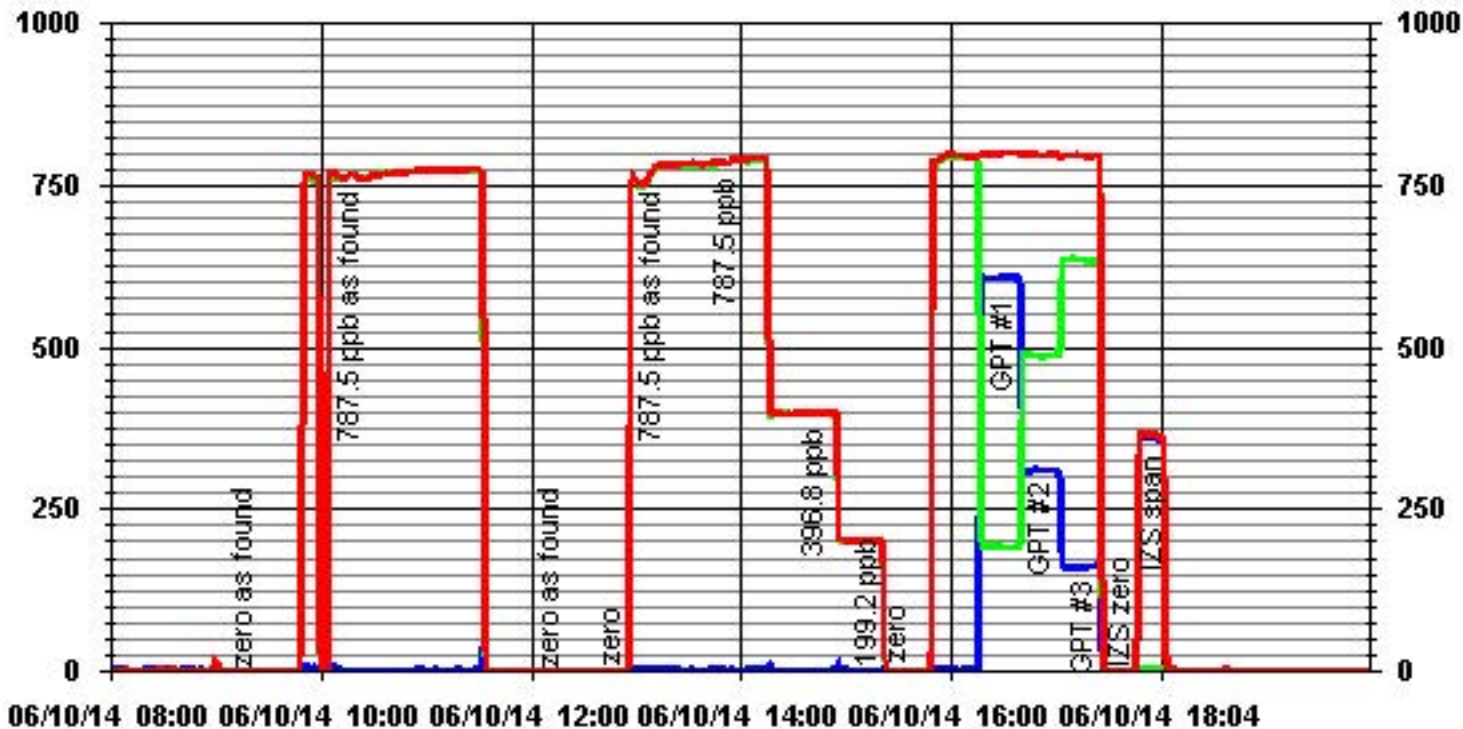
Date: 10-Jun-14
 Company: LICA
 Station Name/Location: Maskwa
 Performed by: Kevin Hope

Start Time (mst): 12:08
 End Time (mst): 15:46
 Calibration Purpose: Monthly Calibration
 Cal Gas Expiry Date: 4-Feb-18

API 200E NOx Analyzer Calibration



01 Minute Averages



— LICA30 NOX_ PPB

— LICA30 NO_ PPB

— LICA30 NO2_ PPB



API 200E NOx Analyzer Calibration

Date: 20-Jun-14
 Company: LICA
 Station Name/Location: Maskwa
 Performed by: Limin Li/Raja Abid

Start Time (mst): 7:43
 End Time (mst): 10:05
 Calibration Purpose: As Found
 Cal Gas Expiry Date: 4-Feb-18

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

Correction Factors:
 As found C.F. Previous Cal High Point C.F.:
 NO= 1.000 NO= 1.000
 NOx= 1.000 NOx= 1.000
 NO₂= 0.998 NO₂= 0.997

As found:
 NOx SLOPE: 1.078
 NOx OFFS: 0.1
 NO SLOPE: 1.075
 NO OFFS: 0.1
 TEST: 130.7
 SAMP FLW: 446
 OZONE FL: 78
 PMT: 55
 NORM PMT: 40.3
 AZERO: 15.3
 HVPS: 750
 RCELL TEMP: 49.9
 BOX TEMP: 31
 PMT TEMP: 6.6
 IZS TEMP: 40.3
 MOLY TEMP: 314.6
 RCEL: 5.3
 SAMP: 26.9
 Internal Span: Nox:360,NO:4.49,NO2:356.8

As left:
 NOx SLOPE: 1.078
 NOx OFFS: 0.1
 NO SLOPE: 1.075
 NO OFFS: 0.1
 TEST: 130.7
 SAMP FLW: 446
 OZONE FL: 78
 PMT: 55
 NORM PMT: 40.3
 AZERO: 15.3
 HVPS: 750
 RCELL TEMP: 49.9
 BOX TEMP: 31
 PMT TEMP: 6.6
 IZS TEMP: 40.3
 MOLY TEMP: 314.6
 RCEL: 5.3
 SAMP: 26.9
 Internal Span: NA (New perm tube)

Calibrator Flow Targets:

Make & Model: Envirocnics 6100
 Serial #: 4760
 Cal Gas Cylinder I.D. #: BLM711
 NO Cylinder Conc. (ppm): 50.1
 NOx Cylinder Conc. (ppm): 50.2

point	diluent (cc/min)	cal gas (cc/min)	O ₃ setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	4922	78	480.00	5000
mid	4962	38	220.00	5000
low	4981	19	90.00	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	4996	0.0	4996	0	0	-0.3	0.0	NA	NA
adjusted zero	na	0.0	#VALUE!	0	0			NA	NA
as found high	4916	77.61	4994	778.6	780.2	779	780	1.000	1.000
adjusted high		na							
mid		na							
low		na							
calibrator zero	na	0.00	#VALUE!	0	0			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	4916	77.61	4994	0.0	780.0	782.0	2.0	0.0	0.0	
as found NO ₂	4916	77.61	4994	480.0	234.0	784.0	549.0	546.0	547.0	0.998
adjusted NO ₂		na								
gpt mid		na								
gpt low		na								
Average NO ₂ C.F.=										

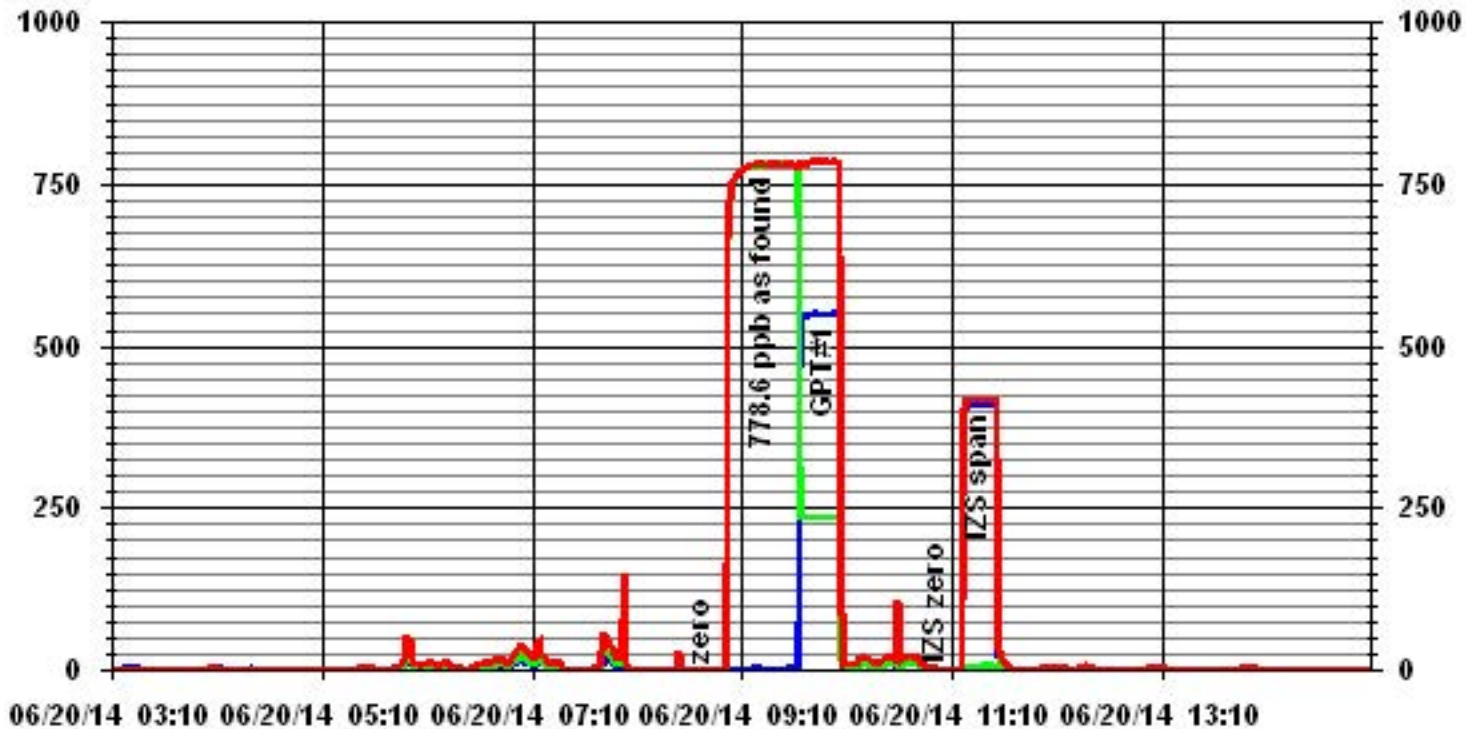
Linear Regression/Calibration Results:

	NO	NOx	NO ₂	LIMITS
Correlation Coefficient =				> or = 0.995
Slope =				0.85-1.15
b (Intercept as % of full scale)=				± 3% F.S.
% change in C.F. from last cal=	<u>0.05%</u>	<u>-0.03%</u>	<u>-0.12%</u>	+/-15%
NO ₂ converter efficiency				>85%

Comments:

After as found point, change new perm tube.

01 Minute Averages



Lakeland Industry & Community Association

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

Prepared By:



July 29, 2014

Lakeland Industry & Community Association

St. Lina

Ambient Air Monitoring

Table of Contents	Page		Page
Introduction	3	Calibration Reports	97
Calibration Procedure	4	• Sulphur Dioxide	98
Monthly Continuous Summary	5	• Hydrogen Sulphide	101
General Monthly Summary	6	• Total Hydrocarbons	106
Continuous Monitoring	10	• Nitrogen Dioxide	109
• Monthly Summaries, Graphs & Wind Roses	11	• Ozone	113
• Sulphur Dioxide	12	• Particulate Matter 2.5	116
• Hydrogen Sulphide	20		
• Total Hydrocarbons	28		
• Ozone	36		
• Nitrogen Dioxide	44		
• Nitric Oxide	52		
• Oxides of Nitrogen	59		
• Particulate Matter 2.5	67		
• Temperature	72		
• Barometric Pressure	75		
• Relative Humidity	78		
• Precipitation	81		
• Vector Wind Speed	84		
• Vector Wind Direction	91		
• Standard Deviation Wind Direction	94		

Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: St. Lina
Data Period: June 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.

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 – June 2014

LICA ST. LINA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)	
						OBJECTIVES					EXCEEDENCES			MONTHLY AVERAGE
PARAMETER	1-HR	24-HR	1-HR	24-HR	1-HR	24-HR	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING		
SO2 (PPB)	172	48	0	0	0.01	0.01	2	2, 12	VAR	VAR	VAR	0.3	2	100.0
H2S (PPB)	10	3	0	0	1.30	1.30	4	VAR	VAR	VAR	VAR	2.7	9	97.1
THC (PPM)	-	-	-	-	2.12	2.12	3.4	1	18	8.4	309(NW)	2.2	VAR	100.0
OZONE (PPB)	82	-	0	-	31.36	31.36	58	3	15, 16	10.3, 10.1	166(SSE), 168(SSE)	47.8	3	100.0
NO2 (PPB)	159	-	-	-	1.03	1.03	5	2	9	5	225(SW)	3.0	2	100.0
NO (PPB)	-	-	-	-	0.20	0.20	1.5	11	5	6.3	248(WSW)	0.4	15	100.0
NO _x (PPB)	-	-	-	-	1.23	1.23	6.2	2	9	5	225(SW)	3.4	2	100.0
PM2.5 (ug/m3)	-	30	-	0	3.57	3.57	53	29	17	12.5	350(N)	21.8	30	99.2
TEMPERATURE (DEGREE C)	-	-	-	-	14.98	14.98	27.1	28	11	0.9	327(NW)	20.5	27	100.0
BP (MILLIBAR)	-	-	-	-	924.9	924.9	933	23	VAR	VAR	VAR	932.4	23	100.0
RH (%)	-	-	-	-	68.20	68.20	92	VAR	VAR	VAR	VAR	89.7	19	100.0
PRECIPITATION (MM)	-	-	-	-	0.10	0.10	5.4	21	5	14.7	322(NW)	1.0	21	99.7
VECTOR WS (KPH)	-	-	-	-	8.47	8.47	21.2	21	10	-	324(NW)	13.5	24	100.0
VECTOR WD (DEGREES)	-	-	-	-	329(NW)	329(NW)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS

General Monthly Summary

Equipment Operation

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

AQM STATION – LICA – St. Lina

Sulphur Dioxide (PPB)

Analyzer make / model - API 100E, S/N: 468

The analyzer was working well throughout the month. The monthly calibration was performed on June 18th. The inlet filter was changed before the calibration was started. Hourly maximum data collected on June 10th at hour 8 was invalidated due to a small power outage that affected data quality. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

Analyzer make / model - API 101E, S/N: 510 replaced to API 101E, S/N: 722

As the API 101, S/N 510 analyzer, LICA owned, required annual maintenance, it was removed from the trailer following a removal calibration on June 17th. The analyzer was brought back to Maxxam Calgary shop for maintenance/ repair. A temporary API 101E, S/N 722 analyzer, Maxxam supplied, was installed on June 17th. The analyzer was allowed time to stabilize overnight. An installation calibration was performed on June 18th. Hourly maximum data collected on June 10th at hour 8 was invalidated due to a small power outage that affected data quality.

Total Hydrocarbon (PPM)

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

The analyzer was working well throughout the month. The monthly calibration was performed on June 18th. The inlet filter was changed before the calibration was started. Hourly maximum data collected on June 1st hour 18 went above the full scale. The real concentration might be higher than indicated. Hourly maximum data collected on June 10th at hour 8 was invalidated due to a small power outage that affected data quality. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – St. Lina

Nitrogen Dioxide (PPB)

Analyzer make / model - API 200A S/N: 1746

The analyzer was working well throughout the month. The monthly calibration was performed on June 18th. The inlet filter was changed before the calibration was started. Hourly maximum data collected on June 10th at hour 8 was invalidated due to a small power outage that affected data quality. Data was corrected using daily zero information.

Ozone (PPB)

Analyzer make / model - Thermo 49i, S/N: 1002240371

The analyzer was working well throughout the month. The monthly calibration was performed on June 18th. The inlet filter was changed before the calibration was started. Hourly maximum data collected on June 10th at hour 8 was invalidated due to a small power outage that affected data quality. Data was corrected using daily zero information.

Particulate Matter 2.5 (UG/M3)

Analyzer make / model – Thermo Teom 1400A S/N: 140AB228720001

The Teom unit was working well throughout the month. Two Teom audits were performed this month: one was completed on June 18th, and the other was performed on June 27th. The sample pump was rebuilt during the site visit on June 18th. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. Three hourly data were invalidated as the data were below –3 ug/m3.

General Monthly Summary

AQM STATION – LICA – St. Lina

Temperature (Degree C)

Analyzer make / model – Met One 060

The temperature sensor was working well throughout the month. The temperature sensor was checked on June 18th: Maxxam standard thermometer read 17.23 degree C while the temperature sensor read 16.73 degree C.

Barometric Pressure (Millibar)

Analyzer make / model - Met One 092

The BP sensor was working well throughout the month. The BP was checked on June 18th: Maxxam standard pressure sensor read 27.52 inHg while the BP sensor read 27.38 inHg.

Relative Humidity (%)

Analyzer make / model - Met One 083

The RH sensor was working well throughout the month.

Precipitation (MM)

Analyzer make / model - Met One 387

The rain gauge was checked on June 18th. It was found that the funnel was blocked. Performed troubleshooting by cleaning the funnel and water drainage. After the maintenance, the tipping bucket was checked again by pouring water through the inner funnel to tipping bucket to hear 2 tips. The sensor read 2mm which indicated that the tipping bucket was working properly. The base for the housing was cleaned during this trip. As the funnel found to be blocked, the hourly data we had recorded might be lower than it should be. Data should be used with caution.

General Monthly Summary

AQM STATION – LICA – St. Lina

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.

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 sample manifold was cleaned on June 18th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - St. Lina Site

JUNE 2014

SULPHUR DIOXIDE (SO2) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
DAY																														
1	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	S	0	0.0	24	
2	0	0	0	0	0	0	0	0	0	1	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	2	0.3	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	S	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	S	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	S	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	S	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	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	0	0	S	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	S	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	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	0	0	0	S	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	2	0	S	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24	
13	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	0.0	24	
14	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	0.0	24	
15	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	0.0	24	
16	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	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	0.0	24	
18	0	0	0	0	0	0	S	0	C	C	C	C	C	C	0	0	0	0	S	S	0	0	0	0	0	0	0	0.0	24	
19	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	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	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	0.0	24	
22	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	0.0	24	
23	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	0.0	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	0	0	S	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	S	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	S	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	S	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	S	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	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	0.0	24	
HOURLY MAX		0	0	0	0	0	0	0	1	2	2	2	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	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

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

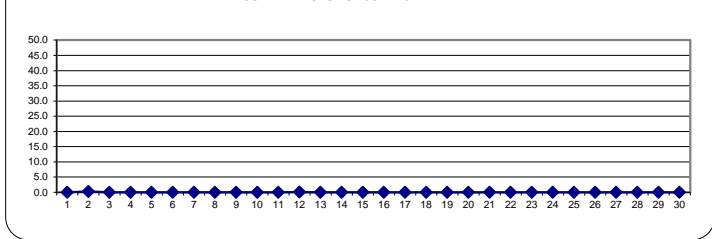
OBJECTIVE LIMIT:

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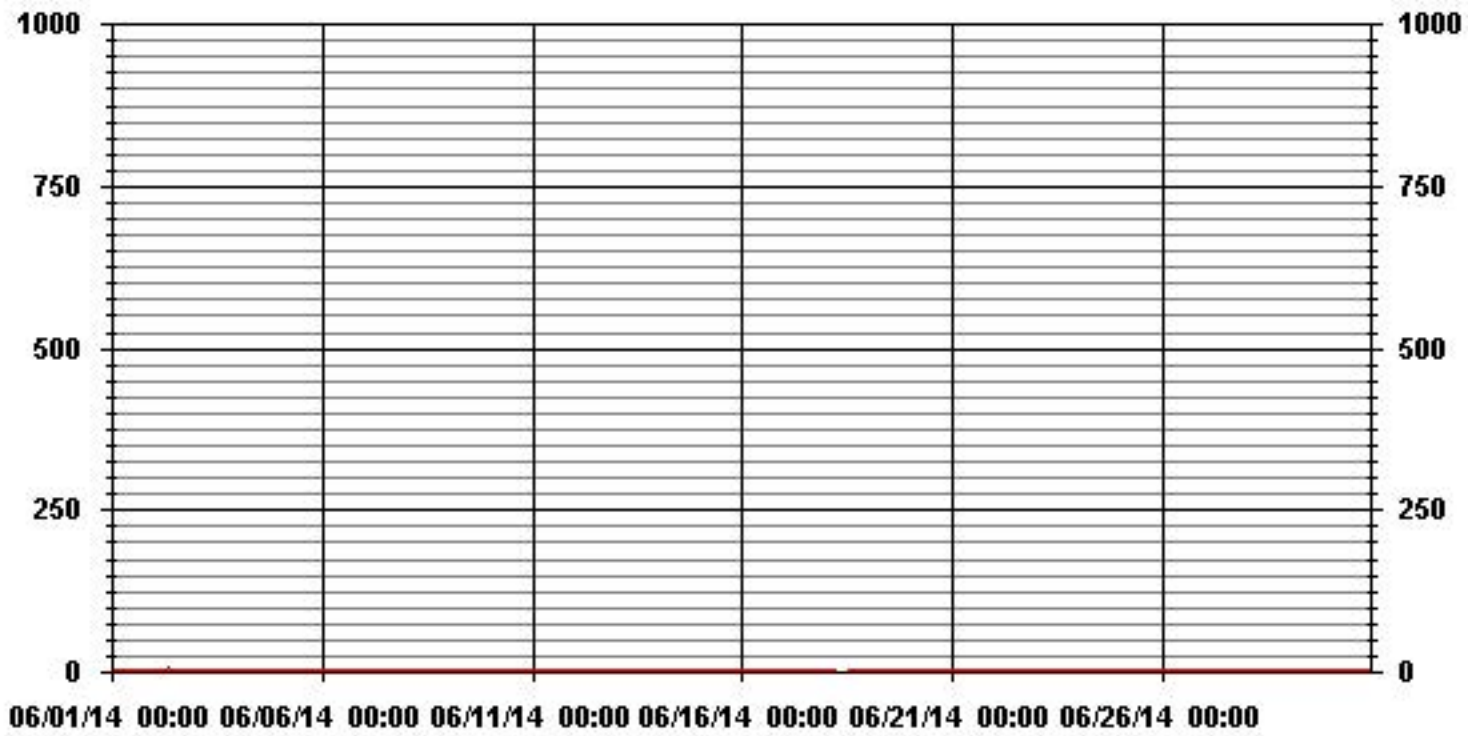
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	5					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	2, 12
MAXIMUM 24-HR AVERAGE:	0.3	PPB			ON DAY(S)	2
					VAR-VARIOUS	
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.14		MONTHLY AVERAGE:	0.01	PPB	

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



— LICA31 SO2_ PPB

Lakeland Industry & Community Association - St. Lina Site

JUNE 2014

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY MAX.	24-HOUR AVG.	RDGS.			
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00							
DAY																																
1	S	1	0	0	0	0	1	0	0	0	1	0	1	1	1	1	1	0	0	0	0	0	0	S	1	0.4	24					
2	0	0	0	0	0	0	0	0	3	4	4	3	1	1	0	0	0	0	1	1	0	0	0	S	0	4	0.8	24				
3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	S	0	0	1	0.1	24				
4	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	0.0	24				
5	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	1	1	0.3	24			
6	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	1	0.4	24			
7	1	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0.4	24			
8	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0.1	24				
9	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	2	0.7	24			
10	1	0	0	0	0	0	0	0	0	P	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.0	23			
11	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	0.0	24			
12	0	0	0	0	0	0	0	0	0	4	2	3	2	S	1	1	1	1	1	1	1	0	1	1	0	1	4	0.9	24			
13	1	1	1	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.5	24			
14	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	24			
15	1	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0.5	24			
16	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	0.0	24			
17	0	0	0	0	0	0	0	0	S	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0.5	24			
18	1	1	1	1	1	1	S	1	C	C	C	C	C	C	C	0	0	0	0	S	S	1	1	0	1	1	1	0.7	24			
19	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24			
20	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0.1	24			
21	0	0	0	S	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			
22	0	0	S	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	24			
23	1	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	1	0.0	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	0	1	S	1	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	S	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	S	0	0	0	0.0	24			
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	S	0	0	0	0	1	0.1	24				
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	S	0	0	0	0	0	1	0.0	24			
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	S	1	1	0	0	0	1	0.3	24				
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0	24			
HOURLY MAX		1	1	1	1	1	1	3	4	4	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
HOURLY AVG		0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.4	0.6	0.4	0.3	0.2	0.1	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.1	0.3							

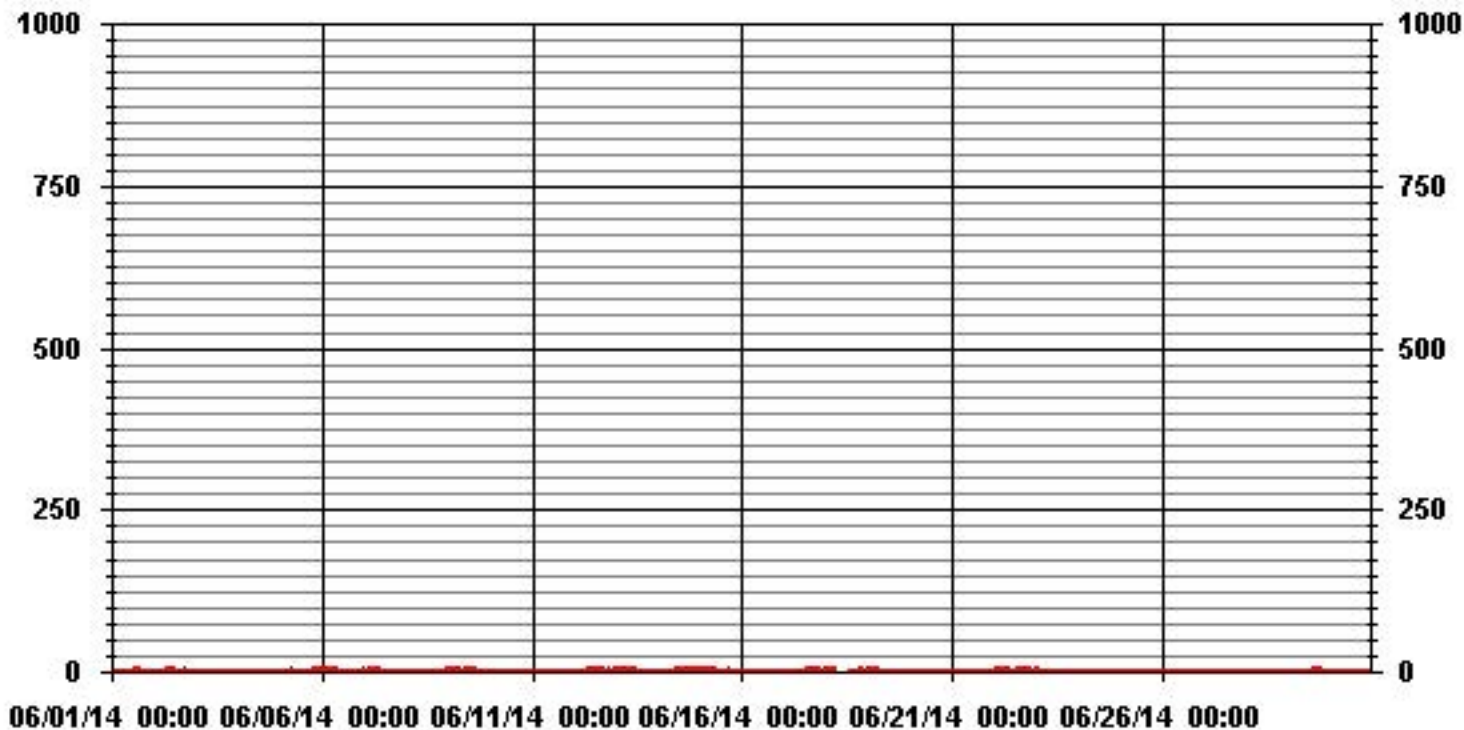
STATUS FLAG CODES

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:	167
MAXIMUM INSTANTANEOUS VALUE:	4 PPB @ HOUR(S) VAR ON DAY(S) 2, 12
	VAR-VARIOUS
IZS CALIBRATION TIME:	34 HRS
MONTHLY CALIBRATION TIME:	6 HRS
OPERATIONAL TIME:	719 HRS
STANDARD DEVIATION:	0.54

01 Hour Averages



LICA31
 SO2_ / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	4.55	2.94	3.08	6.61	7.94	5.73	8.67	6.91	5.73	5.29	3.38	3.97	4.26	8.67	14.11	8.08	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.55	2.94	3.08	6.61	7.94	5.73	8.67	6.91	5.73	5.29	3.38	3.97	4.26	8.67	14.11	8.08	

Calm : .00 %

Total # Operational Hours : 680

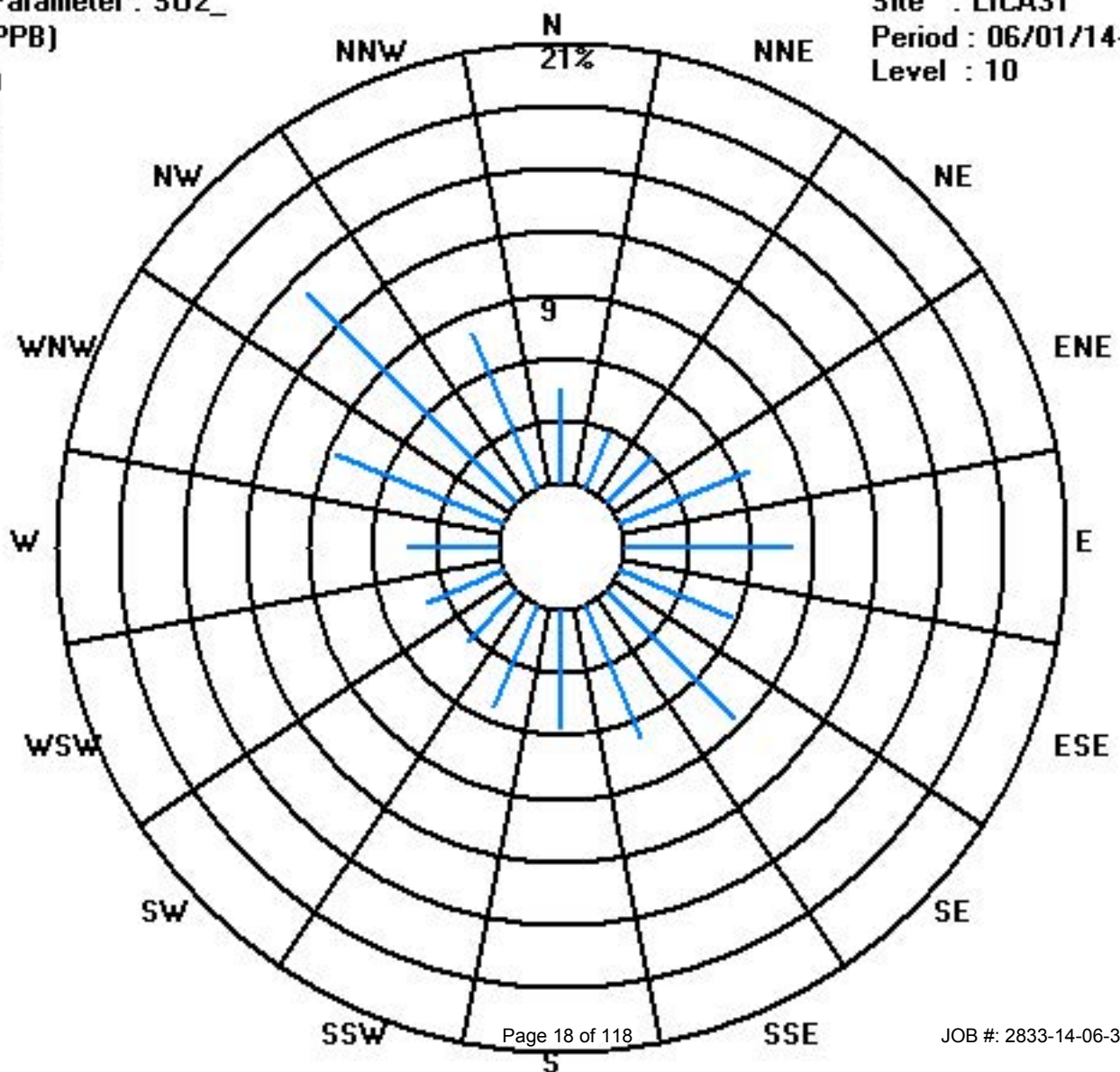
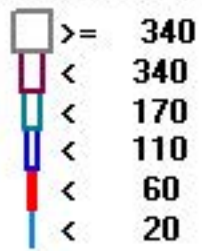
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	31	20	21	45	54	39	59	47	39	36	23	27	29	59	96	55	680
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	31	20	21	45	54	39	59	47	39	36	23	27	29	59	96	55	

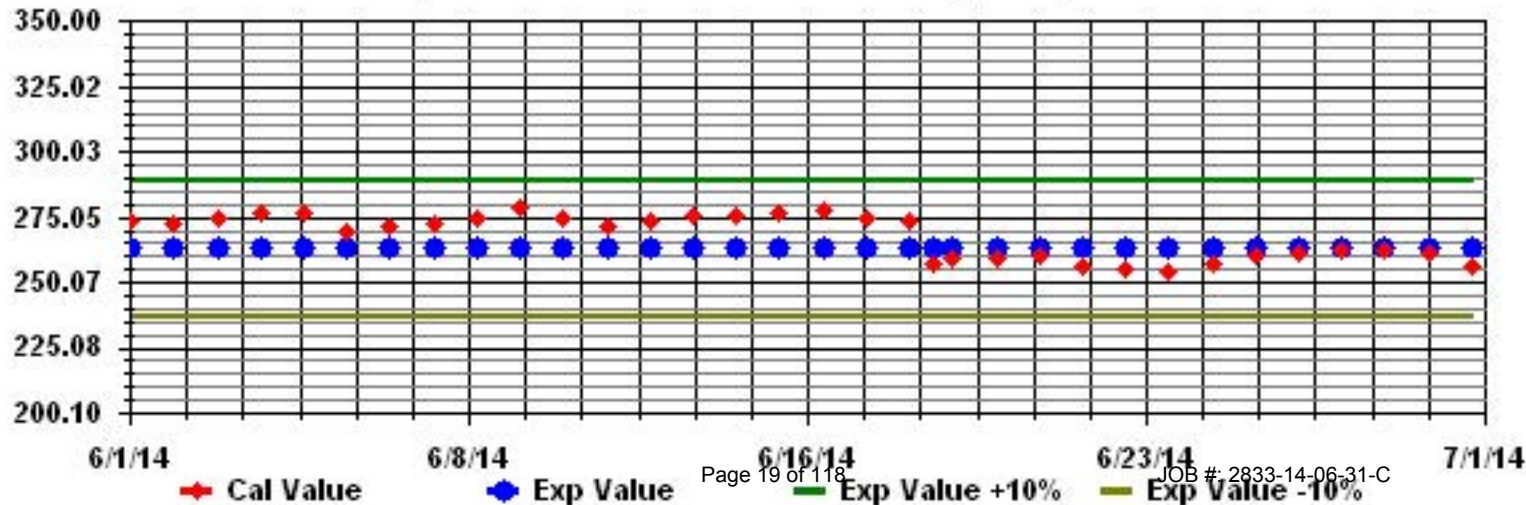
Calm : .00 %

Total # Operational Hours : 680

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: S02_ Sequence: S02 Phase: SPAN



Hydrogen Sulphide

Lakeland Industry & Community Association - St. Lina Site

JUNE 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	1	1	1	1	1	1	2	2	1	1	1	0	0	0	1	0	0	1	2	1	1	1	2	S	2	1.0	24	
2	1	2	1	2	1	1	1	2	2	1	1	0	1	1	2	1	2	1	1	2	2	2	2	S	2	2	1.4	24	
3	2	2	3	3	2	2	S	S	2	2	2	1	2	2	3	2	2	1	2	2	2	S	2	2	3	2.0	24		
4	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2.0	24	
5	2	2	2	1	1	1	1	1	1	2	1	1	2	1	1	1	1	1	1	1	S	1	0	0	1	2	1.1	24	
6	1	1	1	1	1	0	0	0	0	1	1	0	1	0	1	1	1	1	S	1	1	1	1	1	1	1	0.7	24	
7	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	1.0	24	
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	2	2	1	2	2	2	2	2	1.3	24	
9	2	2	1	2	3	3	3	3	3	4	3	3	3	2	3	3	S	3	3	2	3	3	3	2	2	4	2.7	24	
10	2	2	2	2	2	2	S	S	2	4	3	2	2	2	S	2	2	2	2	1	2	2	1	1	1	4	2.0	24	
11	1	1	1	1	0	1	0	1	1	1	1	1	1	0	S	1	1	1	0	1	1	1	1	1	1	1	0.8	24	
12	1	1	2	1	2	2	1	1	1	2	1	2	S	1	1	1	1	1	2	1	1	2	2	2	2	2	1.4	24	
13	3	2	2	2	2	3	S	S	2	1	2	S	2	1	2	2	3	3	2	2	1	1	2	2	3	2	2.0	24	
14	2	2	2	3	3	2	2	2	2	1	S	2	2	2	2	2	3	2	2	2	2	3	3	2	3	3	2.2	24	
15	3	3	3	3	3	3	3	3	3	2	S	2	2	1	2	3	3	3	3	2	3	2	2	3	3	3	2.6	24	
16	3	3	3	3	4	3	3	3	3	S	3	2	2	2	2	3	2	2	2	2	2	2	2	2	2	4	2.5	24	
17	2	2	2	2	2	2	2	S	2	2	2	C	C	C	C	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2	2.0	15	
18	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	C	0	0	0	0	1	0	0	0	1	0.1	12	
19	0	1	1	1	1	S	0	1	1	0	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0.8	24	
20	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1.0	24	
21	1	1	1	S	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	0	0	1	1	1	1	0.8	24	
22	1	1	S	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.4	24
23	0	S	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.3	24	
24	S	1	1	1	1	1	1	0	0	1	0	0	0	0	0	1	0	1	1	1	1	1	1	1	S	1	0.6	24	
25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	S	1	1	1.0	24
26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	S	1	1	1	0.9	24	
27	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	2	1.1	24	
28	1	1	2	2	2	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	3	1.3	24	
29	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	2	1.1	24	
30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	S	1	0	1	1	1	1	1	1	0.9	24	
HOURLY MAX		3	3	3	3	4	3	3	3	4	4	3	3	2	3	3	3	3	3	3	2	3	3	3	3	3			
HOURLY AVG		1.4	1.5	1.5	1.6	1.6	1.5	1.3	1.4	1.3	1.3	1.3	1.1	1.0	1.1	1.2	1.1	1.3	1.3	1.2	1.2	1.2	1.2	1.3	1.4				

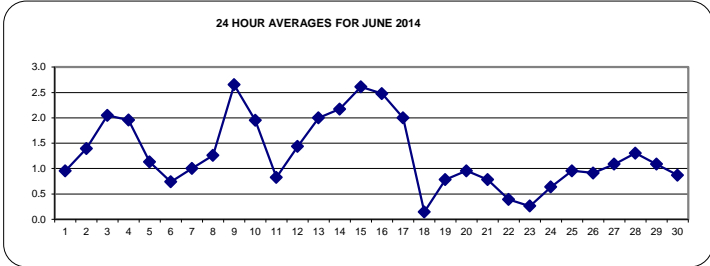
STATUS FLAG CODES

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

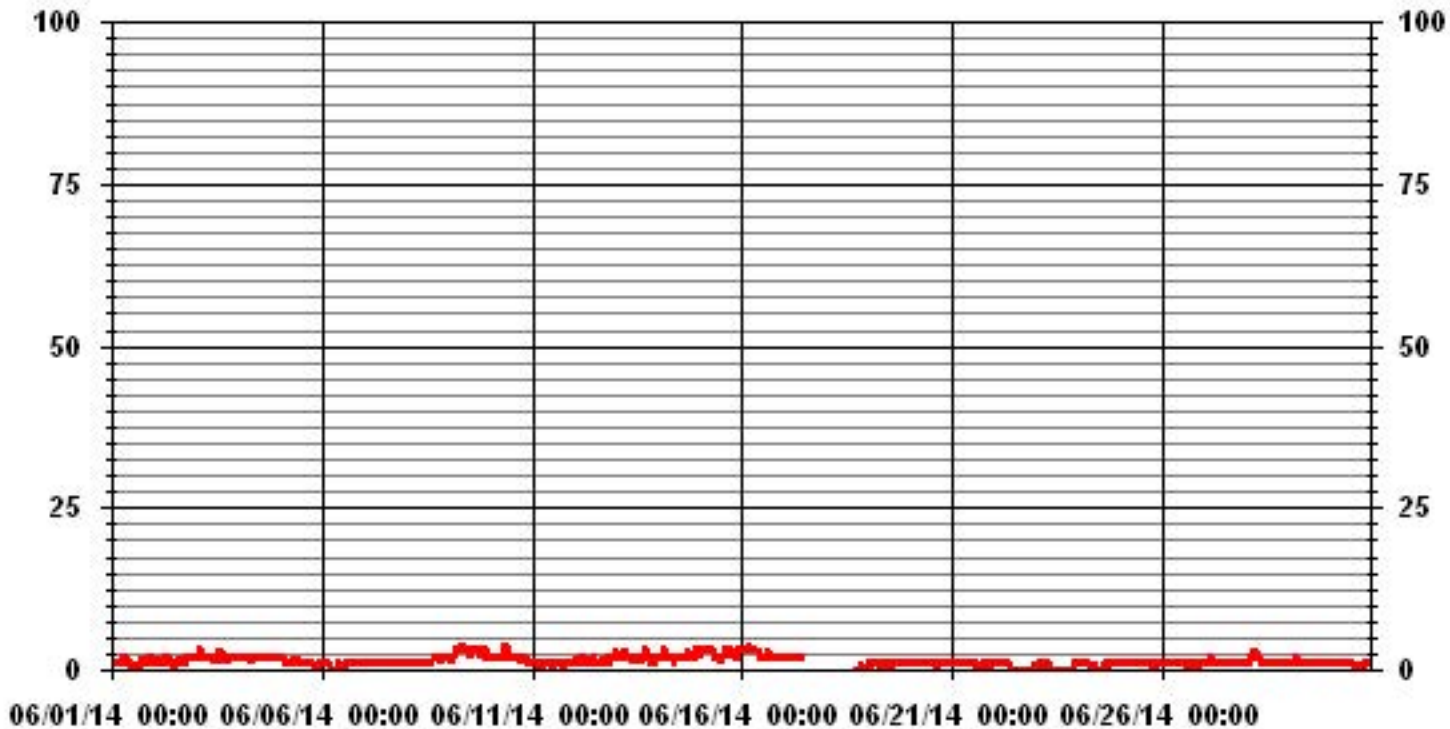
OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: 1-HR 10 PPB | 24-HR 3 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF 24-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	573				
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	VAR	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	2.7	PPB			ON DAY(S)
					VAR-VARIOUS
IZS CALIBRATION TIME:	37	HRS	OPERATIONAL TIME:	699 HRS	
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	97.1 %	
STANDARD DEVIATION:	0.80		MONTHLY AVERAGE:	1.30 PPB	



01 Hour Averages



— LICA31 H2S_ PPB

Lakeland Industry & Community Association - St. Lina Site

JUNE 2014

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.		
DAY																													
1	S	2	1	2	2	2	2	3	3	1	2	2	1	1	2	2	1	2	2	3	2	1	2	2	S	3	1.9	24	
2	2	3	3	2	2	1	2	2	3	1	2	1	2	2	4	2	3	3	2	2	3	3	S	3	4	2.3	24		
3	3	3	3	5	4	4	S	S	2	3	3	2	3	4	4	3	3	2	2	2	3	S	3	2	5	3.0	24		
4	3	3	3	3	3	3	2	2	2	2	3	2	2	2	3	3	3	3	3	2	S	2	2	3	3	2.6	24		
5	3	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	1	2	S	1	1	1	1	3	1.8	24	
6	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	2	1.1	24	
7	1	1	1	1	1	1	1	2	1	1	2	2	1	1	2	1	1	S	1	1	1	1	1	1	1	2	1.2	24	
8	2	2	2	2	1	2	1	1	2	1	1	2	1	2	2	2	S	2	2	2	2	2	2	2	2	2	1.7	24	
9	2	2	5	3	3	4	4	4	4	4	3	3	3	3	3	S	3	3	3	3	3	5	5	4	2	5	3.4	24	
10	3	3	3	3	3	3	S	S	P	5	3	3	2	2	S	2	2	2	2	2	3	3	2	2	2	5	2.7	23	
11	2	1	1	2	1	2	1	1	3	3	3	2	1	S	1	2	1	2	1	1	2	2	1	2	3	1.7	24		
12	1	1	2	2	6	5	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	3	2	3	6	2.3	24	
13	3	3	3	3	4	4	S	S	2	2	3	S	3	2	2	4	3	3	3	3	3	3	2	2	3	4	2.9	24	
14	3	3	3	4	3	3	3	3	3	2	S	3	3	3	3	3	3	3	3	3	3	3	3	4	3	4	3.0	24	
15	4	3	3	4	3	4	4	4	4	3	S	3	3	2	3	4	3	3	3	3	3	3	3	4	4	4	3.3	24	
16	3	4	4	3	5	4	4	4	S	3	3	3	3	3	3	4	3	3	3	3	3	3	2	3	3	5	3.3	24	
17	3	3	3	3	3	3	3	S	3	3	3	C	C	C	C	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	3	3.0	15	
18	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	C	C	C	3	1	1	1	1	0	3	1.2	12	
19	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	1.0	24	
20	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	1.0	24	
21	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	1.0	24	
22	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	1.0	24	
23	1	S	1	1	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1.2	24	
24	S	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	1.0	24	
25	1	1	1	2	1	2	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	2	1.3	24
26	2	2	2	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	2	1.2	24
27	1	1	1	3	3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	1	S	1	2	2	3	1.3	24	
28	2	2	2	2	3	3	2	2	2	2	1	1	1	1	1	2	1	2	1	S	1	1	2	1	3	1.7	24		
29	2	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	2	1.4	24	
30	1	2	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	2	1.1	24	
HOURLY MAX		4	4	5	5	6	5	4	4	4	5	3	3	3	4	4	4	3	3	3	3	5	5	4	4				
HOURLY AVG		2.0	1.9	2.0	2.2	2.5	2.3	1.8	1.9	1.9	1.8	1.9	1.6	1.5	1.7	1.9	1.8	1.7	1.8	1.9	1.7	1.7	1.7	1.8	1.7				

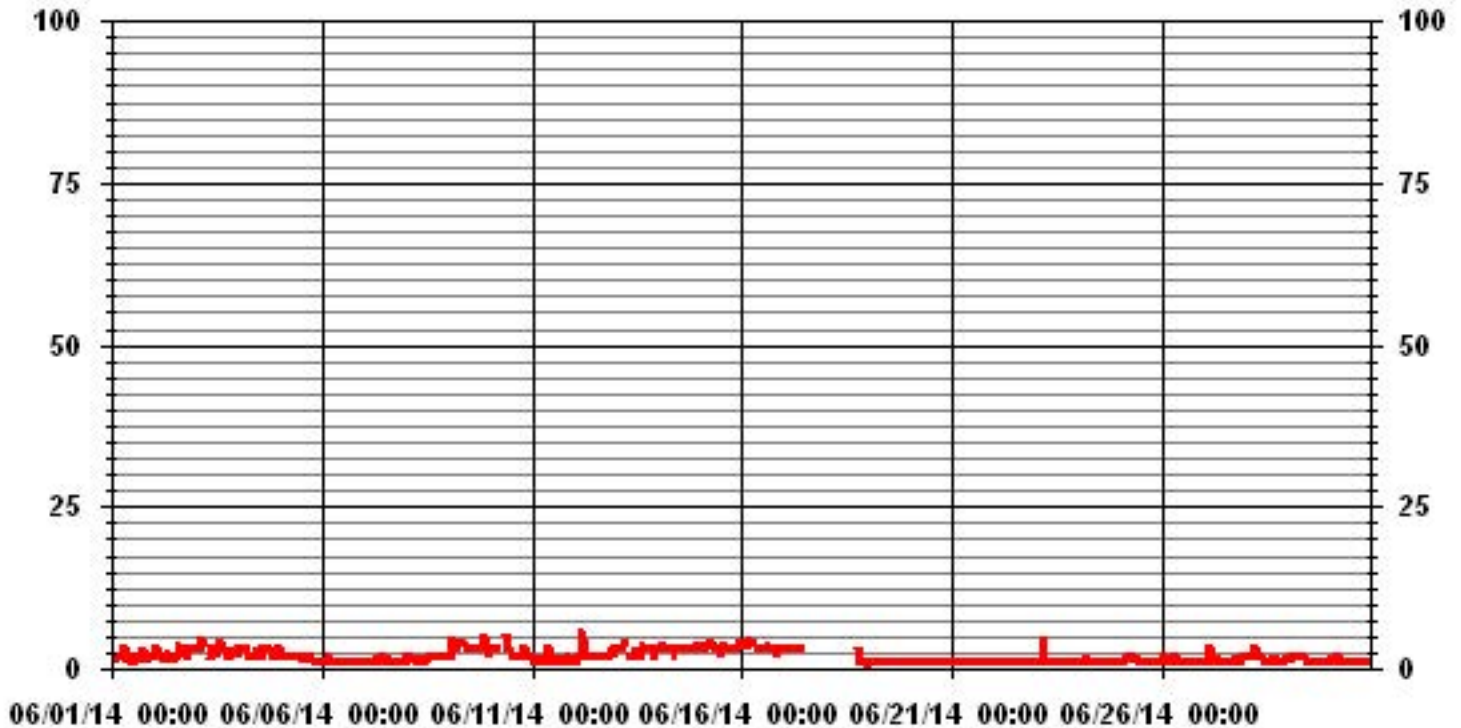
STATUS FLAG CODES

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:	650
MAXIMUM INSTANTANEOUS VALUE:	6 PPB @ HOUR(S) 4 ON DAY(S) 12
	VAR-VARIOUS
IZS CALIBRATION TIME:	37 HRS
MONTHLY CALIBRATION TIME:	10 HRS
STANDARD DEVIATION:	1.00
OPERATIONAL TIME:	698 HRS

01 Hour Averages



LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
Parameter : H2S_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	4.28	3.06	3.06	6.12	6.43	3.67	7.81	5.97	3.67	5.05	3.52	3.98	4.44	8.11	14.24	8.11	91.57
< 10	.30	.00	.15	.30	1.53	.91	.30	.45	2.29	.45	.00	.15	.00	.91	.45	.15	8.42
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.59	3.06	3.21	6.43	7.96	4.59	8.11	6.43	5.97	5.51	3.52	4.13	4.44	9.03	14.70	8.26	

Calm : .00 %

Total # Operational Hours : 653

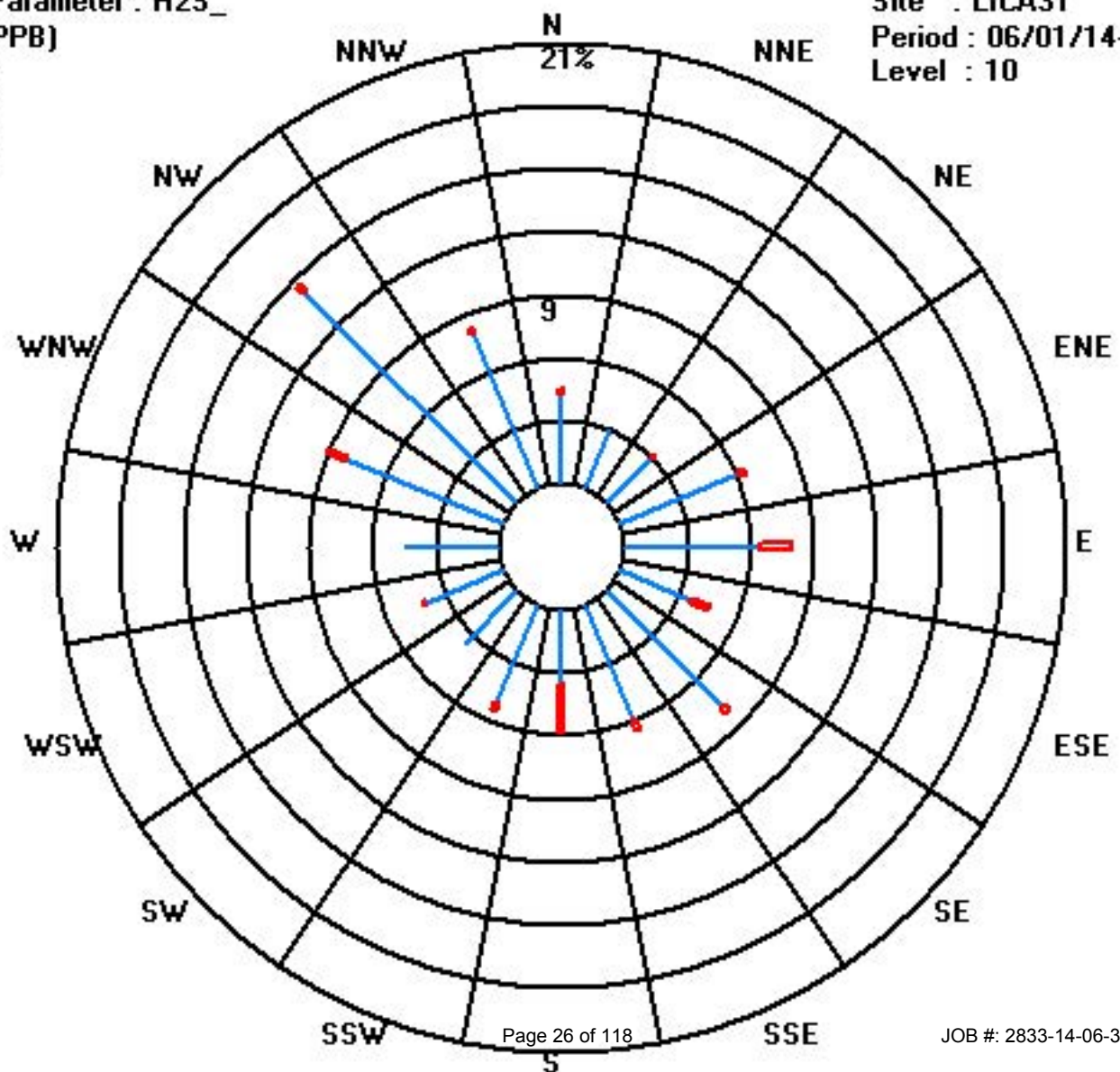
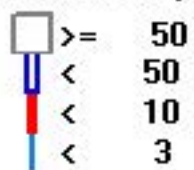
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	28	20	20	40	42	24	51	39	24	33	23	26	29	53	93	53	598
< 10	2		1	2	10	6	2	3	15	3		1		6	3	1	55
< 50																	
>= 50																	
Totals	30	20	21	42	52	30	53	42	39	36	23	27	29	59	96	54	

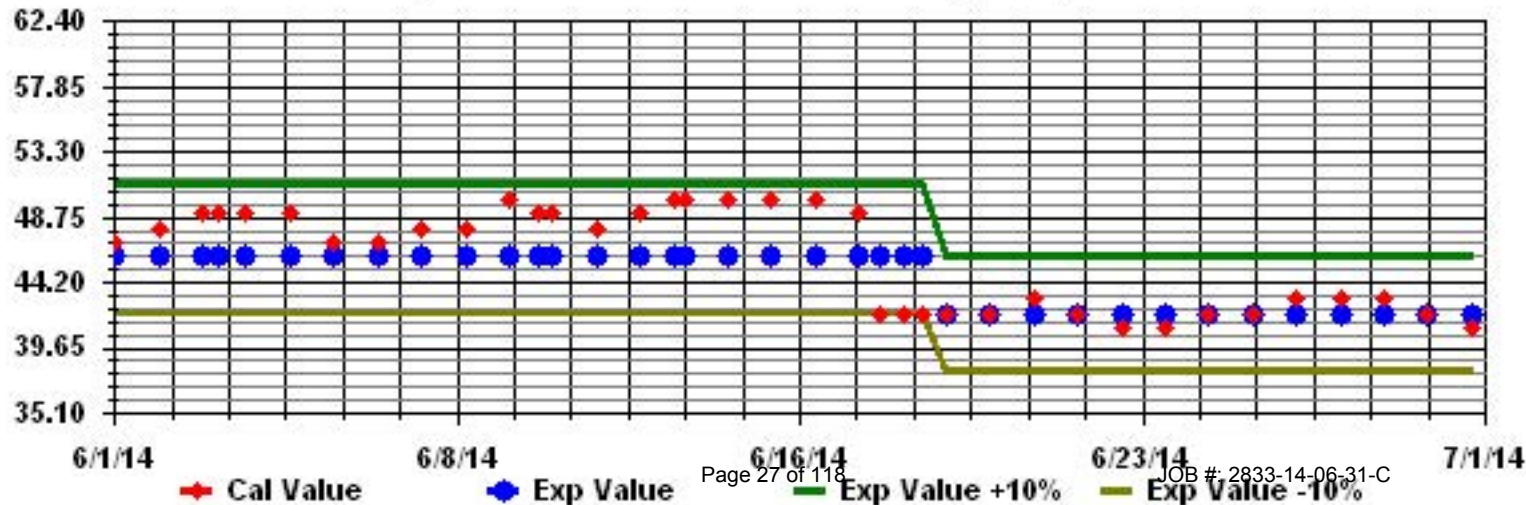
Calm : .00 %

Total # Operational Hours : 653

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: H2S_ Sequence: H2S Phase: SPAll



Total Hydrocarbons

Lakeland Industry & Community Association - St. Lina Site

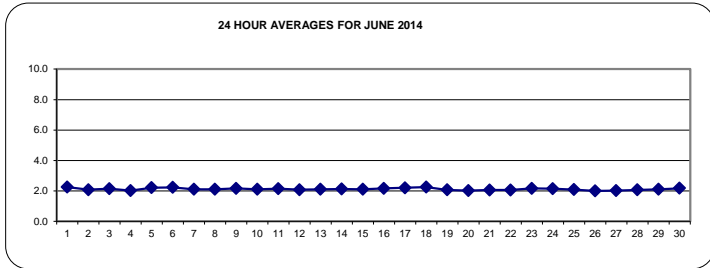
JUNE 2014

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	2.2	2.2	2.3	2.4	2.3	2.3	2.3	2.1	2.1	2.1	2.1	2.2	2.2	2.1	3.4	2.6	2.0	2.0	2.0	S	3.4	2.2	24	
2		2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.1	S	2.1	2.2	2.1	24	
3		2.3	2.3	2.2	2.1	2.1	2.2	2.3	2.3	2.3	2.1	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.0	2.1	S	2.0	2.0	2.3	2.1	24	
4		1.9	1.9	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	2.2	2.0	S	2.0	2.1	2.1	2.2	2.0	24	
5		2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.2	S	2.3	2.3	2.2	2.3	2.3	2.2	24	
6		2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	S	2.0	2.0	2.1	2.1	2.1	2.4	2.2	24
7		2.1	2.1	2.1	2.2	2.3	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	1.9	2.0	2.0	S	2.1	2.1	2.2	2.3	2.2	2.2	2.3	2.1	24	
8		2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	S	1.9	1.9	2.0	2.0	2.1	2.2	2.2	2.2	24	
9		2.2	2.2	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.0	2.0	1.9	S	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.4	2.2	24	
10		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	S	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.4	2.3	2.2	2.4	24	
11		2.3	2.3	2.2	2.3	2.2	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	S	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.3	2.1	24	
12		2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	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	24	
13		2.1	2.3	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2.0	2.0	S	2.0	2.0	2.1	2.0	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.3	2.1	24
14		2.1	2.3	2.3	2.4	2.3	2.2	2.1	2.0	2.1	2.0	S	2.0	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.4	2.1	24
15		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24
16		2.2	2.3	2.4	2.4	2.3	2.3	2.2	2.2	S	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.4	2.2	24
17		2.2	2.2	2.2	2.2	2.2	2.2	S	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	24
18		2.3	2.4	2.7	2.7	2.6	2.6	S	2.2	C	C	C	C	C	C	2.0	2.1	S	2.0	2.1	2.1	2.0	2.1	2.0	2.0	2.7	2.2	24
19		2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	24	
20		2.0	2.0	2.1	2.2	S	2.0	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.0	24
21		2.2	2.1	2.0	S	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.2	2.1	24
22		2.2	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.1	24
23		2.1	S	2.2	2.3	2.3	2.4	2.4	2.3	2.2	2.3	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	2.4	2.2	24
24		S	2.2	2.5	2.6	2.6	2.5	2.4	2.2	2.2	2.1	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	S	2.6	2.1	24
25		2.1	2.1	2.2	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2.2	2.2	2.1	2.0	2.0	2.0	1.9	1.9	2.0	2.0	1.9	1.9	S	2.0	2.3	2.1	24
26		2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	S	1.9	2.0	2.1	2.0	24	
27		2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	S	2.0	2.0	2.0	2.1	2.0	24
28		2.0	2.1	2.1	2.2	2.2	2.2	2.1	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	2.1	2.1	2.1	2.1	2.2	2.1	24
29		2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	S	2.1	2.2	2.1	2.1	2.1	2.2	2.1	24
30		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	S	2.2	2.3	2.3	2.3	2.2	2.3	2.3	2.2	24
HOURLY MAX		2	2	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2	2	2	2	2	2	24
HOURLY AVG		2.1	2.1	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	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24

STATUS FLAG CODES

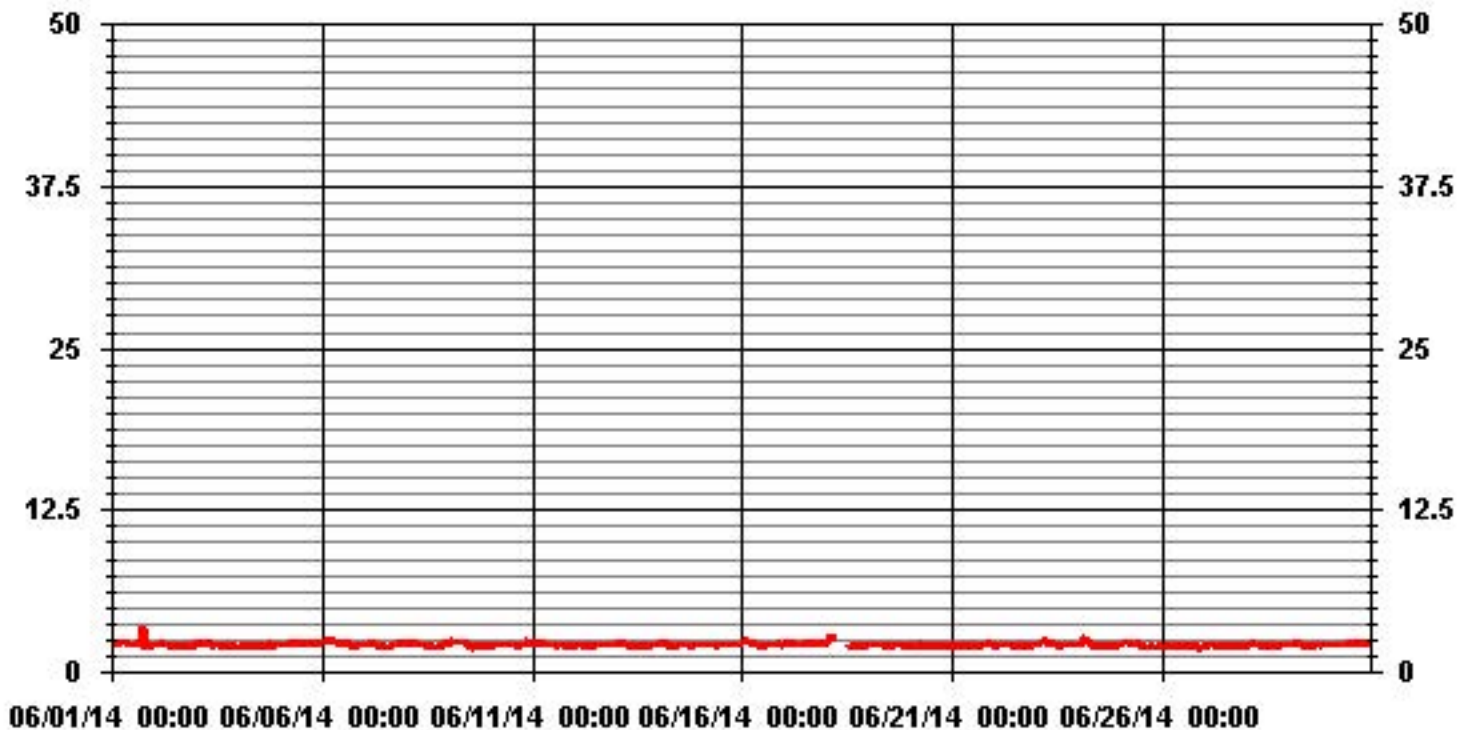
C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	681					
MAXIMUM 1-HR AVERAGE:	3.4	PPM	@ HOUR(S)	18	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	2.2	PPM			ON DAY(S)	VAR
					VAR-VARIOUS	
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.13		MONTHLY AVERAGE:	2.12	PPM	

01 Hour Averages



— LICA31 THC PPM

Lakeland Industry & Community Association - St. Lina Site

JUNE 2014

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.	
DAY																												
1	S	2.2	2.2	2.4	2.5	2.5	2.4	2.3	2.3	2.4	2.4	2.3	2.2	6.1	2.2	2.3	2.2	2.2	54.1	9.5	2.1	2.1	2.1	S	54.1	5.1	24	
2		2.2	3.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2	2.1	2.1	2.2	2.2	2.1	2.3	S	2.2	3.2	24	
3		2.3	2.4	2.3	2.2	2.2	2.4	2.3	2.4	2.4	2.4	2.2	2.3	2.3	2.1	2.1	2.1	2	2.1	2.1	2.1	2.2	S	2.3	2.1	24		
4		2	2	2.1	2.1	2.4	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.5	2.2	2.4	2.1	2.5	2.6	3.6	2.2	S	2.1	3	24			
5		2.6	3.9	2.7	2.4	2.2	2.2	2.8	2.4	2.6	2.5	2.4	2.7	3.1	2.4	2.9	2.4	2.5	2.3	S	2.5	2.4	2.3	2.3	3.9	2.6	24	
6		2.4	2.4	2.4	2.6	2.4	2.5	2.4	2.5	2.5	2.6	2.4	3	2.4	2.5	2.5	2.6	2.4	2.2	S	2.1	2.1	2.1	2.1	2.1	3	24	
7		2.4	2.2	2.2	3.3	4.1	2.6	2.2	2.3	2.2	2.2	2.1	2.5	2.1	2.1	2.1	2	2	S	2.6	2.2	4.5	3.7	3.1	6	6	24	
8		3	2.6	2.5	2.3	2.5	2.4	2.3	2.2	2.2	2.7	2.3	2.1	2.2	2.1	2.1	2.1	S	2	2	2	2.1	2.2	2.3	2.3	3	24	
9		2.3	2.4	2.5	2.4	2.4	2.3	2.4	2.3	2.4	2.6	2.6	2.7	2.1	2.5	2.1	S	2.2	2.2	2.1	2.3	2.3	2.3	2.2	2.2	2.7	24	
10		2.1	2.2	2.2	2.3	2.3	2.3	2.4	2.6	P	2.2	2.1	2.2	2.1	2.2	S	2.2	2.1	2.1	2.1	2.2	2.9	2.9	4.5	3	2.7	24	
11		2.7	2.6	2.8	2.6	2.3	2.4	2.3	2.3	2.2	2.1	2.1	2.1	2.2	S	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.8	24
12		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	S	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	24
13		2.2	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.1	S	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.4	24
14		2.2	2.3	2.5	2.5	2.4	2.2	2.2	2.1	2.1	2.1	S	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.5	24
15		2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	S	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	24
16		2.2	2.4	2.5	2.6	2.6	2.4	2.3	2.3	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	2.2	2.3	2.2	2.6	2.2	24
17		2.3	2.2	2.3	2.3	2.2	2.2	S	2.1	2.1	2.2	2.3	2.3	2.3	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	24	
18		2.3	2.6	2.7	2.7	2.7	2.6	S	2.3	C	C	C	C	C	C	2.1	2.1	S	S	2.1	2.1	2.1	2.1	2.1	2.1	2.7	24	
19		2.1	2.1	2.1	2.1	2.1	S	2.1	2.2	2.1	2.1	2.1	2	2.1	2	2.1	2.1	2.2	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.2	24	
20		2.1	2.1	5.7	4.2	S	2.1	2.3	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	5.7	24	
21		3.2	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	2.1	2.1	2.1	2.3	2.2	2.1	2.2	2.6	2.7	2.4	3.2	24	
22		2.3	2.2	S	2.2	2.3	2.2	2.2	2.4	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	24	
23		2.2	S	2.3	2.4	2.4	2.4	2.5	2.3	2.3	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	24	
24		S	2.4	2.6	2.6	2.7	2.6	2.5	2.3	2.2	2.2	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2.1	S	24	
25		2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2	2	1.9	1.9	2	2.2	2.1	2.1	2.1	S	2	24	
26		2	2	2	2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2.6	2.4	S	2	2.6	24	
27		2.6	2.1	3.1	2.2	2.5	2.9	2.5	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2	2.2	S	2.1	2.1	2.1	3.1	24	
28		2.1	2.1	2.6	2.2	2.2	3.9	2.1	2.2	2.1	2.6	2.2	2.1	2.1	2.6	2.2	2.6	2.1	2.6	2.2	S	2.3	2.5	2.5	2.3	3.9	24	
29		2.3	2.2	2.3	2.8	3	2.7	2.8	3	2.5	2.6	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	S	2.2	2.3	2.3	2.2	2.2	3	24	
30		2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.2	2.2	2.2	2.2	2.4	2.2	2.2	2.2	2.2	2.5	S	2.4	2.5	2.5	2.4	2.3	2.4	2.5	24	
HOURLY MAX		3	4	6	4	4	4	3	3	3	3	3	3	3	6	3	3	3	3	3	54	10	5	5	3	6		
HOURLY AVG		2.3	2.4	2.5	2.4	2.4	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	4.1	2.5	2.3	2.3	2.3	2.4		

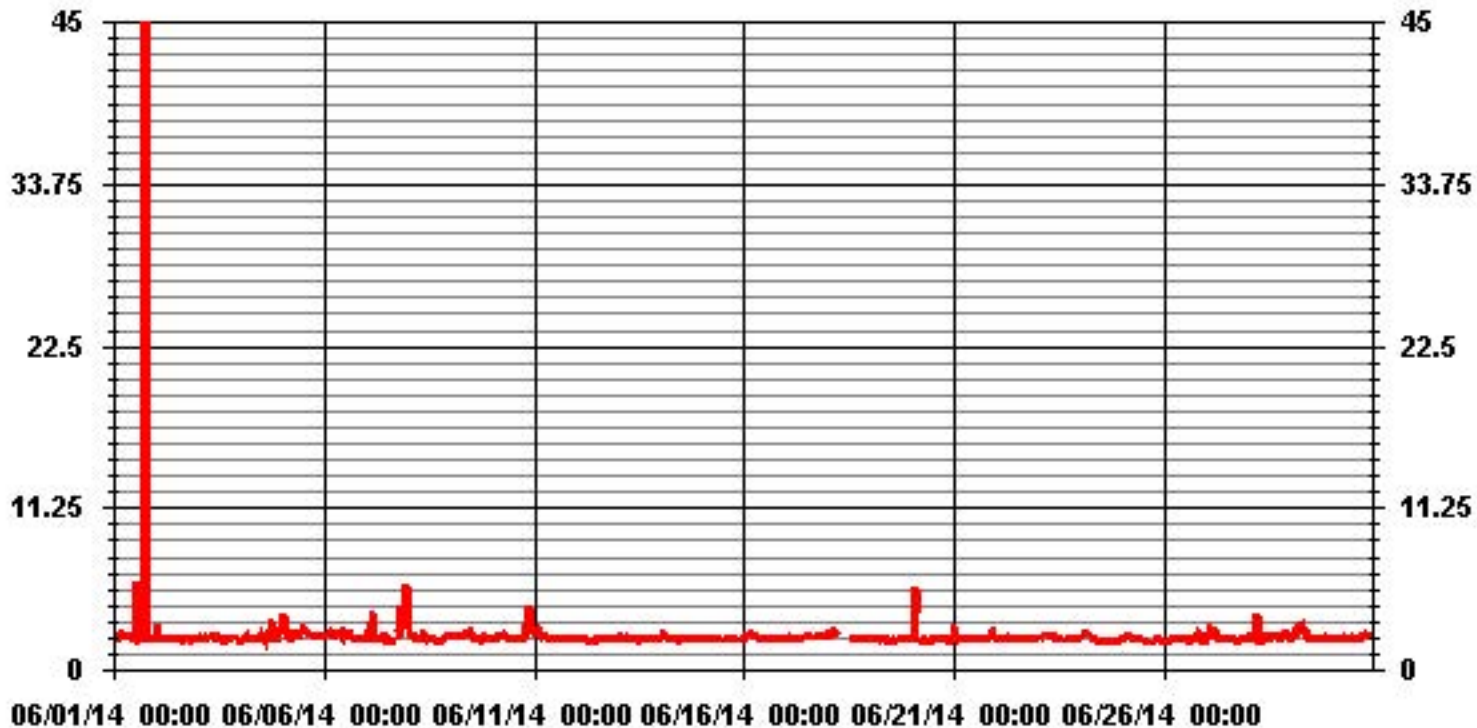
STATUS FLAG CODES

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:	679
MAXIMUM INSTANTANEOUS VALUE:	54.1 PPM @ HOUR(S) 18 ON DAY(S) 1
	VAR-VARIOUS
IZS CALIBRATION TIME:	34 HRS
MONTHLY CALIBRATION TIME:	6 HRS
OPERATIONAL TIME:	719 HRS
STANDARD DEVIATION:	2.04

01 Hour Averages



LICA31
 THC / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	4.55	2.93	3.08	6.60	8.07	5.72	8.66	6.90	5.72	5.28	3.37	3.96	4.25	8.66	13.95	8.07	99.85
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.14
< 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	4.55	2.93	3.08	6.60	8.07	5.72	8.66	6.90	5.72	5.28	3.37	3.96	4.25	8.66	14.09	8.07	

Calm : .00 %

Total # Operational Hours : 681

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	31	20	21	45	55	39	59	47	39	36	23	27	29	59	95	55	680
< 10.0															1		1
< 50.0																	
>= 50.0																	
Totals	31	20	21	45	55	39	59	47	39	36	23	27	29	59	96	55	

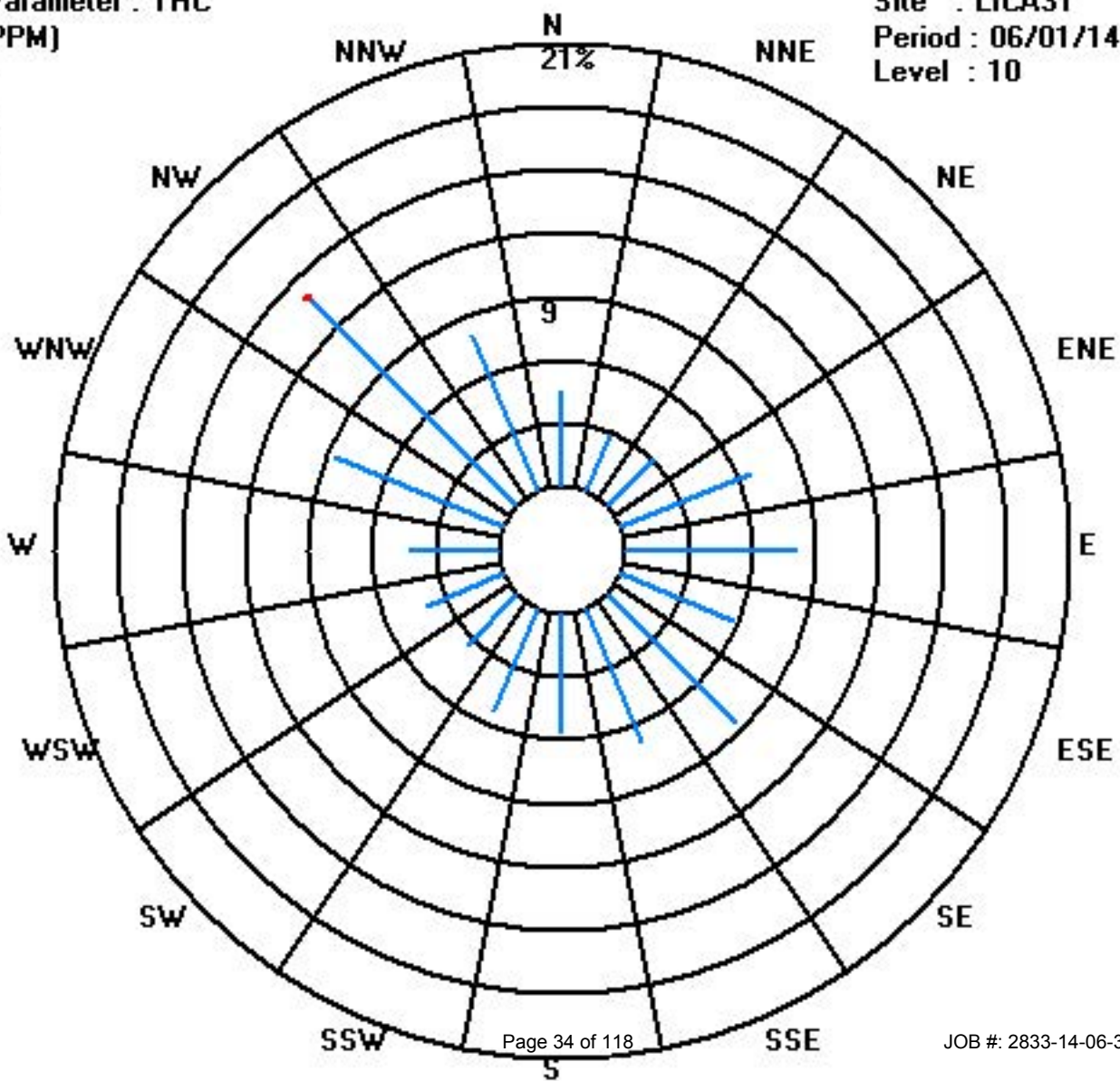
Calm : .00 %

Total # Operational Hours : 681

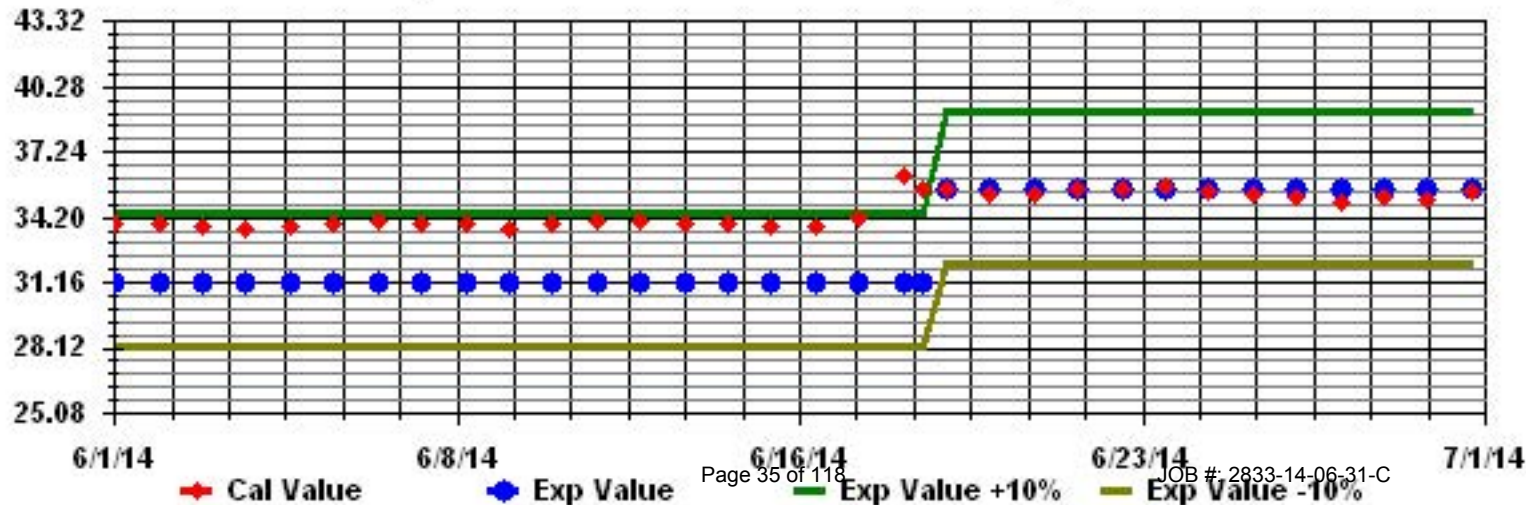
Class Limits (PPM)

Period : 06/01/14-06/30/14

Level : 10



Calibration Graph for Site: LICA31 Parameter: THC Sequence: THC Phase: SPAN



Ozone

Lakeland Industry & Community Association - St. Lina Site

JUNE 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		S	42	38	36	34	28	32	32	37	42	50	54	55	53	46	45	44	40	41	42	52	54	45	S	55	42.8	24
2		43	36	34	31	30	27	31	32	35	39	45	49	50	51	48	44	50	52	53	50	49	41	S	43	53	41.9	24
3		42	39	40	40	40	37	34	36	41	45	55	57	57	57	54	58	58	56	52	51	49	S	52	50	58	47.8	24
4		51	51	49	46	46	42	29	27	32	28	26	25	27	29	32	33	33	32	25	21	S	24	28	29	51	33.3	24
5		26	25	23	20	20	20	19	20	19	22	23	25	29	34	33	31	29	30	31	S	29	27	27	23	34	25.4	24
6		25	26	26	25	24	24	22	25	29	34	35	36	38	38	38	38	39	37	S	35	33	33	31	30	39	31.3	24
7		28	24	25	25	24	20	20	27	32	35	35	35	34	35	36	36	36	S	36	35	35	35	35	29	36	31.0	24
8		26	31	29	29	28	28	24	26	31	34	36	36	37	37	38	41	S	42	42	40	38	36	37	38	42	34.1	24
9		38	36	31	30	29	28	24	22	21	21	27	30	35	35	32	S	30	32	33	34	35	32	29	28	38	30.1	24
10		26	23	23	25	25	26	30	32	33	32	30	30	32	S	30	30	32	30	32	30	28	20	24	28	37	28.1	24
11		25	23	23	18	22	14	21	25	32	35	37	37	38	S	40	40	40	41	42	40	41	41	39	36	42	32.6	24
12		36	34	33	34	32	31	31	34	39	46	47	47	S	50	49	49	49	49	49	49	45	43	40	39	50	41.1	24
13		37	35	31	27	25	24	26	30	34	37	43	S	48	49	47	46	44	44	42	43	42	39	40	38	49	37.9	24
14		40	36	34	29	27	28	32	36	39	43	S	45	47	48	49	48	47	45	42	41	42	41	42	42	49	40.1	24
15		41	38	36	34	32	31	30	32	36	S	43	43	43	42	43	43	42	43	43	41	38	33	33	33	43	38.0	24
16		31	29	26	25	24	27	29	29	S	34	32	33	34	32	27	27	24	24	26	23	21	19	19	19	34	26.7	24
17		17	20	17	15	17	17	20	S	23	25	28	31	26	28	32	31	33	34	33	32	28	24	22	21	34	25.0	24
18		23	22	20	21	22	23	S	30	28	28	33	34	30	29	C	C	C	C	C	C	20	20	20	20	34	24.9	24
19		19	17	14	13	14	S	14	15	17	18	18	19	20	18	17	17	15	14	13	14	16	16	16	15	20	16.0	24
20		15	13	16	18	S	16	16	23	27	32	32	35	37	32	27	27	27	28	24	22	21	19	18	16	37	23.5	24
21		15	17	22	S	24	24	27	28	30	29	31	28	27	27	26	27	27	27	27	28	29	28	25	31	31	26.1	24
22		19	19	S	19	21	21	21	23	23	25	27	31	30	28	30	29	32	32	25	25	27	29	27	23	32	25.5	24
23		21	S	19	17	18	16	18	21	24	30	36	36	37	38	38	38	38	37	33	33	33	37	35	33	38	29.8	24
24		S	27	23	22	21	21	25	29	28	29	32	34	36	35	35	35	35	36	36	36	34	33	32	S	36	30.6	24
25		30	28	24	22	20	20	20	22	24	23	23	23	29	30	30	32	36	33	30	31	37	39	S	31	39	27.7	24
26		19	16	16	15	17	19	17	17	18	20	20	23	27	31	32	32	32	35	35	27	27	S	25	20	35	23.5	24
27		23	25	24	13	19	26	25	27	28	28	35	36	36	34	36	37	37	38	37	37	S	38	39	38	39	31.1	24
28		39	37	36	33	32	31	29	30	35	37	42	43	42	43	42	37	36	33	32	S	38	35	33	31	43	35.9	24
29		30	28	26	24	22	21	21	22	23	25	29	29	31	36	40	42	46	46	S	47	42	32	27	25	47	31.0	24
30		23	22	21	21	21	21	20	23	25	27	30	30	31	32	32	33	38	S	27	25	27	29	28	27	38	26.7	24
HOURLY MAX		51	51	49	46	46	42	34	36	41	46	55	57	57	57	54	58	58	56	53	51	52	54	52	50			
HOURLY AVG		28.9	28.2	26.9	25.1	25.2	24.5	24.4	26.7	29.1	31.1	33.8	35.0	35.9	36.7	36.8	36.6	36.7	36.7	34.8	34.3	33.8	32.1	31.3	29.6			

