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October 1, 2013

**RE: August 2013 Ambient Air Monitoring Monthly Reports**

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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". The signature is written in a cursive style.

Michael Bisaga

Airshed Program Manager  
Lakeland Industry and Community Association

cc (email): LICA Office

@\_YUbx' bXi glf m' '7 ca a i b]mi5 ggc WU]cb'

Cold Lake Monitoring Site  
Ambient Air Monitoring  
Data Report  
For  
August 2013

Prepared By:



September 25, 2013

@U\_YUbX' bXi glf m' '7 ca a i b]hm5 ggc V]Uh]cb'  
 7 c`X' @U\_Y'Ac b]hcf]b[ 'G]hY'  
 5 a V]Ybh5 ]f'Ac b]hcf]b[

HUV'Y'cZ7 cbhYb]g' .. . .....DU[ Y'  
 .  
 b]hcfXi W]cb' .. . . . . .  
 7 U]VfUh]cb'DfcWXi fY' .. . . . . .  
 Ac b]h `m7 cb]h]bi ci g'Gi a a Ufm .. . . . . .  
 Ac b]h `mBcb!7 cb]h]bi ci g'Gi a a Ufm .. . . . . .  
 ; YbYfU'Ac b]h `mGi a a Ufm .. . . . . .  
 7 cb]h]bi ci g'Ac b]hcf]b[ .. . . . . .  
 • Ac b]h `mGi a a Uf]Ygž; fUd\ g/ 'K ]bX'FcgYg' .. . . . . .  
 o Gi `d\ i f'8 ]cl ]XY' .. . . . . .  
 o HcHJ'FYXi WX'Gi `d\ i f' .. . . . . .  
 o HcHJ'<nXfcWUfVcbg' .. . . . . .  
 o DUf]W `Uh'A Uhf' &') .. . . . . .  
 o B]hcf[ Yb'8 ]cl ]XY' .. . . . . .  
 o B]h]WCl ]XY' .. . . . . .  
 o Cl ]XYg'cZB]hcf[ Yb' .. . . . . .  
 o CncbY' .. . . . . .  
 o 5 a V]YbhHYa dYfUhi fY' .. . . . . .  
 o FYUh]j Y'<i a ]X]hm' .. . . . . .  
 o JYW'cf'K ]bX'GdYYX' .. . . . . .  
 o JYW'cf'K ]bX'8 ]fYW]cb' .. . . . . .  
 o G]ubXUfX'8 Yj ]Uh]cb'K ]bX'8 ]fYW]cb' .. . . . . .  
 Bcb!7 cb]h]bi ci g'Ac b]hcf]b[ .. . . . . .

.....DU[ Y'  
 7 U]VfUh]cb'FYdcf]g' .. . . . . .  
 • Gi `d\ i f'8 ]cl ]XY' .. . . . . .  
 • HcHJ'FYXi WX'Gi `d\ i f' .. . . . . .  
 • HcHJ'<nXfcWUfVcbg' .. . . . . .  
 • DUf]W `Uh'A Uhf' &') .. . . . . .  
 • B]hcf[ Yb'8 ]cl ]XY' .. . . . . .  
 • CncbY' .. . . . . .  
 DUgg]j Y6 i VV'Y'A Udg' .. . . . . .  
 DUgg]j Y: ]YX'8 UhJ' .. . . . . .  
 .....: ]YX' BchYg' .. . . . . .  
 DUgg]j YAc b]hcf]b[ '@VcfUrcfmi5 bUng]g' .. . . . . .

## Appendix A

The following Ambient Air Monitoring report was prepared for:

Mr. Mike Bisaga

10000 100th Street

Box 8237

5107W – 50 Street

Bonnyville, Alberta

T9N 2J5

Monitoring Location: Cold Lake

Data Period: August 2013

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Lili Zhou

The monthly analytical report for passive monitoring:

Authorized by Levi Manchak



## 7 U]VfU]cb'DfcWXi fY

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*.

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION COLD LAKE SITE

7 cbh]bi ci g'5a V]YbhA cb]hcf]b[ 'È'5 i [ i gh&\$%'`

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 <sub>2</sub> (PPB)	172	48	0	0	0.05	2	22	8, 9	4.8, 5.4	205(SSW), 216(SW)	0.4	13	100.0
TRS (PPB)	-	-	-	-	0.35	4	8	6	1.1	267(W)	1.0	13, 14	100.0
NO <sub>2</sub> (PPB)	159	-	0	-	1.69	10.9	6	20	4.2	352(N)	3.1	23	100.0
NO (PPB)	-	-	-	-	0.46	21.9	6	20	4.2	352(N)	1.8	6	100.0
NO <sub>x</sub> (PPB)	-	-	-	-	2.15	32.8	6	20	4.2	352(N)	4.0	23	100.0
O <sub>3</sub> (PPB)	82	-	0	-	21.66	56	24	14	4.2	56(NE)	32.2	24	100.0
THC (PPM)	-	-	-	-	2.29	3.6	23	7	0.3	173(S)	2.6	VAR	100.0
PM 2.5 (UG/M <sup>3</sup> )	-	30	-	0	8.01	39	15	15	5.7	250(WSW)	18.2	6	98.3
TEMPERATURE (DEG C)	-	-	-	-	17.31	29.6	15	13	7.5	155(SSE)	21.7	15	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	72.05	100	17	6	1.3	187(S)	89.5	30	100.0
VECTOR WS (KPH)	-	-	-	-	4.17	17.4	20	13	-	278(W)	9.8	20	100.0
VECTOR WD (DEGREES)	-	-	-	-	166(SSE)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS      NA: NOT AVAILABLE

**Acbh `mBcb!7 cbh]bi ci g'8 UhJGi a a Ufm**  
**@ ? 9 @ B8 `B8I GHFM/ `7 CA AI BHM5 GGC7 5HCB!'7 C @ ` @ ? 9 `**

**DUggjj Y'5a V]YbhAcb]hcf]b[ 'BYtk cf\_ 'E'5i [ i gh&\$% `**

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO <sub>2</sub>	#6	1.0	0.43
H <sub>2</sub> S	#36	1.36	0.40
NO <sub>2</sub>	#28	2.4	0.9
O <sub>3</sub>	#32	26.0	19.0

## ; YbYfU`AcBH`mGi a a Ufm`

### 9ei Jda YbhCdYfUjcb`

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

### 5EA`GH5HCB`E`@75`-7C@B`@5?9`GCI H<`

### 5`fUj`Yf`Ui`Xjhk`Ug`dYfZ`fa`YX`Vm59GF8`cb`5i`[`i`gh&\$`h`"

### Gi`d\`i`f`8`jcl`jXY`fDD6`L`

- Analyzer make / model – Thermo 43i, S/N: 806528242

No operational issues were observed during the month. The monthly calibration was performed on August 15<sup>th</sup>. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

### HcHJ`FYXi`WX`Gi`d\`i`f`fDD6`L`

- Analyzer make / model –TEI 450i, S/N: 812728560
- Converter - CD NOVA CDN 101, S/N: 250

No operational issues were observed during the month. The monthly calibration was performed on August 15<sup>th</sup>. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

### CncbY`fDD6`L`

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

No operational issues were observed during the month. The monthly calibration was performed on August 15<sup>th</sup>. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information."

# General Monthly Summary

## AQM STATION – LICA – COLD LAKE SOUTH

### Total Hydrocarbon (PPM)

- Analyzer make / model -TECO 51C-LT, S/N: 427408718

The monthly calibration was performed on August 15<sup>th</sup>. The inlet filter was changed before the monthly calibration was started. The analyzer spanned high on August 30 due to sample pump failure. The pump was rebuilt on August 30<sup>th</sup>. A post-repair calibration was performed after the maintenance. It could be determined that the pump failed during the hour 8 on August 29. The data was invalidated between August 29<sup>th</sup> at hour 8 and August 30<sup>th</sup> at hour 9. A total of 26 hours of data was invalidated due to this event. Data was corrected using daily zero information.

### Nitrogen Dioxide (PPB)

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

No operational issues were observed during the month. The monthly calibration was performed on August 15<sup>th</sup>. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

### Particulate Matter 2.5 (UG/M3)

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

Two Teom audits were performed in August: one was on August 15<sup>th</sup> and the other one was on August 30<sup>th</sup>. Both audits passed the manufacturer requirements. On August 30<sup>th</sup>, the sample inlet was cleaned, the sample filter was changed. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. Thirteen hours of data were invalidated as the data were below –3 ug/m3.

### Relative Humidity (PERCENT)

- System make / model - Rotronic Hygroclip-S3

No operational issues were observed during the month.

## ; YbYfU`AcBH`mGi a a Ufm

5EA`GH5HCB`E`@75`-7C`@`@5?9`GCI H<`

JYWcf`K`JbX`GdYYX`fP`D<L`/`JYWcf`K`JbX`8`JfYWJcb`fB9;`L`

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

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

No operational issues were observed during the month. The last wind system calibration was performed on December 18<sup>th</sup>, 2012.

5a`VJYbhHYa`dYfUi`fY`fB9;`7L`

- System make / model - Rotronic Hygroclip-S3

No operational issues were observed during the month.

HfUJ`Yf`HYa`dYfUi`fY`fB9;`7L`

- System make / model - R&R 61

No operational issues were observed during the month.

8`UUc`[`Yf`

- 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.

HfUJ`Yf`

The manifold was cleaned on August 15<sup>th</sup>.

DUggJj`Y`BYtk`cf`\_`

The samplers installed at site #2 had been removed and all samples were missing.

7 c b h ] b i c i g ' A c b ] h c f ] b [ ' .

- 
- 
- 
- 
- 

**AcbH`mGi a a Uf]Ygž; fUd\ g/ 'K ]bX'  
FcgYg'**



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- 
- 
- 
- 

**Gi`d\ i f`8 ]cI ]XY`**

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2013

SULPHUR DIOXIDE (SO<sub>2</sub>) 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	1	1	1	1	S	1	1	0	0	0	0	0	1	0.3	24	
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	0	0	0	0	0	0	1	0.1	24	
3	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	
4	0	0	0	0	0	0	0	0	0	0	1	0	1	S	1	0	1	1	1	0	0	0	0	0	1	0.3	24	
5	0	0	0	0	0	0	0	0	0	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	1	0.1	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	24	
7	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	
8	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
9	0	0	0	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
10	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
11	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
12	0	0	0	0	0	S	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	S	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	0.4	24	
14	0	0	0	S	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
15	0	0	S	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
16	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	
17	S	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	S	1	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	0	S	0	0	0.0	24	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0	24	
20	0	0	0	0	0	0	0	C	C	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	24	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	24	
22	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	S	0	0	0	0	0	2	0.2	24	
23	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	
24	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	
25	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	
26	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	
27	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	
28	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	
29	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	
30	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	
31	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	
HOURLY MAX	0	0	0	0	0	0	0	0	2	2	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0			
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0			

STATUS FLAG CODES

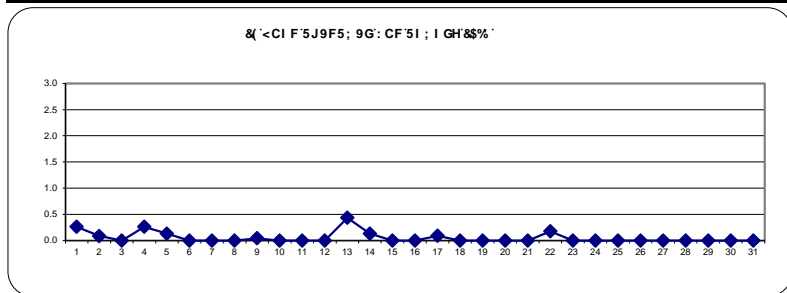
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

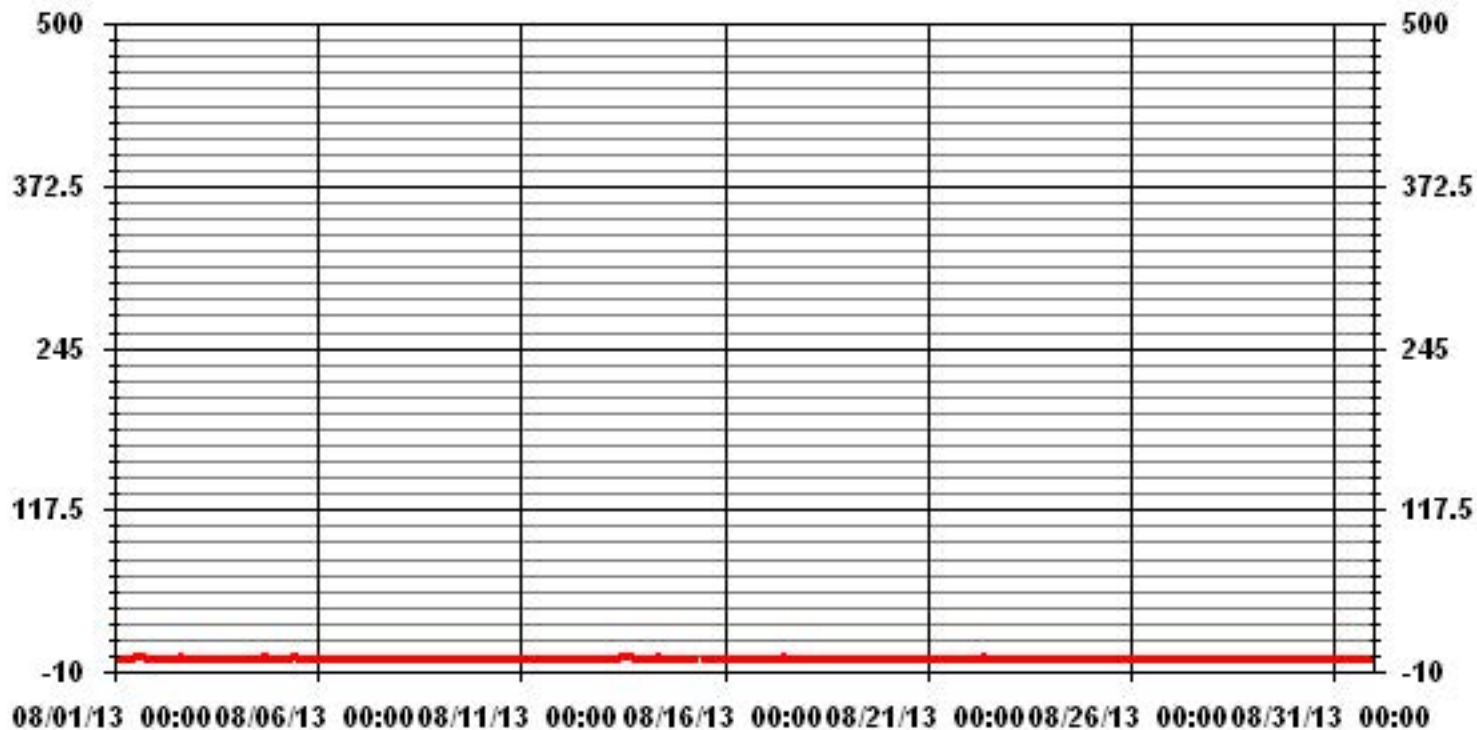
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	35					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	8, 9	ON DAY(S)	22
MAXIMUM 24-HR AVERAGE:	0.4	PPB			ON DAY(S)	13
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.24		MONTHLY AVERAGE:	0.05	PPB	



### 01 Hour Averages



— LICA SO2\_ PPB

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2013

## SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	S	2	1	1	1	1	1	1	1	2	1.1	24
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1.0	24
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1.0	24
4	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
5	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
6	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	1.0	24
7	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	1	1.0	24
8	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	1.0	24
9	1	1	1	1	1	1	1	1	S	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
10	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
11	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
12	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
13	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	2	1.1	24
14	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
15	1	1	S	1	1	1	1	C	C	C	C	C	1	1	1	0	1	1	0	0	0	0	0	0	0	1	0.6	24
16	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0.1	24
17	S	0	0	0	0	0	0	0	0	0	1	2	1	1	1	1	0	0	0	0	0	0	0	0	S	2	0.3	24
18	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	S	0	1	0.1	24
19	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
20	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.0	24
22	0	0	0	0	0	0	0	1	3	3	1	0	0	1	1	1	0	0	S	0	0	0	0	0	0	3	0.5	24
23	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0.1	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	S	0	0	0	0	0	0	0	0	1	0.1	24
25	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	S	1	1	0	0	0	0	0	0	0	1	0.3	24
26	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
27	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
28	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
29	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
30	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
31	0	0	0	0	0	0	0	0	0	0	S	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.1	24
HOURLY MAX	1	1	1	1	1	1	1	1	3	3	1	2	2	1	1	2	2	2	1	1	1	1	1	1	1	1		
HOURLY AVG	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.7	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5			

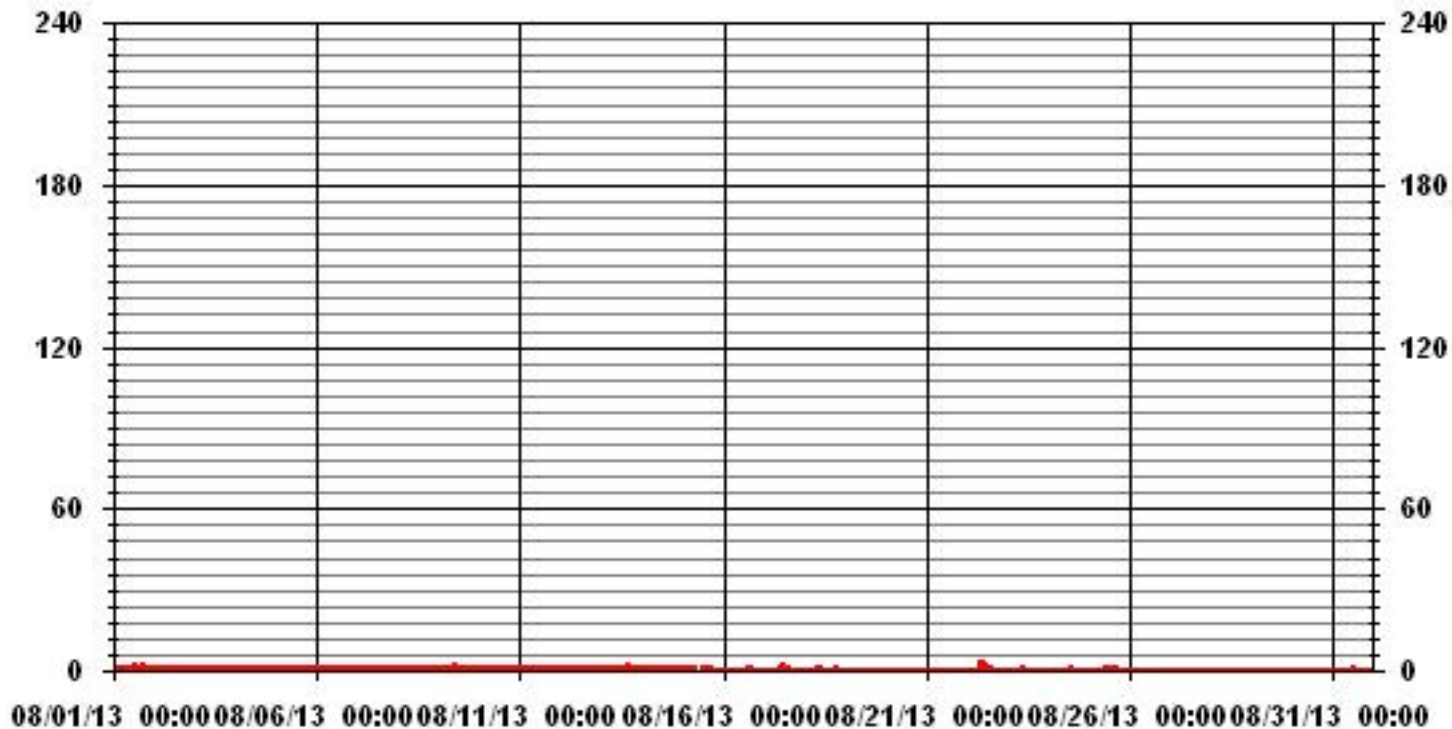
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	365					
MAXIMUM INSTANTANEOUS VALUE:	3	PPB	@ HOUR(S)	8, 9	ON DAY(S)	22
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	0.53					

### 01 Hour Averages



— LICA SO2MAX PPB

LICA  
 SO2\_ / WDR Joint Frequency Distribution (Percent)

August 2013

Distribution By % Of Samples

Logger Id : 01  
 Site Name : LICA  
 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	1.98	4.53	6.66	5.81	8.08	7.37	16.87	6.52	3.26	4.68	7.23	9.64	7.94	5.10	2.83	1.41	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.98	4.53	6.66	5.81	8.08	7.37	16.87	6.52	3.26	4.68	7.23	9.64	7.94	5.10	2.83	1.41	

Calm : .00 %

Total # Operational Hours : 705

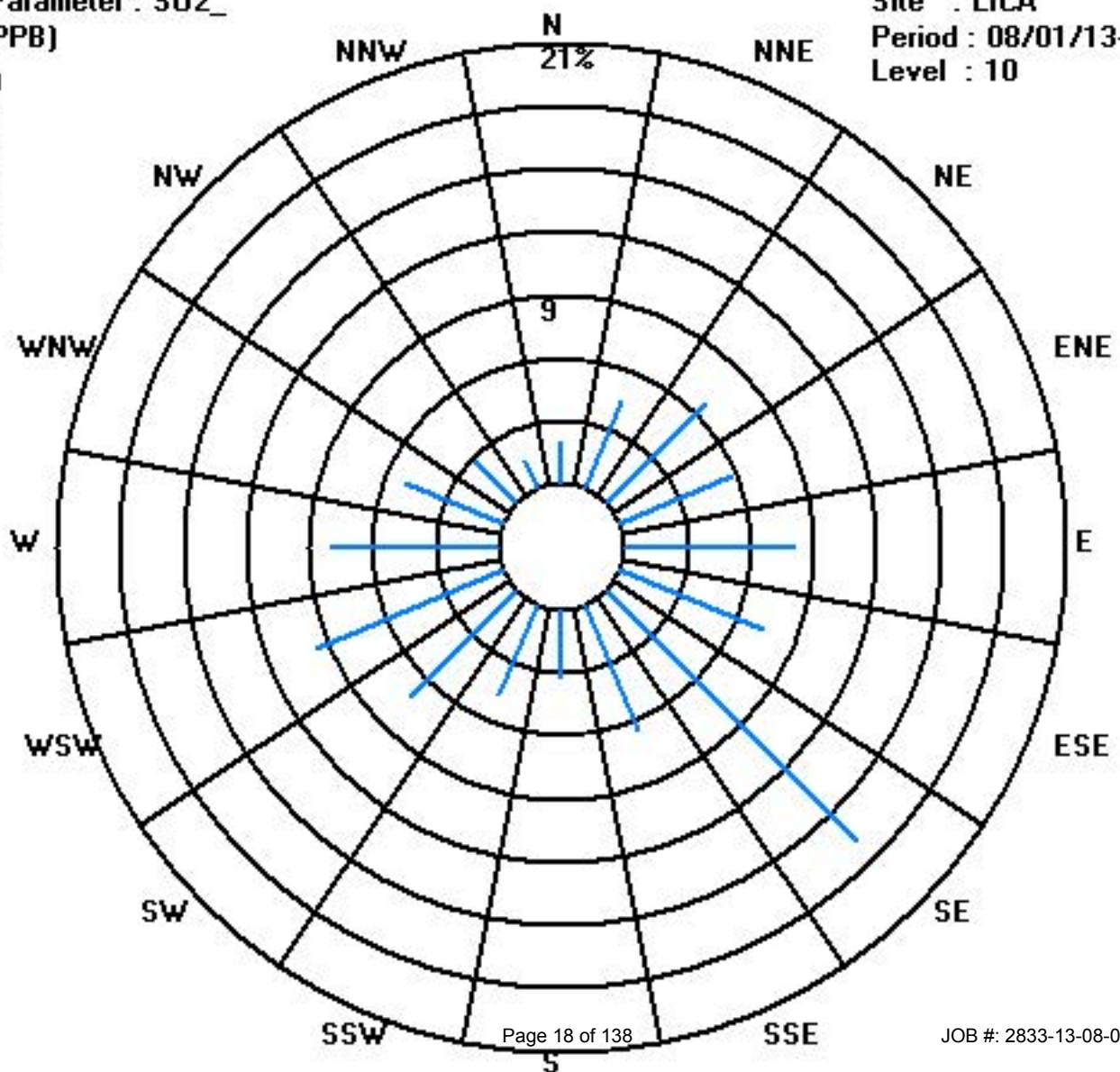
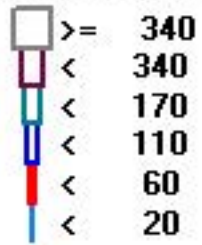
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	14	32	47	41	57	52	119	46	23	33	51	68	56	36	20	10	705
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	14	32	47	41	57	52	119	46	23	33	51	68	56	36	20	10	

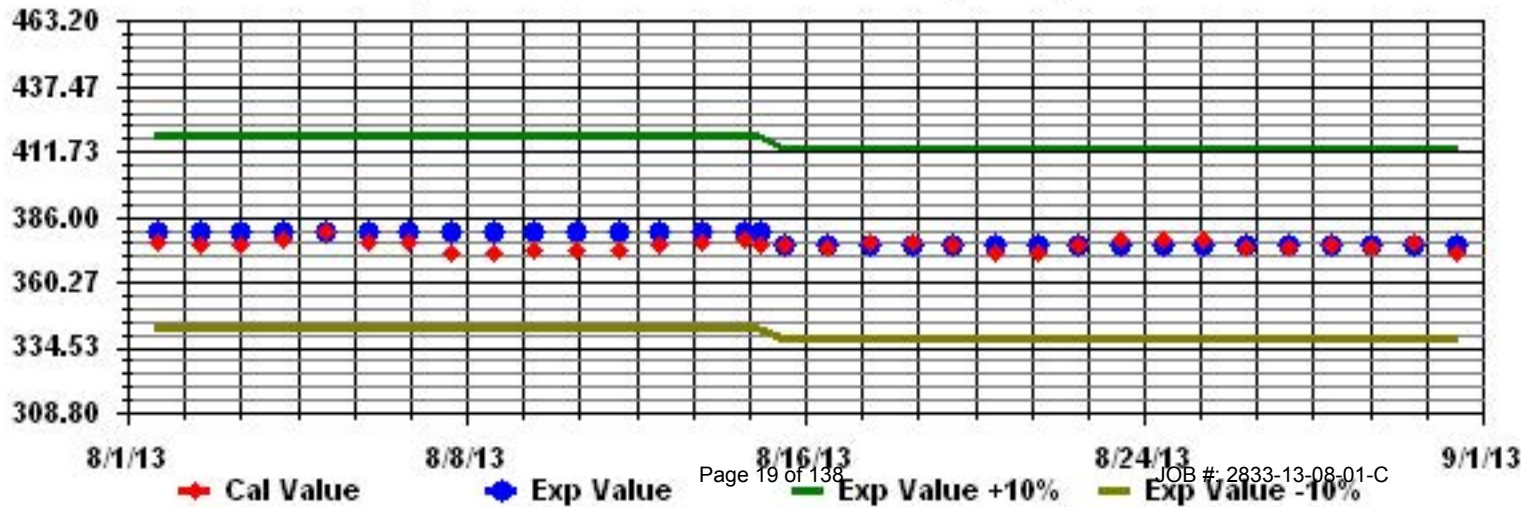
Calm : .00 %

Total # Operational Hours : 705

Class Limits (PPB)



Calibration Graph for Site: LICA Parameter: SO2\_ Sequence: SO2 Phase: SPAN





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Hc hU`F YXi WYX`Gi `d\ i f`

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

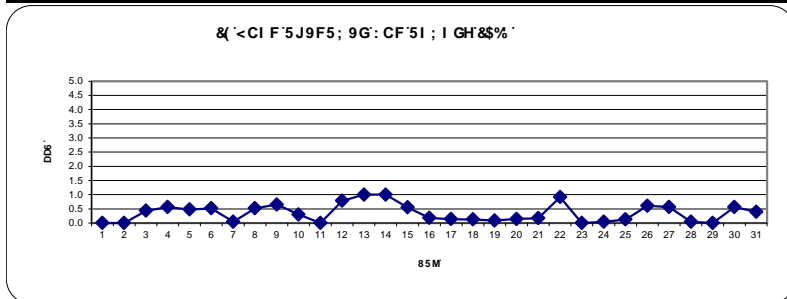
AUGUST 2013

## TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

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

### STATUS FLAG CODES

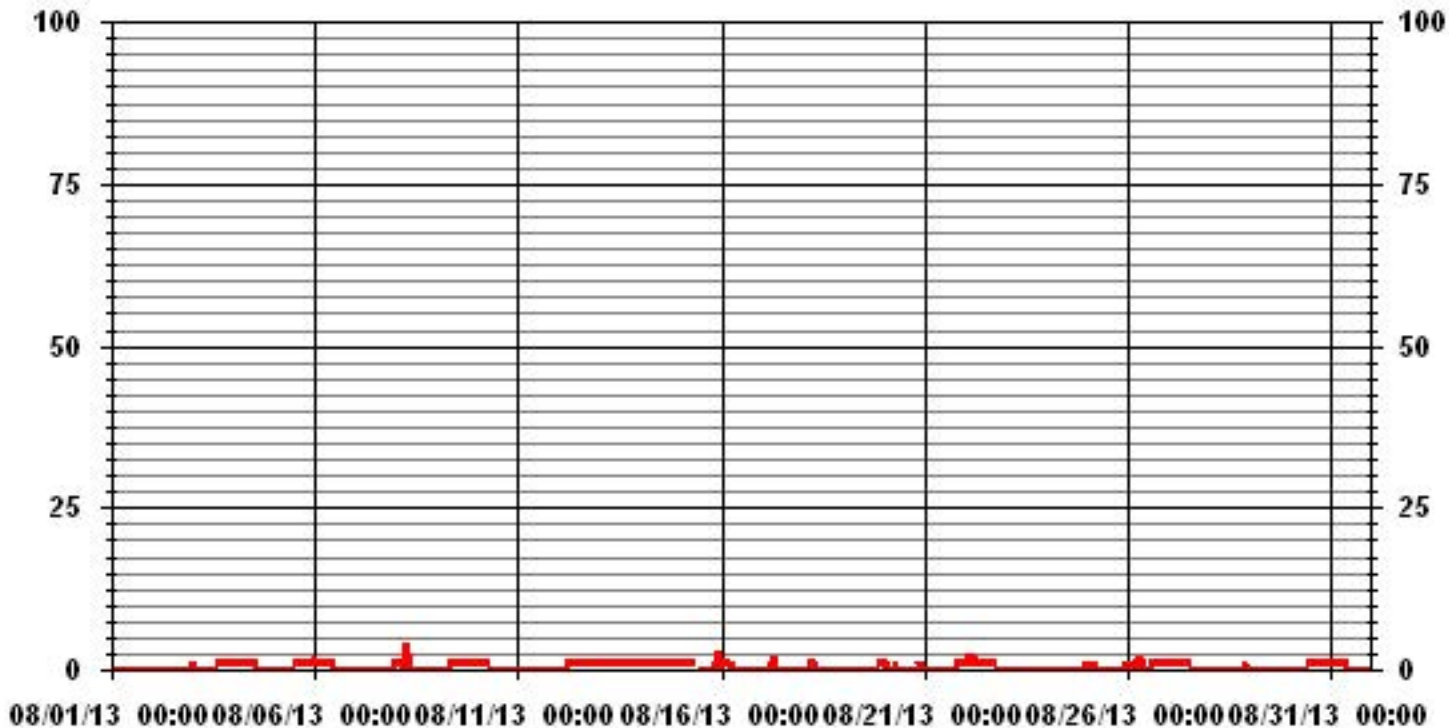
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	236
MAXIMUM 1-HR AVERAGE:	4 PPB @ HOUR(S) 6 ON DAY(S) 8
MAXIMUM 24-HR AVERAGE:	1.0 PPB ON DAY(S) 13, 14
	VAR-VARIOUS
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.53
MONTHLY AVERAGE:	0.35 PPB

# 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2013

## TOTAL REDUCED SULPHUR MAX    instantaneous maximum in ppb

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

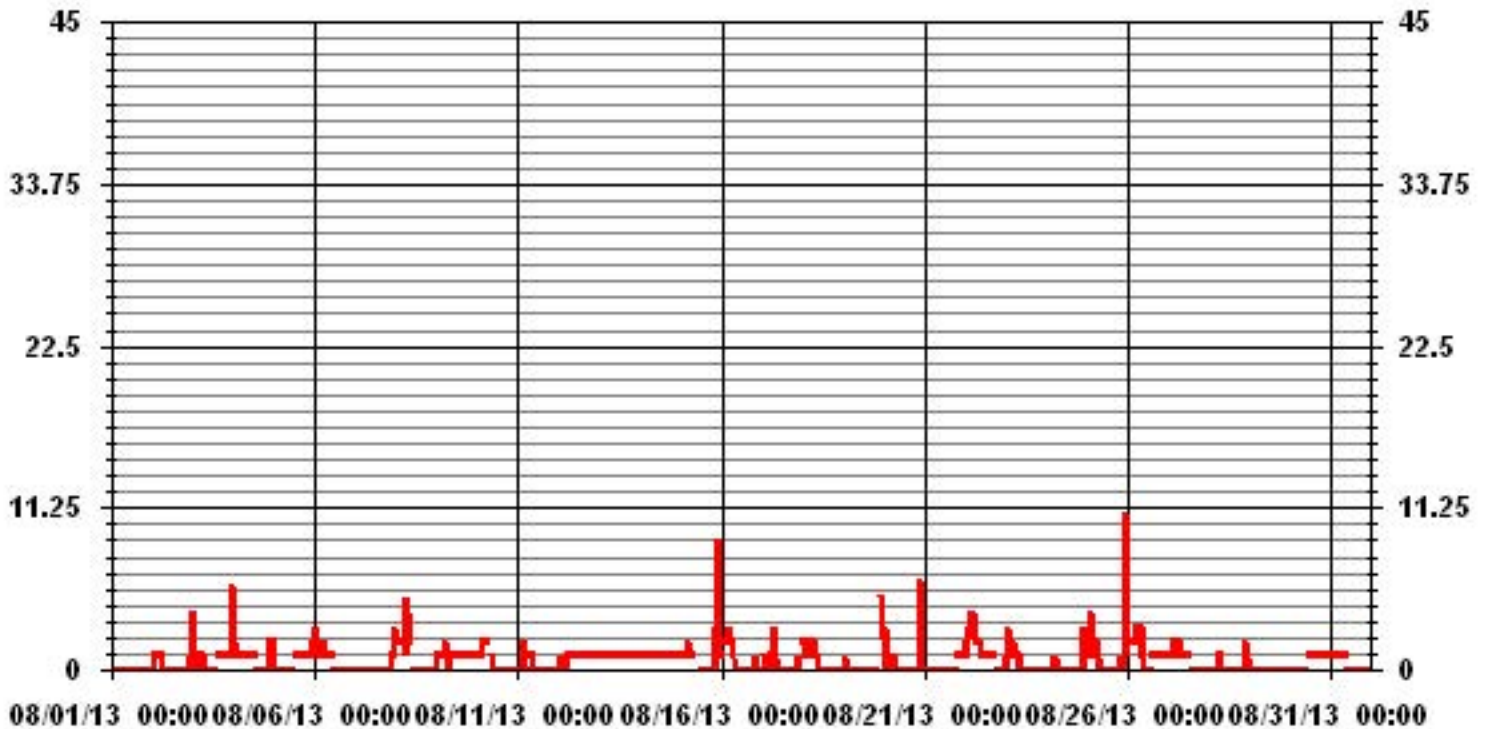
### STATUS FLAG CODES

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

### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	308					
MAXIMUM INSTANTANEOUS VALUE:	11	PPB	@ HOUR(S)	22	ON DAY(S)	25
VAR - VARIOUS						
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	0.98					

# 01 Hour Averages



LICA  
 TRS\_ / WDR Joint Frequency Distribution (Percent)

August 2013

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	1.98	4.54	6.53	5.82	8.09	7.38	16.90	6.53	3.26	4.68	7.24	9.65	7.81	4.82	2.84	1.42	99.57
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.28	.00	.00	.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	1.98	4.54	6.53	5.82	8.09	7.38	16.90	6.53	3.26	4.68	7.24	9.65	7.95	5.11	2.84	1.42	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3	14	32	46	41	57	52	119	46	23	33	51	68	55	34	20	10	701
< 10													1	2			3
< 50																	
>= 50																	
Totals	14	32	46	41	57	52	119	46	23	33	51	68	56	36	20	10	

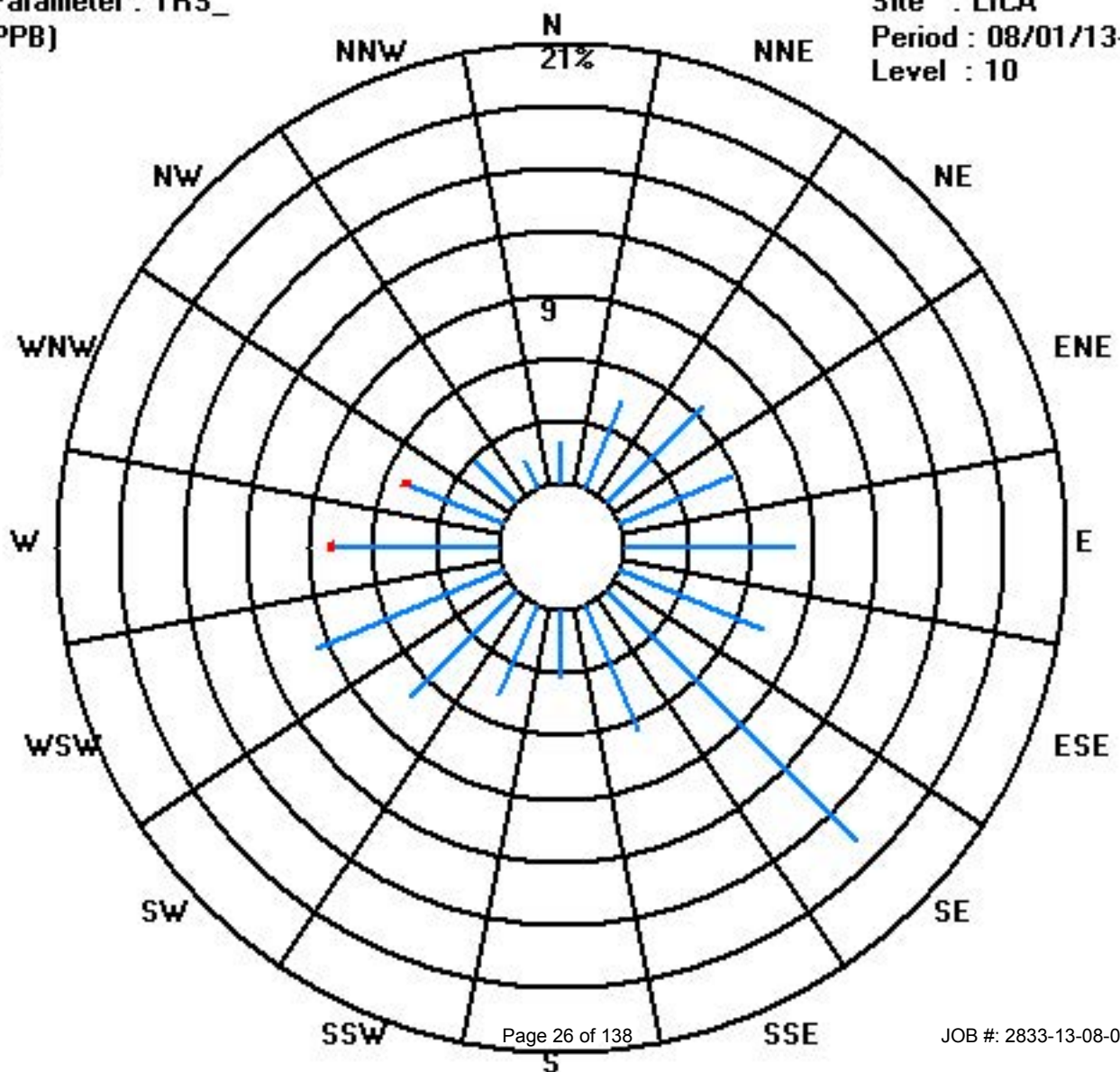
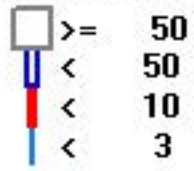
Calm : .00 %

Total # Operational Hours : 704

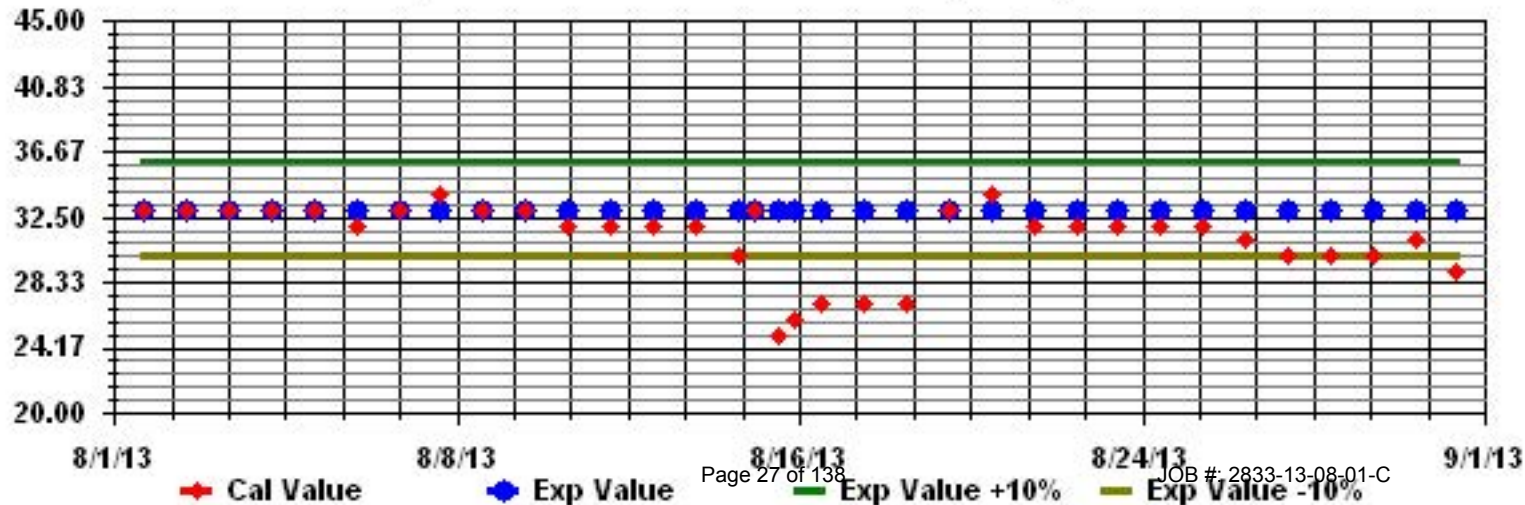
Class Limits (PPB)

Period : 08/01/13-08/31/13

Level : 10



Calibration Graph for Site: LICA Parameter: TRS\_ Sequence: TRS Phase: SPAN





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Hc hU' < mXfc WUf Vc bg'

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

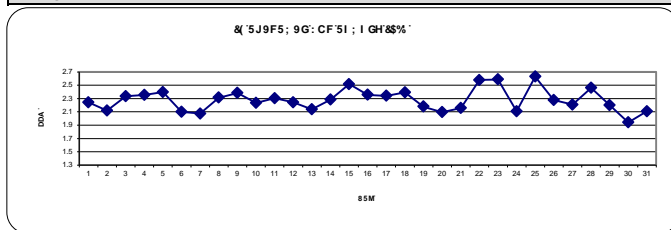
AUGUST 2013

### TOTAL HYDROCARBONS (THC) hourly averages in ppm

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

**STATUS FLAG CODES**

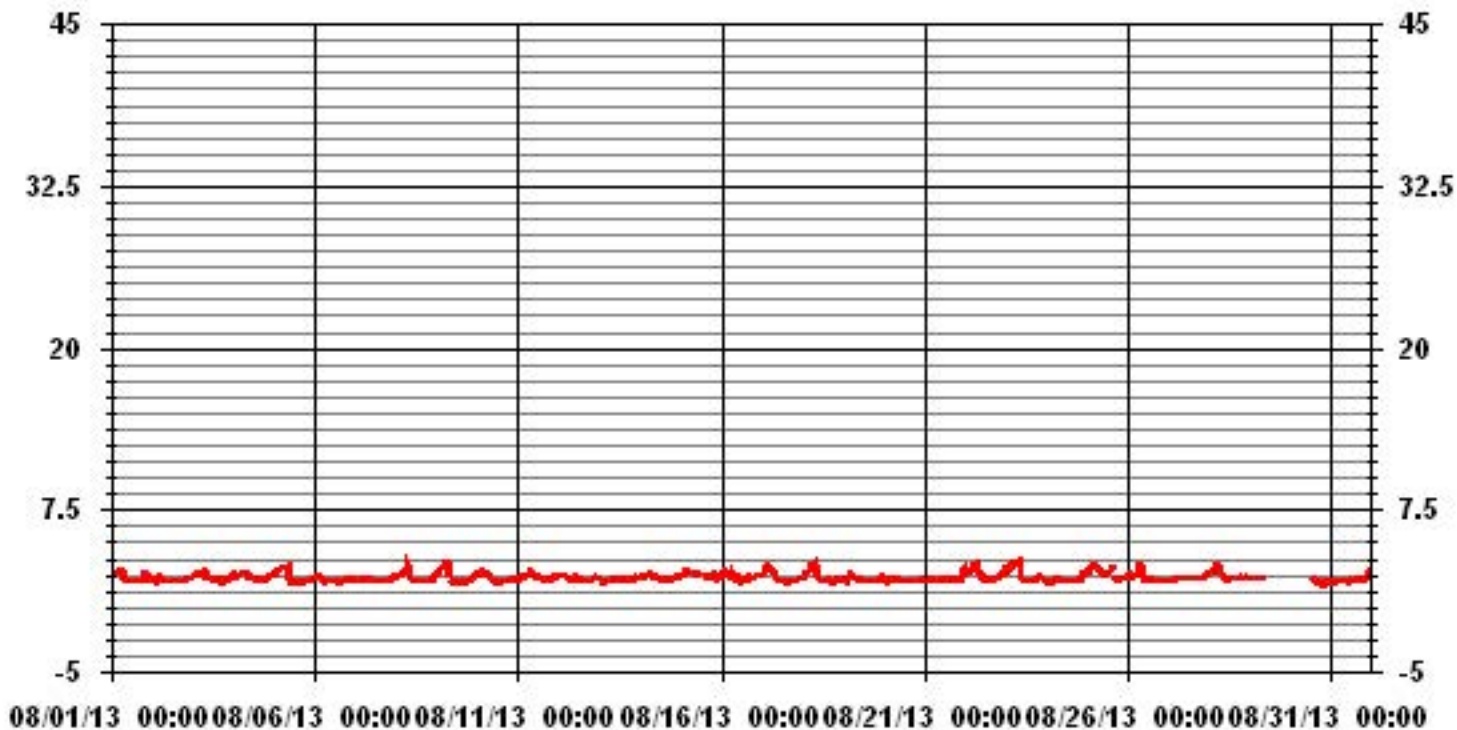
C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR



**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	676					
MAXIMUM 1-HR AVERAGE:	3.6	PPM	@ HOUR(S)	7	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	2.6	PPM			ON DAY(S)	VAR
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	717	HRS	
MONTHLY CALIBRATION TIME:	11	HRS	AMD OPERATION UPTIME:	96.4	%	
STANDARD DEVIATION:	0.33		MONTHLY AVERAGE:	2.29	PPM	

### 01 Hour Averages



— LICA    — THC    — PPM

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2013

## TOTAL HYDROCARBONS MAX      instantaneous maximum in ppm

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

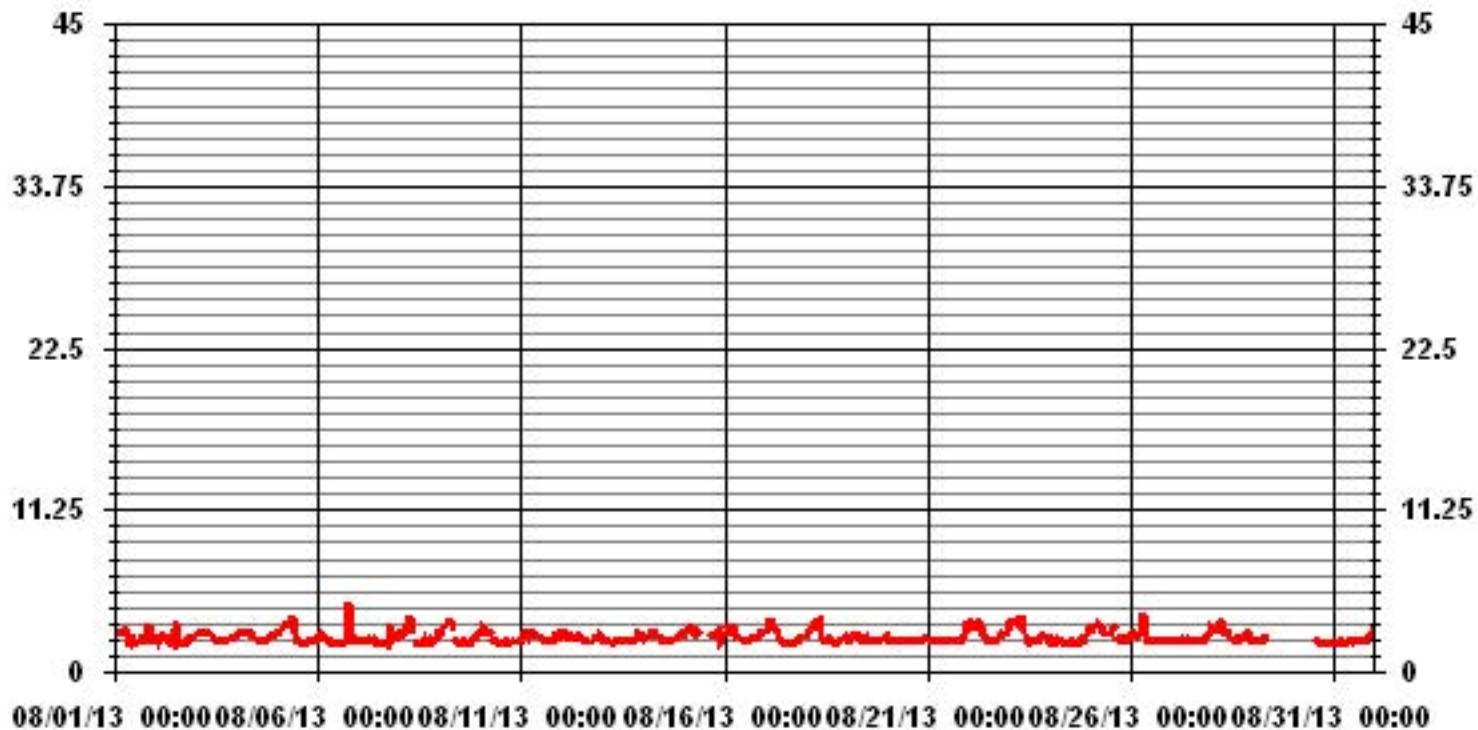
**STATUS FLAG CODES**

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:	675					
MAXIMUM INSTANTANEOUS VALUE:	4.8	PPM	@ HOUR(S)	18	ON DAY(S)	6
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	717	HRS	
MONTHLY CALIBRATION TIME:	12	HRS				
STANDARD DEVIATION:	0.41					

### 01 Hour Averages



— LICA THCMAX PPM

LICA  
 THC / WD Joint Frequency Distribution (Percent)

August 2013

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	1.92	3.84	6.21	5.62	6.21	6.65	17.45	6.65	2.66	4.58	6.50	8.72	7.39	4.58	2.95	1.47	93.49
< 10.0	.14	.44	.00	.14	.73	.73	.29	.00	.73	.14	.88	1.18	.59	.44	.00	.00	6.50
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.07	4.28	6.21	5.76	6.95	7.39	17.75	6.65	3.40	4.73	7.39	9.91	7.98	5.02	2.95	1.47	

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	
< 3.0	13	26	42	38	42	45	118	45	18	31	44	59	50	31	20	10	632
< 10.0	1	3		1	5	5	2		5	1	6	8	4	3			44
< 50.0																	
>= 50.0																	
Totals	14	29	42	39	47	50	120	45	23	32	50	67	54	34	20	10	

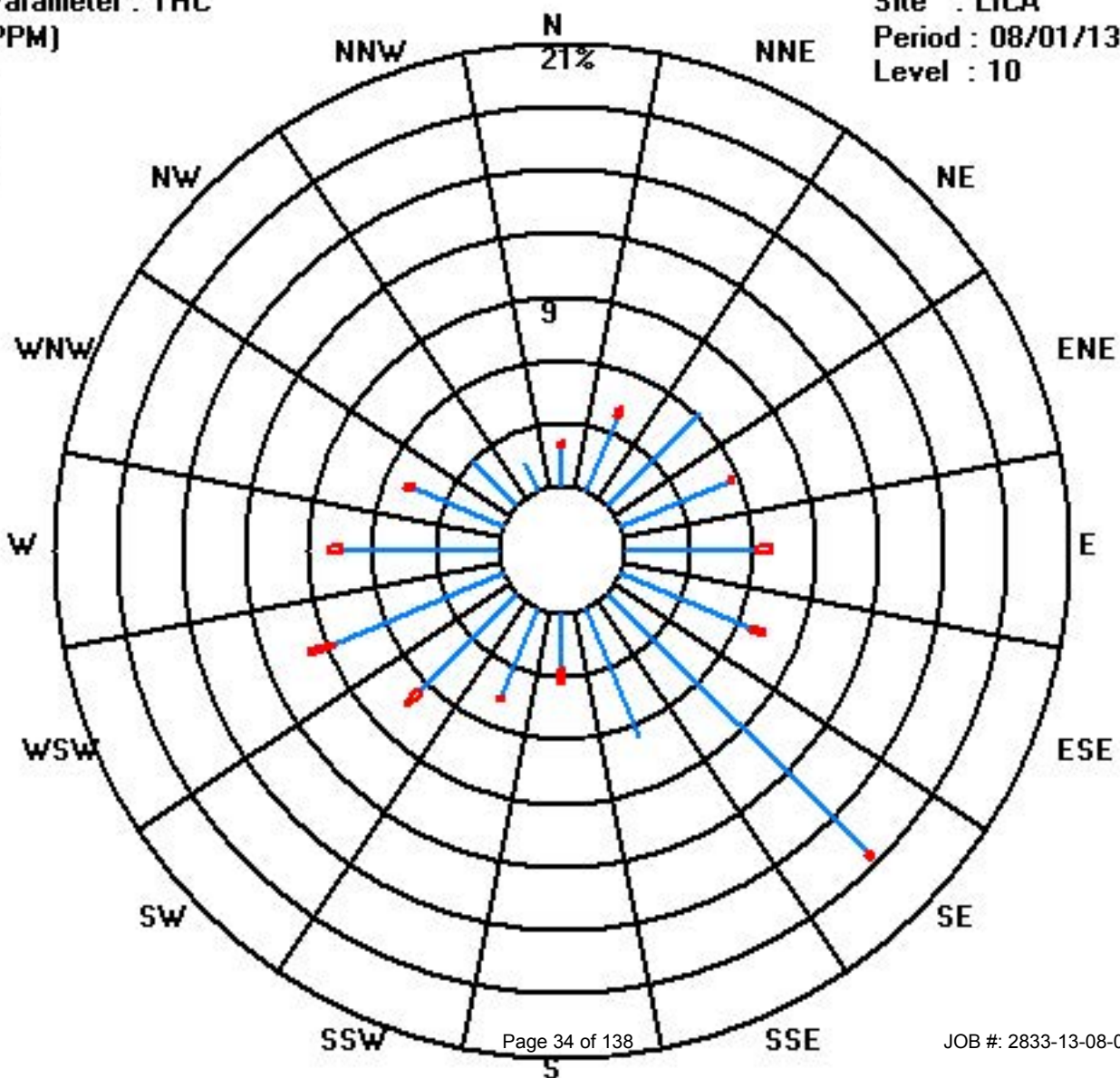
Calm : .00 %

Total # Operational Hours : 676

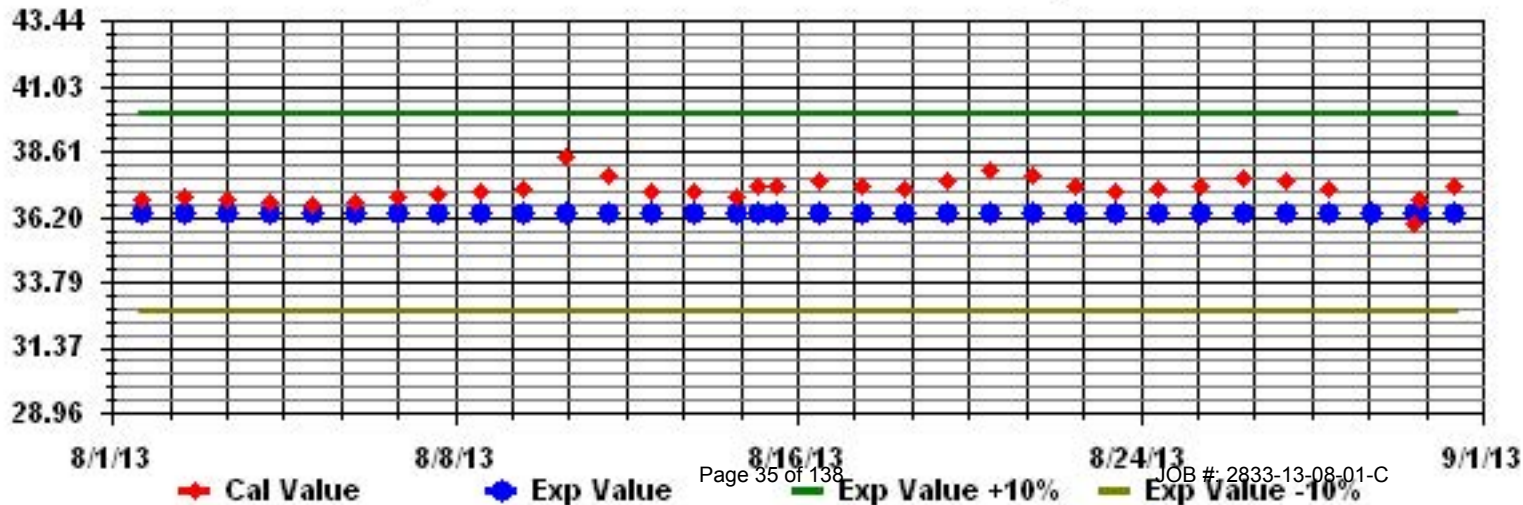
Class Limits (PPM)

Period : 08/01/13-08/31/13

Level : 10



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





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LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2013

PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m<sup>3</sup>

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	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	6	8	4	4	5	2	3	11	X	0	17	9	5	4	3	X	1	11	0	13	8	8	3	3	17	5.8	22				
2	7	4	2	0	2	2	7	8	9	0	26	14	0	8	0	X	12	3	12	0	6	3	5	8	26	6.0	23				
3	5	7	7	4	5	5	13	6	11	5	12	9	1	4	5	6	16	13	0	4	2	8	6	4	16	6.6	24				
4	4	3	6	5	0	4	7	5	5	5	1	10	4	10	6	6	9	14	7	23	14	15	6	13	23	7.6	24				
5	11	12	10	10	10	11	8	10	10	11	12	6	11	7	12	8	10	9	0	8	16	5	10	14	16	9.6	24				
6	8	10	17	21	29	28	15	26	27	22	26	27	6	10	17	12	28	12	20	15	11	17	18	14	29	18.2	24				
7	24	21	24	30	24	20	23	23	26	20	20	8	4	8	5	7	1	5	0	6	5	5	9	4	30	13.4	24				
8	4	8	4	7	3	2	2	3	9	2	0	4	7	11	4	0	9	5	6	10	5	4	4	8	11	5.0	24				
9	0	2	5	0	4	5	9	5	7	1	8	0	16	15	9	6	5	10	5	6	6	7	5	12	16	6.2	24				
10	11	10	13	9	6	3	10	7	10	5	4	11	8	1	2	2	8	3	8	10	8	8	8	6	13	7.1	24				
11	6	2	10	6	5	3	18	1	4	7	1	9	8	1	11	8	12	5	9	7	5	6	8	10	18	6.8	24				
12	4	4	2	3	6	6	10	4	8	4	9	6	3	5	3	8	5	5	2	2	1	5	11	9	11	5.2	24				
13	9	11	6	8	8	6	2	5	8	9	8	16	11	8	6	11	6	5	7	7	18	12	11	6	18	8.5	24				
14	15	11	12	12	10	8	9	2	14	14	13	14	17	12	15	12	9	8	10	6	4	21	10	21	21	11.6	24				
15	19	9	17	10	8	16	11	21	27	25	21	C	11	13	31	39	14	24	19	19	14	14	7	15	39	17.6	24				
16	14	8	2	8	4	6	14	16	9	19	16	4	14	12	10	8	8	16	17	14	11	21	16	9	21	11.5	24				
17	13	11	10	7	11	12	8	3	14	15	16	7	15	12	4	3	11	0	15	10	8	12	6	2	16	9.4	24				
18	8	6	6	1	6	1	4	8	1	5	6	5	9	1	9	5	9	8	13	12	7	10	8	8	13	6.5	24				
19	8	12	3	5	5	1	5	6	8	9	18	X	0	6	13	4	9	0	6	7	5	8	5	3	18	6.3	23				
20	5	3	1	6	3	0	4	7	0	7	X	C	0	2	X	4	4	X	4	0	4	0	X	4	7	3.1	20				
21	0	3	3	0	2	0	5	4	2	X	0	4	1	3	0	0	6	1	X	3	3	0	1	5	6	2.1	22				
22	1	3	0	1	8	4	5	9	7	0	11	12	2	7	12	15	4	1	4	8	9	8	8	6	15	6.0	24				
23	7	1	7	0	13	6	10	14	7	8	7	3	7	0	2	11	3	11	3	14	11	13	15	9	15	7.6	24				
24	4	8	5	2	0	12	14	0	3	4	8	9	8	6	6	9	6	5	3	6	7	2	2	4	14	5.5	24				
25	1	6	3	3	17	7	11	10	4	0	15	9	8	6	12	5	11	11	11	14	11	10	5	4	17	8.1	24				
26	14	0	8	8	6	5	6	6	10	7	6	10	7	5	4	6	5	8	9	6	0	1	8	4	14	6.2	24				
27	0	0	0	6	3	8	0	7	7	8	8	4	9	0	11	6	2	12	14	6	10	7	8	2	14	5.8	24				
28	6	6	2	X	4	8	3	13	17	8	9	10	8	6	4	0	10	5	5	10	X	3	6	0	17	6.5	22				
29	8	2	5	7	1	4	11	15	0	4	16	18	7	11	2	8	7	11	9	0	12	4	14	3	18	7.5	24				
30	6	13	1	16	7	19	0	8	12	15	12	C	C	13	5	18	21	23	23	0	13	1	0	6	23	10.5	24				
31	0	6	3	4	6	14	12	5	X	2	9	18	8	17	1	1	14	0	38	14	5	10	19	9	38	9.3	23				
HOURLY MAX	24	21	24	30	29	28	23	26	27	25	26	27	17	17	31	39	28	24	38	23	18	21	19	21							
HOURLY AVG	7.4	6.8	6.4	6.8	7.1	7.4	8.4	8.6	9.5	8.0	11.2	9.5	7.2	7.2	7.5	7.9	8.9	8.1	9.3	8.4	8.0	8.0	8.1	7.3							

STATUS FLAG CODES

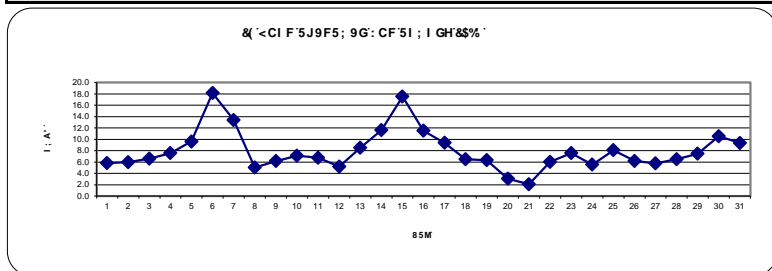
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

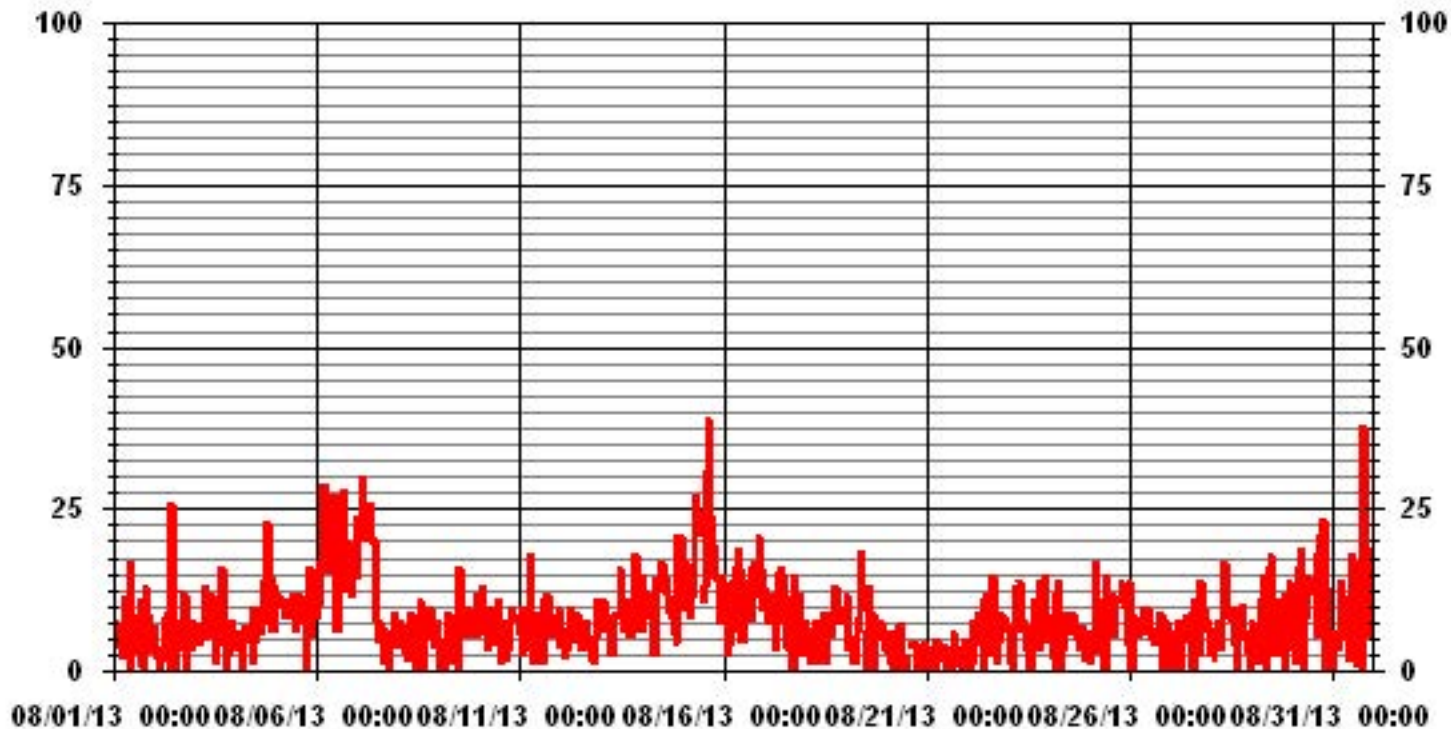
ALBERTA ENVIRONMENT: 1-HR - ug/m<sup>3</sup> 24-HR 30 ug/m<sup>3</sup>

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	673
MAXIMUM 1-HR AVERAGE:	39 UG/M <sup>3</sup> @ HOUR(S) 15 ON DAY(S) 15
MAXIMUM 24-HR AVERAGE:	18.2 UG/M <sup>3</sup> ON DAY(S) 6
I/S CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	5.98
OPERATIONAL TIME:	731 HRS
AMD OPERATION UPTIME:	98.3 %
MONTHLY AVERAGE:	8.01 UG/M <sup>3</sup>



# 01 Hour Averages



— LICA PM2 UG/M3

LICA  
PM2 / WD Joint Frequency Distribution (Percent)

August 2013

Distribution By % Of Samples

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

Wind Parameter : WD  
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	1.92	4.53	6.32	5.91	8.25	7.42	17.60	6.60	3.30	4.40	7.15	9.62	7.42	4.67	2.88	1.37	99.44
< 60	.00	.00	.00	.00	.13	.00	.00	.00	.00	.13	.13	.13	.00	.00	.00	.00	.55
< 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	1.92	4.53	6.32	5.91	8.39	7.42	17.60	6.60	3.30	4.53	7.29	9.76	7.42	4.67	2.88	1.37	

Calm : .00 %

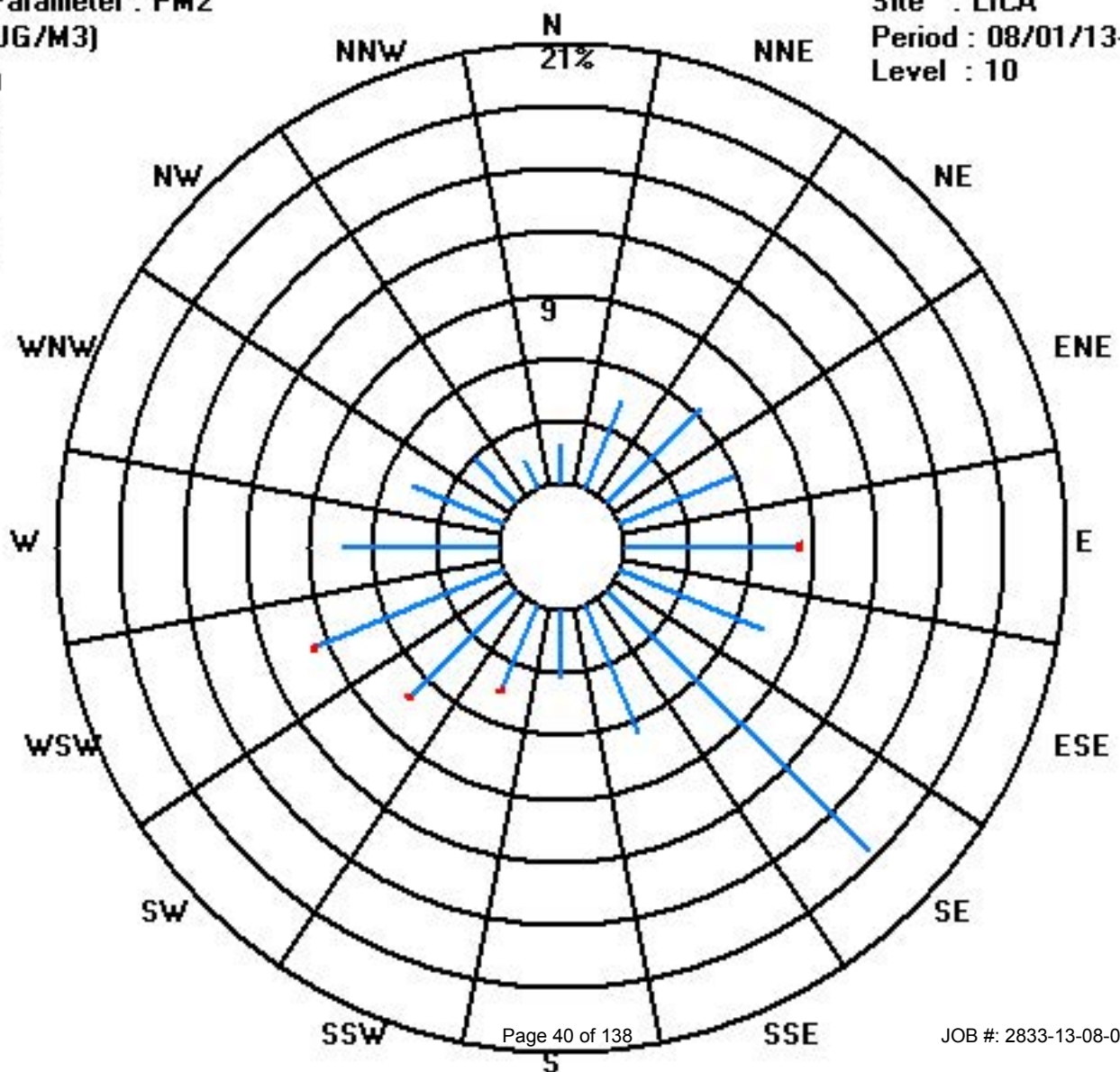
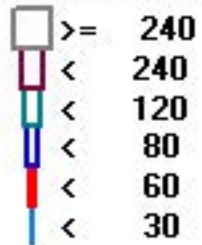
Total # Operational Hours : 727

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	14	33	46	43	60	54	128	48	24	32	52	70	54	34	21	10	723
< 60					1					1	1	1					4
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	14	33	46	43	61	54	128	48	24	33	53	71	54	34	21	10	

Calm : .00 %

Total # Operational Hours : 727



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# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2013

## NITROGEN DIOXIDE hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.		
DAY																												
1	2.2	1.9	1.5	0.9	1.3	1	2.1	2.8	1.4	1.4	1.5	0.9	0	1.1	0.8	0.9	<b>S</b>	0.7	1	3.1	3.9	4.6	0.8	0.9	4.6	1.6	24	
2	1.4	0.6	0.6	0.6	1.5	1.1	1.8	1.5	0.9	0.6	0.4	0.4	0.6	0.3	0.3	<b>S</b>	0.6	0.6	0.7	1	3.3	2.7	2.1	1.6	3.3	1.1	24	
3	1.3	1.5	1.2	1.1	0.6	0.7	2.2	1.2	1.2	0.8	0.7	0.4	0.5	0.5	<b>S</b>	0.6	0.7	0.6	0.5	0.7	1.9	2.1	1.6	0.8	2.2	1.0	24	
4	1.2	0.8	1	0.7	0.7	1.3	1.5	1.3	1.2	1.2	1	0.7	0.6	<b>S</b>	0.7	0.6	2.1	1.7	2.7	2.4	2.7	2.8	2.5	2.8	2.8	1.5	24	
5	2.8	2.5	2.7	2.5	2.6	2.4	2.6	5.4	3.7	2.2	1.8	1	<b>S</b>	1.6	1.5	1	0.8	0.7	1.3	2.3	2.2	1.7	1.6	1.5	5.4	2.1	24	
6	1.1	0.7	0.9	1.6	1.2	1.2	0.9	3.2	1.6	0.9	1.1	<b>S</b>	0.8	0.9	0.9	1.5	1.3	0.7	2.2	3	<b>10.9</b>	5.3	1	1	<b>10.9</b>	1.9	24	
7	0.9	0.5	0.5	0.6	1.9	1.5	2.6	3.1	1.5	0.6	<b>S</b>	0.6	0.5	0.3	0.4	0.6	1	0.6	2	1.6	2.4	3.3	4.5	3.5	4.5	1.5	24	
8	1.9	1.3	0.8	0.7	1.1	0.8	1.6	3.2	3.7	<b>S</b>	0.4	0.2	0.2	0.1	0.3	0.2	0.1	0.3	0.9	2.1	3.5	2.7	2	2.7	3.7	1.3	24	
9	2.7	2.1	1.7	1.4	0.9	0.9	2.5	2.2	<b>S</b>	0.6	0.2	0.3	0.3	0.3	0.2	0.5	0.6	0.1	0.3	1.2	2.6	3	3.1	3.9	3.9	1.4	24	
10	3	1.8	1.9	1.2	1.2	1.3	2	<b>S</b>	1.2	0.9	0.8	0.1	0.1	0	0.2	0.5	0.5	0.5	0.6	1.2	1.9	1.1	1	1.3	3	1.1	24	
11	0.8	0.9	0.9	1	1.3	1.5	<b>S</b>	1.6	1.4	1.1	1.1	1	0.9	0.7	1.1	0.6	1.2	1.8	1.7	2.3	3.1	4.5	3.1	3.5	4.5	1.6	24	
12	2.3	1.3	0.9	1.7	2.7	<b>S</b>	2.9	2.3	1.6	1.8	3	2.4	1.6	0.6	0.8	1	0.7	0.6	0.9	3.5	4.1	2.6	3.1	2.5	4.1	2.0	24	
13	1.3	1	0.6	0.6	<b>S</b>	1.3	1.5	1.8	0.9	0.6	0.8	0.6	0.5	0.4	0.5	0.9	1	0.9	1	1.3	2.2	2.1	2.2	1.7	2.2	1.1	24	
14	0.7	0.7	1	<b>S</b>	1.7	1.8	4.2	1.6	1.5	1.5	1.1	0.7	0.8	0.8	1	0.7	0.6	0.7	1	2	4.5	1.9	1.2	1.6	4.5	1.4	24	
15	1.1	1.3	<b>S</b>	2.2	2.9	3.5	2.9	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	1.8	2.2	2.2	2.2	2.7	3.6	2	1.2	1.2	1.2	3.6	2.1	24	
16	1.1	<b>S</b>	1.8	1.5	1	1.3	3.4	3.5	2.5	4.9	3.8	1.6	2.6	2.5	2.4	2.4	2.9	2.4	1.9	2.1	2.8	3.1	3.5	2.5	4.9	2.5	24	
17	<b>S</b>	3.2	5	5.1	4.8	2.9	2.7	2.5	2	1.6	1.5	1.8	1.8	1.1	0.8	0.7	1.1	1.4	1.5	1.7	1.9	2.3	1.9	<b>S</b>	5.1	2.2	24	
18	1.9	1.4	1.3	1.9	3.7	2.3	1.6	2.7	2.6	2.1	2.2	1	0.6	0.7	0.7	0.6	0.7	0.7	0.9	1.3	2.5	2.3	<b>S</b>	2.6	3.7	1.7	24	
19	2.1	1.6	2.2	2.3	3.4	3.8	4.1	3.5	2.8	1.4	1.1	0.8	1	0.5	0.9	0.7	0.6	0.7	0.5	0.7	1.4	<b>S</b>	1.5	1.3	4.1	1.7	24	
20	1.2	1.6	1.5	1.6	1	2	1.8	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	0.5	0.6	0.7	0.3	0.5	0.3	0	0.3	1.6	<b>S</b>	4.6	4	2.7	4.6	1.4	24	
21	1.8	1.5	1.1	1.5	2	2.8	2.7	2.6	1.1	0.9	0.8	0.6	0.6	0.6	0.3	0.2	0.4	0.3	0.2	<b>S</b>	5	2.1	2.1	2.2	5	1.5	24	
22	1.5	1.6	1.8	1.5	2	3.2	5	2.7	3.1	2.9	1.8	1.1	1	0.7	0.9	0.9	0.9	0.9	<b>S</b>	5.8	4.1	3.4	3	2.5	5.8	2.3	24	
23	2.1	1.7	2.1	1.9	2.8	2.7	3.8	6.7	7	5.1	1.2	1.2	0.9	1	0.8	1.3	3	<b>S</b>	5.3	5.4	6.7	6.6	1.9	0.9	7	<b>3.1</b>	24	
24	1	1	0.5	0.6	0.6	1.3	3	2.5	1.9	1.7	2	1.6	1	1.5	1.6	1.1	<b>S</b>	1.1	1	2.5	2.6	2.6	2.3	2.3	3	1.6	24	
25	2	2.8	2.8	2.6	2.1	2.4	3.4	1.9	1.6	1.1	1.1	1.6	1.3	1.6	1.7	<b>S</b>	2.4	2.1	1.3	1.5	1.7	1.8	1	1	3.4	1.9	24	
26	1.1	1.5	2.4	2.6	2.3	2.1	3.9	4.1	3.7	2.3	2.4	1.5	1.1	1.3	<b>S</b>	3	2.6	1.3	1.7	3.3	1.5	1	0.6	0.5	4.1	2.1	24	
27	0.4	0.4	0.3	0.8	1.5	2.2	4.6	4.7	2.3	1.8	1.2	1	1.1	<b>S</b>	1.3	1.1	1.5	1.7	2.8	4.5	4.9	2.9	1.8	1.9	4.9	2.0	24	
28	1.9	1.2	0.9	1.2	1.9	1.7	2.4	4.4	1.8	1.4	1.5	1.1	<b>S</b>	0.7	1.1	1	2.2	2	2.6	4.2	5.3	3.7	1.1	0.7	5.3	2.0	24	
29	0.6	0.5	0.4	0.6	0.7	1	2.5	3.8	2	1.2	0.9	<b>S</b>	1	1	0.8	1.4	1.6	1.9	3.9	4.5	2.5	1.7	0.7	1.1	4.5	1.6	24	
30	0.2	0.6	0.9	1.1	1.3	1.9	1.5	2.3	1.8	0.8	<b>S</b>	2	1.4	1.7	1.4	1.1	1	0.5	0.7	0.5	0.1	0.1	0.1	0.4	2.3	1.0	24	
31	0.4	0.5	0.5	0.5	0.4	0.5	0.5	0.7	1.3	<b>S</b>	1.4	2.4	2.3	1.3	0.6	0.9	0.8	0.8	1.3	1.6	2.6	2.5	1.9	2.4	2.6	1.2	24	
HOURLY MAX	3	3	5	5	5	4	5	7	7	5	4	2	3	3	2	3	3	2	5	6	11	7	5	4				
HOURLY AVG	1.5	1.3	1.4	1.5	1.8	1.8	2.6	2.9	2.1	1.6	1.4	1.0	0.9	0.9	0.9	1.0	1.2	1.0	1.5	2.4	3.2	2.7	1.9	1.9				

### STATUS FLAG CODES

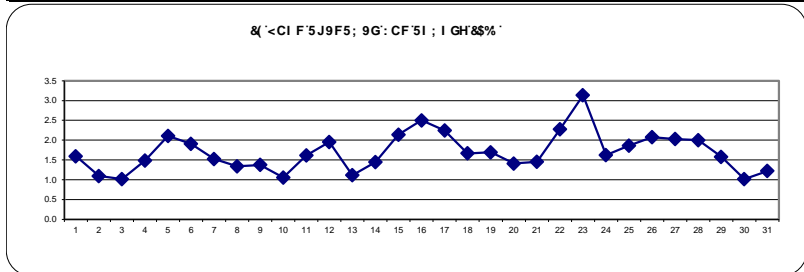
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

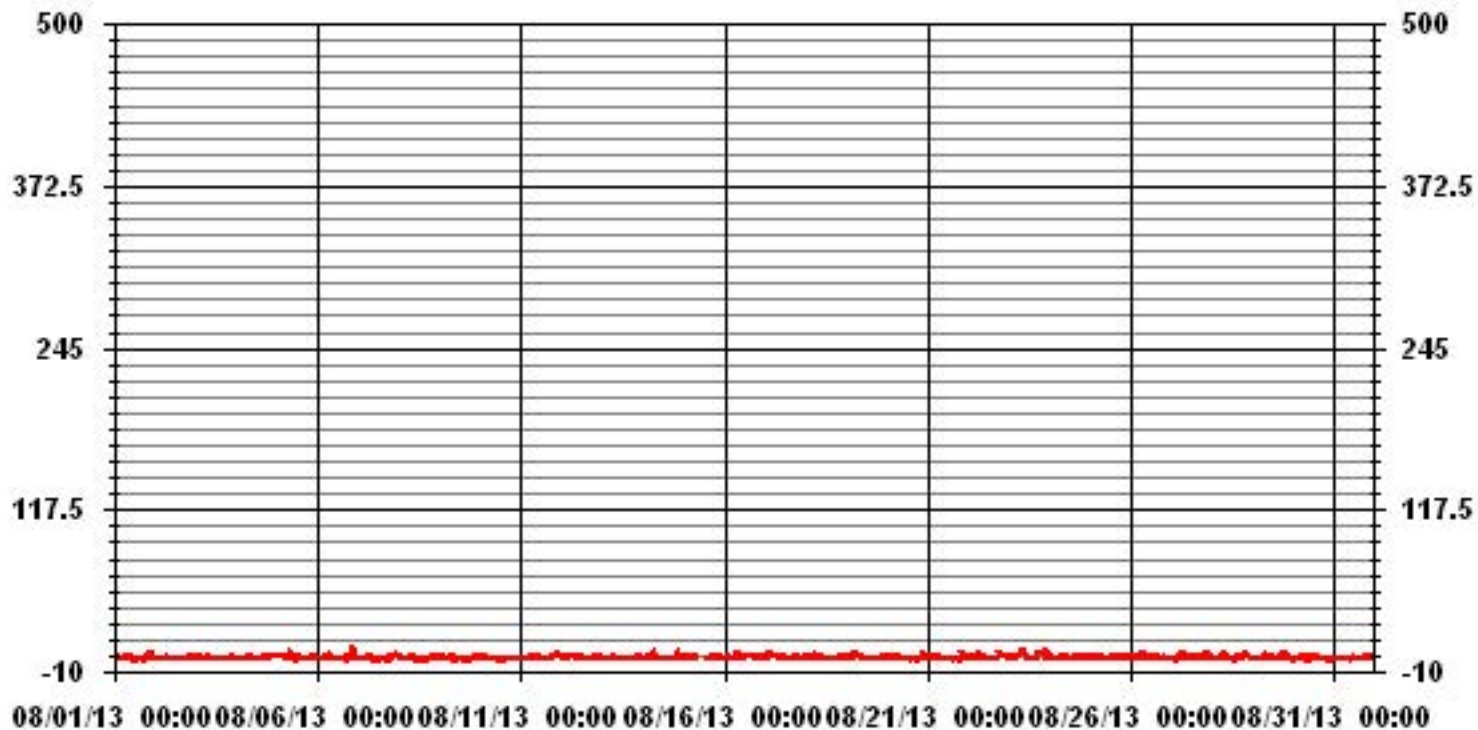
ALBERTA ENVIRONMENT: 1-HR 159 PPB

### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	698					
MAXIMUM 1-HR AVERAGE:	10.9	PPB	@ HOUR(S)	20	ON DAY(S)	6
MAXIMUM 24-HR AVERAGE:	3.1	PPB			ON DAY(S)	23
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	11	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	1.20		MONTHLY AVERAGE:	1.69	PPB	



### 01 Hour Averages



— LICA NO2\_ PPB



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2013

## NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	3	2.5	2	1.5	1.5	2	3	6.5	2.5	6.5	19.5	3	36	1.9	1.9	2	S	2	2	6.5	6	7.5	2	2	36	5.4	24	
2	10	1	1.5	1	2.5	2	3.5	2.6	2.5	2	1	1.5	3	1.5	1	S	2.5	1	2.5	2.5	9	4.5	2.5	2.5	10	2.8	24	
3	2	2	1.5	1.5	1	13	4	3.5	1.5	1	2.5	1	1.5	1.5	S	1	6.5	1	1	2.5	8	5.5	3	1.5	13	2.9	24	
4	2	1.5	1.5	1	1.5	2	2	1.5	1.5	1.5	1.5	2	2	S	1.5	2	6.5	2.5	4	3.5	4	3.5	3.5	3.5	6.5	2.4	24	
5	4	3.5	3.5	4.5	3	4	5	6	5.5	3.5	2.5	2	S	4.5	2.5	3	1.5	1.5	2	4	3	2.5	4	4	6	3.5	24	
6	1.5	1	1.5	3.5	2	6	1	7	2.5	1.5	1.5	S	1	2.5	2.5	3	3	1	13.5	4	55.5	45.9	2	2.5	55.5	7.2	24	
7	1.5	1	1	1.5	9.5	2.5	6	4.5	7	3	S	1.5	1	1	1.5	4.5	5.5	2	18	3	3	7	6.5	4.5	18	4.2	24	
8	2.5	2	1	1	2	4	3	6	5	S	2.5	2	1.5	1	2.5	2	1	1.5	4.5	12	6	5	2.5	3.5	12	3.2	24	
9	4	3	2.5	1.5	1.5	2	5.5	4	S	2.5	1.5	0.5	2.5	6	3	3	4.5	2.5	1.5	2	9.5	5	5	6.5	9.5	3.5	24	
10	9.5	2.5	3.5	1.5	7.5	3.5	4	S	2	1.5	7.5	2	1	0.5	0.5	1	1	1	1.5	2.5	3	2	1.5	2	9.5	2.7	24	
11	1	1.5	1	1.5	4	2	S	2.5	1.5	1.5	1.5	1.5	1.5	2.5	1	2	6	2.5	5.5	5	6	4.5	5	6	2.7	24		
12	4	3	2	3.5	4	S	5.5	3.5	2	3	6.5	4	6.5	1.5	5	5	2.5	1.5	4.5	8.5	8.5	3.5	4.5	3.5	8.5	4.2	24	
13	2.5	2	1	1	S	2.5	4	5.5	2	3.5	5	2.4	1	1.9	1.5	6	4	1.5	3	2.5	3.5	3	4.5	2.5	6	2.9	24	
14	1	1	1.5	S	3	3.5	8	2.5	2.5	3.5	4.5	1.5	3	3	11.5	3	1	2	1.5	6	7.5	3.5	4	5.5	11.5	3.7	24	
15	1.5	2	S	3	4	5	5.5	C	C	C	C	C	C	C	2.9	3.4	3.4	2.9	4.4	6.9	7.4	2.4	1.9	2.4	7.4	3.7	24	
16	2.4	S	2.4	1.9	1.4	1.9	4.9	5.9	2.9	7.4	9.4	2.4	7.4	3.9	3.4	2.9	4.9	3.4	2.9	3.4	3.9	4.4	4.4	3.4	9.4	4.0	24	
17	S	5	5.5	6	15	3.5	5	3	3.5	2	2.5	2.4	2.5	1.5	1	1.5	2	2	2	2.5	3	3	3.5	S	15	3.5	24	
18	3	2	2	3	7.5	3	2	9	5	3	4.5	1.5	1	1	1.5	2	1.5	1.5	1	2	3.5	3	S	5.5	9	3.0	24	
19	3	3	3.5	3.5	5	5	6	5.5	4	2.5	1.5	1	3.5	1	1.5	1.5	1	1	1.5	1.5	2.5	S	2	1.5	6	2.7	24	
20	2	2.5	2	2	2	2.5	2.5	C	C	C	C	0.7	1.2	1.7	0.8	3.2	0.7	0.2	0.7	3.2	S	6.2	7.2	3.7	7.2	2.4	24	
21	2.7	1.7	1.2	3.7	3.7	4.2	4.2	4.7	1.2	0.7	1.2	0.7	0.7	0.7	0.7	0.2	0.2	0.8	0.7	S	8.7	3.2	2.7	2.7	8.7	2.2	24	
22	1.7	1.7	2.2	1.7	4.2	4.7	19.7	15.7	3.7	3.2	2.2	2.2	2.2	1.2	1.7	1.7	1.2	1.7	S	18.8	6.8	9.8	4.3	2.8	19.7	5.0	24	
23	2.3	2.3	3.8	2.3	3.3	3.3	7.3	9.3	8.3	8.8	1.8	1.8	1.8	2.3	1.8	2.8	4.3	S	6.6	6.6	8.1	8.1	5.6	1.1	9.3	4.5	24	
24	1.1	1.1	0.6	1.1	0.6	2.1	4.6	3.6	3.1	2.1	2.1	2.1	1.1	1.6	2.1	1.1	S	4.5	1.5	6	4.5	3.5	3.5	3	6	2.5	24	
25	3	3	3.5	5.5	3	5.5	5.5	2.5	2.5	1.5	1.5	3.5	1.5	2.5	3.5	S	4.7	2.7	1.7	2.2	2.7	2.2	1.2	1.2	5.5	2.9	24	
26	1.2	1.7	2.7	3.2	2.7	2.7	4.2	5.7	7.7	19.2	20.7	5.2	2.7	1.7	S	4.6	4.1	1.6	2.1	5.1	1.6	1.6	1.1	0.6	20.7	4.5	24	
27	0.6	0.6	0.1	2.1	2.6	3.6	5.1	6.1	2.6	2.6	1.6	1.1	1.1	S	3.7	1.2	2.2	1.7	4.2	7.7	5.7	4.2	2.2	3.2	7.7	2.9	24	
28	2.7	1.2	0.7	2.2	2.7	2.2	8.2	7.7	3.2	2.2	7.2	1.7	S	1	1	1	2.5	3.5	4	5	9	7	3	1	9	3.5	24	
29	0.5	0.5	0.5	0.5	1	2	4.5	5	4.5	2	1	S	1.2	0.7	1.7	1.7	2.7	2.7	12.7	7.7	4.7	3.2	1.2	3.7	12.7	2.9	24	
30	0.2	1.2	1.7	3.2	2.2	2.7	2.2	7.7	16.7	3.7	S	3	1.5	2	1.5	1	1	1	1	1	0	0	0	0	16.7	2.4	24	
31	0.5	0	0.5	0.5	0	0	0	1	1.5	S	1.7	2.7	4.7	2.2	1.2	1.2	1.2	1.7	2.7	2.2	3.2	3.2	2.2	4.7	4.7	1.7	24	
HOURLY MAX	10.0	5.0	5.5	6.0	15.0	13.0	19.7	15.7	16.7	19.2	20.7	5.2	36.0	6.0	11.5	6.0	6.5	6.0	18.0	18.8	55.5	45.9	7.2	6.5				
HOURLY AVG	2.6	1.9	1.9	2.3	3.5	3.4	4.9	5.3	3.9	3.5	4.3	2.0	3.4	1.9	2.3	2.3	2.7	2.0	3.7	4.9	6.9	5.6	3.2	3.0				

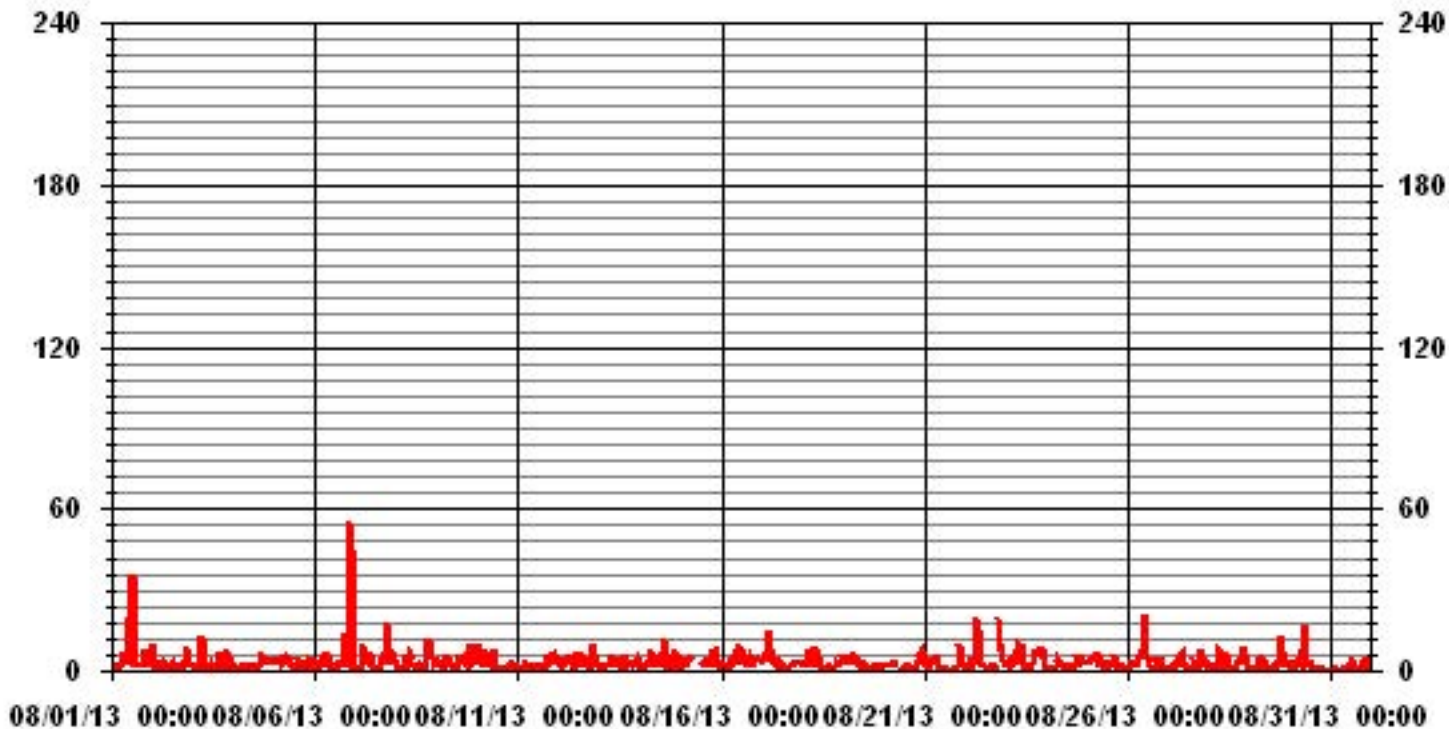
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	693					
MAXIMUM INSTANTANEOUS VALUE:	55.5	PPB	@ HOUR(S)	20	ON DAY(S)	6
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION:	3.92					

# 01 Hour Averages



LICA  
 NO2\_ / WD Joint Frequency Distribution (Percent)

August 2013

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	1.99	4.56	6.70	5.84	8.13	7.41	16.83	6.41	3.28	4.70	7.27	9.70	7.70	5.13	2.85	1.42	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.99	4.56	6.70	5.84	8.13	7.41	16.83	6.41	3.28	4.70	7.27	9.70	7.70	5.13	2.85	1.42	

Calm : .00 %

Total # Operational Hours : 701

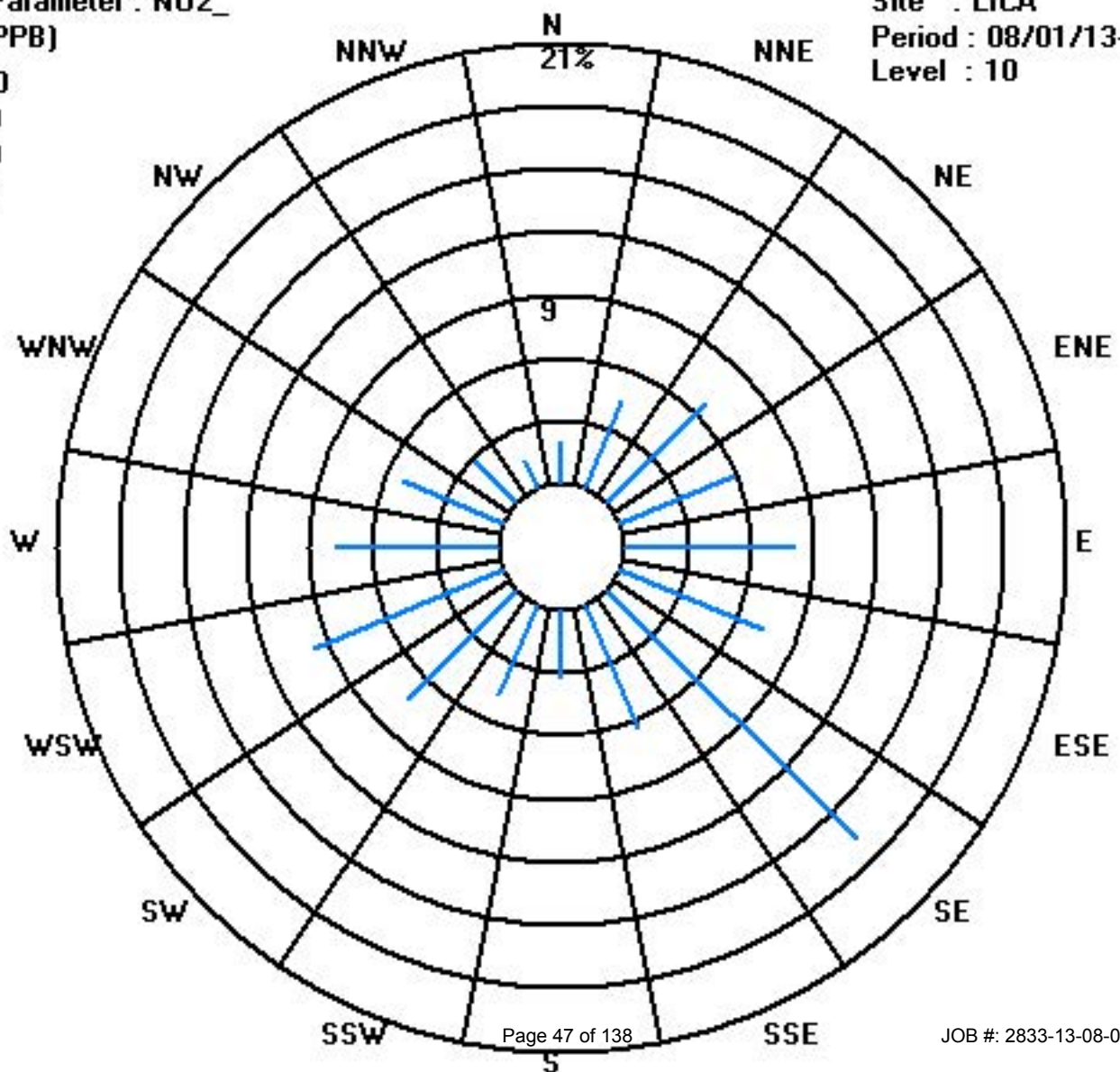
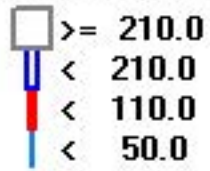
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	14	32	47	41	57	52	118	45	23	33	51	68	54	36	20	10	701
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	14	32	47	41	57	52	118	45	23	33	51	68	54	36	20	10	

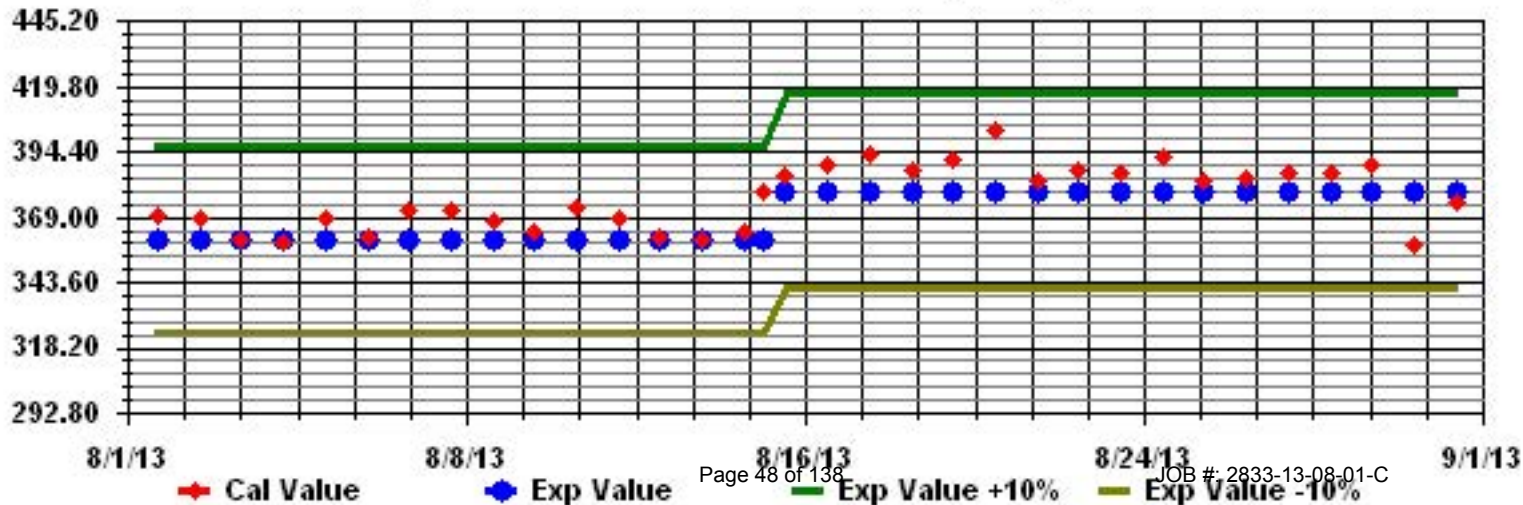
Calm : .00 %

Total # Operational Hours : 701

Class Limits (PPB)



Calibration Graph for Site: LICA Parameter: NO2\_ Sequence: NO2 Phase: SPAN



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**B]hf]WCI ]XY'**

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2013

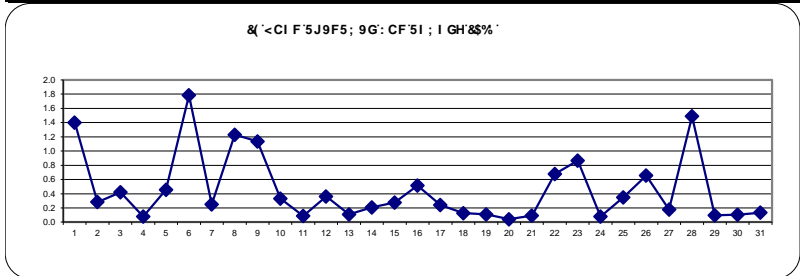
## NITRIC OXIDE hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.			
DAY																													
1	0.1	0.2	0.3	0.7	1.4	4.7	6.7	2.6	0.4	0.4	1.2	0.2	12.2	0	0.2	0.1	S	0.2	0.1	0.2	0.1	0.2	0	0	12.2	1.4	24		
2	0.5	0	0	0.1	0.4	0.9	1.9	1	0.6	0.5	0.1	0.1	0.2	0	0	S	0.1	0	0	0	0.1	0	0	0	1.9	0.3	24		
3	0	0.2	0	0.2	0.1	4.7	2.7	0.5	0.2	0	0.1	0.1	0.1	0	S	0	0.1	0	0	0	0.5	0.1	0.1	0	4.7	0.4	24		
4	0	0	0	0	0	0.6	0.9	0	0	0	0	0	0	0	S	0	0	0.2	0	0.1	0	0	0	0	0.9	0.1	24		
5	0	0.2	0.2	0.3	0.1	0.8	2.7	1.8	3.3	0.6	0	0.1	S	0.1	0	0.1	0	0	0	0	0	0	0.1	0.1	3.3	0.5	24		
6	0	0	0	0	0	0.9	0	2.4	0.4	0.1	0	S	0	0.1	0.1	0.1	0.1	0	1.3	0.1	21.9	13.5	0	0	21.9	1.8	24		
7	0	0	0	0	0.3	0.1	0.6	0.4	0.9	0.6	S	0.3	0.1	0.1	0.1	0.1	0.4	0.5	0.2	0.4	0	0	0.2	0.3	0.2	0.9	0.2	24	
8	0.3	0.1	0.2	0.3	1.1	3.1	10.1	8.4	2.9	S	0.1	0.1	0.1	0	0.1	0.4	0	0.2	0.4	0	0.3	0.3	0.2	0	0.1	10.1	1.2	24	
9	0.1	0.2	0.4	0.6	2.4	4.9	10.3	2	S	0.3	0.1	0	0	0.3	0.2	0.3	0.2	0.4	0	0	2.2	0.1	0.1	1	10.3	1.1	24		
10	2	0	0.4	0.1	0.8	1.8	1.7	S	0.4	0.1	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0.1	2	0.3	24		
11	0	0	0	0	0.1	0	S	0.1	0.1	0.1	0	0.1	0.1	0	0.1	0.1	0	0.3	0.1	0.3	0	0	0.2	0.3	0.3	0.1	24		
12	0.2	0.5	0.7	0.4	0.4	S	0.7	0.3	0.2	0.3	1.4	1	0.5	0.1	0.2	0.2	0.3	0.1	0.1	0.1	0.5	0	0.1	0	1.4	0.4	24		
13	0	0	0	0	S	0.1	0.3	0.6	0.1	0.2	0.4	0.1	0.1	0.2	0.1	0	0.1	0.1	0.1	0	0	0	0	0	0.6	0.1	24		
14	0	0	0	S	0	0.2	1.9	0.4	0.1	0.6	0.5	0	0.1	0.1	0.1	0.3	0	0	0	0.1	0.1	0	0.1	0.2	1.9	0.2	24		
15	0	0	S	0	0.5	2.6	1.3	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	2.6	0.3	24		
16	0	S	0.1	0.1	0.2	2.4	4.1	2.5	0.4	1	0.7	0	0.2	0.1	0	0	0	0	0	0	0	0	0	0	4.1	0.5	24		
17	S	0	0	0	1.4	0.6	1.7	1.1	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1.7	0.2	24	
18	0	0	0	0	0.4	0	0.2	0.8	0.8	0.5	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.8	0.1	24
19	0	0	0	0	0	0	0.3	0.9	0.5	0.5	0.2	0	0	0	0	0	0.1	0	0	0	0	0	S	0	0.9	0.1	24		
20	0	0	0	0	0	0	0.3	C	C	C	C	C	0	0	0.4	0	0.1	0	0	0	0	S	0	0	0.4	0.0	24		
21	0	0	0	0	0	0	0.3	1	0.4	0	0.1	0	0	0	0	0	0	0	0	0	S	0.1	0	0.1	1	0.1	24		
22	0	0	0	0.1	1	3	7.4	1.4	1.1	0.9	0.2	0	0	0	0	0	0	0	S	0.2	0	0.3	0	0	7.4	0.7	24		
23	0	0	0	0.2	0.5	1.9	5.5	6	3.4	1.8	0.1	0.1	0.1	0	0	0.2	0.1	S	0	0	0	0	0	0	6	0.9	24		
24	0	0	0	0	0	0	0.5	0.5	0.2	0.1	0.1	0	0	0	0	0	S	0.3	0	0	0	0	0	0.1	0.5	0.1	24		
25	0.1	0	0.4	1.4	0.9	2.1	3	0.1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	3	0.3	24		
26	0	0	0	0.2	0.6	2.7	3.1	2.1	2.3	1.5	1.4	0.2	0	0	S	0.5	0.4	0	0.1	0	0	0	0	0	3.1	0.7	24		
27	0	0	0	0.4	0	0	0.4	0.8	0.3	0.4	0.1	0	0	0	S	0.1	0	0	0.1	0.2	0.2	0.2	0.4	0.5	0.8	0.2	24		
28	0.4	1.2	1	1.7	2.8	4.6	11	9.2	0.9	0.4	0.2	0	S	0.1	0	0.1	0.2	0.1	0	0	0.3	0	0	0	11	1.5	24		
29	0	0	0	0	0	0	0.1	0.6	0.5	0.2	0.2	S	0	0	0	0	0.1	0.1	0.4	0	0	0	0	0	0.6	0.1	24		
30	0	0	0	0.2	0	0	0.1	0.7	0.6	0.5	S	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0.7	0.1	24		
31	0	0	0	0	0	0	0	0	0.1	S	0.4	1.3	0.4	0	0	0	0	0	0	0	0	0.2	0.3	0.4	1.3	0.1	24		
HOURLY MAX	2	1	1	2	3	5	11	9	3	2	1	1	12	0	0	1	1	0	1	0	22	14	0	1					
HOURLY AVG	0.1	0.1	0.1	0.2	0.5	1.4	2.7	1.7	0.8	0.4	0.3	0.1	0.5	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.9	0.5	0.1	0.1					

### STATUS FLAG CODES

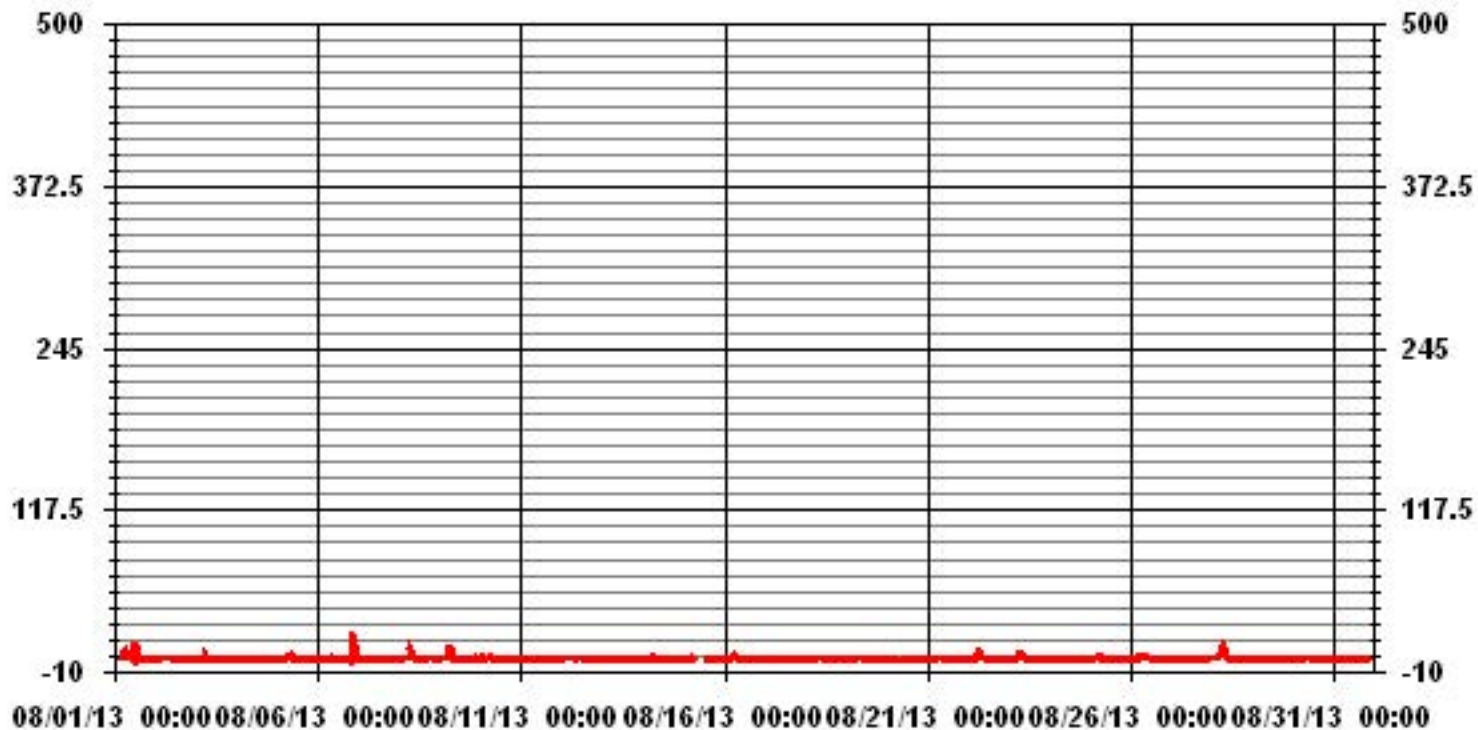
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	346					
MAXIMUM 1-HR AVERAGE:	21.9	PPB	@ HOUR(S)	20	ON DAY(S)	6
MAXIMUM 24-HR AVERAGE:	1.8	PPB			ON DAY(S)	6
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	11	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	1.55		MONTHLY AVERAGE:	0.46	PPB	

### 01 Hour Averages





# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2013

## 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 MAX.	24-HOUR AVG.	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	0.5	1	1	1.5	3	5.5	8.5	7	1.2	2.5	28	2.5	224	0.5	2	1	S	2.5	0.5	2	3	1	0	0	224	13.0	24	
2	14.5	0	1	1	1	2	9	2.5	2.5	8.5	2.5	3.5	4	0.5	0.5	S	3	0	0.5	0	1	0.5	0	0.5	14.5	2.5	24	
3	0.5	1	0.5	1	0.5	91.5	14	3.5	0.5	0.1	1.5	1	2	1	S	0	1.5	0.5	0	1.5	10.5	4	1.5	0	91.5	6.0	24	
4	0.5	0	0.5	0	0.5	1.5	2.5	0.5	0	0	0.5	0.5	0.5	S	0	0	1.5	0.5	0.5	0.5	0	0	0.1	0.2	2.5	0.5	24	
5	0.5	1.5	0.5	1	1.5	2.5	3.5	2.5	4	3	0.5	1	S	1	0	2	0	0	0.5	0	0.1	0	1	0.5	4	1.2	24	
6	0	0	0	0	0.5	15.5	0	13.5	1	1	0	S	0	2	1	0.5	1	0	28.5	1.5	82.5	67.5	0	0	82.5	9.4	24	
7	0	0	0	0.5	2.5	0.5	11.5	1	5.5	7	S	7	1.5	1	0.5	4.5	3	2	3.5	0	0	1.5	0.5	1	11.5	2.4	24	
8	1	0.5	1	0.5	3	10.5	20.5	13	8	S	2	2.5	1	0	1	9.5	0	1	5.5	6	2.5	0.5	0	0.5	20.5	3.9	24	
9	1	0.5	1	2	16.5	10	18	8.5	S	4	1	0.5	1	7.5	4	4	3.5	7	0.5	0.1	51.5	0.5	2	14.5	51.5	6.9	24	
10	33.5	0	1.5	1	9	8.5	3.5	S	2	0.5	1.5	0.5	0	1	0	0.5	0	0	0	0	0	0	0	0.5	33.5	2.8	24	
11	0	0	0	0	2.5	0.5	S	0.5	1.5	0	0.5	1	0.5	1	1	0	5.5	1.5	4	0	0.5	1	1	5.5	1.0	24		
12	1	1	3	6	1.5	S	2	1	2	1.5	8	5.5	4	1.5	3	3	5	0.5	1.5	1.5	9.5	0.6	1	0.5	9.5	2.8	24	
13	0.1	0	0	0	S	0.5	5	5	0.5	4	5	1	1	4.5	1	0	2	2	1	0	0	0	0.5	0	5	1.4	24	
14	0	0.2	0	S	0.5	1	9	3.5	1.5	4	10	1	2	1	2	4.5	0.5	0	0	1	0.5	0	0.5	3	10	2.0	24	
15	0	0.1	S	0	4	5	6	C	C	C	C	C	C	C	0.5	0.5	1	0	0	0	0	0	0	0.5	6	1.1	24	
16	0.5	S	0.5	1	1.5	8.5	7.5	8.5	0.5	2	3.5	0	4	2	0.5	0	0.5	0	0	0	0	0	0	0.5	8.5	1.8	24	
17	S	0.5	0	0	23.5	1.5	5	2	1.5	1.5	0.5	0	0	0.5	0	0	0	0	0	0	0	0	0	1	S	23.5	1.7	24
18	0.5	0.5	0.5	0.5	6	0.5	0.5	3	3	0.5	2.5	0	0	0	0	1	0	0	0	0	0	0	0	S	0	6	0.8	24
19	0	0	0	0	0	0	0.5	2.5	1	1	0.5	0	0.5	0.5	0	0.5	3	0	0	0	0	0	S	0	3	0.4	24	
20	0	0	0	0	0	0	0.5	C	C	C	C	0	1	4.5	0	2	0	0	0	0	0	0	S	0	0	4.5	0.4	24
21	0	0	0	0	0	0	0.5	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0	0	0	0.1	S	3.5	0	1	0.5	3.5	0.5	24	
22	0.5	0	0.5	0.5	4.5	5.5	54	32	1.5	1	0.5	0	1.5	0	0.5	0	0	0.5	S	6	0.5	8	0	0.5	54	5.1	24	
23	0	0.5	0	2.5	1	3	13.5	12.5	5.5	4	1.5	1.5	1	1	0.5	6.5	3.5	S	0	0.5	0.5	0	0	0	13.5	2.6	24	
24	0	0	0	0	0	0.5	1.5	3.5	1	0.5	1	0.5	0	0	0.5	1	S	9	0	0	0.1	0.5	1	0.5	9	0.9	24	
25	1	0.5	1	14.5	2.5	7.5	5.5	1.6	0.5	0.5	0	1	0	0	0.5	S	0.5	0	0	0	0	0	0	0	14.5	1.6	24	
26	0	0.5	0.5	0.5	1	4.5	6.5	4	10	25	23.5	3.5	1.5	0	S	1.5	1.5	1	1	0.5	0.5	0.5	0.5	0.5	25	3.8	24	
27	0.5	0.5	0	10	0.5	0	1.5	1.5	1	1	0.5	0	0.5	S	2	0	0.5	0	2	2.5	1	0.5	1.5	1.5	10	1.3	24	
28	2.5	3	1.5	4	6	7	19.5	15	6	3	3.5	0.5	S	2.5	0	4	1.5	1.5	0	0.5	8	3.5	0	0.5	19.5	4.1	24	
29	0	0	0.5	0.5	0.5	0.5	1	1	3	2	2	S	0.5	0.5	0.5	0.5	1	0.5	6.5	0.5	0	1	0	0.5	6.5	1.0	24	
30	0	0.5	0	3	0.5	1.5	1.5	11	12.5	14.5	S	2.5	0.5	0.5	0	0	1.5	0	0	0	0	0	0.1	0	14.5	2.2	24	
31	0	0	0	0	0	0	0	0	0.5	S	1	1.5	1	1.5	0	0	0	0	0	0	0	1	1	5.5	5.5	0.6	24	
HOURLY MAX	33.5	3.0	3.0	14.5	23.5	91.5	54.0	32.0	12.5	25.0	28.0	7.0	224.0	7.5	4.0	9.5	5.0	9.0	28.5	6.0	82.5	67.5	2.0	14.5				
HOURLY AVG	2.0	0.4	0.5	1.7	3.1	6.5	7.7	5.8	2.8	3.5	3.8	1.4	9.1	1.3	0.8	1.7	1.2	1.1	1.8	1.0	5.8	3.1	0.5	1.1				

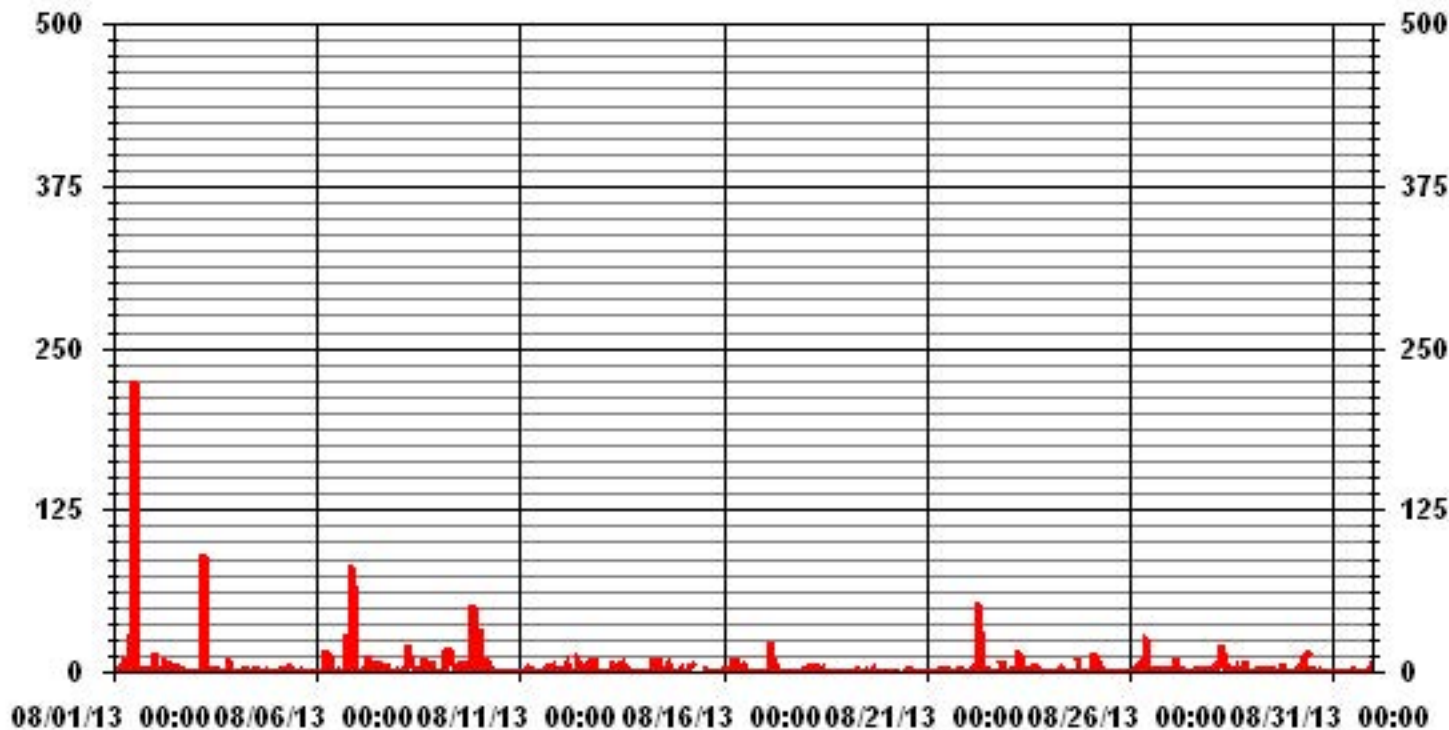
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	483					
MAXIMUM INSTANTANEOUS VALUE:	224.0	PPB	@ HOUR(S)	12	ON DAY(S)	1
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION:	10.93					

### 01 Hour Averages



LICA  
 NO\_ / WD Joint Frequency Distribution (Percent)

August 2013

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	1.99	4.56	6.70	5.84	8.13	7.41	16.83	6.41	3.28	4.70	7.27	9.70	7.70	5.13	2.85	1.42	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.99	4.56	6.70	5.84	8.13	7.41	16.83	6.41	3.28	4.70	7.27	9.70	7.70	5.13	2.85	1.42	

Calm : .00 %

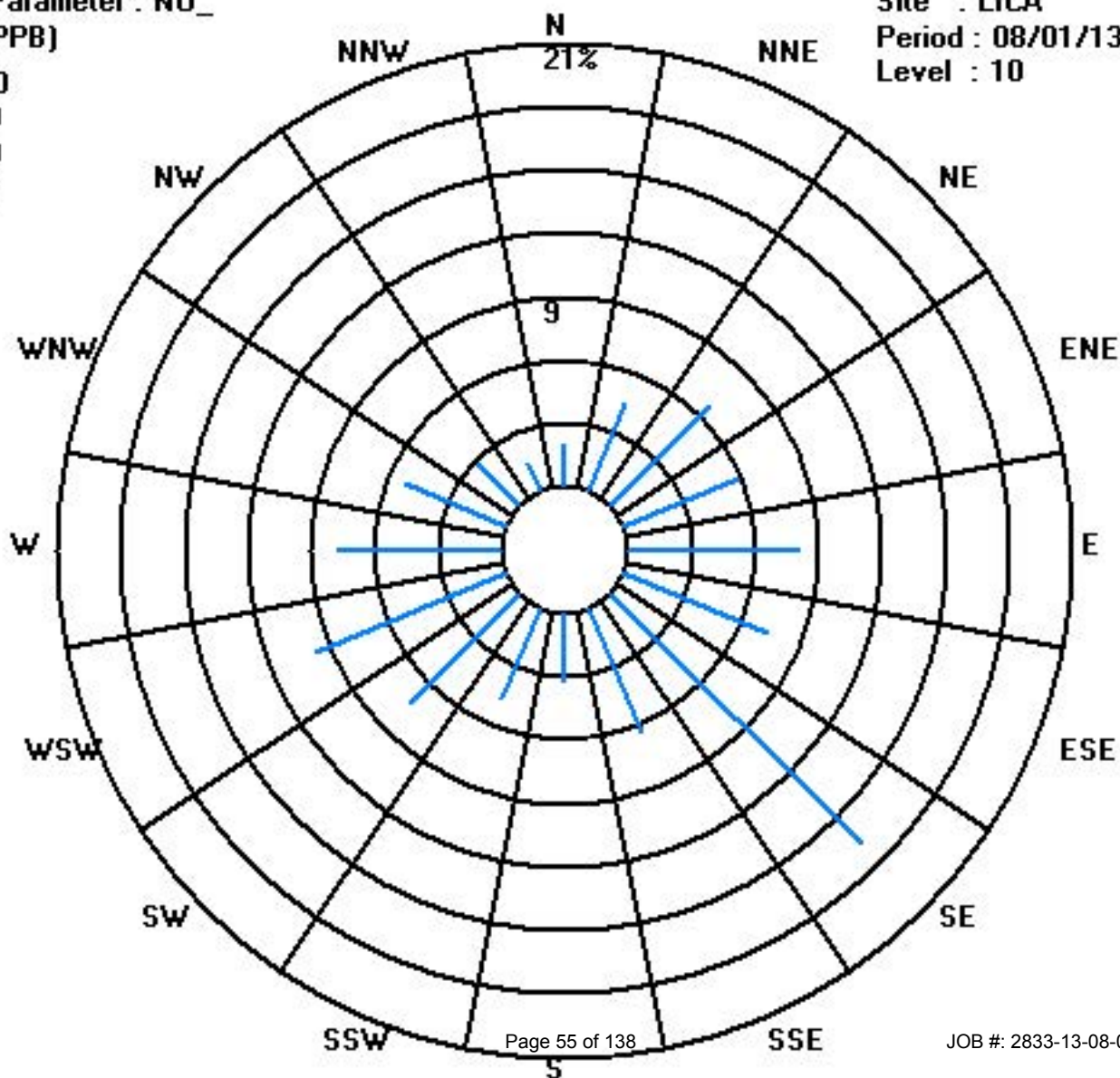
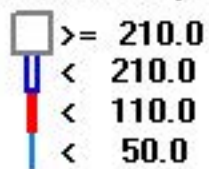
Total # Operational Hours : 701