STATUS FLAG CODES

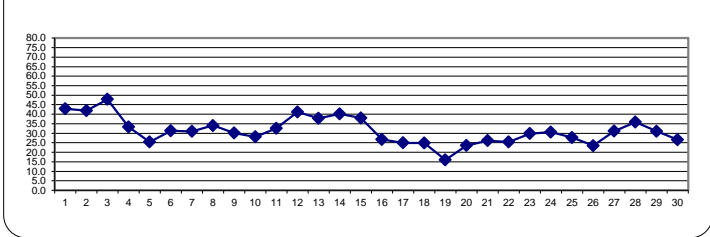
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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

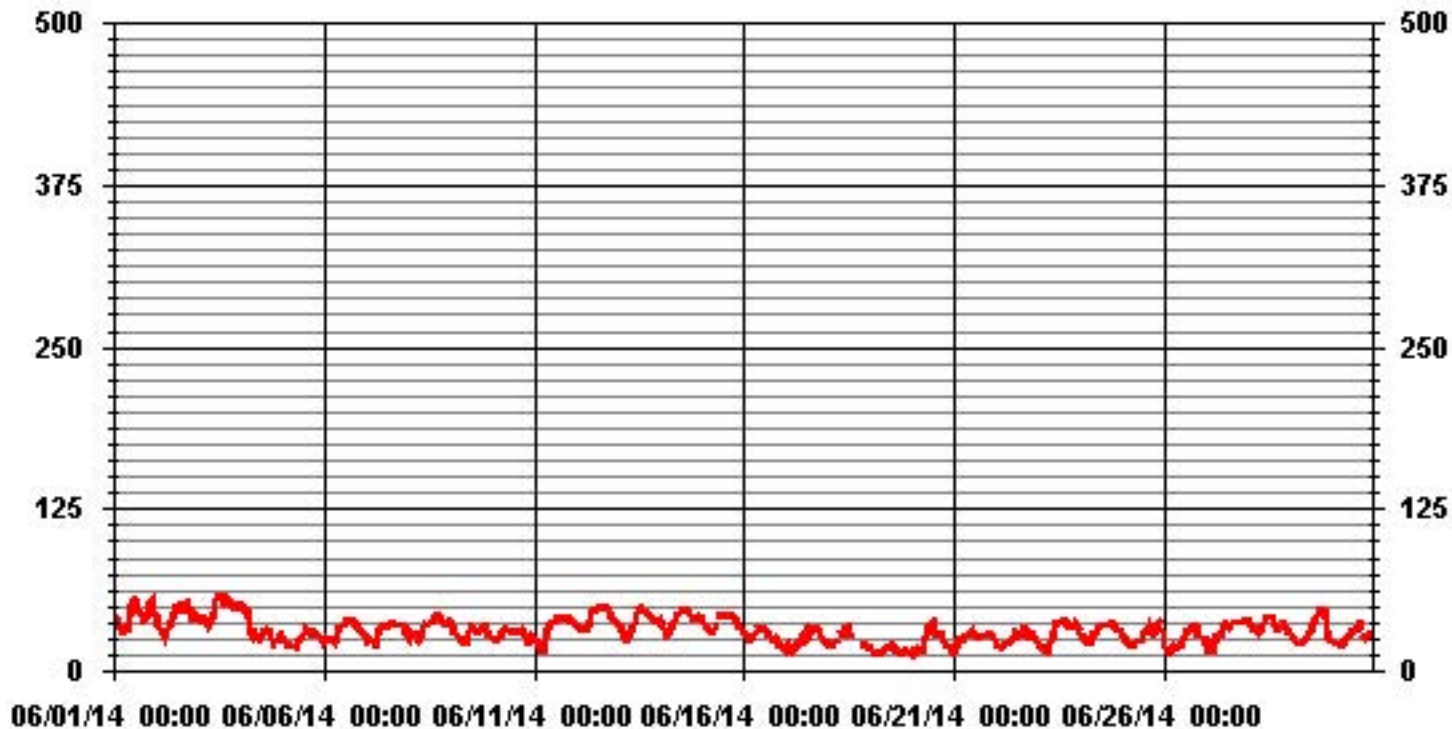
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	682				
MAXIMUM 1-HR AVERAGE:	58	PPB	@ HOUR(S)	15, 16	ON DAY(S) 3
MAXIMUM 24-HR AVERAGE:	47.8	PPB			ON DAY(S) 3
				VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	9.25		MONTHLY AVERAGE:	31.36	PPB

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



Lakeland Industry & Community Association - St. Lina Site

JUNE 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	45	45	39	36	32	33	34	42	45	54	56	57	56	49	49	49	43	45	48	54	56	50	S	57	46.2	24	
	2	49	47	36	34	32	31	33	36	38	43	48	51	51	53	54	52	53	55	55	53	51	50	S	45	55	45.7	24	
	3	42	41	41	41	43	40	37	39	44	52	58	58	59	58	59	59	60	59	56	52	52	S	55	53	60	50.3	24	
	4	52	52	52	49	47	45	37	28	33	31	27	27	29	33	34	35	35	33	30	22	S	28	30	32	52	35.7	24	
	5	29	27	26	25	21	21	20	21	20	23	24	28	33	36	34	33	31	32	32	S	31	29	28	25	36	27.3	24	
	6	26	26	27	26	25	24	24	27	34	35	37	38	39	40	39	40	40	39	S	37	36	36	33	32	40	33.0	24	
	7	31	31	27	27	26	25	25	31	34	37	36	36	35	36	37	38	37	S	38	37	37	37	37	37	32	38	33.3	24
	8	30	34	33	31	32	32	29	29	34	36	37	37	38	39	41	43	S	44	44	41	40	37	39	39	44	36.5	24	
	9	39	39	34	31	30	30	26	24	22	26	28	34	38	38	35	S	32	33	36	34	36	34	30	29	39	32.1	24	
	10	28	25	24	26	26	31	31	34	S	34	32	32	32	35	S	33	33	35	33	32	27	28	31	31	35	30.6	24	
	11	27	26	26	23	25	19	23	29	35	37	39	39	39	S	42	41	42	44	43	43	43	42	41	37	44	35.0	24	
	12	37	36	34	35	33	33	33	36	46	48	48	48	S	51	50	50	50	51	51	49	45	41	41	41	51	42.9	24	
	13	38	37	34	28	27	25	28	32	35	41	45	S	50	51	48	48	45	46	44	46	45	43	43	40	51	40.0	24	
	14	41	38	36	32	29	31	35	39	42	45	S	46	49	50	51	50	48	48	44	43	43	42	43	43	51	42.1	24	
	15	43	39	37	35	33	32	32	35	40	S	44	46	46	44	45	45	44	44	45	42	40	35	33	34	46	39.7	24	
	16	32	31	28	27	30	29	33	31	S	37	34	35	36	35	30	29	27	25	27	26	24	21	20	20	37	29.0	24	
	17	20	22	21	18	19	21	21	S	25	27	32	33	32	31	37	33	35	35	36	34	31	26	24	23	37	27.7	24	
	18	23	23	21	23	23	23	S	33	32	31	35	36	32	C	C	C	C	C	C	C	21	23	21	21	36	26.3	24	
	19	20	19	16	14	15	S	16	16	18	19	19	20	22	20	19	19	16	16	16	16	17	18	18	17	22	17.7	24	
	20	16	16	22	23	S	17	20	28	29	37	36	38	40	37	30	29	30	30	27	26	24	21	21	19	40	26.8	24	
	21	18	20	24	S	25	26	29	30	33	32	32	30	29	28	28	29	29	29	29	28	31	31	30	28	33	28.1	24	
	22	21	20	S	21	22	22	23	24	24	27	29	33	31	29	31	31	36	35	27	26	28	30	30	25	36	27.2	24	
	23	23	S	21	19	19	18	23	23	28	36	41	40	39	41	41	42	41	41	38	35	36	38	38	34	42	32.8	24	
	24	S	30	26	23	23	24	27	31	30	31	34	36	38	37	36	37	37	37	37	37	37	35	35	32	S	38	32.4	24
	25	30	29	26	22	21	21	21	25	27	26	25	25	33	32	32	39	40	36	35	36	42	42	S	32	42	30.3	24	
	26	28	17	16	15	19	19	19	19	20	24	23	25	30	37	34	34	34	37	39	35	31	S	28	22	39	26.3	24	
	27	28	26	25	16	25	27	27	30	30	32	38	38	38	38	38	40	39	40	40	42	S	40	42	40	42	33.9	24	
	28	40	39	37	35	34	35	34	35	37	41	46	45	44	45	45	41	41	42	37	S	41	37	33	32	46	39.0	24	
	29	31	29	27	25	23	22	22	23	25	27	30	32	34	40	42	46	48	47	S	51	45	37	27	27	51	33.0	24	
	30	24	23	22	22	22	21	21	24	26	29	31	32	33	33	34	37	41	S	29	26	29	30	29	28	41	28.1	24	
	HOURLY MAX	52	52	52	49	47	45	37	39	46	52	58	58	59	58	59	59	60	59	56	53	54	56	55	53				
	HOURLY AVG	30.9	30.6	29.1	27.1	27.1	26.8	27.0	29.2	31.5	34.1	35.9	37.0	38.1	39.4	39.1	39.3	39.0	39.1	37.5	36.9	36.3	34.5	33.1	31.5				

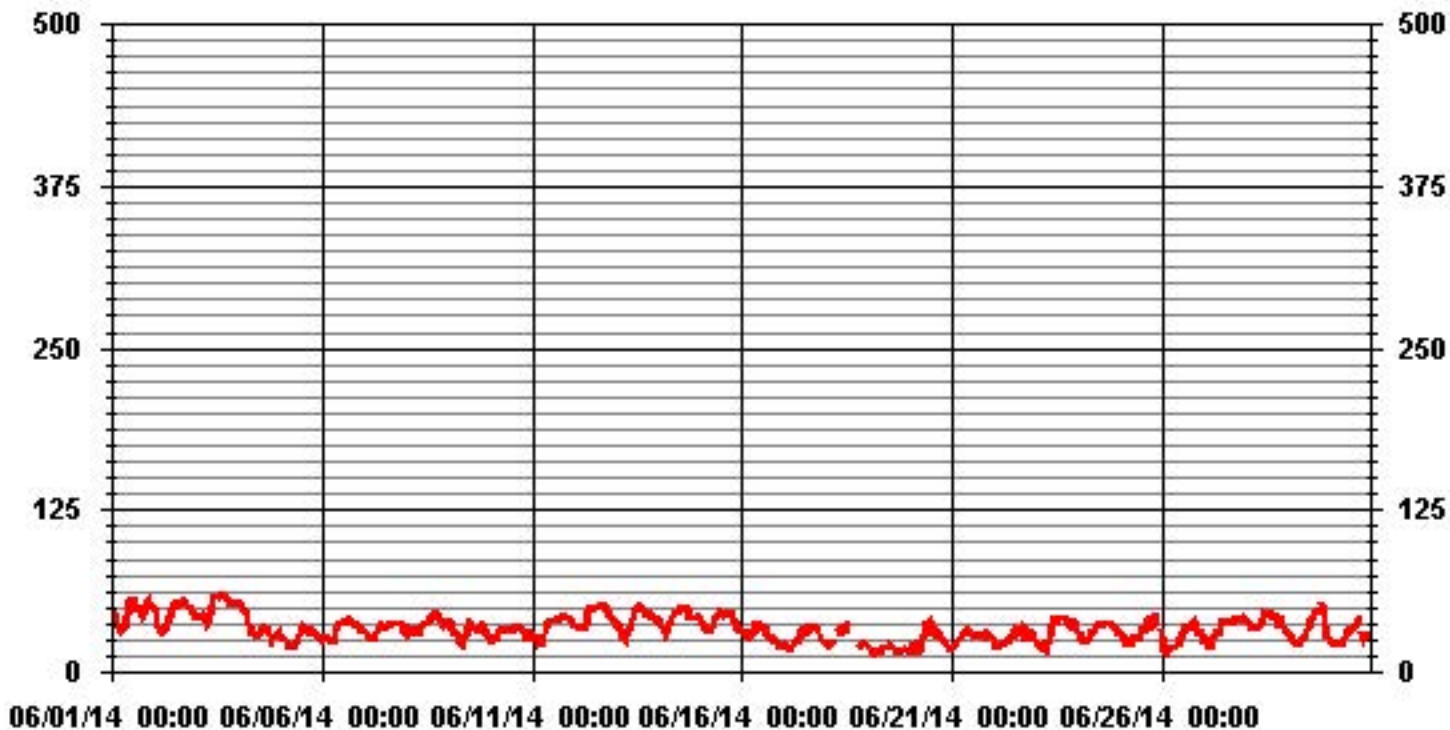
STATUS FLAG CODES

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:	680
MAXIMUM INSTANTANEOUS VALUE:	60 PPB @ HOUR(S) 16 ON DAY(S) 3
	VAR-VARIOUS
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	9.45
OPERATIONAL TIME:	720 HRS

01 Hour Averages



— LICA31 O3MAX PPB

LICA31
 O3_ / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : O3_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50	4.39	2.93	3.07	6.59	7.47	5.71	8.35	6.59	4.98	4.98	3.37	3.37	3.95	8.50	13.92	7.77	96.04
< 110	.14	.00	.00	.00	.00	.43	.43	.43	.73	.29	.00	.58	.29	.14	.14	.29	3.95
< 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	4.54	2.93	3.07	6.59	7.47	6.15	8.79	7.03	5.71	5.27	3.37	3.95	4.25	8.65	14.07	8.06	

Calm : .00 %

Total # Operational Hours : 682

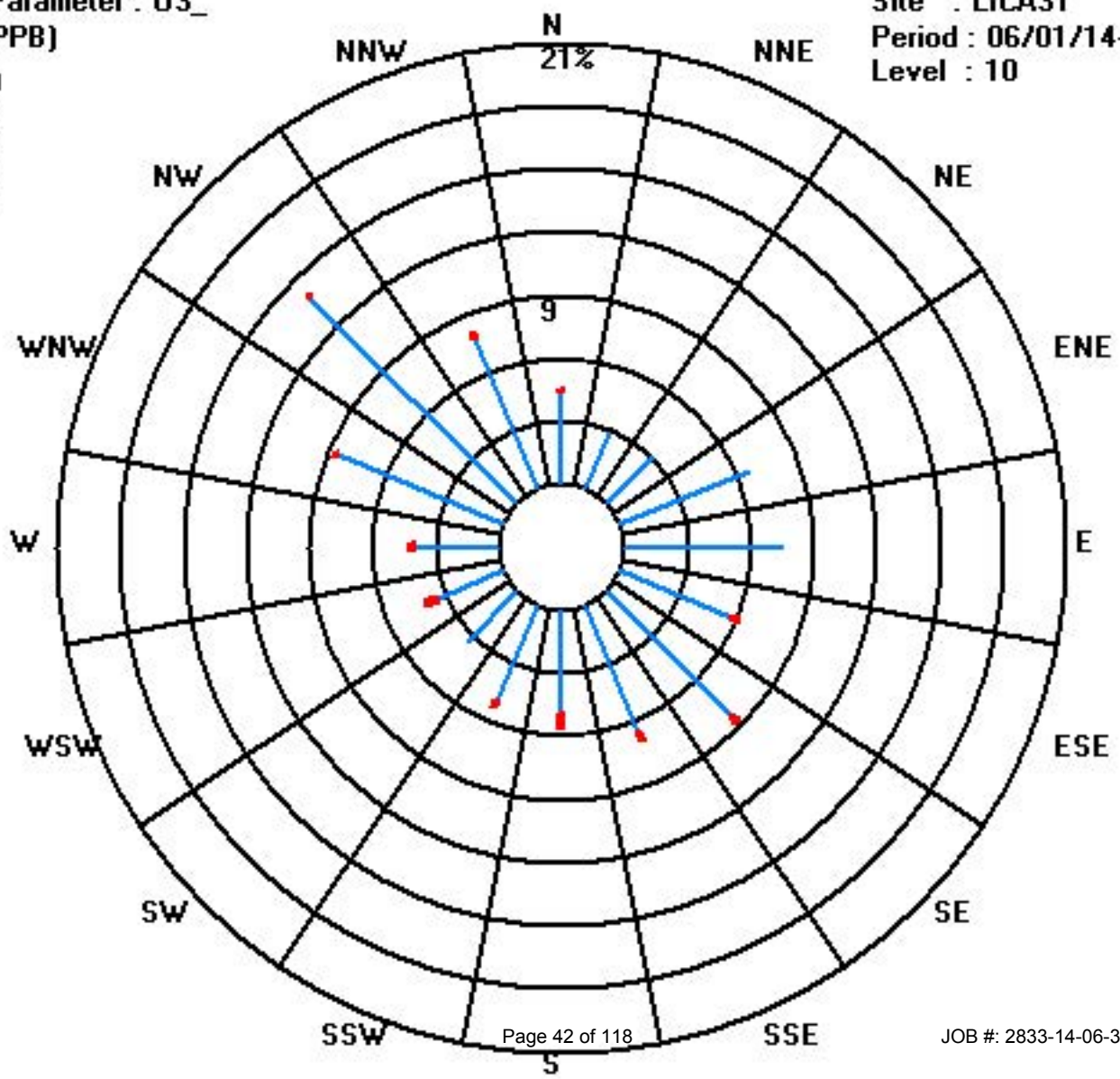
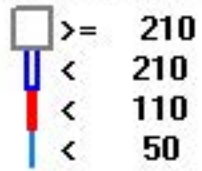
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50	30	20	21	45	51	39	57	45	34	34	23	23	27	58	95	53	655
< 110	1					3	3	3	5	2		4	2	1	1	2	27
< 210																	
>= 210																	
Totals	31	20	21	45	51	42	60	48	39	36	23	27	29	59	96	55	

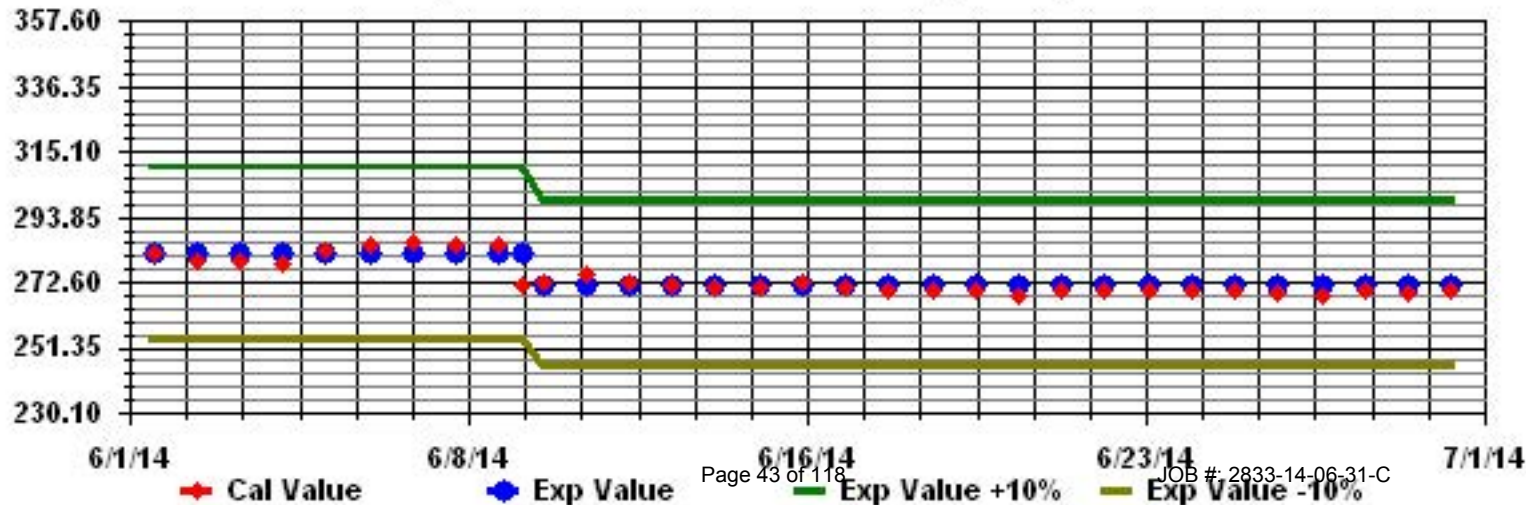
Calm : .00 %

Total # Operational Hours : 682

Class Limits (PPB)



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



Nitrogen Dioxide

Lakeland Industry & Community Association - St. Lina Site

JUNE 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1	S	0.5	0.9	1.3	1.8	0.9	1.5	1.4	1.3	0.9	1	0.5	0.1	0.2	0.5	0.8	0.7	0.6	0.7	0.6	0.2	0	0.3	S	1.8	0.8	24		
2	2.5	2.7	3.1	2.9	3.1	2.9	3.2	4.3	4.6	5	4.1	3.1	2.7	2.5	2.7	2.6	2.2	2.3	2.9	3	2.6	2.5	S	1.4	5	3.0	24		
3	2	2.3	2.2	2.4	2.7	2	2	2.2	2.4	1.5	1	0.9	0.5	0.3	0.7	0.5	0.5	0.4	0.5	0.5	0.8	S	0.3	0.4	2.7	1.3	24		
4	0.5	0.3	0.3	0.3	0.2	0.2	0.4	0.2	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.5	0.1	24		
5	0	0	0	0.5	0.4	0.4	0.2	0.5	0.3	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.5	0.1	24		
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.3	0.3	0.4	0.8	0.8	0.1	24		
7	0.6	0.4	0.5	0.4	0.5	0.4	0.7	0.4	0.5	0.3	0	0	0	0	0	0	0	S	0	0	0	0	0.2	0	0.4	0.7	0.2	24	
8	0.4	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.2	0.8	1.5	1.5	1.5	0.2	24		
9	1.1	1.4	2.4	2.2	2.2	2.7	2.9	2.7	2.9	2.8	1.7	1.1	0.5	0	0	S	0.8	0.8	0.8	0.7	0.8	1	1	0.7	2.9	1.4	24		
10	0.7	0.9	0.7	0.7	0.8	1.2	0.8	0.9	0.8	0.8	0.7	0.5	0.5	0.8	S	0	0	0	0	0	0	0	0.1	0.2	0.9	1.2	0.5	24	
11	0	0	0.4	0.4	0	0.4	0.3	0.3	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.5	1.8	1.8	0.2	24	
12	1.5	1.8	1.4	1.5	1.7	1.6	2.4	1.3	0.8	0.7	0.6	0.2	S	0.2	0	0	0	0.1	0.1	0.2	0.6	0.8	0.7	1.2	2.4	0.8	24		
13	1.3	1.9	2.4	1.8	0.9	1.1	0.7	0.6	0.4	0.4	0.1	S	0	0	0	0	0	0	0	0	0	1.2	0.9	0.8	0.4	2.4	0.6	24	
14	1	1.7	2.4	2.9	2.9	2.5	2.5	1.2	1	0.6	S	1	1.1	1.2	1.3	1	1	1.1	1.1	1	1.2	1.3	1.8	1.7	2.9	1.5	24		
15	1.6	2.1	2.5	3.1	3.9	4.2	2.5	2.1	1.9	S	0	0.1	0	0	0	0	0	0	0	0	0	0	0.1	0.2	0.1	4.2	1.1	24	
16	0.4	1.3	1.5	1.5	1.2	0.6	0.7	0.8	S	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	1.5	0.4	24		
17	0.3	0.1	0.2	0.4	0.3	0.2	0.1	S	0.9	1	1	0.9	1.1	1.2	1.2	1.3	1.2	1.4	1.3	1.4	1.7	1.7	2.1	2.3	2.3	1.0	24		
18	1.8	2.7	4.3	4.2	3.8	3.6	S	1.1	C	C	C	C	C	C	C	C	C	0.9	0.7	0.4	0.8	0.7	0.8	0.6	4.3	1.9	24		
19	0.7	0.8	0.9	1.2	1.4	S	1.8	1.7	1.4	0.8	0.7	0.6	0.5	0.3	0.3	0.5	0.5	0.7	0.7	0.7	1	1	0.8	1	1.8	0.9	24		
20	1	1	1.1	0.7	S	1	1.4	1.3	0.8	0.5	0.4	0.5	0.5	0.6	0.7	0.6	0.8	0.5	0.8	0.7	1	1.2	1.7	1.7	1.7	0.9	24		
21	1.9	1.3	0.6	S	0.7	0.6	0.2	0.2	0.4	0.3	0.3	0.2	0.2	0.1	0.3	0.5	0.4	0.7	0.8	0.8	0.6	0.7	0.5	1.1	1.9	0.6	24		
22	1.3	1.1	S	1.7	1.8	1.3	1	0.7	0.5	0.7	0.6	0.5	0.5	0.4	0.4	0.3	0.1	0.1	0.2	0.4	0.6	0.3	0.3	0.4	1.8	0.7	24		
23	1.2	S	2.7	3.5	4.2	4.1	3.6	3	2.1	2	1.2	0.6	0.5	0.5	0.4	0.4	0.7	0.8	0.7	0.5	0.6	0.6	0.4	1	4.2	1.5	24		
24	S	2	3.6	3.4	3.1	2.5	1.7	1.1	0.9	0.6	0.4	0.6	0.5	0.6	0.5	0.6	0.6	0.5	0.6	0.7	0.7	1	1.3	S	3.6	1.3	24		
25	2.6	2.4	3.1	3.6	3.6	3.2	3	2.5	2.5	2.8	2.8	2.8	2.3	2	1.9	1.7	1.4	1.3	1.8	2.1	2	1.8	S	0.9	3.6	2.4	24		
26	0.8	0.7	0.6	0.6	0.5	0.3	0.7	0.7	0.8	0.5	0.4	0.6	0.2	0.3	0.1	0.6	0.4	0.4	0.5	0.7	0.2	S	0.7	0.7	0.8	0.5	24		
27	0.8	0.4	0.4	1.8	2	0.6	0.8	0.6	0.5	0.6	0.8	0.7	0.7	0.6	0.4	0.6	0.7	0.7	1.9	1.8	S	2.5	4.1	2.7	4.1	1.2	24		
28	2.2	2.8	3.7	3	2.7	2.9	2.4	2.5	2.4	1.9	1.8	1.7	1.7	1.7	1.6	1.6	1.8	1.5	1.8	S	2	2.5	2.5	2.2	3.7	2.2	24		
29	2.1	2.2	2.3	2.1	1.7	1.9	1.8	1.6	1.6	1.7	1.7	1.7	1.8	2	2.2	2.4	2.6	2.6	S	3	2.8	2.2	2.1	1.9	3	2.1	24		
30	1.8	1.9	1.8	1.6	1.6	1.5	1.6	1.6	1.4	1.6	1.8	2.3	1.9	1.8	1.8	1.6	1.7	S	1.6	1.9	2.1	2	1.6	1.9	2.3	1.8	24		
HOURLY MAX		3	3	4	4	4	4	4	4	5	5	4	3	3	3	3	3	3	3	3	3	3	3	3	4	3			
HOURLY AVG		1.1	1.3	1.6	1.7	1.7	1.5	1.4	1.3	1.2	1.0	0.8	0.8	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.8	0.9	0.9	1.0	1.1				

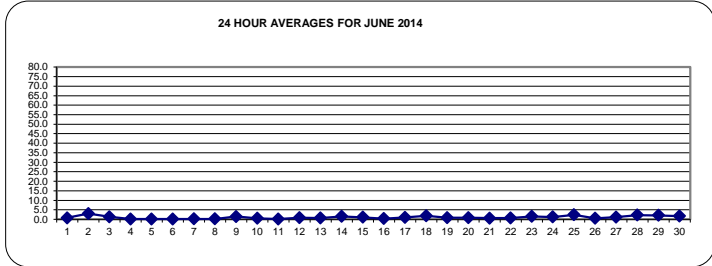
STATUS FLAG CODES

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

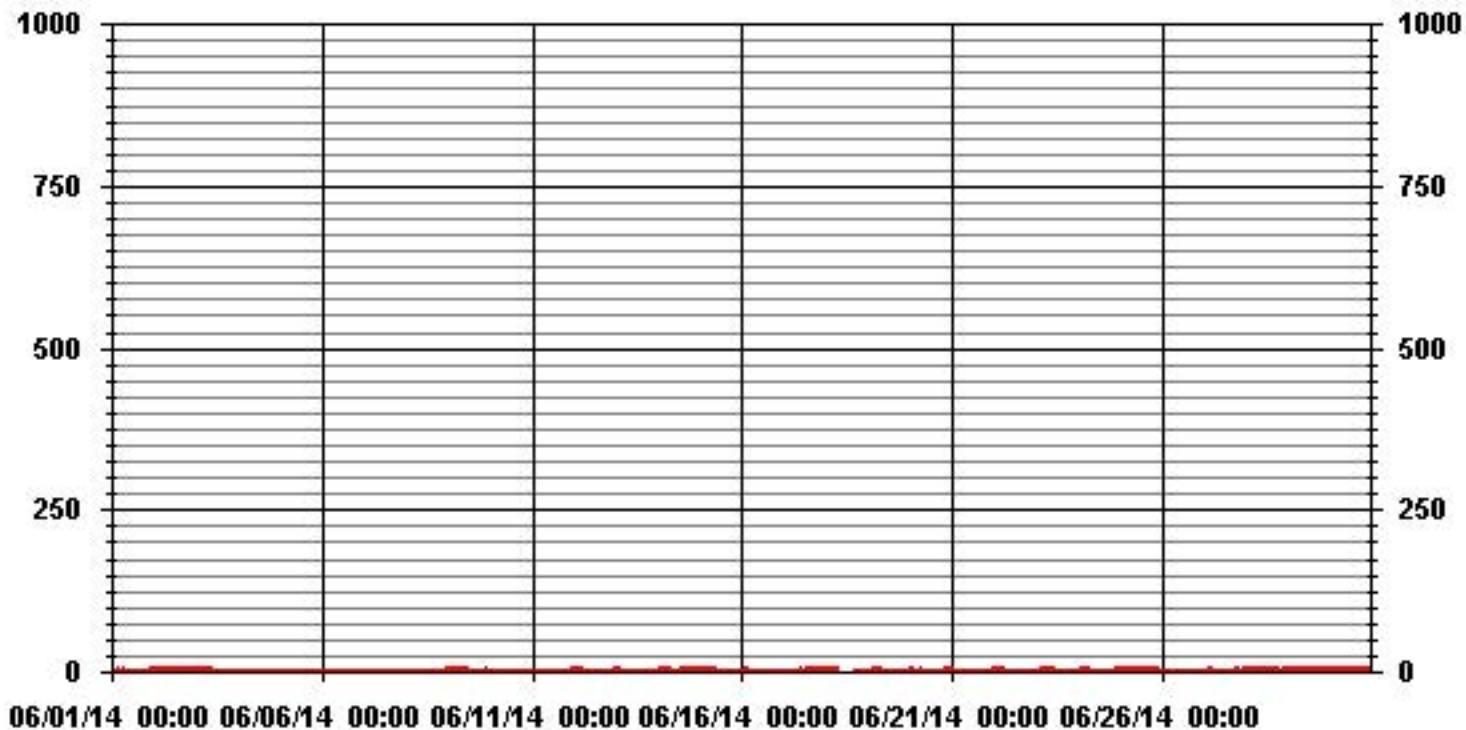
OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	543					
MAXIMUM 1-HR AVERAGE:	5	PPB	@ HOUR(S)	9	ON DAY(S)	2
MAXIMUM 24-HR AVERAGE:	3.0	PPB			ON DAY(S)	2
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	1.00		MONTHLY AVERAGE:	1.03	PPB	



01 Hour Averages



— LICA31 NO2_ PPB

Lakeland Industry & Community Association - St. Lina Site

JUNE 2014

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1	S	1.1	2.4	3.1	2.9	1.3	2.1	1.9	1.9	1.5	2.6	1.6	1.1	1.1	1.1	1.4	1.4	1.1	1.5	1.3	0.9	0.6	1	S	3.1	1.6	24		
2		2.4	4.2	2.6	2.8	3.1	3.1	5.2	5	5.4	4	3	2.6	3.2	2.7	2.7	1.8	2.2	11	5.7	2.4	2.4	S	2.1	11	3.5	24		
3		2.7	2.8	2.9	3.7	4.2	2.6	2.5	2.6	3	2.6	1.7	1.6	1.3	1.1	1.4	1.1	1.2	1.1	1.1	1.3	1.6	S	0.7	1.2	4.2	2.0	24	
4		1.1	0.7	0.9	0.7	0.7	0.9	0.8	1.1	0.5	1.1	0.5	0.3	0.4	0.2	0.4	0.5	0.7	0.8	0.6	0.7	S	1.4	1.2	1.3	1.4	0.8	24	
5		1.4	1.3	1.3	2.3	2.1	2.4	1.7	2.4	2.2	1.7	1.6	1.7	1.4	1.4	1.2	1.6	1.3	1.7	S	0.3	0.2	0.3	0.4	2.4	1.5	24		
6		0.2	0.2	0.3	0.4	0.4	0.5	0.9	1	0.6	1.4	0.2	1.2	0.2	0.7	0.3	0.2	0.8	0.7	S	3.5	2.3	2.2	2.1	2.4	3.5	1.0	24	
7		2.4	2.4	2.3	2.2	2.5	2.1	12.7	2	2.3	2.1	1.5	7.4	1.2	1.4	9.1	1.1	1.2	S	0.9	0.2	0.8	5.6	0.7	1.1	12.7	2.8	24	
8		1.2	1.2	0.7	0.7	1.1	0.6	0.6	0.6	0.5	0.2	0.2	0.2	0.2	0.3	0.4	S	1.5	1.4	1.5	1.8	3	3.2	3.4	3.4	1.1	24		
9		2.9	3.8	4.2	4	4	4.5	4.8	4.3	4.5	5.6	3.6	3.1	2.1	1.7	1.5	S	9.4	0.5	0.4	0.6	0.3	0.7	0.8	0.6	9.4	3.0	24	
10		0.5	0.6	0.2	0.2	0.3	11.7	1.2	0.5	P	0.5	0.7	0.3	0.3	0.6	S	1.4	1.6	1.6	1.8	1.5	1.7	1.9	2.7	1.4	11.7	1.5	23	
11		1.6	1.7	2.1	1.9	1.7	8.9	3.2	4.2	1.9	1.4	2.2	1.7	1.6	S	1.4	1.4	2.1	1.4	1.7	1.9	1.8	1.8	3.3	4.1	8.9	2.4	24	
12		3.6	3.7	3.1	3.2	3.4	3.6	4.8	4.1	3.7	3	2.9	1.9	S	2.2	1.9	1.6	1.7	1.7	1.9	1.8	2.4	2.3	2.4	2.9	4.8	2.8	24	
13		3.2	3.8	4	4	2.7	2.9	2.5	2.5	2.2	2.1	1.9	S	0.6	0.8	0.6	0.5	0.6	0.6	0.4	0.6	6.3	3.2	3.3	1.1	6.3	2.2	24	
14		2	2.7	3.3	3.9	3.6	4.7	18.2	2.2	1.7	1.5	S	1.9	1.9	1.9	2.6	1.8	1.5	1.7	1.7	1.7	1.9	2.1	2.7	2.2	18.2	3.0	24	
15		2.4	2.8	3.2	3.8	5.3	5.4	3.3	3.1	2.7	S	0.8	0.8	0.7	0.3	0.4	0.3	0.4	0.4	0.3	0.6	0.8	0.8	0.9	5.4	1.7	24		
16		1.4	2.1	2.3	2.3	2.2	1.4	1.5	2	S	1.8	1.7	1.6	1.8	1.5	1.6	1.6	1.6	1.6	1.7	1.6	2.1	1.9	1.8	2	2.3	1.8	24	
17		2.1	1.8	2.2	2.1	1.9	2	1.9	S	0.8	0.6	0.6	0.5	0.7	1.1	0.9	0.9	0.9	1.1	0.9	1	1.5	1.5	1.8	2.1	2.2	1.3	24	
18		1.7	2.8	4.2	4.1	3.8	3.3	S	3.2	C	C	C	C	C	C	C	C	C	C	1.5	1.3	1.7	1.7	1.7	1.5	4.2	2.5	24	
19		1.5	1.5	1.7	2.2	2.3	S	2.6	2.3	2.1	1.7	1.7	1.3	1.4	1.2	1.3	1.4	1.4	1.3	1.4	1.6	1.6	1.7	1.8	2.6	1.7	24		
20		1.9	1.9	2	1.9	S	1.5	2.3	2.3	1.5	1.4	1.2	1.1	1.6	1.6	1.6	1.5	1.7	1.6	1.7	1.4	1.9	2.1	2.4	2.8	1.8	24		
21		3.5	2	1.5	S	1.5	1.5	1.4	1.1	1.2	1	1.1	1.1	1.1	1	0.9	1.1	1.1	1.9	1.7	1.6	1.5	2.8	1.3	2.6	3.5	1.5	24	
22		2.2	1.9	S	2.5	2.6	2.1	2	1.3	1.2	1.4	1.3	1.4	1.2	1	1.2	1.3	1	1	1.1	1.1	1.6	1.1	1.1	1.3	2.6	1.5	24	
23		2.2	S	3.6	4.9	5.2	4.7	4.5	3.7	3.3	3.1	2.1	1.3	1.3	1.3	1.2	1.5	1.7	1.5	1.5	2.7	1.4	1.4	2	5.2	2.5	24		
24		S	3	4.6	4.2	3.9	3.7	2.3	2	1.7	1.5	1.3	1.3	1.2	1.5	1.5	1.3	1.5	1.5	1.5	1.5	2.1	2	S	4.6	2.1	24		
25		1.3	1.3	2.3	2.3	2.5	2.1	1.7	0.9	1.2	1.8	1.6	1.5	0.9	0.9	0.7	0.5	0.2	0.3	0.7	1	1.6	1	S	0.7	2.5	1.3	24	
26		0.7	0.5	0.4	0.5	0.2	0.2	0.5	0.6	1.3	0.4	0.5	0.7	0	0.3	0.1	0.6	0.6	0.5	0.3	1.8	0.1	S	1	0.7	1.8	0.5	24	
27		1.3	0.1	0.1	2.3	2.6	0.4	1.2	0.7	0.6	0.3	0.8	0.5	0.5	0.7	0.1	1	0.8	0.9	5.2	3	S	2.5	3.6	1.6	5.2	1.3	24	
28		0.9	1.8	2.6	2	1.4	1.8	1.2	1.8	1.2	1.2	0.8	0.5	1.3	0.9	0.3	0.5	1.2	0.3	0.7	S	1	1.3	1.2	1.3	2.6	1.2	24	
29		1.2	1.2	1.1	1.3	0.7	0.4	0.3	0.4	0.4	0.5	0.6	0.4	0.5	1	0.9	1	1.5	1.6	S	2	1.3	0.8	0	0	2	0.8	24	
30		0	0	0	0	0	0	0	0	0	0	0	0.8	0.3	0.2	0	0	0	S	1.2	1.3	1.8	8.3	0.9	0.7	8.3	0.7	24	
HOURLY MAX		4	4	5	5	5	12	18	5	5	6	4	7	3	3	9	3	9	2	11	6	6	8	4	4				
HOURLY AVG		1.8	1.8	2.2	2.4	2.4	2.8	3.0	2.1	1.8	1.7	1.4	1.5	1.1	1.1	1.3	1.1	1.5	1.2	1.7	1.6	1.7	2.1	1.7	1.7				

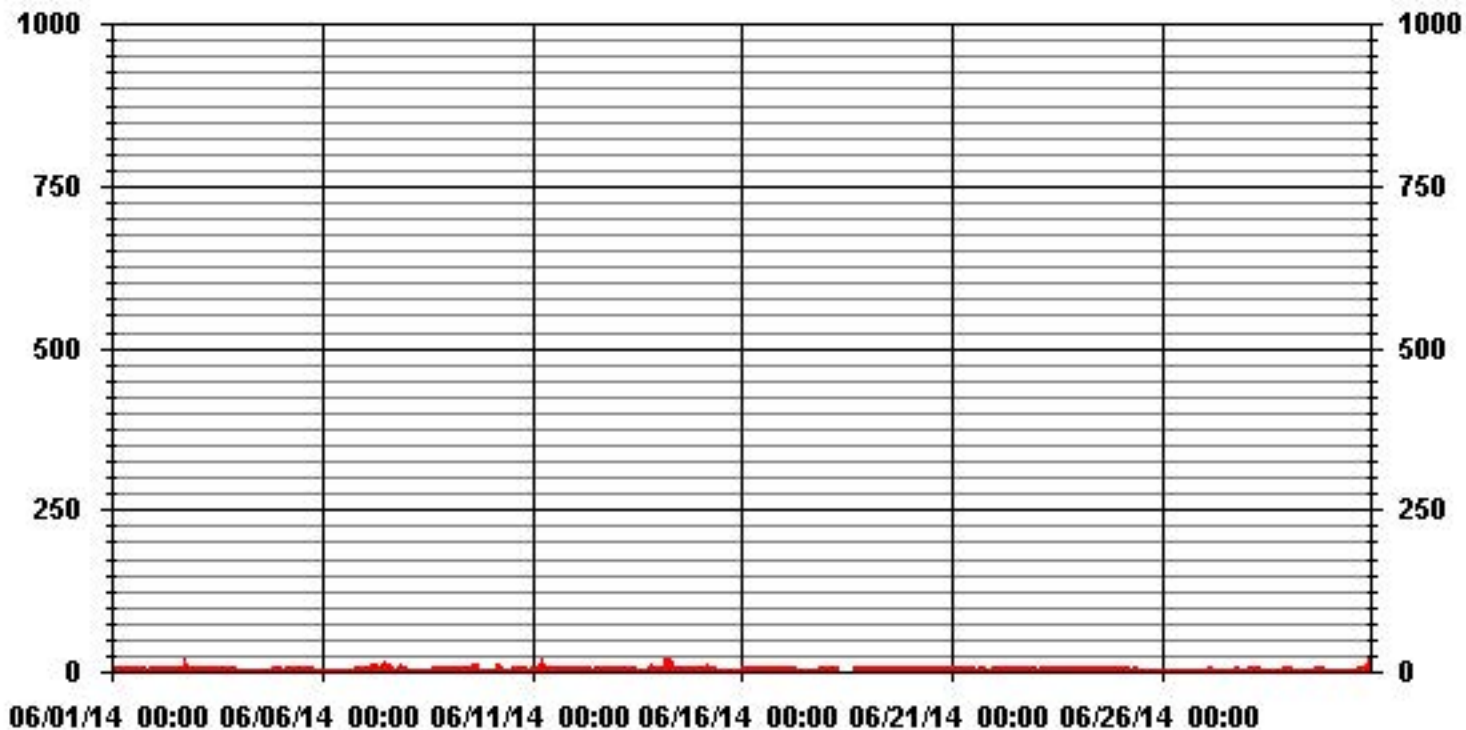
STATUS FLAG CODES

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:	660					
MAXIMUM INSTANTANEOUS VALUE:	18.2	PPB	@ HOUR(S)	6	ON DAY(S)	14
	VAR-VARIOUS					
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	10	HRS				
STANDARD DEVIATION:	1.57					

01 Hour Averages



LICA31
 NO2_ / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : NO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	4.56	2.94	3.09	6.62	7.95	5.59	8.68	6.92	5.74	5.30	3.38	3.97	4.27	8.68	14.13	8.10	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	4.56	2.94	3.09	6.62	7.95	5.59	8.68	6.92	5.74	5.30	3.38	3.97	4.27	8.68	14.13	8.10	

Calm : .00 %

Total # Operational Hours : 679

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	31	20	21	45	54	38	59	47	39	36	23	27	29	59	96	55	679
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	31	20	21	45	54	38	59	47	39	36	23	27	29	59	96	55	

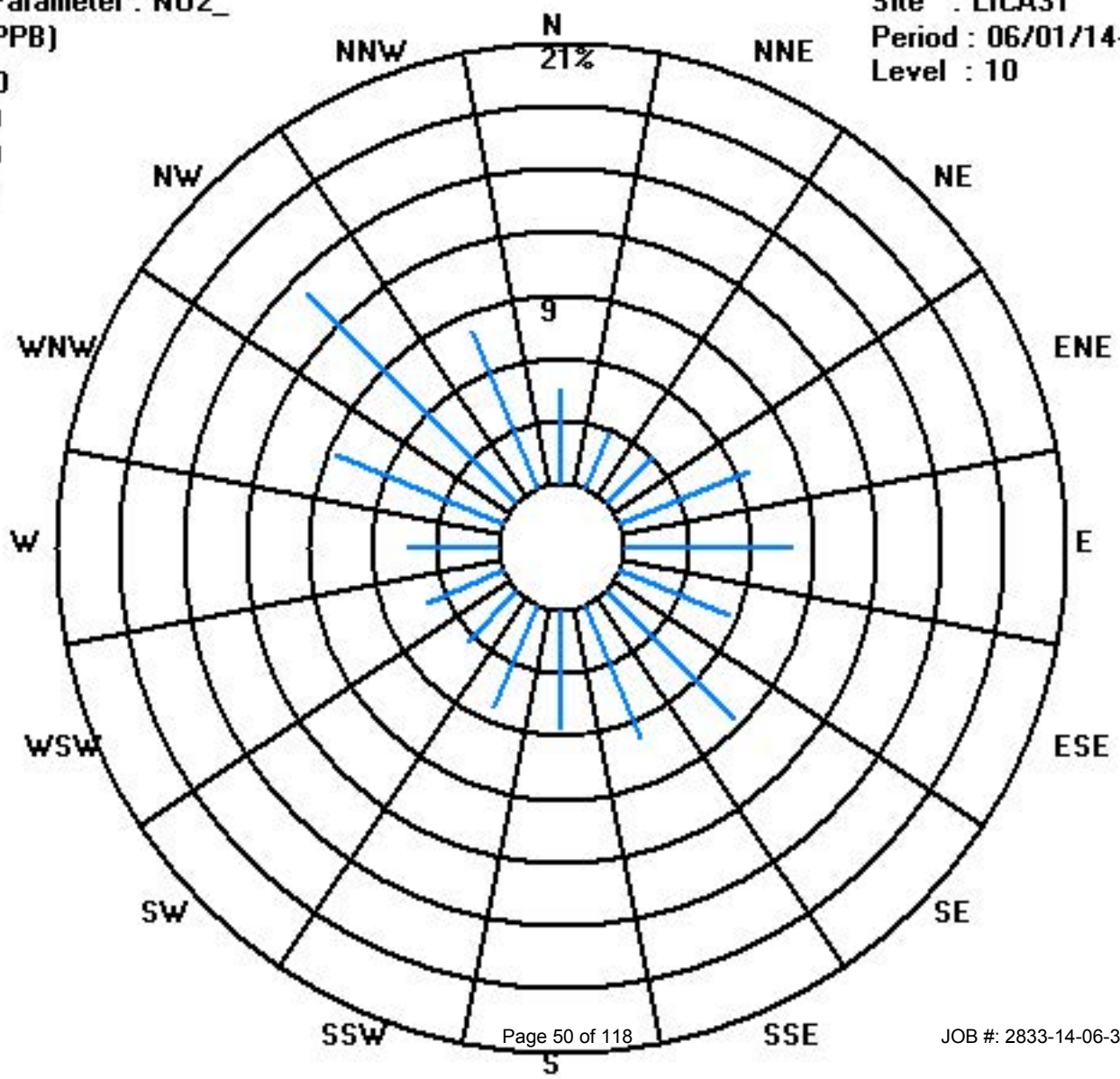
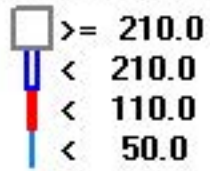
Calm : .00 %

Total # Operational Hours : 679

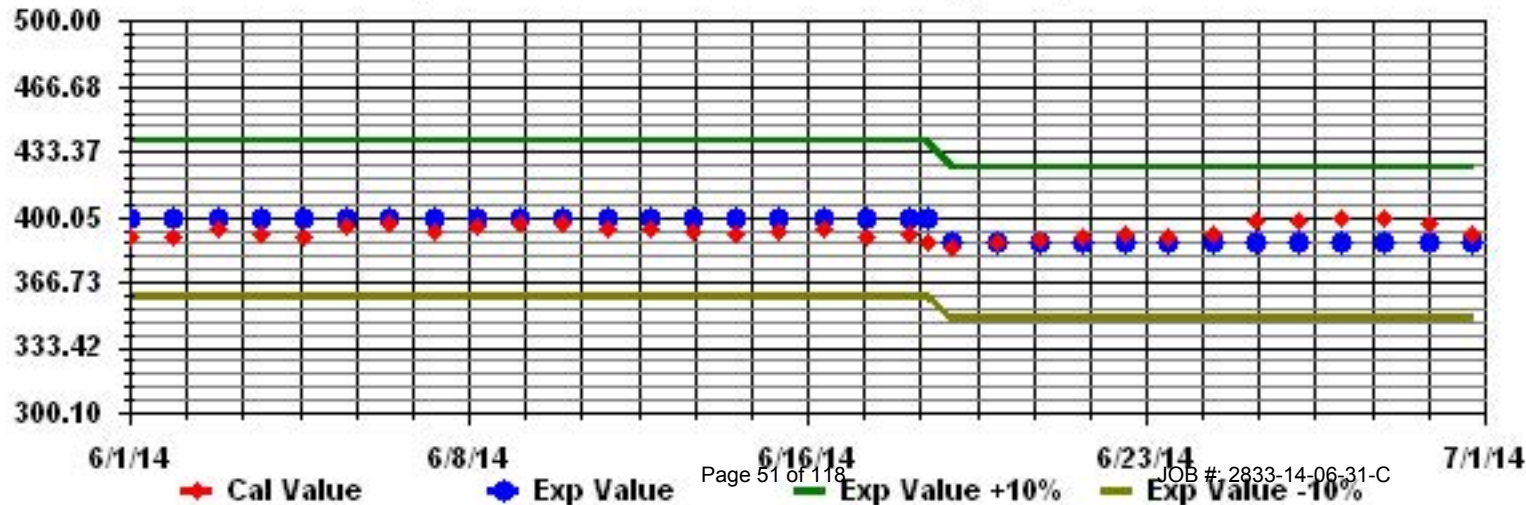
Class Limits (PPB)

Period : 06/01/14-06/30/14

Level : 10



Calibration Graph for Site: LICA31 Parameter: NO2_ Sequence: NO2 Phase: SPAN



Nitric Oxide

Lakeland Industry & Community Association - St. Lina Site

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

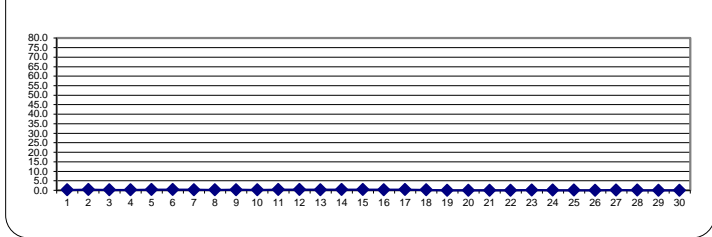
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

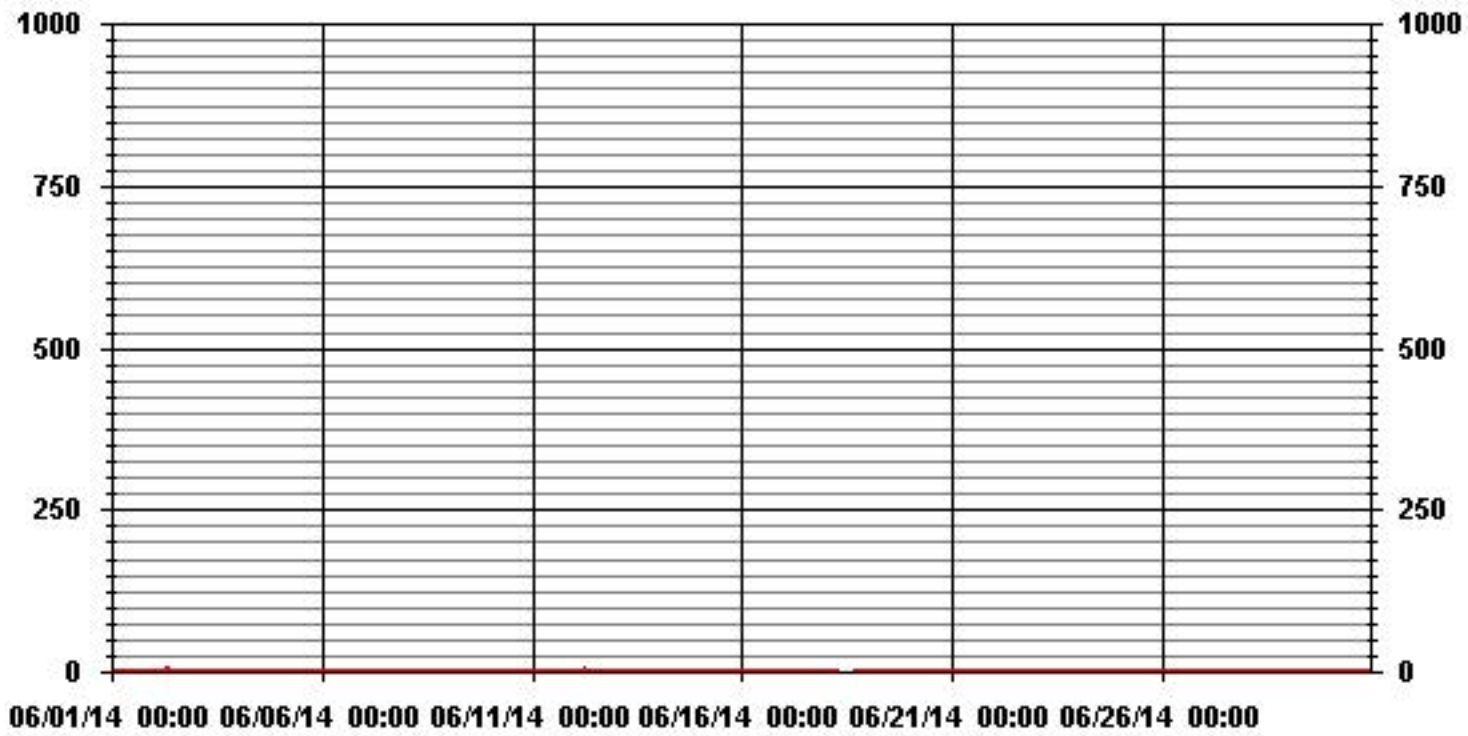
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA				
NUMBER OF NON-ZERO READINGS:	446				
MAXIMUM 1-HR AVERAGE:	1.5	PPB	@ HOUR(S)	5	ON DAY(S) 11
MAXIMUM 24-HR AVERAGE:	0.4	PPB			ON DAY(S) 15
					VAR-VARIOUS
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.22		MONTHLY AVERAGE:	0.20	PPB

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



— LICA31 NO_ PPB

Lakeland Industry & Community Association - St. Lina Site

JUNE 2014

NITRIC OXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
1	S	0.7	0.6	0.7	0.7	0.9	1.5	1.1	1.3	0.9	1.7	1.1	1	1.1	0.6	0.7	0.7	0.7	0.8	1	0.7	0.8	0.9	S	1.7	0.9	24	
2	0.8	0.7	0.7	0.5	1	1.5	1.4	2.8	2.2	2.2	1.2	1	0.8	1.3	1.3	0.7	0.8	1	12.8	1.9	0.7	0.7	S	0.9	12.8	1.7	24	
3	0.7	0.6	0.7	0.6	0.7	0.8	0.9	1.2	1.5	1.3	1.1	1	0.8	0.7	0.8	0.8	0.8	0.5	0.7	0.7	0.9	S	0.9	0.7	1.5	0.8	24	
4	0.6	0.7	0.6	0.7	0.7	0.6	0.9	1.5	0.9	1.3	1.2	0.9	0.8	1.1	0.9	1	0.9	0.8	0.8	0.8	S	1	0.7	0.7	1.5	0.9	24	
5	0.6	0.9	0.6	0.6	0.8	1.1	0.8	1.5	1.1	1.1	1.1	1.4	1	1.4	1.3	1.3	1	1.1	2.5	S	1.1	1	1.1	1.1	2.5	1.1	24	
6	1.1	1.1	0.9	1.1	1	0.9	2.4	1.5	1.2	2	1.2	1.9	1.2	1	0.7	0.9	1.4	1.1	S	1.3	0.8	0.8	1	1.1	2.4	1.2	24	
7	1	1	0.6	1	0.9	1	12.3	1.3	1.5	1.3	1	11.2	1.2	0.8	9.2	0.6	0.6	S	1	0.8	0.7	2.6	0.7	1	12.3	2.3	24	
8	0.8	0.9	0.9	0.9	1.1	1.1	1	1	0.9	1	0.9	0.7	0.6	0.7	0.9	0.9	S	1.1	0.7	1	0.7	0.9	0.8	0.8	1.1	0.9	24	
9	0.8	0.7	0.8	0.6	0.8	0.9	0.9	1	0.9	1.7	1.4	1.7	0.9	0.7	1.1	S	9.9	0.6	0.8	0.8	0.7	0.7	0.8	0.9	9.9	1.3	24	
10	0.7	0.9	0.6	0.7	0.9	21.9	1.3	0.7	P	1	0.8	1.1	1.1	S	1.1	1	0.8	0.8	0.7	0.9	1	1	1	1	21.9	1.9	23	
11	0.6	0.9	1	0.7	1.1	33.9	3.8	3.8	2.4	1.1	1.4	1.2	1.2	S	1.1	1.1	1.5	0.8	0.7	1.1	1	1	1	1	33.9	2.8	24	
12	0.7	1	0.7	0.9	1.3	1.4	2.2	2.1	1.9	1.4	1.4	0.9	S	1.1	1.2	0.9	0.9	1	0.8	0.9	0.7	1	1	0.8	2.2	1.1	24	
13	1	0.9	1	0.8	0.9	1.1	1.1	1.4	1.1	1.1	1	S	1.1	0.9	1	1	0.7	0.9	1.1	0.8	2	1	1.1	0.8	2	1.0	24	
14	0.7	0.8	0.9	0.9	0.8	2.4	18.6	1.6	1.1	0.8	S	1.4	1.1	1.1	1.5	0.9	1	1	1.1	0.7	0.8	0.9	0.7	1.1	18.6	1.8	24	
15	1.2	0.7	1	1.1	1.1	1.3	1.5	1.4	1.3	S	1.2	1	0.9	0.9	1.3	1	1.1	1	0.9	1	1	0.7	0.8	1.1	1.5	1.1	24	
16	1.3	0.9	0.9	1	1.1	1.2	1.1	1.3	S	1.1	0.9	0.9	1.1	0.7	1.3	1	1	0.8	0.8	1	1.1	1	1	0.9	1.3	1.0	24	
17	1.1	0.9	1	1.1	1.1	1.3	1	S	1	1.1	1	0.8	1	0.9	1	1	0.8	1	0.8	1.1	1.1	1	0.9	0.8	1.3	1.0	24	
18	0.8	1	1.1	1	0.7	1.6	S	1.6	C	C	C	C	C	C	C	C	C	C	C	0.5	0.4	0.5	0.4	0.6	0.4	1.6	0.8	24
19	0.6	0.6	0.5	0.4	0.6	S	0.7	0.7	0.6	0.4	0.4	0.5	0.4	0.5	0.5	0.4	0.4	0.7	0.4	0.7	0.5	0.4	0.4	0.6	0.7	0.5	24	
20	0.5	0.4	0.5	1	S	0.7	1.1	0.8	0.7	0.6	0.4	0.8	0.5	0.3	0.5	0.6	0.2	0.2	0.4	0.5	0.5	0.5	0.7	0.5	1.1	0.6	24	
21	0.6	0.7	0.5	S	0.7	0.6	0.2	0.3	0.6	0.4	0.8	0.8	0.7	0.5	0.5	0.8	0.8	0.7	0.7	0.7	0.5	0.9	0.7	0.5	0.9	0.6	24	
22	0.5	0.2	S	0.6	0.6	0.6	1.5	0.7	0.7	0.8	0.6	1.1	0.8	0.6	0.6	0.7	0.6	0.5	0.6	0.6	0.5	0.5	0.6	0.8	1.5	0.7	24	
23	0.5	S	0.7	0.4	0.7	0.8	1.1	1.3	1.1	1.1	0.7	0.6	0.6	0.5	0.6	0.5	0.6	0.7	0.4	0.3	0.6	0.6	0.6	0.6	1.3	0.7	24	
24	S	0.7	0.5	0.5	0.4	1	1	1.1	0.8	0.5	0.5	0.6	0.5	0.5	0.6	0.5	0.7	0.3	0.6	0.7	0.6	0.5	0.6	S	1.1	0.6	24	
25	0.9	0.7	0.7	0.8	0.7	0.8	0.9	1	0.6	0.5	0.4	0.7	0.5	0.4	0.5	0.4	0.4	0.5	0.6	0.3	0.3	S	0.8	1	0.6	24		
26	0.5	0.5	0.6	0.5	0.6	0.5	0.7	0.5	1.8	1	0.2	0.6	0.4	0.7	0.4	1.2	1.2	2	0.7	0.7	0.4	S	0.7	0.4	2	0.7	24	
27	0.4	0.4	0.6	0.5	1.1	0.7	1.5	1	0.8	0.8	0.7	0.7	0.8	0.9	0.8	1.7	1	1.1	2.8	1	S	0.7	0.7	0.7	2.8	0.9	24	
28	0.5	0.5	0.7	0.5	0.8	0.7	0.7	1.1	0.7	0.4	1.1	0.8	1.1	0.9	0.8	0.9	0.6	0.6	S	0.8	0.8	0.6	0.7	1.1	0.7	24		
29	0.5	0.5	0.5	0.2	0.4	0.8	0.7	0.7	0.5	0.7	0.5	1	0.7	0.8	0.5	0.5	0.8	0.6	S	2.2	0.7	0.7	0.7	0.6	2.2	0.7	24	
30	0.6	0.6	0.5	0.6	0.7	0.7	0.6	0.8	0.6	0.5	0.6	1.2	1.4	1.3	0.7	0.4	0.6	S	0.7	1.2	1.5	14.1	0.3	0.9	14.1	1.4	24	
HOURLY MAX	1	1	1	1	1	34	19	4	2	2	2	11	1	1	9	2	10	2	13	2	2	14	1	1				
HOURLY AVG	0.7	0.7	0.7	0.7	0.8	2.9	2.2	1.3	1.1	1.0	0.9	1.3	0.9	0.8	1.2	0.8	1.1	0.8	1.3	0.9	0.8	1.3	0.8	0.8				

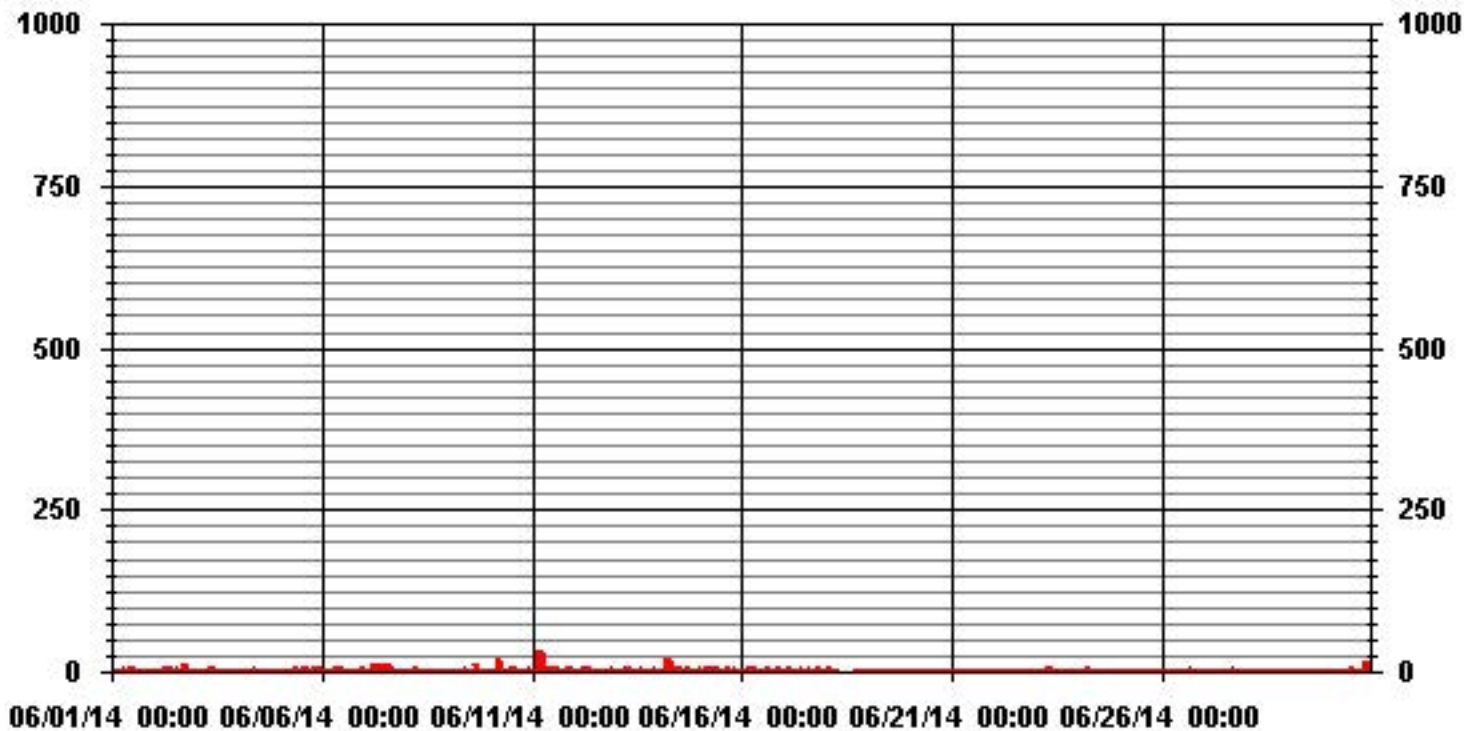
STATUS FLAG CODES

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:	677
MAXIMUM INSTANTANEOUS VALUE:	33.9 PPB @ HOUR(S) 5 ON DAY(S) 11
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	10 HRS
STANDARD DEVIATION:	1.97
OPERATIONAL TIME:	719 HRS

01 Hour Averages



LICA31
 NO_ / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	4.56	2.94	3.09	6.62	7.95	5.59	8.68	6.92	5.74	5.30	3.38	3.97	4.27	8.68	14.13	8.10	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	4.56	2.94	3.09	6.62	7.95	5.59	8.68	6.92	5.74	5.30	3.38	3.97	4.27	8.68	14.13	8.10	

Calm : .00 %

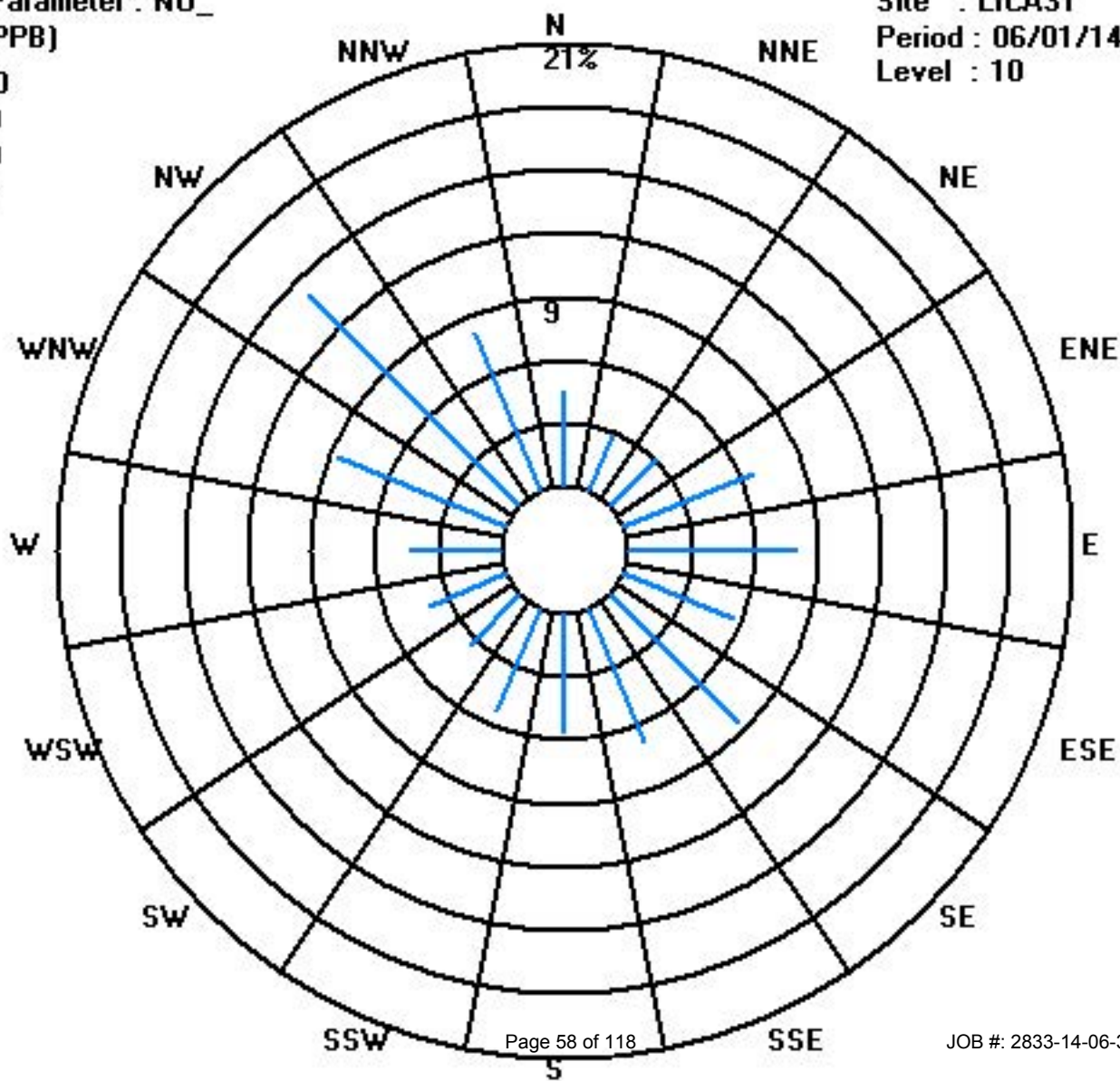
Total # Operational Hours : 679

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	31	20	21	45	54	38	59	47	39	36	23	27	29	59	96	55	679
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	31	20	21	45	54	38	59	47	39	36	23	27	29	59	96	55	

Calm : .00 %

Total # Operational Hours : 679



Oxides of Nitrogen

Lakeland Industry & Community Association - St. Lina Site

JUNE 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	MAX.	AVG.	RDGS.		
DAY																													
1		S	0.6	0.9	1.3	1.8	1	1.9	2	1.8	1.2	1.4	0.7	0.5	0.6	0.9	0.7	0.7	0.9	0.7	0.3	0.2	0.5	S	2	1.0	24		
2		2.7	2.7	3.2	2.9	3.3	3.1	3.7	5.4	5.9	6.2	4.7	3.6	3	2.8	3	2.8	2.3	2.7	3.5	3.2	2.7	2.5	S	1.7	6.2	3.4	24	
3		2	2.3	2.2	2.4	2.8	2.2	2.3	2.8	3.1	2	1.4	1.3	0.6	0.5	0.9	0.7	0.7	0.4	0.7	0.5	1.1	S	0.6	0.5	3.1	1.5	24	
4		0.5	0.3	0.3	0.4	0.2	0.3	0.6	0.6	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.1	S	0.3	0	0.1	0.6	0.3	24		
5		0.1	0.1	0.1	0.6	0.7	0.5	0.5	1.1	0.8	0.5	0.5	0.6	0.4	0.6	0.6	0.5	0.4	0.4	0.5	S	0.4	0.3	0.5	0.5	1.1	0.5	24	
6		0.3	0.4	0.4	0.4	0.3	0.3	0.6	0.5	0.4	0.7	0.3	0.5	0.4	0.3	0.2	0.3	0.3	0.4	S	0.3	0.6	0.5	0.6	1.2	1.2	0.4	24	
7		0.9	0.8	0.6	0.8	0.6	0.8	1.5	0.9	1	0.7	0.2	0.4	0.4	0.1	0.3	0.1	0.1	S	0.3	0.3	0.2	0.1	0.6	0.1	0.7	1.5	0.5	24
8		0.6	0.6	0.2	0.2	0.4	0.3	0.4	0.4	0.2	0.3	0.1	0.2	0	0.2	0.2	0.3	S	0.3	0.1	0.2	0.3	1.1	1.7	1.6	1.7	0.4	24	
9		1.1	1.6	2.6	2.2	2.4	3	3	2.9	3.2	3.2	2.4	1.9	0.6	0.2	0.3	S	1.3	0.9	1	0.9	0.9	1.2	1.2	0.9	3.2	1.7	24	
10		0.8	1	0.8	0.8	1.1	1.8	1.1	1	1.1	0.8	0.9	0.8	1	S	0.5	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.5	0.3	1.8	0.7	24	
11		0	0.1	0.5	0.4	0.4	1.9	1.2	1.4	0.6	0.4	0.5	0.2	0.2	S	0.5	0.3	0.4	0.2	0.3	0.3	0.4	0.3	0.9	2	2	0.6	24	
12		1.6	2.1	1.4	1.7	2.2	2.3	3.6	2.3	1.5	1.4	1.1	0.5	S	0.6	0.4	0.3	0.3	0.4	0.3	0.4	0.7	1.2	1.1	1.3	3.6	1.2	24	
13		1.5	2.1	2.7	2	1.1	1.6	1.2	1.4	0.9	0.9	0.5	S	0.5	0.2	0.2	0.2	0.2	0.2	0.4	0.1	1.5	1.1	1	0.4	2.7	1.0	24	
14		1.1	2	2.7	3.1	3.2	3.3	3.8	2.1	1.5	0.9	S	1.6	1.4	1.6	1.7	1.2	1.3	1.3	1.4	1.2	1.4	1.5	1.9	2.1	3.8	1.9	24	
15		2	2.3	2.9	3.5	4.4	5	3.3	2.9	2.5	S	0.4	0.5	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.6	5	1.5	24	
16		0.9	1.6	1.8	1.9	1.4	1	1.2	1.4	S	0.4	0.2	0.3	0.2	0.2	0.4	0.3	0.3	0.1	0.1	0.3	0.5	0.5	0.5	0.5	1.9	0.7	24	
17		0.7	0.4	0.6	0.7	0.6	0.7	0.5	S	1.4	1.3	1.2	1.2	1.5	1.6	1.5	1.8	1.5	1.8	1.6	1.8	2	2	2.4	2.6	2.6	1.4	24	
18		2	3.2	4.7	4.6	4.1	4.2	S	1.8	C	C	C	C	C	C	C	C	C	C	0.9	0.7	0.4	0.8	0.7	0.8	0.6	4.7	2.1	24
19		0.7	0.8	0.9	1.2	1.4	S	1.9	1.7	1.4	0.8	0.7	0.6	0.5	0.3	0.3	0.5	0.5	0.7	0.7	0.7	1	1	0.8	1.1	1.9	0.9	24	
20		1	1	1.1	0.7	S	1.1	1.6	1.5	0.8	0.5	0.4	0.5	0.5	0.6	0.7	0.6	0.8	0.5	0.8	0.7	1	1.2	1.7	1.7	1.7	0.9	24	
21		1.9	1.3	0.6	S	0.8	0.6	0.2	0.2	0.4	0.3	0.3	0.3	0.2	0.1	0.3	0.6	0.5	0.7	0.9	0.8	0.6	0.7	0.5	1.1	1.9	0.6	24	
22		1.3	1.1	S	1.7	1.8	1.4	1.3	0.9	0.6	0.8	0.6	0.6	0.6	0.4	0.4	0.4	0.1	0.1	0.2	0.4	0.6	0.3	0.3	0.4	1.8	0.7	24	
23		1.2	S	2.7	3.5	4.2	4.3	4	3.6	2.6	2.3	1.3	0.6	0.5	0.5	0.4	0.4	0.7	0.9	0.7	0.5	0.6	0.6	0.4	1	4.3	1.6	24	
24		S	2	3.6	3.4	3.1	2.9	2.1	1.3	1.1	0.6	0.4	0.6	0.5	0.6	0.5	0.6	0.6	0.5	0.6	0.7	0.7	1	1.3	S	3.6	1.3	24	
25		2.8	2.5	3.2	3.6	3.6	3.3	3.2	2.9	2.6	2.8	2.8	2.9	2.3	2	1.9	1.7	1.4	1.3	1.8	2.1	2	1.8	S	1.1	3.6	2.4	24	
26		0.8	0.7	0.6	0.6	0.5	0.3	0.7	0.7	1	0.6	0.4	0.6	0.2	0.3	0.1	0.6	0.4	0.5	0.5	0.7	0.2	S	0.7	0.7	1	0.5	24	
27		0.8	0.4	0.4	1.8	2.2	0.6	1	0.9	0.6	0.7	0.9	0.7	0.7	0.7	0.5	1	0.8	0.7	2.2	2	S	2.6	4.1	2.7	4.1	1.3	24	
28		2.2	2.8	3.7	3	2.7	3	2.5	2.8	2.4	1.9	2.1	1.7	1.8	1.9	1.6	1.7	1.8	1.5	1.8	S	2.1	2.5	2.6	2.2	3.7	2.3	24	
29		2.1	2.2	2.3	2.1	1.7	1.9	1.8	1.6	1.6	1.7	1.7	1.8	1.8	2	2.2	2.4	2.6	2.7	S	3.5	2.9	2.4	2.1	2	3.5	2.1	24	
30		1.8	1.9	1.8	1.6	1.7	1.7	1.6	1.7	1.4	1.6	1.8	2.3	1.9	1.8	1.8	1.6	1.7	S	1.6	1.9	2.3	2.2	1.6	1.9	2.3	1.8	24	
HOURLY MAX		3	3	5	5	4	5	4	5	6	6	5	4	3	3	3	3	3	3	4	4	3	3	4	3				
HOURLY AVG		1.3	1.4	1.7	1.8	1.9	1.9	1.8	1.7	1.5	1.3	1.1	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	1.0	1.1	1.1	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

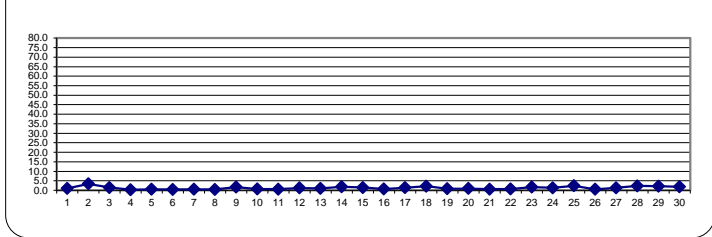
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

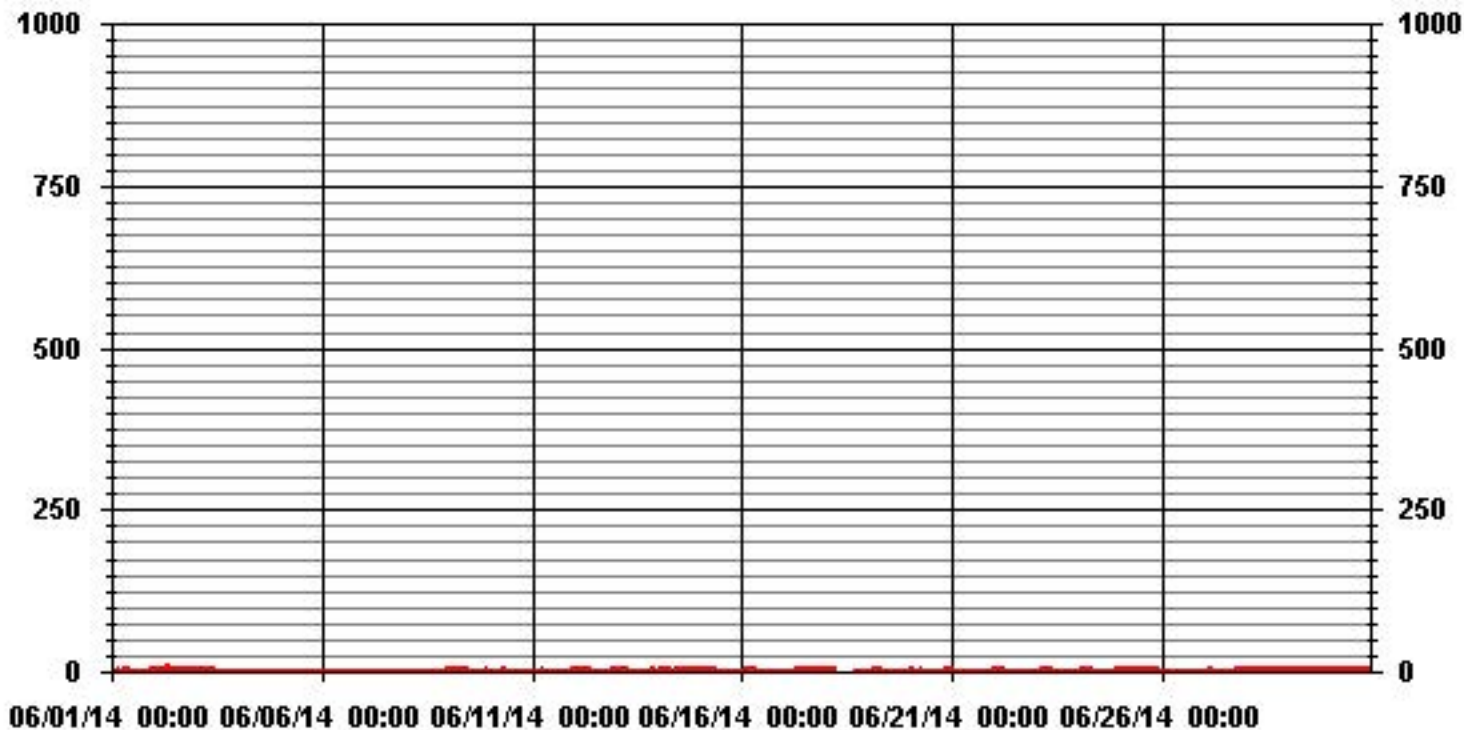
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	676					
MAXIMUM 1-HR AVERAGE:	6.2	PPB	@ HOUR(S)	9	ON DAY(S)	2
MAXIMUM 24-HR AVERAGE:	3.4	PPB			ON DAY(S)	2
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	1.03		MONTHLY AVERAGE:	1.23	PPB	

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



— LICA31 NOX_ PPB

Lakeland Industry & Community Association - St. Lina Site

JUNE 2014

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	S	1.3	2.8	3	3	1.6	2.9	2.7	2.6	1.7	3.9	2.3	1.5	1.5	1.3	1.6	1.4	1.3	1.5	1.5	1	0.9	1.2	S	3.9	1.9	24	
2	3.4	3.5	5.4	3.5	4.1	5	4.8	8.4	8	7.9	5.8	4.4	4	5.4	4.4	4	2.9	3.9	22.4	7.9	3.3	3.3	S	2.3	22.4	5.6	24	
3	2.7	2.8	3.1	3.8	4.3	2.7	2.8	3.4	4	3	2.2	2.1	1.5	1.3	1.3	1.6	1.3	0.9	1.5	1.4	1.7	S	1.2	1.2	4.3	2.3	24	
4	1.2	0.8	1	0.9	0.8	1.1	1.4	1.7	0.7	1.9	0.9	0.5	0.7	0.7	0.7	0.8	0.9	0.9	0.8	1.1	S	0.9	0.7	0.5	1.9	0.9	24	
5	0.6	0.6	0.6	1.5	1.3	1.6	1.1	2.4	1.6	1.1	1.3	1.4	1	1.1	1.1	1	1.1	0.9	2.6	S	0.8	0.5	0.6	0.7	2.6	1.2	24	
6	0.6	0.7	0.7	0.9	0.7	0.6	2.4	1.9	1.3	2.9	1	2.3	0.7	1.1	0.4	0.4	1.9	1.3	S	3.4	1.6	1.4	1.4	1.8	3.4	1.4	24	
7	1.6	2	1.1	1.4	1.5	1.3	23	1.7	2	2	0.9	17.3	1.1	0.7	11.5	0.2	0.4	S	1.7	0.5	0.9	7.9	0.9	1.3	23	3.6	24	
8	1.3	1.5	0.8	0.8	1.4	0.8	1	1	0.7	0.6	0.6	0.4	0.3	0.4	0.7	0.6	S	0.7	0.6	0.9	0.9	2.1	2.5	2.3	2.5	1.0	24	
9	1.9	3.1	3.3	3	3.1	3.9	3.8	3.5	4	5.4	3.8	3.6	1.4	0.7	1.1	S	18	1.9	1.6	1.9	1.5	2.2	2.1	1.5	18	3.3	24	
10	1.7	1.6	1.4	1.7	1.6	29.5	3.2	1.6	P	1.7	1.9	1.5	1.6	2	S	0.8	1	0.7	0.9	0.6	0.9	1.1	2.1	0.7	29.5	2.7	23	
11	0.5	0.7	1.3	1.1	1.1	41.5	5.3	6.5	3	0.7	2.1	0.8	1.3	S	1	0.5	2	0.6	0.7	1.2	1.2	0.9	2.6	3.2	41.5	3.5	24	
12	2.6	3.1	2.2	2.5	2.8	3.2	5.5	4.5	4.1	2.5	2.7	1.1	S	1.3	1.1	0.9	0.9	1	1	0.9	1.6	1.8	1.7	2	5.5	2.2	24	
13	2.3	3.1	3.4	3	1.8	2.2	1.9	2.1	1.8	1.4	1.1	S	1.1	0.9	0.7	0.7	0.7	0.7	0.8	0.9	7.7	3.8	3.9	1.1	7.7	2.0	24	
14	2.2	2.9	3.4	3.8	3.8	6.5	36.1	2.8	2.4	1.6	S	2.8	2.1	2.3	3.6	2	1.8	2	2.1	1.9	2.1	2.1	2.9	2.8	36.1	4.2	24	
15	2.7	3.1	3.6	4.2	5.9	6	3.9	3.7	3.4	S	1	1.1	0.9	0.7	0.7	0.7	0.9	0.7	0.5	0.7	0.7	1	1.1	1.4	6	2.1	24	
16	1.9	2.3	2.4	2.6	2.3	1.9	2	2.4	S	1.4	1.2	1.2	1.5	0.5	0.9	0.7	0.9	0.7	0.8	0.9	1.6	1.4	1.2	1.1	2.6	1.5	24	
17	1.5	1.1	1.7	1.6	1.1	1.5	1	S	2.2	1.9	2.3	1.9	2.2	2.2	2.1	2.4	2.3	2.6	2.1	2.7	2.9	2.6	3.1	3.3	3.3	2.1	24	
18	2.7	4.4	5.7	5.6	4.8	4.9	S	3.4	C	C	C	C	C	C	C	C	C	C	1.2	0.9	1.6	1.5	1.7	1.3	5.7	3.1	24	
19	1.3	1.3	1.6	2	2.1	S	2.6	2.4	2	1.5	1.3	1.4	1	0.9	0.9	1.1	1	1.3	1.3	1.5	1.5	1.6	1.5	1.9	2.6	1.5	24	
20	1.8	1.7	2.1	2.6	S	1.6	2.6	2.4	1.6	1.5	1	1.5	1.3	1.5	1.3	1.5	1.3	1.4	1.4	1.4	1.7	1.9	2.4	2.6	2.6	1.7	24	
21	3.4	1.8	1.3	S	1.5	1.5	0.8	1	1.1	0.9	1	1.1	0.8	0.9	1	1.5	1.3	2	1.8	1.3	1.3	3.1	1.7	2.2	3.4	1.5	24	
22	2.1	1.8	S	2.6	2.4	2.2	2.9	1.5	1.4	1.5	1.4	2	1.4	1	1.3	1	0.8	0.7	0.8	1.2	1.7	0.9	1.1	1.3	2.9	1.5	24	
23	2.1	S	3.4	4.7	5	5	5.2	4.3	3.8	3.4	1.9	1.3	1.3	1.1	1.1	1	1.3	1.6	1.4	1.1	2.2	1.1	1.2	1.6	5.2	2.4	24	
24	S	3.1	4.6	4.3	3.7	3.9	2.8	2	1.8	1.3	1.2	1.3	1.2	1.1	1.1	1.4	1.3	1.1	1.4	1.4	1.5	1.9	S	S	4.6	2.1	24	
25	3.6	3.2	4.1	4.3	4.3	4.4	3.9	3.4	3.5	3.4	3.5	3.5	3	2.8	2.7	2.5	2	2	2.6	3.2	3.2	2.5	S	1.9	4.4	3.2	24	
26	1.6	1.3	1.5	1.3	1.1	1.3	1.6	1.3	3.6	1.7	1.1	1.7	0.9	1.5	1	2.2	2.3	3.3	1.7	3	1	S	2.1	1.5	3.6	1.7	24	
27	2.2	1.1	0.9	3.1	3.7	1.5	3.3	1.9	1.7	1.4	1.8	1.6	2	1.9	1.1	2.6	2.4	2.5	8.8	4.5	S	4.4	5.3	3.5	8.8	2.7	24	
28	3	3.6	4.7	3.9	3.6	3.9	3.3	4	3.3	2.9	3.1	2.4	4	3.3	2.5	2.6	3.4	2.3	2.6	S	3.1	3.2	3.2	3	4.7	3.3	24	
29	2.8	2.8	3	2.9	2.3	2.6	2.5	2.3	2.4	2.6	2.5	3	4	2.7	3.1	2.8	3.2	3.4	3.6	S	6.7	4.4	4.1	2.9	2.8	6.7	3.1	24
30	2.4	2.5	2.4	2.4	2.4	2.4	2.6	2.5	2.3	2.5	3	4	4.2	3.9	2.8	2.3	2.9	S	3.5	3.8	4.7	21.2	2.5	3.1	21.2	3.8	24	
HOURLY MAX	4	4	6	6	6	42	36	8	8	8	6	17	4	5	12	4	18	4	22	8	8	21	5	4				
HOURLY AVG	2.1	2.2	2.5	2.7	2.7	5.0	4.7	2.9	2.6	2.2	2.0	2.5	1.7	1.6	1.9	1.5	2.2	1.6	2.5	2.1	2.1	2.9	2.0	1.9				

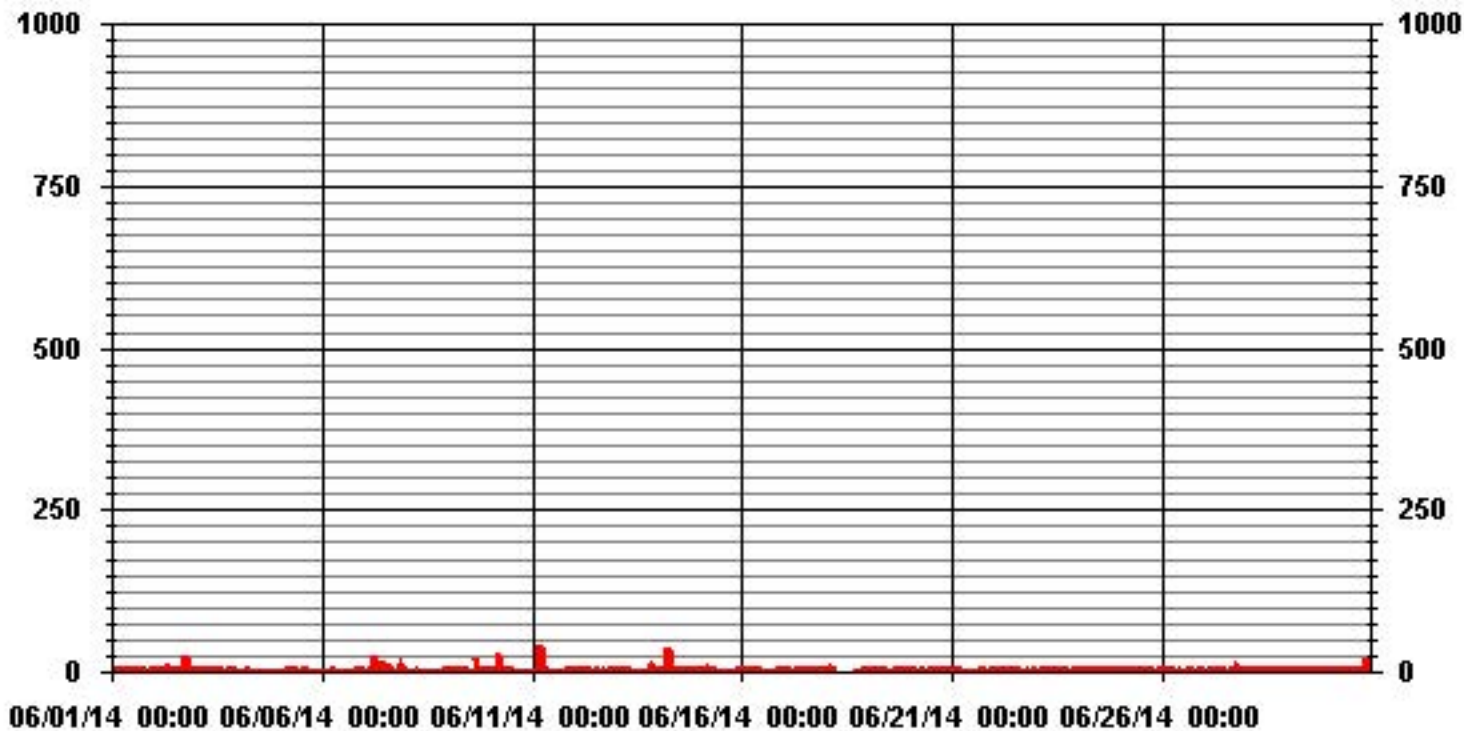
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	677					
MAXIMUM INSTANTANEOUS VALUE:	41.5	PPB	@ HOUR(S)	5	ON DAY(S)	11
	VAR-VARIOUS					
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	10	HRS				
STANDARD DEVIATION:	3.07					

01 Hour Averages



— LICA31 NOXMAX PPB

LICA31
NOX_ / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	4.56	2.94	3.09	6.62	7.95	5.59	8.68	6.92	5.74	5.30	3.38	3.97	4.27	8.68	14.13	8.10	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	4.56	2.94	3.09	6.62	7.95	5.59	8.68	6.92	5.74	5.30	3.38	3.97	4.27	8.68	14.13	8.10	

Calm : .00 %

Total # Operational Hours : 679

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	31	20	21	45	54	38	59	47	39	36	23	27	29	59	96	55	679
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	31	20	21	45	54	38	59	47	39	36	23	27	29	59	96	55	

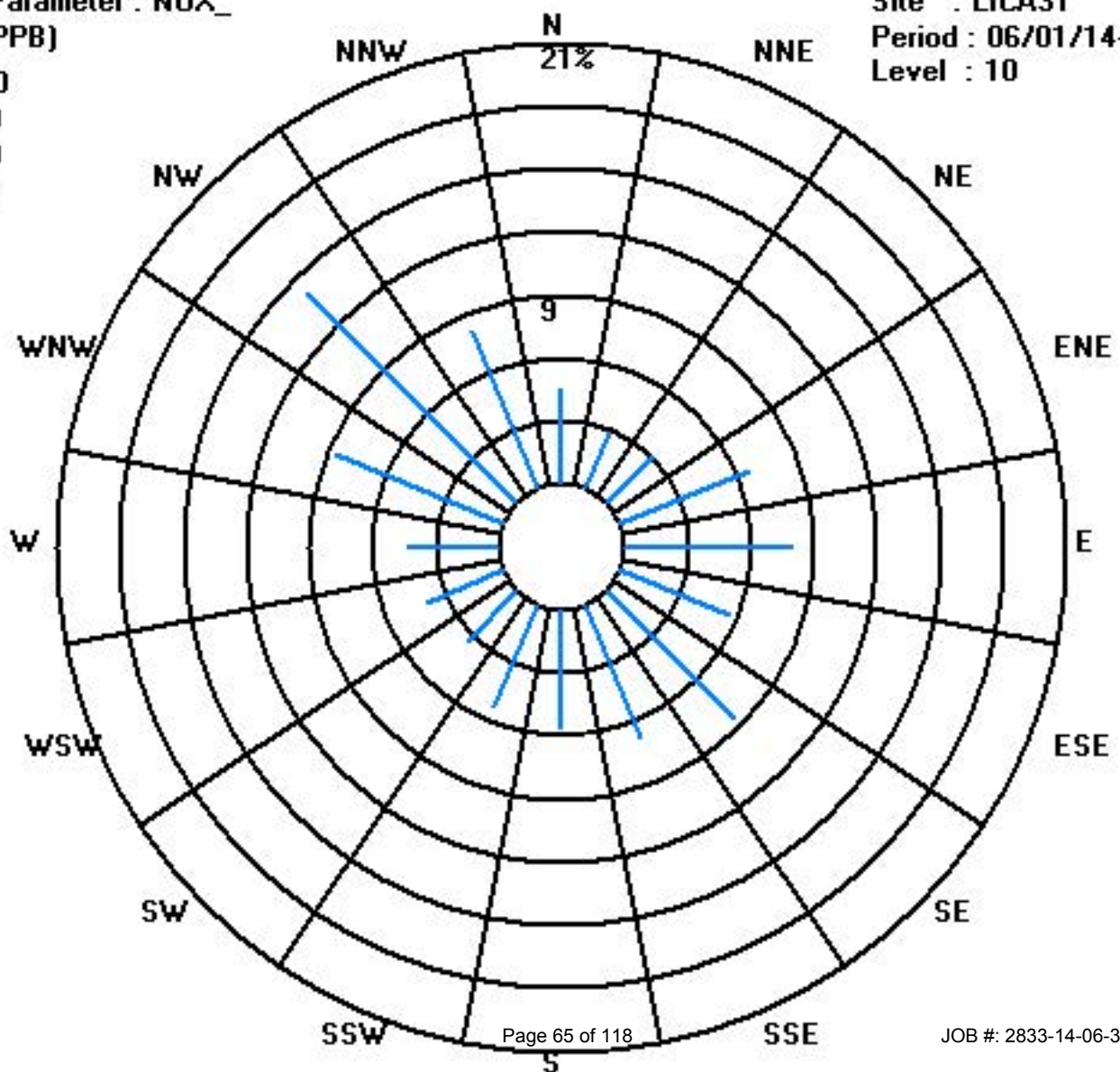
Calm : .00 %

Total # Operational Hours : 679

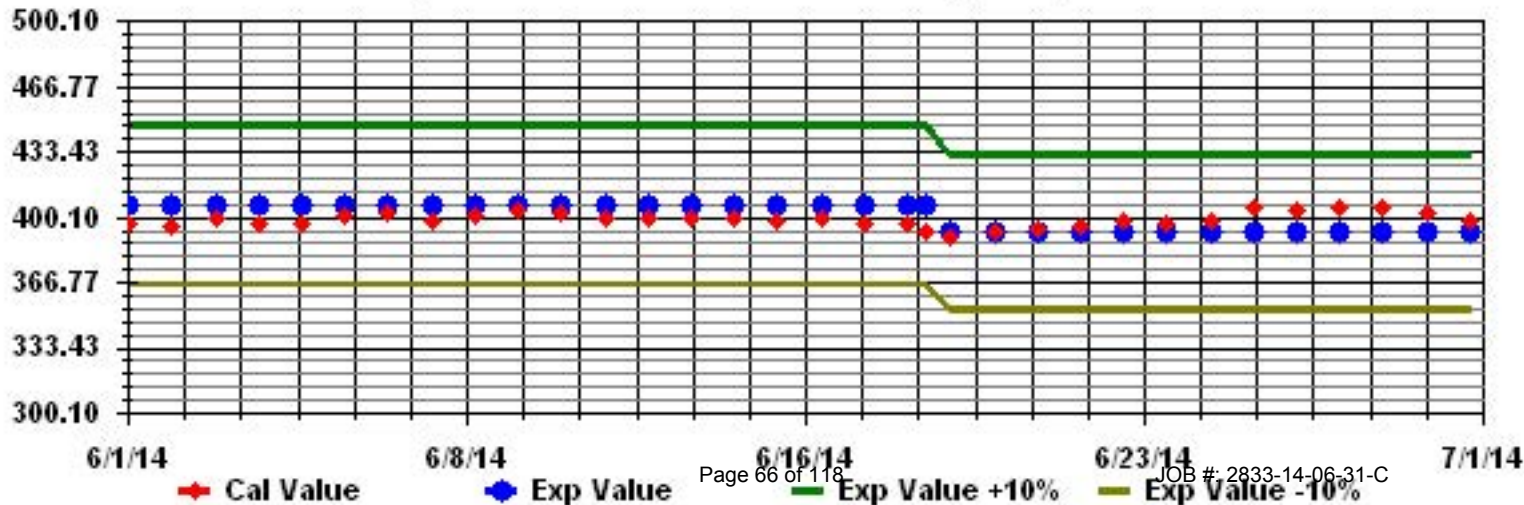
Class Limits (PPB)

Period : 06/01/14-06/30/14

Level : 10



Calibration Graph for Site: LICA31 Parameter: NOX_ Sequence: NO2 Phase: SPAN



Particulate Matter 2.5

Lakeland Industry & Community Association - St. Lina Site

JUNE 2014

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

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.	
DAY																												
1		3	4	6	5	6	6	4	6	5	4	2	1	1	4	7	3	4	3	2	2	0	0	2	2	7	3.4	24
2		4	5	7	8	8	10	8	5	8	6	5	2	2	3	3	1	3	4	6	5	6	5	4	5	10	5.1	24
3		5	5	5	5	5	5	7	6	4	4	3	3	2	3	4	3	4	2	4	2	2	3	4	1	7	3.8	24
4		3	4	3	3	3	4	6	3	3	2	0	1	0	0	2	2	2	0	5	2	2	1	1	1	6	2.2	24
5		0	0	1	1	2	1	0	2	1	1	1	2	2	0	0	1	2	0	2	2	2	2	2	2	2	1.2	24
6		2	2	2	1	2	2	2	0	0	0	0	0	0	1	2	3	2	3	3	3	2	3	3	3	3	1.7	24
7		3	2	2	2	4	3	2	0	1	0	0	0	1	0	0	5	1	3	0	1	1	1	2	6	6	1.7	24
8		4	2	3	3	2	2	3	1	0	0	0	1	1	0	2	2	X	0	2	3	5	1	1	1	5	1.7	23
9		1	1	1	0	3	3	5	3	3	2	3	4	4	4	1	1	1	1	1	1	1	1	1	0	5	1.9	24
10		1	1	0	0	1	1	1	0	0	1	0	1	0	1	2	2	0	0	4	1	2	2	2	2	4	1.0	24
11		3	2	2	1	2	5	0	0	0	0	2	3	2	1	2	3	1	0	1	0	0	2	3	2	5	1.5	24
12		1	2	2	2	3	2	2	4	1	0	6	2	1	2	2	1	2	2	2	2	2	3	2	3	6	2.1	24
13		4	3	4	6	6	4	5	5	6	5	3	2	3	2	4	4	4	3	5	5	4	2	2	3	6	3.9	24
14		2	3	5	7	6	2	2	2	4	4	1	3	3	3	3	1	3	5	3	2	0	2	2	1	7	2.9	24
15		3	4	4	4	4	3	3	4	3	0	1	5	0	2	3	3	2	1	2	0	5	4	0	1	5	2.5	24
16		3	3	3	3	3	2	1	3	3	0	0	0	0	1	1	0	1	0	2	1	3	2	3	3	3	1.7	24
17		3	2	3	3	2	3	1	2	3	2	1	8	3	4	7	2	0	0	3	4	4	2	3	3	8	2.8	24
18		2	1	3	4	4	3	5	1	8	5	X	0	3	Y	Y	Y	C	C	0	0	0	0	0	0	8	2.2	20
19		1	1	2	2	2	1	0	0	0	0	0	0	1	0	0	1	1	0	0	1	1	0	0	1	2	0.6	24
20		2	2	2	2	3	1	6	0	2	0	3	3	1	7	4	2	1	1	1	3	2	2	1	2	7	2.2	24
21		3	1	0	1	0	0	0	0	0	0	1	1	0	0	1	2	2	1	1	1	1	0	1	2	3	0.9	24
22		4	1	2	1	1	3	2	3	3	1	1	2	3	3	2	3	2	5	5	4	3	4	5	6	6	2.9	24
23		6	7	7	6	6	6	5	6	6	4	2	3	4	1	2	2	6	6	3	3	X	0	3	4	7	4.3	23
24		3	3	4	2	3	3	2	3	5	5	3	2	2	7	5	3	1	1	4	3	2	2	3	2	7	3.0	24
25		1	2	2	2	3	4	4	5	6	4	5	6	4	3	6	3	0	1	3	0	0	0	0	2	6	2.8	24
26		0	0	0	0	0	0	0	0	2	2	2	2	2	0	1	0	1	1	3	3	0	0	1	1	3	0.9	24
27		0	0	1	1	1	2	4	1	5	0	2	2	1	2	C	1	2	2	4	4	3	6	6	4	6	2.3	24
28		3	3	4	4	4	3	4	4	4	3	2	2	3	3	5	6	2	5	5	6	4	6	5	4	6	3.9	24
29		5	5	5	5	4	5	5	6	6	6	9	9	10	16	29	33	43	53	43	36	33	30	14	12	53	17.6	24
30		12	11	13	14	14	14	13	16	23	28	37	42	32	23	22	24	21	32	29	25	20	19	20	20	42	21.8	24
HOURLY MAX		12	11	13	14	14	14	13	16	23	28	37	42	32	23	22	24	21	32	29	25	20	19	20	20	42		
HOURLY AVG		2.9	2.7	3.3	3.3	3.6	3.4	3.4	3.0	3.8	3.0	3.3	3.7	3.0	3.3	4.4	4.0	4.1	4.7	4.9	4.2	3.8	3.5	3.2	3.3			

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

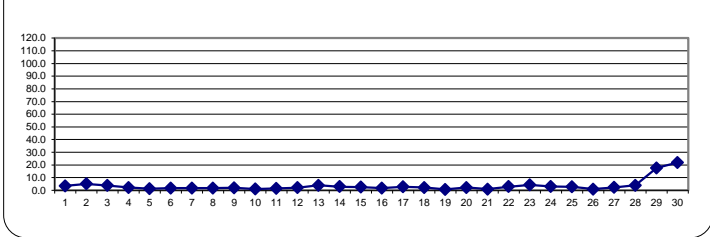
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 24-HR 30 ug/m3

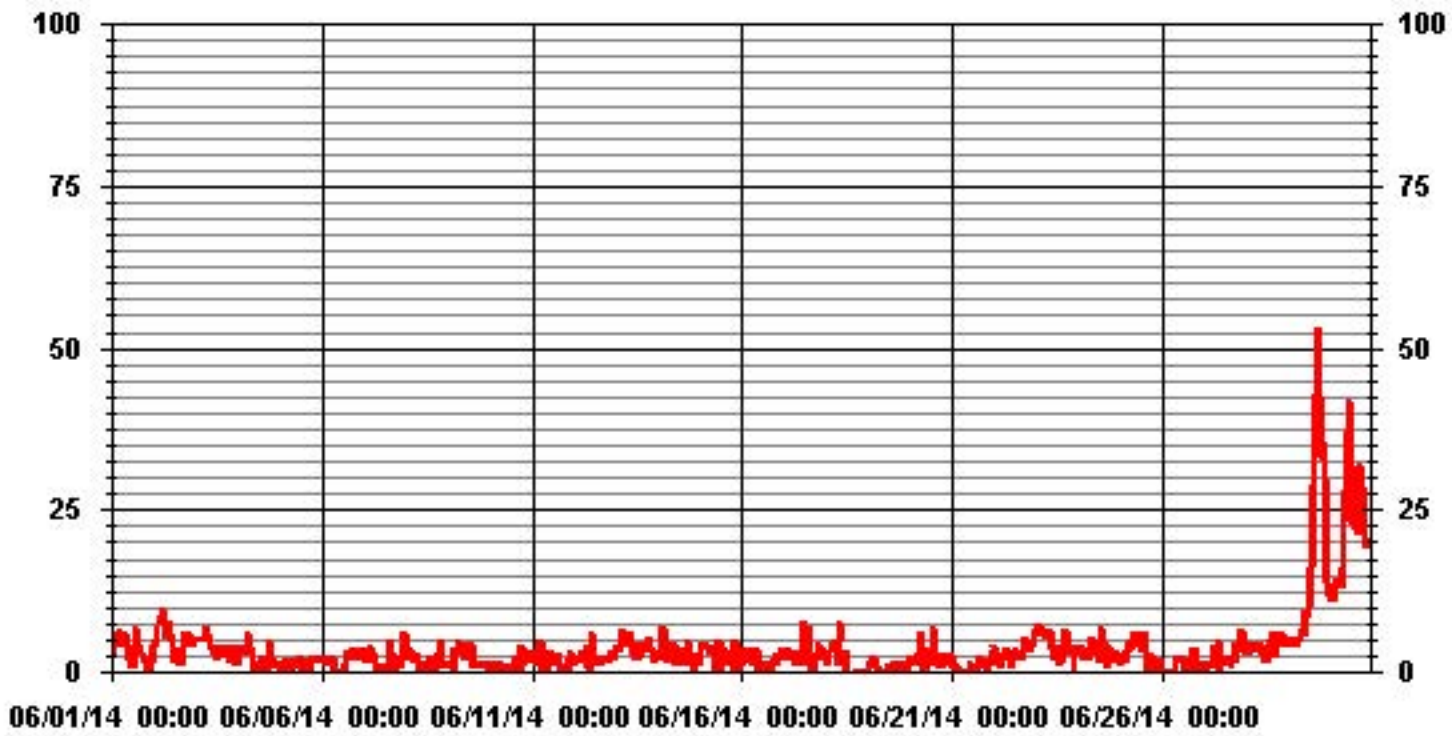
MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	598					
MAXIMUM 1-HR AVERAGE:	53	ug/m3	@ HOUR(S)	17	ON DAY(S)	29
MAXIMUM 24-HR AVERAGE:	21.8	ug/m3			ON DAY(S)	30
					VAR-VARIOUS	
MONTHLY CALIBRATION TIME:	3	HRS			OPERATIONAL TIME:	714 HRS
STANDARD DEVIATION:	5.67				AMD OPERATION UPTIME:	99.2 %
					MONTHLY AVERAGE:	3.57 ug/m3

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



— LICA31 PM2 UG/M3

LICA31
 PM2 / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : PM2
 Units : UG/M3

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 30	4.07	2.95	3.23	6.46	7.73	5.90	9.00	6.89	5.62	5.20	3.23	4.07	4.07	8.72	13.64	7.59	98.45
< 60	.28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.42	.70	1.54
< 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	4.36	2.95	3.23	6.46	7.73	5.90	9.00	6.89	5.62	5.20	3.23	4.07	4.07	8.86	14.06	8.29	

Calm : .00 %

Total # Operational Hours : 711

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 30	29	21	23	46	55	42	64	49	40	37	23	29	29	62	97	54	700
< 60	2													1	3	5	11
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	31	21	23	46	55	42	64	49	40	37	23	29	29	63	100	59	

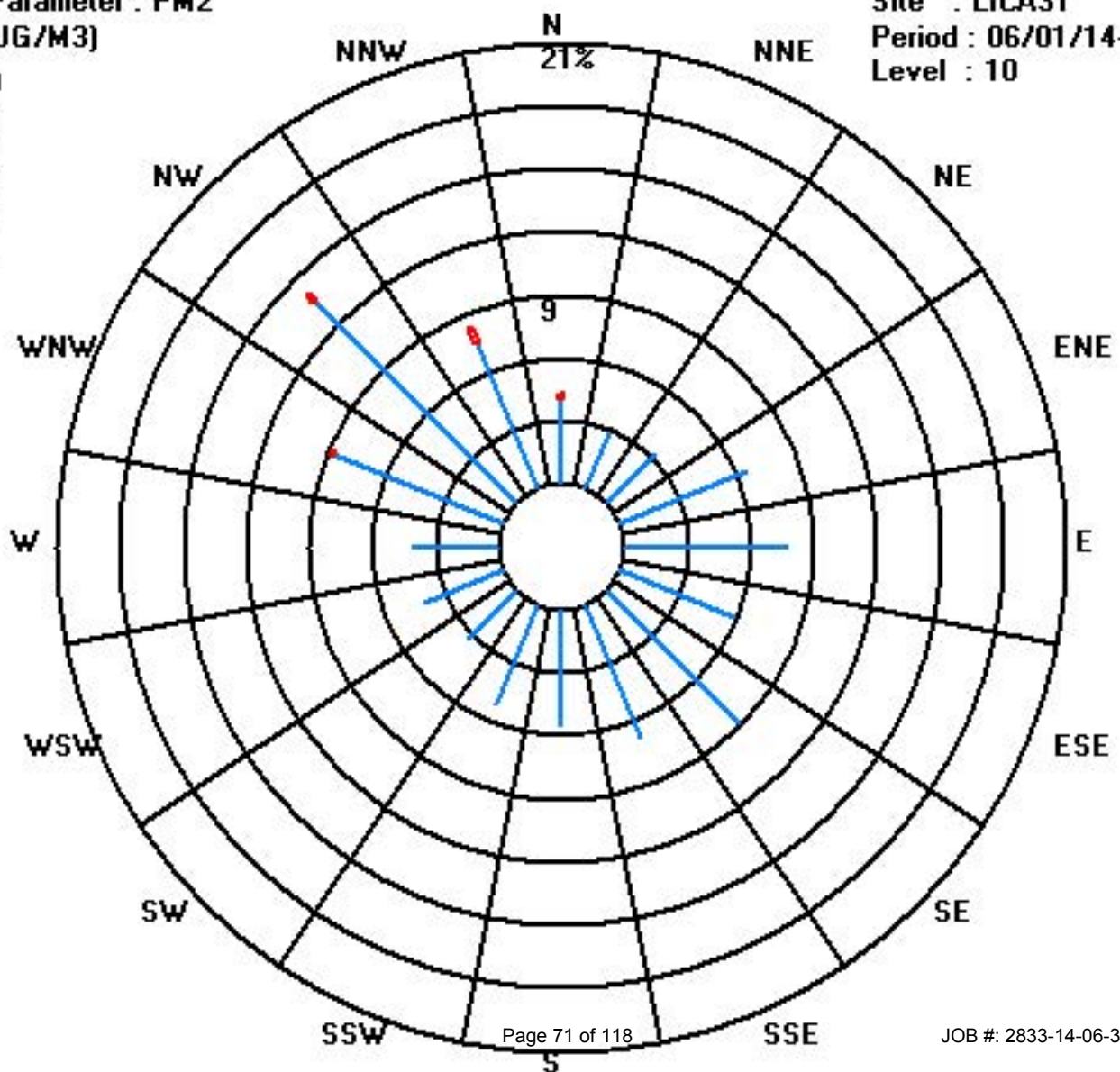
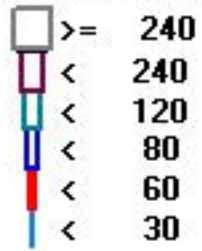
Calm : .00 %

Total # Operational Hours : 711

Class Limits (UG/M3)

Period : 06/01/14-06/30/14

Level : 10



Temperature

Lakeland Industry & Community Association - St. Lina Site

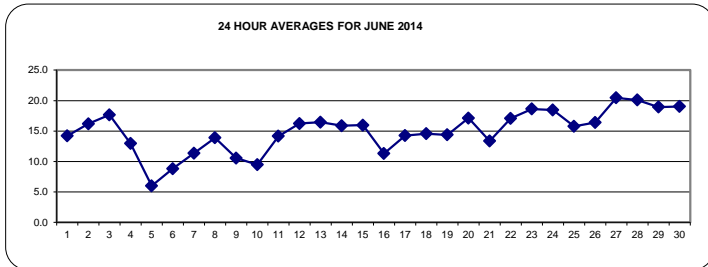
JUNE 2014

AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																												
1		11.4	11.4	11	10	9.4	10.3	13.5	15.6	17.4	19	20.7	22	22.6	22.1	16.7	13.5	12.9	12.7	12.5	11.9	11.3	11.9	10.7	10	22.6	14.2	24
2		9.8	9	8.3	8.1	7.9	10.1	13.2	16.1	17.9	19.6	20	21.3	22	22.2	16.8	17.2	22.2	21.9	21.3	20.5	18.1	15.2	15.4	14.5	22.2	16.2	24
3		13.9	13.1	13.1	12.9	12.9	14.1	16.6	19.2	20.4	21.6	22.2	22.4	22.9	22.7	20.9	23.3	22.3	20.4	18.1	16.6	14.8	14.2	13.5	11.9	23.3	17.7	24
4		11.3	11.3	10.9	10.7	10.5	10.7	11.1	11.3	13.7	15.2	15.7	17.1	17.7	18.7	19.2	18.7	17.9	16.5	11.2	9.7	9	8.3	7.5	7.1	19.2	13.0	24
5		7	6.8	6.8	5.8	5.1	4.8	4.5	4.4	4.6	4.9	5.3	5.7	6.2	7.5	9.1	10	7.9	8	7.5	5.1	5.1	4.8	3.9	3.2	10	6.0	24
6		3	2.4	2.7	3	3.1	3.6	4.6	7.9	10.1	10.6	11.7	12.1	13.4	12.8	13.8	14.4	15.1	12.8	12.8	11.5	9.3	7.6	6.8	6.3	15.1	8.8	24
7		6.3	6.2	5.8	5.2	5.1	7.2	8.5	12	13.2	14.5	16	16.1	16.5	16.5	17.4	15.4	15.7	13.7	12.8	11.5	10.1	9	9.2	8.1	17.4	11.3	24
8		7.6	8.5	8.3	8.2	8.1	9.4	9	11.2	14	16.8	16.6	17.5	17	17.4	18.2	19.6	18.9	18.7	17.5	16.3	14.3	13.5	13.6	13.5	19.6	13.9	24
9		13.2	12.8	11.5	11	10.9	10.8	9.7	9.4	9.6	9.6	10.5	12.6	14.4	14.9	11	10.7	9.5	8.9	8.9	8.9	8.7	8.6	8.7	8.6	14.9	10.6	24
10		8.6	8.6	8.5	8.3	7.8	7.8	8	8.7	9.2	9.2	9.8	10.3	10.8	11.6	12.1	12.8	12.9	12.8	9	9	8.7	7.7	7.7	7.3	12.9	9.5	24
11		6.9	6.5	6.2	5.1	5.6	6.6	10.9	13.7	15.3	16.8	17.6	18.3	18.7	19.2	20.4	20.2	19.2	19.8	18.8	17.7	15.9	14.4	13.4	12.4	20.4	14.2	24
12		11.7	10.5	10.1	9.7	9.5	11.5	13.9	16.3	18.1	18.9	19.3	19.4	20.5	20.7	21	20.9	20.7	20	19.8	18.3	16.3	14.9	14	13.4	21	16.2	24
13		12.6	11.4	10.6	9.6	9.4	11	13.1	15.1	17.1	19.4	20	20.8	22	22.5	22.6	22	21.8	21.2	19.6	18.2	15.4	13.9	12.9	12.1	22.6	16.4	24
14		12.1	10.8	10.1	9.1	8.5	10.8	13.2	16	17.2	18	18.8	19.7	20	20.6	21	21	21.3	20.7	19.2	17.9	15.7	13.8	12.9	12.1	21.3	15.9	24
15		11.3	10.6	10.2	9.6	9.2	11.3	13.7	16.2	18.8	18.7	19.7	20.1	20.4	21	20.7	21.1	21	19.9	18.9	17.4	15.4	13.6	12.4	11.9	21.1	16.0	24
16		12.1	11.3	10.7	10.1	9.6	10.2	11.3	12.2	12.3	12	11.6	12.4	13.2	13.3	12	11.6	11.5	10.8	10.9	10.8	10.4	10.4	10.4	10.5	13.3	11.3	24
17		10.5	10.4	10.4	10.1	10	10.4	11.6	12.8	14.6	15.2	17.1	17.1	16	17.1	17.3	17.3	17	17.4	17.1	16.1	14.8	14.2	13.9	14	17.4	14.3	24
18		13.5	12.3	11.8	12.1	12.7	12.6	14.1	15.2	14.5	17.3	19.3	17.9	17.3	17.1	16.9	16.7	14.6	14.6	14.2	13.4	13.1	12.9	12.7	12.7	19.3	14.6	24
19		12.7	12.8	13	13.1	13.2	13.4	13.5	13.8	14	14.3	14.2	14.8	14.7	15.6	16	16.1	15.9	15.7	15.6	15.4	14.9	14.5	14	13.8	16.1	14.4	24
20		13.9	14.1	13.8	13.6	13.7	13.6	14.5	17.5	19.7	21	22	22.8	21.8	20.6	19.5	19.5	19.6	19.5	17.8	16.4	14.8	14	13.7	13.6	22.8	17.1	24
21		13.5	13.5	13.4	13.7	13.9	13.8	13.4	13.3	13.2	12.8	12.4	13.3	13.7	13.6	13.7	14.4	16.2	14	12.8	13	12.6	12.2	12	12.2	16.2	13.4	24
22		12	11.8	11.6	11.7	11.9	12.1	13.1	15.3	16.4	18.4	19.7	21.3	22.1	22.2	22.5	22	22.2	21.3	19.2	18.5	17.3	16.7	15.8	15	22.5	17.1	24
23		14.3	14.4	14.2	13.9	14	14.3	15.4	17.2	20.3	22.2	23	23.2	24	23.8	24.1	23.5	20.2	19.7	19.6	19.7	18.4	17	15.4	14.8	24.1	18.6	24
24		14.7	14	13.7	13.5	13.5	15	17	18.2	19.2	20.3	21.4	22.1	22.8	22.4	22.2	21.6	21.8	21.6	21	20	18.5	17	16	15.7	22.8	18.5	24
25		15.4	14.8	13.7	13.1	13	14.5	14.8	17.7	18.3	16.6	16.3	16.9	17.9	17.5	17.6	18.2	17.4	16.9	17	15.5	14.3	13.8	13.6	13.7	18.3	15.8	24
26		13.8	13.7	13.6	13.6	13.6	13.4	13.6	14	15.1	15.8	16.3	16.7	18.5	19.3	20.5	20.9	21.3	21.1	19.4	18.4	16.6	15.7	14.7	13.5	21.3	16.4	24
27		13.6	13.7	13.4	11.1	11.9	15.2	20.2	22.1	23.3	23.5	24.1	24.8	25.1	25.6	25.5	25.6	25.2	24.8	23.7	22.4	20.9	19.2	18.4	17.6	25.6	20.5	24
28		17.6	16.3	15.7	14.9	14.6	17.2	20.6	21.9	24.1	25.8	25.4	27.1	25.7	26.6	24.2	17.2	19.5	20.3	20	20.6	18.4	16.9	16.2	15.8	27.1	20.1	24
29		15.2	14.7	14.5	14	13.7	13.8	15.6	18.2	19.5	20.7	21.5	22.1	23.1	23.1	23.8	23.6	23.4	22.2	21.8	20.2	18.7	17.7	17.1	16.2	23.8	18.9	24
30		15.3	15	15	15.1	15	15.3	16.9	18.7	20.3	21	21.6	22.6	23.1	23	23.9	23.7	18.7	20.5	21.1	20.7	19.2	17.9	16.7	16	23.9	19.0	24
HOURLY MAX		17.6	16.3	15.7	15.1	15	17.2	20.6	22.1	24.1	25.8	25.4	27.1	25.7	26.6	25.5	25.6	25.2	24.8	23.7	22.4	20.9	19.2	18.4	17.6			
HOURLY AVG		11.8	11.4	11.1	10.7	10.6	11.5	13.0	14.7	16.0	17.0	17.7	18.4	18.8	19.0	18.7	18.4	18.1	17.6	16.6	15.7	14.4	13.4	12.8	12.3			

STATUS FLAG CODES

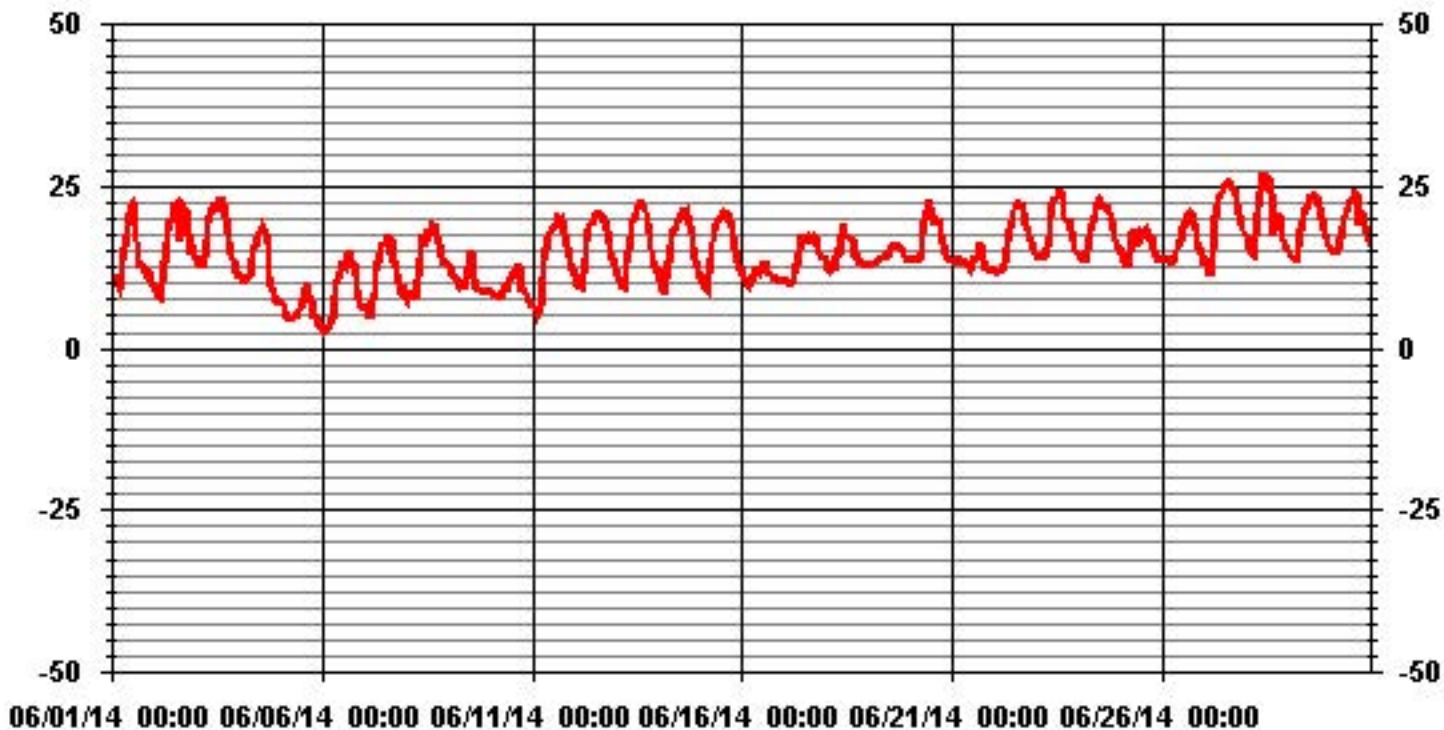
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	2.4 °C	@ HOUR(S)	1	ON DAY(S)	6
MAXIMUM 1-HR AVERAGE:	27.1 °C	@ HOUR(S)	11	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	20.5 °C			ON DAY(S)	27
				VAR-VARIOUS	
OPERATIONAL TIME:				720	HRS
AMD OPERATION UPTIME:				100.0	%
STANDARD DEVIATION:	4.87			MONTHLY AVERAGE:	14.98 °C

01 Hour Averages



— LICA31 TPX DGC

Barometric Pressure

Lakeland Industry & Community Association - St. Lina Site

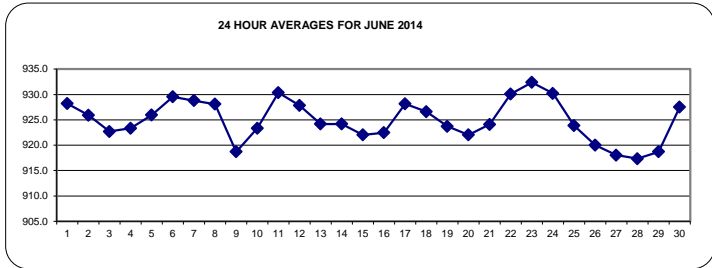
JUNE 2014

BAROMETRIC PRESSURE (BP) hourly averages in millibar

MST																										DAILY	24-HOUR		
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	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	928	928	928	928	928	928	928	929	929	929	929	929	929	929	928	929	928	928	928	928	928	927	927	927	927	929	928.2	24	
2	927	927	926	926	927	926	927	927	927	927	927	927	927	927	926	926	925	925	925	925	925	924	924	924	924	927	925.9	24	
3	923	923	923	923	923	923	923	923	923	924	924	923	923	922	922	922	922	922	922	922	922	922	923	923	924	924	922.7	24	
4	922	923	923	923	923	923	923	924	924	924	924	924	924	924	924	923	923	923	923	923	923	923	923	924	924	924	923.3	24	
5	923	923	923	923	923	923	924	924	924	924	925	925	926	927	927	928	928	929	929	929	929	929	929	929	929	929	929	926.0	24
6	929	929	929	929	929	929	929	930	930	930	930	930	930	930	930	930	930	930	930	930	930	929	929	928	930	929.5	24		
7	928	928	928	928	928	928	928	928	929	929	929	929	929	929	928	929	929	930	930	930	930	929	929	929	930	928.8	24		
8	929	929	929	929	929	929	930	930	930	930	930	930	930	930	929	929	928	928	927	927	926	925	924	924	923	930	928.1	24	
9	922	922	921	920	919	919	918	918	918	917	917	918	918	918	918	918	918	918	918	918	918	919	919	919	919	922	918.7	24	
10	919	919	919	919	919	919	920	921	921	922	922	923	924	924	925	926	926	927	927	927	927	928	928	928	928	928	928	923.3	24
11	928	928	928	929	929	929	930	931	931	931	932	932	932	932	931	931	931	931	931	931	931	930	930	930	930	932	930.3	24	
12	930	929	929	929	929	929	929	929	930	930	929	929	929	928	928	927	927	926	926	926	926	925	925	924	930	927.8	24		
13	924	924	923	923	923	923	924	924	924	924	924	925	925	925	925	924	924	924	924	925	925	925	925	925	925	925	924.2	24	
14	925	924	924	924	924	924	924	925	925	925	925	925	925	925	924	924	924	924	924	924	924	923	923	923	925	924.2	24		
15	923	922	922	922	922	922	922	923	923	923	923	922	922	922	922	922	922	922	922	922	922	921	921	921	921	923	922.0	24	
16	921	921	921	921	921	921	921	922	922	922	922	922	922	922	922	923	923	923	924	924	924	925	925	925	925	925	922.5	24	
17	925	926	926	927	927	927	928	928	929	929	929	929	929	929	929	929	929	929	929	929	929	929	929	928	928	929	928.2	24	
18	927	927	927	927	927	927	927	927	927	927	927	927	927	927	927	927	926	926	926	926	926	926	926	926	926	925	927	926.6	24
19	925	925	924	924	924	924	924	924	924	924	923	923	923	923	924	924	924	924	924	924	923	923	923	923	925	925	923.7	24	
20	923	922	922	922	922	923	923	922	922	922	922	922	922	922	922	922	922	922	922	922	922	922	921	921	923	922.0	24		
21	921	921	921	921	921	921	921	922	922	922	923	924	924	925	925	926	927	927	927	927	928	928	927	927	928	924.1	24		
22	928	928	928	928	929	929	929	930	930	930	930	931	931	931	931	931	931	931	931	931	931	931	931	931	931	931	930.1	24	
23	931	931	931	931	932	932	932	933	933	933	933	933	933	933	933	933	933	933	933	933	933	932	932	932	932	933	932.4	24	
24	932	931	931	931	931	931	932	932	932	932	931	931	931	931	930	930	929	929	929	929	928	928	927	927	932	930.2	24		
25	926	926	925	925	925	925	925	925	925	925	924	924	924	924	924	924	923	923	922	922	922	922	921	926	923.9	24			
26	921	921	921	920	920	920	920	920	920	921	920	920	920	920	920	920	920	920	920	920	920	919	919	919	921	920.0	24		
27	918	918	918	918	918	918	918	918	919	919	919	919	918	918	918	918	918	918	918	918	918	917	917	917	919	918.0	24		
28	917	916	916	916	916	917	917	917	918	918	918	918	918	918	918	918	917	917	918	918	918	918	918	917	918	917.3	24		
29	917	917	917	917	917	917	917	918	918	918	918	919	919	919	919	919	919	919	920	920	921	921	921	922	922	918.7	24		
30	922	922	923	923	924	924	925	926	926	927	927	928	928	929	929	930	930	930	931	931	931	931	931	932	932	927.5	24		
HOURLY MAX	932	931	931	931	932	932	932	933	933	933	933	933	933	933	933	933	933	933	933	933	933	932	932	932	932	932	932	932	
HOURLY AVG	924.5	924.3	924.2	924.2	924.3	924.3	924.6	925.0	925.2	925.3	925.2	925.4	925.4	925.3	925.3	925.2	925.2	925.4	925.3	925.2	925.4	925.3	925.0	924.9	924.8				

STATUS FLAG CODES

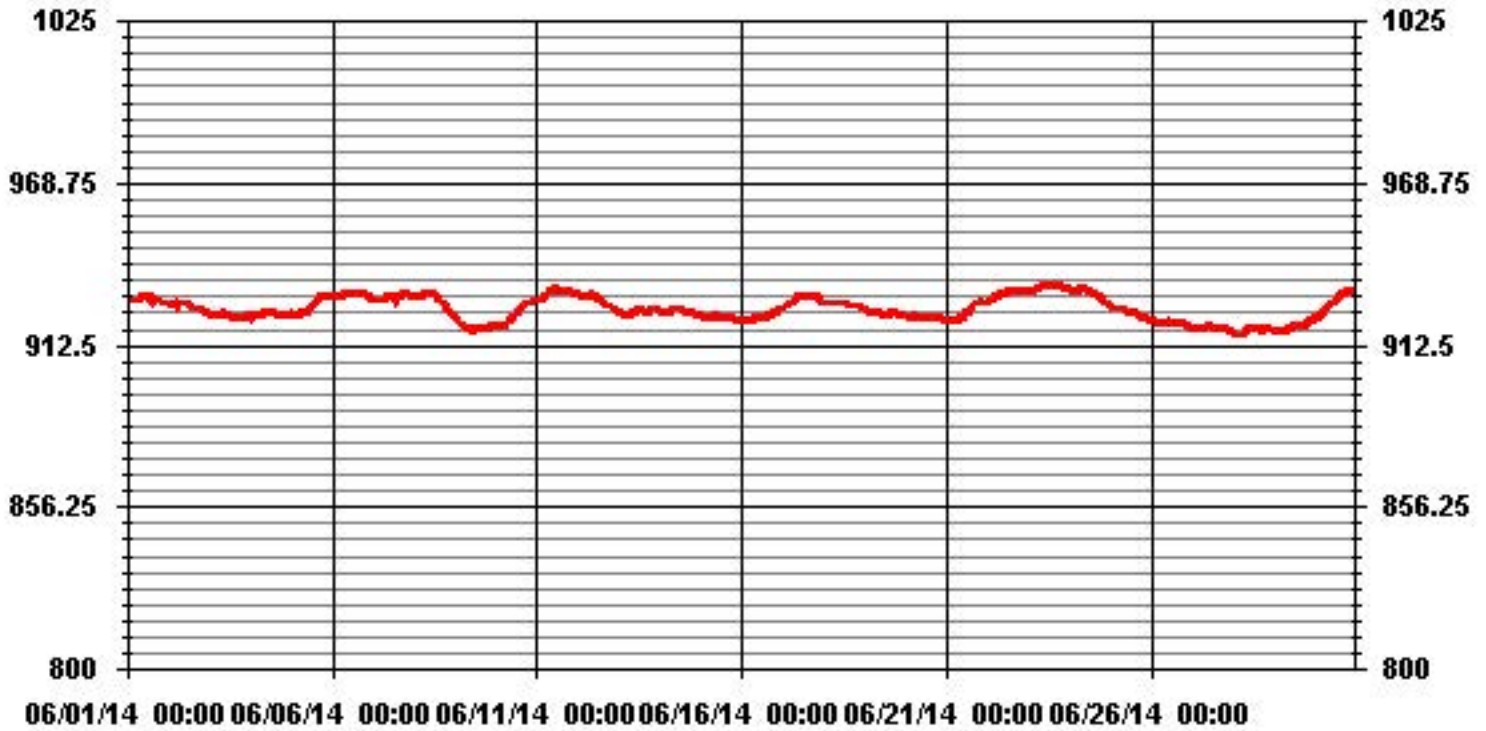
C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	933	MB	@ HOUR(S)	VAR	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	932.4	MB			ON DAY(S)	23
					VAR-VARIOUS	
				OPERATIONAL TIME:	720	HRS
				AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	4.22			MONTHLY AVERAGE:	924.9	MB

01 Hour Averages



Relative Humidity

Lakeland Industry & Community Association - St. Lina Site

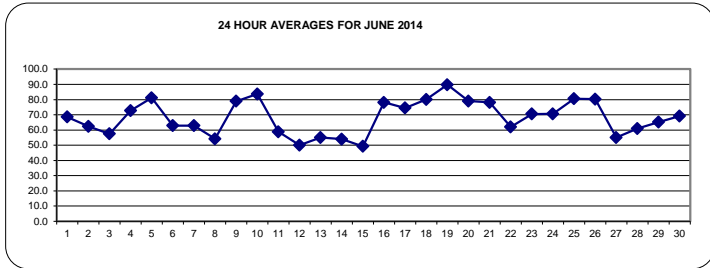
JUNE 2014

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	MAX.	AVG.	RDGS.	
DAY																												
1		70	70	72	78	80	78	69	65	59	53	44	38	34	38	62	77	83	84	83	86	82	73	84	84	86	68.6	24
2		84	87	90	90	90	83	76	70	64	57	53	46	42	40	57	61	40	40	42	45	52	67	60	62	90	62.4	24
3		66	69	70	71	72	70	65	60	56	52	45	43	39	39	47	38	41	44	54	57	63	65	70	83	83	57.5	24
4		86	85	87	90	91	90	89	85	74	63	56	52	49	46	42	42	44	49	81	88	89	89	88	89	91	72.7	24
5		90	90	90	89	88	88	86	86	86	85	84	82	78	70	61	62	72	71	71	82	82	83	85	86	90	81.1	24
6		83	83	84	84	84	83	82	72	62	53	46	44	39	41	40	38	37	45	49	58	67	74	79	82	84	62.9	24
7		84	83	85	86	87	82	79	63	58	52	46	44	43	42	37	45	48	54	58	60	64	66	67	77	87	62.9	24
8		78	73	74	73	73	70	75	68	58	49	45	43	41	40	39	34	34	36	39	45	53	55	53	53	78	54.2	24
9		56	58	64	65	66	70	82	87	88	89	85	77	70	67	82	84	86	87	88	89	89	88	89	88	89	78.9	24
10		90	89	87	85	89	89	87	85	83	85	82	81	81	78	75	72	73	70	87	87	88	89	88	88	90	83.7	24
11		90	90	90	91	91	87	76	70	62	56	51	50	46	42	35	36	36	34	35	39	41	46	56	63	91	58.9	24
12		64	69	71	70	71	64	59	55	48	43	41	39	35	33	34	33	34	35	35	42	49	56	59	61	71	50.0	24
13		64	67	71	79	82	77	71	64	59	53	47	41	37	32	34	36	36	35	39	45	57	64	65	67	82	55.1	24
14		65	72	77	82	84	76	69	61	59	56	49	43	42	39	37	33	33	36	41	43	45	50	52	52	84	54.0	24
15		57	62	68	74	77	73	68	62	53	43	36	38	34	31	32	32	32	32	34	39	45	53	54	53	77	49.3	24
16		59	64	70	74	76	73	70	70	71	74	79	76	72	73	82	82	84	88	88	88	90	91	91	91	91	78.2	24
17		91	90	90	91	91	85	79	71	70	61	58	68	65	62	63	61	61	62	68	74	78	80	79	91	91	74.5	24
18		79	82	83	82	80	82	80	75	78	71	63	66	70	72	73	86	87	87	89	91	91	92	92	92	92	80.0	24
19		92	92	92	92	92	92	92	92	91	90	90	89	88	88	86	85	86	86	87	88	89	91	91	92	92	89.7	24
20		92	92	92	92	92	92	92	79	70	63	61	58	60	66	72	71	70	70	76	79	86	90	91	91	92	79.0	24
21		91	92	92	92	91	90	90	90	89	87	80	74	65	65	61	57	65	69	68	67	67	70	73	92	92	78.1	24
22		80	78	78	73	69	70	68	63	61	54	50	45	46	47	46	48	47	49	62	65	68	69	73	79	80	62.0	24
23		84	85	86	87	87	86	83	77	68	62	57	56	53	52	52	52	64	70	71	71	69	67	74	80	87	70.5	24
24		82	85	87	88	88	83	75	71	70	67	63	59	55	60	62	64	61	60	61	64	68	71	75	75	88	70.6	24
25		75	78	82	84	84	79	79	72	72	78	80	80	77	77	75	75	81	82	88	88	89	90	91	91	91	80.5	24
26		91	91	92	92	92	92	91	89	86	84	82	81	75	69	65	61	60	60	68	75	79	80	84	88	92	80.3	24
27		82	79	78	89	82	69	58	53	50	51	46	43	42	40	34	33	35	36	42	49	51	58	60	62	89	55.1	24
28		60	64	69	73	74	66	60	58	52	48	43	39	41	39	46	74	67	66	68	64	66	72	76	78	78	61.0	24
29		81	84	84	86	86	86	79	71	68	65	61	59	57	53	45	46	45	43	44	49	56	67	74	76	86	65.2	24
30		81	84	84	83	83	82	76	69	64	62	58	56	55	55	52	52	66	67	69	69	69	71	75	77	84	69.1	24
HOURLY MAX		92	92	92	92	92	92	92	92	91	90	90	89	88	88	86	85	86	88	88	89	91	91	92	92			
HOURLY AVG		78.2	79.6	81.3	82.8	83.1	80.4	77.0	72.0	67.7	63.9	59.7	56.9	54.8	53.2	54.4	55.4	56.4	58.0	62.4	66.0	69.2	72.3	74.8	77.1			

STATUS FLAG CODES

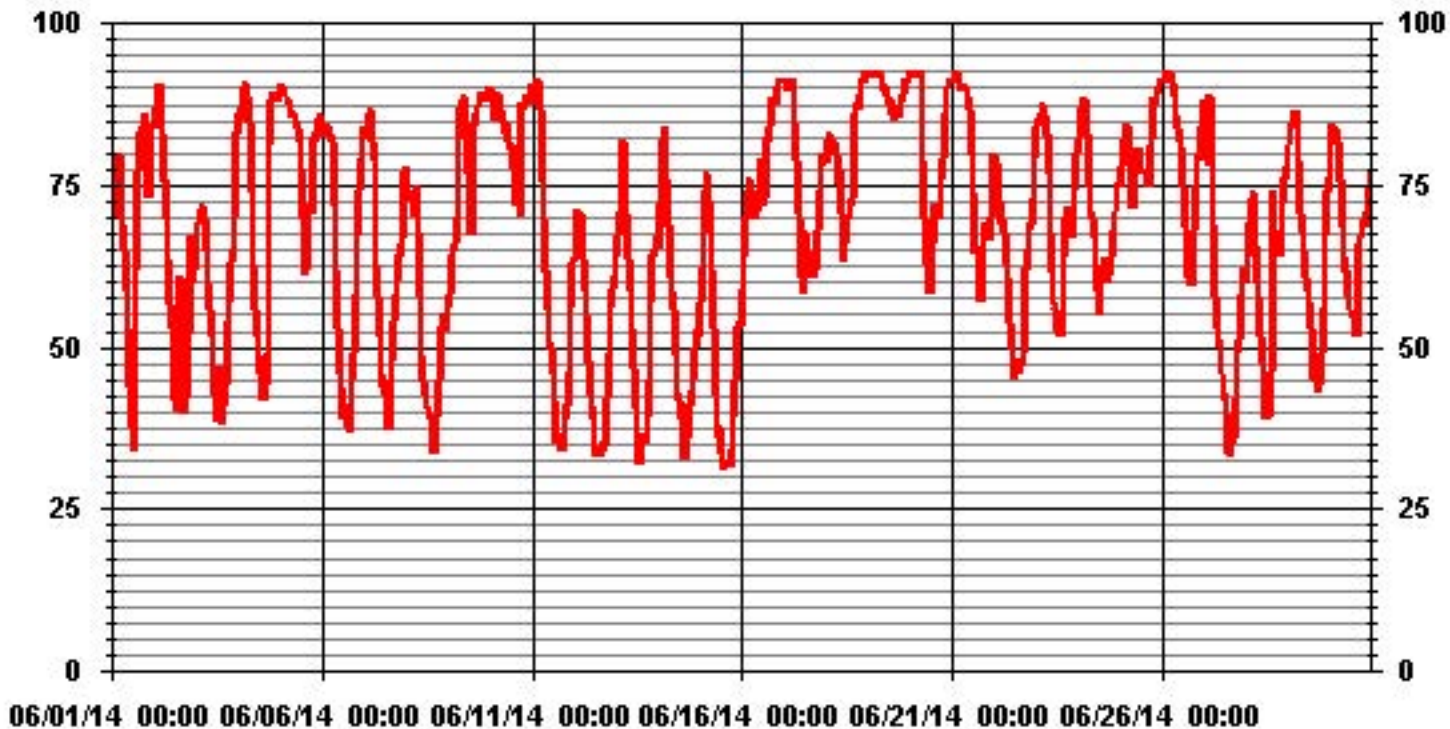
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	92	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	89.7	%			ON DAY(S)	19
					VAR-VARIOUS	
				OPERATIONAL TIME:	720	HRS
				AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	17.29			MONTHLY AVERAGE:	68.20	%

01 Hour Averages



Precipitation

Lakeland Industry & Community Association - St. Lina Site

JUNE 2014

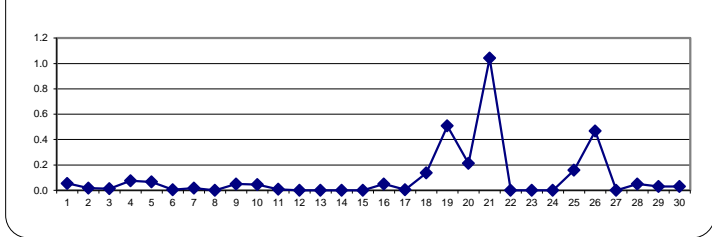
PRECIPITATION hourly averages in millimeter

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
DAY																														
1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0	0.2	0.1	24		
2		0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0	0	0	0.1	0	0	0.1	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	0.3	0.3	0.0	24		
4		0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.1	24	
5		0.2	0	0.2	0.1	0.1	0	0.1	0.1	0.1	0.1	0.1	0.1	0	0.1	0	0	0.1	0	0.1	0	0.1	0	0	0.1	0.1	0.2	0.1	24	
6		0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24	
7		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	0	0.1	0	0	0	0	0.2	0.0	24	
8		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
9		0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0.1	0.1	0	0.1	0.1	0	0.1	0	0.1	0	0.1	0.1	0.1	24	
10		0	0.1	0	0.1	0	0.1	0	0	0.1	0	0	0.1	0	0	0.1	0	0.1	0	0.1	0.1	0	0.1	0	0.1	0.1	0.1	0.0	24	
11		0	0	0	0.1	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24	
12		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
13		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
14		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
15		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
16		0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	0.1	0	0.1	0.1	0.1	0	0.1	0.1	0.1	0	0.1	0.1	0.2	0.1	24	
17		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	0.1	0.0	24
18		0	0	0	0	0	0	0	0	0	0	0	0	Y	Y	0.1	0	0	1.8	0.3	0.1	0.2	0.4	0	0.1	0	1.8	0.1	22	
19		1.1	0	0	0	1.1	1.7	5.2	2.6	0	0	0.1	0	0.2	0.2	0	0	0	0	0	0	0	0	0	0	0	5.2	0.5	24	
20		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1.3	1.7	2	2	0.2	24	
21		4.3	2.3	0.9	0.7	0.4	5.4	3	3.6	1.8	1.2	0.2	0	0	0	0.2	0	0	0.2	0.2	0.1	0.1	0	0.4	0	5.4	1.0	24		
22		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
23		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
24		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
25		0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0.3	0	0.1	0	1.5	0.3	0	1.4	1.5	0.2	24		
26		2.8	0.3	0.1	0	4.2	2.5	0.9	0.3	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	4.2	0.5	24		
27		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
28		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1	0	0	0	0	0	0	0	0	0	1	0.1	24	
29		0.2	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.0	24	
30		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0	0	0	0	0	0	0	0.7	0.0	24		
HOURLY MAX		4.3	2.3	0.9	0.7	4.2	5.4	5.2	3.6	1.8	1.2	0.2	0.2	0.2	0.2	0.2	1	1.8	0.3	0.3	0.2	1.5	1.3	1.7	2					
HOURLY AVG		0.3	0.1	0.0	0.0	0.2	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	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

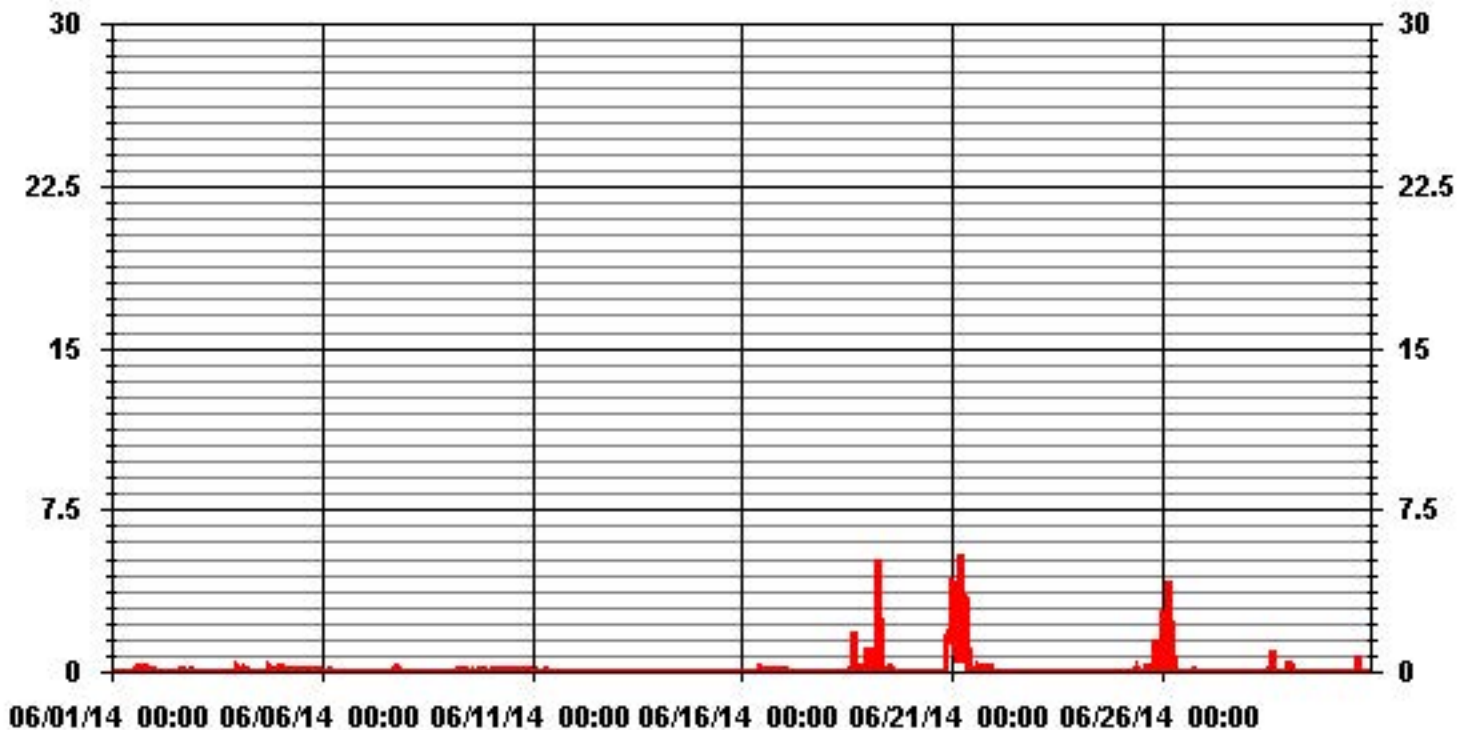
24 HOUR AVERAGES FOR JUNE 2014



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	5.4	MM	@ HOUR(S)	5	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	1.0	MM			ON DAY(S)	21
					VAR-VARIOUS	
OPERATIONAL TIME:					718	HRS
AMD OPERATION UPTIME:					99.7	%
STANDARD DEVIATION:	0.48				MONTHLY AVERAGE:	0.10 MM

01 Hour Averages



Vector Wind Speed

Lakeland Industry & Community Association - St. Lina Site

JUNE 2014

WIND SPEED (WS) hourly averages in km/hr

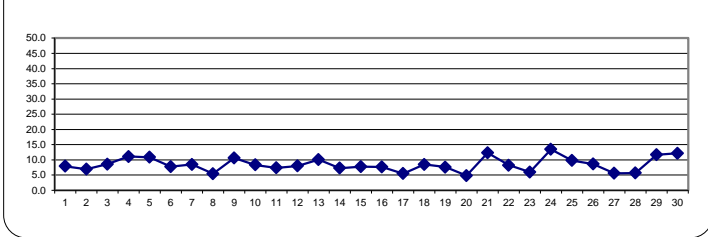
MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY	24-HOUR	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		8.2	7.3	6.6	4.8	2.1	7.4	7.1	7.9	8.7	7.5	5.3	7.4	6.7	7.2	8.7	11	7.5	8.2	8.4	10.1	15.6	14.1	8	4.2	15.6	7.9	24	
2		2.8	5.2	7.6	7.9	7	6.9	8.3	6.7	6.1	5	6.8	9.2	10	8.8	11.6	6.3	6.4	8.3	7.2	2.8	2.1	6.5	7.5	9.2	11.6	6.9	24	
3		9.1	8.7	7.5	7.2	6.2	5.1	4.4	5	7.9	8.9	9.8	9.7	10.2	11.8	7.4	10.3	10.1	13.2	13.9	12.4	4.2	6.3	6.6	10	13.9	8.6	24	
4		11.4	9.6	10.2	8.3	8.4	11.4	10.4	12.3	13.8	12.3	14	11.7	11.8	10	9.5	8.9	6.8	7	18.9	13	13.9	15.3	11.2	6.4	18.9	11.1	24	
5		3.4	1.9	2.6	9.1	10.4	7.4	9.8	9.1	9.6	16.2	15.3	17.5	17.1	15.2	13.2	14.5	14.1	15.7	14.8	11.2	8.7	7.4	8.3	8.6	17.5	10.9	24	
6		9.7	8.9	8.2	7.7	7.9	8.2	8.5	8.3	8.4	8	6.4	7.5	11.6	10.1	5.8	8	8.2	6.4	7.8	6.7	5.4	6.1	6.3	5.3	11.6	7.7	24	
7		3.9	4.9	5.4	5.3	4.9	3.6	7.5	8.2	7.6	10.8	12.6	15.1	17.7	17.3	15	14.4	8.9	8.1	6.7	5.8	2.9	5.3	6.7	5.4	17.7	8.5	24	
8		5	7.6	7.9	5.6	5.8	4.8	3.7	3.9	2.1	1.2	2.2	3.8	2	2.6	1.4	6.7	4.2	5.7	6.9	6.5	8.5	10.3	10.8	11	11.0	5.4	24	
9		11.9	11.9	9.4	10	7.9	6	7.2	4.3	3.6	4.4	8.2	10	10.3	8.5	15.4	17.8	14.3	11.9	13.9	13.3	13.1	13.8	14.3	13.9	17.8	10.6	24	
10		12.3	10.9	11.1	13.7	15.1	10.3	9.6	8.5	10.5	11	10.7	10.1	7.9	8.1	5.8	4.5	3.3	5.5	8	2.1	2.1	4.4	7.3	7.6	15.1	8.4	24	
11		6.7	7	6.5	6	6.3	6.3	5.6	7.4	8.9	7.7	6.2	8.6	8.9	10.9	9.8	10.5	9.1	7.3	7.3	4.6	4.5	6.8	7	7.6	10.9	7.4	24	
12		7.3	7.2	7.1	6.8	6.5	5.7	5.9	5.9	8.8	10.8	10.4	8.3	8.4	10.1	9	9.5	8	8	8.1	6	6.6	8.4	9.5	9.5	10.8	8.0	24	
13		9.7	9.8	9.6	9.8	9.5	10.2	10	11.5	11.9	11.3	12.6	11.4	12.8	11.1	10	11.5	12.8	11.2	10.2	8.1	5.9	6	4.8	9.8	12.8	10.1	24	
14		9.9	8.4	8.3	9.9	7.6	3.9	3.4	2.6	5.5	7	8.4	7.2	6.6	7.5	6	6.8	6.4	7.6	9.4	8.6	8.5	8.4	8.2	8.7	9.9	7.3	24	
15		9.4	8.7	8.4	7.3	6.7	6.8	5	4.2	3.7	7.3	9.3	6.3	8.8	7.5	8.9	8.8	8.7	8.1	7.2	7	8.8	10.3	10.3	8.9	10.3	7.8	24	
16		10	7.4	4.9	5.8	5.3	6.6	5.7	8.2	8.5	9.4	10.6	7.9	7.2	6.7	7.5	11.6	8.9	8.8	9.7	7.1	6.7	6.1	6	7.1	11.6	7.7	24	
17		6.3	5.3	4	4.9	4.5	4.8	5.4	4.2	2.8	8.3	6.4	5	3.7	5.1	5.5	7.3	5.4	4	3	6.4	5.9	7.2	7.6	9.1	9.1	5.5	24	
18		8.7	8.4	7.4	8.8	9.7	8.4	8.1	7.7	2.2	7.1	8.1	8.8	8.5	10	8.4	7	7	8.4	9.7	10.2	9.7	10.7	10	10.4	10.7	8.5	24	
19		8.9	7.1	5.3	5.9	6.3	6.4	5.7	6.1	11	11.2	10	8.9	9.6	8.9	9	8.5	7.6	5.8	4.5	4.7	7.3	8.8	9.2	6.3	11.2	7.6	24	
20		1.8	2.3	1.4	4.8	1.8	6.5	5.7	7.3	6.4	2.2	3.6	4.8	4.1	5.8	7.7	7.2	6.3	4.5	7.1	6.5	6.7	4.6	3.2	2.7	7.7	4.8	24	
21		3.7	7.4	10.8	12.7	13	14.7	13.2	15.5	15.7	19	21.2	20.8	19.3	17.7	15.5	12.7	11.5	10.2	7.8	6.4	6	5.9	6.6	8.4	21.2	12.3	24	
22		7.6	7.4	8.1	8.1	9.3	8.2	7.8	6.6	7.2	9.4	10.4	9.8	8.8	10.2	9.8	10.8	13.6	9.8	6	4.1	5.7	6.3	6.8	6.3	13.6	8.3	24	
23		4.9	3.9	5.5	5.5	5.5	4.2	3.6	3.8	4.3	3.9	6.2	7	6.5	7.3	9.9	8.9	7.5	4.9	3.7	5.6	7.7	5.8	8	8.8	9.9	6.0	24	
24		7.3	9	9.2	9.3	8.7	9.1	10.4	15.4	14.2	14.2	16.6	14.6	16	16	19.5	19.5	17.2	17.6	15.8	13.6	11.1	11.7	12.6	14.4	19.5	13.5	24	
25		14.7	13.7	12.5	10.8	10.4	10.5	11.3	9.5	9.7	11.4	12.6	13.1	15.1	17.9	13.7	10.7	7.9	5.3	3.9	1.5	6.3	5.1	3.5	4	17.9	9.8	24	
26		9.7	8.6	10	8	8.1	10	11.1	9.6	8.7	8.5	10.6	11.3	11.4	11.3	11.5	10.8	8.7	8.3	5.4	3.7	4.7	5.5	5.9	6.2	11.5	8.7	24	
27		6.4	6.7	5.9	6.7	6.1	5.1	3	4.7	5.3	7	5.7	5.8	7.5	9.4	8.8	8.2	5.5	3.9	3.9	3.5	1.4	3.8	4.3	5.6	9.4	5.6	24	
28		4.9	6.4	5.6	6.5	5.8	5	4.2	3.4	4.1	3.5	2.6	0.9	3.1	6.2	2.7	5.8	4.2	5.5	8.5	8.5	10.9	8.4	9.8	10.3	10.9	5.7	24	
29		11.3	11.7	11	9.8	11	10.7	10.7	9.4	11.1	11.2	11.9	13.1	14.6	16.2	12.7	11.2	11.8	12.5	10.9	9	9.7	12.4	12.4	14.3	16.2	11.7	24	
30		13.9	12.9	13	12.8	13.9	13.2	12.1	14.1	13.9	15	16.8	15.9	14.6	14.6	13.6	14.2	11	6.6	7.1	7	8.8	10	8.5	8.4	16.8	12.2	24	
HOURLY MAX		14.7	13.7	13.0	13.7	15.1	14.7	13.2	15.5	15.7	19.0	21.2	20.8	19.3	17.9	19.5	17.2	17.6	18.9	13.6	15.6	15.3	14.3	14.4					
HOURLY AVG		8.0	7.9	7.7	8.0	7.7	7.6	7.5	7.7	8.1	9.0	9.7	9.7	10.0	10.3	9.8	10.1	8.8	8.3	8.5	7.2	7.3	8.1	8.0	8.3				

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

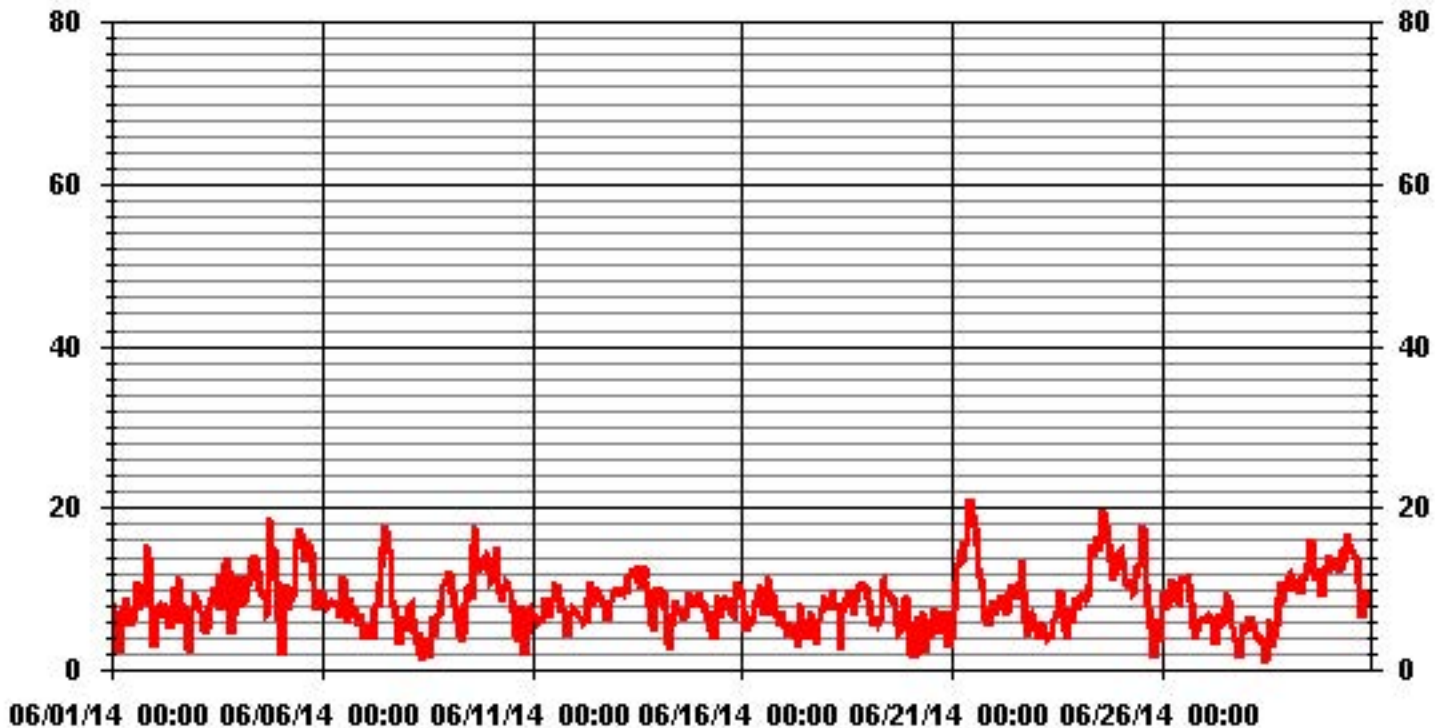
24 HOUR AVERAGES FOR JUNE 2014



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	720
MAXIMUM 1-HR AVERAGE:	21.2 KPH @ HOUR(S) 10 ON DAY(S) 21
MAXIMUM 24-HR AVERAGE:	13.5 KPH ON DAY(S) 24
	VAR-VARIOUS
MONTHLY CALIBRATION TIME:	0 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	3.51
MONTHLY AVERAGE:	8.47 KPH