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	14	32	47	41	57	52	118	45	23	33	51	68	54	36	20	10	701
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	14	32	47	41	57	52	118	45	23	33	51	68	54	36	20	10	

Calm : .00 %

Total # Operational Hours : 701



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- 
- 
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CI ]XYg'cZB]hfc[ Yb'

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2013

## OXIDES OF NITROGEN hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1		2.3	2.1	1.8	1.6	2.7	5.7	8.8	5.4	1.8	1.8	2.7	1.1	12.2	1.1	1	1	S	0.9	1.1	3.3	4	4.8	0.8	0.9	12.2	3.0	24
2		1.9	0.6	0.6	0.7	1.9	2	3.7	2.5	1.5	1.1	0.5	0.5	0.8	0.3	0.3	S	0.7	0.6	0.7	1	3.4	2.7	2.1	1.6	3.7	1.4	24
3		1.3	1.7	1.2	1.3	0.7	5.4	4.9	1.7	1.4	0.8	0.8	0.5	0.6	0.5	S	0.6	0.8	0.6	0.5	0.7	2.4	2.2	1.7	0.8	5.4	1.4	24
4		1.2	0.8	1	0.7	0.7	1.9	2.4	1.3	1.2	1.2	1	0.7	0.6	S	0.7	0.6	2.3	1.7	2.8	2.4	2.7	2.8	2.5	2.8	2.8	1.6	24
5		2.8	2.7	2.9	2.8	2.7	3.2	5.3	7.2	7	2.8	1.8	1.1	S	1.7	1.5	1.1	0.8	0.7	1.3	2.3	2.2	1.7	1.7	1.6	7.2	2.6	24
6		1.1	0.7	0.9	1.6	1.2	2.1	0.9	5.6	2	1	1.1	S	0.8	1	1	1.6	1.4	0.7	3.5	3.1	32.8	18.8	1	1	32.8	3.7	24
7		0.9	0.5	0.5	0.6	2.2	1.6	3.2	3.5	2.4	1.2	S	0.9	0.6	0.4	0.5	1	1.5	0.8	2.4	1.6	2.4	3.5	4.8	3.7	4.8	1.8	24
8		2.2	1.4	1	1	2.2	3.9	11.7	11.6	6.6	S	0.5	0.3	0.3	0.1	0.4	0.6	0.1	0.4	1.2	2.4	3.7	2.7	2	2.8	11.7	2.6	24
9		2.8	2.3	2.1	2	3.3	5.8	12.8	4.2	S	0.9	0.3	0.3	0.3	0.6	0.4	0.8	0.8	0.5	0.3	1.2	4.8	3.1	3.2	4.9	12.8	2.5	24
10		5	1.8	2.3	1.3	2	3.1	3.7	S	1.6	1	0.9	0.1	0.1	0.2	0.5	0.5	0.5	0.6	1.2	1.9	1.1	1	1.4	5.0	1.4	24	
11		0.8	0.9	0.9	1	1.4	1.5	S	1.7	1.5	1.2	1.1	1.1	1	0.7	1.2	0.7	1.2	2.1	1.8	2.6	3.1	4.5	3.3	3.8	4.5	1.7	24
12		2.5	1.8	1.6	2.1	3.1	S	3.6	2.6	1.8	2.1	4.4	3.4	2.1	0.7	1	1.2	1	0.7	1	3.6	4.6	2.6	3.2	2.5	4.6	2.3	24
13		1.3	1	0.6	0.6	S	1.4	1.8	2.4	1	0.8	1.2	0.7	0.6	0.6	0.6	0.9	1.1	1	1.1	1.3	2.2	2.1	2.2	1.7	2.4	1.2	24
14		0.7	0.7	1	S	1.7	2	6.1	2	1.6	2.1	1.6	0.7	0.9	0.9	1.1	1	0.6	0.7	1	2.1	4.6	1.9	1.3	1.8	6.1	1.7	24
15		1.1	1.3	S	2.2	3.4	6.1	4.2	C	C	C	C	C	C	C	1.8	2.2	2.2	2.2	2.7	3.6	2	1.2	1.2	1.2	6.1	2.4	24
16		1.1	S	1.9	1.6	1.2	3.7	7.5	6	2.9	5.9	4.5	1.6	2.8	2.6	2.4	2.4	2.9	2.4	1.9	2.1	2.8	3.1	3.5	2.5	7.5	3.0	24
17		S	3.2	5	5.1	6.2	3.5	4.4	3.6	2.4	1.7	1.5	1.8	1.8	1.1	0.8	0.7	1.1	1.4	1.5	1.7	1.9	2.3	1.9	S	6.2	2.5	24
18		1.9	1.4	1.3	1.9	4.1	2.3	1.8	3.5	3.4	2.6	2.4	1	0.6	0.7	0.7	0.6	0.7	0.7	0.9	1.3	2.5	2.3	S	2.6	4.1	1.8	24
19		2.1	1.6	2.2	2.3	3.4	3.8	4.4	4.4	3.3	1.9	1.3	0.8	1	0.5	0.9	0.7	0.7	0.7	0.5	0.7	1.4	S	1.5	1.3	4.4	1.8	24
20		1.2	1.6	1.5	1.6	1	2	2.1	C	C	C	C	0.5	0.6	1.1	0.3	0.6	0.3	0	0.3	1.6	S	4.6	4	2.7	4.6	1.5	24
21		1.8	1.5	1.1	1.5	2	2.8	3	3.6	1.5	0.9	0.9	0.6	0.6	0.3	0.2	0.4	0.3	0.2	S	5.1	2.1	2.2	2.3	5.1	1.5	24	
22		1.5	1.6	1.8	1.6	3	6.2	12.4	4.1	4.2	3.8	2	1.1	1	0.7	0.9	0.9	0.9	0.9	S	6	4.1	3.7	3	2.5	12.4	3.0	24
23		2.1	1.7	2.1	2.1	3.3	4.6	9.3	12.7	10.4	6.9	1.3	1.3	1	1	0.8	1.5	3.1	S	5.3	5.4	6.7	6.6	1.9	0.9	12.7	4.0	24
24		1	1	0.5	0.6	0.6	1.3	3.5	3	2.1	1.8	2.1	1.6	1	1.5	1.6	1.1	S	1.4	1	2.5	2.6	2.6	2.3	2.4	3.5	1.7	24
25		2.1	2.8	3.2	4	3	4.5	6.4	2	1.6	1.1	1.1	1.6	1.3	1.6	1.7	S	2.4	2.1	1.3	1.5	1.7	1.8	1	1	6.4	2.2	24
26		1.1	1.5	2.4	2.8	2.9	4.8	7	6.2	6	3.8	3.8	1.7	1.1	1.3	S	3.5	3	1.3	1.8	3.3	1.5	1	0.6	0.5	7.0	2.7	24
27		0.4	0.4	0.3	1.2	1.5	2.2	5	5.5	2.6	2.2	1.3	1	1.1	S	1.4	1.1	1.5	1.7	2.9	4.7	5.1	3.1	2.2	2.4	5.5	2.2	24
28		2.3	2.4	1.9	2.9	4.7	6.3	13.4	13.6	2.7	1.8	1.7	1.1	S	0.8	1.1	1.1	2.4	2.1	2.6	4.2	5.6	3.7	1.1	0.7	13.6	3.5	24
29		0.6	0.5	0.4	0.6	0.7	1	2.6	4.4	2.5	1.4	1.1	S	1	1	0.8	1.4	1.7	2	4.3	4.5	2.5	1.7	0.7	1.1	4.5	1.7	24
30		0.2	0.6	0.9	1.3	1.3	1.9	1.6	3	2.4	1.3	S	2.1	1.5	1.8	1.4	1.1	1	0.5	0.7	0.5	0.1	0.1	0.1	0.4	3.0	1.1	24
31		0.4	0.5	0.5	0.5	0.4	0.5	0.5	0.7	1.4	S	1.8	3.7	2.7	1.3	0.6	0.9	0.8	0.8	1.3	1.6	2.6	2.7	2.2	2.8	3.7	1.4	24
HOURLY MAX		5.0	3.2	5.0	5.1	6.2	6.3	13.4	13.6	10.4	6.9	4.5	3.7	12.2	2.6	2.4	3.5	3.1	2.4	5.3	6.0	32.8	18.8	4.8	4.9			
HOURLY AVG		1.6	1.4	1.5	1.7	2.3	3.2	5.3	4.6	2.9	2.0	1.7	1.2	1.4	0.9	0.9	1.1	1.3	1.1	1.6	2.5	4.1	3.2	2.0	2.0			

### STATUS FLAG CODES

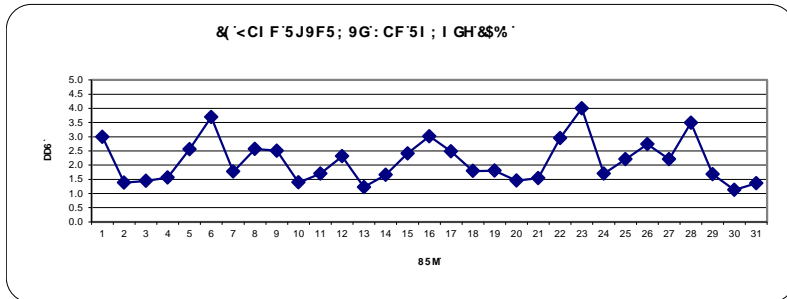
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

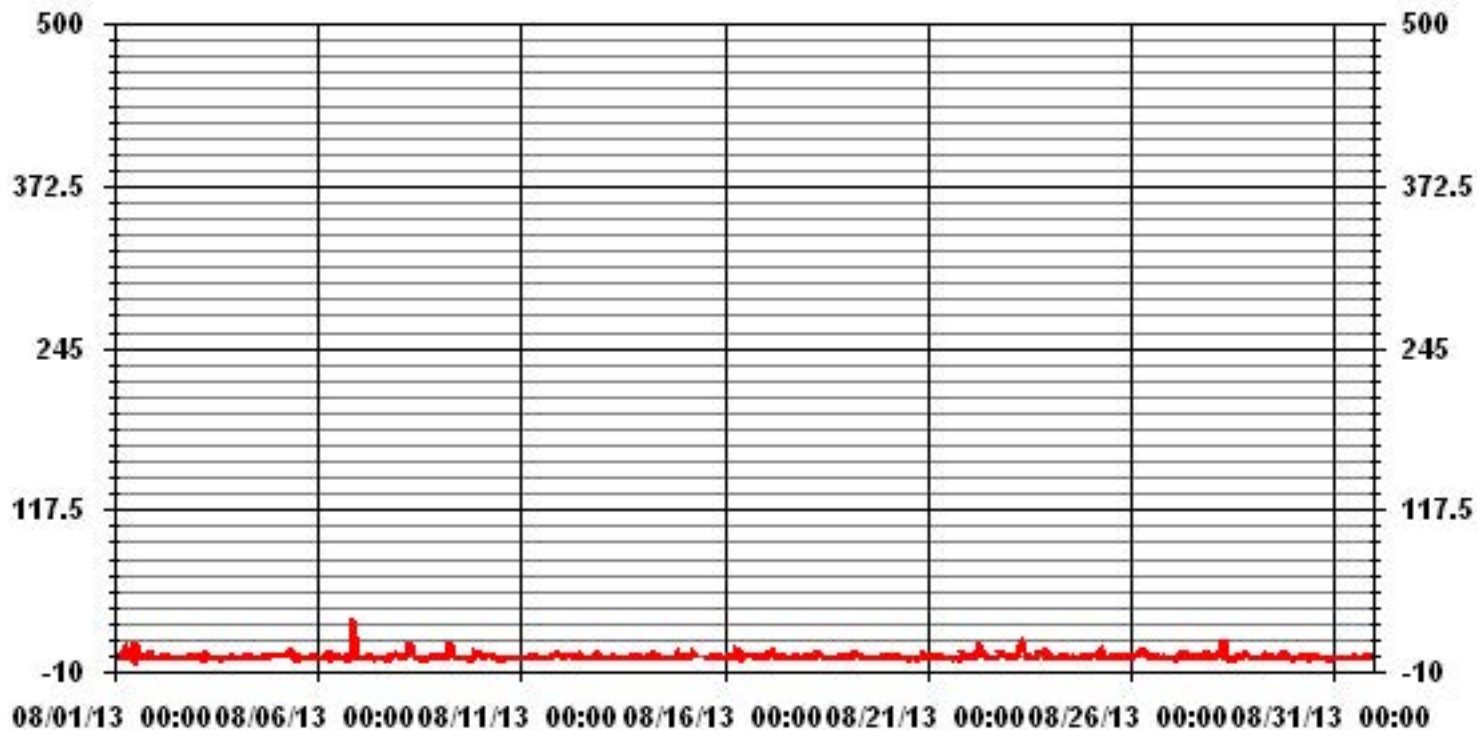
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	57	PPB
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### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	700		
MAXIMUM 1-HR AVERAGE:	32.8 PPB @ HOUR(S) 20 ON DAY(S) 6		
MAXIMUM 24-HR AVERAGE:	4.0 PPB ON DAY(S) 23		
	VAR-VARIOUS		
IZS CALIBRATION TIME:	32 HRS	OPERATIONAL TIME:	744 HRS
MONTHLY CALIBRATION TIME:	11 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	2.28	MONTHLY AVERAGE:	2.15 PPB



### 01 Hour Averages



— LICA NOX\_ PPB

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2013

## OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY MAX.	24-HOUR AVG.	RDGS.
1	3.5	3	2.5	2.5	4.5	7	11.5	13	3.5	9	40.4	5	<b>133.5</b>	2.5	3	2.5	<b>S</b>	3.5	2	7.5	7	8	2	2	<b>133.5</b>	12.1	24	
2	22	1	2.5	1.5	3.5	3.5	12	4	4.5	4	2.5	3.5	4.5	1.5	1	<b>S</b>	3	1	3	3	10	5	2.5	2.5	22	4.4	24	
3	2.5	3	1.5	2.5	1.5	98	18	6	2	1.5	3.5	1.5	3	2.5	<b>S</b>	1	8.5	1.5	1	3.5	18.5	10	4	1	98	8.5	24	
4	2	1.5	2	1.5	1.5	3.5	4.5	1.5	1.5	1.5	2	2.5	2	<b>S</b>	1.5	2	7.5	3	4.5	4	4	3.5	3	3.5	7.5	2.8	24	
5	4	4	4	5	3.5	4.5	7.5	8	9	6.5	3	2.5	<b>S</b>	5.5	3	5	1.5	1.5	2.5	3.5	3	2.5	5	4.5	9	4.3	24	
6	2	1.5	1.5	3	2.5	18	1.5	20	3	2	1.5	<b>S</b>	1	3	3.5	3.5	1	41	6	122	88	2	2.5	122	14.5	24		
7	1.2	1	1	1.5	11.5	2.5	13.5	5	8.5	4	<b>S</b>	6	2	1	2	7.5	8.5	3.5	20	3	3.5	8.5	7	5	20	5.5	24	
8	3	2	2	1.5	4.5	13.5	23	17.5	13	<b>S</b>	4.5	3	2.5	1.5	3.5	8	1	2	8	13.5	7	5	2.5	4	23	6.3	24	
9	4	3	2.5	3.5	14.5	12	21.5	12	<b>S</b>	5	2.5	1	3.5	13.5	7	6	6	7	1.5	2	59.5	5.5	7	21	59.5	9.6	24	
10	43	2.5	5	2.5	16.5	11.5	7	<b>S</b>	3	2	9	2.5	1	0.5	0.5	1.5	1	1	1.5	2	3	1.5	1	2.5	43	5.3	24	
11	1	1	1.5	2	6	2.5	<b>S</b>	3.5	2	3	2	2	1.5	2	2.5	1.5	2	10.5	2.5	9	5	6.5	5	6	10.5	3.5	24	
12	4	3.5	4.5	7	4.5	<b>S</b>	7	4.5	3	4	12	9.5	7	2	7.5	7.5	4.5	2	6	9.5	17.5	3.5	4.5	3.5	17.5	6.0	24	
13	2.5	2	1	1	<b>S</b>	3	5.5	8.5	2.5	4.5	8.5	3	1.5	3.5	1.5	6	6	2.5	3.5	3	3.5	3	5	2.5	8.5	3.6	24	
14	1	1	1	<b>S</b>	3	4.5	17	3.5	4	6.5	10	2.5	5	3.5	12	4.5	1.5	2	1.5	7	8	3	4.5	8.5	17	5.0	24	
15	1.5	1.5	<b>S</b>	3	7	8.5	10.5	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	3	4	4.5	3	4.5	7	7.5	2.5	2	3	10.5	4.6	24	
16	3	<b>S</b>	2.5	3	3	10	12.5	<b>C</b>	3.5	9	11	2.5	11.5	5.5	3.5	3	5.5	3.5	3	3.5	4	4.5	4.5	3.5	13	5.6	24	
17	<b>S</b>	4.5	5.5	6	38.5	4.5	9.5	4.5	5	3	3	2	2	1.5	1	1.5	2	2	2	2.5	2.5	3	3.5	<b>S</b>	38.5	5.0	24	
18	2.5	2.5	2.5	3	12.5	3	2.5	12	8	3.5	6.5	1.5	1	1	1	3	1.5	1.5	1	1.5	3.5	3	<b>S</b>	5.5	12.5	3.6	24	
19	3	3	3	3.5	5	5	6.5	8	5	3	2	1	4	1.5	1.5	1.5	2.5	1	1	1	2.5	<b>S</b>	2	1.5	8	3.0	24	
20	2	2	2	2	2	2.5	2.5	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	1	2.5	5	1	5	1	0.5	0.5	3.5	<b>S</b>	6.5	7	4	7	2.8	24	
21	3	2	1.5	3.5	3.5	4.5	4.5	7	2	1.5	2	1.5	1	1.5	1.5	0.5	0.5	0.5	0.5	<b>S</b>	12.5	3.5	4	3	12.5	2.8	24	
22	2	2	2.5	2.5	7.5	10	73	48	5.5	4.5	3	3	3.5	1.5	2	2.5	1.5	2.5	<b>S</b>	24.5	6.5	18.5	4.5	3.5	73	10.2	24	
23	3	2	4	5	4.6	6	19.5	18.5	14	13	3.5	2.5	2.5	3.5	2.5	7	7	<b>S</b>	7	7.5	8.5	8.5	6	1.5	19.5	6.8	24	
24	1.5	1	1	1.5	1	3	6.5	6.5	4	3	3.5	2.5	1.5	2	2.5	2.5	<b>S</b>	9	1.5	5.5	4.5	3.5	3.5	3	9	3.2	24	
25	3.5	3.5	4.5	16.5	5	13	10	3	3	1.5	1.5	4.5	1.5	2.5	4	<b>S</b>	6	2.5	2	2	2.5	2.5	1.5	1.5	16.5	4.3	24	
26	1.5	2	3	3.5	3.5	7	9.5	9	17.5	44	42	9	4.5	2	<b>S</b>	6	6	2.5	3.5	5.5	2	2.5	2	1.5	44	8.2	24	
27	1	1.5	0.5	8.5	3	4	7	8	4	4	2	1.5	1.5	<b>S</b>	5.5	1.5	3	2.5	6	10.5	7	4.5	4	4.5	10.5	4.2	24	
28	4	4	3	6	8.5	9.5	23.5	23	6.5	3	10	2.5	<b>S</b>	3	1.5	2	4	5.5	4.5	5.5	17	11	3.5	2.5	23.5	7.1	24	
29	1.5	1	1	1	2	3	5	6.5	8	4	3	<b>S</b>	1.5	1.5	2.5	2.5	4	3.5	19	8.5	5	4.5	1.5	4.5	19	4.1	24	
30	0.5	2	2	5.5	2.5	3.5	3	18.5	28.5	17.5	<b>S</b>	6	2.5	3	2	1.5	2	1.5	1.5	1	0.5	0.5	0.5	0.5	28.5	4.6	24	
31	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.5	2.5	<b>S</b>	3	4.5	6	4	1.5	1.5	2	2	3	2.5	3.5	4	2.5	10.5	10.5	2.5	24	
HOURLY MAX	43.0	4.5	5.5	16.5	38.5	98.0	73.0	48.0	28.5	44.0	42.0	9.5	133.5	13.5	12.0	8.0	8.5	10.5	41.0	24.5	122.0	88.0	7.0	21.0				
HOURLY AVG	4.3	2.2	2.4	3.7	6.2	9.4	11.9	10.5	6.3	6.2	7.3	3.2	7.7	2.9	2.9	3.5	3.7	2.9	5.3	5.6	12.0	7.9	3.6	4.1				

**STATUS FLAG CODES**

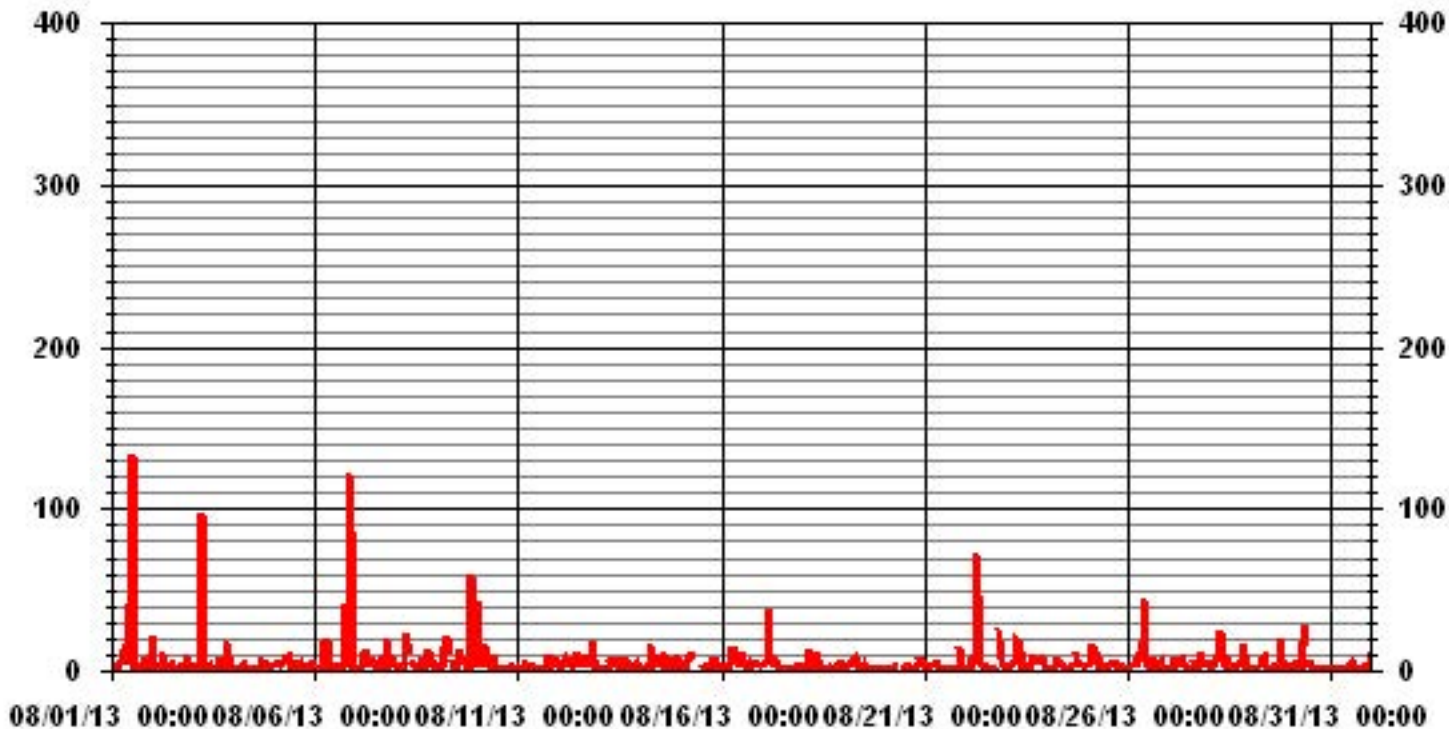
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	701					
MAXIMUM INSTANTANEOUS VALUE:	133.5	PPB	@ HOUR(S)	12	ON DAY(S)	1
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION:	10.33					



### 01 Hour Averages



LICA  
 NOX\_ / WD Joint Frequency Distribution (Percent)

August 2013

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	1.99	4.56	6.70	5.84	8.13	7.41	16.83	6.41	3.28	4.70	7.27	9.70	7.70	5.13	2.85	1.42	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.99	4.56	6.70	5.84	8.13	7.41	16.83	6.41	3.28	4.70	7.27	9.70	7.70	5.13	2.85	1.42	

Calm : .00 %

Total # Operational Hours : 701

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	14	32	47	41	57	52	118	45	23	33	51	68	54	36	20	10	701
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	14	32	47	41	57	52	118	45	23	33	51	68	54	36	20	10	

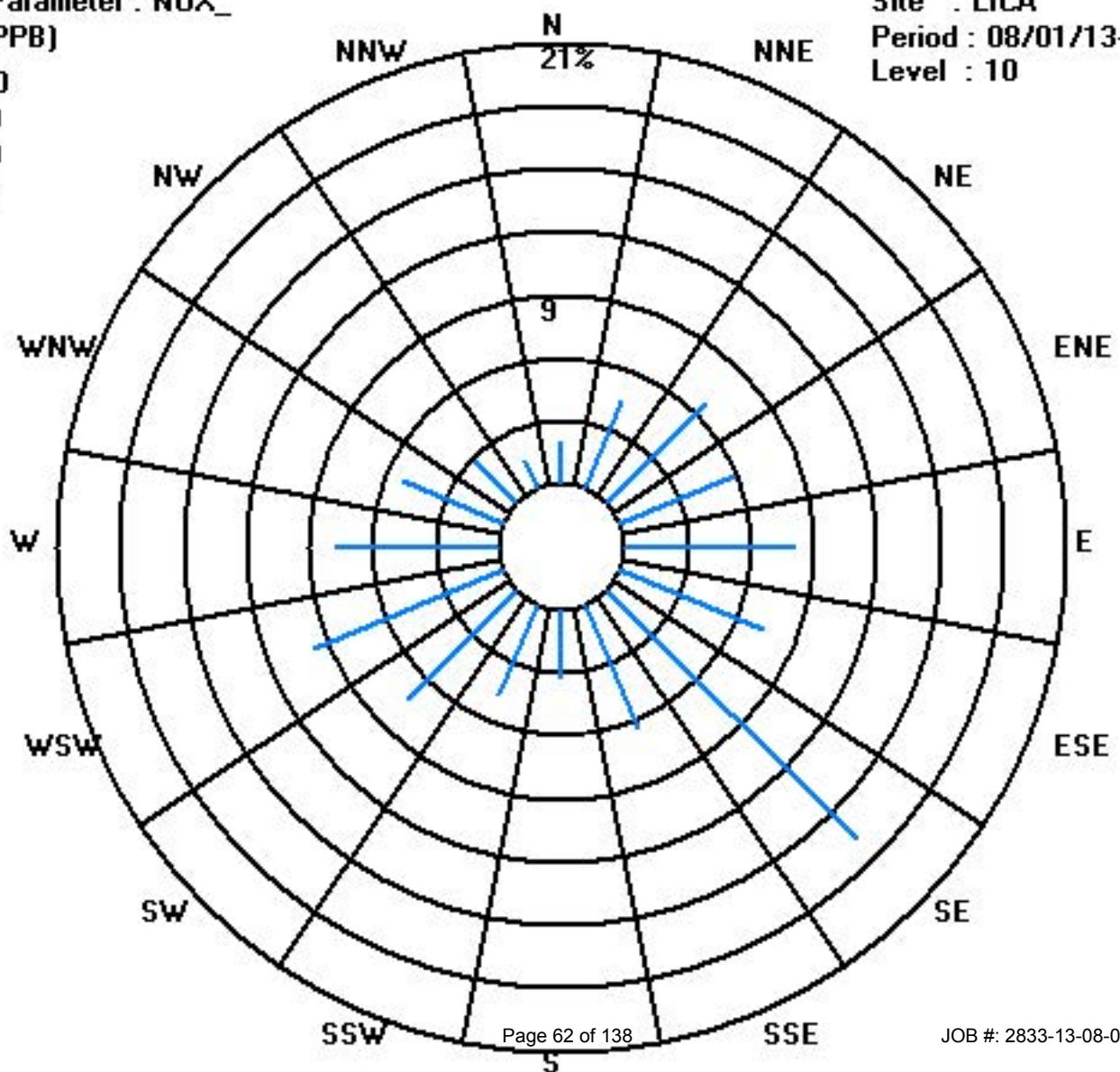
Calm : .00 %

Total # Operational Hours : 701

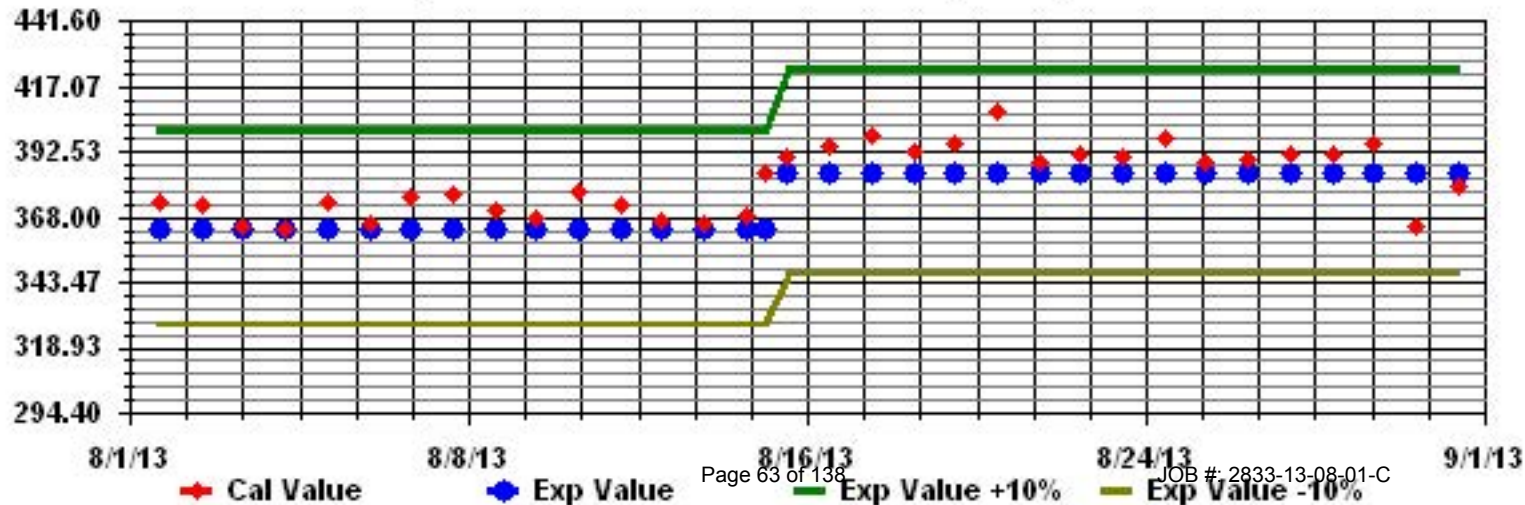
Class Limits (PPB)

Period : 08/01/13-08/31/13

Level : 10



Calibration Graph for Site: LICA Parameter: NOX\_ Sequence: NO2 Phase: SPAN



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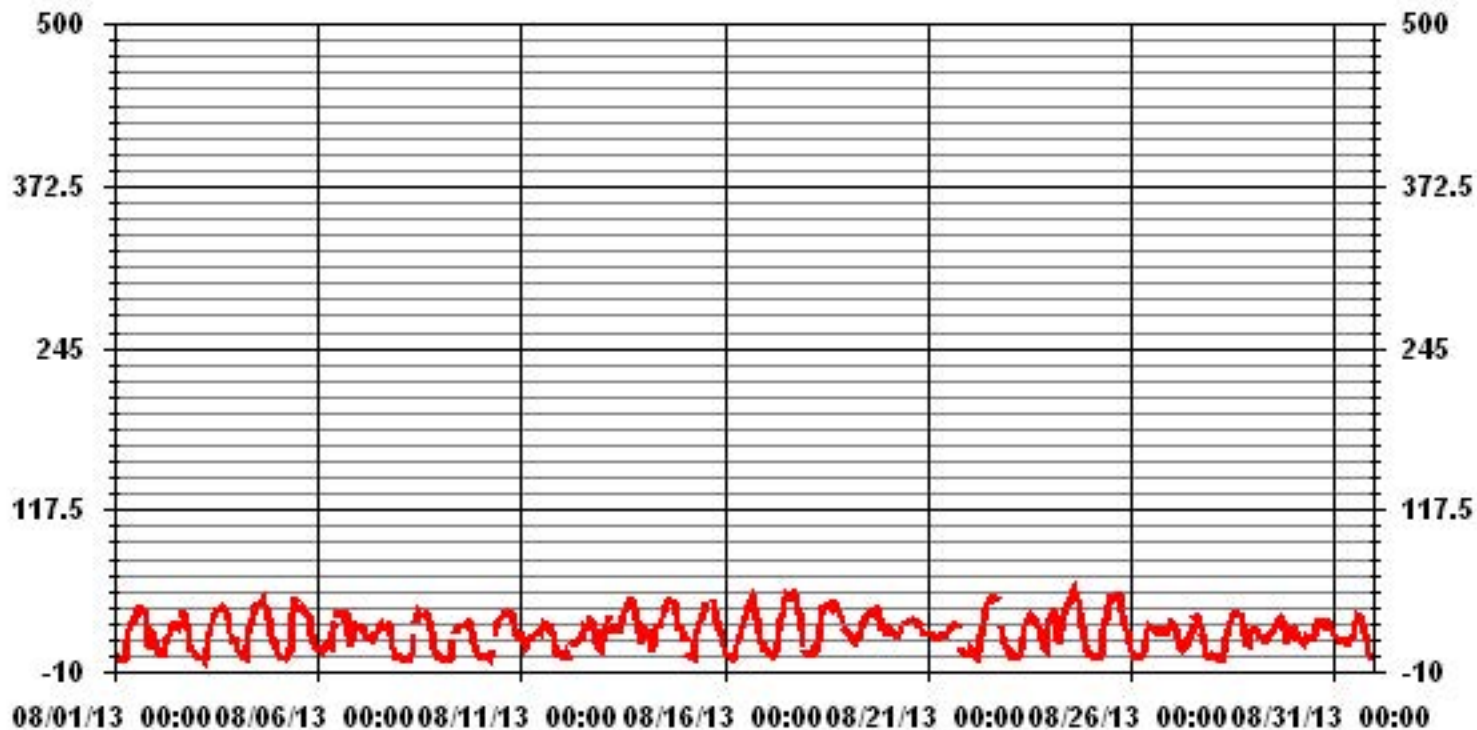
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**CncbY'**



### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2013

## 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	4	3	1	1	0	1	3	22	26	30	30	32	43	43	43	43	S	41	38	33	17	23	23	21	43	22.7	24
2	20	14	11	6	5	5	17	19	21	27	28	30	30	28	32	S	38	38	32	27	21	13	11	8	38	20.9	24
3	8	4	5	3	4	1	17	21	25	31	36	39	40	41	S	43	44	41	40	37	28	17	19	19	44	24.5	24
4	12	11	10	8	7	4	19	24	29	35	40	46	48	S	49	50	51	44	43	37	27	23	18	16	51	28.3	24
5	9	5	4	2	4	3	8	9	11	44	52	52	S	42	45	43	41	37	39	38	32	18	17	13	52	24.7	24
6	10	13	13	10	11	13	13	19	30	30	32	S	37	38	38	37	41	43	34	14	28	30	32	30	43	25.9	24
7	26	29	29	25	22	17	18	20	18	22	S	26	32	31	28	26	28	28	29	27	17	9	3	3	32	22.3	24
8	1	2	1	1	1	1	2	10	27	S	35	46	38	36	36	38	38	36	33	28	16	10	7	4	46	19.4	24
9	3	1	1	1	1	0	5	20	S	25	27	26	26	28	28	29	30	32	31	30	18	13	6	6	32	16.8	24
10	5	6	3	4	6	1	14	S	23	28	30	34	36	38	37	38	39	39	38	34	27	23	23	21	39	23.8	24
11	22	17	15	16	19	19	S	19	20	24	25	24	26	29	28	29	28	27	25	23	21	10	5	4	29	20.7	24
12	6	3	6	8	5	S	17	18	17	18	17	17	26	29	28	33	34	34	34	28	20	13	13	15	34	19.1	24
13	19	27	33	35	S	30	29	28	24	25	28	35	36	41	42	46	48	48	46	45	36	30	19	26	48	33.7	24
14	28	24	23	S	20	9	22	26	27	29	31	36	42	47	47	49	48	48	48	43	30	29	28	23	49	32.9	24
15	21	21	S	6	5	8	20	22	28	35	35	C	C	C	C	C	C	C	43	35	34	32	25	22	43	24.5	24
16	10	S	7	6	4	2	6	17	20	20	31	38	36	43	45	49	51	49	45	38	31	19	17	16	51	26.1	24
17	S	11	9	7	7	5	8	17	29	35	42	52	54	52	51	48	56	54	51	43	41	34	17	S	56	32.9	24
18	12	7	6	12	13	10	10	18	32	41	41	44	45	48	48	43	49	44	44	43	39	33	S	27	49	30.8	24
19	23	22	22	19	16	14	15	20	23	28	31	35	37	38	36	36	38	41	47	40	30	S	28	28	47	29.0	24
20	25	27	26	23	22	21	21	23	26	C	C	30	31	31	30	32	32	30	30	30	S	23	23	23	32	26.6	24
21	21	21	21	22	20	19	17	19	19	19	19	23	25	25	27	27	29	29	29	S	10	9	7	6	29	20.1	24
22	8	11	11	6	4	2	15	22	28	36	43	45	47	48	52	52	50	50	S	34	26	21	15	13	52	27.8	24
23	9	6	6	3	2	2	5	14	22	31	30	34	37	34	35	32	31	S	28	20	14	12	21	43	43	20.5	24
24	39	40	41	39	38	25	19	31	40	41	43	46	53	56	58	54	S	49	45	37	24	16	14	7	58	37.2	24
25	6	3	2	2	1	2	19	28	28	36	49	52	50	48	50	S	55	54	48	37	32	27	25	22	55	29.4	24
26	13	8	3	1	1	1	6	8	21	29	29	30	29	27	S	24	24	27	28	24	22	27	28	32	32	19.2	24
27	31	29	28	21	19	15	10	12	12	15	19	25	27	S	36	36	35	31	25	19	7	8	4	10	36	20.6	24
28	5	1	1	1	1	1	1	16	23	27	33	37	S	38	39	37	36	36	34	26	21	18	24	24	39	20.9	24
29	26	24	25	23	20	20	17	17	18	21	23	S	26	28	30	31	34	33	29	23	14	21	24	27	34	24.1	24
30	26	24	21	17	16	15	19	17	18	18	S	19	25	34	34	32	33	31	30	28	33	30	27	22	34	24.7	24
31	21	19	18	16	15	16	16	18	17	S	19	26	34	37	34	36	36	31	26	21	11	4	4	8	37	21.0	24
HOURLY MAX	39	40	41	39	38	30	29	31	40	44	52	52	54	56	58	54	56	54	51	45	41	34	32	43			
HOURLY AVG	15.6	14.4	13.4	11.5	10.3	9.4	13.6	19.1	23.4	28.6	32.1	35.0	36.3	37.8	38.8	38.3	39.2	38.8	36.4	31.4	24.2	19.8	17.6	18.0			

### STATUS FLAG CODES

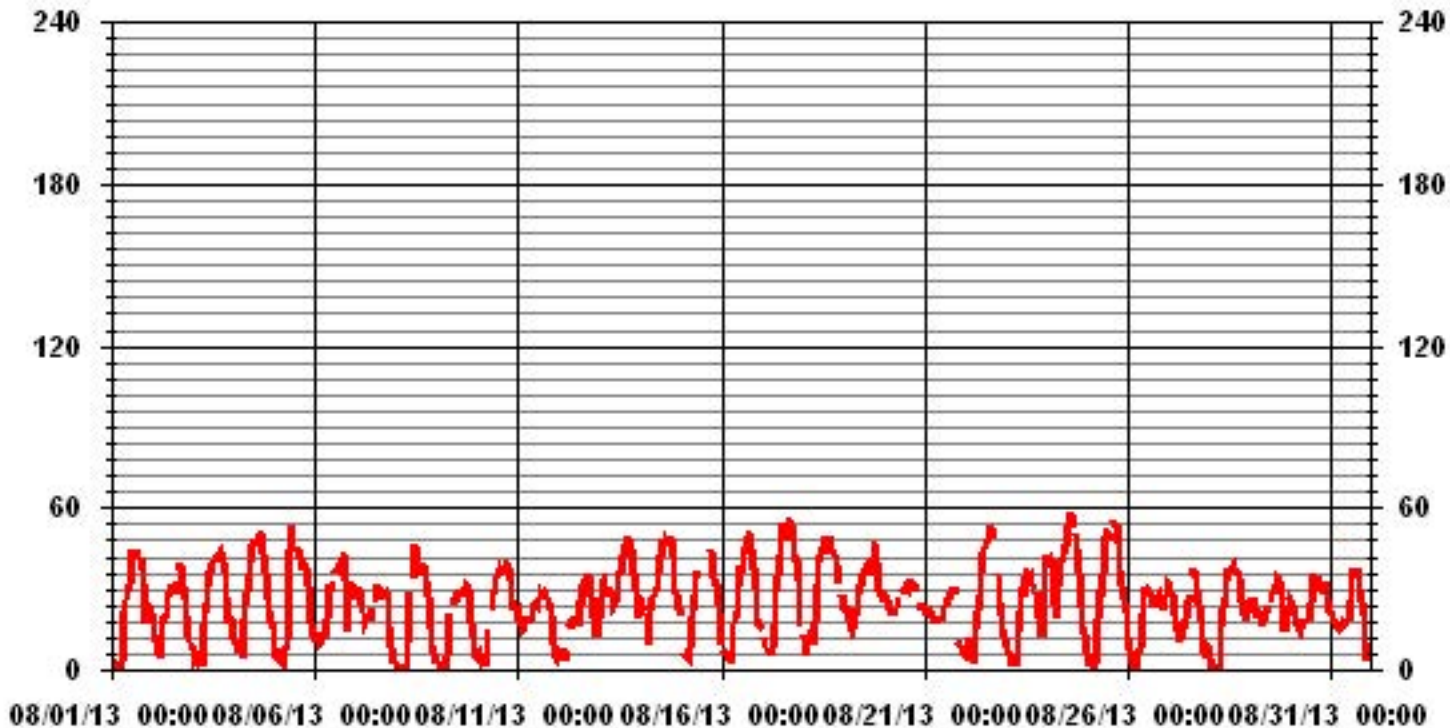
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	701					
MAXIMUM INSTANTANEOUS VALUE:	58	PPB	@ HOUR(S)	14	ON DAY(S)	24
S CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	13.57					



# 01 Hour Averages



— LICA O3MAX PPB

LICA  
O3\_ / WD Joint Frequency Distribution (Percent)

August 2013

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	1.98	4.53	6.37	5.80	8.07	7.36	17.56	6.37	3.25	4.67	6.65	9.34	7.64	5.09	2.83	1.41	99.00
< 110	.00	.00	.28	.00	.00	.00	.00	.00	.00	.00	.42	.14	.14	.00	.00	.00	.99
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.98	4.53	6.65	5.80	8.07	7.36	17.56	6.37	3.25	4.67	7.08	9.49	7.79	5.09	2.83	1.41	

Calm : .00 %

Total # Operational Hours : 706

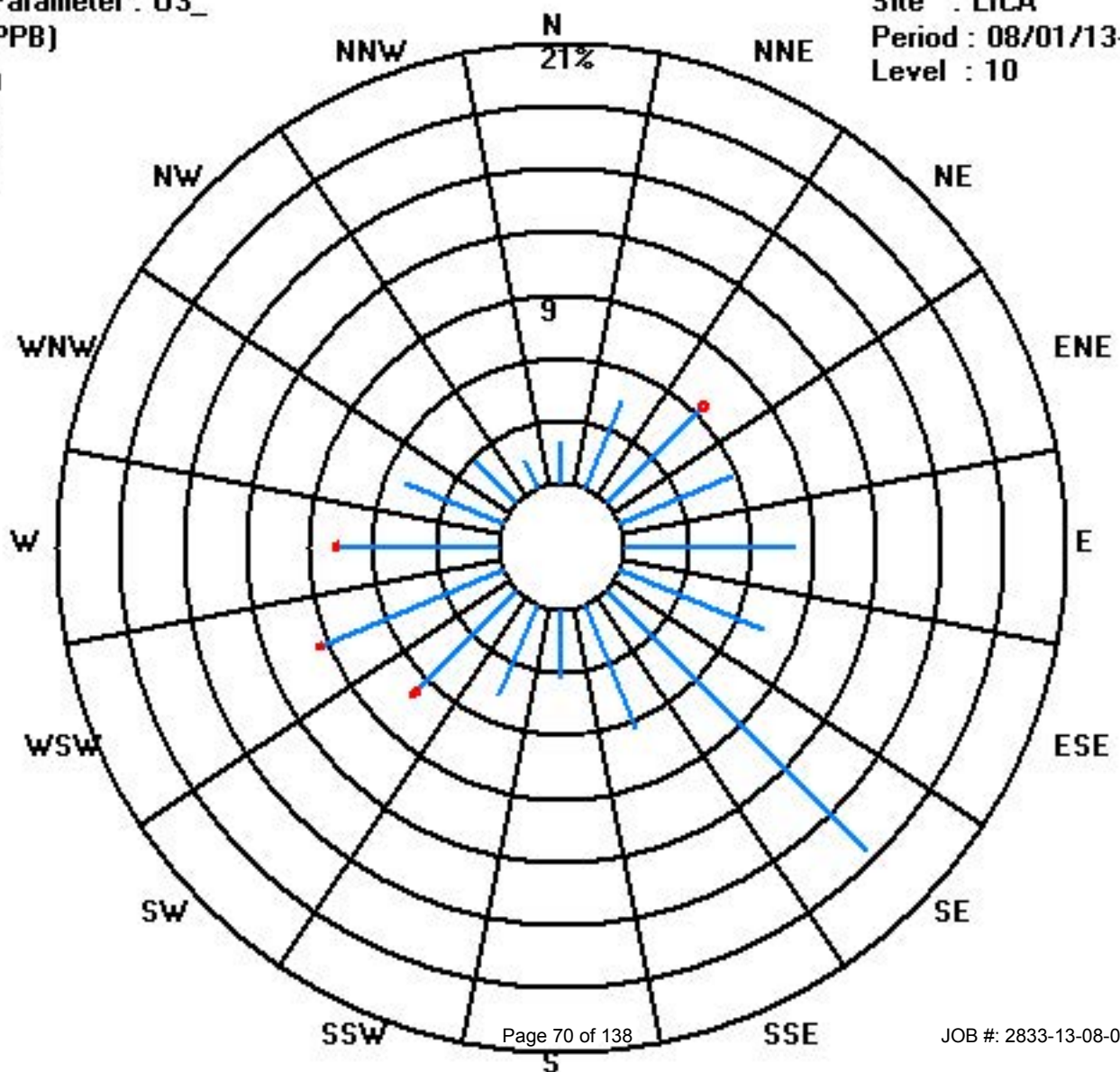
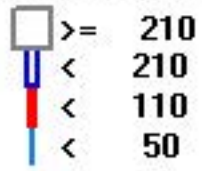
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50	14	32	45	41	57	52	124	45	23	33	47	66	54	36	20	10	699
< 110			2								3	1	1				7
< 210																	
>= 210																	
Totals	14	32	47	41	57	52	124	45	23	33	50	67	55	36	20	10	

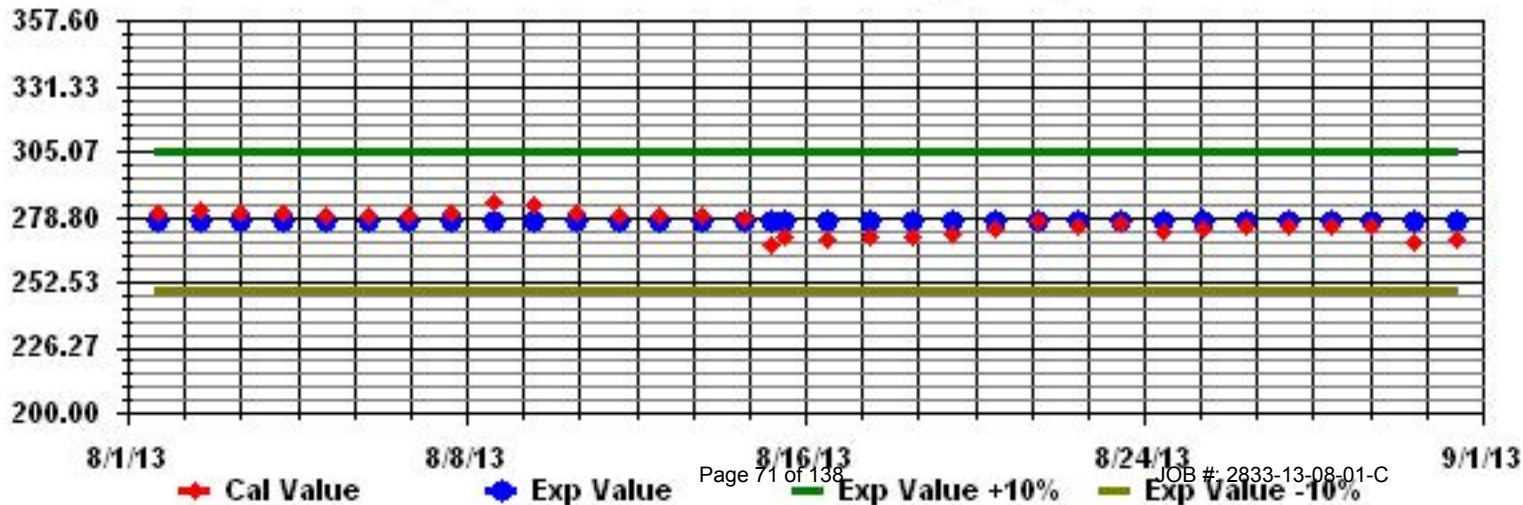
Calm : .00 %

Total # Operational Hours : 706

Class Limits (PPB)



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



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LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

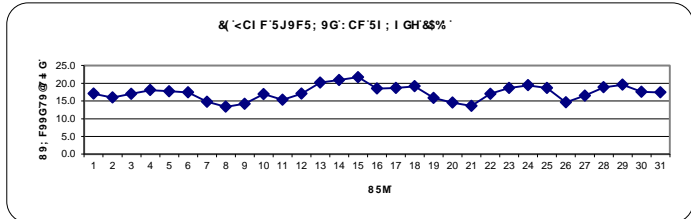
AUGUST 2013

AMBIENT TEMPERATURE hourly averages (Degrees C)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY	24-HOUR	
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	1	12.4	11.2	10	8.7	8	8.9	13.6	17.2	18.8	19.7	20.2	21.3	22.1	22.2	23.2	23.6	23.1	22.9	22.5	20.7	16.1	14.2	15.4	14	23.6	17.1	24	
2	2	12.8	10.3	8.6	7.7	7	8	12.7	14.8	16.8	18.1	19.3	20.6	21.2	21.5	21.9	22.4	22.6	22.9	21.8	19.8	15.9	13.6	12.2	11	22.9	16.0	24	
3	3	10.1	9.4	9	8.1	7.2	8	12.1	15.3	18	20.5	22.1	22.8	23.4	24.2	24.3	24.7	24	23.5	22.8	20.7	17.3	14.4	13.3	13.1	24.7	17.0	24	
4	4	11.1	10.1	9.6	9.1	8.5	9.5	14.2	17.6	19.5	21.1	22.8	24.6	24.4	23.7	25.7	25.6	23.7	21.8	21.7	20.3	18.3	17.3	16.8	16.6	25.7	18.1	24	
5	5	15.6	14.9	14.2	14	13.6	13.5	14.6	16.6	17.1	22	23.3	24.3	22.1	20.1	21.1	20.1	19.6	19.2	18.7	18.2	16.7	15.7	15.5	15.3	24.3	17.8	24	
6	6	15.2	14.9	14.2	13.6	12.9	12.6	14.2	16.2	17.5	19.2	18.9	21	21.2	21	21	20.7	22.2	22.1	19.3	16.9	16.6	16	15.5	14.7	22.2	17.4	24	
7	7	14.1	13.8	13.1	12.9	12.5	12.6	12.7	13	13.8	15.9	17.2	17.8	19	19.1	18.4	18.6	18.5	18.6	18.2	16.1	12.4	10.2	8.7	7.5	19.1	14.8	24	
8	8	6.6	5.8	5.1	4.3	3.9	4.4	9	13.5	16.9	17.6	17.5	18.7	19.1	19.7	20	20.2	20.4	20.4	19.6	17.1	13.3	10.5	9.2	8	20.4	13.4	24	
9	9	7.2	6.4	5.8	5.1	4.6	4.5	9.2	13.4	16.9	18.6	19.6	19.9	20.1	20.5	21	20.9	20.6	21.6	20.6	18.3	14.1	11.8	10.6	9.8	21.6	14.2	24	
10	10	9.2	8.6	7.9	7.7	7.2	7.5	12.5	15.3	17.8	20.1	21.5	22.4	23.3	23.9	23.6	23.7	23.5	23.3	22.7	20.9	17.8	16.6	15.6	14.4	23.9	17.0	24	
11	11	14.2	12.9	12.2	11.6	12	12.4	14.4	15.4	17	18.1	18.5	17.3	17.3	17.7	16.4	17	16.9	17.5	17.5	16.9	15.1	13.8	13	12.5	18.5	15.3	24	
12	12	11.9	11.5	11.2	11.8	11.9	12.2	15.2	15.6	15.9	15.7	16.7	17.7	19.6	21.1	21.7	22.1	22.3	22.5	21.5	20.7	19	17.7	17.4	16.7	22.5	17.1	24	
13	13	17.1	17	16.3	16	16	15.7	16.6	18.4	19.1	20.4	22	23.3	24.7	25.3	25.6	25.5	24.8	24.1	21.9	19.3	17.5	16.3	16.1	15.6	25.6	20.2	24	
14	14	16.6	16.2	15.7	15.1	14.1	12.9	15.3	17.8	19.6	21.6	23.4	24.8	26.1	26.9	27.3	27.4	26.8	26.5	25.7	23.2	21	20	19.3	18.3	27.4	20.9	24	
15	15	18	17.4	16	15	14.6	14.3	17.4	19.2	21	23.4	24.6	26.7	28.3	29.6	29	28.3	27.3	26.7	25.1	23.7	21.9	19.5	17.8	16.4	29.6	21.7	24	
16	16	15	13.9	13.6	13	12.1	11.8	14.4	17.6	18.9	19.4	20.4	20.8	21.3	22.7	24.3	24.6	24.6	24.1	23.6	20.8	18.9	17.2	16.5	15.3	24.6	18.5	24	
17	17	14.2	14.1	13.6	12.9	12.2	11.9	13.1	16.1	19	22	24	24.9	25.8	26.7	26.3	26.6	26.6	22.6	22.5	21.9	19.6	17.1	14.9	13.2	12.4	26.7	18.7	24
18	18	11.6	10.8	10.2	10.2	10.7	11.3	12.4	14.7	18.8	22.1	23.6	24.3	25.9	26.3	26.3	25.7	25.8	25.2	24.2	22.1	20.6	20.1	18.8	17.6	26.3	19.1	24	
19	19	16.3	15.3	14.2	12.8	11.9	11.6	12.3	13.8	15.5	17.3	18.8	20.6	21.2	22.1	21	21.5	21.9	20.8	17.3	12.7	11.3	10.2	10	10.1	22.1	15.9	24	
20	20	10	12	11.6	10.1	9	8.6	10.2	12.7	14.7	16	17	18.2	18.9	19.3	19.6	20.2	19.3	18.8	18.1	16.2	13.7	12.4	11.9	11.2	20.2	14.6	24	
21	21	10	9.4	9.5	10.3	10.2	10.5	11.2	12.8	14.2	14.9	15.5	16.5	17.2	17.1	18.1	18.8	18.8	18.8	18.3	15.2	11.6	9.9	9	8.3	18.8	13.6	24	
22	22	7.7	8.7	8.2	6.7	5.7	5	9	14.3	17.1	20	22.9	24.1	24.8	25.9	26.6	26.9	27	27	24.8	20.1	16.5	14.5	13	12.1	27.0	17.0	24	
23	23	11	10.1	9.6	8.7	8.2	7.8	10.8	15.6	19.8	22.3	23.9	25.2	25.8	26.5	27.1	26.4	25.8	25.2	23	20.6	18.7	17.7	19.5	18.4	27.1	18.7	24	
24	24	16.1	15.2	15.5	15.8	15	12.3	14.1	17.7	19.9	20.8	21.5	22.7	24.1	25.2	25.9	26.4	26.3	26.1	24.8	20.6	17.7	15.5	14.2	13.3	26.4	19.4	24	
25	25	12.7	12.2	11.6	11.1	10.4	10.1	13	17.8	19.3	21.9	24.4	25.3	25.5	24.7	25.8	24.9	25.3	24.8	23.3	20.3	18.1	16.8	15.1	13	25.8	18.6	24	
26	26	11.3	10.3	9.9	9.2	8.3	8.2	10.4	12.4	15	17.8	19.2	19.5	18.6	18.6	16.7	17.1	17.2	17.8	17.2	15.8	15	15.3	15.1	15.4	19.5	14.6	24	
27	27	14.9	14.9	14.8	13.6	13.7	13.8	14.1	14.9	15.4	15.5	16.2	17.1	17.8	20.5	21.2	22.2	22.1	20.9	19.4	17.3	15.5	14.2	13.4	13.1	22.2	16.5	24	
28	28	12.4	11.4	10.7	10.3	10.6	10.5	12	15.6	19	21.1	23	24.4	25	26.1	26.4	26.3	25.8	25.3	22.9	20.6	19.5	18.2	18.1	18.1	26.4	18.9	24	
29	29	18.7	18.2	17.5	16.9	16.5	16.6	16.8	16.9	17.8	18.2	19.4	21.2	22.2	23.5	24	24.6	23.5	23.2	22.4	20.5	18.1	18.1	18.1	18	24.6	19.6	24	
30	30	17.8	17	16.4	16.2	16.3	16.4	16.7	17	17.6	18.2	18.4	18.3	18.7	20.1	19.1	20.4	20.8	19.2	18.3	16.9	15.5	15.4	15.3	15.4	20.8	17.6	24	
31	31	15.2	15.1	15.1	14.3	13.9	14.3	14.9	15.4	16.3	17.9	20.3	21.7	22.8	23	24	22.8	22.4	20.6	17.7	15.4	14	12.9	12.8	24.0	17.4	24		
HOURLY MAX		18.7	18.2	17.5	16.9	16.5	16.6	17.4	19.2	21.0	23.4	24.6	26.7	28.3	29.6	29.0	28.3	27.3	27.0	25.7	23.7	21.9	20.1	19.5	18.4				
HOURLY AVG		13.1	12.5	12.0	11.4	10.9	10.9	13.2	15.6	17.5	19.2	20.4	21.5	22.1	22.7	23.0	23.1	22.8	22.5	21.4	19.1	16.7	15.3	14.5	13.8				

STATUS FLAG CODES

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

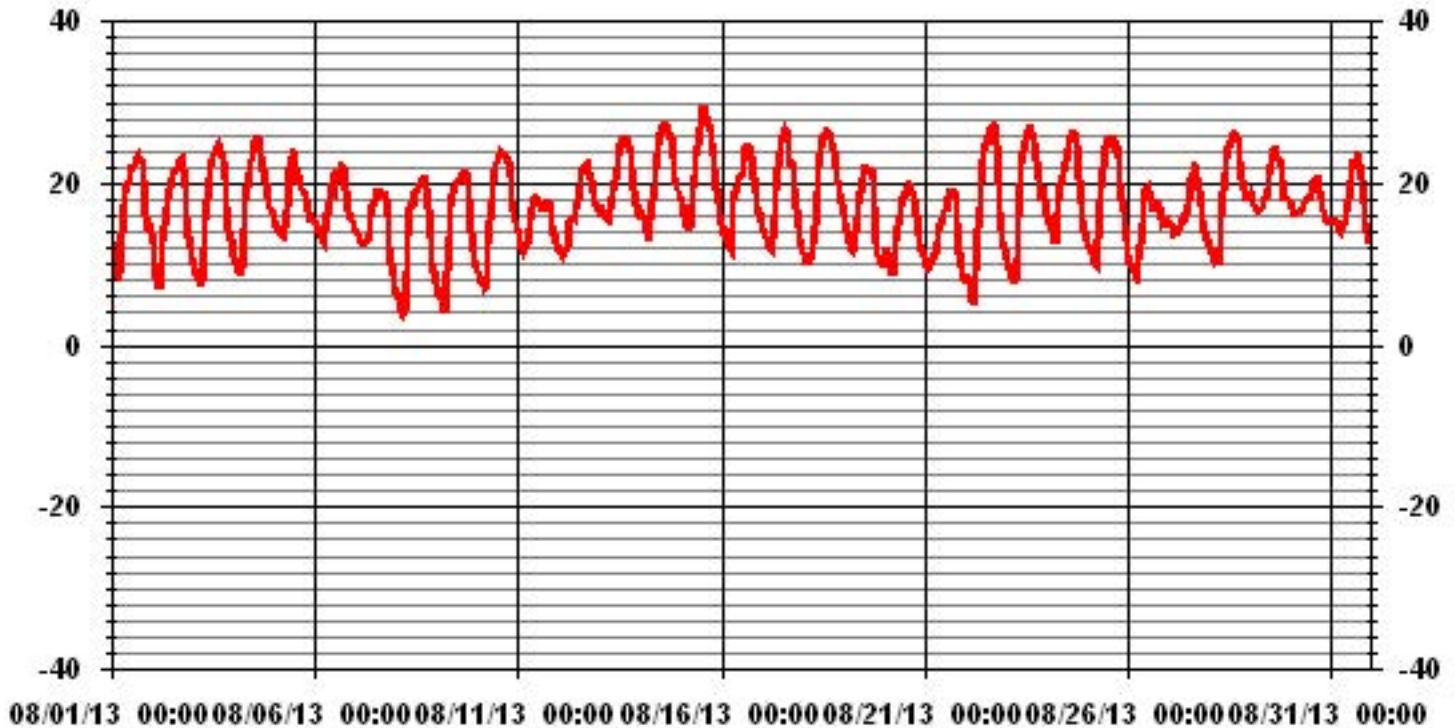


MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	3.9 °C	@ HOUR(S)	4	ON DAY(S)	8
MAXIMUM 1-HR AVERAGE:	29.6 °C	@ HOUR(S)	13	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	21.7 °C			ON DAY(S)	15
VAR-VARIOUS					
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	5.21		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	17.31	°C

\* Outside detection limits of sensor.

### 01 Hour Averages



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LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

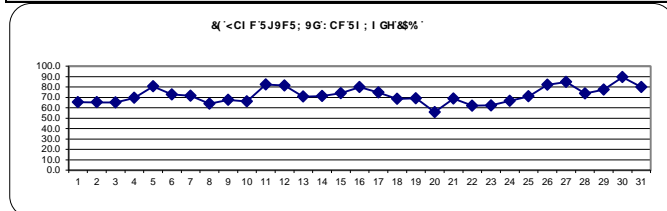
AUGUST 2013

RELATIVE HUMIDITY hourly averages (%)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	1	94	95	96	95	96	97	84	74	63	53	50	47	48	47	40	36	36	35	37	51	76	80	66	71	97	65.3	24
2	2	76	85	91	93	92	90	74	67	61	55	47	47	47	48	45	40	37	38	44	55	75	82	87	90	93	65.3	24
3	3	92	93	93	92	94	92	80	71	63	57	51	44	41	38	37	36	38	38	42	51	68	81	84	84	94	65.0	24
4	4	89	91	92	94	94	90	78	69	64	62	56	48	45	52	40	38	48	54	56	69	79	84	87	88	94	69.5	24
5	5	91	92	94	94	96	96	93	88	91	60	50	45	57	72	68	70	72	76	75	76	90	95	96	97	97	80.6	24
6	6	97	98	98	97	97	95	91	85	75	66	68	56	48	45	43	46	43	42	66	79	75	75	77	82	98	72.7	24
7	7	82	87	88	90	89	89	89	87	85	71	62	56	48	47	52	51	46	45	45	61	80	86	90	92	92	71.6	24
8	8	92	93	93	94	94	94	83	82	73	60	49	44	33	34	35	33	31	34	38	55	75	85	87	90	94	63.8	24
9	9	92	92	92	93	93	93	81	74	61	52	46	49	47	45	44	43	45	41	44	57	76	84	88	89	93	67.5	24
10	10	91	90	91	90	93	90	78	74	65	56	50	44	40	39	42	43	44	45	48	58	72	76	81	84	93	66.0	24
11	11	82	87	87	88	86	85	78	76	73	72	72	82	78	71	83	83	84	78	77	79	88	93	96	96	96	82.3	24
12	12	96	97	97	98	97	97	87	88	88	90	86	83	73	65	66	63	58	57	62	66	79	85	87	89	98	81.4	24
13	13	86	85	86	88	90	90	87	77	72	68	63	59	52	48	46	45	46	48	53	64	77	86	90	91	91	70.7	24
14	14	87	86	85	86	90	94	85	75	70	67	63	58	54	49	47	47	49	52	58	70	79	83	86	91	94	71.3	24
15	15	92	92	93	94	95	95	88	83	75	66	63	57	49	44	47	56	57	59	65	73	73	81	87	91	95	74.0	24
16	16	94	96	97	97	96	96	92	82	81	78	73	69	70	64	60	58	57	58	62	74	84	91	93	95	97	79.9	24
17	17	97	98	98	99	99	99	100	93	78	64	59	56	52	44	42	41	52	52	57	68	77	86	91	93	100	74.8	24
18	18	94	95	95	95	96	97	96	89	73	59	53	53	47	44	43	46	45	47	52	61	65	60	67	75	97	68.6	24
19	19	82	88	89	93	94	95	90	82	70	60	50	42	39	32	35	35	38	43	56	86	91	91	90	89	95	69.2	24
20	20	89	80	80	81	80	80	75	63	54	48	43	40	38	36	36	33	34	35	38	43	51	57	61	65	89	55.8	24
21	21	71	73	73	72	75	77	76	68	65	65	64	61	59	60	55	54	53	52	56	72	84	88	90	91	91	68.9	24
22	22	93	94	93	93	93	93	83	68	56	47	39	35	35	30	30	29	30	30	38	59	72	78	83	85	94	61.9	24
23	23	91	92	93	95	94	94	85	74	62	51	39	35	33	31	27	31	33	39	50	62	71	78	65	69	95	62.3	24
24	24	85	88	81	76	80	93	85	72	63	60	59	53	47	44	41	38	38	39	46	65	77	86	88	92	93	66.5	24
25	25	92	93	92	93	94	95	86	77	75	66	53	49	46	50	49	51	49	49	54	67	75	78	83	90	95	71.1	24
26	26	94	95	95	94	94	95	95	93	86	72	64	62	69	70	85	85	84	75	73	80	84	78	76	70	95	82.0	24
27	27	77	80	84	95	96	98	98	97	95	94	88	83	77	68	63	60	64	71	79	88	94	96	97	96	98	84.9	24
28	28	96	97	97	98	98	97	96	88	77	68	58	51	47	44	46	47	50	51	62	78	81	86	78	81	98	73.8	24
29	29	83	86	87	92	94	91	90	88	85	82	76	69	66	62	59	58	58	60	66	75	86	84	81	81	94	77.5	24
30	30	82	89	96	98	98	98	96	93	90	88	87	89	87	79	87	81	72	79	84	91	95	95	96	97	98	89.5	24
31	31	97	96	96	95	96	96	96	94	92	86	76	65	59	51	51	48	51	55	65	81	90	93	95	95	97	80.0	24
HOURLY MAX		97	98	98	99	99	99	100	97	95	94	88	89	87	79	87	85	84	79	84	91	95	96	97	97			
HOURLY AVG		88.9	90.4	91.0	92.0	92.7	92.9	86.9	80.1	73.2	65.5	59.7	55.5	52.6	50.1	49.8	49.2	49.7	50.9	56.4	68.2	78.7	83.3	84.6	86.7			

STATUS FLAG CODES

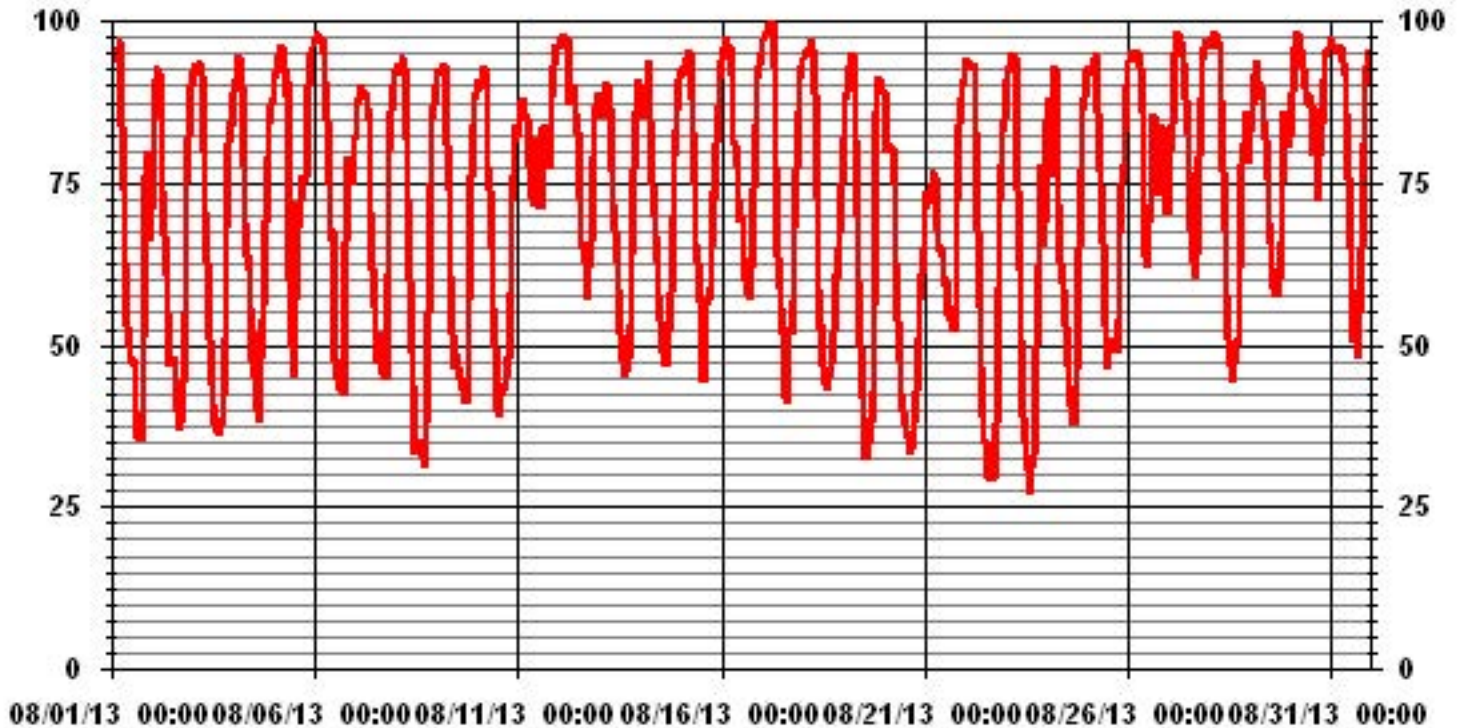
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	100	%	@ HOUR(S)	6	ON DAY(S)	17
MAXIMUM 24-HR AVERAGE:	89.5	%			ON DAY(S)	30
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	19.80		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	72.05	%	

# 01 Hour Averages



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**J YWcf 'K ]bX'GdYYX'**

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2013

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

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
1	0.4	1.1	0.4	1.2	0.1	0.4	0.9	3.7	2.4	4.4	4.8	3.6	0.6	2.8	5.1	5.4	6.8	6.6	5.5	3.3	0.7	2.1	5.1	4	6.8	2.5	24
2	2.3	1.1	0.3	0.3	0.3	0.7	4.6	4.9	4.6	5.1	5.1	2.5	5.2	7.5	5.8	3.9	3	3.3	5	5	1.7	2	1.8	0.6	7.5	2.6	24
3	0	0.7	0.5	0.3	0.9	0.4	3.8	4.5	3.7	4	4.6	6.3	5.3	5.6	5.7	4.6	7.5	8.1	5.4	5.3	2.6	2.8	2.9	2.2	8.1	3.1	24
4	0.2	0.7	0.2	0.4	0.3	0.5	2.4	1.5	3	3.2	2	2.9	2.4	3.7	4.5	6	6	4.4	4.1	2.1	0.7	1.1	1.8	0.6	6	0.4	24
5	0.3	0.7	0.2	0.7	1.6	1	1.5	1.4	1.4	3.8	4.4	3.6	6.5	2.5	3.7	11.4	8	4.8	2.7	3.2	1	2	0.1	0.5	11.4	2.8	24
6	1.7	1	1.7	2.1	3.3	2.9	2.2	0.4	0.8	2.1	2.7	2.8	2.3	3.3	3.6	1.4	2.2	1.9	0.9	0.7	4.2	4.8	3.1	4	4.8	2.3	24
7	4.8	4.9	4.7	2.9	3.9	3.6	2.3	4	7.2	9.4	10.3	9.3	8.7	6.8	7.4	9.3	7.2	6.5	5.4	2.1	0.5	0.6	0.5	1	10.3	5.1	24
8	0.5	0.4	0.6	1.1	0.6	1	1.1	1.1	1.4	4.1	5.5	5.8	5.6	4.6	5.5	5.1	4.9	6.2	4.5	3.2	0.6	1.1	0.7	0.8	6.2	2.8	24
9	0.8	0.4	0.8	0.6	0.3	0.5	0.9	4.1	2.7	5.3	5.5	2.7	4.8	5.8	5.8	6.5	4.3	5.1	4.6	2.2	1	0.6	0.8	1.3	6.5	2.8	24
10	1.4	0.8	0.6	0.8	0.7	0.4	0.8	4.8	4.2	5.3	7.7	9.2	6	5.2	4.8	6.1	5.1	6	5.1	3.8	4.4	4.4	4.1	4.7	9.2	4.0	24
11	4.8	2.5	1.3	0.4	3.2	4.8	7.8	6.8	5.8	7.6	5.8	3.5	9.2	12.2	5.1	8.2	4.3	4.9	5.4	3.3	0.1	2.1	0.8	1.4	12.2	4.6	24
12	0.7	1.2	0.7	1.1	0.3	2.1	4	2.2	2	2.4	3.2	4.2	7.1	10.7	8.7	7.6	7.3	7.3	4.1	3.3	1.4	0.9	1.3	1.5	10.7	3.6	24
13	2.1	4.4	6.6	7.5	4.3	4.3	5.2	5.9	9.4	8.6	9.6	8.4	10	11.9	12.4	11.7	10.5	10.3	6.1	3.9	3.4	1.6	1.6	3.7	12.4	6.8	24
14	5.8	7.4	5.9	5.1	0.8	0.5	1.8	6.3	5.6	5.1	6.2	7.6	5.7	6.7	7.6	6.2	6.4	4.5	3.3	2.7	2.6	4.7	3.4	3	7.6	4.8	24
15	3.9	2	1.3	0.9	0.7	1.1	4.9	4.7	4.1	3.8	6.2	7.9	8.9	7.5	5.4	5.7	7.4	6.1	3.3	4.2	5.3	2.4	2.7	0.2	8.9	4.2	24
16	0.8	1.9	1.5	0.5	1.4	1	1.8	2.1	1.8	2.4	1.7	3.4	1.6	3.4	3.8	3.9	4.8	4.3	3.3	2.6	1.4	2.8	3.1	2.8	4.8	2.4	24
17	2.8	3.3	3.5	3.5	0.5	0.5	1.3	4.5	5.8	4.9	4	6.7	6.3	6.6	5.7	7	7.5	4.2	5	3	1.7	1.1	0.9	0.2	7.5	3.8	24
18	0.8	0.8	1.2	1.1	0.9	0.8	1.1	1	2.6	1.7	2.9	5.2	3.6	5.3	6.4	7.2	8	9.1	6.8	4.2	3.6	4.8	6	5.5	9.1	3.8	24
19	5.2	6.1	5.4	3.8	4.1	4.6	4.8	6.3	7.8	9.9	9.6	11.9	12	13.8	13.3	10.6	10.1	9.2	12.4	3.3	3.2	3.1	3.3	2.7	13.8	7.4	24
20	2.8	6.5	7.1	5	4.4	5.8	10.5	11.5	15.5	15.8	14.6	16	17.4	15	16.2	14.8	13.8	8.2	6	4.5	5.5	6.2	6.5	17.4	9.8	24	
21	5.3	5.4	5.6	5.4	6.3	7.1	5.1	9.9	12.7	10.3	9.3	9.7	10.8	10.6	12.1	10.7	10	7.1	4.5	0.5	1.3	0.9	0.2	0.3	12.7	6.7	24
22	0.9	2.2	1	0.3	0.5	0.6	0.4	2.4	4.8	5.4	8.1	11.8	11.5	12.7	9.1	8.5	5.2	5.5	2.2	1.4	0.6	0.8	1.1	0.3	12.7	4.1	24
23	1.5	0.5	0.5	0.7	0.8	0.1	0.4	0.3	0.7	3.5	5.9	5.4	5.3	4.5	4.8	4.4	2.7	2.1	1.1	0.9	1.3	3.9	5.1	5.9	2.6	24	
24	3.8	12.6	9.4	11.9	1.6	1	1	1.4	2.1	3.2	3.8	2.7	4	4.5	4.2	3.6	3.4	3.5	3.3	1.3	1	0.3	0.3	0.5	12.6	3.5	24
25	0.5	0.8	1	0.7	1.2	0.2	1.6	6.3	8	9.6	8.6	5.1	4.6	4.1	5.6	6.9	8.3	8.9	7.3	5.4	4	4.9	4.1	1.3	9.6	4.5	24
26	1.3	1.9	0.5	0.6	0.8	0.9	0.5	1	3.6	6.3	6.4	5.4	4.2	1.7	4.9	3.5	5.5	8.2	6.8	4.6	5.4	4.9	5.3	6.9	8.2	3.8	24
27	7.2	6.7	3.6	4	1.3	2.5	0.2	1.1	1.6	3.6	3.4	3	3.4	1.8	2.1	1.5	2.4	4	2.4	1.2	0.6	0	0.8	1.8	7.2	2.5	24
28	0.2	0.7	0.4	0.6	1.1	0.2	0.6	1.3	4.6	4.2	4.2	6.4	6.9	4.5	4.2	6.6	6.5	5.5	1.7	1.2	0.5	1.1	3	2.3	6.9	2.9	24
29	3.6	3.7	4.5	3.8	5.1	5.7	5.2	4.5	3.7	6.2	8	8.7	9.6	8.5	8.7	8.1	9	6.8	4.3	1.5	1.4	3.1	4.6	4.5	9.6	5.5	24
30	4.2	3.9	1.3	5.9	4.3	3.4	6.8	6.1	3.2	1.6	2.4	1.7	5.1	4.6	5.3	6.5	10.5	11.2	8.2	10.1	12.7	11.3	9	8.5	12.7	6.2	24
31	7.4	7.2	6.9	7.6	6	6.3	5.5	6.3	4.9	4.6	2	2.6	0.8	2.2	2.4	3.7	4.3	4.3	2.8	1.5	0.7	0.7	0.9	0.9	7.6	3.9	24
HOURLY MAX	7.4	12.6	9.4	11.9	6.3	7.1	7.8	10.5	12.7	15.5	15.8	14.6	16.0	17.4	15.0	16.2	14.8	13.8	12.4	10.1	12.7	11.3	9.0	8.5			
HOURLY AVG	2.5	3.0	2.6	2.6	2.0	2.0	2.8	3.9	4.4	5.4	5.8	6.0	6.3	6.6	6.4	6.7	6.6	6.3	4.7	3.1	2.4	2.6	2.7	2.6			

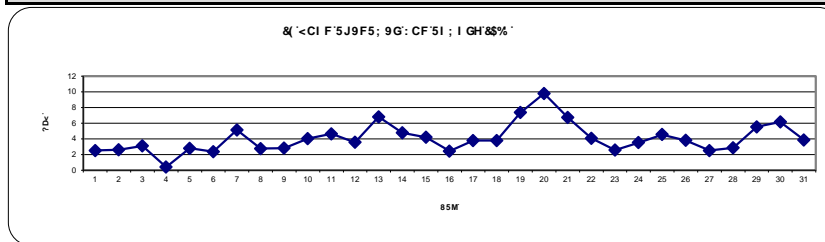
### STATUS FLAG CODES

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

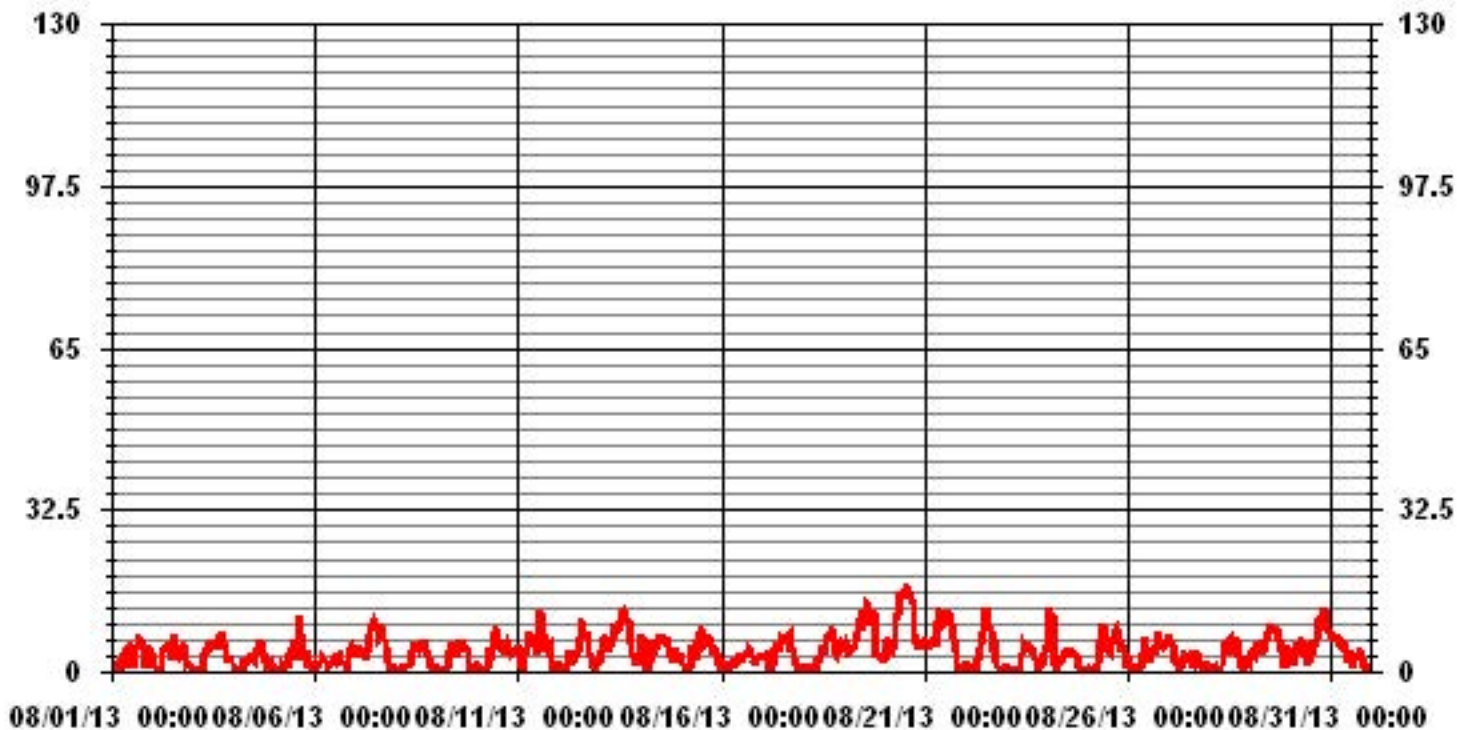
LAST CALIBRATION: November 28, 2012

### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	17.4	KPH	@ HOUR(S)	13	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:	9.8	KPH			ON DAY(S)	20
CALMS (≤ 0 KPH)	4.03	%	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	3.19		MONTHLY AVERAGE:	4.17	KPH	



# 01 Hour Averages



## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2013

### VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST																								DAILY	
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	
DAY																									
1	2.2	5.4	2.7	3.2	2.3	1.2	2.9	9.6	6	11.3	10.9	8.7	12.1	10.9	11.4	10.5	12.2	11.4	10.2	7.2	2.2	8.2	9.2	6.4	12.2
2	5	2.8	2.7	2.9	1.9	2.7	11.1	8.3	7.7	10.8	12.6	9.5	9.3	13.6	12.4	12.1	9.5	9.1	8.4	6.9	3.4	3.3	3.7	2.2	13.6
3	4.7	3.8	2.4	1.8	2.4	2.3	7.2	7.2	7.8	8.9	9.6	18.4	13.7	11.9	13.3	11.1	16.4	15.1	9.7	6.5	5.8	5.3	4.5	3.8	18.4
4	1.2	2.6	2.9	3.5	2.6	2.1	5.5	5	6.9	6.8	8.1	8.7	8.3	8.1	12.6	13.6	14	7.8	6.6	5.5	3.7	3.1	5.7	1.9	14
5	2.2	1.9	2.5	2.8	6.6	4.3	4.5	5.6	4.1	8.5	9.6	9.2	17.5	6.9	13.8	17	14	8.2	7	7.1	4.2	4.5	3.2	6	17.5
6	3.7	3.2	4.5	4.2	5.9	7.1	5	4.1	5.3	5.2	7.5	8.3	7.1	9	9.7	5.5	5.8	4.2	2.7	2.3	9.3	9.4	9.3	8.8	9.7
7	8.3	15.6	8.4	10	7	8.3	4.8	8.3	12.2	13.2	18.9	15	14.6	14.1	12.9	16	14.7	11.8	10.8	5.7	2.2	3.8	2.9	4	18.9
8	2.4	2.4	2.6	2.5	2.9	2.8	3.4	2.6	4.7	10	11.1	13.1	15.1	11.9	12.5	10.6	11.4	10.8	8.5	7.4	1.4	3	1.6	2.7	15.1
9	3.6	3.4	3	3.7	2.9	2.8	4.4	6.5	6.9	11.6	12.6	9.2	12.5	11.1	14	11	11.5	11	9.8	4.6	2.2	2.5	2.9	2.7	14
10	2.8	2.4	2.3	2.7	2.3	2.5	7.3	9.1	9.3	12.3	14.3	16.6	13.8	12.7	10.2	14.8	12.7	11.8	10	5.3	5.5	5.8	6.3	6.3	16.6
11	7.7	4.3	3.8	1.8	4.8	8.1	10.5	10.6	8.8	13	10.5	8.6	16.4	16.5	14.4	12.4	9.6	7.8	8.9	5.6	5.6	5.4	3.8	3.5	16.5
12	4.4	5.8	5.4	7	3.2	5.5	7.9	7.1	4.2	5.1	7.4	7.2	12.2	16.9	16	12	11.3	13	8.2	7.3	3.2	2.3	3.2	3.2	16.9
13	4.5	7.4	11.7	12	8.2	8.6	10.1	11	15.1	14.1	16	14	17.1	18.5	18.7	18.3	17.5	14.7	12	6	6.7	3.1	3	6.4	18.7
14	7.9	10.1	9.5	7.9	4.4	2.9	6.6	11	8.8	10.1	11	13.4	13.2	17	16.3	14.7	15	8.9	8.6	4.2	4.6	7	5	5.6	17
15	6.4	5.9	3	2.5	2.6	4	7.8	7.7	8.2	7.8	13.9	14.4	16.1	13.4	9.9	11.7	14.9	11.5	6.4	6.2	11.2	4.2	5.2	2.9	16.1
16	3.9	4.5	3.4	2.1	3.3	2.5	4.2	3.8	3.2	7.3	5.3	6.1	5.5	8.6	7.2	9.6	9.1	8.8	5.6	5.3	3.5	4.4	4.6	3.6	9.6
17	4.3	6.2	5.6	5.1	4.1	4.3	4.2	9.3	8.7	9.1	9.8	14.3	14.1	14.1	12.8	12.5	17.5	8.7	11.1	6.5	5.4	3.2	2.5	1.9	17.5
18	3.4	3.5	4.2	5.1	5.3	2.9	3.6	6.2	8.7	7.1	11.5	12.2	9.7	10.9	13.6	12.9	14.1	15.7	11.5	7.7	7.2	7.3	10.9	9.2	15.7
19	8.5	10.6	11.2	6.3	8.5	7.5	9.1	12.4	15	15.8	14.5	20.1	18	20.8	20.5	16.5	20.8	16.9	<b>33.3</b>	9.2	5.7	7.5	5.1	4.3	<b>33.3</b>
20	7.6	10.9	12	8.3	8.1	7.4	12.1	15.7	19.3	23.2	21.8	22.5	23.4	25.4	22.3	26.1	21.9	19.7	16.4	14.3	6.4	10	10.6	11.4	26.1
21	9.1	8.2	8.8	8.9	10.3	11.5	8.5	17.4	22.3	16.7	15.4	17.7	17.8	16.5	19	20.4	16.2	14	8.9	2.1	2.5	1.9	1	1.9	22.3
22	2.8	4.1	3.4	1.6	1.7	2.1	3.1	7.1	11	16	15.1	18.2	19.2	22.5	17.3	20.4	12.4	11.1	5.5	3.7	3.5	3.9	3.1	2.7	22.5
23	4	5.2	5	3.6	3.1	2.7	3.4	2.8	4.1	7.7	9.4	9.5	10.9	10.4	10.3	8.2	8	4.7	5.2	3.1	3.8	4.6	7.6	19.9	19.9
24	12.1	18.6	19.2	20.4	11.4	5.1	3.2	4.6	6.8	7.9	7.3	7	9.7	12.7	9.9	8.8	8.5	7.2	6.1	2.7	2.4	2.7	2.8	1.6	20.4
25	2.3	2.9	3.4	2.1	4	3	6.9	12.6	12.9	17.6	15.5	11.8	8.7	8.7	8.9	12.9	14.3	14.8	12.8	8.1	6.4	7.6	6.1	4.8	17.6
26	3.1	3.3	2.2	2.7	4.1	3.5	2.1	3.4	7.5	13.7	10.2	12.1	11.1	4.7	11.8	6.1	9.9	13.3	11.7	9.9	10.8	8.7	8.6	11.9	13.7
27	13.5	11.9	11.3	8	7.8	6.9	3	3.7	3.8	7.6	6.8	7.3	7.7	6.7	9	6.6	7.9	9.9	5.7	5.9	2	3.2	3.7	4.1	13.5
28	2.7	4.2	2.4	2	3.3	4.4	2.8	7.6	9.6	8.5	9.3	13.3	13.8	11.3	9.2	11.1	9.5	8.1	7.3	3.7	3.8	7.6	7.2	5.6	13.8
29	7.4	6.2	12.2	12.2	10.7	9.8	7.9	8.2	6.6	9	12.9	13.6	14.3	12.8	14.6	15.9	15.8	11.7	8.5	4.6	3.2	4.8	7.4	10.7	15.9
30	6.7	12.2	6.8	11.4	10.1	8.2	15.1	9.7	9.2	5.8	4.5	3.9	9.4	8.7	16.1	11.7	18.7	20.3	12.9	17	23.4	14.9	13.8	11.5	23.4
31	12	10.2	10.6	10.4	8.2	8.6	7.7	9.2	11.2	7.8	6.7	9.5	7.7	9.1	8.1	8.7	11.5	8.6	4.6	3	1.7	2	2.1	2.3	12
PEAK	13.5	18.6	19.2	20.4	11.4	11.5	15.1	17.4	22.3	23.2	21.8	22.5	23.4	25.4	22.3	26.1	21.9	20.3	33.3	17.0	23.4	14.9	13.8	19.9	

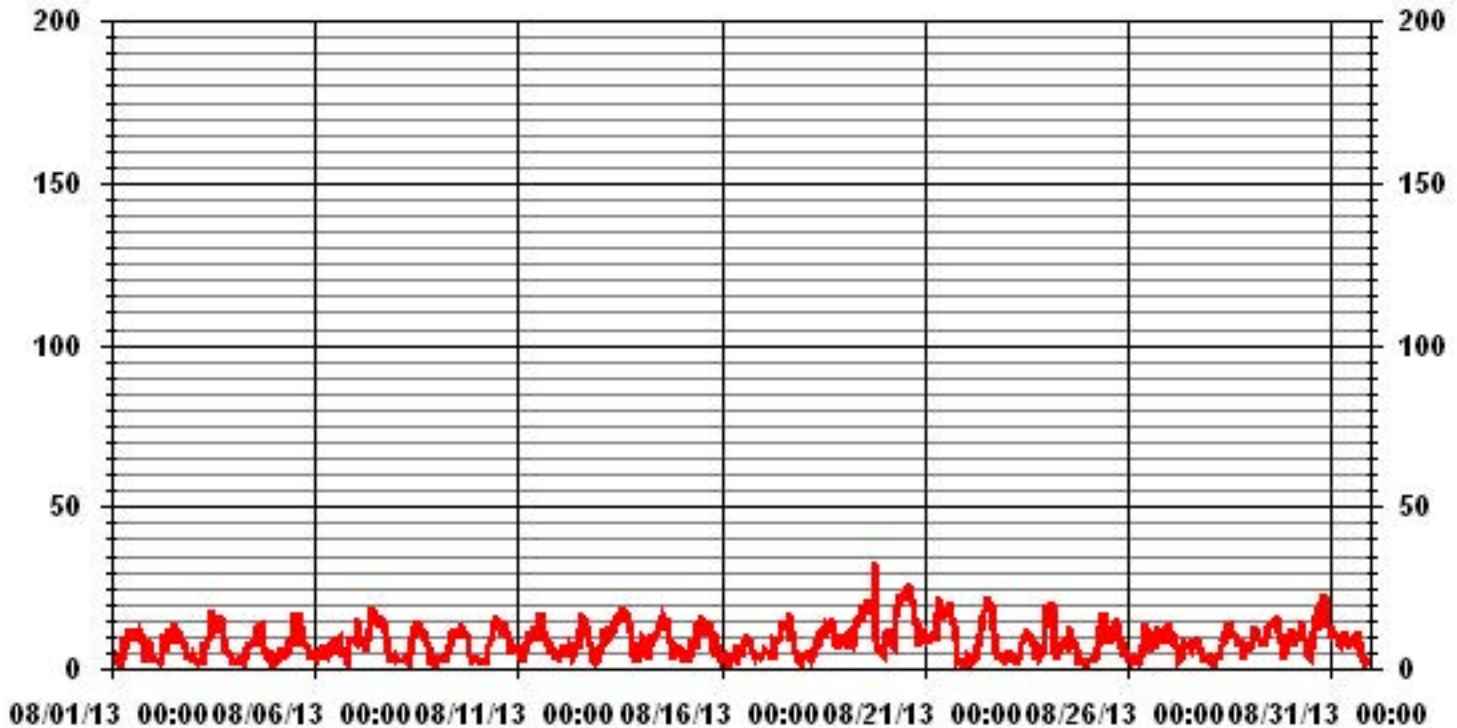
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

MAXIMUM INSTANTANEOUS READING	33.3	KPH	@ HOUR(S)	18
			ON DAY(S)	19

# 01 Hour Averages



LICA  
WSP / WD Joint Frequency Distribution (Percent)

August 2013

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	1.34	3.49	5.24	5.24	5.77	6.04	11.96	4.97	2.68	4.03	5.24	7.66	3.62	2.82	1.61	.53	72.31
< 12.0	.13	.40	1.20	.53	2.01	1.20	4.97	1.34	.13	.13	1.07	1.88	3.36	.94	1.07	.53	20.96
< 20.0	.00	.00	.00	.00	.00	.00	.40	.00	.00	.00	.13	.00	1.20	.80	.00	.13	2.68
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.47	3.89	6.45	5.77	7.79	7.25	17.33	6.31	2.82	4.16	6.45	9.54	8.19	4.56	2.68	1.20	

Calm : 4.03 %

Total # Operational Hours : 744

Distribution By Samples

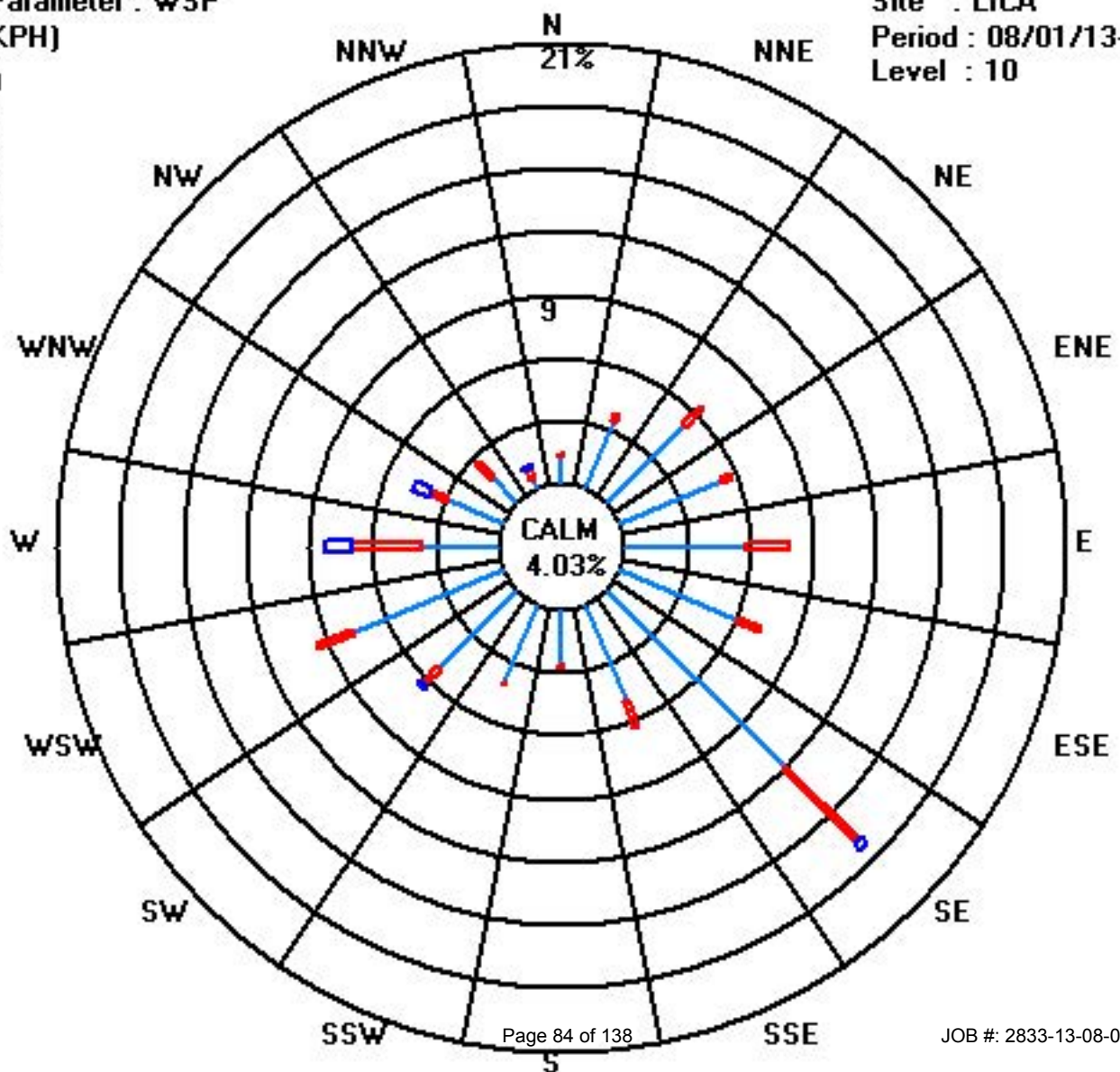
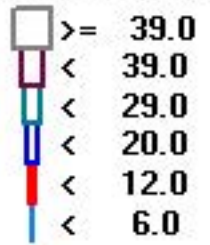
Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	10	26	39	39	43	45	89	37	20	30	39	57	27	21	12	4	538
< 12.0	1	3	9	4	15	9	37	10	1	1	8	14	25	7	8	4	156
< 20.0							3				1		9	6		1	20
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	11	29	48	43	58	54	129	47	21	31	48	71	61	34	20	9	

Calm : 4.03 %

Total # Operational Hours : 744



Class Limits (KPH)



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**J YWcf 'K ]bX'8 ]f YW]cb '**

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2013

## VECTOR WIND DIRECTION (WD) hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUADRANT	RDGS.
DAY																											
1	199	241	136	244	22	141	260	35	51	49	62	69	66	28	51	44	80	76	71	72	13	97	111	64	64	ENE	24
2	78	166	233	218	74	253	106	116	118	104	117	117	78	49	80	40	59	140	137	143	149	128	123	100	102	E	24
3	1	252	76	23	269	225	130	136	173	197	208	204	209	189	174	201	152	145	149	145	142	137	132	143	168	SSE	24
4	290	84	210	285	95	117	134	189	231	248	271	248	209	91	225	234	354	29	50	55	35	234	267	161	247	WSW	24
5	79	161	315	110	244	231	253	299	281	61	91	38	17	306	5	46	54	32	94	88	177	346	312	166	40	NE	24
6	288	280	350	291	353	12	352	126	10	239	318	289	313	0	40	40	203	210	200	150	352	22	94	109	352	N	24
7	99	30	104	80	110	55	76	112	90	104	109	111	105	93	71	101	94	79	80	148	134	97	174	246	95	E	24
8	182	226	217	236	206	238	267	299	65	57	54	52	32	40	55	69	46	83	116	148	150	233	137	217	66	ENE	24
9	223	201	250	223	217	185	126	140	139	143	146	194	125	147	146	143	149	164	154	160	124	121	96	84	149	SSE	24
10	111	44	52	100	341	30	71	135	127	132	139	147	157	179	198	166	163	149	148	141	140	139	136	135	146	SE	24
11	143	138	112	107	139	137	136	136	133	135	145	160	139	137	128	135	122	107	95	103	202	83	238	80	132	SE	24
12	37	209	231	79	50	99	92	153	164	123	86	95	112	134	136	134	132	140	141	100	60	67	71	111	124	ESE	24
13	140	124	125	106	115	137	138	127	137	142	135	136	135	142	140	142	143	137	143	147	136	124	124	137	135	SE	24
14	139	135	137	137	207	75	118	136	129	121	135	138	155	155	150	169	160	165	168	140	130	142	133	144	144	SE	24
15	140	133	71	104	104	129	137	143	129	131	136	126	141	155	225	250	270	272	269	260	339	320	303	26	172	S	24
16	214	264	265	23	234	179	291	276	293	54	21	305	46	246	220	208	237	232	217	225	252	239	248	244	245	WSW	24
17	239	248	254	253	221	179	187	279	252	254	246	236	248	248	310	227	229	225	221	203	207	154	151	225	241	WSW	24
18	200	242	253	128	120	145	265	75	132	118	138	165	197	232	244	245	240	249	244	241	261	287	273	257	235	SW	24
19	232	255	265	251	243	252	241	260	265	276	280	268	267	282	270	274	265	245	284	297	215	241	241	261	265	W	24
20	236	249	241	232	240	240	247	263	270	278	272	279	286	278	281	277	282	292	294	271	268	268	262	261	272	W	24
21	245	246	255	258	255	262	242	269	276	278	274	274	288	302	300	305	285	295	309	165	141	141	85	341	278	W	24
22	293	233	228	295	79	105	189	193	205	216	232	240	231	236	225	227	209	221	166	158	175	127	145	112	223	SW	24
23	263	171	248	245	119	352	89	173	13	38	33	49	48	72	86	74	66	79	81	48	67	116	120	116	70	ENE	24
24	168	141	125	119	242	242	46	303	20	58	72	45	16	42	56	88	102	140	152	170	140	223	189	127	107	ESE	24
25	78	99	91	115	241	28	87	140	139	139	148	182	207	210	226	239	269	275	288	298	282	329	326	250	218	SW	24
26	243	263	140	192	268	179	235	26	118	108	86	120	143	170	69	49	73	73	96	95	92	80	78	89	94	E	24
27	86	75	120	59	30	259	3	127	220	233	223	207	252	227	212	237	13	18	11	50	136	299	156	125	120	ESE	24
28	163	276	163	66	123	180	258	124	129	110	126	128	139	136	34	44	39	25	32	42	103	5	356	43	81	E	24
29	64	31	28	32	22	43	64	68	43	25	45	39	32	35	36	87	102	95	110	87	21	56	62	92	54	NE	24
30	125	86	94	133	94	61	82	98	101	201	316	298	269	284	308	287	273	275	280	312	339	343	339	327	319	NW	24
31	322	319	321	323	330	325	320	320	299	311	291	260	285	260	297	248	241	232	212	191	160	141	152	151	300	WNW	24
HOURLY AVG	322	319	350	323	353	352	352	320	299	311	318	305	313	306	310	305	354	295	309	312	352	346	356	341			

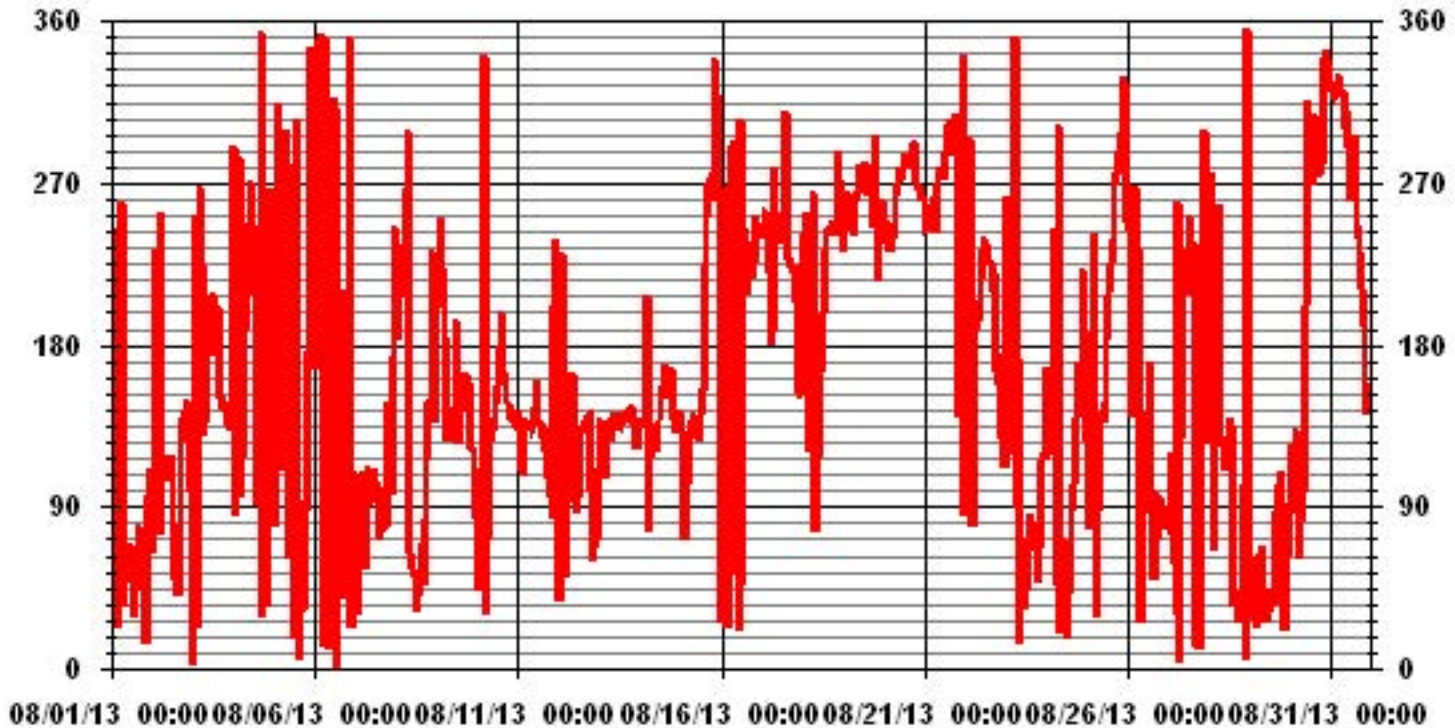
**STATUS FLAG CODES**

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 :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	86.82	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	166 DEG

# 01 Hour Averages



— LICA WDR DEG

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**GhUbXUfX'8 Yj ]U]cb'K ]bX'8 ]f YW]cb'**

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2013

## STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	51	51	43	43	47	60	42	34	52	41	40	54	62	56	41	40	25	23	23	30	51	28	22	19
2	28	48	50	58	50	54	28	28	31	31	37	60	43	27	39	55	53	47	22	9	27	21	33	53
3	51	76	61	66	40	54	19	23	39	49	43	38	43	43	42	47	36	24	24	9	12	12	15	18
4	64	52	58	72	50	57	44	49	42	36	54	57	59	33	48	30	30	24	22	27	46	35	50	31
5	53	36	69	40	64	39	56	35	39	54	43	46	29	41	49	22	25	23	29	23	40	39	50	29
6	27	45	43	19	19	36	35	66	77	48	52	66	56	29	42	47	39	28	40	43	41	28	35	21
7	27	25	26	42	28	29	43	26	26	26	25	26	29	34	29	25	30	31	26	22	52	38	45	47
8	58	60	38	17	32	45	38	38	67	41	35	41	40	52	41	43	38	33	31	19	39	34	36	32
9	69	43	48	60	55	51	43	17	45	37	42	49	33	40	34	30	37	34	24	21	25	45	42	23
10	26	43	55	45	59	58	47	22	34	30	31	31	44	49	45	37	38	31	20	10	8	9	10	11
11	15	18	36	68	16	17	12	13	18	18	23	33	16	16	41	17	26	23	19	21	51	24	46	38
12	53	47	60	32	52	27	29	28	27	33	41	28	26	20	19	18	20	16	19	33	37	24	35	39
13	37	24	21	23	25	21	17	22	17	21	22	25	21	19	20	18	18	14	13	14	13	31	21	12
14	11	11	13	14	72	56	34	20	24	33	30	24	46	32	36	37	34	35	34	16	14	10	15	17
15	14	27	40	48	53	47	13	16	28	36	26	25	24	35	29	25	23	24	19	15	21	26	17	40
16	33	35	45	44	40	43	35	34	27	45	54	31	56	41	38	45	30	29	26	33	28	11	15	12
17	16	17	15	17	27	59	42	31	24	31	47	34	36	44	30	33	29	31	32	39	56	43	48	74
18	35	61	60	41	56	68	57	48	46	57	60	43	57	44	38	27	28	27	25	23	22	21	20	22
19	25	23	19	24	25	24	25	23	22	23	26	27	28	22	23	24	28	26	23	33	23	29	26	27
20	29	23	27	27	28	24	25	20	24	23	22	23	23	24	24	23	23	23	21	19	16	16	18	19
21	23	25	22	22	21	20	26	22	22	24	27	25	24	21	23	25	25	23	16	32	25	55	71	65
22	49	35	67	60	66	54	60	45	34	38	34	27	30	27	31	35	41	33	28	39	52	55	48	52
23	53	66	46	39	33	65	53	45	68	35	28	36	35	36	40	28	22	26	26	38	55	56	30	57
24	54	18	19	19	42	72	65	45	50	50	51	58	46	48	45	53	41	32	18	29	46	67	48	51
25	45	41	45	37	50	54	45	18	18	17	27	36	36	35	37	27	27	22	19	15	14	16	14	40
26	30	28	46	37	63	53	71	70	27	27	28	34	33	46	28	26	25	21	21	20	19	21	22	21
27	23	22	31	53	59	42	47	35	39	28	31	43	52	70	57	65	65	34	26	30	50	37	30	29
28	71	60	59	65	49	48	51	36	25	33	40	31	45	51	55	26	22	20	45	51	48	46	29	29
29	26	27	26	40	24	21	19	24	24	23	22	26	20	24	21	23	22	21	24	42	36	24	19	21
30	26	65	61	26	31	22	24	23	40	48	25	39	31	29	21	24	21	21	22	19	18	17	17	15
31	14	14	15	13	13	13	13	18	23	30	64	60	48	50	55	43	30	32	24	37	45	47	42	44

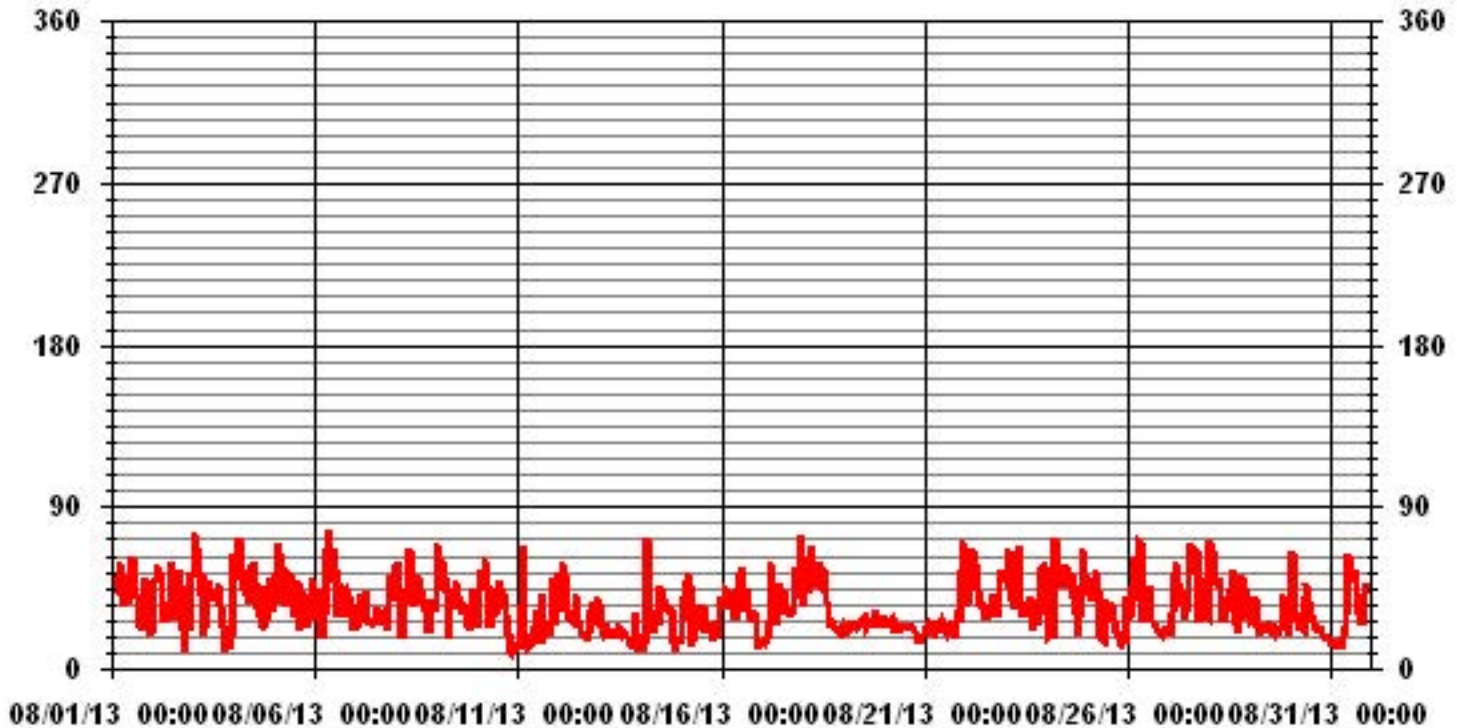
**STATUS FLAG CODES**

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

LAST CALIBRATION: November 28, 2012

CALIBRATION TIME: 0 HRS      OPERATIONAL TIME: 744 HRS

# 01 Hour Averages



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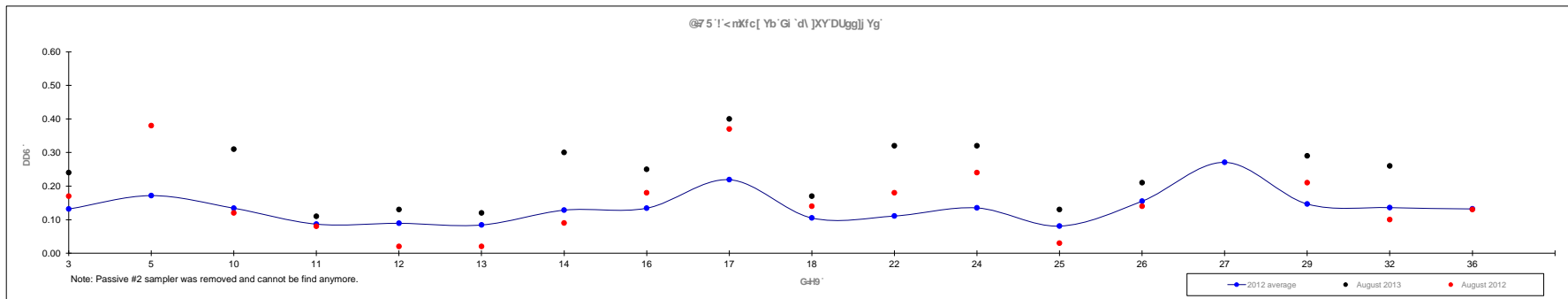
Duggj YGi a a UfmFYgi `hg`Zf'5i [ i gh&\$%

@\_YUbX`-bXi glfni' 7 ca a i b]mi5 ggcVUjcb

<nKrcj Yb Gi 'd] jXY  
ddV

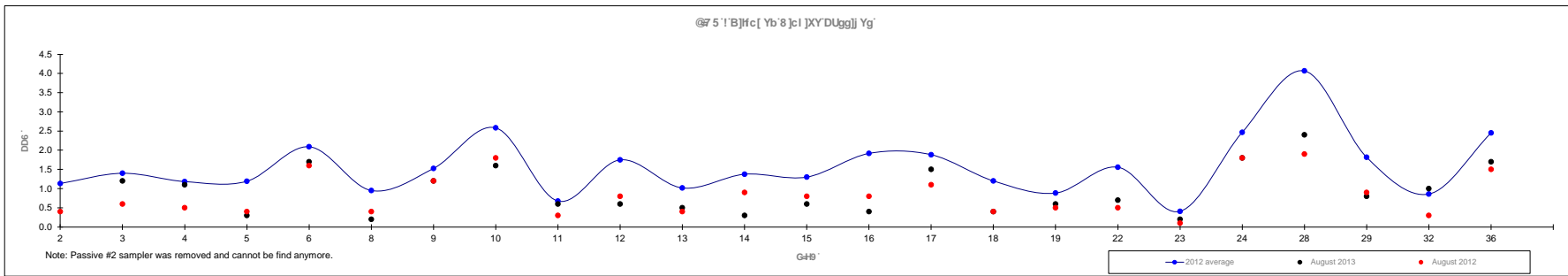
	'	)	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	FYUj[b[	Si [ i gh&\$%	GjW
AYUb	0.13	0.17	0.13	0.09	0.09	0.08	0.13	0.13	0.22	0.11	0.11	0.14	0.08	0.16	0.27	0.15	0.14	0.13		0.40		-	
A Yb i a	0.09	0.06	0.08	0.04	0.02	0.02	0.06	0.09	0.09	0.06	0.06	0.07	0.03	0.07	0.02	0.06	0.09	0.07		0.11		#11	
A U i a	0.21	0.38	0.35	0.15	0.16	0.16	0.20	0.23	0.55	0.16	0.18	0.24	0.17	0.28	0.74	0.49	0.23	0.23		1.36		#36	

@7 5 '1'<nKrcj Yb Gi 'd] jXYDuggj Yg'



Duggj YGi a a UfmiFYgi `hg'Z:f'5i [ i gh&\$%  
 @J\_YUbX'~bXi gfm'v '7 ca a i b]m5 ggcVUjcb

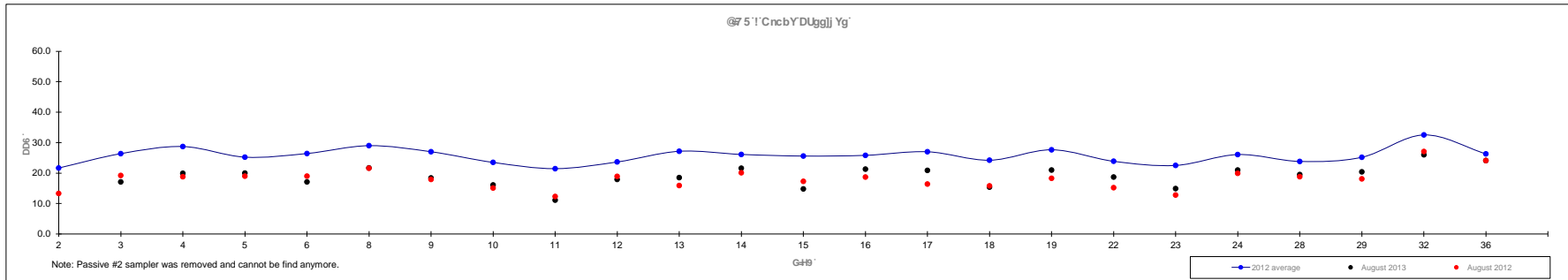
		B]fc[ Yb'8]cl ]XY dGV																				5i [ i gh&\$%		
AYUb	&	'	(	)	*	,	-	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	F YUK]b[	G]Y
	1.1	1.4	1.2	1.2	2.1	1.0	1.5	2.6	0.7	1.8	1.0	1.4	1.3	1.9	1.9	1.2	0.9	1.6	0.4	2.5	4.1	1.8	0.9	2.5
A]bb i a	0.4	0.5	0.4	0.3	0.9	0.3	0.7	1.3	0.2	0.4	0.3	0.5	0.3	0.6	0.8	0.4	0.3	0.4	0.1	1.1	1.2	0.4	0.2	1.0
AU]a i a	3.6	3.6	3.6	3.2	4.7	2.1	3.6	5.2	1.8	4.4	2.5	3.2	2.9	4.9	3.9	2.7	2.0	3.2	1.2	6.0	8.6	4.8	2.4	6.6
																						0.9	-	
																							0.2	#8, #23
																							2.4	#28



DUggj YGi a a UfmFYgi `rgZf'5i [ i gh&\$%

@\_YUbX'`bXi gffni' `7ca i b)m5ggcVUjcb

	CncbY ddV																									5i [ i gh&\$%	
AYUb	&	'	(	)	'	.	-	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	FVUXj[	gYV
	21.7	26.4	28.7	25.2	26.4	29.0	27.0	23.5	21.5	23.7	27.2	26.1	25.6	25.8	27.0	24.2	27.7	23.9	22.5	26.1	23.8	25.2	32.5	26.3	19.0	-	
Ajja i a	12.8	18.4	18.8	19.0	17.5	21.6	17.6	15.1	12.3	13.9	15.9	17.8	16.8	18.4	16.4	15.8	18.3	15.2	11.8	17.5	17.1	17.5	24.4	20.4	11.1	#11	
AUja i a	32.2	41.2	42.3	34.7	37.0	38.8	40.2	35.4	32.1	33.1	38.9	37.4	36.6	38.1	38.7	33.8	35.6	35.2	36.1	37.9	30.2	33.2	40.8	33.1	26.0	#32	



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7 U]VfUh]cb`F Ydcfhg`

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**Gi`d\ i f'8 ]cI ]XY`**



**GC&7 UJVfUjcb F Ydcfh**  
**GUjcb-bzfa Ujcb**

Calibration Date	August 15, 2013	Previous Calibration	July 7, 2013
Company	@ Y UbX-bXi glfmi' 7 ca a i b]mi5 ggcVUjcb		
Plant / Location	7 c X @J Y Gci h		
Start Time (MST)	8:44	End Time (MST)	11:02
Reason:	Monthly calibration		
Barometric Pressure	27.99 in HG	Station Temperature	23 Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	BAL3031
DAS Output Voltage	0-10 Volts	Cal Gas Expiry date	December 29, 2016
		Chart Rec. Output	N/A Volts

**9 ei Jda Ybh-bzfa Ujcb**

Analyzer Make / Model:	Thermo 43i	S/N :	806528242	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	EnviroNics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	A3485K		
Chart Recorder Make / Model:	N/A	S/N :	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

**5 bUmYf GYHjg**

Before Calibration			After Calibration		
Concentration Range	0-500 ppb				
Sample Flow / Box Temp	447 ccm	28.1 Deg C	477 ccm	31.7 Deg C	
HVPS / Lamp Setting	-632.3	721	-632.3	720	
PMT / RxCell Temp	OK Deg C	45 Deg C	OK Deg C	45 Deg C	
Converter / IZS Temp	N/A Deg C	45 Deg C	N/A Deg C	45.0 Deg C	
Offset / Slope	6.3	1.073	7.7	1.068	

**7 UJVfUjcb 8 UHJ**

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	N/A
	No zero adj.			
4914	39.86	399	401	0.9952
	No span adj.			
4975	19.9	198	202	0.9802
4985	10.0	99	103	0.9593
4994	0	0	0	N/A
			Sum of Least Squares	0.9906
			New Correction Factor	0.9952

**NG 7 UJVfUjcb 8 UHJ**

Before Calibration		After Calibration	
Auto Zero	0.0	Auto Zero	0.0
Auto Span	380.0	Auto Span	375.3
Sample Lines Connected		Sample Lines Connected	Yes

**DYfWbh7 Ubf Y**

Previous Month's Calibration Correction Factor:	0.9980
Current Correction Factor Before Span Adjust:	0.9952
Percent Change:	0.3%

Notes: **B5 . BchUdd JWVY**

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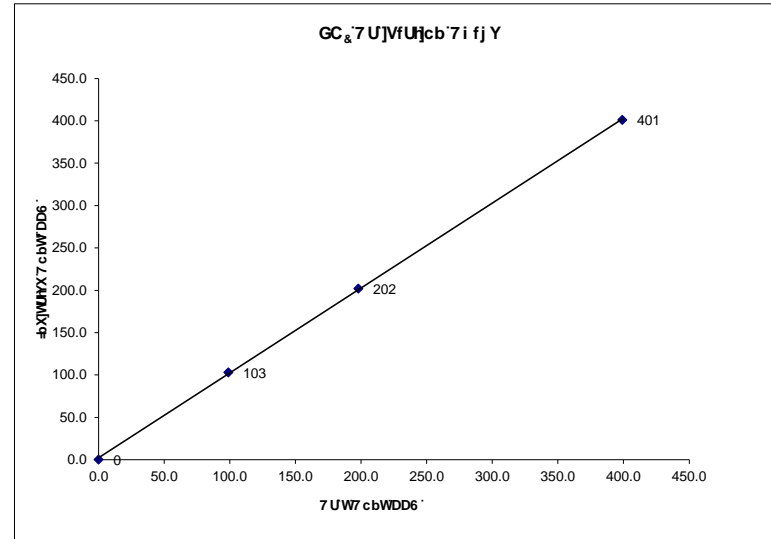


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**GC&7 UJVfUjcb 7 i fj Y**

Calibration Date	August 15, 2013
Company	@ Y UbX-bXi glfmi' 7 ca a i b]mi5 ggcVUjcb
Plant / Location	7 c X @J Y Gci h
Start Time (MST)	8:44
End Time (MST)	11:02

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0	N/A		0.999872
99	103	0.9593		1.002405
198	202	0.9802		2.105897
399	401	0.9952		