01 Hour Averages



— LICA31 WSP KPH

Lakeland Industry & Community Association - St. Lina Site

JUNE 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	14.2	12.9	13.8	11.6	8.6	15.3	17.3	20.6	28.2	21.2	24.7	28.5	29.3	46.5	38.6	28.3	21.2	19.7	30.4	25.8	45.2	60.7	24.5	12.9	61	25.0	24
2	8.8	16	13.6	14.9	15.3	13.2	17.8	13.6	18.4	15.1	22.8	25.9	24.5	24.7	52.7	14.5	16.4	20.6	20.1	9.6	5.3	11.4	14.5	27.2	53	18.2	24
3	17.5	14.2	11.2	11.2	14.7	9.7	10.6	14.2	18.6	25.6	27.4	30.4	33.5	30	25.4	34.4	28.9	47.1	34.4	32.4	22.8	20	19.7	37.4	47	23.8	24
4	35.7	28.3	23.4	20.6	21.9	30.7	28	34.6	40.3	36.3	36.6	38.4	35.3	35.7	30.9	29.6	19.5	18.2	46.6	34.4	34.2	41	33.1	17.1	47	31.3	24
5	12.5	6.6	6.6	23.7	27.4	21	30.2	23.2	26.7	41.4	39.9	46	47.5	39.9	37	57.1	40.1	43.8	46	36.8	27.6	16.2	15.1	17.3	57	30.4	24
6	17.5	17.6	17.1	15.6	13.6	17.1	14.9	24.1	23.4	21.2	19.9	21.9	32	30.5	22.2	22.1	34.2	20.4	31.5	20.4	12.9	13.7	11.8	9.2	34	20.2	24
7	8.1	10.8	10.1	9.9	8.8	8.1	16	17.7	19.3	29.6	34.7	35.2	49.5	44.7	41.2	56.3	27.8	41.9	40.1	24.1	7.7	9.2	11.2	10.3	56	23.8	24
8	10.3	14.5	18.8	16.4	12.5	12.3	17.1	12.7	12.3	16.7	15.1	15.6	11.6	12.7	19.8	27.6	18	15.6	15.8	14.5	16	21.7	25.9	28.5	29	16.8	24
9	28.3	27.2	23.6	25.6	20.8	14.1	14.9	13.2	9.7	16.7	21	28.1	29.6	29.1	44.7	50.3	36.6	27.6	33.1	33.7	38.8	32.9	34.4	37.2	50	28.0	24
10	27.2	25	24.1	38.3	37	28.7	30.5	26.1	P	33.5	32.9	30	21.2	23.9	15.6	15.3	14.9	23.2	25.4	14.7	6.2	11	12.8	13.2	38	23.1	23
11	12.9	12.7	12.1	11.8	9.1	9	10.3	14.2	17.5	18.8	17.8	25.7	27.8	25.4	34.8	27.8	23.4	19.5	16.9	12.5	9	9.7	12.3	13.6	35	16.9	24
12	12.7	16	11.4	12.3	13.4	11.6	14.5	14.5	24.1	30	31.8	32.2	29.8	32.6	30.7	28.7	30.9	26.8	24.1	14.5	13.2	18	18	18.4	33	21.3	24
13	17.5	21.5	19.1	19.7	19.5	21.5	26.5	30	27.6	35.7	33.3	32.2	40.1	31.8	30.9	31.2	39.2	35.9	26.9	36.3	19.3	15.3	11.6	18	40	26.7	24
14	20.8	17.8	16.9	22.8	15.8	11.8	9.3	11.4	18.8	28	26.7	28.5	26.9	27.2	23.6	26.3	21.7	24.3	30.9	24.7	24.3	14.5	13.2	15.1	31	20.9	24
15	16.2	14	12.1	12.1	10.1	12.1	11.8	11.2	19.9	25	26.5	21	24.9	26.3	28.9	26.9	29.8	26.5	20.2	17.1	24.3	18	21	19.9	30	19.8	24
16	28.5	17.3	11.8	14.5	14	14.9	19.7	24.8	22.1	29	26.3	20.6	19.3	24.1	34.6	29.4	27.4	25.4	31.6	21.9	19.1	16.2	17.5	15.2	35	21.9	24
17	17.1	14	12.1	14.2	12.7	14.1	16.1	12.3	12.1	24.3	19.1	22.8	15.6	12.3	19.3	19.5	15.1	13.2	9.2	17.1	12.3	14.7	15.3	19.1	24	15.6	24
18	19.5	17.1	16.2	18.9	24.1	21.9	23.2	19.1	9.9	21.7	25.6	22.1	22.6	25.4	20.8	21.2	21.9	21.9	25.4	24.6	23.9	27.8	25.6	28	28	22.0	24
19	22.5	20.6	16.3	17.1	18.6	16.7	16.9	18.4	28	29.4	29.4	33.3	26.1	27.6	23.9	21.9	20.6	16.5	14	14.2	17.3	25.2	23	18.4	33	21.5	24
20	7.7	7.9	4.9	11.8	8.8	16.2	19.9	19.3	19.9	11.6	14.7	21	13.4	21.9	19.3	19.3	17.5	14.7	19.5	18.2	17.5	12.7	11	6.2	22	14.8	24
21	12.3	19.3	26.5	29.4	33.7	35.5	38.8	43.4	51	51.4	63.5	50.4	54.1	50.4	38.3	38.3	36.1	28.3	24.3	16.9	16.7	13.6	15.8	20.2	64	33.7	24
22	14.7	15.1	15.8	16	21.7	17.1	18.8	18.8	19.5	24.3	27.1	29.8	28.3	32.4	30.9	37.2	42.7	33.5	19.1	9.2	12.9	14	14	14.7	43	22.0	24
23	11.8	10.5	11	12.9	12.7	9.9	9.7	11.2	15.1	14.1	19.3	23	21.9	28.9	27.6	25.4	24.7	17.3	11.8	16.2	26.5	13.4	15.8	17.5	29	17.0	24
24	13.4	17.6	19.7	18.2	18.6	24.3	28.3	39.4	35.7	38.3	42.7	39	38.5	43.1	47.7	45.5	43.6	42	43.6	36.8	26.9	24.1	29.1	31.6	48	32.8	24
25	36.6	35.3	26.3	24.5	23.9	23.7	28.7	23.5	25.6	28	32	30.9	37.4	43.1	37.3	31.8	23.9	13.4	10.5	14.2	16	11.2	11.2	16.4	43	25.2	24
26	30.4	22.6	21.7	21.2	24.5	25.5	27.6	25.8	22.8	20.2	26.5	29.4	27.6	28.5	27.4	26.9	22.3	24.1	24.5	16.6	14.2	9.7	10.8	8.1	30	22.5	24
27	13.6	11.8	12.3	11	12.5	11.6	10.1	11.6	16.9	15.8	16.4	18.5	27.8	24.3	22.1	21.2	17.7	14.5	9.9	7.5	3.1	5.3	9.4	9.9	28	14.0	24
28	7	9.2	8.8	10.1	10.1	8.8	9	9.4	9.9	15.1	12.8	13.4	12.3	17.5	34.8	23	11.4	12.8	18.2	19.9	26.1	23.7	21.2	21.5	35	15.3	24
29	24.3	22.4	23.9	22.1	24.3	23.2	25.4	21.5	26.7	27.8	32.6	36.4	41.4	43.8	35.7	40.1	37.9	36.3	33.7	26.9	24.7	28.5	28	37.7	44	30.2	24
30	28.7	35.9	30.4	31.6	36.6	30	36.3	35.1	37.5	40.1	46.8	52.5	41.4	40.3	38.5	48.4	46.3	12.3	14.5	13.8	20.8	21.2	19.1	23.3	53	32.6	24
HOURLY MAX	37	36	30	38	37	36	39	43	51	51	64	53	54	50	53	57	46	47	47	37	45	61	34	38			
HOURLY AVG	18.3	17.7	16.4	18.0	18.2	17.7	19.9	20.5	22.7	26.2	28.2	29.4	29.7	30.8	31.2	30.9	27.1	24.6	25.1	20.9	19.5	19.2	18.2	19.4			

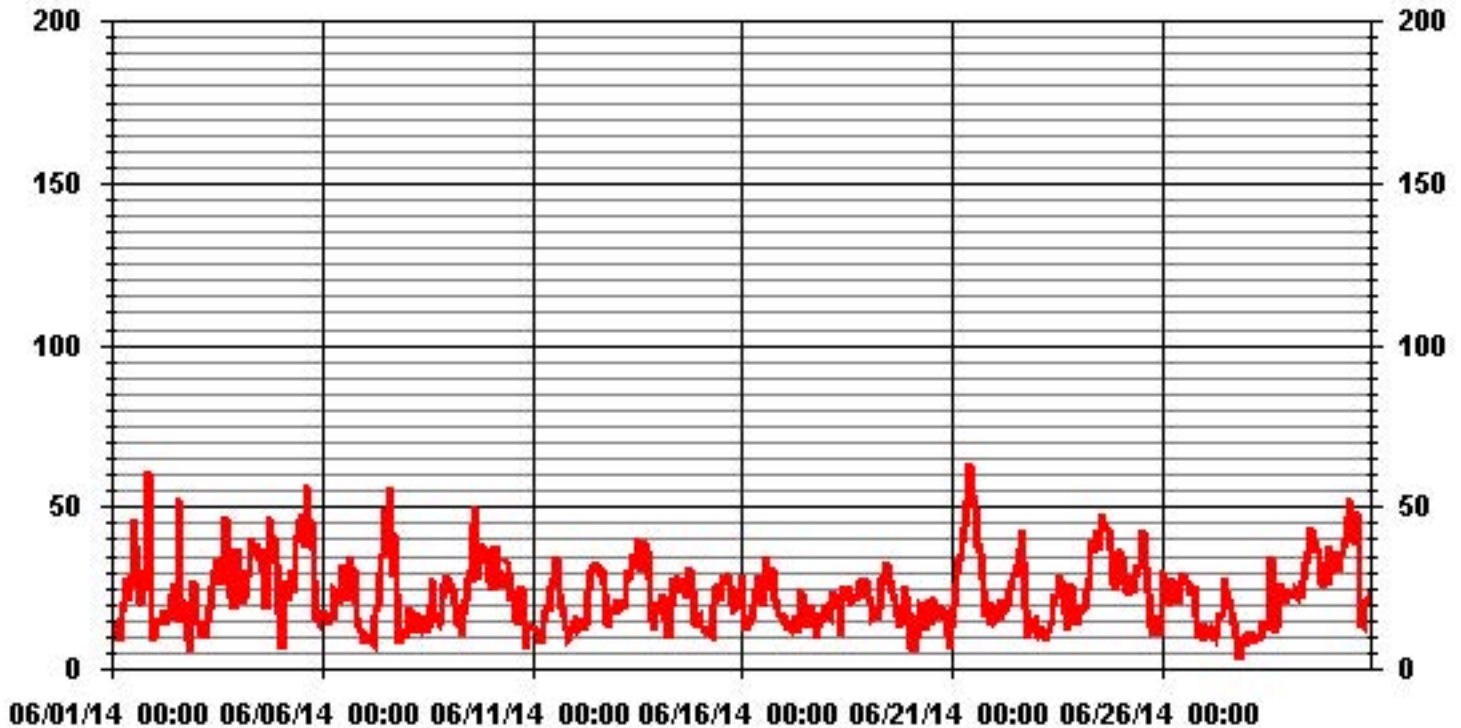
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS VALUE:	64	KPH	@ HOUR(S)	10	ON DAY(S)	21
					VAR-VARIOUS	
			OPERATIONAL TIME:			719 HRS

01 Hour Averages



LICA31
WSP / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	1.25	1.11	2.08	1.94	1.94	1.25	1.25	.55	1.38	2.77	1.38	1.25	1.80	1.38	1.38	.83	23.61
< 12.0	2.77	1.66	1.11	4.44	5.69	4.58	5.97	4.86	3.88	2.50	1.80	2.77	2.36	5.83	7.50	4.02	61.80
< 20.0	.27	.13	.00	.00	.41	.41	1.66	1.52	.27	.00	.00	.00	.00	1.52	4.72	3.33	14.30
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.27	.00	.27
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.30	2.91	3.19	6.38	8.05	6.25	8.88	6.94	5.55	5.27	3.19	4.02	4.16	8.75	13.88	8.19	

Calm : .00 %

Total # Operational Hours : 720

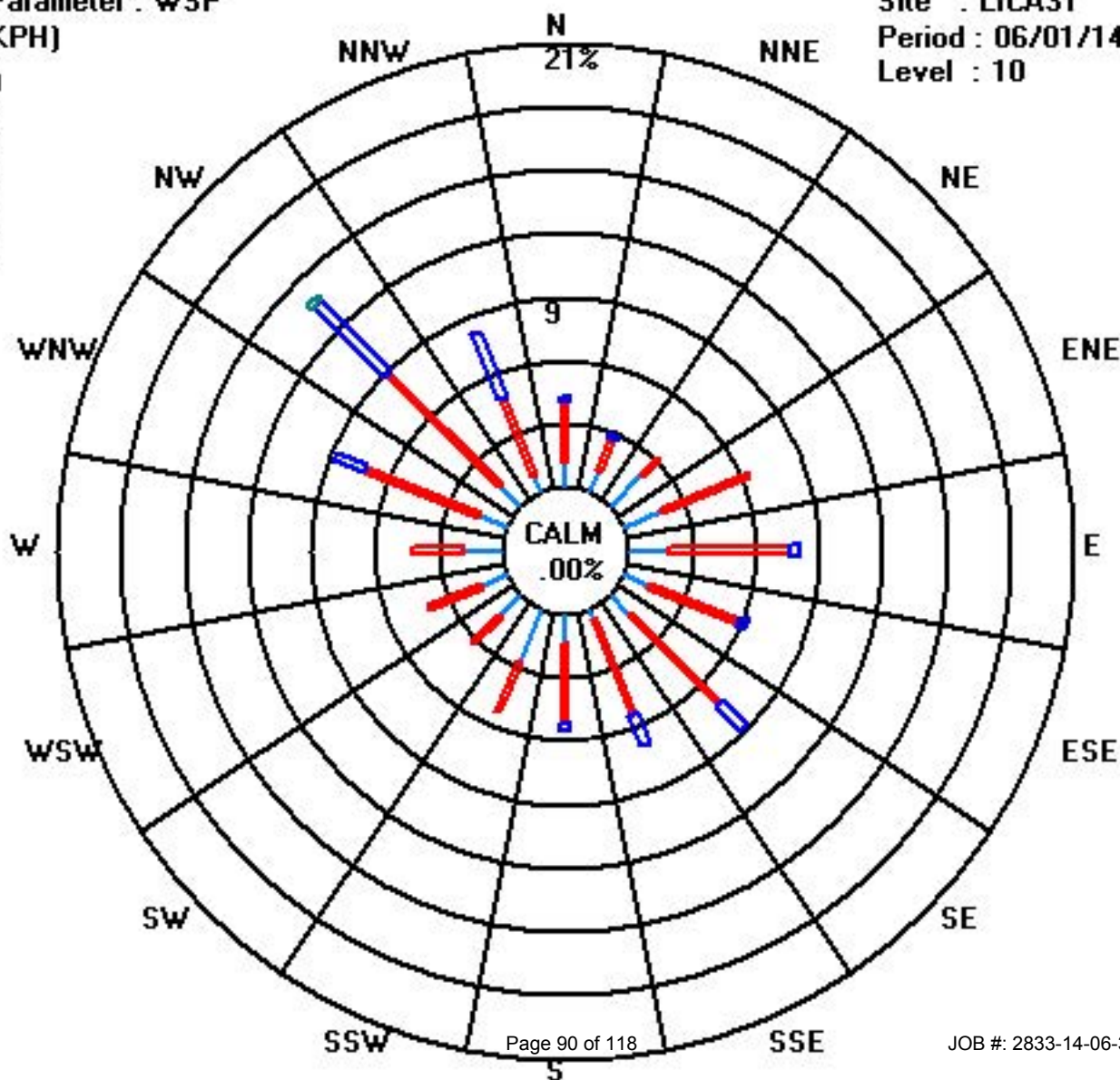
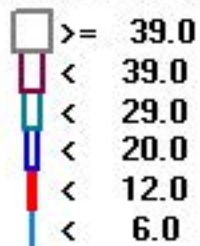
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	9	8	15	14	14	9	9	4	10	20	10	9	13	10	10	6	170
< 12.0	20	12	8	32	41	33	43	35	28	18	13	20	17	42	54	29	445
< 20.0	2	1			3	3	12	11	2					11	34	24	103
< 29.0															2		2
< 39.0																	
>= 39.0																	
Totals	31	21	23	46	58	45	64	50	40	38	23	29	30	63	100	59	

Calm : .00 %

Total # Operational Hours : 720

Class Limits (KPH)



Vector Wind Direction

Lakeland Industry & Community Association - St. Lina Site

JUNE 2014

WIND DIRECTION (WD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	24-HOUR	24-HOUR	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUADRANT	RDGS.	
DAY																													
1		163	164	210	203	348	92	98	116	138	156	187	204	205	296	44	139	102	69	309	280	188	182	229	276	348	NNW	24	
2		94	199	239	224	224	226	237	229	235	225	214	224	243	247	295	224	253	249	272	261	248	109	144	158	295	WNW	24	
3		179	177	188	184	180	158	142	128	112	126	143	154	143	145	187	166	168	109	104	119	67	14	325	340	340	NNW	24	
4		359	339	330	331	306	313	333	337	341	346	334	331	342	348	5	12	6	356	305	314	317	328	329	331	359	N	24	
5		2	358	277	34	16	7	345	337	309	333	329	330	333	332	328	307	312	316	314	338	309	302	283	273	358	N	24	
6		288	293	293	299	287	288	270	289	304	312	334	335	298	317	353	323	353	23	256	225	219	201	203	199	353	N	24	
7		218	218	202	210	212	205	246	278	284	291	298	306	305	321	329	14	23	343	5	41	340	315	292	258	343	NNW	24	
8		290	312	293	287	358	4	63	217	233	273	184	88	103	97	187	205	197	157	146	133	126	137	153	164	358	N	24	
9		153	144	112	114	123	162	177	176	169	285	321	331	324	318	292	282	289	292	294	296	299	304	297	296	331	NNW	24	
10		288	289	286	293	304	327	336	349	357	359	357	4	15	37	34	22	51	53	72	56	254	348	315	324	359	N	24	
11		323	304	289	274	274	248	255	259	259	256	249	246	218	257	260	242	257	254	242	252	204	180	193	199	323	NW	24	
12		196	206	201	198	206	198	207	194	192	187	190	187	176	175	161	145	152	157	137	108	91	88	93	93	207	SSW	24	
13		79	75	66	70	63	62	66	75	76	72	80	87	93	109	89	73	80	90	79	160	207	147	89	116	207	SSW	24	
14		137	139	171	185	205	218	223	174	145	165	149	143	151	161	180	169	167	143	157	167	173	178	180	180	223	SW	24	
15		181	185	188	197	183	184	189	209	146	117	126	91	113	92	118	100	84	102	103	107	116	122	120	141	209	SSW	24	
16		151	154	85	79	77	92	111	97	94	46	29	21	15	19	67	79	83	70	79	67	65	64	75	83	154	SSE	24	
17		85	113	95	83	88	98	132	123	158	170	158	141	93	62	106	108	140	120	97	117	109	108	104	119	170	SSE	24	
18		130	143	165	168	160	153	140	159	147	105	107	131	114	120	108	97	93	83	92	91	89	83	77	79	168	SSE	24	
19		74	72	48	49	63	59	53	44	63	76	65	62	81	69	83	93	80	69	74	73	93	81	91	111	111	ESE	24	
20		133	27	22	284	328	63	65	50	37	7	10	31	14	58	66	74	58	46	80	87	89	75	62	19	328	NNW	24	
21		292	291	292	313	317	322	328	331	333	322	324	325	322	324	321	330	332	339	340	349	356	358	317	294	358	N	24	
22		296	291	289	303	307	302	299	318	315	317	323	337	341	6	4	3	4	18	34	15	353	352	7	31	353	N	24	
23		43	36	20	45	56	52	73	77	82	81	110	103	113	137	131	130	239	293	45	74	161	186	125	137	293	WNW	24	
24		146	126	128	132	141	149	165	166	161	161	151	160	162	139	138	152	150	146	145	151	140	130	133	136	166	SSE	24	
25		145	146	134	133	130	137	143	137	140	131	133	135	145	147	159	172	154	123	104	126	301	320	288	188	320	NW	24	
26		224	241	259	274	285	293	304	302	314	306	294	302	305	318	308	311	318	314	317	320	337	309	278	252	337	NNW	24	
27		285	295	310	232	287	316	320	324	295	259	291	304	280	261	274	281	279	270	243	266	212	198	206	194	324	NW	24	
28		197	202	218	200	199	245	237	260	272	290	260	327	244	282	277	184	236	281	291	307	311	304	305	308	327	NW	24	
29		305	310	306	313	315	318	316	314	321	318	333	338	332	334	338	342	351	350	340	322	315	313	313	310	351	N	24	
30		305	312	317	321	323	322	325	324	320	326	342	335	329	325	331	326	339	296	296	309	316	311	328	316	342	NNW	24	

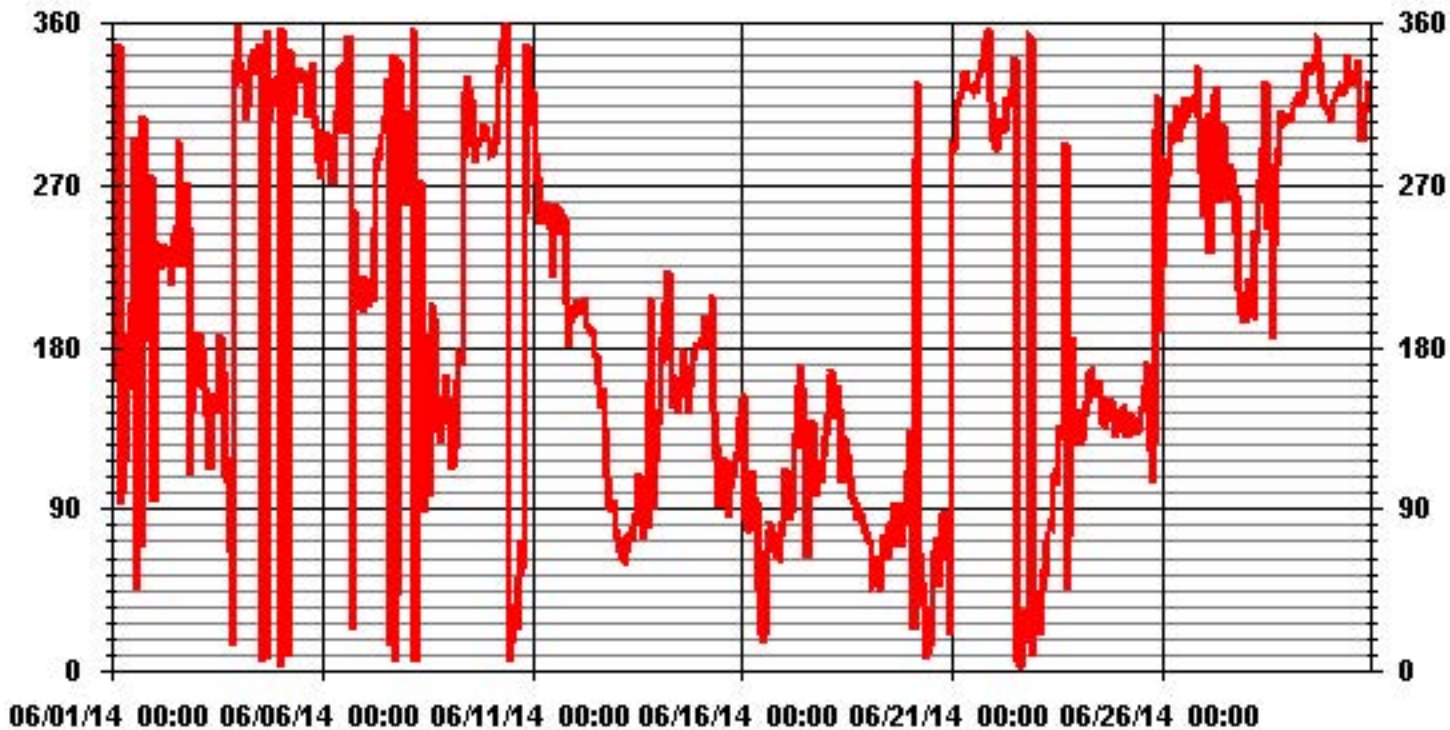
STATUS FLAG CODES

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:	720	HRS
STANDARD DEVIATION:	102.62		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	329	DEG

01 Hour Averages



Standard Deviation Wind Direction

Lakeland Industry & Community Association - St. Lina Site

JUNE 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	9	10	12	25	49	16	22	24	25	30	40	36	43	40	22	17	22	18	21	17	19	29	15	48	
2	50	22	9	12	13	14	15	19	25	29	33	26	23	29	25	23	28	23	22	25	29	27	8	12	
3	10	8	7	5	9	14	23	27	24	26	26	29	27	21	23	29	22	20	19	16	38	27	22	21	
4	19	19	18	18	23	19	20	19	20	24	22	27	26	29	27	24	23	22	17	18	16	17	18	19	
5	21	22	26	19	19	22	20	22	19	18	19	18	19	23	21	24	22	19	19	26	16	15	10	9	
6	11	11	12	15	12	14	13	24	27	23	36	32	29	23	39	30	26	32	30	21	15	13	13	9	
7	15	16	10	11	10	20	12	19	24	24	24	22	24	22	24	20	28	37	30	20	19	11	9	11	
8	21	14	16	14	14	17	26	30	67	64	51	50	60	63	71	39	44	31	19	13	8	13	16	17	
9	16	17	18	17	19	15	13	18	21	26	21	24	23	23	21	16	17	17	16	17	18	18	18	17	
10	17	16	16	17	18	19	20	26	22	21	25	23	24	24	27	36	37	25	22	42	27	12	10	12	
11	12	15	10	10	6	7	13	14	20	28	32	37	28	23	30	30	19	28	19	12	11	5	8	10	
12	8	11	7	8	11	14	19	21	21	22	23	33	34	30	27	25	24	20	18	15	13	13	14	14	
13	13	13	13	14	15	16	18	20	20	23	23	25	24	28	28	25	25	23	21	25	20	20	23	11	
14	12	12	11	12	15	24	29	44	31	30	26	39	41	30	38	37	36	33	22	16	12	9	9	10	
15	11	7	7	8	9	13	21	28	44	33	26	33	32	36	28	28	27	26	24	18	11	10	11	11	
16	16	14	23	15	16	16	24	23	22	25	22	25	27	25	25	22	20	21	20	25	20	20	21	19	
17	19	18	21	21	22	24	24	35	42	25	34	43	34	21	36	24	20	27	26	17	14	14	14	15	
18	15	13	14	13	15	18	16	19	27	26	26	23	23	21	22	24	20	19	20	20	20	19	18	19	
19	21	21	22	22	21	20	22	24	22	21	21	24	20	23	20	21	24	22	26	25	18	18	22	24	
20	40	26	36	19	37	19	21	25	30	65	41	39	39	24	23	24	25	31	21	21	19	19	20	16	
21	17	16	17	18	17	19	22	20	20	18	19	18	19	20	19	21	22	21	19	18	21	16	15	12	
22	13	13	13	14	15	15	17	20	20	22	25	29	29	25	28	27	24	24	23	17	16	16	15	16	
23	16	17	15	12	14	14	19	23	31	44	39	33	40	31	25	26	24	27	27	21	18	16	10	12	
24	13	12	13	13	16	17	18	17	20	21	20	22	21	19	18	20	19	19	19	18	16	14	16	16	
25	17	17	15	16	16	17	17	21	21	19	19	18	19	17	19	19	17	19	23	33	18	22	22	18	
26	19	17	11	13	18	17	17	19	19	19	17	19	24	21	21	20	26	20	28	22	18	10	11	7	
27	11	8	19	9	12	12	24	21	32	28	36	33	35	29	26	27	37	42	22	15	20	5	8	7	
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29	15	14	15	16	14	14	17	20	19	19	21	22	21	20	22	22	26	21	19	16	16	15	16	16	
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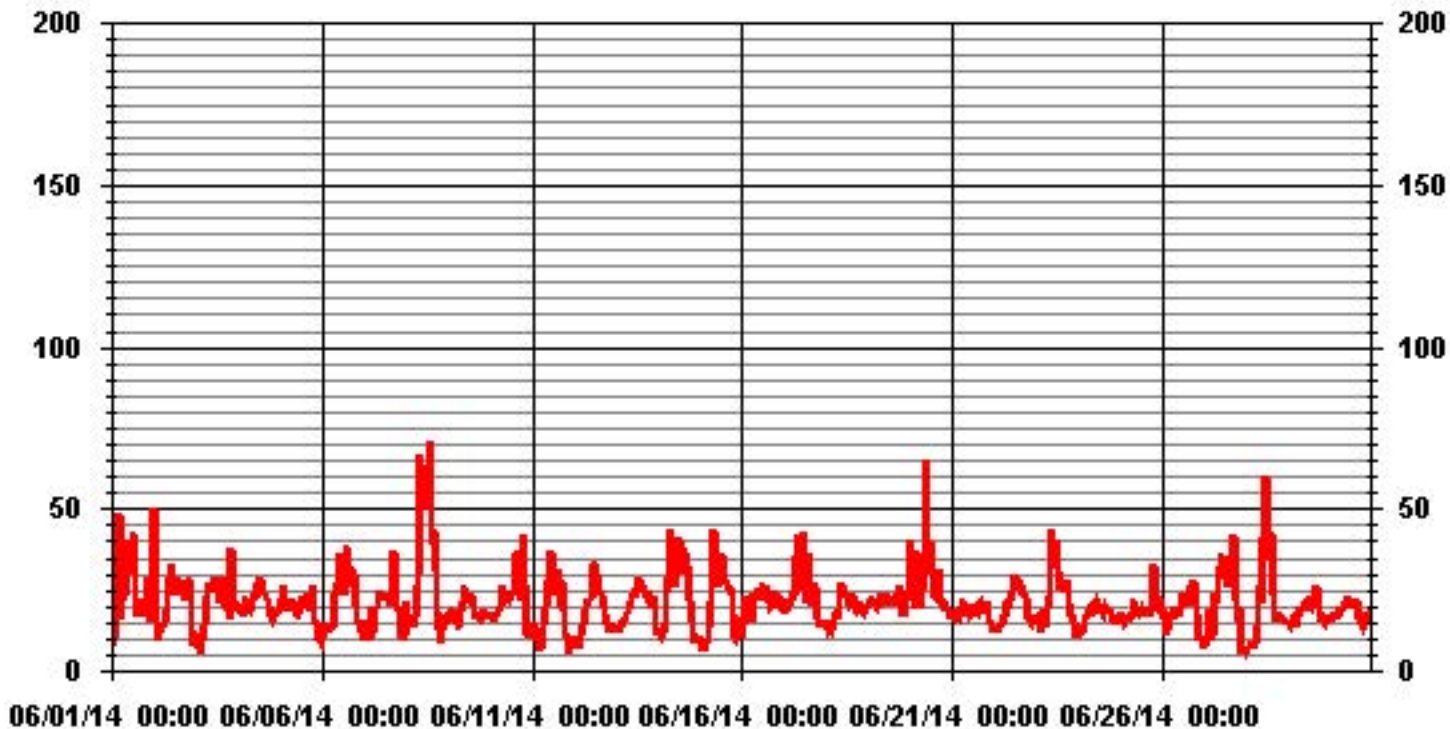
STATUS FLAG CODES

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: 720 HRS

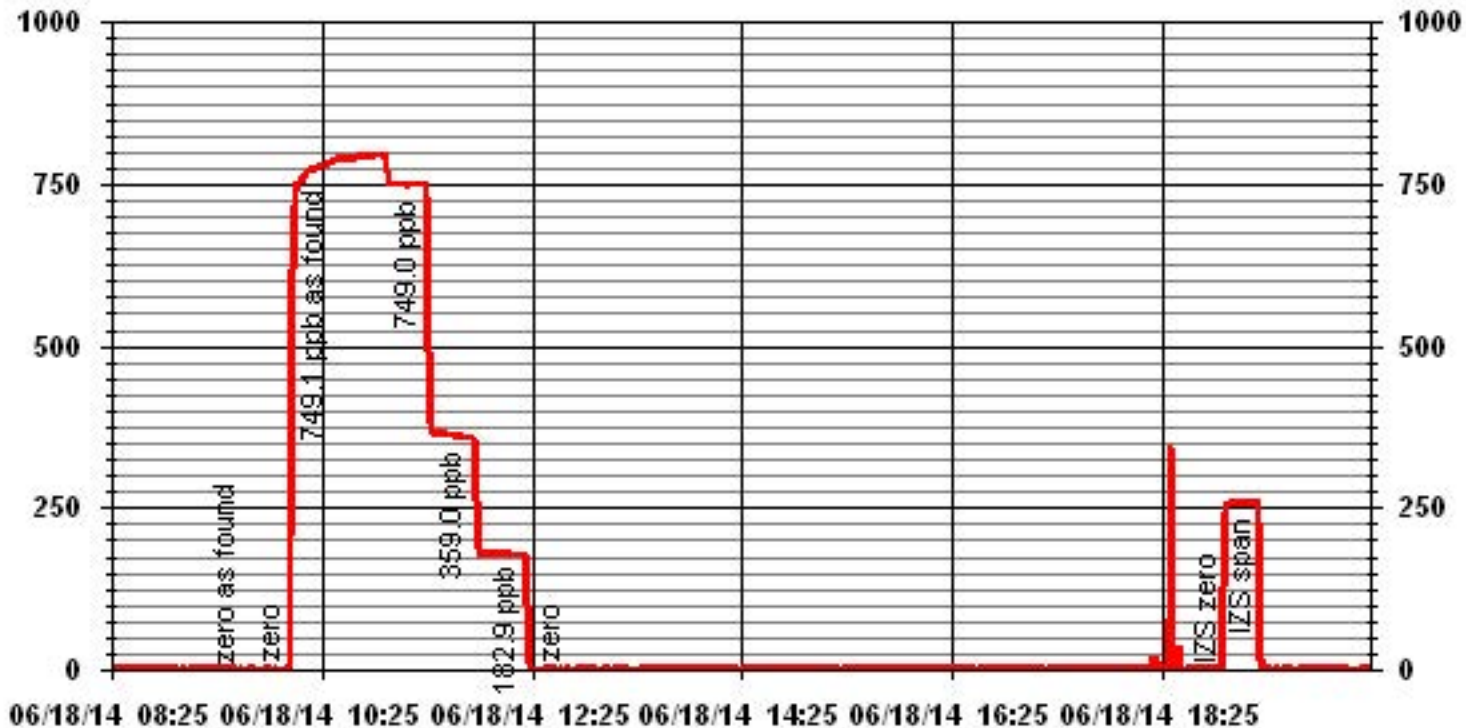
01 Hour Averages



Calibration Reports

Sulphur Dioxide

01 Minute Averages



Hydrogen Sulphide



API 101E H2S Analyzer Calibration

Date: 17-Jun-14
Company: LICA
Station Name/Location: ST LINA
Performed by: Chris Wesson
Application H₂S/TRS/SO₂: H2S
Start/End Time (mst): 11:15 - 13:42
Calibration Purpose: Removal
Converter Make & Model: Internal
Converter Serial #: N/A
Cal Gas Expiry Date: 8-Jul-16

Analyzer:
Serial Number: 510
Last Calibration Date: 10-Jun-14
Previous Cal High Point C.F.: 0.998
Range ppb: 100
As Found C.F.: 0.884
New C.F.: 0.899

As found:		As left:	
SLOPE:	1.217	SLOPE:	N/A
OFFSET:	131.6	OFFSET:	N/A
HVPS:	542	HVPS:	N/A
RCELL TEMP:	50.0	RCELL TEMP:	N/A
BOX TEMP:	34.9	BOX TEMP:	N/A
PMT TEMP:	8.4	PMT TEMP:	N/A
IZS TEMP:	45.0	IZS TEMP:	N/A
TEST:	315.3 (convTemp)	TEST:	N/A
STABIL:	0.1	STABIL:	N/A
PRES:	20.9	PRES:	N/A
SAMP FL:	547	SAMP FL:	N/A
PMT:	5.9	PMT:	N/A
NORM PMT:	134.5	NORM PMT:	N/A
UV LAMP:	1422	UV LAMP:	N/A
LAMP RATIO:	92.8	LAMP RATIO:	N/A
STR. LGT	80.1	STR. LGT	N/A
DRK PMT:	39.9	DRK PMT:	N/A
DRK LMP:	-5.6	DRK LMP:	N/A
Internal Span:	46.2	Internal Span:	N/A

Calibrator: Flow Meter ID's: N/A Make & Model: Environica 6100 Serial #: 5212 Cal Gas Cylinder I.D. #: BLM44 Cal Gas Conc. (ppm): 10.3	Calibrator Flow Targets: <table border="1"> <thead> <tr> <th>point</th> <th>diluent (cc/min)</th> <th>cal gas (cc/min)</th> <th>total (cc/min)</th> </tr> </thead> <tbody> <tr><td>zero</td><td>5000</td><td>0</td><td>5000</td></tr> <tr><td>high</td><td>4960</td><td>40</td><td>5000</td></tr> <tr><td>mid</td><td>4980</td><td>20</td><td>5000</td></tr> <tr><td>low</td><td>4990</td><td>11</td><td>5001</td></tr> </tbody> </table>	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	11	5001
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	11	5001																		

Calibration:

Point	Calibrator Flow Rates (cc/min)			Calculated Concentration: (ppb)	Indicated Concentration: (ppb)	Correction Factors:
	Diluent	Cal Gas	Total			
as found zero	4998	0.0	4998	0	1.0	NA
adjusted zero	N/A	0.0	#####	0		NA
as found high	4961	37.76	4999	78.0	88.2	0.884
adjusted high		N/A				
mid	4978	18.41	4996	38.0	43.0	0.884
low	4986	10.62	4997	21.9	24.0	0.914
calibrator zero	4998	0.00	4998	0	0.0	NA
Average C.F. =						0.899

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	Pass/Fail ?
Slope =	0.889	> or = 0.995	PASS
b (Intercept as % of full scale) =	-0.25%	0.85-1.15	PASS
% change in C.F. from last cal	11.43%	± 3% F.S.	PASS
		± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

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

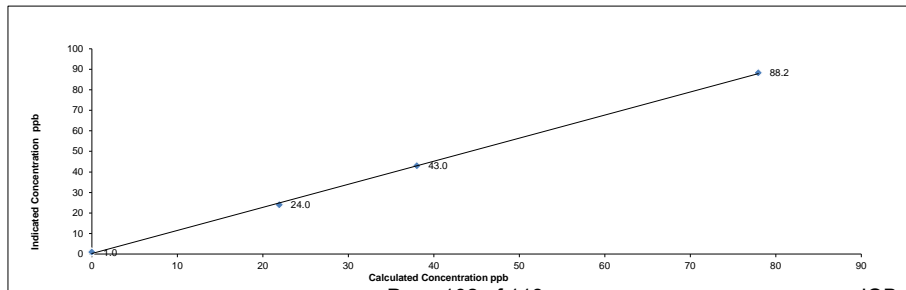
SO₂ High Point gas concentration: n/a Time gas run (mst): n/a

Zero corrected analyzer response: n/a

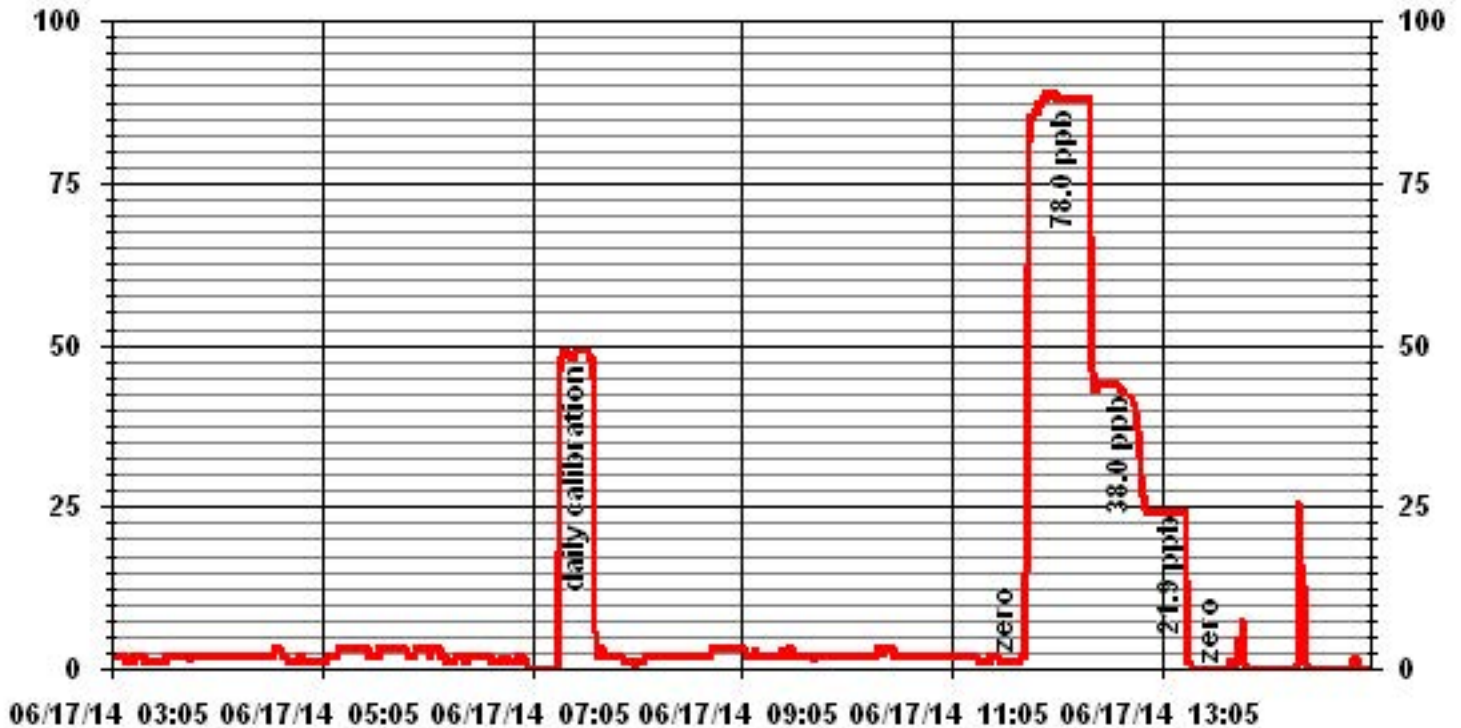
Comments:

Removal calibration prior to maintenance

API 101E H2S Analyzer Calibration



01 Minute Averages





API 101E H2S Analyzer Calibration

Date: 18-Jun-14	Start/End Time (mst): 11:00/15:45	
Company: LICA	Calibration Purpose: INSTALL CAL	
Station Name/Location: ST LINA	Converter Make & Model: Internal	
Performed by: Limin Li/Raja Abid	Converter Serial #: N/A	
Application H ₂ S/TRS/SO ₂ : H2S	Cal Gas Expiry Date: 25-Dec-15	

Analyzer: Serial Number: 722 Last Calibration Date: 17-Jun-14 Previous Cal High Point C.F.: 1.000	Range ppb: 100 As Found C.F.: NA New C.F.: 1.032
---	---

As found:	As left:
SLOPE: 1.368	SLOPE: 0.978
OFFSET: 36.0	OFFSET: 56.5
HVPS: 595	HVPS: 622
RCELL TEMP: 50.0	RCELL TEMP: 50.0
BOX TEMP: 30.4	BOX TEMP: 32.5
PMT TEMP: 8.1	PMT TEMP: 8.2
IZS TEMP: 45.0	IZS TEMP: 45.0
TEST: 314.8 (ConvTemp)	TEST: 315.3 (ConvTemp)
STABIL: 8.3	STABIL: 0.2
PRES: 25.1	PRES: 24.9
SAMP FL: 609	SAMP FL: 597
PMT: 172.5	PMT: 104.2
NORM PMT: 143.8	NORM PMT: 57.2
UV LAMP: 2202.5	UV LAMP: 2203
LAMP RATIO: 100	LAMP RATIO: 100
STR. LGT: 24.7	STR. LGT: 27.6
DRK PMT: 56.8	DRK PMT: 58.2
DRK LMP: 3.5	DRK LMP: 3.5
Internal Span: 46.2	Internal Span: 41.7

Calibrator: Flow Meter ID's: N/A Make & Model: API 700 Serial #: 830 Cal Gas Cylinder I.D. #: BLM005049 Cal Gas Conc. (ppm): 10.1	Calibrator Flow Targets: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>point</th> <th>diluent (cc/min)</th> <th>cal gas (cc/min)</th> <th>total (cc/min)</th> </tr> </thead> <tbody> <tr> <td>zero</td> <td>5000</td> <td>0</td> <td>5000</td> </tr> <tr> <td>high</td> <td>4961</td> <td>39</td> <td>5000</td> </tr> <tr> <td>mid</td> <td>4981</td> <td>19</td> <td>5000</td> </tr> <tr> <td>low</td> <td>4989</td> <td>11</td> <td>5000</td> </tr> </tbody> </table>	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)	zero	5000	0	5000	high	4961	39	5000	mid	4981	19	5000	low	4989	11	5000
point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)																		
zero	5000	0	5000																		
high	4961	39	5000																		
mid	4981	19	5000																		
low	4989	11	5000																		

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	na	0.0	#####	0		NA
adjusted zero	4998	0.0	4998	0	0.0	NA
as found high	na					
adjusted high	4960	38.60	4999	78.0	78.0	1.000
mid	4980	18.80	4999	38.0	36.7	1.035
low	4990	11.40	5001	23.0	21.7	1.061
calibrator zero	4998	0.00	4998	0	0.3	NA
Average C.F. =						1.032

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	> or = 0.995	LIMITS	Pass/Fail ?
Slope =	0.996	0.85-1.15	PASS	
b (Intercept as % of full scale) =	0.79%	± 3% F.S.	PASS	
% change in C.F. from last cal	#VALUE!	± 15%	#####	

Converter Efficiency Check for H₂S/TRS application:

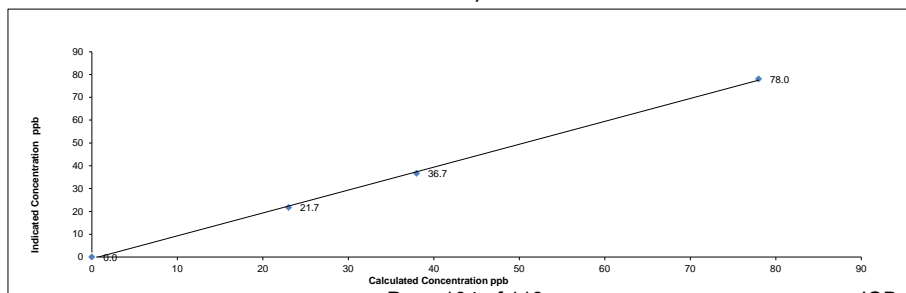
run converter efficiency test immediately following zero adjust

SO ₂ High Point gas concentration:	200PPB	Time gas run (mst):	15:34:00-15:43
Zero corrected analyzer response:	2.8		

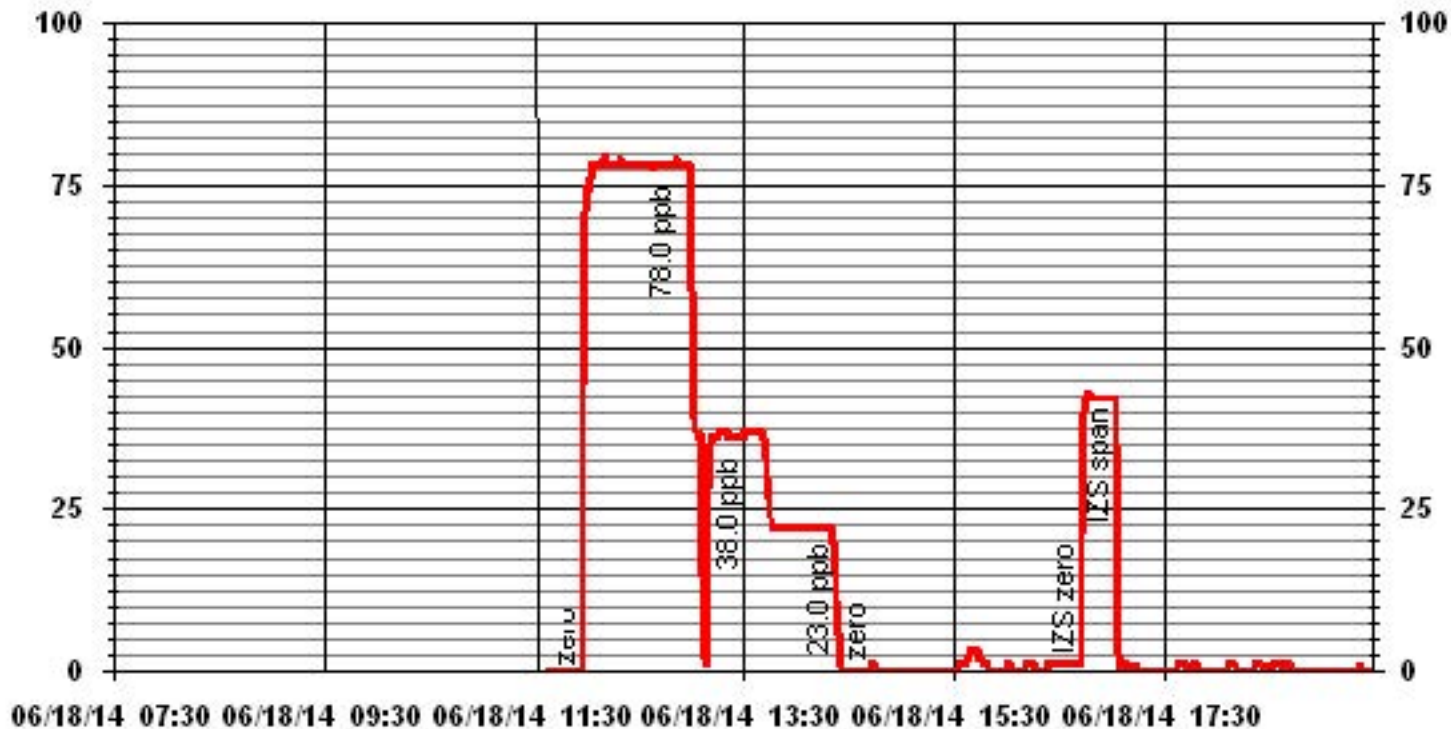
Comments:

When doing second point, Cal gas pressure drop, Calibrator stop. Redo second point.

API 101E H2S Analyzer Calibration



01 Minute Averages



Total Hydrocarbons

Maxxam Thermo 51C THC Analyzer Calibration

Date: 18-Jun-14 Start Time (mst): 9:55
 Company: LICA End Time (mst): 13:30
 Station Name/Location: St. Lina Calibration Purpose: Monthly Calibration
 Performed by: Limin Li/Raja Abid Cal Gas Expiry Date: 26-Mar-17

Analyzer: _____
 Serial Number: 436609739 Range ppm: 50
 Last Calibration Date: 30-May-14 As Found C.F.: 0.980
 Previous Cal High Point C.F.: 0.999 New C.F.: 1.010

	As found:	As left:
H ₂ cylinder (psi):	<u>1450</u>	<u>1450</u>
H ₂ cylinder reg set (psi):	<u>25</u>	<u>25</u>
Span Cylinder (psi):	<u>480</u>	<u>480</u>
Span Cylinder Reg Set (psi):	<u>25</u>	<u>25</u>
Zero Air Gen Pressure:	<u>37</u>	<u>37</u>
measurement alarms:	<u>NONE</u>	<u>NONE</u>
service alarms:	<u>NONE</u>	<u>NONE</u>
FID status:	cnt: <u>2170</u>	cnt: <u>2170</u>
	rng: <u>1</u>	rng: <u>1</u>
	try: <u>0</u>	try: <u>0</u>
	flm: <u>206.9</u>	flm: <u>204.6</u>
	det: <u>125.7</u>	det: <u>125.5</u>
Oven Readings:	Flame: <u>206</u>	Flame: <u>204</u>
	Filter: <u>125</u>	Filter: <u>125</u>
	Base: <u>125</u>	Base: <u>125</u>
	Pump: <u>6.82</u>	Pump: <u>6.82</u>
Voltages:	+5 <u>4.9</u>	+5 <u>4.9</u>
	+15 <u>14.9</u>	+15 <u>14.9</u>
	-15 <u>-15</u>	-15 <u>-15</u>
	Internal Span: <u>31.18</u>	Internal Span: <u>35.51</u>

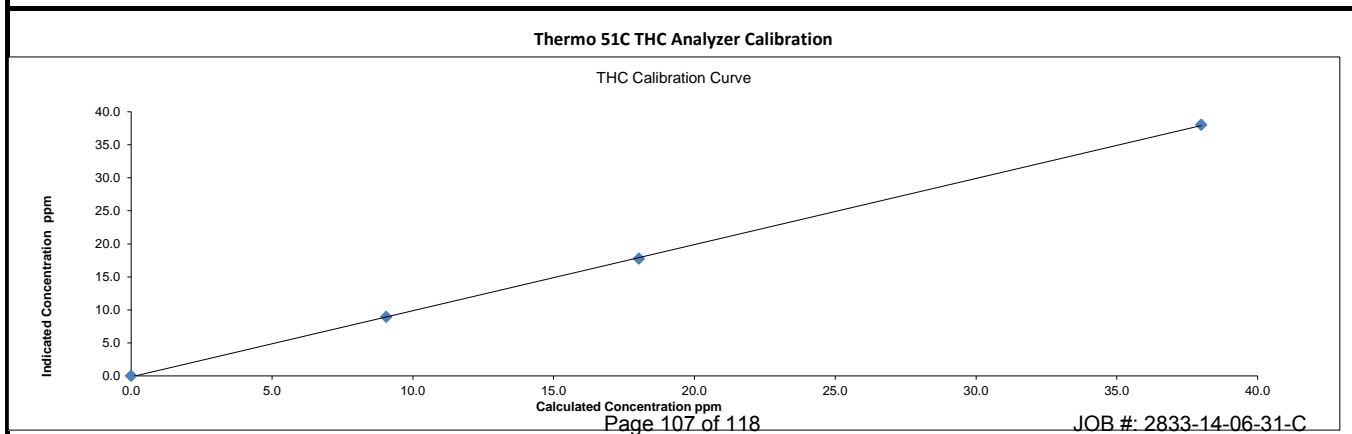
Calibrator:	Flow Meter ID's: <u>NA</u>	Calibrator Flow Targets:			
	Make & Model: <u>API700</u>	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
	Serial #: <u>627</u>	zero	<u>2000</u>	<u>0</u>	<u>2000</u>
	Cal Gas Cylinder I.D. #: <u>LL33674</u>	high	<u>2000</u>	<u>68</u>	<u>2068</u>
	CH ₄ /C ₃ H ₈ Cylinder Conc. (ppm): <u>601.4</u> <u>202.0</u>	mid	<u>2000</u>	<u>32</u>	<u>2032</u>
	CH ₄ as propane/total CH ₄ equivalents (ppm): <u>555.5</u> <u>1156.9</u>	low	<u>2000</u>	<u>16</u>	<u>2016</u>

Point	Calibrator Flow Rates (cc/min)			Calculated Concentration:		Indicated Concentration:		Correction Factors:
	Diluent	Cal Gas	Total	(ppm)	(ppm)	(ppm)	(ppm)	
as found zero	2002	0.00	2002	0	0.06	0	0.06	NA
adjusted zero	2002	0.00	2002	0	0.00	0	0.00	NA
as found high	2002	68.00	2070	38.00	38.80	38.80	38.80	0.980
adjusted high	2002	68.00	2070	38.00	38.02	38.02	38.02	1.000
mid	2002	31.70	2034	18.03	17.74	17.74	17.74	1.017
low	2002	15.80	2018	9.06	8.93	8.93	8.93	1.014
calibrator zero	2002	0.00	2002	0	0.00	0	0.00	NA
Average C.F. =								1.010

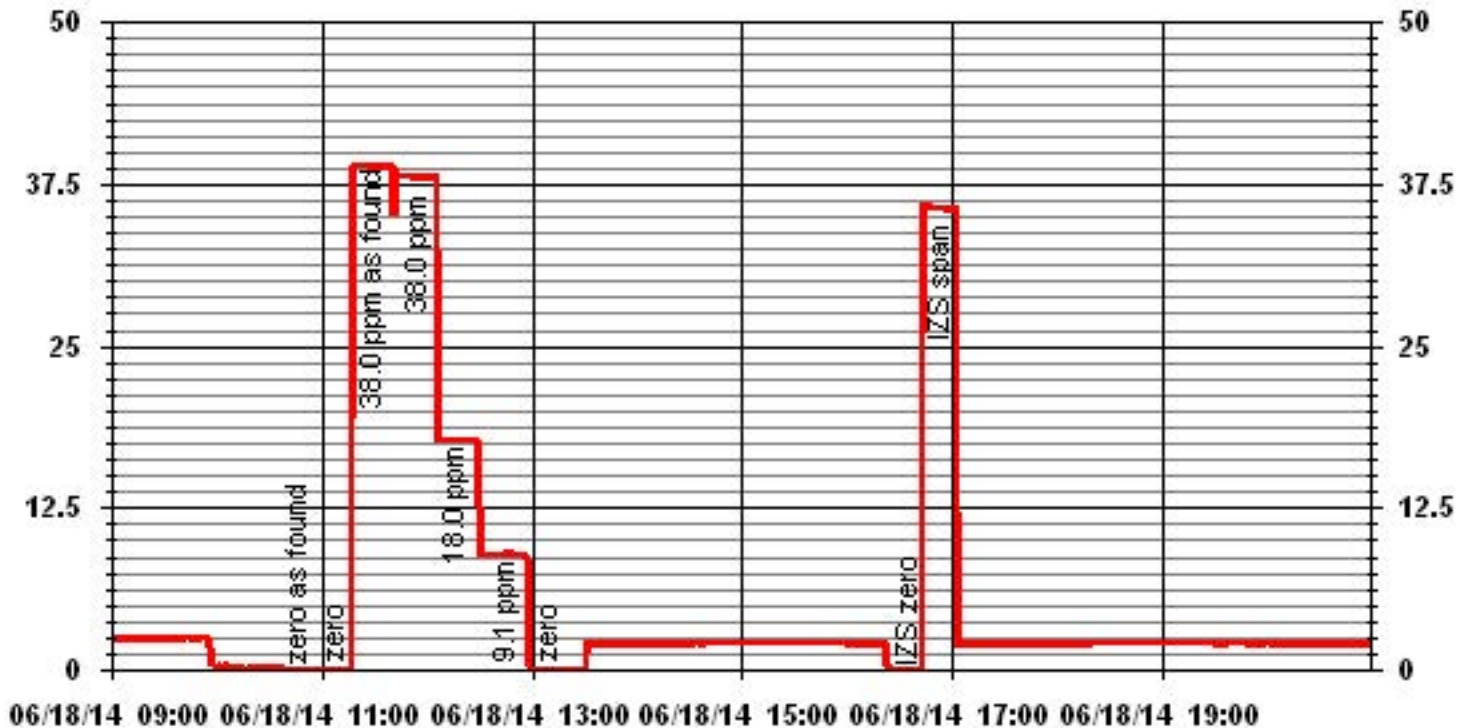
Linear Regression/Calibration Results:

Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>1.001</u>	> or = 0.995	PASS
b (Intercept as % of full scale) =	<u>-0.228%</u>	0.85-1.15	PASS
% change in C.F. from last cal	<u>1.95%</u>	± 3% F.S.	PASS
		± 15%	PASS

Comments:
 Change sample filter.



01 Minute Averages



Nitrogen Dioxide



API 200E NOx Analyzer Calibration

Date: 18-Jun-14
 Company: LICA
 Station Name/Location: St Lina
 Performed by: Limin Li/Raja Abid

Start Time (mst): 8:50
 End Time (mst): 15:40
 Calibration Purpose: Monthly Cal
 Cal Gas Expiry Date: 4-Feb-18

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

Correction Factors:
 As found C.F. Previous Cal High Point C.F.:
 NO= 0.991 NO= 1.000
 NOx= 0.990 NOx= 1.000
 NO₂= 0.998 NO₂= 0.996

As found:
 NOx SLOPE: 0.929
 NOx OFFS: 0.4
 NO SLOPE: 0.923
 NO OFFS: -1.7
 TEST: 130.7
 SAMP FLW: 468
 OZONE FL: 74
 PMT: 23.1
 NORM PMT: -2.6
 AZERO: 29.4
 HVPS: 654
 RCELL TEMP: 50.0
 BOX TEMP: 28.8
 PMT TEMP: 6.9
 IZS TEMP: 40.3
 MOLY TEMP: 316.0
 RCEL: 5.7
 SAMP: 26.9
 Internal Span: Nox:406,NO:7.8,NO2:399

As left:
 NOx SLOPE: 0.920
 NOx OFFS: -0.3
 NO SLOPE: 0.916
 NO OFFS: -0.9
 TEST: 130.7
 SAMP FLW: 472
 OZONE FL: 73
 PMT: 24.2
 NORM PMT: -0.3
 AZERO: 23
 HVPS: 654
 RCELL TEMP: 50.0
 BOX TEMP: 31.7
 PMT TEMP: 6.9
 IZS TEMP: 40.1
 MOLY TEMP: 315.2
 RCEL: 5.6
 SAMP: 26.7
 Internal Span: Nox:392.2,NO:5.8,NO2:386.7

Calibrator Flow Targets:

Make & Model: EnviroNics 6100
 Serial #: 4760
 Cal Gas Cylinder I.D. #: BLM711
 NO Cylinder Conc. (ppm): 50.1
 NOx Cylinder Conc. (ppm): 50.2

point	diluent (cc/min)	cal gas (cc/min)	O ₃ setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	4922	78	480.00	5000
mid	4962	38	220.00	5000
low	4981	19	90.00	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	4996	0.0	4996	0	0	0.6	-0.3	NA	NA
adjusted zero	4996	0.0	4996	0	0	0.0	-0.1	NA	NA
as found high	4916	77.61	4994	778.6	780.2	786	788	0.991	0.990
adjusted high	4916	77.61	4994	778.6	780.2	779	781	1.000	0.999
mid	4957	37.81	4995	379.2	380.0	378	378	1.003	1.005
low	4976	18.95	4995	190.1	190.5	189	190	1.006	1.002
calibrator zero	4996	0.00	4996	0	0	0.0	0.0	NA	NA
Average C.F.=								1.003	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	4916	77.60	4994	0.0	780.0	782.0	2.0	0.0	-0.1	
as found NO ₂	4916	77.60	4994	480.0	251.0	783.0	532.0	529.0	530.0	0.998
adjusted NO ₂		NA								
gpt mid	4916	77.60	4994	220.0	534.0	784.0	250.0	246.0	248.0	0.992
gpt low	4916	77.60	4994	90.0	684.0	785.0	101.0	96.0	99.0	0.970
Average NO₂ C.F.=										0.981

Linear Regression/Calibration Results:			LIMITS
NO	NOx	NO ₂	
Correlation Coefficient =	<u>1.000</u>	<u>1.000</u>	> or = 0.995
Slope =	<u>1.001</u>	<u>1.001</u>	0.85-1.15
b (Intercept as % of full scale)=	<u>-0.08%</u>	<u>-0.08%</u>	± 3% F.S.
% change in C.F. from last cal=	<u>0.94%</u>	<u>1.00%</u>	+/-15%
NO ₂ converter efficiency	<u></u>	<u></u>	>85%

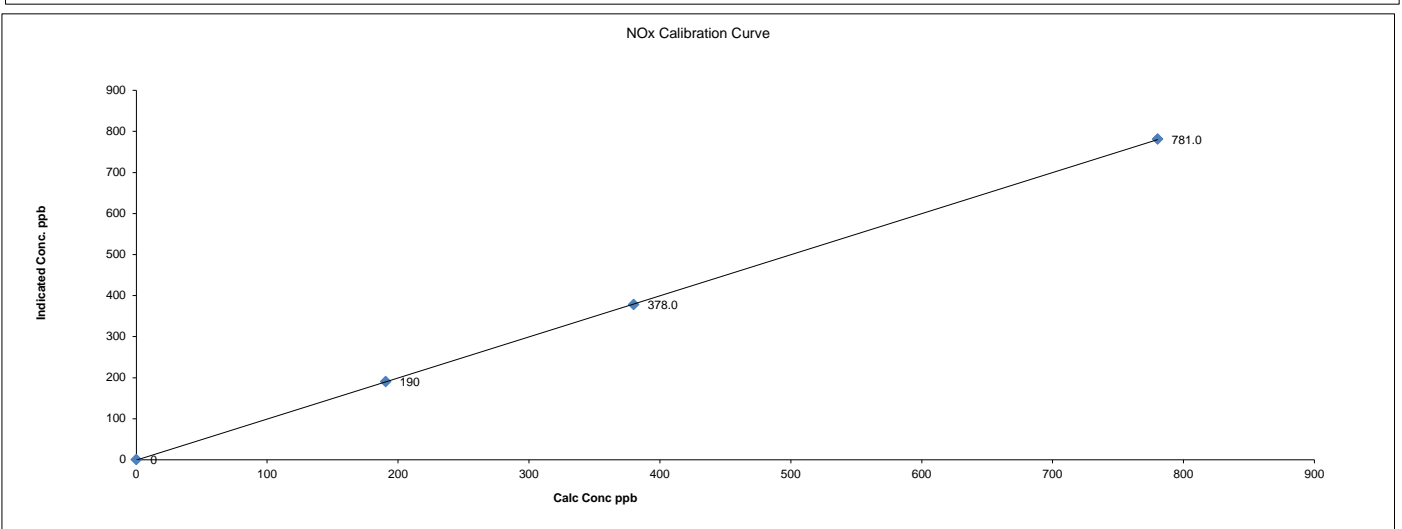
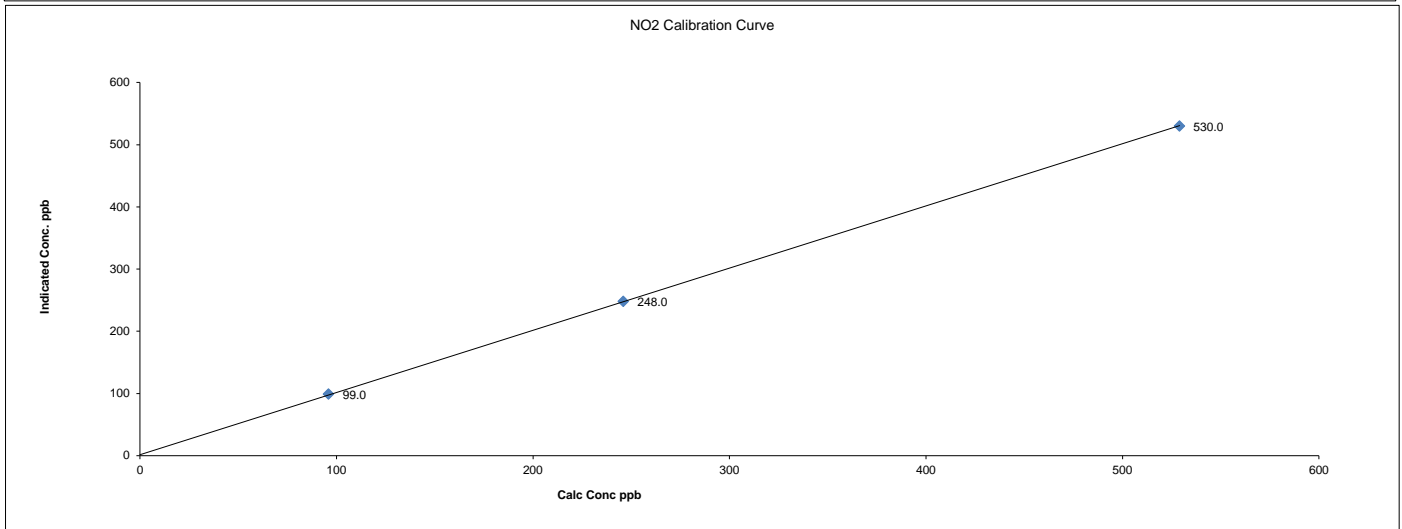
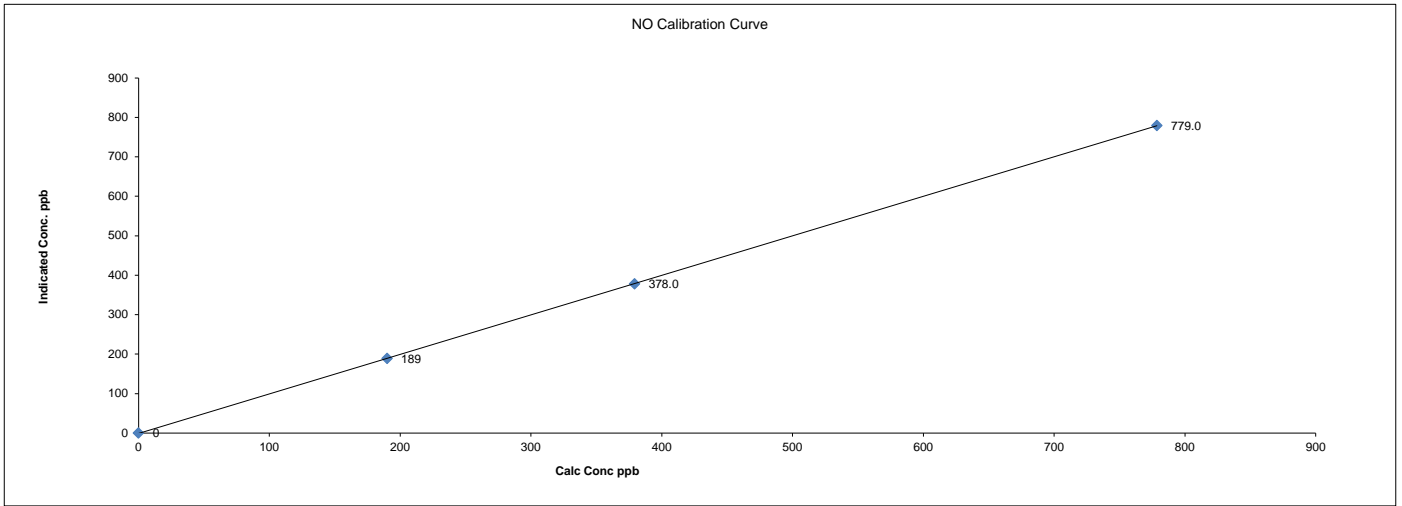
Comments:

Change sample filter. After calibration do O3 350 PPB point for O3 analyzer calibration. NOX: 786 ;NO: 390 ;NO2: 396 . NO2 CE:0.993.

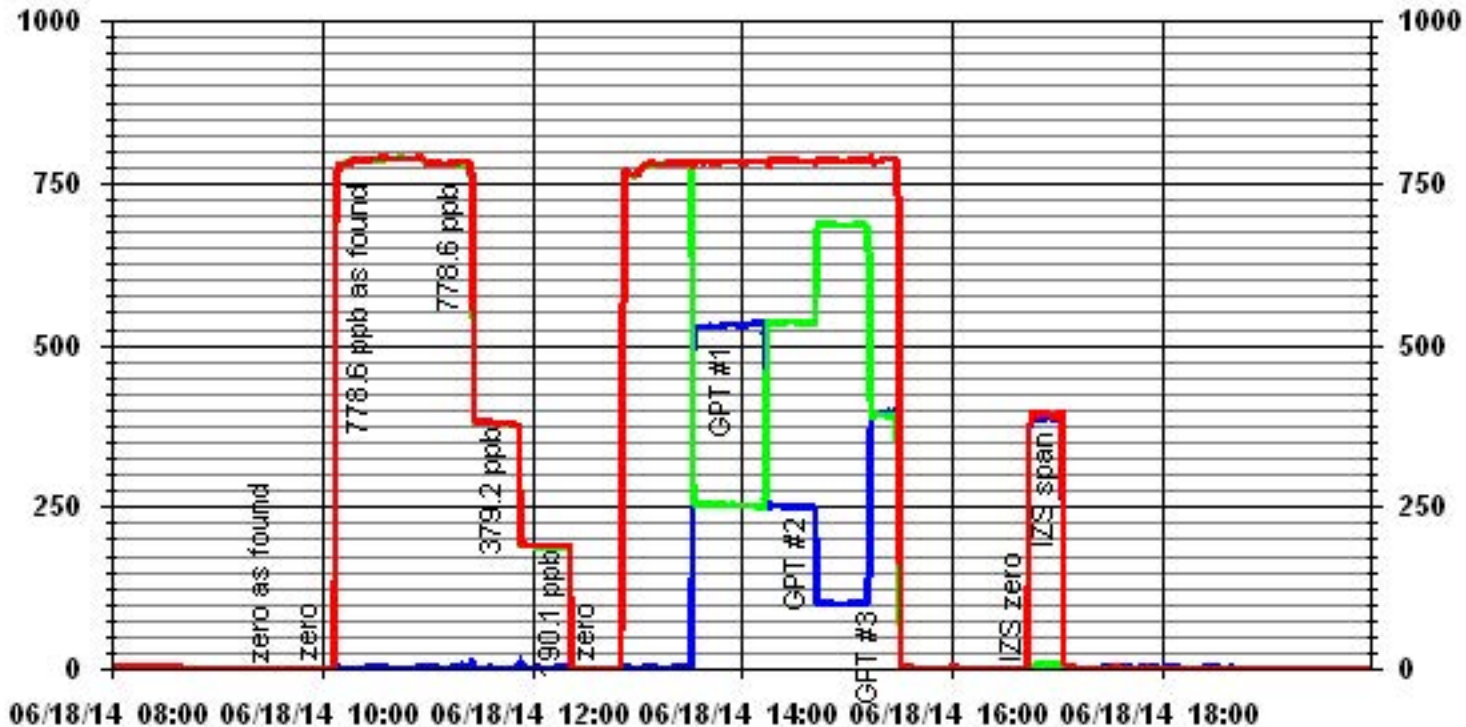
Date: 18-Jun-14
 Company: LICA
 Station Name/Location: St Lina
 Performed by: Limin Li/Raja Abid

Start Time (mst): 8:50
 End Time (mst): 15:40
 Calibration Purpose: Monthly Cal
 Cal Gas Expiry Date: 4-Feb-18

API 200E NOx Analyzer Calibration



01 Minute Averages



— LICA31 NOX_ PPB

— LICA31 NO_ PPB

— LICA31 NO2_ PPB

Ozone

Maxxam Thermo 49i O₃ Analyzer Calibration

Date: 18-Jun-14 Start Time (mst): 15:30
 Company: LICA End Time (mst): 18:50
 Station Name/Location: St.Lina Calibration Purpose: Monthly Calibration
 Performed by: Limin Li/Raja Abid G.P.T. Date: 18-Jun-14

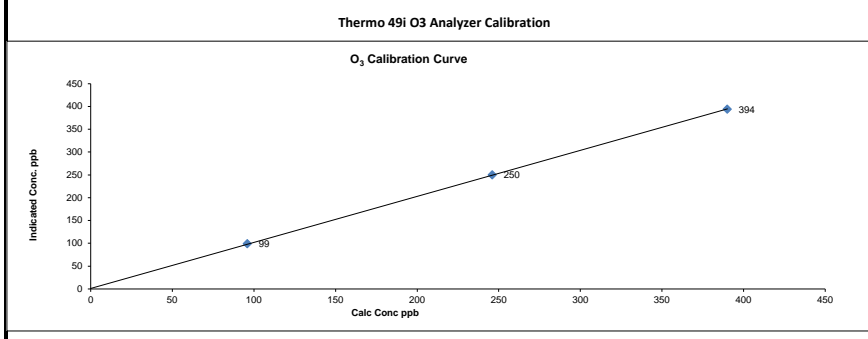
Analyzer:		Range ppm: <u>500</u>	
Serial Number:	<u>1002240371</u>	As Found C.F.:	<u>1.007</u>
Last Calibration Date:	<u>1-May-14</u>	New C.F.:	<u>0.981</u>
Previous Cal High Point C.F.:	<u>1.000</u>		
As found:		As left:	
O ₃ Bkg:	<u>-0.1</u>	O ₃ Bkg:	<u>-0.1</u>
O ₃ Coef:	<u>0.995</u>	O ₃ Coef:	<u>1.009</u>
Motherboard:	<u>3.3</u>		<u>3.3</u>
	<u>15.0</u>		<u>15.0</u>
	<u>24.0</u>		<u>24.0</u>
	<u>-3.3</u>		<u>-3.3</u>
Interface Board:	<u>3.3</u>		<u>3.3</u>
	<u>5.0</u>		<u>5.0</u>
	<u>15.0</u>		<u>15.0</u>
	<u>-15.0</u>		<u>-15.0</u>
Photo Lamp	<u>9.4</u>	Photo Lamp	<u>9.4</u>
	<u>24.0</u>		<u>23.6</u>
O ₃ Lamp	<u>8.3</u>	O ₃ Lamp	<u>8.3</u>
Bench:	<u>29.8</u>	Bench:	<u>29.8</u>
Bench Lamp:	<u>53.6</u>	Bench Lamp:	<u>53.6</u>
O ₃ Lamp:	<u>67.9</u>	O ₃ Lamp:	<u>67.9</u>
Pressure:	<u>678.8</u>	Pressure:	<u>678.8</u>
Cell A lpm:	<u>0.736</u>	Cell A lpm:	<u>0.736</u>
Cell B lpm:	<u>0.731</u>	Cell B lpm:	<u>0.731</u>
O ₃ ppb:	<u>27.7</u>	O ₃ ppb:	<u>27.7</u>
Cell A ppb:	<u>29</u>	Cell A ppb:	<u>29</u>
Cell B ppb:	<u>26.3</u>	Cell B ppb:	<u>26.3</u>
Cell A int:	<u>70911</u>	Cell A int:	<u>70911</u>
Cell B int:	<u>80808</u>	Cell B int:	<u>80808</u>
Internal Span:	<u>334</u>	Internal Span:	<u>334</u>

Calibrator:		Calibrator Flow Targets:		
Make & Model:	<u>Enviroics 6100</u>	point	total flow (cc/min)	O ₃ setting (v or ppb)
Serial #:	<u>4760</u>	zero	<u>5000</u>	<u>0</u>
NOx Gas Cylinder I.D. #:	<u>na</u>	high	<u>5000</u>	<u>350</u>
NOx Cylinder Conc. (ppm):	<u>na</u>	mid	<u>5000</u>	<u>220</u>
		low	<u>5000</u>	<u>90</u>

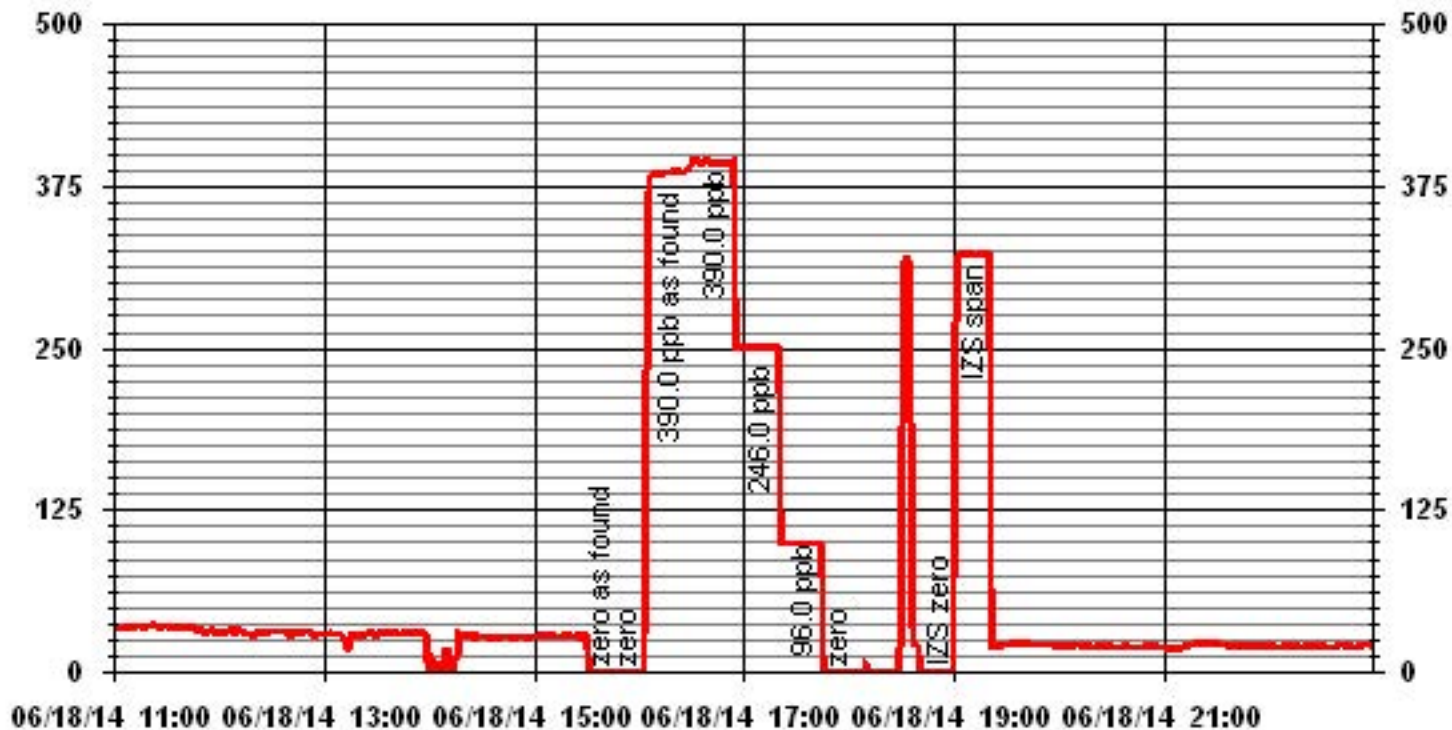
Calibration:							
Calibrator Flow Rates (cc/min)			Calculated Concentration:	Indicated Concentration:	Correction Factors:		
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)		
as found zero	4997	0.0	4997	0.0	-0.1	NA	
adjusted zero	4997	0.0	4997	0.0	-0.1	NA	
as found high	4997	0.00	4997	390.0	387.0	1.007	
adjusted high	4997	0.00	4997	390.0	394.0	0.990	
mid	4997	0.00	4997	246.0	250.0	0.984	
low	4997	0.00	4997	96.0	99.0	0.969	
calibrator zero	4997	0.00	4997	0.0	0.0	NA	
** copy and paste flows and NO decrease from NOx cal in to calculated concentration**						Average C.F.=	0.981

Linear Regression/Calibration Results:			
Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>1.010</u>	> or = 0.995	PASS
b (Intercept as % of full scale)=	<u>0.196%</u>	0.85-1.15	PASS
% change in C.F. from last cal	<u>-1%</u>	± 3% F.S.	PASS
		± 15%	PASS

Comments:
 Filter changed. No zero adjustment necessary.