**BcHfg.**

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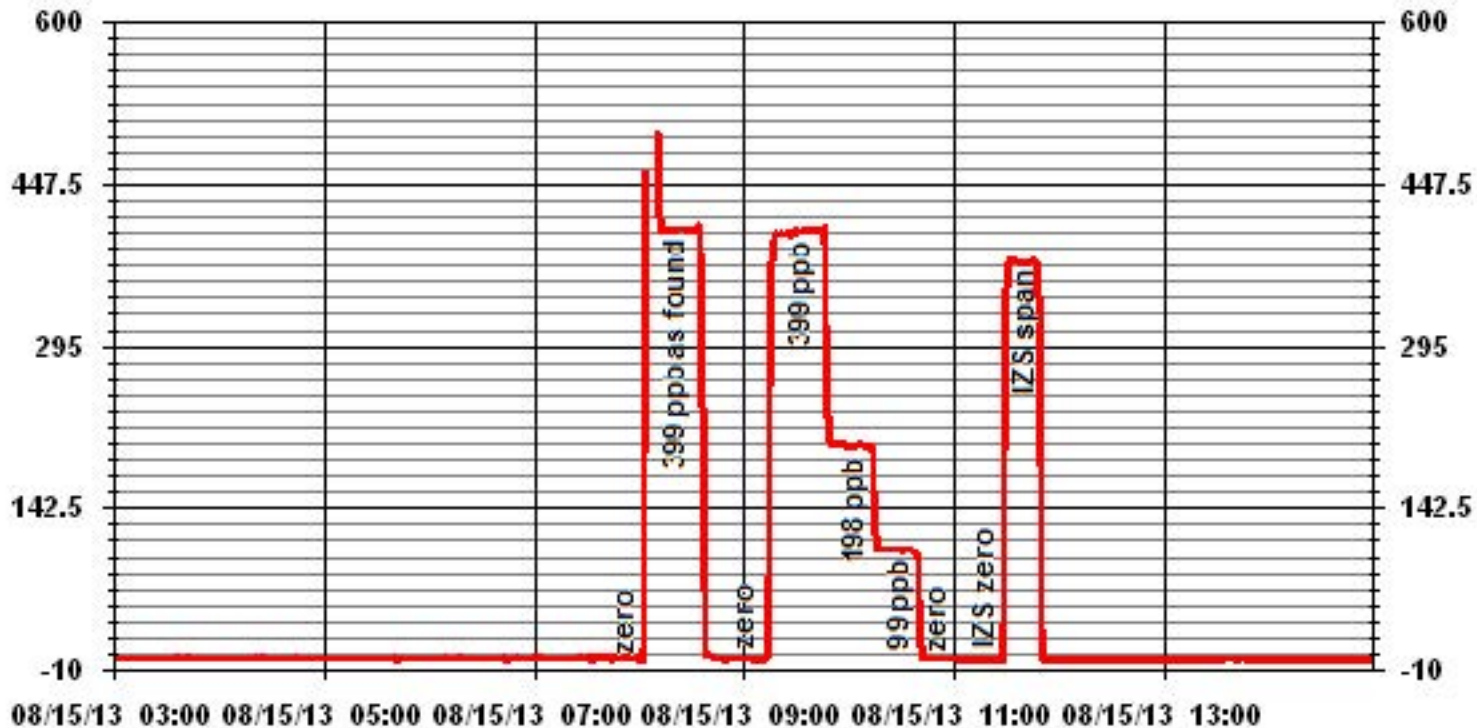


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Calibration Performed by: WA/TB



### 01 Minute Averages



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Hc hU`F YXi WYX`Gi `d\ i f`



**HFG7UJVFUJcb7i f j Y**  
**GLUJcb7i f j Y**

Calibration Date	August 15, 2013	Previous Calibration	July 7, 2013
Company	@J YUbX7Xi gfrn7 ca a i b]m5 ggcVUJcb		
Plant / Location	7 c X @J Y Gci H		
Start Time (MST)	8:35	End Time (MST)	10:47
Reason:	Monthly calibration		
Barometric Pressure	27.99 in HG	Station Temperature	23 Deg C
Cal Gas	10.1 ppm	Gas Cyl. #	BLM005049
DAS Output Voltage	0-10 Volts	Cal Gas Expiry date	December 25, 2015
		Chart Rec. Output	N/A Volts

**9ei]da Ybhi7cfa UJcb**

Analyzer Make / Model:	Thermo 450i	S/N :	812728560	Method:	Fluorescent
Converter Make / Model:	CND 101	S/N :	501		
Calibrator Make / Model:	API 700	S/N :	690	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	A3485K		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	API 700	S/N :	690		

**5bUmYfGYHj]g**

Before Calibration		After Calibration	
Concentration Range	0-100		
Sample Flow / Box Temp	488 ccm 31.5 Deg C	486 ccm 34.8 Deg C	
HVPS / Lamp Setting	-650.8 745	-650.8 741	
PMT / RxCell Temp	OK Deg C 45 Deg C	OK Deg C 45 Deg C	
Converter / IZS Temp	810 Deg C 45 Deg C	810 Deg C 45.0 Deg C	
Offset / Slope	13.4 0.917	12.7 0.877	

**7UJVFUJcb8UU**

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	N/A
	No zero adj.			
4958	40	81	81	1.0000
	No span adj.			
4980	20.0	40	40	1.0000
4990	11.4	23	22	1.0464
5000	0.0	0	0	N/A
			Sum of Least Squares	1.0030
			New Correction Factor	1.0000

**NG7UJVFUJcb8UU**

Before Calibration		After Calibration	
Auto Zero	0.0		0.0
Auto Span	33.0		33.0
Sample Lines Connected			Yes

**DYfWbh7\Ub]Y**

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

Notes: **B5 . BchUdd]WVY**

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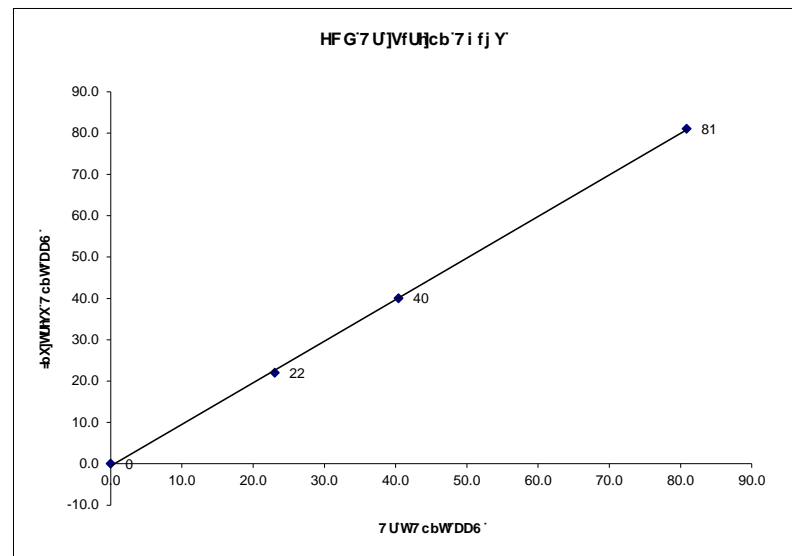
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Calibration Performed by: WA/TB

**HFG7UJVFUJcb7i f j Y**

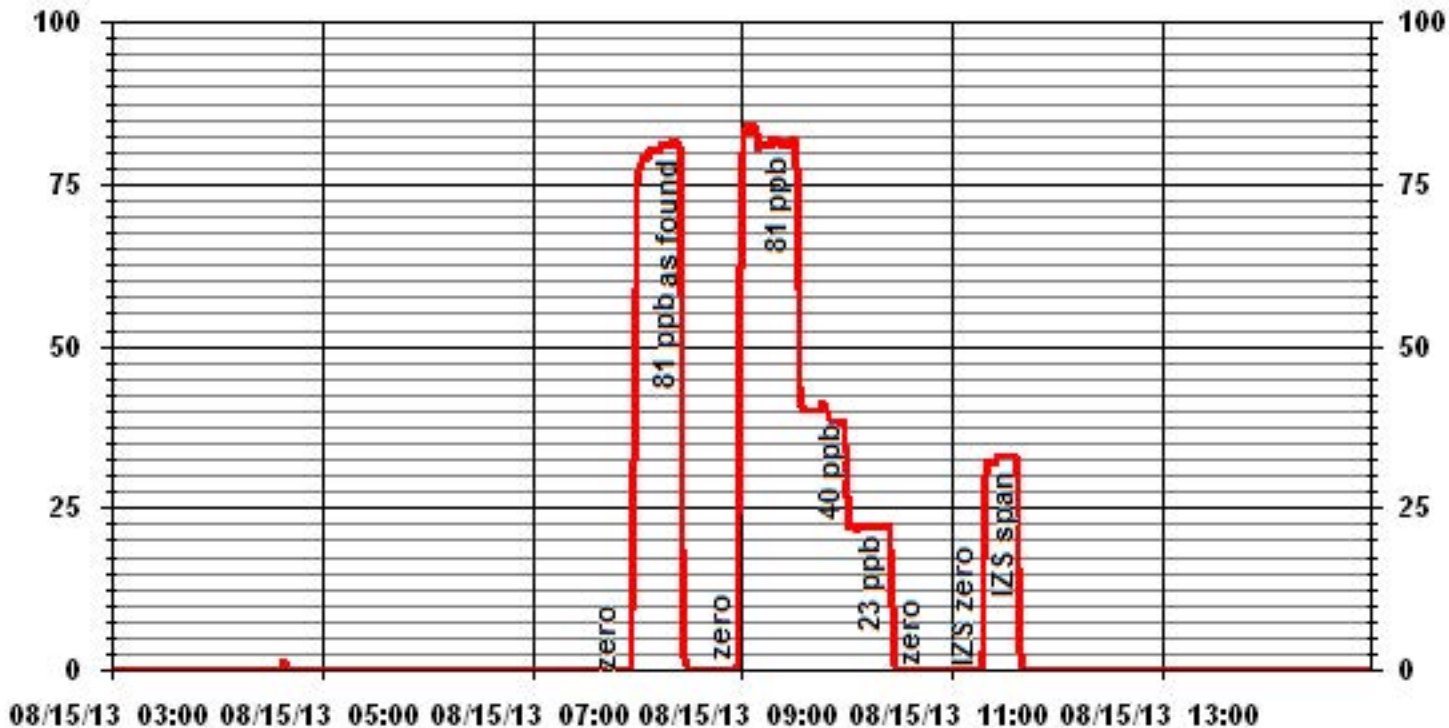
Calibration Date	August 15, 2013
Company	@J YUbX7Xi gfrn7 ca a i b]m5 ggcVUJcb
Plant / Location	7 c X @J Y Gci H
Start Time (MST)	8:35
End Time (MST)	10:47

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
0	0	N/A	Slope (0.85 to 1.15)	0.999792
23	22	1.0464	Intercept (± 3% F.S.)	1.005465
40	40	1.0000		
81	81	1.0000		-0.510574



Notes:

# 01 Minute Averages



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Hc hU' < mXfc WUf Vc bg'

H<7 7 U]VfUjcb F Ydcfh

Station Information	
Calibration Date:	August 15, 2013
Company:	@J_YLbX' bXi ghfmi' 7 ca a i b]mi5 ggcVfUjcb
Plant / Location:	7 c' X' @J_Y Gci fl
Start Time (MST):	11:24
End Time (MST):	12:09
Reason:	AF Point
Barometric Pressure:	27.99 in HG
Station Temperature:	23 Deg C
Calibrator:	API 700
S/N:	690
Cal Gas Concentration:	CH4 600 PPM C3H8 204 PPM
TOTAL CH4:	1161.0 PPM
Gas Cyl. #:	LL155310
Cal Gas Expiry Date:	September 9, 2013
DAS make & Model:	ESC 8832
S/N:	A3485K
Chart Recorder:	N/A
S/N:	N/A
Output Voltage Range:	0-10 VDC
Chart Speed:	N/A mm/hr

5 bUmYf' bZfa Ujcb

Make / Model:	Thermo 51C-LT	S/N:	427408718	Method:	Flame Ionization
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5 bUmYf' GYfHbj g

	Before Calibration		After Calibration	
Concentration Range	0-50	ppm	0-50	ppm
Sample Pressure	6.5	psi	6.5	psi
Hydrogen Pressure	9	psi	9	psi
Air Pressure	20	psi	20	psi

7 U]VfUjcb 8 UH

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
1995	0.0	0.0	0.3	N/A
	No zero adj.			
1995	74.0	41.5	41.4	1.0030
New Correction Factor:				1.0030

DYfWbh7\ Ub] Y

Previous Calibration Correction Factor:	1.0030
Current Correction Factor Before Span Adjust:	1.0030
Percent Change:	0.0%

NG7 U]VfUjcb 8 UH

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	36.35	36.35
Sample Lines Connected		MYg

Cylinder Pressures	
Span	600 psi Hydrogen 150 psi Zero Air 34 psi

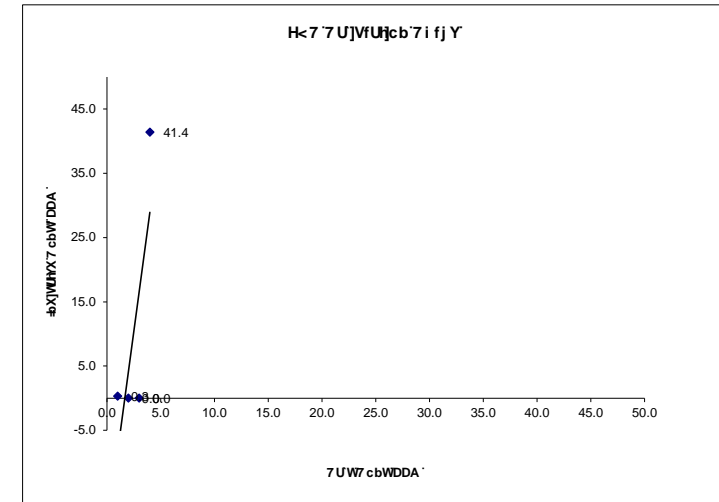
Notes: B# . Bch5 dd' JWY  
Change sample filter

Calibration Performed by: WA/TB

H<7 7 U]VfUjcb 7 i fj Y

Calibration Date:	August 15, 2013
Company:	@J_YLbX' bXi ghfmi' 7 ca a i b]mi5 ggcVfUjcb
Plant / Location:	7 c' X' @J_Y Gci fl
Start Time (MST):	11:24
End Time (MST):	12:09

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient	Slope	Intercept
0.0	0.3	N/A	(≥ 0.995)	(0.85 to 1.15)	(± 3% F.S.)
41.5	41.4	1.0030			



Notes:

**H<7 '7 UJVfUjcb FYdcfh**

**Station Information**

Calibration Date:	August 15, 2013	Previous Calibration:	July 8, 2013
Company:	@J YUbX bXi ghmi' 7 ca a i b]mi5 ggcVfUjcb		
Plant / Location:	7 c'X @J YGci h		
Start Time (MST):	12:16	End Time (MST):	14:25
Reason:	Monthly calibration		
Barometric Pressure:	27.99 in HG	Station Temperature:	23 Deg C
Calibrator:	API 700	S/N:	690
Cal Gas Concentration:	CH4 600 PPM	C3H8 204 PPM	
	TOTAL CH4 1161.0 PPM	Gas Cyl. # LL155310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832	S/N :	A3485K
Chart Recorder:	N/A	S/N:	N/A
Output Voltage Range	0-10 VDC	Chart Speed:	N/A mm/hr

**5bUmYf bZfa Ujcb**

Make / Model	Thermo 51C-LT	S/N :	427408718	Method	Flame Ionization
<b>5bUmYf GYfhj b] g</b>					
	Before Calibration		After Calibration		
Concentration Range	0-50 ppm		0-50 ppm		
Sample Pressure	6.5 psi		6.5 psi		
Hydrogen Pressure	9 psi		9 psi		
Air Pressure	20 psi		20 psi		

**7 UJVfUjcb 8 UU**

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
1995	0.0	0.0	0.0	N/A
	No zero adj.			
1995	74.0	41.5	41.5	1.0000
	No span adj.			
1996	37.0	21.1	21.0	1.0062
1995	20.0	11.5	11.1	1.0382
1995	0.0	0.0	0.0	N/A
New Correction Factor:				1.0000

**DYfVb7 Uj Y**

Previous Calibration Correction Factor:	1.0030
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	0.3%

**NG 7 UJVfUjcb 8 UU**

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	36.35	36.4
Sample Lines Connected		MYg

Cylinder Pressures

Span 700 psi      Hydrogen 2000 psi      Zero Air 34 psi

Notes: **B# . Bch5 dd' jWV Y**

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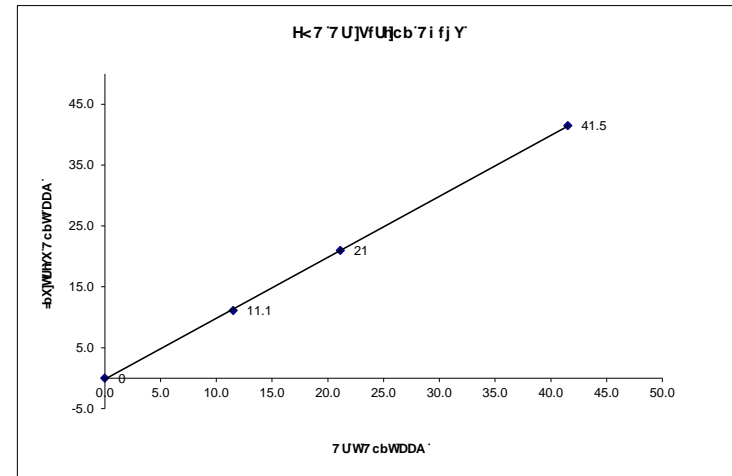
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Calibration Performed by: WATB

**H<7 '7 UJVfUjcb 7 i fj Y**

Calibration Date	August 15, 2013
Company	@J YUbX bXi ghmi' 7 ca a i b]mi5 ggcVfUjcb
Plant / Location	7 c'X @J YGci h
Start Time (MST)	12:16
End Time (MST)	14:25

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope (≥ 0.995) (0.85 to 1.15)	Intercept (± 3% F.S.)
0.0	0.0	N/A	0.999883	1.002239
11.5	11.1	1.0382		-0.18597
21.1	21.0	1.0062		
41.5	41.5	1.0000		



Notes:

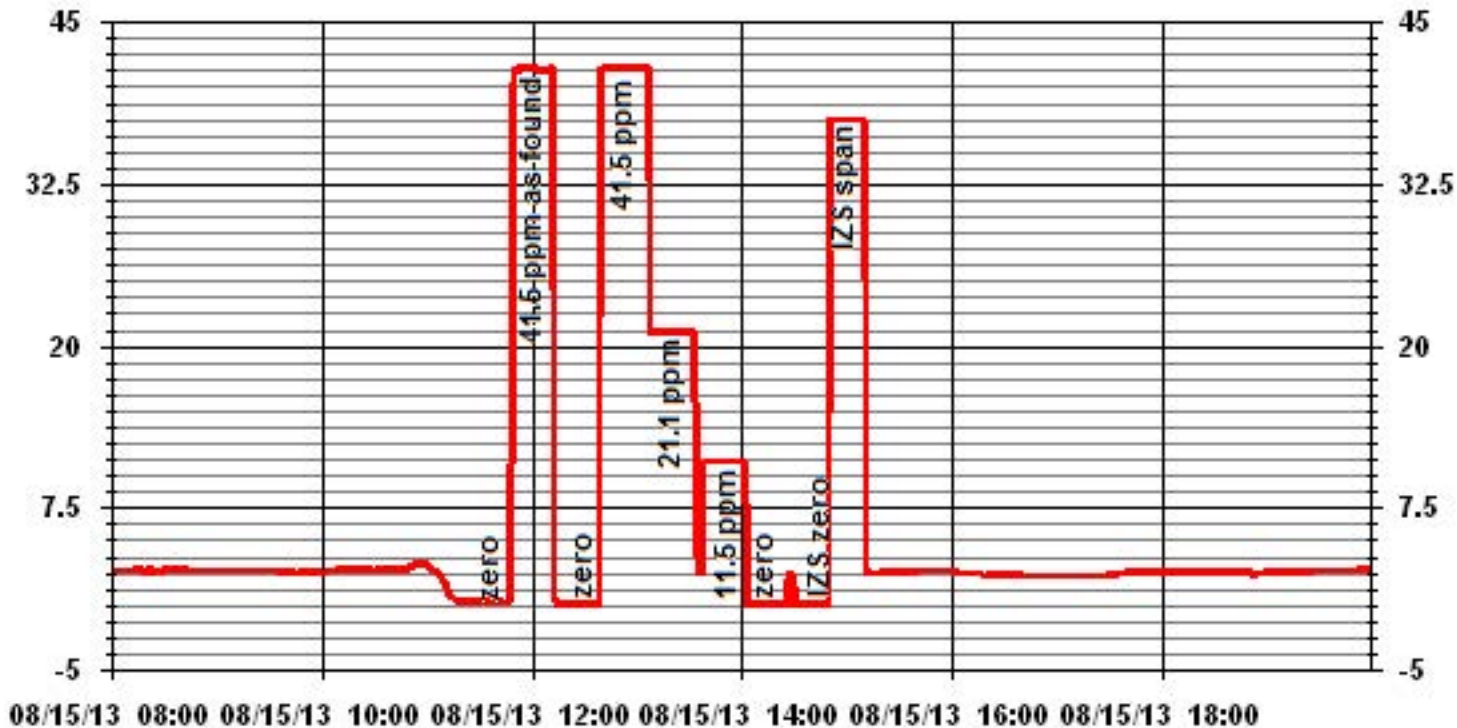
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# 01 Minute Averages



**H<7 7 UJVFUjcb F Ydcfh**

**Station Information**

Calibration Date:	August 30, 2013	Previous Calibration:	N/A
Company:	@J_YUbX' bXi glfni' 7 ca a i b]mi5 ggcWUjcb		
Plant / Location:	7 c X' @J_YGci h		
Start Time (MST)	11:01	End Time (MST)	13:05
Reason:	Post repair calibration		
Barometric Pressure:	27.93 in HG	Station Temperature:	23 Deg C
Calibrator:	API 700	S/N:	690
Cal Gas Concentration:	CH4 600 PPM	C3H8 204 PPM	
	TOTAL CH4 1161.0 PPM	Gas Cyl. # LL155310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832	S/N :	A3485K
Chart Recorder:	N/A	S/N:	N/A
Output Voltage Range	0-10 VDC	Chart Speed:	N/A mm/hr

**5bUmYf bZfa Ujcb**

Make / Model	Thermo 51C-LT	S/N :	427408718	Method	Flame Ionization
<b>5bUmYf GYHbj g</b>					
	Before Calibration		After Calibration		
Concentration Range	0-50 ppm		0-50 ppm		
Sample Pressure	6.5 psi		6.5 psi		
Hydrogen Pressure	9 psi		9 psi		
Air Pressure	20 psi		20 psi		

**7 UJVFUjcb 8 UH**

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
1995	0.0	0.0	0.0	N/A
	No zero adj.			
1995	74.0	41.5	41.4	1.0030
	No span adj.			
1996	37.0	21.1	21.0	1.0062
1995	20.0	11.5	11.1	1.0382
1995	0.0	0.0	0.0	N/A
New Correction Factor:				1.0030

**DYfWbh7\ Ubf Y**

Previous Calibration Correction Factor:	N/A
Current Correction Factor Before Span Adjust:	1.0030
Percent Change:	#VALUE!

**NG7 UJVFUjcb 8 UH**

	Before Calibration	After Calibration
Auto Zero	N/A	0.0
Auto Span	N/A	36.35
Sample Lines Connected		MYg

Cylinder Pressures			
Span	700 psi	Hydrogen	2000 psi
		Zero Air	34 psi

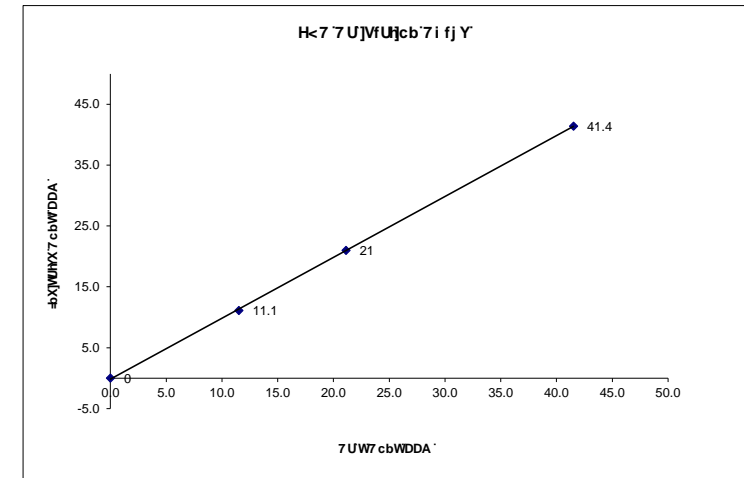
Notes: **B# . Bch5 dd' WU' Y**  
 Pump rebuild.

Calibration Performed by: \_\_\_\_\_ WA \_\_\_\_\_

**H<7 7 UJVFUjcb 7 i fj Y**

Calibration Date	August 30, 2013
Company	@J_YUbX' bXi glfni' 7 ca a i b]mi5 ggcWUjcb
Plant / Location	7 c X' @J_YGci h
Start Time (MST)	11:01
End Time (MST)	13:05

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) 0.999896
0.0	0.0	N/A	Intercept	(0.85 to 1.15) 0.999762
11.5	11.1	1.0382		(± 3% F.S.) -0.16505
21.1	21.0	1.0062		
41.5	41.4	1.0030		

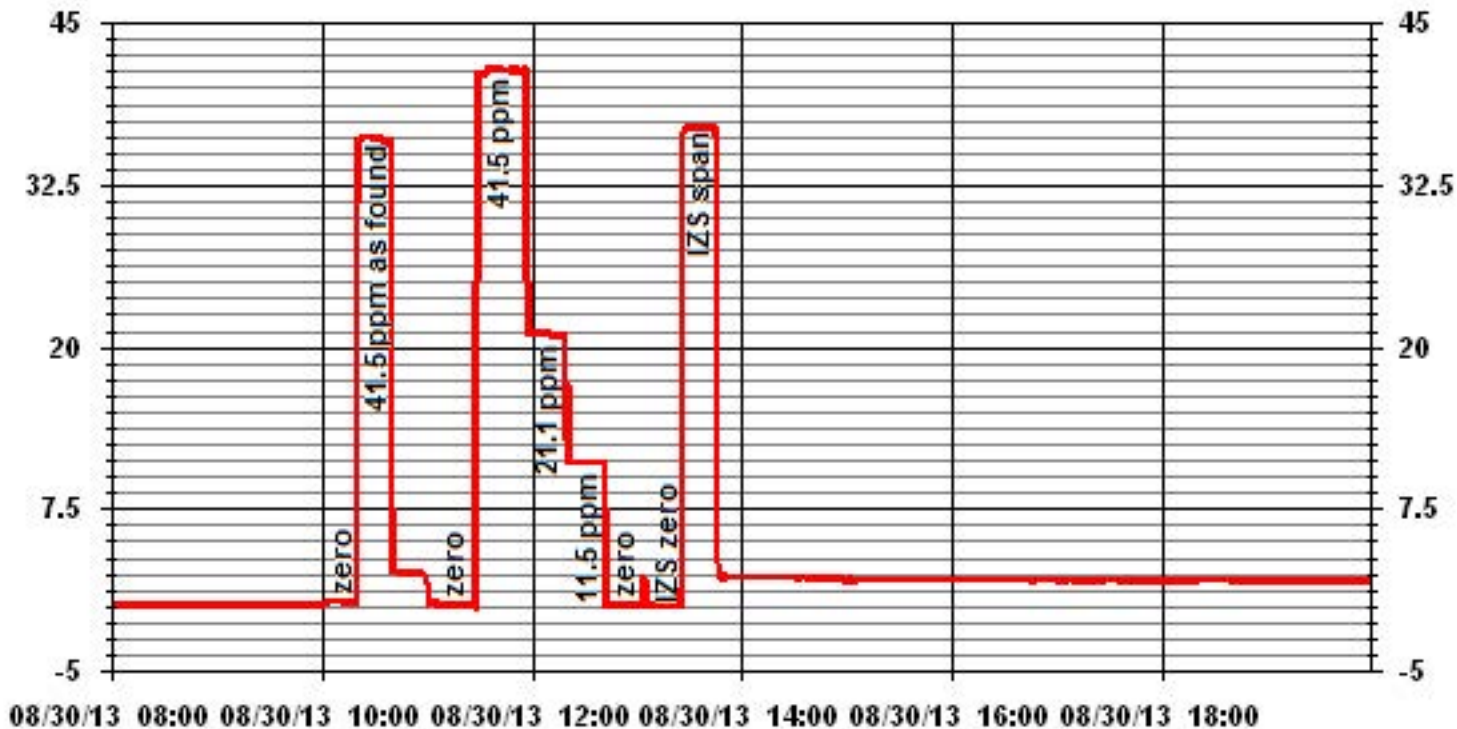


Notes:

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### 01 Minute Averages



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DUFhW`UhY`A Uhf`&')`

H9CA (%): 5i Xjh

<b>GHJcb</b>		<b>5i XjhHfUbgZf'GHbXUF</b>	
Date:	August 15, 2013	Make/Model:	Streamline FTS
Station Name:	LICA 1	Serial Number:	LO 091099, HI 091001
Location:	Cold Lake South	Cell s/n:	N/A
Operator:	LICA	Thermometer s/n:	Station Temp. Sensor
<b>GUa d'Yf</b>		<b>GYfi d'UbX'W ffYbhGUa d'Yf'fYUXlb'g</b>	
Make/Model	Thermo TEOM Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	AMU 1775	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A201620804	Filter Load (%)	22.3%
Firmware Ver.	1.52	K <sub>o</sub> Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	27.0
		Press (ATM)	0.935

**7cbj Yfglcb'Zca 'a a <[ 'cf'~<[ 'hc'5 HA 'f5 la cgd\ YfYq**  
 ATM = (mmHg) X (1.316 X 10<sup>-3</sup>) or ATM = ("Hg) X (3.34207 X 10<sup>-2</sup>)

BcHf' Hc'YfUbVWg'UFY bchX'Ug'6 C@ 'jb'6 fUW Yfg

**5i Xjh**

<b>GUh g</b>			
Noise 0\$%\$u[	0.091	Warnings	None
Pump Vacuum 0\$Y \$Ura	0.37	Pump Gauge (inHg)	N/A
<b>HYa dYfUf fY#DfYggi fY</b>		<b>8 °7</b>	
Measured Temp fl-&°7 Ł	27.5		-0.5
Measured Press fl-\$%Ura Ł	0.931	<b>8 5 HA</b>	0.004
<b>:`ck'5i Xjh</b>			
Indicated Main Flow (l/min)	3.00	Main Flow Drift fl-%\$i Ł	1.44%
Measured Main Flow (l/min)	3.00	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift fl-%\$i Ł	0.68%
Measured Bypass Flow (l/min)	13.56	Flow Adjusted to Measured?	Yes
<b>@U_7\ YW</b>		<b>~bglfi a YbhGYfi d</b>	
Main fd'\$%`#a ]bŁ	Base= NA Ref = NA	Flow Control=Active	
Aux fd'\$%`#a ]bŁ	Base= NA Ref = NA	Report Conditions=Actual	
<b>?_ : UWcf</b>			
Measured	N/A		
K <sub>o</sub> Difference fl-&'i Ł	N/A		

**GUfhHja Y.** 11:20 : **]b]gl' Hja Y.** 12:40  
**GUa d'Y'~Yh7'YUbyX.'** No **BYk': ]Hfg'~bglU'YX.'** NA  
**BYk': ]Hf'@UX]b[ 'i .** NA  
**7ca a Ybtg.**

**5i X]rcf#g.** Waseem Ahmed

H9CA (%): 5i Xjh

<b>GHJcb</b>		<b>5i XjhHfUbgZf'GHbXUF</b>	
Date:	August 30, 2013	Make/Model:	Streamline FTS
Station Name:	LICA 1	Serial Number:	LO 091099, HI 091001
Location:	Cold Lake South	Cell s/n:	N/A
Operator:	LICA	Thermometer s/n:	Station Temp. Sensor
<b>GUa d'Yf</b>		<b>GYfi d'UbX'W ffYbhGUa d'Yf'fYUXlb'g</b>	
Make/Model	Thermo TEOM Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	AMU 1775	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A201620804	Filter Load (%)	16.3%
Firmware Ver.	1.52	K <sub>o</sub> Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	18.5
		Press (ATM)	0.933

**7cbj Yfglcb'Zca 'a a <[ 'cf'~<[ 'hc'5 HA 'fb la cgd\ YfYq**  
 ATM = (mmHg) X (1.316 X 10<sup>-3</sup>) or ATM = ("Hg) X (3.34207 X 10<sup>-2</sup>)

BcHf' Hc'YfUbVWg'UFY bchX'Ug'6 C@ 'jb'6 fUW Ytg

**5i Xjh**

<b>GUh g</b>			
Noise 0\$%\$u[	0.008	Warnings	None
Pump Vacuum 0\$Y \$Ura	0.38	Pump Gauge (inHg)	N/A
<b>HYa dYfUf fY#DfYggi fY</b>		<b>8 °7</b>	
Measured Temp fl-&°7 Ł	18.5		0.0
Measured Press fl-\$%Ura Ł	0.930	<b>8 5 HA</b>	0.003
<b>:`ck'5i Xjh</b>			
Indicated Main Flow (l/min)	3.00	Main Flow Drift fl-%\$i Ł	1.77%
Measured Main Flow (l/min)	3.01	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift fl-%\$i Ł	0.00%
Measured Bypass Flow (l/min)	13.76	Flow Adjusted to Measured?	Yes
<b>@U_7\ YW</b>		<b>~bglfi a YbhGYfi d</b>	
Main fd '\$'°) `#a ]bŁ	Base= 0.00 Ref = 0.00	Flow Control=Active	
Aux fd '\$'°) `#a ]bŁ	Base= 0.00 Ref = 0.00	Report Conditions=Actual	
<b>?_c : UWcf</b>			
Measured	N/A		
K <sub>o</sub> Difference fl-&'i Ł	N/A		

**GUfhHja Y.** 11:20 : **]b]g\ 'Hja Y.** 13:05 PM  
**GUa d'Y'~Yh7'YUbyX.'** Yes **BYk' : ]hfg'~bglU'YX.'** Yes  
**BYk' : ]hfr'@UX]b[ 'i .** 15.9%  
**7ca a Ybtg.**

**5i X]rcf#g.** Waseem Ahmed

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**B]hfc[ Yb'8 ]cI ]XY'**

**BCI '1BC' BC&7 UJVfUjcb FYdcfh  
GfUjcb bZfa Ujcb**

Calibration Date	August 15, 2013	Previous Calibration	July 7, 2013
Company	LICA	Plant/Location	Cold Lake South
Start Time (MST)	7:29	End Time (MST)	8:32
Reason:	AF point		
Barometric Pressure	27.99 in HG	Station Temperature	23 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO	49.2 ppm
Cal Gas Cylinder #	BAL3031	Cal Gas Expiry date	December 29, 2016
DAS Output Voltage	0-10 Volts	Chart Rec. Output	N/A Volts

**9ei Jda Ybh-bZfa Ujcb**

Analyzer Make / Model:	Thermo 42C	S/N :	427408716	Method:	Chemiluminescent
Calibrator Make / Model:	Enviro-nics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	A3485K		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	Enviro-nics 6100	S/N :	4760		

**5bUmYf GYHbj g**

Before Calibration				After Calibration			
Concentration Range	700	ccm	317	Deg C	700	ccm	317
Sample Flow/Conv. Temp	OK	ccm	189.7	*Hg-A	OK	ccm	189.7
Ozone Flow / Vacuum	-821	Volts	N/A	MV	-821	Volts	N/A
HVPS / A ZERO	50.1	Deg C	-2.4	Deg C	50.1	Deg C	-2.4
Rx/ Temp / PMT Temp	27.4	Deg C	OK	Deg C	27.4	Deg C	OK
Box Temp / IZS Temp	6.2	NOx	4.5	NO	6.2	NOx	4.5
Offset	1.000	NOx	0.985	NO	1.000	NOx	0.985
Slope	0.998	NO2	N/A		0.998	NO2	N/A
NO <sub>2</sub> COEF / Conv Efficiency							

**8 Jf Hcb7 UJVfUjcb 8 UU**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	-2	0	-1	NA	NA
	No zero adj									
4914	39.9	NA	397	396	NA	379	382	-3	1.0412	1.0363

**; Ug DA UgYHfUjcb 7 UJVfUjcb 8 UU**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO <sub>2</sub> Correction Factor	NO <sub>2</sub> Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 1.0412	NO= 1.0363	NO2=
				Average Converter Efficiency=		

**-NG7 UJVfUjcb 8 UU**

Before Calibration				After Calibration			
Auto Zero	0.0	NOx	0.0	NO2	0.0	NOx	0.0
Auto Span	364	NOx	360	NO2	364	NOx	360
Sample Lines Connected:				YES			

**DYfVbh71 Ub Y**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	1.000	1.000	
Current Correction Factor Before Span Adjust	1.041	1.036	
Percent Change	-4.0%	-3.5%	

**Notes B5 . 'Bch5 dd' JVVY**

Change sample filter

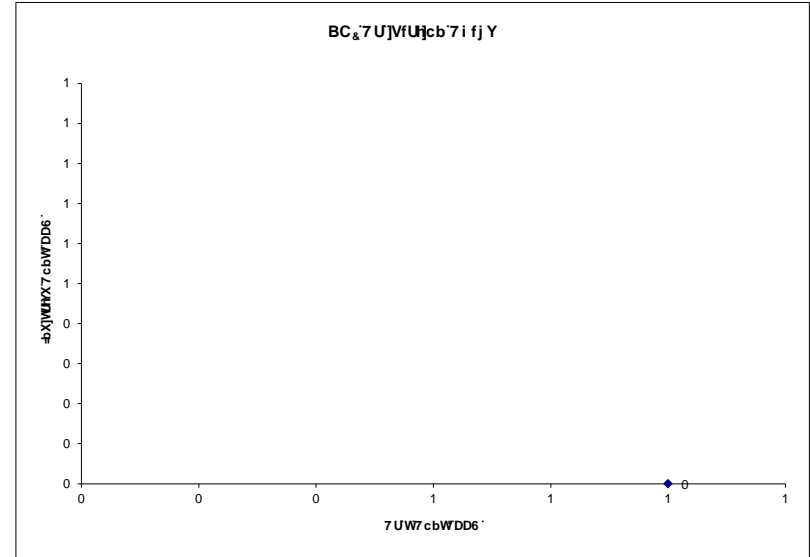
Calibration Performed by: WA/TB

**BC&7 UJVfUjcb 7i fj Y**

Calibration Date	August 15, 2013
Company	@7 5
Plant / Location	7c X' @J YGci H
Start Time (MST)	7:29
End Time (MST)	8:32

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)
-3			Slope (0.85 to 1.15)
			Intercept (± 3% F.S.)

**BC&7 UJVfUjcb 7i fj Y**



Notes:



**BCI 'BC' BC&7 UJVfUjcb FYdcfh  
GfUjcb bZfa Ujcb**

Calibration Date	August 15, 2013	Previous Calibration	July 7, 2013
Company	LICA	Plant/Location	Cold Lake South
Start Time (MST)	8:44	End Time (MST)	12:48
Reason:	Monthly calibration		
Barometric Pressure	27.99 in HG	Station Temperature	23 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO	49.2 ppm
Cal Gas Cylinder #	BAL3031	Cal Gas Expiry date	December 29, 2016
DAS Output Voltage	0-10 Volts	Chart Rec. Output	N/A Volts

**9ei Jda Ybh-bZfa Ujcb**

Analyzer Make / Model:	Thermo 42C	S/N :	427408716	Method:	Chemiluminescent
Calibrator Make / Model:	EnviroNics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	A3485K		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

**5bUmYf GYHbj g**

Before Calibration				After Calibration			
Concentration Range							
Sample Flow/Conv. Temp	700 ccm	317 Deg C		700 ccm	316 Deg C		
Ozone Flow / Vacuum	OK ccm	189.7 °Hg-A		OK ccm	189.6 °Hg-A		
HVPS / A ZERO	-821 Volts	N/A MV		-821 Volts	N/A MV		
Rx/ Temp / PMT Temp	50.1 Deg C	-2.4 Deg C		49.6 Deg C	-2.4 Deg C		
Box Temp / IZS Temp	27.4 Deg C	OK Deg C		30.4 Deg C	OK Deg C		
Offset	6.2 NOx	4.5 NO		4.4 NOx	4.1 NO		
Slope	1.000 NOx	0.985 NO		1.006 NOx	1.023 NO		
NO <sub>2</sub> COEF / Conv Efficiency	0.998 NO <sub>2</sub>	N/A		0.998 NO <sub>2</sub>	N/A		

**8 Ji Hcb7 UJVfUjcb 8 UH**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	0	0	0	NA	NA
	No zero adj.									
4915	39.9	NA	397	396	NA	398	397	1	0.9965	0.9970
	No span adj.									
4975	19.9	NA	197	196	NA	199	199	1	0.9890	0.9870
4985	10.0	NA	98	98	NA	102	102	0	0.9628	0.9609
4995	0.0	NA	0	0	NA	0	0	0	NA	NA

**Ug DA UgYHfUjcb 7 UJVfUjcb 8 UH**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO <sub>2</sub> Correction Factor	NO <sub>2</sub> Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4915	39.8	NA	396	395	NA	397	395	2	NA	NA
4915	39.8	350	396	NA	309	398	88	309	1.0000	100.00%
	No adj.									
4914	39.9	150	397	NA	135	396	262	134	1.0075	99.25%
4915	39.9	75	397	NA	67	397	330	67	1.0000	100.00%

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 0.993	NO= 0.993	NO <sub>2</sub> = 1.001
				NOx= 0.9965	NO= 0.9970	NO <sub>2</sub> = 1.0000
				Average Converter Efficiency= 99.75%		

**NG7 UJVfUjcb 8 UH**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO <sub>2</sub>		0.0 NOx	0.0 NO <sub>2</sub>		
Auto Span	364 NOx	360 NO <sub>2</sub>		385 NOx	379 NO <sub>2</sub>		
	Sample Lines Connected:			YES			

**DYfVbh71 Ub Y**

	NOx	NO	NO <sub>2</sub>
Previous Month's Calibration Correction Factor	1.000	1.000	1.007
Current Correction Factor Before Span Adjust	0.996	0.997	1.000
Percent Change	0.4%	0.3%	0.7%

Notes: **B5 . Bch5 dd JVVY**

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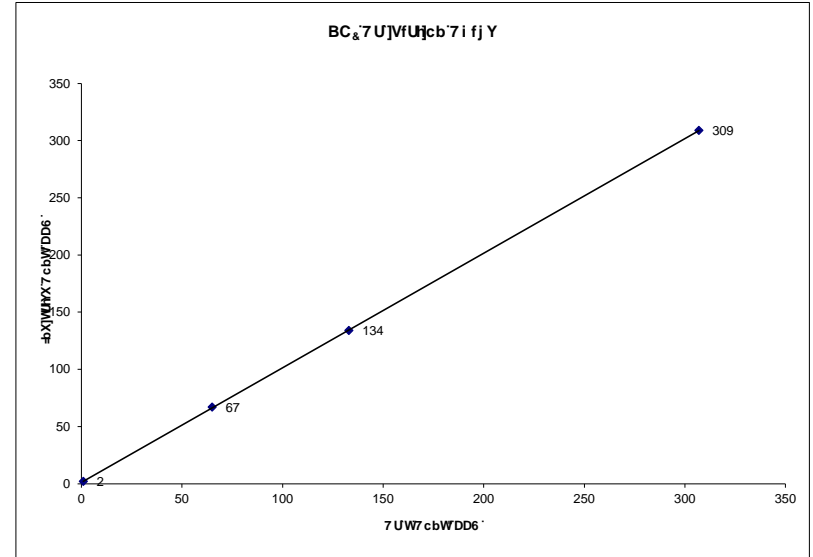
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Calibration Performed by: WA/TB

**BC&7 UJVfUjcb 7i fj Y**

Calibration Date	August 15, 2013
Company	<b>@7 5</b>
Plant / Location	<b>7 c X @ J Y Cci H</b>
Start Time (MST)	8:44
End Time (MST)	12:48

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999986
1	2	NA	Intercept	(± 3% F.S.)	1.21137
65	67	0.9701			
133	134	0.9925			
307	309	0.9935			

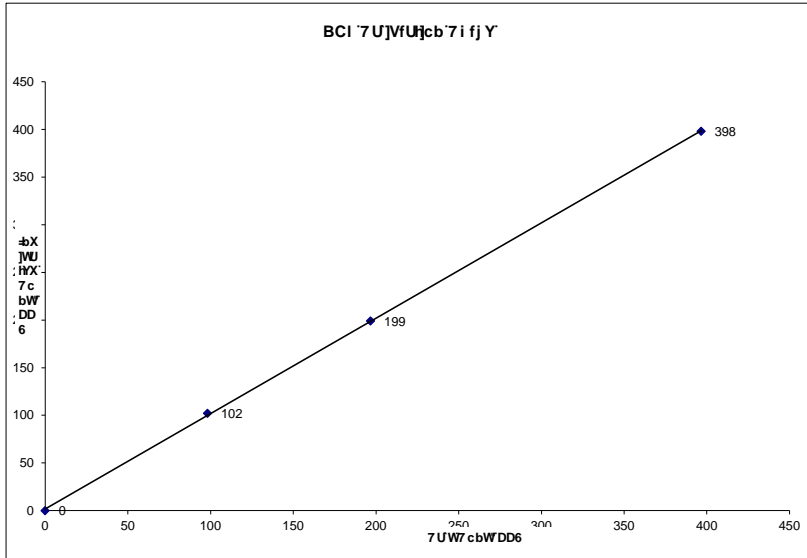


Notes:

BCI 7 UJVfUjcb 7i fj Y

Calibration Date	August 15, 2013		
Company	G7 5		
Plant / Location	7 c X @ U Y Gci h		
Start Time (MST)	8:44	End Time (MST)	12:48

Calculated Conc. (ppb)	Indicated Response (ppb)	Correction Factor	Correlation Coefficient (Slope Intercept)	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)	0.999914 1.000955 1.68149
0	0	NA			
98	102	0.9628			
197	199	0.9890			
397	398	0.9965			

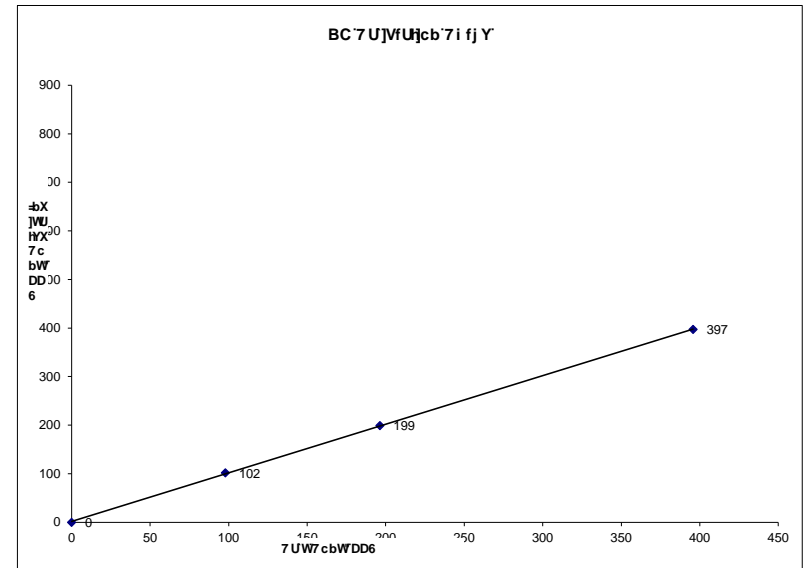


Notes:

BC 7 UJVfUjcb 7i fj Y

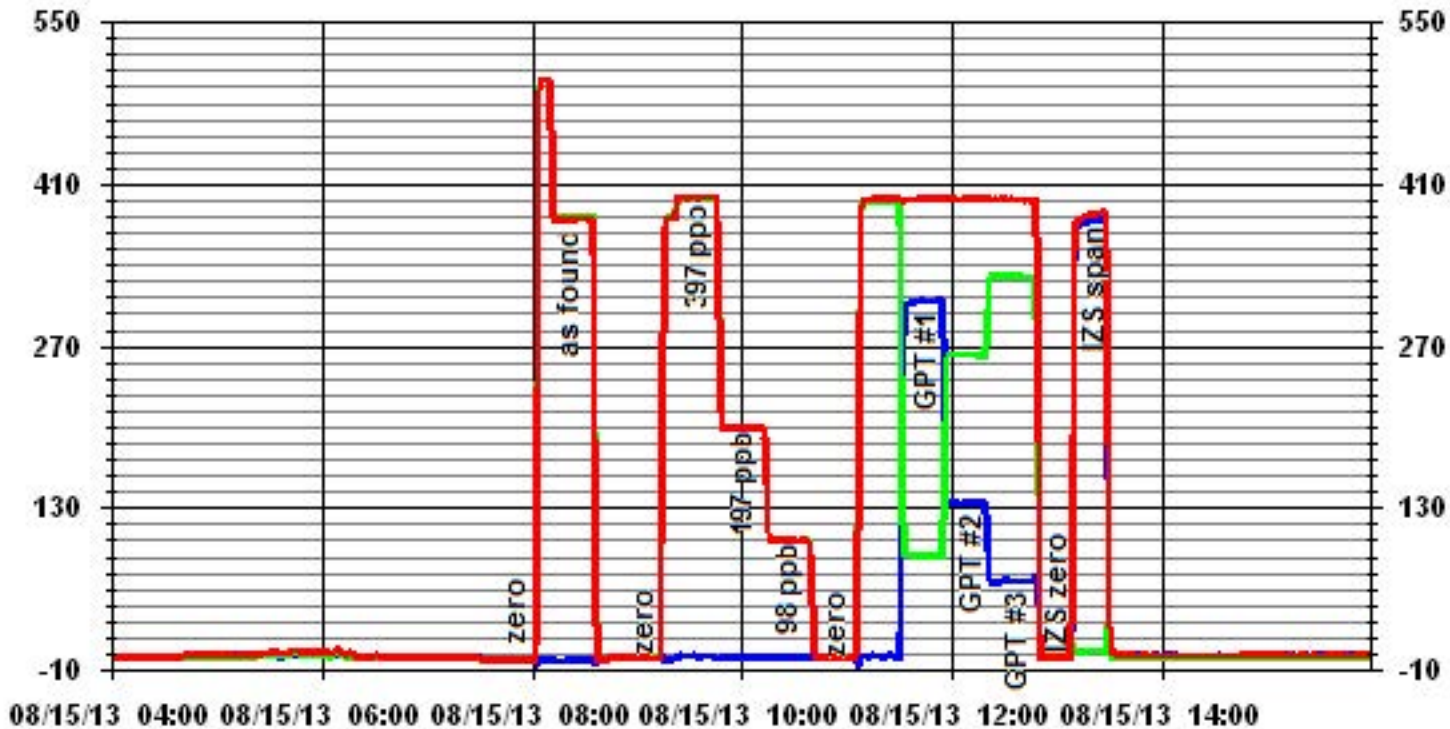
Calibration Date	August 15, 2013		
Company	G7 5		
Plant / Location	7 c X @ U Y Gci h		
Start Time (MST)	8:44	End Time (MST)	12:48

Calculated Conc. (ppb)	Indicated Response (ppb)	Correction Factor	Correlation Coefficient (Slope Intercept)	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)	0.999896 1.000385 1.88078
0	0	NA			
98	102	0.9609			
196	199	0.9870			
396	397	0.9970			



Notes:

### 01 Minute Averages



— LICA

NOX\_

PPB

— LICA

NO\_

PPB

— LICA

NO2\_

PPB

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**CncbY'**

**C. 7 U]vfUjcb'F Ydcfh**

**GUjcb' bZfa Ujcb**

Calibration Date	August 15, 2013	Previous Calibration	July 8, 2013
Company	@U' YUbX' bXi gfm' '7 ca a i b]mi5ggcVUjcb		
Plant / Location	@7 5 %! '7 c' X' @U' Y Gci H		
Start Time (MST)	12:55	End Time (MST)	14:10
Reason:	As Found check		
Barometric Pressure	27.95 inHg	Station Temperature	23 Deg C
DAS Output Voltage	0 - 10 Volts		

**9ei ]da Ybh-bZfa Ujcb**

Analyzer Make / Model:	Thermo 49i	S/N :	700419951	Method:	Photometric
Calibrator Make / Model:	Enviroics 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	3485		

**5bUmYf'GYHjb[ g**

Before Calibration		After Calibration	
Concentration Range	0 - 500 ppb		
Cell A Flow / Cell B Flow	710 LPM / 750 LPM	710 LPM / 750 LPM	
O <sub>3</sub> Set Level	702 mmHg	701 mmHg	
Bench Lamp	29.8 Deg C	30.5 Deg C	
O <sub>3</sub> Lamp / Box Temp	53.5 Deg	67.5 Deg C	67.5 Deg C
Offset / Slope	1.3 / 1.08	1.3 / 1.08	

**7 U]vfUjcb' 8 UH**

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	-1	NA
4995	350	307	309	0.9935
			Sum of Least Squares	
			New Correction Factor	0.9935

**NG7 U]vfUjcb' 8 UH**

Before Calibration		After Calibration	
Auto Zero	0.0	0.0	
Auto Span	277	277	
Sample Lines Connected			NO
Previous Calibration Correction Factor:			0.9935
Current Correctio Factor Before Span Adjust:			0.9935
Percent Change:			0.0%

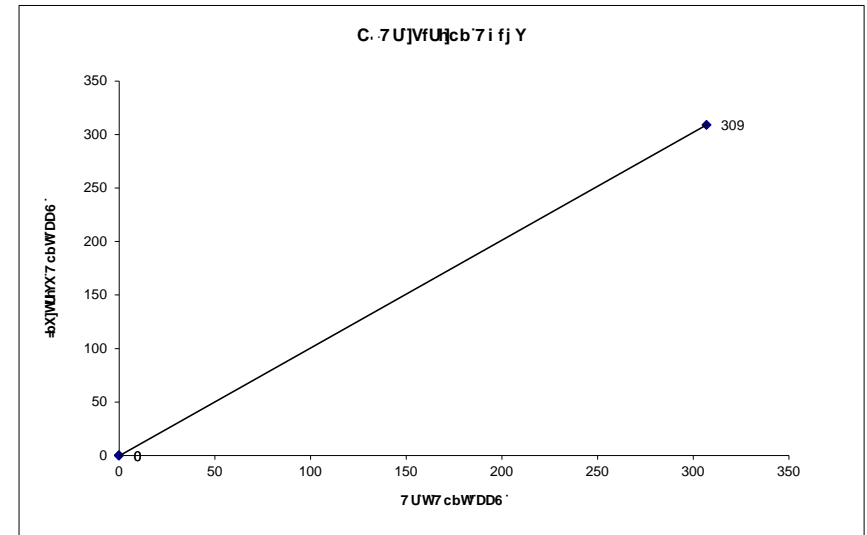
Note: **B5 . 'Bch5dd' ]MUVY**

Calibration Performed by: Waseem Ahmed

**C. 7 U]vfUjcb' 7 i fj Y**

Calibration Date	August 15, 2013
Company	@U' YUbX' bXi gfm' '7 ca a i b]mi5ggcVUjcb
Plant / Location	@7 5 %! '7 c' X' @U' Y Gci H
Start Time (MST)	12:55
End Time (MST)	14:10

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
0	-1	n/a	Slope	0.999991
0	0	#DIV/0!	Intercept	1.007600
0	0	#DIV/0!		(± 3% F.S.) -0.333333
307	309	0.9935		



Notes:

**C. 7 U]vUjcb'F Ydcfh**  
**GUjcb' bZfa Ujcb**

Calibration Date	August 15, 2013	Previous Calibration	July 8, 2013
Company	@U' YUbX' bXi gfm' '7 ca a i b]mi5ggcVUjcb		
Plant / Location	@7 5 %! '7 c' X' @U' Y Gci H		
Start Time (MST)	14:19	End Time (MST)	16:16
Reason:	Monthly Calibration		
Barometric Pressure	27.94 inHg	Station Temperature	23 Deg C
DAS Output Voltage	0 - 10 Volts		

**9ei ]da Ybh-bZfa Ujcb**

Analyzer Make / Model:	Thermo 49i	S/N :	700419951	Method:	Photometric
Calibrator Make / Model:	Enviroics 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	3485		

**5bUmYf'GYHj b] g**

Before Calibration		After Calibration	
Concentration Range	0 - 500 ppb		
Cell A Flow / Cell B Flow	710 LPM / 750 LPM	710 LPM / 751 LPM	
O <sub>3</sub> Set Level	702 mmHg	702 mmHg	
Bench Lamp	30.5 Deg C	31.5 Deg C	
O <sub>3</sub> Lamp / Box Temp	53.5 Deg / 67.5 Deg C	53.5 Deg C / 67.5 Deg C	
Offset / Slope	1.3 / 1.08	-0.1 / 1.045	

**7 U]vUjcb'8 UH**

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	NA
	No Zero Adj.			
4995	350	307	308	0.9968
	No Span Adj.			
4995	150	133	132	1.0076
4995	75	65	66	0.9848
4995	0	0	0	NA
Sum of Least Squares				0.9979
New Correction Factor				0.9968

**NG7 U]vUjcb'8 UH**

Before Calibration		After Calibration	
Auto Zero	0.0	0.0	
Auto Span	277	277	
Sample Lines Connected		YES	
Previous Calibration Correction Factor:		NA	
Current Correctio Factor Before Span Adjust:		0.9968	
Percent Change:		#VALUE!	

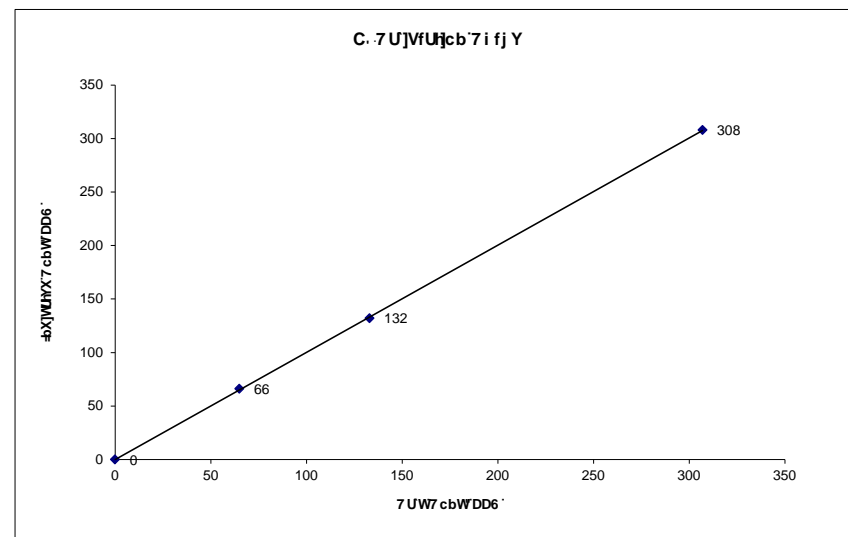
Note: **B5 . Bch5dd]WUYY**

Calibration Performed by: Waseem Ahmed

**C. 7 U]vUjcb'7i fj Y**

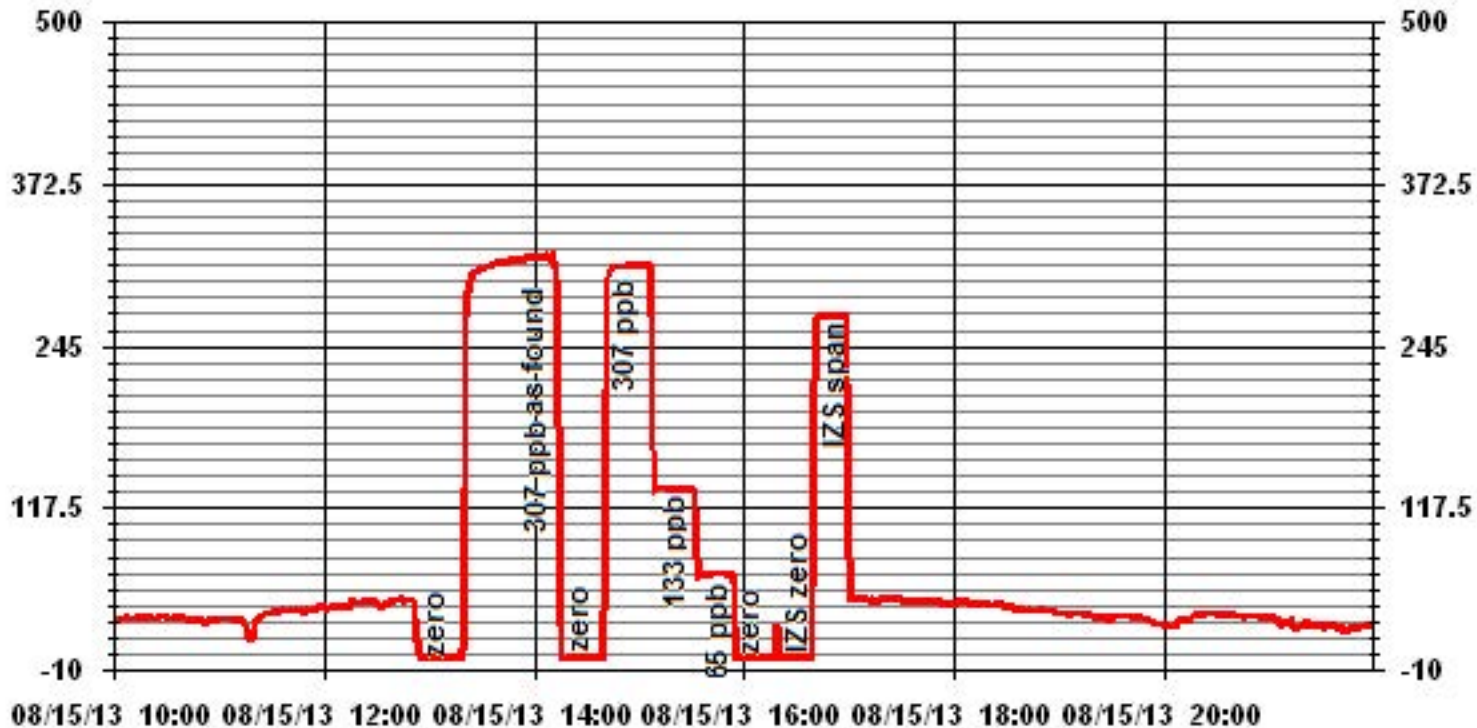
Calibration Date	August 15, 2013
Company	@U' YUbX' bXi gfm' '7 ca a i b]mi5ggcVUjcb
Plant / Location	@7 5 %! '7 c' X' @U' Y Gci H
Start Time (MST)	14:19
End Time (MST)	16:16

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
0	0	n/a	Slope (0.85 to 1.15)	0.999952
65	66	0.9848	Intercept (± 3% F.S.)	1.002151
133	132	1.0076		-0.021619
307	308	0.9968		



Notes:

# 01 Minute Averages



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**DUgg]j Y`6 i VV`Y`A Udg`**

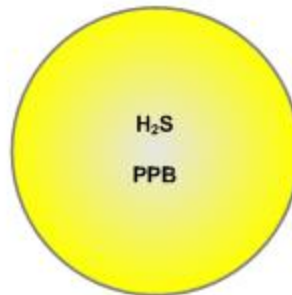


# Lakeland Industry & Community Association H<sub>2</sub>S Passive Bubble Map

AUGUST 2013

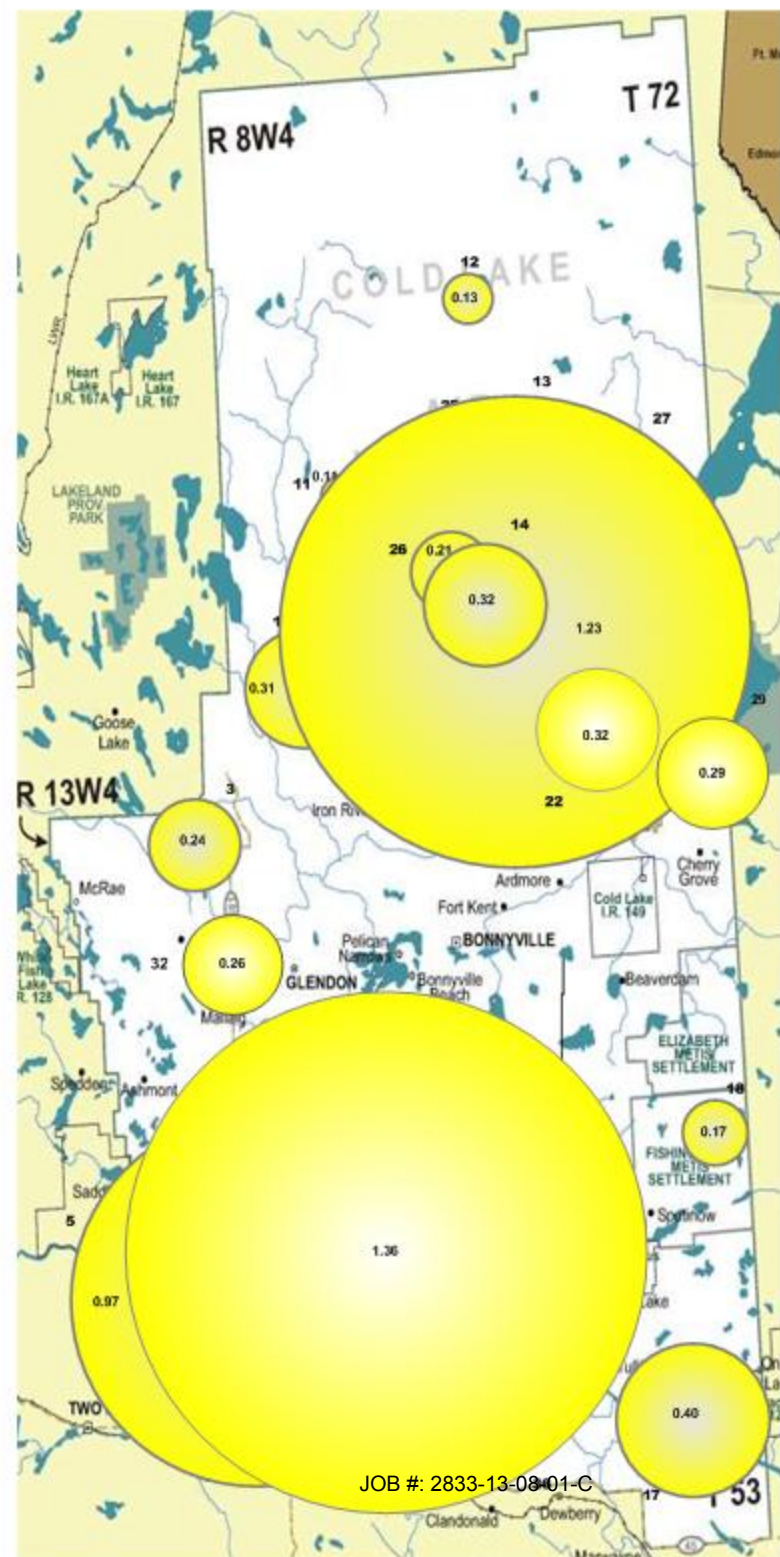
## PASSIVE STATIONS

Station	Concentration (PPB)	Duplicate
3 - Therien	0.24 PPB	NA
5 - Lake Eliza	0.97 PPB	NA
10 - La Corey	0.31 PPB	NA
11 - Wolf Lake	0.11 PPB	NA
12 - Foster Creek	0.13 PPB	NA
13 - Primrose	0.12 PPB	NA
14 - Maskwa	0.30 PPB	0.29 PPB
16 - Frog Lake	0.25 PPB	0.25 PPB
17 - Clear Range	0.40 PPB	NA
18 - Fishing Lake	0.17 PPB	NA
22 - Cold Lake South	0.32 PPB	NA
24 - Fort George	0.32 PPB	NA
25 - Burnt Lake	0.13 PPB	NA
26 - Mahihkan	0.21 PPB	NA
27 - Mahkeses	1.23 PPB	NA
29 - Cold Lake South 2	0.29 PPB	NA
32 - St. Lina	0.26 PPB	NA
36 - Elk Point	1.36 PPB	NA



## Summary

Minimum : 0.11 PPB - Primrose  
 Maximum: 1.36 PPB - Lake Eliza  
 Average: 0.40 PPB (Includes Duplicates)

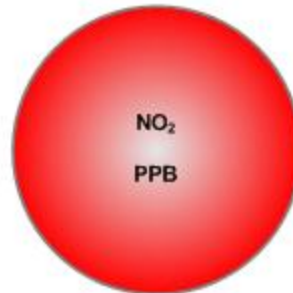


# Lakeland Industry & Community Association NO<sub>2</sub> Passive Bubble Map

AUGUST 2013

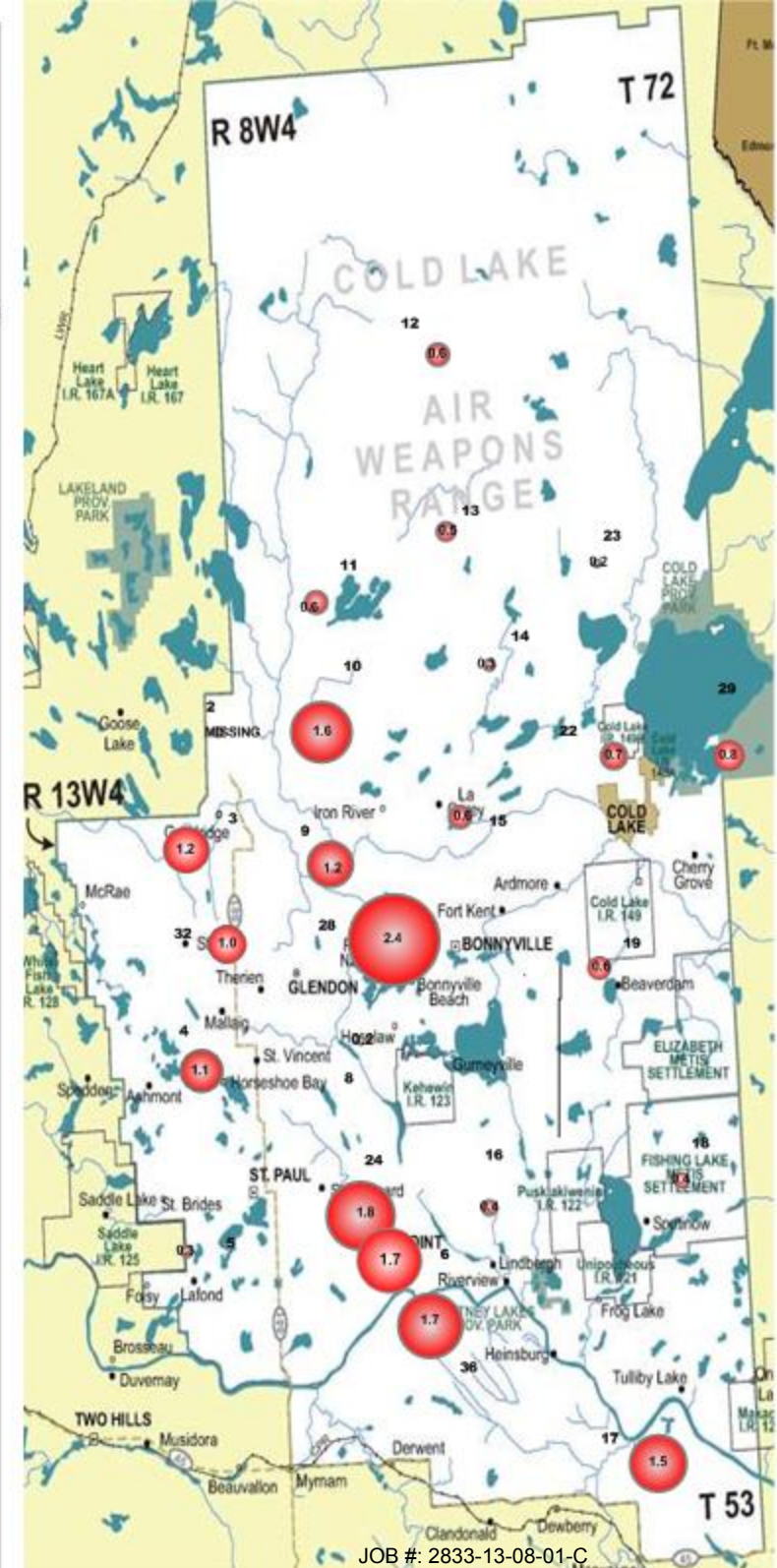
## PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	1.2 PPB	NA
4 – Flat Lake	1.1 PPB	NA
5 – Lake Eliza	0.3 PPB	NA
6 – Telegraph Creek	1.7 PPB	NA
8 – Muriel-Kehewin	0.2 PPB	NA
9 – Dupre	1.2 PPB	NA
10 – La Corey	1.6 PPB	NA
11 – Wolf Lake	0.6 PPB	NA
12 – Foster Creek	0.6 PPB	NA
13 – Primrose	0.5 PPB	NA
14 – Maskwa	0.3 PPB	NA
15 – Ardmore	0.6 PPB	NA
16 – Frog Lake	0.4 PPB	NA
17 – Clear Range	1.5 PPB	NA
18 – Fishing Lake	0.4 PPB	NA
19 – Beaverdam	0.6 PPB	NA
22 – Cold Lake South	1.0 PPB	0.4 PPB
23 – Medley-Martineau	< 0.1 PPB	0.2 PPB
24 – Fort George	1.8 PPB	NA
28 – Town of Bonnyville	2.4 PPB	NA
29 – Cold Lake South 2	0.8 PPB	NA
32 – St. Lina	1.0 PPB	NA
36 – Elk Point	1.7 PPB	NA



## Summary

Minimum : 0.2 PPB – Muriel-Kehewin and Medley-Martineau  
 Maximum: 2.4 PPB – Town of Bonnyville  
 Average: 0.9 PPB \*Includes Duplicates



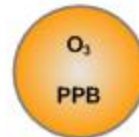


# Lakeland Industry & Community Association O<sub>3</sub> Passive Bubble Map

AUGUST 2013

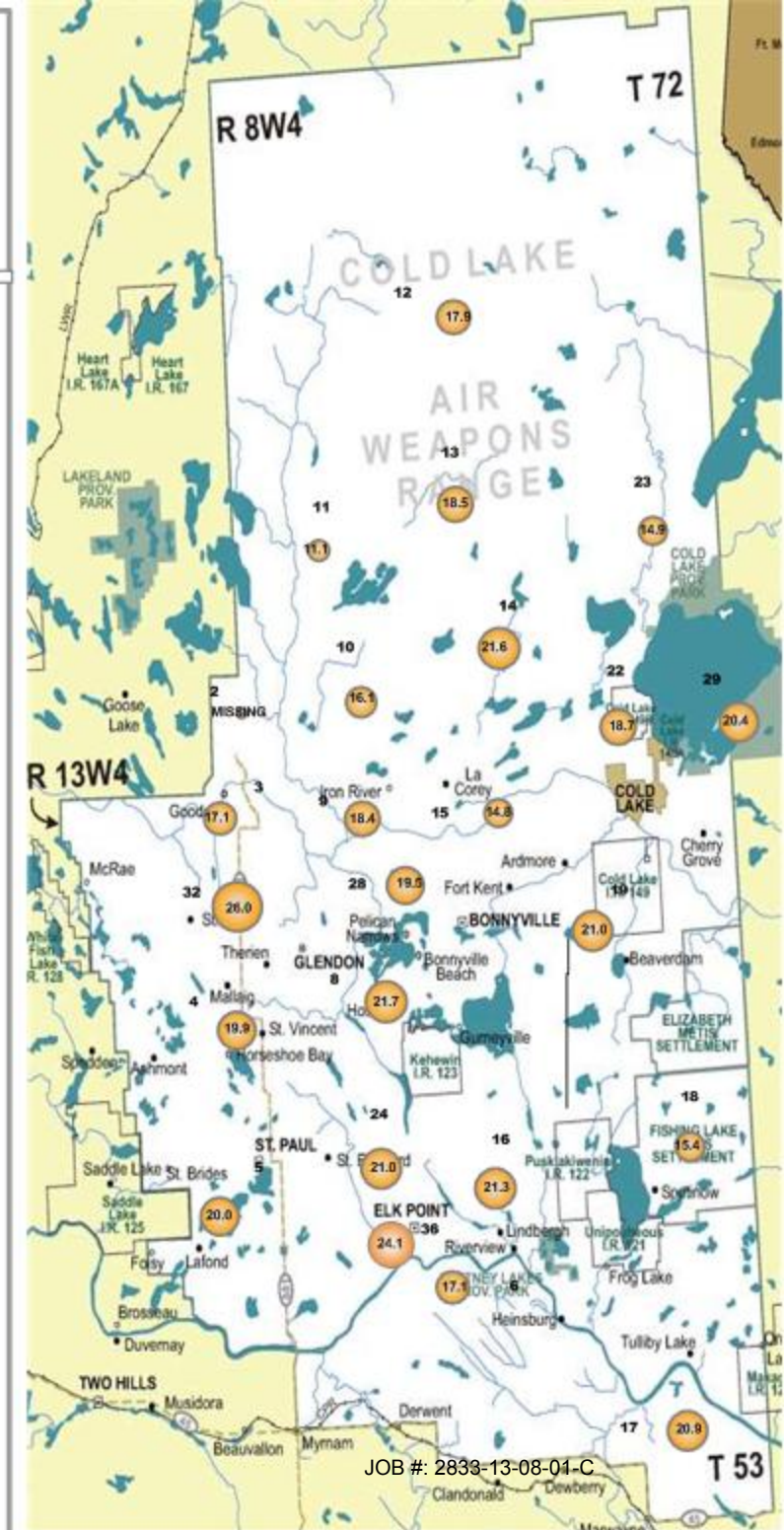
## PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	17.1 PPB	NA
4 – Flat Lake	19.9 PPB	NA
5 – Lake Eliza	20.0 PPB	NA
6 – Telegraph Creek	17.1 PPB	NA
8 – Muriel-Kehewin	21.7 PPB	NA
9 – Dupre	18.4 PPB	NA
10 – La Corey	16.1 PPB	NA
11 – Wolf Lake	11.1 PPB	NA
12 – Foster Creek	17.9 PPB	NA
13 – Primrose	18.5 PPB	NA
14 – Maskwa	21.6 PPB	NA
15 – Ardmore	14.8 PPB	NA
16 – Frog Lake	21.3 PPB	NA
17 – Clear Range	20.9 PPB	NA
18 – Fishing Lake	15.4 PPB	NA
19 – Beaverdam	21.0 PPB	NA
22 – Cold Lake South	18.4 PPB	NA
23 – Medley-Martineau	15.4 PPB	NA
24 – Fort George	21.0 PPB	NA
28 – Town of Bonnyville	19.5 PPB	NA
29 – Cold Lake South 2	20.4 PPB	NA
32 – St. Lina	26.0 PPB	NA
36 – Elk Point	24.1 PPB	NA



## Summary

Minimum : 11.1 PPB – Wolf Lake  
 Maximum: 26.0 PPB – St. Lina  
 Average: 19.0 PPB \*Includes Duplicates



# Lakeland Industry & Community Association SO<sub>2</sub> Passive Bubble Map

AUGUST 2013

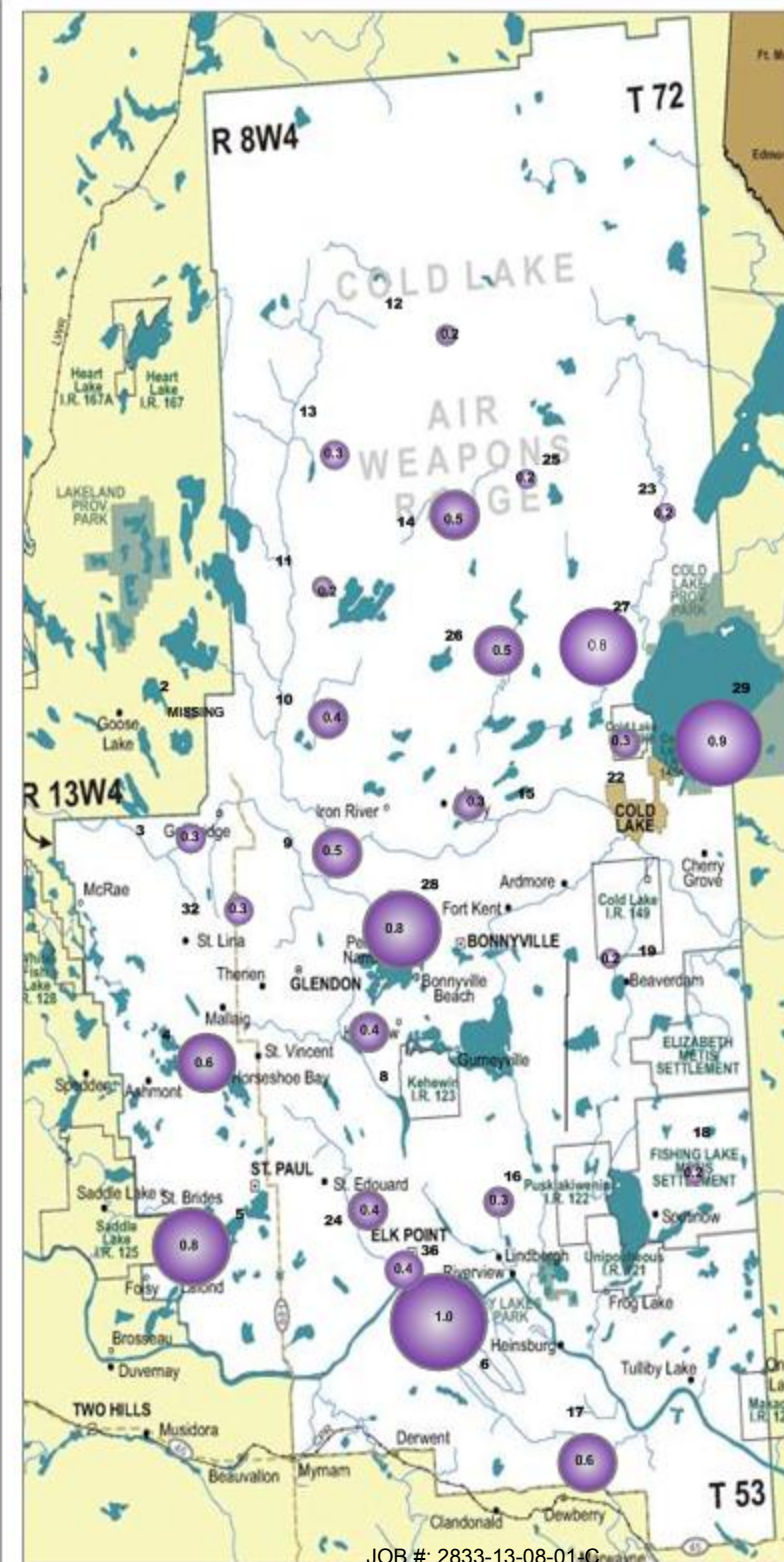
## PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	0.3 PPB	NA
4 – Flat Lake	0.6 PPB	NA
5 – Lake Eliza	0.8 PPB	NA
6 – Telegraph Creek	1.0 PPB	NA
8 – Muriel-Kehewin	0.4 PPB	0.4 PPB
9 – Dupre	0.6 PPB	0.4 PPB
10 – La Corey	0.3 PPB	0.4 PPB
11 – Wolf Lake	0.2 PPB	NA
12 – Foster Creek	0.2 PPB	NA
13 – Primrose	0.3 PPB	NA
14 – Maskwa	0.5 PPB	NA
15 – Ardmore	0.3 PPB	NA
16 – Frog Lake	0.3 PPB	NA
17 – Clear Range	0.6 PPB	NA
18 – Fishing Lake	0.2 PPB	NA
19 – Beaverdam	0.2 PPB	NA
22 – Cold Lake South	0.3 PPB	NA
23 – Medley-Martineau	0.2 PPB	NA
24 – Fort George	0.4 PPB	NA
25 – Burnt Lake	0.2 PPB	NA
26 – Mahikan	0.5 PPB	NA
27 – Mahkeses	0.8 PPB	NA
28 – Town of Bonnyville	0.9 PPB	NA
29 – Cold Lake South 2	0.3 PPB	NA
32 – St. Lina	0.3 PPB	NA
36 – Elk Point	0.4 PPB	NA



## Summary

Minimum : 0.2 PPB –Various stations  
 Maximum: 1.0 PPB –Telegraph Creek  
 Average: 0.43 PPB \*Includes Duplicates



**DUgglj Y: jY^X^8 UhU**

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# : JYX'BchYg'

8	G5AD@F	GH5FH		9B8		BCH9G
		85H9	HA9	85H9	HA9	
&	GC#BC#C	B5	B5	B5	B5	All samplers had been removed and samples are missing.
'	< &G#GC &#BC &#C	\$, #, #B\$%	\$-.' \$	\$, #B- #B\$%	%.) )	
(	GC &#BC &#C	\$, #+ #B\$%	%.' (	\$, #B- #B\$%	%.' \$	
)	< &G#GC &#BC &#C	\$, #+ &B\$%	%.' )	\$, #B- #B\$%	%.' &(	
*	GC &#BC &#C	\$, #+ #B\$%	%o('	\$, #B- #B\$%	%&.) )	
,	GC &#BC &#C	\$, #, #B\$%	%o\$)	\$, #B- #B\$%	%.' &\$	
-	GC &#BC &#C	\$, #, #B\$%	\$, .) &	\$, #B- #B\$%	%.' )	
%\$	< &G#GC &#BC &#C	\$, #* #B\$%	%.' ,	\$, #B, #B\$%	%o' ,	
%%	< &G#GC &#BC &#C	\$, #* #B\$%	%.' \$)	\$, #B, #B\$%	%&' %	
%&	< &G#GC &#BC &#C	\$, #* #B\$%	%.' (\$	\$, #B, #B\$%	%.' (\$	
%'	< &G#GC &#BC &#C	\$, #* #B\$%	%.' )	\$, #B, #B\$%	\$-.' ,	
%&	< &G#GC &#BC &#C	\$, #* #B\$%	%.' &\$	\$, #B, #B\$%	%.' &)	
%)	GC &#BC &#C	\$, #* #B\$%	%.' &	\$, # \$B\$%	%.' (\$	
%'	< &G#GC &#BC &#C	\$, #+ #B\$%	\$, .) *	\$, #B- #B\$%	%.' %\$	
%+	< &G#GC &#BC &#C	\$, #+ #B\$%	%.' \$)	\$, #B- #B\$%	%&' \$)	
%o	< &G#GC &#BC &#C	\$, #+ #B\$%	\$-.' ')	\$, #B- #B\$%	%.' )	
%o	GC &#BC &#C	\$, #+ #B\$%	\$, .%)	\$, #B- #B\$%	\$-.' &\$	
&&	< &G#GC &#BC &#C	\$, #, #B\$%	%.' )	\$, # \$B\$%	%.' &)	
&'	GC &#BC &#C	\$, #, #B\$%	%&' \$)	\$, #B, #B\$%	%.' %&	
&(	< &G#GC &#BC &#C	\$, #+ #B\$%	%&' %)	\$, #B- #B\$%	%.' ,	
&)	< &G#GC &	\$, #* #B\$%	%.' (,	\$, #B, #B\$%	%.' ()	
&*	< &G#GC &	\$, #* #B\$%	%&' &+	\$, #B, #B\$%	%.' %&	
&+	< &G#GC &	\$, #* #B\$%	%&' (,	\$, #B, #B\$%	%.' \$)	
&'	GC &#BC &#C	\$, #, #B\$%	%&' )	\$, #B- #B\$%	%.' \$)	
&'	< &G#GC &#BC &#C	\$, #, #B\$%	%.' \$\$	\$, # \$B\$%	%.' %\$	
' &	< &G#GC &#BC &#C	\$, #, #B\$%	%.' \$+	\$, #B- #B\$%	%.' %\$	
' *	< &G#GC &#BC &#C	\$, #, #B\$%	%&' &	\$, #B- #B\$%	%.' (\$	

8	G5AD@F	GH5FH		9B8		BCH9G
		85H9	HA9	85H9	HA9	
8 i d JWUHY \$,	GC &	\$, #, #S%	%(\$)	\$, #, #S%	%, &S	.
8 i d JWUHY \$-	GC &	\$, #, #S%	\$, .) &	\$, #, #S%	%, ' )	.
8 i d JWUHY %\$	GC &	\$, #* #S%	%, ' ,	\$, #, #S%	%, ' ,	.
8 i d JWUHY %/	< &G	\$, #* #S%	%, &S	\$, #, #S%	%, &)	.
8 i d JWUHY %%	< &G	\$, #+ #S%	\$, .) *	\$, #, #S%	%, %S	.
8 i d JWUHY &&	BC &	\$, #, #S%	%, .) )	\$, # \$#S%	%, &)	.
8 i d JWUHY &	BC &	\$, #, #S%	%, &) \$	\$, #, #S%	%, %/	.
8 i d JWUHY &&	C.	\$, #, #S%	%, .) )	\$, # \$#S%	%, &)	.
8 i d JWUHY &	C.	\$, #, #S%	%, &) \$	\$, #, #S%	%, %/	.

DUgg]j Y`BYhk cf\_`@UvcfUhcfm5 bU`mg]g`





Your Project #: 2013/08/06 - 2013/08/29  
Site Location: LICA

**Attention: MICHAEL BISAGA**

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

**Report Date: 2013/09/11**

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B378965**

**Received: 2013/09/04, 11:48**

Sample Matrix: Air  
# Samples Received: 33

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis (1)	20	2013/09/10	2013/09/11	EINDSOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (1)	25	2013/09/09	2013/09/11	EINDSOP-00148	Tang Passive NO2 in
O3 Passive Analysis (1)	25	2013/09/06	2013/09/11	EINDSOP-00197	EPA 300 R2.1
SO2 Passive Analysis (1)	29	2013/09/09	2013/09/11	EINDSOP-00149	Tang Passive SO2 in

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) The detection limit is based on a 30 day sampling period.

**Encryption Key**

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

Levi Manchak, Customer Service  
Email: LManchak@maxxam.ca  
Phone# (780) 378-8500

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

Total cover pages: 1

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



Maxxam Job #: B378965  
 Report Date: 2013/09/11

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION  
 Client Project #: 2013/08/06 - 2013/08/29  
 Site Location: LICA  
 Sampler Initials: SB

**RESULTS OF CHEMICAL ANALYSES OF AIR**

Maxxam ID		HK0010	HK0011	HK0012	HK0013	HK0014		
Sampling Date		2013/08/08 09:30	2013/08/07 14:34	2013/08/07 13:55	2013/08/07 11:43	2013/08/08 11:05		
	<b>UNITS</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>8</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>								
Calculated H2S	ppb	0.24		0.97			0.02	7158110
Calculated NO2	ppb	1.2	1.1	0.3	1.7	0.2	0.1	7153615
Calculated O3	ppb	17.1	19.9	20.0	17.1	21.7	0.1	7151249
Calculated SO2	ppb	0.3	0.6	0.8	1.0	0.4	0.1	7154050
RDL = Reportable Detection Limit								

Maxxam ID		HK0015		HK0016	HK0017	HK0018		
Sampling Date		2013/08/08 08:52		2013/08/06 16:38	2013/08/06 13:05	2013/08/06 14:40		
	<b>UNITS</b>	<b>9</b>	<b>QC Batch</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>								
Calculated H2S	ppb		7158110	0.31	0.11	0.13	0.02	7158110
Calculated NO2	ppb	1.2	7153615	1.6	0.6	0.6	0.1	7153615
Calculated O3	ppb	18.4	7151249	16.1	11.1	17.9	0.1	7151249
Calculated SO2	ppb	0.6	7154050	0.3	0.2	0.2	0.1	7154057
RDL = Reportable Detection Limit								

Maxxam ID		HK0019	HK0020	HK0021	HK0022	HK0023		
Sampling Date		2013/08/06 10:55	2013/08/06 10:20	2013/08/06 17:32	2013/08/07 08:56	2013/08/07 10:50		
	<b>UNITS</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>								
Calculated H2S	ppb	0.12	0.30		0.25	0.40	0.02	7158110
Calculated NO2	ppb	0.5	0.3	0.6	0.4	1.5	0.1	7153615
Calculated O3	ppb	18.5	21.6	14.8	21.3	20.9	0.1	7151249
Calculated SO2	ppb	0.3	0.5	0.3	0.3	0.6	0.1	7154057
RDL = Reportable Detection Limit								



Maxxam Job #: B378965  
 Report Date: 2013/09/11

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION  
 Client Project #: 2013/08/06 - 2013/08/29  
 Site Location: LICA  
 Sampler Initials: SB

**RESULTS OF CHEMICAL ANALYSES OF AIR**

Maxxam ID		HK0024	HK0025	HK0026		HK0027		
Sampling Date		2013/08/07 09:33	2013/08/07 08:15	2013/08/08 13:55		2013/08/08 12:50		
	<b>UNITS</b>	<b>18</b>	<b>19</b>	<b>22</b>	<b>QC Batch</b>	<b>23</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>								
Calculated H2S	ppb	0.17		0.32	7158110		0.02	
Calculated NO2	ppb	0.4	0.6	1.0	7153615	<0.1	0.1	7153618
Calculated O3	ppb	15.4	21.0	18.4	7151249	15.4	0.1	7151259
Calculated SO2	ppb	0.2	0.2	0.3	7154057	0.2	0.1	7154057
RDL = Reportable Detection Limit								

Maxxam ID		HK0028	HK0029	HK0030	HK0031	HK0032		
Sampling Date		2013/08/07 12:15	2013/08/06 15:48	2013/08/06 11:27	2013/08/06 11:48	2013/08/08 11:35		
	<b>UNITS</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>								
Calculated H2S	ppb	0.32	0.13	0.21	1.23		0.02	7158110
Calculated NO2	ppb	1.8				2.4	0.1	7153618
Calculated O3	ppb	21.0				19.5	0.1	7151259
Calculated SO2	ppb	0.4	0.2	0.5	0.8	0.9	0.1	7154057
RDL = Reportable Detection Limit								

Maxxam ID		HK0033	HK0034	HK0035		HK0038		
Sampling Date		2013/08/08 14:00	2013/08/08 10:07	2013/08/07 12:28		2013/08/08 13:55		
	<b>UNITS</b>	<b>29</b>	<b>32</b>	<b>36</b>	<b>QC Batch</b>	<b>22 DUP</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>								
Calculated H2S	ppb	0.29	0.26	1.36	7158226		0.02	
Calculated NO2	ppb	0.8	1.0	1.7	7153618	0.4	0.1	7153615
Calculated O3	ppb	20.4	26.0	24.1	7151259	18.9	0.1	7151259
Calculated SO2	ppb	0.3	0.3	0.4	7154057		0.1	
RDL = Reportable Detection Limit								



Maxxam Job #: B378965  
 Report Date: 2013/09/11

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION  
 Client Project #: 2013/08/06 - 2013/08/29  
 Site Location: LICA  
 Sampler Initials: SB

**RESULTS OF CHEMICAL ANALYSES OF AIR**

Maxxam ID		HK0039	HK0040		HK0041		HK0042		
Sampling Date		2013/08/08 12:50	2013/08/08 11:05		2013/08/08 08:52		2013/08/06 16:38		
	<b>UNITS</b>	<b>23 DUP</b>	<b>08 DUP</b>	<b>QC Batch</b>	<b>09 DUP</b>	<b>QC Batch</b>	<b>10 DUP</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>									
Calculated NO2	ppb	0.2		7153618				0.1	
Calculated O3	ppb	14.4		7151259				0.1	
Calculated SO2	ppb		0.4	7154057	0.4	7154050	0.4	0.1	7154057

RDL = Reportable Detection Limit

Maxxam ID		HK0043	HK0044		
Sampling Date		2013/08/06 10:20	2013/08/07 08:56		
	<b>UNITS</b>	<b>14 DUP</b>	<b>16 DUP</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>					
Calculated H2S	ppb	0.29	0.25	0.02	7158226

RDL = Reportable Detection Limit



Maxxam Job #: B378965  
Report Date: 2013/09/11

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION  
Client Project #: 2013/08/06 - 2013/08/29  
Site Location: LICA  
Sampler Initials: SB

**General Comments**

**Results relate only to the items tested.**



LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION  
 Attention: MICHAEL BISAGA  
 Client Project #: 2013/08/06 - 2013/08/29  
 P.O. #:  
 Site Location: LICA

Quality Assurance Report  
 Maxxam Job Number: PB378965

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7151249 OZ	Calibration Check	Calculated O3	2013/09/06		99	%	91 - 107
	Spiked Blank	Calculated O3	2013/09/06		99	%	96 - 103
	Method Blank	Calculated O3	2013/09/06	<0.1		ppb	
7151259 OZ	Calibration Check	Calculated O3	2013/09/06		99	%	91 - 107
	Spiked Blank	Calculated O3	2013/09/06		98	%	96 - 103
	Method Blank	Calculated O3	2013/09/06	<0.1		ppb	
7153615 DF4	Calibration Check	Calculated NO2	2013/09/09		100	%	76 - 118
	Spiked Blank	Calculated NO2	2013/09/09		102	%	93 - 105
	Method Blank	Calculated NO2	2013/09/09	<0.1		ppb	
7153618 DF4	Calibration Check	Calculated NO2	2013/09/09		98	%	76 - 118
	Spiked Blank	Calculated NO2	2013/09/09		104	%	93 - 105
	Method Blank	Calculated NO2	2013/09/09	<0.1		ppb	
7154050 DF4	Calibration Check	Calculated SO2	2013/09/09		102	%	95 - 105
	Spiked Blank	Calculated SO2	2013/09/09		101	%	90 - 110
	Method Blank	Calculated SO2	2013/09/09	<0.1		ppb	
7154057 DF4	Calibration Check	Calculated SO2	2013/09/09		101	%	95 - 105
	Spiked Blank	Calculated SO2	2013/09/09		100	%	90 - 110
	Method Blank	Calculated SO2	2013/09/09	<0.1		ppb	
7158110 WC6	Calibration Check	Calculated H2S	2013/09/11		104	%	80 - 120
	Spiked Blank	Calculated H2S	2013/09/11		99	%	N/A
7158226 WC6	Calibration Check	Calculated H2S	2013/09/11		104	%	80 - 120
	Spiked Blank	Calculated H2S	2013/09/11		99	%	N/A

Calibration Check: A calibration standard analyzed at different times to evaluate on-going calibration accuracy.  
 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.

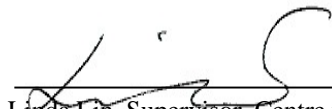
Maxxam Analytics International Corporation o/a Maxxam Analytics Edmonton: 6744 - 50th Street T6B 3M9 Telephone(780) 378-8500 FAX(780) 378-8699

**Validation Signature Page**

**Maxxam Job #: B378965**

---

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

A handwritten signature in black ink, appearing to be "Linda Lin", written over a horizontal line.

Linda Lin, Supervisor, Centre for Passive Sampling Technology

---

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

# Lakeland Industry & Community Association

Maskwa Monitoring Site  
Ambient Air Monitoring  
Data Report  
For  
August 2013

Prepared By:



September 25, 2013



# Lakeland Industry & Community Association Ambient Air Monitoring Maskwa

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## Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: Maskwa  
Data Period: August 2013

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:

- CAL SOP-00211
- CAL SOP-00209
- CAL SOP-00213
- CAL SOP-00214
- CAL SOP-00208

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

# MONTHLY CONTINUOUS DATA SUMMARY

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – MASKWA

### Continuous Ambient Monitoring – August 2013

LICA MASKWA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO2 (PPB)	172	48	0	0	0.22	5	15	10	3.7	233(SW)	0.7	24	100.0
H2S (PPB)	10	3	0	0	0.20	5	23	0	0.8	197(SSW)	1.5	23	100.0
THC (PPM)	-	-	-	-	2.21	3.8	23	0	0.8	197(SSW)	2.5	23	100.0
NOx (PPB)	-	-	-	-	1.49	11.9	15	5	0.3	336(NNW)	3.1	23	100.0
NO (PPB)	-	-	-	-	0.25	9.8	15	5	0.3	336(NNW)	1.2	15	100.0
NO <sub>2</sub> (PPB)	159	-	0	-	1.24	10.7	13	4	3.8	110(ESE)	2.5	23	100.0
VECTOR WS (KPH)	-	-	-	-	3.74	10.5	20	13	-	288(WNW)	6.0	29	100.0
VECTOR WD (DEGREES)	-	-	-	-	154(SSE)	-	-	-	-	-	-	-	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	72.18	94	28	6	2.3	55(NE)	88.4	30	100.0
TEMPERATURE (DEG C)	-	-	-	-	16.81	29.2	15	13	4.9	121(ESE)	20.6	14	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	943	953	9	VAR	VAR	VAR	951.1	9	100.0
PRECIPITATION (MM)	-	-	-	-	0.05	4.2	6	20	5.9	63(ENE)	18.8	30	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

**A trailer audit was performed by AERSD on August 22<sup>nd</sup>.**

#### Sulphur Dioxide (PPB)

- Analyzer make / model - API 100E, S/N: 508

No operational issues were observed during the month. The monthly calibration was performed on August 23<sup>rd</sup>. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

#### Hydrogen Sulphide (PPB)

- Analyzer make / model - API 101A, S/N: 722 changed to API 101E, S/N: 511

No operational issues were observed during the month. A removal calibration was performed on the API 101A, Maxxam supplied, on August 23<sup>rd</sup>. The API 101E analyzer, LICA owned, was installed on the same day. The inlet filter was changed before the removal calibration was started. Data was corrected using daily zero information.

# General Monthly Summary

## AQM STATION – LICA – Maskwa

### 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 August 23<sup>rd</sup>. The inlet filter was changed before the monthly calibration was started. The span gas bottle was changed on August 23<sup>rd</sup>. The analyzer spanned low after the monthly calibration was completed because the span gas pressure was set too low. The pressure was increased on August 26<sup>th</sup> to correct this issue. This issue did not affect data quality. Data was corrected using daily zero information.

### Nitrogen Dioxide (PPB)

- Analyzer make / model - API 200E, S/N: 594

No operational issues were observed during the month. The monthly calibration was performed on August 23<sup>rd</sup>. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

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

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

The wind system is reported as vector wind speed and vector wind direction. The last wind system calibration was performed by manufacturer on December 20<sup>th</sup>, 2011.

No operational issues were observed this month. The hourly maximum reading for wind speed collected on August 23<sup>rd</sup> at hour 22 was invalidated as the reading went above the full scale.

### Relative Humidity (PERCENT)

- System make / model - Met One 083

No operational issues were observed during the month.

### Precipitation (MM)

- System make / model - Met One 387

No operational issues were observed during the month.

# General Monthly Summary

## **AQM STATION – LICA – Maskwa**

### **Barometric Pressure (MILLIBAR)**

- System make / model - Met One 092

No operation issues were observed during the month.

### **Ambient Temperature (DEGC)**

- System make / model - Met One 060

No operational issues were observed during the month.

### **Trailer Temperature (DEG C)**

- System make / model – R&R 61

No operational issues were observed during the month.

### **Standard Deviation Wind Direction (DEG)**

- System make / model –Met One 50.5H

No operational issues were observed during the month.

# General Monthly Summary

## AQM STATION – LICA – Maskwa

### Datalogger

- System make / model - ESC 8832
- Software make/version - ESC v 5.51a

No operational issues were observed during the month.

### Trailer

The manifold was cleaned on August 23<sup>rd</sup>.



# Continuous Monitoring

# Monthly Summaries, Graphs & Wind Roses

# Sulphur Dioxide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

## SULPHUR DIOXIDE (SO<sub>2</sub>) 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	S	0	0	0	0	0	0	0	1	1	1	2	0	1	0	1	1	0	0	0	0	0	2	0.3	24	
2	0	S	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	1	0.2	24	
3	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	S	2	0.2	24
4	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	S	0	1	0.2	24	
5	0	0	0	0	0	0	0	1	2	1	1	0	3	1	1	0	0	0	0	0	0	S	0	0	3	0.4	24	
6	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	S	1	0	0	1	0.1	24	
7	0	0	0	0	0	0	0	1	0	0	2	1	1	0	0	0	0	0	0	S	0	0	0	0	2	0.2	24	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	S	0	0	0	0	0	0	1	0.1	24	
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0	24	
10	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0.1	24	
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0	0	0	0	0	0	1	0.0	24	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	2	S	2	0	0	0	0	0	0	0	0	2	0.2	24	
13	0	0	1	1	3	1	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	1	0	3	0.6	24	
14	0	0	0	0	0	0	0	1	1	1	0	0	S	0	0	0	0	0	0	0	1	2	1	0	2	0.3	24	
15	0	0	0	0	0	0	0	0	0	1	5	S	1	1	1	1	0	1	1	1	0	0	0	0	5	0.6	24	
16	0	0	0	0	0	0	0	0	0	0	S	0	2	1	0	0	0	0	0	0	0	1	1	0	2	0.2	24	
17	0	0	0	0	0	0	0	0	1	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
18	0	0	0	0	0	0	0	1	S	1	2	1	1	0	0	0	0	0	0	0	0	4	1	1	4	0.5	24	
19	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.0	24	
20	1	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
21	0	0	0	0	0	S	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
22	0	0	0	0	S	0	0	C	C	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0	1	0.2	24	
23	0	0	0	S	0	0	0	0	0	C	C	C	C	C	1	1	0	0	0	0	0	0	0	0	1	0.1	24	
24	1	0	S	0	0	0	0	1	2	2	1	3	0	2	2	1	0	0	0	0	0	0	0	0	3	0.7	24	
25	0	S	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0	0	2	2	0	0	2	0.3	24		
26	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	
27	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	
28	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0	S	0	0	3	0.2	24	
29	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	
30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	S	0	0	0	0	2	0.1	24	
31	0	0	0	0	0	0	0	0	2	3	2	1	1	0	0	0	0	0	S	0	0	0	0	0	3	0.4	24	
HOURLY MAX	1	0	1	1	3	1	1	1	2	3	5	3	3	2	2	2	1	1	2	2	2	2	4	2	1			
HOURLY AVG	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.2	0.4	0.6	0.7	0.4	0.5	0.3	0.2	0.3	0.1	0.2	0.2	0.1	0.1	0.3	0.2	0.0				

### STATUS FLAG CODES

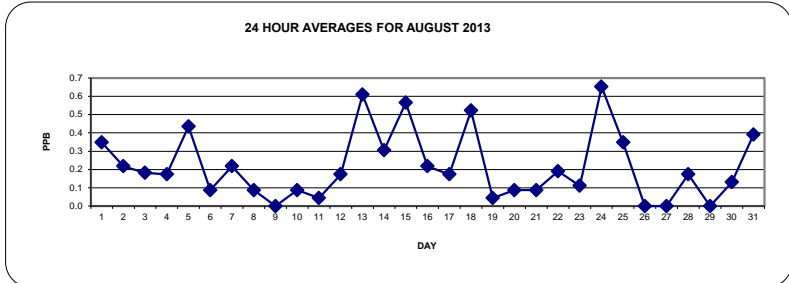
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

### OBJECTIVE LIMIT:

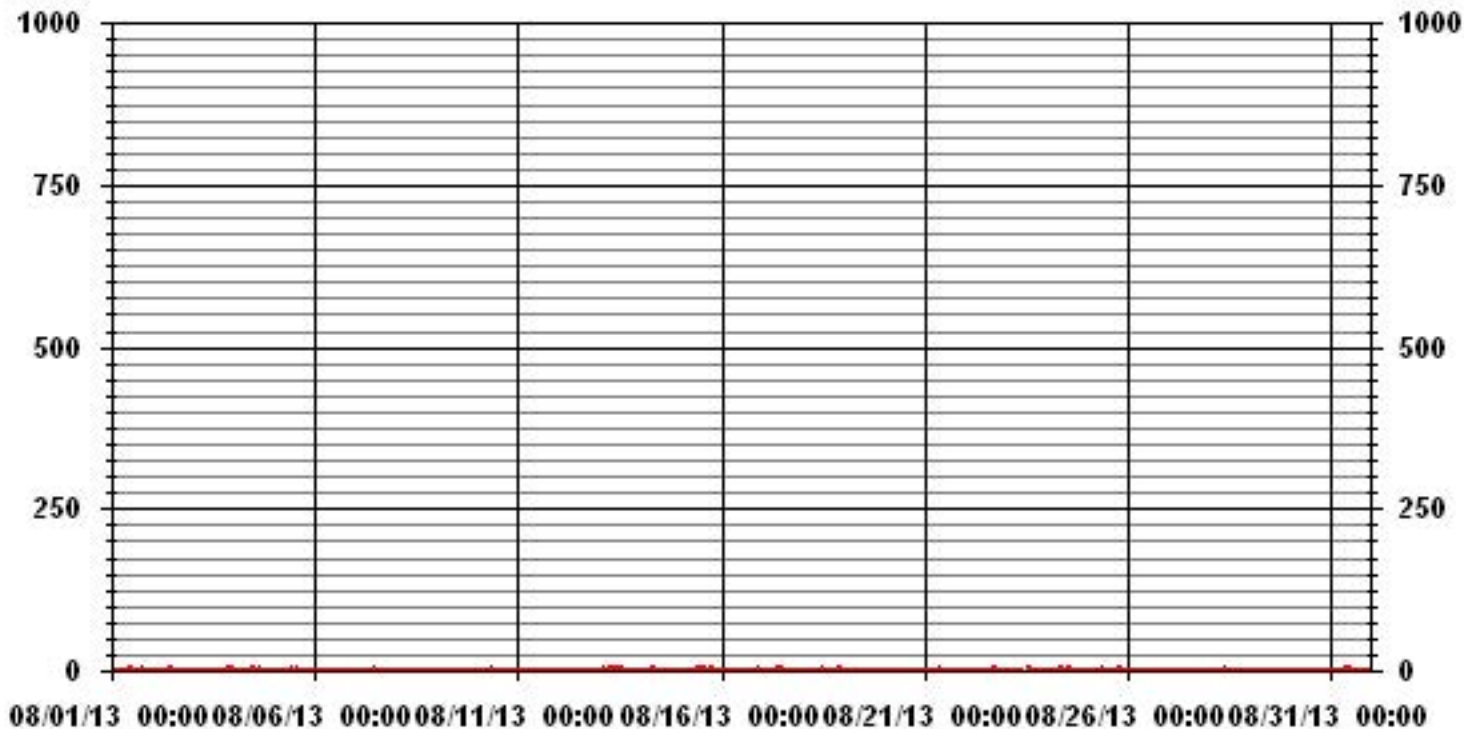
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	116					
MAXIMUM 1-HR AVERAGE:	5	PPB	@ HOUR(S)	10	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	0.7	PPB			ON DAY(S)	24
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.56		MONTHLY AVERAGE:	0.22	PPB	



### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

## 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	S	0	0	0	0	0	0	3	5	9	6	9	1	3	1	3	3	3	0	0	0	0	9	2.0	24
2	0	S	0	0	0	0	0	0	2	3	2	3	2	2	1	2	1	0	2	0	0	1	0	0	3	0.9	24
3	S	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	0	1	4	4	S	4	0.7	24	
4	0	1	1	1	1	0	1	1	1	1	2	2	1	1	1	2	3	1	1	1	1	1	S	1	3	1.1	24
5	1	1	1	1	1	1	1	1	3	2	1	1	5	1	2	1	1	1	1	1	1	S	0	0	5	1.3	24
6	0	0	0	0	0	0	0	0	0	0	5	3	2	1	0	0	0	0	0	0	S	3	1	1	5	0.7	24
7	1	1	1	1	1	1	1	2	1	1	3	2	2	1	1	2	1	1	1	S	0	0	0	0	3	1.1	24
8	0	0	0	0	0	0	0	0	0	2	2	2	1	1	3	1	2	1	S	1	0	0	0	0	3	0.7	24
9	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	S	1	1	1	1	1	1	1	0.7	24
10	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	S	0	0	0	0	0	0	0	2	0.8	24
11	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	S	1	3	2	0	0	0	0	0	3	0.3	24
12	0	0	0	0	0	0	0	0	0	0	1	0	2	4	S	4	1	1	1	1	1	1	1	1	4	0.8	24
13	1	1	1	3	4	2	3	3	1	1	1	1	2	S	0	0	1	1	1	0	0	1	2	0	4	1.3	24
14	0	0	0	0	0	0	1	1	1	2	1	1	S	1	1	1	0	0	0	0	2	3	2	0	3	0.7	24
15	0	0	0	0	0	1	1	1	0	3	7	S	2	3	1	1	1	1	4	4	1	0	1	0	7	1.4	24
16	0	0	0	0	1	0	0	1	1	0	S	1	3	2	1	1	1	1	1	1	1	2	2	1	3	0.9	24
17	1	1	0	0	0	0	1	1	2	S	2	2	2	1	2	1	1	1	1	1	1	0	1	1	2	1.0	24
18	0	0	0	1	1	0	1	2	S	2	3	2	1	1	1	1	1	1	1	1	1	9	2	2	9	1.5	24
19	1	1	1	1	1	1	0	S	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	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	0.9	24
21	0	0	1	0	0	S	0	0	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0.5	24
22	0	0	0	0	S	0	1	C	C	C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	24
23	1	1	1	S	0	0	0	0	0	C	C	C	C	C	2	Y	1	1	1	1	1	1	1	1	2	0.8	23
24	2	2	S	1	1	1	1	3	4	2	2	7	1	9	3	2	1	1	1	1	0	0	0	0	9	2.0	24
25	0	S	0	0	1	0	0	1	2	1	1	1	1	1	1	3	4	4	17	15	0	0	0	17	2.3	24	
26	S	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0.1	24
27	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	1	0	0	S	0	2	0.2	24
28	0	0	0	0	1	0	0	1	2	6	1	1	1	2	2	3	1	1	0	0	0	S	0	0	6	1.0	24
29	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	S	0	0	1	1	0.3	24	
30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	S	0	1	1	1	5	1.1	24
31	1	1	0	1	1	1	1	1	5	9	7	3	4	1	1	1	1	1	S	0	0	1	0	0	9	1.8	24
HOURLY MAX	2	2	1	3	4	2	3	3	8	9	7	9	6	9	3	4	3	4	5	17	15	9	4	2			
HOURLY AVG	0.4	0.5	0.4	0.4	0.6	0.4	0.5	0.8	1.4	1.7	1.8	1.7	1.5	1.6	1.0	1.1	1.0	1.2	1.3	1.0	1.1	0.7	0.4				

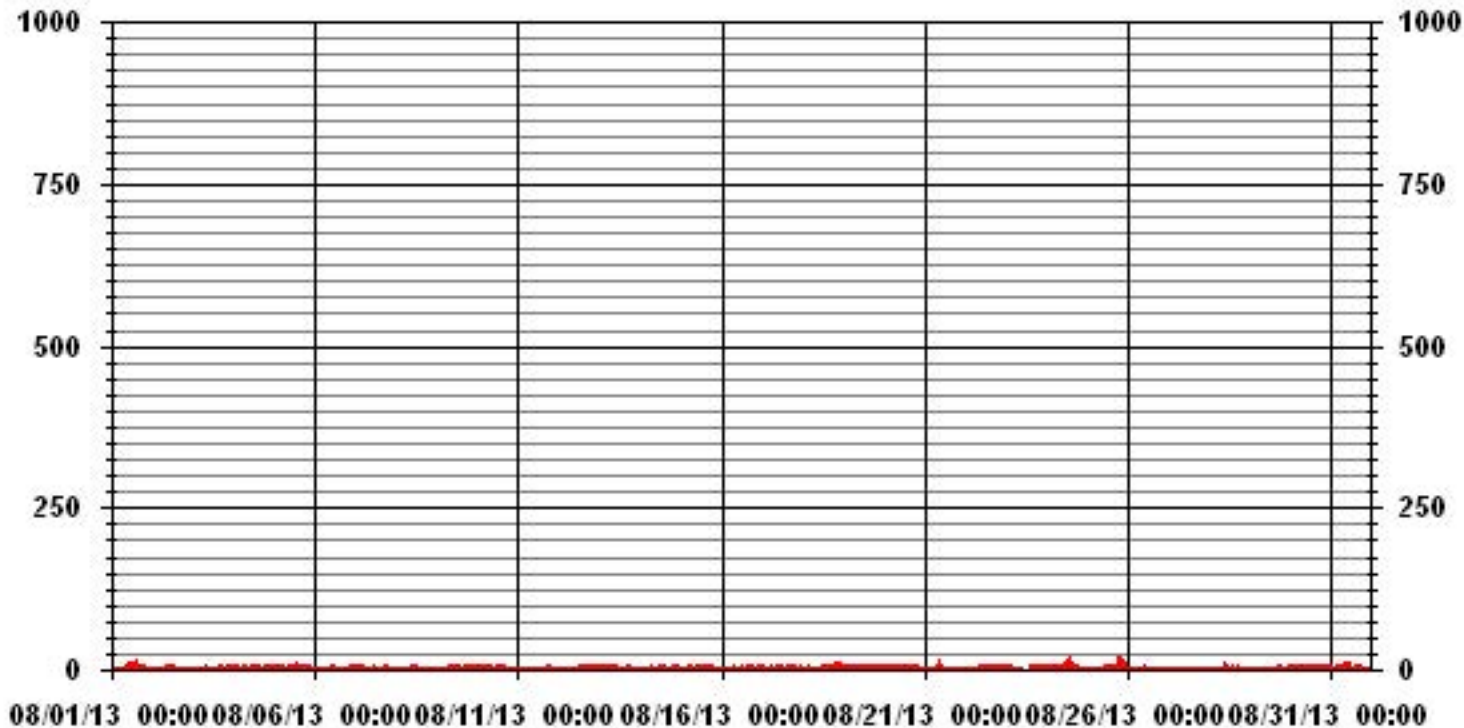
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	424
MAXIMUM INSTANTANEOUS VALUE:	17 PPB @ HOUR(S) 19 ON DAY(S) 25
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	8 HRS
STANDARD DEVIATION:	1.51
OPERATIONAL TIME:	743 HRS

### 01 Hour Averages



— LICA30 SO2MAX PPB

LICA30  
 SO2\_ / WDR Joint Frequency Distribution (Percent)

August 2013

Distribution By % Of Samples

Logger Id : 30  
 Site Name : LICA30  
 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	4.11	5.25	11.64	8.38	5.25	6.10	9.80	9.80	6.53	10.08	5.53	5.11	6.10	3.40	1.13	1.70	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	4.11	5.25	11.64	8.38	5.25	6.10	9.80	9.80	6.53	10.08	5.53	5.11	6.10	3.40	1.13	1.70	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	29	37	82	59	37	43	69	69	46	71	39	36	43	24	8	12	704
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	29	37	82	59	37	43	69	69	46	71	39	36	43	24	8	12	

Calm : .00 %

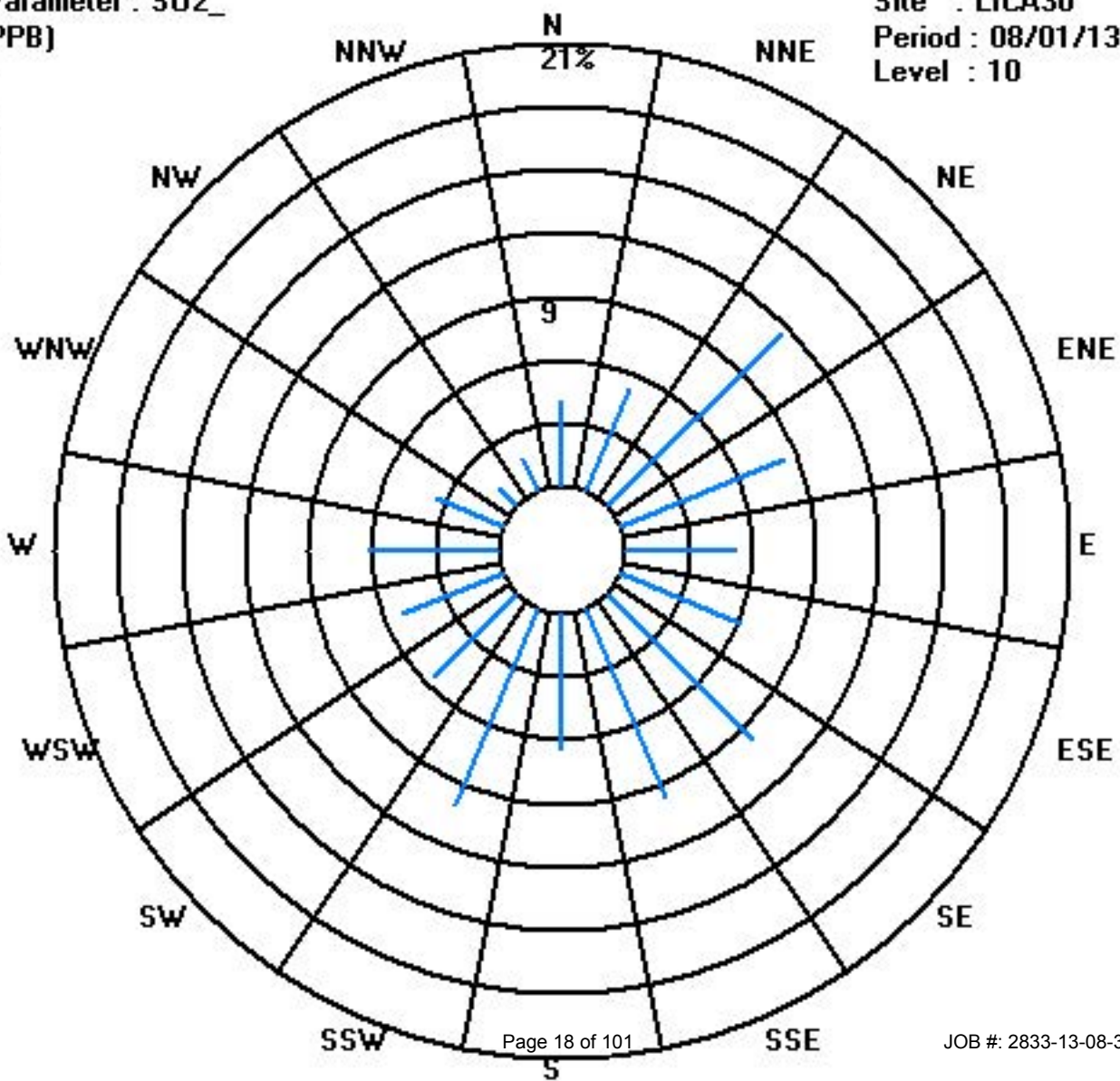
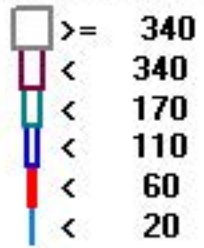
Total # Operational Hours : 704



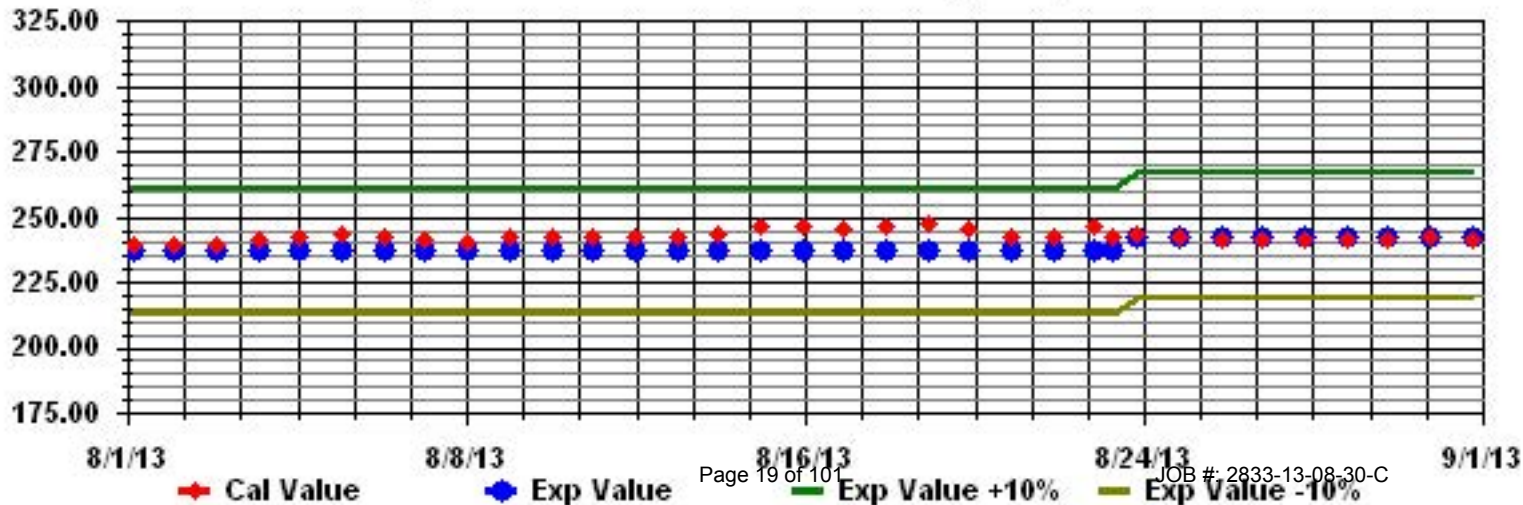
Class Limits (PPB)

Period : 08/01/13-08/31/13

Level : 10



Calibration Graph for Site: LICA30 Parameter: S02\_ Sequence: S02 Phase: SPAN



# Hydrogen Sulphide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

## HYDROGEN SULPHIDE (H<sub>2</sub>S) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR				
DAY	HOURLY MAX	HOURLY AVG	HOURLY MAX	HOURLY AVG	HOURLY MAX	HOURLY AVG	HOURLY MAX	HOURLY AVG	HOURLY MAX	HOURLY AVG	HOURLY MAX	HOURLY AVG	HOURLY MAX	HOURLY AVG	HOURLY MAX	HOURLY AVG	HOURLY MAX	HOURLY AVG	HOURLY MAX	HOURLY AVG	HOURLY MAX	HOURLY AVG	HOURLY MAX	HOURLY AVG	HOURLY MAX	HOURLY AVG	MAX.	AVG.	RDGS.	
1	0	0.3	0	0.3	S	0	0.2	0	0.4	0	0.5	0	0.4	0	0.3	0	0.3	0	0.3	0	0.1	0	0.1	0	0.1	0	0.1	0.0	0.0	24
2	0	0.3	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	0.0	24
3	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	0.0	24
4	0	0.3	0	0.2	0	0	2	1	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	2	0.1	24	
5	0	0.3	1	0.3	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0.2	24	
6	0	0.3	0	0.2	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
7	0	0.3	0	0.2	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
8	0	0.3	0	0.2	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
9	0	0.3	0	0.2	0	0	1	3	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	3	0.2	24	
10	0	0.3	0	0.2	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	24
11	0	0.3	0	0.2	0	0	0	0	0	0	0	1	0	0	1	0	S	0	0	0	0	0	0	0	0	0	1	0.1	24	
12	0	0.3	0	0.2	0	0	0	0	0	1	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
13	0	0.3	2	0.3	2	0	2	4	2	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	4	0.5	24	
14	0	0.3	0	0.2	0	1	1	0	0	1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	1	0.2	24	
15	1	0.3	1	0.3	1	1	1	1	1	1	1	2	S	1	1	1	1	1	1	1	1	1	1	0	0	2	0.9	24		
16	0	0.3	0	0.2	0	0	1	2	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24		
17	0	0.3	0	0.2	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
18	0	0.3	0	0.2	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
19	0	0.3	0	0.2	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
20	0	0.3	0	0.2	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
21	0	0.3	0	0.2	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
22	0	0.3	0	0.2	0	S	0	1	C	C	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0.2	24		
23	S	4	3	S	1	1	1	2	0	C	C	C	C	C	C	C	C	C	0	1	1	1	0	1	1	5	1.5	24		
24	1	0.3	1	0.3	1	1	1	1	2	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0.5	24		
25	1	0.3	S	0	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	0	0	0	0	0	0	1	0.6	24		
26	S	0	0	1	1	0	0	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	S	1	0.4	24		
27	0	0.3	0	0.2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	2	1	1	S	1	2	0.3	24		
28	2	0.3	1	0.3	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	S	0	0	2	0.3	24	
29	0	0.3	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S	0	0	0	1	0.0	24	
30	0	0.3	0	0.2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	S	0	0	0	0	1	0.1	24	
31	0	0.3	0	0.2	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	5	4	3	2	1	2	4	2	1	1	2	1	1	1	1	1	1	1	1	1	1	2	1	1	1	3				
HOURLY AVG	0.3	0.3	0.3	0.2	0.2	0.4	0.5	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.2				

### STATUS FLAG CODES

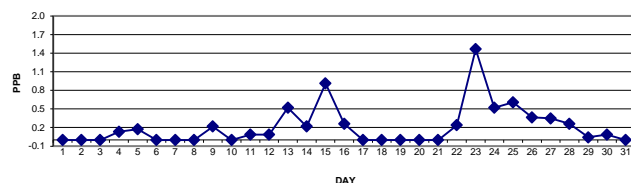
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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

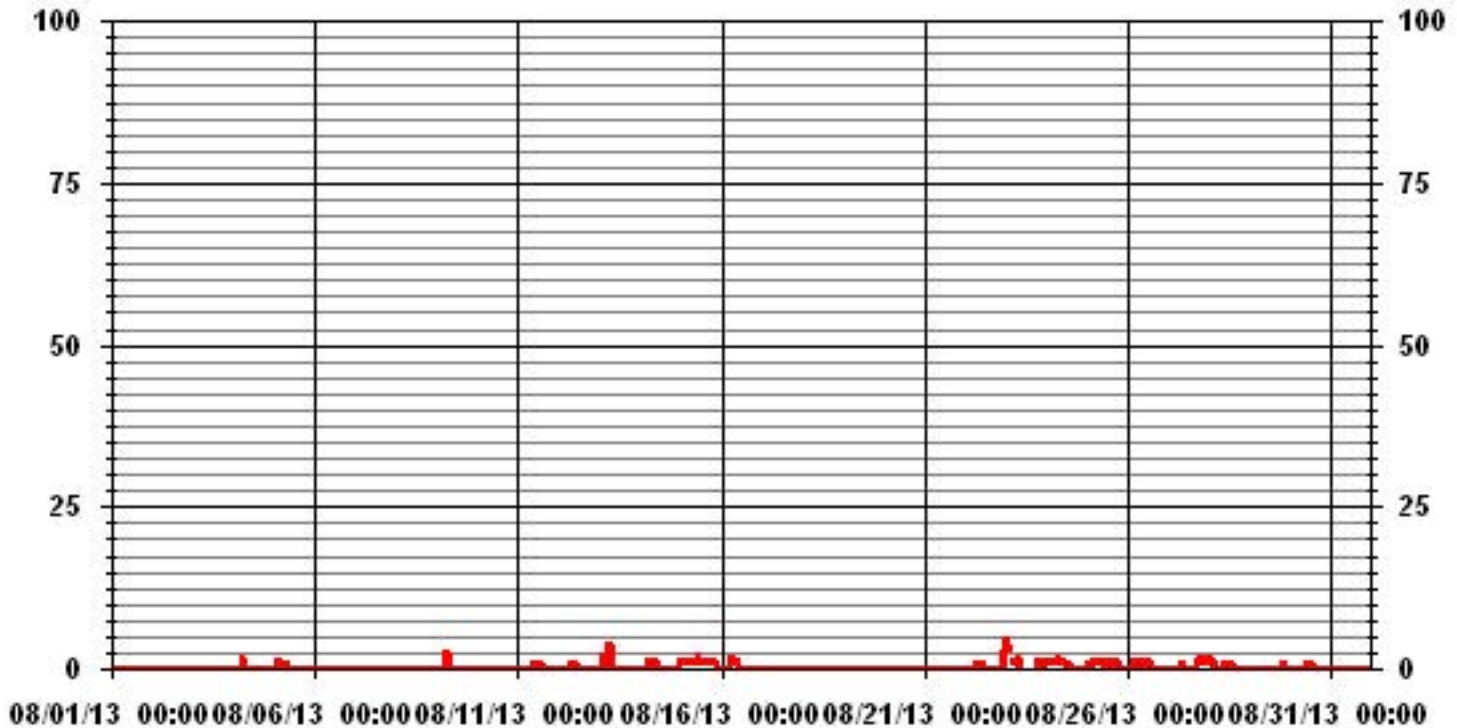
### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	111
MAXIMUM 1-HR AVERAGE:	5 PPB @ HOUR(S) 0 ON DAY(S) 23
MAXIMUM 24-HR AVERAGE:	1.5 PPB ON DAY(S) 23
	VAR-VARIOUS
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	10 HRS
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.53
MONTHLY AVERAGE:	0.20 PPB

24 HOUR AVERAGES FOR AUGUST 2013



# 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

## 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	1	S	1	1	1	2	0	0	0	0	0	0	0	1	2	2	0	1	0	0	0	0	0	2	0.5	24
2	0	S	4	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3	1	0	0	0	0	4	0.4	24
3	S	0	0	0	0	2	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	S	2	0.3	24
4	0	0	0	0	1	4	2	1	1	1	1	0	0	1	0	0	1	0	0	3	0	0	S	0	4	0.7	24
5	1	1	2	2	1	1	1	2	0	1	0	0	4	1	1	1	0	0	0	0	1	S	1	0	4	0.9	24
6	0	0	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	S	1	0	3	3	0.3	24
7	0	0	1	0	0	0	0	0	0	1	0	0	1	0	2	3	0	0	0	S	0	0	0	0	3	0.3	24
8	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0.0	24
9	2	1	1	1	0	2	5	2	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	3	5	0.8	24
10	1	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1	S	0	0	0	1	0	2	0	2	0.4	24
11	0	0	0	0	1	1	1	2	2	1	4	0	1	3	1	S	2	1	1	0	0	1	1	2	4	1.1	24
12	0	0	1	1	1	1	1	0	2	1	1	0	1	1	S	1	0	0	0	0	0	0	0	0	2	0.5	24
13	0	1	5	6	1	4	6	5	1	1	0	3	0	S	1	0	1	1	0	1	1	2	1	1	6	1.8	24
14	1	1	1	1	1	1	1	1	1	2	1	1	S	1	1	1	1	2	1	1	1	1	1	1	2	1.1	24
15	3	1	2	2	1	1	2	2	2	2	3	S	2	2	1	2	2	2	2	2	1	1	0	1	3	1.7	24
16	1	1	1	1	4	2	4	1	1	1	S	1	0	0	0	0	0	0	0	0	0	1	1	0	4	0.9	24
17	0	2	0	0	1	0	1	1	0	S	0	0	0	0	1	0	0	3	6	0	0	0	0	0	6	0.7	24
18	0	0	0	0	0	0	0	1	S	0	1	1	0	2	3	0	0	0	1	0	1	1	1	0	3	0.5	24
19	0	0	0	0	0	0	0	S	1	0	0	1	2	0	0	0	0	0	1	0	0	0	0	0	2	0.2	24
20	0	0	0	0	0	3	S	0	1	1	1	1	5	1	0	0	0	1	3	0	0	0	0	0	5	0.7	24
21	0	3	0	0	0	S	0	0	1	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	0.3	24
22	0	4	2	1	S	1	1	C	C	C	1	0	0	0	0	1	0	1	0	1	0	1	1	5	5	1.0	24
23	6	4	6	S	1	1	5	5	1	C	C	C	C	C	C	C	C	1	1	1	1	1	1	3	6	2.5	24
24	3	2	S	1	1	1	3	5	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1.5	24
25	1	S	1	2	2	1	2	1	1	1	1	1	1	1	0	2	2	1	1	1	1	1	1	0	2	1.1	24
26	S	0	1	2	3	1	1	1	1	1	2	1	2	1	1	1	1	1	0	0	1	1	0	S	3	1.0	24
27	1	1	0	1	1	1	0	0	2	1	1	1	1	1	1	1	1	1	1	3	1	1	S	2	3	1.0	24
28	3	1	1	1	1	0	1	1	1	2	1	1	1	1	1	1	1	1	1	0	S	1	0	3	1.0	24	
29	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	S	1	3	1	3	0.5	24
30	0	0	2	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	0	1	2	0.9	24
31	0	1	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	1	0.6	24
HOURLY MAX	6	4	6	6	4	4	6	5	4	2	4	3	5	3	3	3	2	3	6	3	1	2	3	5			
HOURLY AVG	0.8	0.9	1.1	0.8	0.8	1.0	1.4	1.2	0.9	0.9	0.8	0.5	0.9	0.7	0.7	0.6	0.6	0.8	0.9	0.6	0.4	0.6	0.6	0.8			

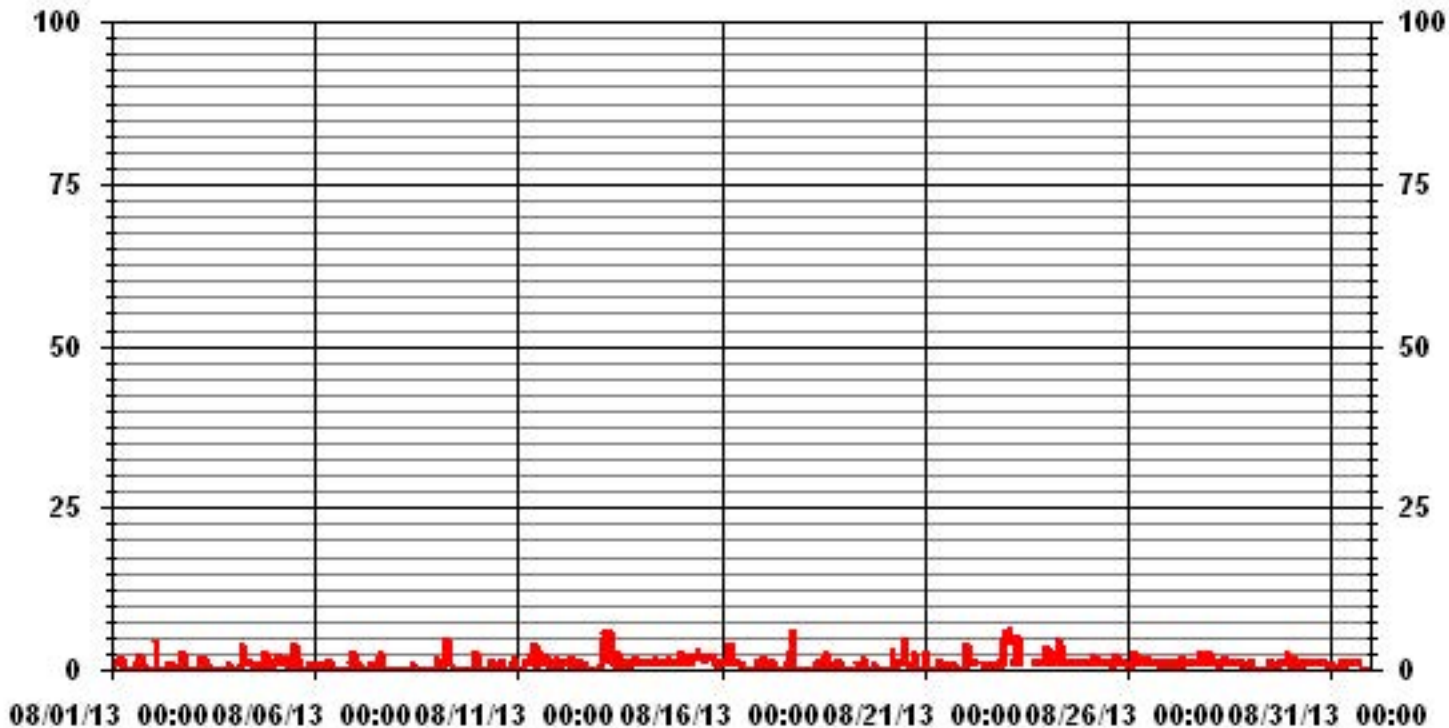
**STATUS FLAG CODES**

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:	381
MAXIMUM INSTANTANEOUS VALUE:	6 PPB @ HOUR(S) VAR ON DAY(S) VAR
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	11 HRS
OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	1.05

# 01 Hour Averages



LICA30  
H2S\_ / WDR Joint Frequency Distribution (Percent)

August 2013

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	4.13	5.13	11.55	8.41	5.27	5.99	9.27	9.70	6.56	9.98	5.56	5.13	6.13	3.42	1.14	1.71	99.14
< 10	.00	.00	.14	.00	.00	.14	.28	.14	.00	.14	.00	.00	.00	.00	.00	.00	.85
< 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	4.13	5.13	11.69	8.41	5.27	6.13	9.55	9.84	6.56	10.12	5.56	5.13	6.13	3.42	1.14	1.71	

Calm : .00 %

Total # Operational Hours : 701

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	29	36	81	59	37	42	65	68	46	70	39	36	43	24	8	12	695
< 10			1			1	2	1		1							6
< 50																	
>= 50																	
Totals	29	36	82	59	37	43	67	69	46	71	39	36	43	24	8	12	

Calm : .00 %

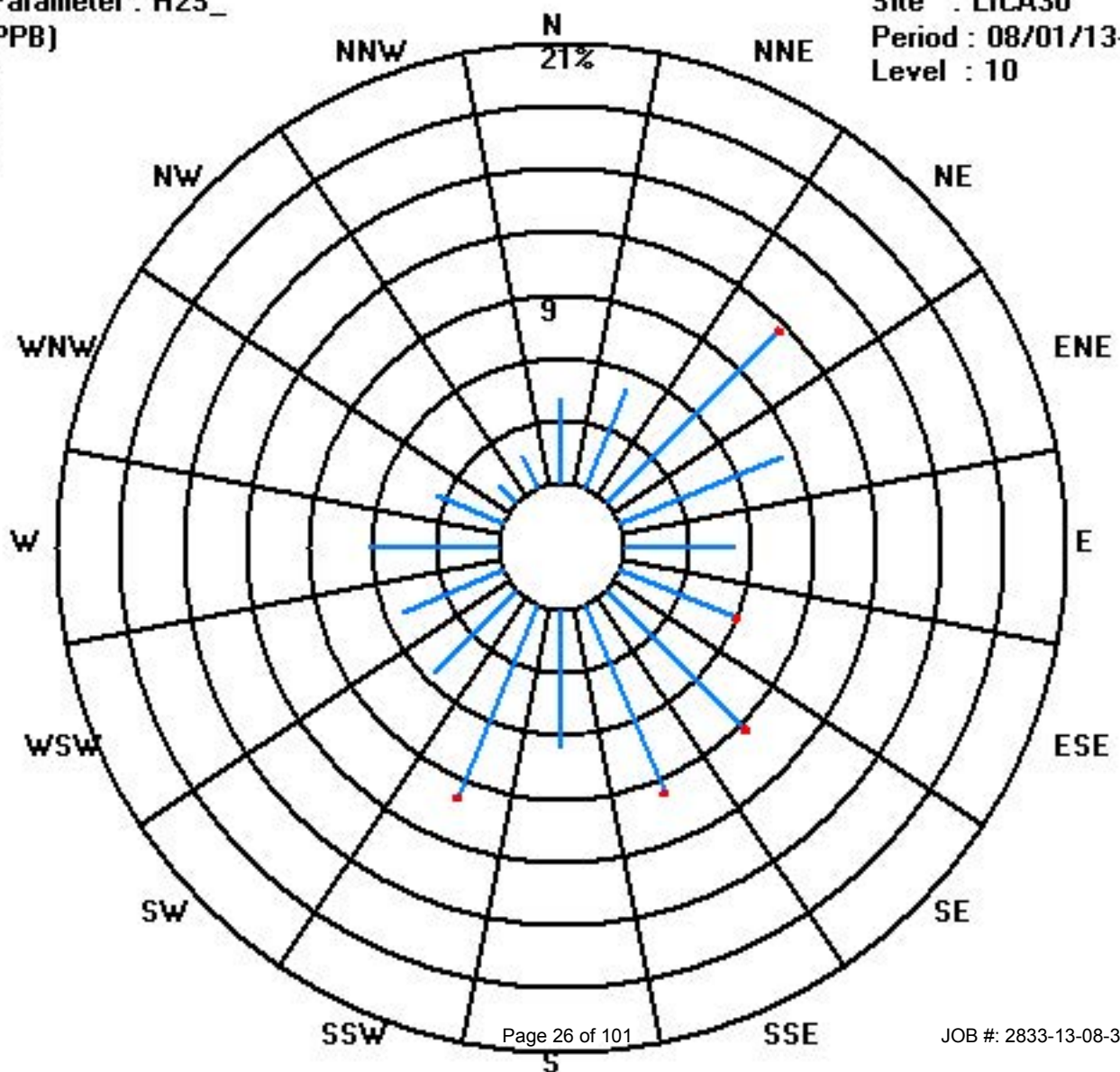
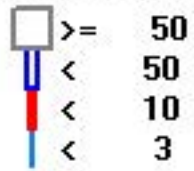
Total # Operational Hours : 701



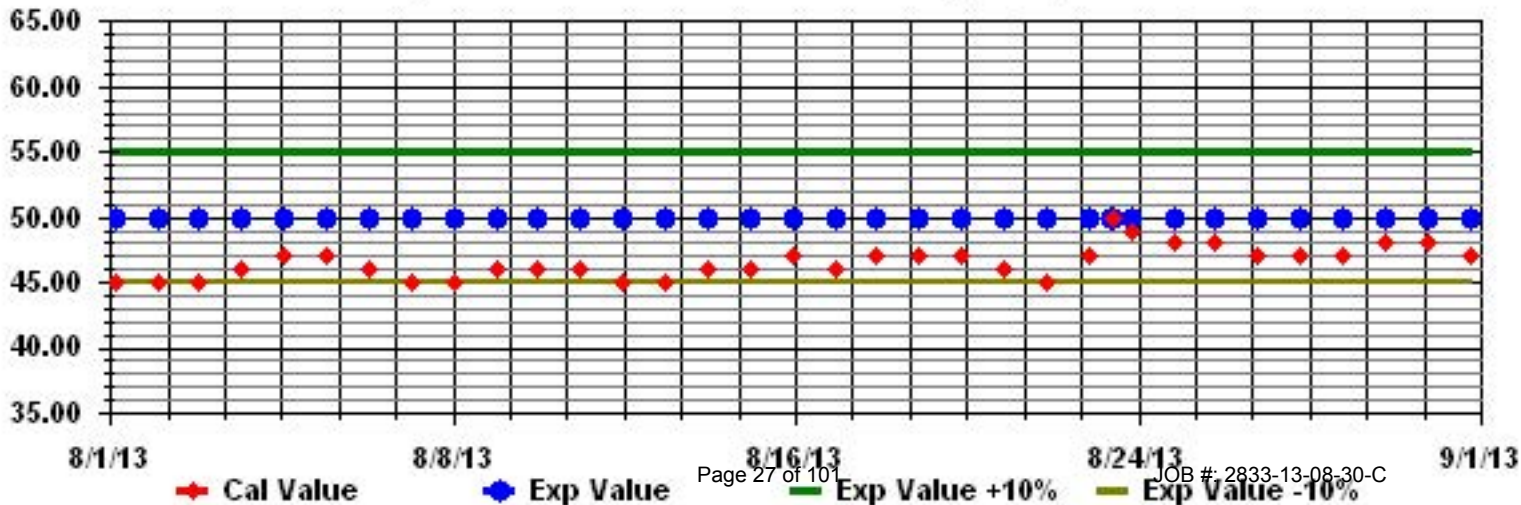
Class Limits (PPB)

Period : 08/01/13-08/31/13

Level : 10



Calibration Graph for Site: LICA30 Parameter: H2S\_ Sequence: H2S Phase: SPAll



# Total Hydrocarbons

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

AUGUST 2013

## TOTAL HYDROCARBONS hourly averages in ppm

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	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	2.2	2.4	S	2.8	3	2.7	2.4	2.2	2	2	2	2	2	2	2	2	2	2	2	2.1	2	2.1	2.1	2.1	3.0	2.2	24	
2	2.1	S	2.1	2.2	2.2	2.2	2.2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.3	2.3	2.3	2.1	24	
3	S	2.3	2.3	2.4	2.3	2.4	2.5	2.4	2.4	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	S	2.5	2.3	24	
4	2.2	2.2	2.4	2.4	2.4	2.5	2.7	2.6	2.4	2.3	2.3	2.2	2.1	2.2	2.1	2.1	2.1	2	2.1	2.1	2.1	2.2	2.3	S	2.4	2.7	2.3	24
5	2.6	2.6	3.1	2.9	2.8	2.9	2.8	2.8	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2	2	2	2	2	2	S	2.1	2.1	3.1	2.3	24	
6	2.1	2.2	2.2	2.2	2.2	2.3	2.2	2.1	2.1	2.1	2.3	2.1	2	2	2	2	2	2	2	2	2.1	S	2.1	2	2.1	2.3	2.1	24
7	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2.1	2	2	2	2	2	2	2	2	2	S	2.1	2.1	2.2	2.3	2.3	2.1	24
8	2.3	2.3	2.4	2.4	2.5	2.4	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2.1	2.1	S	2.1	2.1	2.1	2.2	2.2	2.3	2.5	2.2	24
9	2.7	3	3.3	3.2	2.8	2.6	2.8	2.5	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	2.2	2.3	2.3	2.4	3.3	2.4	24
10	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.5	2.2	24	
11	2.2	2.2	2.3	2.4	2.6	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.2	2.1	2.1	S	2.1	2.2	2.1	2.1	2.1	2.2	2.1	2.2	2.6	2.3	24	
12	2.2	2.2	2.3	2.5	2.6	2.5	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	S	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.2	24
13	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	S	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
14	2.3	2.3	2.3	2.4	2.5	2.5	2.6	2.4	2.3	2.2	2.2	2.2	S	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.6	2.3	24	
15	2.3	2.5	2.4	2.5	2.5	2.5	2.6	2.9	2.7	2.6	2.7	S	2.4	2.4	2.3	2.4	2.5	2.5	2.6	2.1	2	2.1	2.1	2.1	2.9	2.4	24	
16	2.1	2.2	2.2	2.1	2.2	2.4	3.3	2.5	2.4	2.1	S	2.3	2.4	2.2	2.1	2	2	2	2.1	2.1	2.1	2.3	2.3	2.2	3.3	2.2	24	
17	2.2	2.2	2.2	2.2	2.2	2.3	2.7	2.7	2.4	S	2.3	2.2	2.1	2	2	2	2	2	2	2	2	2.1	2.2	2.2	2.2	2.7	2.2	24
18	2.3	2.4	2.4	2.4	2.5	2.7	2.7	2.5	S	2.1	2.3	2.1	2	2.1	2	2	2	2	2	2	2	2	2	2	2	2.7	2.2	24
19	2	2	2.1	2.1	2	2	2	S	2	2	2	1.9	2	2	1.9	1.9	2	2	2.1	2	2	2.1	2.2	2.2	2.2	2.0	24	
20	2.4	2.3	2.1	2.1	2.2	2.3	S	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.4	2.1	24
21	2.1	2.1	2.1	2	2	S	2	2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.0	24
22	2.2	2.4	2.4	2.5	S	2.6	2.8	2.9	2.7	2.5	C	2.1	2	2	2	2	2	2	2	2	2	2.1	2.2	3.3	3.3	2.3	24	
23	3.8	3.5	3.2	S	2.7	2.7	3.1	3.5	2.5	2	2	2	2	C	C	C	C	C	2.1	2.1	2.1	2.1	2.2	2.1	3.8	2.5	24	
24	2.1	2.1	S	2.1	2.1	2.1	2.4	2.9	2.4	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.2	2.2	2.9	2.1	24	
25	2.3	S	2.5	2.6	3	2.6	2.6	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.1	2.2	2.2	2.2	2.4	2.1	2.1	2.1	2.1	3.0	2.4	24	
26	S	2.1	2.3	2.5	2.9	2.8	2.7	2.6	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2.1	2.1	S	2.9	2.2	24	
27	2.1	2	2	2	2	2	2	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	S	2.6	2.6	2.1	24	
28	3.4	2.9	2.8	2.7	3	2.5	2.5	2.5	2.4	2.5	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.2	S	2.1	2.1	3.4	2.4	24	
29	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.2	2.1	24
30	2.2	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	2.2	2.1	2.1	2.1	2.1	S	2	2	2	2.1	2.2	2.1	24
31	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.2	2.2	2.3	2.3	2.3	2.1	24	
HOURLY MAX	3.8	3.5	3.3	3.2	3.0	2.9	3.3	3.5	2.7	2.6	2.7	2.4	2.5	2.5	2.5	2.4	2.5	2.5	2.6	2.4	2.2	2.3	2.3	3.3				
HOURLY AVG	2.3	2.3	2.4	2.4	2.4	2.4	2.5	2.4	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2				

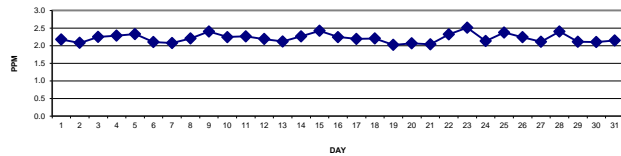
### STATUS FLAG CODES

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

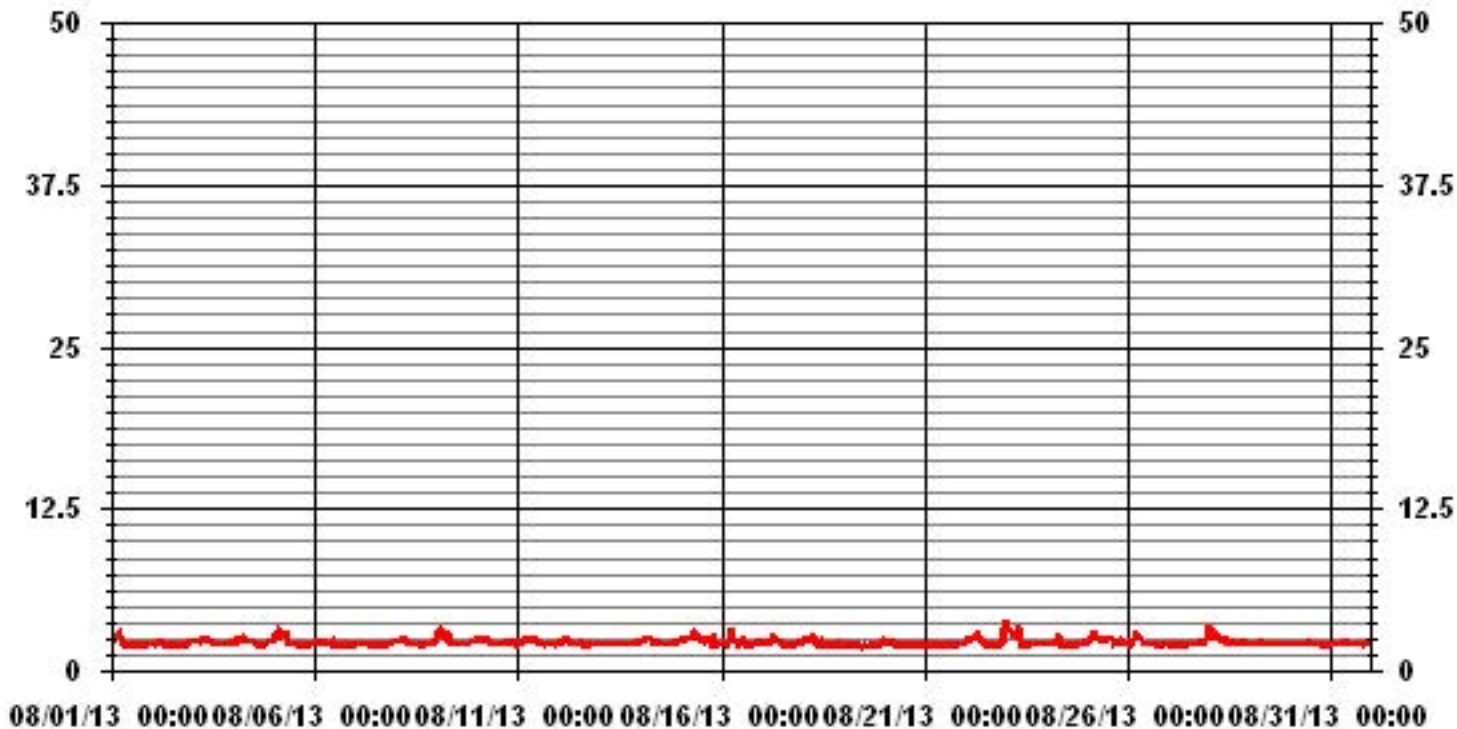
### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	704		
MAXIMUM 1-HR AVERAGE:	3.8 PPM	@ HOUR(S)	0 ON DAY(S)
MAXIMUM 24-HR AVERAGE:	2.5 PPM		23 ON DAY(S)
			VAR- VARIOUS
IZS CALIBRATION TIME:	34 HRS	OPERATIONAL TIME:	744 HRS
MONTHLY CALIBRATION TIME:	6 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.25	MONTHLY AVERAGE:	2.21 PPM

24 AVERAGES FOR AUGUST 2013



### 01 Hour Averages



— LICA30 THC PPM

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

## TOTAL HYDROCARBONS MAX      instantaneous maximum in ppm

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	24:00	MAX.	AVG.	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	2.2	3	S	3	3.4	2.9	2.5	2.4	2.1	2.1	2.1	2.1	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	3.4	2.3	24
2	2.1	S	2.1	2.2	2.3	2.2	2.3	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2.1	2.3	2.4	2.3	2.4	2.4	2.1	24
3	S	2.3	2.4	2.4	2.4	2.4	2.6	2.5	2.4	2.4	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	S	2.6	2.3	24
4	2.2	2.2	2.5	2.6	2.5	2.6	2.9	2.7	2.5	2.4	2.3	2.3	2.3	2.2	2.6	2.4	2.6	2.1	2.1	2.2	2.3	2.3	S	2.5	2.9	2.4	24	
5	2.8	2.8	4.1	3.5	3	2.9	3	3.7	2.2	2.1	2.1	2.2	2.5	2.2	2.5	2.3	2.2	2	2	2.1	2.1	S	2.2	2.2	4.1	2.6	24	
6	2.2	2.5	2.4	2.3	2.3	2.3	2.2	2.1	2.6	3	2.1	2.1	2	2	2	2	2	2.1	2.3	S	2.5	2.1	2.1	3	2.2	24		
7	2.2	2.3	2.1	2.1	2.2	2.2	2.1	2.6	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2	2	2.1	S	2.1	2.2	2.3	2.3	2.6	2.2	24		
8	2.4	2.3	2.4	2.4	2.6	2.6	2.5	2.4	2.2	2.1	2.2	2.1	2.1	2.1	2.3	2.1	2.1	2.1	S	2.1	2.2	2.2	2.3	2.4	2.6	2.3	24	
9	3.5	3.4	3.6	3.6	3.1	2.7	3.1	2.6	2.4	2.5	2.2	2.1	2.1	2.1	2.1	2.2	2.2	S	2.1	2.1	2.2	2.3	2.4	2.5	3.6	2.6	24	
10	2.6	2.7	2.4	2.4	2.4	2.4	2.5	2.6	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	S	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.7	2.3	24	
11	2.2	2.3	2.3	2.6	2.8	2.7	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.2	2.1	S	2.2	2.3	2.3	2.2	2.2	2.3	2.2	2.2	2.8	2.3	24	
12	2.2	2.2	3.3	2.7	2.6	2.6	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.4	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	3.3	2.3	24	
13	2.2	2.2	2.2	2.3	2.5	2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.5	2.2	24
14	2.4	2.4	2.4	2.6	2.5	2.7	2.7	2.5	2.4	2.3	2.2	2.2	S	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.4	2.3	2.7	2.3	24	
15	2.3	2.6	2.5	2.5	2.5	2.6	2.9	3	2.8	2.8	3	S	2.4	2.5	2.4	2.5	2.5	2.9	2.9	2.5	2.1	2.1	2.1	2.2	3	2.5	24	
16	2.4	2.4	2.2	2.2	2.2	4.2	4.9	2.6	2.5	2.2	S	2.5	2.4	2.4	2.1	2	2.1	2.1	2.1	2.2	2.3	2.8	2.6	2.3	4.9	2.5	24	
17	2.2	2.2	2.2	2.2	2.3	2.6	2.9	2.9	2.6	S	2.4	2.4	2.2	2.3	2.1	2	2	2	2	2.1	2.1	2.2	2.3	2.3	2.9	2.3	24	
18	2.3	2.4	2.5	2.4	2.6	2.8	2.8	2.7	S	2.2	2.4	2.2	2.1	2.2	2	2	2	2	2	2	2	2	2	2	2	2.8	2.3	24
19	2	2.1	2.2	2.1	2	2	2	S	2	2	2	2	2	2	2	2	2	2	3.1	2	2.1	2.2	2.2	2.3	3.1	2.1	24	
20	2.4	2.4	2.2	2.2	2.2	2.3	S	2.2	2	2	2	2	2.3	2.1	2	2	2.1	2.3	2	2	2	2	2	2	2.4	2.1	24	
21	2.1	2.1	2.1	2	2	S	2.1	2.1	2.3	2.5	2	2.1	2	2	2	2	2	2	2	2	2	2.1	2.2	2.2	2.2	2.5	2.1	24
22	2.3	2.4	2.5	2.5	S	2.7	2.9	2.9	2.7	2.6	C	C	2.3	2.1	2.1	2	2	2	2	2	2	2.1	2.1	2.3	4.5	4.5	24	
23	4.4	3.9	4	S	2.7	2.8	4.3	4.6	2.9	2.1	2	2	2	C	C	C	C	2.1	2.2	2.1	2.2	2.3	2.3	4.6	2.8	24		
24	2.3	2.1	S	2.4	2.2	2.2	3	4.6	3.4	2	2.1	2.2	2	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	4.6	2.3	24	
25	2.5	S	2.7	3.2	3.4	2.9	2.7	2.6	2.5	2.5	2.4	2.5	2.6	2.6	2.6	2.3	2.6	2.4	2.3	3	2.3	2.1	2.1	2.2	3.4	2.6	24	
26	S	2.2	2.5	2.9	3.3	3.1	2.9	2.7	S	S	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2	2.1	2.1	S	3.3	2.4	24	
27	2.1	2.1	2.1	2.1	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.2	2.4	2.3	2.2	S	4	4	2.2	24	
28	3.8	3.3	3.1	3.1	3.3	2.7	2.6	2.6	3.1	2.9	2.3	2.2	2.1	2.2	2.4	2.3	2.2	2.2	2.2	2.2	2.5	2.6	S	2.1	2.1	3.8	2.6	24
29	2.1	2.1	2.1	2.2	2.1	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	2.1	2.1	2.1	S	2.1	2.1	2.2	2.1	24	
30	2.4	2.3	2.1	2.2	2.2	2.1	2.1	2.3	2.2	2.1	2.3	2.7	2.2	2.1	2.9	2.4	2.4	2.3	2.6	S	2	2	2.1	2.1	2.9	2.3	24	
31	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.4	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	S	2.2	2.2	2.3	2.3	2.4	2.4	2.2	24	
HOURLY MAX	4.4	3.9	4.1	3.6	3.4	4.2	4.9	4.6	3.4	2.9	3.0	2.7	2.6	2.6	2.9	2.5	2.6	2.9	3.1	3.0	2.6	2.8	2.6	4.5				
HOURLY AVG	2.4	2.5	2.5	2.5	2.5	2.6	2.7	2.6	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.4				

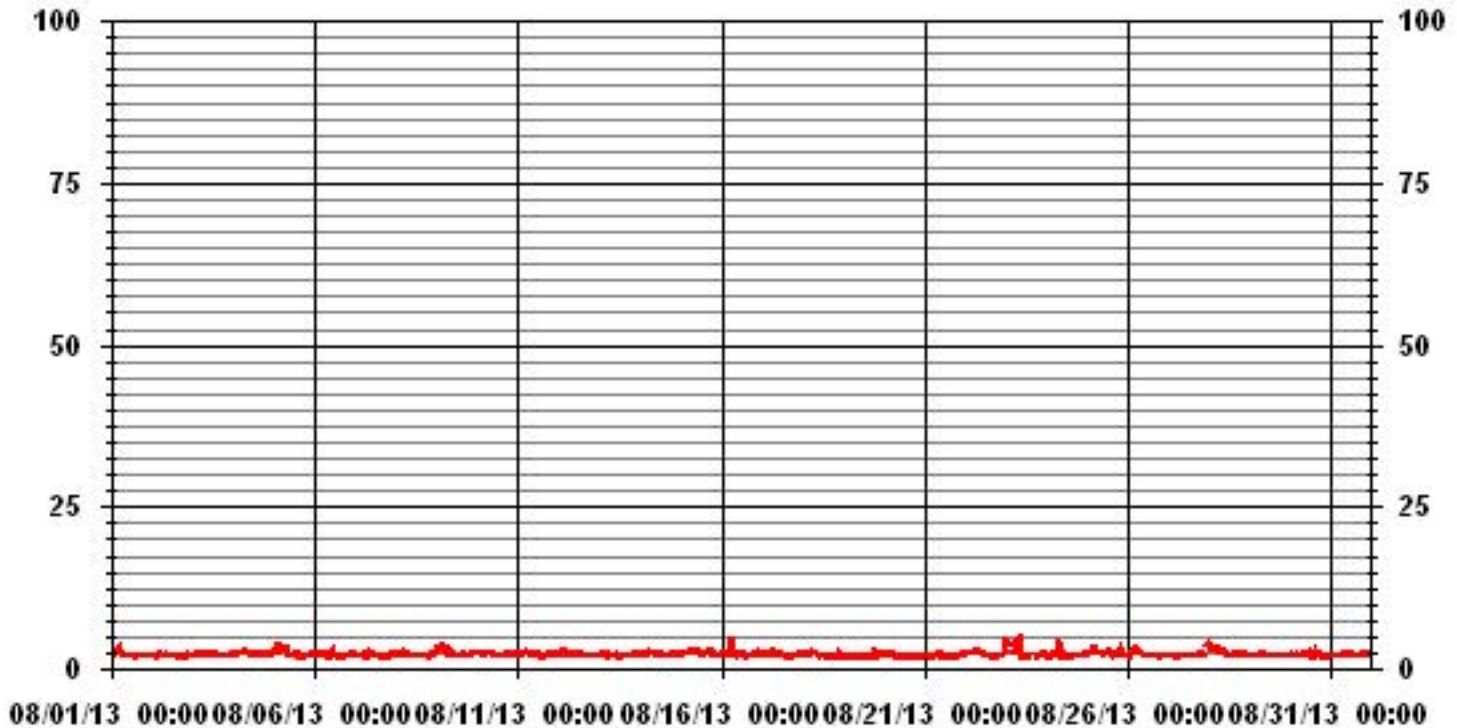
**STATUS FLAG CODES**

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:	703					
MAXIMUM INSTANTANEOUS VALUE:	4.9	PPM	@ HOUR(S)	6	ON DAY(S)	16
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	0.39					

# 01 Hour Averages



— LICA30 THCMAX PPM

LICA30  
 THC / WDR Joint Frequency Distribution (Percent)

August 2013

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	4.40	5.39	11.22	8.23	5.25	6.10	8.52	9.65	6.25	9.65	5.53	5.11	6.10	3.40	1.27	1.70	97.86
< 10.0	.00	.00	.28	.14	.00	.00	.85	.14	.28	.42	.00	.00	.00	.00	.00	.00	2.13
< 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	4.40	5.39	11.50	8.38	5.25	6.10	9.37	9.80	6.53	10.08	5.53	5.11	6.10	3.40	1.27	1.70	

Calm : .00 %

Total # Operational Hours : 704

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	38	79	58	37	43	60	68	44	68	39	36	43	24	9	12	689
< 10.0			2	1			6	1	2	3							15
< 50.0																	
>= 50.0																	
Totals	31	38	81	59	37	43	66	69	46	71	39	36	43	24	9	12	

Calm : .00 %

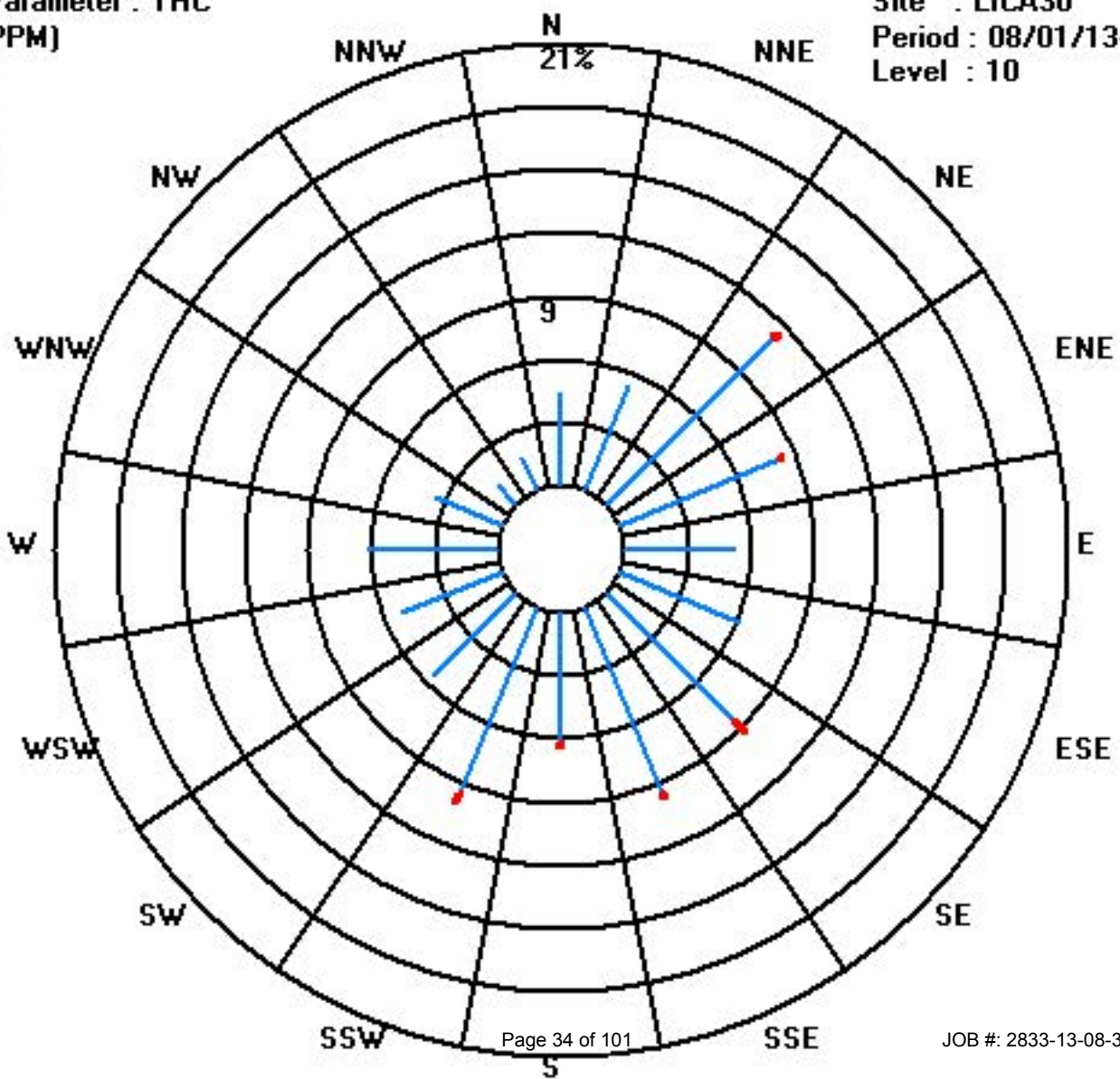
Total # Operational Hours : 704



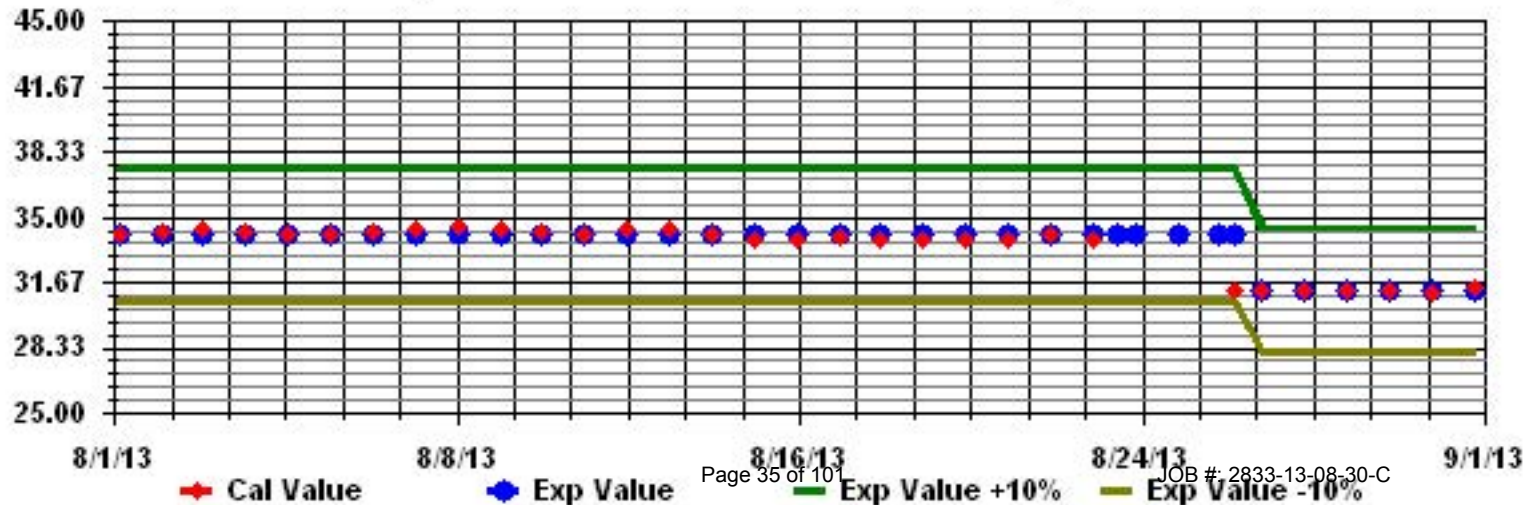
Class Limits (PPM)

Period : 08/01/13-08/31/13

Level : 10



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



# Nitrogen Dioxide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

## NITROGEN DIOXIDE hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY 24-HOUR		
DAY	DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	1	0	0	S	0.7	1.8	0.9	1.5	0.9	0.1	1	1	2.4	1.4	2	0.3	0.8	0.1	1	0.9	1	0	0.1	0	0	0	2.4	0.8	24
2	2	0	S	0.4	0.2	0.2	0.4	0.2	0.1	0.5	1.7	1.9	1.8	2.3	1	0.4	1.3	0.6	0.1	0.6	0	0.1	0.8	0.5	0.4	0.4	2.3	0.7	24
3	3	S	1	1.1	1.8	1.9	1.7	1.2	1.9	1.6	1.4	0.8	0.7	0.4	0.5	0.6	0.2	0.1	0.5	0.4	0.4	0.8	3.7	3.5	S	3.7	1.2	24	
4	4	1.2	1.5	2	1.9	1.6	1.1	0.8	1.4	1.2	1.1	1.2	1.1	0.8	0.3	0.5	1.3	2.5	0.6	0.4	0.4	1	1.2	S	1.4	2.5	1.2	24	
5	5	1.4	1	0.8	0.6	1	1.1	1.1	2	4.1	2.2	0.8	0.9	6.4	2.8	4.4	0	0.1	0.1	0.4	0.3	0.1	S	0.4	0.5	6.4	1.4	24	
6	6	0.2	1	3.7	1.8	1.5	0.9	0.7	0.2	0.1	0.1	2.8	1.1	1.7	1.2	0.6	1.2	0.8	0.5	0.8	1.2	S	5.6	0.3	0.2	5.6	1.2	24	
7	7	0.4	1	0.3	0.2	0.4	0.5	0.3	0.9	0.1	0.2	2.3	1.5	0.7	0.1	0.1	0.5	0	0	0	S	0	0.3	0.5	0.6	2.3	0.5	24	
8	8	0.4	0.8	0.4	0.2	0.1	0.1	0.5	0.6	0.2	0	0.9	0.6	0.2	1.2	2	0.2	2	0.4	S	0	0	0	0.1	0.5	2.0	0.5	24	
9	9	0.8	1	1.3	0.5	0.1	0.3	0.8	1.3	0.5	0.6	1	0.4	0.2	0.7	0.3	0	0	S	0.1	0.5	0.4	0.9	1.4	1.4	1.4	0.6	24	
10	10	0.4	0.2	0.4	1.1	1.1	0.7	0.9	1.5	1.3	0.9	0.4	0.1	0.1	0.3	0.1	0.4	S	0.5	1	1.6	2.2	2	1.5	1.4	2.2	0.9	24	
11	11	1.3	1	1.1	1.2	0.7	2	1.1	1.4	1.4	1.1	1.2	1.3	0.9	0.9	0.3	S	1.1	3.8	2	0.7	2	1.8	1.2	1.2	3.8	1.3	24	
12	12	0.6	0.5	0.4	0.9	3.4	1.1	0.7	1.4	1.7	1.2	1.7	1.2	2.2	5.4	S	3.6	0	0	0	2	0.8	0.2	0	0	5.4	1.3	24	
13	13	0.1	1	2.7	5.1	10.7	2.3	2.3	1.8	0.6	0.9	0.6	0.6	0.9	S	1.1	0.9	0.8	0.8	0.8	1	1.3	2.5	3.3	1.9	10.7	1.9	24	
14	14	1	0.7	1.5	1.9	2.6	1.5	1.9	3.4	2	1.7	1.5	1.5	S	1.1	1	1.2	0.6	0.6	0.6	0.5	2.1	3.5	2.2	1.7	3.5	1.6	24	
15	15	1.4	0.7	0.8	1.3	1.3	2.1	1.9	3.6	2.2	2.7	7.6	S	1.3	2.1	1.6	3.2	1.4	2	2.4	0.8	0.2	0.2	0.2	0	7.6	1.8	24	
16	16	0	0.2	0	0	1.2	0.9	1.4	1.5	1.5	0.7	S	4.3	5.8	4.1	2.4	0.7	1	0.7	0.7	0.9	1.5	8.6	6.2	5.4	8.6	2.2	24	
17	17	1.1	1.1	0.2	0.5	0.7	2.1	3.5	4.3	3.3	S	2.3	2.2	1.8	0.8	0.7	0.7	0.8	1	1.3	1.4	1.6	2	2.1	2.3	4.3	1.6	24	
18	18	2	1.8	2	1.7	1	0.7	1.4	2.9	S	2	4.1	1.8	0.6	0.7	0.1	0.1	0.3	0.2	0.1	0.4	0	10	3.7	3.9	10.0	1.8	24	
19	19	0.3	0.9	1.3	1.7	0.3	1.4	0.7	S	0.8	0.6	0.3	0.2	0.4	0.4	0.3	1.3	0.3	1.3	3.7	0.9	0.7	1.1	2.1	3.8	3.8	1.1	24	
20	20	5.4	3.3	1.2	0.9	1.7	4.8	S	1.8	0.8	0.6	0.9	0.6	0.7	0.7	0.8	0.7	0	0.5	0	1.1	0.2	1.3	1.3	0.3	5.4	1.3	24	
21	21	0.8	0.8	0.5	0.4	0.3	S	1	1	3.2	3.1	0.3	0.3	1.2	1.1	0.6	0.8	0	0	0	0.3	0	0	0.2	0.7	3.2	0.7	24	
22	22	1	2.1	2.6	2.7	S	3.9	3.8	C	C	C	C	1.6	1.7	2.2	1.4	1.5	0.6	0.3	0	0	0.2	0.3	0.3	0.5	3.9	1.4	24	
23	23	0.4	0.7	1.6	S	10	7.3	3.8	4.9	2.4	C	C	C	C	C	C	2.1	1.2	0.3	0.3	0.9	0.3	0.3	1.3	5.1	10.0	2.5	24	
24	24	3.5	1	S	3	2.6	2.4	2.7	6	7.7	3	1.8	4.6	1	3.5	2.7	2	0.8	0.3	0.5	0.5	0.6	1.1	1.8	1.4	7.7	2.4	24	
25	25	0.9	S	0.3	0.7	3.9	2.4	2	3.5	2.5	1.4	1.2	1	1.5	1.3	1.6	1.4	1.7	1.8	1.8	8.8	3.1	0.6	0.2	1.7	8.8	2.0	24	
26	26	S	4.7	3.2	1.9	1.5	1.5	2	3.4	1.4	0.9	2.1	0.8	1	2.1	2.3	0.4	0.6	0	0	0	0	0	0	0	S	4.7	1.4	24
27	27	0	0	0	0	0	0	0	0.4	2.8	0.4	0.6	0.9	0.4	0.2	0.5	0.7	0.5	0.4	0.4	0.5	0	0	S	0.3	2.8	0.4	24	
28	28	0.9	0.9	1	0.7	0.6	3.2	1.9	1.1	1.2	3.5	1.1	0.8	0.8	1.4	0.8	1.6	0.8	0.4	0.4	0.4	0.6	S	0	0	3.5	1.0	24	
29	29	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.5	0.0	24
30	30	0	0	0	0	0	0	0	0.6	1.7	0	1.2	1	0.9	0.7	1.6	0.5	0.4	3.2	5.1	S	0.1	0.1	0.2	1.5	5.1	0.8	24	
31	31	1.2	0.4	0.6	0.6	0.7	1.4	2.8	1.8	3	3.7	2.8	1.9	2.1	1.1	0.4	0.5	0.5	0.7	S	0.6	0.5	0.7	1.5	1.9	3.7	1.4	24	
HOURLY MAX		5.4	4.7	3.7	5.1	10.7	7.3	3.8	6.0	7.7	3.7	7.6	4.6	6.4	5.4	4.4	3.6	2.5	3.8	5.1	8.8	3.1	10.0	6.2	5.4				
HOURLY AVG		0.9	1.0	1.1	1.2	1.8	1.6	1.4	1.9	1.7	1.3	1.6	1.3	1.4	1.4	1.0	1.0	0.7	0.7	0.9	0.9	0.7	1.7	1.2	1.4				

### STATUS FLAG CODES

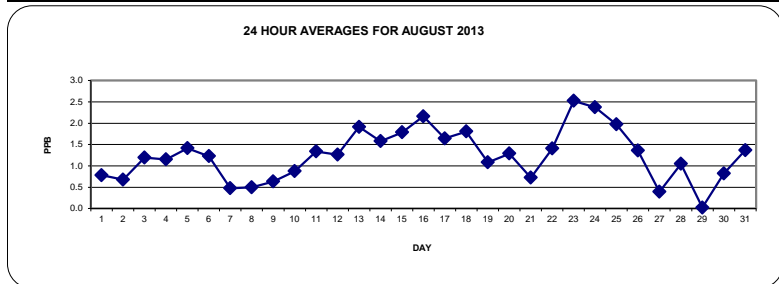
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

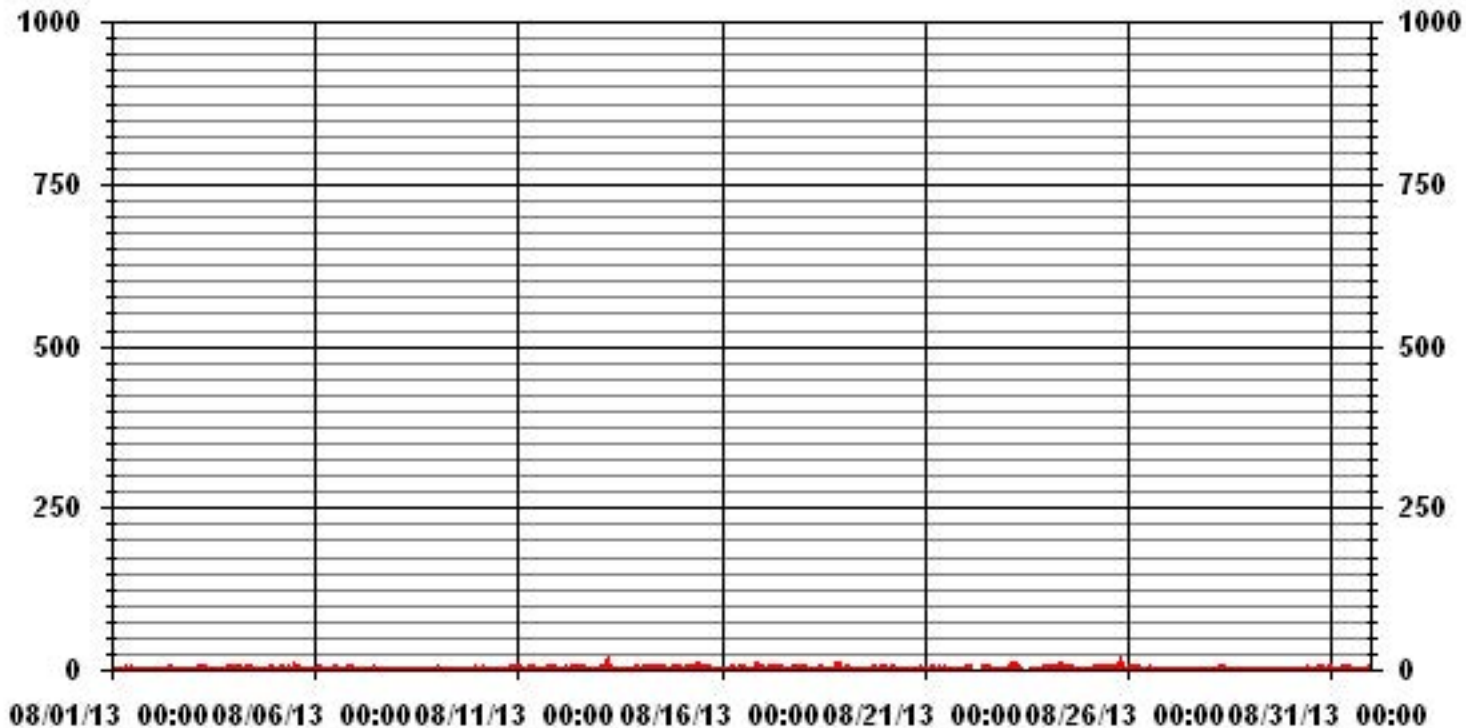
ALBERTA ENVIRONMENT: 1-HR 159 PPB

### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	617					
MAXIMUM 1-HR AVERAGE:	10.7	PPB	@ HOUR(S)	4	ON DAY(S)	13
MAXIMUM 24-HR AVERAGE:	2.5	PPB			ON DAY(S)	23
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	1.40		MONTHLY AVERAGE:	1.24	PPB	



### 01 Hour Averages



— LICA30 IIO2\_ PPB

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

## NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00			
DAY																											
1	0.5	0.6	S	1.4	2.9	2.7	2.2	1.6	0.6	2.8	2.2	6.9	3.6	5.4	0.8	3.5	0.6	3.3	2.8	4.4	0.9	0.6	0.4	0.5	6.9	2.2	24
2	0.4	S	1	0.7	0.8	0.9	0.8	0.9	2.7	3.9	3.3	4.1	3.6	2.8	1.4	1.9	1.3	0.7	2.3	0.3	0.7	2.4	1.3	0.8	4.1	1.7	24
3	S	1	1.4	2.2	2.1	2.2	1.4	2.6	1.6	1.4	0.9	0.8	0.6	0.6	0.4	0.5	0.6	0.5	0.6	1.9	4.9	4.2	S	4.9	1.5	24	
4	1.4	2.1	2.8	2.4	2.5	1.7	2	2.1	2	1.3	1.5	1.4	1.1	0.7	0.9	4.3	5.6	2.4	0.8	0.9	1.5	2	S	2.7	5.6	2.0	24
5	2.3	1.6	1.4	1.2	1.9	1.7	2	2.9	5.3	2.7	1.3	1.8	13.3	4	8.8	0.4	0.8	0.4	1	0.8	0.6	S	0.7	1	13.3	2.5	24
6	1.3	2.8	6.3	2.7	2.4	1.6	1.2	0.8	0.6	1.7	5.9	4	2.5	2.1	1.4	2.6	1.4	1.1	1.3	3.8	S	18.7	0.9	0.9	18.7	3.0	24
7	1	3.5	0.8	0.9	2.2	1.1	1.1	3.7	0.7	3.8	2.2	1.9	1.1	1.6	2.4	0.2	0.3	0.4	S	0.8	1.1	1.8	1.5	3.8	1.5	24	
8	1.3	1.9	1.5	1.3	1	1	1.8	1.7	1.5	1.7	4.2	4.3	1.6	2.1	10.7	1.7	4.2	2.4	S	0.4	0.7	0.6	1	1.5	10.7	2.2	24
9	2	2.3	3	1.7	1.7	2.7	2.6	2.6	2.2	1.3	1.8	1.1	0.7	2.2	1.4	0.6	0.8	S	0.6	1.4	1.1	1.8	2.2	2.5	3	1.8	24
10	1.5	1.2	2	2.2	2	1.8	2.1	3.1	2.9	1.7	1.2	0.7	0.9	1.2	1.2	1.3	S	1.1	1.8	2.3	3.4	2.9	2.9	2.2	3.4	1.9	24
11	1.9	1.6	1.6	2.2	1.7	6.6	1.8	2	1.9	1.6	1.6	2.2	1.4	2.2	0.9	S	3.4	6.2	6.5	2.2	2.6	3.4	2.7	2	6.6	2.6	24
12	1.2	1.1	1.1	2.6	5.2	2.9	1.3	2.6	3	2.1	4.5	2.5	6.1	7.9	S	6.8	0.7	0.7	0.7	3.8	3.6	0.9	1	0.4	7.9	2.7	24
13	0.8	4.3	4.9	11.7	16.9	6.3	5.7	4.8	1.4	1.8	1.7	1.2	1.7	S	2.5	1.4	1.4	1.4	1.5	1.9	3.2	3.3	4.4	3.5	16.9	3.8	24
14	1.7	1.4	3.3	2.7	4.3	2.9	3.8	4.9	3.8	3	2.3	2.4	S	1.5	1.6	2.3	1.8	1	1	1	3.9	4.2	3.4	2.4	4.9	2.6	24
15	1.8	1.3	1.5	2.3	3.4	14.2	16.9	8.8	4.4	4.7	11.8	S	3	3.4	3	13.1	3.3	4.4	7.2	7.3	0.9	0.9	0.9	0.8	16.9	5.2	24
16	0.7	1.1	0.9	0.9	10.9	3.7	3.1	2.9	3	1.2	S	4.8	7.1	5.4	4.8	1.1	3.5	1.4	1.3	1.5	3.2	12.3	9.9	8.3	12.3	4.0	24
17	2.1	2.4	1	1	1.6	3.8	4.9	7.4	7.5	S	3.8	3.2	2.7	1.7	1.9	1.3	1.3	1.3	1.9	2	2.1	2.5	2.5	2.9	7.5	2.7	24
18	2.9	2.4	2.8	2.7	1.7	1.4	3.2	5.2	S	2.4	5.3	3.1	1.6	1.1	0.6	0.8	1.3	0.8	0.7	1.2	0.8	19.1	8.8	9.5	19.1	3.5	24
19	1.7	1.6	2.6	3.6	1.7	6.5	1.5	S	1	0.8	0.6	0.4	1.1	0.7	0.7	14	0.7	8.4	8.6	2	1.2	1.8	3.9	5.9	14	3.1	24
20	6.8	6.3	2	2	3.9	8.6	S	3	6.9	1.2	1.9	1.9	1.1	6.1	1.7	1.2	1.1	1.7	0.4	2.3	2.2	3.8	2.4	0.7	8.6	3.0	24
21	1.1	1.3	0.9	0.7	1	S	1.9	1.3	10.6	6.3	2.1	1.3	2.2	1.8	1.1	1.3	0.6	1.7	0.8	3	0.4	0.2	1.3	1.4	10.6	1.9	24
22	1.9	2.9	3.3	3.3	S	8.4	5.2	C	C	C	C	2.5	4.1	5.7	2	2.7	2.8	1.2	0.8	0.6	0.7	0.8	0.8	1.2	8.4	2.7	24
23	1	1.4	2.6	S	11.9	8.2	7.1	5.9	4.5	C	C	C	C	C	C	1.9	1.5	1.3	1.8	1.4	1.2	3.8	13.6	13.6	4.3	24	
24	10.5	8.2	S	5.5	5.7	4.1	3.9	11.3	11.1	4.7	2.5	8.6	2.3	10.2	4.4	4.2	1.5	0.9	1.3	1.3	1.5	2.4	6.7	4.5	11.3	5.1	24
25	1.8	S	1	3.3	6.4	3.3	4.2	5.2	3.8	2.6	1.8	1.7	2.3	1.9	2.2	2.2	4.8	20.1	9.3	21.8	18.6	1.4	0.9	3.7	21.8	5.4	24
26	S	6.2	5.1	3.2	2.9	2.9	4.6	4.6	2.8	3.9	3.9	2.4	2.7	34.7	5.2	1.3	1.6	0.8	0.6	0.6	0.6	0.7	0.6	S	34.7	4.2	24
27	0.6	0.6	0.6	0.8	0.6	0.5	0.5	2.7	4.9	1.8	1.9	2.8	2.5	1	1.9	1.8	1.1	1.4	1.4	1.8	1	0.7	S	0.8	4.9	1.5	24
28	1.2	1.2	1.4	1.5	2	4.1	2.7	1.9	2.9	4.2	2.2	1.2	1	2.3	1.9	3.2	1.3	0.7	0.5	1	0.7	S	0.8	0.6	4.2	1.8	24
29	1.1	0.8	1.8	1.6	1.2	1.2	1.2	0.7	0.6	0.4	0.4	0.5	0.6	0.4	0.4	0.6	0.5	1.1	0.4	0.6	S	0.6	0.8	2	2	0.8	24
30	6.1	6.1	1.9	1.2	0.6	0.6	0.3	4.7	4.8	1.2	2.2	1.5	2.1	1.6	3.9	2.1	2.2	6.8	10	S	0.4	0.4	0.7	2.6	10	2.8	24
31	2.9	0.9	1	1	1.3	2.1	4	2.9	4.9	7.1	5.9	4.3	4.9	2.6	0.7	1.2	0.6	1	S	1.2	1.2	1.4	2.1	2.8	7.1	2.5	24
HOURLY MAX	10.5	8.2	6.3	11.7	16.9	14.2	16.9	11.3	11.1	7.1	11.8	8.6	13.3	34.7	10.7	14.0	5.6	20.1	10.0	21.8	18.6	19.1	9.9	13.6			
HOURLY AVG	2.1	2.4	2.1	2.4	3.5	3.7	3.2	3.6	3.6	2.5	2.9	2.6	2.8	3.9	2.4	2.8	1.8	2.6	2.3	2.5	2.1	3.3	2.5	2.9			

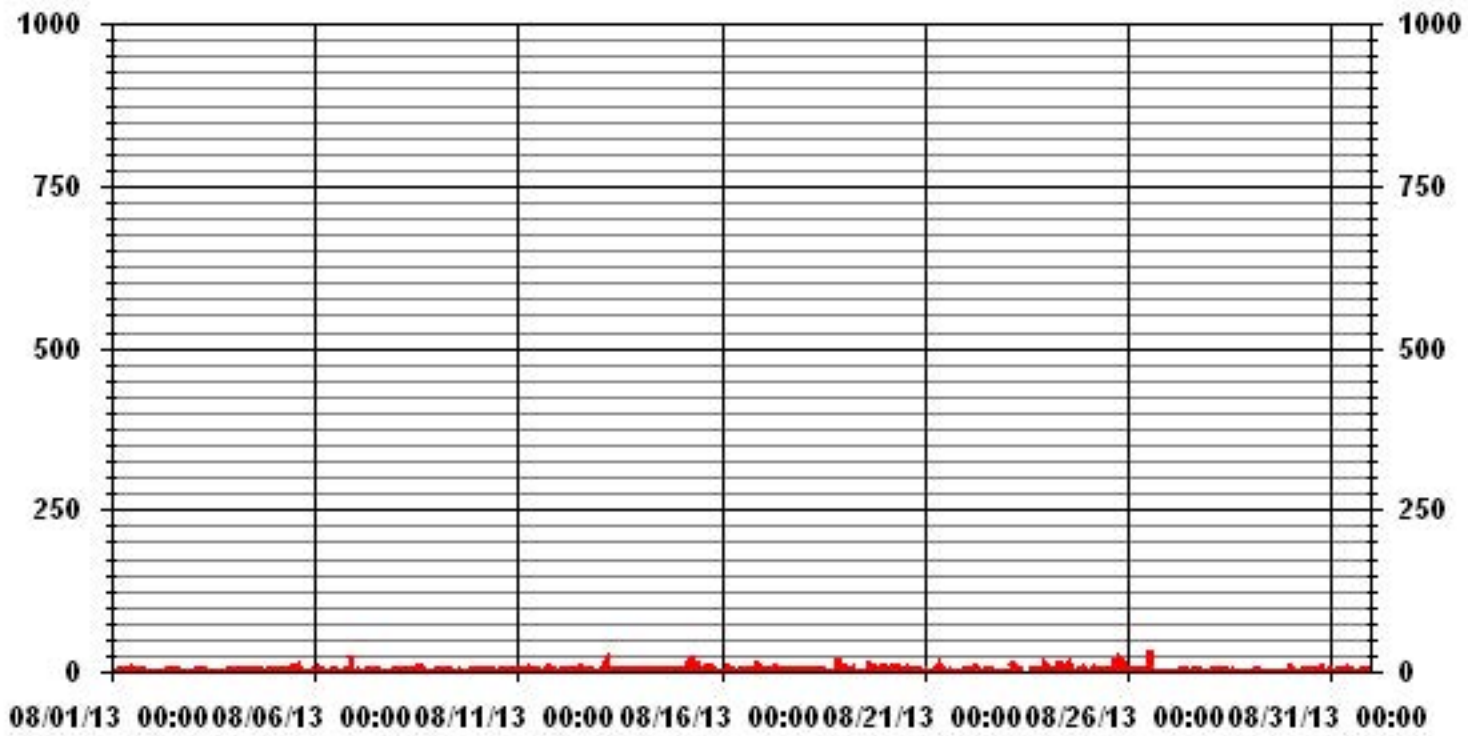
**STATUS FLAG CODES**

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:	700					
MAXIMUM INSTANTANEOUS VALUE:	34.7	PPB	@ HOUR(S)	13	ON DAY(S)	26
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION:	3.08					

### 01 Hour Averages



— LICA30 NO2MAX PPB

LICA30  
 NO2\_ / WDR Joint Frequency Distribution (Percent)

August 2013

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	4.14	5.14	11.71	8.42	5.28	6.14	9.85	9.85	6.57	9.71	5.57	5.14	6.14	3.42	1.14	1.71	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.14	5.14	11.71	8.42	5.28	6.14	9.85	9.85	6.57	9.71	5.57	5.14	6.14	3.42	1.14	1.71	

Calm : .00 %

Total # Operational Hours : 700

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	29	36	82	59	37	43	69	69	46	68	39	36	43	24	8	12	700
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	29	36	82	59	37	43	69	69	46	68	39	36	43	24	8	12	

Calm : .00 %

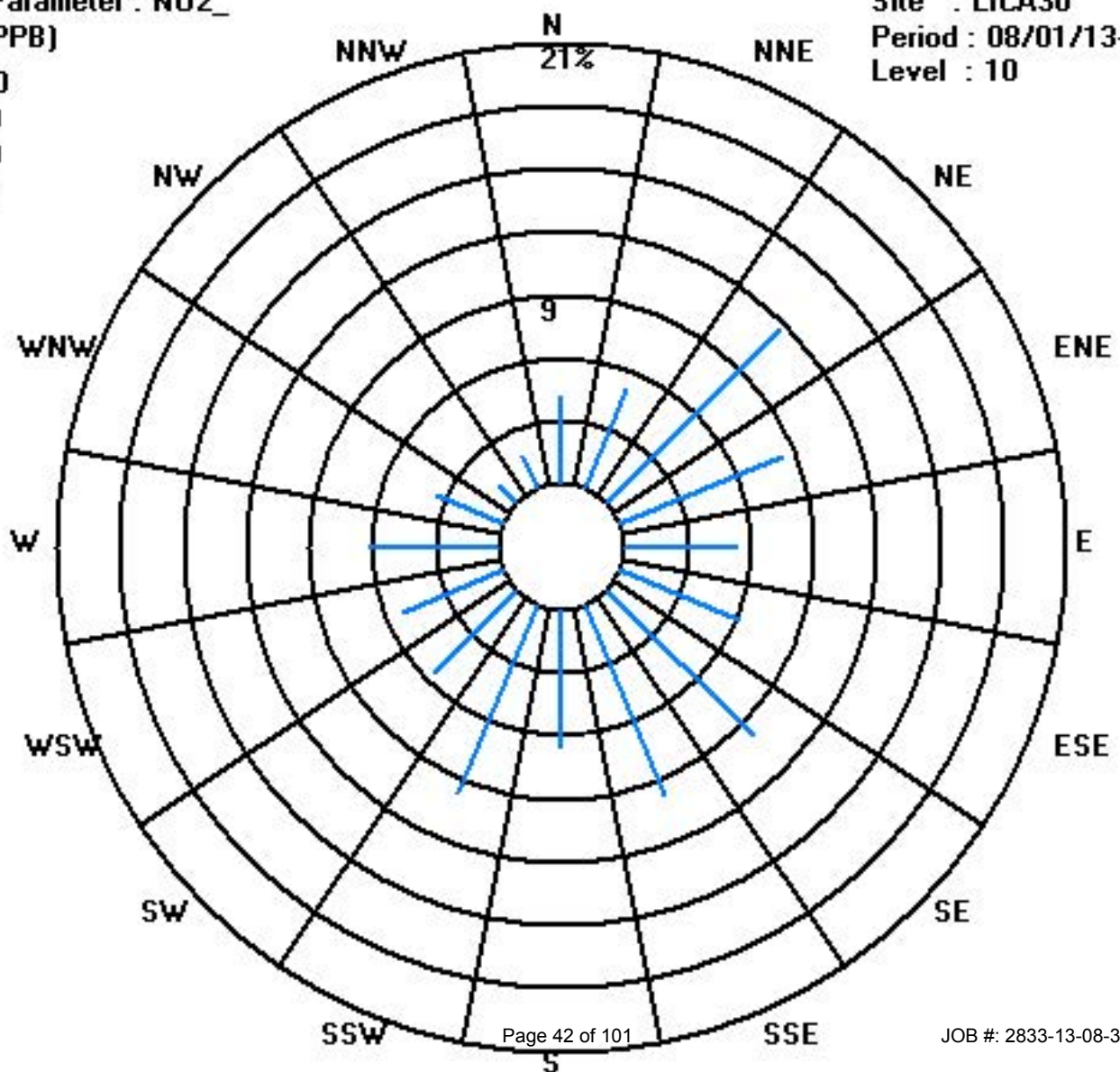
Total # Operational Hours : 700



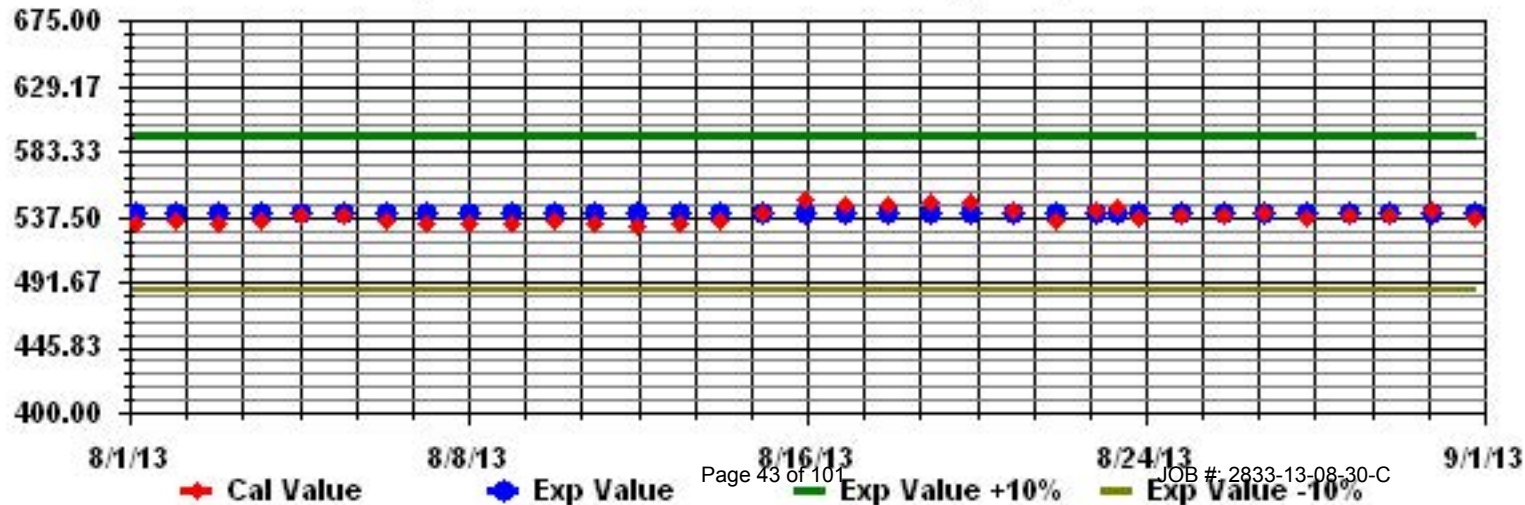
Class Limits (PPB)

Period : 08/01/13-08/31/13

Level : 10



Calibration Graph for Site: LICA30 Parameter: NO2\_ Sequence: NO2 Phase: SPAN



# Nitric Oxide

# LAKELAND INDUSTRY & COMMUNITY ASSOICATION - MASKWA

AUGUST 2013

## NITRIC OXIDE hourly averages in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
	HOUR START	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	0	0	S	0.1	0.7	1.3	1	0.4	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0	1.3	0.2	24
2	0	S	0.2	0.1	0.2	0.3	0.4	0.2	0.4	1	0.7	0.4	0.6	0	0	0	0	0	0	0	0	0	0	0	0	1.0	0.2	24
3	S	0	0	0	0	0.4	1	1.2	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1.2	0.1	24	
4	0	0	0	0	0.2	0.3	0.9	0.7	0.4	0	0	0	0	0	0	0	0.1	0	0	0	0	0	S	0	0.9	0.1	24	
5	0	0	0	0	0	0.3	0.5	0.3	0.7	0	0	0	0.9	0.2	0.2	0	0	0	0	0	0	S	0	0	0.9	0.1	24	
6	0	0	0.1	0	0	0.1	0.2	0.1	0	0	0.9	0.1	0	0	0	0	0	0	0	0	S	0.5	0	0	0.9	0.1	24	
7	0	0	0	0	0.1	0	0.2	0.7	0	0	1.5	0.8	0	0	0	0	0	0	0	S	0	0	0	0	1.5	0.1	24	
8	0	0	0.3	0.2	0.4	0.4	0.8	0.6	0.1	0	0	0	0	0	0.2	0	0	0	S	0	0	0	0.1	0.2	0.8	0.1	24	
9	0.2	0.2	0.4	0.5	0.8	1.4	2.3	1.7	0.3	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	2.3	0.3	24	
10	0.2	0.4	0.3	0.4	0.2	0.7	1.2	1.7	0.7	0.1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1.7	0.3	24	
11	0	0	0	0	0.1	1.1	0.3	0.4	0.2	0	0	0	0	0	0	S	0	0	0.4	0	0.1	0	0	0	0.1	1.1	0.1	24
12	0	0.2	0.1	0.2	0.3	0.3	0.1	0.3	0.2	0	0.2	0.1	0.6	1.7	S	0.3	0	0	0	0	0	0	0	0	0	1.7	0.2	24
13	0	0	0	0	1	0	0.1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1.0	0.0	24
14	0	0	0.1	0	0.1	0.1	0.7	1.2	0.5	0.4	0.3	0.2	S	0	0	0	0	0	0	0	0	0	0	0	0	1.2	0.2	24
15	0	0	0	0	0.2	9.8	4.5	7.8	0.4	0.6	3.4	S	0	0	0	0	0	0	0	0	0	0	0	0	0	9.8	1.2	24
16	0	0	0	0	1.2	0.6	0.6	0.5	0.2	0	S	0.7	0.8	0.4	0.1	0	0	0	0	0	0	0	0	0.1	0.2	1.2	0.2	24
17	0	0	0	0.1	0.1	0.7	2.2	2.3	1.3	S	0.6	0.4	0.3	0	0.2	0	0.1	0	0.1	0.1	0	0	0	0.1	2.3	0.4	24	
18	0	0.2	0.3	0.2	0.2	0.4	1.7	1.7	S	0.3	0.9	0	0	0	0	0	0	0	0	0	0	0.9	0	0	1.7	0.3	24	
19	0	0	0	0	0	0.3	0	S	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0.3	0.0	24
20	0	0.2	0.2	0.2	0.6	1	S	1.8	1.1	0.8	1.1	0	0.2	0.3	0	0	0	0	0	0	0	0	0	0	1.8	0.3	24	
21	0	0	0.1	0	0.2	S	0.1	0	2.9	1.6	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0	2.9	0.2	24	
22	0	0	0	0	S	0.2	0.8	C	C	C	C	0.3	0.3	0.4	0.1	0	0	0	0	0	0	0	0	0	0.8	0.1	24	
23	0	0	0	S	0.1	2.5	3.2	3.6	0.4	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	3.6	0.6	24	
24	0	0	S	0	0	0	0.3	2.5	2.8	0.5	0	0.8	0	0.5	0	0	0	0	0	0	0	0	0	0	2.8	0.3	24	
25	0	S	0	0	0	0	0.7	1.3	0	0	0	0	0	0	0	0	0	0	0	0.8	0	0	0	0	1.3	0.1	24	
26	S	0	0	0	0	0.6	1.4	3.2	0.4	0	0	0	0	0.4	0	0	0	0	0	0	0	0	0	0	S	3.2	0.3	24
27	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.2	0.2	0.0	24
28	0.1	0.2	0	0.2	0.3	0.6	1.1	1.3	0.5	1.2	0	0.1	0.1	0.4	0.2	0.2	0	0.1	0	0	0	S	0.3	0.3	1.3	0.3	24	
29	0.5	0.6	0.8	0.6	0.5	0.4	0.6	0.5	0.5	0.4	0.3	0.4	0.4	0.5	0.5	0.4	0.3	0.4	0.5	0.4	S	0	0	0	0.8	0.4	24	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.4	S	0.3	0	0	0.1	1.4	0.1	24	
31	0.1	0.1	0	0	0.1	0.2	1.1	2	4.3	5	2.6	1	0.9	0.5	0.1	0.1	0	0	S	0	0	0	0	0	5.0	0.8	24	
HOURLY MAX	0.5	0.6	0.8	0.6	1.2	9.8	4.5	7.8	4.3	5.0	3.4	1.0	0.9	1.7	0.5	0.4	0.3	0.4	1.4	0.8	0.3	0.9	0.3	0.3				
HOURLY AVG	0.0	0.1	0.1	0.1	0.3	0.8	0.9	1.3	0.6	0.4	0.4	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0				

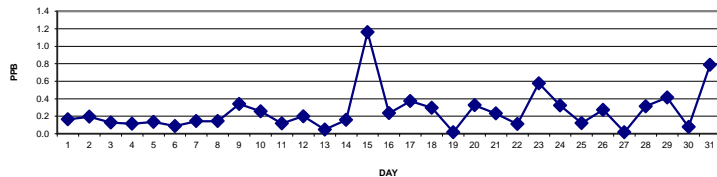
### STATUS FLAG CODES

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

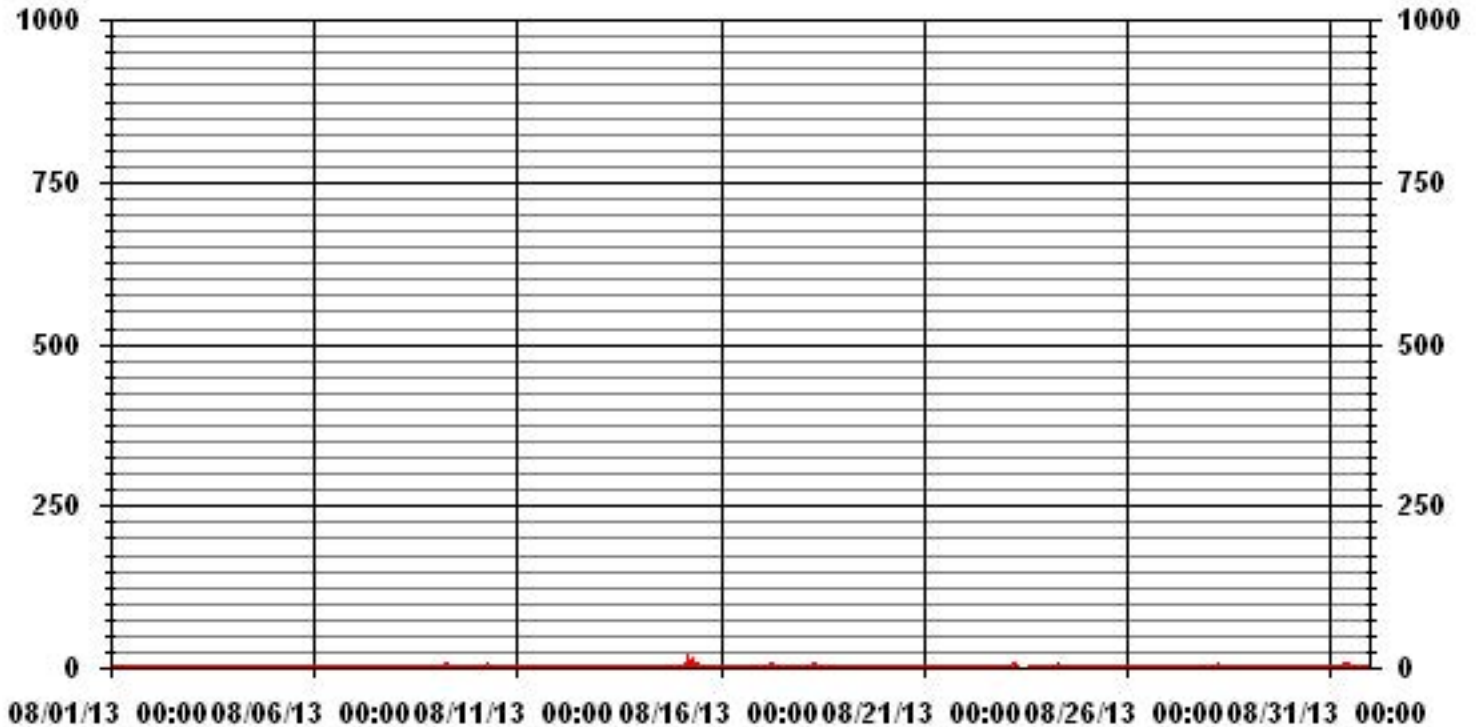
### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	249					
MAXIMUM 1-HR AVERAGE:	9.8	PPB	@ HOUR(S)	5	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	1.2	PPB			ON DAY(S)	15
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.72		MONTHLY AVERAGE:	0.25	PPB	

24 HOUR AVERAGES FOR AUGUST 2013



# 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

## NITRIC OXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	0	0	S	0.7	1.6	3.1	1.5	1	0.6	1	0.6	2.9	1.2	2.8	0.3	0.5	0.2	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	3.1	0.8	24
2	0.2	S	0.6	0.7	0.7	0.9	0.9	1.1	2.6	3.4	2.7	2.8	2.2	1.6	0.3	1.1	0.4	0.3	0.9	0	0	0	0.2	0.4	3.4	1.0	24	
3	S	0.7	0.6	0.5	0.9	1.1	2.1	2.9	0.7	0.4	0	0	0	0.2	0	0	0	0	0.1	0	0	0	S	2.9	0.5	24		
4	0.5	0.4	0.4	0.6	0.8	0.8	2.1	1.3	1	0.4	0.5	0.4	0.3	0.2	0.3	0.9	1	0.4	0.4	0.2	0.3	0.3	S	0.5	2.1	0.6	24	
5	0.3	0.3	0.2	0.3	1	0.9	1	0.9	1.5	0.5	0.1	0.5	3.4	1.3	1.4	0	0	0.2	0.2	0.2	0.2	S	0.2	0.2	3.4	0.6	24	
6	0.2	0.2	1	0.4	0.6	0.7	0.7	0.7	0.5	2.9	2	0.7	1	0.3	0.5	0.3	0.2	0.2	1.2	S	6.6	0.2	0.3	6.6	1.0	24		
7	0.4	0.6	0.4	0.4	0.5	0.6	0.7	3.3	0.5	0.4	4	2.1	1.2	0.9	0.6	0.9	0.2	0.4	0.2	S	0.3	0.3	0.3	0.5	4.0	0.9	24	
8	0.5	0.7	0.8	0.8	0.9	0.9	1.6	1.3	0.6	0.6	2.4	2.4	0.3	0.5	6.8	0.2	0.8	0	S	0.4	0.2	0.4	0.7	0.8	6.8	1.1	24	
9	0.8	0.8	0.8	1.1	1.6	6.9	6.8	2.7	1.5	0.6	0.9	0.2	0.3	1	0.3	0	0.3	S	0.2	0.3	0.2	0.3	0.4	0.5	6.9	1.2	24	
10	0.8	0.9	0.9	0.9	0.6	1.3	2	2.7	1.7	0.9	0.2	0.1	0.5	0.7	0.3	0.5	S	0.4	0.4	0.2	0.3	0.4	0.5	0.4	2.7	0.8	24	
11	0.4	0.3	0.3	0.5	0.6	6.8	0.8	1	0.7	0.6	0.6	0.6	0.6	0.7	0.5	S	0.5	1.5	0.7	0.6	0.5	0.5	0.4	0.5	6.8	0.9	24	
12	0.6	0.7	0.5	0.8	0.7	0.9	0.9	0.9	0.9	0.7	1.1	0.6	2.4	3.8	S	1.8	0.3	0.3	0.3	0	0.4	0.3	0.3	0.2	3.8	0.8	24	
13	0.5	0.1	0.2	1.2	2.8	0.7	1.3	1.3	0.4	1.3	1.2	0.5	0.7	S	0.8	0.6	0.4	0.6	0.5	0.4	0.1	0.4	0.4	0.6	2.8	0.7	24	
14	0.5	0.6	0.7	0.6	0.7	0.7	1.6	3	1.6	1.9	0.8	1.2	S	0.9	0.7	0.9	0.3	0.5	0.5	0.3	0.4	0.3	0.4	0.4	3.0	0.8	24	
15	0.4	0.3	0.3	0.2	3	123	53.3	35.9	2.5	2.1	6.4	S	0.6	0.8	0.3	2.5	0.5	0.3	0.6	0.5	0.1	0.2	0.1	0.1	123.0	10.2	24	
16	0.1	0.1	0	0.4	23.5	3.8	1.9	1	1.1	0.5	S	1.6	1.8	0.9	1	0.5	1.3	0.6	0.2	0.3	0.2	1	0.7	0.8	23.5	1.9	24	
17	0.6	0.5	0.5	0.6	0.6	1.4	3.6	3.5	3.2	S	1.2	1.1	0.9	0.6	1.2	0.5	0.8	0.5	0.6	0.8	0.5	0.6	0.7	0.7	3.6	1.1	24	
18	0.5	0.7	1	0.8	1.1	0.9	6.3	3.4	S	0.8	1.8	0.7	0.6	0.2	0.2	0.6	0.6	0.3	0.1	0.1	0.1	4.4	0.2	0.3	6.3	1.1	24	
19	0.4	0.4	0.3	0.3	0.4	3.6	1	S	0.5	0.6	0.7	0.7	0.8	1	0.6	14.4	0.2	5.1	0.6	0.4	0.4	0.5	0.4	0.7	14.4	1.5	24	
20	0.6	0.7	0.8	0.6	2.7	2.3	S	5.1	24.2	2.2	3.4	3.1	1.9	11.8	2.1	1.2	0.2	0.8	0.1	0.2	0.4	0.6	0.5	0.6	24.2	2.9	24	
21	0.5	0.3	0.6	0.4	0.7	S	0.7	0.7	16.4	5.5	2.1	1.9	3.8	1.4	0.7	1.5	0	0.2	0	0	0	0	0	0.1	16.4	1.6	24	
22	0.3	0.3	0.6	0.1	S	2	2.3	C	C	C	C	1.2	2.9	2.5	1.1	0.9	0.4	0.3	0	0	0	0.2	0.1	0.1	2.9	0.8	24	
23	0.1	0.2	0.5	S	0.7	12.3	5	5	1.8	C	C	C	C	C	C	0.5	0.4	0.2	0.2	0.1	0.2	0.1	0.2	0.5	47.9	47.9	4.7	24
24	0.6	0.1	S	1.4	1.6	0.5	1.1	6.3	5.3	1.5	0.7	2.8	0.3	3	0.9	1.9	0.2	0.1	0.1	0.3	0	0.8	0.2	6.3	1.3	24		
25	0.5	S	0.2	0.2	0.6	1	2.3	4.6	0.6	0.2	0.7	0.4	0.4	0.4	0.6	0.1	0.9	13.7	1.5	9.2	5.7	0.1	0.2	0.2	13.7	1.9	24	
26	S	0.1	0.1	0.2	0.4	5.9	4.6	5.4	1.6	2	2.1	0.1	0	43.5	2.2	0.2	0.3	0	0	0.1	0.1	0.1	0.1	S	43.5	3.1	24	
27	0	0	0.2	0.2	0	0	0	0.6	1.4	0.5	0.6	2.3	2	0	0.3	0.2	0.1	0	0	0	0	0	S	0.9	2.3	0.4	24	
28	0.7	0.7	0.3	0.8	1	1.8	3.6	3.4	2	2	0.6	0.7	0.8	1.1	0.8	1.3	0.6	0.5	0.6	0.5	0.6	S	1.1	1.2	3.6	1.2	24	
29	1.1	1.3	1.4	1.3	1.1	1	1.1	1.1	1.1	1.1	0.9	0.9	1	1.2	1.1	0.9	0.9	0.9	1.2	0.9	S	0.1	0.1	0	1.4	0.9	24	
30	0.1	0	0	0.1	0	0	0	2.1	1.6	0	0.5	0.5	1	0.1	1.5	0.2	0	0.5	5.5	S	0.8	0.5	0.5	0.7	5.5	0.7	24	
31	0.6	0.6	0.6	0.6	0.7	1	2.6	2.6	8.2	13.3	6.3	3.6	2.2	1.9	0.7	0.6	0.5	0.5	S	0.4	0.3	0.3	0.3	0.3	13.3	2.1	24	
HOURLY MAX	1.1	1.3	1.4	1.4	23.5	123.0	53.3	35.9	24.2	13.3	6.4	3.6	3.8	43.5	6.8	14.4	1.3	13.7	5.5	9.2	5.7	6.6	1.1	47.9				
HOURLY AVG	0.4	0.4	0.5	0.6	1.7	6.2	3.8	3.6	3.0	1.6	1.6	1.3	1.2	3.0	1.0	1.2	0.4	1.0	0.5	0.6	0.4	0.6	0.4	2.1				

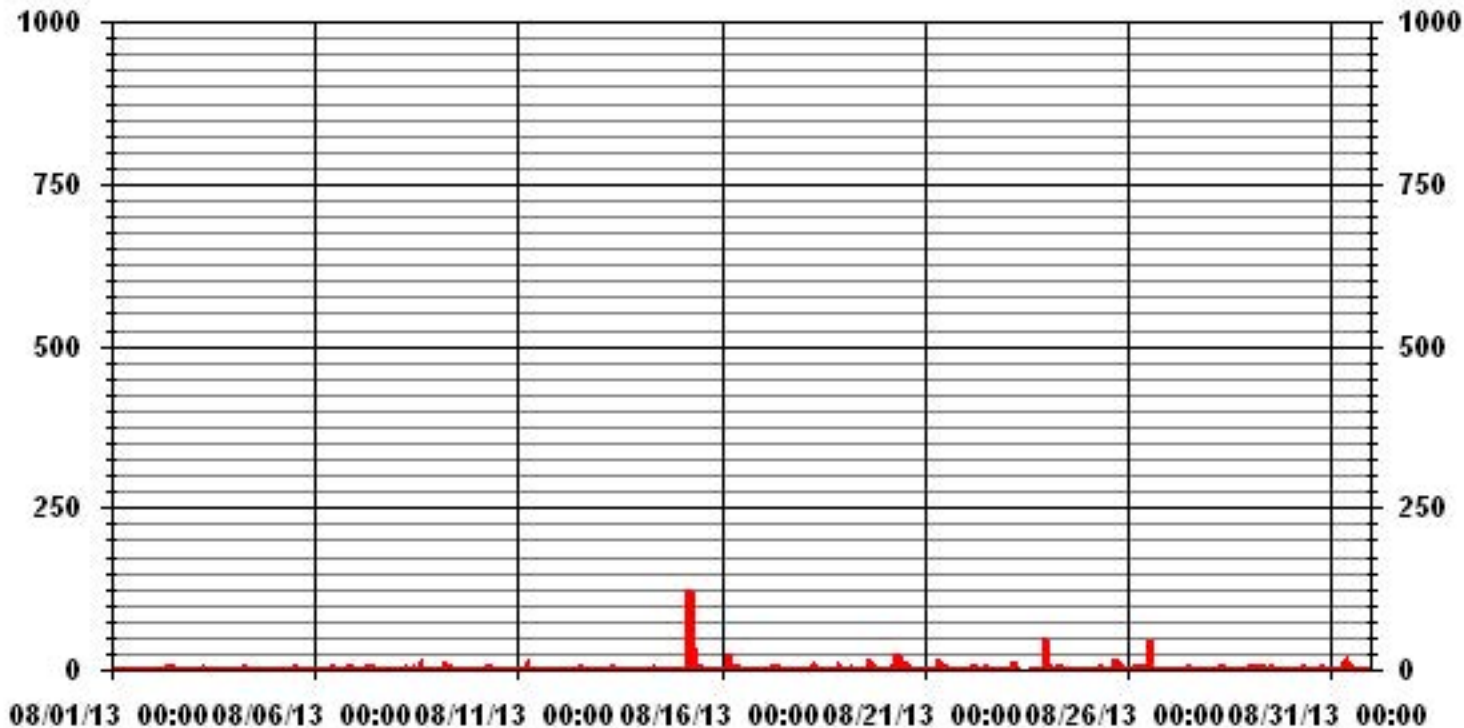
**STATUS FLAG CODES**

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:	646					
MAXIMUM INSTANTANEOUS VALUE:	123.0	PPB	@ HOUR(S)	5	ON DAY(S)	15
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION:	6.06					

# 01 Hour Averages



LICA30  
 NO\_ / WDR Joint Frequency Distribution (Percent)

August 2013

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	4.13	5.13	11.69	8.41	5.27	6.13	9.84	9.84	6.56	9.84	5.56	5.13	6.13	3.42	1.14	1.71	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	4.13	5.13	11.69	8.41	5.27	6.13	9.84	9.84	6.56	9.84	5.56	5.13	6.13	3.42	1.14	1.71	

Calm : .00 %

Total # Operational Hours : 701

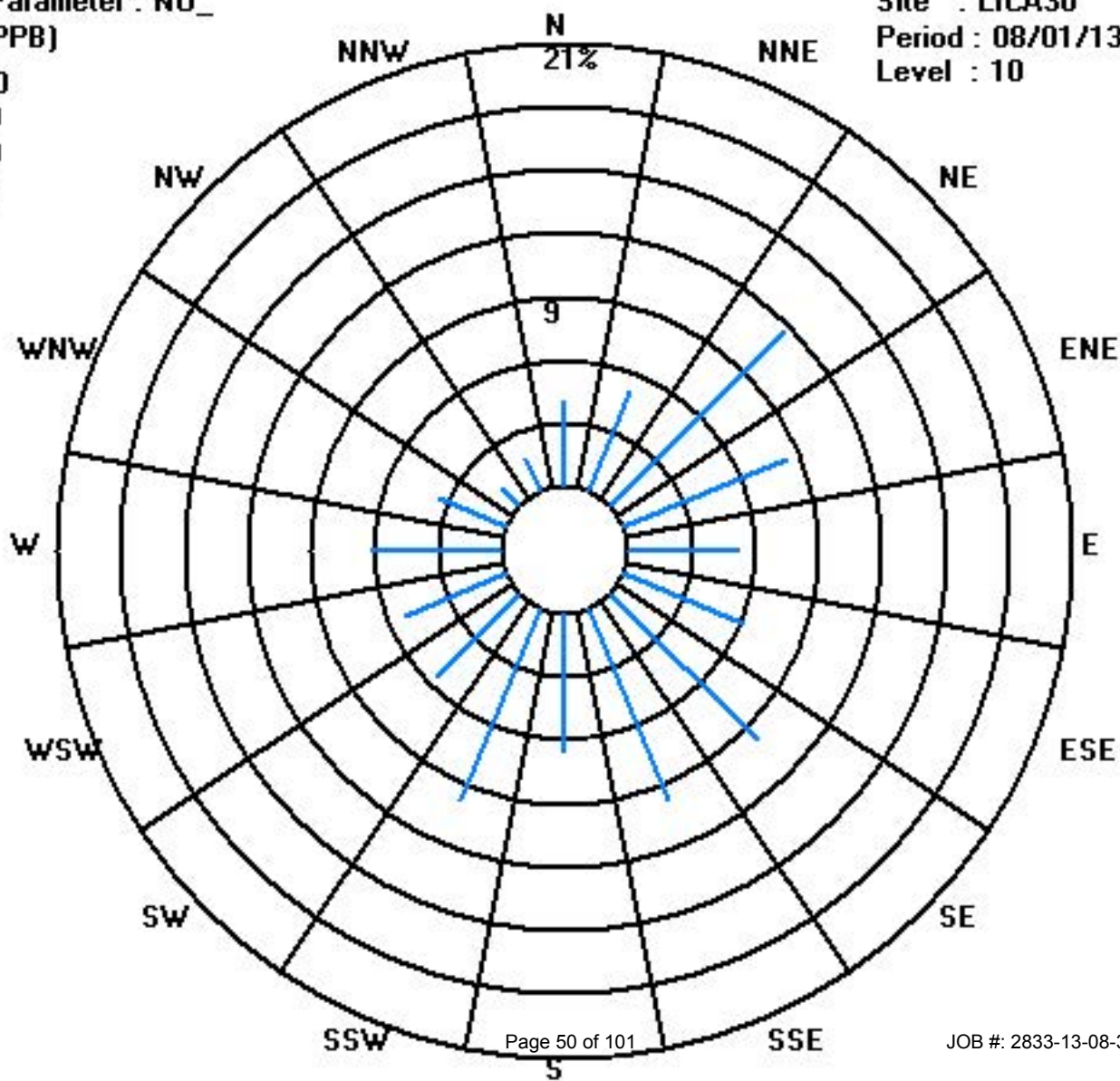
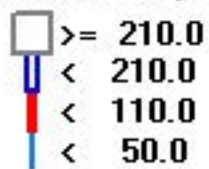
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	29	36	82	59	37	43	69	69	46	69	39	36	43	24	8	12	701
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	29	36	82	59	37	43	69	69	46	69	39	36	43	24	8	12	

Calm : .00 %

Total # Operational Hours : 701





# Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

OXIDES OF NITROGEN hourly averages in ppb

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00			
DAY 1	0	0	S	0.8	2.5	2.2	2.5	1.3	0.1	1	1	2.4	1.4	2.3	0.3	0.8	0.1	1	0.9	1	0	0.1	0	0	2.5	0.9	24
2	0	S	0.6	0.3	0.4	0.7	0.6	0.3	0.9	2.7	2.6	2.2	2.9	1	0.4	1.3	0.6	0.1	0.6	0	0.1	0.8	0.5	0.4	2.9	0.9	24
3	S	1	1.1	1.8	1.9	2.1	2.2	3.1	1.8	1.4	0.8	0.7	0.4	0.5	0.6	0.2	0.1	0.5	0.4	0.4	0.8	3.7	3.5	S	3.7	1.3	24
4	1.2	1.5	2	1.9	1.8	1.4	1.7	2.1	1.6	1.1	1.2	1.1	0.8	0.3	0.5	1.3	2.6	0.6	0.4	0.4	1	1.2	S	1.4	2.6	1.3	24
5	1.4	1	0.8	0.6	1	1.4	1.6	2.3	4.8	2.2	0.8	0.9	7.3	3	4.6	0	0.1	0.1	0.4	0.3	0.1	S	0.4	0.5	7.3	1.5	24
6	0.2	1	3.8	1.8	1.5	1	0.9	0.3	0.1	0.1	3.7	1.2	1.7	1.2	0.6	1.2	0.8	0.5	0.8	1.2	S	6.1	0.3	0.2	6.1	1.3	24
7	0.4	1	0.3	0.2	0.5	0.5	0.5	1.6	0.1	0.2	3.8	2.3	0.7	0.1	0.1	0.5	0	0	0	S	0	0.3	0.5	0.6	3.8	0.6	24
8	0.4	0.8	0.7	0.4	0.5	0.5	1.3	1.2	0.3	0	0.9	0.6	0.2	1.2	2.2	0.2	2	0.4	S	0	0	0	0.2	0.7	2.2	0.6	24
9	1	1.2	1.7	1	0.9	1.7	3.1	3	0.8	0.6	1	0.4	0.2	0.7	0.3	0	0	S	0.1	0.5	0.4	0.9	1.4	1.4	3.1	1.0	24
10	0.6	0.6	0.7	1.5	1.3	1.4	2.1	3.2	2	1	0.4	0.1	0.1	0.3	0.1	0.4	S	0.5	1	1.6	2.2	2	1.5	1.4	3.2	1.1	24
11	1.3	1	1.1	1.2	0.8	3.1	1.4	1.8	1.6	1.1	1.2	1.3	0.9	0.9	0.3	S	1.1	4.2	2	0.8	2	1.8	1.2	1.3	4.2	1.5	24
12	0.6	0.7	0.5	1.1	3.7	1.4	0.8	1.7	1.9	1.2	1.9	1.3	2.8	7.1	S	3.9	0	0	0	2	0.8	0.2	0	0	7.1	1.5	24
13	0.1	1	2.7	5.1	11.7	2.3	2.4	1.8	0.6	0.9	0.6	0.6	0.9	S	1.1	0.9	0.8	0.8	0.8	1	1.3	2.5	3.3	1.9	11.7	2.0	24
14	1	0.7	1.6	1.9	2.7	1.6	2.6	4.6	2.5	2.1	1.8	1.7	S	1.1	1	1.2	0.6	0.6	0.6	0.5	2.1	3.5	2.2	1.7	4.6	1.7	24
15	1.4	0.7	0.8	1.3	1.5	11.9	6.4	11.4	2.6	3.3	11	S	1.3	2.1	1.6	3.2	1.4	2	2.4	0.8	0.2	0.2	0	11.9	2.9	24	
16	0	0.2	0	0	2.4	1.5	2	2	1.7	0.7	S	5	6.6	4.5	2.5	0.7	1	0.7	0.7	0.9	1.5	8.6	6.3	5.6	8.6	2.4	24
17	1.1	1.1	0.2	0.6	0.8	2.8	5.7	6.6	4.6	S	2.9	2.6	2.1	0.8	0.9	0.7	0.9	1	1.4	1.5	1.6	2	2.1	2.4	6.6	2.0	24
18	2	2	2.3	1.9	1.2	1.1	3.1	4.6	S	2.3	5	1.8	0.6	0.7	0.1	0.1	0.3	0.2	0.1	0.4	0	10.9	3.7	3.9	10.9	2.1	24
19	0.3	0.9	1.3	1.7	0.3	1.7	0.7	S	0.8	0.6	0.3	0.2	0.4	0.4	0.3	1.4	0.3	1.3	3.7	0.9	0.7	1.1	2.1	3.8	3.8	1.1	24
20	5.4	3.5	1.4	1.1	2.3	5.8	S	3.6	1.9	1.4	2	0.6	0.9	1	0.8	0.7	0	0.5	0	1.1	0.2	1.3	1.3	0.3	5.8	1.6	24
21	0.8	0.8	0.6	0.4	0.5	S	1.1	1	6.1	4.7	0.3	0.3	1.6	1.1	0.6	0.8	0	0	0	0.3	0	0.2	0.7	6.1	1.0	24	
22	1	2.1	2.6	2.7	S	4.1	4.6	C	C	C	C	1.9	2	2.6	1.5	1.5	0.6	0.3	0	0	0.2	0.3	0.3	0.5	4.6	1.5	24
23	0.4	0.7	1.6	S	10.1	9.8	7	8.5	2.8	C	C	C	C	C	C	2.1	1.2	0.3	0.3	0.9	0.3	0.3	1.3	5.1	10.1	3.1	24
24	3.5	1	S	3	2.6	2.4	3	8.5	10.5	3.5	1.8	5.4	1	4	2.7	2	0.8	0.3	0.5	0.5	0.6	1.1	1.8	1.4	10.5	2.7	24
25	0.9	S	0.3	0.7	3.9	2.4	2.7	4.8	2.5	1.4	1.2	1	1.5	1.3	1.6	1.4	1.7	1.8	1.8	9.6	3.1	0.6	0.2	1.7	9.6	2.1	24
26	S	4.7	3.2	1.9	1.5	2.1	3.4	6.6	1.8	0.9	2.1	0.8	1	2.5	2.3	0.4	0.6	0	0	0	0	0	0	S	6.6	1.6	24
27	0	0	0	0	0	0	0	0.4	3	0.4	0.6	0.9	0.4	0.2	0.5	0.7	0.5	0.4	0.4	0.5	0	0	S	0.5	3	0.4	24
28	1	1.1	1	0.9	0.9	3.8	3	2.4	1.7	4.7	1.1	0.9	0.9	1.8	1	1.8	0.8	0.5	0.4	0.4	0.6	S	0.3	0.3	4.7	1.4	24
29	0.5	0.6	0.8	1.1	0.5	0.4	0.6	0.5	0.5	0.4	0.3	0.4	0.4	0.5	0.5	0.4	0.3	0.4	0.5	0.4	S	0	0	0	1.1	0.4	24
30	0	0	0	0	0	0	0	0.6	1.7	0	1.2	1	0.9	0.7	1.6	0.5	0.4	3.2	6.5	S	0.4	0.1	0.2	1.6	6.5	0.9	24
31	1.3	0.5	0.6	0.6	0.8	1.6	3.9	3.8	7.3	8.7	5.4	2.9	3	1.6	0.5	0.6	0.5	0.7	S	0.6	0.5	0.7	1.5	1.9	8.7	2.2	24
HOURLY MAX	5.4	4.7	3.8	5.1	11.7	11.9	7.0	11.4	10.5	8.7	11.0	5.4	7.3	7.1	4.6	3.9	2.6	4.2	6.5	9.6	3.1	10.9	6.3	5.6			
HOURLY AVG	1.0	1.1	1.2	1.3	2.0	2.4	2.4	3.2	2.4	1.7	2.0	1.5	1.5	1.6	1.1	1.0	0.7	0.8	0.9	1.0	0.7	1.7	1.3	1.4			

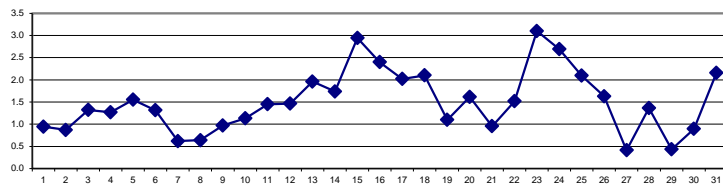
STATUS FLAG CODES

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

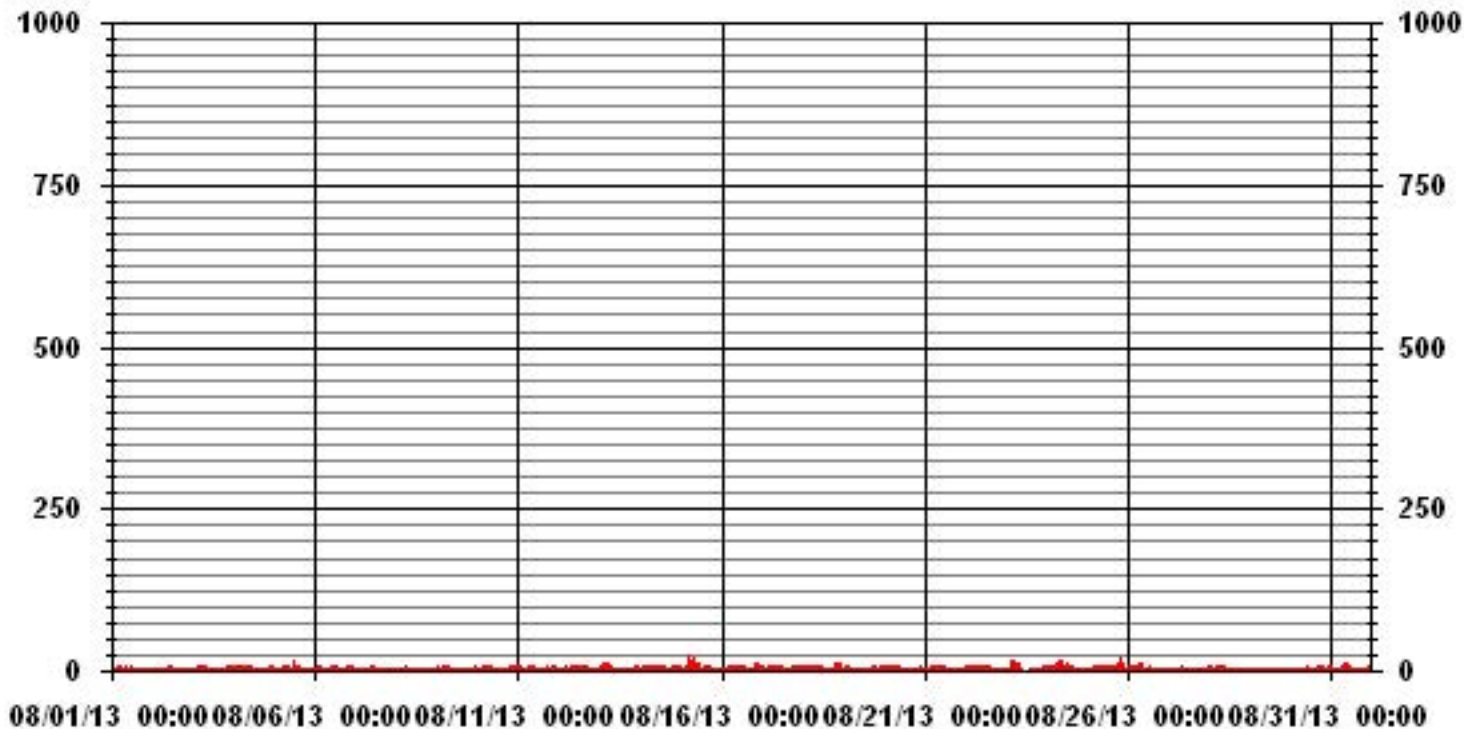
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	638					
MAXIMUM 1-HR AVERAGE:	11.9	PPB	@ HOUR(S)	5	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	3.1	PPB			ON DAY(S)	23
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	1.79		MONTHLY AVERAGE:	1.49	PPB	

24 HOUR AVERAGES FOR AUGUST 2013



### 01 Hour Averages



— LICA30 NOX\_ PPB

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

## OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY MAX.	24-HOUR AVG.	RDGS.
	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
1	0.3	0.6	S	1.6	3.9	4.3	3.3	2.4	1	4.1	3	10.2	5.2	8.6	1.1	4.5	0.8	4.4	3.3	4.9	0.7	0.7	0.3	0.5	10.2	3.0	24	
2	0.3	S	1.3	0.9	0.9	1.4	1.4	1.9	4.9	7.1	6.4	7.3	6.3	4.7	2	3.4	2	1.1	3.2	0.6	1	2.6	1.4	0.9	7.3	2.7	24	
3	S	1.5	1.9	2.7	2.4	3.2	3.4	5.5	2.4	2.1	1.3	1.3	0.9	1	1.2	0.7	0.9	1.2	1.1	1	2.2	5.1	4.7	S	5.5	2.2	24	
4	1.9	2.3	2.9	2.6	2.7	2.2	3.5	2.8	2.4	1.6	1.8	1.7	1.4	1	1.1	5.1	6.6	2.9	1.1	1.1	1.6	2.3	S	3.1	6.6	2.4	24	
5	2.2	1.7	1.4	1.4	2.7	2.3	2.7	3.8	6.9	3.1	1.4	2.3	15	5.4	10.5	0.6	0.7	0.7	1.1	0.9	0.6	S	0.9	1	15.0	3.0	24	
6	1.2	2.6	7.3	2.6	2.4	2.1	1.7	0.9	0.7	2.1	8.9	6.3	3.2	3.1	1.5	3.2	1.3	1.1	1.5	5	S	25.4	0.8	0.6	25.4	3.7	24	
7	0.9	3.9	0.9	0.9	2.4	1	1	6.5	0.7	1.3	7.9	4	3.2	2.1	2.4	3.2	0.2	0.3	0.2	S	0.7	0.9	1.4	1.3	7.9	2.1	24	
8	1	1.4	1.3	1	1.1	1.1	2.6	2.1	1.3	1.9	6.7	6.6	1.8	2.5	17.7	1.5	5.1	2	S	0.4	0.3	0.6	0.9	1.3	17.7	2.7	24	
9	1.9	2.1	2.9	1.8	2.1	9	8.6	4.2	3.1	1.6	2.5	0.9	0.9	2.3	1.5	0.5	0.8	S	0.7	1.2	1.2	1.7	2	2.4	9.0	2.4	24	
10	1.4	1.1	1.8	2.2	1.9	2.1	2.9	4.3	4.3	2.4	1.2	0.8	1.6	1.6	1.4	1.7	S	1.2	1.7	2.3	3.4	3	3	1.9	4.3	2.1	24	
11	1.9	1.6	1.6	1.9	1.5	13	2.1	2.4	2.2	1.7	2	2.8	1.7	2.8	0.9	S	3.9	7.7	7.3	2.6	2.9	3.6	2.8	2.1	13.0	3.2	24	
12	1.3	1.3	1.2	2.6	5.2	3	1.4	3	3.5	2.3	5.9	2.9	8.8	11.9	S	8.7	0.7	0.6	0.6	3.6	3.4	0.7	0.8	0.3	11.9	3.2	24	
13	0.7	4.2	4.7	12.7	19.5	6.8	7	5.8	1.3	2.9	2.7	1.2	2.2	S	3.1	1.7	1.5	1.2	1.6	1.6	3.2	3.3	4.5	3.5	19.5	4.2	24	
14	1.6	1.4	3.4	2.7	4.5	3.1	4.9	7.5	5	4.5	2.4	3.4	S	2.5	2.3	3.2	2	1.2	1.1	1.1	4	4.2	3.5	2.5	7.5	3.1	24	
15	2	1.4	1.5	2.4	6.5	127.1	62.4	44.5	7	6.7	18.3	S	3.3	4.3	3.2	15.7	3.7	4.8	7.9	8	0.8	0.7	0.8	0.6	127.1	14.5	24	
16	0.5	0.8	0.5	0.7	32.3	7.1	4.6	3.4	3.4	1.4	S	6.6	8.9	6.1	6	1.2	4.8	1.5	1.7	1.5	3.3	12.4	10.6	8.4	32.3	5.6	24	
17	2.3	2.3	1.1	1.1	1.6	4.5	8.2	10.6	10.7	S	4.4	4	3.5	1.9	2.6	1.4	1.4	1.5	2.2	2.3	2.3	2.5	2.8	3.1	10.7	3.4	24	
18	2.9	2.7	3.1	2.9	1.7	1.7	8.4	8	S	3.3	6.8	4	2	1.2	0.7	1.3	1.8	1.1	0.7	1.2	0.9	23.5	8.6	9.6	23.5	4.3	24	
19	1.7	1.8	2.6	3.7	1.6	9.5	2.3	S	1.5	1.4	1.5	0.9	1.8	1.5	1	27.6	1.1	11.1	9.1	2.1	1.3	2.1	3.9	6.1	27.6	4.2	24	
20	7.1	6.2	2.5	1.9	6.2	10.8	S	7.8	29.5	3.1	5.5	5.5	3.2	18.4	3.7	2.8	1.9	3	0.6	2.7	3	4.5	2.9	0.8	29.5	5.8	24	
21	1.4	1.4	1.3	0.9	1.2	S	2.5	2	27.4	12.2	4.2	3.5	6.2	3.3	2.4	3.1	0.7	2.3	0.6	3.1	0.5	0.2	1	1.4	27.4	3.6	24	
22	1.8	2.8	4	3.2	S	10.3	7.3	C	C	C	C	3.9	5.5	8.5	3	3.5	3.3	1	0.7	0.6	0.9	0.8	0.9	1.1	10.3	3.3	24	
23	1	1.3	2.5	S	12.2	19.5	12	10.6	6.2	C	C	C	C	C	C	C	1.8	1.4	1.1	1.6	1.1	1	4.1	58.1	58.1	8.5	24	
24	10.7	7.8	S	6.8	7.2	4.3	4.7	17.7	16.2	6.3	2.9	11.4	2.4	13.4	5.2	6.1	1.7	0.8	1.3	1	1.1	2	7.1	4.4	17.7	6.2	24	
25	1.7	S	0.8	3.3	6.8	4.1	6.5	9.6	4.6	3.1	2.1	2	2.7	2.4	2.6	2.3	5.8	31.9	11	31.2	24.7	1.2	0.9	3.3	31.9	7.2	24	
26	S	6	4.9	3	2.7	8.3	8.1	10	4.1	6.1	6.2	1.8	2.6	78.2	7.4	1.6	1.6	0.6	0.3	0.3	0.3	0.6	0.4	S	78.2	7.1	24	
27	0.5	0.2	0.4	0.8	0.3	0.3	0.2	3.1	6.2	2.2	2.3	5.3	4.6	1	2.2	2	1	0.8	1.1	1.3	0.8	0.1	S	1.1	6.2	1.6	24	
28	1.9	1.7	1.8	2.1	2.6	5.3	5.7	5.6	5.3	6.3	3	1.5	1.6	3.2	2.6	4.7	1.8	1.3	0.8	1.1	1.1	S	1.1	0.8	6.3	2.7	24	
29	1.1	0.9	2	1.7	1.3	1.3	1.4	0.7	0.6	0.5	0.3	0.5	0.4	0.6	0.3	0.3	0.4	1	0.7	0.5	S	0.5	0.6	1.8	2.0	0.8	24	
30	6.1	6.1	1.5	0.8	0.6	0.4	0.2	6.7	6.5	0.8	2.4	1.6	3.2	1.6	3.9	2.2	1.9	7.3	14.4	S	1	0.6	0.9	2.7	14.4	3.2	24	
31	3.1	1.2	1.2	1	1.4	2.7	5.9	5.3	13	20.2	12.6	8.1	6.8	4.4	1.1	1.4	0.8	1.3	S	1.2	1.2	1.3	2.1	3	20.2	4.4	24	
HOURLY MAX	10.7	7.8	7.3	12.7	32.3	127.1	62.4	44.5	29.5	20.2	18.3	11.4	15.0	78.2	17.7	27.6	6.6	31.9	14.4	31.2	24.7	25.4	10.6	58.1				
HOURLY AVG	2.2	2.4	2.2	2.5	4.6	9.1	6.2	6.9	6.3	4.0	4.5	3.9	3.8	6.9	3.3	4.0	2.1	3.3	2.7	3.0	2.4	3.7	2.6	4.4				

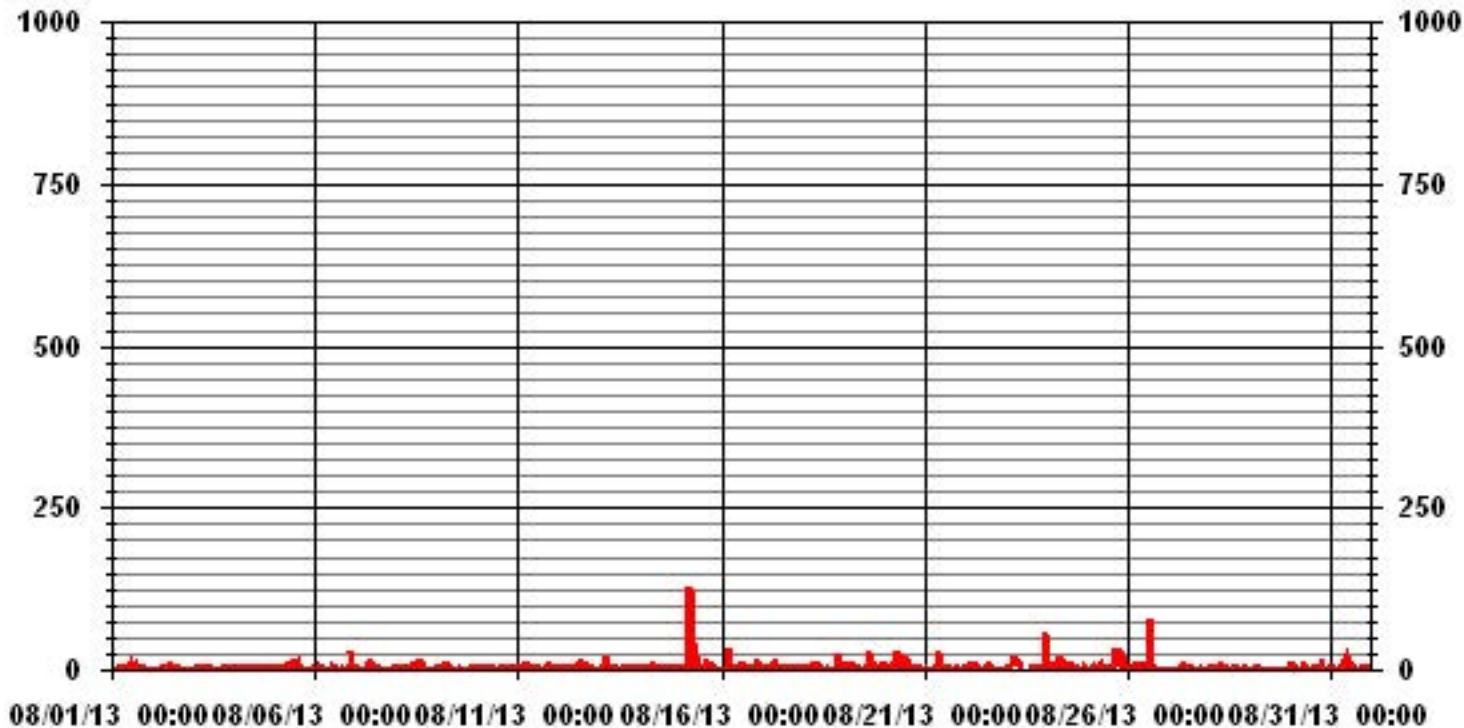
**STATUS FLAG CODES**

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:	700					
MAXIMUM INSTANTANEOUS VALUE:	127.1	PPB	@ HOUR(S)	5	ON DAY(S)	15
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION:	7.68					

# 01 Hour Averages



LICA30  
NOX\_ / WDR Joint Frequency Distribution (Percent)

August 2013

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	4.13	5.13	11.69	8.41	5.27	6.13	9.84	9.84	6.56	9.84	5.56	5.13	6.13	3.42	1.14	1.71	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	4.13	5.13	11.69	8.41	5.27	6.13	9.84	9.84	6.56	9.84	5.56	5.13	6.13	3.42	1.14	1.71	

Calm : .00 %

Total # Operational Hours : 701

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	29	36	82	59	37	43	69	69	46	69	39	36	43	24	8	12	701
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	29	36	82	59	37	43	69	69	46	69	39	36	43	24	8	12	

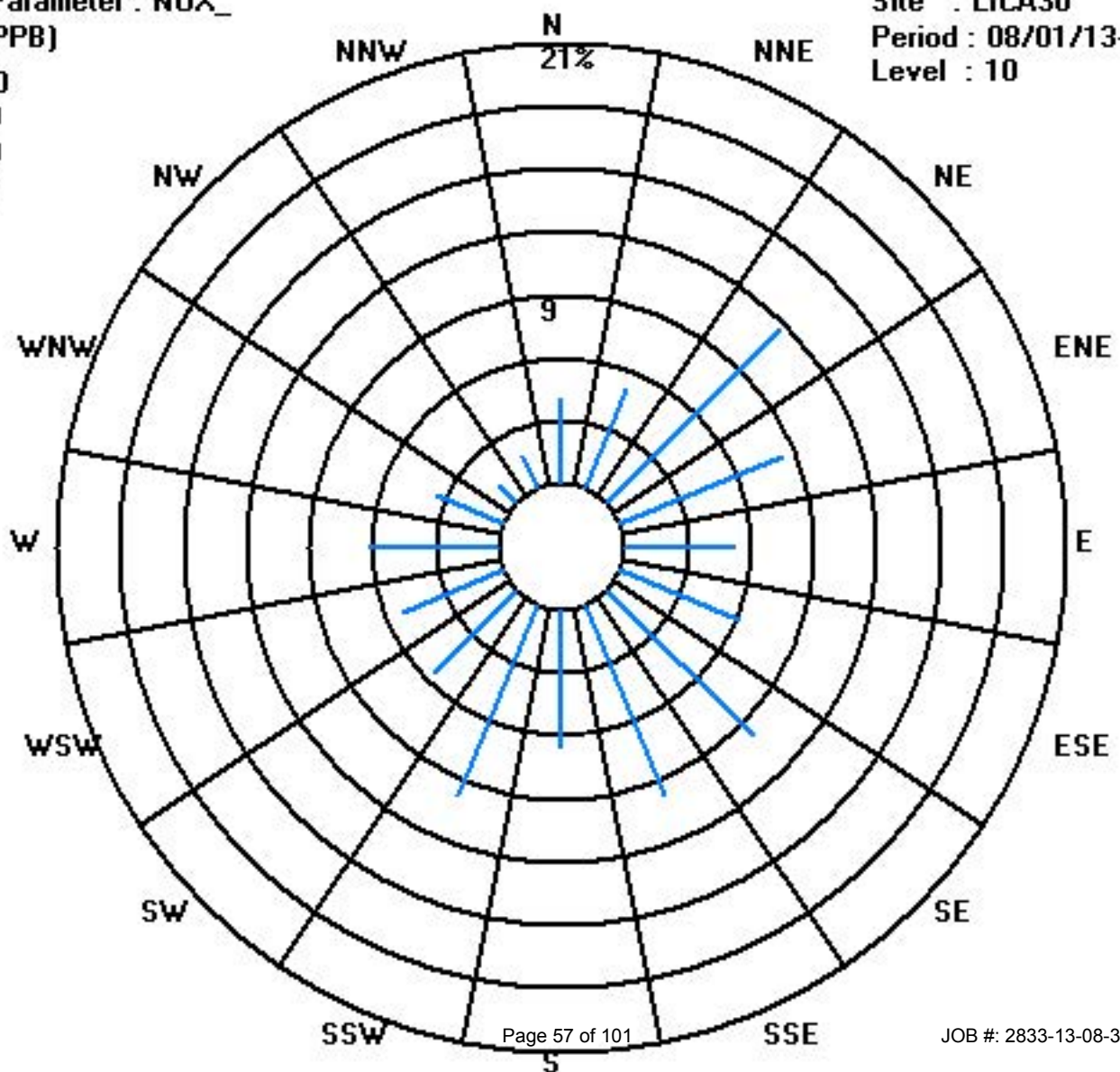
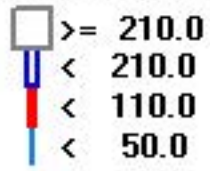
Calm : .00 %