01 Minute Averages



Particulate Matter 2.5



R & P 1400A TEOM PM2.5 Analyzer Calibration

Date: 18-Jun-14
 Company: LICA
 Station Name/Location: St.Lina
 Previous Audit Date: 30-May-14
 Parameter: PM2.5
 Performed by: Limin Li/Raja Abid
 Start/End Time (mst): 16:00/17:20
 Calibration Purpose: Monthly Calibration 1

1400A Information and Status:

Serial Number: 140AB228720001
 K_o Factor: 15003
 Ambient Temperature °C: 15.2
 Ambient Pressure atm: 0.923
 Main Flow Reading lpm: 2.98
 Aux Flow Reading lpm: 13.60
 As Found Filter Loading %: 25.00
 As Left Filter Loading %: 25.00
 As Found Noise: 0.052
 As Left Noise: 0.021
 Pump Vacuum: Ok
 Warnings: None

Reference Standards:

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

As Found Pump Off Test and Leak Check :

	main flow	auxillary flow	
pump unplugged zero (lpm)	0.04	0.18	
seconds to reach full flow (max. 60s)	45	53	(maintenance required if either > 60 seconds)
leak rate (lpm)	0.05	0.20	
0 corrected leak rate (lpm)	0.01	0.02	
limit (lpm)	0.15	.15 or (.60 with FDMS unit)	

As Left Pump Off Test and Leak Check (same as above if as found adequate):

	main flow	auxillary flow	
pump unplugged zero (lpm)	0.04	0.19	
seconds to reach full flow (max. 60s)	45	53	(maintenance required if either > 60 seconds)
leak rate (lpm)	0.05	0.20	
0 corrected leak rate (lpm)	0.01	0.01	
limit (lpm)	0.15	.15 or (.60 with FDMS unit)	

As found temperature and pressure:

	tolerance +/- 2.0°C	tolerance +/- 0.01 atm
1400A temperature °C:	14.6	1400A pressure atm: 0.923
reference temperature °C:	15.8	reference pressure: 0.920
difference °C:	1.2	difference : -0.003

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

	tolerance +/- 2.0°C	tolerance +/- 0.01 atm
1400A temperature °C:	14.6	1400A pressure atm: 0.923
reference temperature °C:	15.8	reference pressure: 0.920
difference °C:	1.2	difference : -0.003

As found flows:

	main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm/+/- 7%
1400A main flow lpm:	2.98	1400A total/aux flow lpm: 16.58
reference main flow lpm:	3.00	reference total/aux flow lpm: 16.82
difference lpm:	0.02	difference lpm: 0.24

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

	main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm/+/- 7%
1400A main flow lpm:	2.98	1400A total/aux flow lpm: 16.58
reference main flow lpm:	3.00	reference total/aux flow lpm: 16.82
difference lpm:	0.02	difference lpm: 0.24

K_o Audit:

Last K_o audit date: NA
 1400A K_o factor: 15003
 Measured K_o factor: NA
 % difference: NA

Comments:



R & P 1400A TEOM PM 2.5 Analyzer Calibration

Date: 27-Jun-14
 Company: LICA
 Station Name/Location: St.Lina
 Previous Audit Date: June 18,2014

Parameter: PM 2.5
 Performed by: Kevin Hope
 Start/End Time (mst): 13:58/14:28
 Calibration Purpose: Monthly

1400A Information and Status:

Serial Number:	<u>140AB228720001</u>	As Found Filter Loading %:	<u>28.00</u>
K _o Factor:	<u>15003</u>	As Left Filter Loading %:	<u>18.00</u>
Ambient Temperature °C:	<u>23.0</u>	As Found Noise:	<u>0.041</u>
Ambient Pressure atm:	<u>0.934</u>	As Left Noise:	<u>0.000</u>
Main Flow Reading lpm:	<u>2.95</u>	Pump Vacuum:	<u>Ok</u>
Aux Flow Reading lpm:	<u>13.68</u>	Warnings:	<u>None</u>

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	<u>Dwyer</u>	<u>Fisher Scientific</u>	<u>Fisher Scientific</u>
Model:	<u>475 Mark III</u>	<u>FB61291</u>	<u>FB61291</u>
Serial Number:	<u>NA</u>	<u>130168457</u>	<u>130168457</u>
Calibration Date:	<u>unknown</u>	<u>11-Apr-14</u>	<u>11-Apr-14</u>

As Found Pump Off Test and Leak Check :

	main flow	auxillary flow	
pump unplugged zero (lpm)	<u>0.08</u>	<u>0.10</u>	
seconds to reach full flow (max. 60s)	<u>22</u>	<u>39</u>	(maintenance required if either > 60 seconds)
leak rate (lpm)	<u>0.08</u>	<u>0.10</u>	
0 corrected leak rate (lpm)	<u>0.00</u>	<u>0.00</u>	
limit (lpm)	<u>0.15</u>	<u>.15 or (.60 with FDMS unit)</u>	

As Left Pump Off Test and Leak Check (same as above if as found adequate):

	main flow	auxillary flow	
pump unplugged zero (lpm)	<u>0.08</u>	<u>0.10</u>	
seconds to reach full flow (max. 60s)	<u>22</u>	<u>39</u>	(maintenance required if either > 60 seconds)
leak rate (lpm)	<u>0.08</u>	<u>0.10</u>	
0 corrected leak rate (lpm)	<u>0.00</u>	<u>0.00</u>	
limit (lpm)	<u>0.15</u>	<u>.15 or (.60 with FDMS unit)</u>	

As found temperature and pressure:

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1400A temperature °C:	<u>22.8</u>	1400A pressure atm:	<u>0.937</u>
reference temperature °C:	<u>23.0</u>	reference pressure:	<u>0.934</u>
difference °C:	<u>0.2</u>	difference :	<u>-0.003</u>

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

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1400A temperature °C:	<u>22.8</u>	1400A pressure atm:	<u>0.937</u>
reference temperature °C:	<u>23.0</u>	reference pressure:	<u>0.934</u>
difference °C:	<u>0.2</u>	difference :	<u>-0.003</u>

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm		total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm/+/- 7%	
1400A main flow lpm:	<u>2.98</u>	1400A total/aux flow lpm:	<u>13.61</u>
reference main flow lpm:	<u>2.95</u>	reference total/aux flow lpm:	<u>13.68</u>
difference lpm:	<u>-0.03</u>	difference lpm:	<u>0.07</u>

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

main flow tolerance 3.00 lpm +/- 0.20 lpm		total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm/+/- 7%	
1400A main flow lpm:	<u>2.98</u>	1400A total/aux flow lpm:	<u>13.61</u>
reference main flow lpm:	<u>2.95</u>	reference total/aux flow lpm:	<u>13.68</u>
difference lpm:	<u>-0.03</u>	difference lpm:	<u>0.07</u>

K_o Audit:

Last K_o audit date: NA
 1400A K_o factor: 15003
 Measured K_o factor: NA
 % difference: NA

Comments:

Lakeland Industry & Community Association

Portable / Elk Point Airport Monitoring Site

Ambient Air Monitoring Data Report

For

June 2014

Prepared By:



July 29, 2014

Lakeland Industry & Community Association Portable / Elk Point Airport Ambient Air Monitoring

Table of Contents

	Page		Page
Introduction	3		
Calibration Procedure	4		
Monthly Continuous Summary	5	Calibration Reports	99
General Monthly Summary	6	• Sulphur Dioxide	100
Continuous Monitoring	9	• Hydrogen Sulphide	104
• Monthly Summaries, Graphs & Wind Roses	10	• Total Hydrocarbons (55i)	107
○ Sulphur Dioxide	11	• Particulate Matter 2.5	111
○ Hydrogen Sulphide	19	• Nitrogen Dioxide	114
○ Particulate Matter 2.5	27	• Ozone	118
○ Nitrogen Dioxide	32		
○ Nitric Oxide	40		
○ Oxides of Nitrogen	47		
○ Ozone	55		
○ Total Hydrocarbons (55i)	63		
○ Methane	70		
○ Non-Methane Hydrocarbons	78		
○ Vector Wind Speed	86		
○ Vector Wind Direction	93		
○ Standard Deviation Wind Direction	96		

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: June 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 – June 2014

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PORTABLE / ELK POINT AIRPORT SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						OBJECTIVES				MONTHLY AVERAGE	1-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	0.16	2	2, 3	VAR	VAR	VAR	0.8	7	99.6
H ₂ S (PPB)	10	3	0	0	0.02	1	VAR	VAR	VAR	VAR	0.3	3	100.0
THC (55i) (PPM)	-	-	-	-	2.40	6.9	14	5	2.6	105(ESE)	3.2	28	100.0
Methane (PPM)	-	-	-	-	2.38	6.8	14	5	2.6	105(ESE)	3.1	28	100.0
NMHC (PPM)	-	-	-	-	0.02	0.3	VAR	VAR	VAR	VAR	0.1	28	100.0
NO ₂ (PPB)	159	-	0	-	3.67	20.1	1	23	1.5	156(SSE)	7.1	2	95.3
NO (PPB)	-	-	-	-	1.08	27.2	28	5	0.7	301(WNW)	4.4	27	95.3
NO _x (PPB)	-	-	-	-	4.75	39.5	26	23	4	282(W)	10.6	27	95.3
O ₃ (PPB)	82	-	0	-	26.39	62	1	17	5.7	223(SW)	36.8	13	100.0
PM 2.5 (UG/M ³)	-	30	-	0	12.21	60	2, 29	18, 23	8.3, 16.2	306(NW) 311(NW)	26.14	30	95.6
VECTOR WS (KPH)	-	-	-	-	10.72	35.3	21	12	-	315(NW)	20.6	30	100.0
VECTOR WD (DEGREES)	-	-	-	-	327(NW)	-	-	-	-	-	-	-	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 replaced with API 100A, S/N: 837

The monthly calibration attempted to be performed on June 3rd. However, the analyzer took long time to reach the first span point. The calibration was aborted to perform troubleshooting. No issue could be determined. An as found points check was performed on June 4th using a different calibrator. The analyzer responded well. The 3-point calibration was performed after the as found points check. Suspected issues causing the analyzer to respond slow was from the calibrator. No data was discarded due to this event. Hourly maximum data collected during the hour 20 on June 5th was discarded due to a small power outage that affected data quality. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

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

The analyzer was working well throughout the month. The monthly calibration was performed on June 3rd. The inlet filter was changed before the calibration was started. Hourly maximum data collected during the hour 20 on June 5th was discarded due to a small power outage that affected data quality. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Nitrogen Dioxide (PPB)

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

The monthly calibration was performed on June 5th. The inlet filter was changed before the calibration was started. The analyzer spanned high on June 13th. During the site visit on June 13th, it was found that various temperature alarms showed on the analyzers due to the case fan failure. The fan was replaced on June 13th following a zero/span check. The check result was good. Data was invalidated back to the last good calibration result, which was June 12th. A total of 33 hours of data was invalidated. Hourly maximum data collected during the hour 20 on June 5th was discarded due to a small power outage that affected data quality. Data was corrected using daily zero information.

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 June 5th. The inlet filter was changed before the calibration was started. Hourly maximum data collected during the hour 20 on June 5th was discarded due to a small power outage that affected data quality. 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 June 5th. The inlet filter was changed before the calibration was started. Hourly maximum data collected during the hour 20 on June 5th was discarded due to a small power outage that affected data quality. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Particulate Matter 2.5 (ug/m³)

- Analyzer make / model – TEOM 1405F, S/N: 1405A208301003

Two Teom audits were performed this month: one was done on June 4th and the other was completed on June 27th. The sample inlet was cleaned and the filter was replaced on June 4th. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. 32 hours of data were invalidated as the data were below –3 ug/m³.

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

- System make / model –RM Young 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. Hourly maximum data for wind speed collected during the hour 20 on June 5th was discarded due to a small power outage that affected data quality.

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 June 4th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - Elk Point Site

JUNE 2014

SULPHUR DIOXIDE (SO2) hourly averages in ppb

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

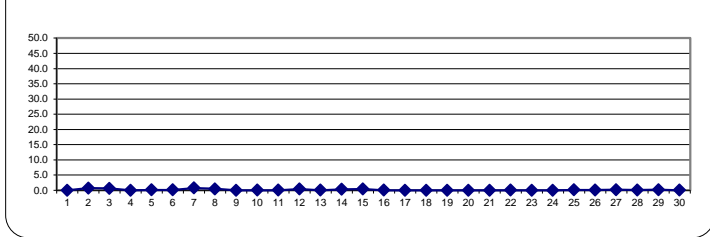
OBJECTIVE LIMIT:

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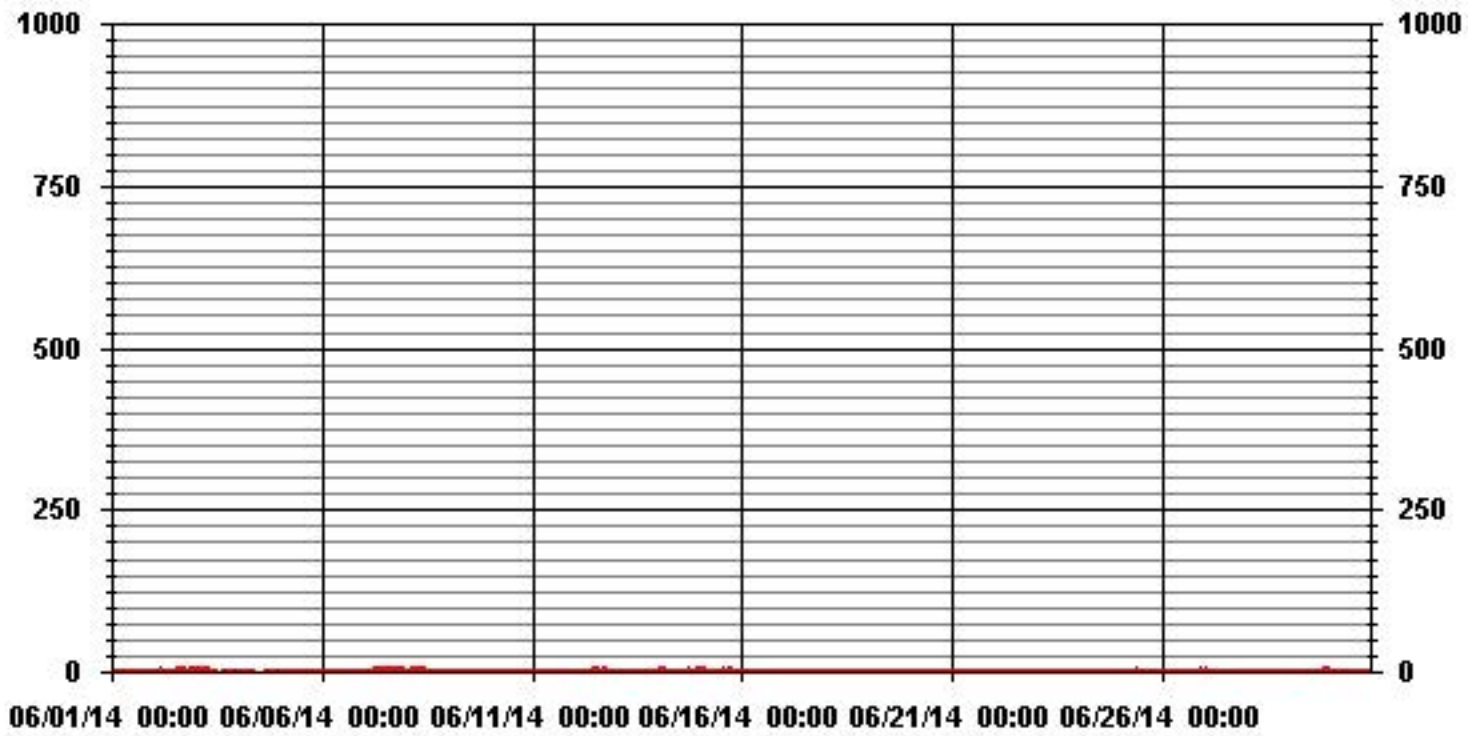
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	106					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	2, 3
MAXIMUM 24-HR AVERAGE:	0.8	PPB			ON DAY(S)	7
				VAR-VARIOUS		
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	717 HRS		
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	99.6 %		
STANDARD DEVIATION:	0.38		MONTHLY AVERAGE:	0.16 PPB		

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



— LICA35 SO2_ PPB

Lakeland Industry & Community Association - Elk Point Site

JUNE 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	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	1	1	0	1	0.1	24
	2	0	0	0	0	4	1	1	0	0	1	1	7	3	S	2	1	2	2	2	2	2	2	2	1	7	1.6	24
	3	1	1	1	1	1	1	S	S	3	2	1	1	C	C	Y	Y	Y	Y	0	S	S	0	0	0	3	0.9	20
	4	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	1	1	1	1	1	1	1	1	1	0.4	24
	5	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	0	1	1	P	1	1	1	1	1.0	23
	6	1	1	1	1	0	1	1	0	0	S	0	0	0	0	1	1	1	1	1	0	0	1	1	1	1	0.6	24
	7	1	1	1	1	1	1	1	1	S	1	2	2	2	1	1	2	1	1	1	1	1	1	1	1	2	1.2	24
	8	1	1	1	1	1	1	1	S	1	1	2	1	2	2	0	1	1	1	1	1	1	1	1	1	2	1.1	24
	9	1	0	1	0	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0.4	24
	10	1	0	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	1	1	1	4	0.4	24
	11	1	1	1	1	S	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	24
	12	1	1	1	S	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0.7	24
	13	1	1	S	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0.8	24
	14	1	S	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	24
	15	S	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	S	1	0.7	24
	16	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	S	1	1	0.7	24
	17	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	S	0	1	1	0.4	24
	18	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0.2	24
	19	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	S	1	1	0	1	0	1	0.4	24
	20	1	0	0	1	0	0	0	S	0	0	0	0	0	0	0	1	1	S	1	1	0	0	0	1	0.3	24	
	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S	1	1	1	1	1	0	1	0.3	24	
	22	0	1	1	1	1	0	0	0	0	0	0	0	0	0	1	S	1	1	1	1	1	0	0	1	0.5	24	
	23	1	1	1	0	0	0	0	0	0	0	0	0	0	1	S	0	0	0	0	1	0	1	1	1	0.3	24	
	24	1	1	1	1	1	1	0	0	0	0	0	1	1	1	S	0	1	0	1	1	1	1	1	1	1	0.7	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	1	1	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	1	1	1	1	1	1	1	0.8	24
	27	1	1	1	0	0	1	1	1	0	0	0	S	0	0	0	0	1	1	0	0	1	1	1	1	1	0.5	24
	28	1	1	0	0	0	1	1	1	0	0	S	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0.4	24
	29	1	1	1	1	1	1	1	1	0	S	0	0	1	1	0	0	0	0	0	1	1	1	1	1	1	0.7	24
	30	1	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	1	0	1	0	1	1	1	1	1	0.6	24
HOURLY MAX		1	1	1	1	4	1	1	1	3	2	2	7	3	2	2	2	2	2	4	2	2	2	2	1			
HOURLY AVG		0.8	0.7	0.8	0.7	0.8	0.7	0.4	0.4	0.4	0.4	0.4	0.7	0.6	0.5	0.5	0.5	0.6	0.6	0.8	0.8	0.9	0.9	0.8	0.8			

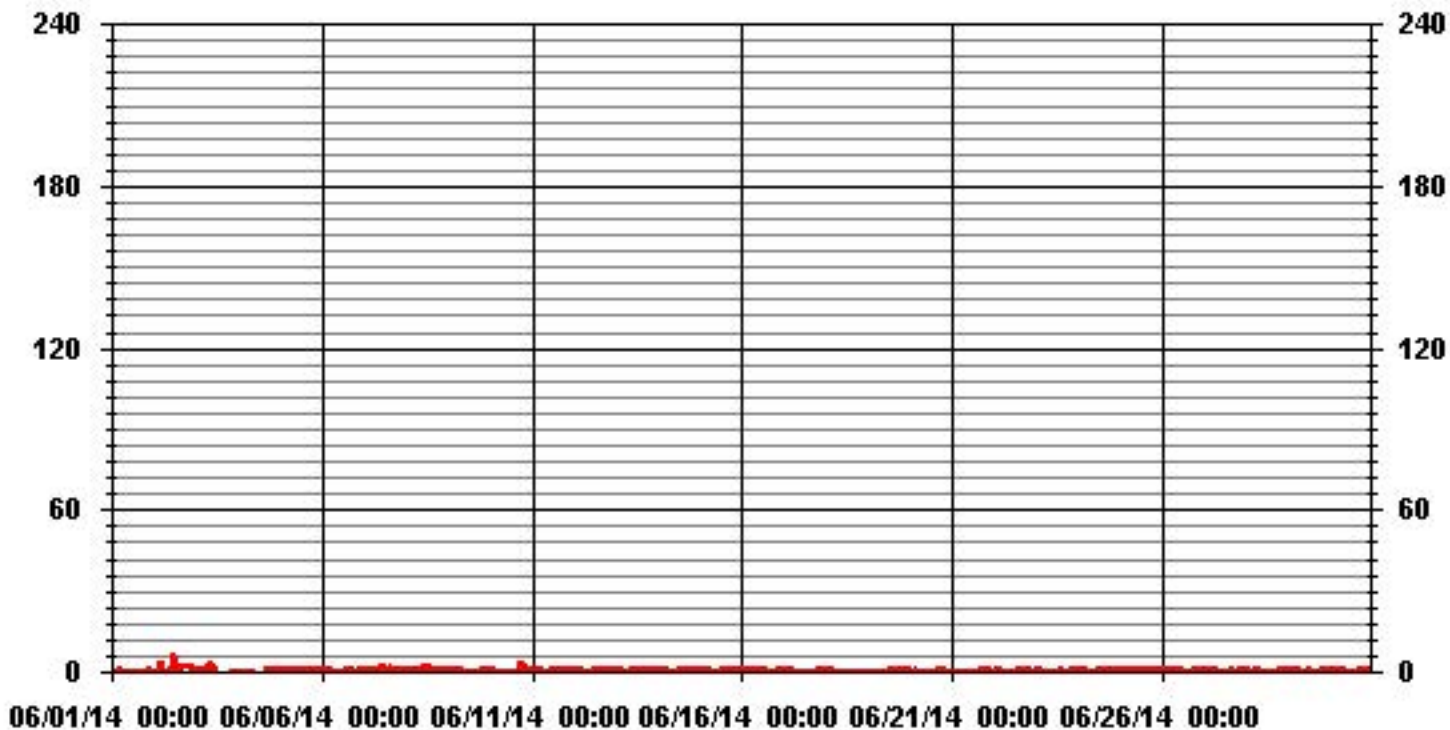
STATUS FLAG CODES

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:	395					
MAXIMUM INSTANTANEOUS VALUE:	7	PPB	@ HOUR(S)	11	ON DAY(S)	2
	VAR-VARIOUS					
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	715	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	0.63					

01 Hour Averages



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

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	3.25	1.33	4.73	6.65	11.24	11.98	5.47	3.10	1.77	1.03	1.77	4.14	10.05	11.53	16.56	5.32	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	3.25	1.33	4.73	6.65	11.24	11.98	5.47	3.10	1.77	1.03	1.77	4.14	10.05	11.53	16.56	5.32	

Calm : .00 %

Total # Operational Hours : 676

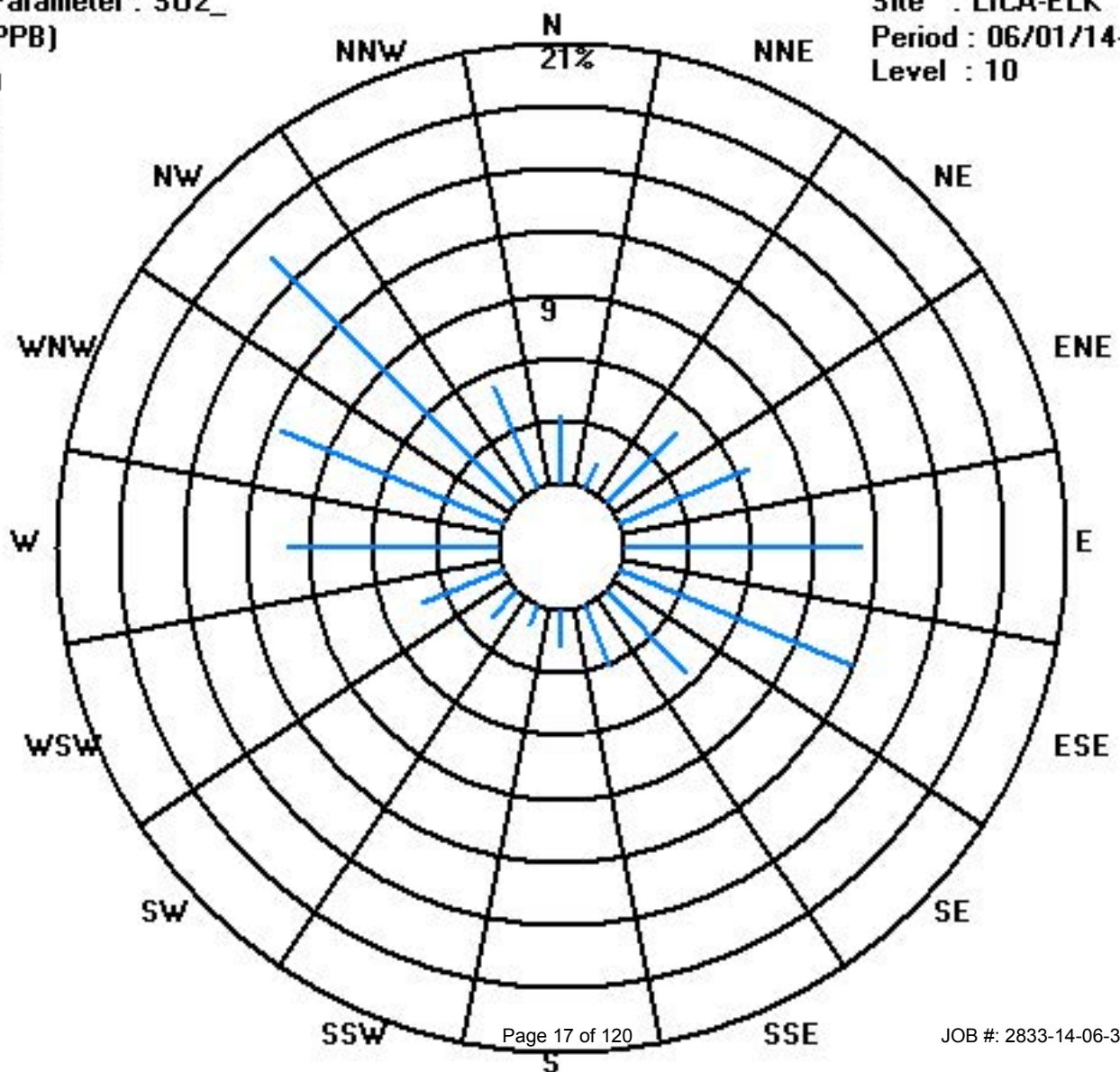
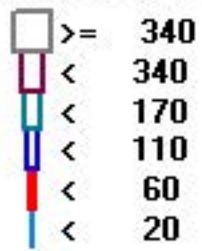
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	22	9	32	45	76	81	37	21	12	7	12	28	68	78	112	36	676
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	22	9	32	45	76	81	37	21	12	7	12	28	68	78	112	36	

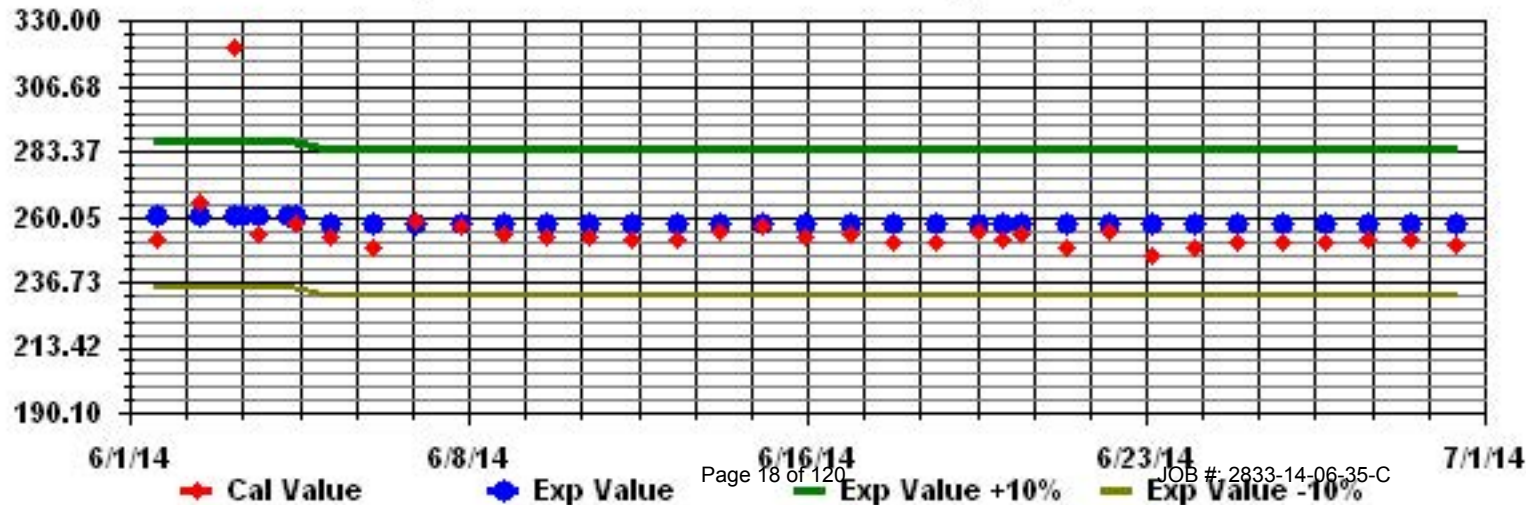
Calm : .00 %

Total # Operational Hours : 676

Class Limits (PPB)



Calibration Graph for Site: LICA35 Parameter: S02_ Sequence: S02 Phase: SPAN



Hydrogen Sulphide

Lakeland Industry & Community Association - Elk Point Site

JUNE 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	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	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
3		0	0	0	0	I	I	I	I	I	0	0	0	C	C	C	C	C	0	0	S	0	0	0	0	0	I	0.3	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	0.0	24		
5		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	0.0	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	0.0	24		
7		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	0.0	24		
8		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	0.0	24		
9		0	0	I	I	I	I	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	I	0.2	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	0.0	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	0.0	24		
12		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	0.0	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	0.0	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	0.0	24		
15		S	0	0	0	I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	I	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	S	0	0	0.0	24		
17		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	24		
18		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0.0	24		
20		0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	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	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	0	0	0	S	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	S	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	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24		
25		0	0	0	0	0	I	I	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	I	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	0.0	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	0.0	24		
28		0	0	0	0	0	I	I	I	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	I	0.1	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	0.0	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	0.0	24		
HOURLY MAX		0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
HOURLY AVG		0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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

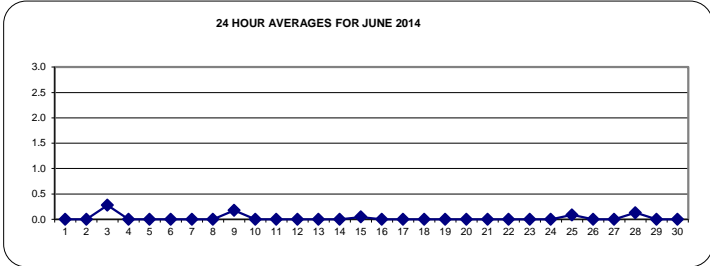
OBJECTIVE LIMIT:

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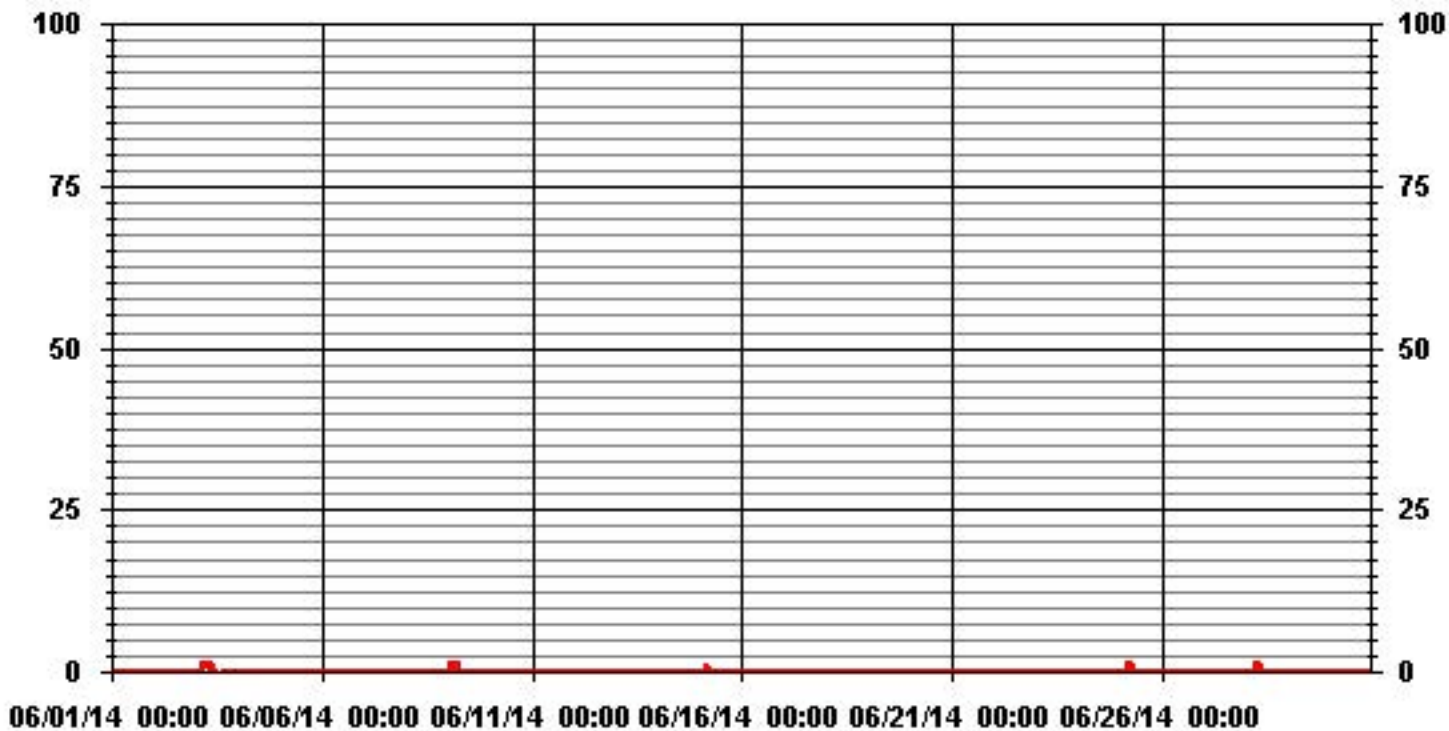
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	15					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.3	PPB			ON DAY(S)	3
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.15		MONTHLY AVERAGE:	0.02	PPB	

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



Lakeland Industry & Community Association - Elk Point Site

JUNE 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	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0	24
2		0	0	0	0	1	1	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
3		0	0	1	1	1	1	1	1	2	1	0	0	C	C	C	C	C	C	0	S	S	0	0	0	0	2	0.6	24
4		1	0	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	24	
5		0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	P	0	0	0	0	0.0	23
6		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	0.0	24
7		0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
8		0	0	0	0	0	1	0	S	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	1	0.2	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	1	0	0	0	0	1	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	0.0	24
12		0	0	0	S	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	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	0.0	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	0.0	24
15		S	0	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	2	0.3	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	S	0	0	0.0	24
17		0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	S	0	0	2	0.1	24
18		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	0.0	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	0.0	24
20		0	0	0	0	1	0	0	S	0	0	0	0	0	0	0	0	0	2	S	0	0	0	0	0	2	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	0.0	24
22		0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0.0	24	
23		0	1	1	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0.1	24	
24		0	0	0	1	0	0	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
25		0	0	1	1	1	1	1	1	1	1	1	1	0	S	0	0	0	0	2	0	0	0	0	0	2	0.5	24	
26		0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	1	1	0.1	24	
27		1	1	1	1	0	1	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
28		0	1	1	1	1	1	1	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
29		0	0	0	0	0	0	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
30		0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX		1	1	2	1	1	1	1	1	2	1	1	1	2	1	0	1	0	2	2	0	0	0	1	1				
HOURLY AVG		0.1	0.1	0.3	0.3	0.2	0.3	0.3	0.1	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	69
MAXIMUM INSTANTANEOUS VALUE:	2 PPB @ HOUR(S) VAR ON DAY(S) VAR
	VAR-VARIOUS
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION:	0.33
OPERATIONAL TIME:	719 HRS

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

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3	3.22	1.31	4.68	6.58	11.12	12.00	5.41	3.07	1.75	1.02	1.75	4.09	9.95	11.42	17.27	5.27	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	3.22	1.31	4.68	6.58	11.12	12.00	5.41	3.07	1.75	1.02	1.75	4.09	9.95	11.42	17.27	5.27	

Calm : .00 %

Total # Operational Hours : 683

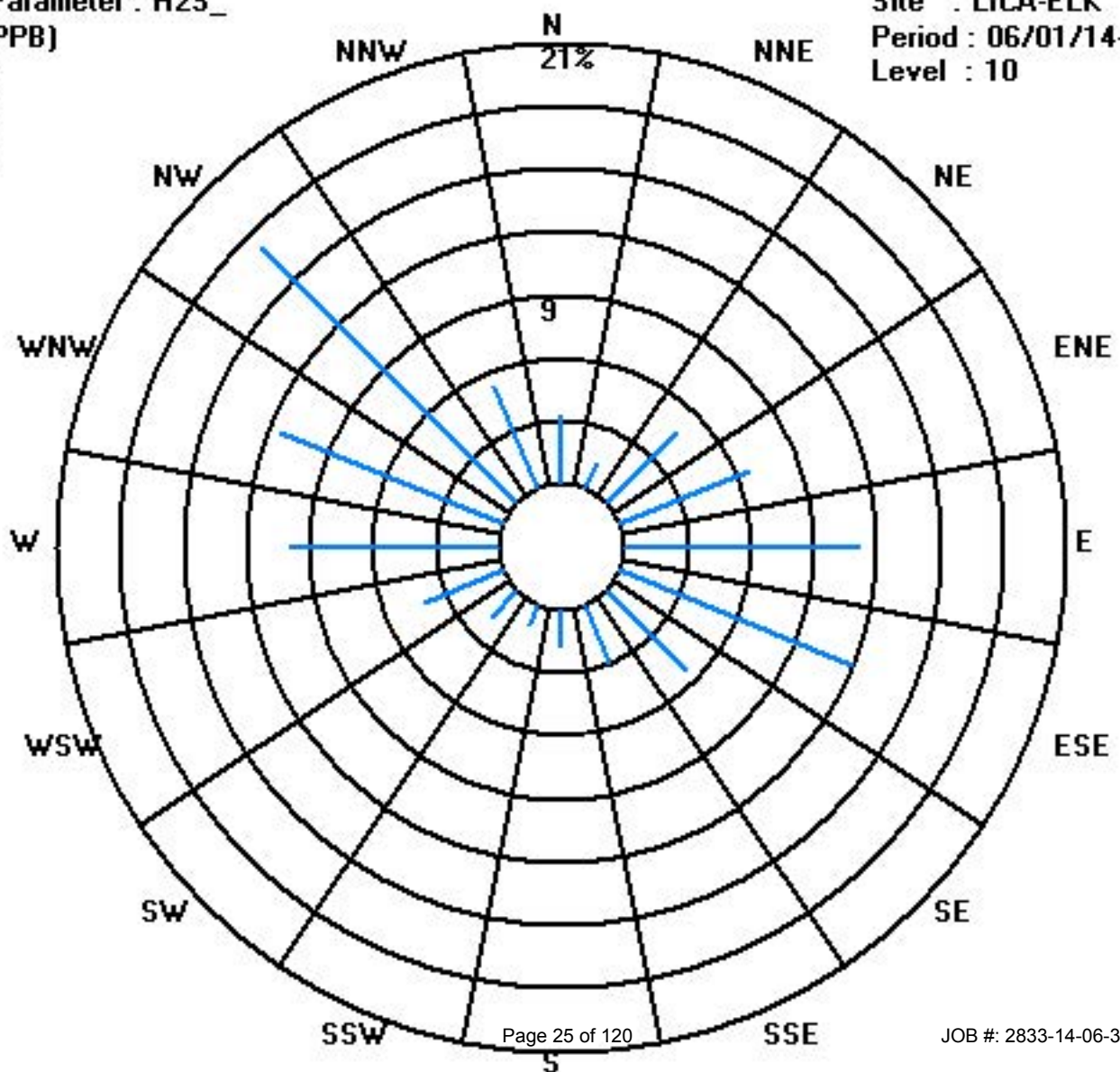
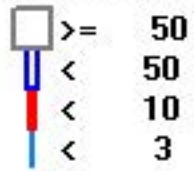
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3	22	9	32	45	76	82	37	21	12	7	12	28	68	78	118	36	683
< 10																	
< 50																	
>= 50																	
Totals	22	9	32	45	76	82	37	21	12	7	12	28	68	78	118	36	

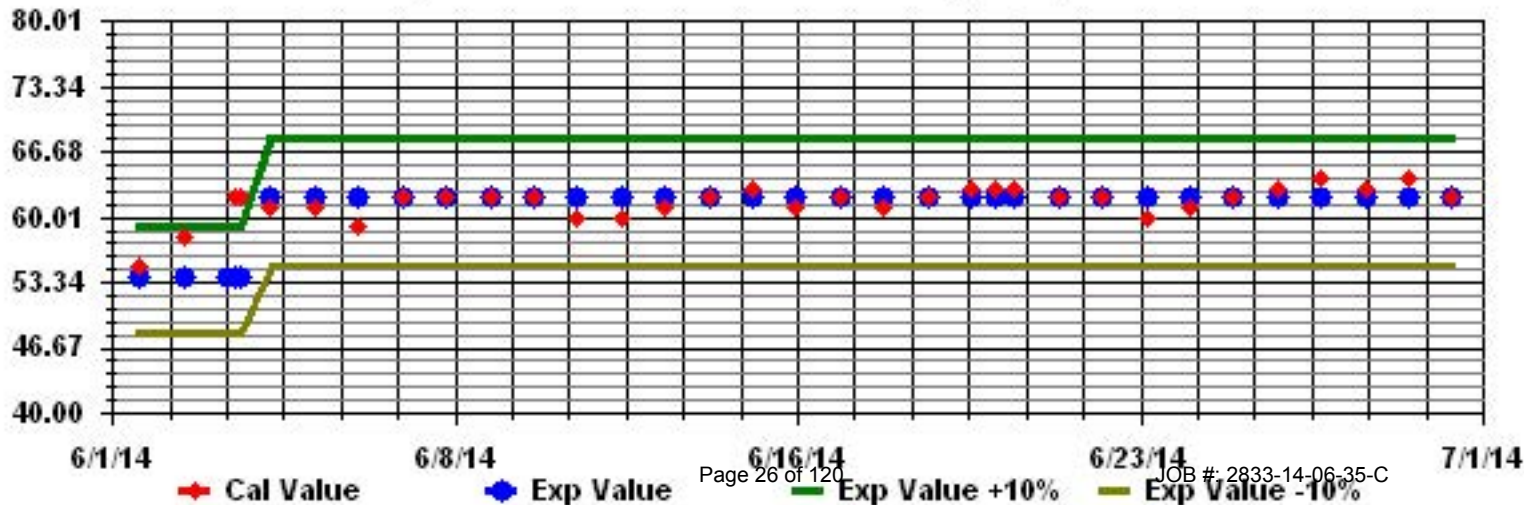
Calm : .00 %

Total # Operational Hours : 683

Class Limits (PPB)



Calibration Graph for Site: LICA35 Parameter: H2S_ Sequence: H2S Phase: SPAll



Particulate Matter 2.5

Lakeland Industry & Community Association - Elk Point Site

JUNE 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	10	8	5	9	9	20	30	11	15	0	20	29	17	7	13	5	5	0	9	10	19	6	5	9	30	11.3	24
	2	19	16	17	18	13	17	X	25	15	3	9	18	15	6	10	45	49	42	24	30	20	14	36	60	60	22.7	23
	3	28	39	30	34	42	50	19	9	6	18	X	27	13	12	1	4	8	9	9	5	13	15	11	9	50	17.9	23
	4	6	5	10	10	11	13	X	13	9	5	X	2	10	0	C	14	X	6	9	8	15	0	6	15	8.0	20	
	5	3	6	5	2	6	5	4	6	3	1	16	15	X	0	X	1	10	3	5	0	7	1	0	1	16	4.5	22
	6	0	11	0	0	1	1	X	7	15	X	9	6	0	15	23	8	1	5	4	3	6	5	6	3	23	5.9	22
	7	8	4	2	4	10	6	4	12	10	24	17	13	22	35	15	43	45	45	46	29	13	12	8	5	46	18.0	24
	8	4	1	0	0	1	3	5	2	4	19	3	31	X	X	9	13	X	13	X	0	10	13	18	17	31	8.3	20
	9	12	11	12	9	6	14	7	X	0	10	12	7	9	0	11	8	10	8	8	0	1	11	X	10	14	8.0	22
	10	11	X	10	0	11	4	15	20	5	0	4	X	X	0	5	1	2	3	26	7	9	2	9	11	26	7.4	21
	11	12	10	14	11	11	2	9	4	7	1	7	1	1	3	X	X	2	12	4	10	10	14	20	10	20	8.0	22
	12	13	14	10	15	12	8	5	6	8	3	0	2	4	11	11	8	4	7	9	9	5	6	4	16	16	7.9	24
	13	0	2	6	0	7	6	5	11	27	0	8	10	14	11	12	12	24	20	14	8	14	6	8	11	27	9.8	24
	14	X	20	0	X	X	25	9	X	3	7	10	5	X	18	5	22	X	12	5	8	11	13	32	20	32	12.5	18
	15	X	0	35	55	15	6	9	14	5	6	0	3	1	27	14	19	21	3	1	5	10	10	8	9	55	12.0	23
	16	13	12	8	X	15	9	14	10	11	9	9	11	10	14	7	10	5	2	11	11	13	8	7	16	16	10.2	23
	17	18	12	16	13	18	5	14	17	10	5	1	16	13	14	8	9	11	13	10	7	11	13	8	15	18	11.5	24
	18	18	16	27	22	21	17	11	10	12	11	10	11	13	17	16	16	15	15	11	19	10	11	16	15	27	15.0	24
	19	14	16	14	11	11	11	9	8	9	11	14	20	9	14	7	15	13	14	11	15	13	13	16	8	20	12.3	24
	20	16	17	18	24	11	12	17	17	2	9	13	1	0	6	7	1	0	11	10	12	12	12	7	10	24	10.2	24
	21	14	12	13	12	12	12	14	7	7	10	7	10	6	10	4	5	8	7	13	8	11	15	7	7	15	9.6	24
	22	9	8	10	20	16	13	8	12	10	1	4	4	20	19	6	7	7	7	12	7	10	13	15	29	29	11.1	24
	23	19	15	14	16	13	15	9	6	13	5	6	12	10	4	12	1	6	4	13	9	11	21	9	15	21	10.8	24
	24	20	29	14	9	12	16	11	7	11	9	0	12	24	2	12	28	27	5	14	13	16	7	12	15	29	13.5	24
	25	26	30	23	29	1	3	7	15	12	12	23	20	13	12	15	8	9	4	16	14	10	13	13	7	30	14.0	24
	26	13	11	13	11	16	9	11	9	8	16	10	7	4	18	16	14	7	7	13	8	15	8	10	8	18	10.9	24
	27	27	X	17	15	14	7	12	26	18	14	1	1	17	11	3	45	C	C	6	2	8	10	6	5	45	12.6	23
	28	12	10	5	9	7	8	10	13	3	9	11	7	X	26	X	2	9	12	13	5	6	7	10	4	26	9.0	22
	29	10	15	5	6	3	8	12	12	8	9	21	32	12	30	36	35	33	53	60	44	42	33	24	28	60	23.8	24
	30	25	24	23	9	22	20	18	23	24	34	42	37	29	20	32	19	35	25	26	29	32	28	24	27	42	26.1	24
HOURLY MAX		28	39	35	55	42	50	30	26	27	34	42	37	29	35	36	45	49	53	60	44	42	33	36	60			
HOURLY AVG		13.6	13.4	12.5	13.3	12.0	11.5	11.0	11.9	9.7	9.0	10.3	13.1	11.1	12.8	11.5	14.4	14.1	12.9	14.1	11.2	12.5	11.8	12.0	13.5			

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

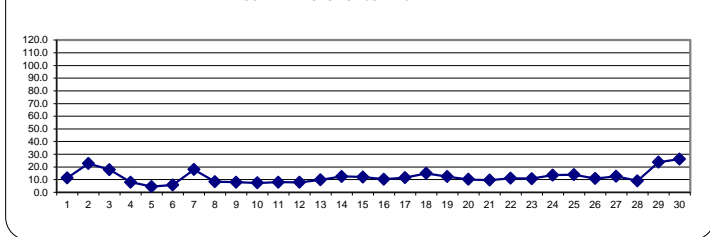
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 24-HR 30 ug/m3

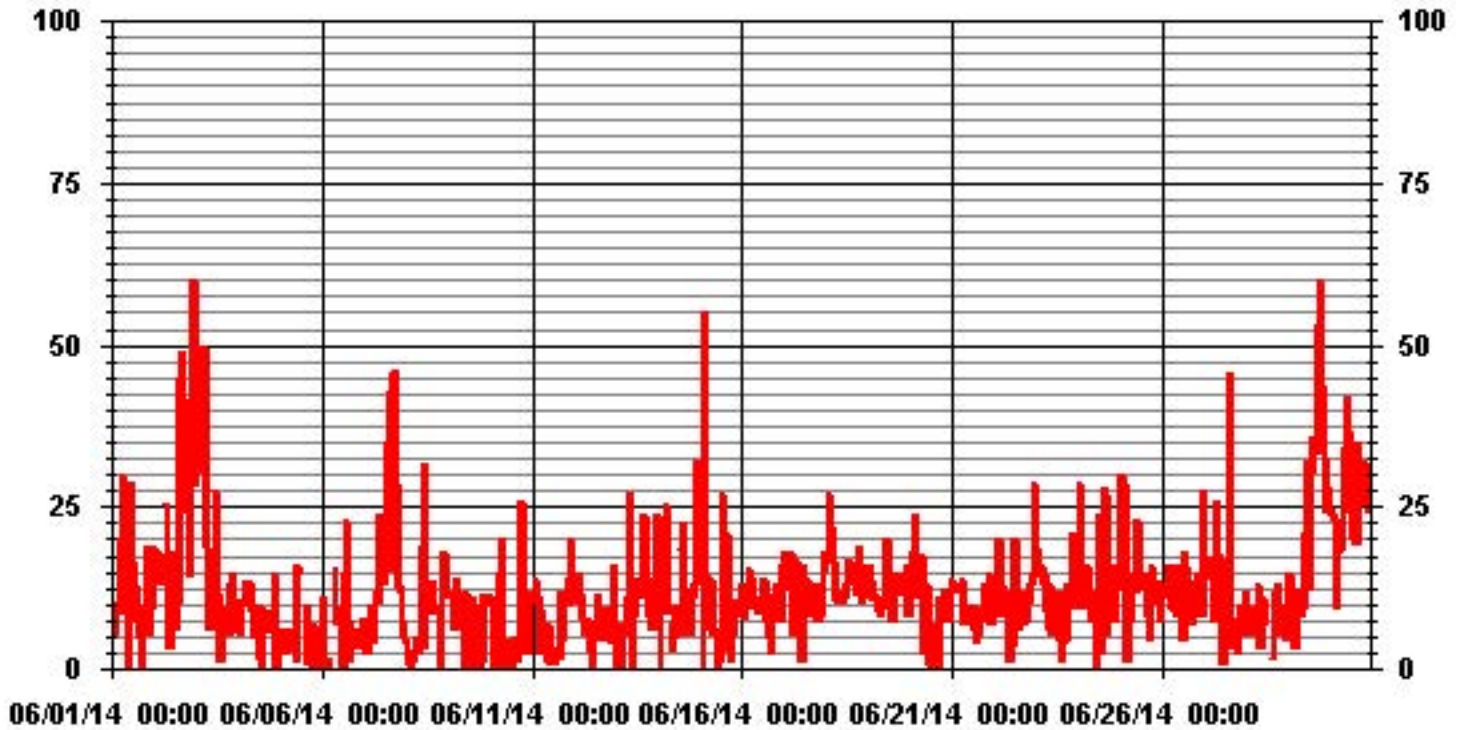
MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	655					
MAXIMUM 1-HR AVERAGE:	60	ug/m3	@ HOUR(S)	18, 23	ON DAY(S)	2, 29
MAXIMUM 24-HR AVERAGE:	26.1	ug/m3			ON DAY(S)	30
				VAR-VARIOUS		
MONTHLY CALIBRATION TIME:	3	HRS	OPERATIONAL TIME:	688 HRS		
STANDARD DEVIATION:	9.41		AMD OPERATION UPTIME:	95.6 %		
			MONTHLY AVERAGE:	12.21 ug/m3		

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



— LICA35 PM2 UG/M3

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

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	2.62	1.45	5.10	6.55	9.76	11.51	5.83	3.20	1.60	.72	1.89	3.79	9.62	10.93	15.01	4.66	94.31
< 60	.14	.00	.00	.14	1.02	.43	.00	.00	.00	.14	.00	.00	.29	.58	1.89	.72	5.39
< 80	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.29
< 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	2.76	1.45	5.10	6.70	10.93	11.95	5.83	3.20	1.60	.87	1.89	3.79	9.91	11.51	17.05	5.39	

Calm : .00 %

Total # Operational Hours : 686

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	18	10	35	45	67	79	40	22	11	5	13	26	66	75	103	32	647
< 60	1			1	7	3				1			2	4	13	5	37
< 80					1										1		2
< 120																	
< 240																	
>= 240																	
Totals	19	10	35	46	75	82	40	22	11	6	13	26	68	79	117	37	

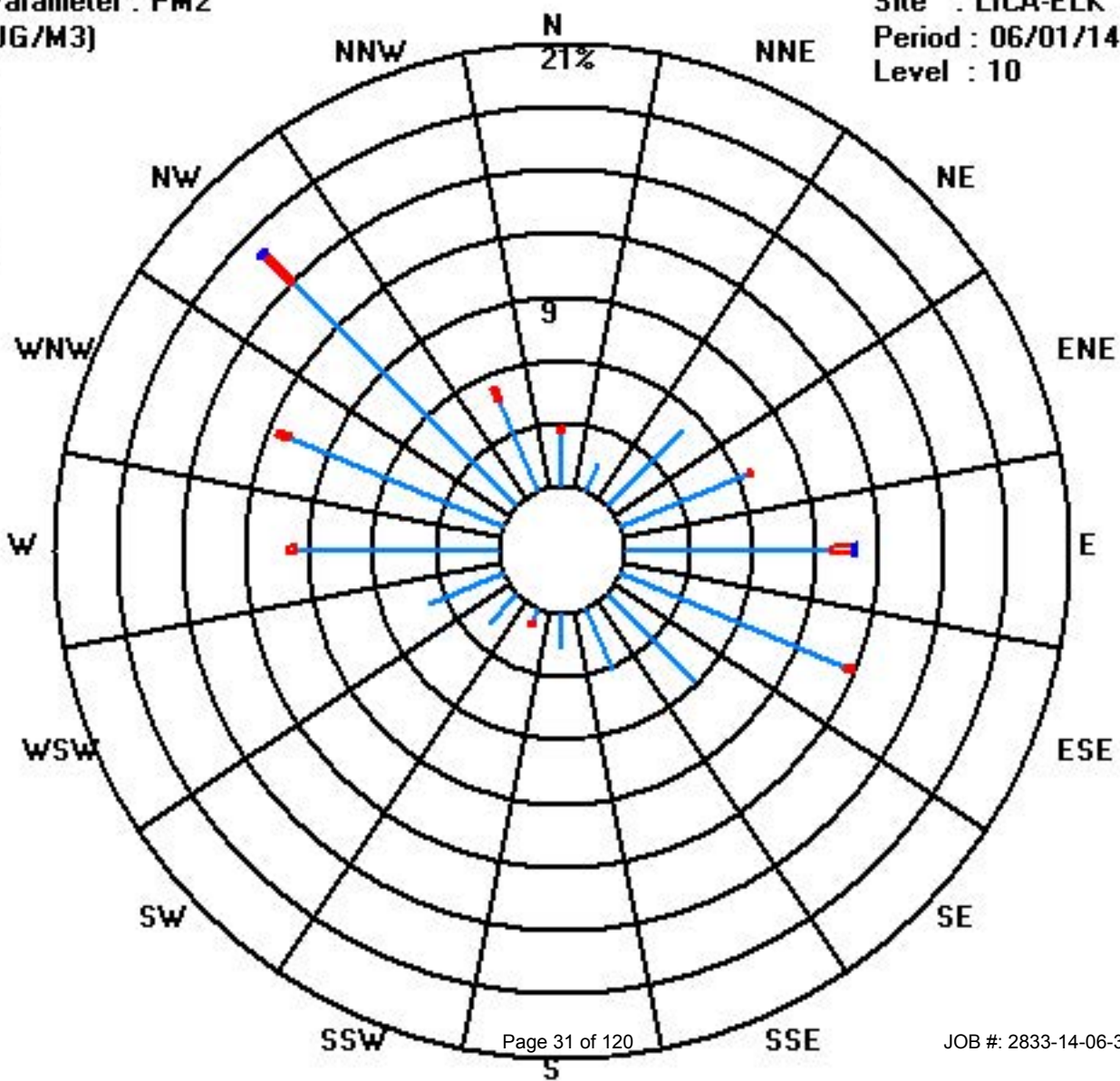
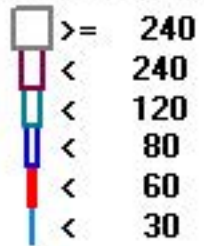
Calm : .00 %

Total # Operational Hours : 686

Class Limits (UG/M3)

Period : 06/01/14-06/30/14

Level : 10



Nitrogen Dioxide

Lakeland Industry & Community Association - Elk Point Site

JUNE 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	4.4	12.4	19.1	8.6	8.7	7.3	4.3	1.5	1.7	1.7	1.3	1.3	1.1	1.6	S	3.1	2.4	1	1.2	1.4	4.3	3.8	10.2	20.1	20.1	5.3	24	
	2	11.9	5.7	7.9	19	19	19.9	15	6.2	5.3	3.3	1.7	1.2	0.9	S	2.3	1.8	0.7	0.7	0.5	0.3	2.6	9.6	11.8	15.2	19.9	7.1	24	
	3	7.2	9.5	10.9	10	12.8	7.9	8.8	7.5	7	3.3	1.3	1.8	S	2.6	3.6	5.9	2.8	2	1.5	1.3	3.3	4.5	9.1	9.6	12.8	5.8	24	
	4	7.1	2.8	1.4	1.4	1	1	0.8	1.2	0.5	0.5	0.2	S	0.4	0.4	0.4	0.1	0	0	0	0	0	0	0	0	7.1	0.8	24	
	5	0	0	0.3	1	0.9	0.9	0.3	0.1	0.6	0.8	C	C	C	C	C	0.4	0	0	0	0	0	0.3	3.7	8.2	8.2	1.0	24	
	6	7.5	9.9	8	4.6	6.6	5.5	4.1	1.8	0	S	0	0	0	0	0	0	0	0	0	0	3.7	9.6	15.6	19.8	19.8	4.2	24	
	7	18.7	13.9	14.6	13.6	12.3	9.1	7.6	S	7.3	4.8	1.1	0.4	2	0	0	0	0	0	0	0	1.5	4.5	18.5	18.7	5.6	24		
	8	13	6.1	9.7	15	17.5	14.7	8.4	S	0.6	1	0.1	0	0	0	0	0.4	0.6	0.7	6.2	6.2	6.1	14	4.1	17.5	5.4	24		
	9	4.3	4.3	4.6	3.8	4.1	4.4	S	6	6.8	5.9	5.7	5.9	3.8	1.7	0.7	0.7	0.2	0	0	1.5	0.4	0.9	0.5	2.1	6.8	3.0	24	
	10	2.2	1.4	1.5	1.5	1.3	S	1.5	0.8	0.4	0.3	0.3	0	0	0	0	0	0	0	1.7	0.6	2.1	4.7	1.5	6.8	6.8	1.2	24	
	11	7.7	16.1	16.2	14.6	S	9.6	6	4.8	1.7	0.8	0.7	0.1	0.2	0.3	0	0	0	0.2	0.4	7.2	13.1	14.6	12	16.2	5.5	24		
	12	8.1	9.4	12.9	S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	12.9	10.1	4
	13	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	S	1.7	1.2	1	3	3.7	5.5	3	10.6	9	10.6	4.3	10	
	14	12.6	S	11.2	9.1	8.5	11.4	7.6	4.3	3.2	2.3	1.4	0.7	0.7	0.6	0.7	0.5	0.7	1.1	0.7	1.2	4.2	10.3	14.3	15.5	15.5	5.3	24	
	15	S	16.4	15.1	12.1	10	8.2	7.6	7.1	4.1	0.9	0.3	0.5	0.2	0.2	0.2	0.1	0.1	0	0	0.1	0.8	2.3	2.5	S	16.4	4.0	24	
	16	3.5	3.9	5.9	4.1	6.2	5.4	4.4	1.5	0.4	0.4	0.6	0.3	0.4	0.1	0	0.2	0.2	0.1	0.2	0.3	0.8	2.1	S	2.2	6.2	1.9	24	
	17	1.8	2	2.4	2.8	4.2	3.7	1.4	2.5	1.6	2.4	1.5	1.1	1.8	1.7	1.6	0.9	1	1.7	1.2	0.7	1.9	S	4.3	10.7	10.7	2.4	24	
	18	9.2	8	8.2	7.3	6.3	4.8	2.3	1.9	1.2	1.7	1.4	1.3	1.7	0.8	0.6	0.7	0.9	1	1	1.2	S	0.8	1.1	1.6	9.2	2.8	24	
	19	2.1	2	1.7	1.2	0.9	0.9	0.6	0.6	0.5	0.8	0.5	1.4	1.2	1.2	1	0.7	0.9	1.1	0.9	S	1.7	2.2	3.1	2.4	3.1	1.3	24	
	20	2.1	1.6	7	8.1	3.4	1.7	1	S	0.5	0.6	0.6	0.4	0.5	0.2	0.2	0.2	0.4	0.5	S	1.3	1	1.3	2.9	4.1	8.1	1.8	24	
	21	4.3	8.6	6.2	1.8	2.2	1.7	2.6	1.2	0.9	0.7	0.3	0.3	0.1	0.1	0.1	0.1	0.1	S	0.4	0.5	1.1	0.6	1	1.2	8.6	1.6	24	
	22	1.4	1.4	12.2	10	7.7	3.4	0.5	0.3	0.2	0.1	0	0	0.2	0.2	0.1	0.2	S	0.7	0.5	0.5	0.7	2	13.6	2	13.6	2.5	24	
	23	5.6	14.3	11.1	3.3	3.1	1.9	2.5	2.3	2.5	0.6	0.4	0.6	0.5	0.6	0.7	S	0.9	1.4	1.6	11.8	10.1	14.5	14.5	10.6	14.5	5.0	24	
	24	8.2	11	8.9	7.5	7.1	5.1	3.3	2.4	1.5	0.9	0.8	1	1.3	2.1	S	1.2	1.1	1.2	1.4	1.7	4.8	3.3	6.1	5.3	11	3.8	24	
	25	4.2	4.5	7.2	4.8	2.9	2.5	2.3	2.1	2.4	2.8	2.8	2.6	2.4	S	2.2	1.4	1.9	4	3.9	5	8	7.8	8.8	12.1	12.1	4.3	24	
	26	7	8.7	5.6	10.5	12.5	4.4	3.5	3.2	2.9	1.5	1.2	1.3	S	0.2	0	0	0	0	0	4.4	16	19.6	17	19.6	5.2	24		
	27	14.4	11.7	8.7	8.1	6.5	5.1	6.4	3.2	1.5	1.1	0	S	0.7	1.7	1.2	0.8	0.9	1.5	1.5	7.6	8.8	15.5	16.2	19.4	19.4	6.2	24	
	28	13.6	14.2	12.2	11.5	8.2	9	6.7	13	6.2	2.4	S	0.9	0.5	0.5	0.7	2.4	0.9	1.9	2	4.3	5.7	3.4	1.4	14.2	5.3	24		
	29	2.2	4.8	1.3	1.7	1.8	1.8	1.1	0.8	0.7	S	0.7	0.6	0.9	0.4	0.8	1	1	1.5	1.6	2.2	2	1.7	1.4	1.7	4.8	1.5	24	
	30	2	1.1	0.8	0.7	0.6	0.6	0.6	S	0.8	1	0.9	0.7	0.6	0.4	0.5	0.5	1.3	1.1	1.3	2.1	1.7	1.6	1.9	2.1	1.0	24		
	HOURLY MAX	19	16	19	19	19	20	15	13	7	6	6	6	4	3	4	6	3	4	4	12	10	16	20	20				
	HOURLY AVG	6.7	7.3	8.0	7.1	6.5	5.6	4.1	3.1	2.3	1.6	1.0	1.0	0.9	0.7	0.7	0.8	0.8	0.8	1.0	1.9	3.3	5.2	7.5	8.4				

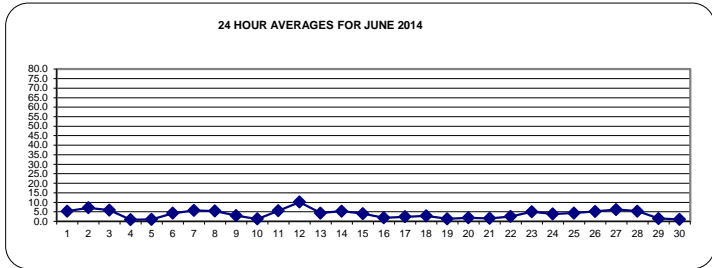
STATUS FLAG CODES

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

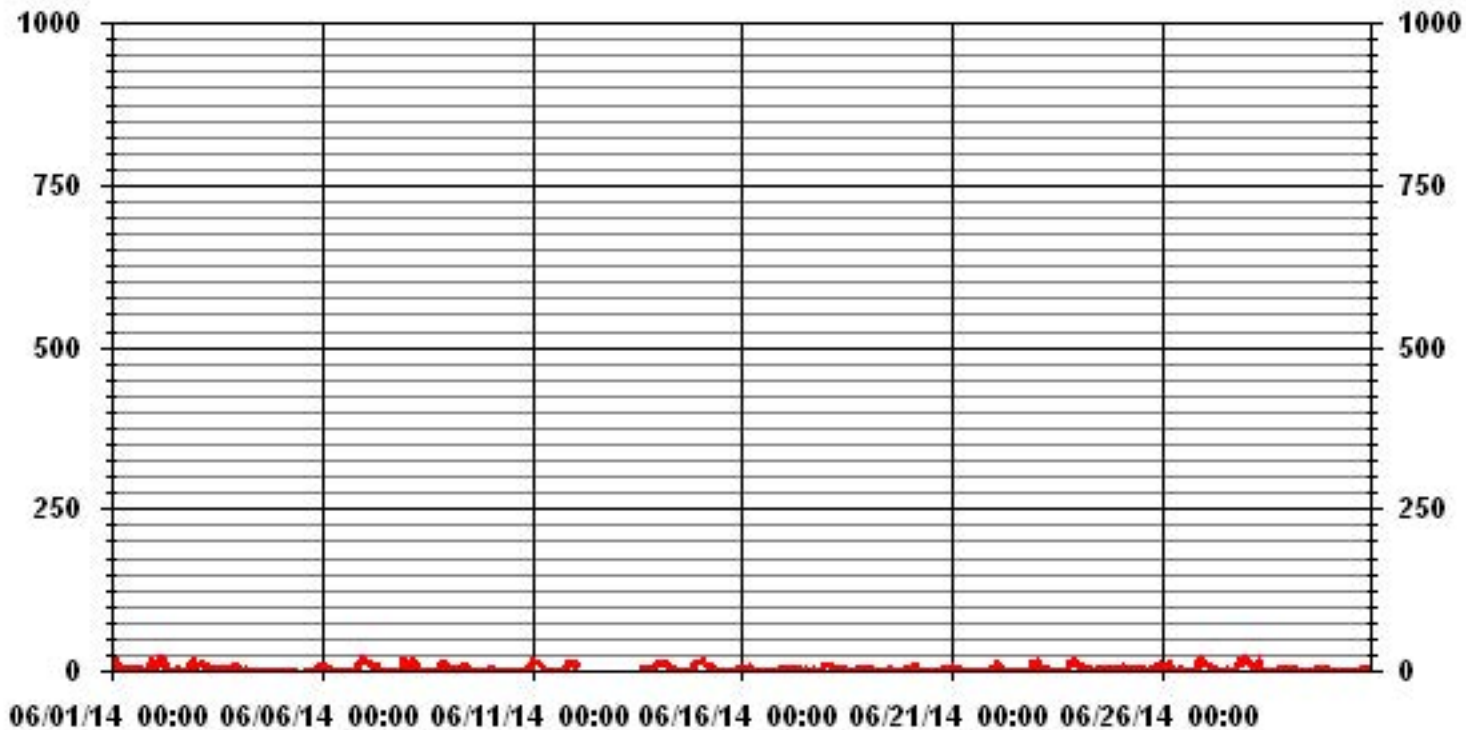
OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	586					
MAXIMUM 1-HR AVERAGE:	20.1	PPB	@ HOUR(S)	23	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	10.1	PPB			ON DAY(S)	2
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	686	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	95.3	%	
STANDARD DEVIATION:	4.50		MONTHLY AVERAGE:	3.67	PPB	

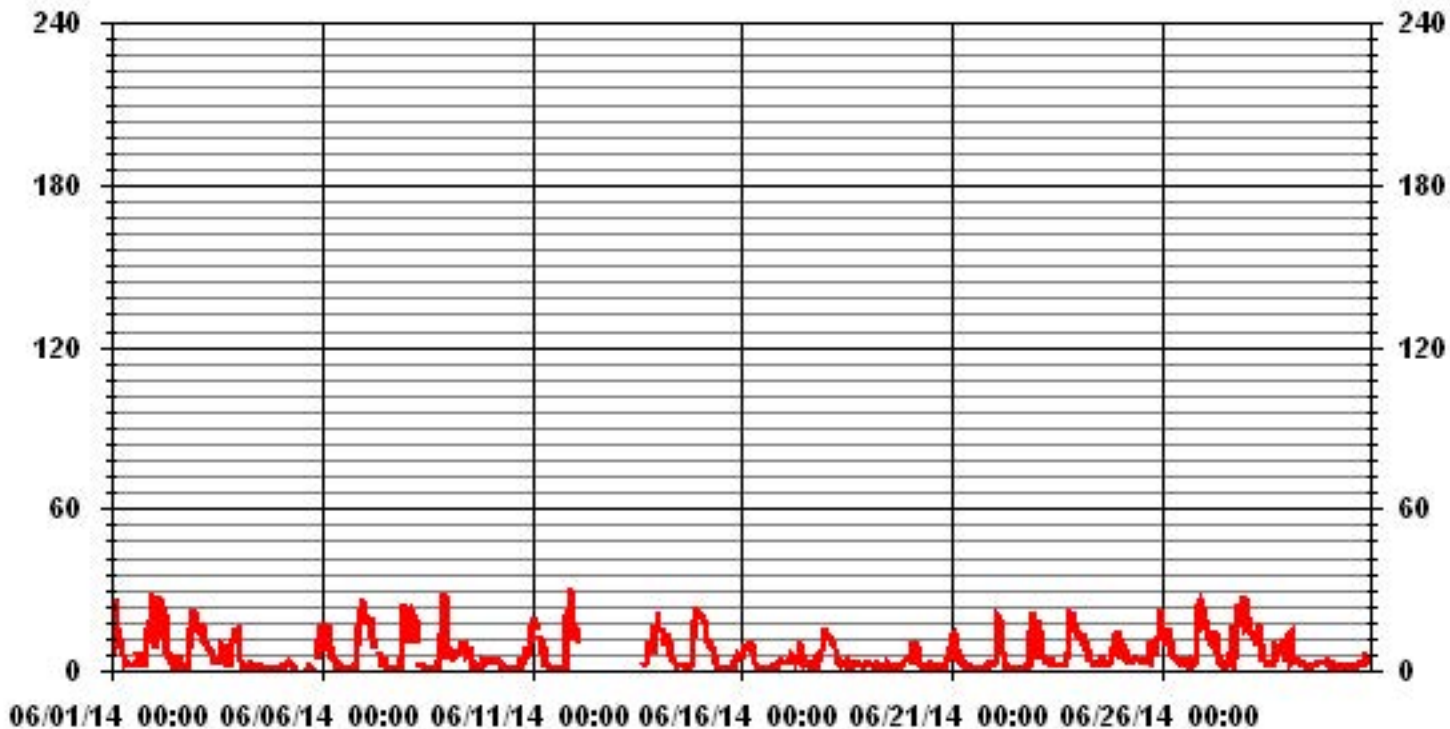


01 Hour Averages



— LICA35 NO2_ PPB

01 Hour Averages



— LICA35 IIO2MAX PPB

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

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	3.38	1.38	4.76	5.69	10.00	12.46	5.84	2.00	1.38	1.23	2.15	4.30	10.61	11.84	17.38	5.53	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	3.38	1.38	4.76	5.69	10.00	12.46	5.84	2.00	1.38	1.23	2.15	4.30	10.61	11.84	17.38	5.53	

Calm : .00 %

Total # Operational Hours : 650

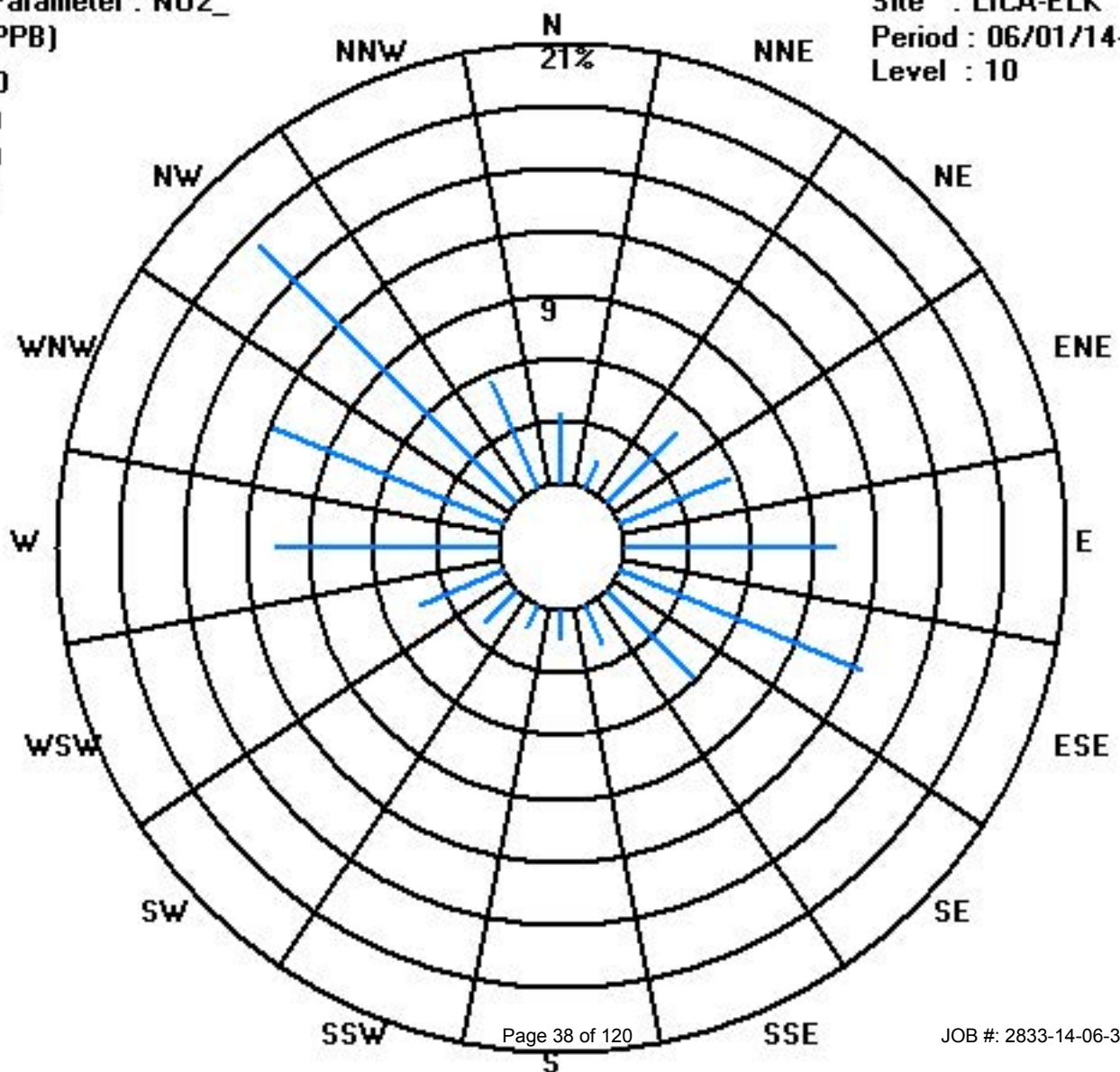
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	22	9	31	37	65	81	38	13	9	8	14	28	69	77	113	36	650
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	22	9	31	37	65	81	38	13	9	8	14	28	69	77	113	36	

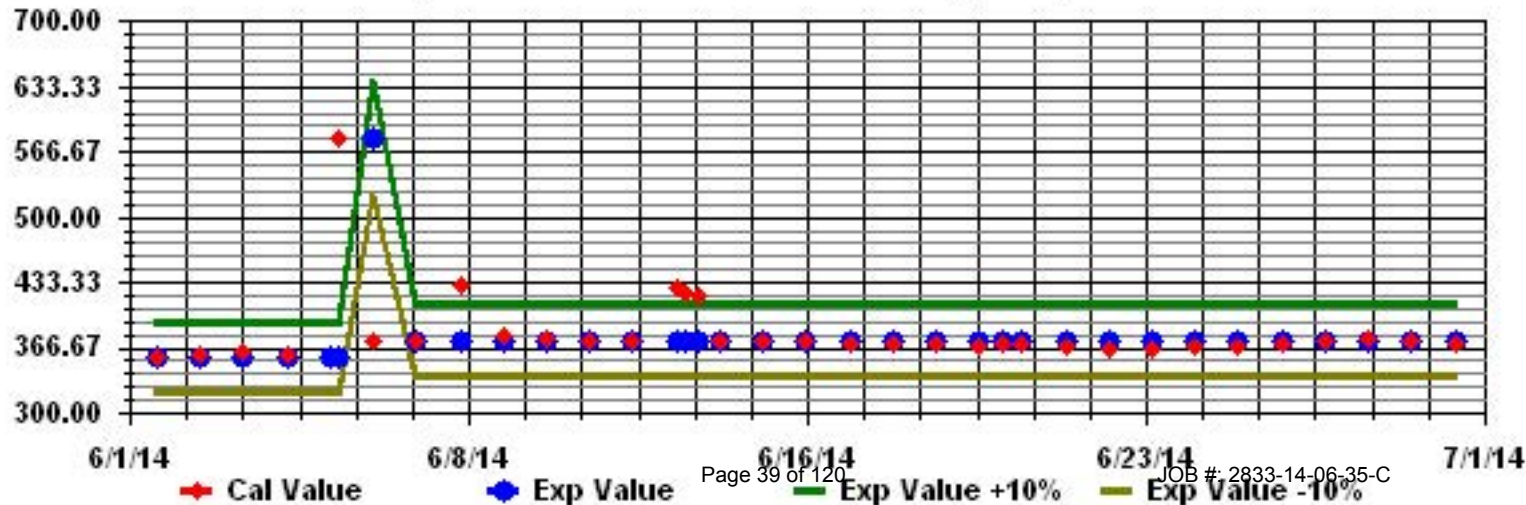
Calm : .00 %

Total # Operational Hours : 650

Class Limits (PPB)



Calibration Graph for Site: LICA35 Parameter: NO2_ Sequence: NO2 Phase: SPAN



Nitric Oxide

Lakeland Industry & Community Association - Elk Point Site

JUNE 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	0.2	1.2	2	0.5	1.7	2.6	1.8	0.8	1	0.8	0.6	0.7	0.5	0.5	S	0	0	0	0	0	0	0	0	0.1	1.3	2.6	0.7	24
	2	0	0	0	6.7	13.2	16.3	10.3	1.9	1.6	0.7	0	0	0	S	0.3	0.1	0	0	0	0	0	0	0	0	0	16.3	2.2	24
	3	0	0	0	0.2	2.9	3.1	5.7	4.8	3.3	0	0	0	S	0.4	0.8	1.5	0.6	0.2	0.2	0.4	0.5	0.5	0.8	0.6	5.7	1.2	24	
	4	0.6	0.6	0.4	0.4	0.5	0.5	0.4	0.6	0.6	0.6	0.5	S	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.2	24	
	5	0	0	0	0	0	0	0	0	0	0	S	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0.0	24	
	6	0	0	0	0	0	0.4	0.8	0.1	0	S	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.5	0.4	0.4	0.8	0.8	2.1	5.5	5.5	0.6	24	
	7	4.7	2.5	6.2	8.7	5.8	7	7.6	S	2	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	8.7	2.0	24
	8	0	0	0	0.9	4.5	5.7	1.9	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.4	0	5.7	0.6	24
	9	0	0	0	0	0	0	S	0.6	1	1.1	1	1	0.8	0.1	0	0	0	0	0	0	0	0	0	0	0	1.1	0.2	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	0.0	24
	11	0.1	3.4	3.5	10.8	S	13.1	8.7	3.7	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.6	2.6	0.1	13.1	2.1	24
	12	0.2	2.5	8	S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	8	3.6	4
	13	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	S	0.3	0	0	0.2	0.3	0.1	0	0	0	0.3	0.1	0.3	10
	14	0	S	0.1	0	3.1	12.6	6.8	1.8	1.2	0.9	0.7	0.3	0.2	0	0	0	0	0	0	0	0	0	0.3	0.3	0.1	12.6	1.2	24
	15	S	0.3	0.5	1.5	4	6	5.4	4.7	2	0.7	0.3	0.2	0	0	0	0	0	0	0	0	0	0	0	0	S	6	1.2	24
	16	0.2	0.1	0	0	0.1	0.3	0.5	0.3	0	0	0.1	0	0.3	0.2	0.3	0.1	0	0	0.2	0.2	0.1	0	S	0.2	0.5	0.1	24	
	17	0.2	0.2	0.1	0	0.5	1.1	0.3	1.2	0.9	2.2	1.1	0.5	0.5	0.5	0.3	0.2	0.1	0.2	0.1	0	0	S	0.3	1	2.2	0.5	24	
	18	1	0.5	0.3	0.4	0.4	0.7	0.9	0.6	0.4	0.4	0.3	0.5	0.3	0.1	0	0.1	0.2	0.2	0.2	0	S	0.1	0.2	0.2	1	0.3	24	
	19	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.5	0.4	0.1	0	0	0	0	0.1	S	0	0.1	0.1	0.1	0.2	0.5	0.1	24	
	20	0.1	0.1	1.3	3.1	2.5	0.3	0.4	S	0.5	0.6	0.6	0.3	0.3	0.4	0.3	0.3	0.1	0.1	S	0.1	0	0.1	0.1	0.2	3.1	0.5	24	
	21	0.1	1.2	0.8	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.1	S	0.2	0.1	0	0.1	0.1	0	1.2	0.2	24	
	22	0	0.1	1.7	5.3	1.1	0.8	0.4	0.4	0.5	0.5	0.4	0.4	0.3	0.2	0.1	0	S	0	0	0	0	0	0	1.2	0	5.3	0.6	24
	23	1.1	12.9	11.8	0.3	0.3	0.7	1.1	1.3	1.3	0.5	0.3	0.4	0.2	0.3	0.4	S	0.6	0.7	0.5	3.7	0.8	2.2	3.3	1.7	12.9	2.0	24	
	24	1.4	1.5	1.4	0.9	1.9	2.4	2.6	2.1	1.3	0.8	0.6	0.6	0.6	0.5	S	0.6	0.6	0.7	0.5	0.5	0.8	0.3	0.5	0.6	2.6	1.0	24	
	25	0.2	0	0.5	0	0.4	0.7	1.4	1.2	0.8	1.2	0.9	0.9	0.8	S	0.9	0.5	0.5	0.9	0.4	0.6	0.7	0.2	0.5	2.3	2.3	0.7	24	
	26	0.9	1.7	0.2	0.8	3.7	1.5	1.2	1.5	1.5	0.9	0.7	0.6	S	1.7	1.3	1.2	1.3	1.2	1.1	1.1	4.8	18.6	22.5	22.5	3.1	24		
	27	21.9	15.7	11.5	5.5	7.5	5.8	13.7	4.3	2.5	1.9	1.5	S	0.5	0.6	0.5	0.6	0.3	0.4	0.4	1	0.7	1.9	0.3	1.9	21.9	4.4	24	
	28	3.9	4.1	4.6	8.5	12.2	27.2	8.8	10.3	3.2	0.7	S	0.4	0.1	0.2	0.1	0	1.3	0.2	0.3	0.1	0.1	0.1	0.1	0.1	27.2	3.8	24	
	29	0.1	0	0.1	0.1	0.2	0.2	0.2	0.3	0.1	S	0.3	0.4	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0	0.1	0	0.4	0.2	24
	30	0	0	0.1	0.2	0.1	0.2	0.1	0.2	S	0.4	0.3	0.2	0.1	0.1	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.4	0.2	24	
	HOURLY MAX	22	16	12	11	13	27	14	10	3	2	2	1	1	2	1	2	1	1	1	4	1	5	19	23				
	HOURLY AVG	1.3	1.7	1.9	2.0	2.5	4.1	3.0	1.7	1.0	0.6	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.4	1.2	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