Total # Operational Hours : 701

Class Limits (PPB)

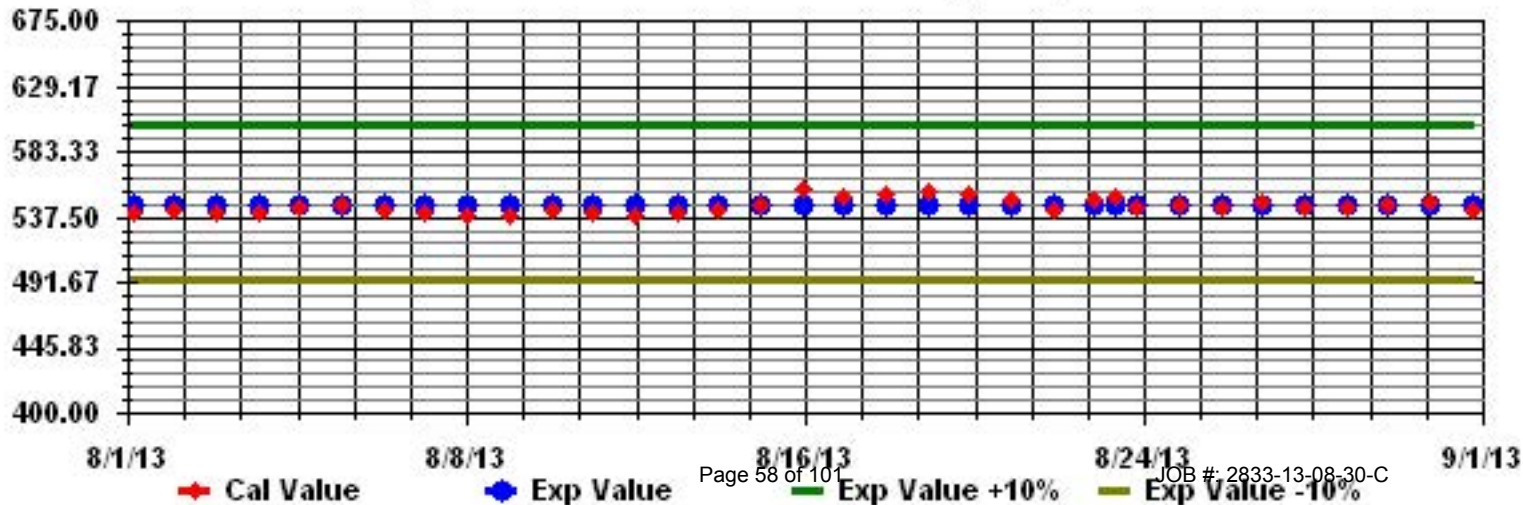
Period : 08/01/13-08/31/13

Level : 10





Calibration Graph for Site: LICA30 Parameter: NOX\_ Sequence: NO2 Phase: SPAN



# Temperature

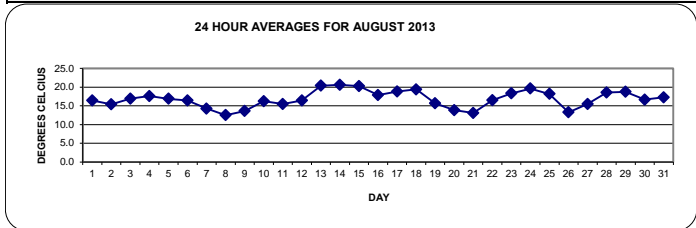
**LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA**  
**AUGUST 2013**  
**AMBIENT TEMPERATURE hourly averages (Degrees C)**

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	1	10.3	9.3	8.6	7.8	7.3	7.6	10.4	15.4	19.4	21.8	22.8	23.2	23.3	24.3	24.5	24.9	24.7	24.2	21.2	17.3	13.9	11.6	11	10.2	24.9	16.5	24
2	2	9.8	8.5	7.4	6.4	5.6	6.4	9.9	15.3	18	19.8	20.7	22	22.6	23.1	23	23.7	23.3	22.5	21.3	16.8	13.5	11.8	9.7	8.7	23.7	15.4	24
3	3	8.1	7.6	7.1	6.9	7	7.2	9	15.8	19.2	21.5	22.5	23.7	24.1	25	24.8	25.2	24.5	24	22.5	19	16.4	15.2	14.8	15.2	25.2	16.9	24
4	4	15	13.9	11.7	9.1	7.8	8.2	11.8	17.4	19.9	21.4	22.2	23.9	24.9	25.3	23.4	21.2	22.6	21.7	20.3	17.9	16.3	15.8	15.8	15.5	25.3	17.6	24
5	5	15	14.3	12.9	12.4	11.8	11.2	13.5	18.7	22.7	24.3	25.3	21.6	21.3	18.1	18.7	17.9	17.9	17.3	16.6	15.8	15.3	14.9	14.2	14	25.3	16.9	24
6	6	13.7	13.7	13.7	11.9	11.1	10.3	11.5	14.4	17.8	20.1	18.9	21.9	21.7	20.9	20.6	22.9	21.5	20.7	18.9	16.3	13.8	13.1	12.2	12.1	22.9	16.4	24
7	7	12.2	11.9	11.9	11.3	11.2	10.9	11.4	14	15.7	17	18.4	20.1	19.5	20.1	17.8	18.2	18.4	18.6	17	14.4	10.4	8.5	7.4	6.1	20.1	14.3	24
8	8	5.7	5.2	5	4.3	3.5	3.9	6.8	12.2	17.1	18.6	20.1	19.8	19	19.3	20.8	20.1	20.9	17.6	16.1	13.5	9.8	8.1	7	6.6	20.9	12.5	24
9	9	5.9	5.2	4.7	3.9	3.2	3.2	6.3	12.3	17.7	19.8	20.1	20.6	21.9	20.7	21.5	22.1	22	21.7	19.9	15.7	12.1	9.8	8.6	7.6	22.1	13.6	24
10	10	6.9	6.3	6.3	6.2	6.1	6	8.8	14.3	19.6	21.2	22.6	23.4	24.1	24.4	23.6	23.2	23.5	22.7	21	18.2	15.5	14.8	15.5	16.1	24.4	16.3	24
11	11	15.6	14.7	13.2	11.7	9.2	10.8	14.4	16.3	17.2	17.4	17.9	18.2	18.5	18.1	18.2	18.6	17.9	17.9	17	16.4	14.6	12.8	12.8	11.7	18.6	15.5	24
12	12	11.1	10.7	11.5	12	12.1	12.3	14.9	15.8	16.2	17.2	17.6	17.3	19.2	20.2	20.9	21	20.3	20.2	18.9	18.1	17.2	16.7	16.5	16.5	21.0	16.4	24
13	13	16	15.7	15.7	15.4	15.4	15.5	16.4	19.4	21.1	22	23.7	25.3	25.7	26.1	27.1	27	26.2	25.4	23.5	20	17.9	17.3	16.5	15.7	27.1	20.4	24
14	14	13.6	12.8	14.9	13.7	12.3	12	13.9	19	21.5	23.7	25.2	26.6	27.4	27.7	28.1	27.9	26.9	26.2	23.8	21.5	20.2	20	18.9	16.5	28.1	20.6	24
15	15	15.2	14.3	14.2	14	14.6	13.9	15.3	17.5	18	20.7	24.7	27.6	28.9	29.2	28	27	26.9	26	24.3	21.8	18.6	16.4	15.1	13.8	29.2	20.3	24
16	16	13	12.7	11.8	11.1	10.7	10.6	12.6	15.6	18.7	19.8	21.4	21.5	21.5	23.5	25.7	24.6	24.6	23.7	21.9	19.5	17.8	16.9	15.7	14.1	25.7	17.9	24
17	17	12.9	12.7	12.1	11.6	10.8	11.5	12.9	15.4	18.7	23.1	24.5	25	26.4	27.4	27.8	26.9	25.5	23.6	21.8	18.6	17.2	15.9	15.4	14.8	27.8	18.9	24
18	18	13.1	12.1	12.3	11.9	11.1	10.8	12.7	17.1	21.7	25	25.1	25.9	26.3	26.2	25.7	25.5	24.2	23.5	23.2	20.7	19.2	19.1	17.5	15.8	26.3	19.4	24
19	19	14.3	13.4	12.2	11.8	12.4	13.1	13.8	14.9	16	18.2	20.5	21.8	22.6	22.7	20.7	21.5	21.7	20.8	13.2	11.1	9.7	9.8	10.1	10.1	22.7	15.7	24
20	20	10.2	10.6	10.1	9.1	8.4	8.1	9.1	11.7	14.8	16.6	17.7	18.7	19.2	19.3	17.9	18.3	18.9	18.2	15.9	14.5	12.9	11.3	10.6	10.4	19.3	13.9	24
21	21	10.4	9.7	10.2	9.9	10	10.6	11.3	12.4	13.9	15.1	15.7	15.7	16.8	17.2	17.6	17.7	17.7	18.4	15.9	12.1	10.1	8.6	8.2	9.3	18.4	13.1	24
22	22	9.7	10.1	9.9	9.2	7.9	5.9	9.1	12.8	15.4	19.1	22.2	23.9	26.2	25.5	26.7	25.6	25.4	25.1	22.3	17.2	14	12.3	11.1	10.2	26.7	16.5	24
23	23	9.4	8.9	8.6	8.6	8.4	7.7	9.7	13.4	19.6	23.8	26	27.5	28.3	28.5	28.1	27.5	25.8	24.9	22.4	18.9	16.9	15.5	15.3	16.5	28.5	18.3	24
24	24	16.8	16.3	15.7	14.6	12.4	10.6	11.4	16.3	20.5	23	24.7	25.8	26.7	27.8	28	28.1	27.5	26.4	23	17.9	15.8	15	13.9	13	28.1	19.6	24
25	25	12.8	11.9	10.9	10.6	9.8	10	11.6	17.5	20.6	24.2	25.4	25.6	25.2	25.9	25.3	25.8	25.4	23.9	20.9	18.9	17.5	14.6	11.6	10.6	25.9	18.2	24
26	26	10.1	9.5	8.9	7.9	7.1	6.7	9.1	11.6	14.6	18.3	19.5	17.7	16.7	17.2	15.7	15.4	15.5	15.4	14.7	13.9	13.6	13.6	13.3	12.6	19.5	13.3	24
27	27	12.6	12.5	12.6	12.6	12.6	13	13.7	14.4	15.2	15.5	15.8	16.9	17.8	19.2	20	20.6	21.5	19.5	17.2	16.1	13.6	13.6	13.2	12.2	21.5	15.5	24
28	28	11.3	10.7	10.3	10	9.5	10.4	11.1	13.5	19.4	23.2	24.7	25.8	26.6	27.4	27.3	27.2	26.1	24.7	21	18.7	18.9	17.1	15.2	15.7	27.4	18.6	24
29	29	15.5	14.8	14.4	14	14.1	14	14.9	15.7	17.2	18.7	20.9	22.2	23.7	24.1	24.3	24.3	24.6	23.8	21.3	19	18.2	17.4	16.9	16.6	24.6	18.8	24
30	30	16.6	16	15.8	15.5	15.4	15.5	15.9	16.8	17.8	17.5	17.5	17.8	18.6	19.9	18.8	19.4	18.4	17	16.1	15	14.8	14.8	14.7	14.5	19.9	16.7	24
31	31	14.2	14.3	14.5	13.9	13.7	13.5	12.6	13.9	17.4	19.7	21.3	22.6	24.2	23.6	22.7	22.5	21.4	18.4	15.1	13	12.8	13.1	13.1	13.1	24.2	17.3	24
HOURLY MAX		16.8	16.3	15.8	15.5	15.4	15.5	16.4	19.4	22.7	25.0	26.0	27.6	28.9	29.2	28.1	28.1	27.5	26.4	24.3	21.8	20.2	20.0	18.9	16.6			
HOURLY AVG		12.2	11.6	11.3	10.6	10.1	10.0	11.8	15.2	18.1	20.2	21.5	22.2	22.8	23.2	23.0	23.0	22.7	21.8	19.7	17.1	15.1	14.0	13.3	12.8			

**STATUS FLAG CODES**

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

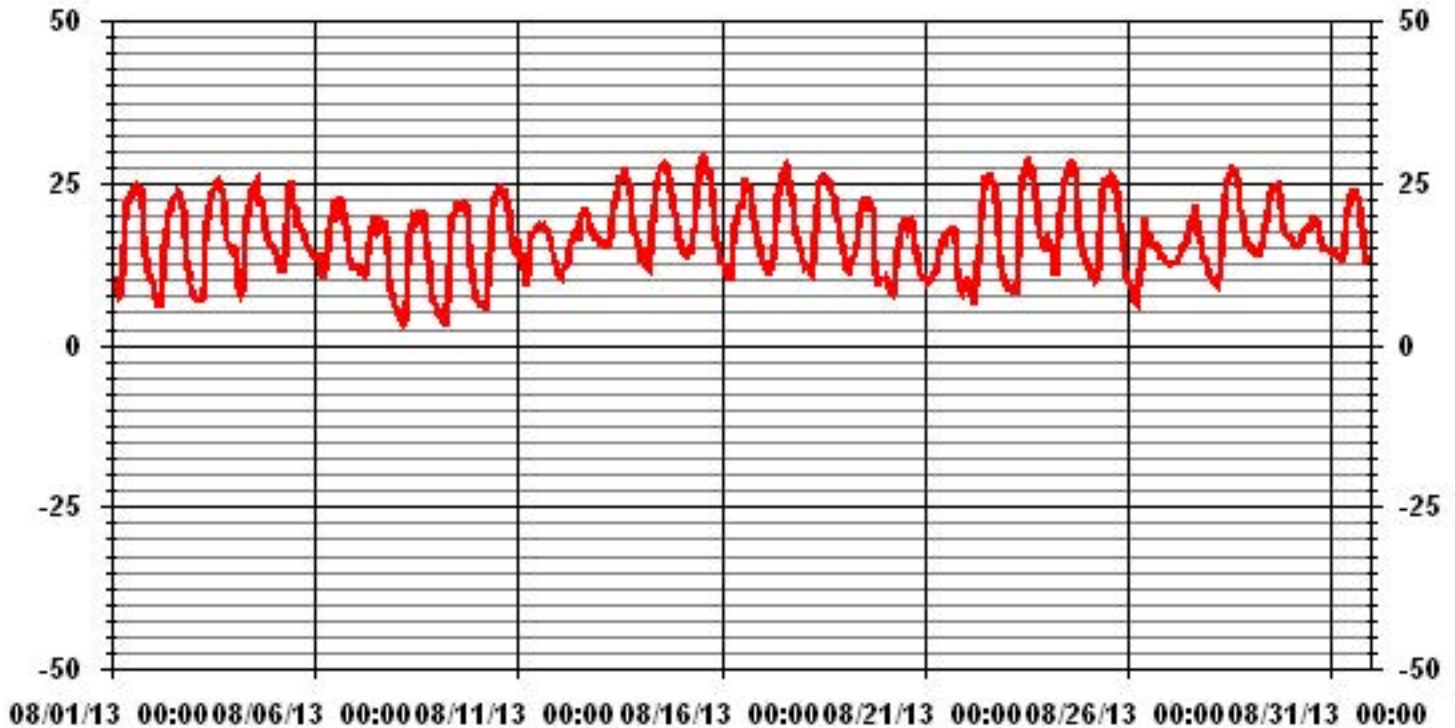
**24 HOUR AVERAGES FOR AUGUST 2013**



**MONTHLY SUMMARY**

MINIMUM 1-HR AVERAGE:	3.2 °C	@ HOUR(S)	4, 5	ON DAY(S)	9
MAXIMUM 1-HR AVERAGE:	29.2 °C	@ HOUR(S)	13	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	20.6 °C			ON DAY(S)	14
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	5.71		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	16.81	°C

### 01 Hour Averages



# Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

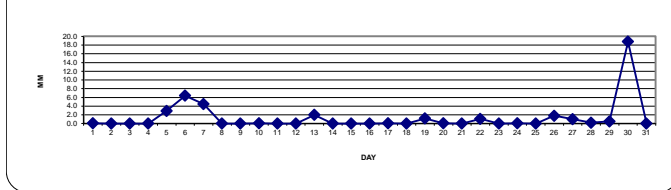
PRECIPITATION hourly averages (mm)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	DAILY TOTAL	RDGS.	
DAY																														
1		0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24	
2		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
3		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
4		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
5		0	0	0	0	0	0	0	0	0	0	0	0	0.1	1.9	0.2	0.3	0.1	0	0	0	0	0	0	0	0.3	1.9	2.9	24	
6		0.1	0	0.8	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.2	4.2	0	0	0	4.2	6.4	24	
7		3.6	0.1	0.1	0	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.6	4.5	24	
8		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
9		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
10		0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24	
11		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	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	0.0	24	
13		1.9	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.9	2.0	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	0.0	24	
15		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
16		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
17		0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	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	0	0	0	0	0.0	0.0	24	
19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.1	0	0	0.1	0	0	1.1	1.2	24	
20		0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24	
21		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
22		0	0	0	0	0	0	0	0	0	0	0	0	1.1	0	0	0	0	0	0	0	0	0	0	0	0	1.1	1.1	24	
23		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
24		0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24	
25		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
26		0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.2	0.2	0.4	0	0	0	0	0	0	0	0	1.2	1.8	24	
27		0	0	0	0.9	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	1.0	24	
28		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0.1	0.1	0.2	24	
29		0.1	0.2	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	0.2	0.5	24	
30		0	0.1	0.4	0.1	0	0	0	0	0	0	0.6	0.1	0	0.2	1.6	0.3	2.4	0.1	1.7	2.4	2.9	2.9	2.4	0.6	2.9	18.8	24		
31		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24		
HOURLY MAX		3.6	0.2	0.8	0.9	0.1	0.7	0.1	0.1	0.0	0.0	0.6	0.1	1.9	0.2	1.6	0.3	2.4	0.1	1.7	2.4	4.2	2.9	2.4	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

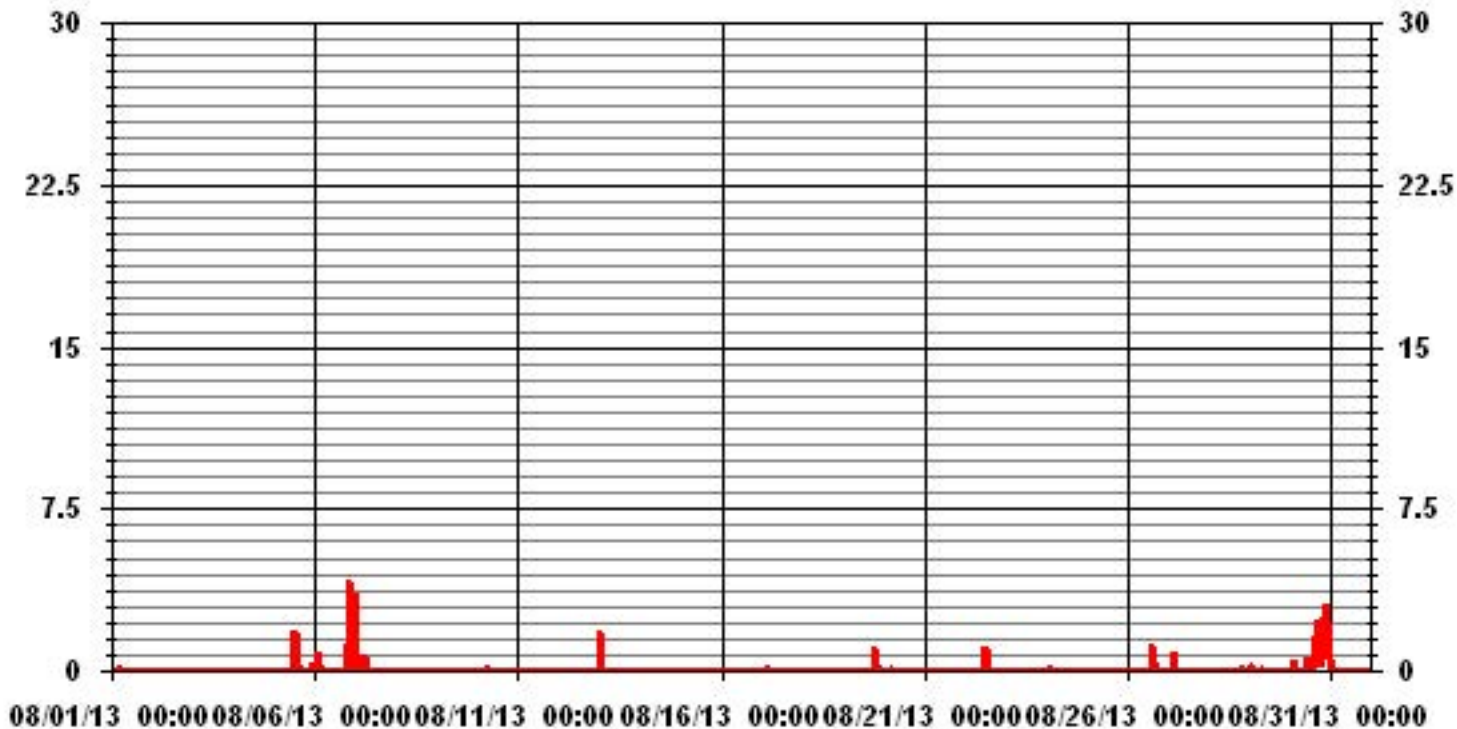
DAILY TOTALS FOR AUGUST 2013



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	4.2	MM	HOURLY(S)	20	ON DAY(S)	6
MAXIMUM DAILY TOTAL	18.8	MM			ON DAY(S)	30
MONTHLY TOTAL	40.9	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	0.34		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	0.05	MM	

# 01 Hour Averages



# Relative Humidity



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

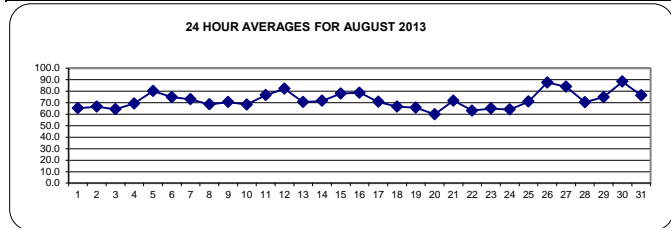
## RELATIVE HUMIDITY hourly averages (%)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1		92	92	92	92	93	93	91	75	56	51	47	44	41	36	33	33	34	41	48	61	74	82	79	85	93	65.2	24	
2		87	89	91	91	92	92	88	71	59	50	46	43	43	42	41	41	42	46	61	77	83	88	91	92	92	66.5	24	
3		91	92	92	92	92	93	92	74	59	54	52	47	42	38	38	38	38	41	45	56	66	70	72	70	93	64.3	24	
4		69	72	79	88	91	92	86	68	62	59	58	53	48	42	48	58	50	55	66	76	83	86	87	88	92	69.3	24	
5		89	89	92	92	93	93	92	72	54	50	49	63	66	81	79	82	78	81	85	88	88	89	90	91	93	80.3	24	
6		91	92	91	92	92	93	91	84	74	66	69	52	51	53	56	47	50	55	62	79	87	88	91	92	93	74.9	24	
7		90	91	91	91	91	91	90	84	77	70	62	55	54	52	57	54	48	42	50	64	80	87	91	91	91	73.0	24	
8		92	92	92	92	92	92	92	79	57	45	42	41	43	43	39	40	39	52	57	67	84	90	91	92	92	68.5	24	
9		92	92	92	92	92	92	93	84	59	51	50	47	46	49	47	45	45	47	53	69	83	90	91	92	93	70.5	24	
10		92	92	92	92	92	92	93	85	59	53	49	44	43	42	44	46	48	51	58	69	79	80	75	71	93	68.4	24	
11		71	75	80	83	89	87	78	74	73	74	75	73	66	65	68	67	71	70	74	76	82	88	88	90	90	76.5	24	
12		91	92	93	93	92	91	87	86	85	82	79	79	74	69	67	68	70	70	77	80	84	87	88	87	93	82.1	24	
13		89	91	89	87	89	89	85	73	66	63	58	56	55	52	48	47	49	51	57	68	76	82	86	87	91	70.5	24	
14		91	92	87	88	92	92	92	74	66	62	58	54	52	52	49	49	51	54	64	72	78	78	83	90	92	71.7	24	
15		92	93	93	93	93	93	93	93	91	80	65	56	55	56	54	58	59	61	70	70	80	88	91	92	93	77.9	24	
16		93	93	93	93	93	93	93	90	77	73	68	69	71	64	55	58	60	61	67	76	83	86	88	91	93	78.7	24	
17		92	93	93	93	93	93	93	90	76	62	58	56	50	39	36	37	48	54	54	67	74	79	82	85	93	70.7	24	
18		89	92	93	93	92	93	93	84	63	51	54	46	43	45	43	46	51	54	60	59	62	67	71	93	66.6	24		
19		77	82	88	84	80	76	74	69	65	58	45	37	34	32	38	38	37	37	78	89	91	92	90	88	92	65.8	24	
20		88	86	85	84	83	82	78	69	58	50	47	41	41	40	42	41	37	38	45	50	54	62	66	68	88	59.8	24	
21		68	71	71	77	78	77	76	73	70	67	66	66	63	61	60	58	59	55	64	81	87	90	92	91	92	71.7	24	
22		88	89	86	80	84	90	82	67	62	54	46	41	33	32	31	33	33	33	45	65	76	83	89	91	91	63.0	24	
23		92	93	93	93	93	93	93	86	61	45	39	33	30	31	32	36	42	41	56	67	75	80	79	75	93	64.9	24	
24		73	75	76	80	87	92	93	77	60	52	47	42	39	36	36	36	40	40	50	71	79	82	86	89	93	64.1	24	
25		89	91	92	93	93	93	93	79	68	55	51	47	46	45	47	48	49	54	64	70	73	81	91	92	93	71.0	24	
26		93	93	93	93	93	93	93	93	86	71	67	72	78	78	87	90	90	88	90	91	92	93	93	91	93	87.5	24	
27		90	89	89	91	91	91	91	89	88	87	85	80	75	70	69	66	63	73	82	85	91	93	93	93	93	83.9	24	
28		93	93	93	93	93	93	94	93	78	61	53	47	43	45	45	45	49	52	65	77	68	68	75	75	94	70.5	24	
29		79	86	88	89	87	88	86	86	82	75	67	62	58	55	56	57	57	59	67	77	81	84	85	85	89	74.8	24	
30		86	89	91	92	92	91	91	88	85	86	88	88	84	77	84	83	86	90	91	91	92	92	92	92	92	88.4	24	
31		92	92	92	92	92	91	86	75	67	60	55	52	49	49	53	54	58	72	87	92	93	93	93	93	93	76.3	24	
HOURLY MAX		93	93	93	93	93	93	94	93	91	87	88	88	84	81	87	90	90	90	91	91	92	93	93	93	93			
HOURLY AVG		87.1	88.5	89.1	89.6	90.3	90.5	88.9	80.5	69.4	62.1	58.1	54.5	52.2	50.7	50.9	51.5	52.5	54.8	63.1	72.9	79.6	83.5	85.5	86.4				

### STATUS FLAG CODES

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

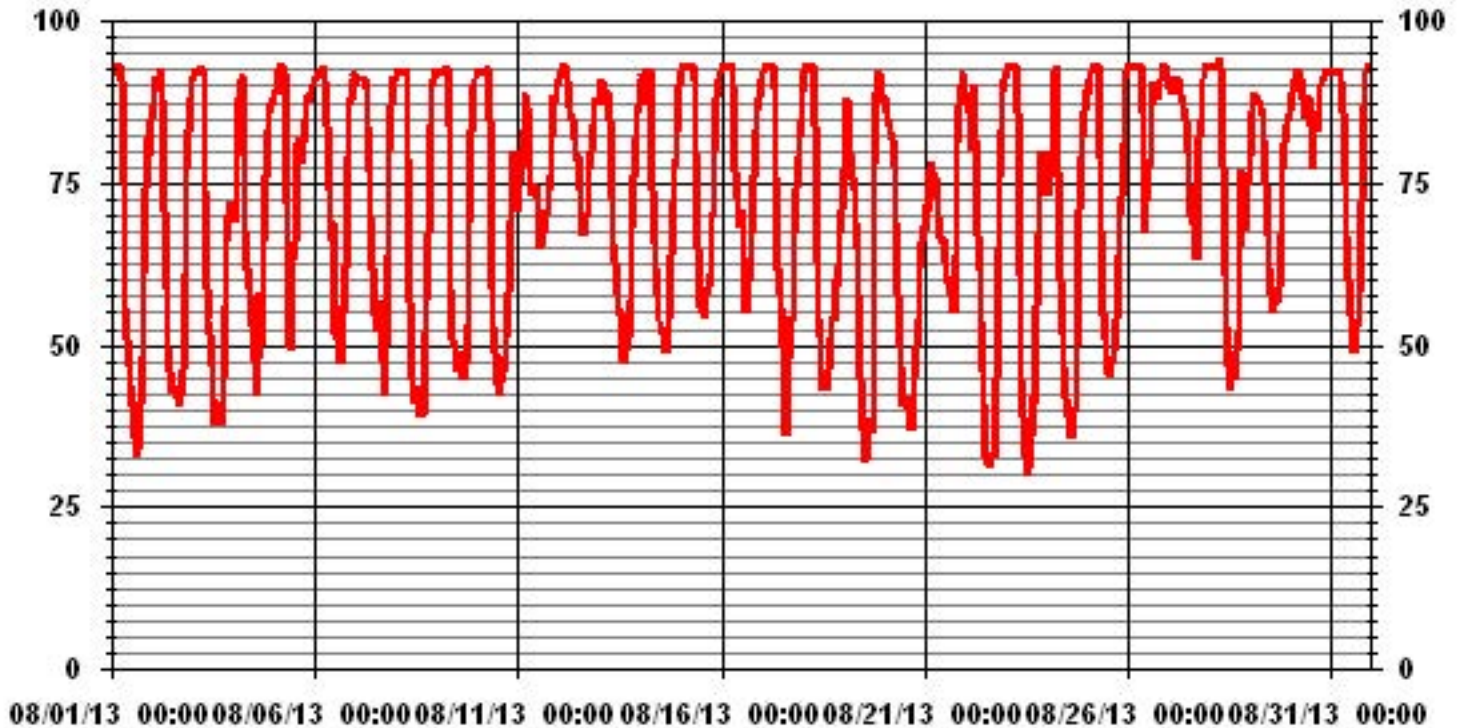
24 HOUR AVERAGES FOR AUGUST 2013



### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	94	%	@ HOUR(S)	6	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	88.4	%			ON DAY(S)	30
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	18.71		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	72.18	%	

### 01 Hour Averages



— LICA30 RH %

JOB #: 2833-13-08-30-C

# Barometric Pressure

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

## BAROMETRIC PRESSURE hourly averages (millibar)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
DAY																														
1		947	947	947	947	946	947	947	948	949	949	949	949	948	948	948	947	947	947	947	947	947	947	947	947	947	949	947.5	24	
2		947	947	947	947	947	947	947	948	949	950	950	950	950	950	949	949	949	949	949	949	949	948	948	948	948	949	950	948.4	24
3		949	949	949	948	948	948	949	950	950	951	950	950	950	950	949	949	949	949	948	948	947	947	947	947	947	947	951	948.6	24
4		947	947	946	945	945	945	945	946	946	947	946	946	946	946	945	945	945	944	944	944	944	944	944	944	943	947	945.2	24	
5		943	942	942	942	941	941	941	942	942	942	942	941	941	941	941	941	941	941	941	941	941	942	942	942	942	942	943	941.5	24
6		942	942	942	942	942	941	943	944	945	945	945	945	945	945	945	945	945	945	945	945	945	945	945	945	945	945	945	944.1	24
7		946	945	944	945	946	946	946	946	947	947	948	948	948	948	948	948	948	948	949	949	949	949	949	949	949	949	949	947.4	24
8		949	949	949	949	949	950	950	951	952	952	952	952	952	952	952	952	952	952	951	951	951	951	951	951	951	951	952	950.9	24
9		951	951	951	951	951	951	951	952	953	953	953	953	953	952	952	951	951	951	950	950	949	949	949	949	949	949	953	951.1	24
10		948	948	948	948	948	948	948	949	950	950	950	950	949	949	949	949	948	948	948	948	948	947	947	947	947	947	950	948.4	24
11		947	948	947	947	947	947	947	947	947	947	947	948	948	948	948	948	948	947	947	947	948	947	947	948	948	948	948	947.4	24
12		948	948	948	949	948	948	949	950	950	950	950	951	951	951	951	950	950	950	950	949	949	949	949	949	949	951	949.5	24	
13		948	949	949	949	949	949	949	950	950	950	950	950	949	949	949	948	948	948	948	947	947	947	947	947	947	950	948.5	24	
14		946	946	946	946	945	945	945	946	946	946	946	946	945	945	944	944	943	943	942	942	942	941	942	941	942	941	946	944.3	24
15		941	940	940	940	940	940	940	940	940	940	940	940	939	939	939	939	939	939	939	939	939	939	939	939	939	939	941	939.5	24
16		939	939	939	939	938	938	938	938	939	940	940	940	940	940	939	939	939	939	939	939	939	939	939	939	939	939	940	939.1	24
17		939	939	940	940	939	940	940	941	941	942	942	941	941	941	940	940	940	940	939	939	940	939	940	939	940	940	942	940.1	24
18		939	939	939	939	939	939	940	940	940	940	940	939	939	939	939	938	937	937	936	936	937	937	937	937	937	940	938.4	24	
19		936	936	936	936	936	937	937	937	937	937	938	938	937	937	937	937	936	936	936	937	936	936	936	936	936	936	938	936.5	24
20		936	936	937	937	937	937	937	938	938	938	939	939	939	939	939	939	940	940	940	940	940	940	941	941	941	941	941	938.7	24
21		942	942	942	942	943	943	944	944	945	946	946	947	947	947	947	947	947	947	947	946	946	946	946	945	945	947	945.1	24	
22		945	945	945	945	945	944	944	944	944	944	944	944	943	943	942	941	940	940	939	939	938	938	938	938	938	938	945	942.2	24
23		937	937	937	937	938	938	938	939	939	940	940	939	939	938	938	937	937	936	936	936	935	935	934	934	934	940	937.2	24	
24		933	934	933	933	934	933	934	935	935	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	937	935.2	24	
25		937	937	937	937	937	937	938	938	938	938	938	938	938	938	938	939	939	939	939	940	940	941	941	941	941	941	941	938.4	24
26		941	941	941	941	941	941	942	943	943	943	944	943	944	943	942	942	942	941	941	941	941	941	941	940	940	940	944	941.7	24
27		940	939	939	939	939	940	939	940	940	941	941	941	941	942	941	941	941	941	941	941	940	940	941	941	941	941	942	940.4	24
28		941	941	941	941	941	941	941	941	942	942	943	943	942	942	942	941	941	941	942	942	942	942	942	942	942	942	943	941.7	24
29		943	943	943	942	942	942	943	943	944	944	944	945	944	944	944	944	943	943	943	943	942	941	940	940	940	940	945	942.9	24
30		941	940	939	938	938	937	938	937	938	937	938	937	937	937	937	937	936	936	936	938	938	939	939	939	939	941	937.8	24	
31		940	941	941	942	942	943	944	945	945	946	946	946	946	946	946	945	945	945	945	945	944	944	944	944	944	946	944.2	24	
HOURLY MAX		951	951	951	951	951	951	951	952	953	953	953	953	953	952	952	952	952	952	951	951	951	951	951	951	951	951	951		
HOURLY AVG		943	943	943	943	943	943	944	944	944	944	944	944	944	944	944	943	943	943	943	943	943	943	943	943	943	943	943		

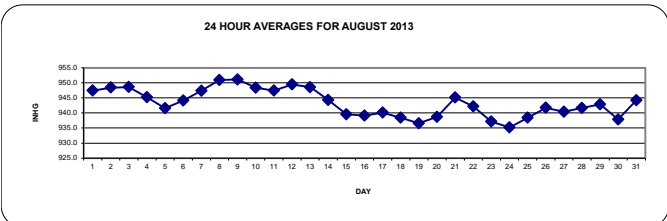
### STATUS FLAG CODES

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:	953	MB	@ HOUR(S)	VAR	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:	951.1	MB			ON DAY(S)	9
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	4.69		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	943	MB	

24 HOUR AVERAGES FOR AUGUST 2013



# 01 Hour Averages



# Vector Wind Speed

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

## WIND SPEED hourly averages (km/hr)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0.7	1.9	1.8	1.5	1.2	1.7	3.3	4.3	3.9	1.6	3.1	3.8	3.7	5.5	5.6	4.5	6	4.5	3.3	2.6	2.7	3	3.6	3.9	6	1.8	24
2	3.9	2.2	3.4	1.5	1.7	3.2	4.2	4.4	5.3	5.2	5	5	4.1	3.5	3.1	3.1	6.4	6.3	4.4	2.9	3	2.4	1.6	0.8	6.4	2.7	24
3	0.6	0.5	0.6	1.2	1.6	1.4	2.9	1.7	4.4	4.6	6.5	6	7.1	7.1	7.9	6.5	7.4	8.8	6.7	4.9	5.3	4.7	5.4	6.3	8.8	4	24
4	5.7	3.9	1.1	0.5	0.9	1	0.6	4	4.1	4.2	3.9	3.4	5.7	6.4	4.1	3.7	2.4	4.8	2.2	1.5	1.5	1.1	1.8	1.7	6.4	1.5	24
5	1.7	0.6	0.6	1.2	1.2	1.1	0.2	1.6	3.4	3.7	1.9	1.9	1.4	0.5	3.7	6.8	6.2	3.7	1.9	1.7	2.3	3.3	1.8	1.9	6.8	1.8	24
6	2.2	1.6	1.7	1.1	2.8	3.6	3.9	5.4	3.2	0.9	1.6	1.8	1.6	2.6	5.9	3.8	4.1	3.9	3.2	2.2	5.9	4.3	2.5	3.2	5.9	1.2	24
7	3	4	4.7	3.7	2.6	4	2.5	4.7	6.2	7.4	7	7.2	5.4	7.1	6.2	5.5	8.2	9.6	5.7	3	1.7	0.7	1.4	0.4	9.6	4.1	24
8	0.8	1.6	1.4	1.3	1.8	1.5	3.3	3.7	3.5	4.9	3.3	0.4	1	2.1	1.5	2.5	3.2	3.4	3.7	2.9	2.2	1.8	0.3	1.3	4.9	1.4	24
9	0.9	0.7	1.1	0.9	1.3	0.4	1.8	2	4.4	4.3	4.5	3.9	5.1	4.7	4.3	5.1	5.1	4.9	3.6	3	2.4	2	0.8	0.7	5.1	2.4	24
10	0.8	1	1.3	1.2	1.7	1.1	2.3	2	3.7	5.7	5.8	7.4	6.5	6.9	7.6	6.8	5.4	4.9	4	3.2	3.7	4.5	6.4	6.9	7.6	3.7	24
11	6	4.6	3.6	1.7	1.2	2.5	3.5	2.7	4.2	5	5	7.6	8.6	5.7	3.7	6.5	3.3	4.8	3.5	2.8	2.3	1.7	1.1	2.9	8.6	3.4	24
12	2.4	1.5	0.5	2.4	0.3	3.6	3.7	1.9	2.4	3	3.3	4.1	5.7	5.3	4.3	3.4	4.8	4.5	2.2	2.8	2.5	1.8	2.3	3.2	5.7	2.7	24
13	3.3	3.5	5.5	5	3.8	4.2	3.7	4.3	5.8	6.4	8	6.5	7.1	6.1	7.1	7.4	7.7	6.1	4.9	4.2	4.2	4.8	3.9	3.3	8	5	24
14	1.8	2.3	4.1	1.7	1.8	1.5	2.6	3.9	3.4	4.6	6.7	5.3	6	6	7.4	7.1	6.2	4	4.6	4.6	6.3	2.6	1.1	7.4	3.6	24	
15	0.6	2.3	1.8	2.5	1.8	0.3	0.9	1.2	2.6	2.4	3.7	4	5.2	4.9	6.8	3.8	3.8	3.1	2.5	6.1	2.2	1.9	0.6	0.2	6.8	0.6	24
16	0.5	1	1	1	1.1	1.4	0.7	1.4	1	1.6	0.4	2.8	2.4	2.7	2.7	3.2	3.6	3.4	2.6	2.7	2.4	3.2	2.5	2.3	3.6	1.1	24
17	1.9	2.9	2.4	2.1	1.5	3.5	4.4	4.8	4.2	4.3	4.8	5.8	5.3	4.8	3.9	3.9	8.6	8.8	5.2	5.3	6.5	5.9	6.4	4.5	8.8	4.3	24
18	1.7	2.5	2.7	1.6	0.9	1.3	0.7	0.7	2.5	0.7	5.1	5	7	6.1	7.3	6.1	5.8	6.4	5.3	3	4.9	5.3	4.8	2.7	7.3	3	24
19	4.6	3	2.8	3.3	3.5	4.1	4.4	4.1	4.6	4.9	6.5	7.9	9	8.3	6	5.9	8.5	7.6	5.5	3.3	4.4	6.7	6.6	5.6	9	5	24
20	4.5	5.1	5.1	3.7	4.9	6.1	5.5	5.8	6.2	8.4	7.7	8.8	9.2	<b>10.5</b>	9	9.9	9.4	8.6	4.6	4.6	4.3	3.6	3.7	3.9	<b>10.5</b>	5.9	24
21	4.8	4.5	4.8	4	3.8	4.2	4.2	4.6	7.2	5.9	4.9	6	5.6	6	5.6	6.1	4.4	4.9	2.7	1.9	2.2	3.2	3.6	4.4	7.2	4	24
22	5.2	6.6	6.5	6.1	3.3	3.1	5.8	9.1	8.8	6.4	7.1	8.8	7.5	7.1	7.5	9.3	7.5	5.1	3.5	2.7	1.7	1	0.3	1.6	9.3	5.3	24
23	0.8	1.2	1	2.4	1.2	0.6	0.7	1.5	4	4.1	3.5	1.9	3.1	2.2	3.5	5.5	4.3	2.7	0.9	1.6	1.7	1.9	2.7	2.1	5.5	1	24
24	4.3	5.8	0.5	1.2	1.5	1.2	0.7	1.6	1.2	1.7	1.3	0.8	3.6	2.1	2.1	2.2	2.7	4.3	3.5	2.7	3	4.1	2	2.6	5.8	1.2	24
25	1.2	0.5	0.6	1.7	0.6	1.3	2.3	3.6	7.2	8.6	9.9	8.1	7.7	8.7	6.6	5.6	6.2	6.2	4.3	5	4.7	1.9	0.5	0.5	9.9	1.9	24
26	0.7	1	1	1.4	0.9	0.7	0.3	2.1	2.8	5.2	5.1	2.6	0.7	0.2	4.3	3.5	6.3	5.2	3.4	3.7	3.1	3.9	2.8	3.6	6.3	2.2	24
27	4.1	4.6	2.9	4.5	3.4	2.4	3.4	2.5	2.8	4.4	5.5	5.6	5.5	3.7	3.7	3	1.7	3.1	2.3	2	0.9	0.9	0.3	0.7	5.6	1.2	24
28	0.9	1.7	1.2	1.7	2.2	3	2.3	3.9	3	3.9	4.1	5.7	4	4.5	4.3	2.9	4.6	4.8	1.8	0.4	4.9	2.9	1.9	3.2	5.7	2.1	24
29	3.9	2.9	5.3	6.2	7.5	4.9	5.1	4.8	7.8	7.5	8.9	8.6	8.4	7.8	8.8	9	6.8	5.7	3.7	2.9	4.8	4.9	5.7	4.5	9	<b>6</b>	24
30	2.2	2.2	2.1	1.2	6.9	8.3	5	4.4	2.7	0.7	1.4	1.1	2.2	3.6	2.2	3.2	2.3	4.5	5.8	7.9	7	4	4.2	3.8	8.3	1.9	24
31	5	4.1	4.9	3.4	4.7	3.9	2.8	3.9	2.4	2.7	2.8	3	2.9	3	4.6	4.1	3.4	3.1	1.6	2.5	2.7	3.5	4.1	4.8	5	1.4	24
HOURLY MAX	6.0	6.6	6.5	6.2	7.5	8.3	5.8	9.1	8.8	8.6	9.9	8.8	9.2	10.5	9.0	9.9	9.4	9.6	6.7	7.9	7.0	6.7	6.6	6.9			
HOURLY AVG	2.6	2.6	2.5	2.4	2.4	2.6	2.8	3.4	4.2	4.3	4.7	4.9	5.1	5.0	5.2	5.2	5.4	5.3	3.6	3.2	3.4	3.3	2.8	2.9			

### STATUS FLAG CODES

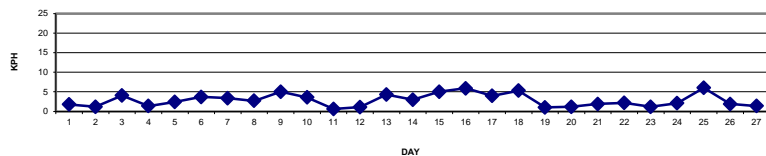
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: December 20, 2011

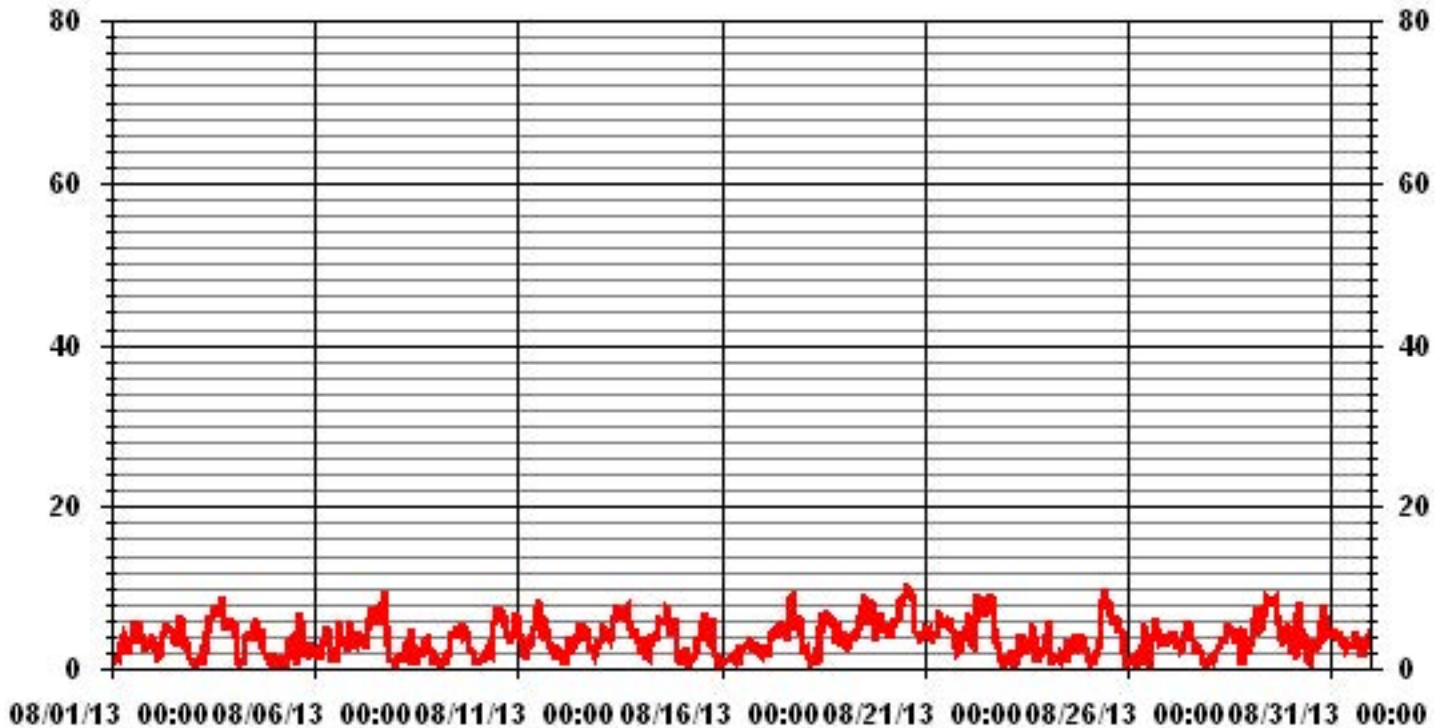
### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	10.5	KPH	@ HOUR(S)	13	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:	6.0	KPH			ON DAY(S)	29
CALMS (≤ 1 KPH)	7.26	%	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	2.16		MONTHLY AVERAGE:	3.74	KPH	

24 HOUR AVERAGES FOR AUGUST 2013



# 01 Hour Averages



— LICA30 WSP KPH



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

## VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST																									
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.
DAY																									
1	5	4.7	10.7	4.7	5.2	8.7	6.7	11.8	14.1	11.5	16.1	21.4	20.3	19.6	24.6	19.2	23.8	20.1	18.3	14.4	14.2	9.2	8.6	8.6	24.6
2	10.5	7.1	9.3	4.1	5.2	6.1	9.8	11.5	13.7	20.7	22.7	18.3	21.1	23.6	21.1	20.1	23.8	17.9	12.2	10.6	7.6	8.7	4.1	4.3	23.8
3	3	2.3	3.2	3.2	5.2	6.9	6.6	13.8	12.1	15.8	20.8	21.6	23.1	22.2	26.8	22	22.7	24.4	17.6	13.9	12.2	11.1	12.4	18.3	26.8
4	17.2	12.6	9.6	3.4	4.1	3.9	3.9	10.4	12.6	11.3	13.3	15.5	17.4	23.1	19.4	14.4	10.6	9.6	8.9	5	4.1	4.7	5.4	4.1	23.1
5	5.6	4.3	4.3	3.2	5	5.2	5.2	8.5	12.6	17.5	14.4	21.2	23.6	11.4	20.2	21.2	20.8	12.6	8.7	8.9	6.9	8.5	6.5	7.8	23.6
6	5.6	7.8	7.8	5.4	9.1	6.7	8.5	10.9	11.3	11.3	8.9	12.8	13.5	14.1	15.5	16.6	12	12.2	10.9	20.7	20.9	18.1	6.7	9.1	20.9
7	21.1	20.9	16.4	14.1	11.3	12.3	9.3	16.4	25.6	26.3	28.2	26.2	22.7	29.9	26.2	24.4	26	29	17.9	11.3	8.5	6.1	4.8	2.6	29.9
8	3.2	3.9	3.6	3.2	5	3.9	6.1	8.9	12.4	19.2	24	16.6	14.1	14.6	16.1	19.5	13.3	12.9	9.9	7	5.7	5.3	5	4.1	24
9	4.1	2.1	2.6	2.1	2.6	1.9	7.8	5.8	12.4	14.8	17.2	20.9	22.3	20.3	16.1	18.5	17.9	21.4	14.4	7.6	6.1	5.8	5	3.2	22.3
10	4	4.2	4.7	5.2	8.3	5.4	6.7	11.5	11.1	18.1	21.6	28.6	26.4	26.2	25.3	22.7	18.8	17.9	13.3	7.6	8.9	12.8	17.9	18.8	28.6
11	17.7	12.2	12.6	8.5	4.7	12.6	10.9	12.4	15.7	16.8	17.2	27.3	30.1	24.4	16.3	22.3	14.4	20.7	10.8	8.7	8.8	7	5.7	8.1	30.1
12	7.2	6.1	9.6	9.3	8.9	13.1	10.9	8	8.9	11.1	12.6	11.8	23.8	25.5	18.8	13.3	17.4	15.7	8.2	8.9	8	6.5	8.2	7.8	25.5
13	10	13.5	19.2	17.4	17.7	16.4	15.5	21.8	23.1	19.2	24.7	24.2	26.4	25.1	25.3	27.5	31	17.9	15.9	10.9	8.9	10.9	11.1	9.2	31
14	5.7	8.8	13.4	8.5	5.5	5	7.1	13.3	12.6	15.5	17.6	25.1	23.8	25.1	25.7	23.8	21.6	16.3	11.8	10.2	12	15.2	12	5.4	25.7
15	3.9	4.7	5.8	6.9	6.1	2.3	3.4	4.5	7.1	14.1	17.9	23.3	25.9	26.2	22	17.9	15.9	21.1	17.4	21.1	8	7.1	5	2.1	26.2
16	6.7	6.5	2.8	2.8	5.4	5.8	4	5.1	4.2	5.3	5.5	9.7	8.3	11.1	15.9	16.1	13.3	13	14.1	13.1	11.3	19.4	12.8	8.9	19.4
17	8.2	7.4	6.7	7.6	5	7.4	13.9	13.5	18.1	17	19	21.4	24	23.5	23.1	23.3	34.7	20.5	16.1	14.6	14.1	15	17	11.1	34.7
18	5.2	6.7	8.5	7.8	5	5.2	6.1	5.9	7.7	17.3	17.3	17.1	19.5	20.4	24.3	21.7	19.7	20.2	17.5	14.4	27.7	20.5	28.2	13.3	28.2
19	15.9	16.1	13.5	15.3	15.9	17.2	16.8	16.8	20.1	21.4	27.9	32.5	35.8	36.9	31.6	27	30.1	26.6	<b>64.9</b>	7.1	12.8	17.2	19.4	14.8	<b>64.9</b>
20	15.5	23.4	19.6	17.9	17.9	17.5	20.8	29.4	25.1	38.7	33.2	46.3	39.1	46.3	39.1	40.2	44.6	37.1	21.1	22	17	17.7	17.7	16.6	46.3
21	18.1	17.2	21.6	18.1	17.9	18.1	20.7	18.1	30.8	25.3	22	26.4	25.8	23.3	24.2	25.3	20.7	20.7	14.6	5.7	4	7.2	6.9	10.7	30.8
22	11.8	15	14.8	16.6	10.2	9.1	17.2	21	24	18.1	23.5	31.6	29.9	35.4	35.6	26.8	26.6	14.4	10.9	6.5	6.3	4.3	2.1	3.9	35.6
23	3.2	3.9	5.6	10.7	8.9	3.2	3.5	4.8	7	11.6	11.8	13.7	15.9	15.7	15.2	20.3	17.9	9.3	4.3	5	10.9	6.1	<b>X</b>	12.4	20.3
24	20.7	22.7	20.9	8.9	10.4	5.6	3.4	7.4	7.8	11.3	9.8	18.8	16.8	16.6	16.8	13.3	14.8	13.3	8	7.1	5.6	9.1	6.5	7.4	22.7
25	6.9	2.6	4.5	3.6	3.6	6.1	6.6	18.9	20.8	28.6	29.9	23.3	19.8	20.5	18.1	25.3	24.4	29.4	20.3	18.8	23.6	9.8	3.2	4.5	29.9
26	4.5	3	3.6	3.4	4.5	5	7.4	6.1	10.4	20.9	15.9	9.8	8.2	4.7	14.8	11.8	15.2	15.2	12.2	10.7	9	8.3	13.2	11.2	20.9
27	11.5	12.4	11.8	17	15	8.7	10.7	10.7	12	15	13.9	17	16.6	17	13.1	11.5	14.1	9.8	8	9.8	6.5	3.9	7.6	5	17
28	3.6	6.3	4.3	7.4	8	8	7.1	9.6	8.8	18	18.9	30	18	28.4	25.1	19.8	22	13.3	5.4	9.1	15.7	10.2	7.4	12.8	30
29	12.8	10.7	16.6	15	17.2	13.1	14.4	14.8	19.6	20.3	27.5	30.3	29.7	29.2	33	23.5	29	24.4	15.5	9.6	13.9	13.1	14.6	14.4	33
30	12.2	36.3	12.2	7.4	18.3	23.3	14.8	21.9	11.6	4.6	5.1	7.5	9.4	13.8	12.5	13.3	12.6	18.1	36	22.7	23.6	11.8	17	17.9	36.3
31	17.2	15.9	17	14.8	20.3	16.1	12	12.4	10	9.8	12	13.7	13.3	20.1	17.2	15	17.6	15.2	7.4	5.2	5	7.6	8.7	9.1	20.3
PEAK	21.1	36.3	21.6	18.1	20.3	23.3	20.8	29.4	30.8	38.7	33.2	46.3	39.1	46.3	39.1	40.2	44.6	37.1	64.9	22.7	27.7	20.5	28.2	18.8	

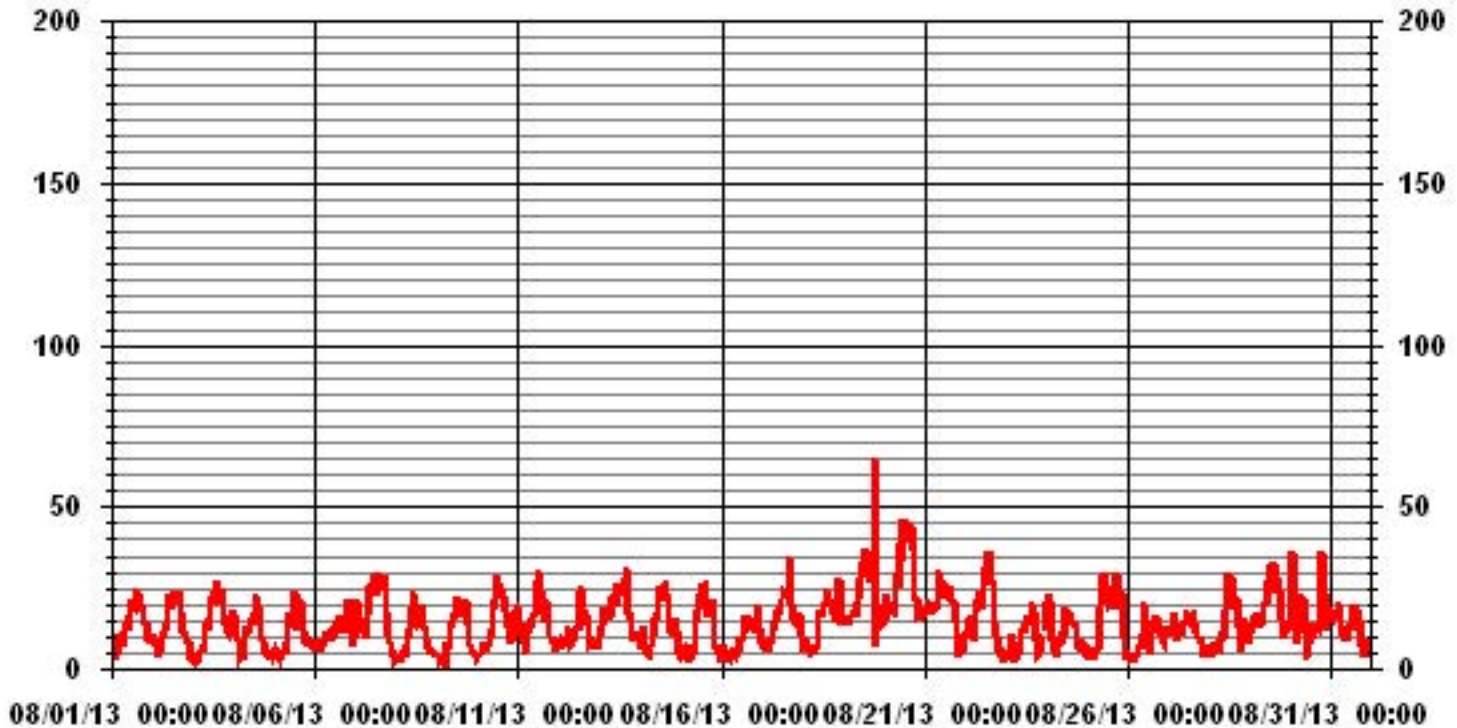
**STATUS FLAG CODES**

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 READING	64.9	KPH	@ HOUR(S)	18
			ON DAY(S)	19

# 01 Hour Averages



LICA30  
WSP / WDR Joint Frequency Distribution (Percent)

August 2013

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	4.16	4.97	9.81	7.52	5.10	5.91	8.33	6.72	4.43	7.12	4.83	4.97	4.56	1.88	1.34	1.61	83.33
< 12.0	.26	.67	1.74	.80	.00	.13	1.47	2.95	1.74	2.82	1.20	.26	1.20	1.34	.00	.00	16.66
< 20.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.43	5.64	11.55	8.33	5.10	6.04	9.81	9.67	6.18	9.94	6.04	5.24	5.77	3.22	1.34	1.61	

Calm : .00 %

Total # Operational Hours : 744

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	37	73	56	38	44	62	50	33	53	36	37	34	14	10	12	620
< 12.0	2	5	13	6		1	11	22	13	21	9	2	9	10			124
< 20.0																	
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	33	42	86	62	38	45	73	72	46	74	45	39	43	24	10	12	

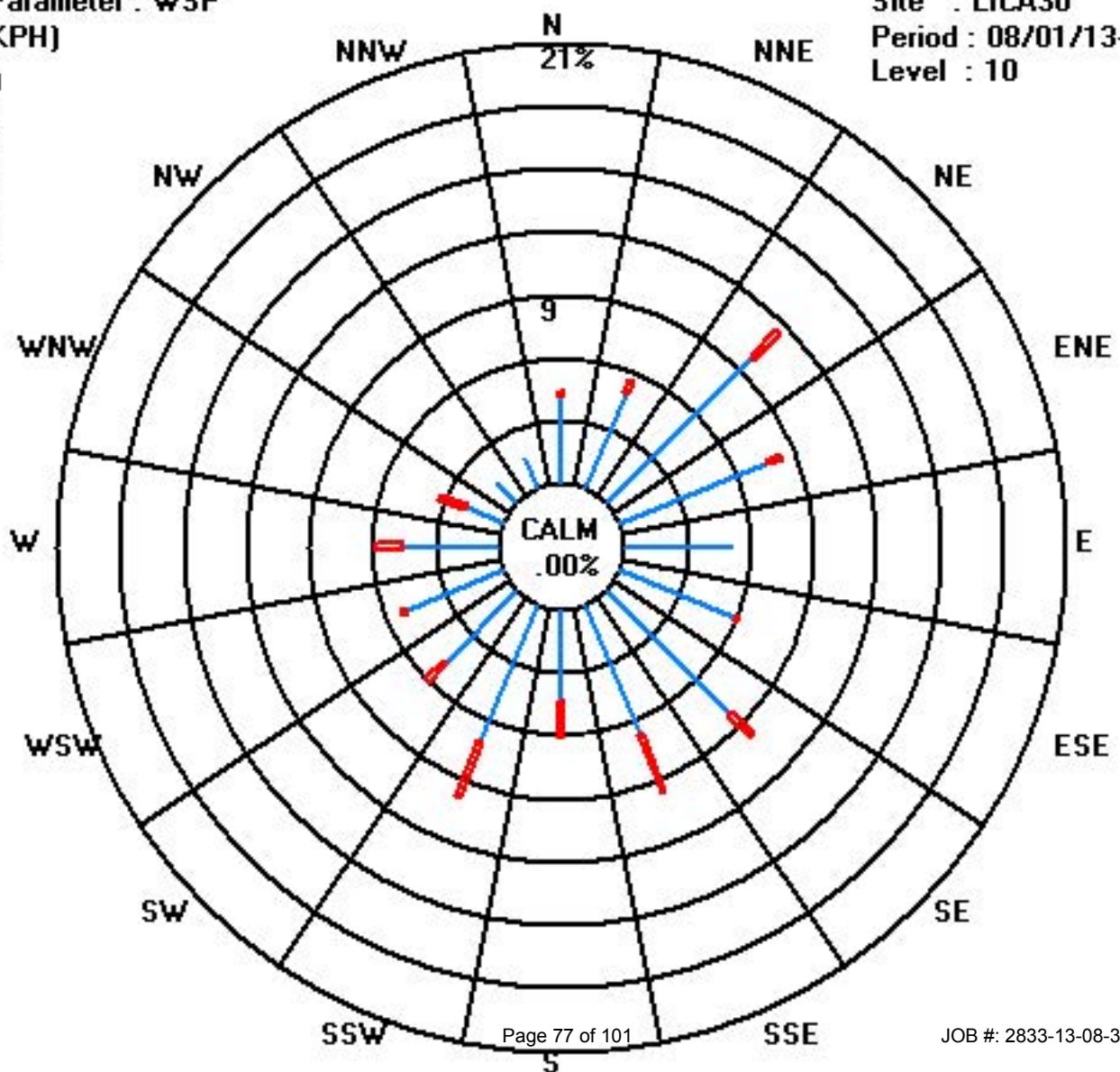
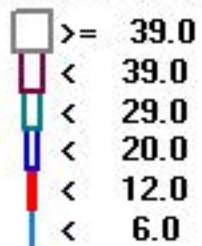
Calm : .00 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 08/01/13-08/31/13

Level : 10



# Vector Wind Direction

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

## WIND DIRECTION hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUADRANT	RDGS.
DAY 1	216	183	223	191	144	16	33	39	31	280	318	322	348	343	347	357	33	119	114	107	56	59	56	51	28	NNE	24
2	54	77	46	64	51	31	40	58	53	94	96	142	99	94	92	121	136	147	141	136	153	161	20	16	95	E	24
3	23	127	168	106	81	71	25	144	191	181	181	178	187	193	185	173	175	156	156	165	159	159	159	165	168	SSE	24
4	172	166	142	119	128	130	17	191	192	197	205	198	187	199	240	4	5	35	69	100	91	220	216	162	179	S	24
5	94	240	176	146	133	47	218	65	66	75	352	118	126	327	44	52	38	37	29	36	43	44	23	15	51	NE	24
6	205	316	326	311	8	19	29	33	54	239	235	212	172	114	136	164	173	168	145	26	63	70	63	48	85	E	24
7	15	83	51	76	11	49	67	67	77	73	121	125	71	74	72	74	72	36	43	56	54	80	141	204	69	ENE	24
8	127	110	127	107	77	38	28	41	58	63	93	275	60	242	96	45	161	127	133	152	157	147	106	152	95	E	24
9	139	197	201	132	130	105	34	32	186	164	174	160	148	146	148	173	154	132	136	151	156	176	149	57	152	SSE	24
10	355	355	77	84	77	66	56	65	161	160	152	161	155	152	168	168	161	145	150	148	145	148	156	162	151	SSE	24
11	174	184	163	141	70	123	132	143	134	121	141	165	150	129	144	133	108	112	64	65	110	73	116	74	135	SE	24
12	72	53	287	80	25	60	60	66	108	131	98	56	85	101	110	84	48	53	75	62	57	65	45	50	74	ENE	24
13	71	83	112	112	110	108	114	112	129	145	146	142	140	150	146	158	140	132	142	152	143	156	152	147	134	SE	24
14	35	32	181	61	85	85	120	147	130	137	165	143	141	157	151	172	160	167	172	158	155	154	142	88	149	SSE	24
15	10	24	101	79	78	336	13	2	39	127	104	112	126	121	194	233	278	299	281	9	10	356	31	57	80	E	24
16	353	21	146	157	165	27	59	7	125	76	320	195	195	245	262	253	279	262	247	257	281	275	275	222	252	WSW	24
17	224	216	208	209	150	202	214	210	229	231	235	219	224	288	246	238	207	199	208	196	194	196	192	205	213	SSW	24
18	201	219	215	216	141	144	234	75	16	244	185	212	193	211	219	220	230	218	216	255	277	291	281	246	225	SW	24
19	216	232	246	247	252	254	240	258	260	262	267	265	286	272	268	252	231	232	265	205	209	206	209	210	246	WSW	24
20	213	251	243	240	227	218	233	240	259	275	258	264	283	288	283	287	282	283	275	271	272	265	252	236	264	W	24
21	232	232	245	237	248	247	243	261	291	290	266	272	271	281	257	255	273	267	266	196	168	184	201	200	254	WSW	24
22	189	191	200	205	216	186	195	196	197	210	206	209	216	234	222	208	208	212	189	177	178	204	280	167	204	SSW	24
23	197	134	136	207	200	193	179	36	35	26	12	359	351	307	17	131	135	135	107	87	77	62	47	98	71	ENE	24
24	126	164	10	3	204	215	141	320	292	194	274	39	348	277	348	260	240	207	198	177	189	196	201	193	205	SSW	24
25	201	74	102	112	128	99	42	111	150	149	177	171	190	189	204	275	287	293	277	295	345	359	180	295	199	SSW	24
26	92	238	210	122	85	78	188	20	39	50	115	114	166	299	24	38	38	41	51	52	51	32	40	43	53	NE	24
27	34	42	43	42	40	48	70	91	111	172	194	198	200	211	213	185	162	130	108	81	89	125	243	13	130	SE	24
28	132	104	91	81	44	61	55	34	46	91	158	143	169	133	125	118	103	45	114	332	14	27	24	54	88	E	24
29	40	44	41	31	31	54	44	40	40	45	49	52	55	50	46	36	57	76	61	46	40	43	46	62	47	NE	24
30	60	113	100	360	23	40	52	88	148	289	352	294	222	230	254	274	299	275	341	3	13	4	352	349	6	N	24
31	0	351	357	348	8	353	356	8	302	323	345	324	302	253	231	220	249	272	232	198	187	193	197	193	298	WNW	24
HOURLY AVG	355	355	357	360	252	353	356	320	302	323	352	359	351	343	348	357	299	299	341	332	345	359	352	349			

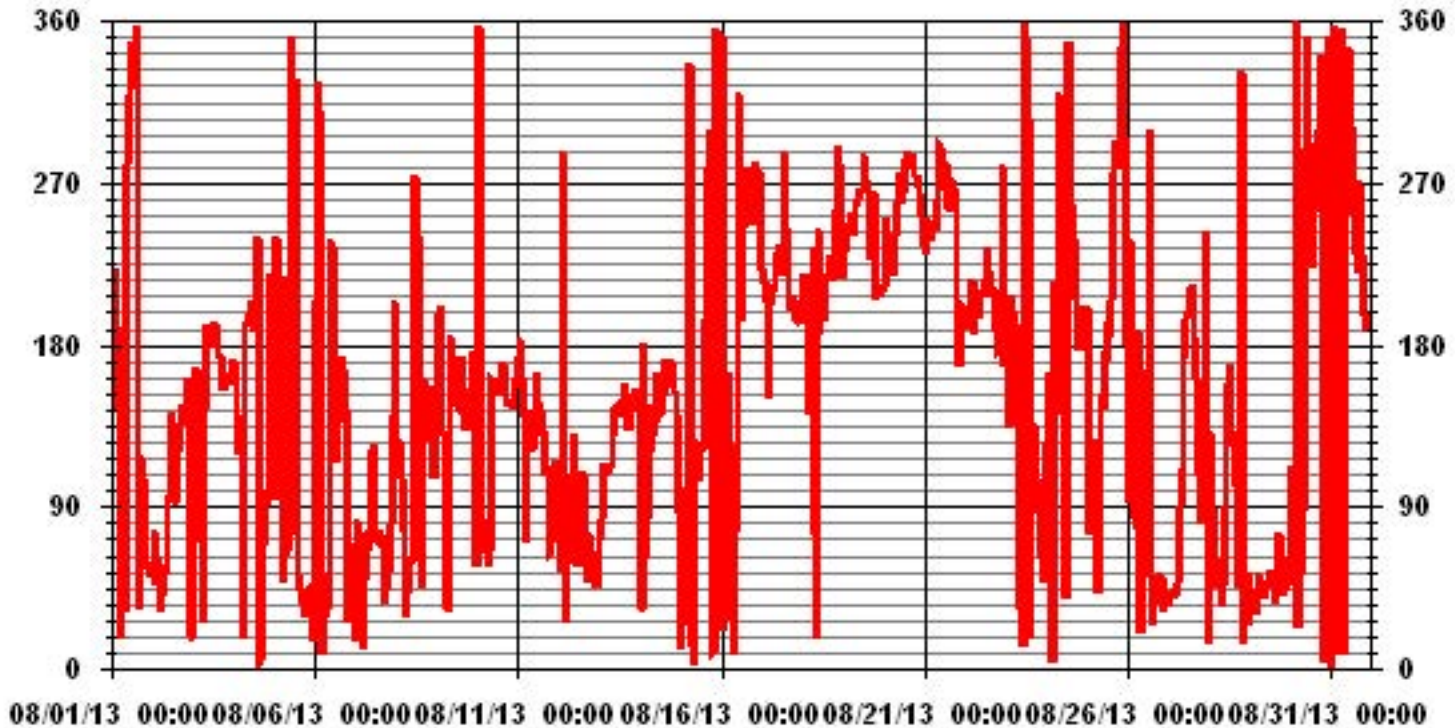
### STATUS FLAG CODES

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

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	89.93	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	154 DEG

# 01 Hour Averages



# Standard Deviation Wind Direction



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2013

## STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	
DAY																									
1	50	22	30	26	37	31	11	22	46	53	55	55	47	39	41	44	35	38	29	28	25	23	18	16	
2	16	21	18	29	30	16	18	30	30	44	47	45	51	58	43	60	33	26	24	14	12	38	24	48	
3	61	56	58	33	31	38	18	36	31	36	36	35	31	31	31	31	27	27	22	16	13	14	14	18	
4	20	24	47	39	50	51	60	25	39	36	44	45	33	30	41	36	42	18	24	22	22	37	33	27	
5	45	55	54	42	39	49	50	38	38	48	66	44	43	55	56	30	30	37	41	31	26	18	24	37	
6	37	42	44	47	24	12	13	18	51	51	44	57	44	43	24	54	27	22	20	56	23	26	21	19	
7	48	37	29	32	40	20	30	32	32	35	39	40	42	37	34	35	29	22	22	25	33	52	46	69	
8	39	18	37	28	29	21	8	23	40	43	72	57	76	65	65	48	50	25	16	15	20	42	70	30	
9	53	33	21	41	16	53	40	23	31	39	47	49	45	38	43	44	37	32	23	14	16	38	33	52	
10	55	37	39	44	34	46	26	26	40	33	40	40	42	37	32	25	30	26	19	13	12	14	16	20	
11	20	19	17	32	47	26	30	45	37	33	32	27	29	34	38	32	31	40	27	28	32	33	48	27	
12	36	36	45	33	33	21	25	48	35	36	35	27	33	40	36	38	25	25	25	21	22	36	30	20	
13	30	29	32	36	35	33	43	39	37	33	29	38	44	39	35	30	32	27	24	15	15	16	16	22	
14	26	38	26	31	39	37	23	30	37	47	48	32	45	42	45	33	25	24	21	14	14	16	37	37	
15	44	25	29	21	23	60	47	43	33	50	44	52	47	39	27	39	46	44	46	25	25	28	48	65	
16	36	54	36	38	27	35	66	54	61	45	70	36	44	55	57	43	49	41	47	47	43	42	46	30	
17	41	24	24	20	26	15	30	27	35	40	46	37	44	50	47	48	34	19	21	16	17	17	18	21	
18	32	25	29	51	39	47	70	68	44	61	36	42	33	37	34	35	36	30	32	40	37	38	40	37	
19	28	38	40	40	43	43	39	47	43	44	45	46	42	45	50	46	38	35	33	15	15	15	18	20	
20	30	45	38	41	31	21	38	40	44	45	48	46	44	39	38	35	41	38	44	42	39	41	40	37	
21	34	38	43	40	44	42	42	43	39	44	47	43	45	45	46	44	49	41	48	20	11	11	9	15	
22	13	15	16	15	20	17	17	18	21	30	28	27	35	40	43	25	25	25	15	9	31	47	46	26	
23	38	45	37	37	55	66	44	36	12	31	44	64	62	44	53	34	34	29	28	23	37	32	34	56	
24	43	40	79	69	70	54	66	53	61	67	50	58	38	73	58	65	53	27	13	10	11	10	22	35	
25	43	41	60	32	54	43	28	30	29	27	26	28	21	23	30	42	40	42	42	37	35	51	47	58	
26	38	35	44	29	41	51	36	36	47	31	38	31	41	64	24	23	19	17	23	22	22	16	37	18	
27	18	19	41	52	52	45	32	40	38	24	25	31	29	49	44	50	51	26	26	28	51	52	43	61	
28	62	26	35	34	37	22	28	23	41	38	46	39	60	57	51	62	34	23	28	51	24	28	35	23	
29	24	33	21	16	13	20	21	20	22	23	29	31	31	30	27	22	31	31	26	21	17	18	20	28	
30	38	46	45	69	17	22	27	38	43	61	39	45	41	43	54	41	47	38	38	27	21	27	34	42	
31	30	36	31	41	24	34	37	30	49	47	53	50	56	46	44	38	45	44	42	10	10	11	11	12	

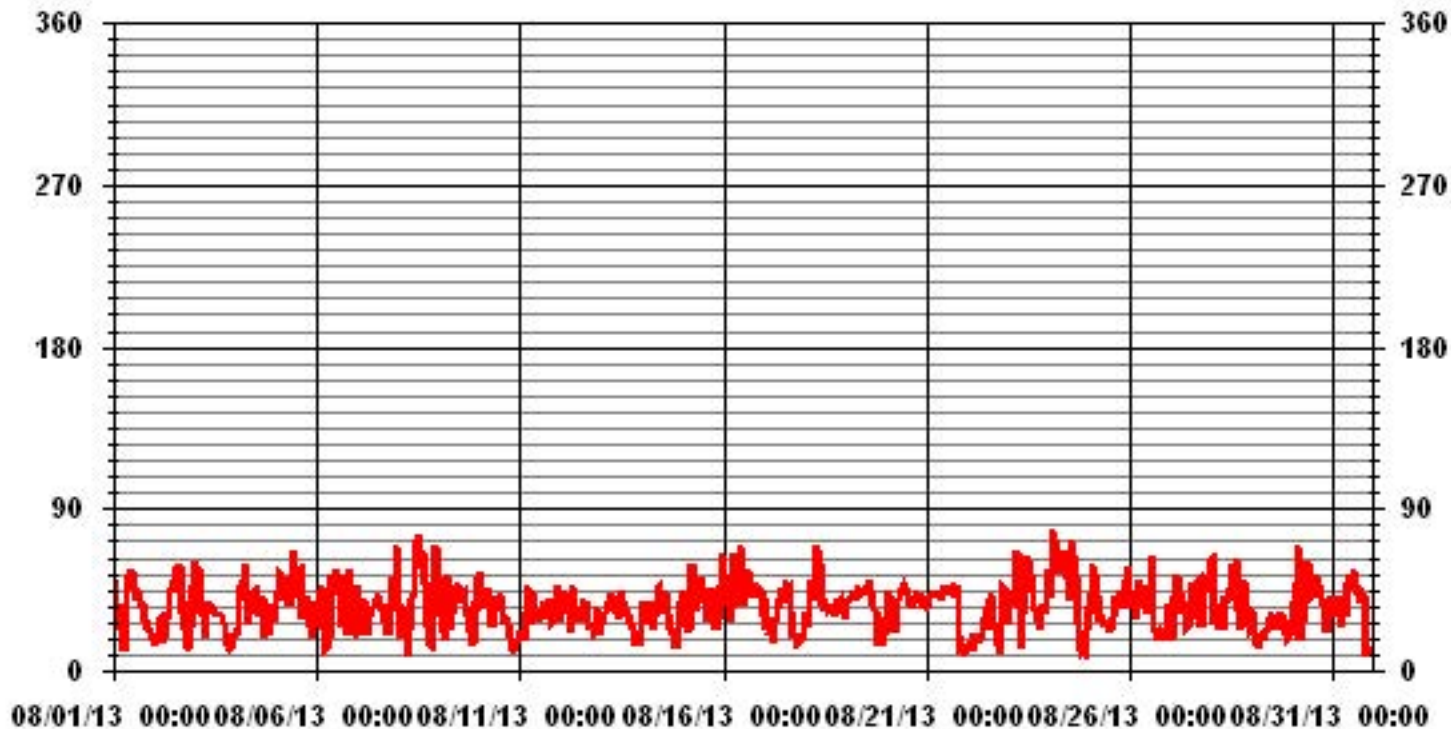
### STATUS FLAG CODES

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: December 20, 2011

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

# 01 Hour Averages



# Calibration Reports

# Sulphur Dioxide



### SO2 Calibration Report

#### Station Information

Calibration Date	August 23, 2013	Previous Calibration	July 18, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	LICA Maskwa		
Start Time (MST)	10:30	End Time (MST)	12:42
Reason:	Monthly calibration		
Barometric Pressure	27.73 in HG	Station Temperature	25 Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	BAL3031
DAS Output Voltage	0-1 Volts	Cal Gas Expiry date	December 29, 2016
		Chart Rec. Output	N/A Volts

#### Equipment Information

Analyzer Make / Model:	API 100E	S/N :	508	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	EnviroNics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO791		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

#### Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0-1000 ppb				
Sample Flow / Box Temp	594 ccm	29.3 Deg C	592 ccm	29.3	Deg C
HVPS / Lamp Setting	491	3272	491	3274	
PMT / RxCell Temp	7.7 Deg C	50 Deg C	7.7 Deg C	50	Deg C
Converter / IZS Temp	N/A Deg C	45 Deg C	N/A Deg C	45.0	Deg C
Offset / Slope	72.6	1.105	77.5	1.108	

#### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	N/A
	No zero adj.			
4914	80.2	797	797	1.0000
	No span adj.			
4962	40.3	399	398	1.0030
4978	20.1	199	199	1.0000
4994	0	0	0	N/A
Sum of Least Squares				1.0001
New Correction Factor				1.0000

#### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0	Auto Zero	0.0
Auto Span	237.0	Auto Span	243.0
Sample Lines Connected		Sample Lines Connected	Yes

#### Percent Change

Previous Month's Calibration Correction Factor:	0.9969
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	-0.3%

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

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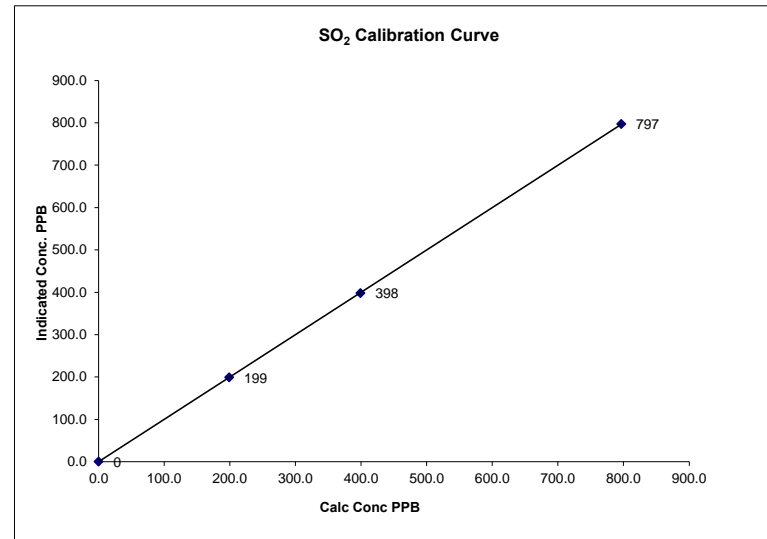
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Calibration Performed by: Waseem Ahmed

### SO2 Calibration Curve

Calibration Date	August 23, 2013
Company	Lakeland Industry & Community Association
Plant / Location	LICA Maskwa
Start Time (MST)	10:30
End Time (MST)	12:42

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0	N/A		0.999996
199	199	1.0000		1.000492
399	398	1.0030		-0.366234
797	797	1.0000		



Notes:

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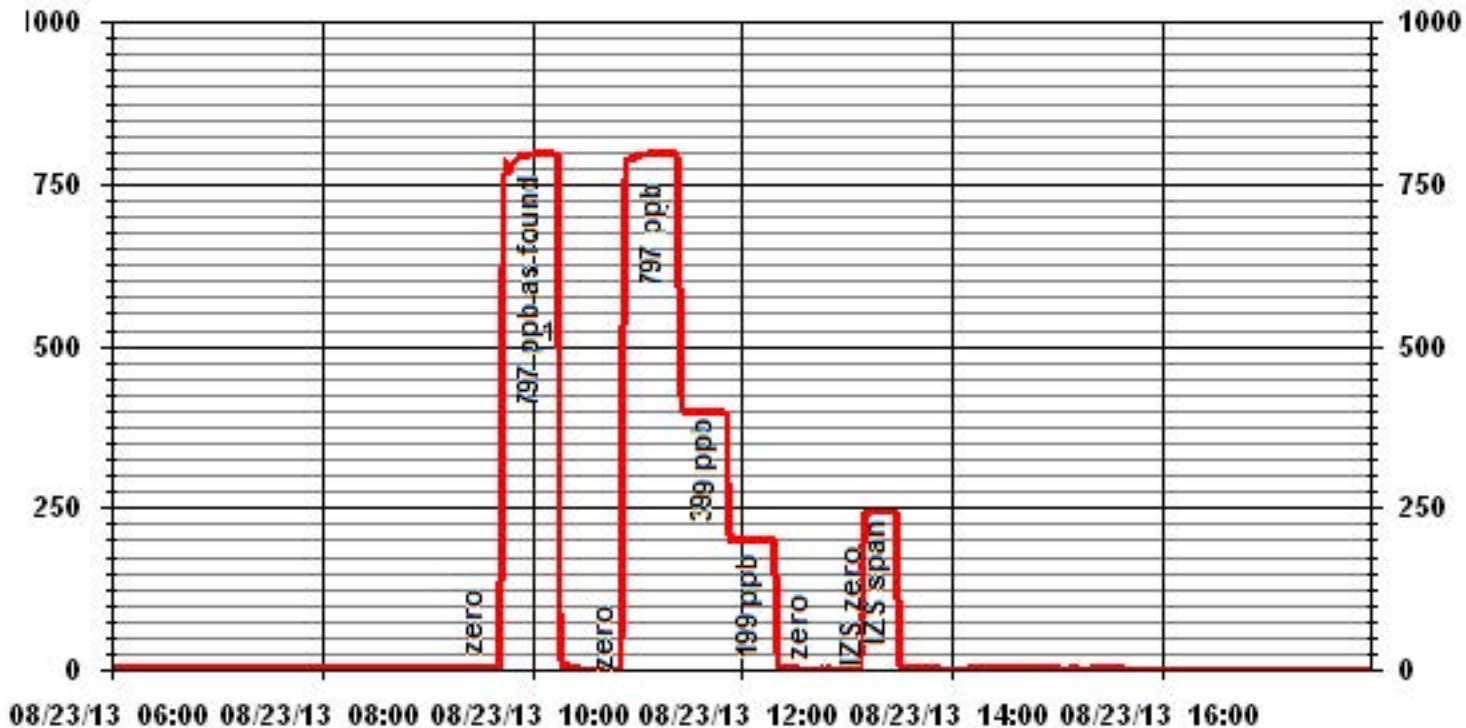


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# 01 Minute Averages



# Hydrogen Sulphide





### H2S Calibration Report

#### Station Information

Calibration Date	August 23, 2013	Previous Calibration	July 19, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	LICA Maskwa		
Start Time (MST)	10:24	End Time (MST)	12:16
Reason:	Remove calibration		
Barometric Pressure	27.73 in HG	Station Temperature	25 Deg C
Cal Gas	10.1 ppm	Gas Cyl. #	BLM00504 Cal Gas Expiry date
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts

#### Equipment Information

Analyzer Make / Model:	API 101E	S/N :	722	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	API 700	S/N :	690	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO791		
Chart Recorder Make / Model:	N/A	S/N:	S/N:	N/A	
Flow Meter:	API 700	S/N :	690		

#### Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0-100 ppb	598 ccm	33.3 Deg C
Sample Flow / Box Temp	598 ccm	33.3 Deg C	598 ccm
HVPS / Lamp Setting	675	1137	675
PMT / RxCell Temp	8.2 Deg C	50 Deg C	8.2 Deg C
Converter / IZS Temp	315 Deg C	45 Deg C	315.5 Deg C
Offset / Slope	89.3	0.85	59.6
			1.346

#### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	NA
	No zero adj.			
4955	40.0	81	81	1.0000
	No span adj.			
4977	20.1	41	40	1.0156
4983	11.9	24	24	1.0000
5000	0	0	0	NA
Sum of Least Squares				1.0020
New Correction Factor				1.0000

#### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0		N/A
Auto Span	50.0		N/A
Sample Lines Connected			NO

#### Percent Change

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

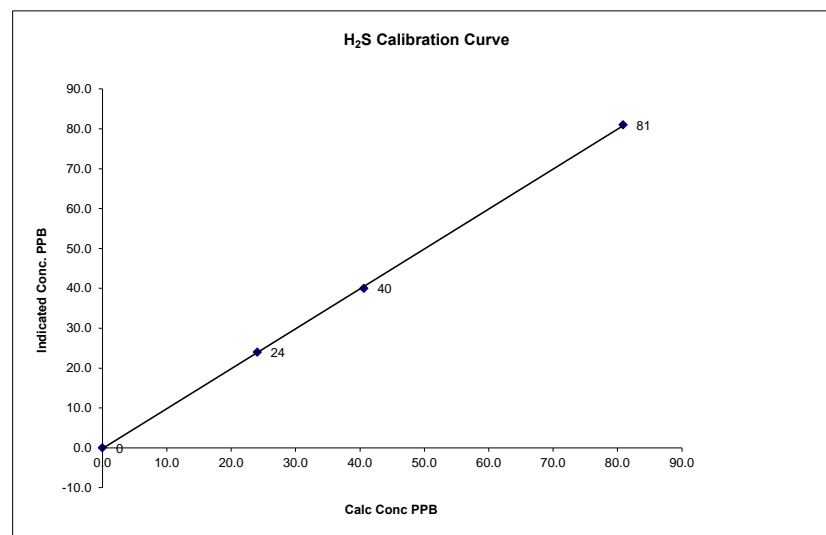
Notes:	NA : Not Applicable

Calibration Performed by: Waseem Ahmed

### H<sub>2</sub>S Calibration Curve

Calibration Date	August 23, 2013
Company	Lakeland Industry & Community Association
Plant / Location	LICA Maskwa
Start Time (MST)	10:24
End Time (MST)	12:16

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	( $\geq 0.995$ )	( $0.85$ to $1.15$ )
0	0	NA	Intercept	$\geq 0.995$	0.999907
24	24	1.0026			1.000985
41	40	1.0156			-0.178103
81	81	0.9985			



Notes:

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## H2S Calibration Report

### Station Information

Calibration Date	August 23, 2013	Previous Calibration	N/A
Company	Lakeland Industry & Community Association		
Plant / Location	LICA Maskwa		
Start Time (MST)	12:30	End Time (MST)	14:54
Reason:	Install calibration		
Barometric Pressure	27.7 in HG	Station Temperature	25 Deg C
Cal Gas	10.1 ppm	Gas Cyl. #	BLM00504 Cal Gas Expiry date
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts

### Equipment Information

Analyzer Make / Model:	API 101E	S/N :	511	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	API 700	S/N :	690	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO791		
Chart Recorder Make / Model:	N/A	S/N:	S/N:	N/A	
Flow Meter:	API 700	S/N :	690		

### Analyzer Settings

		Before Calibration		After Calibration	
Concentration Range		0-100 ppb			
Sample Flow / Box Temp	665 ccm	31.1 Deg C	661 ccm	31.6 Deg C	
HVPS / Lamp Setting	584	3617	584	3620	
PMT / RxCell Temp	7.8 Deg C	50 Deg C	7.9 Deg C	50 Deg C	
Converter / IZS Temp	315.8 Deg C	45 Deg C	315.1 Deg C	45.0 Deg C	
Offset / Slope	33.1	1.099	32.2	1.168	

### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	NA
	No zero adj.			
4955	40.0	81	81	1.0000
	No span adj.			
4977	20.1	41	40	1.0156
4983	11.9	24	23	1.0462
5000	0	0	0	NA
Sum of Least Squares				1.0047
New Correction Factor				1.0000

### IZS Calibration Data

		Before Calibration	After Calibration
Auto Zero		N/A	0.0
Auto Span		N/A	50.0
Sample Lines Connected			Yes

### Percent Change

Previous Month's Calibration Correction Factor:	N/A
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	#VALUE!

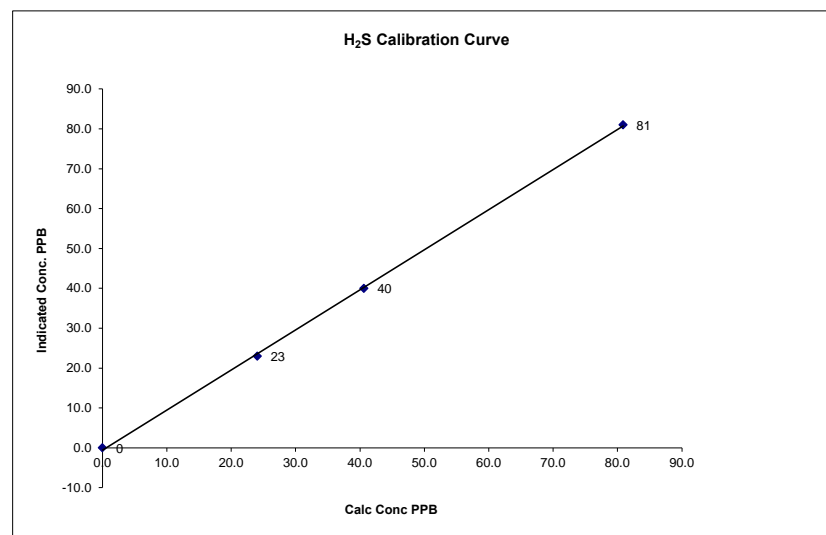
Notes:	NA : Not Applicable

Calibration Performed by: Waseem Ahmed

## H<sub>2</sub>S Calibration Curve

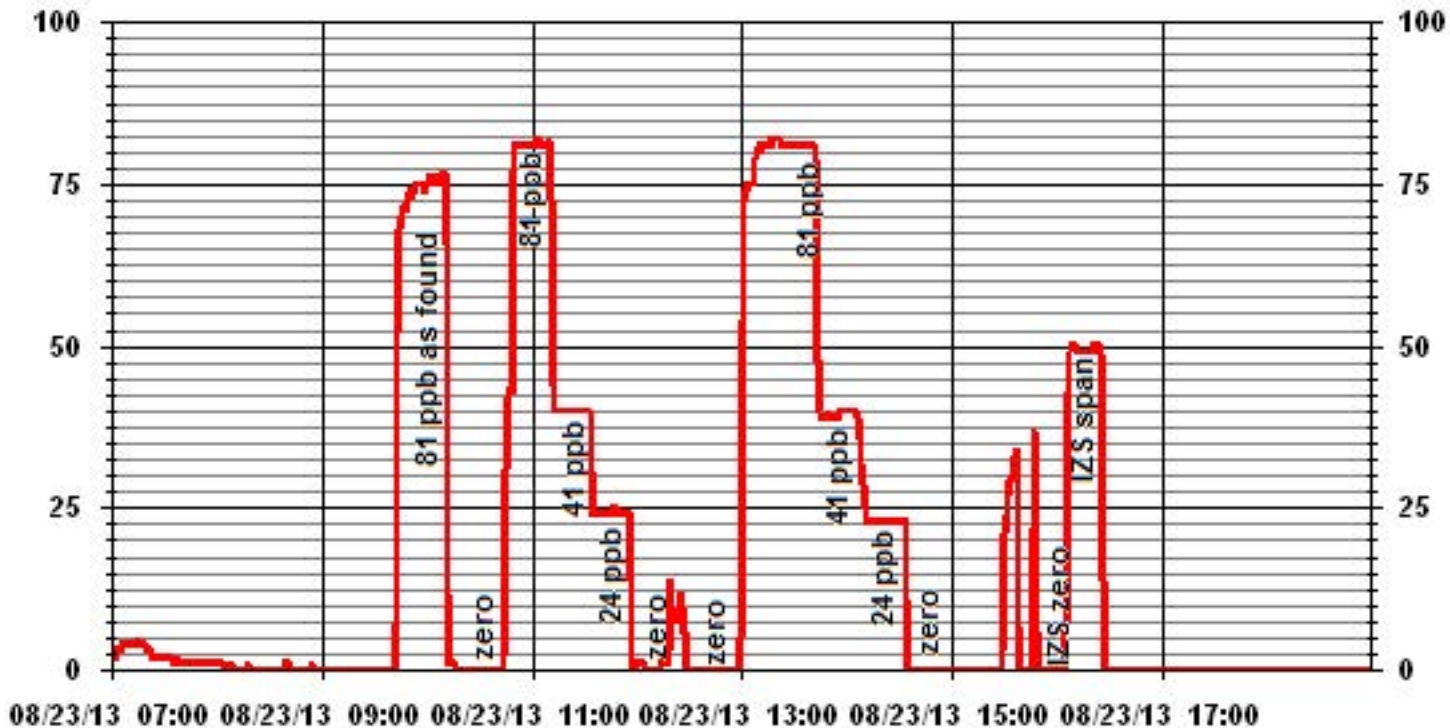
Calibration Date	August 23, 2013		
Company	Lakeland Industry & Community Association		
Plant / Location	LICA Maskwa		
Start Time (MST)	12:30	End Time (MST)	14:54

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999758
0	0	NA	Intercept	(± 3% F.S.)	-0.557280
24	23	1.0462			
41	40	1.0156			
81	81	0.9985			



**Notes:**

# 01 Minute Averages



# Total Hydrocarbons

### THC Calibration Report

Station Information			
Calibration Date:	August 23, 2013	Previous Calibration	July 17, 2013
Company:	Lakeland Industry & Community Association		
Plant / Location:	LICA Maskwa		
Start Time (MST)	14:22	End Time (MST)	16:42
Reason:	Monthly calibration		
Barometric Pressure:	27.68 in HG	Station Temperature:	25 Deg C
Calibrator:	Envionics 6100	S/N:	4760
Cal Gas Concentration:	CH4 600 PPM	C3H8 204 PPM	
	TOTAL CH4 1161.0 PPM	Gas Cyl. #	LL155310
		Cal Gas Expiry Date:	September 9, 2013
DAS make & Model:	ESC 8832	S/N :	AO791
Chart Recorder:	N/A	S/N:	N/A
Output Voltage Range:	0-10 VDC	Chart Speed:	N/A mm/hr

### Analyzer Information

Make / Model	Thermo 51C-LT	S/N :	436609738	Method	Flame Ionization
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### Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0-50 ppm		0-50 ppm	
Sample Pressure	7.5 psi		7.5 psi	
Hydrogen Pressure	8 psi		8 psi	
Air Pressure	20 psi		20 psi	

### Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2002	0.0	0.0	0.0	N/A
	No zero adj.			
2002	74.0	41.4	41.6	0.9948
2002	74.0	41.4	41.4	1.0000
2002	36.9	21.0	20.9	1.0048
2002	20.1	11.5	11.5	1.0000
2002	0.0	0.0	0.0	N/A
New Correction Factor:				1.0000

### Percent Change

Previous Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9948
Percent Change:	0.5%

### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	34.06	34.06
Sample Lines Connected		Yes

Cylinder Pressures			
Span	2200 psi	Hydrogen	850 psi
		Zero Air	32 psi

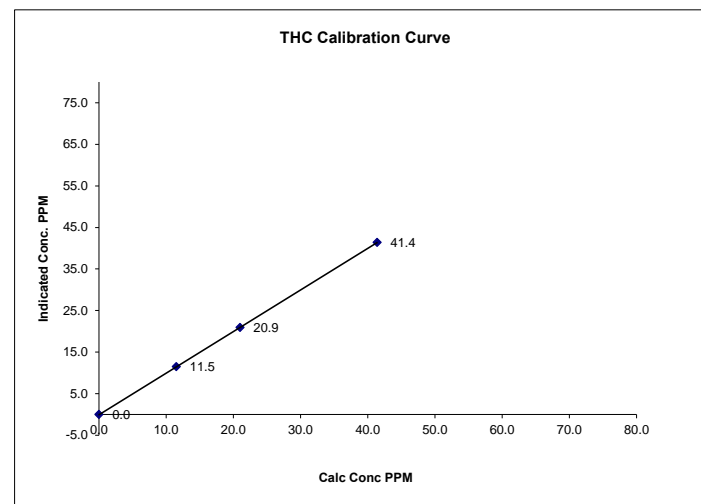
Notes:	<b>N/A : Not Applicable</b>
	Change sample filter
	Spare H2=02, Span =00

Calibration Performed by: Waseem Ahmed

### THC Calibration Curve

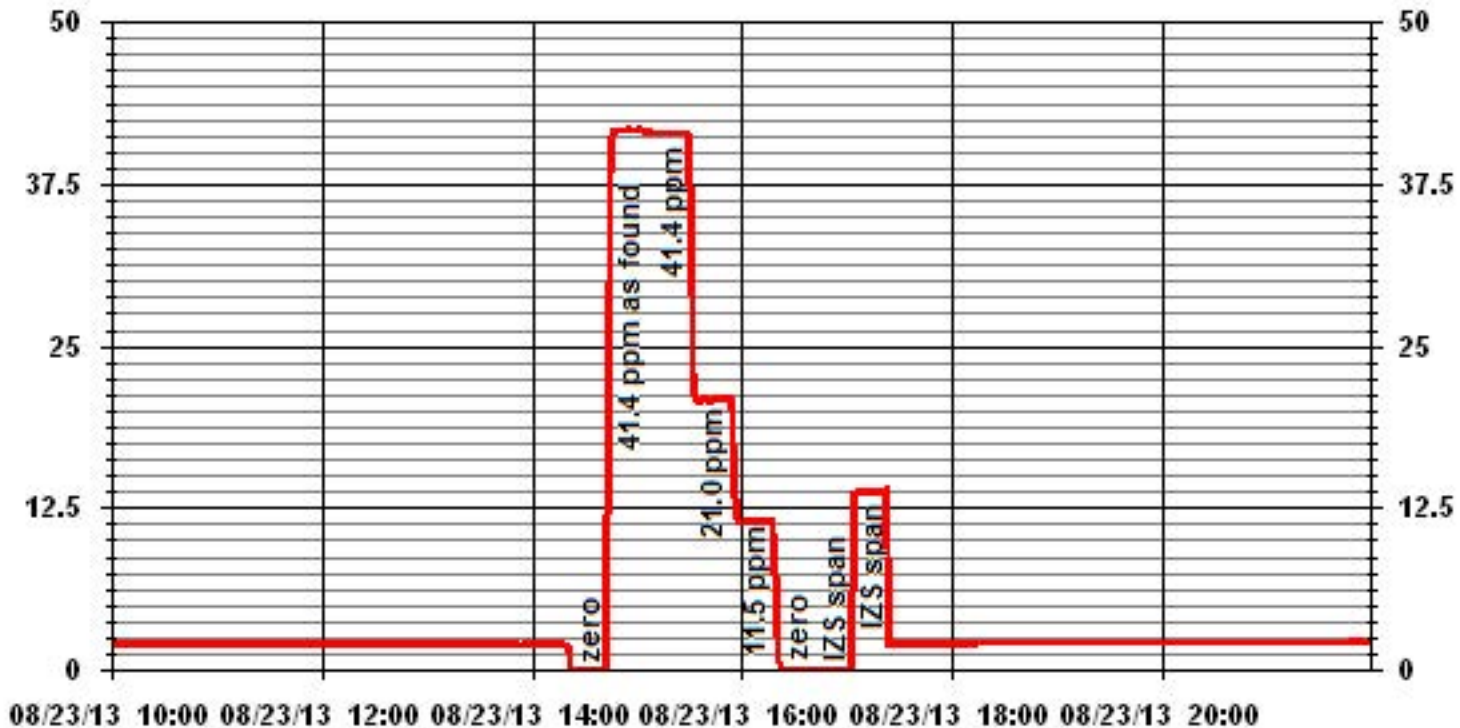
Calibration Date	August 23, 2013
Company	Lakeland Industry & Community Association
Plant / Location	LICA Maskwa
Start Time (MST)	14:22
End Time (MST)	16:42

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient (≥ 0.995)	Slope (0.85 to 1.15)	Intercept (± 3% F.S.)
0.0	0.0	N/A	0.999991	1.000247	-0.03025
11.5	11.5	1.0000			
21.0	20.9	1.0048			
41.4	41.4	1.0000			



Notes:

### 01 Minute Averages



# Nitrogen Dioxide



**NOx - NO- NO2 Calibration Report**  
**Station Information**

Calibration Date	August 23, 2013	Previous Calibration	July 17, 2013
Company	LICA	Plant/Location	LICA Maskwa
Start Time (MST)	9:21	End Time (MST)	10:14
Reason:	AF Point		
Barometric Pressure	27.73 in HG	Station Temperature	25 Deg C
Cal Gas Concentration	NOx 49.6 ppm	NO	49.2 ppm
Cal Gas Cylinder #	BAL 3031	Cal Gas Expiry date	December 29, 2016
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts

**Equipment Information**

Analyzer Make / Model:	API 200E	S/N :	594	Method:	Chemiluminescent
Calibrator Make / Model:	Enviro-nics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO791		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	Enviro-nics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range	0-1000			ppb			
Sample Flow/Conv. Temp	449 ccm	314.1 Deg C		448 ccm	314.6 Deg C		
Ozone Flow / Vacuum	79 ccm	4.7 *Hg-A		79 ccm	4.7 *Hg-A		
HVPS / A ZERO	751 Volts	15.6 MV		751 Volts	15.6 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.6 Deg C		50.0 Deg C	6.6 Deg C		
Box Temp / IZS Temp	30.8 Deg C	42.0 Deg C		30.4 Deg C	42.0 Deg C		
Offset	0.4 NOx	0.0 NO		0.4 NOx	0.0 NO		
Slope	1.109 NOx	1.100 NO		1.109 NOx	1.100 NO		
NO2 COEF / Conv Efficiency	N/A NO2	0.994		N/A NO2	0.994		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	NA	0	0	NA	0	-1	0	NA	NA
	No zero adj.									
4914	80.3	NA	797	791	NA	800	796	3	0.9969	0.9925

**Gas Phase Titration Calibration Data**

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

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 0.9969	NO= 0.9925	NO2=
				Average Converter Efficiency=		

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	547 NOx	540 NO2		547 NOx	540 NO2		
Sample Lines Connected:				YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	1.002	1.000	
Current Correction Factor Before Span Adjust	0.997	0.993	
Percent Change	0.5%	0.8%	

**Notes**

**NA : Not Applicable**

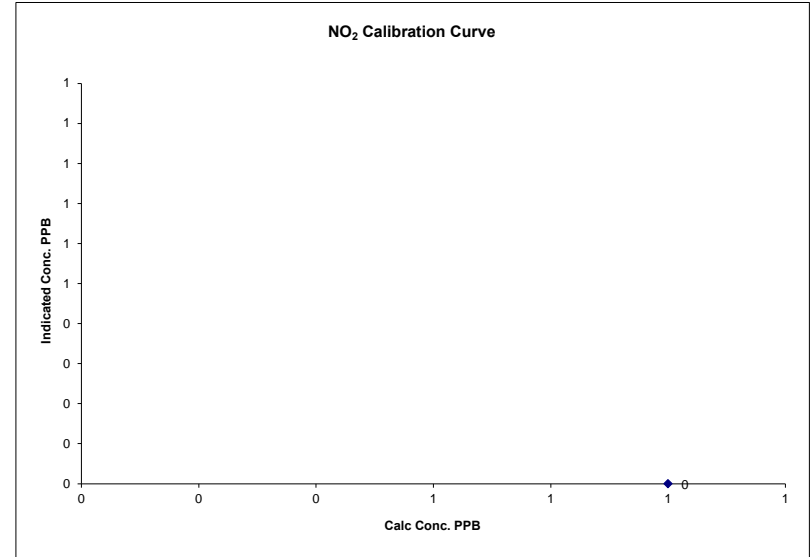
Change sample filter

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

Calibration Date	August 23, 2013
Company	LICA
Plant / Location	LICA Maskwa
Start Time (MST)	9:21
End Time (MST)	10:14

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)
3			Slope (0.85 to 1.15)
			Intercept (± 3% F.S.)



Notes:

**NOx - NO- NO2 Calibration Report**

**Station Information**

Calibration Date	August 23, 2013	Previous Calibration	July 17, 2013
Company	LICA	Plant/Location	LICA Maskwa
Start Time (MST)	10:30	End Time (MST)	14:15
Reason:	Monthly calibration		
Barometric Pressure	27.73 in Hg	Station Temperature	25 Deg C
Cal Gas Concentration	NOx 49.6 ppm	NO	49.2 ppm
Cal Gas Cylinder #	BAL 3031	Cal Gas Expiry date	December 29, 2016
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts

**Equipment Information**

Analyzer Make / Model:	API 200E	S/N :	594	Method:	Chemiluminescent
Calibrator Make / Model:	EnviroNics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO791		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range			0-1000				
Sample Flow/Conv. Temp	448 ccm	314.6 Deg C		453 ccm	316.7 Deg C		
Ozone Flow / Vacuum	79 ccm	4.7 *Hg-A		79 ccm	4.7 *Hg-A		
HVPS / A ZERO	751 Volts	15.6 MV		751 Volts	15.3 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.6 Deg C		50.0 Deg C	6.6 Deg C		
Box Temp / IZS Temp	30.4 Deg C	42.0 Deg C		30.2 Deg C	42.0 Deg C		
Offset	0.4 NOx	0.0 NO		0.4 NOx	0.0 NO		
Slope	1.109 NOx	1.100 NO		1.109 NOx	1.100 NO		
NO2 COEF / Conv Efficiency	N/A NO2	0.994		N/A NO2	0.994		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	0	0	0	NA	NA
	No zero adj.									
4914	80.2	NA	797	790	NA	798	791	6	0.9981	0.9988
	No span adj.									
4962	40.3	NA	399	396	NA	400	396	3	0.9980	1.0000
4978	20.1	NA	199	197	NA	201	199	1	0.9904	0.9923
4994	0.0	NA	0	0	NA	0	0	-1	NA	NA

**Gas Phase Titration Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4920	80.3	NA	797	790	NA	798	792	5	NA	NA
4920	80.3	600	797	NA	529	796	268	527	1.0038	99.62%
	No adj.									
4920	80.3	300	797	NA	268	797	529	268	1.0000	100.00%
4920	80.3	120	797	NA	110	798	687	110	1.0000	100.00%

Linearity	Sum of Least Squares	NOx= 0.998	NO= 0.999	NO2= 1.003
OK?	Correction Factors:	NOx= 0.9981	NO= 0.9988	NO2= 1.0038
	Average Converter Efficiency=	99.87%		

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	547 NOx	540 NO2		547 NOx	540 NO2		
	Sample Lines Connected:			YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	1.002	1.000	1.000
Current Correction Factor Before Span Adjust	0.998	0.999	1.004
Percent Change	0.4%	0.1%	-0.4%

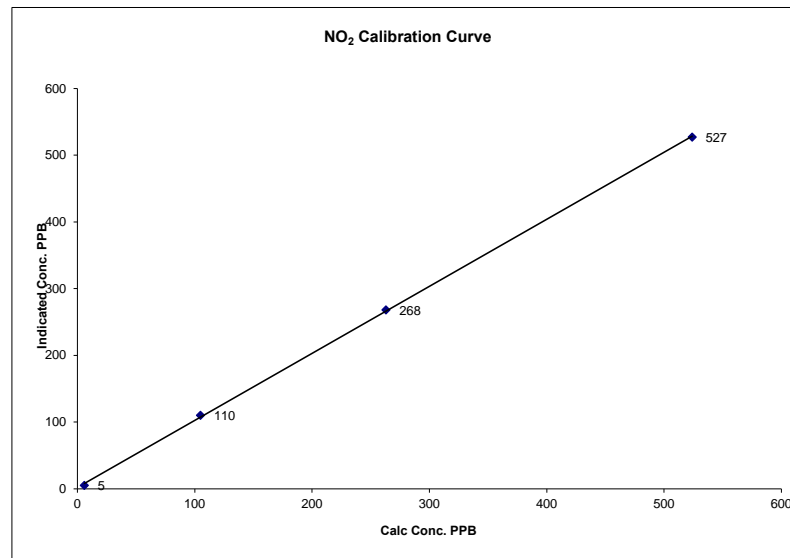
Notes: **NA : Not Applicable**

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

Calibration Date	August 23, 2013
Company	LICA
Plant / Location	LICA Maskwa
Start Time (MST)	10:30
End Time (MST)	14:15

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999866
6	5	NA	Intercept	(± 3% F.S.)	1.95667
105	110	0.9545			
263	268	0.9813			
524	527	0.9943			

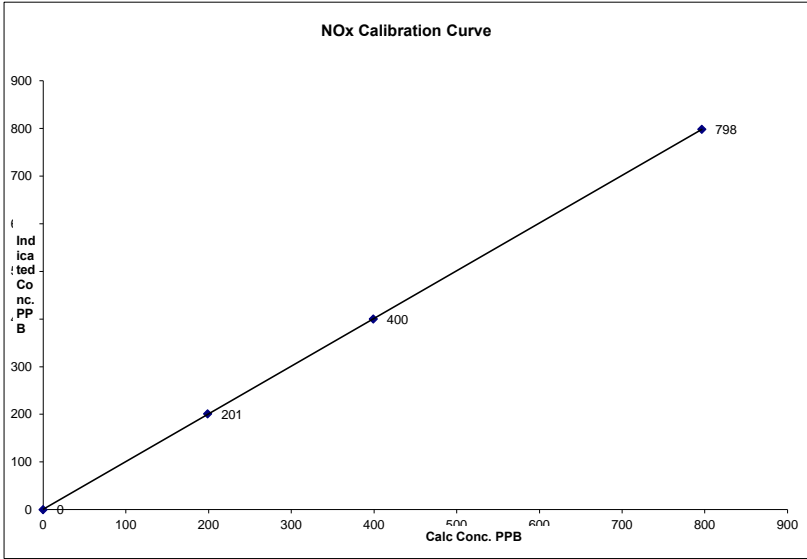


Notes:

**NOx Calibration Curve**

Calibration Date	August 23, 2013		
Company	LICA		
Plant / Location	LICA Maskwa		
Start Time (MST)	10:30	End Time (MST)	14:15

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999995
0	0	NA	Slope (0.85 to 1.15)	1.001211
199	201	0.9904	Intercept (± 3% F.S.)	0.63302
399	400	0.9980		
797	798	0.9981		

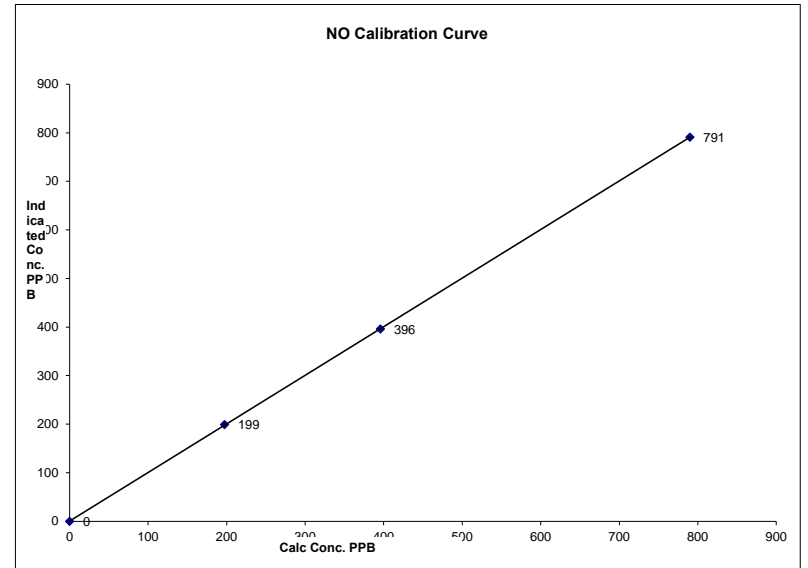


Notes:

**NO Calibration Curve**

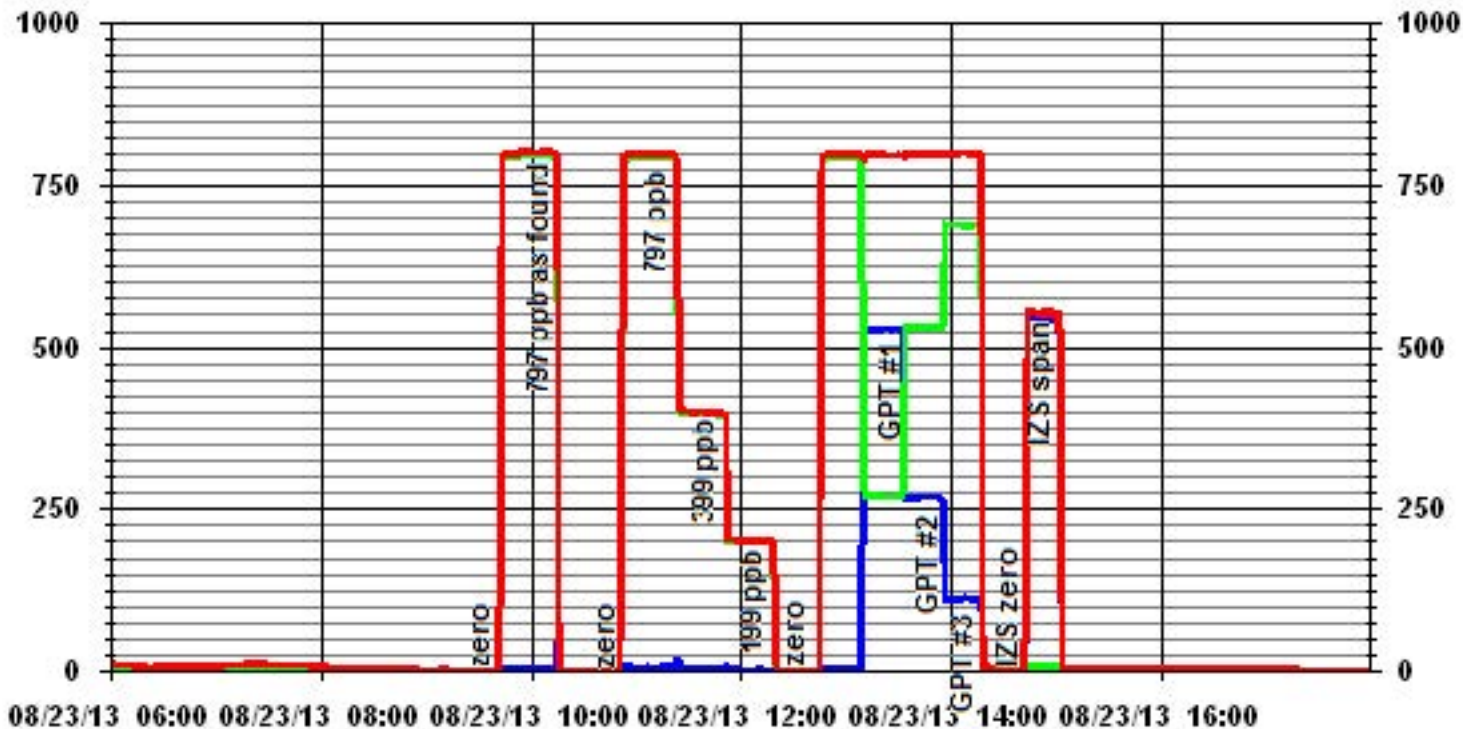
Calibration Date	August 23, 2013		
Company	LICA		
Plant / Location	LICA Maskwa		
Start Time (MST)	10:30	End Time (MST)	14:15

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999995
0	0	NA	Slope (0.85 to 1.15)	1.000528
197	199	0.9923	Intercept (± 3% F.S.)	0.43477
396	396	1.0000		
790	791	0.9988		



Notes:

### 01 Minute Averages



— LICA30 IIOX\_ PPB

— LICA30 IIO\_ PPB

— LICA30 IIO2\_ PPB

# Lakeland Industry & Community Association

St. Lina Monitoring Site  
Ambient Air Monitoring  
Data Report  
For  
August 2013

Prepared By:



September 25, 2013

# Lakeland Industry & Community Association

## St. Lina

### Ambient Air Monitoring

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## Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: St. Lina  
Data Period: August 2013

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:

- CAL SOP-00211
- CAL SOP-00209
- CAL SOP-00213
- CAL SOP-00214
- CAL SOP-00208
- CAL SOP-00215

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



# MONTHLY CONTINUOUS DATA SUMMARY

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – ST. LINA

### Continuous Ambient Monitoring – August 2013

LICA ST. LINA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						OBJECTIVES				EXCEEDENCES		MONTHLY AVERAGE	
PARAMETER	1-HR	24-HR	1-HR	24-HR	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY		
SO2 (PPB)	172	48	0	0	0.86	3	VAR	VAR	VAR	VAR	1.9	10	98.8
H2S (PPB)	10	3	0	0	1.06	3	4, 9	VAR	VAR	VAR	1.9	9	99.6
THC (PPM)	-	-	-	-	2.13	3.2	10, 15	VAR	VAR	VAR	2.5	15	99.7
OZONE (PPB)	82	-	0	-	28.1	48	22, 23	16, 0	11, 8.9	188(S), 325(NW)	38.8	24	44.8
NOx (PPB)	-	-	-	-	1.27	8.0	28	4	8.6	69(ENE)	2.2	15, 16	99.7
NO (PPB)	-	-	-	-	0.28	2.2	16	9	2.2	281(W)	0.8	16	99.7
NO <sub>2</sub> (PPB)	159	-	0	-	0.99	7.9	28	4	8.6	69(ENE)	1.9	28	99.7
PM2.5 (ug/m3)	-	30	-	0	3.52	10	25, 31	VAR	VAR	VAR	6.4	25	35.8
TEMPERATURE (DEGREE C)	-	-	-	-	17.72	27.3	28	14	4.9	69(ENE)	21.2	14, 15	99.7
BP (MILLIBAR)	-	-	-	-	928	937	8, 9	VAR	VAR	VAR	935.9	8	99.7
RH (%)	-	-	-	-	68.30	92	17	VAR	VAR	VAR	84.2	30	99.7
PRECIPITATION (MM)	-	-	-	-	0.09	11.7	5	11	5.3	301(WNW)	14.6	6	100.0
VECTOR WS (KPH)	-	-	-	-	8.06	25.8	20	14	-	278(W)	15.5	20	99.7
VECTOR WD (DEGREES)	-	-	-	-	164(SSE)	-	-	-	-	-	-	-	99.7

VAR-VARIOUS

# General Monthly Summary

## Equipment Operation

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

### AQM STATION – LICA – St. Lina

**A trailer audit was performed by AESRD on August 19<sup>th</sup>.**

#### Sulphur Dioxide (PPB)

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

The analyzer was working well throughout the month. Following the as found points check on August 1<sup>st</sup>, the zero air scrubber was recharged. A multi-points calibration was performed after. The inlet filter was changed before the as found points check was started. As the SO<sub>2</sub> channel and the O<sub>3</sub> channel are on the same relay. The SO<sub>2</sub> channel was put in the Maintenance mode when the O<sub>3</sub> analyzer was under repair on August 19<sup>th</sup> between hour 14 and hour 19. Data between hour 9 and hour 10 on August 30<sup>th</sup> are missing due to a power failure. Data was corrected using daily zero information.

#### Hydrogen Sulphide (PPB)

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

The analyzer was working well throughout the month. Following the as found points check on August 1<sup>st</sup>, the SO<sub>2</sub> scrubber material was renewed, the sinter filters were changed and the zero air scrubber was recharged. The analyzer was allowed time to stabilize. The inlet filter was changed before the as found points check was started on August 2<sup>nd</sup>. A UV lamp calibration was performed prior an as found points check. A post maintenance calibration was then performed. Data between hour 9 and hour 10 on August 30<sup>th</sup> are missing due to a power failure. Data was corrected using daily zero information.

# General Monthly Summary

## AQM STATION – LICA – St. Lina

### Total Hydrocarbon (PPM)

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

No operational issue was observed this month. The monthly calibration was performed on August 2<sup>nd</sup>. The inlet filter was changed before the monthly calibration was started. Data between hour 9 and hour 10 on August 30<sup>th</sup> are missing due to a power failure. Data was corrected using daily zero information.

### Nitrogen Dioxide (PPB)

Analyzer make / model - API 200E, S/N: 592

The analyzer did not span on August 1<sup>st</sup>. An as found points check was performed on August 1<sup>st</sup>, and the result was within the acceptable range. The pump for the zero/span system was rebuilt on August 1<sup>st</sup>. No data was invalidated due to this issue. A 3-points calibration was performed on August 1<sup>st</sup>, and the GPT points calibration was performed on August 2<sup>nd</sup>. The analyzer spanned low on August 23<sup>rd</sup> due to the permeation tube depleting. Following an as found points check was performed on August 26<sup>th</sup>, the perm tube was replaced. Time was allowed for the perm tube to condition. The expected span value was adjusted on September 1<sup>st</sup>. This event did not affect data quality. Data between hour 9 and hour 10 on August 30<sup>th</sup> are missing due to a power failure. Data was corrected using daily zero information.

### Ozone (PPB)

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

The monthly calibration was performed on August 2<sup>nd</sup>. The inlet filter was changed before the monthly calibration was started. During the trailer audit on August 19<sup>th</sup>, it was found that the analyzer could not get a good result for the zero point check. After the investigation performed on August 19<sup>th</sup>, it was concluded that the problem was not with the analyzer, but a leak in the sample line between the analyzer and the manifold. The leak in the sample line is undetectable during the daily zero and span. The calibration zero performed on August 2<sup>nd</sup> was stable, indicating there was no leak in the sample line at that time. Therefore, data was invalidated from the period of August 2<sup>nd</sup> thru August 19<sup>th</sup> when the leak was rectified. A total of 409 hours of data was invalidated due to this event. Data between hour 9 and hour 10 on August 30<sup>th</sup> are missing due to a power failure. Data was corrected using daily zero information.

# General Monthly Summary

## AQM STATION – LICA – St. Lina

### Particulate Matter 2.5 (UG/M3)

Analyzer make / model –R&P Teom 1400a, S/N: 20001

The Teom unit did not pass the flow audit on July 15<sup>th</sup> and was removed from the trailer and sent back to the manufacturer for repair on July 16<sup>th</sup>. A temporary Teom 1400a unit was installed on August 19<sup>th</sup> following an installation audit. 449 hours of data between August 1<sup>st</sup> at hour 0 and August 19<sup>th</sup> at hour 16<sup>th</sup> were invalidated due to this issue. Data between hour 9 and hour 10 on August 30<sup>th</sup> are missing due to a power failure. The channel configuration on the datalogger system went missing after the power failure. The channel was re-configured on August 31<sup>st</sup>. 24 hours of data is missing due to this issue. 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. A total of 3 hours of PM 2.5 data was invalidated as the data were below –3 ug/m3.

### Temperature (Degree C)

Analyzer make / model – Met One 060

The temperature sensor was working well throughout the month. Data between hour 9 and hour 10 on August 30<sup>th</sup> are missing due to a power failure.

### Barometric Pressure (Millibar)

Analyzer make / model - Met One 092

The BP sensor was working well throughout the month. Data between hour 9 and hour 10 on August 30<sup>th</sup> are missing due to a power failure.

# General Monthly Summary

## AQM STATION – LICA – St. Lina

### Relative Humidity (%)

Analyzer make / model - Met One 083

The RH sensor was working well throughout the month. Data between hour 9 and hour 10 on August 30<sup>th</sup> are missing due to a power failure.

### Precipitation (MM)

Analyzer make / model - Met One 387

No issues were recorded this month.

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

System make / model –MetOne 50.5H Sonic, S/N: H12635

The wind system is reported as vector wind speed and vector wind direction. The last wind system calibration was performed on August 12<sup>th</sup>, 2012 by the manufacturer.

No issues were recorded this month. Data between hour 9 and hour 10 on August 30<sup>th</sup> are missing due to a power failure.

### Datalogger

System make / model - ESC 8832, S/N: AO717

Software make/version - ESC v 5.51a

The station is connected to a modem to allow for daily polling of the station.

### Trailer

No issue was recorded this month.

# Continuous Monitoring

# Monthly Summaries, Graphs & Wind Roses

# Sulphur Dioxide



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

AUGUST 2013

SULPHUR DIOXIDE (SO<sub>2</sub>) 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	S	0	0	0	0	C	C	C	C	C	C	1	1	1	1	0	1	1	1	1	1	1	0.5	24
2	1	1	1	S	1	1	1	1	1	1	1	1	1	1	Y	0	0	0	0	0	1	1	1	1	1	1	0.8	23
3	1	1	S	0	0	0	0	0	0	1	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
4	1	S	1	1	1	1	1	2	2	2	2	1	1	2	2	2	2	1	0	1	1	1	2	2	2	2	1.4	24
5	S	1	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	1	1	S	1	0.5	24	
6	1	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	0.3	24	
7	1	1	2	2	1	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	S	1	1	2	1.3	24	
8	1	1	1	1	1	2	1	1	1	1	1	1	1	0	0	0	0	0	1	0	S	1	2	2	2	0.9	24	
9	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	S	2	2	2	2	2	1.7	24	
10	2	2	2	2	3	2	3	3	2	2	2	2	2	2	2	2	2	2	S	1	1	1	1	1	3	1.9	24	
11	1	1	1	2	1	1	2	1	2	1	1	2	1	1	1	1	S	1	1	1	1	1	1	1	2	1.2	24	
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1.0	24	
13	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	S	1	1	1	1	1	2	2	2	2	1.2	24	
14	2	2	2	2	2	2	2	2	2	2	1	1	1	2	S	1	1	1	1	1	1	1	1	2	2	1.5	24	
15	2	2	2	2	2	2	2	2	2	2	2	2	2	S	0	0	0	0	0	1	1	1	1	1	2	1.3	24	
16	1	1	1	1	1	1	2	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
17	1	1	1	1	1	1	1	1	1	2	3	S	1	1	1	1	1	1	1	1	1	1	1	1	3	1.1	24	
18	1	1	1	1	1	1	1	1	1	1	S	1	1	2	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
19	1	1	1	1	1	2	1	0	0	C	C	C	0	1	Y	Y	Y	Y	Y	Y	Y	0	0	0	1	0.7	18	
20	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	
21	0	0	0	0	0	0	0	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	24	
22	1	1	1	1	1	1	S	1	1	1	1	2	2	1	1	2	2	2	2	2	2	3	2	2	3	1.5	24	
23	2	2	2	2	3	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.3	24	
24	1	1	1	1	S	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	1	0	0	1	0.8	24	
25	1	0	0	S	0	1	1	1	1	1	1	1	2	2	1	0	0	0	0	0	0	0	0	0	2	0.6	24	
26	0	0	S	1	1	1	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
27	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.1	24	
28	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	
29	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	
30	0	0	0	0	0	0	0	0	0	P	P	1	0	1	1	1	1	0	1	0	0	S	0	0	1	0.3	22	
31	0	1	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0.3	24	
HOURLY MAX	2	2	2	2	3	2	3	3	2	2	3	2	2	2	2	2	2	2	2	2	2	3	2	2				
HOURLY AVG	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.1	1.0	1.0	0.9	0.9	0.7	0.7	0.7	0.7	0.6	0.6	0.7	0.8	0.9	0.9				

STATUS FLAG CODES

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

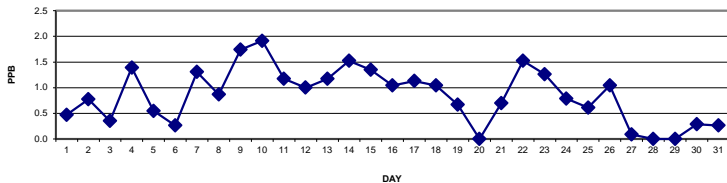
OBJECTIVE LIMIT:

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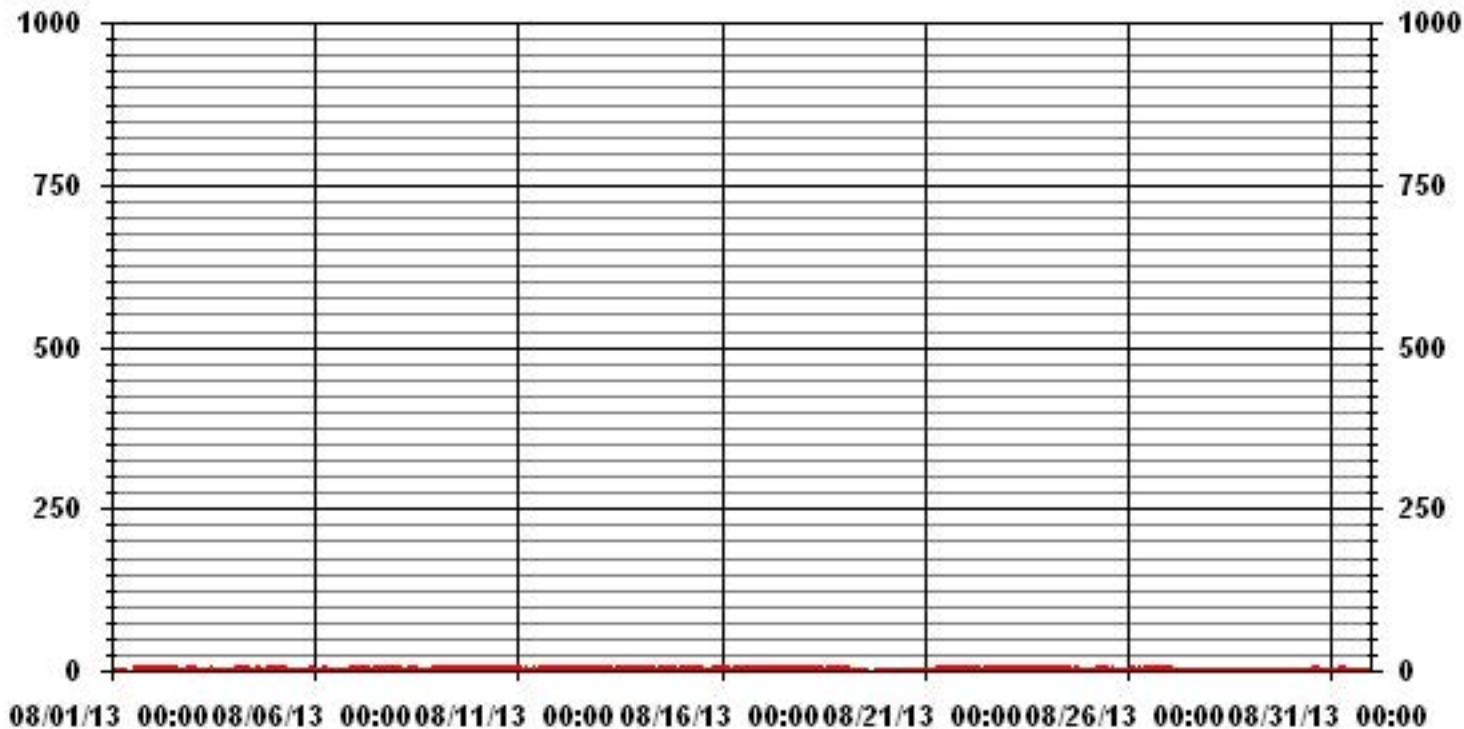
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	472
MAXIMUM 1-HR AVERAGE:	3 PPB @ HOUR(S) VAR ON DAY(S) VAR
MAXIMUM 24-HR AVERAGE:	1.9 PPB ON DAY(S) 10
IZS CALIBRATION TIME:	32 HRS OPERATIONAL TIME: 735 HRS
MONTHLY CALIBRATION TIME:	9 HRS AMD OPERATION UPTIME: 98.8 %
STANDARD DEVIATION:	0.70 MONTHLY AVERAGE: 0.86 PPB

24 HOUR AVERAGES FOR AUGUST 2013



### 01 Hour Averages



— LICA31 SO2\_ PPB

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

## SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
DAY																													
1	1	1	1	1	S	1	1	1	C	C	C	C	C	C	C	2	2	2	2	2	2	2	2	2	2	2	1.6	24	
2	2	2	2	S	2	2	2	2	2	2	2	2	2	Y	Y	1	1	1	1	1	1	1	1	1	1	2	3	1.8	22
3	3	2	S	1	1	1	1	1	1	3	4	3	3	1	1	0	1	1	1	1	1	1	1	1	2	4	1.5	24	
4	2	S	2	2	2	2	2	3	3	3	3	2	2	4	4	3	3	2	2	2	2	2	3	3	4	2.5	24		
5	S	2	2	2	2	2	2	2	2	2	1	1	2	P	0	0	0	0	P	2	1	2	2	S	2	1.5	22		
6	P	2	1	1	1	2	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	S	2	2	1.3	23		
7	2	2	2	3	3	3	2	3	3	3	2	3	2	2	2	2	2	2	2	2	2	2	S	2	2	3	2.3	24	
8	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	1	1	1	2	2	S	2	P	2	3	1.9	23		
9	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	2	2	2	2	S	3	3	3	3	3	2.8	24		
10	3	3	3	4	P	3	4	4	3	3	3	3	3	3	3	3	3	3	S	2	2	2	2	2	4	2.9	23		
11	2	2	3	3	3	2	2	3	3	P	3	3	2	2	2	2	2	S	2	2	2	2	2	2	3	2.3	23		
12	2	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	2.0	24	
13	2	2	2	2	2	2	3	3	3	3	2	2	2	2	2	S	2	2	2	2	2	2	3	3	2	3	2.3	24	
14	3	3	3	3	3	3	3	3	3	3	2	2	3	2	S	2	2	2	2	2	2	2	2	3	3	2.5	24		
15	3	2	3	3	3	3	3	3	3	3	3	3	S	1	1	1	1	1	1	2	2	2	2	3	2.3	24			
16	2	2	2	2	2	2	3	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	3	2.0	24			
17	2	2	2	2	2	2	2	2	2	5	5	S	2	2	2	2	2	2	2	2	2	2	2	2	5	2.3	24		
18	2	2	2	2	2	2	2	2	2	2	S	2	2	3	3	2	2	2	2	2	2	2	2	2	3	2.1	24		
19	2	P	2	2	2	P	2	1	1	C	C	C	1	Y	Y	Y	Y	Y	Y	Y	1	1	1	1	2	1.5	15		
20	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
21	1	1	1	0	1	1	1	S	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.6	24		
22	2	2	2	2	2	S	2	2	2	2	3	3	2	2	2	3	3	3	3	3	3	4	3	3	4	2.5	24		
23	3	3	3	4	5	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	5	2.3	24		
24	2	2	2	2	S	2	2	1	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	1	2	1.7	24		
25	1	1	1	S	1	2	2	2	2	2	2	2	3	3	2	2	1	1	1	1	1	1	1	1	3	1.6	24		
26	1	1	S	2	2	2	3	3	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2.0	24			
27	2	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	2	1.1	24		
28	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1.0	24		
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	S	1	2	1.0	24	
30	1	1	1	1	1	1	1	1	1	P	P	4	1	2	2	2	2	1	1	1	1	S	1	1	4	1.3	22		
31	1	2	1	1	1	2	1	2	2	1	1	1	2	1	1	1	1	1	1	1	1	S	1	1	2	1.2	24		
HOURLY MAX	3	3	3	4	5	3	4	4	3	5	5	4	3	4	4	3	3	3	3	3	3	3	4	3	3				
HOURLY AVG	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.2	2.1	2.0	1.9	1.9	1.8	1.7	1.7	1.6	1.6	1.7	1.8	1.8	1.9	1.9					

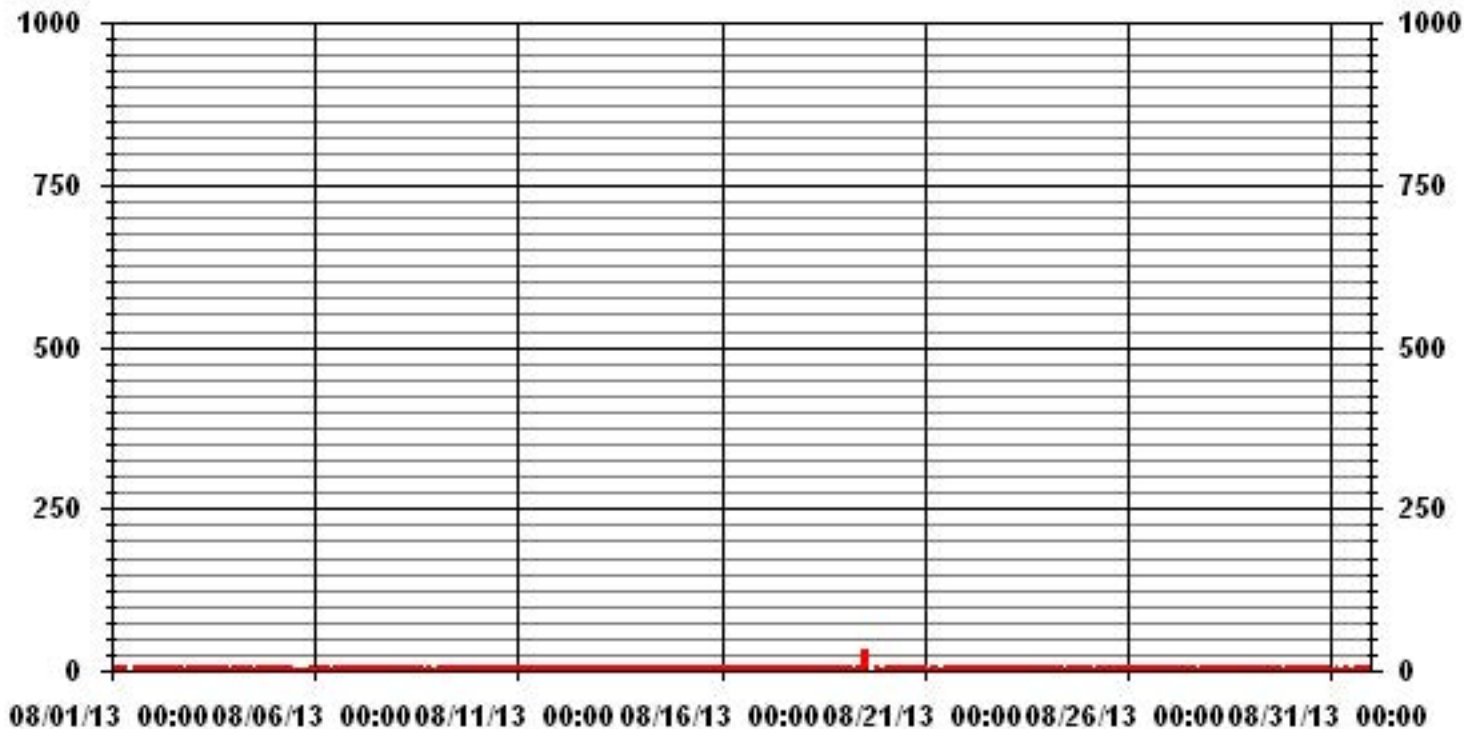
**STATUS FLAG CODES**

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:	5	PPB	@ HOUR(S)	9, 10	ON DAY(S)	17
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	725	HRS	
MONTHLY CALIBRATION TIME:	10	HRS				
STANDARD DEVIATION:	0.76					

### 01 Hour Averages



LICA31  
 SO2\_ / WDR Joint Frequency Distribution (Percent)

August 2013

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	2.73	2.73	4.89	9.36	8.64	8.93	6.05	9.65	11.23	6.34	4.61	4.46	6.91	4.32	5.33	3.74	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.73	2.73	4.89	9.36	8.64	8.93	6.05	9.65	11.23	6.34	4.61	4.46	6.91	4.32	5.33	3.74	

Calm : .00 %

Total # Operational Hours : 694

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	19	19	34	65	60	62	42	67	78	44	32	31	48	30	37	26	694
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	19	19	34	65	60	62	42	67	78	44	32	31	48	30	37	26	

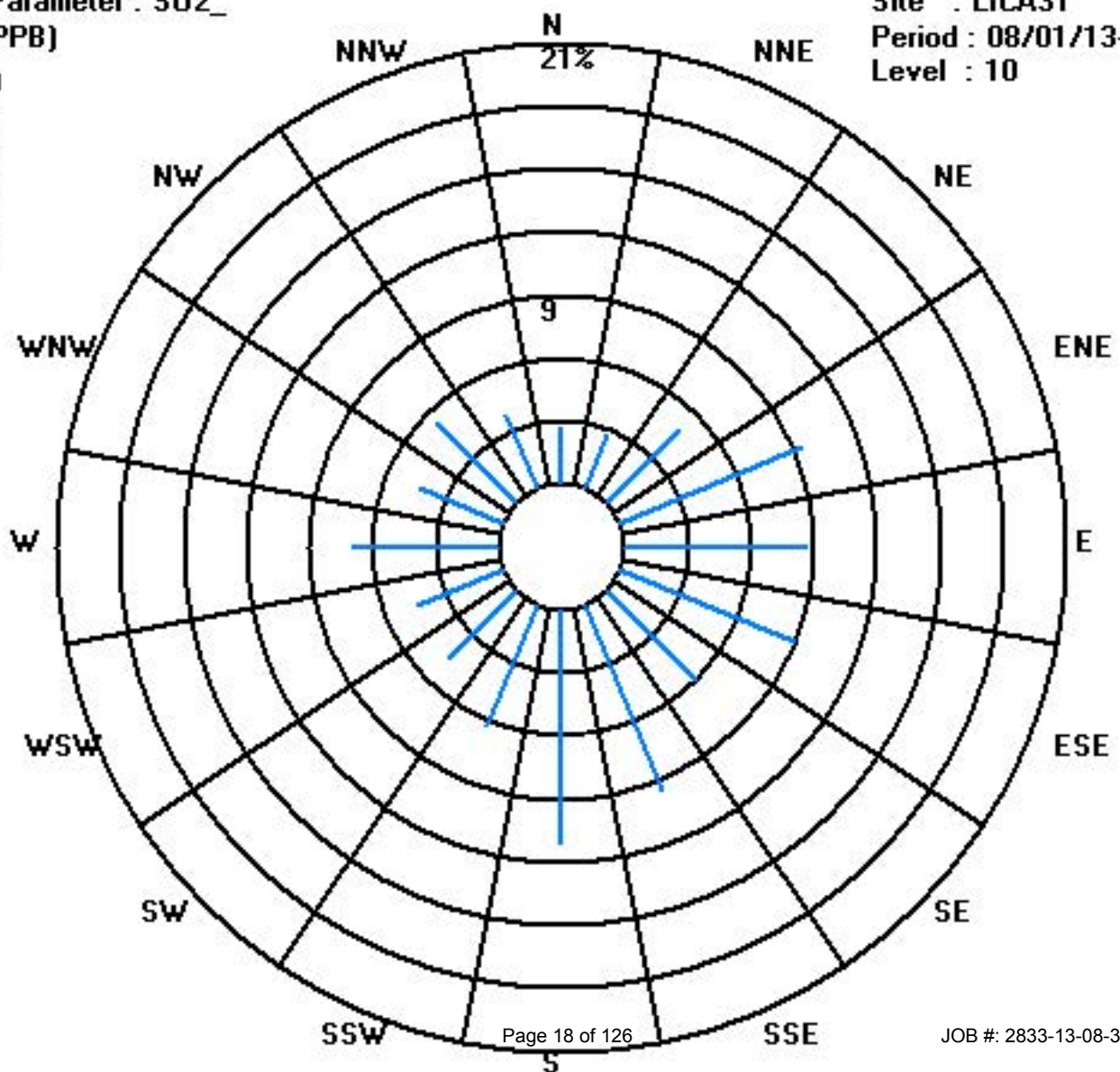
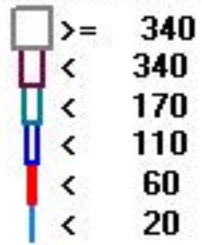
Calm : .00 %

Total # Operational Hours : 694

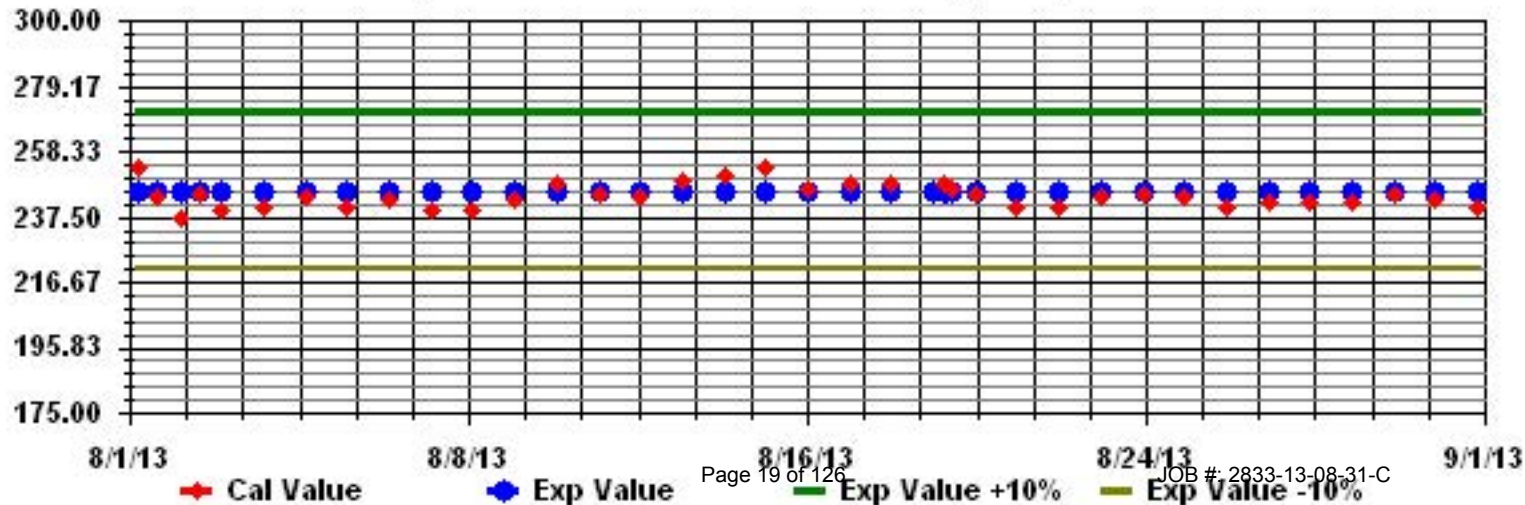
Class Limits (PPB)

Period : 08/01/13-08/31/13

Level : 10



Calibration Graph for Site: LICA31 Parameter: S02\_ Sequence: S02 Phase: SPAN



# Hydrogen Sulphide



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

## HYDROGEN SULPHIDE (H<sub>2</sub>S) 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	0:00	DAILY 24-HOUR			
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
DAY	1	1	1	1	1	S	1	1	1	1	1	1	C	C	Y	0	0	0	0	0	0	0	0	0	0	0	1	0.5	23	
2	0	0	0	0	S	1	1	2	1	2	1	1	1	C	C	C	C	0	1	1	1	1	1	1	1	1	2	0.9	24	
3	1	1	S	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24	
4	1	S	2	2	2	3	3	3	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	3	1.5	24		
5	S	0	0	0	0	2	1	0	0	1	1	0	0	0	1	1	1	1	1	1	1	1	1	0	S	2	0.6	24		
6	1	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	1	0.0	24	
7	0	1	1	1	1	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	0.4	24	
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	2	2	1.1	24		
9	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	1	1	1	1	3	1.9	24		
10	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	0	2	0.8	24	
11	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	S	1	1	1	1	1	1	1	1	0.8	24	
12	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	2	0.7	24	
13	0	1	1	0	1	1	1	1	1	1	1	0	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
14	0	1	1	1	2	2	2	2	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	2	1.1	24	
15	1	1	2	1	2	2	1	2	2	2	2	2	2	2	S	2	2	2	2	1	1	1	1	1	1	1	2	1.6	24	
16	1	1	1	1	1	1	1	1	2	2	2	2	2	1	S	1	1	2	2	1	1	1	1	1	1	1	2	1.3	24	
17	1	2	2	2	1	2	2	1	1	1	1	1	S	1	1	1	1	1	1	1	2	2	1	1	1	2	1.3	24		
18	1	2	2	1	2	2	2	2	2	2	2	S	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1.4	24	
19	2	2	2	2	1	2	2	2	2	1	C	C	C	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.3	24	
20	1	1	1	1	1	1	2	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
21	1	1	1	1	1	1	1	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
22	0	1	1	1	2	2	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
23	1	2	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	2	1.1	24		
24	1	2	2	2	S	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1.3	24		
25	2	2	2	S	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.5	24	
26	1	0	S	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
27	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	1	1.0	24	
28	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	S	1	1.0	24	
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1.0	24	
30	1	1	1	1	1	1	2	1	1	P	P	2	1	2	2	2	2	2	2	2	2	2	S	2	2	2	2	1.6	22	
31	2	2	2	2	2	2	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	S	2	2	2	2	2	1.5	24	
HOURLY MAX		2	2	2	2	2	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
HOURLY AVG		0.9	1.1	1.2	1.1	1.3	1.4	1.3	1.3	1.2	1.1	1.1	1.0	1.0	1.0	0.9	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0			

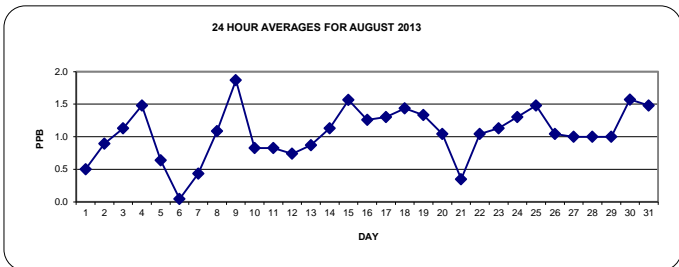
### STATUS FLAG CODES

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

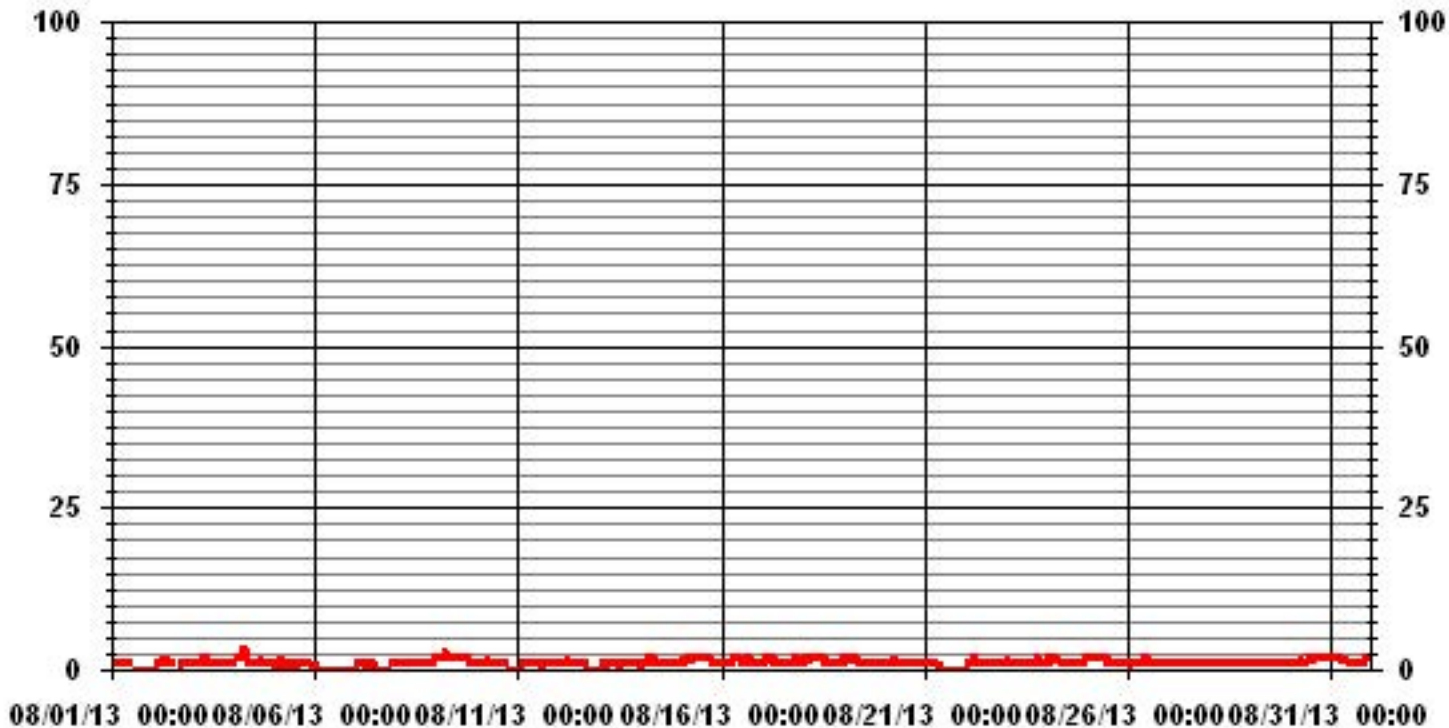
OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: 1-HR 10 PPB 24-HR 3 PPB

### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF 24-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	605				
MAXIMUM 1-HR AVERAGE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	1.9	PPB			9
				VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	741	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	99.6	%
STANDARD DEVIATION:	0.58		MONTHLY AVERAGE:	1.06	PPB



# 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

## 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	24:00	DAILY	24-HOUR	RDGS.
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.		
1		1	1	1	1	S	1	1	1	1	1	C	C	C	Y	Y	0	0	1	0	0	0	0	0	0	1	0.6	22	
2		0	1	1	S	1	2	2	2	2	2	2	C	C	C	C	C	C	1	1	1	1	1	1	1	2	1.3	24	
3		1	2	S	2	1	2	2	2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	2	1.4	24	
4		1	S	2	2	3	3	4	3	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2.1	24	
5		S	2	0	2	3	2	1	1	1	1	1	1	1	P	1	1	1	1	P	1	1	1	1	S	3	1.2	21	
6		P	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1.0	23	
7		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	S	1	1	1	1	0.9	24	
8		1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	S	2	P	2	2	1.3	23	
9		2	2	2	2	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	S	1	1	1	1	3	2.0	24	
10		1	2	1	1	P	2	2	2	2	1	2	2	1	1	1	2	2	2	S	1	0	1	0	0	2	1.3	23	
11		0	1	1	1	1	1	2	1	1	P	1	1	1	1	1	1	1	S	2	2	1	2	2	2	2	1.2	23	
12		1	1	1	1	2	2	2	2	2	2	2	1	2	2	2	S	1	1	0	0	0	0	0	0	2	1.3	24	
13		1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1.0	24	
14		1	1	1	2	2	2	2	2	2	2	1	2	2	S	2	1	1	1	1	1	1	1	1	1	2	1.4	24	
15		2	2	2	2	2	2	2	3	3	3	3	3	3	S	3	2	2	2	2	2	1	2	2	1	3	2.2	24	
16		1	2	2	2	2	2	2	3	2	2	2	2	S	2	2	3	3	2	1	2	2	2	2	2	3	2.0	24	
17		2	3	2	2	2	4	4	2	2	2	2	S	2	1	1	1	1	2	2	2	2	2	2	2	4	2.0	24	
18		2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	24	
19		2	P	2	2	2	P	2	2	2	C	C	C	1	2	2	2	2	2	2	1	1	2	2	2	2	1.8	22	
20		2	1	1	2	1	2	3	2	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.3	24
21		1	1	1	1	1	1	1	S	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0.9	24	
22		1	1	1	2	2	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1.2	24	
23		1	2	2	1	1	S	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	1.4	24	
24		2	2	2	2	S	2	2	2	2	2	2	2	1	2	2	1	1	1	2	2	1	2	2	2	2	1.8	24	
25		2	2	2	S	2	2	2	3	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	3	1.7	24	
26		1	1	S	1	1	2	2	2	2	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	1.3	24	
27		1	S	1	1	1	1	1	2	2	2	1	1	2	2	1	1	1	1	1	1	1	1	1	1	2	1.2	24	
28		S	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	1.2	24	
29		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	S	1	2	1.1	24	
30		2	2	1	2	2	2	2	2	2	P	P	6	2	2	2	2	2	2	2	2	2	2	S	2	2	6	2.1	22
31		2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	2	2	S	2	2	2	2	1.9	24	
HOURLY MAX		2	3	2	2	3	4	4	3	3	3	3	6	3	2	3	3	3	3	2	2	2	2	2	2	2			
HOURLY AVG		1.3	1.5	1.3	1.5	1.6	1.8	1.9	1.9	1.7	1.6	1.4	1.6	1.4	1.5	1.4	1.3	1.2	1.4	1.4	1.3	1.1	1.3	1.3	1.3				

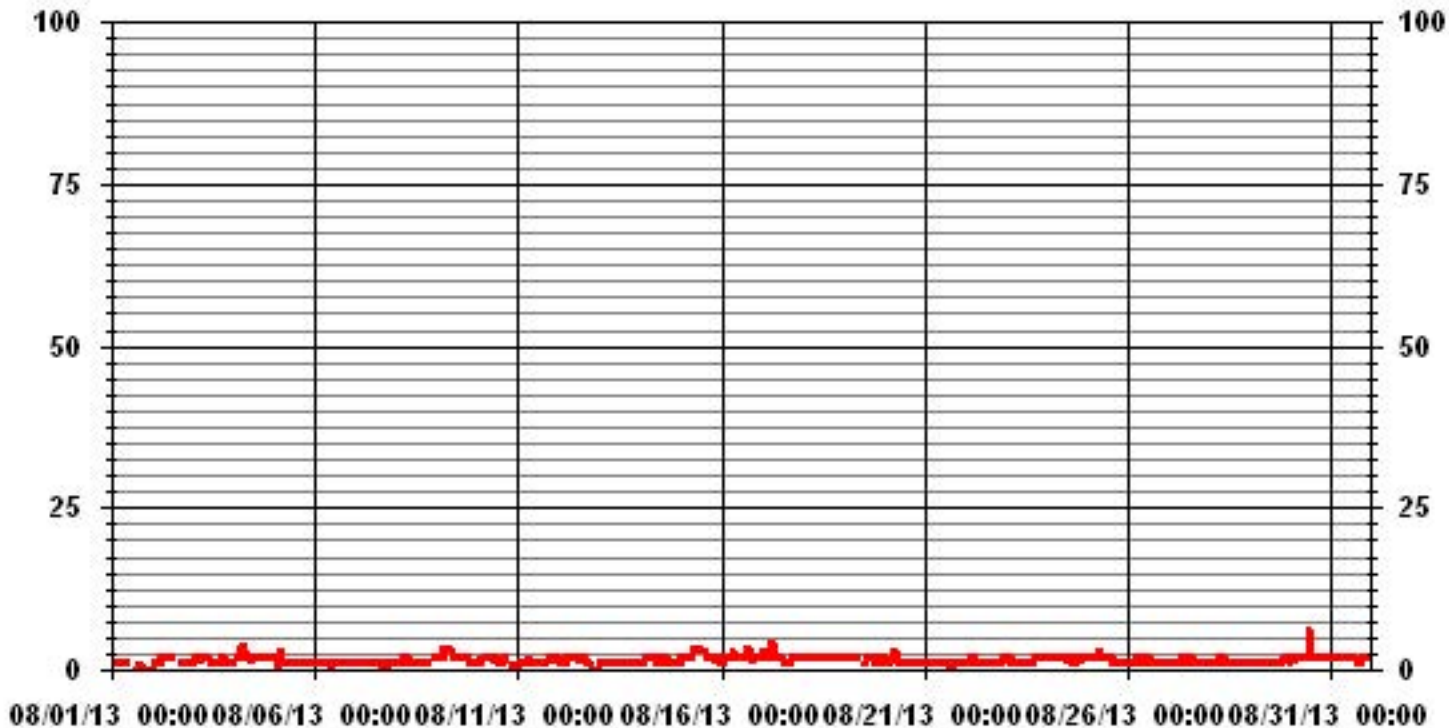
**STATUS FLAG CODES**

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:	664					
MAXIMUM INSTANTANEOUS VALUE:	6	PPB	@ HOUR(S)	11	ON DAY(S)	30
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	731	HRS	
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION:	0.66					

# 01 Hour Averages



LICA31  
H2S\_ / WDR Joint Frequency Distribution (Percent)

August 2013

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	3.00	2.71	4.85	9.42	8.57	8.57	5.85	9.57	11.00	6.14	4.28	5.00	6.85	4.57	5.28	3.71	99.42
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.14	.14	.28	.00	.00	.00	.00	.00	.57
< 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	3.00	2.71	4.85	9.42	8.57	8.57	5.85	9.57	11.14	6.28	4.57	5.00	6.85	4.57	5.28	3.71	

Calm : .00 %

Total # Operational Hours : 700

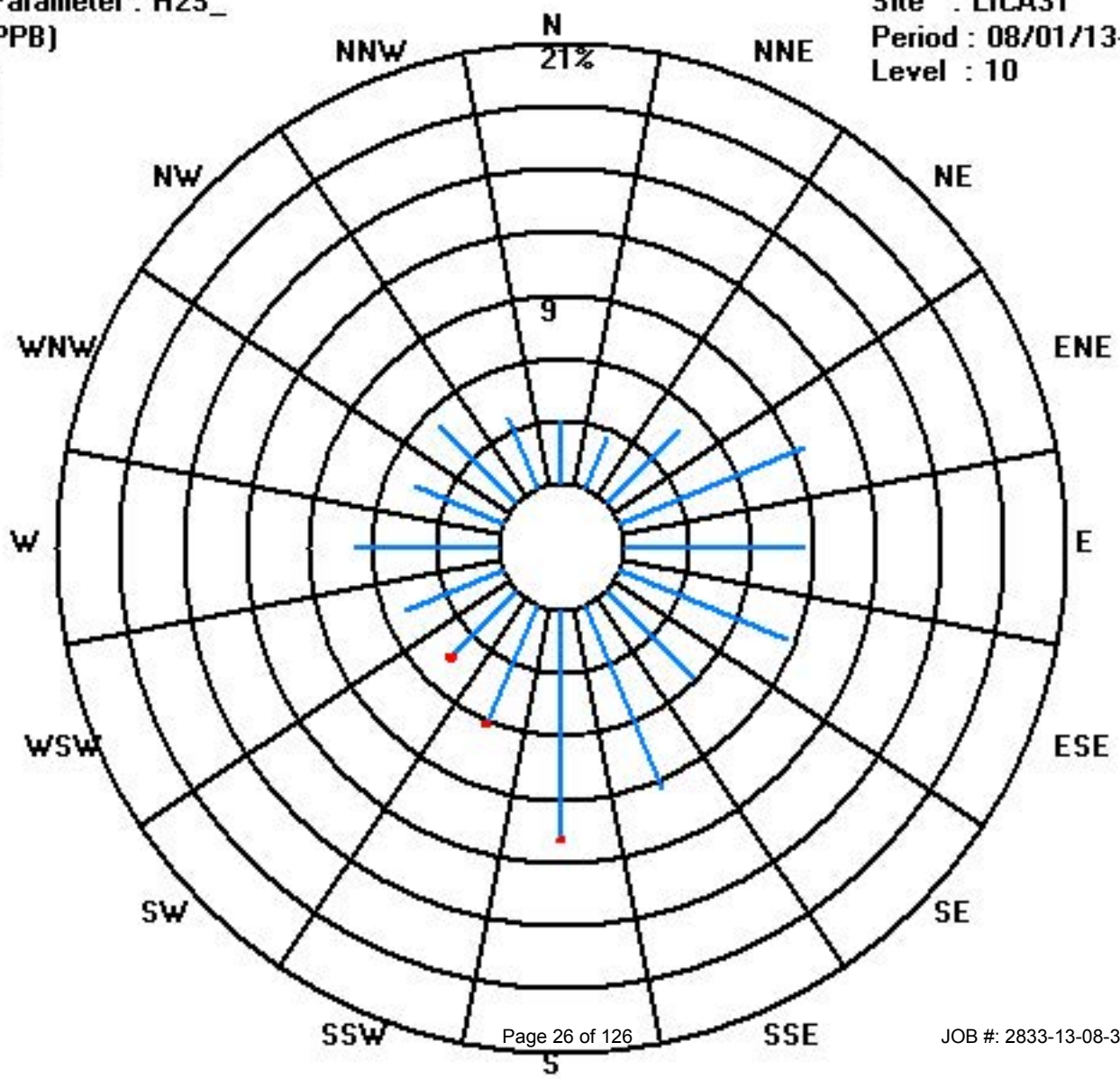
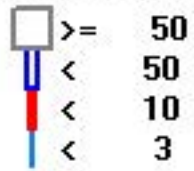
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	21	19	34	66	60	60	41	67	77	43	30	35	48	32	37	26	696
< 10									1	1	2						4
< 50																	
>= 50																	
Totals	21	19	34	66	60	60	41	67	78	44	32	35	48	32	37	26	

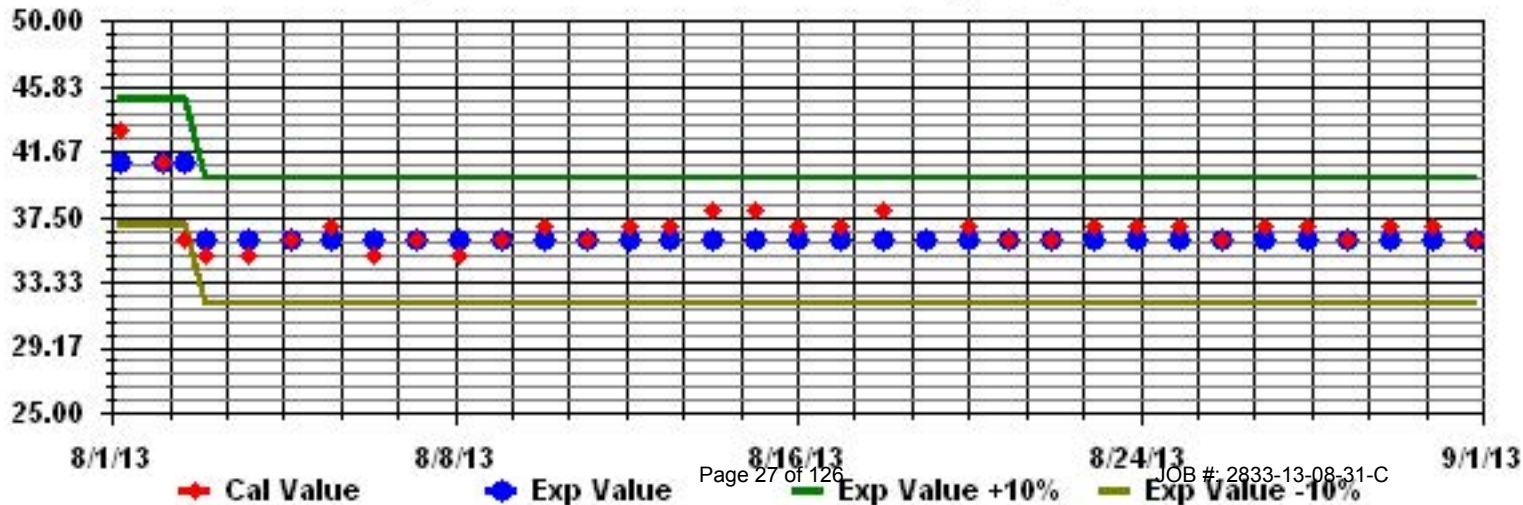
Calm : .00 %

Total # Operational Hours : 700

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: H2S\_ Sequence: H2S Phase: SPAll



# Total Hydrocarbons



## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

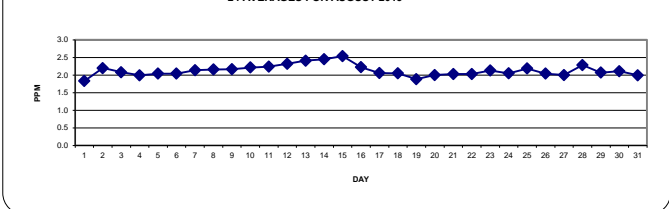
### TOTAL HYDROCARBONS hourly averages in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY 24-HOUR		
DAY	HOURLY MAX	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1		2.3	2.5	1.9	1.9	S	2	2	1.9	1.8	1.8	1.7	1.7	1.6	1.7	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.8	2	2.1	2.5	1.8	24	
2		2.2	2.3	2.3	S	2.2	2.2	2.2	2.1	2	C	C	C	C	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.4	2.6	2.6	2.2	24	
3		2.7	2.8	S	2.5	2.5	2.6	2.7	2.6	2.4	2.1	1.9	1.8	1.7	1.7	1.6	1.6	1.7	1.7	1.8	1.9	1.9	2	2	2	2.8	2.1	24	
4		2.1	S	2.3	2.3	2.3	2.3	2.4	2.2	2.1	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.8	1.8	1.9	1.9	2	2	2	2.4	2.0	24
5		S	2.4	2.4	2.2	2.2	2.5	2.3	2.2	2.1	2	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2	2.1	2	S	2.5	2.0	24	
6		2.1	2	2	2	2.1	2.1	2.1	2	2	1.9	1.9	1.9	1.9	2	2	1.8	1.9	3.2	2	1.9	2	S	2.3	3.2	2.0	24		
7		2.3	2.4	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2	2	1.9	1.9	2	2.1	2.1	2.2	S	2.1	2.1	2.4	2.1	24	
8		2.2	2.2	2.3	2.7	2.8	2.6	2.6	2.5	2.2	2.2	2	1.9	1.9	1.9	1.8	1.8	1.8	1.9	2	2	S	2.1	2.1	2.2	2.8	2.2	24	
9		2.2	2.4	2.5	2.4	2.4	2.6	2.5	2.4	2.3	2.1	2	1.9	2.1	1.9	1.9	1.9	1.8	1.8	1.8	S	2.2	2.2	2.2	2.3	2.6	2.2	24	
10		2.4	2.4	2.5	2.5	2.6	3.2	3.2	2.6	2.4	2.1	2.1	2	1.9	1.9	1.8	1.8	1.7	1.7	S	1.9	2	2	2.1	2.2	3.2	2.2	24	
11		2.3	2.3	2.3	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.4	2.2	2.2	2.2	2.1	2	S	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.2	24	
12		2.3	2.5	2.4	2.5	2.4	2.4	2.5	2.5	2.5	2.4	2.2	2.1	2.1	2.1	2.2	2.2	S	2.2	2.1	2.2	2.3	2.5	2.5	2.3	2.5	2.3	24	
13		2.5	2.4	2.5	2.5	2.7	2.9	2.9	2.7	2.5	2.4	2.3	2.1	2.2	2.1	2.1	S	2.1	2.1	2.2	2.3	2.4	2.4	2.5	2.6	2.9	2.4	24	
14		2.6	2.8	2.9	3	2.9	2.9	2.9	2.8	2.7	2.6	2.3	2.2	2.2	2.2	S	2	2	2.1	2.1	2.1	2.2	2.2	2.3	2.3	3.0	2.4	24	
15		2.4	2.6	2.7	2.7	2.8	2.9	3.2	3.2	2.9	2.7	2.4	2.5	2.5	S	2.1	2.1	2.3	2.4	2.6	2.5	2.3	2.2	2.2	2.2	3.2	2.5	24	
16		2.1	2.2	2.1	2.2	2.3	2.4	2.3	2.5	2.6	2.5	2.3	2.3	S	2.1	2.1	2.1	2.1	2.1	2	2.4	2.4	2	2	2.1	2.6	2.2	24	
17		2.1	2.1	2.2	2.2	2.1	2.3	2.2	2.1	2.1	2	2	S	1.9	2	2	2	2	1.9	1.9	2.2	2	2	2	2.1	2.3	2.1	24	
18		2.1	2.1	2.1	2.2	2.3	2.6	2.2	2.2	2.2	2.1	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.1	1.9	1.9	2.6	2.0	24	
19		2	1.9	1.9	1.9	1.9	1.7	2	2	2	1.8	1.8	C	C	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	2	1.9	1.9	2.0	1.9	24	
20		2	1.9	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.0	24
21		2	2	2	2	2	2	2	2	S	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2.1	2.1	2.1	2.0	24
22		2.1	2.1	2.1	2.1	2.1	2.1	S	2	2.1	2.1	2.1	2	2	2	2	1.9	1.9	1.9	2	2	2.1	1.9	2	2.1	2.1	2.0	24	
23		2	2	2.2	2.2	1.9	S	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.4	2.1	24	
24		2.4	2.1	2	2	S	2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.2	2.2	2.4	2.1	24	
25		2.2	2.3	2.3	S	2.3	2.5	2.7	2.8	2.4	2.2	2.1	2	2	2	2.1	2.1	2.1	2	2.2	2	2	2	2	2	2.8	2.2	24	
26		1.9	2	S	2	2.1	2.1	2.2	2.1	2.1	2	2	2	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2.2	2.0	24	
27		2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	1.9	1.9	1.9	2	2	2	2	2.1	2.2	2.2	2.0	24	
28		S	2	2.1	2.6	2.9	2.7	2.8	2.6	2.6	2.5	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	S	2.9	2.3	24
29		2	2	2.2	2.3	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2.1	2	2	2	S	2.1	2.3	2.1	24
30		2	2.1	2	2.1	2.1	2.2	2.5	2.4	2.3	P	P	1.6	2	2	2	2.1	2.2	2.2	2.1	2.3	2.2	S	2	1.9	2.5	2.1	22	
31		1.9	2	2	2	2	2.2	2	2.1	2.2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	S	2	2	2	2.2	2.0	24	
HOURLY MAX		2.7	2.8	2.9	3.0	2.9	3.2	3.2	3.2	2.9	2.7	2.5	2.5	2.5	2.2	2.2	2.2	2.2	2.3	2.4	3.2	2.5	2.4	2.5	2.5	2.6			
HOURLY AVG		2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.3	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.1	2.1	2.1	2.1	2.1	2.1	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

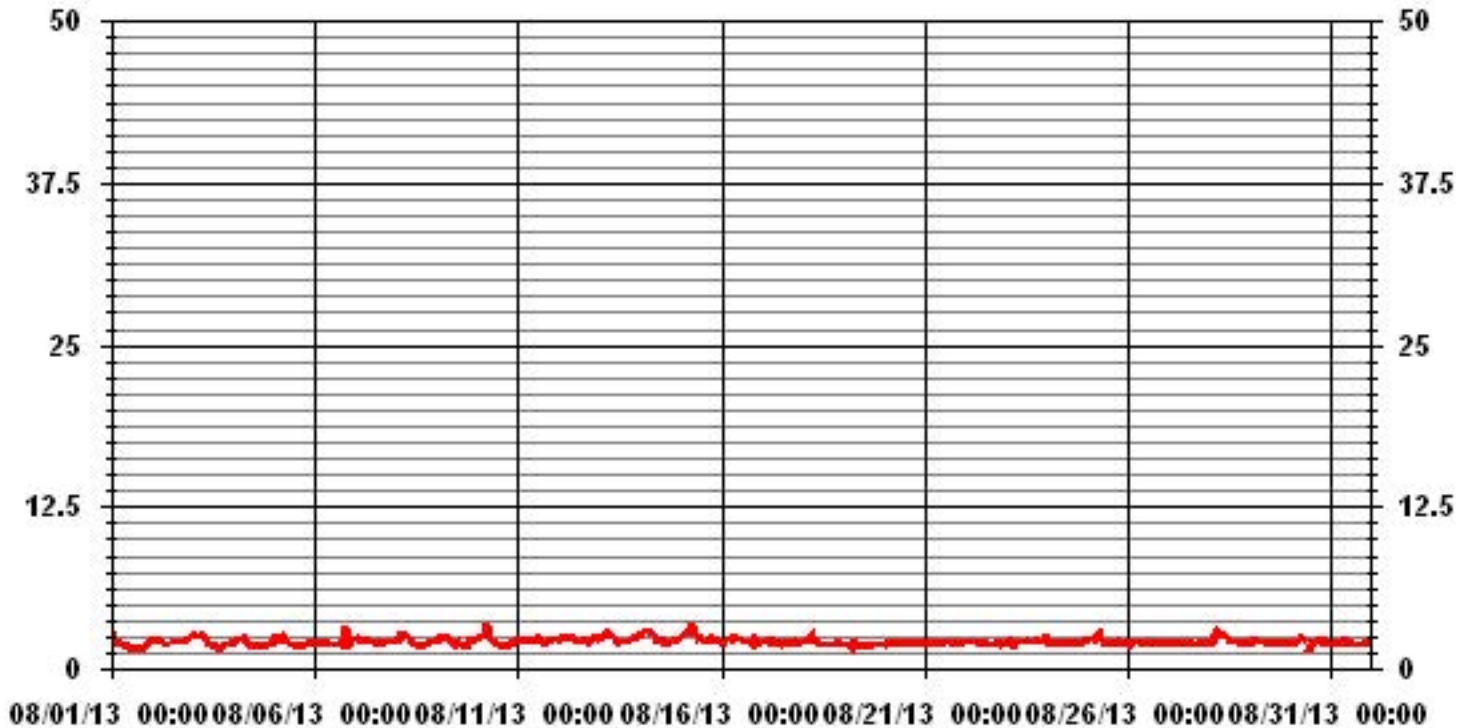
24 AVERAGES FOR AUGUST 2013



#### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	704					
MAXIMUM 1-HR AVERAGE:	3.2	PPM	@ HOUR(S)	VAR	ON DAY(S)	10, 15
MAXIMUM 24-HR AVERAGE:	2.5	PPM			ON DAY(S)	15
					VAR- VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	0.26		MONTHLY AVERAGE:	2.13	PPM	

# 01 Hour Averages



— LICA31 THC PPM

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

## TOTAL HYDROCARBONS MAX      instantaneous maximum in ppm

MST																									DAILY	24-HOUR		
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	3.5	5.1	2.5	2.9	S	2	2.2	2	1.9	2	1.8	1.8	1.7	3	1.7	1.8	1.7	1.8	1.6	1.7	1.8	1.8	3	2.7	5.1	2.3	24	
2	2.3	2.5	2.5	S	2.3	2.4	2.4	2.3	2.1	C	C	C	C	2.2	2.3	2.2	2.2	2.2	2.3	2.3	3	2.5	2.5	2.6	3	2.4	24	
3	2.8	2.9	S	2.7	2.6	2.7	2.8	2.7	2.5	2.3	2.1	1.9	1.8	1.7	1.7	1.7	1.7	1.8	1.9	2	2	2.1	2.1	2.9	2.2	24		
4	2.3	S	2.4	2.4	2.4	2.4	2.4	2.3	2.2	2	1.9	1.9	1.8	2.1	2.4	2.2	1.8	1.9	2.2	1.9	2	2	2.2	2.6	2.6	2.2	24	
5	S	5.9	5.8	3.4	2.3	3.8	3.2	2.9	4.1	3.1	2.9	4	3.5	P	2.3	1.9	1.8	1.9	P	2	2.1	2.2	2.1	S	5.9	3.1	22	
6	P	2	2.5	2.1	2.2	2.1	2.1	2.6	2	2.1	1.9	2	2.2	2.1	4	3.1	3.1	2.9	10	3	2.4	2.9	S	3	10	2.8	23	
7	2.5	2.6	2.4	2.4	2.6	2.5	2.4	2.3	2.3	2.4	2.2	2.2	2.1	2	2	2	2.1	2.2	2.6	2.6	S	2.1	3	10	2.6	2.3	24	
8	2.3	2.3	2.3	3.8	2.9	2.9	2.9	2.7	2.4	2.3	2.2	2	2	2	1.9	1.9	1.9	2.1	2.2	2.2	S	2.1	S	2.2	3.8	2.3	23	
9	2.4	2.5	2.6	2.6	2.5	2.6	2.6	2.5	2.4	2.2	2.1	2	2.2	2.1	1.9	1.9	1.9	1.9	1.9	S	3	2.3	2.3	2.3	3	2.3	24	
10	2.4	3	2.6	2.6	P	3.6	3.6	2.7	2.5	2.2	2.2	2.1	2	1.9	1.9	1.8	1.8	1.8	S	2	2	2.1	2.2	2.3	3.6	2.3	23	
11	2.4	2.4	2.3	2.3	2.2	2.3	2.3	2.3	3	P	2.4	2.5	2.2	2.2	2.2	2.2	2.1	S	2.4	3.3	2.5	2.4	2.4	2.6	3.3	2.4	23	
12	2.5	5.2	3.2	3.1	2.7	2.6	2.5	2.7	2.8	2.6	2.4	2.3	2.3	2.2	2.3	2.3	S	2.4	2.2	2.2	2.6	3	3.6	2.9	5.2	2.7	24	
13	3.1	2.9	3.2	3.2	3.2	3.2	3.2	2.8	2.6	2.5	2.4	2.2	2.3	2.2	2.1	S	2.1	2.2	2.3	2.4	2.5	2.5	2.5	2.6	3.2	2.6	24	
14	2.7	2.9	3	3	3	3	3	2.9	2.8	2.7	2.5	2.3	2.3	2.3	S	2	2.1	2.1	2.1	2.1	2.2	2.2	2.4	2.4	2.3	3	2.5	24
15	2.6	2.7	2.7	2.8	3.4	3.1	3.9	3.5	3.1	2.8	2.6	2.5	2.6	S	2.1	2.4	2.5	3.2	3.1	2.8	3	2.4	2.2	2.2	3.9	2.8	24	
16	2.1	2.2	2.2	2.2	2.4	2.6	3.5	3.4	2.9	4.3	2.9	5	S	2.7	3.1	2.2	2.3	2.1	2.2	3.6	3.6	2.1	2.6	2.9	5	2.8	24	
17	2.8	2.3	2.3	2.3	2.2	2.4	2.4	2.1	2.1	2.1	2.8	S	2.2	2	2	2	2	2.1	2	5.9	2.2	2	2.1	2.1	5.9	2.4	24	
18	2.1	2.2	2.2	2.4	3.4	7.7	2.5	2.4	2.4	2.2	S	2	2	1.9	1.9	2	2	1.9	1.9	2	4	3.7	2	2.3	7.7	2.6	24	
19	3	P	2	2	2	P	2.1	2	2	S	2.1	C	C	2	1.9	1.8	1.9	2	2	2.3	2.2	4.7	2	4.7	2.2	22		
20	2	2	2	2	2	2.1	2.1	2	S	2.2	2.2	2.1	2.4	2.4	2.2	2	2.1	2.2	2.9	2.3	2.2	2.3	2.1	2	2.9	2.2	24	
21	2	2	2	2	2	2.1	2.2	S	2.5	2.6	2	2.2	2.3	2.4	2.4	2.2	2.2	2.5	2.2	2.4	2	2	2.1	2.1	2.6	2.2	24	
22	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	2	2	2	2.2	2.9	2.1	2.1	2.2	2.9	2.1	24	
23	2.5	2.2	5.2	7.6	2.2	S	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.1	2.3	2.3	2.3	2.4	2.2	2.2	2.6	2.6	7.6	2.6	24	
24	2.8	2.5	2.4	2.1	S	3.2	3	3.7	2.2	2	2	2	2	2	2	2.1	2	2	2	2.1	2.1	2.1	2.2	2.2	3.7	2.3	24	
25	2.2	2.4	2.4	S	2.5	2.7	2.8	2.9	2.6	2.3	2.2	2	2	2.3	2.7	2.5	2.7	2.8	3.8	2.4	2	2	2	2	3.8	2.4	24	
26	2.1	2.1	S	2.1	2.2	2.5	2.6	2.3	2.2	2.1	2.1	2.6	2.6	2.3	2.3	2.2	2.2	2.1	2.1	2	2	2	2.1	2	2.6	2.2	24	
27	2.1	S	2	2	2.5	2.3	2	2	2	2	2	2	2	2	2	2	2	2.5	2.2	2.2	2.1	2.1	2.4	2.5	2.5	2.1	24	
28	S	2.1	2.4	2.9	3.1	2.9	2.9	2.8	2.7	2.7	2.7	2.3	2.2	2.1	2.2	2.1	2.1	2.8	2.5	2.1	2	2	2	S	3.1	2.4	24	
29	2	2.1	2.3	2.4	2.2	2.1	2.2	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2	2	2.5	2.1	2.2	2.1	S	2.3	2.5	2.2	24	
30	2.1	2.3	2.5	2.2	2.3	2.3	3.8	2.7	2.8	P	P	2.1	2.1	2.2	2.1	2.3	2.5	2.8	2.5	2.7	2.7	S	2.4	2	3.8	2.4	22	
31	2.2	2.3	2	2.3	2.7	3.2	2.2	2.6	2.9	2.5	2.2	2.2	2.6	2.5	2	2	2	2	2	2	2	S	2	2	3.2	2.3	24	
HOURLY MAX	3.5	5.9	5.8	7.6	3.4	7.7	3.9	3.7	4.1	4.3	2.9	5.0	3.5	3.0	4.0	3.1	3.1	3.2	10.0	5.9	4.0	4.7	3.6	3.0				
HOURLY AVG	2.4	2.7	2.6	2.7	2.5	2.8	2.7	2.6	2.5	2.4	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.2	2.5	2.4	2.4	2.3	2.3	2.3				

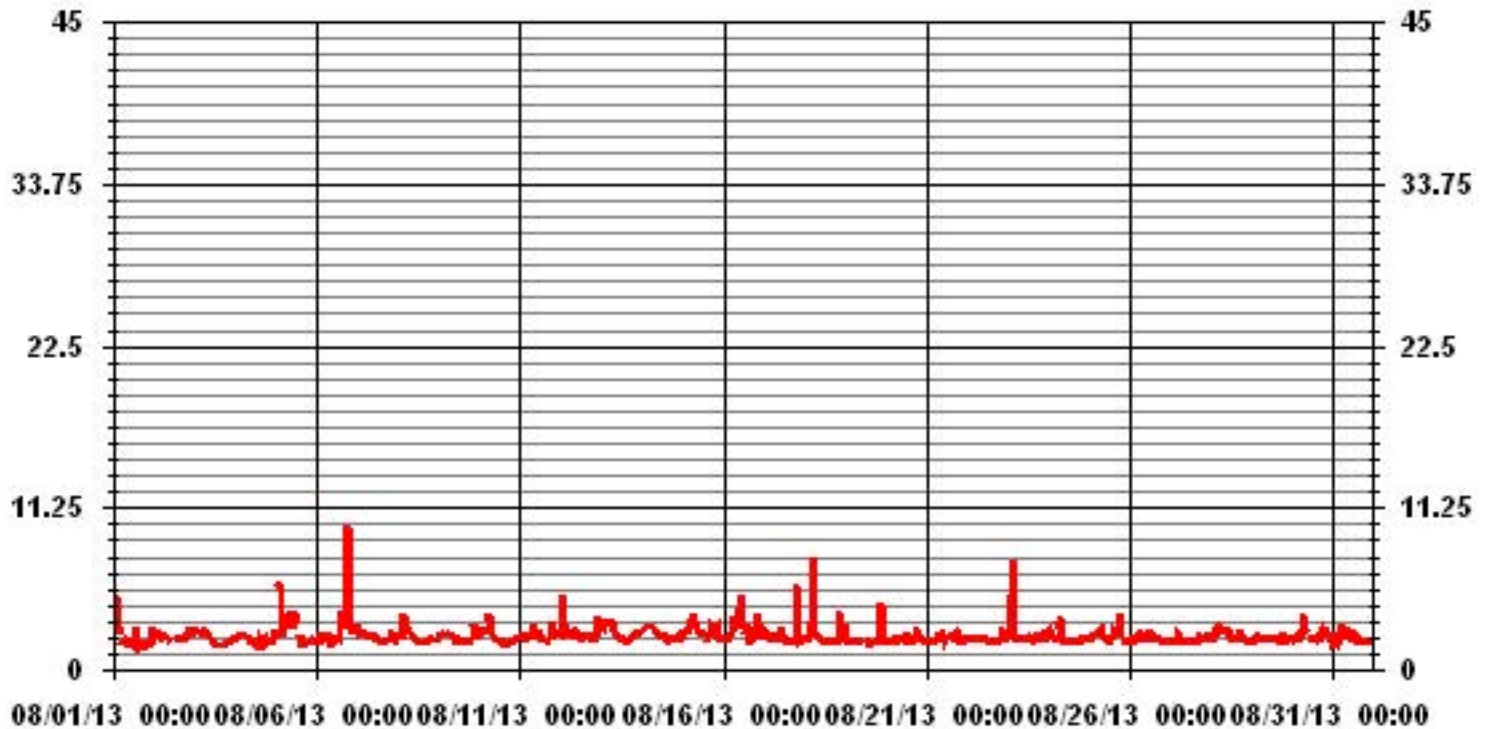
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	695					
MAXIMUM INSTANTANEOUS VALUE:	10.0	PPM	@ HOUR(S)	18	ON DAY(S)	6
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	734	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	0.66					

# 01 Hour Averages



LICA31  
 THC / WDR Joint Frequency Distribution (Percent)

August 2013

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	3.40	2.69	4.82	9.37	8.38	7.95	5.96	9.51	10.93	6.25	4.54	5.11	6.81	4.54	5.11	3.69	99.14
< 10.0	.00	.00	.00	.00	.14	.42	.00	.00	.14	.00	.00	.00	.00	.00	.14	.00	.85
< 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	3.40	2.69	4.82	9.37	8.52	8.38	5.96	9.51	11.07	6.25	4.54	5.11	6.81	4.54	5.25	3.69	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	24	19	34	66	59	56	42	67	77	44	32	36	48	32	36	26	698
< 10.0					1	3			1						1		6
< 50.0																	
>= 50.0																	
Totals	24	19	34	66	60	59	42	67	78	44	32	36	48	32	37	26	

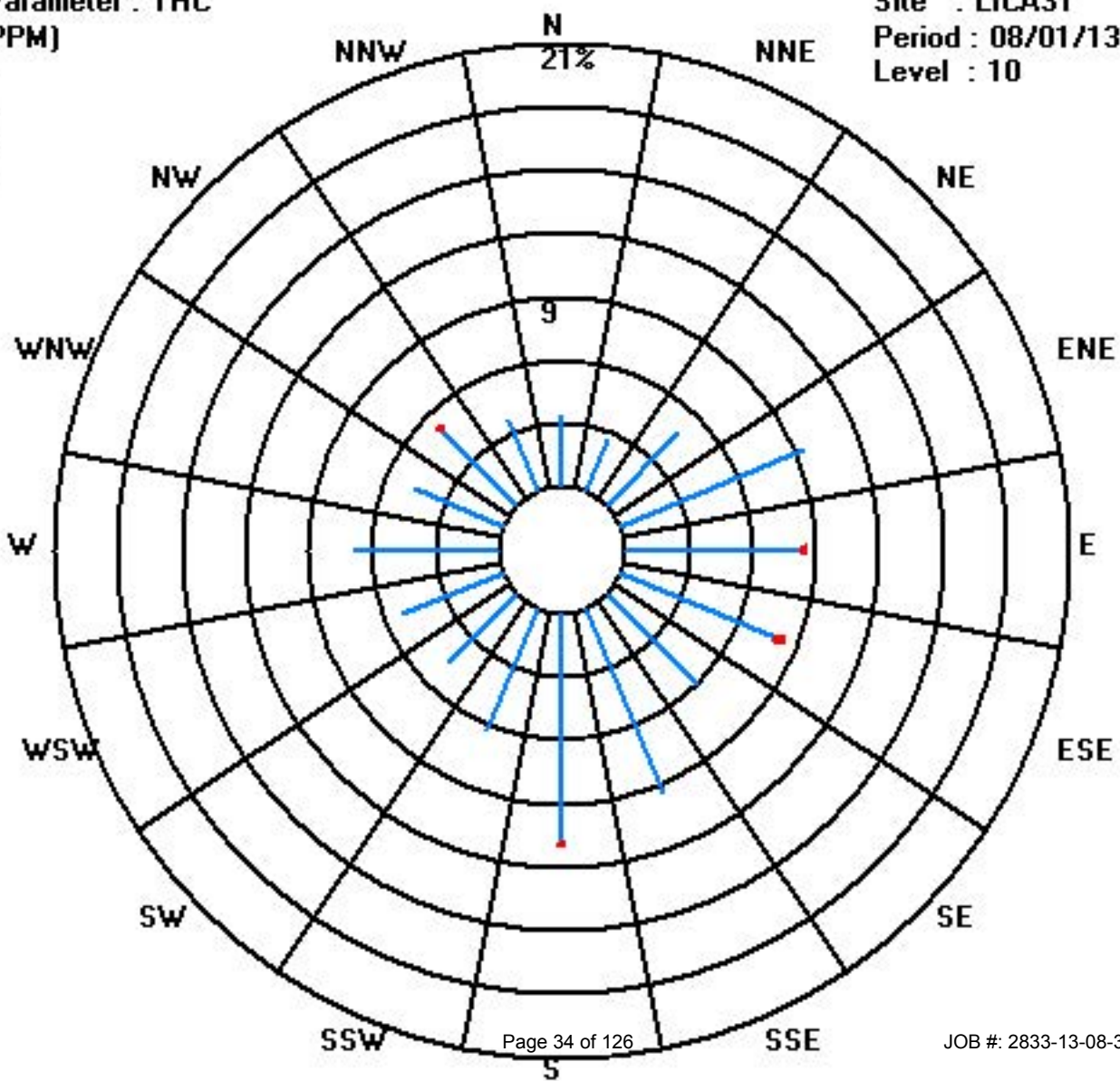
Calm : .00 %

Total # Operational Hours : 704

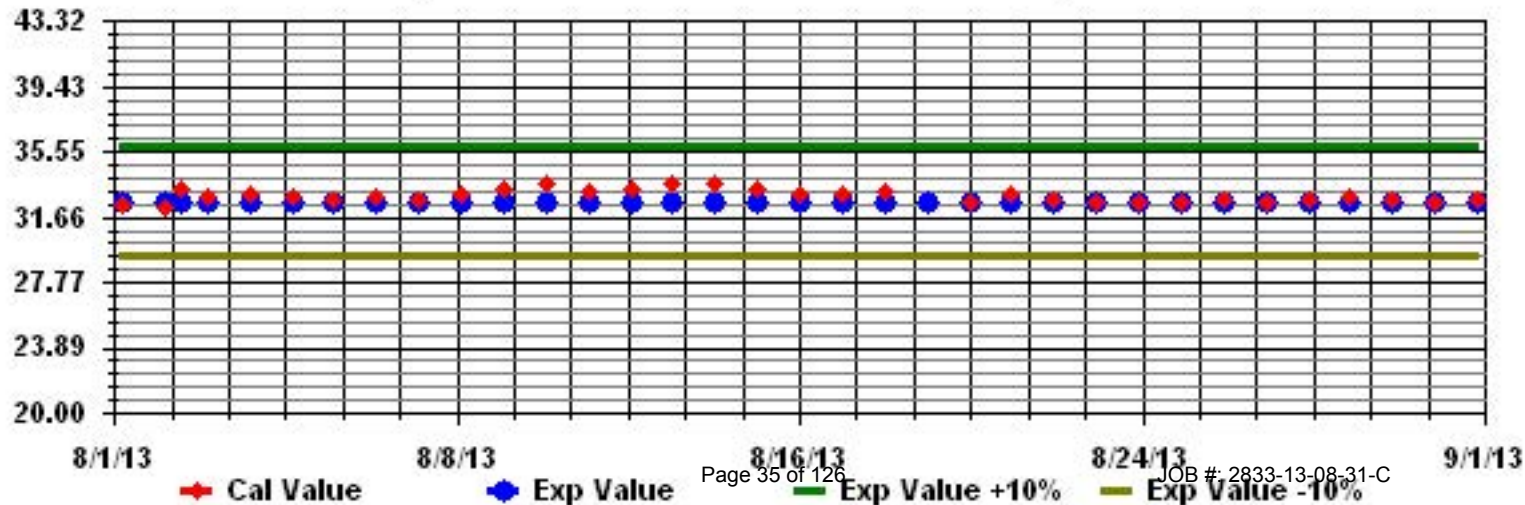
Class Limits (PPM)

Period : 08/01/13-08/31/13

Level : 10



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



# Ozone



## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

OZONE (O<sub>3</sub>) 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	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.		
DAY																												
1	20	19	20	22	S	22	19	22	25	26	31	31	31	29	S	38	40	38	38	36	36	39	34	28	40	29.3	24	
2	22	18	17	S	14	14	15	18	20	24	29	37	C	C	C	X	X	X	X	X	X	X	X	X	37	20.7	15	
3	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	X	X	0
4	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	X	X	0
5	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	X	X	0
6	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	X	X	0
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	X	X	0
8	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	X	X	0
9	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	X	X	0
10	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	X	X	0
11	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	X	X	0
12	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	X	X	0
13	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	X	X	0
14	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	X	X	0
15	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	X	X	0
16	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	X	X	0
17	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	X	X	0
18	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	X	X	0
19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	C	C	C	C	28	29	28	28	28	29	28.3	8
20	25	28	25	24	22	20	19	21	S	27	27	28	28	29	30	30	30	30	29	28	27	27	26	26	30	26.3	24	
21	26	25	24	23	20	18	18	S	21	23	25	25	25	26	27	28	27	26	26	25	24	25	25	25	28	24.2	24	
22	27	26	26	25	25	23	S	24	26	29	34	40	44	46	46	47	48	46	44	40	41	47	42	38	48	36.3	24	
23	48	38	38	45	45	S	32	29	29	26	28	32	36	39	41	40	35	33	29	24	23	21	19	19	48	32.6	24	
24	21	30	35	34	S	37	31	34	37	40	42	43	45	45	44	45	44	44	41	41	43	41	39	37	45	38.8	24	
25	37	36	37	S	34	32	33	29	28	32	33	31	38	45	41	38	35	33	32	30	28	29	30	29	45	33.5	24	
26	28	28	S	25	24	23	20	21	22	27	24	20	16	15	21	21	20	21	17	18	17	20	18	20	28	21.1	24	
27	21	S	18	16	15	16	15	14	15	17	19	25	27	29	33	37	42	39	37	36	34	37	38	34	42	26.7	24	
28	S	29	27	20	12	13	11	19	27	32	38	43	44	46	47	47	47	47	38	37	33	31	30	S	47	32.6	24	
29	28	25	22	19	17	16	16	17	17	22	28	32	35	36	37	36	33	30	27	24	24	24	S	21	37	25.5	24	
30	19	19	23	17	16	13	13	14	18	P	P	30	29	30	30	28	24	25	25	20	18	S	20	21	30	21.5	22	
31	20	17	16	14	13	12	13	14	15	16	19	20	22	24	29	30	30	30	27	27	S	24	21	20	30	20.6	24	
HOURLY MAX	48	38	38	45	45	37	33	34	37	40	42	43	45	46	47	47	48	47	44	41	43	47	42	38				
HOURLY AVG	26.3	26.0	25.2	23.7	21.4	19.9	19.6	21.2	23.1	26.2	29.0	31.2	32.3	33.7	35.4	35.7	35.1	34.1	31.5	29.8	29.0	30.2	28.5	26.6				

### STATUS FLAG CODES

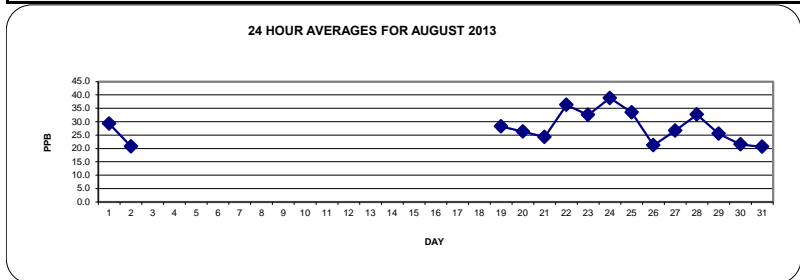
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

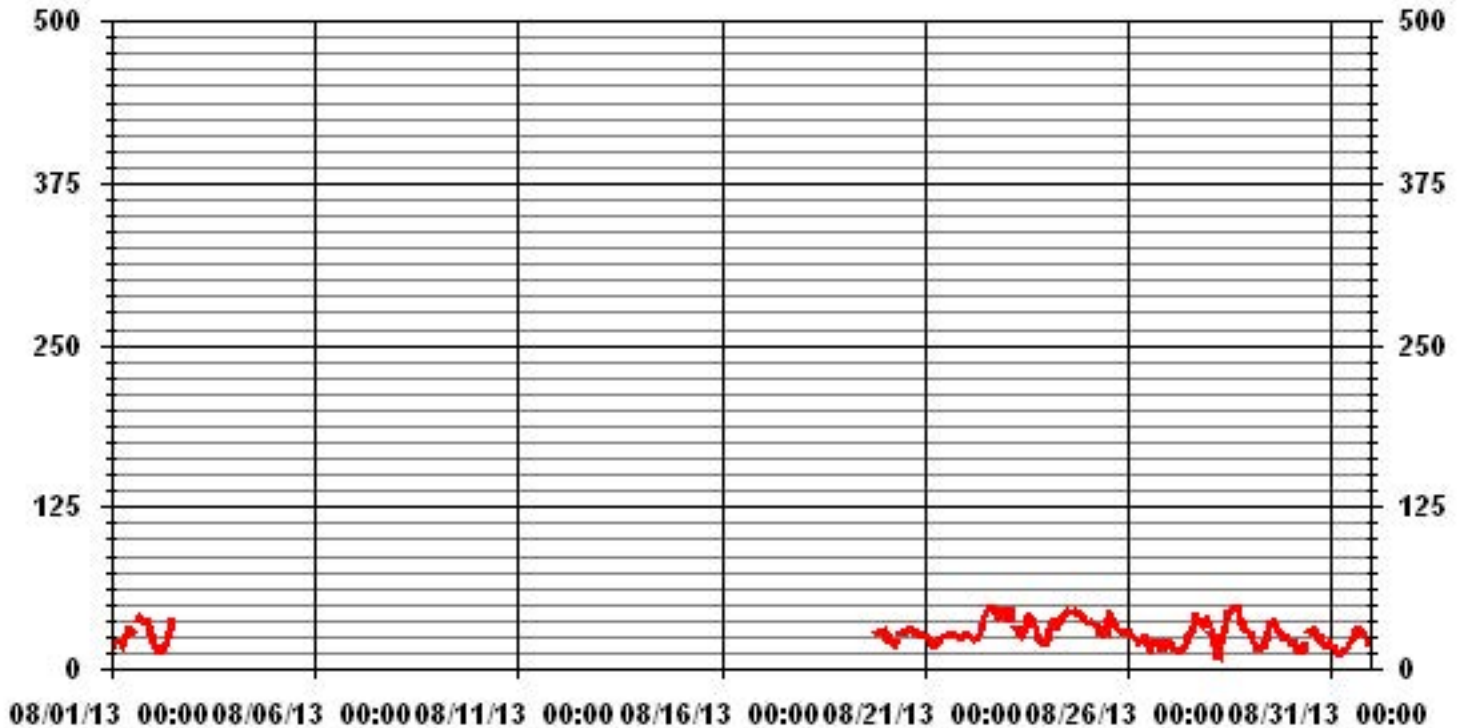
ALBERTA ENVIRONMENT: 1-HR 82 PPB

### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	310				
MAXIMUM 1-HR AVERAGE:	48	PPB	@ HOUR(S)	16, 0	ON DAY(S) 22, 23
MAXIMUM 24-HR AVERAGE:	38.8	PPB			ON DAY(S) 24
					VAR-VARIOUS
I/S CALIBRATION TIME:	16	HRS	OPERATIONAL TIME:	333	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	44.8	%
STANDARD DEVIATION:	8.98		MONTHLY AVERAGE:	28.1	PPB



# 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

## 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	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	22	20	21	25	S	25	21	25	28	29	34	34	33	31	S	41	43	41	40	39	39	40	38	30	43	31.8	24	
2	29	19	19	S	14	14	17	20	23	27	36	C	C	C	X	X	X	X	X	X	X	X	X	X	X	36	21.8	15
3	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			0
4	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			0
5	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			0
6	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			0
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			0
8	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			0
9	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			0
10	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			0
11	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			0
12	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			0
13	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			0
14	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			0
15	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			0
16	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			0
17	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			0
18	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			0
19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	C	C	C	C	C	33	31	32	31			8
20	28	29	26	25	23	23	20	24	S	28	28	28	30	31	31	31	31	31	29	29	29	27	27	27	27	31	27.5	24
21	27	25	25	24	21	19	19	S	22	24	26	27	26	27	27	28	29	29	28	28	26	25	26	27	27	29	25.4	24
22	27	27	26	25	26	24	S	26	29	32	39	44	47	48	48	48	50	50	47	43	46	48	47	45	50	38.8	24	
23	50	51	50	49	50	S	36	31	33	29	32	35	39	44	44	43	43	37	33	29	26	25	21	27	51	37.3	24	
24	31	37	37	39	S	47	37	39	42	42	44	46	48	48	47	47	46	46	43	42	46	43	42	43	48	42.7	24	
25	41	38	43	S	37	33	42	32	38	37	37	37	43	48	45	42	39	37	38	31	31	36	38	31	48	38.0	24	
26	30	29	S	26	26	26	27	27	32	36	29	26	20	25	24	23	24	24	22	24	23	37	34	31	37	27.2	24	
27	22	S	21	18	17	19	22	18	17	19	24	28	31	32	36	40	44	43	40	38	36	40	42	41	44	29.9	24	
28	S	30	30	24	15	16	15	25	30	36	62	59	46	50	50	50	62	65	50	39	36	32	32	S	65	38.8	24	
29	29	28	24	20	19	17	17	18	20	25	33	39	38	39	40	38	36	33	29	25	25	25	S	25	40	27.9	24	
30	22	24	28	23	18	15	14	16	21	P	P	33	31	33	33	32	29	28	26	23	19	S	21	31	33	24.8	22	
31	22	18	17	15	14	13	14	15	17	20	21	23	26	28	33	33	33	32	29	29	S	25	22	21	33	22.6	24	
HOURLY MAX	50	51	50	49	50	47	42	39	42	42	62	59	48	50	50	50	62	65	50	43	46	48	47	45				
HOURLY AVG	29.2	28.8	28.2	26.1	23.3	22.4	23.2	24.3	27.1	29.5	34.2	35.3	35.2	37.2	38.2	38.2	39.2	38.2	34.9	32.2	31.8	33.4	32.5	31.5				

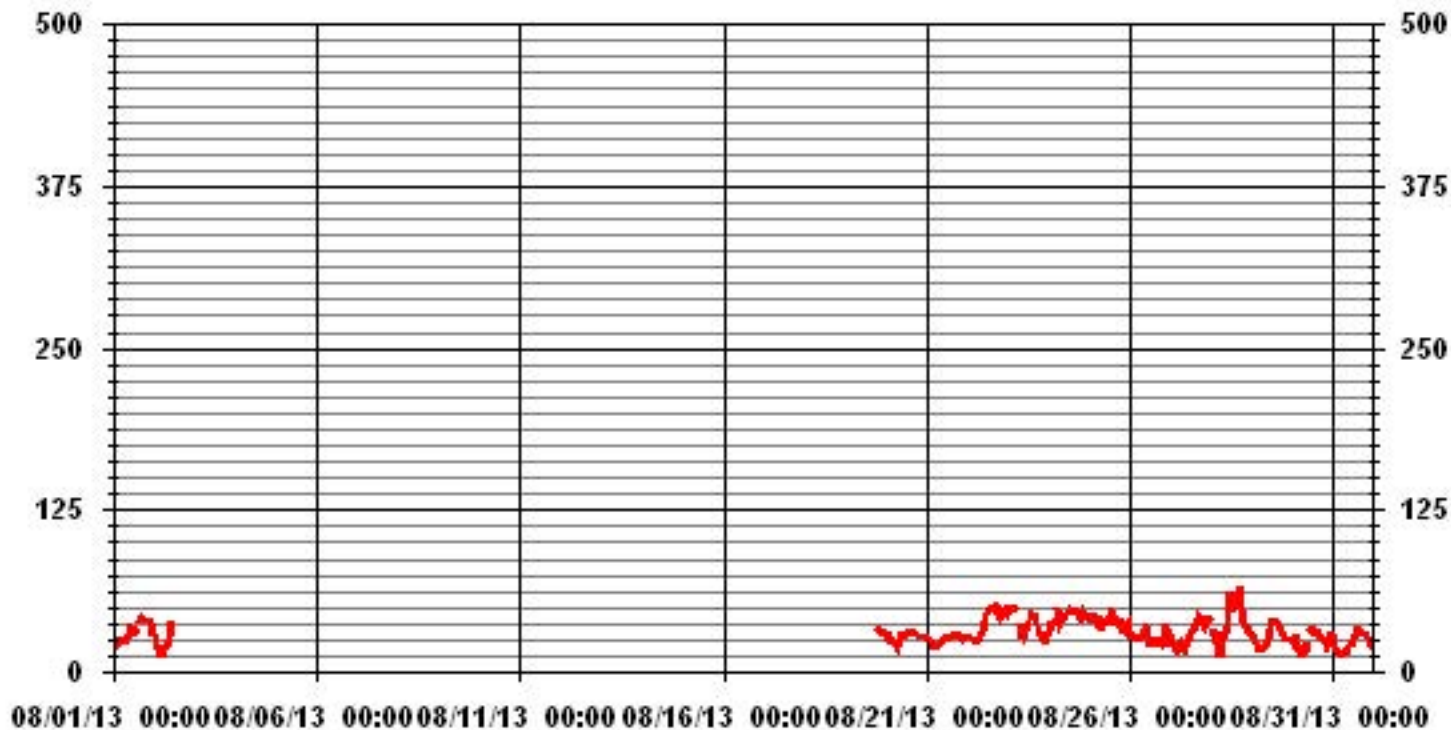
**STATUS FLAG CODES**

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:	309					
MAXIMUM INSTANTANEOUS VALUE:	65	PPB	@ HOUR(S)	17	ON DAY(S)	28
IZS CALIBRATION TIME:	16	HRS	OPERATIONAL TIME:	333	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	9.95					

# 01 Hour Averages



LICA31  
 O3\_ / WDR Joint Frequency Distribution (Percent)

August 2013

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	3.87	3.22	7.41	16.45	8.06	5.16	2.25	1.93	7.41	7.09	5.80	4.83	9.35	6.77	5.80	4.51	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.87	3.22	7.41	16.45	8.06	5.16	2.25	1.93	7.41	7.09	5.80	4.83	9.35	6.77	5.80	4.51	

Calm : .00 %

Total # Operational Hours : 310

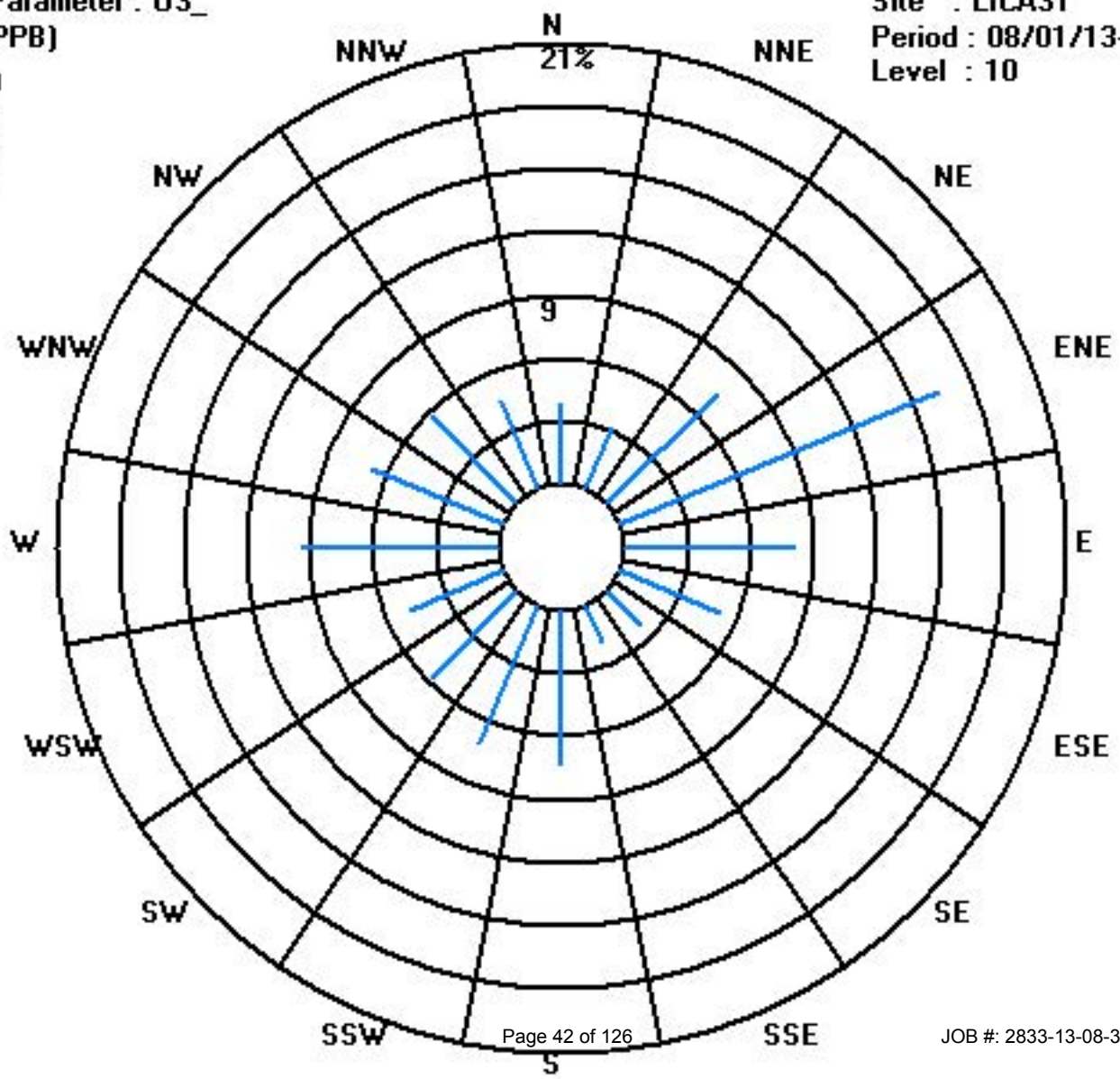
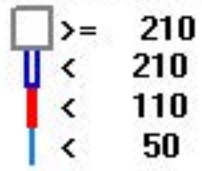
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50	12	10	23	51	25	16	7	6	23	22	18	15	29	21	18	14	310
< 110																	
< 210																	
>= 210																	
Totals	12	10	23	51	25	16	7	6	23	22	18	15	29	21	18	14	

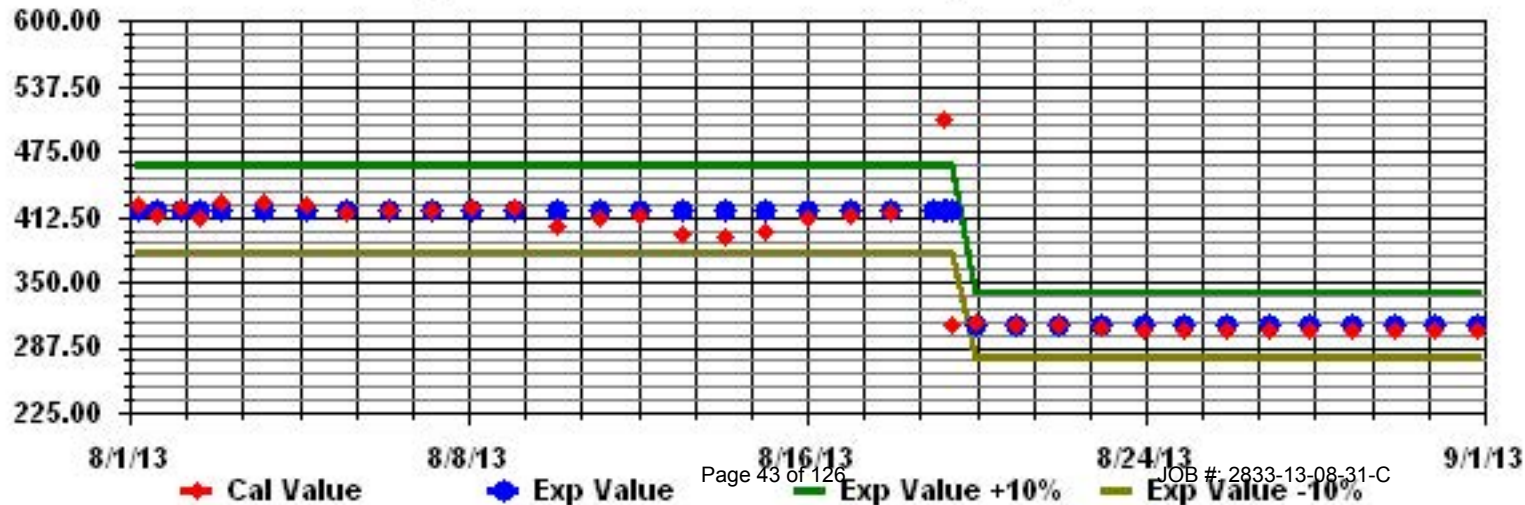
Calm : .00 %

Total # Operational Hours : 310

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: 03\_ Sequence: 03 Phase: SPAN



# Nitrogen Dioxide



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

## NITROGEN DIOXIDE hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY	24-HOUR		
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
1		0	0	0	0	S	0.1	0.3	0	0	C	C	C	C	C	C	0	0	0	0	0.6	0.4	0.2	0.5	0.9	0.9	0.2	24		
2		2.1	1.9	0.6	S	0.9	0.9	0.7	0.7	0.9	C	C	C	C	0.8	0.9	0.6	0.6	0.6	0.5	0.8	1.1	1.1	1.7	2.7	2.7	1.1	24		
3		2.4	2.7	S	2.1	1.8	1.9	1.9	1.5	1.3	1.1	1.2	0.8	0.6	0.2	0.1	0	0	0	0	0.1	0.5	0.6	0.9	1	2.7	1.0	24		
4		1	S	1.3	1.4	1.3	1.6	1.6	1.9	1.1	0.7	0.6	0.3	0.3	0.6	0.7	0.8	0.4	0.5	0	0.2	0.2	0.2	0.3	0.8	1.9	0.8	24		
5		S	0.7	0.7	1.4	1.3	1	0.8	0.9	0.5	0.6	0.6	0.7	0.7	0.5	0.3	0.4	0.2	0.3	1.3	1.2	1.6	1.9	1.2	S	1.9	0.9	24		
6		1.6	0.7	0.7	0.7	0.7	0.6	0.5	0.6	0.4	0.5	0.5	0.6	0.7	0.5	0.6	0.7	0.7	0.5	0.5	1	0.9	0.9	S	1.9	1.9	0.7	24		
7		1.6	2.8	1.6	1.2	1.4	1.5	0.8	0.7	0.6	0.7	0.5	0.5	0.1	0.2	0.1	0	0	0.1	0	0.1	0.2	S	0.2	0.4	2.8	0.7	24		
8		0.4	0.9	3.2	4.2	4.1	2.5	1.8	1.3	0.8	1	0.6	0.3	0.4	0.5	0.2	0.3	0.3	0.5	0.5	0.7	S	0.4	1.5	1.4	4.2	1.2	24		
9		1.3	1.5	1.2	1.1	1	1.5	0.9	0.8	0.6	0.4	0.5	0.3	0.6	0.4	0.3	0.1	0.4	0.3	0.3	S	0.6	1	1.5	1.4	1.5	0.8	24		
10		1.6	1.7	1.9	1.8	1.7	2.1	1.8	1	0.9	0.6	0.7	0.5	0.4	0.1	0.1	0	0.1	0.4	S	0.7	0.8	1.1	1.3	1.6	2.1	1.0	24		
11		1.3	1.1	0.9	0.8	0.8	0.8	0.7	0.9	1	1	1.2	1.3	0.6	0.7	0.7	0.7	0.9	S	0.1	0.2	0.5	0.7	0.7	0.7	1.3	0.8	24		
12		0.4	0.8	0.6	0.9	0.8	0.7	0.9	1	1.1	0.6	0	0	0	0	0	0.1	S	0.7	0.7	0.7	1.1	1.1	1.4	1.2	1.4	0.6	24		
13		1.4	1.4	1.3	1.4	2	2.3	1.9	1.4	1.5	1.4	1.2	0.8	0.9	0.8	0.8	S	0.6	1	1.2	1.3	1.5	1.6	1.5	1.5	2.3	1.3	24		
14		1.7	2	2	1.9	1.6	1.5	1.4	1.3	1.4	1.3	0.9	0.6	0.7	0.9	S	0.9	1	0.9	0.8	1.1	1.2	1.3	1.3	1.1	2	1.3	24		
15		1.5	2.1	2.2	2.2	2.1	1.9	1.8	2	1.7	1.5	1.6	1.6	1.6	S	1.2	1.4	1.2	1.1	1.2	1.5	1.4	0.9	0.9	0.6	2.2	1.5	24		
16		0.4	0.6	0.5	1.1	2.6	3.2	2.9	1.7	1.4	1.4	1.3	0.9	S	1.3	1	1.2	0.9	1	0.8	1	1.5	1.7	1.5	1.5	3.2	1.4	24		
17		1.2	1	1.5	1.1	0.9	2.3	2.3	1	1.3	2.7	2.3	S	0.7	0.7	0.9	0.9	0.9	0.8	0.7	1.6	1.3	1.1	0.9	0.9	2.7	1.3	24		
18		1.1	1.5	1.3	1.5	1.4	1.9	1.2	0.7	0.8	0.7	S	0.1	0.3	0.7	0.4	0.6	0.5	0.3	0.4	0.5	0.2	0.4	0.5	0.3	1.9	0.8	24		
19		0.4	0.5	0.3	0.6	0.6	0.9	0.5	0.5	0.5	C	C	C	C	0.9	0.9	0.7	0.6	0.7	0.8	0.9	1.9	1.8	1.3	1.6	1.9	0.8	24		
20		1.5	0.6	0.7	0.6	0.6	1	0.7	0.5	S	0	0.1	0.1	0.3	0.2	0.3	0.2	0.3	0.3	0.4	0.5	0.3	0.1	0.2	0.1	1.5	0.4	24		
21		0.2	0.1	0.2	0.2	0.3	0.7	0.4	S	0.3	0.4	0.5	0.6	0.5	0.5	0.6	0.4	0.4	0.4	0.6	0.7	1.4	1.3	1.5	1.9	1.9	0.6	24		
22		2	2	2.1	2.3	1.9	1.9	S	1.4	1.5	1.6	1.8	1.6	1.2	0.9	0.6	0.6	0.7	0.6	0.7	1.3	2.8	1.2	1.5	2.9	2.9	1.5	24		
23		0.9	1.4	1.5	2.6	2.9	S	2.1	1.3	1.2	0.9	0.6	0.7	0.8	0.8	1	1	1	1.3	1.2	1.1	1.3	2.2	2.6	3.9	3.9	1.5	24		
24		3.2	1.4	1	0.8	S	0.7	0.8	0.8	1.5	0.7	0.8	0.5	0.8	0.6	0.7	0.9	0.4	0.3	0.7	0.7	0.8	0.8	1.3	1.5	3.2	0.9	24		
25		1.5	1.5	1.2	S	1.3	2	2.3	2.2	1.9	1.5	1.6	1.7	2.5	2.6	2.2	1.1	0.7	0.6	1.1	0.8	1.3	0.6	0.4	0.4	2.6	1.4	24		
26		0.6	0.6	S	1.3	1.7	1.7	3	1.9	1.3	1.2	C	C	1.3	1.3	1.4	1.7	1.5	1.1	1.5	1.1	1.2	1.1	0.9	1	3	1.4	24		
27		0.7	S	1.2	1.2	0.7	0.2	0.4	1.5	0.6	0.4	0.6	0.3	0.3	0.3	0.3	0.1	0.4	0.5	0.3	0.5	0.6	0.4	0.6	1	1.5	0.6	24		
28		S	1	1.4	4.7	7.9	5.1	4.1	2.8	2.2	2.1	1.7	0.9	0.7	0.6	0.7	0.6	0.6	1.3	1.2	0.9	0.6	0.6	0.7	S	7.9	1.9	24		
29		0.4	1.1	2.2	3.1	2.8	1.7	1.5	1.6	2	0.9	0.4	0	0	0	0	0	0	0.1	0.2	0.4	0	0	S	0.5	3.1	0.8	24		
30		0.4	0.7	0.5	0.8	0.6	1.1	1.6	2.3	1.7	P	P	0.1	0.3	0.3	0.2	0.3	0.3	0.4	0.4	0.7	0.7	S	0.5	0.5	2.3	0.7	22		
31		0.8	0.9	0.8	0.8	1.1	1.1	0.9	0.5	0.4	0	0.2	0.2	0.3	0.2	0.4	0.3	0.2	0.2	0.4	0.9	S	0.8	1.9	1.4	1.9	0.6	24		
HOURLY MAX		3.2	2.8	3.2	4.7	7.9	5.1	4.1	2.8	2.2	2.7	2.3	1.7	2.5	2.6	2.2	1.7	1.5	1.3	1.5	1.6	2.8	2.2	2.6	3.9					
HOURLY AVG		1.2	1.2	1.2	1.5	1.7	1.5	1.4	1.2	1.1	1.0	0.9	0.6	0.7	0.6	0.6	0.6	0.5	0.6	0.6	0.8	1.0	0.9	1.1	1.3					

### STATUS FLAG CODES

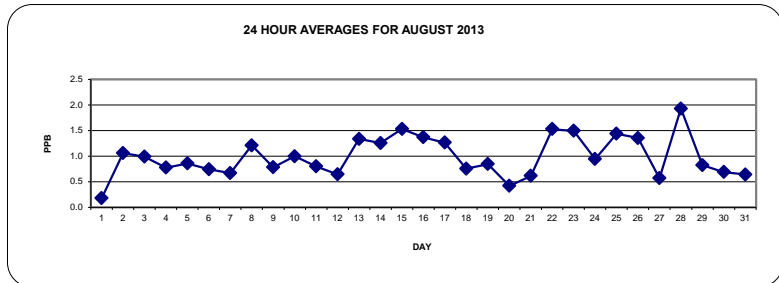
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

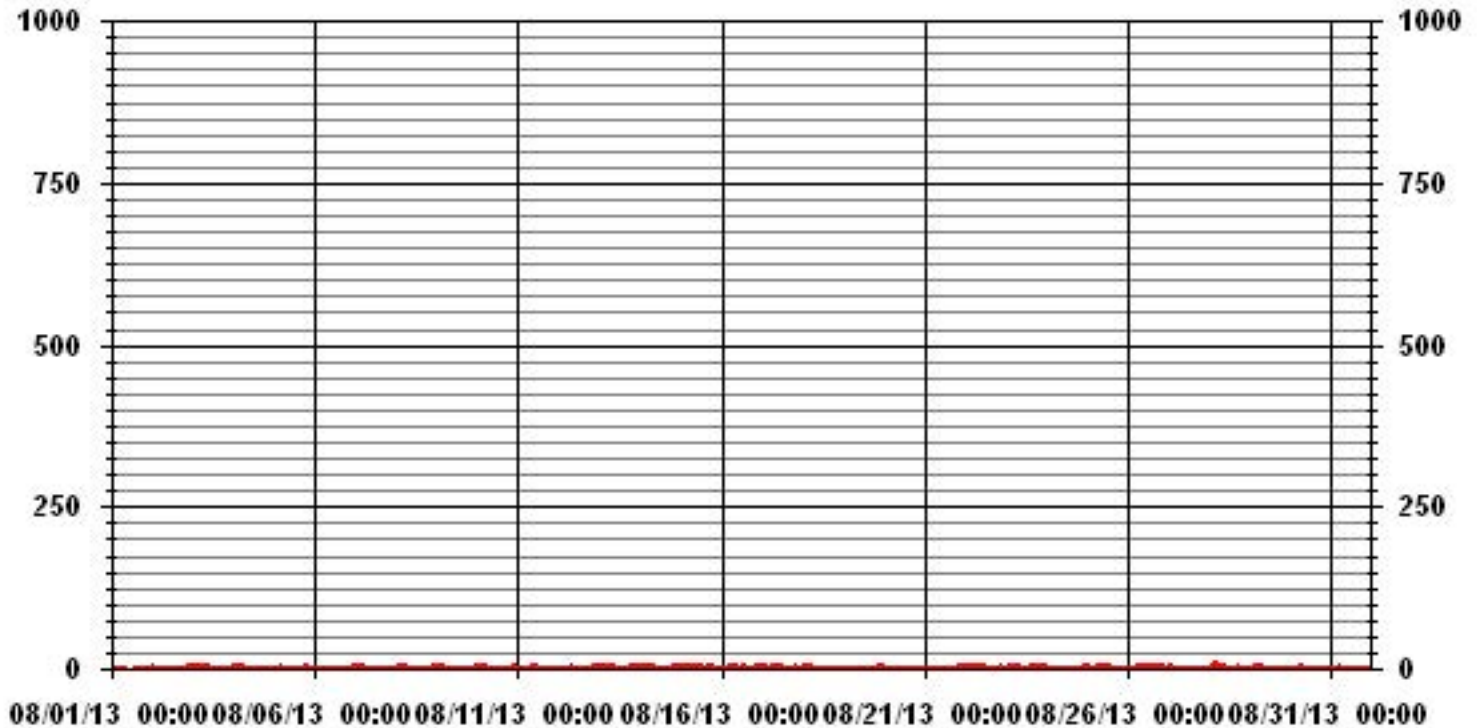
ALBERTA ENVIRONMENT: 1-HR 159 PPB

### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	660					
MAXIMUM 1-HR AVERAGE:	7.9	PPB	@ HOUR(S)	4	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	1.9	PPB			ON DAY(S)	28
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	16	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	0.76		MONTHLY AVERAGE:	0.99	PPB	



# 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

## NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	0.7	1.3	1.4	1	S	1.2	2.5	0.8	C	C	C	C	C	C	C	1.1	0.5	0.2	0.5	1.9	1.6	1.5	2	2.4	2.5	1.3	24	
2	4.2	4.4	2.5	S	1.7	1.7	1.7	1.6	1.6	C	C	C	C	C	1.5	1.6	1.5	0.8	1.5	1.8	2	2.2	2.6	3.4	4.4	2.1	24	
3	3.5	3.9	S	3.2	3	3	3	2.7	2.2	2.2	2.4	1.8	1.6	1.1	1.1	0.5	0.1	0.3	0.7	1.2	1.4	1.3	1.8	1.8	3.9	1.9	24	
4	1.8	S	2.3	3	2.5	2.9	2.9	24.2	2.3	1.9	2.5	1.6	1.1	1.7	1.9	1.9	1.5	2.5	1.3	1.3	1.5	1.4	1.3	1.9	24.2	2.9	24	
5	S	1.8	1.9	2.4	2.2	2.5	2.1	2.1	1.6	1.5	2.8	2.6	2.3	P	1.5	1.5	1.4	1.5	P	2.6	2.9	3.3	2.7	S	3.3	2.2	22	
6	P	1.6	1.6	1.4	1.8	1.5	1.4	3.6	1.4	1.2	1.2	1.4	2.2	1.6	1.5	1.8	2	1.2	2.1	4.3	3.3	1.8	S	3.1	4.3	2.0	23	
7	3.1	4.3	2.9	2.3	2.8	2.8	2.1	2	1.7	2	1.5	1.6	1.3	1.2	1.2	1.3	0.9	1.1	1.2	1.2	1.5	S	1.1	1.4	4.3	1.8	24	
8	1.5	2.3	6.8	6.6	5.8	4.4	3	3	2	2.1	1.9	1.1	1.3	1.2	1	0.9	1	1	1.1	1.2	S	1.3	P	2.5	6.8	2.4	23	
9	2.4	2.6	2.5	2.5	2.4	2.7	2.5	2.6	1.8	1.7	1.4	1	1.2	1.1	1.1	0.9	1	0.9	1.1	S	1.8	2.4	2.7	2.9	2.9	1.9	24	
10	2.9	3	3	3	P	3.8	3.6	2.6	2.2	2	1.9	1.7	1.6	1.5	1.4	1.1	0.9	0.8	S	1.5	1.8	2.4	2.6	2.7	3.8	2.2	23	
11	2.7	2.3	2.3	2.1	2.1	2.1	2	2.1	2.1	P	2.5	2.7	1.9	2.1	1.9	1.8	2	S	1.7	2	2.2	2.4	2.4	2.3	2.7	2.2	23	
12	2.2	2.6	2.5	2.6	2.6	2.4	2.7	2.6	2.7	2.3	1.8	1.7	1.5	1.5	1.8	1.9	S	1.9	2.1	2	2.1	2.2	2.5	2.4	2.7	2.2	24	
13	2.5	2.5	2.5	2.7	3.3	3.7	3.4	3.1	2.8	2.9	2.5	2.1	2.3	1.9	1.7	S	0.9	1.3	1.9	2.3	2.7	2.7	2.8	2.9	3.7	2.5	24	
14	3	3.3	3.3	3.3	2.9	2.9	2.9	2.5	2.5	2.6	2.2	1.7	1.7	1.4	S	0.7	0.9	0.9	0.7	1	1.5	1.6	2	1.6	3.3	2.0	24	
15	2.3	2.9	2.8	2.8	2.9	3	2.8	3	2.7	2.4	2.4	2.4	2	S	2.4	2.3	1.6	2.3	3.6	4.1	5	2.6	2.7	2.6	5	2.8	24	
16	1.8	2.1	2.1	3.1	4.1	5	5.1	9.6	2.9	4.7	4.7	2.7	S	4	2.5	3.5	2.7	2.8	2.2	2.9	22.2	5.6	3.3	3	22.2	4.5	24	
17	2.5	2.3	3.6	2.5	2.3	14.2	9.3	2.4	2.7	4.3	4.2	S	2.5	1.7	2.2	1.7	2.2	1.9	1.7	5	3.4	2.2	1.7	1.9	14.2	3.4	24	
18	2.4	2.5	2.3	2.9	2.6	5.1	2.3	1.7	1.8	1.7	S	1.3	1.4	2.9	1.6	2.5	1.8	1.7	2	2.5	1.3	1.4	1.5	1.2	5.1	2.1	24	
19	1.4	P	1.2	1.5	1.8	P	2.2	1.5	1.9	C	C	C	C	2.2	2	2	1.9	1.7	1.8	2.8	4.5	3.3	2.5	3.1	4.5	2.2	22	
20	2.9	2.1	2	2	2.1	2.7	2.2	1.9	S	0.9	0.8	0.9	1.1	1.1	1.3	0.9	1.1	0.9	1.7	1.4	1.1	1.1	1.1	1.1	1.1	2.9	1.5	24
21	1	1.1	1	1	1.3	1.5	1.3	S	1	1.8	1.5	1.8	1.4	3.1	3	1.6	1.4	1.4	2.1	1.9	2.6	2.1	2.5	2.7	3.1	1.7	24	
22	2.7	2.9	3	4	2.6	3.1	S	2.5	2.7	3.4	3.5	3.2	2.5	1.8	1.8	1.6	1.8	1.7	1.6	4.8	8.6	3.5	3.1	4.2	8.6	3.1	24	
23	2	3.3	3	4.7	3.7	S	2.8	2.5	2	1.7	1.5	1.5	1.5	1.5	1.9	1.9	1.9	2.1	2.3	2	2.4	3.3	5	5.2	5.2	2.6	24	
24	4.3	3.2	1.9	1.7	S	2	1.3	2.3	12.2	1.5	1.5	1.2	11.8	1	1.8	13.6	1.1	1.1	1.9	1.7	1.3	1.5	1.9	2.2	13.6	3.2	24	
25	2.2	2.2	1.9	S	2.1	2.8	2.9	3.1	3.2	2.3	3.6	3.9	3.4	3.3	6.5	2.3	1.9	2.2	2.7	1.9	3.5	2.3	1.1	1.1	6.5	2.7	24	
26	1.4	1.1	S	2.1	2.5	2.8	3.6	3	1.9	1.7	S	S	1.8	2.4	1.9	2.4	2.2	1.6	2.4	1.7	2.1	1.7	1.4	1.7	3.6	2.1	24	
27	1.4	S	2.1	2	1.6	1.2	1.5	10.4	1.3	1.2	1.2	1.4	1.4	1.4	1.2	1.4	1.3	1.2	1.2	1.5	1.5	1.4	1.6	1.8	10.4	1.8	24	
28	S	1.5	3.1	8.1	10.1	6.6	4.7	3.6	2.6	2.8	2.3	1.4	1.2	2	1.9	1.2	1.2	3.7	2.3	2	1.3	1.2	1.2	S	10.1	3.0	24	
29	1.4	2.6	3.6	4.5	3.9	2.8	2.6	3	3.1	2.3	1.6	1	1	1	0.9	1	1.1	1.1	1.2	1.4	0.9	1.1	S	1.5	4.5	1.9	24	
30	1.6	1.6	1.4	1.6	1.5	2.4	2.7	3.5	3.9	P	P	1.7	1.2	1.2	6.7	1.4	2.1	2.2	1.6	2	2.8	S	1.3	1.4	6.7	2.2	22	
31	1.6	1.8	1.8	1.6	2.1	2.2	1.8	1.6	1.1	1	1	1.2	1.5	1.1	1.2	1.2	1	0.9	2.1	2	S	2.4	3	2.3	3	1.6	24	
HOURLY MAX	4.3	4.4	6.8	8.1	10.1	14.2	9.3	24.2	12.2	4.7	4.7	3.9	11.8	4.0	6.7	13.6	2.7	3.7	3.6	5.0	22.2	5.6	5.0	5.2				
HOURLY AVG	2.3	2.5	2.5	2.8	2.9	3.3	2.8	3.7	2.5	2.2	2.2	1.8	2.1	1.8	2.0	2.0	1.4	1.5	1.7	2.2	3.1	2.2	2.2	2.4				

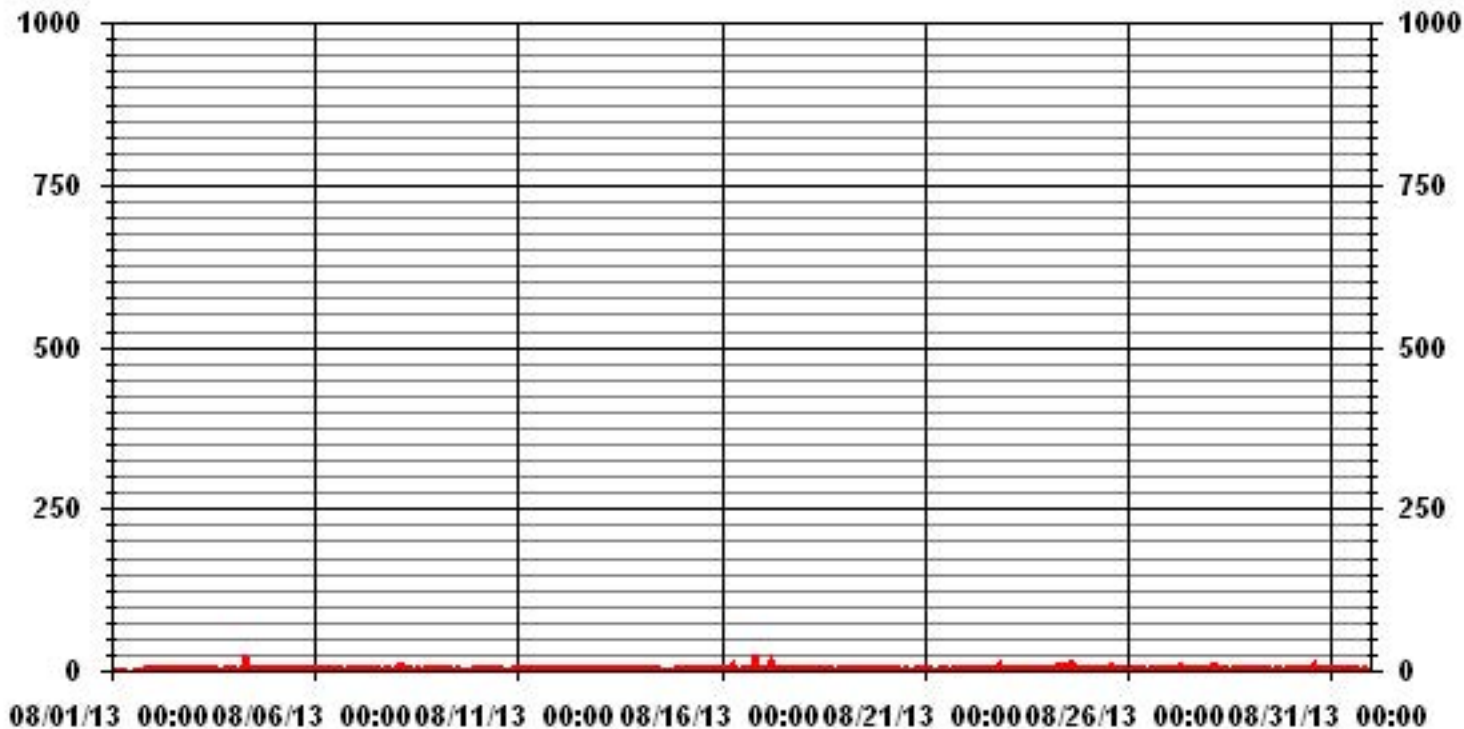
**STATUS FLAG CODES**

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:	685					
MAXIMUM INSTANTANEOUS VALUE:	24.2	PPB	@ HOUR(S)	7	ON DAY(S)	4
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	734	HRS	
MONTHLY CALIBRATION TIME:	15	HRS				
STANDARD DEVIATION:	1.83					

# 01 Hour Averages



— LICA31 NO2MAX PPB

LICA31  
 NO2\_ / WDR Joint Frequency Distribution (Percent)

August 2013

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	2.74	2.74	4.90	9.37	8.65	8.22	6.06	9.66	11.11	6.34	4.61	5.05	6.78	4.61	5.33	3.75	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.74	2.74	4.90	9.37	8.65	8.22	6.06	9.66	11.11	6.34	4.61	5.05	6.78	4.61	5.33	3.75	

Calm : .00 %

Total # Operational Hours : 693

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	19	19	34	65	60	57	42	67	77	44	32	35	47	32	37	26	693
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	19	19	34	65	60	57	42	67	77	44	32	35	47	32	37	26	

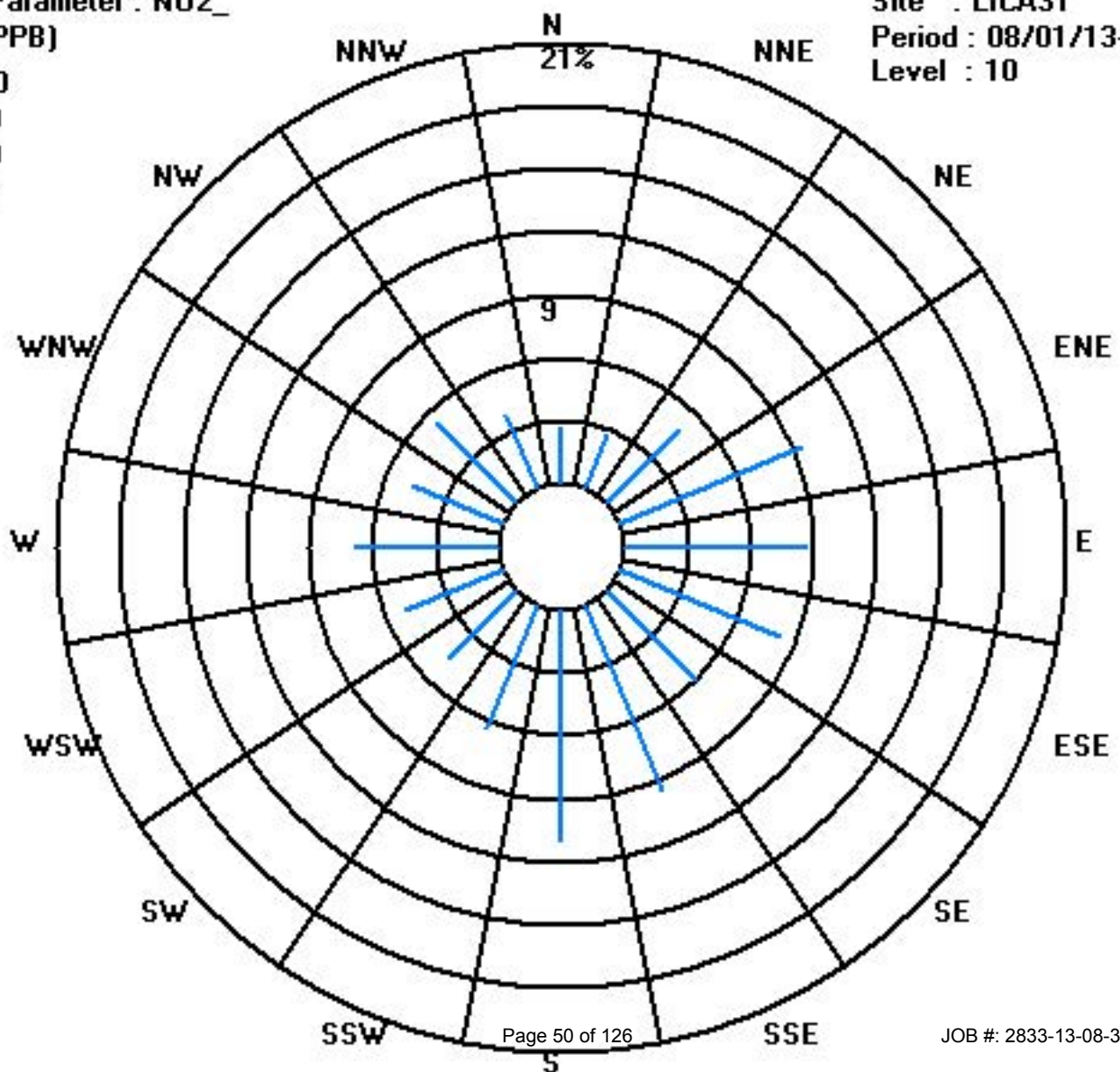
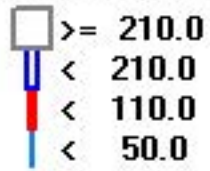
Calm : .00 %

Total # Operational Hours : 693

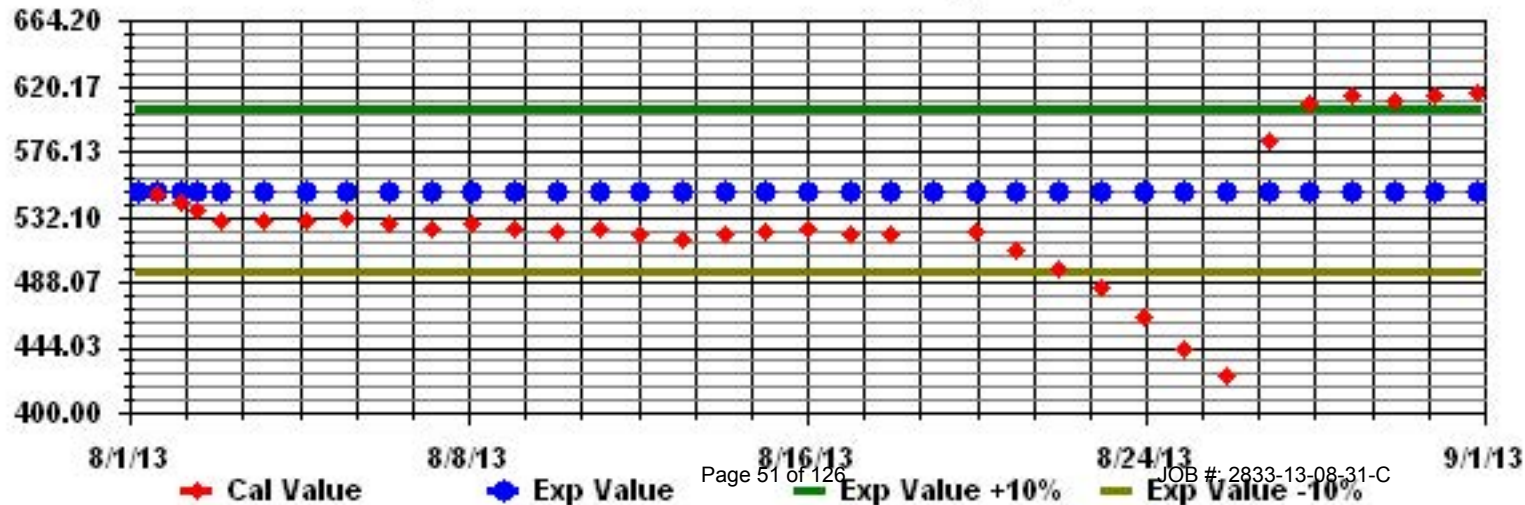
Class Limits (PPB)

Period : 08/01/13-08/31/13

Level : 10



Calibration Graph for Site: LICA31 Parameter: NO2\_ Sequence: NO2 Phase: SPAN



# Nitric Oxide



# LAKELAND INDUSTRY & COMMUNICATY ASSOCIATION - ST. LINA

AUGUST 2013

NITRIC OXIDE hourly averages in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
	HOUR START	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	HOUR END	MAX.	AVG.
1	0	0	0	0.1	S	0	0.2	0.2	0	C	C	C	C	C	C	0.4	0	0	0	0	0.1	0	0.2	0.3	0.4	0.1	24	
2	0.4	0.7	0.6	S	0.3	0.2	0.4	0.4	0.2	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0.1	0.7	0.2	24
3	0.2	0.2	S	0.3	0.4	0.6	0.8	1	0.5	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0.2	24
4	0.1	S	0.2	0	0	0	0.2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
5	S	0.4	0.1	0	0.1	0.3	0.4	0.2	0.2	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0.2	S	0.4	0.1	24
6	0.3	0	0.1	0.1	0.2	0.2	0.3	0.6	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.6	0.1	24
7	0	0	0	0	0	0	0	0.2	0	0.2	0.1	0	0	0	0	0	0	0	0	0	0	0	S	0.5	0.4	0.5	0.1	24
8	0.5	0.5	0.6	0.6	0.6	0.9	1.4	1.1	0.6	0.8	0.4	0.2	0.2	0	0	0	0	0	0	0	S	0.5	0.4	0.3	1.4	0.4	24	
9	0.2	0.4	0.4	0.6	0.5	0.7	0.9	0.8	0.7	0.4	0.1	0	0	0	0	0	0	0	0	S	0.3	0.2	0.3	0.4	0.9	0.3	24	
10	0.4	0.1	0.4	0.4	0.6	0.7	1.2	0.9	0.6	0.4	0.1	0	0	0	0	0	0	0	S	0.2	0.2	0.5	0.5	0.5	1.2	0.3	24	
11	0.6	0.7	0.6	0.7	0.6	0.8	0.9	0.7	0.7	0.8	0.6	0.8	0.7	0.7	0.7	0.4	0.3	S	0	0	0	0	0	0	0	0.9	0.5	24
12	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
13	0.1	0.2	0	0	0	0.3	0.6	0.9	0.6	0.3	0.1	0	0	0	0	S	0.4	0.1	0	0.2	0.3	0.2	0.4	0.6	0.9	0.2	24	
14	0.5	0.8	0.7	0.8	0.8	0.9	1.1	1.2	1	1	0.6	0.5	0.4	0.2	S	0	0.2	0	0	0	0	0.1	0.2	0.3	1.2	0.5	24	
15	0.3	0.6	0.3	0.4	0.6	0.8	1	1.4	1.2	0.8	0.6	0.4	0.2	S	0.6	0.4	0.4	0.5	0.6	1	1	0.9	0.9	0.9	1.4	0.7	24	
16	1	0.9	1	1	0.8	1.2	1.4	1.9	1.2	2.2	1.7	1.2	S	0.8	0	0.4	0	0.2	0	0.1	0.3	0.5	0.2	0.1	2.2	0.8	24	
17	0	0	0	0	0	1.5	0.8	0.2	0.4	0.5	0.1	S	0.5	0.2	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0	0	1.5	0.2	24		
18	0	0.1	0.1	0.1	0.1	0.3	0.3	0.4	0.3	0	S	0.8	0.5	0.6	0.5	0.5	0.3	0.6	0.5	0.8	0.5	0.4	0.4	0.4	0.8	0.4	24	
19	0.2	0.6	0.4	0.4	0.5	1.2	0.5	0.6	0.7	C	C	C	C	1.1	0.8	0.6	0.7	0.5	0.7	0.6	0.9	0.8	0.7	0.9	1.2	0.7	24	
20	0.8	0.9	0.9	1	1.1	1.2	1	1.1	S	0.5	0.1	0.1	0.1	0	0	0.1	0	0	0.3	0	0	0	0	0	1.2	0.4	24	
21	0	0	0	0	0	0	0	S	0.4	0.6	0.2	0.3	0.2	0.4	0.4	0.3	0.2	0.3	0.2	0.1	0.1	0.1	0	0	0.6	0.2	24	
22	0	0.1	0.1	0.1	0	0.1	S	1	0.7	0.5	0.4	0.3	0.4	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	1	1	0.2	24	
23	0	0	0	0.1	0	S	0.6	0.5	0.5	0.5	0.4	0.7	0.4	0.5	0.4	0.3	0.5	0.4	0.4	0.2	0.3	0.3	0.3	0.4	0.7	0.3	24	
24	0.4	0.3	0.4	0.3	S	0.3	0.2	0.1	0.7	0	0	0	0.2	0	0.3	0.6	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0	0.7	0.2	24	
25	0.1	0.1	0.2	S	0	0	0	0.2	0.3	0.2	0.2	0.2	0.1	0	0.2	0	0	0.2	0.1	0	0	0	0	0	0.3	0.1	24	
26	0	0	S	0.1	0	0.1	0.2	0.2	0.2	0	C	C	0	0	0	0.1	0.3	0	0.1	0	0.2	0	0.1	0	0.3	0.1	24	
27	0	S	0.2	0	0	0	0	1.7	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	1.7	0.1	24	
28	S	0.3	0	0.2	0.1	0	1	0.8	0.5	0.3	0.2	0	0	0	0.1	0	0.3	0.1	0	0.2	0	0.1	0.1	S	1	0.2	24	
29	0.4	0.4	0.1	0.1	0.1	0.2	0.3	0.4	0.6	0.6	0.2	0	0	0.1	0	0.1	0.2	0	0	0	0	0	0	S	0.6	0.6	24	
30	0.5	0.3	0.3	0.1	0.3	0.5	0.3	0.5	0.8	P	P	1.5	0.3	0.5	0.7	0.6	0.9	0.6	0.7	0.8	0.7	S	0.5	0.4	1.5	0.6	22	
31	0.3	0.3	0.3	0.5	0.2	0.4	0.4	0.5	0.5	0.6	0.3	0.3	0.5	0.5	0.2	0.4	0.3	0.2	0.3	0.2	S	0.2	0.1	0.1	0.6	0.3	24	
HOURLY MAX	1.0	0.9	1.0	1.0	1.1	1.5	1.4	1.9	1.2	2.2	1.7	1.5	0.7	1.1	0.8	0.6	0.9	0.6	0.7	1.0	1.0	0.9	0.9	0.9				
HOURLY AVG	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.7	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2				