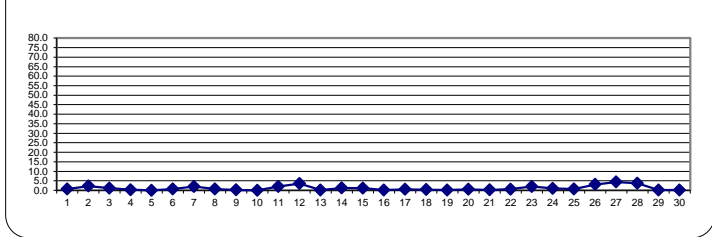
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

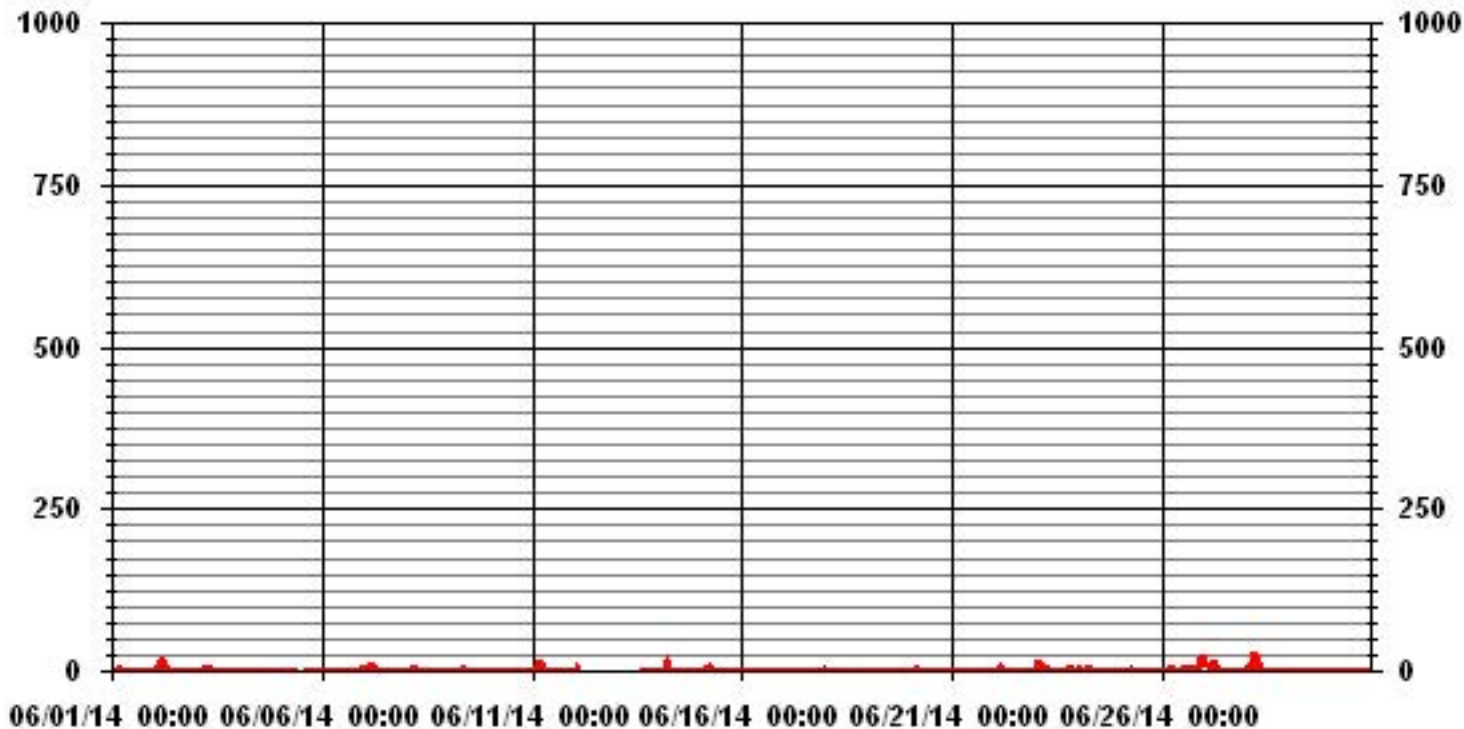
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA				
NUMBER OF NON-ZERO READINGS:	442				
MAXIMUM 1-HR AVERAGE:	27.2	PPB	@ HOUR(S)	5	ON DAY(S) 28
MAXIMUM 24-HR AVERAGE:	4.4	PPB			ON DAY(S) 27
					VAR-VARIOUS
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	686	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	95.3	%
STANDARD DEVIATION:	2.77		MONTHLY AVERAGE:	1.08	PPB

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



Lakeland Industry & Community Association - Elk Point Site

JUNE 2014

NITRIC OXIDE MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
1	0.8	27.2	11	1.3	9.4	5.3	2.7	1.5	1.6	1.7	1.1	1.1	0.9	1.4	S	1.3	0.5	0.2	0.3	0.1	0.1	0.5	2.7	6.9	27.2	3.5	24		
2	0.8	0.6	1.5	16.4	17.2	21.2	23.7	3	2.6	1.7	0.6	0.1	0	S	0.9	0.8	0.5	0.2	0.3	0.1	0.1	0.4	0.4	0.9	23.7	4.1	24		
3	0.8	0.9	1.4	1.7	10.6	6.3	7.4	6	4.4	3.3	0.5	0.5	S	1	2.2	2.8	1.3	0.8	0.7	0.8	1	2.5	2.7	1.1	10.6	2.6	24		
4	1.2	1	0.9	0.9	1	1	0.9	1.2	1.2	1.2	1	S	0.4	0.2	0	0	0	0	0	0	0	0	0	0	0	1.2	0.5	24	
5	0	0	0	0	0	0	0	0	0.3	S	S	C	C	C	C	C	0.5	0.6	0.2	0.2	P	0	1.5	1.7	1.7	0.3	23		
6	0	2	1.8	0	2.9	2.2	1.9	2	0	S	1.1	1.2	1.1	1	1	1	0.9	1.1	0.9	0.8	1.5	1.9	6.1	13.3	13.3	2.0	24		
7	12.4	7.9	11.6	13.7	7.4	10.6	10.2	S	S	2.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.1	13.7	3.7	24
8	0	0	1.4	5.7	9.8	9.8	3.4	S	0	0.1	0	0	0	0	0	0.1	0	0.4	0.2	0.9	0.9	3.9	10.1	0.1	10.1	2.0	24		
9	0.2	0.1	0	0.3	0.8	1.5	S	1.9	3.1	3.3	2.6	2.4	2.3	1.5	0.2	0.3	0.6	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.2	3.3	1.0	24	
10	0.3	0.1	0	0.2	0.3	S	0.4	0.2	0.3	0.4	0.3	0.5	0.2	0.2	0	0.3	0.2	0.4	0.3	0	0.3	0.3	0.2	0.9	0.9	0.3	24		
11	1.9	7.6	6.7	31.3	S	21	24.4	8.5	1.2	0.6	0.7	0.2	0.1	0.4	0.1	0	0	0.2	0	0	13	6.6	35.6	3.8	35.6	7.1	24		
12	4.9	7.2	13.1	S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	13.1	8.4	4
13	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	S	S	0.5	0.5	1.5	1.9	1.2	0.6	0.6	0.6	1.9	0.9	10		
14	0.8	S	1.3	0.8	8.5	17.8	11.1	2.7	1.8	1.6	1.3	0.8	0.9	0.8	0.7	0.4	0.5	1.3	0.4	0.7	0.6	2.1	2.1	1.3	17.8	2.6	24		
15	S	1	2.2	11.3	9.3	10.1	8	6.3	2.9	1.8	0.9	0.8	0.5	0.4	0.3	0.5	0.5	0.2	0.2	0.5	0.2	0.5	0.5	S	11.3	2.7	24		
16	1.3	0.6	0.3	0.5	1	1.3	1.3	0.9	0.6	0.6	0.7	0.5	0.8	0.8	0.8	0.7	0.7	3.8	0.6	0.8	0.6	0.3	S	0.8	3.8	0.9	24		
17	0.9	0.8	0.7	0.5	1.6	2	0.7	2.3	1.9	19.9	15.9	1.2	1.1	1.1	1.3	0.7	0.7	0.9	0.6	0.4	0.5	S	1.2	2.4	19.9	2.6	24		
18	3.8	2.2	2.7	1.9	1.7	1.3	1.6	1.2	1	1.2	1	1.1	1	0.7	0.6	0.7	0.6	0.8	0.7	0.5	S	0.6	0.7	0.8	3.8	1.2	24		
19	0.5	0.5	0.7	0.7	0.7	0.8	0.8	0.8	0.7	0.7	0.6	1.3	1	0.8	0.6	0.5	0.6	0.6	0.6	S	0.7	0.6	0.6	0.7	1.3	0.7	24		
20	0.6	1.2	3.5	11.1	13.2	1	1	S	0.9	1.1	1	2.5	0.9	1.5	0.6	0.7	0.6	0.4	S	0.6	0.5	0.7	0.7	0.8	13.2	2.1	24		
21	1.7	2.7	2.8	0.6	0.8	0.8	1	0.8	0.8	0.8	0.6	0.7	0.5	0.5	0.6	0.6	0.6	S	0.7	0.7	0.4	0.6	0.4	0.6	2.8	0.9	24		
22	0.6	0.6	5.6	21.6	2.3	2.2	1	0.9	1	1	1	0.7	0.9	0.8	0.5	0.3	S	0.4	0.4	0.4	1.5	6.1	0.6	21.6	2.2	24			
23	8.2	26.6	27.3	1	0.8	1.3	1.5	1.8	1.9	1	0.8	0.9	0.8	0.8	1.3	S	1.3	2.1	2	10.5	3.9	25.9	10.1	5.9	27.3	6.0	24		
24	2.7	3.8	3.6	2.5	6.2	3.3	3.8	3.8	2.6	1.4	1.7	1.4	1.3	1.3	S	1.2	1.4	1.5	1.4	1.1	2.1	0.8	3	3.5	6.2	2.4	24		
25	0.9	0.4	1.9	0.9	1.4	1.6	2.3	2.1	1.6	2.1	1.9	1.5	1.3	S	1.5	1.2	1.1	2.7	1.2	1.2	1.4	1.1	1.9	9.4	9.4	1.9	24		
26	4.7	5.6	1.6	2.2	7.4	4.8	2.3	2.6	3.3	1.7	1.2	1.5	S	2.6	2.1	1.8	2.3	1.8	1.8	1.6	1.9	15	44.1	50.8	50.8	7.2	24		
27	32.4	32.1	19.1	16.1	10.8	10.2	33.8	5.9	3.1	2.6	2	S	1.1	1.8	1.3	1.5	1	3.1	1.2	2.6	5	8.4	0.9	5.3	33.8	8.8	24		
28	9.2	7.5	7.8	13	22.5	60	13.6	17.8	7.5	1.3	S	1.1	0.5	0.7	0.7	0.6	4	0.8	1.3	0.7	0.7	0.7	0.5	0.5	60	7.5	24		
29	0.6	0.7	0.4	0.5	0.5	0.8	0.7	0.8	0.7	S	0.8	0.9	0.8	0.7	0.7	0.8	0.8	0.6	0.5	0.6	0.5	0.6	0.5	0.5	0.9	0.7	24		
30	0.4	0.5	0.8	0.6	0.6	0.6	0.5	0.7	S	0.8	0.8	0.7	0.8	0.8	0.9	0.6	0.6	0.7	0.5	0.6	0.8	0.6	0.6	0.5	0.9	0.7	24		
HOURLY MAX	32	32	27	31	23	60	34	18	8	20	16	3	2	3	2	3	4	4	2	11	13	26	44	51					
HOURLY AVG	3.3	5.1	4.5	5.6	5.5	7.4	5.9	3.0	1.8	2.2	1.5	0.9	0.8	0.9	0.8	0.7	0.8	0.9	0.7	1.0	1.4	2.7	4.8	4.2					

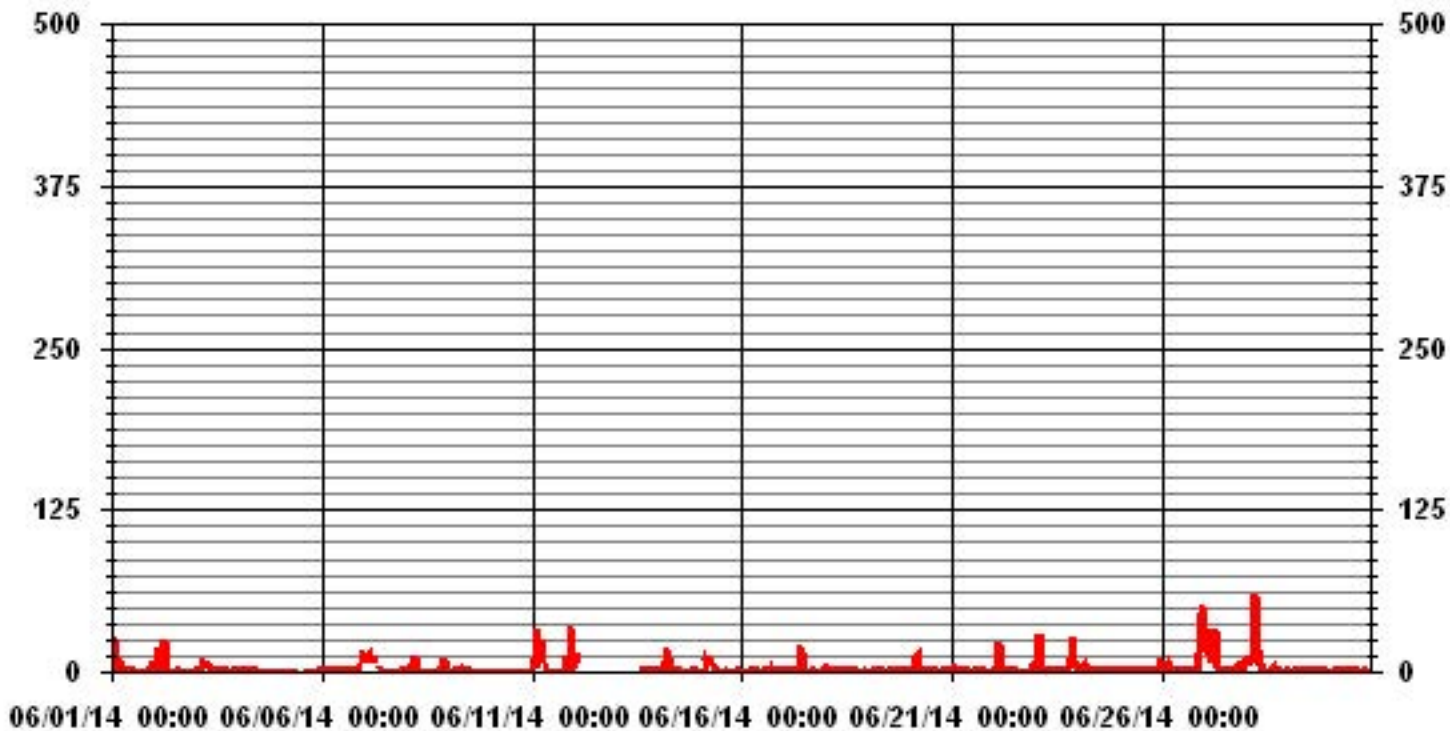
STATUS FLAG CODES

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:	593					
MAXIMUM INSTANTANEOUS VALUE:	60	PPB	@ HOUR(S)	5	ON DAY(S)	28
	VAR-VARIOUS					
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:	685	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	5.99					

01 Hour Averages



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

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	3.38	1.38	4.76	5.69	10.00	12.46	5.84	2.00	1.38	1.23	2.15	4.30	10.61	11.84	17.38	5.53	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	3.38	1.38	4.76	5.69	10.00	12.46	5.84	2.00	1.38	1.23	2.15	4.30	10.61	11.84	17.38	5.53	

Calm : .00 %

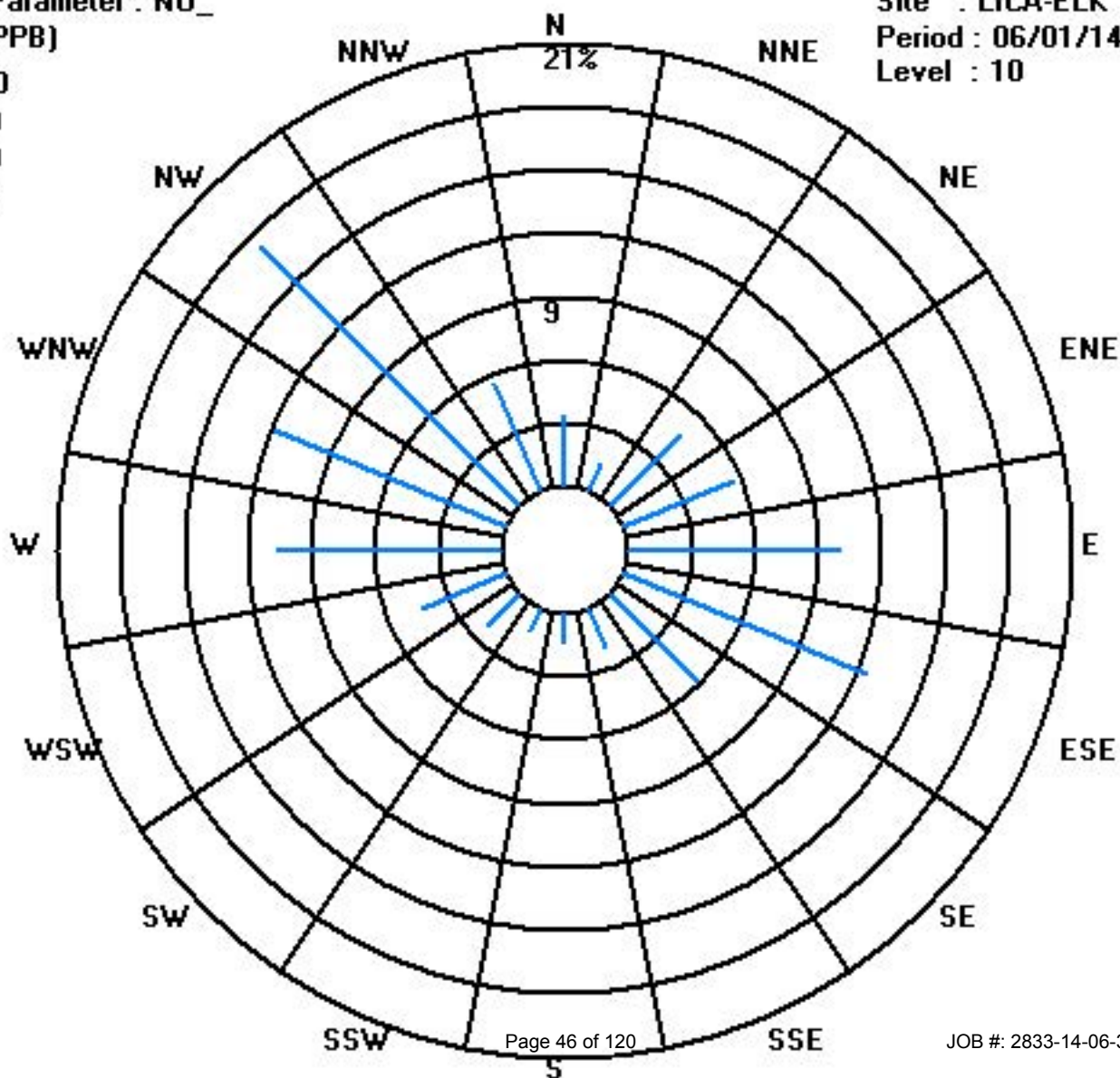
Total # Operational Hours : 650

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	22	9	31	37	65	81	38	13	9	8	14	28	69	77	113	36	650
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	22	9	31	37	65	81	38	13	9	8	14	28	69	77	113	36	

Calm : .00 %

Total # Operational Hours : 650



Oxides of Nitrogen

Lakeland Industry & Community Association - Elk Point Site

JUNE 2014

OXIDES OF NITROGEN (NOx) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																													
1		4.6	13.6	21.1	9.1	10.4	9.9	6.1	2.3	2.7	2.5	1.9	2	1.6	2.1	S	3.1	2.4	1	1.2	1.4	4.3	3.8	10.3	21.4	21.4	6.0	24	
2		11.9	5.7	7.9	25.7	32.2	36.2	25.3	8.1	6.9	4	1.7	1.2	0.9	S	2.6	1.9	0.7	0.7	0.5	0.3	2.6	9.6	11.8	15.2	36.2	9.3	24	
3		7.2	9.5	10.9	10.2	15.7	11	14.5	12.3	10.3	3.3	1.3	1.8	S	3	4.4	7.4	3.4	2.2	1.7	1.7	3.8	5	9.9	10.2	15.7	7.0	24	
4		7.7	3.4	1.8	1.8	1.5	1.5	1.2	1.8	1.1	1.1	0.7	S	0.4	0.4	0.4	0.1	0	0	0	0	0	0	0	0	7.7	1.1	24	
5		0	0	0.3	1	0.9	0.9	0.3	0.1	0.6	0.8	C	C	C	C	C	0.4	0	0	0	0	0	0.3	3.7	8.2	8.2	1.0	24	
6		7.5	9.9	8	4.6	6.6	5.9	4.9	1.9	0	S	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.5	0.4	0.4	4.5	10.4	17.7	25.3	25.3	4.8	24	
7		23.4	16.4	20.8	22.3	18.1	16.1	15.2	S	9.3	5.4	1.1	0.4	2	0	0	0	0	0	0	0	0	1.5	4.5	19	23.4	7.6	24	
8		13	6.1	9.7	15.9	22	20.4	10.3	S	0.6	1	0.1	0	0	0	0	0	0.4	0.6	0.7	6.2	6.1	15.4	4.1	22	6.0	24		
9		4.3	4.3	4.6	3.8	4.1	4.4	S	6.6	7.8	7	6.7	6.9	4.6	1.8	0.7	0.7	0.2	0	0	1.5	0.4	0.9	0.5	2.1	7.8	3.2	24	
10		2.2	1.4	1.5	1.5	1.3	S	1.5	0.8	0.4	0.3	0.3	0	0	0	0	0	0	0	1.7	0.6	2.1	4.7	1.5	6.8	6.8	1.2	24	
11		7.8	19.5	19.7	25.4	S	22.7	14.7	8.5	2.2	0.8	0.7	0.1	0.2	0.3	0	0	0	0	0.2	0.4	7.3	13.7	17.2	12.1	25.4	7.5	24	
12		8.3	11.9	20.9	S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	20.9	13.7	4
13		X	X	X	X	X	X	X	X	X	X	X	X	X	Y	S	2	1.2	1	3.2	4	5.6	3	10.6	9	10.6	4.4	10	
14		12.6	S	11.3	9.1	11.6	24	14.4	6.1	4.4	3.2	2.1	1	0.9	0.6	0.7	0.5	0.7	1.1	0.7	1.2	4.2	10.6	14.6	15.6	24	6.6	24	
15		S	16.7	15.6	13.6	14	14.2	13	11.8	6.1	1.6	0.6	0.7	0.2	0.2	0.2	0.1	0.1	0	0	0.1	0.8	2.3	2.5	S	16.7	5.2	24	
16		3.7	4	5.9	4.1	6.3	5.7	4.9	1.8	0.4	0.4	0.7	0.3	0.7	0.3	0.3	0.3	0.2	0.1	0.4	0.5	0.9	2.1	S	2.4	6.3	2.0	24	
17		2	2.2	2.5	2.8	4.7	4.8	1.7	3.7	2.5	4.6	2.6	1.6	2.3	2.2	1.9	1.1	1.1	1.9	1.3	0.7	1.9	S	4.6	11.7	11.7	2.9	24	
18		10.2	8.5	8.5	7.7	6.7	5.5	3.2	2.5	1.6	2.1	1.7	1.8	2	0.9	0.6	0.8	1.1	1.2	1.2	1.2	S	0.9	1.3	1.8	10.2	3.2	24	
19		2.3	2.1	1.8	1.3	1.1	1.1	0.9	0.9	0.7	0.9	0.6	1.9	1.6	1.3	1	0.7	0.9	1.1	1	S	1.7	2.3	3.2	2.6	3.2	1.4	24	
20		2.2	1.7	8.3	11.2	5.9	2	1.4	S	1	1.2	1.2	0.7	0.8	0.6	0.5	0.5	0.6	S	1.4	1	1.4	3	4.3	11.2	2.3	11.2	2.3	24
21		4.4	9.8	7	2	2.4	2	2.9	1.4	1.2	1	0.5	0.4	0.2	0.2	0.3	0.3	0.2	S	0.6	0.6	1.1	0.7	1.1	1.2	9.8	1.8	24	
22		1.4	1.5	13.9	15.3	8.8	4.2	0.9	0.7	0.7	0.6	0.4	0.4	0.5	0.4	0.2	0.2	S	0.7	0.5	0.5	0.7	2	14.8	2	15.3	3.1	24	
23		6.7	27.2	22.9	3.6	3.4	2.6	3.6	3.6	3.8	1.1	0.7	1	0.7	0.9	1.1	S	1.5	2.1	2.1	15.5	10.9	16.7	17.8	12.3	27.2	7.0	24	
24		9.6	12.5	10.3	8.4	9	7.5	5.9	4.5	2.8	1.7	1.4	1.6	1.9	2.6	S	1.8	1.7	1.9	1.9	2.2	5.6	3.6	6.6	5.9	12.5	4.8	24	
25		4.4	4.5	7.7	4.8	3.3	3.2	3.7	3.3	3.2	4	3.7	3.5	3.2	S	3.1	1.9	2.4	4.9	4.3	5.6	8.7	8	9.3	14.4	14.4	5.0	24	
26		7.9	10.4	5.8	11.3	16.2	5.9	4.7	4.7	4.4	2.4	1.9	1.9	S	1.9	1.3	1.2	1.3	1.2	1.2	1.1	5.5	20.8	38.2	39.5	39.5	8.3	24	
27		36.3	27.4	20.2	13.6	14	10.9	20.1	7.5	4	3	1.5	S	1.2	2.3	1.7	1.4	1.2	1.9	1.9	8.6	9.5	17.4	16.5	21.3	36.3	10.6	24	
28		17.5	18.3	16.8	20	20.4	36.2	15.5	23.3	9.4	3.1	S	1.3	0.6	0.7	0.6	0.7	3.7	1.1	2.2	2.1	4.4	5.8	3.5	1.5	36.2	9.1	24	
29		2.3	4.8	1.4	1.8	2	2	1.3	1.1	0.8	S	1	1	1.1	0.6	1	1.2	1.3	1.7	1.7	2.3	2.1	1.7	1.5	1.7	4.8	1.6	24	
30		2	1.1	0.9	0.9	0.8	0.8	0.7	0.8	S	1.2	1.3	1.1	0.8	0.7	0.7	0.7	0.7	1.5	1.2	1.5	2.3	1.8	1.7	2	2.3	1.2	24	
HOURLY MAX		36	27	23	26	32	36	25	23	10	7	7	7	5	3	4	7	4	5	4	16	11	21	38	40				
HOURLY AVG		8.0	9.1	9.9	9.0	9.0	9.7	7.1	4.8	3.3	2.2	1.4	1.3	1.2	1.0	0.9	1.1	1.0	1.0	1.1	2.2	3.5	5.6	8.7	9.8				

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

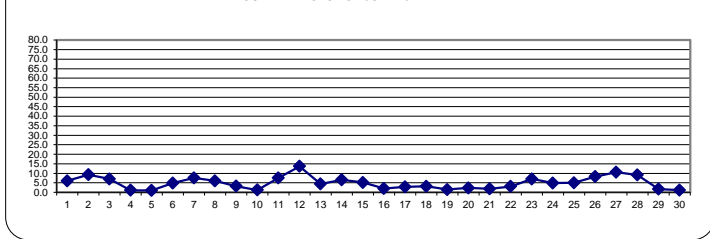
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

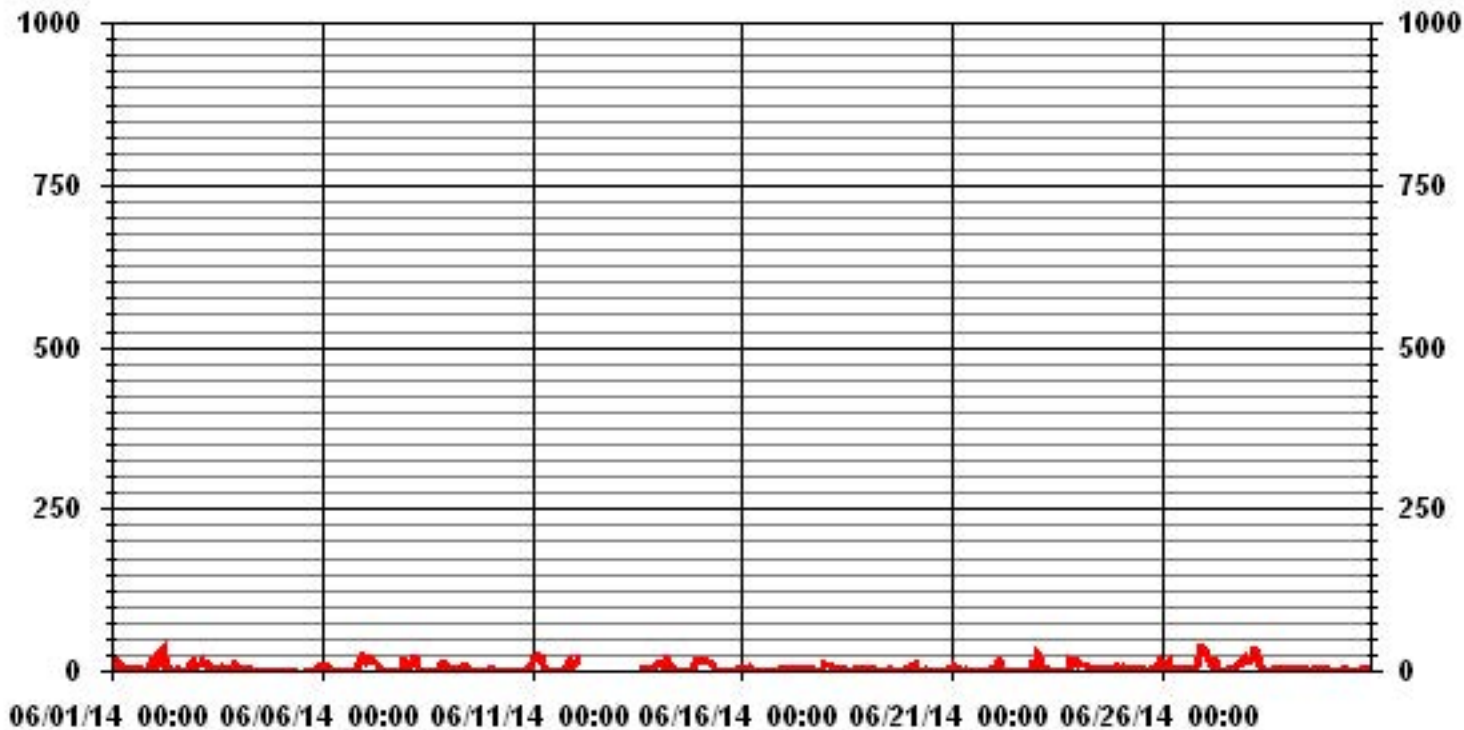
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	606					
MAXIMUM 1-HR AVERAGE:	39.5	PPB	@ HOUR(S)	23	ON DAY(S)	26
MAXIMUM 24-HR AVERAGE:	13.7	PPB			ON DAY(S)	27
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	686	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	95.3	%	
STANDARD DEVIATION:	6.42		MONTHLY AVERAGE:	4.75	PPB	

24 HOUR AVERAGES FOR JUNE 2014



01 Hour Averages



— LICA35 NOX_ PPB

Lakeland Industry & Community Association - Elk Point Site

JUNE 2014

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
1	7.5	43.2	37.6	13.3	22.9	14	8.7	3.2	3.6	4.2	2.9	2.5	2.5	3.7	S	7.3	4.3	2.9	2.3	2.3	9.8	15.9	19.7	31.3	43.2	11.5	24	
2	17.1	7.8	13	41	40.4	43.3	44.4	10.5	9.2	6.4	3.6	1.9	1.9	S	5.3	3.5	1.2	1.6	1	1	7.7	15.8	17.2	23.2	44.4	13.8	24	
3	13.9	15	14.8	13.8	27.9	15.1	16.8	14.7	12.5	9.7	2.3	3.8	S	4.5	10.7	10.8	4.3	4.2	2.5	2.3	10.7	13.2	14.6	15.9	27.9	11.0	24	
4	16.3	4.9	2.6	3.2	2.2	3.3	2.2	4.3	1.6	1.7	1.2	S	1.3	1	1.2	0.6	0.2	0	0	0.2	0.3	0.1	0	0	16.3	2.1	24	
5	0.1	0	1.5	1.7	1.5	2.8	1.9	1.3	1.7	C	C	C	C	C	C	1.9	2.1	0.7	0.4	P	5.5	13.5	17.8	17.8	3.4	23		
6	10.5	19.2	18.8	6.8	19.3	12	6.8	6.2	0.3	S	1.3	1.7	0.4	0.8	0.8	1.1	0.6	1.1	0.3	2.2	9.3	17.4	27.6	37.3	37.3	8.8	24	
7	34.1	25.7	30.8	29.2	23.5	21.7	19.2	S	S	9.4	3.1	2.7	4.5	0.9	0.9	0.8	0.4	0	0	0	0.2	4.3	10.8	29.8	34.1	11.5	24	
8	16.9	9.7	22	27.9	27.8	29.2	14.9	S	2.2	2.9	1.1	0.7	1	0.8	0.2	0.6	1.6	3.1	2.5	12.4	11.6	21.4	38.8	6.1	38.8	11.1	24	
9	5.4	8.1	7.4	4.9	5.5	7.7	S	9.2	12.9	13.4	9.1	10.3	10.5	6.1	1.5	1.9	1.8	0.2	0.4	3.5	2.1	4.2	3.5	3.8	13.4	5.8	24	
10	3.5	3.5	4.2	3.7	3.7	S	3.4	1.5	1.4	0.9	0.8	0.4	0.5	0.3	0.2	0.3	0.3	0.5	4.3	2.6	3.8	8.3	4.3	11.4	11.4	2.8	24	
11	17.6	24.8	23.7	47.4	S	31.1	31.7	16.5	3.5	1.7	1.4	0.9	1.2	1.7	1	0.5	0.8	1.3	1	1.2	33.5	29.1	61.9	21.8	61.9	15.4	24	
12	17.4	19.4	27.1	S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	27.1	21.3	4
13	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	S	S	2.3	2.9	8.9	12.1	9.6	5.7	15.1	14.8	15.1	8.9	10	
14	20.7	S	15.1	10.9	18.4	31.7	22.1	8	5.8	4.5	3.6	1.6	2.3	2	1.8	1.3	1.5	2.8	1.3	2.7	12.3	18.7	23.6	22.5	31.7	10.2	24	
15	S	20.3	20.4	22.1	20.4	19.7	16.5	13.9	8.5	4.4	1.2	1.3	0.8	1	1.1	0.5	0.9	0.6	0.4	0.9	2.7	6.1	5.6	S	22.1	7.7	24	
16	6.2	8.6	8.4	8	9.6	11.8	7.4	3.5	1.3	1.1	1.3	0.9	1.5	1	0.8	0.9	0.9	4.5	0.9	1.2	1.8	3.2	S	3.2	11.8	3.8	24	
17	2.9	2.9	3.1	4.3	6.4	6.8	2.9	5.6	3.6	27.4	19.3	3.1	4.2	2.9	3.3	1.7	1.7	4.1	2.1	1.4	5.3	S	9.3	17.4	27.4	6.2	24	
18	16.1	12.7	15.5	12	11.1	9	4	3.4	2.5	4.1	3.1	3.1	4	1.6	1.1	2.2	2.2	2	1.7	1.9	S	1.8	3.2	2.5	16.1	5.3	24	
19	3.3	2.7	2.7	2	1.6	2.2	1.3	1.4	1.2	1.7	1.2	3.6	2.5	2.1	1.8	1.3	1.6	1.6	1.6	S	2.5	3.1	4.4	4.4	4.4	2.3	24	
20	3.8	4.6	11.8	20.8	22.4	3.1	2.2	S	1.6	1.9	1.7	2.3	1.5	2.1	0.8	0.9	1.3	1.2	S	2.1	1.7	2.7	4.7	8.4	22.4	4.7	24	
21	14.3	15.5	13.7	2.7	4.5	3.1	3.9	2.7	1.5	1.5	1.2	1.3	0.7	0.8	0.7	0.8	0.7	S	1.1	1.4	2.5	1.7	2.7	2.6	15.5	3.5	24	
22	2.1	3.9	25.1	40.3	11.1	8.8	1.7	1.4	1.2	1.3	1	0.8	1	0.7	0.7	0.8	S	1.6	1	1	1.4	15.3	27	3.8	40.3	6.7	24	
23	24.3	40.9	40.9	5.6	5.5	3.9	4.5	4.7	5	2.3	1.5	1.7	1.3	2.3	2.6	S	2.9	4.8	8.5	32.3	20.2	43	24.8	16.6	43	13.0	24	
24	13.5	16.5	14.9	11.8	17	10.7	7.1	7.2	4.5	3	3.7	3.1	3.1	5.1	S	2.7	3.3	3.1	3.4	5.4	9.9	6.4	16.3	17.7	17.7	8.2	24	
25	6.2	5.7	10.3	8.8	5.1	4.5	5.1	4.5	4.5	5.6	5.7	4.6	4.6	S	4.3	4.3	4.1	11.9	8.2	7.4	11.6	11	13.8	28.4	28.4	7.8	24	
26	19.3	18.4	10.7	14.2	23.2	15.9	7.4	7.1	7	4.3	3.1	3.3	S	3.6	2.5	1.5	3.4	1.3	2.1	2.5	12.5	36.8	64.5	70.6	70.6	14.6	24	
27	45.5	45.3	28	25.1	18.6	17.2	45.5	10.4	4.7	5	2.2	S	2.1	5.2	3.3	3.3	2.6	18.8	4.8	17.4	27.9	31.3	19.5	27.8	45.5	17.9	24	
28	21.9	23.5	20.4	26	31	72.3	22.4	35.5	18.2	4.2	S	2.8	1.2	1.2	1.2	1.2	12.5	2.3	7.6	8.1	9.2	8.8	5.6	2	72.3	14.7	24	
29	11.9	12.8	2.3	2.7	2.7	3.1	1.9	1.7	1.4	S	1.5	1.5	1.7	1.1	1.5	1.8	1.8	2.3	2.9	3	2.7	2.8	2	2.7	12.8	3.0	24	
30	3	2.5	1.5	1.5	1.4	1.3	1.2	1.2	S	1.7	1.8	1.6	1.4	1.2	1.3	1	1.4	2.5	1.9	2.3	6	2.3	4.1	4	6	2.1	24	
HOURLY MAX	46	45	41	47	40	72	46	36	18	27	19	10	11	6	11	11	13	19	9	32	34	43	65	71				
HOURLY AVG	13.4	14.9	15.5	14.7	14.2	15.0	11.4	7.2	4.7	5.0	3.1	2.5	2.3	2.1	2.0	2.1	2.2	3.0	2.6	4.7	8.5	12.0	16.4	16.0				

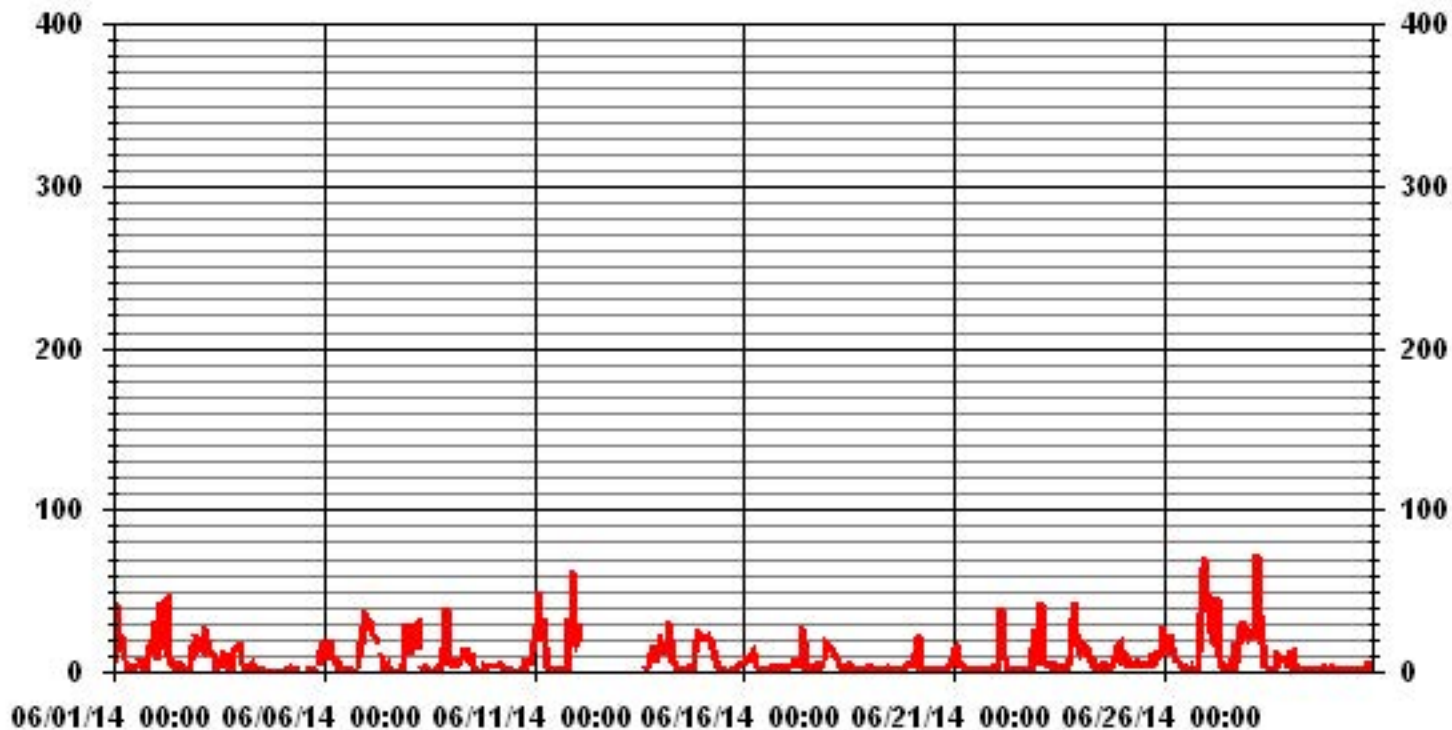
STATUS FLAG CODES

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:	637
MAXIMUM INSTANTANEOUS VALUE:	72.3 PPB @ HOUR(S) 5 ON DAY(S) 28
	VAR-VARIOUS
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	10.60
OPERATIONAL TIME:	685 HRS

01 Hour Averages



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

June 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	3.38	1.38	4.76	5.69	10.00	12.46	5.84	2.00	1.38	1.23	2.15	4.30	10.61	11.84	17.38	5.53	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	3.38	1.38	4.76	5.69	10.00	12.46	5.84	2.00	1.38	1.23	2.15	4.30	10.61	11.84	17.38	5.53	

Calm : .00 %

Total # Operational Hours : 650

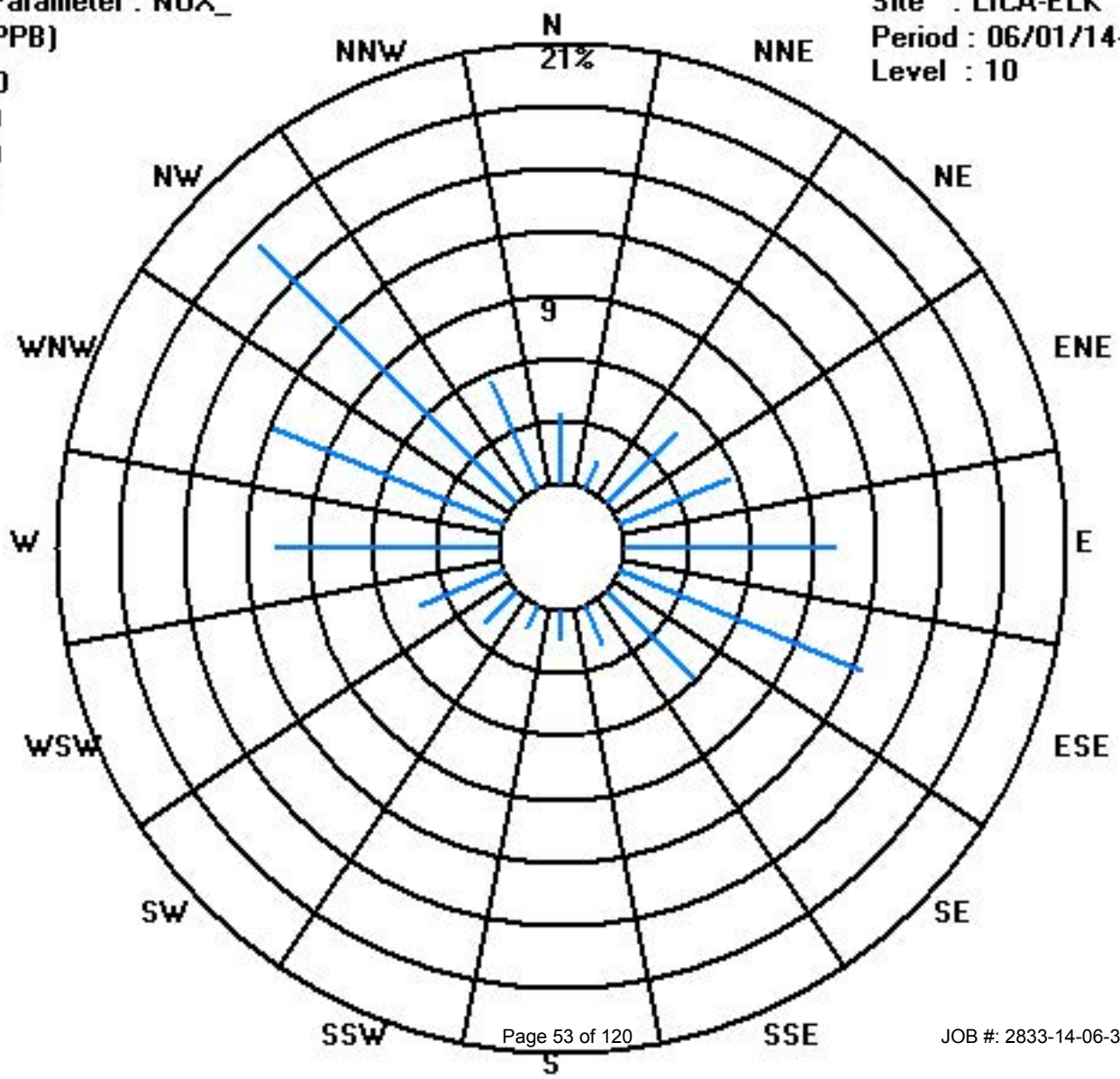
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	22	9	31	37	65	81	38	13	9	8	14	28	69	77	113	36	650
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	22	9	31	37	65	81	38	13	9	8	14	28	69	77	113	36	

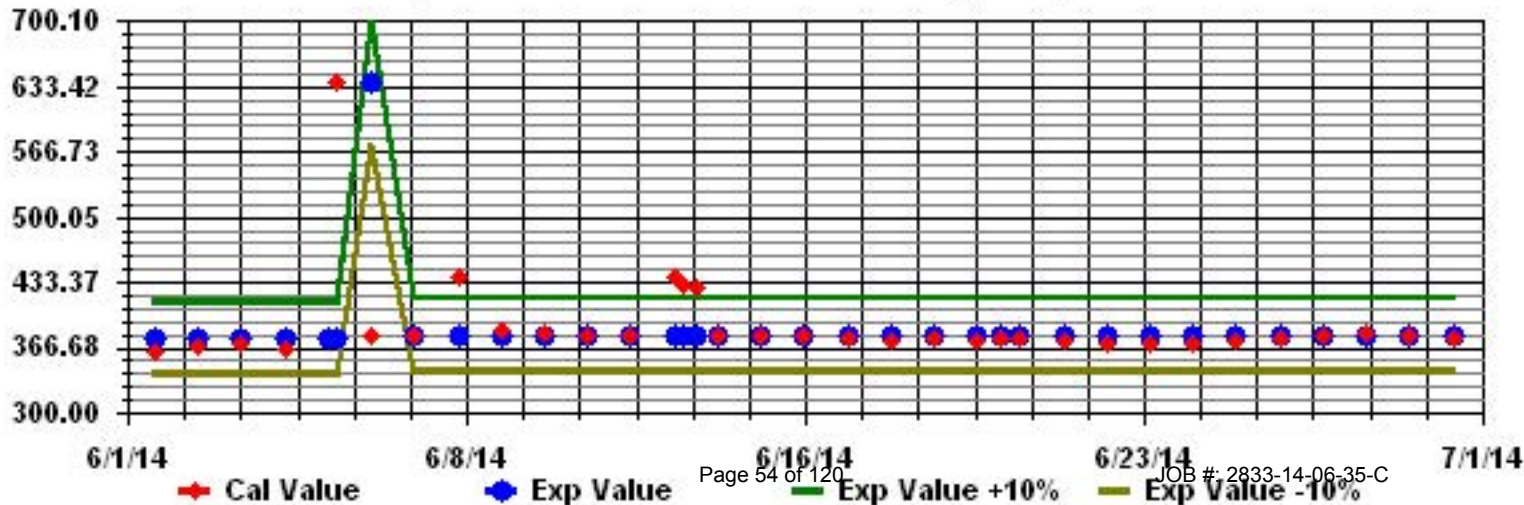
Calm : .00 %

Total # Operational Hours : 650

Class Limits (PPB)



Calibration Graph for Site: LICA35 Parameter: NOX_ Sequence: NO2 Phase: SPAN



Ozone

Lakeland Industry & Community Association - St. Lina Site

JUNE 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	24	13	7	12	13	12	24	30	34	39	43	44	45	S	54	53	62	58	50	39	37	24	11	62	33.6	24	
	2	18	19	9	3	2	5	19	33	41	49	56	56	57	S	53	51	54	55	56	54	44	32	29	19	57	35.4	24
	3	21	12	9	9	7	11	15	22	29	41	52	55	S	61	55	48	56	54	53	51	43	37	30	29	61	34.8	24
	4	27	34	39	41	44	46	44	43	39	35	37	S	31	30	34	35	37	37	37	30	22	21	22	24	46	34.3	24
	5	29	25	22	20	18	19	22	20	19	20	S	23	24	29	37	C	C	C	C	30	30	27	22	18	37	23.9	24
	6	13	11	16	18	16	16	17	26	31	S	35	36	37	38	38	39	39	38	37	35	31	22	10	3	39	26.2	24
	7	3	4	1	1	3	6	10	21	S	30	38	39	34	35	33	36	37	37	38	37	33	27	18	9	39	23.0	24
	8	10	14	11	6	4	11	19	S	35	36	38	39	39	39	41	42	42	43	42	32	30	29	19	28	43	28.2	24
	9	28	28	28	28	27	26	S	22	19	18	18	20	24	35	36	27	30	31	32	31	33	32	31	27	36	27.4	24
	10	25	23	22	22	24	S	27	28	30	30	29	30	30	29	30	31	30	27	24	21	16	16	11	31	25.4	24	
	11	9	3	1	1	S	4	11	19	33	38	36	39	39	38	39	40	41	41	40	36	25	15	13	12	41	24.9	24
	12	8	3	1	S	1	3	6	13	24	40	43	46	47	47	48	49	49	48	41	35	35	31	29	26	49	29.3	24
	13	21	28	S	19	30	32	33	38	40	42	46	50	50	49	50	48	48	45	38	38	32	29	22	19	50	36.8	24
	14	15	S	8	10	5	5	13	30	37	42	43	42	42	40	39	42	42	42	43	45	41	28	18	12	45	29.7	24
	15	S	8	6	4	4	7	15	22	33	40	43	44	44	44	45	46	45	44	41	36	32	30	28	S	46	30.0	24
	16	34	31	26	27	23	24	24	32	34	35	35	34	32	30	29	27	27	26	27	25	22	18	S	16	35	27.7	24
	17	14	13	10	10	8	12	20	18	22	25	28	29	28	32	37	38	32	30	33	35	28	S	21	12	38	23.3	24
	18	12	12	14	13	14	17	26	26	32	32	30	30	28	27	26	24	22	24	21	21	S	19	17	17	32	21.9	24
	19	15	15	14	13	14	14	15	15	17	17	17	16	17	18	19	20	18	16	18	S	16	14	11	11	20	15.7	24
	20	10	11	5	3	8	11	12	S	25	28	31	36	31	31	29	26	24	23	S	18	20	18	15	12	36	19.4	24
	21	13	7	10	17	15	16	15	15	15	17	21	25	28	29	29	34	33	S	30	29	28	30	31	28	34	22.4	24
	22	25	23	11	10	11	17	23	25	26	27	28	31	31	28	31	30	S	28	29	30	28	22	10	20	31	23.7	24
	23	12	1	2	8	8	11	21	23	26	35	36	38	37	35	37	S	38	37	29	15	17	6	5	5	38	21.0	24
	24	3	4	6	7	7	11	14	17	21	25	28	30	28	29	S	32	34	34	36	34	28	27	21	20	36	21.6	24
	25	20	18	14	17	19	20	21	22	21	21	22	24	26	S	30	41	37	38	35	31	22	21	18	16	41	24.1	24
	26	16	11	10	7	4	12	11	13	15	22	26	27	S	32	35	34	36	34	32	29	24	8	1	1	36	19.1	24
	27	1	1	1	3	3	8	9	17	26	29	33	S	33	33	33	34	35	38	43	36	29	11	9	4	43	20.4	24
	28	2	1	1	0	1	2	8	14	29	41	S	43	46	46	47	44	38	39	36	36	30	26	28	30	47	25.6	24
	29	28	25	27	24	24	24	25	27	29	S	32	32	30	36	42	44	43	45	43	40	41	41	38	35	45	33.7	24
	30	32	28	23	22	22	22	22	S	30	34	34	35	36	36	37	36	33	31	28	24	25	24	22	37	28.6	24	
	HOURLY MAX	34	34	39	41	44	46	44	43	41	49	56	56	57	61	55	54	56	62	58	54	44	41	38	35			
	HOURLY AVG	16.8	14.7	12.2	12.9	13.1	14.6	18.7	23.3	27.9	31.6	34.2	35.4	34.8	35.8	37.0	37.6	37.8	37.6	36.6	33.5	29.2	24.1	20.0	17.1			

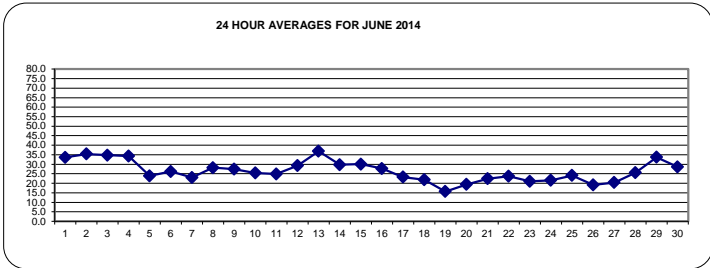
STATUS FLAG CODES

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

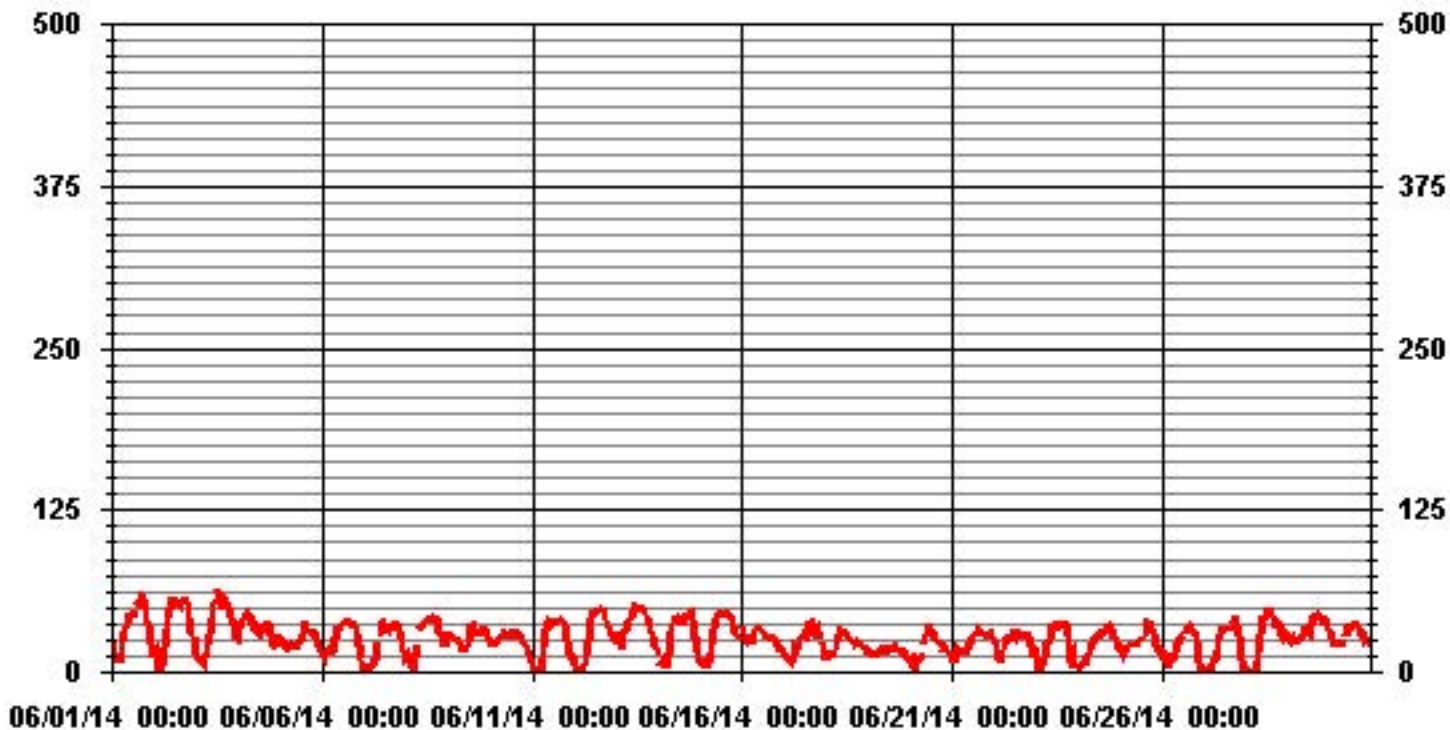
OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	683					
MAXIMUM 1-HR AVERAGE:	62	PPB	@ HOUR(S)	17	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	36.8	PPB			ON DAY(S)	13
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	12.93		MONTHLY AVERAGE:	26.39	PPB	



01 Hour Averages



— LICA35 O3_ PPB

Lakeland Industry & Community Association - Elk Point Site

JUNE 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	29	22	16	19	19	19	30	33	38	41	47	46	48	47	S	56	59	65	61	59	49	44	36	19	65	39.2	24	
2	25	23	18	12	4	8	34	37	47	53	57	57	58	S	54	54	57	57	57	57	52	42	35	29	58	40.3	24	
3	24	20	12	14	11	16	21	33	33	50	57	61	S	62	61	55	59	57	55	54	50	47	39	35	62	40.3	24	
4	31	38	41	42	47	48	48	48	42	38	38	S	32	33	35	37	39	39	39	36	24	21	24	28	48	36.9	24	
5	31	28	24	22	20	23	27	22	21	S	24	26	33	40	C	C	C	C	33	P	30	26	22	40	26.3	23		
6	18	15	21	20	22	21	19	31	33	S	37	38	38	39	39	40	40	39	39	37	35	30	18	9	40	29.5	24	
7	9	9	3	1	6	10	17	23	S	35	41	41	40	37	36	38	38	38	39	39	35	31	22	16	41	26.3	24	
8	17	19	19	14	10	23	29	S	36	38	40	40	40	41	42	43	44	44	44	40	35	33	27	30	44	32.5	24	
9	29	30	30	29	28	28	S	25	22	20	19	22	38	38	38	36	31	32	33	32	34	34	32	30	38	30.0	24	
10	27	26	24	24	25	S	30	30	31	31	31	31	31	31	31	30	33	31	34	27	24	20	20	16	34	27.7	24	
11	14	7	3	5	S	8	19	27	38	40	38	40	40	41	40	41	42	43	41	38	33	23	17	43	28.7	24		
12	15	7	1	S	3	5	9	16	36	43	46	48	49	49	50	51	51	51	48	41	41	36	33	29	51	33.0	24	
13	29	33	S	26	32	32	36	40	42	45	51	51	51	51	51	50	49	48	43	43	38	35	31	29	51	40.7	24	
14	21	S	14	14	10	9	26	35	41	45	45	43	43	42	41	44	43	43	44	47	47	36	25	16	47	33.7	24	
15	S	11	10	6	7	11	19	31	36	42	45	46	45	45	46	48	46	45	44	38	36	32	30	S	48	32.7	24	
16	36	35	29	32	26	27	26	35	35	36	36	36	35	32	30	29	28	27	28	27	24	20	S	17	36	29.8	24	
17	17	14	12	11	10	21	21	20	24	28	30	30	30	36	40	42	34	32	37	37	32	S	25	19	42	26.2	24	
18	15	16	17	17	17	23	30	28	34	34	33	32	30	29	27	27	23	26	22	22	S	20	19	18	34	24.3	24	
19	17	16	16	15	16	15	16	16	18	18	19	19	18	21	21	20	20	18	S	18	15	12	13	21	17.3	24		
20	12	13	8	6	12	14	14	S	31	32	33	41	41	33	31	29	25	25	S	20	23	20	17	17	41	22.6	24	
21	18	14	16	18	17	19	17	16	18	18	23	29	34	32	33	35	34	S	33	31	30	33	32	31	35	25.3	24	
22	27	26	22	15	14	21	25	26	27	28	31	34	32	29	33	32	S	30	30	31	30	26	20	26	34	26.7	24	
23	22	2	5	10	11	19	23	25	34	38	38	41	41	40	40	S	40	39	37	28	22	12	10	12	41	25.6	24	
24	6	6	13	9	10	13	16	21	23	28	31	35	31	32	S	36	36	36	37	36	32	30	26	22	37	24.6	24	
25	21	21	17	20	20	21	22	23	23	24	25	26	29	S	36	45	39	44	41	38	27	28	29	23	45	27.9	24	
26	20	16	15	8	7	16	14	14	18	27	32	30	S	35	38	36	39	40	34	31	28	17	2	2	40	22.6	24	
27	1	3	2	5	4	10	17	24	28	32	34	S	35	35	36	36	37	43	46	45	38	22	13	10	46	24.2	24	
28	6	2	4	1	2	4	14	20	40	43	S	48	50	48	48	48	42	41	40	41	34	30	32	31	50	29.1	24	
29	30	29	28	26	25	25	27	29	30	S	33	33	32	40	44	46	44	47	46	41	43	43	39	36	47	35.5	24	
30	35	30	25	22	22	22	22	24	S	33	35	36	37	37	38	39	39	36	32	32	26	26	27	25	39	30.4	24	
HOURLY MAX	36	38	41	42	47	48	48	48	47	53	57	61	58	62	61	56	59	65	61	59	52	47	39	36				
HOURLY AVG	20.8	18.3	16.0	16.0	15.8	18.3	23.0	26.9	31.4	34.3	36.6	37.8	37.6	38.1	39.3	40.1	39.7	39.9	39.4	37.3	33.6	28.8	25.0	21.6				

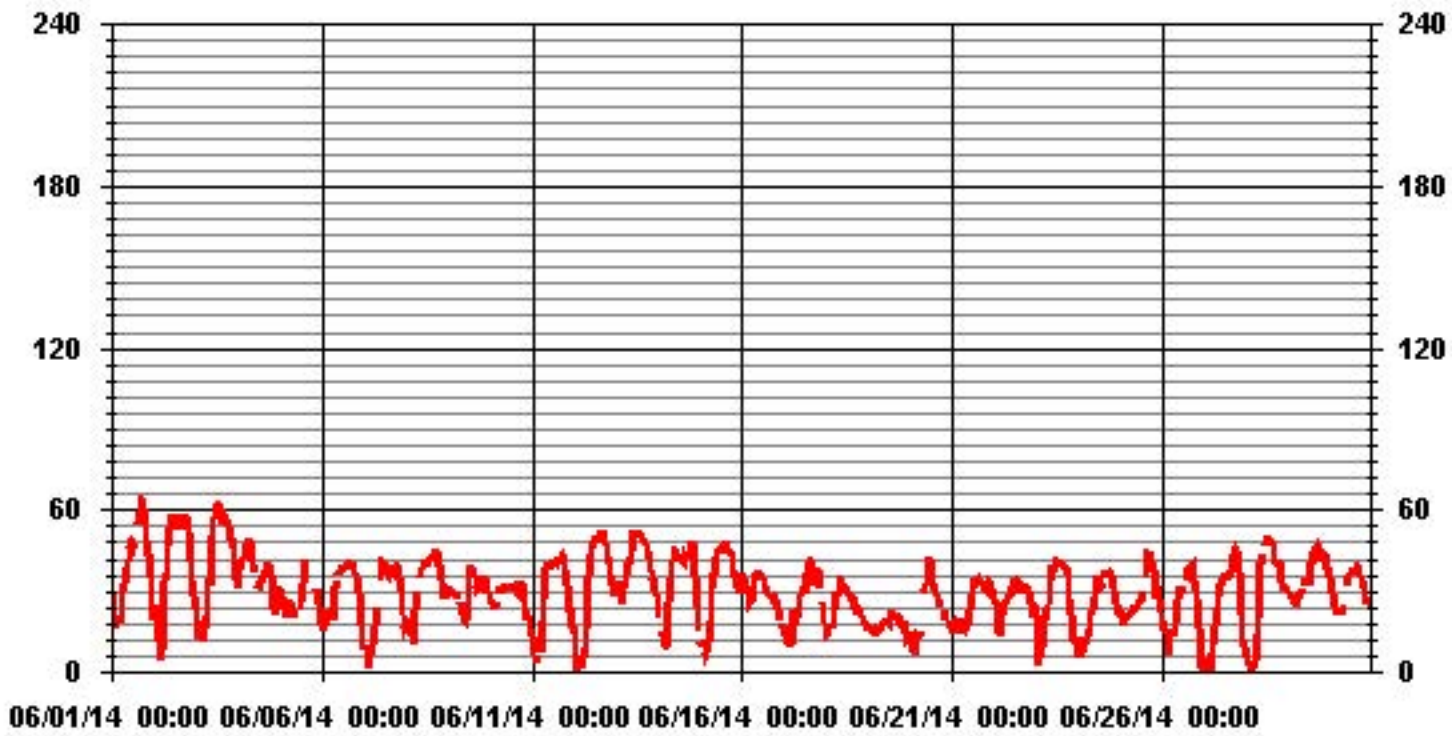
STATUS FLAG CODES

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:	683
MAXIMUM INSTANTANEOUS VALUE:	65 PPB @ HOUR(S) 17 ON DAY(S) 1
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	12.66
OPERATIONAL TIME:	719 HRS

01 Hour Averages



— LICA35 O3MAX PPB

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

June 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	3.07	1.31	4.67	5.99	10.81	11.69	5.40	3.07	1.60	.87	1.60	3.80	9.64	10.96	16.52	5.26	96.34	
< 110	.14	.00	.14	.58	.29	.29	.14	.00	.14	.29	.43	.29	.29	.00	.58	.00	3.65	
< 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	3.21	1.31	4.82	6.57	11.11	11.98	5.55	3.07	1.75	1.16	2.04	4.09	9.94	10.96	17.10	5.26		

Calm : .00 %

Total # Operational Hours : 684

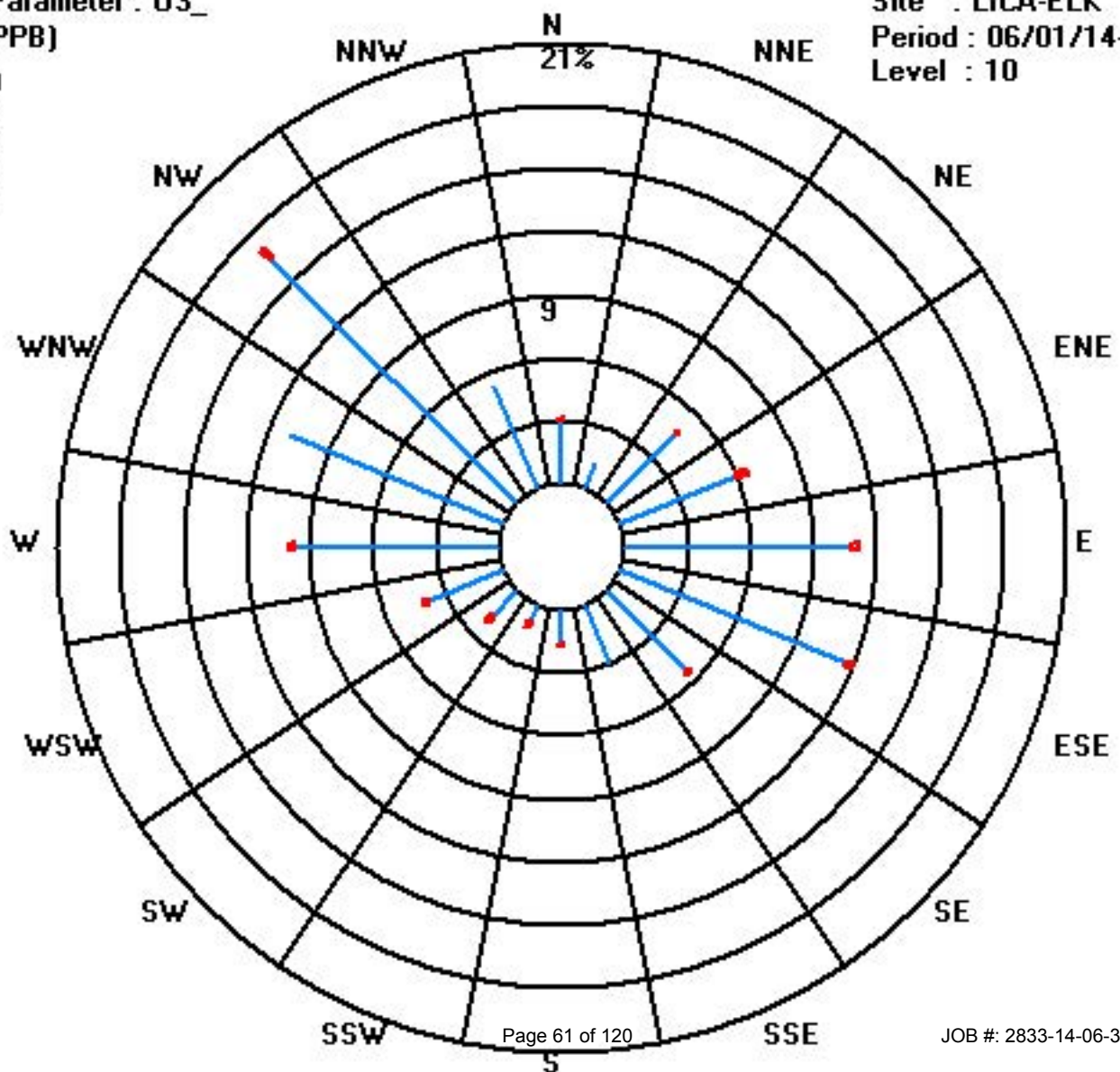
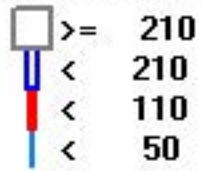
Distribution By Samples

		Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 50	21	9	32	41	74	80	37	21	11	6	11	26	66	75	113	36	659	
< 110	1		1	4	2	2	1		1	2	3	2	2		4		25	
< 210																		
>= 210																		
Totals	22	9	33	45	76	82	38	21	12	8	14	28	68	75	117	36		

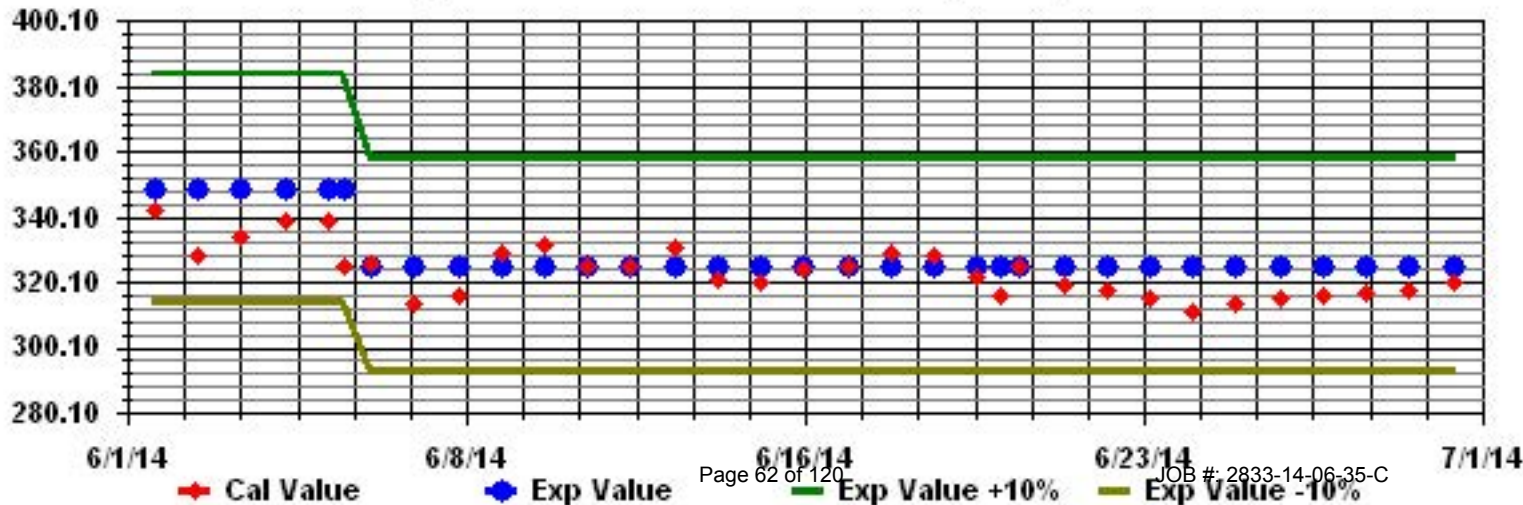
Calm : .00 %

Total # Operational Hours : 684

Class Limits (PPB)



Calibration Graph for Site: LICA35 Parameter: 03_ Sequence: 03 Phase: SPAN



Total Hydrocarbons (55i)

Lakeland Industry & Community Association - Elk Point Site

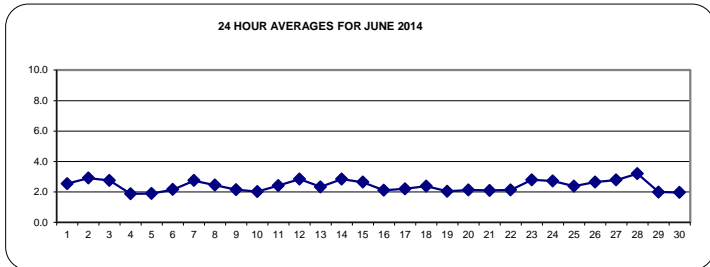
JUNE 2014

TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY MAX.	24-HOUR AVG.	RDGS.
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																													
1		2.4	3.6	4.3	3.5	3.5	3.6	2.8	2.2	2.2	2.1	2.1	2.0	2.0	S	1.9	1.9	1.8	1.9	1.9	2.2	2.1	2.4	3.7	4.3	2.5	24		
2		5.2	2.9	3.4	5.0	5.8	5.3	4.7	2.6	2.3	2.1	1.9	1.9	1.9	S	1.8	1.8	1.8	1.8	1.8	1.9	2.5	3.2	3.5	5.8	2.9	24		
3		3.1	3.2	4.0	3.8	4.3	4.0	4.1	3.6	3.5	2.5	2.1	2.0	S	1.9	1.9	2.0	1.9	1.9	1.9	2.0	2.2	2.8	2.8	4.3	2.8	24		
4		2.7	2.2	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	S	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.7	1.9	24		
5		1.8	1.8	1.9	1.9	1.9	1.9	1.8	1.8	1.9	1.8	S	1.8	1.8	1.8	1.8	C	C	C	C	1.9	1.9	2.0	2.2	2.4	2.4	1.9	24	
6		2.5	2.6	2.5	2.2	2.4	2.2	2.1	2.0	1.9	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.6	2.5	2.9	2.9	2.2	24	
7		3.2	3.2	4.0	4.7	4.8	4.2	4.3	3.4	S	2.4	1.9	1.9	2.0	1.9	1.8	1.8	1.8	1.8	1.9	1.8	1.9	2.3	2.8	3.3	4.8	2.7	24	
8		3.2	2.9	3.1	3.3	3.3	3.0	2.9	S	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2.4	2.7	3.1	3.1	2.4	3.3	2.4	24	
9		2.5	2.4	2.4	2.3	2.2	2.2	S	2.2	2.3	2.3	2.4	2.4	2.3	2.1	2.0	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	2.0	2.5	2.1	24	
10		2.0	2.0	2.0	2.0	1.9	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.0	2.3	2.4	2.1	2.7	2.7	2.0	24	
11		2.9	3.6	3.2	3.4	S	3.1	3.0	2.3	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.7	3.0	3.2	3.6	2.4	24		
12		3.2	3.8	4.3	S	4.5	4.9	4.9	4.3	3.5	2.1	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.2	2.1	2.4	2.5	3.2	4.9	2.8	24	
13		3.2	2.5	S	4.5	2.4	2.3	2.2	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.2	2.4	2.2	3.4	3.2	4.5	2.3	24		
14		3.5	S	4.2	3.9	4.7	6.9	4.6	2.7	2.4	2.3	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.5	2.9	3.3	6.9	2.8	24		
15		S	3.9	4.1	4.2	4.5	4.3	3.9	3.4	2.5	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	2.0	2.1	2.2	S	4.5	2.6	24		
16		2.2	2.4	2.3	2.6	2.5	2.7	2.6	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	S	2.3	2.7	2.1	24		
17		2.2	2.2	2.3	2.4	2.5	2.4	2.1	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	S	2.4	2.8	2.8	2.2	24		
18		4.0	3.7	3.3	3.0	2.8	2.7	2.3	2.3	2.1	2.0	2.0	2.0	2.0	2.0	1.9	2.1	2.2	2.1	2.0	2.0	S	2.0	2.1	2.1	4.0	2.4	24	
19		2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	S	2.0	2.1	2.2	2.2	2.2	2.0	24	
20		2.1	2.1	2.9	3.1	2.5	2.2	2.1	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	S	2.0	1.9	2.0	2.3	2.6	3.1	2.1	24	
21		3.6	2.9	2.5	2.1	2.1	2.1	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	S	1.9	1.9	2.0	1.9	1.9	2.0	3.6	2.1	24		
22		2.0	2.1	2.8	3.2	2.6	2.3	2.0	2.0	1.9	1.8	1.8	1.9	1.9	1.9	1.9	S	1.9	1.9	1.9	1.9	2.1	2.9	2.4	3.2	2.1	24		
23		2.6	4.6	4.9	3.0	3.3	2.9	2.4	2.4	2.3	2.0	1.9	2.0	2.0	1.9	S	1.9	2.0	2.3	2.5	2.7	3.2	4.4	5.0	5.0	2.8	24		
24		5.0	4.9	4.3	3.3	3.9	3.4	3.1	2.7	2.3	2.0	2.0	2.0	2.0	S	2.0	2.0	2.0	2.0	2.1	2.4	2.1	2.4	2.6	5.0	2.7	24		
25		2.6	2.5	2.4	2.4	2.3	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	S	2.1	2.0	2.0	2.0	2.3	2.4	2.8	2.8	3.4	3.3	3.4	2.4	24	
26		3.2	3.1	2.8	4.0	3.6	2.4	2.0	2.0	2.0	1.9	1.9	1.9	S	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.8	4.2	4.8	4.9	4.9	2.6	24	
27		5.1	4.6	4.1	3.4	3.1	2.7	3.2	2.3	2.1	2.0	1.9	S	1.9	1.9	1.9	1.9	1.9	1.9	2.3	2.1	4.0	3.5	4.2	5.1	2.8	24		
28		4.4	4.8	4.7	5.5	6.3	6.8	5.1	4.9	3.2	2.2	S	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.2	2.1	2.1	2.0	6.8	3.2	24		
29		2.1	2.2	2.0	2.1	2.1	2.1	2.0	2.0	2.0	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.2	2.0	24	
30		2.0	1.9	1.9	1.9	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	2.0	2.0	2.2	2.2	2.0	2.1	2.2	2.0	24	
HOURLY MAX		5	5	5	6	6	7	5	5	4	3	2	2	2	2	2	2	2	2	2	3	3	4	5	5				
HOURLY AVG		3.0	3.0	3.1	3.1	3.2	3.1	2.8	2.5	2.2	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.2	2.4	2.7	2.9				