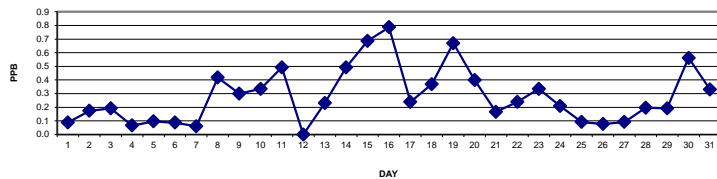
STATUS FLAG CODES

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

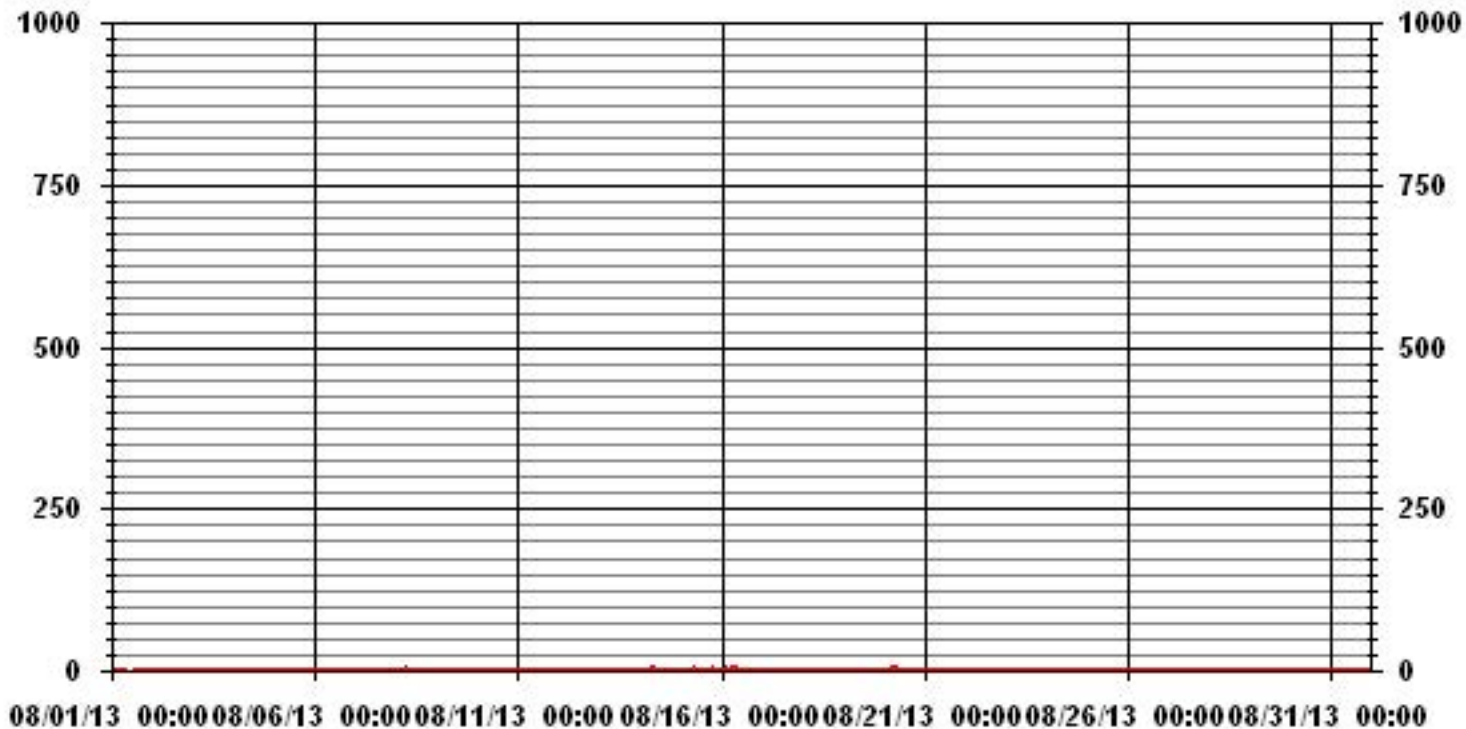
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	433					
MAXIMUM 1-HR AVERAGE:	2.2	PPB	@ HOUR(S)	9	ON DAY(S)	16
MAXIMUM 24-HR AVERAGE:	0.8	PPB			ON DAY(S)	16
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	16	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	0.34		MONTHLY AVERAGE:	0.28	PPB	

24 HOUR AVERAGES FOR AUGUST 2013



# 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

## 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	0.6	0.8	0.7	0.8	S	1.1	1.3	1.1	C	C	C	C	C	C	C	2.6	0.4	5.3	0.4	0.7	0.8	0.5	0.9	1	5.3	1.2	24	
2	0.9	1.3	1.1	S	0.8	0.7	1	1	0.8	C	C	C	C	0.3	0.2	0.2	0	4.7	0	0.2	0.4	0.6	0.5	0.8	4.7	0.8	24	
3	0.8	0.8	S	1.3	0.9	1.2	1.4	1.5	1.2	1	0.6	0.5	C	0.4	0.1	0.3	0.1	0	4.2	0	0	0.6	0.5	0.6	0.9	4.2	0.8	24
4	0.8	S	0.8	0.5	0.6	0.5	1	36	0.7	0.2	0.6	0	0.2	0.2	0	0.1	0	0	0	0	0.2	0	0.4	0.3	36	1.9	24	
5	S	1.2	0.7	0.8	0.7	1.4	0.9	1	0.8	0.9	1.4	0.6	0.7	P	0.3	0.4	0.5	3	P	0.3	0.5	0.6	0.9	S	3	0.9	22	
6	P	0.6	0.7	0.6	0.7	1.1	1.1	3.1	0.8	0.8	0.6	0.6	0.9	0.4	0.5	0.9	0.9	4.8	0.4	1.1	0.6	0.6	S	0.9	4.8	1.0	23	
7	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.6	0.8	0.7	0.7	0.5	0.6	0.4	0.3	0.2	4.5	0.1	0.2	0.3	S	1.6	1	4.5	0.8	24	
8	1.1	1.2	1.4	1.1	1.2	1.6	2	2	1.4	1.4	1.2	0.8	0.7	0.7	0.3	0.5	0.3	4.5	0.4	0.7	S	1	P	0.8	4.5	1.2	23	
9	0.8	0.9	1.2	1.2	1.2	1.2	1.6	1.8	1.6	1	0.9	0.7	0.7	0.5	0.5	0.5	0.6	6.4	0.4	S	1.1	0.9	0.9	1	6.4	1.2	24	
10	1	1	1.2	1	P	1.7	1.8	1.6	1.2	1	0.8	0.9	0.6	0.2	0.3	0	0.3	5.6	S	1.3	0.8	1.1	1.2	1.1	5.6	1.2	23	
11	1.2	1.1	1.1	1.1	1.4	1.4	1.6	1.2	1.4	P	1.5	1.5	1.2	1.1	1.5	1.1	1.1	S	0	0	0	0.2	0.2	0.2	1.6	1.0	23	
12	0	0.1	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0	0	0	0	S	1.8	0.3	0.3	0.5	0.7	0.7	0.6	1.8	0.3	24	
13	0.7	0.9	0.5	0.6	0.5	1.2	1.2	1.6	1.4	0.8	0.8	0.5	0.5	0.2	0.1	S	2.2	2.3	0.6	0.8	0.9	0.8	1	1.1	2.3	0.9	24	
14	1.1	1.4	1.2	1.4	1.5	1.5	1.7	1.8	1.7	1.7	1.3	1.2	1.1	0.9	S	1	2.9	2.5	0.3	0.6	0.5	0.7	0.9	0.9	2.9	1.3	24	
15	1.1	1.2	1	1.1	1.3	1.5	1.7	2	1.7	1.3	1.1	0.8	S	2.2	1.6	1.2	1.2	1.7	2	2	1.5	1.6	1.4	2.2	1.5	2.2	24	
16	1.6	1.4	1.6	1.7	1.6	1.9	2.2	20.7	1.8	9	9.3	3.2	S	4.1	1	3	1.2	1.1	0.7	1	15.9	4.1	0.8	0.9	20.7	3.9	24	
17	0.6	0.7	0.8	0.6	0.6	24.8	11.3	1.3	2.2	1.2	0.9	S	1.2	0.8	0.8	1	1.1	0.9	0.8	1.1	0.8	0.8	0.7	0.5	24.8	2.4	24	
18	0.7	0.8	0.8	0.8	0.6	1.8	1.2	1	1.2	0.8	S	1.5	1.4	2.1	1.1	1.8	1.2	1.4	1.5	2.5	1.2	1.4	1.1	1.1	2.5	1.3	24	
19	1	P	1.1	1	1.3	P	1.7	1.4	1.6	C	C	C	C	2.7	1.5	1.4	1.7	1.2	1.5	2.6	3.4	1.4	1.3	1.5	3.4	1.6	22	
20	1.5	1.5	1.5	1.5	2.8	2	1.6	1.8	S	1.4	1	0.7	0.7	0.5	0.9	0.7	0.7	0.9	1.5	0.5	0.5	0.4	0.5	0.5	2.8	1.1	24	
21	0.5	0.2	0.7	0.4	0.3	0.6	0.3	S	2.3	2.5	1.3	2	1.1	2.7	2.4	1	0.8	0.8	1	0.6	0.6	0.7	0.5	0.7	2.7	1.0	24	
22	0.6	0.6	0.6	0.6	0.6	0.8	S	2	1.6	1.6	1.8	1.3	1.4	0.7	0.8	0.8	0.8	1.1	0.8	0.7	0.7	0.7	0.8	0.6	2	1.0	24	
23	0.5	0.4	0.4	0.7	0.6	S	1.4	1	1	1	1.1	1.6	1	1.1	1.1	0.9	1.2	0.9	0.9	0.8	0.9	0.8	1.1	1.1	1.6	0.9	24	
24	1.2	0.9	1.1	0.8	S	1.3	0.9	1.2	11.6	0.6	0.8	0.6	7.3	0.5	1.4	12.6	0.8	0.8	0.8	0.7	0.7	0.8	0.8	0.6	12.6	2.1	24	
25	0.8	0.7	0.8	S	0.8	0.6	0.5	0.8	1.9	0.8	1.4	2.8	1.9	0.8	8	1	0.7	1.3	1.2	0.7	0.6	0.6	0.7	0.5	8	1.3	24	
26	0.4	0.6	S	0.7	0.7	0.7	0.7	0.7	0.7	0.7	S	S	0.6	0.3	0.6	0.6	1.1	0.5	0.7	0.5	0.7	0.7	0.6	0.5	1.1	0.6	24	
27	0.4	S	1	0.5	0.4	0.5	0.6	23.4	0.7	0.6	1.9	0.3	0.3	0.6	0.3	0.1	0.5	0.5	0.1	0.1	0.5	0.1	0.4	0.4	23.4	1.5	24	
28	S	1	0.4	0.8	0.7	0.6	1.8	1.2	1	0.9	0.6	0.6	0.4	0.7	0.7	0.8	0.7	0.5	0.8	0.5	0.5	0.7	S	1.8	0.8	24		
29	1.3	1.1	0.6	0.5	0.8	0.8	0.8	1.1	1.3	1.2	0.9	0.5	0.6	0.7	0.7	0.7	0.8	0.7	0.5	0.5	0.5	0.5	S	1.7	1.7	0.8	24	
30	1.1	0.9	0.8	0.7	1	1.3	1.1	2.6	2.8	P	P	10.6	1.2	1.2	11.7	1.5	3.2	2.5	1.7	1.8	2.2	S	1.7	0.8	11.7	2.5	22	
31	0.9	0.9	1.2	1.2	0.9	0.9	1.1	1.6	1.5	1.1	1	1.3	1.5	1.6	0.8	1.1	0.8	0.8	0.8	0.8	S	0.9	0.6	0.6	1.6	1.0	24	
HOURLY MAX	1.6	1.5	1.6	1.7	2.8	24.8	11.3	36.0	11.6	9.0	9.3	10.6	7.3	4.1	11.7	12.6	3.2	6.4	1.7	2.6	15.9	4.1	1.7	1.7				
HOURLY AVG	0.9	0.9	0.9	0.9	0.9	1.9	1.6	4.0	1.7	1.3	1.4	1.4	1.1	0.9	1.4	1.3	0.9	2.2	0.7	0.8	1.3	0.8	0.8	0.8				

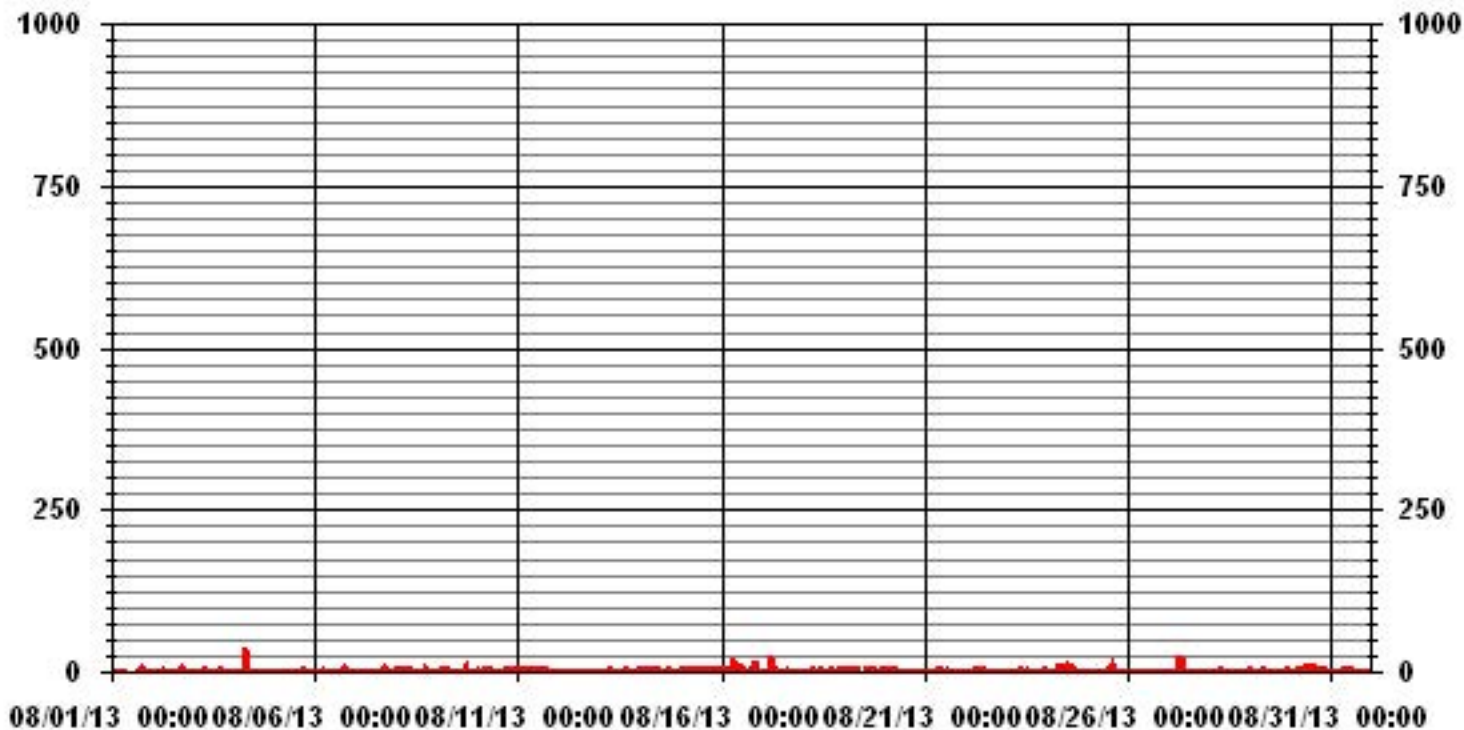
**STATUS FLAG CODES**

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:	660					
MAXIMUM INSTANTANEOUS VALUE:	36.0	PPB	@ HOUR(S)	7	ON DAY(S)	4
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	734	HRS	
MONTHLY CALIBRATION TIME:	15	HRS				
STANDARD DEVIATION:	2.42					

# 01 Hour Averages



LICA31  
 NO\_ / WDR Joint Frequency Distribution (Percent)

August 2013

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	2.73	2.73	4.89	9.36	8.64	8.21	6.05	9.65	11.23	6.34	4.61	5.04	6.77	4.61	5.33	3.74	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.73	2.73	4.89	9.36	8.64	8.21	6.05	9.65	11.23	6.34	4.61	5.04	6.77	4.61	5.33	3.74	

Calm : .00 %

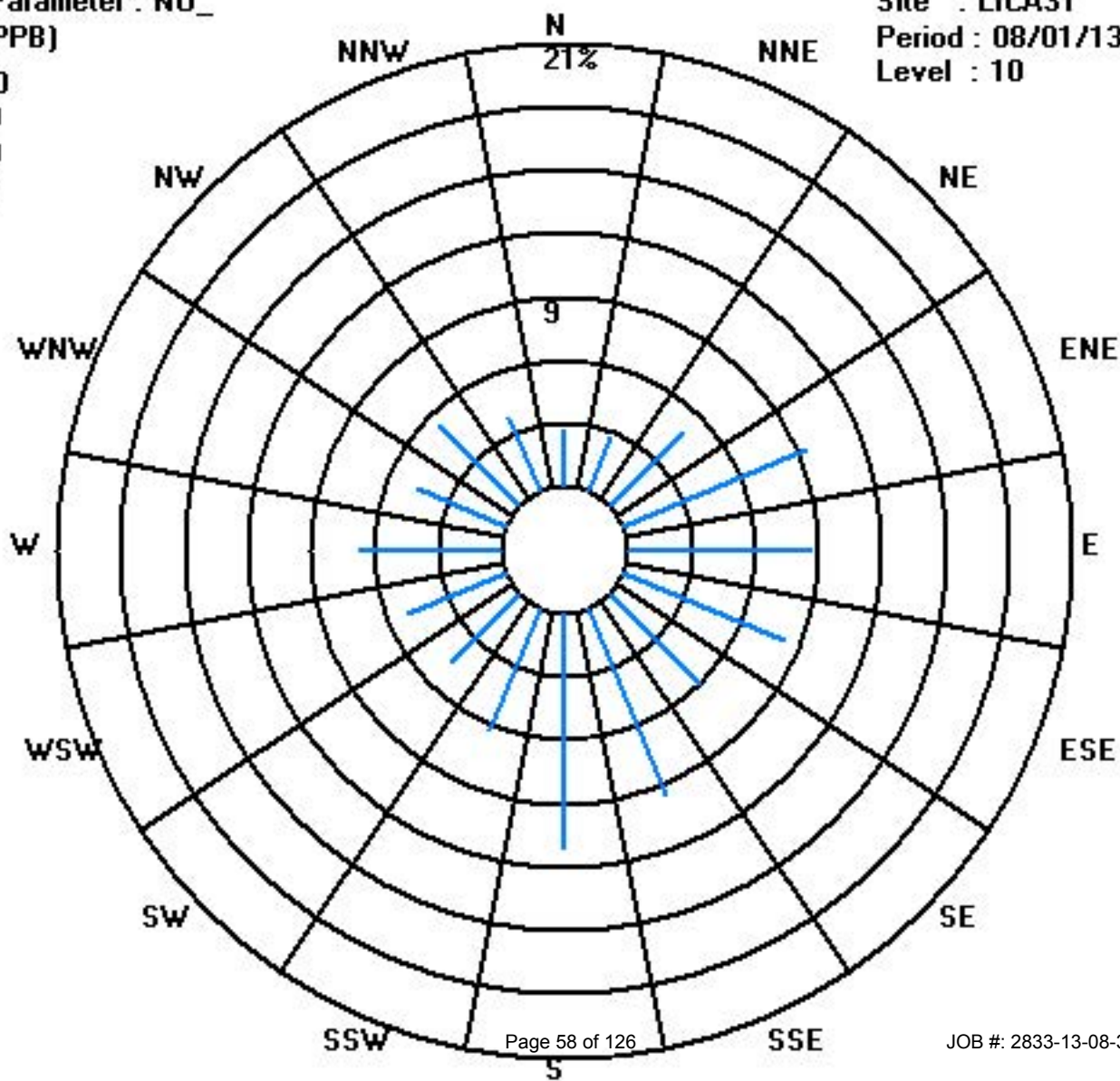
Total # Operational Hours : 694

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	19	19	34	65	60	57	42	67	78	44	32	35	47	32	37	26	694
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	19	19	34	65	60	57	42	67	78	44	32	35	47	32	37	26	

Calm : .00 %

Total # Operational Hours : 694



# Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

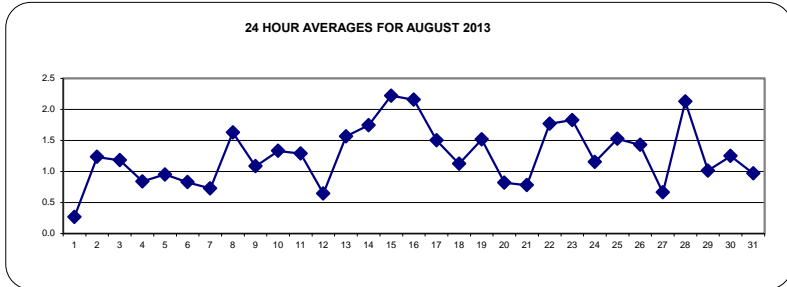
AUGUST 2013

OXIDES OF NITROGEN hourly averages in ppb

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00			
DAY																											
1	0	0	0	0.1	S	0.1	0.5	0.2	0	C	C	C	C	C	C	0.4	0	0	0	0.6	0.5	0.2	0.7	1.2	1.2	0.3	24
2	2.5	2.6	1.2	S	1.2	1.1	1.1	1.1	1.1	C	C	C	C	0.8	0.9	0.6	0.6	0.6	0.5	0.8	1.1	1.1	1.7	2.8	2.8	1.2	24
3	2.6	2.9	S	2.4	2.2	2.5	2.7	2.5	1.8	1.4	1.2	0.8	0.6	0.2	0.1	0	0	0	0	0.1	0.5	0.6	0.9	1.1	2.9	1.2	24
4	1.1	S	1.5	1.4	1.3	1.6	1.8	2.9	1.1	0.7	0.6	0.3	0.3	0.6	0.7	0.8	0.4	0.5	0	0.2	0.2	0.2	0.3	0.8	2.9	0.8	24
5	S	1.1	0.8	1.4	1.4	1.3	1.2	1.1	0.7	0.6	0.6	0.7	0.7	0.7	0.3	0.4	0.2	0.3	1.3	1.2	1.6	1.9	1.4	S	1.9	1.0	24
6	1.9	0.7	0.8	0.8	0.9	0.8	0.8	1.2	0.6	0.5	0.5	0.6	0.7	0.5	0.6	0.7	0.7	0.5	0.5	1	0.9	0.9	S	1.9	1.9	0.8	24
7	1.6	2.8	1.6	1.2	1.4	1.5	0.8	0.9	0.6	0.9	0.6	0.5	0.1	0.2	0.1	0	0	0.1	0	0.1	0.2	S	0.7	0.8	2.8	0.7	24
8	0.9	1.4	3.8	4.8	4.7	3.4	3.2	2.4	1.4	1.8	1	0.5	0.6	0.5	0.2	0.3	0.3	0.5	0.5	0.7	S	0.9	1.9	1.7	4.8	1.6	24
9	1.5	1.9	1.6	1.7	1.5	2.2	1.8	1.6	1.3	0.8	0.6	0.3	0.6	0.4	0.3	0.1	0.4	0.3	0.3	S	0.9	1.2	1.8	1.8	2.2	1.1	24
10	2	1.8	2.3	2.2	2.3	2.8	3	1.9	1.5	1	0.8	0.5	0.4	0.1	0.1	0	0.1	0.4	S	0.9	1	1.6	1.8	2.1	3	1.3	24
11	1.9	1.8	1.5	1.5	1.4	1.6	1.6	1.6	1.7	1.8	1.8	2.1	1.3	1.4	1.4	1.1	1.2	S	0.1	0.2	0.5	0.7	0.7	0.7	2.1	1.3	24
12	0.4	0.8	0.6	0.9	0.8	0.7	0.9	1	1.1	0.6	0	0	0	0	0	0.1	S	0.7	0.7	0.7	1.1	1.1	1.4	1.2	1.4	0.6	24
13	1.5	1.6	1.3	1.4	2	2.6	2.5	2.3	2.1	1.7	1.3	0.8	0.9	0.8	0.8	S	1	1.1	1.2	1.5	1.8	1.8	1.9	2.1	2.6	1.6	24
14	2.2	2.8	2.7	2.7	2.4	2.4	2.5	2.5	2.4	2.3	1.5	1.1	1.1	S	0.9	1.2	0.9	0.8	1.1	1.2	1.4	1.5	1.4	2.8	1.7	24	
15	1.8	2.7	2.5	2.6	2.7	2.7	2.8	3.4	2.9	2.3	2.2	2	1.8	S	1.8	1.8	1.6	1.6	1.8	2.5	2.4	1.8	1.8	1.5	3.4	2.2	24
16	1.4	1.5	1.5	2.1	3.4	4.4	4.3	3.6	2.6	3.6	3	2.1	S	2.1	1	1.6	0.9	1.2	0.8	1.1	1.8	2.2	1.7	1.6	4.4	2.2	24
17	1.2	1	1.5	1.1	0.9	3.8	3.1	1.2	1.7	3.2	2.4	S	1.2	0.9	1.1	1.1	1.2	1	0.8	1.7	1.4	1.2	0.9	0.9	3.8	1.5	24
18	1.1	1.6	1.4	1.6	1.5	2.2	1.5	1.1	1.1	0.7	S	0.9	0.8	1.3	0.9	1.1	0.8	0.9	0.9	1.3	0.7	0.8	0.9	0.7	2.2	1.1	24
19	0.6	1.1	0.7	1	1.1	2.1	1	1.1	1.2	C	C	C	C	2	1.7	1.3	1.3	1.2	1.5	1.5	2.8	2.6	2	2.5	2.8	1.5	24
20	2.3	1.5	1.6	1.6	1.7	2.2	1.7	1.6	S	0.5	0.2	0.2	0.4	0.2	0.3	0.3	0.3	0.3	0.7	0.5	0.3	0.1	0.2	0.1	2.3	0.8	24
21	0.2	0.1	0.2	0.2	0.3	0.7	0.4	S	0.7	1	0.7	0.9	0.7	0.9	1	0.7	0.6	0.7	0.8	0.8	1.5	1.4	1.5	1.9	1.9	0.8	24
22	2	2.1	2.2	2.4	1.9	2	S	2.4	2.2	2.1	2.2	1.9	1.6	1	0.8	0.8	0.9	0.8	0.9	1.5	2.9	1.3	1.7	3	3	1.8	24
23	0.9	1.4	1.5	2.7	2.9	S	2.7	1.8	1.7	1.4	1	1.4	1.2	1.3	1.4	1.3	1.5	1.7	1.6	1.3	1.6	2.5	2.9	4.3	4.3	1.8	24
24	3.6	1.7	1.4	1.1	S	1	1	0.9	2.2	0.7	0.8	0.5	1	0.6	1	1.5	0.6	0.5	0.8	0.8	0.9	0.9	1.5	1.5	3.6	1.2	24
25	1.6	1.6	1.4	S	1.3	2	2.3	2.4	2.2	1.7	1.8	1.9	2.6	2.6	2.4	1.1	0.7	0.8	1.2	0.8	1.3	0.6	0.4	0.4	2.6	1.5	24
26	0.6	0.6	S	1.4	1.7	1.8	3.2	2.1	1.5	1.2	C	C	1.3	1.3	1.4	1.8	1.8	1.1	1.6	1.1	1.4	1.1	1	1	3.2	1.4	24
27	0.7	S	1.4	1.2	0.7	0.2	0.4	3.2	0.6	0.4	0.8	0.3	0.3	0.3	0.3	0.1	0.4	0.5	0.3	0.5	0.6	0.4	0.6	1	3.2	0.7	24
28	S	1.3	1.4	4.9	8	5.1	5.1	3.6	2.7	2.4	1.9	0.9	0.7	0.6	0.8	0.6	0.9	1.4	1.2	1.1	0.6	0.7	0.8	S	8	2.1	24
29	0.8	1.5	2.3	3.2	2.9	1.9	1.8	2	2.6	1.5	0.6	0	0	0.1	0	0.1	0.2	0.1	0.2	0.4	0	0	S	1.1	3.2	1.0	24
30	0.9	1	0.8	0.9	0.9	1.6	1.9	2.8	2.5	P	P	1.6	0.6	0.8	0.9	0.9	1.2	1	1.1	1.5	1.4	S	1	0.9	2.8	1.2	22
31	1.1	1.2	1.1	1.3	1.3	1.5	1.3	1	0.9	0.6	0.5	0.5	0.8	0.7	0.6	0.7	0.5	0.4	0.7	1.1	S	1	2	1.5	2	1.0	24
HOURLY MAX	3.6	2.9	3.8	4.9	8.0	5.1	5.1	3.6	2.9	3.6	3.0	2.1	2.6	2.6	2.4	1.8	1.8	1.7	1.8	2.5	2.9	2.6	2.9	4.3			
HOURLY AVG	1.4	1.5	1.5	1.8	2.0	2.0	2.0	1.9	1.6	1.4	1.1	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.8	1.0	1.1	1.1	1.3	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

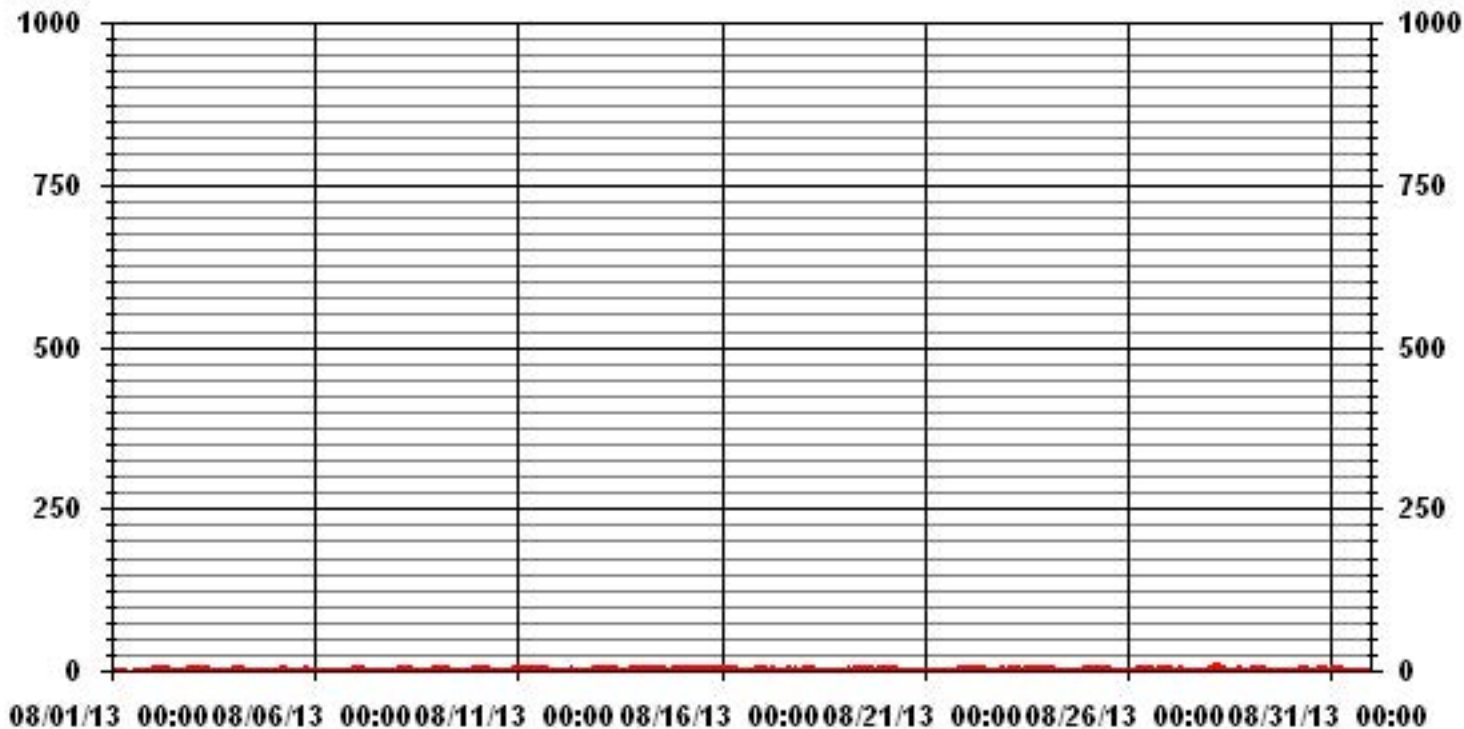


MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	668					
MAXIMUM 1-HR AVERAGE:	8.0	PPB	@ HOUR(S)	4	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	2.2	PPB			ON DAY(S)	15, 16
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	16	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	0.90		MONTHLY AVERAGE:	1.27	PPB	



### 01 Hour Averages



— LICA31 NOX\_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	0.3	1	0.9	0.4	S	1.1	3.2	0.9	C	C	C	C	C	C	2.4	0.7	5.3	0.5	1.8	1.6	0.8	1.4	1.8	5.3	1.5	24		
2	4	4	2	S	2	1.8	1.8	1.8	1.7	C	C	C	C	1.4	1.4	1.2	1.2	5.8	1.2	1.6	1.7	1.8	2.4	3.5	5.8	2.2	24	
3	3.3	3.5	S	3.8	2.8	3.1	3.4	3.3	2.5	2.2	2	1.6	1.8	0.8	1	0.2	0.5	4.9	0.5	0.7	1.1	1.2	1.4	1.8	4.9	2.1	24	
4	1.6	S	2.1	2.7	2	2.5	3.3	55	2.4	1.3	2.7	1.4	1.5	1.6	1.7	1.8	1.3	2.5	0.9	0.9	0.9	0.8	1.1	1.4	55	4.1	24	
5	S	1.8	1.5	2.1	1.9	3	2	2.2	1.3	1.6	3.4	2.5	2	P	0.9	0.9	1	3.8	P	2.1	2.4	2.5	2.2	S	3.8	2.1	22	
6	P	1.3	1.3	1.3	1.6	1.6	1.6	5.9	1.5	1.2	1.3	1.2	2.5	1.3	1.4	2	2.3	5.2	2.1	5.2	3.6	1.9	S	3	5.9	2.3	23	
7	2.6	3.9	2.5	2	2.3	2.2	1.9	1.6	1.3	1.6	1.1	1	0.9	0.8	0.7	0.7	0.5	4.9	0.4	0.7	0.8	S	1.3	1.5	4.9	1.6	24	
8	1.6	2.4	7.1	6.5	5.7	4.6	4	3.8	2.3	2.9	2.1	1.1	1.1	1.2	0.8	0.8	1	4.7	1.1	1.4	S	1.7	S	2.3	7.1	2.7	23	
9	2.3	2.6	2.6	2.7	2.3	2.7	3.4	3.5	2.3	1.5	1.6	1	1.4	1.1	1	0.9	1	6.7	1	S	1.5	2.1	2.7	2.6	6.7	2.2	24	
10	2.7	2.6	3	2.7	P	3.7	3.5	2.9	2.2	1.8	1.5	1.2	1.1	0.7	1.3	0.5	1	6.2	S	1.6	1.7	2.4	2.4	2.8	6.2	2.3	23	
11	2.7	2.3	2	2	2	2.2	2.2	2.2	2.3	P	2.6	2.8	2	2.1	2.2	1.6	2	S	0.6	1	1	1.4	1.4	1.2	2.8	1.9	23	
12	1	1.6	1.3	1.4	1.4	1.4	1.6	1.7	1.8	1.4	0.5	0.7	0.3	0.4	0.6	0.8	S	2.6	1.5	1.4	1.7	1.7	2.1	2	2.6	1.3	24	
13	2	2.3	2.1	2.1	3	3.5	3	3.2	3	2.5	2.2	1.5	1.5	1.4	1.5	S	3	3.1	1.9	2.3	2.5	2.5	2.5	2.9	3.5	2.4	24	
14	2.9	3.4	3.3	3.4	3	3.1	3.2	3.1	2.9	2.9	2.3	1.8	1.7	1.7	S	1.6	4	3.7	1.4	1.7	1.8	2	2.4	2	4	2.6	24	
15	2.6	3.5	3.1	3.2	3.4	3.6	3.5	4.1	3.8	3	3.1	2.8	2.4	S	4.4	3.8	2.3	3.3	4	4.4	5.7	2.8	2.8	2.8	5.7	3.4	24	
16	2	2.1	2.3	3.1	4.7	5.8	6	26.1	3.3	11.9	12.9	4.6	S	7	2.5	5.6	3.1	2.5	1.9	2.9	37.4	9	2.8	2.7	37.4	7.1	24	
17	2	1.6	2.9	1.9	1.9	34.2	19.9	2.6	3.9	4.3	4.3	S	3.2	1.5	1.9	1.8	2.6	1.8	1.4	5.2	3.3	2	1.5	1.8	34.2	4.7	24	
18	1.8	2.4	2.1	2.7	2.1	5.9	2.4	1.6	2	1.2	S	1.9	2.1	4.1	1.8	3.6	2.1	2.1	2.5	4.2	1.3	1.4	1.6	1.4	5.9	2.4	24	
19	1.5	P	1.3	1.6	2.1	P	3.3	2.3	2.6	C	C	C	C	4.3	2.6	2.3	2.7	1.8	2.3	3.9	6.5	3.4	2.6	3.2	6.5	2.8	22	
20	3.2	2.1	2.2	2.1	3.5	3.4	2.4	2.3	S	1.8	1.1	0.9	1.4	1.3	1.9	0.9	1.1	0.9	2.6	1.1	0.9	0.7	0.9	0.9	3.5	1.7	24	
21	0.9	0.5	1	0.7	1	1.3	1.2	S	2.3	3.5	2.3	3.1	1.8	4.9	4.9	2	1.3	1.6	2.1	1.7	2.2	2	2.4	2.5	4.9	2.1	24	
22	2.6	2.7	3	4.1	2.5	3.3	S	3.6	3.9	4.4	4.5	3.7	3.1	1.6	1.5	1.3	1.5	1.6	1.6	4.6	8.3	3.1	2.7	3.9	8.3	3.2	24	
23	1.5	2.8	2.6	4.6	3.7	S	3.7	2.7	2.5	2.3	1.7	2.1	1.7	2	2	1.8	2.1	2.3	2.4	1.8	2.6	3.4	5.4	5.5	5.5	2.7	24	
24	4.5	3.1	1.9	1.7	S	2.6	1.8	3.2	21.6	1.7	1.8	1.3	18.8	1.2	2.8	26.1	1.2	0.9	2	1.5	1.5	1.5	2	2.1	26.1	4.6	24	
25	2.3	2.1	2	S	2.4	2.7	2.9	3.5	4.9	2.7	4.6	6.1	4.8	3.5	14.3	2.9	2.2	3	3.3	1.6	3.5	2.5	1	0.9	14.3	3.5	24	
26	1.1	1.2	S	2.1	2.8	3.1	3.7	3.1	2.2	2	S	S	2	2	2.3	2.5	2.8	1.6	2.4	1.8	2.1	1.8	1.5	1.5	3.7	2.2	24	
27	1.4	S	2.2	1.9	1.3	1	1.8	31.1	1.5	1.2	2.8	1.3	1.2	1.7	1	1	1.2	1.2	1	1.2	1	1.1	1.2	1.6	31.1	2.7	24	
28	S	1.8	2.8	8.1	10.2	6.8	6	5.1	3.3	3	2.9	1.6	1.4	2.4	2.3	1.4	1.5	3.6	2.5	2.1	1.2	1.4	1.5	S	10.2	3.3	24	
29	1.9	2.5	3.2	3.9	3.7	2.6	2.5	3	3.4	2.7	1.6	0.4	0.6	0.7	0.5	0.5	0.7	0.7	0.7	1	0.6	0.7	S	1.6	3.9	1.7	24	
30	1.5	1.6	1.5	1.6	1.7	2.9	2.9	5.6	5.8	P	P	10.4	1.6	1.6	17.2	2	3.7	4.2	2.8	2.8	4.3	S	2.1	1.7	17.2	3.8	22	
31	1.9	2.1	2	2	1.9	2.2	2.1	2.7	2.1	1.6	1.2	2.1	2.5	1.8	1.3	1.6	1.3	1.1	2.3	2.2	S	2.2	3	2.1	3	2.0	24	
HOURLY MAX	4.5	4.0	7.1	8.1	10.2	34.2	19.9	55.0	21.6	11.9	12.9	10.4	18.8	7.0	17.2	26.1	4.0	6.7	4.0	5.2	37.4	9.0	5.4	5.5				
HOURLY AVG	2.1	2.3	2.3	2.7	2.8	4.1	3.5	6.5	3.3	2.6	2.7	2.3	2.5	2.0	2.7	2.6	1.8	3.1	1.8	2.2	3.6	2.1	2.1	2.2				

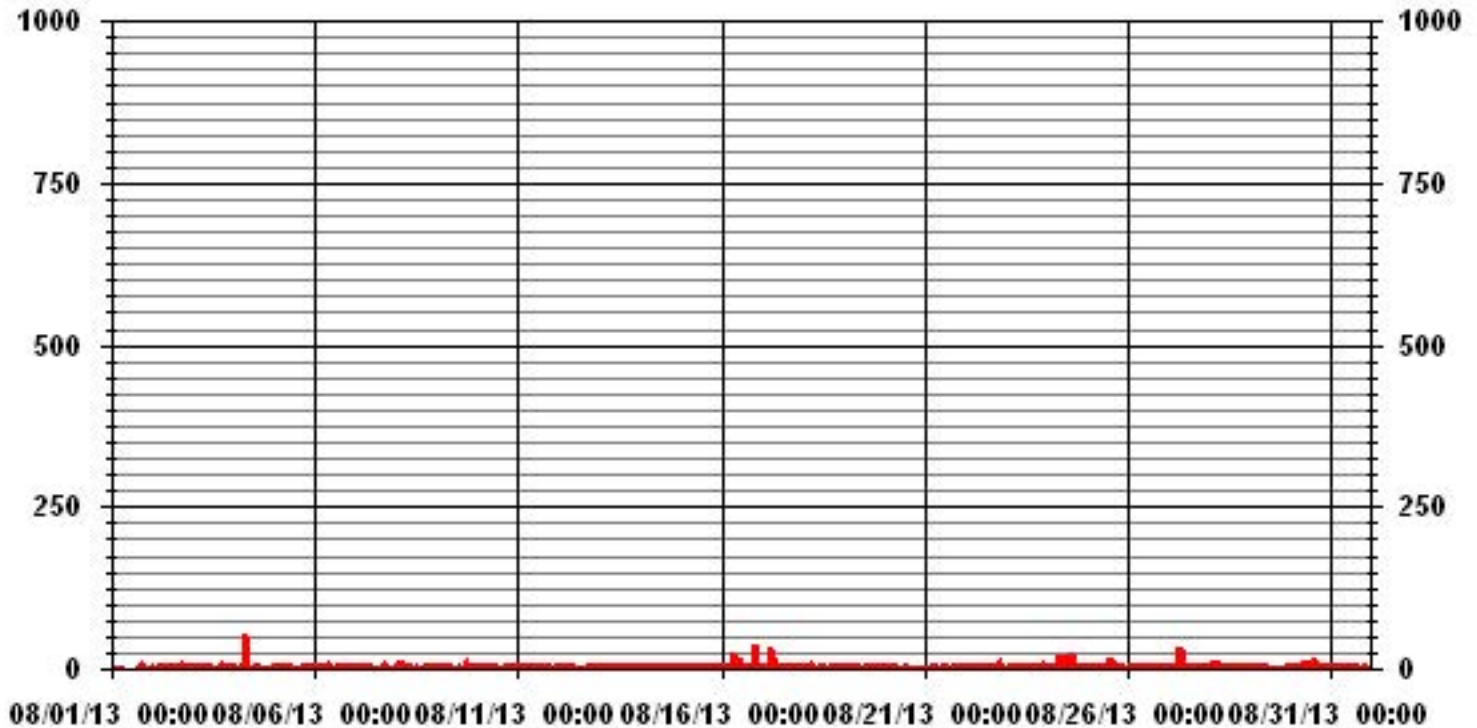
STATUS FLAG CODES

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:	685
MAXIMUM INSTANTANEOUS VALUE:	55.0 PPB @ HOUR(S) 7 ON DAY(S) 4
IZS CALIBRATION TIME:	35 HRS
MONTHLY CALIBRATION TIME:	15 HRS
OPERATIONAL TIME:	734 HRS
STANDARD DEVIATION:	3.74

# 01 Hour Averages



LICA31  
 NOX\_ / WDR Joint Frequency Distribution (Percent)

August 2013

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	2.73	2.73	4.89	9.36	8.64	8.21	6.05	9.65	11.23	6.34	4.61	5.04	6.77	4.61	5.33	3.74	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.73	2.73	4.89	9.36	8.64	8.21	6.05	9.65	11.23	6.34	4.61	5.04	6.77	4.61	5.33	3.74	

Calm : .00 %

Total # Operational Hours : 694

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	19	19	34	65	60	57	42	67	78	44	32	35	47	32	37	26	694
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	19	19	34	65	60	57	42	67	78	44	32	35	47	32	37	26	

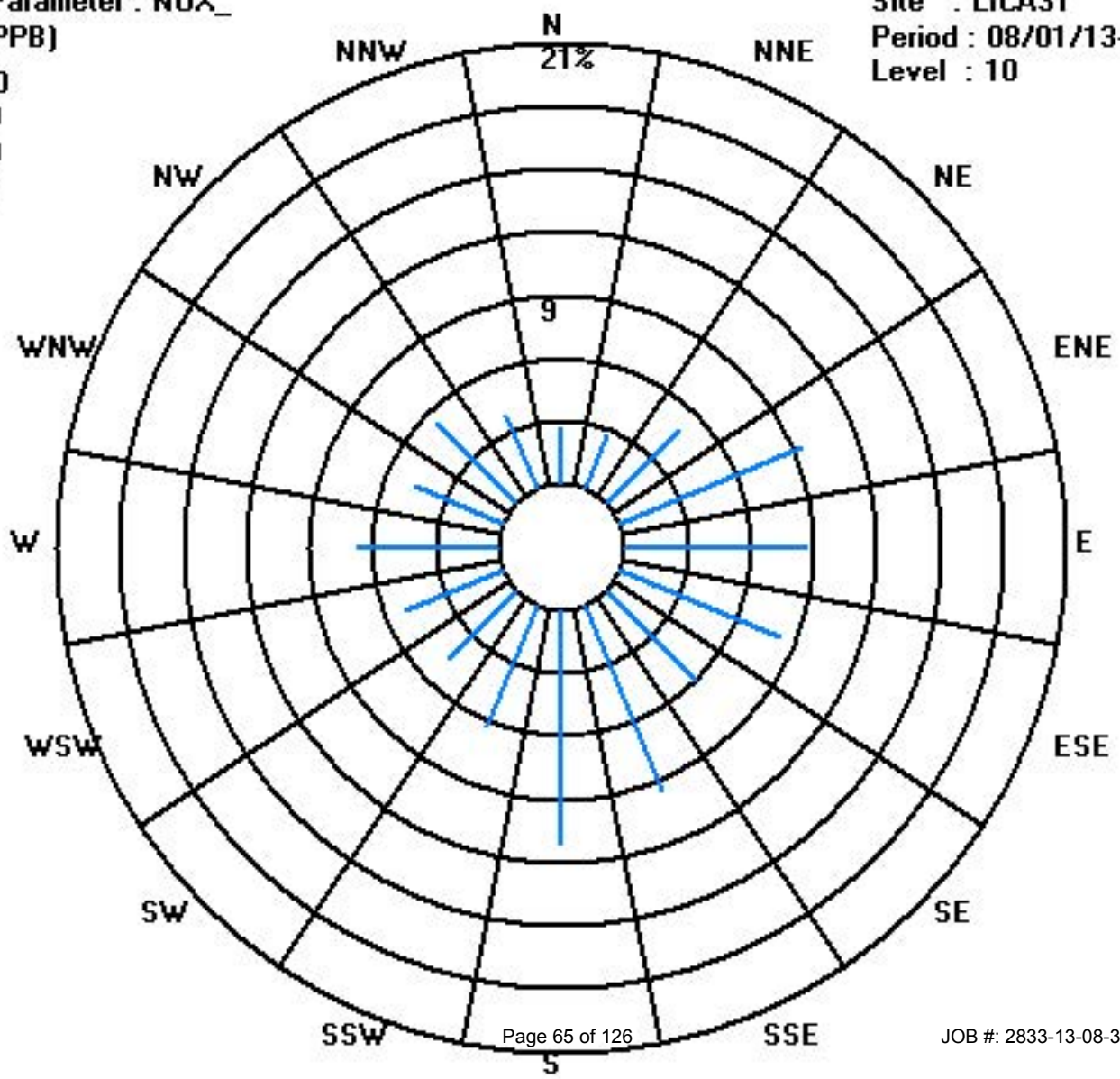
Calm : .00 %

Total # Operational Hours : 694

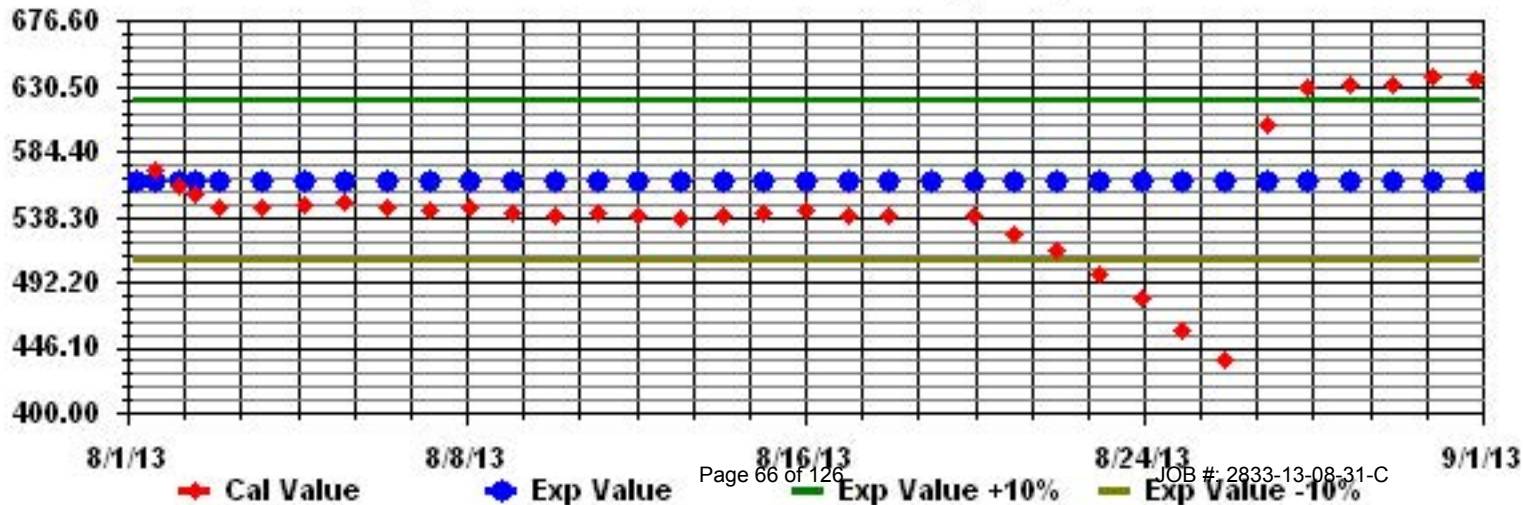
Class Limits (PPB)

Period : 08/01/13-08/31/13

Level : 10



Calibration Graph for Site: LICA31 Parameter: NOX\_ Sequence: NO2 Phase: SPAN



# Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m<sup>3</sup>

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
DAY																													
1	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			0	
2	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			0	
3	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			0	
4	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			0	
5	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			0	
6	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			0	
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			0	
8	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			0	
9	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			0	
10	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			0	
11	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			0	
12	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			0	
13	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			0	
14	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			0	
15	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			0	
16	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			0	
17	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			0	
18	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			0	
19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	C	C	X	5	0	1	0		5	1.5	6	
20	0	1	0	0	1	1	1	1	2	X	2	0	0	2	1	0	X	1	1	4	3	3	2	2	2	4	4	1.3	22
21	2	2	2	2	3	3	3	2	3	1	0	2	2	1	1	1	1	0	2	1	2	2	2	2	4	4	1.8	24	
22	4	4	3	3	3	3	3	3	4	5	5	4	5	2	2	0	4	2	6	5	5	5	6	5	6	6	3.8	24	
23	2	7	5	4	6	8	9	4	6	4	1	3	2	3	6	9	6	6	4	2	3	4	3	9	9	4.5	24		
24	6	4	6	5	5	4	7	5	3	4	5	6	5	6	5	3	4	7	5	6	5	6	7	7	7	5.2	24		
25	7	7	7	6	8	7	7	8	6	6	8	9	8	10	10	8	6	6	4	5	4	2	3	2	10	6.4	24		
26	2	1	2	3	4	5	3	3	3	4	0	4	3	2	0	2	2	2	1	1	0	0	0	1	5	2.0	24		
27	1	0	0	1	2	1	1	1	1	2	2	3	4	4	3	4	5	7	4	5	4	3	4	4	7	2.8	24		
28	3	4	3	3	4	4	4	0	4	4	4	2	2	1	3	2	4	5	4	1	3	4	2	3	5	3.0	24		
29	3	2	4	3	4	4	4	5	5	4	4	3	3	2	3	2	5	5	7	4	2	1	3	5	7	3.6	24		
30	1	4	0	0	2	5	5	4	3	P	P	X	X	X	X	X	X	X	X	X	X	X	X	X	5	2.7	9		
31	X	X	X	X	X	X	X	X	X	X	X	7	7	7	9	10	3	3	4	5	4	5	6	6	10	5.8	13		
HOURLY MAX	7	7	7	6	8	8	9	8	6	6	8	9	8	10	10	10	9	7	7	6	5	5	6	7					
HOURLY AVG	2.8	3.3	2.9	2.7	3.8	4.1	4.3	3.3	3.6	3.8	3.1	3.9	3.7	3.5	3.6	3.5	4.3	4.0	4.0	3.7	3.3	2.8	3.3	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

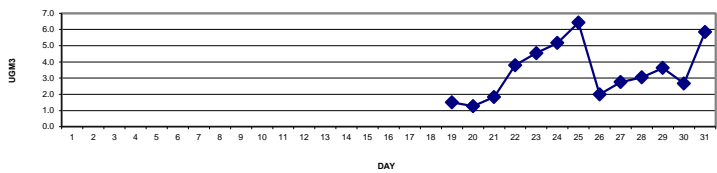
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR - ug/m<sup>3</sup> 24-HR 30 ug/m<sup>3</sup>

MONTHLY SUMMARY

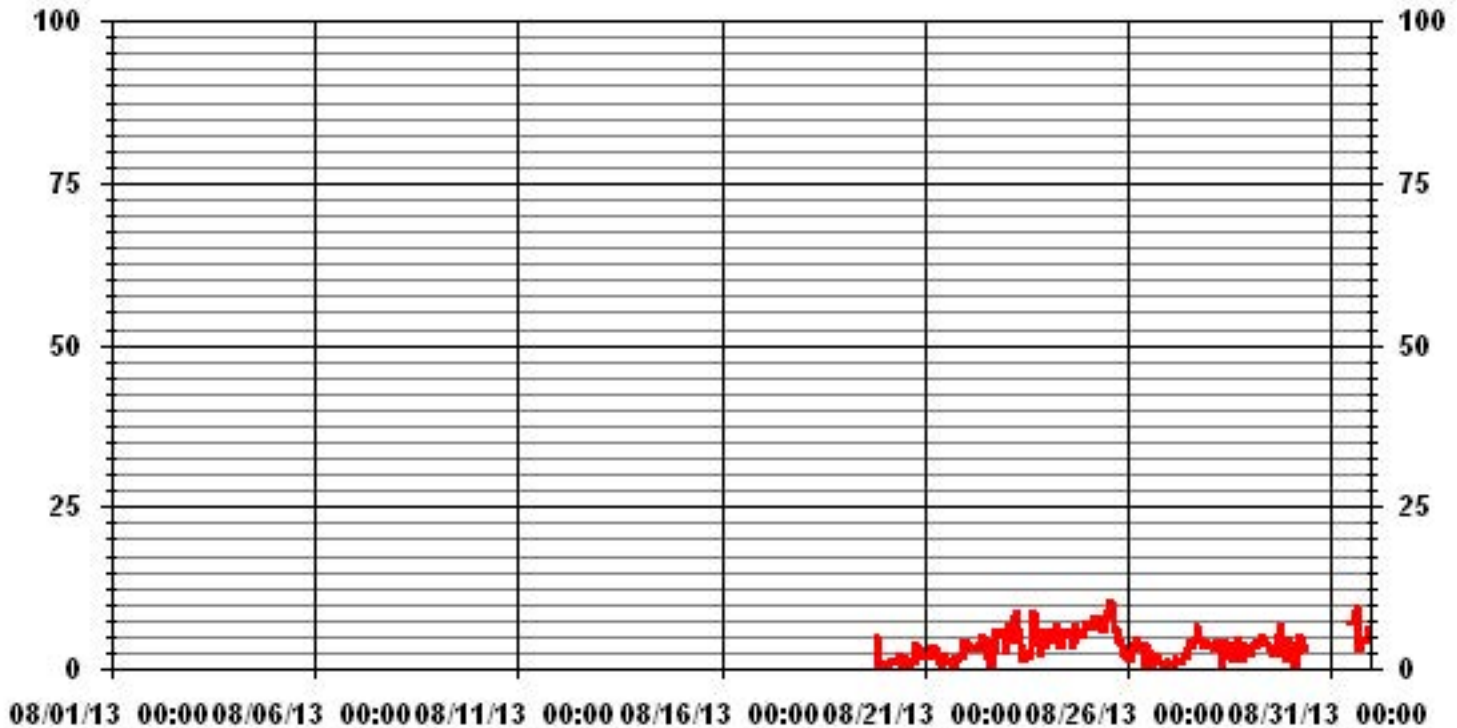
NUMBER OF 1-HR EXCEEDENCES:	-
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	243
MAXIMUM 1-HR AVERAGE:	10 UG/M <sup>3</sup> @ HOUR(S) VAR ON DAY(S) 25, 31
MAXIMUM 24-HR AVERAGE:	6.4 UG/M <sup>3</sup> ON DAY(S) 25
OPERATIONAL TIME:	266 HRS
MONTHLY CALIBRATION TIME:	2 HRS
AMD OPERATION UPTIME:	35.8 %
STANDARD DEVIATION:	2.22
MONTHLY AVERAGE:	3.52 UG/M <sup>3</sup>

24 HOUR AVERAGES FOR AUGUST 2013





# 01 Hour Averages



— LICA31 PM2 UG/M3

LICA31  
 PM2 / WDR Joint Frequency Distribution (Percent)

August 2013

Distribution By % Of Samples

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

Wind Parameter : WDR  
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30	2.27	2.27	8.33	17.80	7.95	4.54	2.65	2.65	9.09	8.71	6.81	5.68	10.60	5.68	3.40	1.51	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.27	2.27	8.33	17.80	7.95	4.54	2.65	2.65	9.09	8.71	6.81	5.68	10.60	5.68	3.40	1.51	

Calm : .00 %

Total # Operational Hours : 264

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30	6	6	22	47	21	12	7	7	24	23	18	15	28	15	9	4	264
< 60																	
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	6	6	22	47	21	12	7	7	24	23	18	15	28	15	9	4	

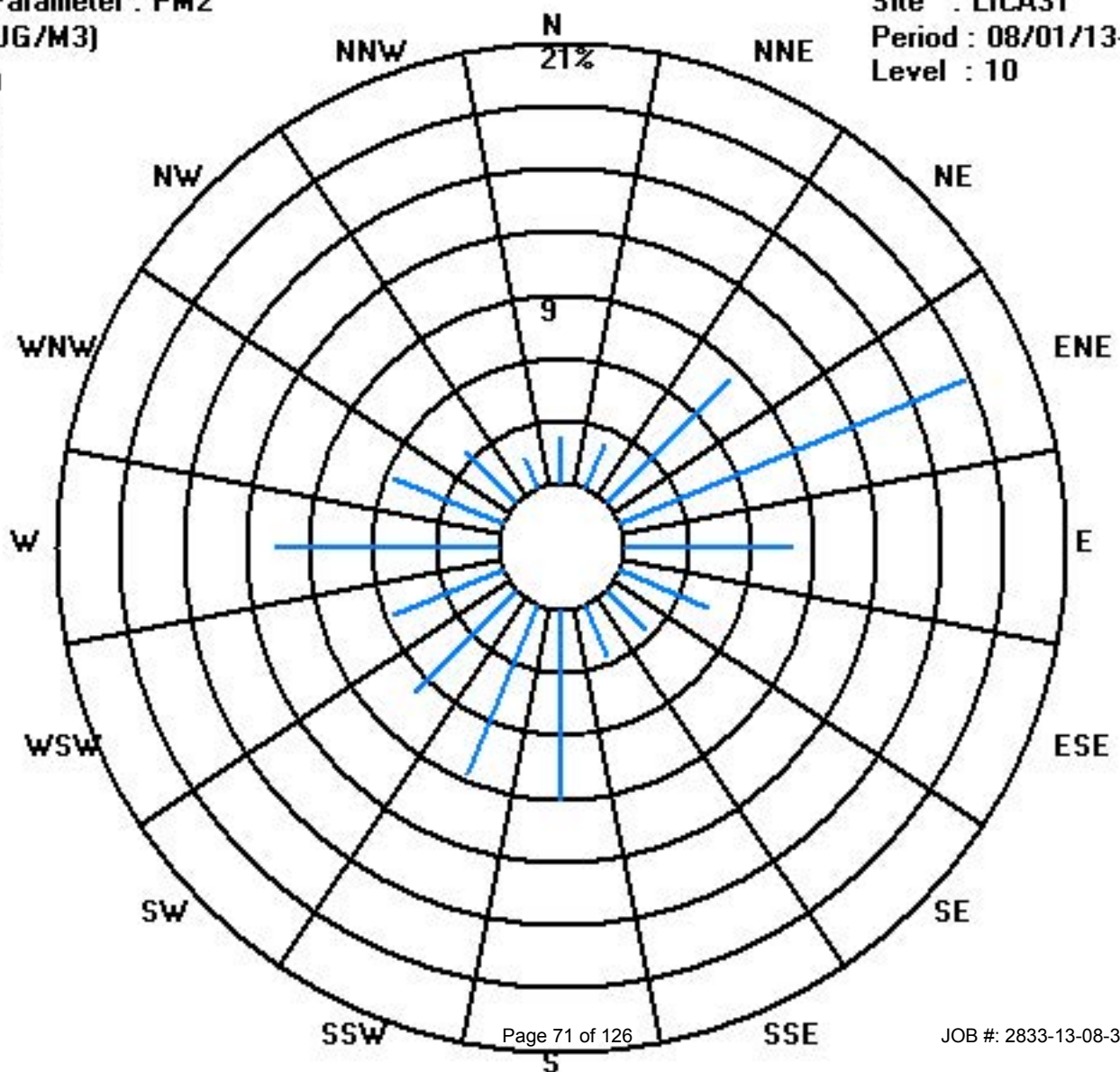
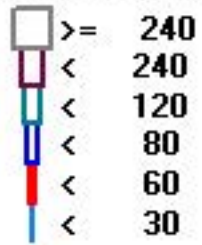
Calm : .00 %

Total # Operational Hours : 264

Class Limits (UG/M3)

Period : 08/01/13-08/31/13

Level : 10



# Temperature

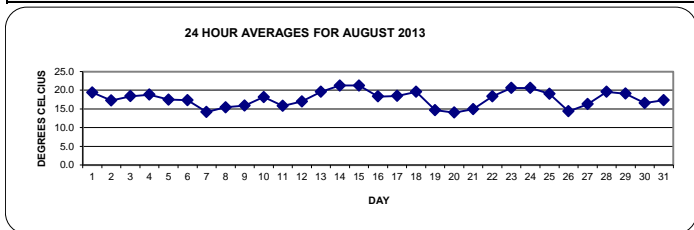
**LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA**  
**AUGUST 2013**  
**AMBIENT TEMPERATURE hourly averages (Degrees C)**

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00			
1	1	15.3	14.7	14	14	13.9	14.3	16.7	19.5	21.6	22.5	23.9	24.8	25.1	23.8	25.1	24.9	24.7	23.4	21.8	19.9	17	17.1	14.7	13.2	25.1	19.4	24
2	2	12.1	11.5	11	9.8	9.5	10	12.6	15.3	17.1	19.4	21.3	22.4	23.6	23.4	22.6	23.6	23.1	22.3	20.8	18.9	17	16.2	15.9	15	23.6	17.3	24
3	3	14.4	13.7	13	12.8	12.7	12.8	14	15.5	18.3	20.5	21.6	23	23.8	23.9	24.6	24	23.9	22.2	21	19.2	17.7	16.8	16.4	16	24.6	18.4	24
4	4	15.8	14.7	13.4	13	12.4	12.9	15.6	16.7	20.4	22.5	24.2	25	24.4	24.2	25.5	25.4	25.6	21.5	18	16.8	15.6	15.9	16.9	15.8	25.6	18.8	24
5	5	15.7	15.6	15.1	13.8	12	12.8	13.3	15.4	18.4	21.5	24.5	18.6	19.2	23.9	22	22.1	20.4	20.1	18.2	16.8	15.5	15.1	14.9	14.7	24.5	17.5	24
6	6	14	12.5	11.9	11.4	11	11.4	13.6	15.9	17.7	19.5	20.5	21.5	22.5	22.2	23.1	23	23.4	22.4	20.1	18.1	17	15.9	15.1	12.8	23.4	17.4	24
7	7	13.2	12.2	12.1	12	12.1	11.7	11.5	11.9	13.8	14	14.6	15.1	15.7	17	18.4	19	18.4	17.9	15.4	14.4	13.3	12.6	12.3	12.2	19.0	14.2	24
8	8	10.7	9.9	10.2	9.5	9.2	11	14.8	16.3	17.2	17.7	18.6	19.6	19.9	19.8	20.1	20.8	20	18.3	17.4	15.5	14.1	13.6	13.4	12.6	20.8	15.4	24
9	9	12.1	11.4	10.9	10.5	10.6	10.6	13.2	15.3	17.3	18.4	19.2	19.1	19.4	20.1	20.6	20	20	19.5	17.9	16.4	15.2	14.6	14.5	14.5	20.6	15.9	24
10	10	13.8	13.4	12.5	12.4	12.2	10.8	13.4	17.2	19.2	20.3	21.2	21.8	22.7	23.1	24.1	23.5	22.9	22.3	21.1	19.3	18	17.6	17	16.5	24.1	18.2	24
11	11	15.6	15	14.6	14.4	14.3	14.1	14.6	15.3	15.5	14.7	14.4	15.1	16	16	17.6	19.6	19.7	19.4	18	16.1	15	14.9	14.8	14.5	19.7	15.8	24
12	12	14.3	14.2	14.5	14	13.8	13.9	14.1	14.4	14.5	15.3	17.6	18.9	19.8	21.3	20.7	20.6	20.5	20.5	19.4	18.5	17.5	16.9	16.5	16	21.3	17.0	24
13	13	15.5	15.2	14.8	14.4	13.9	13.4	15.6	18.4	19.1	20.5	22.4	23.2	23.7	24.7	24.8	25.1	25	24.2	22.2	20.5	19.1	18.5	18	17.8	25.1	19.6	24
14	14	17.3	16.8	16.1	15.6	15.1	14.8	16	19.2	21.2	22.5	24.3	25	25.8	26.5	26.5	26.8	25.8	25.5	24.1	22.8	21.3	20.4	20.3	20.2	26.8	21.2	24
15	15	19.4	18.1	17.6	17.2	16.6	15.6	16.9	18.8	22.6	24.3	25.3	26.5	25.2	25.5	25.6	25.9	25.3	24.5	23.6	21.9	20.1	18.8	17.7	16.8	26.5	21.2	24
16	16	16.5	15.6	15.1	14.5	14.4	15.1	17.3	15.8	16.5	18.6	19.1	19.6	22	23.1	24.2	23.7	23.5	22.7	20.8	18.1	17.1	16	15.4	15	24.2	18.3	24
17	17	14.1	13.5	12.8	13.2	13.7	12.5	13.7	15.6	18.4	23.1	25	25.6	25.4	25.8	23.3	21.7	22.1	22.2	20.6	18.1	16.9	16.2	15.4	15	25.8	18.5	24
18	18	14.4	14.1	14.3	14	14.2	14.6	15.9	20.6	21.4	22.3	24.1	24.9	24.3	25.8	25.7	26	25.7	24.4	21.5	19.9	18.4	15.3	14.6	13.8	26.0	19.6	24
19	19	12.7	11.9	11.8	11.1	11.1	11.3	12.3	13.3	14.9	17.3	19.6	19.5	20.7	19.5	20.2	21.1	21.3	15.8	13	11.5	9.8	10	10.8	11.8	21.3	14.7	24
20	20	11.8	11.2	9	8.4	8	7.6	10.6	13.4	14.9	16.1	17.3	18	18.6	18.7	18.7	18.7	18.8	18.2	16.7	14.4	12.9	12.2	11.2	10.9	18.8	14.0	24
21	21	10.8	10.3	11.1	11.3	10.7	10.4	11.9	13.9	15.3	16.7	17.4	18.7	18.3	19.4	19.1	19.8	20	19.3	17.8	15.4	14.2	13.5	12.1	11.7	20.0	15.0	24
22	22	10.9	10.2	9.8	9	9	8.7	11	13.6	17	20.7	22.2	24.7	25.8	26.3	26.4	26	25.8	25.1	23.7	21.9	18.9	19.2	18.4	16.8	26.4	18.4	24
23	23	18.4	16.4	15	16	15.7	15	16	19.6	20.7	23.2	25.1	26.1	26.9	27.2	25.7	24.7	24.3	23.5	21.6	20.1	19.2	18.5	17.9	17.3	27.2	20.6	24
24	24	16.1	16	15	13.4	13.8	14.4	16.6	20.4	22.4	23.5	24.5	25.1	25.5	26	27.1	27	26.5	24.6	22.4	20.6	19.8	19	17.9	17.1	27.1	20.6	24
25	25	16.6	16.5	16.1	16.3	17	16.5	17.7	17.1	18.3	21.3	21.9	22.5	24	22.5	23.1	24.5	24.2	23.1	20.6	17.5	15.8	15.4	15.1	14	24.5	19.1	24
26	26	13.3	12.9	12.9	12.2	12.5	13.1	13.5	14.4	15.9	17.2	16.5	15.7	15.1	15.1	15.2	15.4	16.2	15.7	14.8	14.3	13.8	13.2	13	12.8	17.2	14.4	24
27	27	12.8	12.7	12	11.4	11.3	11.5	11.5	12.2	13.1	15.4	17.2	19.4	19.5	20.1	20.5	21.4	22.1	20.8	20.1	18.3	17.9	17.3	16.7	15.3	22.1	16.3	24
28	28	13.7	13.9	13.4	13	12.6	13	13.6	17.9	20.3	21.8	23.7	25.5	26.2	26.8	27.3	26.1	26.9	24.1	21.3	19.6	18.5	17.5	16.5	16.9	27.3	19.6	24
29	29	16.2	15.5	15.2	14.7	14.2	14.1	14.2	15.9	16.8	19.9	22	23.4	24.8	25.2	25.4	24.6	23.5	22.7	20.9	19.1	18.1	17.7	17.3	16.4	25.4	19.1	24
30	30	15.8	15.7	15.7	15.3	15	14.8	15.3	15.5	17.1	P	P	20.2	19.7	20.7	20.1	18.5	18.3	16.9	15.8	15.3	14.8	14.7	14.5	14.6	20.7	16.6	22
31	31	14.6	14.5	14.1	13.8	13.9	13.5	13.5	14.6	15.7	18.5	19.8	20.5	21.3	22.1	23	22	21.3	21.5	19	17.6	16.5	15.7	14.8	13.7	23.0	17.3	24
HOURLY MAX		19.4	18.1	17.6	17.2	17.0	16.5	17.7	20.6	22.6	24.3	25.3	26.5	26.9	27.2	27.3	27.0	26.9	25.5	24.1	22.8	21.3	20.4	20.3	20.2			
HOURLY AVG		14.4	13.9	13.4	13.0	12.8	12.8	14.2	16.1	17.8	19.6	21.0	21.6	22.1	22.6	22.8	22.8	22.6	21.4	19.7	18.0	16.6	16.0	15.5	14.9			

**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

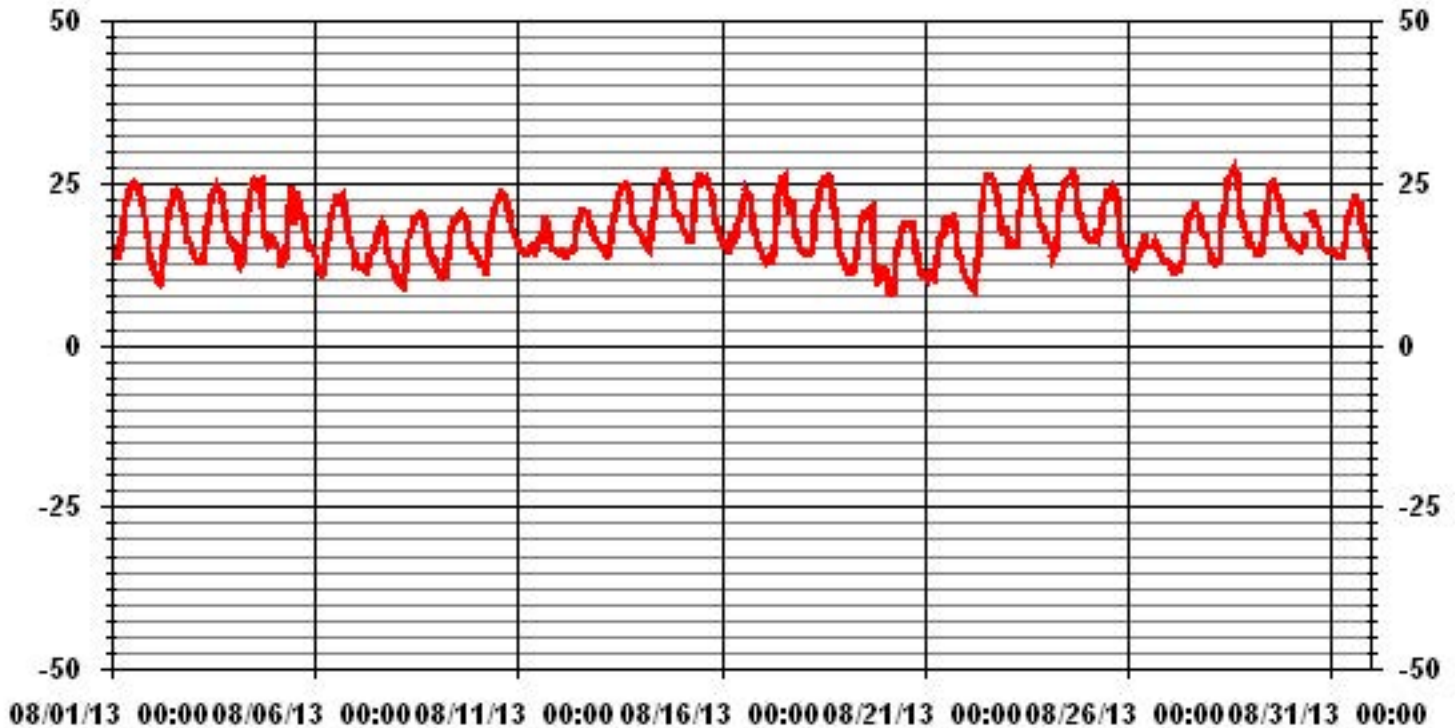
**24 HOUR AVERAGES FOR AUGUST 2013**



**MONTHLY SUMMARY**

MINIMUM 1-HR AVERAGE:	7.6 °C	@ HOUR(S)	5	ON DAY(S)	20
MAXIMUM 1-HR AVERAGE:	27.3 °C	@ HOUR(S)	14	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	21.2 °C			ON DAY(S)	14, 15
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	742	HRS
STANDARD DEVIATION:	4.42		AMD OPERATION UPTIME:	99.7	%
			MONTHLY AVERAGE:	17.72	°C

# 01 Hour Averages



# Barometric Pressure

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

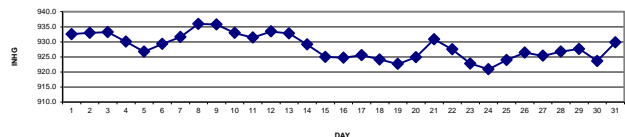
## BAROMETRIC PRESSURE hourly averages (millibar)

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
1	933	933	933	932	932	932	933	933	933	934	934	933	933	933	933	932	932	932	932	932	932	931	931	934	932.5	24			
2	932	932	931	931	931	931	931	932	933	933	934	934	934	934	934	934	934	934	934	934	933	933	933	934	934	934	933.0	24	
3	934	934	933	933	933	933	933	934	934	934	934	934	934	934	934	934	933	933	932	932	932	932	932	932	932	934	933.2	24	
4	931	931	931	930	930	930	930	930	931	931	931	931	931	931	930	930	930	929	929	929	929	928	929	928	931	930.0	24		
5	928	928	927	927	927	927	927	927	927	927	927	927	927	926	926	926	926	926	926	926	927	927	927	927	926	928	926.8	24	
6	927	927	927	927	927	928	928	929	929	930	930	931	931	931	931	931	930	930	930	930	930	930	929	929	931	929.3	24		
7	929	929	929	929	930	930	930	930	930	931	931	932	932	932	933	933	933	933	933	933	933	934	934	934	934	934	931.6	24	
8	934	934	934	934	934	935	935	936	936	937	937	937	937	937	937	937	937	937	937	937	936	936	936	936	936	937	935.9	24	
9	936	936	936	936	936	936	936	936	937	937	937	937	937	936	936	936	936	935	935	935	934	934	934	934	934	937	935.8	24	
10	933	933	933	933	933	933	933	933	933	934	934	934	933	933	933	933	933	933	933	932	932	932	932	932	932	934	932.9	24	
11	932	932	932	931	931	931	931	931	931	931	931	930	931	931	931	932	931	932	932	932	932	931	932	932	932	932	932	931.4	24
12	932	933	933	933	932	932	933	933	934	934	934	934	934	935	935	934	934	934	934	934	933	933	933	933	933	935	933.5	24	
13	933	933	933	933	933	932	933	933	933	934	934	934	934	934	934	933	933	933	932	932	932	931	932	931	932	931	934	932.8	24
14	931	931	930	930	930	930	930	930	930	930	930	930	930	929	929	929	929	928	928	927	927	927	926	927	931	929.1	24		
15	926	926	925	925	925	925	925	925	925	925	925	924	924	925	925	925	925	925	925	925	925	925	925	925	925	926	925.0	24	
16	925	925	924	924	924	924	924	924	924	924	925	925	925	925	925	925	925	925	925	925	925	925	925	925	925	925	925	924.7	24
17	925	925	925	925	925	925	926	926	926	927	927	927	926	926	926	926	926	925	925	925	925	925	925	925	925	927	925.6	24	
18	925	925	924	924	924	925	925	925	925	925	925	925	925	925	924	924	923	923	923	923	923	923	923	923	923	925	924.1	24	
19	922	922	922	922	922	923	923	923	923	923	923	923	923	923	923	923	923	924	922	922	922	922	922	922	923	924	922.6	24	
20	923	923	923	923	923	923	923	924	924	924	925	925	925	925	925	926	926	926	926	927	927	927	927	927	928	928	924.9	24	
21	928	928	928	928	929	929	930	930	931	931	932	932	932	933	933	933	933	932	932	932	931	931	931	931	931	933	930.8	24	
22	931	930	930	930	929	929	929	929	929	929	929	929	928	928	927	927	926	925	925	925	924	924	924	924	931	927.5	24		
23	923	924	923	924	924	924	924	924	925	925	924	924	924	923	923	922	922	921	921	920	920	919	919	925	922.8	24			
24	918	919	919	919	919	920	920	920	921	921	921	921	922	922	922	922	922	922	922	922	922	922	922	922	922	922	920.9	24	
25	922	923	922	922	923	922	922	923	922	923	923	923	923	924	924	924	925	925	925	926	926	926	927	927	927	927	924.0	24	
26	926	927	926	927	927	927	928	927	927	928	928	928	928	927	926	926	926	926	925	925	925	924	924	924	928	926.4	24		
27	924	924	924	924	924	924	925	925	925	926	926	926	926	926	926	926	926	926	926	926	926	926	926	926	926	926	925.4	24	
28	926	926	926	926	926	926	926	926	927	927	927	927	927	927	927	927	927	927	927	927	927	927	927	927	928	926.7	24		
29	928	927	927	927	927	927	927	928	928	929	929	929	929	929	929	928	928	928	928	927	927	926	925	926	929	927.6	24		
30	925	925	924	922	921	922	923	923	923	P	P	923	923	923	923	923	924	924	924	924	925	925	925	926	926	926	923.6	22	
31	926	927	927	928	928	929	930	930	931	931	931	932	932	931	931	931	931	931	931	930	930	930	929	929	932	929.8	24		
HOURLY MAX	936	936	936	936	936	936	936	936	937	937	937	937	937	937	937	937	937	937	937	937	937	936	936	936	936				
HOURLY AVG	928	928	928	928	928	928	928	928	929	929	929	929	929	929	929	929	929	929	929	928	928	928	928	928					

### 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 AUGUST 2013

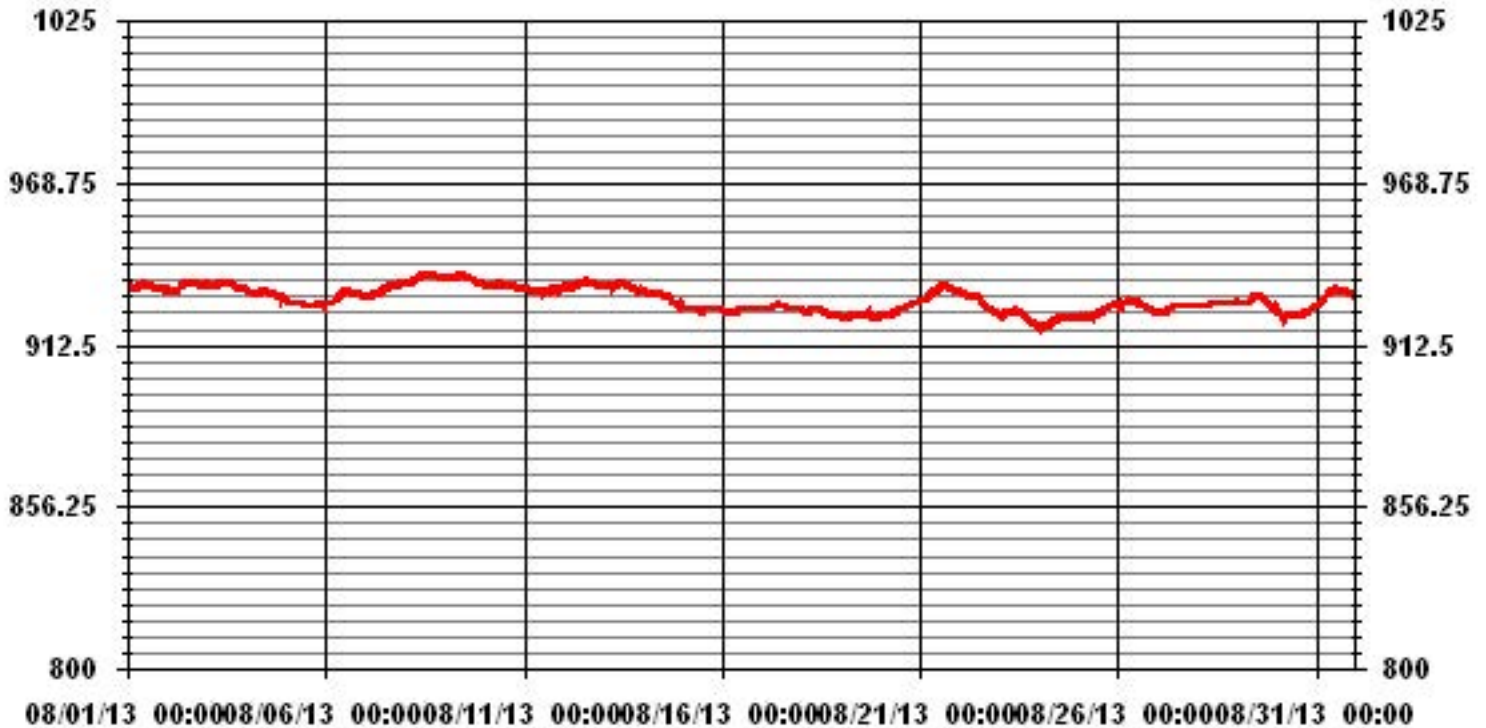


### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	937	MB	@ HOUR(S)	VAR	ON DAY(S)	8, 9
MAXIMUM 24-HR AVERAGE:	935.9	MB			ON DAY(S)	8
				VAR-VARIOUS		
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	742	HRS	
STANDARD DEVIATION:	4.24		AMD OPERATION UPTIME:	99.7	%	
			MONTHLY AVERAGE:	928	MB	



### 01 Hour Averages



# Relative Humidity

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

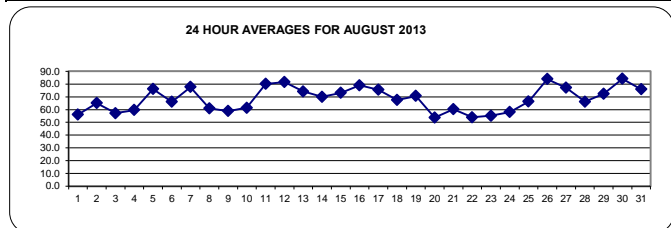
### RELATIVE HUMIDITY hourly averages (%)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOURLY START	HOURLY END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		79	81	81	76	74	72	67	60	54	53	44	41	40	44	39	34	33	38	41	49	55	50	64	78	81	56.1	24	
2		81	83	84	87	88	85	77	70	68	63	58	50	47	47	48	44	46	48	54	62	68	68	67	69	88	88	65.1	24
3		70	72	74	72	70	70	69	68	63	60	56	51	45	43	41	42	41	44	47	52	55	54	56	58	74	57.2	24	
4		60	66	73	76	78	77	71	71	61	55	48	43	40	43	39	39	38	53	63	70	71	67	61	68	78	59.6	24	
5		68	68	72	85	89	90	90	86	76	67	55	76	77	59	63	62	65	67	76	82	88	89	89	89	90	76.2	24	
6		89	90	90	89	90	90	82	76	69	63	59	54	50	50	46	42	37	42	50	55	56	64	69	83	90	66.0	24	
7		83	87	88	89	89	90	90	90	86	86	82	80	76	69	61	57	57	60	69	73	75	76	76	75	90	77.7	24	
8		83	87	84	87	89	83	70	65	60	57	50	45	44	43	42	40	42	45	51	56	57	57	59	68	89	61.0	24	
9		71	74	75	75	74	75	65	62	57	52	45	44	45	44	44	46	45	47	54	60	64	64	65	65	75	58.8	24	
10		68	70	73	72	73	80	73	63	60	53	51	49	49	48	46	49	50	52	58	66	68	67	67	69	80	61.4	24	
11		71	73	75	76	77	79	79	79	80	86	89	87	81	80	77	73	74	74	76	83	88	89	89	89	89	89	80.2	24
12		88	88	86	89	90	90	90	90	89	82	75	73	71	76	73	73	73	74	75	78	81	81	81	84	90	81.6	24	
13		86	86	88	89	89	89	81	74	72	70	66	63	62	60	59	59	58	61	70	76	80	81	82	81	89	74.3	24	
14		81	82	84	85	87	87	83	73	70	67	61	60	57	56	55	53	55	59	64	70	74	76	73	69	87	70.0	24	
15		72	78	81	82	83	86	83	79	68	65	61	58	59	61	61	64	67	67	71	78	83	83	82	82	86	73.1	24	
16		82	85	84	87	87	85	79	85	86	81	79	77	72	66	61	65	64	67	74	82	85	87	87	88	88	79.0	24	
17		89	91	91	92	92	92	92	91	85	67	58	53	49	50	59	62	61	58	61	76	83	87	87	88	92	75.6	24	
18		89	90	91	91	91	89	85	69	68	63	52	48	50	47	45	45	43	45	55	56	61	79	85	85	91	67.6	24	
19		87	89	88	88	87	88	80	79	74	65	52	47	46	54	50	43	42	60	72	79	84	83	81	78	89	70.7	24	
20		75	66	77	78	78	77	67	58	51	45	42	40	39	38	36	34	34	35	42	48	53	56	60	61	78	53.8	24	
21		64	69	66	66	69	71	66	60	58	56	54	51	53	51	52	50	49	51	57	63	68	68	69	71	60.4	24		
22		71	72	72	74	72	74	68	63	57	50	48	41	38	34	32	32	34	37	42	51	58	53	59	64	74	54.0	24	
23		50	63	68	56	54	59	63	56	56	51	44	40	38	36	40	44	51	57	65	68	67	66	66	67	68	55.2	24	
24		72	70	71	78	77	74	68	56	51	49	49	48	46	45	42	37	39	45	54	58	60	63	68	73	78	58.0	24	
25		76	77	78	78	76	76	69	72	66	57	56	58	54	56	57	51	49	52	59	70	75	76	75	80	80	66.4	24	
26		84	84	84	87	86	83	83	81	77	72	76	83	88	89	87	86	84	84	87	85	87	86	86	85	89	83.9	24	
27		85	84	87	89	90	91	91	91	90	81	75	69	68	66	65	61	58	65	67	73	74	74	75	81	91	77.1	24	
28		86	86	88	90	91	91	89	75	68	64	58	50	47	42	40	42	41	48	59	60	64	68	73	69	91	66.2	24	
29		73	76	79	83	85	86	86	82	81	72	65	60	54	52	50	53	58	64	72	78	80	80	81	86	86	72.3	24	
30		89	90	89	90	90	91	91	90	86	P	P	71	73	68	68	77	77	81	84	87	90	90	90	91	84.2	22		
31		90	90	90	90	90	90	89	85	80	71	68	67	63	60	57	61	60	58	67	72	74	79	83	87	90	75.9	24	
HOURLY MAX		90	91	91	92	92	92	92	91	90	89	89	87	88	89	87	86	84	84	87	87	90	90	90	90	90			
HOURLY AVG		77.8	79.6	81.0	82.1	82.4	82.6	78.6	74.2	69.9	64.3	59.4	57.4	55.6	53.9	52.8	52.3	52.4	56.0	62.4	68.2	71.7	72.9	74.3	76.7				

#### 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

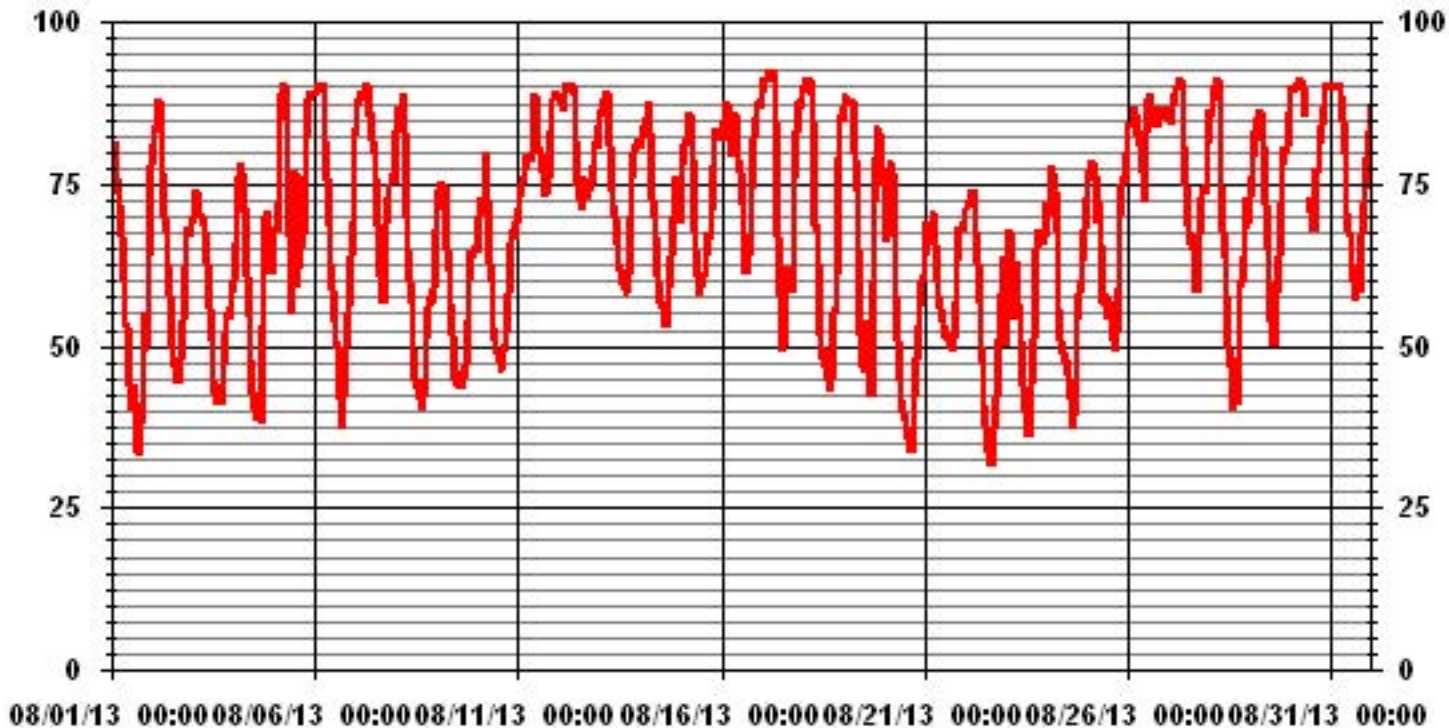
24 HOUR AVERAGES FOR AUGUST 2013



#### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	92 %	@ HOUR(S)	VAR	ON DAY(S)	17
MAXIMUM 24-HR AVERAGE:	84.2 %			ON DAY(S)	30
				VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	742	HRS
STANDARD DEVIATION:	15.52		AMD OPERATION UPTIME:	99.7	%
			MONTHLY AVERAGE:	68.30	%

### 01 Hour Averages



— LICA3T RH %FS

# Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

PRECIPITATION hourly averages (mm)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	DAILY TOTAL	RDGS.		
DAY																															
1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24		
2		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24		
3		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24		
4		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	0	0	0	0	0	0.2	0.3	24		
5		0	0	0	0	0	0	0	0	0	0	0	0	11.7	0.2	0	0	0	0	0	0	0	0.1	0	0.1	0	11.7	12.1	24		
6		8.2	4.8	1.5	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8.2	14.6	24		
7		0.1	0	0	0.1	0.2	0.2	1.5	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.5	2.2	24		
8		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24		
9		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24		
10		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24		
11		0	0	0	0	0	0	0	0	0	1.8	2.5	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	2.5	4.4	24		
12		0	0	0	0	1	0	0.7	1.5	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.5	3.5	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	0.0	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	0.0	24		
15		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24		
16		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24		
17		0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0.1	0.2	24		
18		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	1.2	24		
19		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.1	0	0	0	0.1	0	0	0	0	0	0	1.0	1.2	24		
20		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24		
21		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24		
22		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24		
23		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24		
24		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24		
25		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24		
26		0	0	0	0	0	0	0	0	0	0	0.1	0.1	0.5	1.6	1.7	1.3	0	0	0	0	0	0	0	0	0	1.7	5.3	24		
27		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	0.1	0.1	24		
28		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24		
29		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	4.6	4.6	4.7	24		
30		2.3	0.5	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0.3	1.5	0.7	2.1	3.6	11.3	24			
31		2.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.4	2.4	24			
HOURLY MAX		8.2	4.8	1.5	0.1	1.0	0.2	1.5	1.5	0.3	1.8	2.5	11.7	1.6	1.7	1.3	0.2	0.0	0.1	0.2	0.3	1.5	0.9	2.1	4.6						

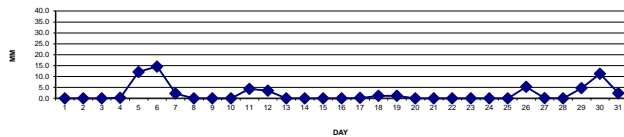
STATUS FLAG CODES

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

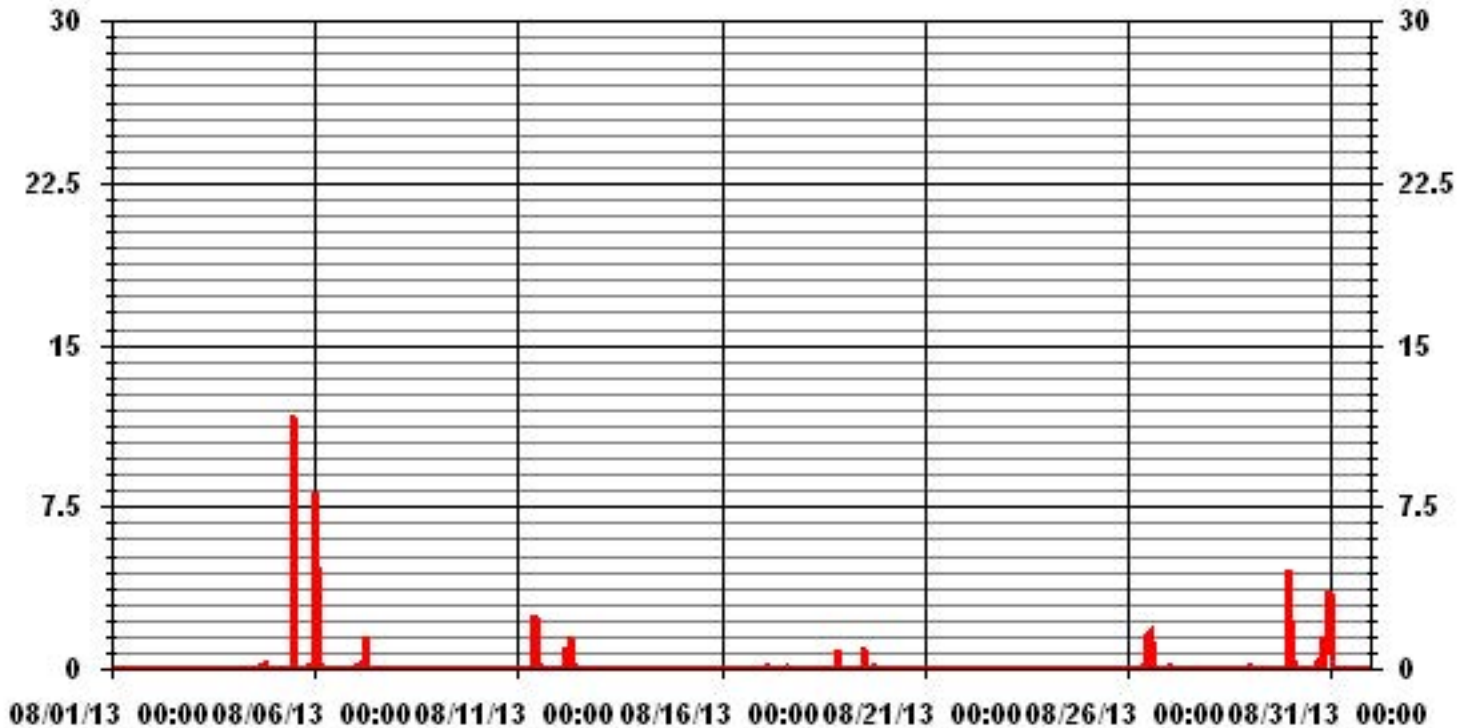
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	11.7	MM	HOUR(S)	11	ON DAY(S)	5
MAXIMUM DAILY TOTAL	14.6	MM			ON DAY(S)	6
MONTHLY TOTAL	63.5	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	0.64		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	0.09	MM	

DAILY TOTALS FOR AUGUST 2013



# 01 Hour Averages



# Vector Wind Speed



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

## WIND SPEED hourly averages (km/hr)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	9.2	7.4	6.4	6.9	7.7	6.1	5.5	5.3	3.7	4	3	4.5	5.3	6.1	7.2	3.4	4.6	4.4	3.5	4	5.1	5.1	7.8	7.8	9.2	4.4	24
2	9	10.6	10.3	9.4	8.9	9	8.5	7.3	7.2	7	5.8	6	5.1	6.8	6.7	6.4	7.2	8.1	7.5	7.8	9.5	10	9.8	8.6	10.6	7.5	24
3	9.4	9.1	9.2	9.5	9.1	9.3	9.5	9.8	5.9	7.9	10.1	9.2	8.8	10.8	8.7	7.2	10.3	9.5	8.9	9.1	10.1	10.4	11.1	11.1	11.1	9	24
4	10.3	10.1	9.5	6.9	7.8	7.4	6.7	5.3	7.4	8.2	8.7	8.7	8	4.2	5.3	4.5	3.2	6.9	8	6.9	6.9	7.8	3.9	4.4	10.3	4.2	24
5	4.8	5.1	8.4	7.8	3.5	3.9	7.8	5.2	3.9	3.7	3.7	5.3	4.6	7.1	5.2	8.8	6	7.3	8.3	8.7	5.6	5.3	5.8	5.4	8.8	2.9	24
6	12.2	12.5	7.5	6.7	6.7	8.4	7.3	8	9	8.2	6.9	5.3	4.6	3.4	5	5.2	5.6	6	4.4	5.2	5.5	2.1	3.1	7.6	12.5	5.2	24
7	7.6	11.3	11.3	8.1	11	11.6	10.8	10.2	9.8	8.8	11.1	9.5	9.6	11.1	11.3	9.4	7.7	8.9	8.1	5.8	7	6.4	5.8	3.8	11.6	8.3	24
8	4.8	6.9	5.8	6.2	6.6	5.1	2.8	3.5	6	7.5	6	4.8	6.9	7.1	6.1	5.1	6.5	5.2	4.9	5.7	6	7.1	7.4	6.7	7.5	5	24
9	6.9	7.9	7.5	8.4	8.7	8.2	7.7	6.4	6.7	9	9.4	8.6	8.7	10.4	8.2	9	9.6	8.7	5.8	7.2	8.6	10	10.6	10.7	10.7	8.1	24
10	10.1	10.2	8.6	8.8	8.1	7.1	6.7	6.9	8.7	11.8	12.3	12.6	10.4	9.8	8.6	10	8.4	9.2	6.7	8.1	11.1	11.6	10.5	10.9	12.6	9	24
11	11.2	9.8	11	11.1	12.2	11.1	11.2	9.7	7.5	0.6	13.2	14.7	10.8	11.3	7.6	8.2	11.8	9.4	9.2	8.8	9.8	11.6	11.1	8.8	14.7	8.1	24
12	4.6	2.4	6.1	7.8	10.4	7.8	6.8	5	8.9	9.6	10	9.3	7.2	6.4	6.8	8.6	8.4	6.7	8	8.8	6.2	7.9	7.8	9.1	10.4	7.3	24
13	8.8	8.4	5.8	6.9	5.4	7.1	7.2	7.1	7.4	6.1	6.3	9.6	8.9	8.7	9.7	9.3	8.4	8.3	7.9	8.9	9.7	10.1	8.4	8.9	10.1	7.6	24
14	8	8.4	9.6	10	9.8	9	8.4	6	7.3	9.2	10.4	11.1	9.8	9.4	9.1	7.1	8.4	8	6.5	7.2	8.5	8.8	8.6	8.9	11.1	8.6	24
15	8.6	9.3	8.4	7.9	5.3	3.8	4.9	6.8	4.3	6.8	10.2	9.7	10.4	11.9	9.6	7.3	5.5	5.9	5.6	6.7	7.2	7	6.7	5.4	11.9	1.5	24
16	5.2	5.8	6.7	8	7.8	2.6	1.9	3.5	3	2.2	5.2	3.7	4.7	4.5	2.6	6.2	7	6.7	6.5	5.8	7.2	8	7.5	5.8	8	3.4	24
17	3.8	4.8	4.8	4	7.6	7.1	5.9	5.7	6.4	8.3	3.8	4.3	7	1.9	11	3.8	3.1	3.4	6.1	5.4	5.8	7.9	7.9	7.5	11	4.9	24
18	8.1	6.5	6.1	3.5	4.2	3.6	3.7	2.6	5.5	4.5	6	5.8	7.4	9.4	11.8	9.4	11.8	10.5	7.7	8	10.6	8.1	6.7	6.5	11.8	5.5	24
19	8.4	9	9.7	9.3	7.4	7.1	9.5	8.4	7.7	10.8	14.3	14.5	14.2	13.2	20.3	18	18.5	20.7	8.4	5.6	6	6.6	10.3	15.3	20.7	10.9	24
20	18	15.9	12.2	10.8	11.8	10.7	11.4	15	19.4	21.2	21	18.6	19.6	21	<b>25.8</b>	24.5	19.3	16.7	10.3	10.4	11.2	12.5	11.8	13.3	<b>25.8</b>	<b>15.5</b>	24
21	15.5	12.1	13.7	13.1	13.3	13.1	13.5	16.7	15.1	14.9	16.4	9.8	10.3	10.2	10.3	10.2	7.5	4	3.6	4.6	6	6.3	7	9.8	16.7	9.1	24
22	9.2	10.1	11.2	11.6	11.9	11.8	10.2	9.2	7.8	9.6	11.2	11.1	12.6	11	13.6	11	8	5.3	5.7	5.1	5.3	5.7	5.9	13.6	8.8	24	
23	8.9	4.7	2.7	5.7	6.8	7.6	5.7	6.1	5.8	6.3	7.6	7.2	5.8	6.2	6.7	6	3.8	4.3	5.6	6.4	7.8	8.5	8.5	8.2	8.9	4.3	24
24	6.1	6.5	4.1	4.4	5.1	3.7	2.5	2	3	3.7	5.3	4	3.4	4.3	4.7	2.6	4.8	6.8	6.5	7.6	8.2	8.8	7.8	8.6	8.8	3.5	24
25	7.6	6.5	7.3	9.3	11.4	10.2	10.2	11.6	11.2	10.4	10.7	7.8	9.8	16	12.9	11.8	13.1	8.3	5.9	6.4	6.7	7.4	7.3	5.3	16	3.2	24
26	5.5	6.9	7	7	6.6	4.4	5.2	6.7	7.6	8.7	6.1	3.3	6.1	6.3	10.9	11.3	11	10.3	8.1	8.6	8.6	11.6	12	10.7	12	7.5	24
27	8.1	8.3	6.2	5.9	5.7	4.6	1.9	3.1	2.9	4.1	4.4	5.4	8.1	6.7	5.6	6.3	6.7	2.9	4.8	6.3	5.7	6.4	5.1	3.6	8.3	2.8	24
28	6.5	6.9	7.2	7.8	8.6	6.2	6.5	4.6	5	4.7	4.6	5.5	5.6	4.3	4.9	5.3	2.9	3.1	5.9	9.6	10.3	8	8.4	7.5	10.3	5.8	24
29	6.5	9.4	7.2	8.4	8	6.4	7.4	8.5	8.7	8.3	10.6	10.6	10.9	9	8.7	7.6	8	7.9	7.3	9.9	10.1	13.9	13.3	7.3	13.9	8.5	24
30	9.3	4.9	6.2	9.6	8.3	5.7	4.9	3.4	2.8	<b>P</b>	<b>P</b>	14.3	17.3	14.5	15.8	13	14.3	14.6	11.6	12	10.3	9.7	9.6	9	17.3	6.8	22
31	10.7	11.3	11.7	10.4	10.2	7.1	9.5	9.6	8.8	7.1	7.7	9.8	7.6	3.9	7.3	12.9	11	6.3	4.6	5.5	7.6	7.4	7.2	6.1	12.9	5.6	24
HOURLY MAX	18.0	15.9	13.7	13.1	13.3	13.1	13.5	16.7	19.4	21.2	21.0	18.6	19.6	21.0	25.8	24.5	19.3	20.7	11.6	12.0	11.2	13.9	13.3	15.3			
HOURLY AVG	8.5	8.4	8.0	8.1	8.3	7.3	7.2	7.1	7.3	7.7	8.7	8.5	8.6	8.7	9.2	8.8	8.6	8.0	6.8	7.3	7.9	8.3	8.2	8.0			

### STATUS FLAG CODES

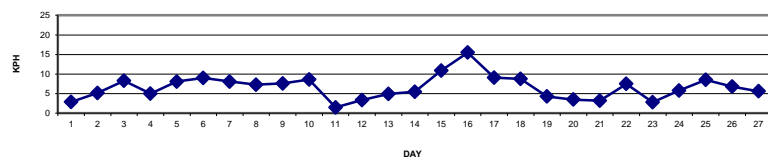
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: June 12, 2012

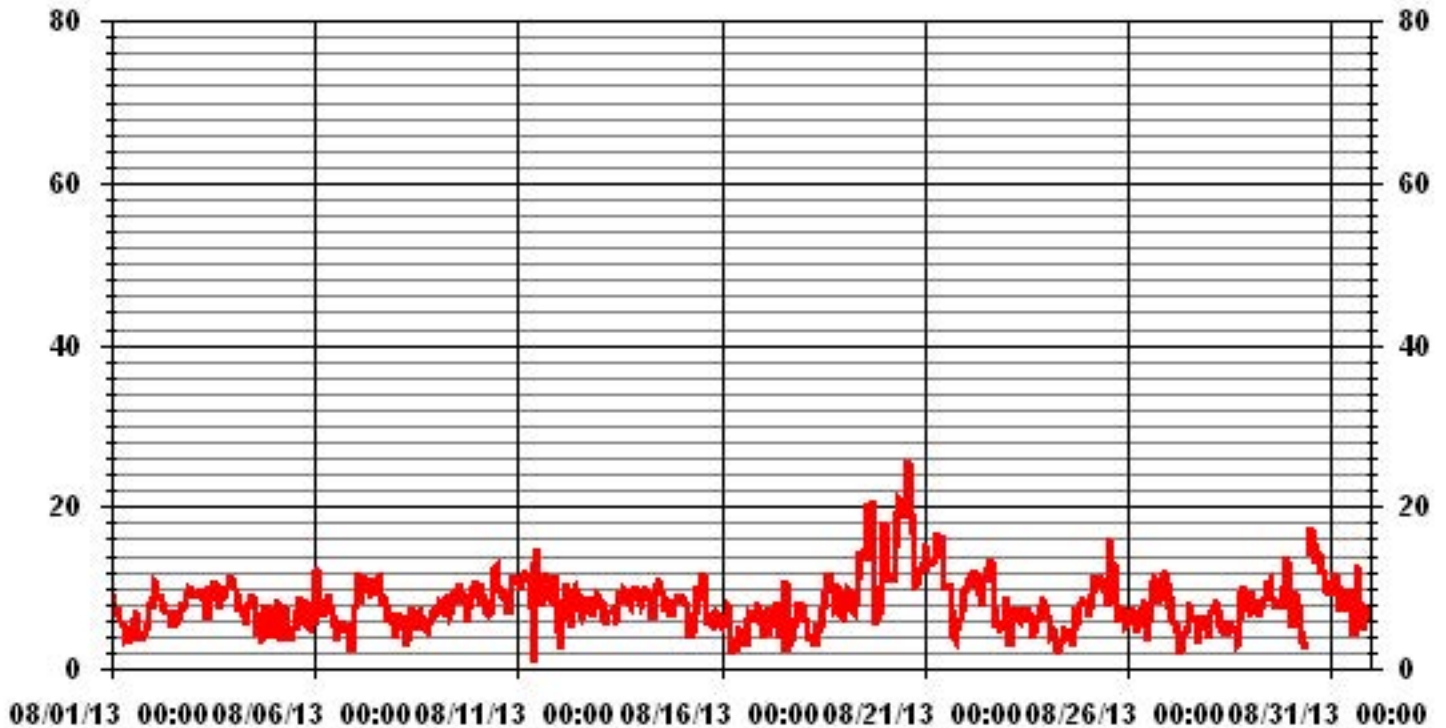
### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	25.8	KPH	@ HOUR(S)	14	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:	15.5	KPH			ON DAY(S)	20
CALMS (≤ 0 KPH)	0.13	%	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	3.25		MONTHLY AVERAGE:	8.06	KPH	

24 HOUR AVERAGES FOR AUGUST 2013



# 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

AUGUST 2013

## VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST																								DAILY	
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	
DAY																									
1	15.1	13.8	14.2	12.1	12.7	10.3	11.2	14.1	10.3	12.5	13.8	18.4	20.6	18.6	26.3	25.4	17.3	13.1	10.7	7.2	6.6	9	17.3	15.3	26.3
2	17.8	21.9	21.2	18.2	17.8	17.8	29.8	17.5	16.4	17.3	17.1	19.1	19.5	18.2	18.8	23.2	18.2	17.5	19.7	14.7	17.6	19.5	19.5	16.9	29.8
3	16.7	15.3	14.7	17.3	15.4	25.2	21.5	24.5	13.2	24.5	31.5	27.4	27.4	32.4	31.7	23.8	27.3	27.8	28.9	17.1	19.9	19.9	24.1	22.3	32.4
4	25.6	17.1	16	14.1	12.9	14.5	16.2	14.5	19.3	22.8	31.3	27.4	30.4	13.4	16.9	17.3	14	38.8	24.5	25.6	11.6	11.8	11.6	9.9	38.8
5	8.6	11.6	15.1	19.3	7.2	11.6	17.3	14.9	12.5	16.7	13.8	29.1	16.2	<b>P</b>	24.5	27.1	19.1	30.4	<b>P</b>	25.2	17.8	14.2	16.2	14	30.4
6	<b>P</b>	43.1	21.7	19.3	16.2	17.5	16.4	21.7	27.1	25.6	21.2	22.8	25.6	18.2	17.7	20.6	15.3	14.2	9.6	8.8	9	7.9	19.8	13.4	43.1
7	24.7	30.2	24.7	20.8	41.8	28.3	28.8	26.7	24.8	25.2	35.9	23	25.5	27.8	35.7	27.4	22.1	26	25.2	14.2	11.5	11.2	7.9	5.7	41.8
8	7	8.3	8.3	13.2	12.1	10.8	8.3	10.1	14.2	18.4	17.6	27.4	22.1	21.2	22.5	16	21.2	16.4	13.1	9	9.2	11	<b>P</b>	9.7	27.4
9	10.3	10.5	13.6	13.6	14.5	12.9	14.9	12.7	15.8	27.8	27.1	30.9	26.3	31.7	26.7	25.2	24.5	25	12.3	13.4	15.6	18.4	19.7	23	31.7
10	19.1	20.2	20.4	17.3	<b>P</b>	13.4	16.4	18.4	28.3	29.8	32.6	31.2	30.5	30.6	30.7	33.5	29.8	25.2	18.6	15	22.3	24.3	21.2	26.5	33.5
11	31.3	24.3	26.3	32.2	30	27.4	30.2	26.9	18.9	<b>P</b>	36.8	34.8	28.9	29.3	36.3	23.4	30.1	28	24.1	20.2	22.6	25.6	25.8	23	36.8
12	16.1	9	12.3	17.5	26.1	25	13.8	15.4	21.7	23.6	26	25.2	17.5	19.1	22.2	19.7	18.4	16.2	18.4	18.8	13.8	15.3	16.7	19.7	26.1
13	16.2	17.5	13.4	15.6	11.6	16.5	17.3	17.3	16.4	18.6	17.1	32	24.5	28.3	28.7	24.3	24.9	25.2	16.2	17.3	20.9	23.3	18.2	18	32
14	16.9	17.1	21.4	23.4	21.9	25.2	23	13.8	22.8	24.7	30.9	30.4	29.8	30.2	25.4	23.2	25.6	23.8	21.2	17.1	21.9	16.9	19.9	24.5	30.9
15	17.3	15.1	14.9	14	12.3	9.2	12.1	13.8	14.9	19.7	23	25.9	29.2	30	20.8	24.1	27.1	12.5	11.2	14.1	13.4	15.1	12.5	13.6	30
16	9.2	11.6	11.9	13.6	14.9	11.4	10.8	18.8	6.6	7	18	13.2	13.4	14.7	11.6	17.5	20.4	20.2	26.1	11.2	13.4	15.1	15.3	10.5	26.1
17	9.4	7.3	8.6	13.6	17.8	19.1	14.5	18.2	16	20.4	16.9	15.3	18.8	13.8	43.1	26.5	13.6	14.7	18.4	16.2	10.5	13.4	13.2	16.2	43.1
18	18.2	14.5	16.2	9	8.8	13.8	11.4	12.6	13.2	14.9	22.3	19.9	24.9	28.2	31.8	23.3	26	23.2	13.8	17.1	26.9	21	16.2	13.2	31.8
19	16.2	<b>P</b>	17.3	15.1	14.9	<b>P</b>	20.6	17.6	15.6	22.8	30.4	34.4	29.6	27.4	53.4	37.9	38.1	<b>70.2</b>	26.7	13.4	15.8	15.3	30.2	31.5	<b>70.2</b>
20	49	34.4	21.9	20.6	21.5	21.9	18.2	37.2	55.1	58.9	54.9	47.9	46	60	65.6	67.4	48.2	43.1	26.5	29.2	25.8	33.7	25.8	26.3	67.4
21	34	25	32.7	34	25.6	32.6	30	47.3	42.7	36.2	40.1	36.8	26	30.2	30.2	26.9	23.4	12.5	10.1	8.3	9.7	10.3	11.4	16.2	47.3
22	18.7	20.8	24.5	18.9	20.2	25.2	23.9	26.5	28	20.4	22.8	28	28.5	34.4	33.6	37.9	33.1	26.1	17.5	12.7	7.9	7.5	7.7	11.4	37.9
23	15.8	14.5	13.4	13.6	14.2	14.2	12.3	13.2	15.3	18.2	21.2	19.3	16.4	18.4	16.1	13.2	11	10.1	10.1	12.5	16	15.8	19.7	21.7	21.7
24	18.8	24.1	14	9.7	10.1	12.1	7.2	7.9	11.8	14.2	19.9	15.6	20	21.5	19.1	19.9	19.3	20.6	12.7	12.5	14.2	16	11.8	14.2	24.1
25	15.1	13.6	22.3	20.6	29.4	26.5	24.8	32.2	30.7	28.3	27.4	23.3	24.7	32.4	32.9	36.3	28.5	24.3	17.3	16.5	13.6	14.2	13.8	12.3	36.3
26	11	12.7	12.5	11.8	12.5	11.8	14	17.5	21.7	29.1	16.7	12.1	13.8	28.5	24.8	29.6	26.1	28.5	20.4	22.6	24.7	26.9	28.5	28.5	29.6
27	20.4	18.6	15.8	15.8	14.9	14	9.7	10.1	8.1	11.6	14.7	21.2	24.7	21.7	15.4	24.7	21.2	9.9	10.1	12.9	13.2	10.8	9.9	10.1	24.7
28	10.1	10.1	11	12.7	14.7	14.2	12.1	11.4	11.6	12.5	16.4	20.8	20.2	19.3	16.5	16.2	11	10.8	16.4	27.4	26.9	21.5	23.7	20.6	27.4
29	17.5	22.8	17.7	22.3	17.8	17.8	21.5	22.8	21	24.7	29.6	30	29.2	25.8	20.1	22.5	21.2	24.5	20.4	21.7	27.1	39	42.2	23	42.2
30	23.2	40.7	16	25.5	20.6	13.8	13.4	10.1	10.1	<b>P</b>	<b>P</b>	27.4	44.3	46.4	37.9	39.4	40.1	40.1	39.2	32.9	26.9	27.6	23.9	27.8	46.4
31	32.2	27.2	30.4	31.1	33.5	21.7	24.3	21.9	21.5	18.2	19.6	20.1	19.7	16.4	20.4	26.9	21.7	14.7	12.6	7.9	11.6	12.7	13.2	12.1	33.5
PEAK	49.0	43.1	32.7	34.0	41.8	32.6	30.2	47.3	55.1	58.9	54.9	47.9	46.0	60.0	65.6	67.4	48.2	70.2	39.2	32.9	27.1	39.0	42.2	31.5	

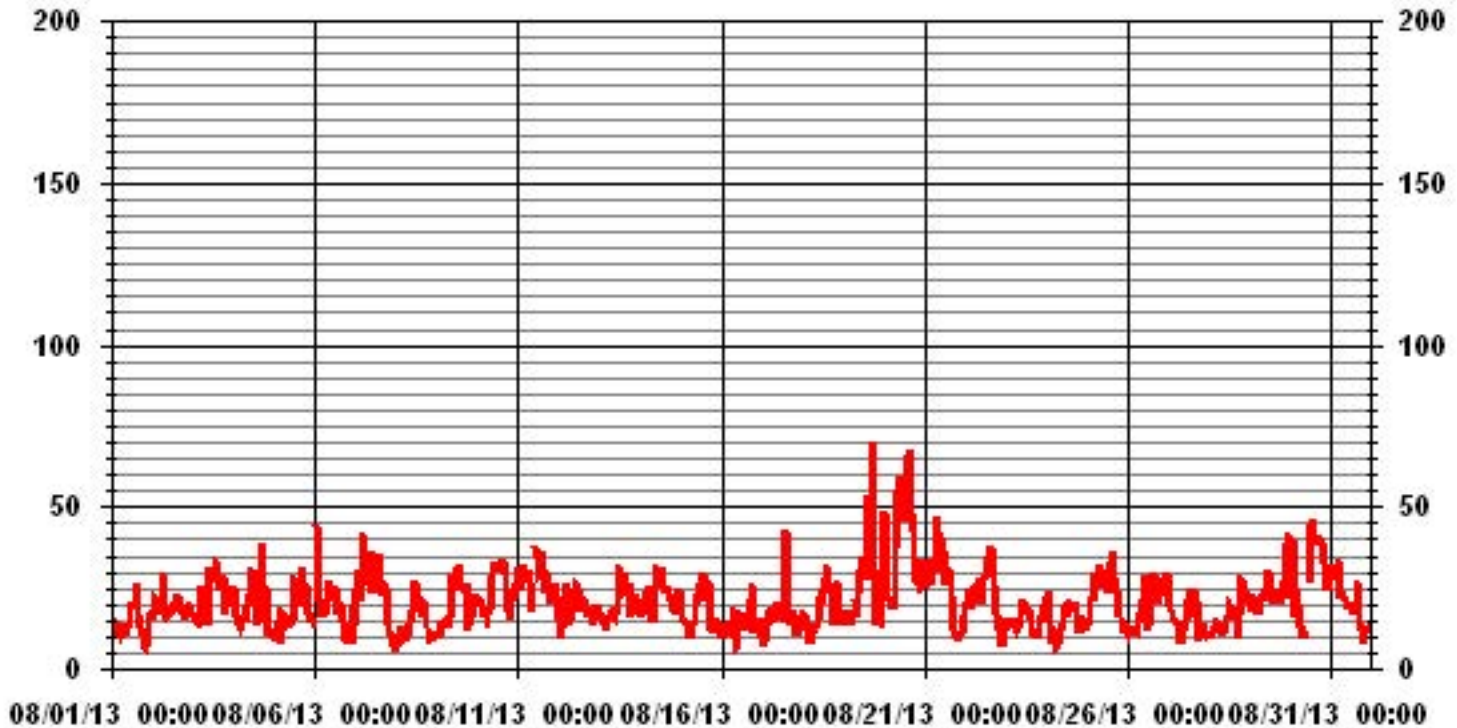
**STATUS FLAG CODES**

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**

MAXIMUM INSTANTANEOUS READING	70.2	KPH	@ HOUR(S)	17
			ON DAY(S)	19

# 01 Hour Averages



LICA31  
WSP / WDR Joint Frequency Distribution (Percent)

August 2013

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	1.34	1.61	2.02	2.02	1.88	1.75	1.34	1.07	1.21	1.48	2.56	1.07	2.02	.80	1.75	1.34	25.33
< 12.0	2.15	.80	2.83	7.00	6.46	6.60	4.85	8.22	9.29	4.71	1.61	2.83	2.29	1.75	2.69	2.29	66.44
< 20.0	.00	.13	.13	.13	.26	.00	.26	.13	.40	.00	.13	.94	2.42	1.61	.53	.00	7.14
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.40	.40	.00	.00	.94
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.50	2.56	4.98	9.16	8.62	8.35	6.46	9.43	10.91	6.19	4.31	4.98	7.14	4.58	4.98	3.63	

Calm : .13 %

Total # Operational Hours : 742

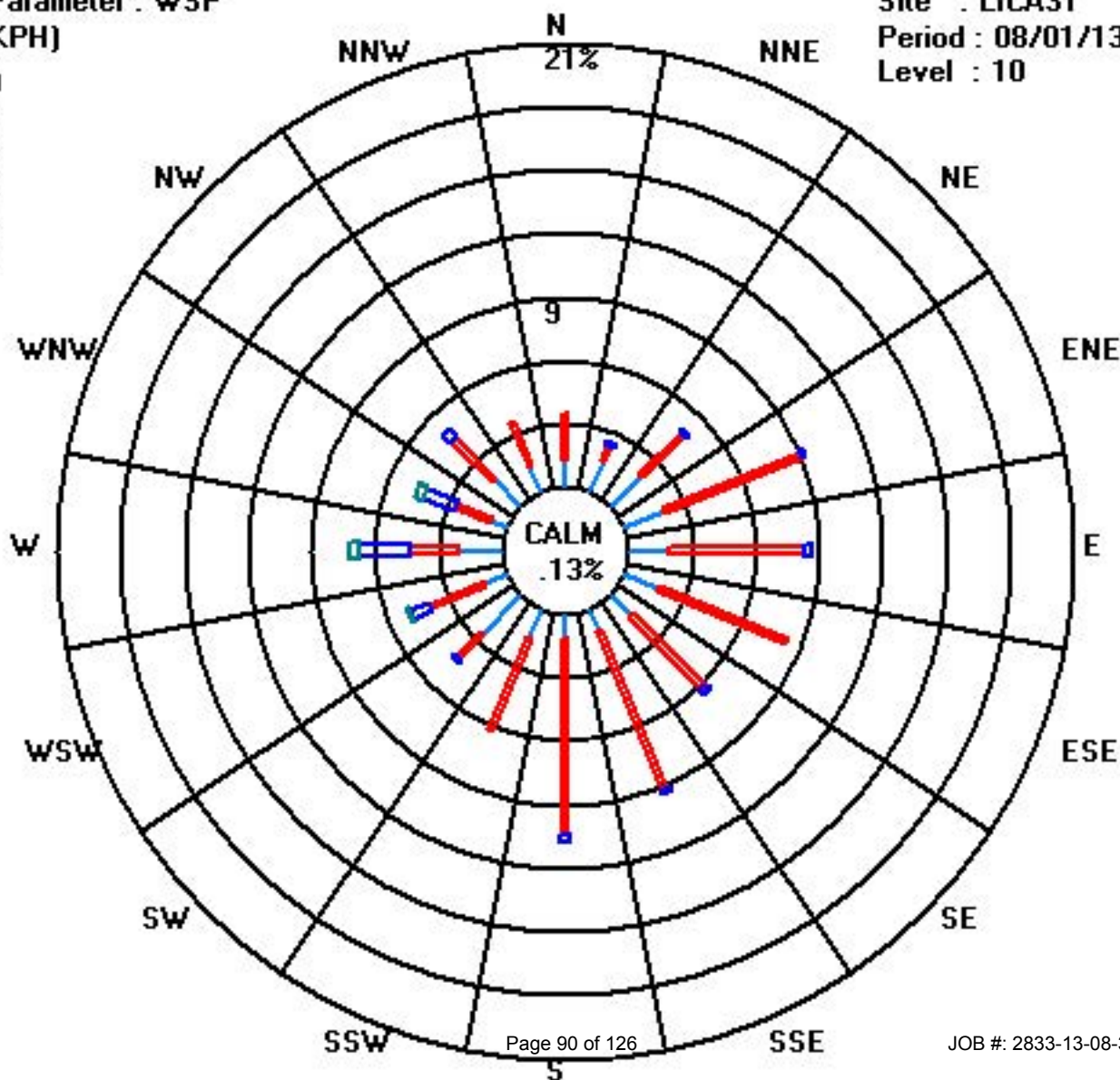
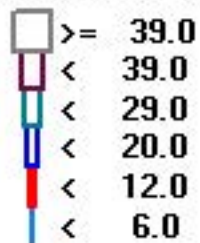
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	10	12	15	15	14	13	10	8	9	11	19	8	15	6	13	10	188
< 12.0	16	6	21	52	48	49	36	61	69	35	12	21	17	13	20	17	493
< 20.0		1	1	1	2		2	1	3		1	7	18	12	4		53
< 29.0												1	3	3			7
< 39.0																	
>= 39.0																	
Totals	26	19	37	68	64	62	48	70	81	46	32	37	53	34	37	27	