STATUS FLAG CODES

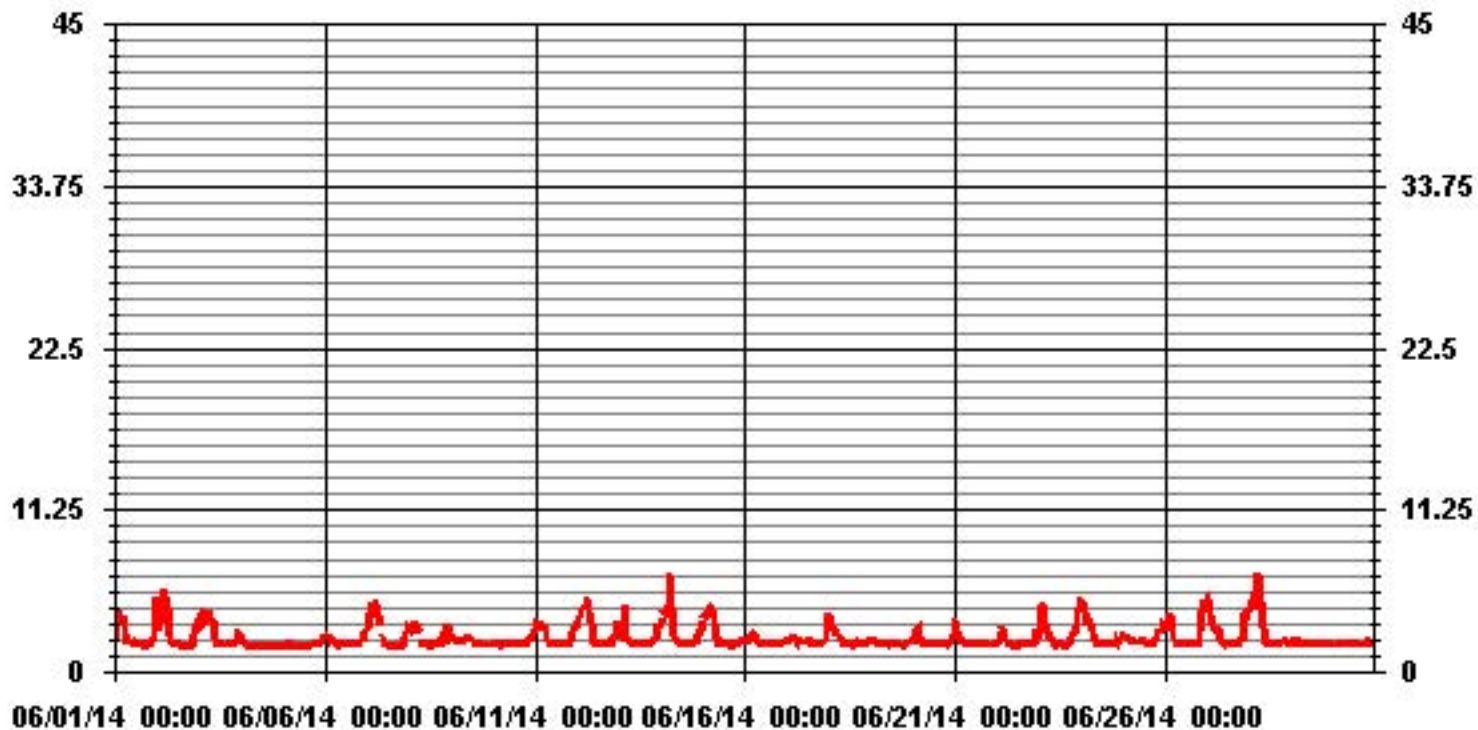
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	684					
MAXIMUM 1-HR AVERAGE:	6.9	PPM	@ HOUR(S)	5	ON DAY(S)	14
MAXIMUM 24-HR AVERAGE:	3.2	PPM			ON DAY(S)	28
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.83		MONTHLY AVERAGE:	2.40	PPM	

01 Hour Averages



— LICA35 THC55 PPM

Lakeland Industry & Community Association - Elk Point Site

JUNE 2014

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	3.22	4.34	6.13	4.42	4.72	3.93	3.49	2.53	2.34	2.4	2.18	2.17	2.27	2.11	S	2.18	2.01	1.95	1.96	2.06	3.12	2.84	4.37	4.6	6.13	3.1	24
2	11.95	3.5	4.33	6.41	6.5	7.03	7.43	2.87	2.61	2.26	2.1	2.04	2.15	S	2.07	2.05	1.88	2.06	1.9	2.05	2.47	4.02	5.44	5.17	11.95	3.9	24
3	3.67	3.86	4.86	4.79	6.64	5	4.86	4.14	4.5	3.38	2.22	2.21	S	1.97	2.36	2.62	2.19	2.2	2.14	2.08	2.64	2.88	4.37	3.59	6.64	3.4	24
4	3.56	2.61	2.05	2.13	1.94	2	2	1.96	1.87	1.87	1.97	S	2	2.04	1.99	1.98	1.88	1.87	2.05	2.02	1.88	1.92	1.86	1.88	3.56	2.1	24
5	1.86	1.86	2.15	2.01	1.99	2.04	1.96	1.98	2	S	S	1.9	2.03	1.88	1.86	C	C	C	C	1.98	P	2.3	2.7	2.62	2.7	2.1	23
6	3	3.12	2.92	2.5	3.25	2.73	2.21	2.18	1.97	S	1.94	1.96	1.93	1.93	1.93	1.95	1.94	1.94	2.14	2.17	2.7	3.15	2.9	3.26	3.26	2.4	24
7	3.99	3.65	5.15	5.46	5.76	5	4.74	4.1	S	3.08	2.08	2.21	2.29	2.2	2.05	1.92	2.05	2.05	2.12	1.94	2.18	2.66	3.05	3.89	5.76	3.2	24
8	4.25	3.68	4.12	4.81	4.21	3.44	3.82	S	2.01	1.96	2.17	2.14	2.07	2	1.95	1.96	1.97	2	2.05	3.67	3.67	4	4.06	2.7	4.81	3.0	24
9	2.65	2.57	2.53	2.5	2.3	2.36	S	2.41	2.49	2.52	2.73	2.68	2.62	2.45	2.25	2.11	2.08	2	1.97	2.2	2.16	2.18	2.12	2.19	2.73	2.4	24
10	2.18	2.23	2.21	2.18	2.21	S	2	2	1.96	2.02	1.97	1.95	1.95	1.94	1.93	1.94	2.13	2.09	2.59	2.38	2.68	2.84	2.64	3.01	3.01	2.2	24
11	3.75	4.4	3.71	4.12	S	3.51	5.12	2.88	2.17	2.02	2.11	2.08	1.98	1.97	1.95	1.93	1.94	1.92	2.08	2.14	2.33	3.54	4.84	4.47	5.12	2.9	24
12	4.95	5.08	5.13	S	5.16	6.24	5.49	4.69	4.38	2.66	2.12	2.11	2.13	2.02	2.33	2.08	2.02	2.06	2.77	2.46	2.38	2.72	2.79	4.58	6.24	3.4	24
13	3.83	3.45	S	8.61	3.21	2.62	2.27	2.17	2.03	2.02	2	1.95	1.93	1.93	2.09	1.96	1.99	2.21	2.55	2.96	2.92	2.77	4.78	3.84	8.61	2.9	24
14	4.21	S	5	4.89	I2.2	8.97	5.52	3.06	2.66	2.49	2.79	2.01	2.11	2.12	2	2.08	2.01	2.09	1.99	2.08	2.4	2.91	3.58	4.03	I2.2	3.6	24
15	S	4.34	4.76	4.51	4.92	4.65	4.36	4.03	2.94	2.5	2	2.03	1.96	1.95	1.95	2.08	1.93	1.93	1.95	2.05	2.16	2.34	2.45	S	4.92	2.9	24
16	2.82	3.23	2.42	4.57	2.81	3.14	2.96	2.46	2	1.94	1.93	1.95	2.16	1.95	2.34	2.11	1.96	1.96	1.98	2.01	2.08	2.39	S	2.63	4.57	2.4	24
17	2.39	2.4	2.49	3.19	2.77	2.86	2.3	2.66	2.57	2.41	2.41	2.44	2.52	2.18	2.17	2.11	2.13	2.31	2.25	2.08	2.52	S	4.11	3.89	4.11	2.6	24
18	4.74	4.65	4.73	4.06	3.71	3.61	2.66	2.89	2.51	2.42	2.25	2.38	2.28	2.33	2.17	4.15	2.54	2.68	2.13	2.09	S	2.23	2.77	2.33	4.74	3.0	24
19	2.47	2.16	2.4	2.4	2.25	2.37	2.22	2.2	2.09	2.63	2.11	2.45	2.33	2.28	2.5	2.2	2.16	2.1	2.01	S	2.33	2.46	2.34	2.92	2.92	2.3	24
20	2.38	2.53	3.33	3.86	4.26	2.52	2.23	S	2.16	2.19	2.01	1.94	2.08	1.95	2.1	2.12	2.01	2.08	S	2.33	2.13	2.06	2.77	3.4	4.26	2.5	24
21	6.19	4.25	3.53	2.46	2.78	2.22	2.36	2.2	2.18	2.01	2.07	1.94	2.08	1.96	2.13	2.08	1.92	S	1.95	2.09	2.13	2.07	2.07	2.16	6.19	2.5	24
22	2.17	2.72	3.81	5.58	2.94	2.87	2.61	2.66	1.97	1.95	1.91	1.91	1.96	1.94	1.93	2.03	S	1.93	2.08	1.93	2.09	3.14	4.12	3.16	5.58	2.6	24
23	4.38	6.39	6.42	3.75	4.27	3.46	2.71	2.63	2.57	2.3	2.02	2.29	2.18	2.3	2.18	S	2.24	2.34	5.01	3.09	3.52	4.54	5.82	7.37	7.37	3.6	24
24	6.4	9.31	6.89	3.9	4.89	4.74	3.78	3.09	2.51	2.21	2.25	2.47	2.4	2.81	S	2.39	2.36	2.2	2.18	2.55	3.24	2.3	4.23	3.77	9.31	3.6	24
25	3.07	2.81	2.69	2.62	2.49	2.53	2.52	2.61	2.36	2.54	2.36	2.45	3.04	S	2.48	2.21	2.47	2.32	2.82	2.97	3.56	4.41	4.72	5.23	5.23	2.9	24
26	4.38	3.93	4.01	5.14	4.33	3.76	2.28	2.2	2.08	2.08	2.07	2.08	S	2.17	2.04	2.24	2.2	1.97	2.16	2.68	3.45	5.63	5.8	6.11	6.11	3.3	24
27	7.04	7.21	4.9	4.77	3.79	3.55	5.02	2.88	2.53	2.24	2.02	S	2.11	2.18	2.13	2.07	1.95	2.08	2.06	2.73	2.66	7.76	4.11	5.08	7.76	3.6	24
28	5.34	5.8	6.17	6.87	10.67	8.66	5.75	5.85	4.25	2.58	S	2.18	2.2	2.23	2.02	3.38	2.14	2.1	2.88	3.02	2.41	2.44	2.37	2.25	10.67	4.1	24
29	2.68	2.61	2.1	2.26	2.42	2.47	2.19	2.23	2.19	S	2	2.1	2.04	1.99	2.06	1.92	2.06	2.07	2.08	2.23	2.27	2.1	2.15	2.09	2.68	2.2	24
30	2.27	2.08	2.09	1.99	2.08	2.14	2.12	2.08	S	2.18	2.27	2.12	2.16	2.08	2.07	2.11	2	2.14	2.15	2.34	2.59	2.4	2.56	2.58	2.59	2.2	24
HOURLY MAX	12	9	7	9	12	9	7	6	5	3	3	3	3	3	3	4	3	3	5	4	4	8	6	7			
HOURLY AVG	4.0	3.8	3.9	4.0	4.2	3.8	3.4	2.8	2.5	2.3	2.1	2.1	2.2	2.1	2.1	2.2	2.1	2.1	2.3	2.4	2.6	3.1	3.5	3.6			

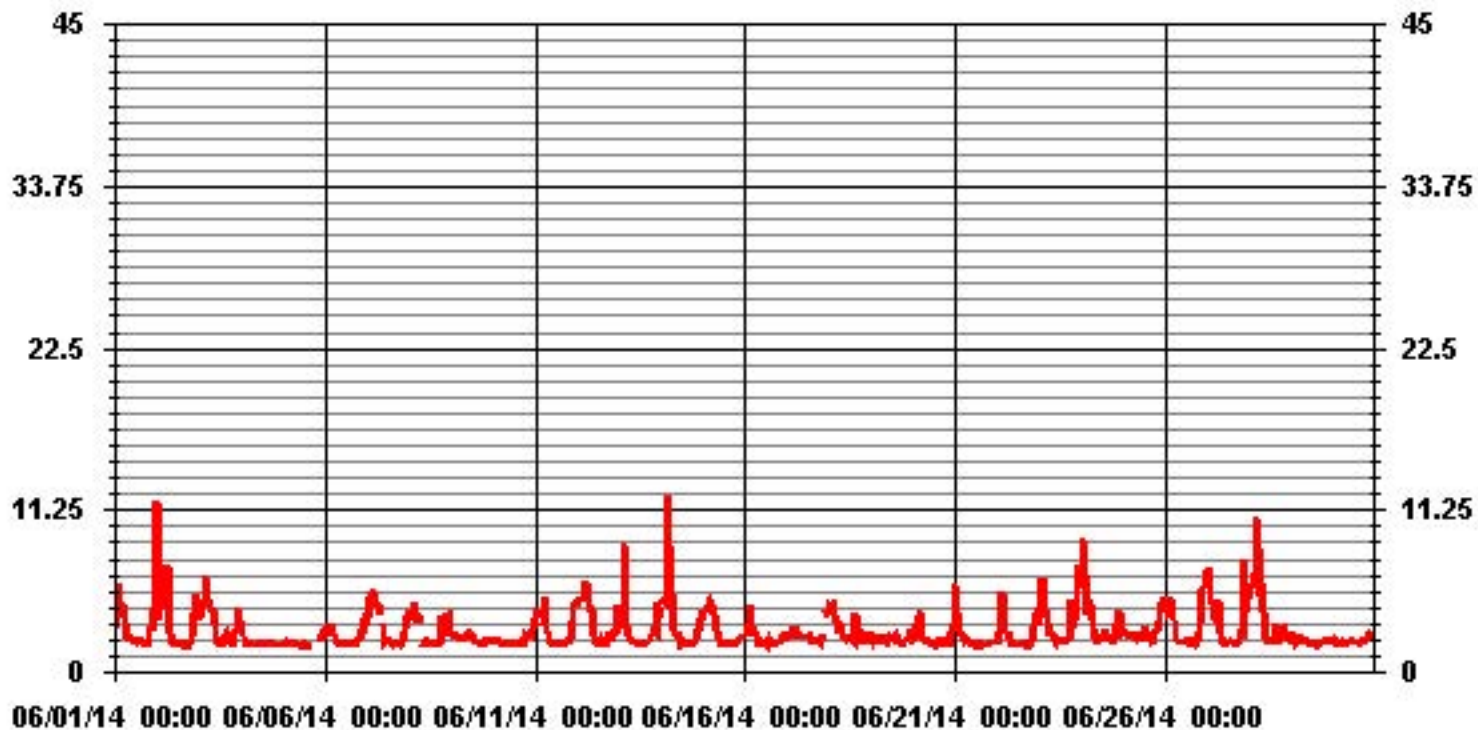
STATUS FLAG CODES

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:	682
MAXIMUM INSTANTANEOUS VALUE:	12.2 PPM @ HOUR(S) 4 ON DAY(S) 14
VAR-VARIOUS	
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	1.36
OPERATIONAL TIME:	719 HRS

01 Hour Averages



— LICA35 THC55MAX PPM

LICA35
 THC55 / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA35
 Parameter : THC55
 Units : PPM

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	3.07	1.02	4.53	5.70	7.60	9.06	4.67	2.48	.87	.87	1.75	3.07	7.01	8.91	16.81	4.82	82.30
< 10.0	.14	.29	.29	.87	3.50	2.92	.87	.58	.87	.29	.29	1.02	2.92	2.04	.29	.43	17.69
< 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	3.21	1.31	4.82	6.57	11.11	11.98	5.55	3.07	1.75	1.16	2.04	4.09	9.94	10.96	17.10	5.26	

Calm : .00 %

Total # Operational Hours : 684

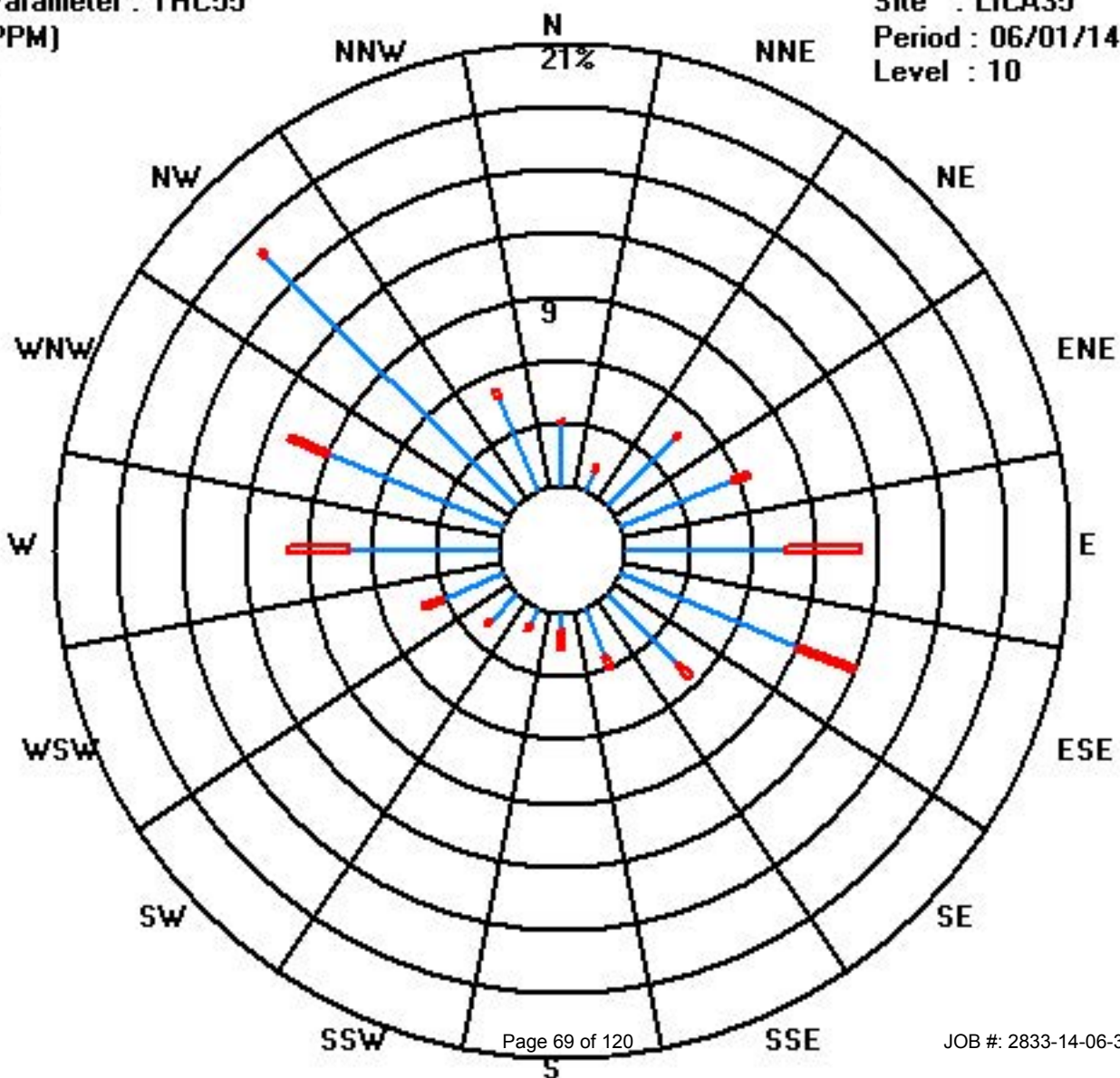
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	21	7	31	39	52	62	32	17	6	6	12	21	48	61	115	33	563
< 10.0	1	2	2	6	24	20	6	4	6	2	2	7	20	14	2	3	121
< 50.0																	
>= 50.0																	
Totals	22	9	33	45	76	82	38	21	12	8	14	28	68	75	117	36	

Calm : .00 %

Total # Operational Hours : 684

Class Limits (PPM)



Methane

Lakeland Industry & Community Association - Elk Point Site

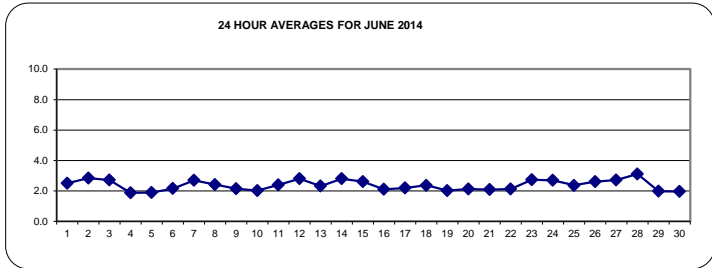
JUNE 2014

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	MAX.	AVG.	RDGS.	
	DAY																											
1		2.4	3.5	4.2	3.4	3.5	3.5	2.7	2.2	2.2	2.1	2.1	2.0	2.0	S	1.9	1.9	1.8	1.9	1.9	2.2	2.1	2.4	3.6	4.2	2.5	24	
2		5.1	2.8	3.3	4.8	5.5	5.0	4.6	2.5	2.3	2.1	1.9	1.9	1.9	S	1.8	1.8	1.8	1.8	1.8	1.9	2.5	3.1	3.5	5.5	2.8	24	
3		3.0	3.2	3.9	3.8	4.2	3.8	4.0	3.5	3.3	2.5	2.1	2.0	S	1.9	1.9	2.0	1.9	1.9	1.9	2.0	2.2	2.8	2.7	4.2	2.7	24	
4		2.7	2.2	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	S	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.7	1.9	24
5		1.8	1.8	1.9	1.9	1.9	1.9	1.8	1.8	1.9	1.8	S	1.8	1.8	1.8	1.8	C	C	C	C	1.9	1.9	2.0	2.2	2.4	2.4	1.9	24
6		2.5	2.6	2.5	2.2	2.4	2.2	2.1	2.0	1.9	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.6	2.5	2.9	2.9	2.2	24
7		3.1	3.2	3.9	4.6	4.7	4.1	4.2	3.3	S	2.4	1.9	1.8	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.9	2.3	2.7	3.2	4.7	2.7	24	
8		3.2	2.9	3.1	3.2	3.2	2.9	2.9	S	1.9	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2.4	2.6	3.0	3.0	2.4	3.2	2.4	24
9		2.5	2.4	2.4	2.3	2.2	2.2	S	2.2	2.3	2.3	2.4	2.4	2.3	2.1	2.0	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	2.0	2.5	2.1	24
10		2.0	2.0	2.0	2.0	1.9	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.0	2.3	2.4	2.1	2.7	2.7	2.0	24
11		2.8	3.6	3.2	3.3	S	3.1	3.0	2.3	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.7	2.9	3.1	3.6	2.4	24	
12		3.1	3.7	4.2	S	4.3	4.8	4.8	4.2	3.4	2.1	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.2	2.1	2.4	2.5	3.1	4.8	2.8	24
13		3.2	2.5	S	4.4	2.4	2.3	2.2	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.2	2.4	2.2	3.3	3.2	4.4	2.3	24
14		3.4	S	4.1	3.8	4.5	6.8	4.5	2.7	2.4	2.3	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.5	2.8	3.2	6.8	2.8	24	
15		S	3.8	4.1	4.1	4.4	4.2	3.8	3.4	2.5	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	2.0	2.1	2.2	S	4.4	2.6	24	
16		2.2	2.4	2.3	2.5	2.5	2.7	2.6	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	S	2.2	2.7	2.1	24	
17		2.2	2.2	2.3	2.4	2.5	2.4	2.1	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	S	2.4	2.7	2.7	2.2	24	
18		3.9	3.7	3.2	3.0	2.8	2.6	2.3	2.3	2.1	2.0	2.0	2.0	2.0	2.0	1.9	2.1	2.2	2.1	2.0	2.0	S	2.0	2.1	2.1	3.9	2.4	24
19		2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	1.9	S	2.0	2.1	2.2	2.2	2.2	2.0	24
20		2.1	2.0	2.9	3.1	2.5	2.2	2.1	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	S	2.0	1.9	2.0	2.3	2.6	3.1	2.1	24
21		3.6	2.9	2.5	2.1	2.1	2.1	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	S	1.9	1.9	1.9	1.9	1.9	2.0	3.6	2.1	24	
22		2.0	2.1	2.8	3.2	2.6	2.3	2.0	2.0	1.9	1.9	1.8	1.8	1.9	1.9	1.9	S	1.9	1.9	1.9	1.9	2.1	2.8	2.3	3.2	2.1	24	
23		2.5	4.4	4.8	3.0	3.2	2.8	2.4	2.4	2.3	2.0	1.9	2.0	2.0	1.9	S	1.9	2.0	2.1	2.4	2.7	3.2	4.2	4.8	4.8	2.7	24	
24		4.8	4.8	4.2	3.3	3.9	3.4	3.1	2.6	2.3	2.0	2.0	2.0	2.0	S	2.0	2.0	2.0	2.0	2.1	2.4	2.1	2.4	2.6	4.8	2.7	24	
25		2.6	2.5	2.4	2.4	2.3	2.2	2.2	2.1	2.2	2.1	2.2	2.1	2.2	2.1	S	2.1	2.0	2.0	2.3	2.4	2.8	2.8	3.3	3.2	3.3	2.4	24
26		3.2	3.1	2.8	3.9	3.6	2.4	2.0	2.0	2.0	1.9	1.9	1.9	S	1.9	1.9	1.9	1.9	1.9	2.0	2.7	4.0	4.5	4.7	4.7	2.6	24	
27		4.9	4.4	3.9	3.3	3.1	2.6	3.2	2.3	2.1	2.0	1.9	S	1.9	1.9	1.9	1.9	1.9	1.9	2.3	2.1	3.8	3.3	4.0	4.9	2.7	24	
28		4.2	4.5	4.5	5.2	6.0	6.5	4.9	4.7	3.1	2.2	S	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.2	2.1	2.1	2.0	6.5	3.1	24	
29		2.1	2.2	2.0	2.1	2.1	2.1	2.0	2.0	1.9	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.2	2.0	24
30		2.0	1.9	1.9	1.9	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	2.0	2.2	2.2	2.0	2.1	2.2	2.0	24	
HOURLY MAX		5	5	5	5	6	7	5	5	3	3	2	2	2	2	2	2	2	2	2	2	3	4	5	5			
HOURLY AVG		2.9	2.9	3.1	3.1	3.1	3.1	2.8	2.5	2.2	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.4	2.6	2.8			

STATUS FLAG CODES

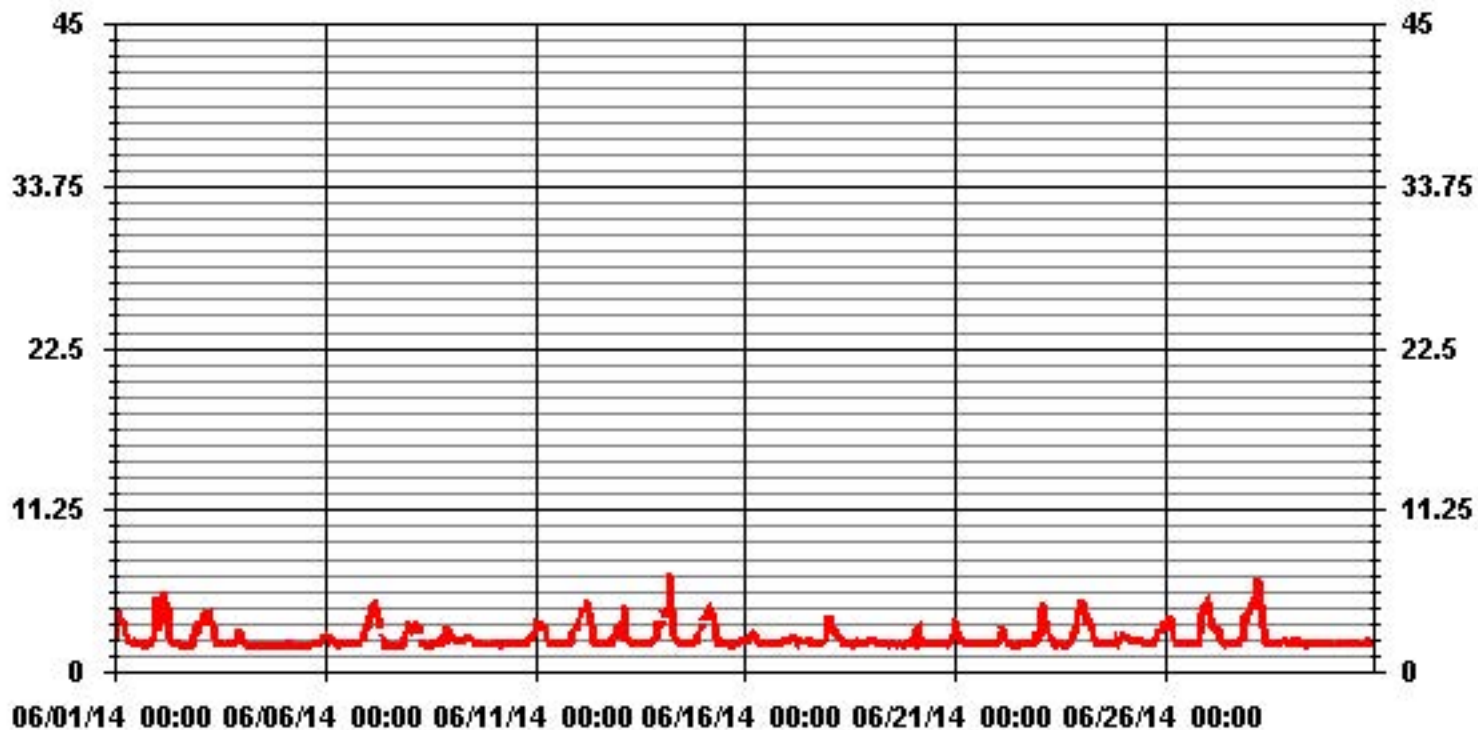
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	684					
MAXIMUM 1-HR AVERAGE:	6.8	PPM	@ HOUR(S)	5	ON DAY(S)	14
MAXIMUM 24-HR AVERAGE:	3.1	PPM			ON DAY(S)	28
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.78		MONTHLY AVERAGE:	2.38	PPM	

01 Hour Averages



— LICA35 METHANE PPM

Lakeland Industry & Community Association - Elk Point Site

JUNE 2014

METHANE MAX instantaneous maximum in ppm

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00			
1	3.19	4.16	5.87	4.25	4.48	3.78	3.37	2.39	2.31	2.4	2.18	2.17	2.13	2.12	S	2.18	2.02	1.95	1.96	2.06	3.13	2.84	4.25	4.49	5.87	3.0	24
2	11.84	3.24	4.07	6.12	6.26	6.7	7.17	2.87	2.47	2.27	2.06	2.05	2	S	1.93	2.02	1.88	1.88	1.9	1.86	2.47	3.86	5.28	5.16	11.84	3.8	24
3	3.66	3.72	4.77	4.59	6.42	4.85	4.7	3.97	4.33	3.12	2.23	2.21	S	1.98	2.36	2.48	2.08	2.08	2.15	2	2.64	2.71	4.37	3.46	6.42	3.3	24
4	3.43	2.47	2.06	2.14	1.94	1.91	1.89	1.93	1.87	1.87	1.85	S	1.86	1.85	1.85	1.89	1.88	1.87	1.85	1.93	1.87	1.89	1.86	1.88	3.43	2.0	24
5	1.86	1.86	2.14	2.02	1.98	2.05	1.97	1.99	2	S	S	1.9	1.88	1.88	1.85	C	C	C	C	1.98	P	2.3	2.7	2.63	2.7	2.1	23
6	3	3	2.93	2.37	3.25	2.68	2.21	2.18	1.97	S	1.94	1.96	1.93	1.93	1.93	1.96	1.94	1.94	2.01	2.17	2.61	3.15	2.89	3.15	3.25	2.4	24
7	3.85	3.49	4.94	5.28	5.61	4.79	4.57	3.97	S	3	2.08	2.07	2.29	2.01	2.01	1.92	1.92	1.93	1.93	1.94	2.12	2.66	3.06	3.69	5.61	3.1	24
8	4.1	3.57	3.95	4.6	3.91	3.44	3.82	S	1.99	1.96	1.97	1.95	1.96	2	1.95	1.96	1.97	2	2.05	3.49	3.84	3.84	2.58	4.6	2.9	24	
9	2.65	2.57	2.53	2.45	2.31	2.36	S	2.31	2.37	2.45	2.57	2.63	2.62	2.22	2.12	2.12	2.1	1.94	1.98	2.21	2.16	2.18	2.13	2.19	2.65	2.3	24
10	2.18	2.23	2.21	2.18	2.21	S	2	2	1.96	1.94	1.97	1.95	1.95	1.95	1.93	1.95	1.93	2.03	2.56	2.38	2.69	2.83	2.65	3.01	3.01	2.2	24
11	3.59	4.24	3.54	3.83	S	3.24	4.96	2.88	2.17	2.03	1.99	1.98	1.98	1.97	1.95	1.93	1.94	1.92	1.96	1.98	2.32	3.54	4.39	4.39	4.96	2.8	24
12	4.75	4.65	4.91	S	4.91	6.15	5.3	4.54	4.2	2.67	2.14	2.12	2.02	2.02	2.34	2.04	2.03	2.05	2.77	2.42	2.37	2.52	2.75	4.43	6.15	3.3	24
13	3.66	3.36	S	8.42	3.21	2.39	2.27	2.15	2.03	2.01	2	1.95	1.93	1.93	1.94	1.96	1.98	2.16	2.55	2.96	2.92	2.78	4.6	3.47	8.42	2.8	24
14	3.95	S	4.85	4.8	11.85	8.78	5.43	3.06	2.65	2.41	2.48	2.01	2.01	2	2	1.98	2.01	2	2	2.08	2.4	2.8	3.41	3.89	11.85	3.5	24
15	S	4.23	4.59	4.37	4.64	4.52	4.3	3.9	2.93	2.43	2	2.03	1.96	1.96	1.95	1.94	1.93	1.93	1.95	1.97	2.16	2.35	2.45	S	4.64	2.8	24
16	2.82	3.06	2.42	4.23	2.77	2.99	2.73	2.46	2	1.95	1.93	1.95	1.95	1.95	2.35	2.12	1.96	1.95	1.97	1.99	2.05	2.26	S	2.47	4.23	2.4	24
17	2.3	2.4	2.4	2.95	2.61	2.67	2.27	2.65	2.36	2.31	2.2	2.44	2.52	2.18	2.17	2.12	2.06	2.11	2.13	2.07	2.52	S	4.1	3.78	4.1	2.5	24
18	4.63	4.52	4.69	3.88	3.66	3.28	2.56	2.89	2.52	2.42	2.25	2.38	2.09	2.32	2.01	4.03	2.54	2.67	2.09	2.1	S	2.19	2.77	2.34	4.69	2.9	24
19	2.31	2.16	2.19	2.22	2.12	2.37	2.05	2.06	2.1	2.64	2.02	2.44	2.34	2.15	2.49	2.03	2.09	2.11	2.01	S	2.13	2.21	2.32	2.92	2.92	2.2	24
20	2.37	2.54	3.21	3.71	4.16	2.35	2.24	S	2.02	2.04	2.01	1.94	1.98	1.95	1.93	1.95	1.94	2	S	2.05	2.02	2.06	2.66	3.21	4.16	2.4	24
21	6.09	4.09	3.44	2.45	2.61	2.22	2.2	2.14	2.04	2.01	1.96	1.94	1.97	1.97	1.92	1.91	1.92	S	1.95	1.97	2.13	2.07	2.07	2.17	6.09	2.4	24
22	2.17	2.72	3.65	5.39	2.89	2.73	2.35	2.66	1.97	1.95	1.91	1.91	1.95	1.94	1.93	1.92	S	1.93	1.94	1.93	1.98	3.07	3.98	3.16	5.39	2.5	24
23	4.12	6.21	6.21	3.52	4.06	3.35	2.63	2.56	2.49	2.13	2.03	2.29	2.14	2.3	2.18	S	2.04	2.15	2.8	3.04	3.37	4.34	5.66	7.17	7.17	3.4	24
24	6.31	9.23	6.81	3.9	4.74	4.69	3.66	3.07	2.51	2.19	2.19	2.37	2.39	2.81	S	2.39	2.24	2.2	2.18	2.55	3.24	2.27	4.14	3.77	9.23	3.6	24
25	3.07	2.7	2.58	2.56	2.48	2.45	2.52	2.61	2.36	2.54	2.37	2.45	3.04	S	2.37	2.21	2.3	2.31	2.8	2.97	3.39	4.24	4.5	5.23	5.23	2.9	24
26	4.19	3.93	3.87	5.02	4.16	3.63	2.29	2.2	2.08	2.09	2.03	1.99	S	2.1	2.05	2.05	2.08	1.98	2.12	2.68	3.45	5.34	5.71	5.82	5.82	3.2	24
27	6.71	6.93	4.68	4.55	3.74	3.44	4.84	2.77	2.3	2.25	1.99	S	1.94	2.18	2.02	2.08	1.95	1.94	2	2.57	2.66	7.44	3.91	4.78	7.44	3.5	24
28	5.12	5.48	5.84	6.56	10.26	8.33	5.52	5.59	4.05	2.44	S	2.06	1.98	1.94	1.94	2.09	2.14	2.05	2.7	2.84	2.35	2.35	2.3	2.12	10.26	3.8	24
29	2.57	2.59	2.12	2.23	2.31	2.28	2.09	2.08	2.01	S	2	2.01	2.05	1.98	1.91	1.92	1.93	1.96	2.08	2.2	2.15	2.1	2.04	2.1	2.59	2.1	24
30	2.11	2.04	1.94	1.98	1.95	1.95	1.95	1.97	S	1.96	1.97	1.96	1.95	1.94	1.96	1.95	2	2.06	2.13	2.3	2.59	2.33	2.49	2.48	2.59	2.1	24
HOURLY MAX	12	9	7	8	12	9	7	6	4	3	3	3	3	3	2	4	3	3	3	3	3	7	6	7			
HOURLY AVG	3.9	3.7	3.8	3.9	4.1	3.7	3.3	2.8	2.4	2.3	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.2	2.3	2.5	3.0	3.4	3.5			

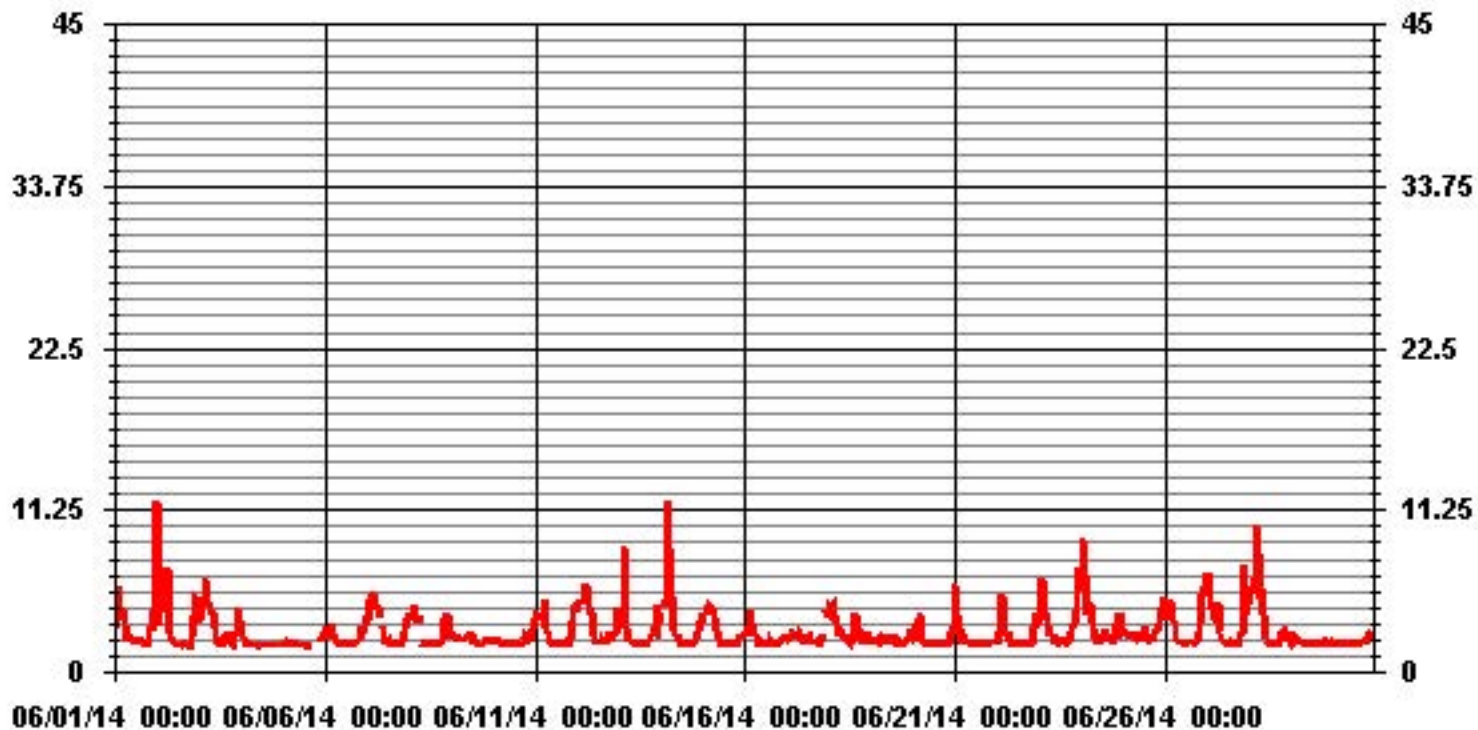
STATUS FLAG CODES

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:	682
MAXIMUM INSTANTANEOUS VALUE:	11.85 PPM @ HOUR(S) 4 ON DAY(S) 14
VAR-VARIOUS	
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	1.31
OPERATIONAL TIME:	719 HRS

01 Hour Averages



LICA35
METHANE / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA35
Parameter : METHANE
Units : PPM

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	3.07	1.02	4.53	5.70	7.60	9.21	4.67	2.48	.87	.87	1.75	3.07	7.16	8.91	16.81	4.82	82.60
< 10.0	.14	.29	.29	.87	3.50	2.77	.87	.58	.87	.29	.29	1.02	2.77	2.04	.29	.43	17.39
< 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	3.21	1.31	4.82	6.57	11.11	11.98	5.55	3.07	1.75	1.16	2.04	4.09	9.94	10.96	17.10	5.26	

Calm : .00 %

Total # Operational Hours : 684

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	21	7	31	39	52	63	32	17	6	6	12	21	49	61	115	33	565
< 10.0	1	2	2	6	24	19	6	4	6	2	2	7	19	14	2	3	119
< 50.0																	
>= 50.0																	
Totals	22	9	33	45	76	82	38	21	12	8	14	28	68	75	117	36	

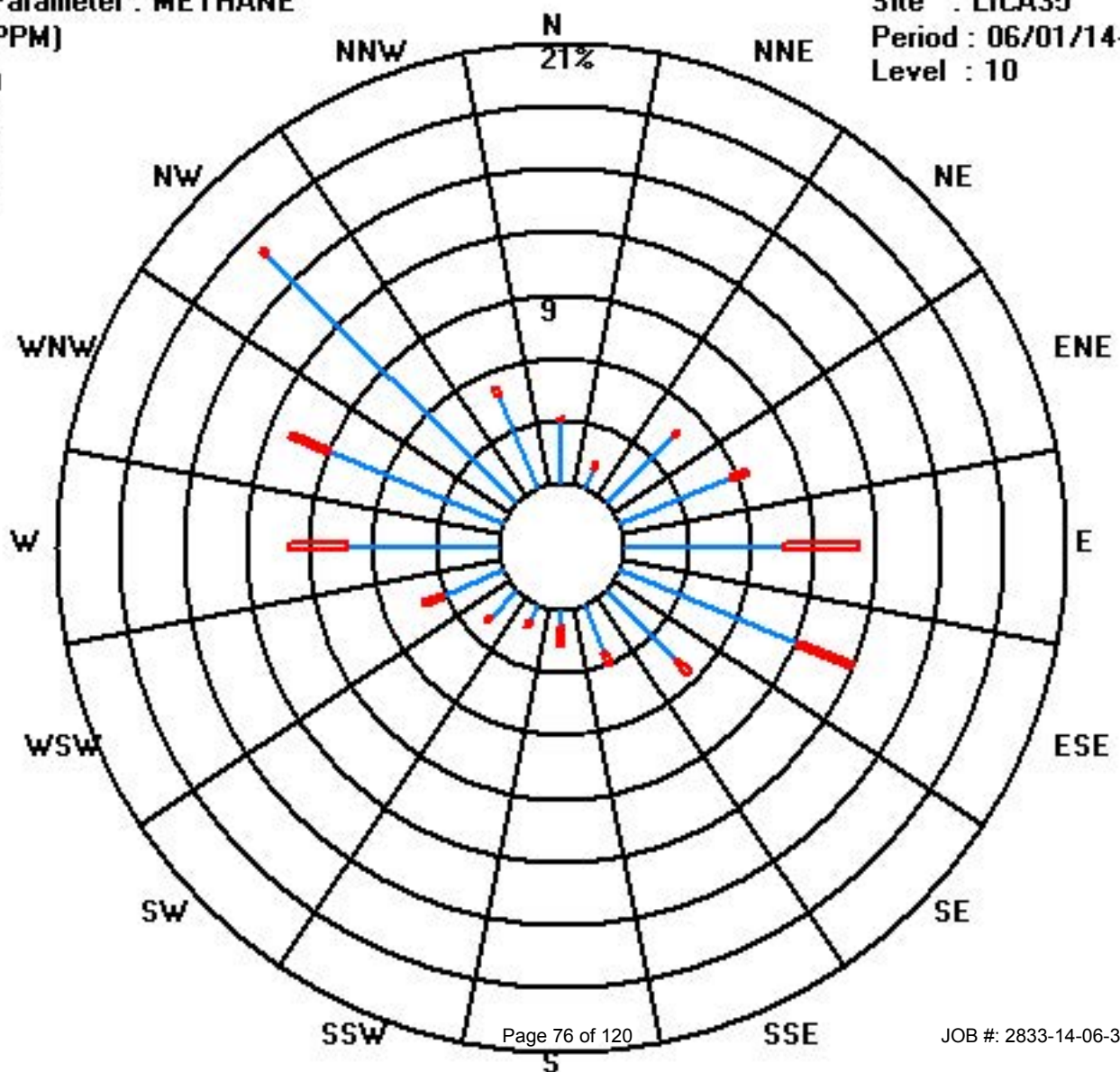
Calm : .00 %

Total # Operational Hours : 684

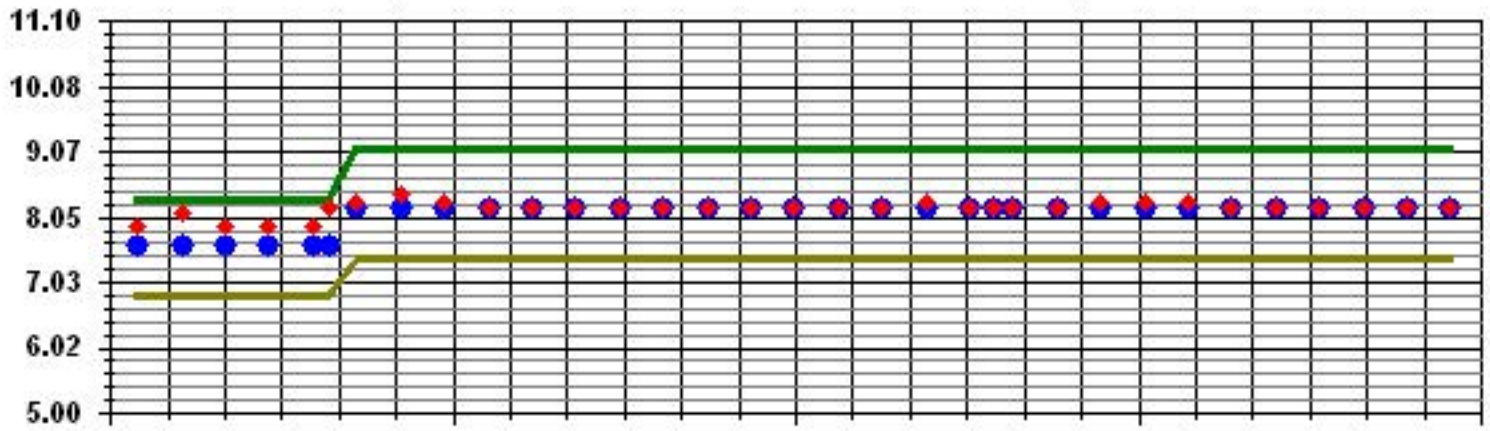
Class Limits (PPM)

Period : 06/01/14-06/30/14

Level : 10



Calibration Graph for Site: LICA35 Parameter: METHANE Sequence: THC55 Phase: SPAN



6/1/14

6/8/14

6/16/14

6/23/14

7/1/14

★ Cal Value

◆ Exp Value

— Exp Value +10%

— Exp Value -10%

Non-Methane Hydrocarbons

Lakeland Industry & Community Association - Elk Point Site

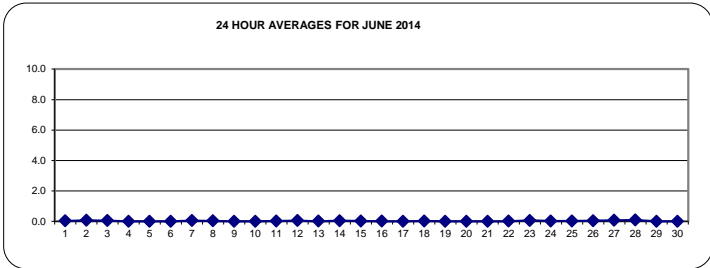
JUNE 2014

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	0.1	0.1	0.1	0	0.1	0.1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0.0	24	
2			0.1	0.1	0.1	0.2	0.3	0.3	0.1	0.1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.1	0	0.3	0.1	24
3			0.1	0	0.1	0	0.1	0.2	0.1	0.1	0.2	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	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	0.0	24	
5			0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0.0	24	
6			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	0.0	24	
7			0.1	0	0.1	0.1	0.1	0.1	0.1	0.1	S	0	0	0.1	0	0	0	0	0	0	0	0.1	0	0	0	0.1	0.1	0.1	0.0	24	
8			0	0	0	0.1	0.1	0.1	0	S	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.0	24	
9			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	0.0	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	0.0	24	
11			0.1	0	0	0.1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0.1	0.1	0.0	24	
12			0.1	0.1	0.1	S	0.2	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	0.0	24	
13			0	0	S	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0.0	24	
14			0.1	S	0.1	0.1	0.2	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	0.2	0.0	24
15			S	0.1	0	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	S	0.1	0.0	24	
16			0	0	0	0.1	0	0	0	0	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	0	S	0	0.1	0.1	0.0	24	
18			0.1	0	0.1	0	0	0.1	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	0	0	0	0	0	0	0	0	0	0.1	0	0	S	0	0	0	0	0	0.1	0.0	24	
20			0	0.1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.1	0.0	24	
21			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.1	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	0.1	0.1	0.1	0.0	24		
23			0.1	0.2	0.1	0	0.1	0.1	0	0	0	0	0	0	0	0	S	0	0	0	0.2	0.1	0	0	0.2	0.2	0.2	0.1	0.0	24	
24			0.2	0.1	0.1	0	0	0	0	0.1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.2	0.0	24	
25			0	0	0	0	0	0	0	0	0	0	0.1	0	0	S	0	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0.0	24	
26			0	0	0	0.1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.1	0.2	0.3	0.2	0.3	0.0	24		
27			0.2	0.2	0.2	0.1	0	0.1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.2	0.1	24	
28			0.2	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.1	24	
29			0	0	0	0	0	0	0	0	0.1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24	
30			0	0	0	0	0	0	0	0	0	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	0	0	0	0	
HOURLY AVG			0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1				

STATUS FLAG CODES

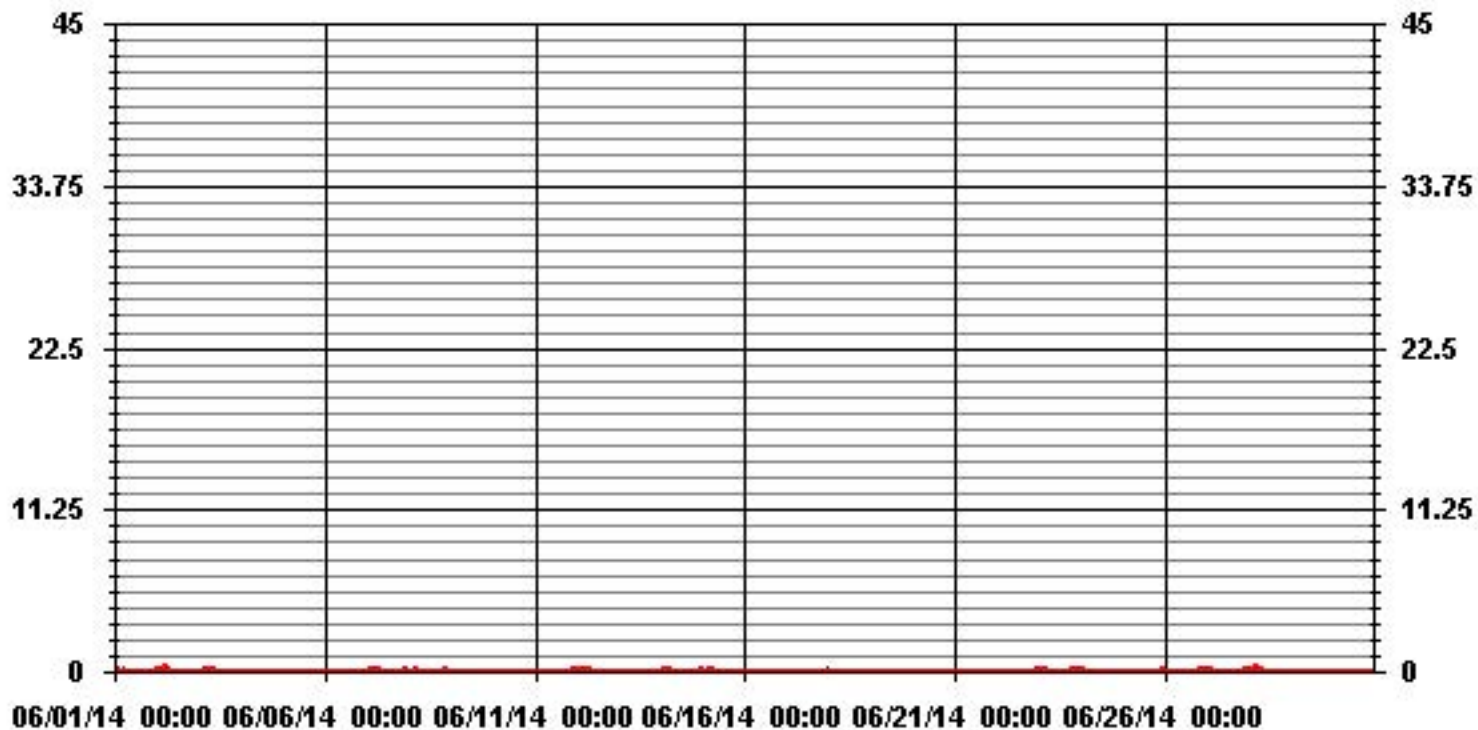
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	121				
MAXIMUM 1-HR AVERAGE:	0.3	PPM	@ HOUR(S)	VAR	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	0.1	PPM			ON DAY(S)
					VAR-VARIOUS
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.06		MONTHLY AVERAGE:	0.02	PPM

01 Hour Averages



Lakeland Industry & Community Association - Elk Point Site

JUNE 2014

NON-METHANE HYDROCARBONS MAX instantaneous maximum in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
1	0.14	0.3	0.26	0.23	0.22	0.16	0.17	0.16	0.08	0	0.06	0	0.18	0	S	0.1	0	0	0.02	0	0	0.2	0.16	0.23	0.3	0.1	24	
2	0.22	0.28	0.3	0.31	0.4	0.34	0.34	0.15	0.26	0	0.1	0	0.2	S	0.18	0.17	0	0.21	0.19	0.19	0.22	0.22	0.27	0.29	0.4	0.2	24	
3	0.24	0.19	0.24	0.22	0.34	0.42	0.27	0.27	0.32	0.29	0.07	0.2	S	0	0.22	0.21	0.2	0.2	0.13	0.17	0.19	0.39	0.26	0.14	0.42	0.2	24	
4	0.38	0.15	0	0	0	0.13	0.13	0.1	0	0	0.13	S	0.15	0.22	0.15	0.11	0	0	0.21	0.12	0.03	0.07	0	0	0.38	0.1	24	
5	0	0	0.19	0	0	0	0	0	0	S	S	0	0.2	0	0	C	C	C	C	0	P	0.18	0	0.02	0.2	0.0	23	
6	0	0.13	0	0.19	0.06	0.05	0	0.12	0	S	0	0	0	0	0	0	0	0	0.15	0	0.09	0.22	0.13	0.15	0.22	0.1	24	
7	0.43	0.18	0.36	0.24	0.3	0.31	0.24	0.23	S	0.09	0.01	0.2	0.23	0.24	0.15	0.15	0.13	0.13	0.2	0	0.17	0.17	0.2	0.27	0.43	0.2	24	
8	0.18	0.15	0.28	0.35	0.4	0.17	0.14	S	0.04	0	0.2	0.22	0.19	0	0	0	0	0	0	0.29	0.24	0.18	0.23	0.13	0.4	0.1	24	
9	0.12	0.01	0	0.09	0	0	S	0.16	0.15	0.16	0.17	0.15	0.24	0.24	0.25	0	0.13	0.07	0	0	0.12	0	0	0	0.25	0.1	24	
10	0	0	0	0.1	0	S	0	0	0	0.08	0	0	0	0	0	0	0	0.22	0.17	0.19	0	0.16	0.16	0	0.12	0.22	0.1	24
11	0.29	0.19	0.3	0.29	S	0.31	0.28	0	0	0	0.14	0.14	0	0	0	0	0	0	0	0.16	0.18	0.17	0.14	0.45	0.21	0.45	0.1	24
12	0.2	0.44	0.22	S	0.35	0.31	0.2	0.23	0.21	0.17	0	0	0.17	0	0	0.14	0	0	0.09	0.22	0	0.29	0.25	0.15	0.44	0.2	24	
13	0.26	0.26	S	0.21	0.1	0.23	0	0.13	0	0	0	0	0	0	0.16	0	0	0.05	0.14	0.12	0.22	0.25	0.31	0.61	0.61	0.1	24	
14	0.25	S	0.37	0.24	0.34	0.3	0.25	0.26	0.11	0.19	0.46	0	0.14	0.16	0	0.13	0	0.15	0	0	0	0.25	0.21	0.47	0.47	0.2	24	
15	S	0.23	0.24	0.19	0.35	0.27	0.32	0.69	0.15	0.08	0	0	0	0	0	0.16	0	0	0	0.13	0	0	0	S	0.69	0.1	24	
16	0.21	0.17	0	0.35	0.23	0.22	0.27	0.13	0	0	0	0.23	0	0	0	0	0	0	0.06	0.1	0.2	S	0.19	0.35	0.1	24		
17	0.12	0.14	0.19	0.25	0.22	0.24	0.15	0	0.25	0.24	0.22	0	0.14	0	0	0	0.11	0.23	0.13	0.04	0	S	0.22	0.21	0.25	0.1	24	
18	0.21	0.22	0.21	0.16	0.16	0.33	0.21	0	0	0	0	0.24	0.17	0.19	0.24	0.06	0.19	0.1	0	S	0.19	0.12	0.13	0.33	0.1	24		
19	0.15	0	0.23	0.26	0.16	0.09	0.21	0.15	0	0.18	0.14	0.16	0.18	0.24	0.26	0.21	0.13	0	S	0.28	0.26	0.18	0.19	0.28	0.2	24		
20	0	0.27	0.28	0.19	0.16	0.19	0	S	0.18	0.2	0	0	0.13	0	0.19	0.19	0.07	0.14	S	0.29	0.16	0	0.11	0.2	0.29	0.1	24	
21	0.24	0.21	0.19	0	0.17	0	0.21	0.12	0.16	0	0.1	0	0.18	0	0.23	0.17	0	S	0	0.17	0.16	0	0	0	0.24	0.1	24	
22	0	0	0.17	0.24	0.12	0.19	0.6	0.07	0	0	0	0	0	0	0	0.14	S	0	0.17	0	0.15	0.2	0.19	0.19	0.6	0.1	24	
23	0.29	0.24	0.31	0.26	0.21	0.2	0.26	0.2	0.18	0.2	0	0.11	0.13	0.12	0.1	S	0.23	0.31	2.91	0.22	0.17	0.19	0.44	0.44	2.91	0.3	24	
24	0.24	0.24	0.25	0.25	0.25	0.2	0.22	0.23	0.17	0.15	0.2	0.2	0.17	0.02	S	0.22	0.18	0.09	0	0.02	0	0.09	0.23	0.12	0.25	0.2	24	
25	0.16	0.21	0.23	0.26	0.14	0.25	0	0.18	0.1	0.11	0.14	0.21	0.18	S	0.28	0.08	0.16	0.15	0.23	0.21	0.22	0.17	0.21	0.23	0.28	0.2	24	
26	0.17	0.19	0.26	0.24	0.22	0.17	0.14	0	0	0	0.11	0.14	S	0.16	0.06	0.24	0.19	0.01	0.19	0.14	0.22	0.3	0.35	0.43	0.43	0.2	24	
27	0.36	0.34	0.32	0.23	0.16	0.29	0.2	0.15	0.24	0	0.13	S	0.18	0	0.2	0	0	0.17	0.13	0.21	0.06	0.45	0.23	0.63	0.63	0.2	24	
28	0.29	0.33	0.33	0.4	0.52	0.36	0.39	0.29	0.36	0.25	S	0.21	0.27	0.3	0.09	0.13	0.14	0.2	0.21	0.16	0.14	0.19	0.24	1.29	0.3	24		
29	0.11	0.21	0.1	0.1	0.14	0.24	0.18	0.17	0.19	S	0	0.13	0	0	0.15	0	0.14	0.13	0.09	0.19	0.17	0.12	0.16	0	0.24	0.1	24	
30	0.21	0.15	0.16	0	0.14	0.2	0.17	0.14	S	0.24	0.31	0.18	0.23	0.15	0.14	0.18	0	0.14	0.11	0.14	0.21	0.15	0.06	0.23	0.31	0.2	24	
HOURLY MAX	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	1			
HOURLY AVG	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2				

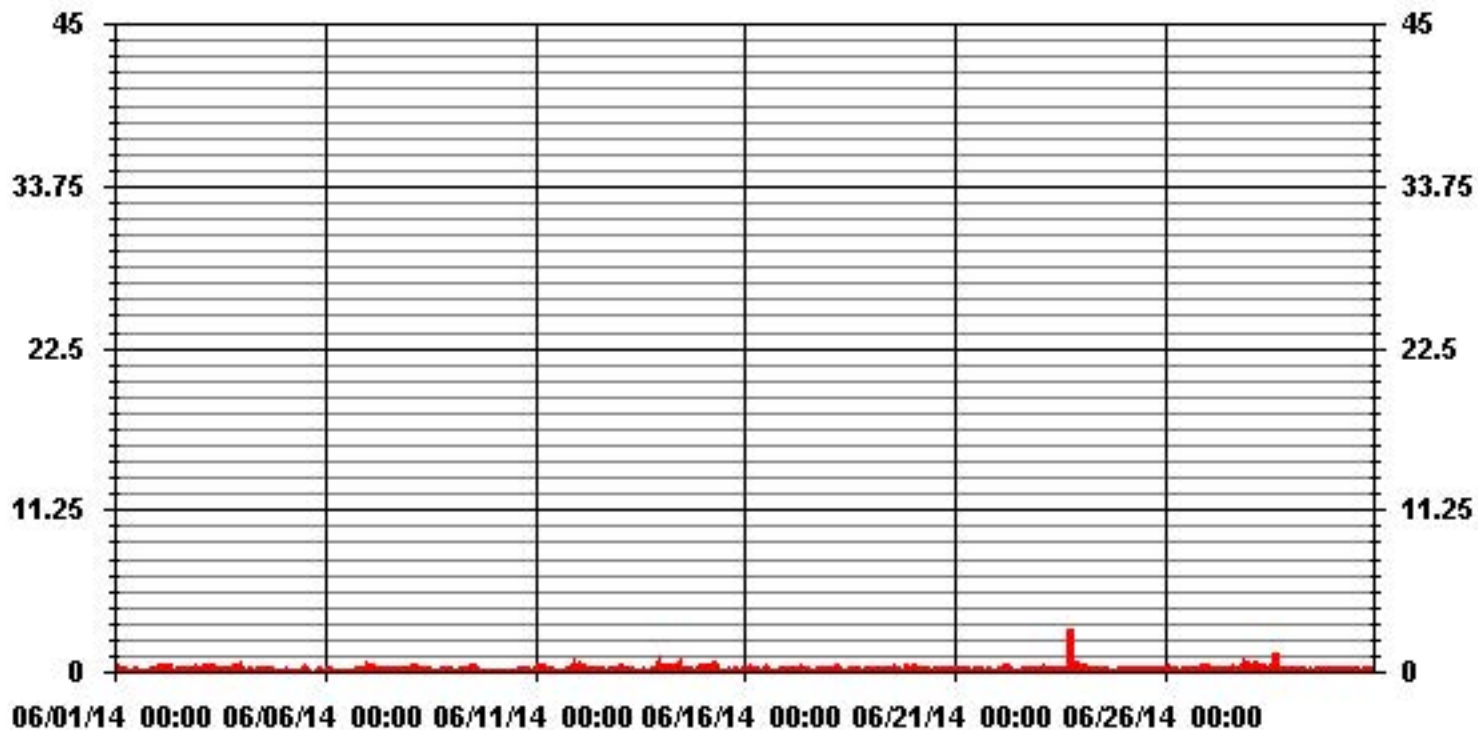
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	490
MAXIMUM INSTANTANEOUS VALUE:	2.91 PPM @ HOUR(S) 18 ON DAY(S) 23
	VAR-VARIOUS
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	0.16
OPERATIONAL TIME:	719 HRS

01 Hour Averages



LICA35
 NMHC / WDR Joint Frequency Distribution (Percent)

June 2014

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA35
 Parameter : NMHC
 Units : PPM

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< .2	3.21	1.31	4.82	6.57	11.11	11.98	5.55	3.07	1.46	1.16	2.04	4.09	9.64	10.67	17.10	5.11	98.97
< .5	.00	.00	.00	.00	.00	.00	.00	.00	.29	.00	.00	.00	.29	.29	.00	.14	1.02
< 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	3.21	1.31	4.82	6.57	11.11	11.98	5.55	3.07	1.75	1.16	2.04	4.09	9.94	10.96	17.10	5.26	

Calm : .00 %

Total # Operational Hours : 684

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< .2	22	9	33	45	76	82	38	21	10	8	14	28	66	73	117	35	677
< .5									2				2	2		1	7
< 1.0																	
< 2.0																	
< 4.0																	
>= 4.0																	
Totals	22	9	33	45	76	82	38	21	12	8	14	28	68	75	117	36	

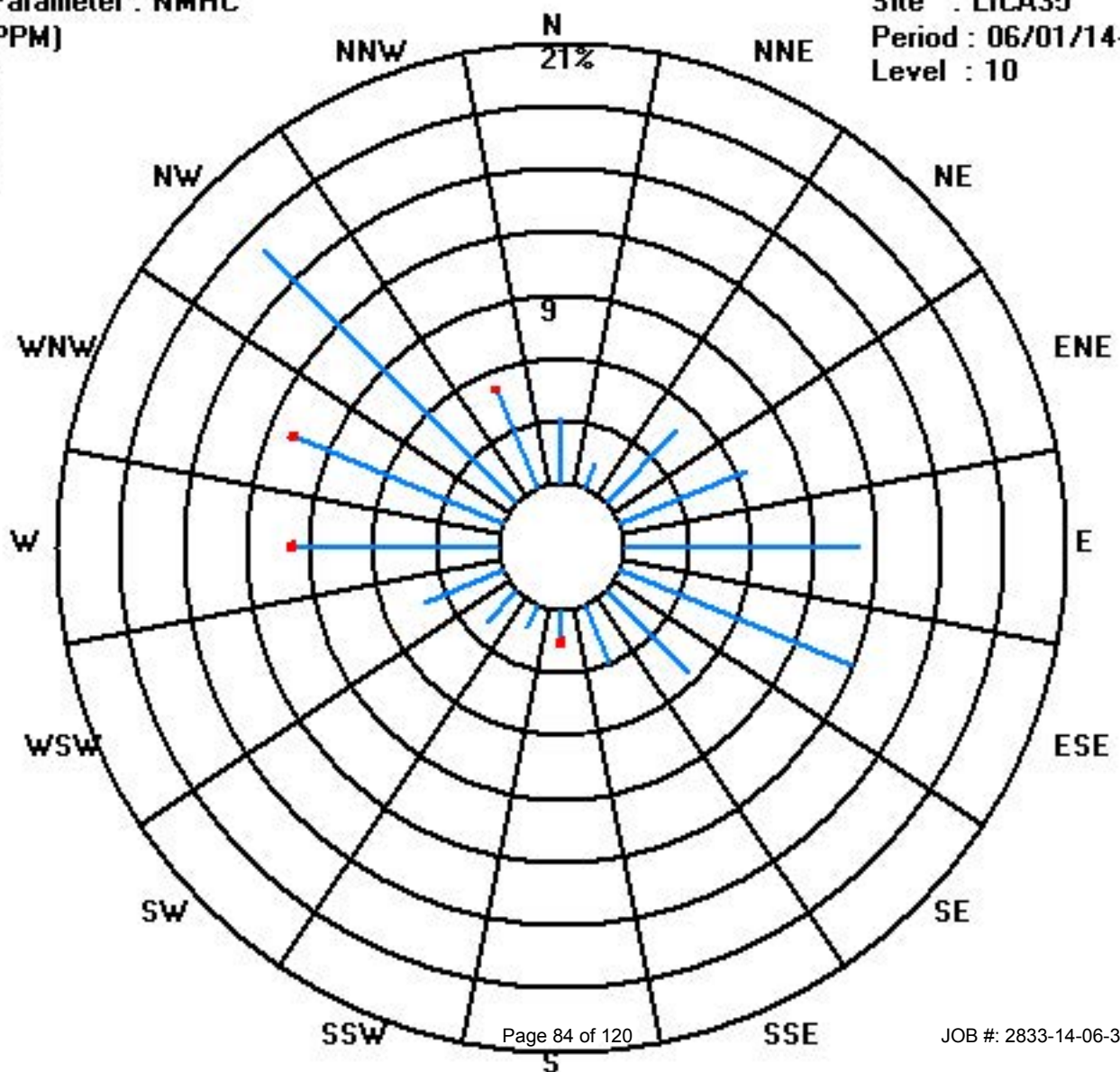
Calm : .00 %

Total # Operational Hours : 684

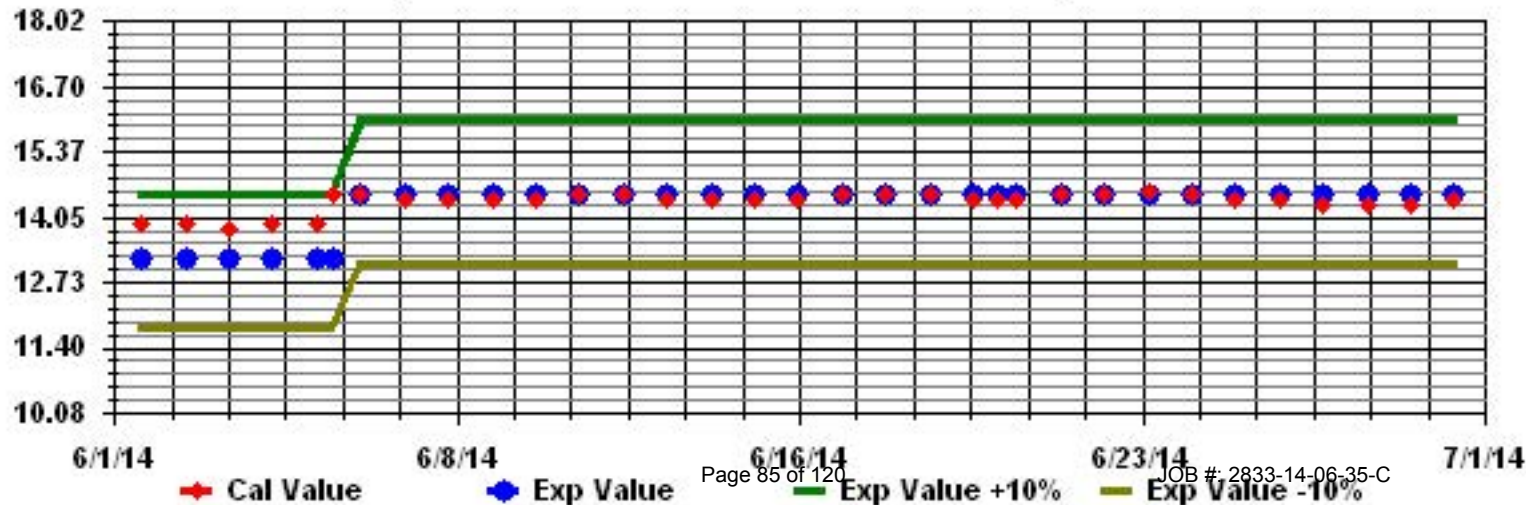
Class Limits (PPM)

Period : 06/01/14-06/30/14

Level : 10



Calibration Graph for Site: LICA35 Parameter: NMHC Sequence: THC55 Phase: SPAN



Vector Wind Speed

Lakeland Industry & Community Association - Elk Point Site

JUNE 2014

WIND SPEED (WS) hourly averages in km/hr

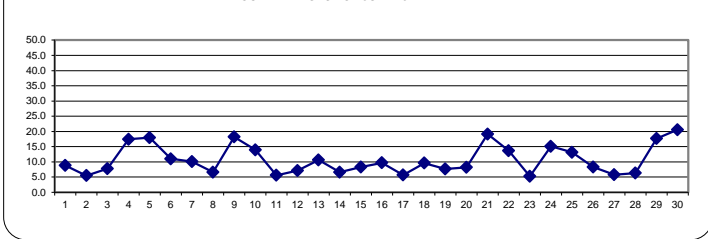
MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		5.8	6	1.4	0.5	2.6	6.5	7.1	10.5	9.7	8.5	10.3	18.1	19	18.2	21.4	17.5	8.6	5.7	6.4	6.8	6.9	9	3.3	1.5	21.4	8.8	24	
2		5.5	1.5	0.8	3.9	0.3	2.1	3	2.5	1.3	4.2	2.4	5.3	6.9	7.4	9.2	11.8	18.9	11.8	8.3	7.1	2.4	5.8	5.4	4.3	18.9	5.5	24	
3		1.6	4	6	5.2	4.8	4	4.7	3.8	8.5	10.9	11.8	9.4	14.6	12.5	14.9	10.9	2.1	15.7	12.1	9.9	7.5	2.1	4.2	5.7	15.7	7.8	24	
4		7.6	4.7	11.7	16.6	19.5	17.2	19.8	15.5	19.4	23.8	25	20.9	20.5	20.8	20.8	15.3	12.8	6.5	6.8	14.6	24.2	23.7	24.2	25.8	25.8	17.4	24	
5		25.5	12.9	6.1	5.4	6.4	14.3	21.9	16.6	16.3	18.6	22.7	24.3	27.4	31.5	24.4	21.8	17.2	26.9	23.9	17.5	15.5	10.2	13.5	11.1	31.5	18.0	24	
6		6.3	9.2	11.6	10.7	10.5	9.1	8	12.6	13.5	14.3	15.2	15.8	17.4	16.1	16.2	14.8	14.9	11.5	9.6	6.1	11.5	5.9	2.8	0.9	17.4	11.0	24	
7		0.6	2	0.2	5.9	0.7	3.3	4.7	3.3	5.6	4.7	10.4	15.3	10.2	19.9	26.4	28.3	23.8	17.5	17.3	12.8	8.2	6.8	5.5	9.2	28.3	10.1	24	
8		7.1	5.5	5.1	7.6	2.8	5.2	5.6	8.6	3.9	5.3	6.5	6.8	3.3	4.7	5.5	5.9	2	5.3	8.8	10.6	9.6	10.9	9.3	12.9	12.9	6.6	24	
9		14.2	14.9	16.4	15.6	17.6	17.5	13.7	11.3	6.8	5.1	3.4	10.6	12.9	20	19.3	27.9	32.3	33.3	24.7	25.2	25.3	23.7	23.2	22.1	33.3	18.2	24	
10		23.8	21.2	24	24.1	27.5	23	17.7	18.7	19	17.4	17.6	14.3	11.9	13	9.3	7.6	1.8	6.5	8.3	7.2	6.7	3.4	5.9	5.4	27.5	14.0	24	
11		5.7	5.1	4.3	5.1	2.2	1.1	1.9	5.2	9.2	9	7.2	6	6.5	8.6	10.4	10.9	9	8.6	2.3	6.7	1.9	3.3	2.3	1.9	10.9	5.6	24	
12		1.9	1.6	1.1	0.3	0.6	2.2	3.6	4.3	5.5	13.5	13.3	13.2	14.3	13.1	13.8	12.9	12.3	9.5	6.5	6.8	6.1	5.8	5.6	3.8	14.3	7.2	24	
13		3.9	5.8	4.8	5.9	7.8	10.5	10.4	11.6	13.1	13.5	16.6	18	18.9	18.1	19.3	20.4	18.3	10.6	4.8	10.8	2	2.3	4.1	2.8	20.4	10.6	24	
14		1.6	0.6	2.6	1.6	1	2.6	5.6	3.8	5.1	9.6	11.4	10.5	6.2	9.7	10.5	10.7	10.5	12.7	12.7	10.2	7	5.4	3	3.3	12.7	6.6	24	
15		4.1	4.4	4.9	5.4	2.4	3	3.6	3.4	6	10.4	12.9	12.2	9.7	9.6	11.1	7.9	10.4	10.4	12.1	14.8	10	9.4	10.1	10.8	14.8	8.3	24	
16		12.2	7.7	5.6	6.7	2.9	5.5	4.6	9.6	14.5	15.8	14.4	12.1	12.1	9.5	12.3	14.2	11.2	13.1	14	10.6	8.7	6.4	3.9	5.5	15.8	9.7	24	
17		3.1	2.7	2.2	2.1	2.6	2.2	2.3	5.2	4.7	8.4	6.3	8.5	5.7	5.9	2.4	7.6	9.7	6.6	7.8	9.1	9.6	6.2	8.5	7.5	9.7	5.7	24	
18		7	6.1	7.9	8.3	5.6	5	8.9	8.9	10.3	13.6	14.2	13.2	7.8	10.1	13.1	15	16.7	10.2	9.6	9.1	7.5	7.1	5.8	9.6	16.7	9.6	24	
19		9	6.5	6.8	4.3	5.6	4.1	5	8.9	13.3	10.6	10.5	7.2	9.2	7.5	8.6	9.1	9.2	7.7	7.8	8.3	2.9	6.7	8.5	7.3	13.3	7.7	24	
20		3	4.6	6.6	6.9	10.1	3.7	4.8	5.5	9.1	11.5	7.7	10.5	16	15.8	13.7	12.9	11	10.8	7.6	4.8	4.5	4.4	6.6	5.2	16.0	8.2	24	
21		6.9	7.9	10.6	11.2	9.9	11.2	13.2	16.5	18.4	20.6	22.5	27.9	35.3	33.2	34.7	31.9	26.8	24	23.4	18.4	14.9	17.8	11.6	10.7	35.3	19.1	24	
22		11.6	8.9	8.6	11.2	8.7	9.2	13.8	15.9	16.7	17.9	19.8	20.1	19	22.2	21.9	20.4	18.4	12.9	13.4	13.1	7.3	5.7	7.2	3	22.2	13.6	24	
23		4	2	3.2	2.7	6.3	4.7	4.7	3.8	3.2	2.8	4.1	5.8	7.6	8.3	4.6	12.5	8.8	8	8.7	4.7	2.3	3.1	3.6	6.1	12.5	5.2	24	
24		6.5	7.3	7	7.9	7.5	11.2	13.2	12.8	15.5	14.3	16.8	21.8	22.2	14.5	16.3	21.8	25	26.6	23.5	17.4	15.3	13.1	12.7	11.9	26.6	15.1	24	
25		12.8	13.7	13.3	14.7	15.5	15.8	16.3	17	14.3	17.3	13.6	19.8	17.5	15.1	14.2	14.8	19	13.3	8.9	4.9	5.3	6.4	7.3	19.8	13.2	24		
26		5.5	4.9	3.1	6.1	3.9	4.9	7.4	8.3	10.7	11.8	12.6	13.4	15.3	12.8	16.6	11.4	13.1	13	6.4	3.5	2.9	3.8	3.3	4	16.6	8.3	24	
27		4.4	5.1	2	7.7	4.2	5.7	1.8	3.5	5.1	4.7	6.4	5.9	7.5	10.8	11.8	10	8.2	9.4	9.1	5.3	5.1	3.1	0.2	2.7	11.8	5.8	24	
28		2.1	0.8	1.2	1.5	1.1	0.7	1.5	2.8	2.6	1.6	3.7	7.8	6.3	6.4	6	8.8	14.1	13.8	10.8	11.6	9.3	10.9	13	13.6	14.1	6.3	24	
29		12.9	15.6	17.1	14.1	15.9	16.4	16.6	15.9	16.4	18.4	20	21.4	15.4	19.6	24.7	25.5	18.8	22	16.4	16.5	17	15.7	15.4	16.2	25.5	17.7	24	
30		18.5	22.3	24.4	23.7	23.9	22.7	22.3	23.6	25.0	26.7	28.4	27.9	26.3	24.1	21	19.6	21	15.4	15.6	11.7	10.5	13.6	12.2	13.6	28.4	20.6	24	
HOURLY MAX		25.5	22.3	24.4	24.1	27.5	23.0	22.3	23.6	25.0	26.7	28.4	27.9	35.3	33.2	34.7	31.9	32.3	33.3	24.7	25.2	25.3	23.7	24.2	25.8				
HOURLY AVG		7.8	7.2	7.4	8.1	7.7	8.2	8.9	9.7	10.8	12.2	12.9	14.1	14.1	14.6	15.1	15.3	14.2	13.3	11.6	10.5	8.9	8.4	8.0	8.2				

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

LAST CALIBRATION:	February 21, 2014
DECLINATION :	MAEGNETIC DECLINATION 19 DEGREES EAST

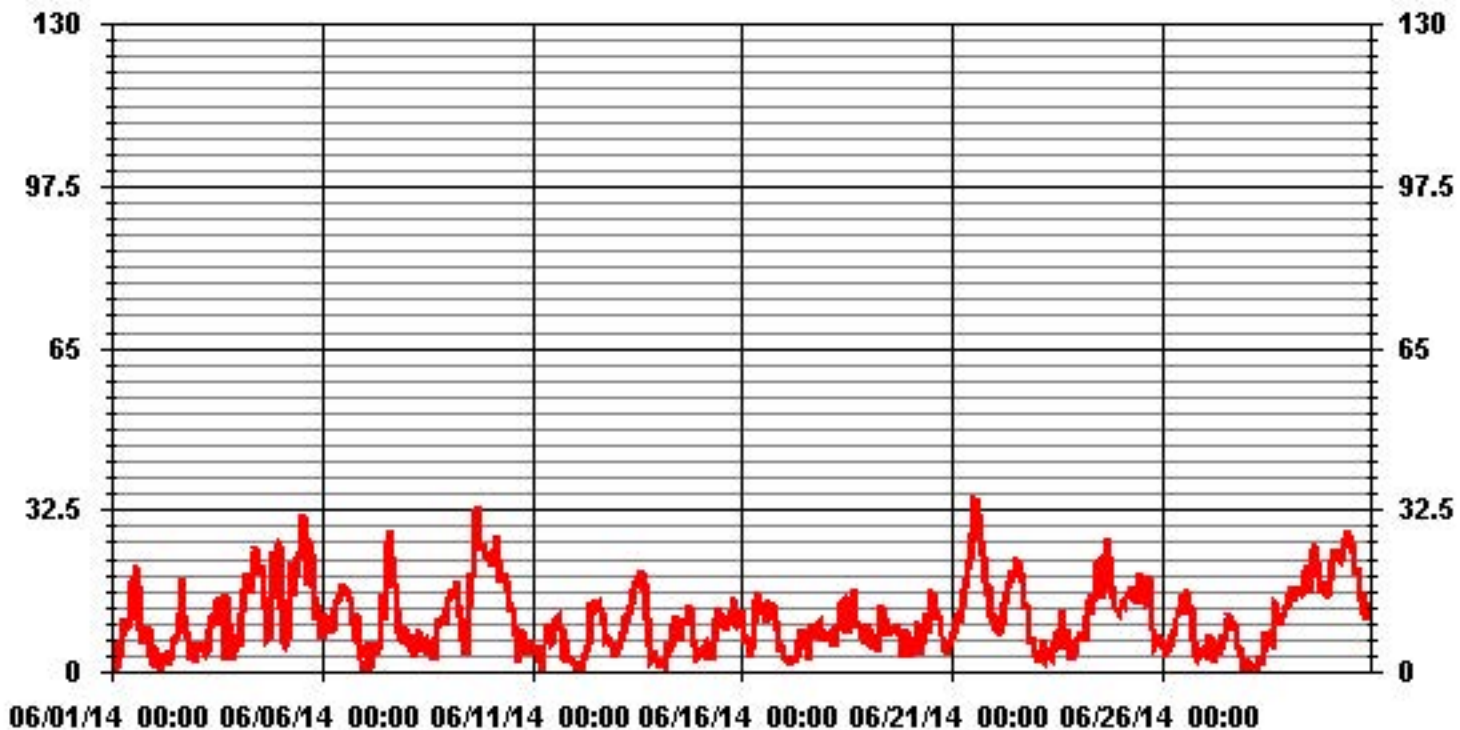
24 HOUR AVERAGES FOR JUNE 2014



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	720
MAXIMUM 1-HR AVERAGE:	35.3 KPH @ HOUR(S) 12 ON DAY(S) 21
MAXIMUM 24-HR AVERAGE:	20.6 KPH ON DAY(S) 30
	VAR-VARIOUS
MONTHLY CALIBRATION TIME:	0 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	6.88
MONTHLY AVERAGE:	10.72 KPH

01 Hour Averages



— LICA35 WSP KPH

Lakeland Industry & Community Association - Elk Point Site

JUNE 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	11.1	11.7	11.8	11.5	10.4	10.6	14.1	18.5	20.3	24.9	26.5	32.6	38.2	36.8	39.8	32.8	22.7	17.4	13.8	12.8	23.5	19.7	8.9	7.3	40	19.9	24
2	9.5	7.3	3.3	10.1	6.6	5.4	7	7.4	10.6	17	26.4	18.3	23.4	26.9	27.7	26.4	35.4	21.2	14.6	12.6	13.3	12.5	9.6	8	35	15.0	24
3	6.6	11.2	9.7	7.6	7.3	8.1	8.3	10.1	16.5	24.1	28.5	22.5	34.8	35	45.5	30.5	12.7	38	32.7	17.6	13.6	8.3	15.8	15.1	46	19.2	24
4	20.5	15	19.6	29.2	32.9	33.9	38.4	25.3	36.8	38.4	42.4	37.2	36.4	36.8	36.4	27.2	24.5	15.7	15.2	43.7	38.8	42.7	44.9	46.7	47	32.4	24
5	48.3	26.4	13.8	11.3	13	25.9	34.9	28.8	26.6	33.6	39.3	39.2	50.7	53.6	47.6	38.3	53.1	48.8	45.4	43.3	P	21.1	21	17.2	54	34.0	23
6	11.2	15.4	16.2	17.8	18.5	17	13.7	22.7	24.9	31.3	27.3	29.9	39	33.4	36	31.8	27	21.6	19.2	26.1	20.8	14.3	6.3	5.4	39	22.0	24
7	6.6	8.8	11	9.4	6.9	7.6	11	10.6	18.3	15.8	29.7	31.6	36.6	48	47.7	46.6	45.9	33.2	30.7	30.7	15.2	9.1	10.2	12.8	48	22.3	24
8	13.3	9.5	12.1	12.6	9	11.7	17.7	18.4	15	17.2	21.1	18.8	18.2	17.2	24.3	19.1	15.4	16.2	21	17	11.6	16	12.6	20.3	24	16.1	24
9	21.1	22.2	26.3	24.9	30.9	28.7	26.2	19.6	12.4	9.4	9.2	21.3	30.2	37.1	35.9	44.7	56.7	51.2	41.7	40.7	46.5	43.5	39.3	35.8	57	31.5	24
10	39.5	34.6	37.7	39.7	44.3	38.1	29.1	30.2	30.4	30.9	28.9	26.8	23.7	20.9	14.3	14.1	8.9	13.8	14.1	11.3	8.8	6.5	9.3	10.1	44	23.6	24
11	10	9.5	7.1	7.7	7.4	3.5	6.6	12.2	16.1	17.4	17.7	20	19.1	24.4	25.3	26.6	25.4	20	21.5	13.6	6.3	6.4	6.1	5.2	27	14.0	24
12	4.1	4.4	4.2	3	3.6	7.7	8.1	9.1	13.5	31.2	29.6	29.1	32.1	28.8	31	30.8	24.9	22.1	13.6	12.5	10.9	10.5	9.8	7.1	32	15.9	24
13	8.8	9.9	8.3	9.2	11.1	18.2	18.2	21.5	22.7	23.7	30.2	34.3	36.5	35.1	46.5	43.6	34.5	35.7	12.9	20.1	14.7	9.2	9.7	5.2	47	21.7	24
14	4.8	3.3	4.6	5.4	5.4	5.3	9.5	11.2	14.2	23.2	32.7	24.6	24.6	20.5	25.3	25.6	26.9	25.4	23.1	20.2	11.6	8.9	6.9	8.3	33	15.5	24
15	8.8	7.4	7.6	7.9	5.5	6.3	10.1	7.3	18.8	29.6	27.8	28	28.4	26.6	24.8	23.2	24.7	22	31.7	31.4	15.5	17	19.9	19.3	32	18.7	24
16	24.8	14.4	9.1	13.9	9	10.8	10.3	21.7	24.4	27.4	24.9	23.5	20.6	19.1	23.5	24.1	22.9	25	25.9	21.7	16.2	11.8	8.1	8	27	18.4	24
17	6.5	7.3	6.2	6.7	5.9	11.3	9.4	14.2	14.2	18.5	15.5	15.1	13.1	12.1	14.1	24.3	21.1	13.7	13.7	18.8	13.4	11.8	15.7	13.2	24	13.2	24
18	9.4	9.5	12.1	13.3	9.9	12.5	19.4	16.4	21.3	26.1	24	21.8	20.3	20.2	22.1	26.4	34	24.5	20.2	15.5	14.5	16.2	14.8	17.6	34	18.4	24
19	17.6	12.5	13.6	9.6	16.1	9	9.4	19.1	26.7	19.5	24.3	16.8	17.1	17.8	19.1	17.5	18.9	15.2	17.6	15.1	12.3	15.1	16.8	16.8	27	16.4	24
20	6.8	13.1	12.8	11.1	15.8	15	7.8	13.1	22.2	24.8	19.1	23.2	29.6	26.8	25.1	21	20.5	18.5	16.9	12	10.1	9.3	12	11	30	16.6	24
21	10.8	14.1	17.8	19	15.9	18.5	19.5	26.2	29.7	34.2	41.6	58.7	62.4	63.9	65.6	54.1	52.6	43.4	41.1	36.9	24.4	32.3	24	17	66	34.3	24
22	18.7	13.8	11.5	14	13	18.5	26.2	25.1	27.8	33.2	30.7	33.7	34.4	37.2	37.9	36.5	35.8	26.2	26.5	25.6	14	9.7	13.7	7.6	38	23.8	24
23	7.1	5.1	4.7	5.9	9.6	9.7	10.4	10.8	8.9	12	13.3	16.8	17.5	19.2	22.7	24.3	17.6	47.3	43.1	10.3	7.3	6.4	6.9	9.1	47	14.4	24
24	10.1	11.8	12	11.2	11.4	17.4	21.4	23.9	26.9	31.5	29.1	37.2	36.1	29.3	27.3	42.4	41	46.1	40.8	30.7	24	18.7	17.8	17.4	46	25.6	24
25	19	19.5	19.6	20.8	23.7	24.7	27.4	28.3	26.7	33.3	29.3	34.4	33	25.3	26	31.4	37.9	26.3	17.8	10.2	9	10	14	12.3	38	23.3	24
26	10.5	9.6	7.7	11.5	7.5	11.5	14.8	14.6	19.6	22.6	24.1	22.6	25.6	23.8	32.1	23.8	25.7	25.6	13.8	5.9	5.4	6.3	6.6	7.5	32	15.8	24
27	8.3	10.1	7	15.9	9.6	10.9	7.8	8.8	13.7	13.9	21.1	22.4	18.2	20.7	23.1	21.5	18.4	23.2	18.1	11.9	7.5	6.5	3.4	6	23	13.7	24
28	5.5	3	3.9	4.7	5.3	5.6	5.1	8.8	9.2	11.6	8.4	20.7	21.6	16.8	14.2	16.2	34.1	24.1	19.8	18.1	16.9	19	22.4	21.9	34	14.0	24
29	20.4	30.4	28.2	23	25.5	25.5	26.1	24.4	24.9	34.4	33.5	35.5	30.3	36.9	46.3	48.6	40.4	40.4	28.7	23.1	25	29.5	29.1	28.1	49	30.8	24
30	30.1	40	45.4	37.6	37.8	39.6	39.6	40.5	43.7	42.4	52.7	47.5	43.2	38.6	38.8	33.4	42	27	25.8	26.1	20.6	28.2	29.6	25.6	53	36.5	24
HOURLY MAX	48	40	45	40	44	40	40	41	44	42	53	59	62	64	66	54	57	51	45	44	47	44	45	47			
HOURLY AVG	14.3	13.7	13.5	14.2	14.3	15.6	16.9	18.3	21.2	25.1	27.0	28.1	29.8	29.6	31.5	30.2	30.1	27.6	24.0	21.2	16.3	15.9	15.5	14.8			

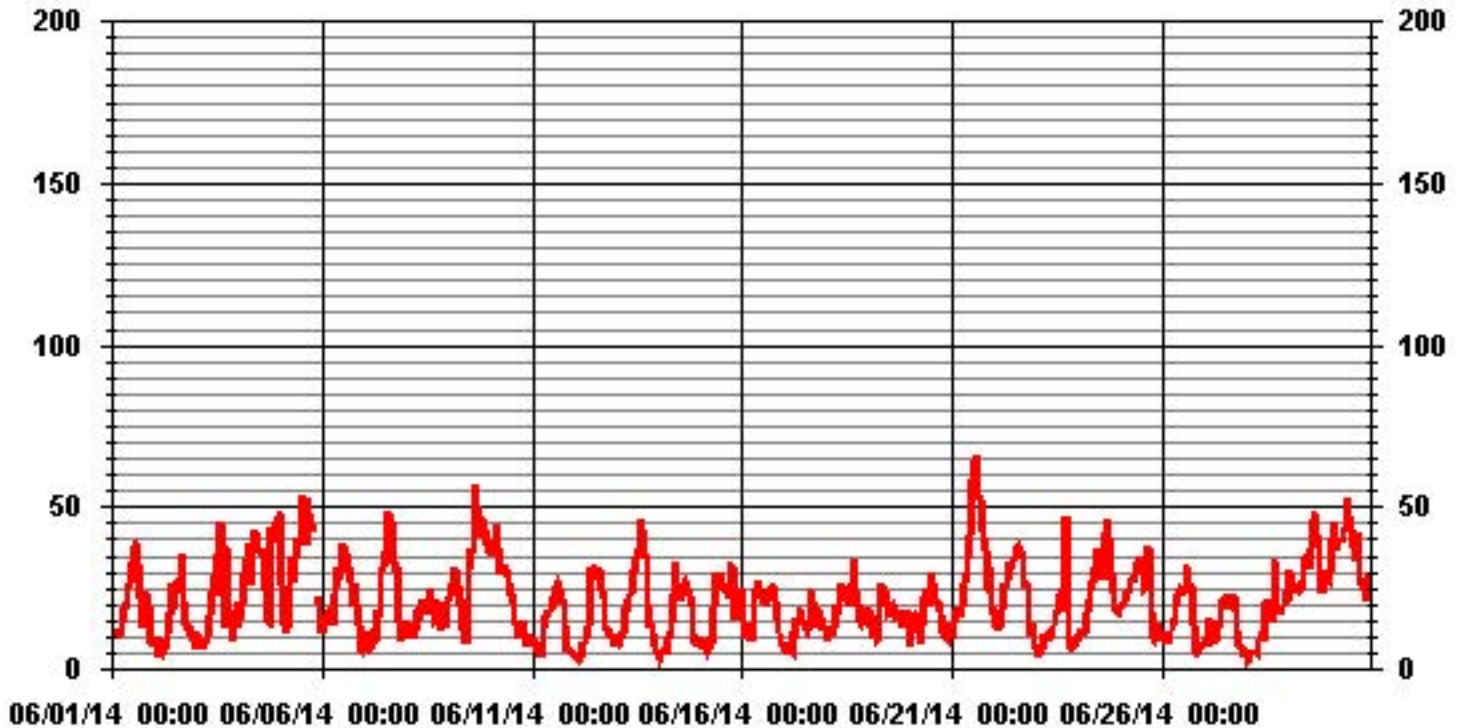
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS VALUE:	66	KPH	@ HOUR(S)	14	ON DAY(S)	21
					VAR-VARIOUS	
OPERATIONAL TIME:						719 HRS

01 Hour Averages



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

June 2014

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
Parameter : WSP
Units : KPH

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	.97	.83	1.80	2.08	4.30	3.61	1.38	.83	1.25	.55	.83	1.38	4.30	3.33	1.38	.97	29.86
< 12.0	1.52	.41	2.91	3.19	4.58	4.02	1.52	.69	.13	.27	1.38	2.36	3.47	2.91	2.22	1.38	33.05
< 20.0	.55	.13	.27	1.11	1.94	4.02	2.08	1.38	.27	.27	.00	.13	.97	3.75	6.80	2.08	25.83
< 29.0	.00	.00	.00	.00	.13	.27	.55	.13	.00	.00	.00	.00	1.11	1.11	6.11	.83	10.27
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.27	.69	.00	.97
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.05	1.38	5.00	6.38	10.97	11.94	5.55	3.05	1.66	1.11	2.22	3.88	9.86	11.38	17.22	5.27	

Calm : .00 %

Total # Operational Hours : 720

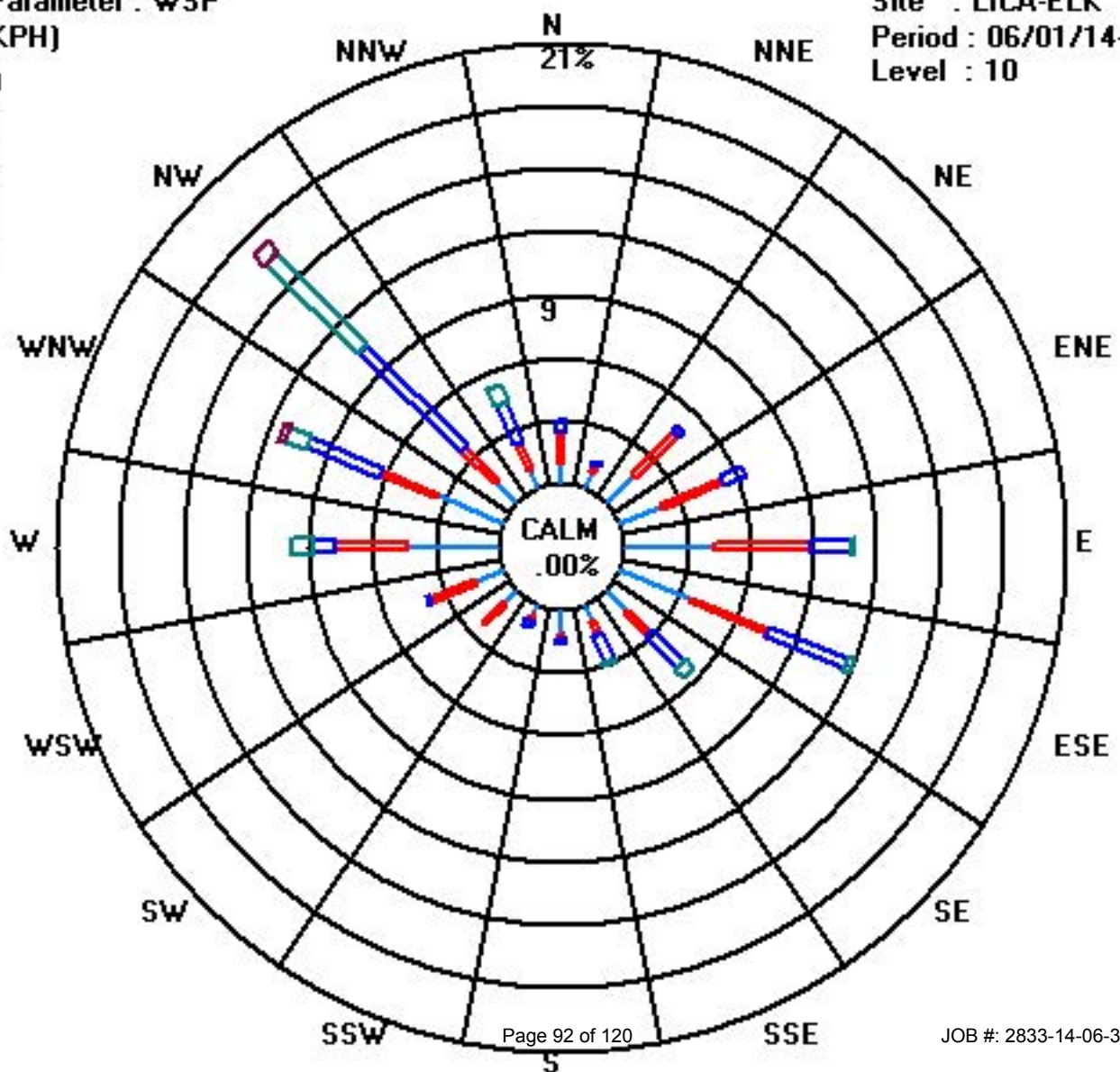
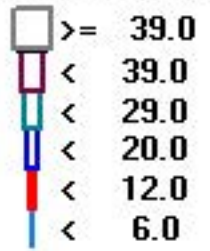
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	7	6	13	15	31	26	10	6	9	4	6	10	31	24	10	7	215
< 12.0	11	3	21	23	33	29	11	5	1	2	10	17	25	21	16	10	238
< 20.0	4	1	2	8	14	29	15	10	2	2		1	7	27	49	15	186
< 29.0					1	2	4	1					8	8	44	6	74
< 39.0														2	5		7
>= 39.0																	
Totals	22	10	36	46	79	86	40	22	12	8	16	28	71	82	124	38	

Calm : .00 %

Total # Operational Hours : 720

Class Limits (KPH)



Vector Wind Direction

Lakeland Industry & Community Association - Elk Point Site

JUNE 2014

WIND DIRECTION (WD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	RDGS.
DAY	24-HOUR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUADRANT	
1	305	224	347	268	71	107	93	96	117	124	116	115	121	147	165	212	248	223	349	60	281	281	147	156	349	NNW	24	
2	109	13	243	276	344	177	199	222	218	176	180	268	219	224	243	268	321	310	306	321	39	111	110	101	344	NNW	24	
3	25	116	87	74	93	82	90	105	113	108	120	115	132	138	199	225	233	72	57	55	79	128	184	266	266	W	24	
4	39	327	307	309	317	310	312	315	327	320	316	315	316	311	316	326	349	348	330	317	314	320	319	349	NNW	24		
5	313	316	312	337	338	315	306	309	307	292	307	314	314	311	324	324	303	298	300	319	305	297	279	268	338	NNW	24	
6	270	269	274	270	280	255	265	286	293	298	324	323	321	304	294	292	315	324	331	275	240	243	106	54	331	NNW	24	
7	21	117	240	123	110	58	114	190	275	268	277	279	281	279	301	312	335	357	339	342	320	302	299	244	357	N	24	
8	274	311	251	270	269	276	290	333	349	281	339	300	296	274	286	281	208	151	116	122	132	135	118	118	349	NNW	24	
9	111	109	107	108	114	117	107	106	110	89	133	270	303	315	297	272	289	292	294	276	280	284	286	278	315	NW	24	
10	278	275	273	274	284	293	300	306	313	315	327	350	355	345	339	331	6	346	301	311	300	304	311	289	355	N	24	
11	283	269	258	230	282	266	267	247	243	249	243	257	217	248	230	245	247	250	0	69	124	140	116	40	283	W	24	
12	278	289	284	261	294	95	94	89	151	175	183	165	165	147	162	161	162	160	116	93	76	66	71	79	294	WNNW	24	
13	69	68	83	87	54	52	68	75	80	83	86	78	81	85	84	98	107	99	140	114	82	31	112	92	140	SE	24	
14	58	123	78	323	182	105	88	95	113	119	118	111	97	89	99	111	119	131	139	156	156	146	92	83	323	NW	24	
15	94	90	85	84	94	87	80	84	79	82	88	95	74	83	92	92	80	85	83	81	86	81	99	126	126	SE	24	
16	120	113	88	80	82	64	72	349	335	338	339	335	327	40	72	70	68	65	61	63	56	48	40	29	349	NNW	24	
17	328	10	41	41	88	129	112	162	124	163	133	97	120	112	109	76	65	52	53	76	89	74	97	119	328	NNW	24	
18	133	136	132	120	110	42	87	82	79	114	95	104	90	70	76	85	86	73	67	51	51	47	81	70	136	SE	24	
19	73	61	49	76	43	58	40	44	55	61	44	103	90	80	58	40	16	360	2	20	19	40	67	83	360	N	24	
20	353	305	273	269	300	354	321	341	4	44	351	322	40	12	355	4	6	24	39	40	38	323	296	280	355	N	24	
21	286	279	287	295	292	301	302	307	310	311	315	312	315	314	312	314	312	305	306	308	302	308	316	305	316	NW	24	
22	304	299	276	281	282	294	312	306	306	315	312	316	320	320	328	325	326	346	340	342	336	298	306	300	346	NNW	24	
23	275	297	300	299	299	313	44	72	81	68	102	125	6	71	109	104	127	109	76	189	286	94	117	97	313	NW	24	
24	97	93	107	103	105	115	124	129	133	154	155	118	108	122	86	124	131	129	132	134	125	114	120	118	155	SSE	24	
25	117	114	108	113	116	116	120	122	120	126	128	129	121	125	143	128	150	134	116	122	146	152	189	189	189	S	24	
26	192	175	117	144	159	200	233	244	250	263	261	247	270	284	302	311	317	317	309	292	278	284	276	282	317	NW	24	
27	279	254	268	270	260	271	267	257	267	261	278	292	299	245	216	204	227	222	209	243	263	257	34	293	299	WNNW	24	
28	275	279	308	301	183	301	350	303	328	275	235	3	40	41	346	322	274	287	293	287	260	255	280	289	350	N	24	
29	290	299	305	292	291	298	305	309	311	311	311	311	308	326	333	334	320	325	313	299	297	321	317	311	334	NNW	24	
30	305	311	316	313	314	315	315	315	318	317	324	320	330	324	330	330	314	303	301	295	296	303	312	303	330	NNW	24	

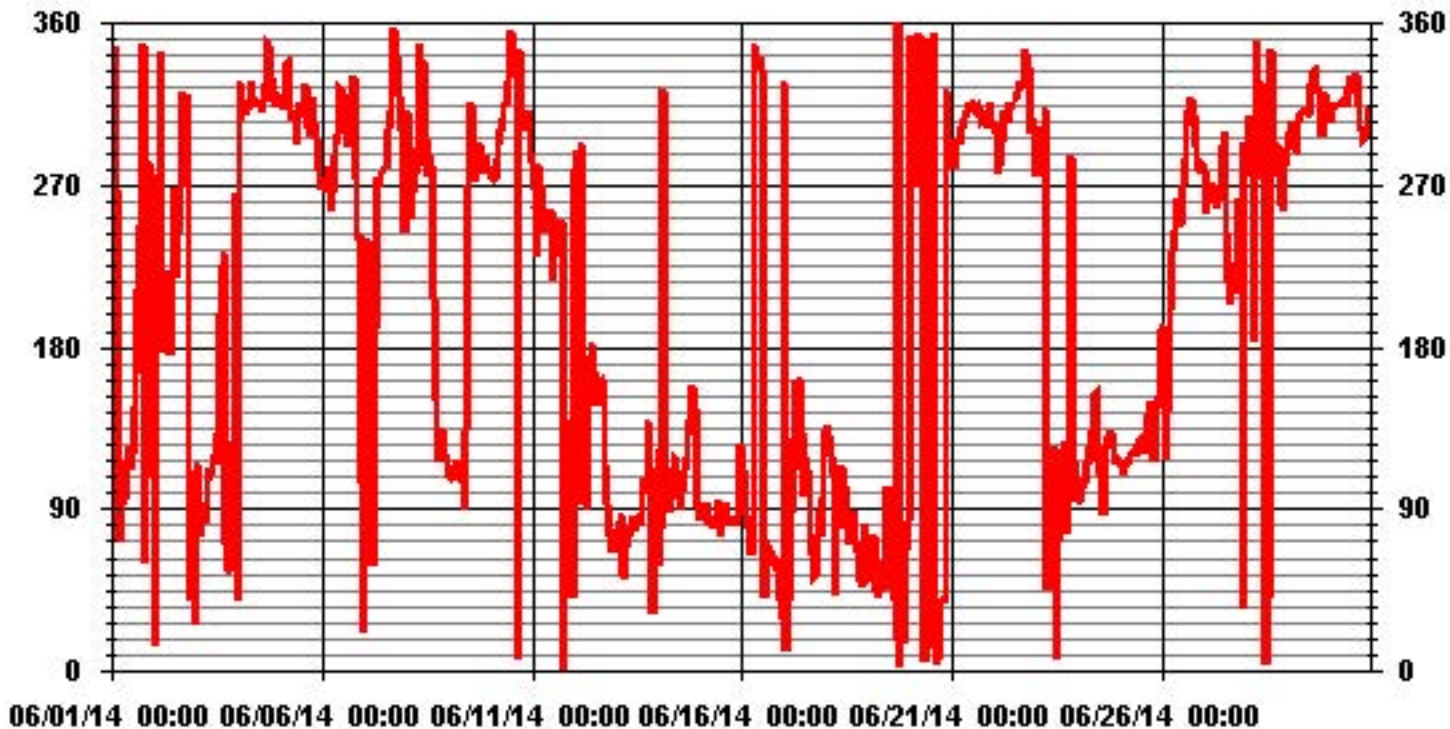
STATUS FLAG CODES

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:	720	HRS
STANDARD DEVIATION:	105.47		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	327	DEG

01 Hour Averages



— LICA35 WDR DEG

Standard Deviation Wind Direction

Lakeland Industry & Community Association - Elk Point Site

JUNE 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

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

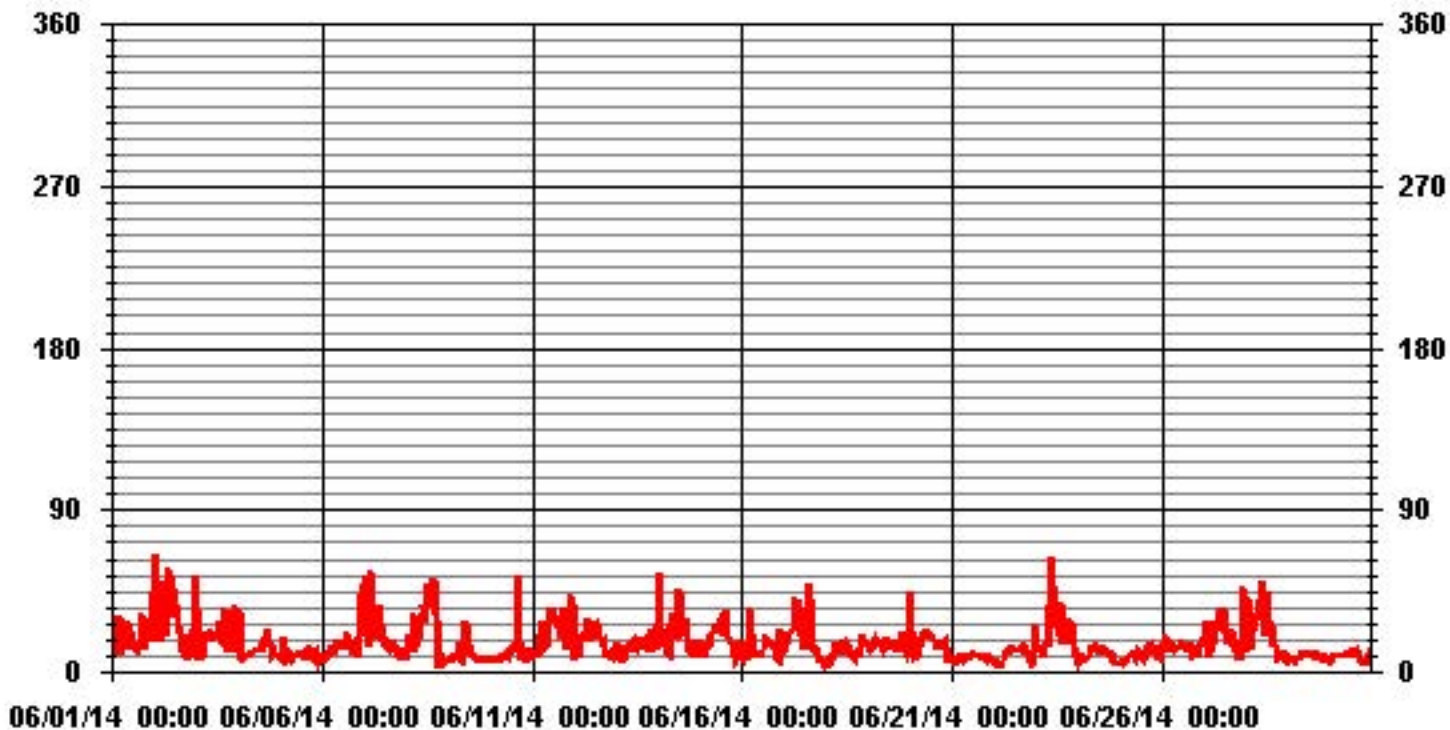
STATUS FLAG CODES

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

LAST CALIBRATION: November 20, 2012

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 0 HRS

01 Hour Averages



Calibration Reports

Sulphur Dioxide



API 100A SO2 Analyzer Calibration

Date: 4-Jun-14
 Company: LICA
 Station Name/Location: Elk Point
 Performed by: Theo McLaren
 Application H₂S/TRS/SO₂: SO2
 Start/End Time (mst): 11:09/12:07
 Calibration Purpose: As Found
 Converter Make & Model: Internal
 Converter Serial #: NA
 Cal Gas Expiry Date: 4-Feb-18

Analyzer:
 Serial Number: 837
 Last Calibration Date: 7-May-14
 Previous Cal High Point C.F.: 1.005
 Range ppb: 1000
 As Found C.F.: 0.998
 New C.F.: NA
As found:
 SLOPE: 0.969
 OFFSET: 24.4
 HVPS: 755
 DCPS: 2593
 RCELL TEMP: 51.2
 BOX TEMP: 33.2
 PMT TEMP: 7.0
 IZS TEMP: 40.0
 STABIL: 0.0
 PRES: 26.5
 SAMP FL: 641
 PMT: 71.4
 UV LAMP: 3230
 STR. LGT: 11.8
 DRK PMT: 44.4
 DRK LMP: -7.2
 Internal Span: 261.3
As left:
 SLOPE: 0.969
 OFFSET: 24.4
 HVPS: 755
 DCPS: 2593
 RCELL TEMP: 51.2
 BOX TEMP: 33.2
 PMT TEMP: 7.0
 IZS TEMP: 40.0
 STABIL: 0.0
 PRES: 26.5
 SAMP FL: 641
 PMT: 71.4
 UV LAMP: 3230
 STR. LGT: 11.8
 DRK PMT: 44.4
 DRK LMP: -7.2
 Internal Span: 261.3

Calibrator:		Calibrator Flow Targets:			
Flow Meter ID's:	NA	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
Make & Model:	Enviroics 6100	zero	5000	0	5000
Serial #:	1991	high	5000	80	5080
Cal Gas Cylinder I.D. #:	BAL1263	mid	5000	40	5040
Cal Gas Conc. (ppm):	49.5	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	-0.2	NA
adjusted zero		NA				
as found high	4920	78.80	4999	780.3	782.0	0.998
adjusted high		NA				
mid		NA				
low		NA				
calibrator zero						

Average C.F. =

Linear Regression/Calibration Results:

Correlation Coefficient = _____ > or = 0.995
 Slope = _____ 0.85-1.15
 b (Intercept as % of full scale) = _____ ± 3% F.S.
 % change in C.F. from last cal = 0.72% ± 15% **PASS**

LIMITS Pass/Fail ?
 > or = 0.995
 0.85-1.15
 ± 3% F.S.
 ± 15% **PASS**

Converter Efficiency Check for H₂S/TRS application:

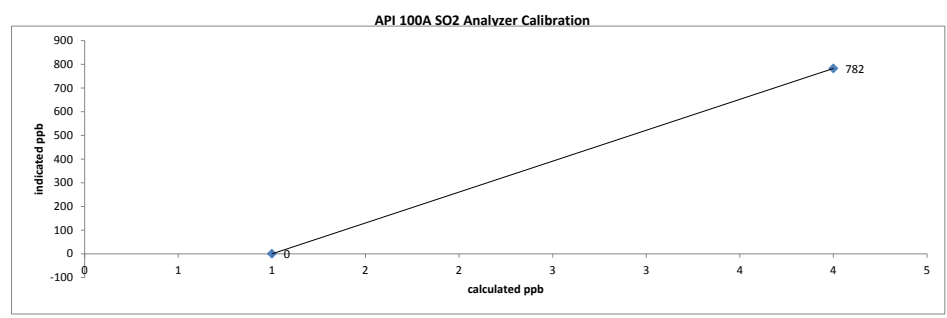
****run converter efficiency test immediately following zero adjust****

SO₂ High Point gas concentration: na Time gas run (mst): na

Zero corrected analyzer response: na

Comments:

As founds performed by Theo McLaren with his calibration equipment to see if the SO2 issues were due to the analyzer or due to tech.





API 100A SO2 Analyzer Calibration

Date: 4-Jun-14
 Company: LICA
 Station Name/Location: Elk Point
 Performed by: Kevin Hope
 Application H₂S/TRS/SO₂: SO2
 Start/End Time (mst): 12:30/15:51
 Calibration Purpose: Monthly Calibration
 Converter Make & Model: Internal
 Converter Serial #: NA
 Cal Gas Expiry Date: 4-Feb-18

Analyzer:
 Serial Number: 837
 Last Calibration Date: 7-May-14
 Previous Cal High Point C.F.: 1.005
 Range ppb: 1000
 As Found C.F.: 0.997
 New C.F.: 1.000

As found:		As left:	
SLOPE:	0.969	SLOPE:	0.962
OFFSET:	24.4	OFFSET:	23.9
HVPS:	755	HVPS:	756
DCPS:	2593	DCPS:	2590
RCELL TEMP:	51.2	RCELL TEMP:	50.1
BOX TEMP:	33.2	BOX TEMP:	34.6
PMT TEMP:	7.0	PMT TEMP:	6.9
IZS TEMP:	40.0	IZS TEMP:	40.2
STABIL:	0.0	STABIL:	0.0
PRES:	26.5	PRES:	26.5
SAMP FL:	641	SAMP FL:	641
PMT:	71.4	PMT:	71.4
UV LAMP:	3230	UV LAMP:	3230
STR. LGT:	11.8	STR. LGT:	11.8
DRK PMT:	44.4	DRK PMT:	44.4
DRK LMP:	-7.2	DRK LMP:	-7.2
Internal Span:	261.3	Internal Span:	261.3

Calibrator:		Calibrator Flow Targets:			
Flow Meter ID's:	NA	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
Make & Model:	Enviroics 6100	zero	5000	0	5000
Serial #:	4760	high	5000	80	5080
Cal Gas Cylinder I.D. #:	BLM000711	mid	5000	40	5040
Cal Gas Conc. (ppm):	48.2	low	5000	20	5020

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	79.76	5076	757.4	760.0	0.997
adjusted high	4996	79.76	5076	757.4	757.1	1.001
mid	4995	39.86	5035	381.6	381.9	0.999
low	4995	19.90	5015	191.3	191.2	1.001
calibrator zero	4995	0.00	4995	0	0.4	NA
Average C.F. =						1.000

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	> or = 0.995	PASS
Slope =	1.000	0.85-1.15	PASS
b (Intercept as % of full scale) =	-0.02%	± 3% F.S.	PASS
% change in C.F. from last cal	0.83%	± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

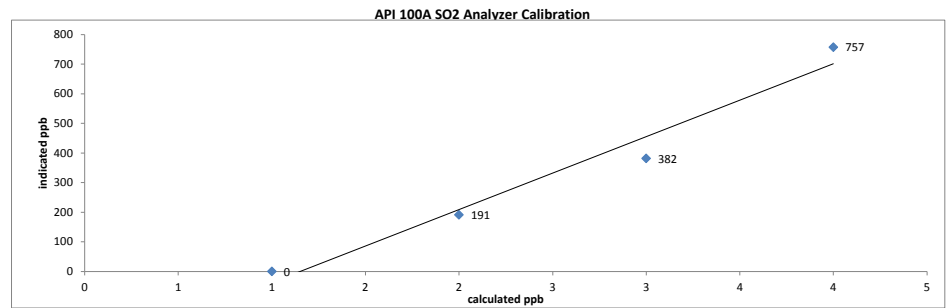
****run converter efficiency test immediately following zero adjust****

SO₂ High Point gas concentration: na Time gas run (mst): na

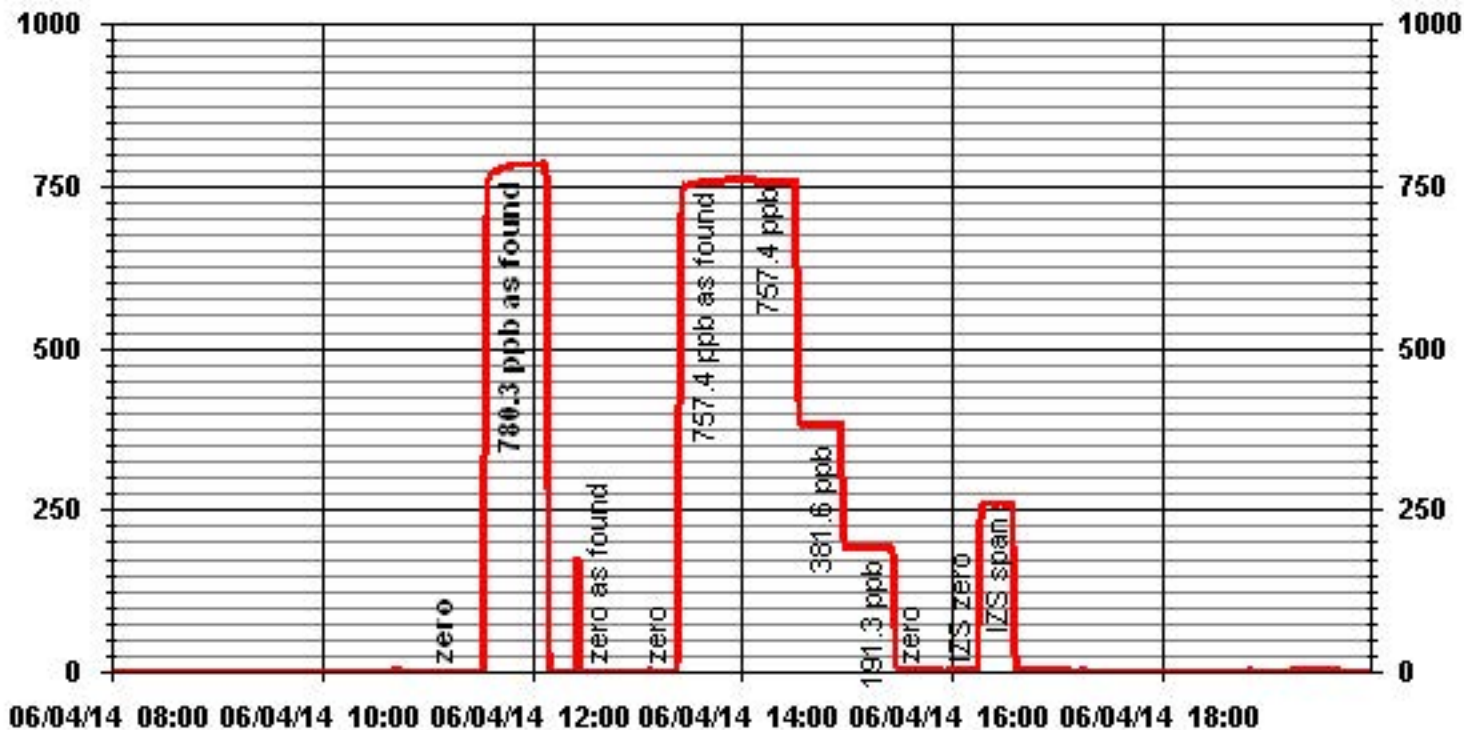
Zero corrected analyzer response: na

Comments:

Monthly 3-point calibration. Sample filter changed.



01 Minute Averages



Hydrogen Sulphide



API 101E H2S Analyzer Calibration

Date: 3-Jun-14 **Start/End Time (mst):** 13:07/16:18
Company: LICA **Calibration Purpose:** Monthly Calibration
Station Name/Location: Elk Point **Converter Make & Model:** Internal
Performed by: Kevin Hope **Converter Serial #:** NA
Application H₂S/TRS/SO₂: H2S **Cal Gas Expiry Date:** 25-Dec-15

Analyzer:
Serial Number: 509 **Range ppb:** 100
Last Calibration Date: 6-May-14 **As Found C.F.:** 1.094
Previous Cal High Point C.F.: 1.000 **New C.F.:** 1.008

As found:		As left:	
SLOPE:	1.149	SLOPE:	1.294
OFFSET:	90.7	OFFSET:	95.0
HVPS:	536	HVPS:	536
RCELL TEMP:	50.0	RCELL TEMP:	50.0
BOX TEMP:	34.2	BOX TEMP:	34.2
PMT TEMP:	8.0	PMT TEMP:	8.0
IZS TEMP:	45.0	IZS TEMP:	45.0
TEST:	NA	TEST:	NA
STABIL:	0.2	STABIL:	0.2
PRES:	27.4	PRES:	27.4
SAMP FL:	566	SAMP FL:	566
PMT:	106.1	PMT:	106.1
NORM PMT:	95.2	NORM PMT:	95.2
UV LAMP:	3662	UV LAMP:	3662
LAMP RATIO:	103.5	LAMP RATIO:	103.5
STR. LGT	52.1	STR. LGT	52.1
DRK PMT:	12.1	DRK PMT:	12.1
DRK LMP:	1.3	DRK LMP:	1.3
Internal Span:	53.62	Internal Span:	61.59

Calibrator:	Flow Meter ID's: NA	Calibrator Flow Targets:			
	Make & Model: API 700	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
	Serial #: 830	zero	5000	0	5000
	Cal Gas Cylinder I.D. #: BLM005049	high	5000	39	5039
	Cal Gas Conc. (ppm): 10.1	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	2.3	NA
adjusted zero	5000	0.0	5000	0	0.1	NA
as found high	5000	39.00	5039	78.2	71.5	1.094
adjusted high	5000	39.00	5039	78.2	78.6	0.995
mid	5000	19.00	5019	38.2	38.0	1.008
low	5000	11.00	5011	22.2	21.8	1.020
calibrator zero	5000	0.00	5000	0	0.0	NA
Average C.F. =						1.008

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	Pass/Fail ?
Slope =	0.994	> or = 0.995	PASS
b (Intercept as % of full scale) =	0.22%	0.85-1.15	PASS
% change in C.F. from last cal	-9.42%	± 3% F.S.	PASS
		± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

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

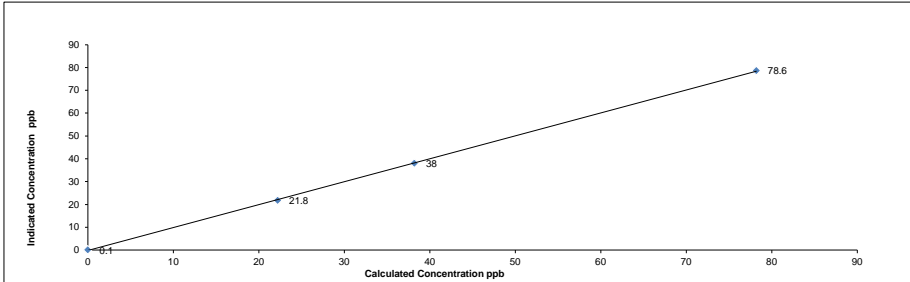
SO₂ High Point gas concentration: na Time gas run (mst): na

Zero corrected analyzer response: na

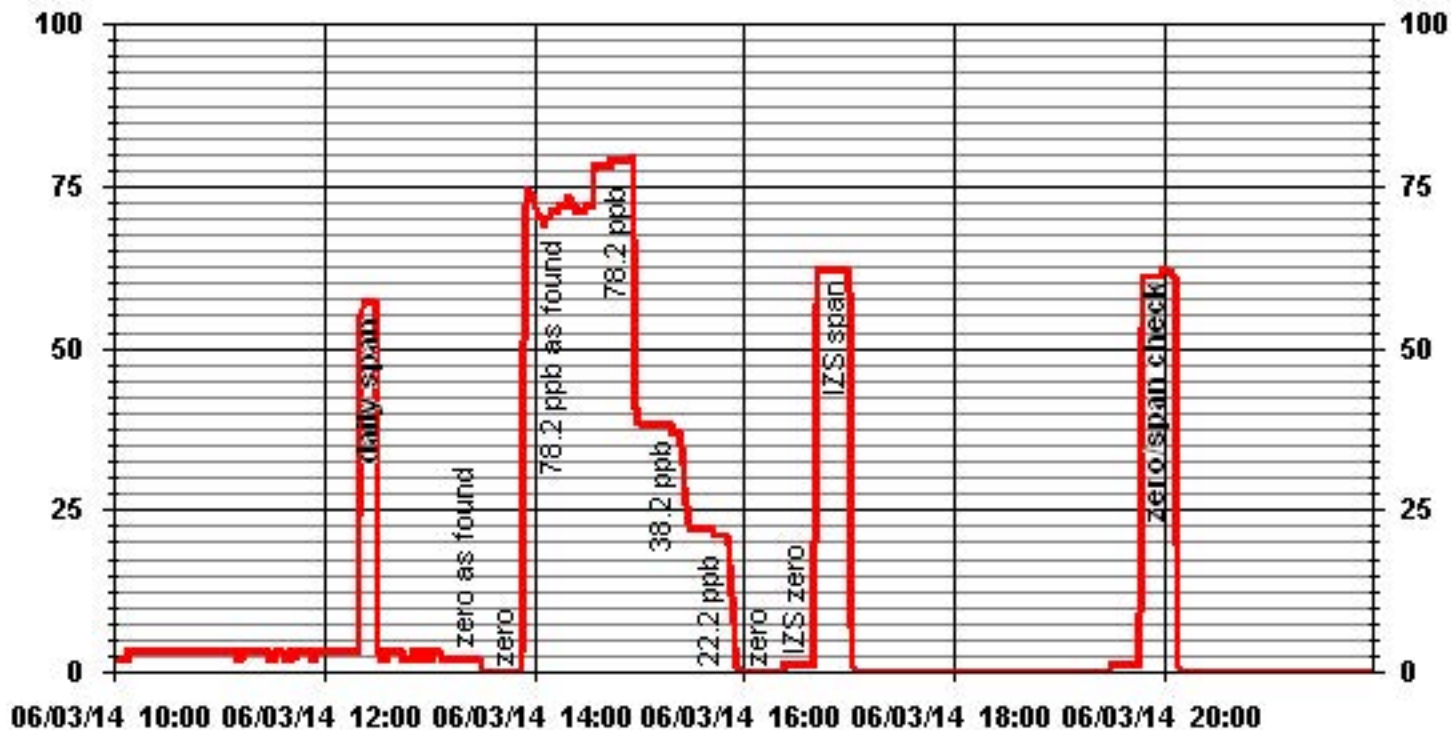
Comments:

Sample filter changed.

API 101E H2S Analyzer Calibration



01 Minute Averages



Total Hydrocarbons (55i)



Thermo 55C Methane/Non-Methane Analyzer Calibration

Date: 5-Jun-14
 Company: LICA
 Station Name: Elk Point
 Performed by: Kevin Hope

Start Time (mst): 15:17
 End Time (mst): 17:40
 Calibration Purpose: Monthly Calibration
 Cal Gas Expiry Date: 26-Mar-17

Analyzer & Diagnostics:

	As found C.F.	Previous Cal High Point C.F.	Analyzer Range
Serial Number: <u>1236656107</u>	CH ₄ = <u>1.064</u>	CH ₄ = <u>1.016</u>	CH ₄ = <u>20</u>
Last Calibration Date: <u>7-May-14</u>	NMHC= <u>1.054</u>	NMHC= <u>1.026</u>	NMHC= <u>20</u>
	THC= <u>1.055</u>	THC= <u>1.024</u>	THC= <u>40</u>
Mother Board Voltages:	3.3: <u>3.3</u>	Calibration History cnt'd>1:	CH ₄ SP Ratio: <u>0.000695</u>
	5.0: <u>4.9</u>		CH ₄ RT: <u>12.2</u>
	15.0: <u>14.9</u>		CH ₄ PK IDX: <u>21</u>
	24.0: <u>24.0</u>		CH ₄ PK HT: <u>11199</u>
	-3.3: <u>-3.2</u>		NM Span Conc: <u>7.12</u>
Interface Board Voltages:	3.3: <u>3.3</u>	Run History>1:	NM SP Ratio: <u>0.000154</u>
	5.0: <u>5.0</u>		NM Peak Area: <u>46150</u>
	15.0: <u>15.0</u>	Date: <u>05JUN2014</u>	
	24.0: <u>23.5</u>	Time: <u>11:27</u>	
	-15.0: <u>-15.1</u>	CH ₄ PK HT: <u>2679</u>	
Bias Supply: <u>-293.3</u>		CH ₄ RT: <u>12.2</u>	
Temperatures: Detector Oven: <u>175.0</u>		CH ₄ Baseline: <u>2288</u>	
Filter: <u>175.0</u>		CH ₄ LOD: <u>55</u>	
Column Oven: <u>75.0</u>		CH ₄ SD: <u>18</u>	
Flame: <u>379.6</u>		CH ₄ CONC: <u>1.86</u>	
Internal: <u>38.1</u>		NM PK HT: <u>0</u>	
Pressures cylinder/reg.:	Carrier: <u>1400</u> <u>50</u>	NM Peak Area: <u>0</u>	
	Fuel: <u>100</u> <u>50</u>	NM CONC: <u>0.00</u>	
	Air: <u>650</u> <u>30</u>	NM Base Start: <u>2360</u>	
FID Status:	Status: <u>LIT</u>	NM Base End: <u>2386</u>	
	Counts: <u>26776</u>	NM LOD: <u>18</u>	
	Flame: <u>381.8</u>	NM Start IDX: <u>5</u>	
	Det Base: <u>175.0</u>	NM End IDX: <u>94</u>	
Flame and Power Stats:	Last Power On: <u>30APR2014 17:19</u>	NM Max Slope: <u>1.2e+00</u>	
	Flameouts: <u>17</u>	NM Min Slope: <u>-6.9e-01</u>	
	Det Oven at Start: <u>169.0</u>	NM PT Count: <u>0</u>	
	Col Oven at Start: <u>74.6</u>	Daily Zero/Span Values:	Previous CH ₄ : <u>20.84</u>
Calibration History>1:	Time: <u>09MAY2014 15:46</u>		Previous NMHC: <u>7.62</u>
	Type: <u>Span</u>		Previous THC: <u>13.2</u>
	Status: <u>Good</u>		New CH ₄ : <u>20.84</u>
	Check/Adjust: <u>Adjust</u>		New NMHC: <u>7.62</u>
	CH ₄ Span Conc: <u>7.78</u>		New THC: <u>13.2</u>

Calibrator and Gas Information:

Make & Model: API 700
 Serial #: 830
 Cal Gas Cylinder I.D. #: LL33674
 CH₄ Cylinder Conc.= 601.4 | 202.0 =C₃H₈ Cylinder Conc.
 CH₄ as C₃H₈= 555.5 | 1156.9 =total CH₄ equivalent

Calibrator Flow Targets: (cc/min):

point	diluent	cal gas	total flow
zero	3000	0	3000
high	3000	36	3036
mid	3000	18	3018
low	3000	10	3010

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							CH ₄	NMHC	THC
20 min as found zero	3000	0.00	3000	0.00	0.00	0.00	0.11	0.00	0.11	NA	NA	NA
20 min adjusted zero	3000	0.00	3000	0.00	0.00	0.00	0.11	0.00	0.11	NA	NA	NA
20 min as found high point	3000	36.00	3036	7.13	6.59	13.72	6.81	6.25	13.11	1.064	1.054	1.055
20 min adjusted high	3000	36.00	3036	7.13	6.59	13.72	7.12	6.59	13.72	1.017	1.000	1.008
20 min mid	3000	18.00	3018	3.59	3.31	6.90	3.59	3.29	6.87	1.031	1.007	1.021
20 min low	3000	10.00	3010	2.00	1.85	3.84	2.11	1.89	4.00	0.999	0.977	0.988
20 min calibrator zero	3000	0.00	3000	0.00	0.00	0.00	0.15	0.00	0.16	NA	NA	NA
Average C.F.=										1.016	0.994	1.006

Linear Regression/Calibration Results:

	CH ₄	NMHC	THC	LIMITS
Correlation Coefficient =	1.000	1.000	1.000	> or = 0.995
Slope =	0.981	0.998	0.990	0.85-1.15
b (Intercept as % of full scale)=	0.57%	0.06%	0.31%	± 3% F.S.
% change in C.F. from last cal=	-4.55%	2.65%	2.96%	+/-15%

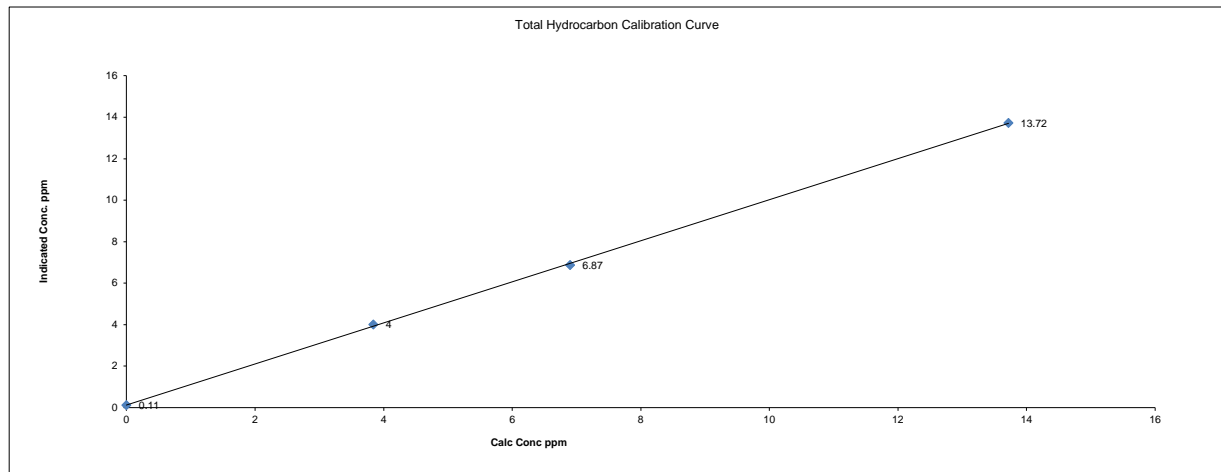
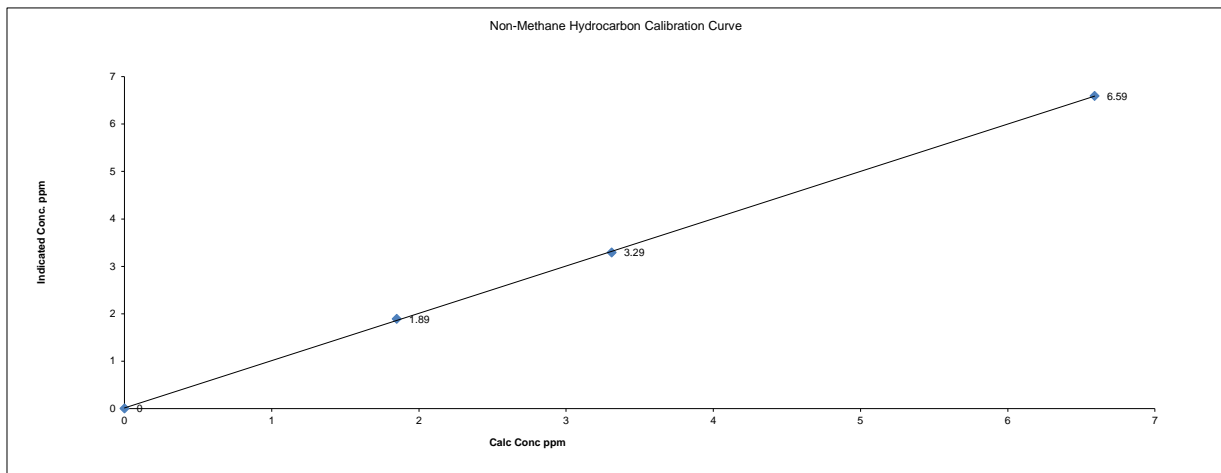
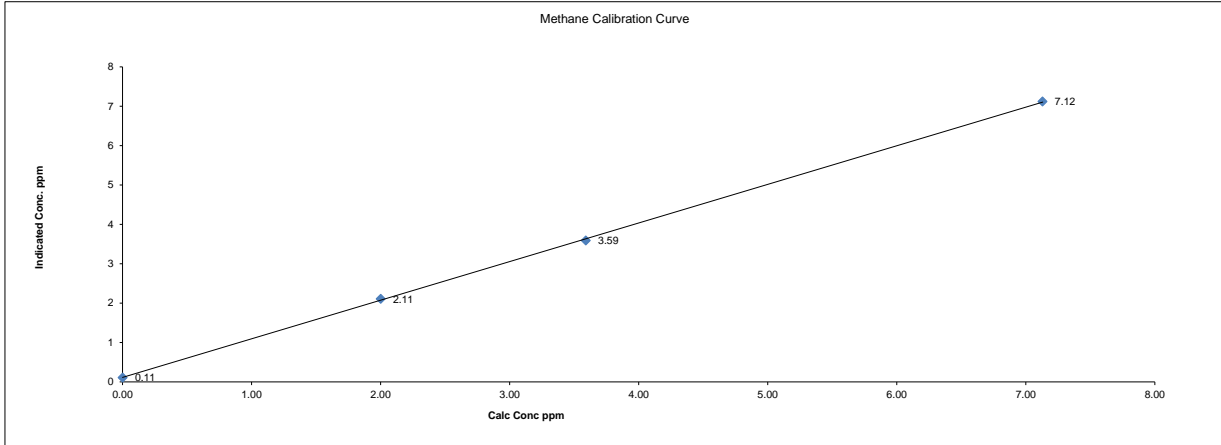
Comments:

Sample filter changed.

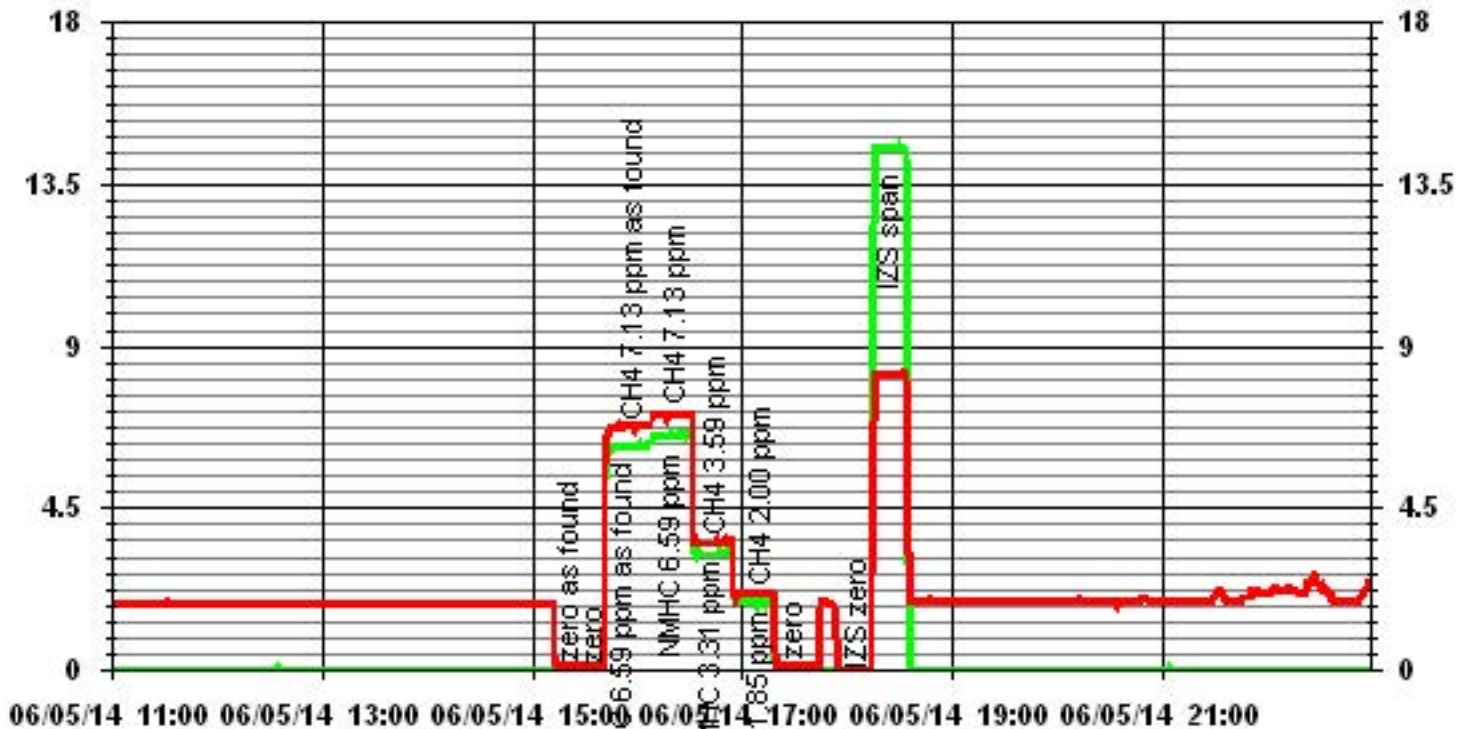
Date: 5-Jun-14
Company: LICA
Station Name: Elk Point
Performed by: Kevin Hope

Start Time (mst): 15:17
End Time (mst): 17:40
Calibration Purpose: Monthly Calibration
Cal Gas Expiry Date: 26-Mar-17

Thermo 55C Methane/Non-Methane Analyzer Calibration



01 Minute Averages



— LICA35

METHANE

PPM

— LICA35

NMHC

PPM

Particulate Matter 2.5



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: 4-Jun-14
 Company: LICA
 Station Name/Location: Elk Point
 Previous Audit Date: 21-May-14

Parameter: PM 2.5
 Performed by: Kevin Hope
 Start/End Time (mst): 15:05/15:35
 Calibration Purpose: Monthly I

1400A Information and Status:

Serial Number: 1405A208301003 As Found Filter Loading %: 20.91
 Ko Factor: NA As Left Filter Loading %: 18.98
 Ambient Temperature °C: 19.0 As Found Noise: 0.006
 Ambient Pressure atm: 0.931 As Left Noise: 0.000
 Main Flow Reading lpm: 3.02 Pump Vacuum: 0.33
 Aux Flow Reading lpm: 16.37 Warnings: None

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	<u>Dwyer</u>	<u>Fisher Scientific</u>	<u>Fisher Scientific</u>
Model:	<u>475 Mark III</u>	<u>FB61291</u>	<u>FB61291</u>
Serial Number:	<u>NA</u>	<u>130168457</u>	<u>130168457</u>
Calibration Date:	<u>unknown</u>	<u>11-Apr-14</u>	<u>11-Apr-14</u>

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	-0.04	0.17	-0.03	0.16
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.00	0.01	0.00	0.01
	limit	0.60	0.60	0.60	0.60

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

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	-0.04	0.17	-0.03	0.16
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.00	0.01	0.00	0.01
	limit	0.60	0.60	0.60	0.60

As found temperature and pressure:

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>19.2</u>	1405F pressure atm:	<u>0.930</u>
reference temperature °C:	<u>19.0</u>	reference pressure:	<u>0.931</u>
difference °C:	<u>-0.2</u>	difference :	<u>-0.001</u>

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

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>19.2</u>	1405F pressure atm:	<u>0.930</u>
reference temperature °C:	<u>19.0</u>	reference pressure:	<u>0.931</u>
difference °C:	<u>-0.2</u>	difference :	<u>0.001</u>

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.01</u>	1400A total/aux flow lpm: <u>16.71</u>
reference main flow lpm: <u>3.02</u>	reference total/aux flow lpm: <u>16.37</u>
difference lpm: <u>0.01</u>	difference lpm: <u>-0.34</u>

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

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.01</u>	1400A total/aux flow lpm: <u>16.71</u>
reference main flow lpm: <u>3.02</u>	reference total/aux flow lpm: <u>16.37</u>
difference lpm: <u>0.01</u>	difference lpm: <u>-0.34</u>

K_o Audit:

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

Comments:



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: 27-Jun-14
 Company: LICA
 Station Name/Location: Elk Point
 Previous Audit Date: 5-Jun-14

Parameter: PM 2.5
 Performed by: Kevin Hope
 Start/End Time (mst): 16:10/16:45
 Calibration Purpose: Monthly

1400A Information and Status:

Serial Number: 1405A208301003 As Found Filter Loading %: 22.67
 Ko Factor: NA As Left Filter Loading %: 17.56
 Ambient Temperature °C: 25.1 As Found Noise: 0.005
 Ambient Pressure atm: 0.923 As Left Noise: 0.000
 Main Flow Reading lpm: 2.95 Pump Vacuum: 0.38
 Aux Flow Reading lpm: 16.17 Warnings: None

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	<u>Dwyer</u>	<u>Fisher Scientific</u>	<u>Fisher Scientific</u>
Model:	<u>475 Mark III</u>	<u>FB61291</u>	<u>FB61291</u>
Serial Number:	<u>NA</u>	<u>130168457</u>	<u>130168457</u>
Calibration Date:	<u>NA</u>	<u>11-Apr-14</u>	<u>11-Apr-14</u>

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	-0.03	0.18	-0.03	0.18
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.00	0.01	0.00	0.01
	limit	0.60	0.60	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	0.18	-0.03	0.18
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.00	0.01	0.00	0.01
	limit	0.60	0.60	0.60	0.60

As found temperature and pressure:

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>24.8</u>	1405F pressure atm:	<u>0.919</u>
reference temperature °C:	<u>25.1</u>	reference pressure:	<u>0.923</u>
difference °C:	<u>0.3</u>	difference :	<u>-0.004</u>

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

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>24.8</u>	1405F pressure atm:	<u>0.919</u>
reference temperature °C:	<u>25.1</u>	reference pressure:	<u>0.923</u>
difference °C:	<u>0.3</u>	difference :	<u>0.004</u>

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>16.65</u>
reference main flow lpm: <u>2.95</u>	reference total/aux flow lpm: <u>16.17</u>
difference lpm: <u>-0.05</u>	difference lpm: <u>-0.48</u>

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

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>16.65</u>
reference main flow lpm: <u>2.95</u>	reference total/aux flow lpm: <u>16.17</u>
difference lpm: <u>-0.05</u>	difference lpm: <u>-0.48</u>

K₀ Audit:

Last K₀ audit date: NA
 1405F K₀ factor: NA
 Measured K₀ factor: NA
 % difference: NA

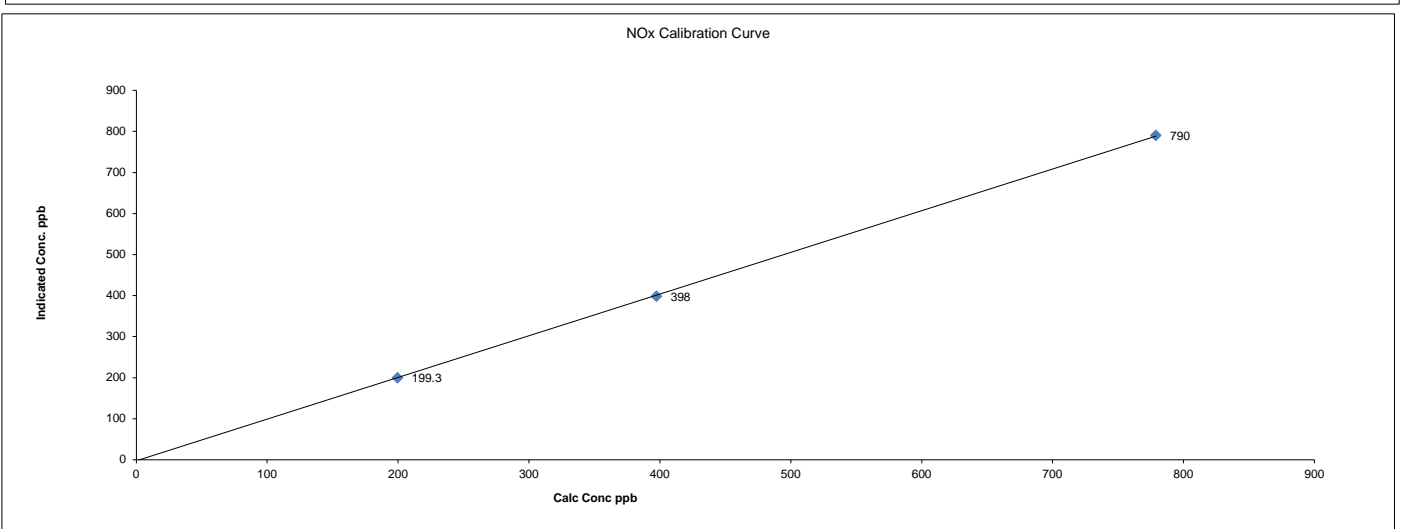
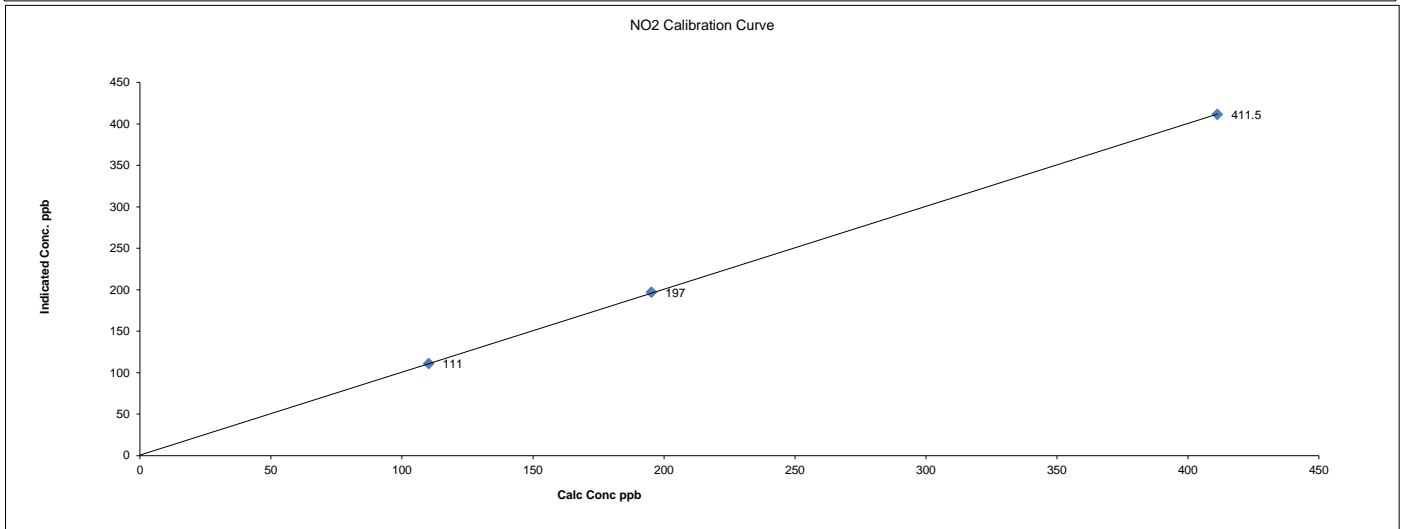
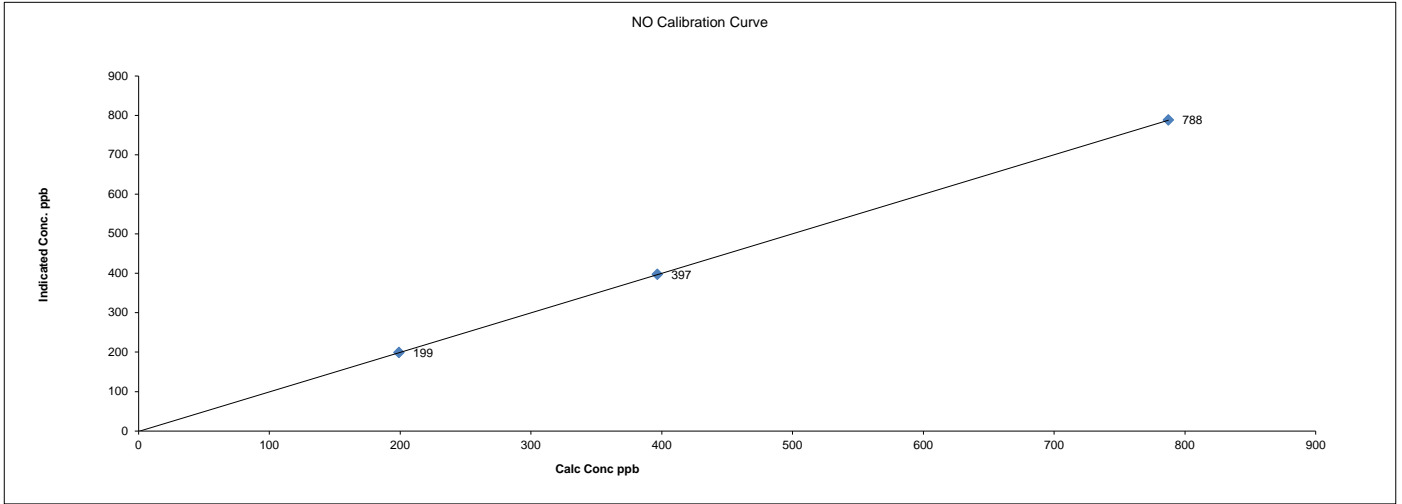
Comments:

Nitrogen Dioxide

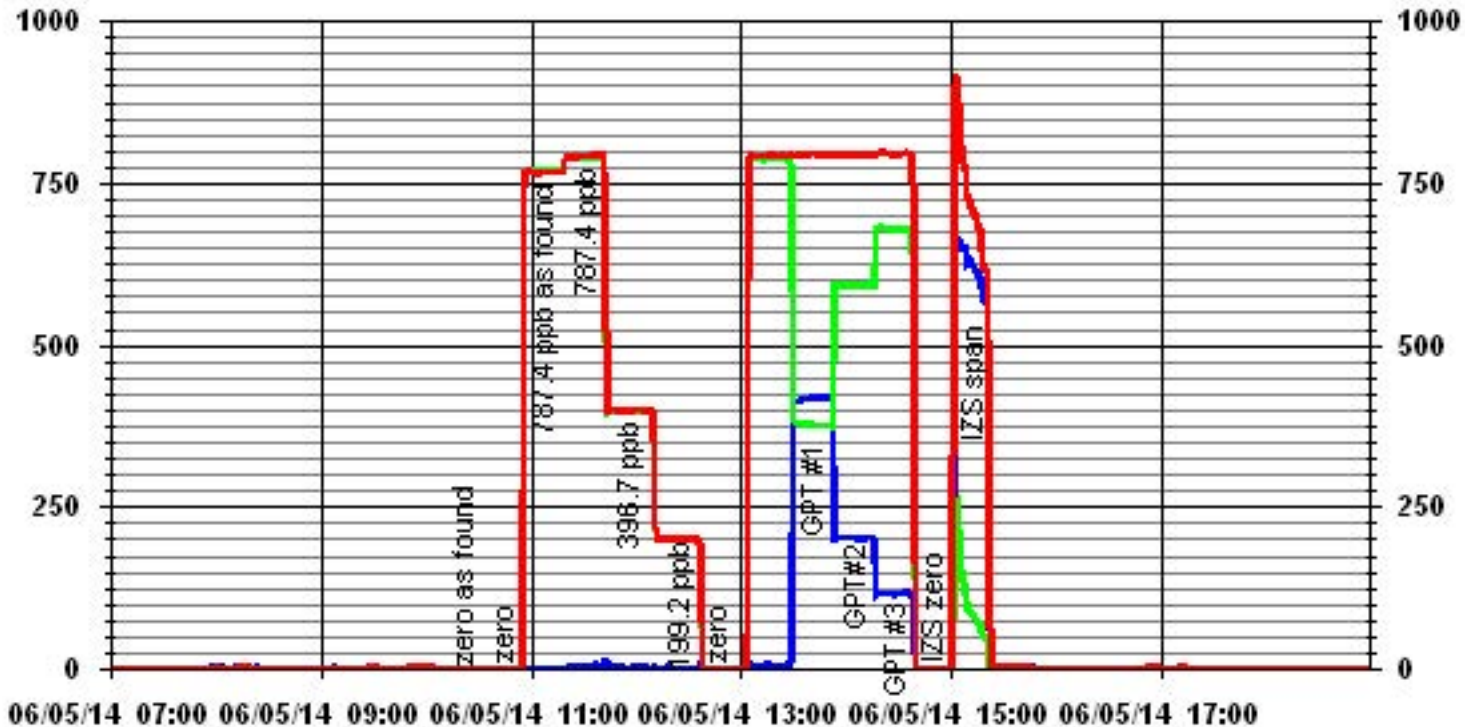
Date: 5-Jun-14
 Company: LICA
 Station Name/Location: Elk Point
 Performed by: Kevin Hope

Start Time (mst): 10:07
 End Time (mst): 14:37
 Calibration Purpose: Monthly Calibration
 Cal Gas Expiry Date: 4-Feb-18

API 200E NOx Analyzer Calibration



01 Minute Averages



— LICA35 IIOX_ PPB

— LICA35 IIO_ PPB

— LICA35 IIO2_ PPB

Ozone

Maxxam Thermo 49i O₃ Analyzer Calibration

Date: 5-Jun-14 Start Time (mst): 15:17
 Company: LICA End Time (mst): 17:45
 Station Name/Location: Elk Point Calibration Purpose: Monthly Calibration
 Performed by: Kevin Hope G.P.T. Date: 5-Jun-14

Analyzer:		Range ppm: <u>500</u>	
Serial Number:	<u>1002240372</u>	As Found C.F.:	<u>0.966</u>
Last Calibration Date:	<u>7-May-14</u>	New C.F.:	<u>1.009</u>
Previous Cal High Point C.F.:	<u>1.000</u>		
As found:		As left:	
O ₃ Bkg:	<u>0.0</u>	O ₃ Bkg:	<u>0.0</u>
O ₃ Coef:	<u>1.046</u>	O ₃ Coef:	<u>1.007</u>
Motherboard:	<u>3.3</u>		<u>3.3</u>
	<u>15.0</u>		<u>15.0</u>
	<u>24.0</u>		<u>23.9</u>
	<u>-3.3</u>		<u>-3.2</u>
Interface Board:	<u>3.3</u>		<u>3.3</u>
	<u>5.0</u>		<u>5.0</u>
	<u>15.0</u>		<u>14.9</u>
	<u>-15.0</u>		<u>-15.1</u>
Photo Lamp	<u>9.8</u>	Photo Lamp	<u>9.8</u>
	<u>24.0</u>		<u>23.5</u>
O ₃ Lamp	<u>9.3</u>	O ₃ Lamp	<u>9.3</u>
Bench:	<u>29.1</u>	Bench:	<u>29.1</u>
Bench Lamp:	<u>54.1</u>	Bench Lamp:	<u>54.1</u>
O ₃ Lamp:	<u>68.2</u>	O ₃ Lamp:	<u>68.2</u>
Pressure:	<u>694.4</u>	Pressure:	<u>694.4</u>
Cell A lpm:	<u>0.752</u>	Cell A lpm:	<u>0.752</u>
Cell B lpm:	<u>0.760</u>	Cell B lpm:	<u>0.760</u>
O ₃ ppb:	<u>33.0</u>	O ₃ ppb:	<u>33.0</u>
Cell A ppb:	<u>40.5</u>	Cell A ppb:	<u>40.5</u>
Cell B ppb:	<u>25.5</u>	Cell B ppb:	<u>25.5</u>
Cell A int:	<u>51002</u>	Cell A int:	<u>51002</u>
Cell B int:	<u>51215</u>	Cell B int:	<u>51215</u>
Internal Span:	<u>349.2</u>	Internal Span:	<u>349.2</u>

Calibrator:		Calibrator Flow Targets:		
Make & Model:	<u>Enviroics 6100</u>	point	total flow (cc/min)	O ₃ setting (v or ppb)
Serial #:	<u>4760</u>	zero	<u>5075</u>	<u>0</u>
NOx Gas Cylinder I.D. #:	<u>BLM000711</u>	high	<u>5075</u>	<u>375</u>
NOx Cylinder Conc. (ppm):	<u>50.2</u>	mid	<u>5075</u>	<u>175</u>
		low	<u>5075</u>	<u>100</u>

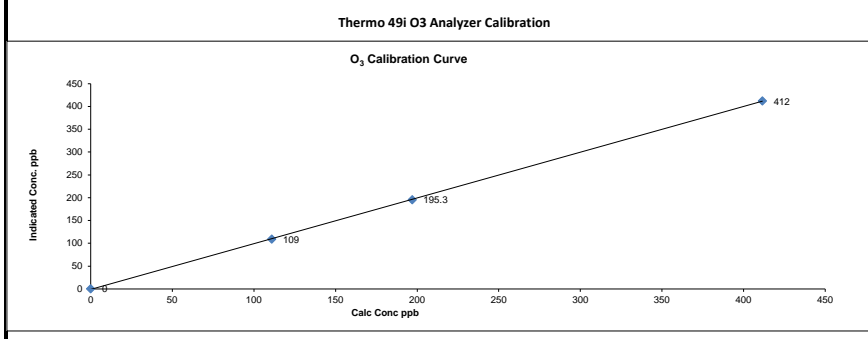
Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5075	0.0	5075	0.0	0.0	NA
adjusted zero	5075	0.0	5075	0.0	0.0	NA
as found high	5070	0.00	5070	411.5	426.0	0.966
adjusted high	5070	0.00	5070	411.5	412.0	0.999
mid	5070	0.00	5070	197.0	195.3	1.009
low	5070	0.00	5070	111.0	109.0	1.019
calibrator zero	5075	0.00	5075	0.0	0.1	NA
** copy and paste flows and NO decrease from NOx cal in to calculated concentration**						Average C.F. = <u>1.009</u>

Linear Regression/Calibration Results:

Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>1.002</u>	> or = 0.995	PASS
b (Intercept as % of full scale) =	<u>-0.249%</u>	0.85-1.15	PASS
% change in C.F. from last cal	<u>3%</u>	± 3% F.S.	PASS
		± 15%	PASS

Comments:

Sample filter changed.



01 Minute Averages