Calm : .13 %

Total # Operational Hours : 742

Class Limits (KPH)



# Vector Wind Direction

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

AUGUST 2013

## WIND DIRECTION hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUADRANT	RDGS.
DAY 1	306	322	336	344	4	356	22	54	60	73	10	7	359	1	7	11	32	53	24	22	56	60	72	90	19	NNE	24
2	74	89	91	79	84	82	87	111	111	103	110	146	113	117	124	126	123	118	115	116	121	128	140	152	110	ESE	24
3	176	174	174	167	166	169	180	185	184	183	183	187	188	181	185	196	164	146	151	139	146	154	162	161	170	SSE	24
4	169	179	186	208	197	200	231	222	214	209	211	213	212	269	273	253	221	231	360	32	64	97	154	251	205	SSW	24
5	262	274	306	321	244	304	318	332	327	311	324	301	269	298	91	66	39	63	82	52	49	31	47	47	356	N	24
6	16	43	76	25	11	21	15	349	4	360	5	1	351	346	300	327	307	314	321	348	353	221	67	77	7	N	24
7	70	77	85	104	39	74	90	88	90	77	86	103	96	105	112	107	102	91	94	107	125	145	162	160	95	E	24
8	64	56	47	75	78	85	98	104	103	111	106	100	99	110	118	88	111	105	111	127	141	151	166	175	106	ESE	24
9	177	172	153	161	170	176	181	184	177	174	163	164	156	187	163	159	171	161	157	139	135	133	132	140	161	SSE	24
10	148	146	146	150	142	104	117	149	149	159	161	171	161	175	187	166	177	162	150	126	130	137	147	155	152	SSE	24
11	165	173	175	176	179	177	179	157	149	110	124	145	166	173	170	103	102	101	107	85	88	83	88	92	139	SE	24
12	140	165	118	105	93	111	123	98	84	94	109	111	116	101	89	126	119	109	123	125	98	94	92	88	107	ESE	24
13	101	108	93	105	117	108	133	145	142	161	145	163	149	152	161	141	159	151	137	130	129	142	152	144	138	SE	24
14	151	169	176	177	176	177	176	161	161	170	168	173	168	166	164	168	177	156	165	169	170	167	165	163	168	SSE	24
15	166	172	187	182	164	64	99	116	130	115	119	133	198	243	254	272	343	310	313	317	327	331	1	24	192	S	24
16	29	34	49	61	77	88	278	295	52	281	13	346	302	301	337	324	285	272	296	318	318	338	334	307	340	NNW	24
17	270	225	203	200	193	254	225	220	211	244	253	276	275	114	179	183	208	168	182	223	208	191	194	196	213	SSW	24
18	236	234	205	210	317	306	0	146	216	194	203	201	206	236	256	241	252	253	250	280	289	321	269	281	250	WSW	24
19	280	274	280	271	260	255	284	258	254	255	265	281	259	250	249	255	252	291	298	249	226	239	239	246	262	W	24
20	262	263	252	264	257	247	253	266	281	288	281	293	292	286	278	281	283	296	297	295	291	290	272	269	278	W	24
21	263	267	273	261	250	260	277	282	288	287	278	294	305	308	315	315	291	263	247	212	201	192	186	200	271	W	24
22	208	210	207	196	197	202	206	205	212	230	230	243	230	219	204	186	188	183	184	201	250	265	218	263	211	SSW	24
23	325	269	279	307	336	10	34	65	62	75	72	65	78	90	107	116	104	87	76	80	64	67	69	71	59	ENE	24
24	64	102	131	63	125	249	12	269	223	234	224	228	184	159	222	173	172	169	184	171	168	176	179	179	174	S	24
25	177	177	160	160	164	167	190	195	198	205	226	243	268	289	311	312	329	332	351	9	5	14	30	233	SW	24	
26	49	54	63	82	92	125	128	106	86	104	119	108	69	69	66	62	66	73	70	69	71	73	67	70	77	ENE	24
27	69	82	54	38	64	82	211	234	214	229	233	184	185	193	191	182	188	170	126	134	122	122	135	40	140	SE	24
28	43	65	74	56	69	64	70	94	102	93	80	45	62	69	69	117	67	44	27	22	43	37	44	51	59	ENE	24
29	34	61	43	47	39	44	50	55	64	72	81	78	75	84	72	73	77	74	85	83	91	87	88	88	71	ENE	24
30	58	25	44	82	85	2	334	9	315	<b>P</b>	<b>P</b>	261	265	284	296	302	310	316	317	311	326	339	336	358	321	NW	22
31	340	337	338	336	335	328	328	319	316	294	287	277	274	300	258	256	269	263	219	197	183	196	206	215	290	WNW	24
HOURLY AVG	340	337	338	344	336	356	334	349	327	360	324	346	359	346	337	327	343	329	360	351	353	339	336	358			

### STATUS FLAG CODES

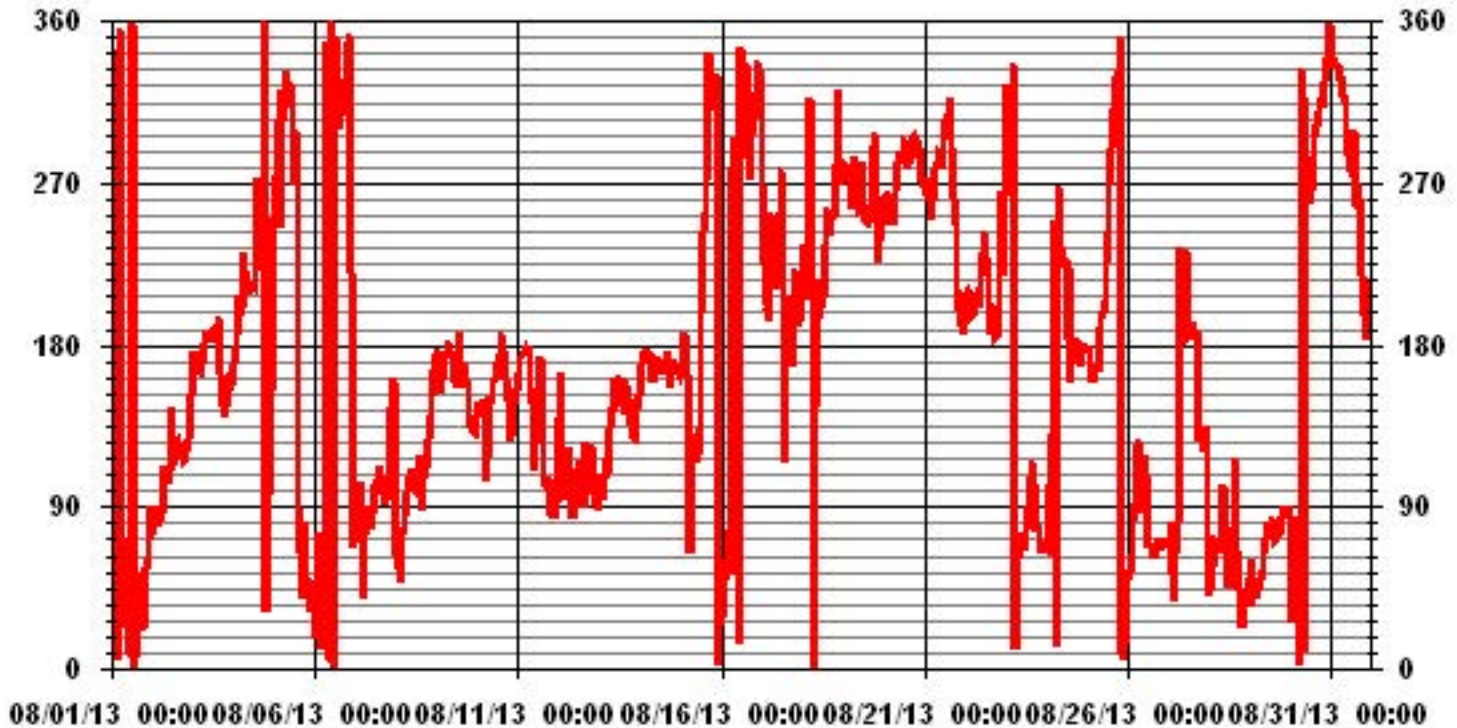
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION:	June 12, 2012
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	742 HRS
STANDARD DEVIATION:	90.83	AMD OPERATION UPTIME:	99.7 %
		MONTHLY AVERAGE:	164 DEG



# 01 Hour Averages



# Standard Deviation Wind Direction

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

AUGUST 2013

## STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	10	12	14	12	9	12	16	21	36	37	58	44	41	30	32	64	38	29	26	11	4	4	9	12
2	13	15	15	13	13	14	18	21	23	26	35	36	40	33	26	26	22	20	18	12	9	10	12	11
3	10	9	10	11	11	13	13	14	22	22	19	27	28	27	26	27	20	18	17	11	13	14	14	14
4	14	11	9	13	10	14	17	20	22	23	25	31	27	28	43	39	52	19	27	15	9	7	18	14
5	11	11	13	25	16	20	15	20	29	34	51	47	37	26	27	23	22	21	21	18	18	19	17	17
6	20	21	18	17	13	17	18	24	22	23	28	39	42	45	38	35	28	23	12	9	14	29	35	12
7	17	18	17	20	29	20	20	21	21	22	21	21	22	21	23	26	22	22	19	15	8	7	5	17
8	8	4	7	25	12	18	31	24	23	25	34	51	32	30	31	30	30	23	17	8	13	8	8	4
9	6	5	8	9	8	8	11	17	22	21	23	25	28	21	24	19	19	19	14	8	9	10	11	13
10	13	12	13	13	13	16	18	19	20	20	19	20	24	26	31	21	20	18	16	10	11	13	14	16
11	15	15	13	14	12	13	13	17	35	17	17	17	17	18	46	21	21	21	19	17	17	16	16	18
12	29	29	13	15	18	19	14	22	19	20	21	23	19	24	23	17	19	21	16	13	13	14	13	14
13	13	12	16	14	13	14	17	21	18	22	29	21	24	26	24	21	23	19	14	12	13	15	17	13
14	14	14	10	11	12	13	15	21	19	18	20	24	25	25	22	25	16	18	14	11	9	11	12	12
15	11	10	9	9	23	38	16	17	24	23	18	23	20	17	22	22	24	15	12	13	11	13	11	11
16	10	12	10	10	11	42	32	15	19	44	23	28	35	35	56	25	27	22	27	13	12	13	12	11
17	13	9	10	13	23	34	20	22	23	21	44	38	29	56	19	57	36	25	10	16	10	10	10	12
18	12	14	18	22	28	18	31	48	26	29	28	34	27	25	20	22	17	14	10	10	16	20	15	11
19	14	8	9	8	10	12	13	11	13	15	18	18	17	14	13	15	13	18	17	10	15	11	11	13
20	12	11	9	9	9	9	10	13	17	19	17	19	19	19	16	17	17	18	18	14	16	16	12	11
21	11	12	13	12	11	11	15	16	19	20	20	27	23	29	24	22	29	26	25	11	8	7	7	10
22	13	15	14	9	10	11	16	18	21	27	23	22	25	25	24	19	20	16	8	11	7	6	9	7
23	10	21	19	10	13	11	14	14	21	26	26	26	33	31	21	18	18	17	11	13	12	11	16	17
24	23	27	28	23	12	32	42	31	34	38	34	56	51	48	44	59	35	17	13	8	8	9	7	8
25	9	11	11	15	16	15	16	16	15	20	18	24	21	13	19	21	20	22	18	18	16	14	13	12
26	10	9	10	10	13	23	19	19	20	21	18	36	17	19	19	19	21	20	18	18	17	17	18	18
27	18	17	17	17	17	24	41	41	38	39	33	39	26	29	26	25	22	33	12	10	10	9	17	60
28	9	8	8	9	8	14	13	22	24	31	37	37	32	43	39	37	41	19	20	18	18	17	17	18
29	18	17	19	21	19	21	16	20	20	25	23	25	23	25	26	25	21	21	17	16	18	17	20	24
30	21	52	20	16	18	21	21	25	37	<b>P</b>	<b>P</b>	16	14	17	18	18	19	18	22	20	20	20	19	21
31	20	19	19	21	20	21	19	17	20	29	27	24	30	45	27	18	15	15	14	6	6	9	11	14

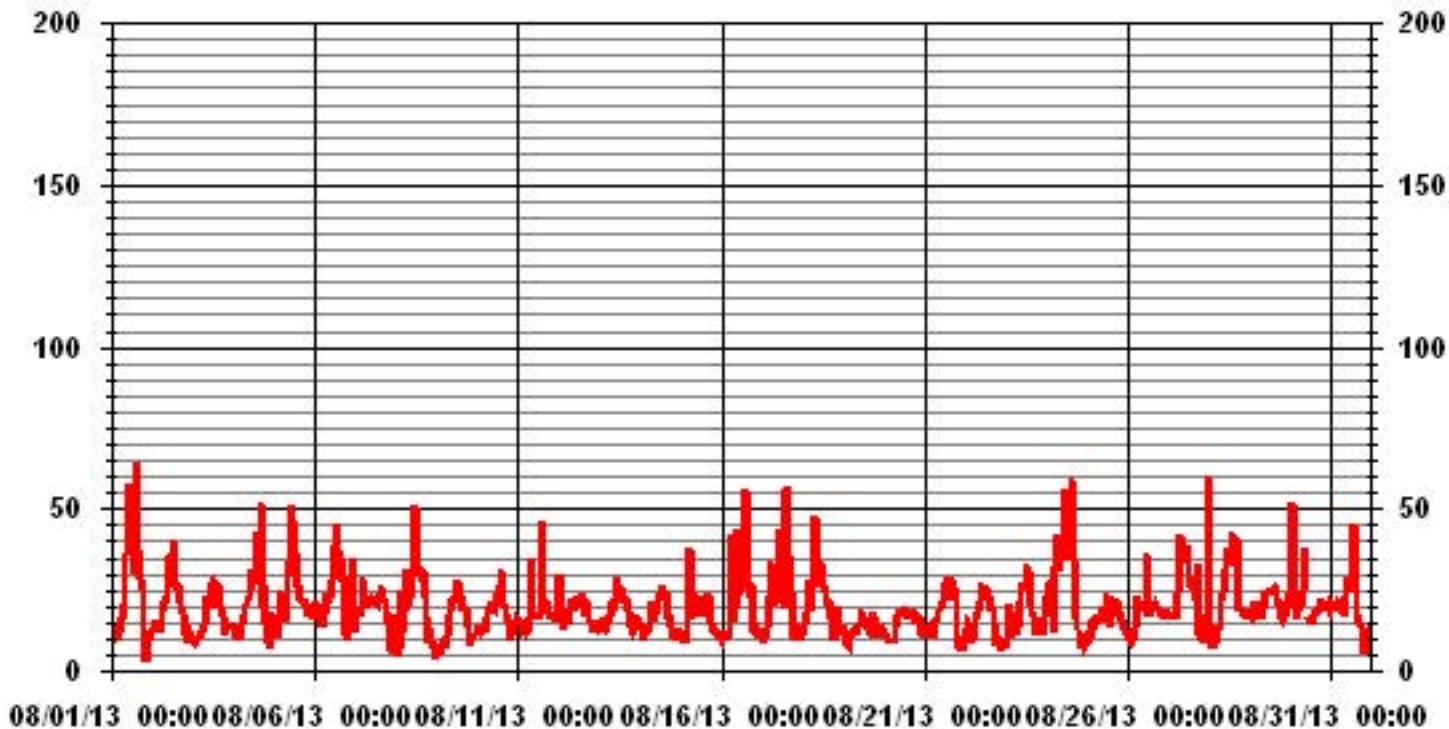
### STATUS FLAG CODES

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: 742 HRS

# 01 Hour Averages



# Calibration Reports

# Sulphur Dioxide



## SO2 Calibration Report

### Station Information

Calibration Date	August 1, 2013	Previous Calibration	July 23, 2013
Company	<b>LAKELAND INDUSTRY &amp; COMMUNITY ASSOCIATION</b>		
Plant / Location	<b>ST. LINA</b>		
Start Time (MST)	11:55	End Time (MST)	14:02
Reason:	Monthly calibration		
Barometric Pressure	27.72 in HG	Station Temperature	25 Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	BAL3031
DAS Output Voltage	0-1 Volts	Cal Gas Expiry date	December 29, 2016
		Chart Rec. Output	N/A Volts

### Equipment Information

Analyzer Make / Model:	API 100E	S/N :	468	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	EnviroNics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	N/A	S/N :	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

### Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 1000 ppb				
Sample Flow / Box Temp	573 ccm	32.1 Deg C	575 ccm	33.1 Deg C	
HVPS / Lamp Setting	540	2005	540	2005	
PMT / RxCell Temp	7.9 Deg C	50 Deg C	7.9 Deg C	50 Deg C	
Converter / IZS Temp	N/A Deg C	40 Deg C	N/A Deg C	40 Deg C	
Offset / Slope	112.7	1.129	117.6	1.091	

### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	1	N/A
	No Zero Adj.			
4920	80.7	800	801	0.9993
	No Span Adj.			
4960	40.3	400	399	1.0019
4980	20.2	200	201	0.9969
5000	0	0	1	N/A
Sum of Least Squares				0.9997
New Correction Factor				0.9993

### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0	Auto Zero	0.0
Auto Span	246.0	Auto Span	246.0
Sample Lines Connected		Sample Lines Connected	Yes

### Percent Change

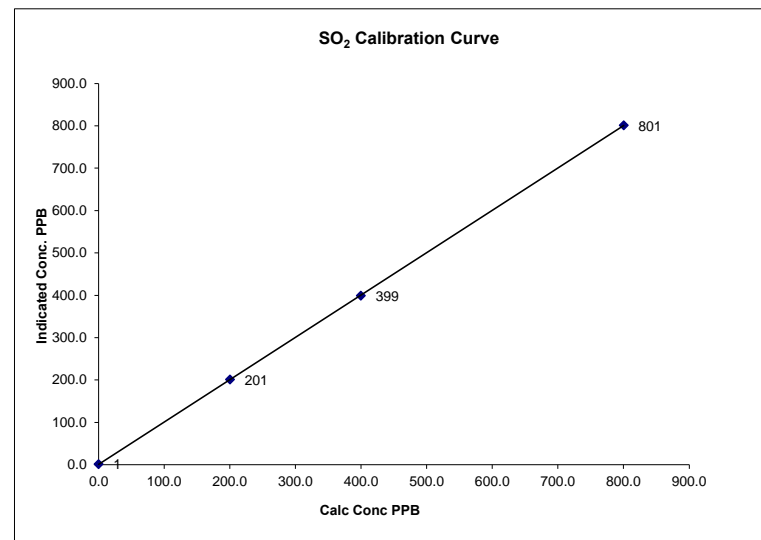
Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9993
Percent Change:	0.1%

Notes: **N/A : Not applicable**  
 Change sample filter.

## SO<sub>2</sub> Calibration Curve

Calibration Date	August 1, 2013
Company	<b>LAKELAND INDUSTRY &amp; COMMUNITY ASSOCIATION</b>
Plant / Location	<b>ST. LINA</b>
Start Time (MST)	11:55
End Time (MST)	14:02

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	1	N/A		0.999995
200	201	0.9969		0.999357
400	399	1.0019		0.585054
800	801	0.9993		



Notes:

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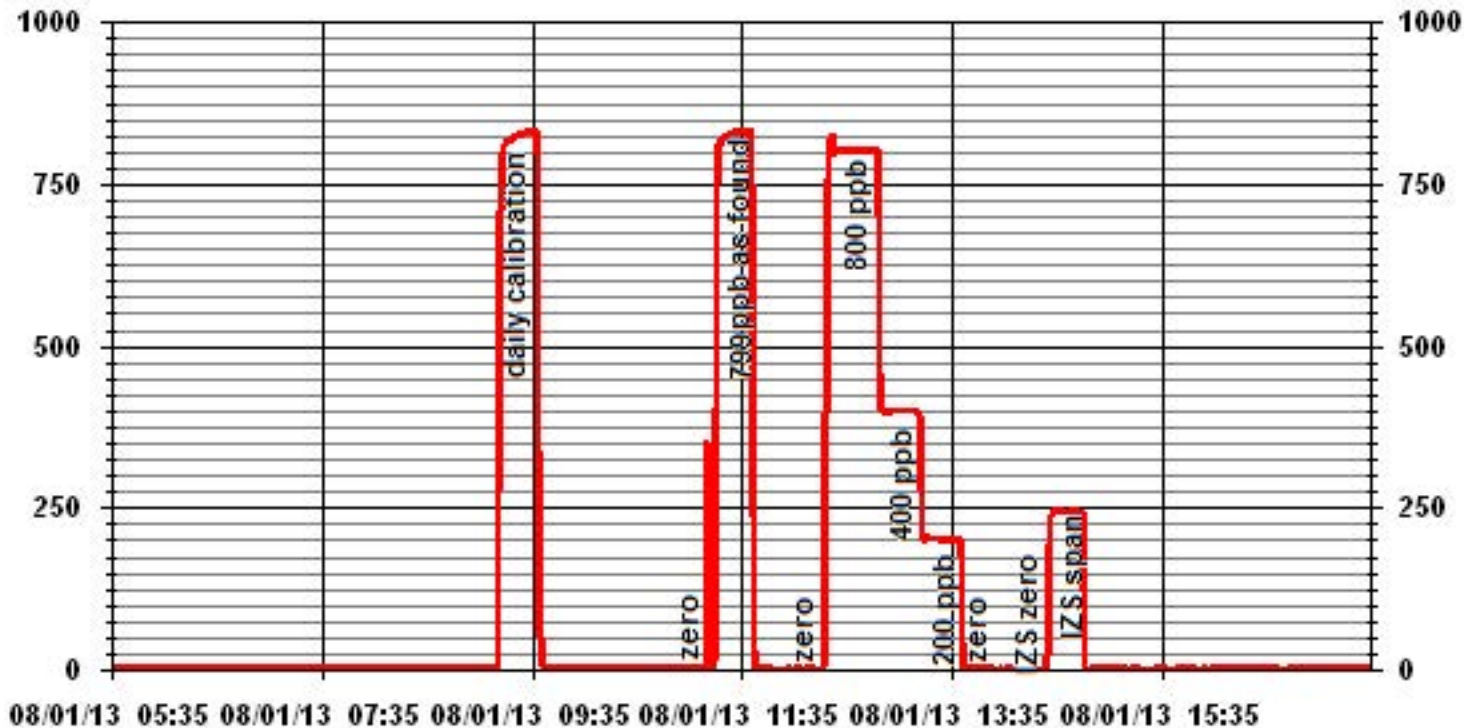


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Calibration Performed by: Waseem Ahmed



# 01 Minute Averages



# Hydrogen Sulphide

### H2S Calibration Report Station Information

Calibration Date	August 1, 2013	Previous Calibration	July 17, 2013
Company	<b>LAKELAND INDUSTRY &amp; COMMUNITY ASSOCIATION</b>		
Plant / Location	<b>ST. LINA</b>		
Start Time (MST)	10:55	End Time (MST)	11:40
Reason:	AF Point		
Barometric Pressure	27.74 in HG	Station Temperature	25 Deg C
Cal Gas	10.1 ppm	Gas Cyl. #	BLM00504 Cal Gas Expiry date
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts
<b>Equipment Information</b>			
Analyzer Make / Model:	API 101E	S/N :	510 Method: Fluorescent
Converter Make / Model:	N/A	S/N :	N/A
Calibrator Make / Model:	API 700	S/N :	690 Method: Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717
Chart Recorder Make / Model:	N/A	S/N:	N/A
Flow Meter:	API 700	S/N :	690

Analyzer Settings			
Before Calibration		After Calibration	
Concentration Range	0 - 100		
Sample Flow / Box Temp	539 ccm	36.2 Deg C	539 ccm
HVPS / Lamp Setting	530	1812	530
PMT / RxCell Temp	8.4 Deg C	50 Deg C	8.4 Deg C
Converter / IZS Temp	315 Deg C	45 Deg C	315 Deg C
Offset / Slope	120.2	1.03	120.2

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	3	NA
	No zero adj.			
4960	40.0	81	88	0.9182
Sum of Least Squares New Correction Factor				0.9182

IZS Calibration Data			
Before Calibration		After Calibration	
Auto Zero	0.0	0.0	
Auto Span	40.6	40.6	
Sample Lines Connected		YES	
Percent Change			
Previous Month's Calibration Correction Factor:		1.0000	
Current Correction Factor Before Span Adjust:		0.9182	
Percent Change:		8.9%	

Notes: **NA : Not Applicable**

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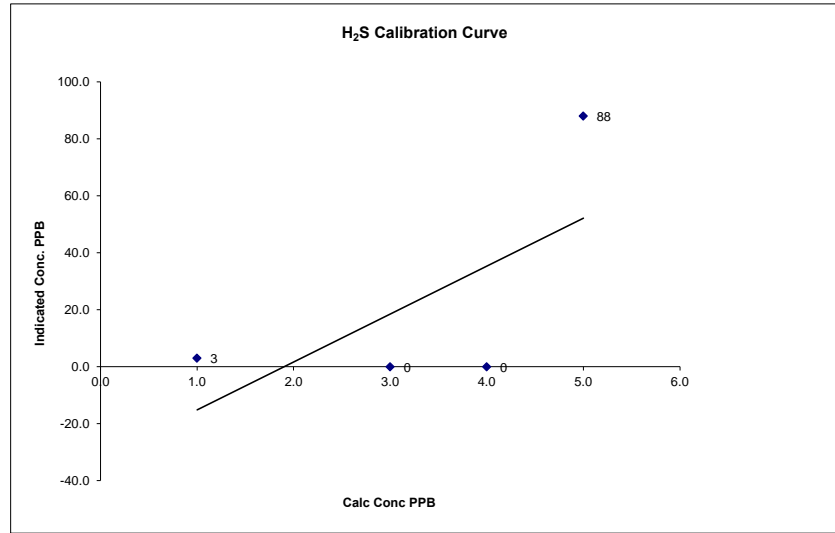
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Calibration Performed by: Waseem Ahmed

### H<sub>2</sub>S Calibration Curve

Calibration Date	August 1, 2013	Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	<b>ST. LINA</b>		
Start Time (MST)	10:55	End Time (MST)	11:40

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	Intercept
0	3	NA	≥ 0.995 (0.85 to 1.15)	(± 3% F.S.)
81	88	0.9182		



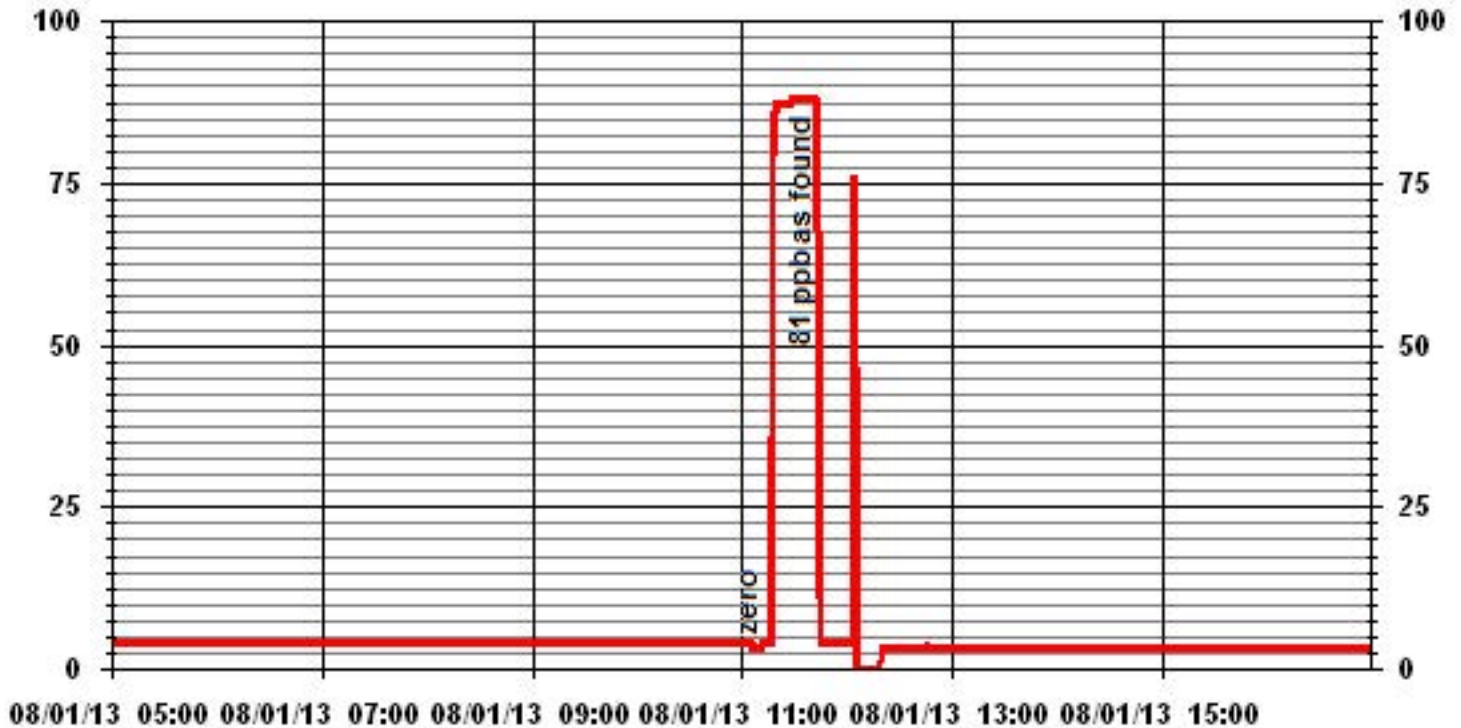
**Notes:**

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# 01 Minute Averages



## H2S Calibration Report

### Station Information

Calibration Date	August 2, 2013		Previous Calibration	July 13, 2013		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION					
Plant / Location	ST. LINA					
Start Time (MST)	12:05		End Time (MST)	12:48		
Reason:	AF Point					
Barometric Pressure	27.74	in HG	Station Temperature	27	Deg C	
Cal Gas	10.1	ppm	Gas Cyl. #	BLM00504	Cal Gas Expiry date	December 25, 2015
DAS Output Voltage	0-1	Volts	Chart Rec. Output	N/A	Volts	

### Equipment Information

Analyzer Make / Model:	API 101E	S/N :	510	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	API 700	S/N :	690	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:		N/A	S/N:	N/A	
Flow Meter:	API 700	S/N :	690		

### Analyzer Settings

		Before Calibration		After Calibration	
Concentration Range		0 - 100		ppb	
Sample Flow / Box Temp	558	ccm	37.6	Deg C	557
HVPS / Lamp Setting	530		1808		530
PMT / RxCell Temp	8.5	Deg C	50	Deg C	8.5
Converter / IZS Temp	315	Deg C	45	Deg C	315
Offset / Slope	120.2		1.03		45.0

### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	3	NA
	No zero adj.			
4960	40.0	81	92	0.8783
			Sum of Least Squares	
			New Correction Factor	0.8783

### IZS Calibration Data

		Before Calibration	After Calibration
Auto Zero		0.0	0.0
Auto Span		40.6	40.6
Sample Lines Connected			YES

### Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.8783
Percent Change:	13.9%

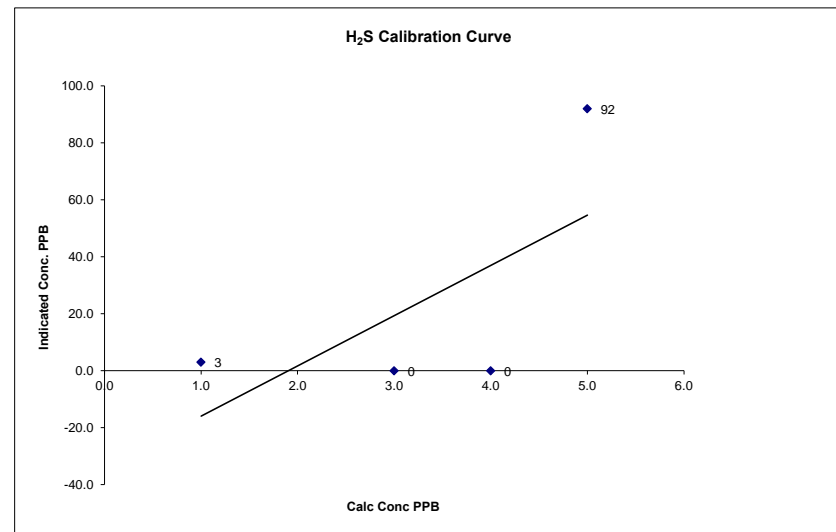
Notes:	NA : Not Applicable

Calibration Performed by: Waseem Ahmed

## H<sub>2</sub>S Calibration Curve

Calibration Date	August 2, 2013	
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION	
Plant / Location	ST. LINA	
Start Time (MST)	12:05	End Time (MST) 12:48

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)
0	3	NA	Intercept	(± 3% F.S.)
81	92	0.8783		



**Notes:**

### H2S Calibration Report

#### Station Information

Calibration Date	August 2, 2013	Previous Calibration	N/A			
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION					
Plant / Location	ST. LINA					
Start Time (MST)	13:15	End Time (MST)	15:15			
Reason:	Post repair calibration					
Barometric Pressure	27.74	in HG	Station Temperature	28	Deg C	
Cal Gas	10.1	ppm	Gas Cyl. #	BLM00504	Cal Gas Expiry date	December 25, 2015
DAS Output Voltage	0-1	Volts	Chart Rec. Output	N/A	Volts	

#### Equipment Information

Analyzer Make / Model:	API 101E	S/N :	510	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	API 700	S/N :	690	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	N/A	S/N:	S/N:	N/A	
Flow Meter:	API 700	S/N :	690		

#### Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 100		ppb	
Sample Flow / Box Temp	558	ccm	38.5	Deg C
HVPS / Lamp Setting	530		1809	
PMT / RxCell Temp	8.5	Deg C	50	Deg C
Converter / IZS Temp	315	Deg C	45	Deg C
Offset / Slope	120.2		1.03	
			113.3	1.044

#### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	NA
	No zero adj.			
4960	40.0	81	82	0.9854
	No span adj.			
4980	20.0	40	40	1.0000
4988	12.0	24	24	1.0000
5000	0	0	0	NA
Sum of Least Squares				0.9915
New Correction Factor				0.9854

#### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	40.6	36.0
Sample Lines Connected		YES

#### Percent Change

Previous Month's Calibration Correction Factor:	N/A
Current Correction Factor Before Span Adjust:	0.9854
Percent Change:	#VALUE!

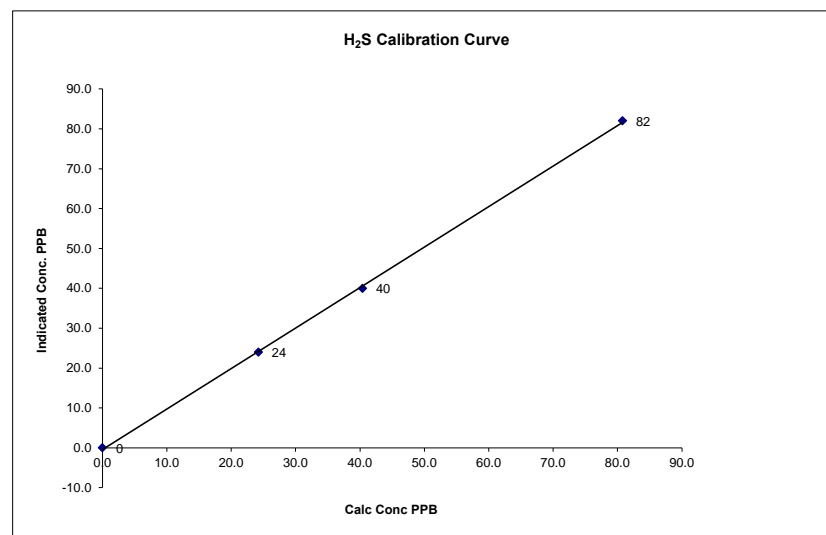
Notes:	<b>NA : Not Applicable</b>
	Change sample filter

Calibration Performed by: Waseem Ahmed

### H<sub>2</sub>S Calibration Curve

Calibration Date	August 2, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	13:15
End Time (MST)	15:15

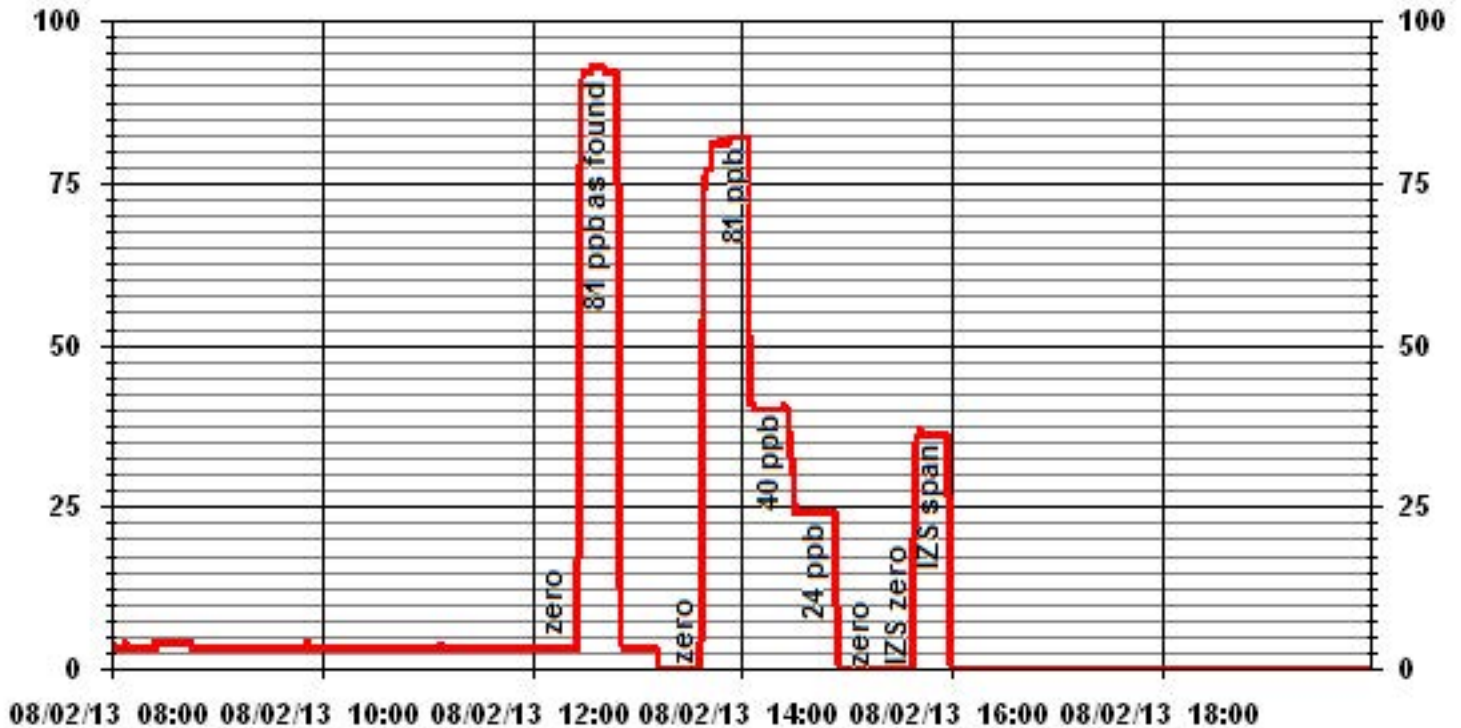
Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999799
0	0	NA	Intercept	(0.85 to 1.15)	1.015786
24	24	1.0100		(± 3% F.S.)	-0.433962
40	40	1.0100			
81	82	0.9854			



Notes:

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### 01 Minute Averages



# Total Hydrocarbons



### THC Calibration Report

Station Information			
Calibration Date:	August 2, 2013	Previous Calibration:	July 13, 2013
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	ST. LINA		
Start Time (MST):	9:25	End Time (MST):	11:55
Reason:	Monthly calibration		
Barometric Pressure:	27.74 in HG	Station Temperature:	21 Deg C
Calibrator:	API 700	S/N:	690
Cal Gas Concentration:	CH4 600 PPM	C3H8 204 PPM	
	TOTAL CH4 1161.0 PPM	Gas Cyl. #	LL155310
		Cal Gas Expiry Date:	September 9, 2013
DAS make & Model:	ESC 8832	S/N :	AO717
Chart Recorder:	N/A	S/N:	N/A
Output Voltage Range:	0-10 VDC	Chart Speed:	N/A mm/hr

#### Analyzer Information

Make / Model	Thermo 51C-LT	S/N :	043669739	Method	Flame Ionization
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#### Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0-50 ppm		0-50 ppm	
Sample Pressure	6.8 psi		6.8 psi	
Hydrogen Pressure	9 psi		9 psi	
Air Pressure	21 psi		21 psi	

#### Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	-0.1	N/A
2000	0.0	0.0	0.0	N/A
1992	71.1	40.0	39.4	1.0155
1992	71.1	40.0	40.0	1.0000
1941	34.1	20.0	20.0	1.0000
1955	17.0	10.0	9.8	1.0213
2000	0.0	0.0	-0.2	N/A
New Correction Factor:				1.0000

#### Percent Change

Previous Calibration Correction Factor:	0.9953
Current Correction Factor Before Span Adjust:	1.0155
Percent Change:	-2.0%

#### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	32.5	32.5
Sample Lines Connected	Yes	

Cylinder Pressures  
 Span 1400 psi Hydrogen 1450 psi Zero Air 32 psi

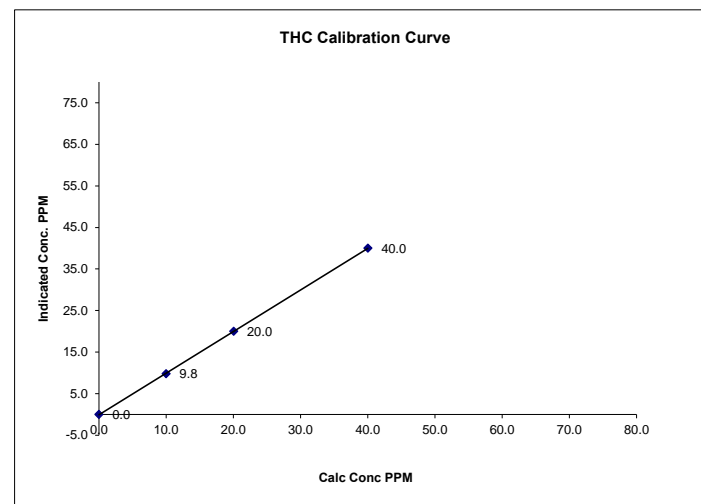
Notes: **N/A : Not Applicable**  
 Change sample filter.  
 Spare H2=01, span =01

Calibration Performed by: Waseem Ahmed

### THC Calibration Curve

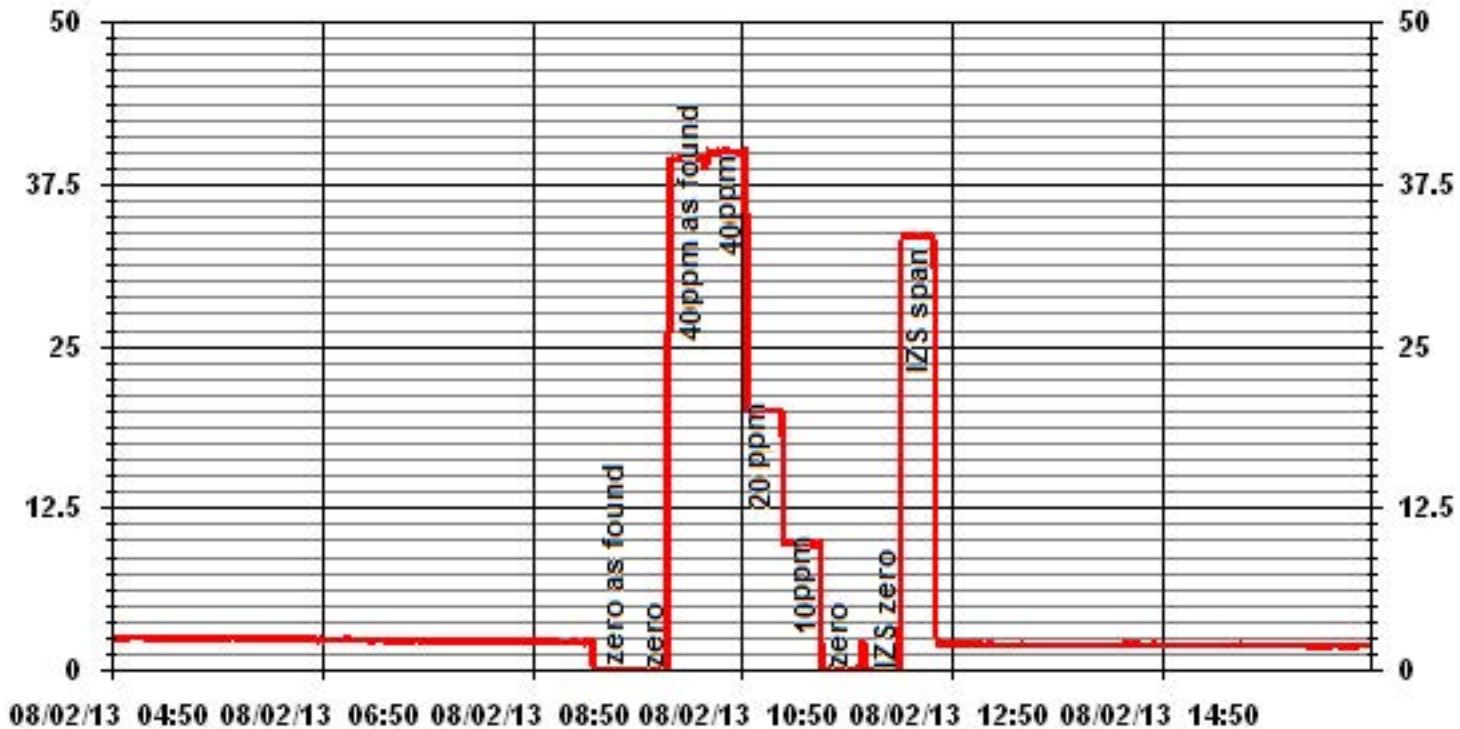
Calibration Date	August 2, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	9:25
End Time (MST)	11:55

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient (≥ 0.995)	Slope (0.85 to 1.15)	Intercept (± 3% F.S.)
0.0	0.0	N/A	0.999970	1.001372	-0.09014
10.0	9.8	1.0213			
20.0	20.0	1.0000			
40.0	40.0	1.0000			



Notes:

### 01 Minute Averages



# Nitrogen Dioxide

**NOx - NO- NO2 Calibration Report**  
**Station Information**

Calibration Date	August 1, 2013	Previous Calibration	July 12, 2013
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	8:55	End Time (MST)	9:37
Reason:	A/F Point		
Barometric Pressure	27.75 in HG	Station Temperature	24 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO	49.2 ppm
Cal Gas Cylinder #	BAL3031	Cal Gas Expiry date	December 29, 2013
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts

**Equipment Information**

Analyzer Make / Model:	API 200E	S/N :	592	Method:	Chemiluminescent
Calibrator Make / Model:	Enviro-nics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	Enviro-nics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range	0 - 1000			ppb			
Sample Flow/Conv. Temp	474 ccm	314 Deg C		481 ccm	316 Deg C		
Ozone Flow / Vacuum	74 ccm	6.0 *Hg-A		74 ccm	6.0 *Hg-A		
HVPS / A ZERO	638 Volts	20.7 MV		638 Volts	19.9 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.9 Deg C		50.0 Deg C	6.9 Deg C		
Box Temp / IZS Temp	30.9 Deg C	45.2 Deg C		31.9 Deg C	45.1 Deg C		
Offset	0.8 NOx	-1.4 NO		0.8 NOx	-1.4 NO		
Slope	1.271 NOx	1.268 NO		1.271 NOx	1.268 NO		
NO2 COEF / Conv Efficiency	N/A NO2	0.993		N/A NO2	0.993		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	NA	0	0	NA	-1	0	-1	NA	NA
	No zero adj.									
4920	80.6	NA	795	793	NA	790	793	-3	1.0046	1.0000

**Gas Phase Titration Calibration Data**

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

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 1.0046	NO= 1.0000	NO2= 1.0000
				Average Converter Efficiency=		

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	564 NOx	549 NO2		564 NOx	549 NO2		
Sample Lines Connected:				YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	1.000	1.000	
Current Correction Factor Before Span Adjust	1.005	1.000	
Percent Change	-0.5%	0.0%	

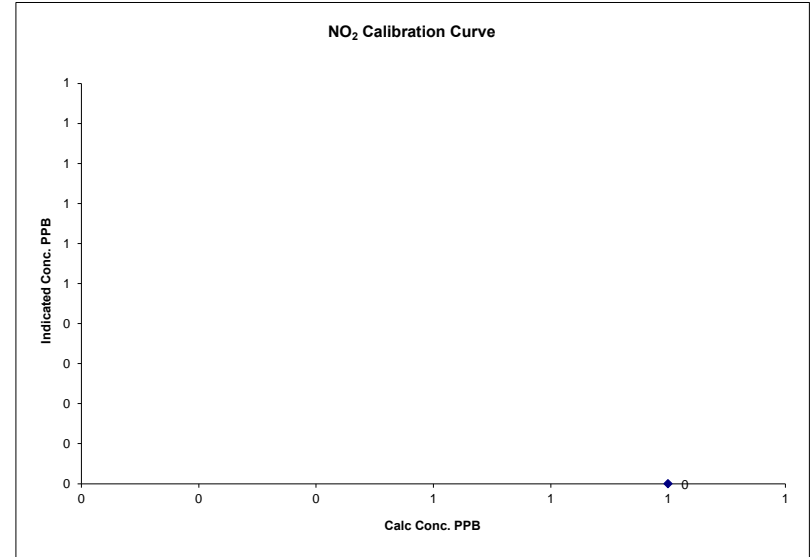
Notes: **NA : Not Applicable**

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

Calibration Date	August 1, 2013
Company	LICA
Plant / Location	St. Lina
Start Time (MST)	8:55
End Time (MST)	9:37

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)
-3			Slope (0.85 to 1.15)
			Intercept (± 3% F.S.)



Notes:

**NOx - NO- NO2 Calibration Report**

**Station Information**

Calibration Date	August 1, 2013	Previous Calibration	N/A
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	11:55	End Time (MST)	14:02
Reason:	Post repair calibration		
Barometric Pressure	27.72 in HG	Station Temperature	25 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO	49.2 ppm
Cal Gas Cylinder #	BAL3031	Cal Gas Expiry date	December 29, 2013
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts

**Equipment Information**

Analyzer Make / Model:	API 200E	S/N :	592	Method:	Chemiluminescent
Calibrator Make / Model:	EnviroNics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range	0 - 1000			ppb			
Sample Flow/Conv. Temp	474 ccm	314 Deg C		474 ccm	316 Deg C		
Ozone Flow / Vacuum	74 ccm	4.1 *Hg-A		74 ccm	3.9 *Hg-A		
HVPS / A ZERO	670 Volts	20.7 MV		670 Volts	24.8 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.9 Deg C		50.0 Deg C	6.9 Deg C		
Box Temp / IZS Temp	33.6 Deg C	45.2 Deg C		33.8 Deg C	45.1 Deg C		
Offset	1 NOx	-1.4 NO		-0.9 NOx	-1.3 NO		
Slope	1.272 NOx	1.271 NO		1.010 NOx	1.005 NO		
NO2 COEF / Conv Efficiency	N/A NO2	0.993		N/A NO2	0.993		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	NA	0	0	NA	0	0	0	NA	NA
	No zero adj.									
4920	80.7	NA	796	794	NA	799	796	2	0.9957	0.9975
	No span adj.									
4960	40.3	NA	397	397	NA	398	397	1	0.9983	1.0000
4980	20.2	NA	199	199	NA	201	200	1	0.9909	0.9938
5000	0.0	NA	0	0	NA	0	0	0	NA	NA

**Gas Phase Titration Calibration Data**

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

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 0.996	NO= 0.998	NO2=
				NOx= 0.9957	NO= 0.9975	NO2=
				Average Converter Efficiency=		

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	564 NOx	549 NO2		564 NOx	549 NO2		
	Sample Lines Connected:			YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	N/A	N/A	
Current Correction Factor Before Span Adjust	0.996	0.997	
Percent Change	#VALUE!	#VALUE!	

**Notes**

**NA : Not Applicable**

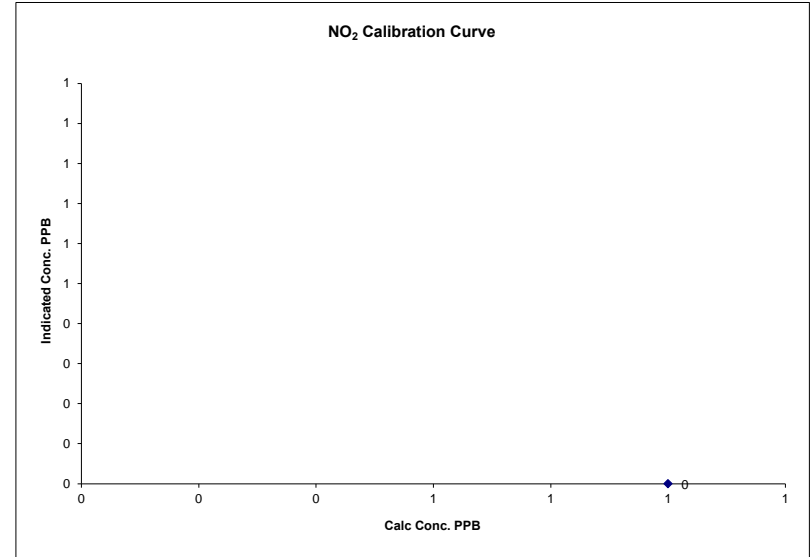
Change sample filter.

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

Calibration Date	August 1, 2013
Company	LICA
Plant / Location	St. Lina
Start Time (MST)	11:55
End Time (MST)	14:02

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)
2			Slope (0.85 to 1.15)
			Intercept (± 3% F.S.)

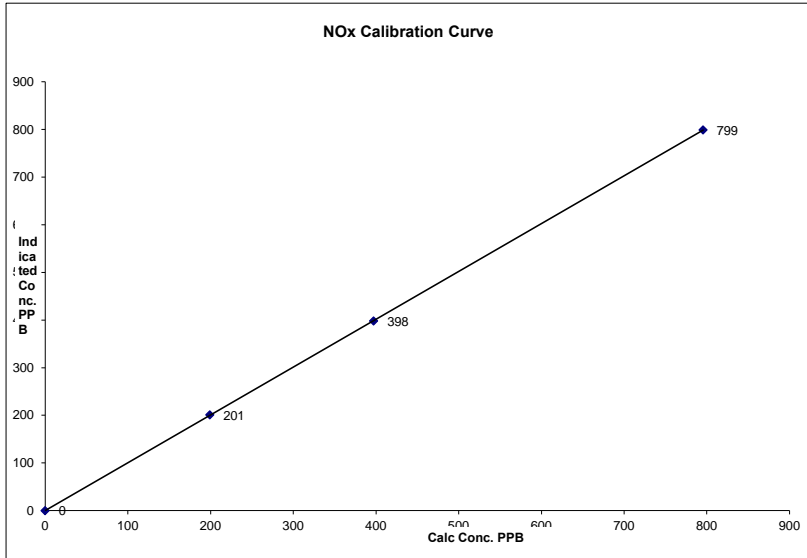


Notes:

**NOx Calibration Curve**

Calibration Date	August 1, 2013	
Company	LICA	
Plant / Location	St. Lina	
Start Time (MST)	11:55	End Time (MST) 14:02

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999994
0	0	NA	Slope (0.85 to 1.15)	1.003715
199	201	0.9909	Intercept (± 3% F.S.)	0.18492
397	398	0.9983		
796	799	0.9957		

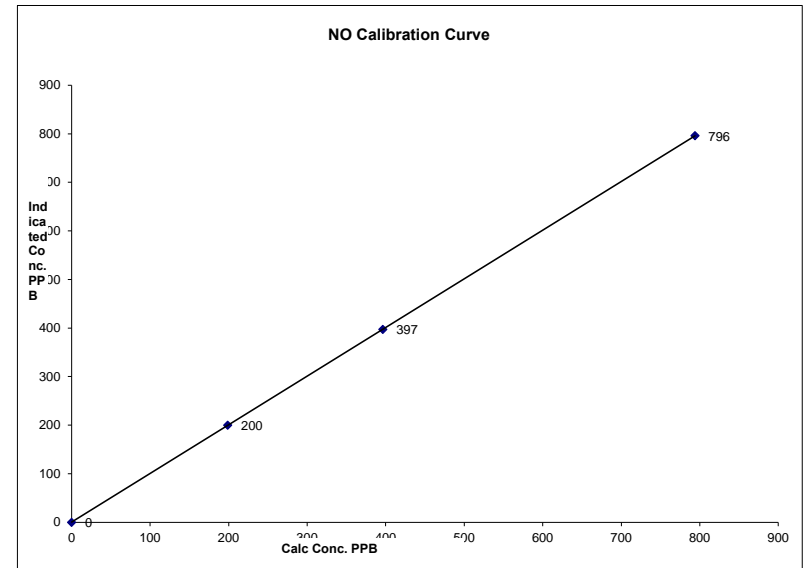


Notes:

**NO Calibration Curve**

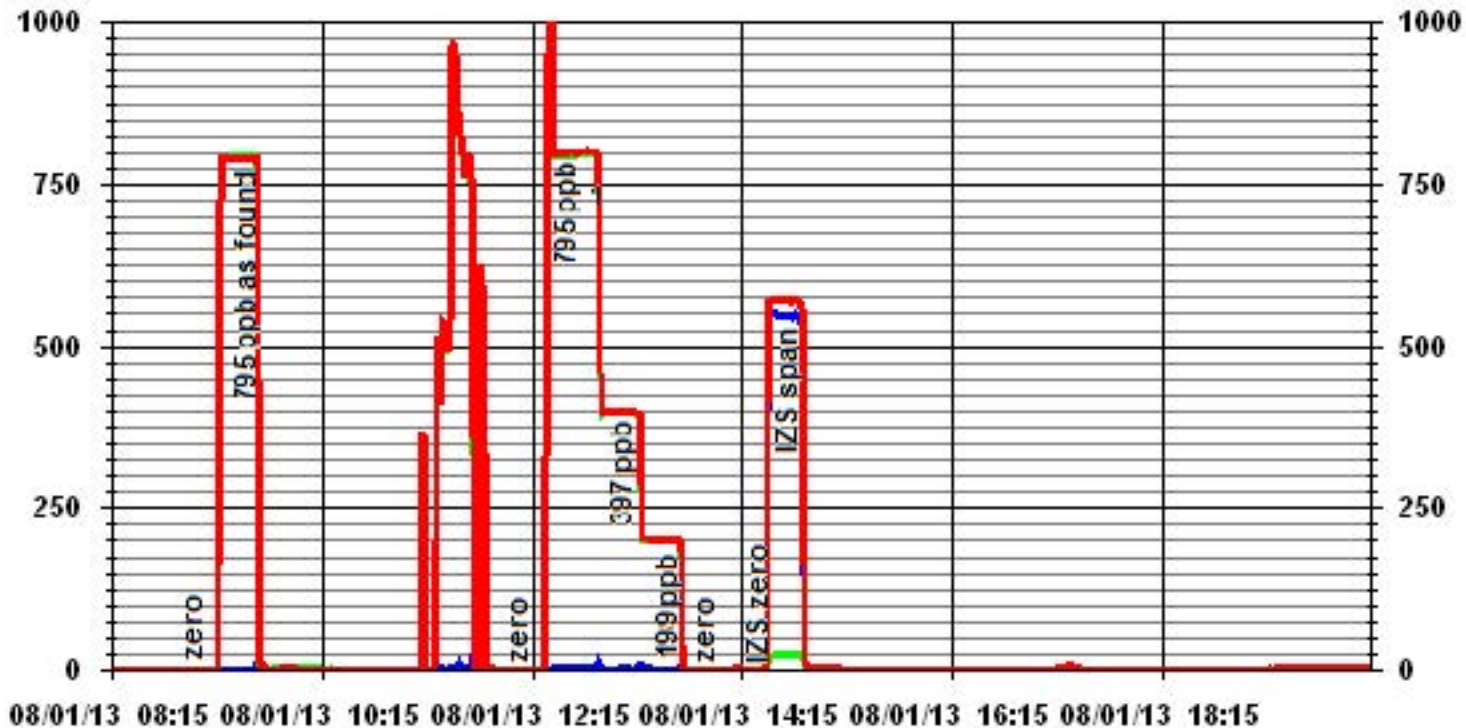
Calibration Date	August 1, 2013	
Company	LICA	
Plant / Location	St. Lina	
Start Time (MST)	11:55	End Time (MST) 14:02

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999998
0	0	NA	Slope (0.85 to 1.15)	1.002155
199	200	0.9938	Intercept (± 3% F.S.)	0.18525
397	397	1.0000		
794	796	0.9975		



Notes:

### 01 Minute Averages



**NOx - NO- NO2 Calibration Report**  
**Station Information**

Calibration Date	August 2, 2013	Previous Calibration	N/A
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	9:20	End Time (MST)	11:34
Reason:	Post repair calibration (GPT)		
Barometric Pressure	27.77 in HG	Station Temperature	21 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO	49.2 ppm
Cal Gas Cylinder #	BAL3031	Cal Gas Expiry date	December 29, 2013
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts

**Equipment Information**

Analyzer Make / Model:	API 200E	S/N :	592	Method:	Chemiluminescent
Calibrator Make / Model:	Enviro-nics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	Enviro-nics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range	0 - 1000						
Sample Flow/Conv. Temp	474 ccm	316 Deg C		474 ccm	316 Deg C		
Ozone Flow / Vacuum	74 ccm	3.9 *Hg-A		74 ccm	4.0 *Hg-A		
HVPS / A ZERO	670 Volts	24.8 MV		670 Volts	26.0 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.9 Deg C		50.0 Deg C	6.9 Deg C		
Box Temp / IZS Temp	28.8 Deg C	45.1 Deg C		34.5 Deg C	45.1 Deg C		
Offset	-0.9 NOx	-1.3 NO		-0.9 NOx	-1.3 NO		
Slope	1.010 NOx	1.005 NO		1.010 NOx	1.005 NO		
NO2 COEF / Conv Efficiency	N/A NO2	0.993		N/A NO2	0.993		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	NA	0	0	NA	1	1	0	NA	NA

**Gas Phase Titration Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4920	80.7	NA	796	794	NA	793	791	2	NA	NA
4920	80.7	600	796	NA	512	793	281	512	1.0000	100.00%
		No adj.								
4920	80.7	300	796	NA	259	794	534	260	0.9962	100.39%
4920	80.7	120	796	NA	103	793	690	103	1.0000	100.00%

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx=	NO=	NO2=	0.999
				NOx=	NO=	NO2=	1.0000
				Average Converter Efficiency= 100.13%			

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	564 NOx	549 NO2		564 NOx	549 NO2		
	Sample Lines Connected:			YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor			N/A
Current Correction Factor Before Span Adjust			1.000
Percent Change			#VALUE!

**Notes**      **NA : Not Applicable**

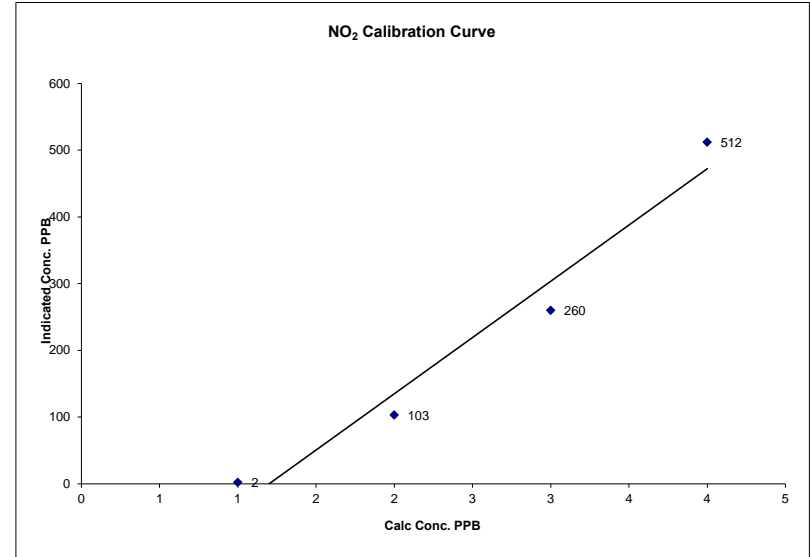
Additional point for O3 calibration  
 O3=450    Flow =4920    Span=80.7    NOx= 796    NO= 406    NO2=389

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

Calibration Date	August 2, 2013
Company	LICA
Plant / Location	St. Lina
Start Time (MST)	9:20
End Time (MST)	11:34

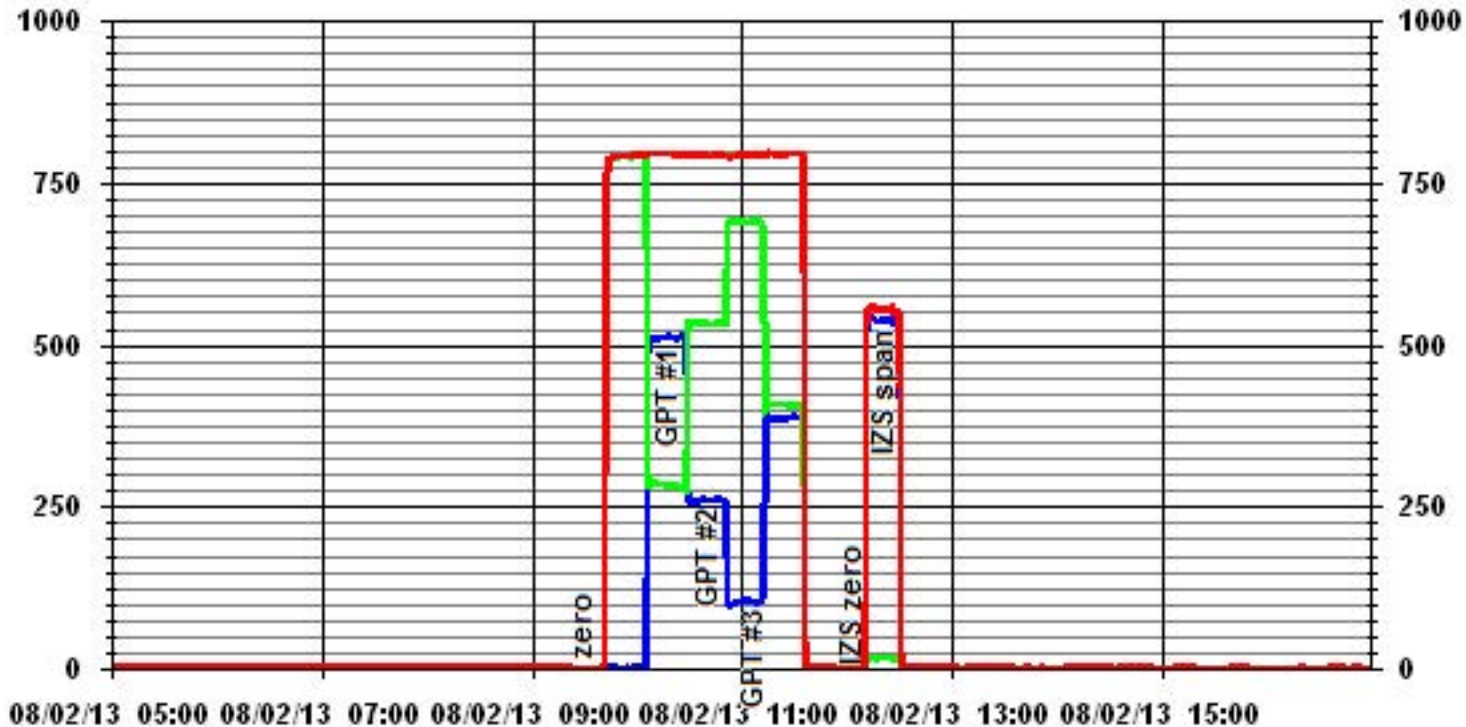
Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
101	103	0.9806		
257	260	0.9885		
510	512	0.9961		



Notes:



# 01 Minute Averages



— LICA31 IIOX\_ PPB

— LICA31 IIO\_ PPB

— LICA31 IIO2\_ PPB

**NOx - NO- NO2 Calibration Report**

**Station Information**

Calibration Date	August 26, 2013	Previous Calibration	August 1, 2013
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	10:28	End Time (MST)	11:20
Reason:	AF point		
Barometric Pressure	27.6 in HG	Station Temperature	20 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO	49.2 ppm
Cal Gas Cylinder #	BAL3031	Cal Gas Expiry date	December 29, 2016
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts

**Equipment Information**

Analyzer Make / Model:	API 200E	S/N :	592	Method:	Chemiluminescent
Calibrator Make / Model:	EnviroNics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range	0 - 1000			ppb			
Sample Flow/Conv. Temp	486 ccm	315.1 Deg C		485 ccm	315 Deg C		
Ozone Flow / Vacuum	74 ccm	3.8 *Hg-A		74 ccm	3.9 *Hg-A		
HVPS / A ZERO	670 Volts	23.4 MV		670 Volts	23.8 MV		
Rx/ Temp / PMT Temp	49.9 Deg C	6.8 Deg C		50.0 Deg C	6.9 Deg C		
Box Temp / IZS Temp	27.2 Deg C	45.0 Deg C		27.3 Deg C	45.0 Deg C		
Offset	-0.9 NOx	-1.3 NO		-0.9 NOx	-1.3 NO		
Slope	1.010 NOx	1.005 NO		1.010 NOx	1.005 NO		
NO2 COEF / Conv Efficiency	N/A NO2	0.993		N/A NO2	0.993		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	NA	0	0	NA	1	1	1	NA	NA
	No zero adj.									
4920	80.1	NA	790	788	NA	761	763	-1	1.0394	1.0346

**Gas Phase Titration Calibration Data**

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

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 1.0394	NO= 1.0346	NO2=
				Average Converter Efficiency=		

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	564 NOx	549 NO2		564 NOx	549 NO2		
Sample Lines Connected:				YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	0.996	0.998	
Current Correction Factor Before Span Adjust	1.039	1.035	
Percent Change	-4.2%	-3.6%	

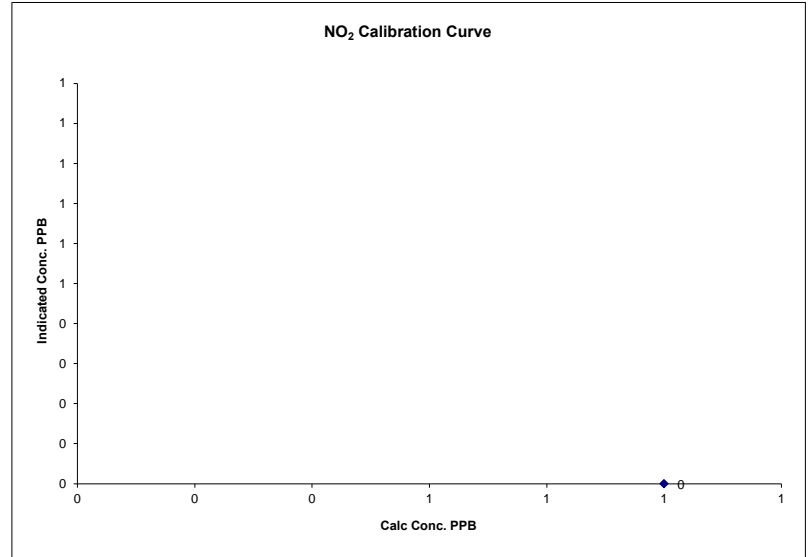
Notes: **NA : Not Applicable**

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

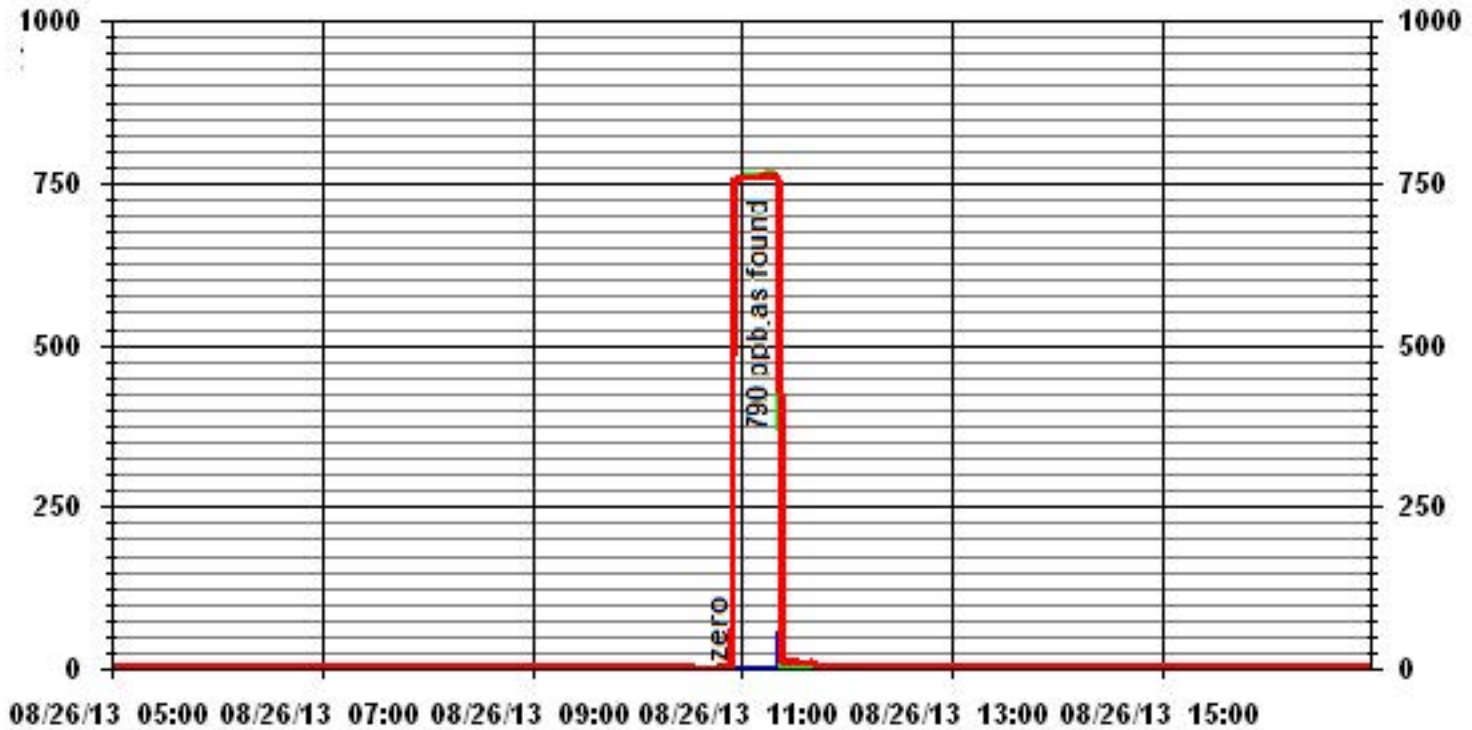
Calibration Date	August 26, 2013
Company	LICA
Plant / Location	St. Lina
Start Time (MST)	10:28
End Time (MST)	11:20

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)
-1			Slope (0.85 to 1.15)
			Intercept (± 3% F.S.)



Notes:

# 01 Minute Averages



— LICA31 IIOX\_ PPB

— LICA31 IIO\_ PPB

— LICA31 IIO2\_ PPB

# Ozone

### O<sub>3</sub> Calibration Report

#### Station Information

Calibration Date	August 2, 2013	Previous Calibration	July 23, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	12:00	End Time (MST)	13:55
Reason:	Monthly calibration		
Barometric Pressure	27.74 in HG	Station Temperature	27 Deg C
DAS Output Voltage	0-10 Volts		

#### Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	1002240371	Method:	Photometric
Calibrator Make / Model:	Enviroics 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO717		

#### Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range	0-500 ppb							
Cell A Flow / Cell B Flow	740 LPM	720 LPM	740 LPM	720 LPM	740 LPM	720 LPM	740 LPM	720 LPM
O <sub>3</sub> Set Level	682 mmHg		682 mmHg		682 mmHg		682 mmHg	
Bench Lamp	53.8 Deg C		53.8 Deg C		53.8 Deg C		53.8 Deg C	
O <sub>3</sub> Lamp / Box Temp	67.9 Deg	32.6 Deg C	68 Deg C	34.3 Deg C	68 Deg C	34.3 Deg C	68 Deg C	34.3 Deg C
Offset / Slope	0.4 1.014		0.4 1.014		0.4 1.014		0.4 1.014	

#### Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	N/A
	No zero adj.			
4995	450	385	386	0.9974
	No span adj.			
4995	300	257	259	0.9923
4995	120	101	103	0.9806
4995	0	0	0	N/A
Sum of Least Squares				0.9951
New Correction Factor				0.9974

#### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0
Auto Span	420	420
Sample Lines Connected		Yes
Previous Calibration Correction Factor:		0.9924
Current Correctio Factor Before Span Adjust:		0.9974
Percent Change:		-0.5%

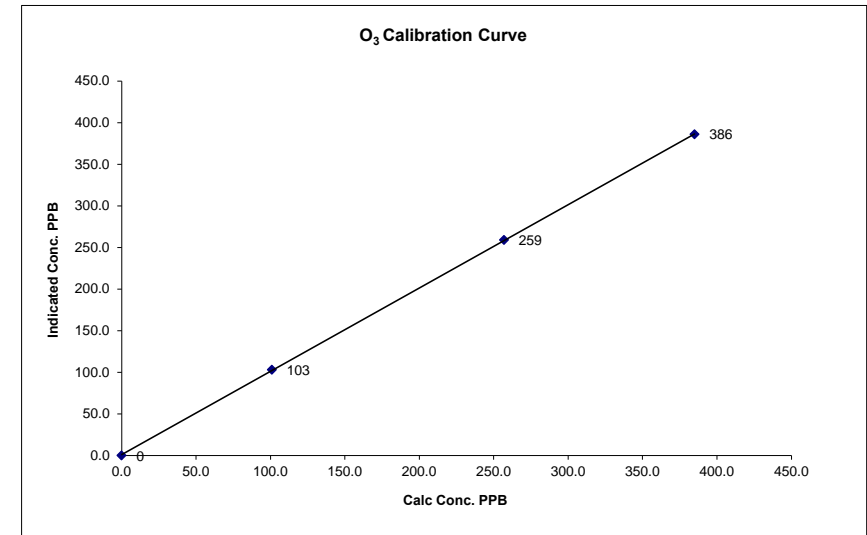
Note: N/A : Not Applicable  
Change sample filter

Calibration Performed by: Waseem Ahmed

### O<sub>3</sub> Calibration Curve

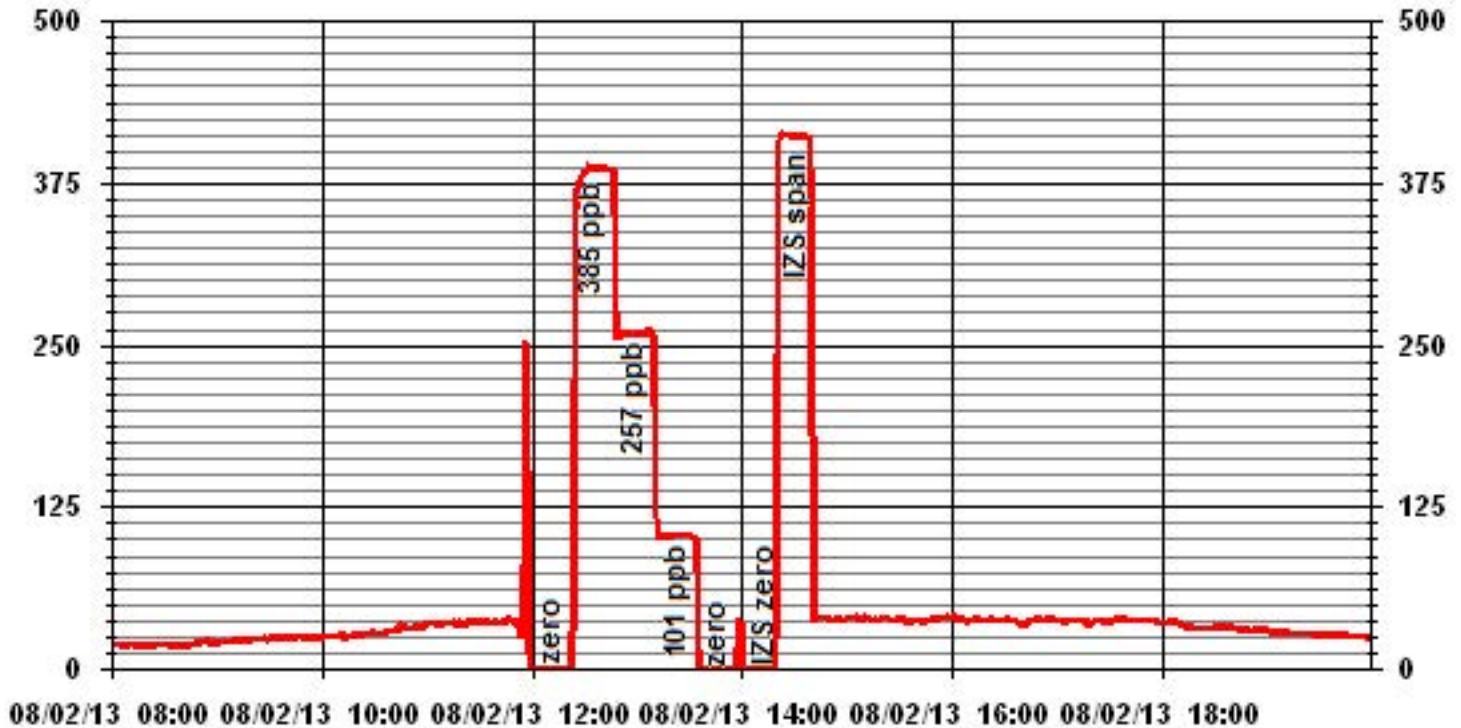
Calibration Date	August 2, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	12:00
End Time (MST)	13:55

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
0	0	N/A	Slope (0.85 to 1.15)	0.999972
101	103	0.9806	Intercept (± 3% F.S.)	1.001992
257	259	0.9923		0.879951
385	386	0.9974		



Notes:

### 01 Minute Averages



— LICA31\_03\_ PPB

### O<sub>3</sub> Calibration Report

#### Station Information

Calibration Date	August 19, 2013	Previous Calibration	August 2, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	16:20	End Time (MST)	18:55
Reason:	Post repair calibration (After AENV audit)		
Barometric Pressure	27.41 in HG	Station Temperature	23 Deg C
DAS Output Voltage	0-10 Volts		

#### Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	1002240371	Method:	Photometric
Calibrator Make / Model:	Enviroics 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO 717		

#### Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range	0-500 ppb							
Cell A Flow / Cell B Flow	732 LPM	714 LPM	734 LPM	714 LPM	732 LPM	714 LPM	734 LPM	714 LPM
O <sub>3</sub> Set Level	671 mmHg		673 mmHg		671 mmHg		673 mmHg	
Bench Lamp	53.7 Deg C		53.7 Deg C		53.7 Deg C		53.7 Deg C	
O <sub>3</sub> Lamp / Box Temp	67.9 Deg	28.7 Deg C	67.9 Deg C	28 Deg C	67.9 Deg C	28 Deg C	67.9 Deg C	28 Deg C
Offset / Slope	0.4		1.014		-0.2		0.985	

#### Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	N/A
	No Zero Adj			
4994	450	385	387	0.9948
	No Span Adj			
4994	300	257	259	0.9923
4994	120	101	104	0.9712
4994	0	0	0	N/A
Sum of Least Squares				0.9930
New Correction Factor				0.9948

#### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	420	309
Sample Lines Connected		Yes
Previous Calibration Correction Factor:		0.9974
Current Correctio Factor Before Span Adjust:		0.9948
Percent Change:		0.3%

Note:

**N/A : Not Applicable**

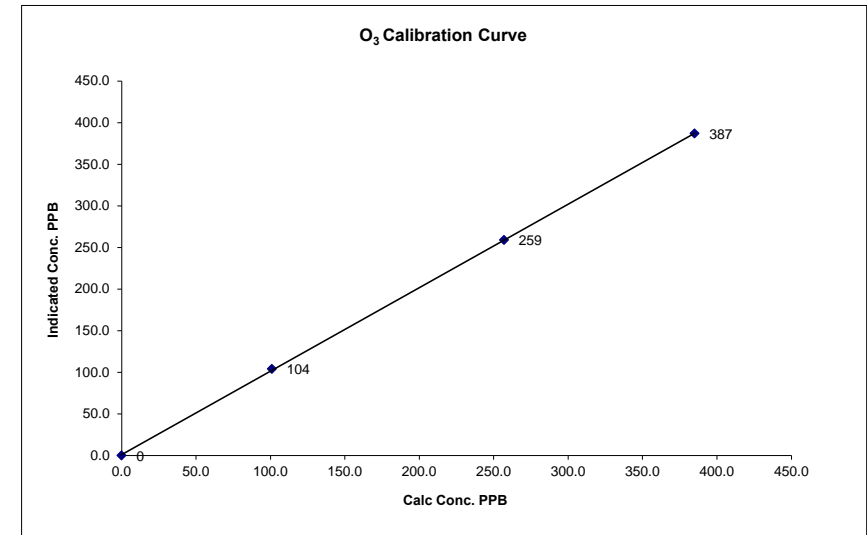
Zero is unstable when doing audit.  
 Found sample line leaks from analyzer to sample filter.  
 Change the TEFLON tube and do the calibration.

Calibration Performed by: Limin Li / Waseem Ahmed

### O<sub>3</sub> Calibration Curve

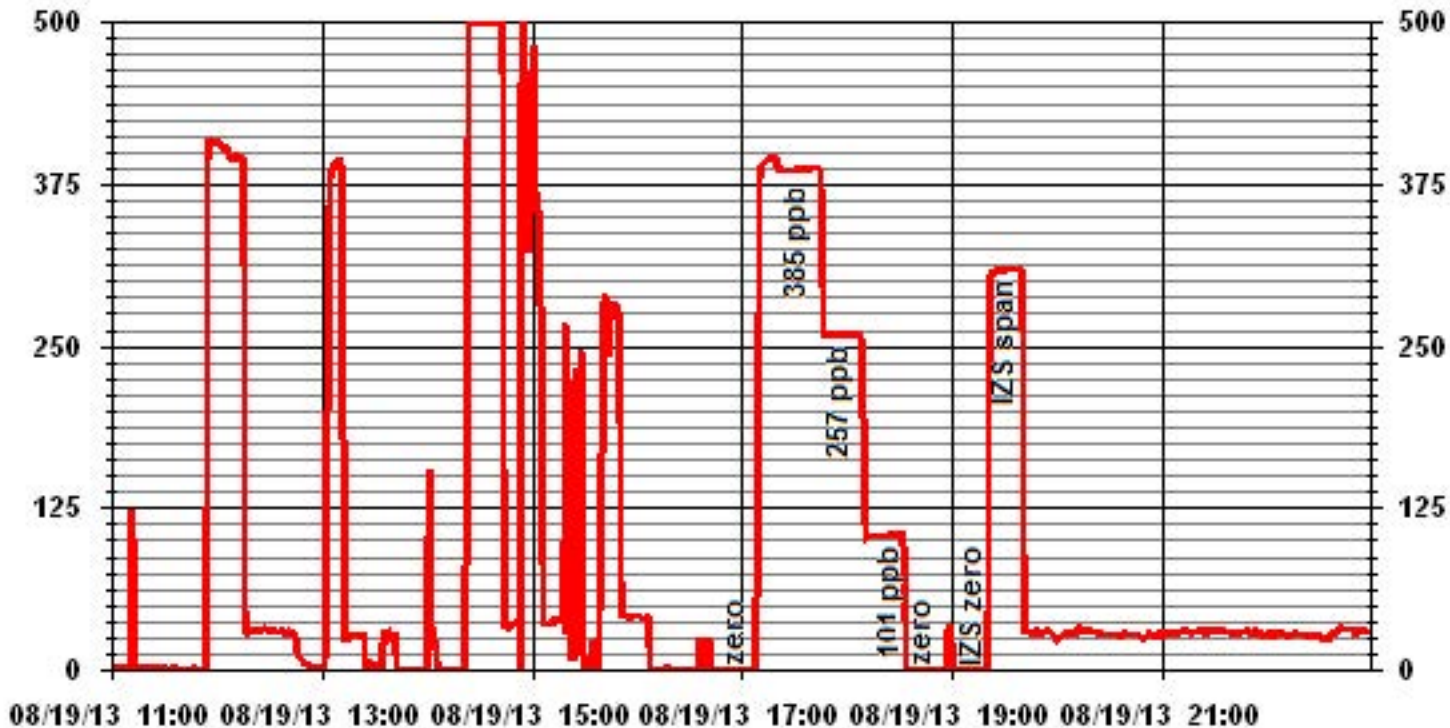
Calibration Date	August 19, 2013		
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	16:20	End Time (MST)	18:55

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
0	0	N/A	Slope (0.85 to 1.15)	0.999956
101	104	0.9712	Intercept (± 3% F.S.)	1.003316
257	259	0.9923		1.133968
385	387	0.9948		



Notes:

# 01 Minute Averages





# Particulate Matter 2.5

**TEOM® Calibration**

	<b><u>Station</u></b>		<b><u>Transfer Standard</u></b>
Date:	August 19, 2013	Make/Model:	BIOS DRYCAL DC-2
Station Name:	LICA St.Lina (CASA#31)	Serial Number:	1193
Location:	St. Lina Station	Cell s/n:	2272
Operator:	Maxxam Analytics	Thermometer:	Station Temp. & pres. Sensor

	<b><u>Sampler</u></b>		<b><u>Set-up and current Sampler readings</u></b>
Make/Model	R&P Teom 1400a	F-Main Set Pt (l/min)	3.00
Unit #	20001	F-Aux Set Pt (l/min)	13.67
Control unit s/n	140AB228720001	Filter Load (%)	18%
Transducer s/n	1200C153540001	K <sub>o</sub> Factor	15003
Parameter	PM2.5	Temp (°C)	20.3
		Press (ATM)	0.916

**Conversion from mmHg or "Hg to ATM (Atmospheres)**

ATM = (mmHg) X (1.316 X 10<sup>-3</sup>) or ATM = ("Hg) X (3.34207 X 10<sup>-2</sup>)

**Note: Tolerances are noted as BOLD in Brackets**

**Calibration**

<b>Zero flow</b>				
	<b>Pump Off</b>		<b>Pump On (Time to reach set points)</b>	
F-Main (l/min)	0.05		<b>(45-60 Sec)</b>	45
F-Aux (l/min)	0.17		<b>(45-60 Sec)</b>	50
<b>Temperature/Pressure</b>				
Measured Temp (± 1 °C)	20.3	Δ °C	0.0	
Measured Press (± 1.5% ATM)	0.916	Δ % ATM	0.0%	
<b>Flow Audit</b>				
Indicated Main/Aux Flow (l/min)	2.98 / 13.61	<b>Δ % from Set-pt</b>		
Total Flow = Main + Aux (l/min)	16.59	<b>(± 2%)</b>	0.7% / 0.4%	
Measured Total Flow (l/min)	16.95	<b>(± 2%)</b>	0.5%	
Measured Main Flow (l/min)	3.074	<b>(± 1.0 l/min. (5.65%))</b>	-2.1%	
		<b>(± 0.2 l/min. (6.25%))</b>	-3.1%	
<b>Leak Check</b>				
Main (< 0.15 l/min)	0.11	<b>Actual leakage = Pump On - Pump Off</b>		
Aux (< 0.15 l/min)	0.20	0.06		
		0.03		
<b>K<sub>o</sub> Factor</b>				
Measured	na			
K <sub>o</sub> Difference (± 2.5%)	na			

**Start Time:** 17:00      **Finish Time:** 18:30  
**Sample Inlet Cleaned:** NA      **Sample Inlet Connected:** Yes  
**Comments:** \_\_\_\_\_

**Calibrator/s:** Limin Li / Waseem Ahmed

# Lakeland Industry & Community Association

Portable / Elk Point Airport Monitoring Site

Ambient Air Monitoring Data Report

For

August 2013

Prepared By:



September 25, 2013

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

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# Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: Portable / Elk Point Airport  
Data Period: August 2013

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Lili Zhou

## 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 – August 2013

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PORTABLE / ELK POINT AIRPORT SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						OBJECTIVES				EXCEEDENCES		MONTHLY AVERAGE	
PARAMETER	1-HR	24-HR	1-HR	24-HR	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY		
SO <sub>2</sub> (PPB)	172	48	0	0	0.05	1	VAR	VAR	VAR	VAR	0.4	20	96.8
H <sub>2</sub> S (PPB)	10	3	0	0	0.09	3	17	7	2	318(NW)	0.5	10	97.3
THC (55i) (PPM)	-	-	-	-	2.81	12.0	23	4	8.2	293(WNW)	3.86	23	100.0
Methane (PPM)	-	-	-	-	2.75	11.6	23	4	8.2	293(WNW)	3.76	23	100.0
NMHC (PPM)	-	-	-	-	0.06	1.3	14	15	14.4	134(SE)	0.18	25	100.0
NO <sub>2</sub> (PPB)	159	-	0	-	4.68	24.8	22	22	1.4	145(SE)	8.4	14	99.3
NO (PPB)	-	-	-	-	1.77	81.4	23	4	8.2	293(WNW)	9.9	23	99.3
NO <sub>x</sub> (PPB)	-	-	-	-	6.45	97.0	23	4	8.2	293(WNW)	15.8	23	99.3
O <sub>3</sub> (PPB)	82	-	0	-	22.49	54	24	17	7	99(E)	35.8	24	99.9
PM 2.5 (UG/M <sup>3</sup> )	-	30	-	0	8.50	34	6, 7	7, 7	4.5, 11.3	20(NNE), 84(E)	20.4	6	97.0
VECTOR WS (KPH)	-	-	-	-	8.75	38.0	20	14	-	286(WNW)	20.8	20	100.0
VECTOR WD (DEGREES)	-	-	-	-	101(E)	-	-	-	-	-	-	-	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 – PORTABLE

**A trailer audit was performed by AESRD on August 21<sup>st</sup>.**

#### Sulphur Dioxide (PPB)

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

The analyzer was working well throughout the month. Following the as found points check on August 13<sup>th</sup>, the scrubber material for the zero air system was changed and a UV lamp calibration was performed. The PMT voltage and the slope were adjusted after the UV lamp calibration. The analyzer was allowed time to stabilize. A post repair/maintenance calibration was performed on August 14<sup>th</sup>. The inlet filter was changed before the as found points check was started. Data was corrected using daily zero information.

#### Hydrogen Sulphide (PPB)

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

Following the as found points check on August 13<sup>th</sup>, the scrubber material for the zero air system was changed and a UV lamp calibration was performed. A 3-point calibration was performed after the maintenance. The inlet filter was changed before the as found points check was started. The analyzer did not span on August 14<sup>th</sup>. It was noticed that the analyzer had a pump flow warning upon arrival on August 14<sup>th</sup>. The issue was due to a leak in sample tubing. The leak was fixed following a zero span check. 19 hours of data between August 13<sup>th</sup> at hour 14 and August 14<sup>th</sup> at hour 8 were invalidated. Data was corrected using daily zero information.



# General Monthly Summary

## AQM STATION – LICA – PORTABLE

### THC (PPM)

- Analyzer make / model –Thermo 51C, S/N: 77021-384

No data is included in this monthly report as the analyzer was removed as per client request.

### 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 August 12<sup>th</sup>. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Below are the canister events occurring in August; a total of nine canisters were collected.

Date	Time	Concentration	Date	Time	Concentration
08/08/2013	05:30	0.18	08/21/2013	21:05	0.15
08/09/2013	19:45	0.16	08/22/2013	21:45	0.24
08/13/2013	01:00	0.16	08/27/2013	22:05	0.15
08/13/2013	19:25	0.17	08/30/2013	03:40	0.15
08/14/2013	15:05	0.83			

### Ozone (PPB)

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

The analyzer was working well throughout the month. The monthly calibration was performed on August 27<sup>th</sup>. The inlet filter was changed before the month calibration was started. Hourly maximum data for August 23<sup>rd</sup> hour 22 was invalidated as less than 100% of hourly data was collected during the hour. Reason unknown. 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 August 12<sup>th</sup>. The inlet filter was changed before the month calibration was started. The analyzer spanned high on August 13<sup>th</sup>. A 3- point calibration check was run to verify the analyzer's functionality, and no issues were found. Another multi-point calibration was performed using a different calibrator to verify the analyzer's functionality on August 14<sup>th</sup>. The calibration result was within the acceptable range. The analyzer spanned high again on August 25<sup>th</sup>. An as found calibration check was performed on August 26<sup>th</sup>, and no issues were found. As a result, no data was invalidated. A leak check was performed, and the critical orifice and sinter filter were changed on August 27<sup>th</sup>. Following the maintenance, another as found points check was performed. Further investigation concerning the intercept for the NO<sub>2</sub> calibration considered outside the manufacture's specs found in July, resulted in an error contained in the reporting template for the NO<sub>2</sub> calibration. This was not a problem with the analyzer. Data was corrected using daily zero information.

### Particulate Matter 2.5 (ug/m<sup>3</sup>)

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

Two Teom audits were performed in August: one was on August 12<sup>th</sup> and the other one was on August 27<sup>th</sup>. Both audits passed the manufacturer requirements. The sample inlet was cleaned on August 27<sup>th</sup>. 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. Twenty-two hours of data were invalidated as the data were below -3 ug/m<sup>3</sup>.

# General Monthly Summary

## AQM STATION – LICA – PORTABLE

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

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

The wind system is reported as vector wind speed and vector wind direction. The most recent wind system calibration was done on November 24, 2011.

No operational issues were observed during the month.

### Datalogger

- System make / model - ESC 8832, S/N: AO717

- Software make / version - ESC v 5.51a

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

### Trailer

The manifold system was cleaned on August 14<sup>th</sup>.

# Continuous Monitoring

# Monthly Summaries, Graphs & Wind Roses

# Sulphur Dioxide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

AUGUST 2013

## SULPHUR DIOXIDE (SO<sub>2</sub>) 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	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.		
DAY																												
1	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
2	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
3	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
4	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
5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0.0	24
6	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
7	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
8	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	1	0.0	24
9	0	0	1	1	0	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
10	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	1	0	1	1	1	1	1	1	0	1	0.3	24
11	0	0	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
12	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
13	0	0	0	0	0	0	0	S	C	C	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	0	0.0	10	
14	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	1	Y	1	0	0	0	0	0	0	0	0	1	0.2	14	
15	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.0	24
16	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
17	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
18	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
19	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
20	S	1	0	1	1	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	S	1	0.4	24
21	0	0	0	0	0	0	0	0	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	24
23	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0.0	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	0	0	0	0	0	0	0	0	0	0	0.0	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
31	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	0	1	1	1	1	1	1	1	1	0	0	1	0	1	0	1	1	0	1	1	1	1	1	1	1			
HOURLY AVG	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	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

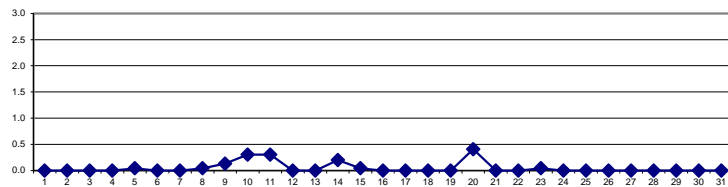
OBJECTIVE LIMIT:

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

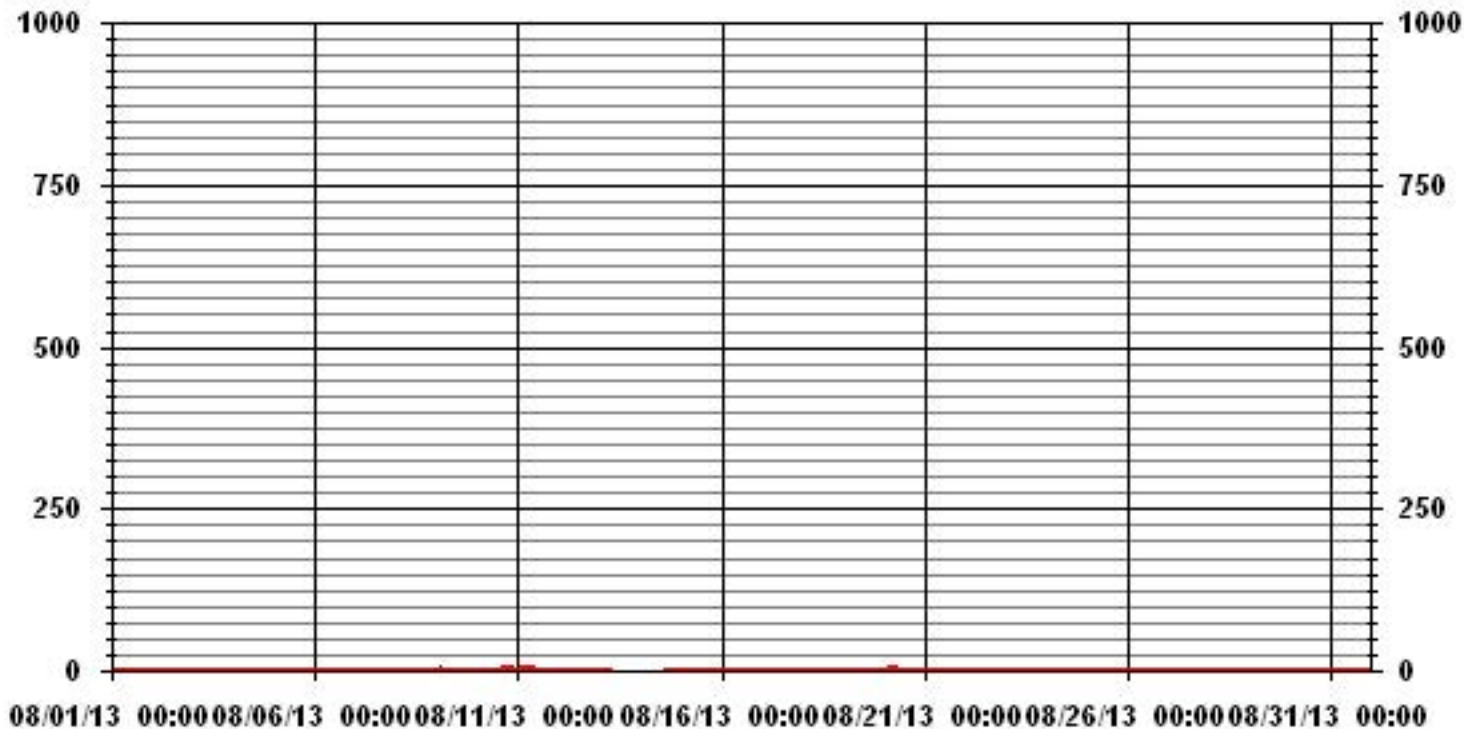
### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	32
MAXIMUM 1-HR AVERAGE:	1 PPB @ HOUR(S) VAR ON DAY(S) VAR
MAXIMUM 24-HR AVERAGE:	0.4 PPB ON DAY(S) 20
IZS CALIBRATION TIME:	31 HRS OPERATIONAL TIME: 720 HRS
MONTHLY CALIBRATION TIME:	8 HRS AMD OPERATION UPTIME: 96.8 %
STANDARD DEVIATION:	0.21 MONTHLY AVERAGE: 0.05 PPB

24 HOUR AVERAGES FOR AUGUST 2013



### 01 Hour Averages





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

AUGUST 2013

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

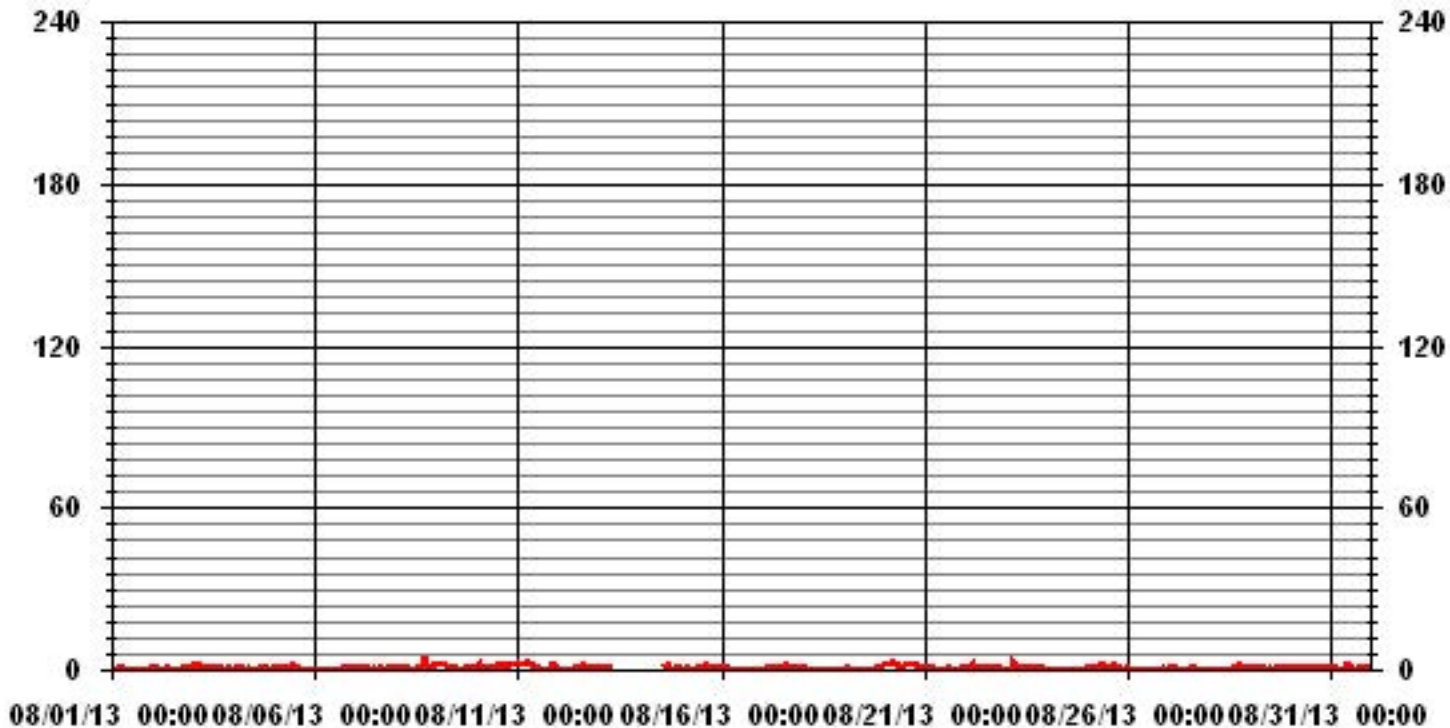
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	352
MAXIMUM INSTANTANEOUS VALUE:	5 PPB @ HOUR(S) 17 ON DAY(S) 8
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	8 HRS
STANDARD DEVIATION:	0.73
OPERATIONAL TIME:	718 HRS

# 01 Hour Averages



LICA-ELK  
 SO2\_ / WDR Joint Frequency Distribution (Percent)

August 2013

Distribution By % Of Samples

Logger Id : 35  
 Site Name : LICA-ELK  
 Parameter : SO2\_  
 Units : PPB

Wind Parameter : WDR  
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	2.20	3.37	4.55	7.48	12.77	14.09	6.60	3.96	3.52	1.90	1.46	6.75	8.66	11.16	6.46	4.99	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.20	3.37	4.55	7.48	12.77	14.09	6.60	3.96	3.52	1.90	1.46	6.75	8.66	11.16	6.46	4.99	

Calm : .00 %

Total # Operational Hours : 681

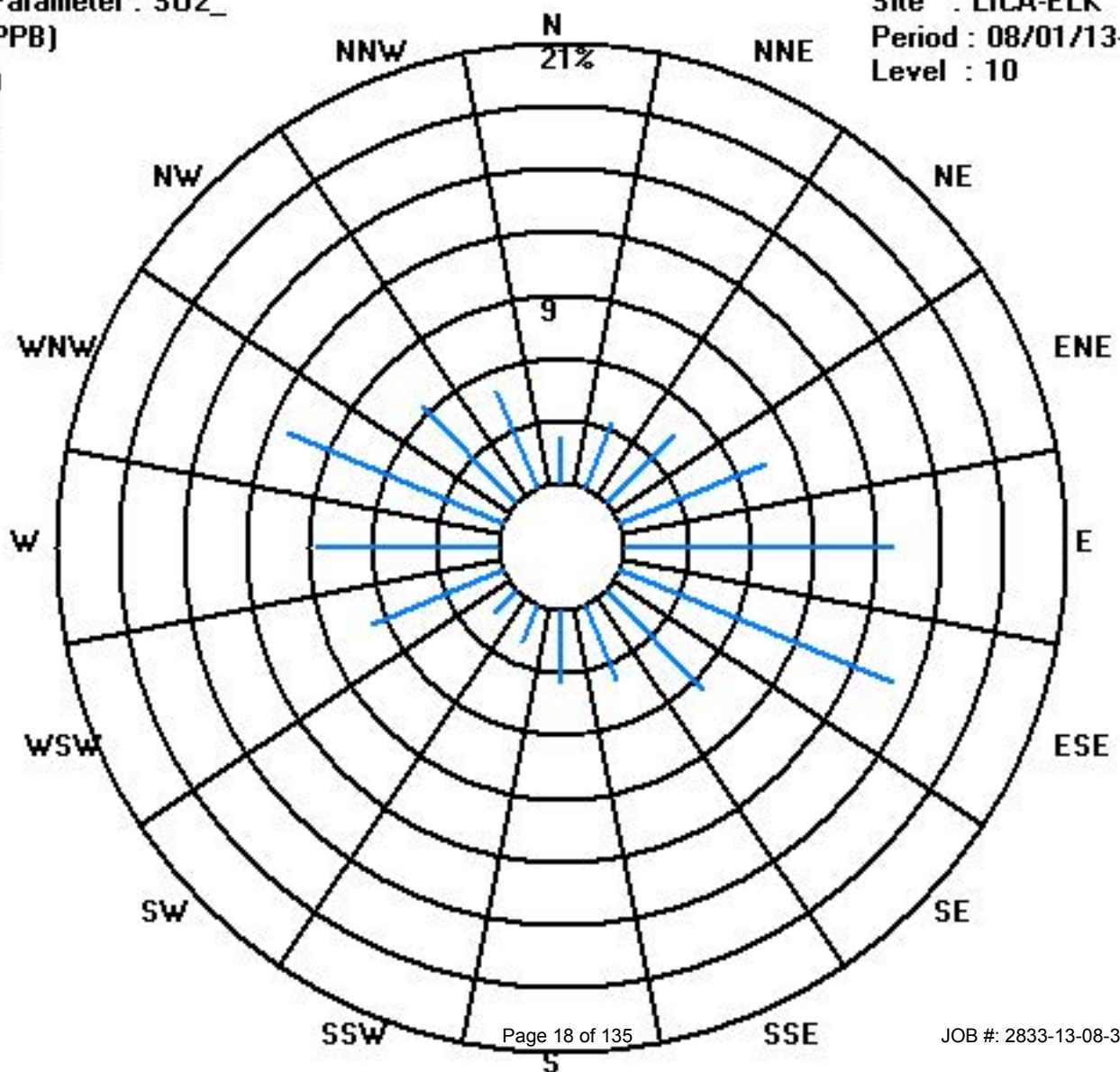
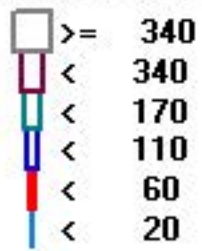
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	15	23	31	51	87	96	45	27	24	13	10	46	59	76	44	34	681
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	15	23	31	51	87	96	45	27	24	13	10	46	59	76	44	34	

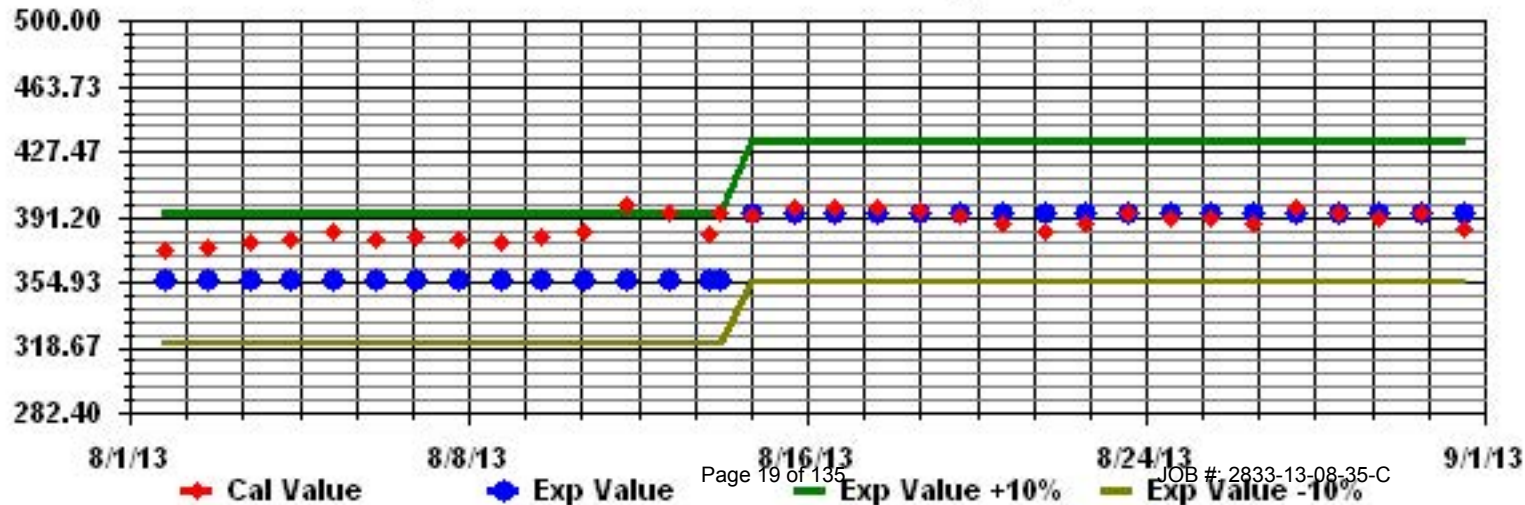
Calm : .00 %

Total # Operational Hours : 681

Class Limits (PPB)



Calibration Graph for Site: LICA35 Parameter: S02\_ Sequence: S02 Phase: SPAN



# Hydrogen Sulphide

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

AUGUST 2013

### HYDROGEN SULPHIDE (H<sub>2</sub>S) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
DAY	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.	
1		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	
2		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
3		0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0.0	24
4		0	0	1	1	0	1	1	2	1	1	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	2	0.4	24
5		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
6		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
7		0	0	1	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
8		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
9		0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	1	0.0	24	
10		1	1	0	1	1	1	2	1	2	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.5	24
11		0	0	0	0	0	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
12		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
13		0	0	0	0	0	0	0	S	C	C	C	C	C	C	X	X	X	X	X	X	X	X	X	X	X	0	0.0	14
14		X	X	X	X	X	X	X	X	X	C	C	0	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0.0	14
15		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
16		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
17		0	0	0	S	0	1	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24
18		0	0	S	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
19		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	1	0.0	24
20		S	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
21		0	0	0	0	0	0	0	0	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0	24
22		0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0.1	24
23		0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0.1	24
24		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
25		0	0	0	0	0	1	1	2	1	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	2	0.3	24
26		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
27		0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0.1	24
28		0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0.1	24
29		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
30		0	0	0	0	0	0	0	1	1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
31		0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX		1	1	1	1	1	1	2	3	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
HOURLY AVG		0.1	0.0	0.1	0.1	0.1	0.2	0.3	0.5	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

**STATUS FLAG CODES**

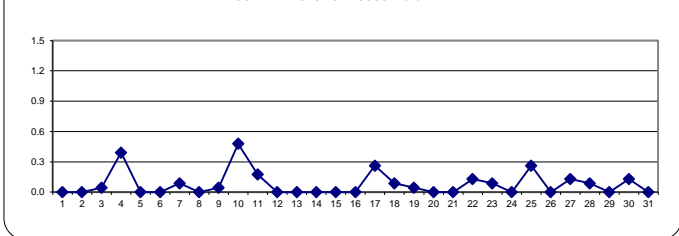
C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR

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

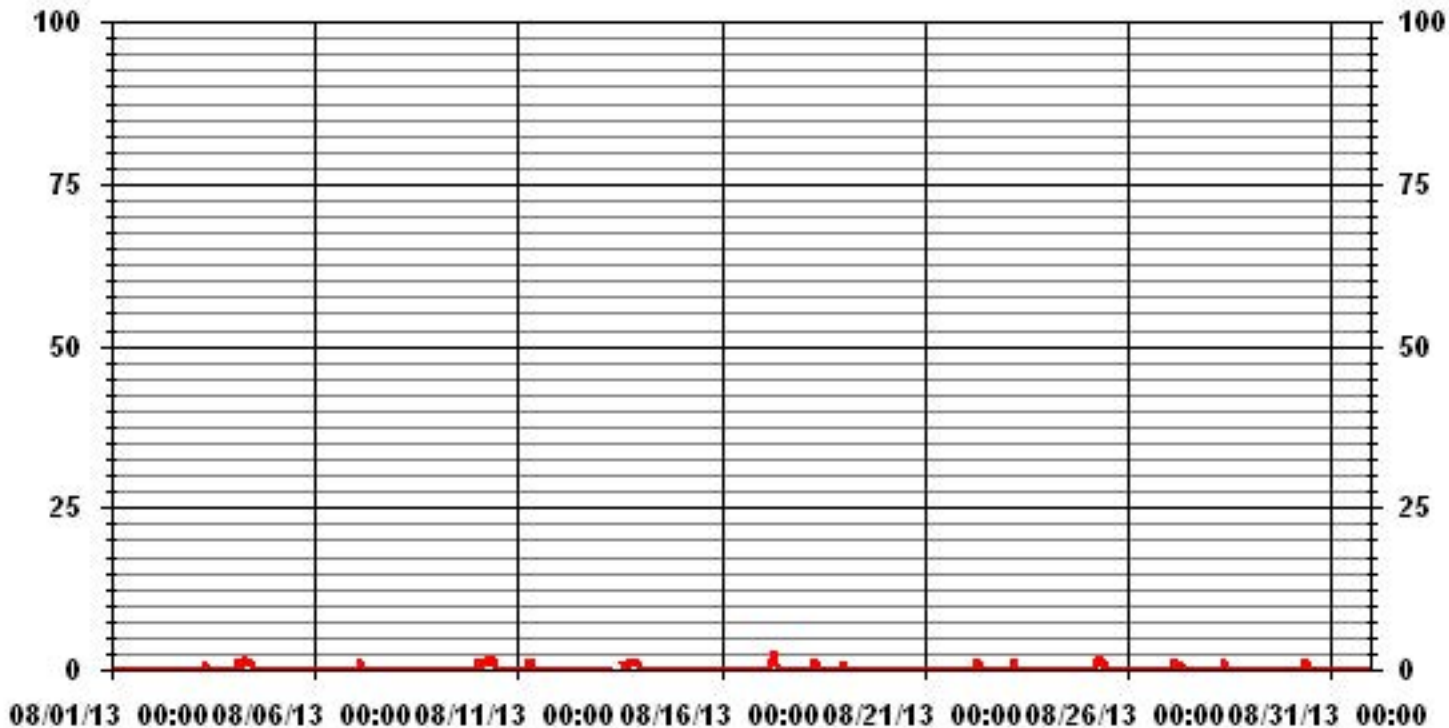
**MONTHLY SUMMARY**

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	50		
MAXIMUM 1-HR AVERAGE:	3 PPB	@ HOUR(S)	7 ON DAY(S)
MAXIMUM 24-HR AVERAGE:	0.5 PPB		10 ON DAY(S)
			VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS	OPERATIONAL TIME:	724 HRS
MONTHLY CALIBRATION TIME:	10 HRS	AMD OPERATION UPTIME:	97.3 %
STANDARD DEVIATION:	0.31	MONTHLY AVERAGE:	0.08 PPB

24 HOUR AVERAGES FOR AUGUST 2013



# 01 Hour Averages





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

AUGUST 2013

## 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	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0.2	24
2	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
3	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	S	0	0	0	1	0	0	1	0.2	24
4	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	2	0.9	24
5	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	0.1	24
6	0	0	0	0	0	0	0	0	0	3	0	0	0	0	S	1	0	1	1	1	1	1	1	1	3	0.5	24
7	1	1	1	1	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	1	0.6	24
8	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
9	0	0	1	0	0	1	0	0	0	0	0	S	0	0	0	1	0	0	1	1	1	1	1	1	1	0.4	24
10	1	1	1	2	1	2	2	2	2	2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.7	24
11	0	0	0	1	1	1	1	1	1	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
12	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
13	0	0	0	0	0	0	1	S	C	C	C	C	C	C	X	X	X	X	X	X	X	X	X	X	1	0.1	14
14	X	X	X	X	X	X	X	X	C	C	C	C	0	0	0	Y	Y	0	0	0	0	0	0	0	0	0.0	13
15	0	0	0	0	0	S	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
16	0	0	0	1	S	0	2	1	1	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	2	0.4	24
17	0	1	1	S	1	3	3	5	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	5	0.9	24
18	2	1	S	1	1	1	1	1	1	0	1	0	0	0	0	0	1	0	1	0	0	1	1	0	2	0.6	24
19	2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24
20	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	S	1	0.0	24
21	0	1	1	0	0	0	0	0	C	C	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.1	24
22	0	0	0	0	0	3	2	1	2	1	0	1	0	0	0	0	0	0	0	0	1	S	0	0	3	0.5	24
23	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	14	0	14	0.8	24
24	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0.0	24
25	0	0	0	0	1	2	2	2	2	1	1	1	0	0	0	0	0	0	S	0	0	0	0	0	2	0.5	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	1	1	1	1	1	1	0.2	24
27	1	P	1	1	1	1	1	2	1	0	1	1	1	1	0	1	S	0	0	0	0	0	0	0	2	0.6	23
28	0	0	0	0	0	0	1	1	1	1	1	1	1	0	1	S	0	1	0	0	0	0	0	1	1	0.4	24
29	0	0	1	1	0	1	0	0	0	0	0	0	0	0	S	0	0	1	0	0	0	0	0	0	1	0.2	24
30	1	1	1	1	1	1	1	2	2	2	1	1	0	S	1	0	1	1	2	0	1	0	0	0	2	0.9	24
31	1	0	0	0	0	1	0	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
HOURLY MAX	2	1	1	2	2	3	3	5	2	3	1	1	1	1	1	1	1	1	2	1	1	1	14	1			
HOURLY AVG	0.3	0.3	0.3	0.4	0.4	0.8	0.8	0.8	0.8	0.6	0.4	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.6	0.1			

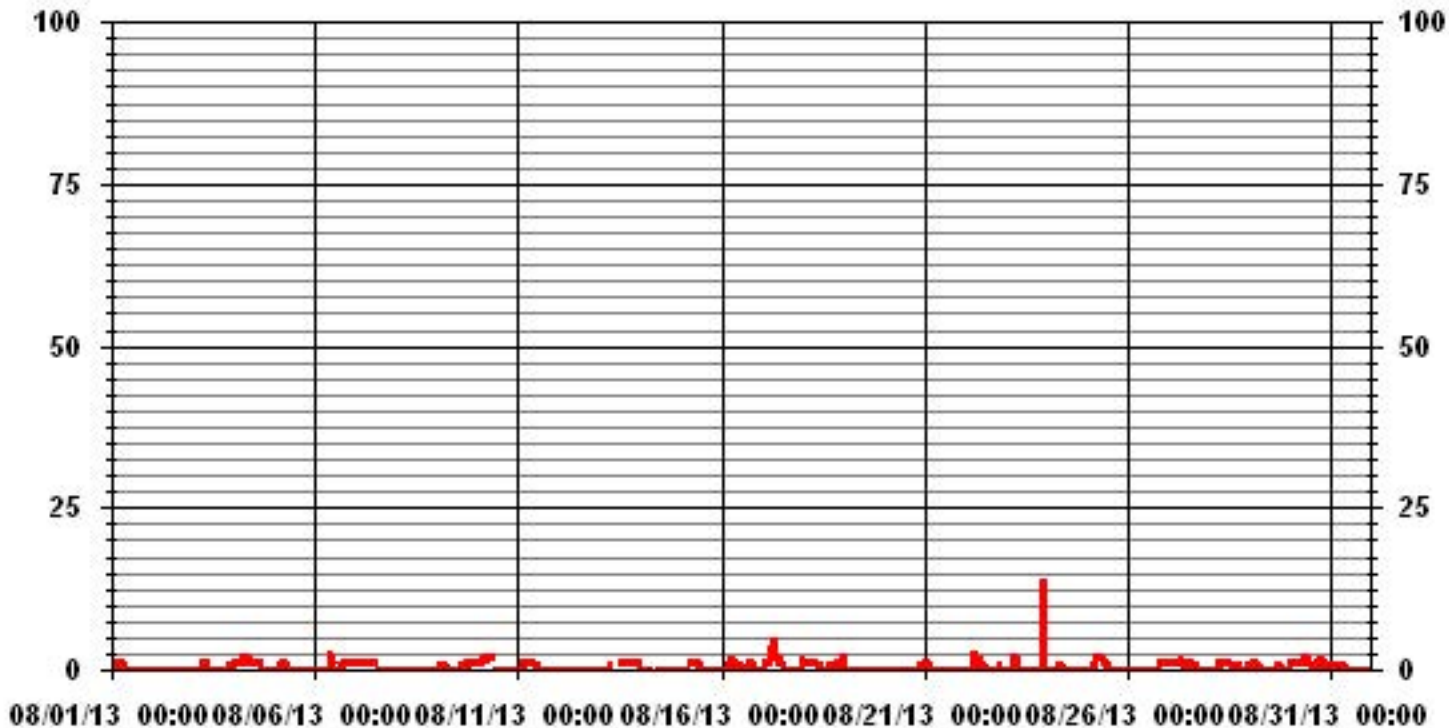
**STATUS FLAG CODES**

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:	188
MAXIMUM INSTANTANEOUS VALUE:	14 PPB @ HOUR(S) 22 ON DAY(S) 23
VAR - VARIOUS	
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	11 HRS
OPERATIONAL TIME:	722 HRS
STANDARD DEVIATION:	0.80

# 01 Hour Averages



LICA-ELK  
H2S\_ / WDR Joint Frequency Distribution (Percent)

August 2013

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	2.13	3.28	4.42	7.27	12.98	15.40	6.99	3.85	3.42	1.85	1.42	6.56	8.41	10.84	6.13	4.85	99.85
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.14
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.13	3.28	4.42	7.27	12.98	15.40	6.99	3.85	3.42	1.85	1.42	6.56	8.41	10.84	6.27	4.85	

Calm : .00 %

Total # Operational Hours : 701

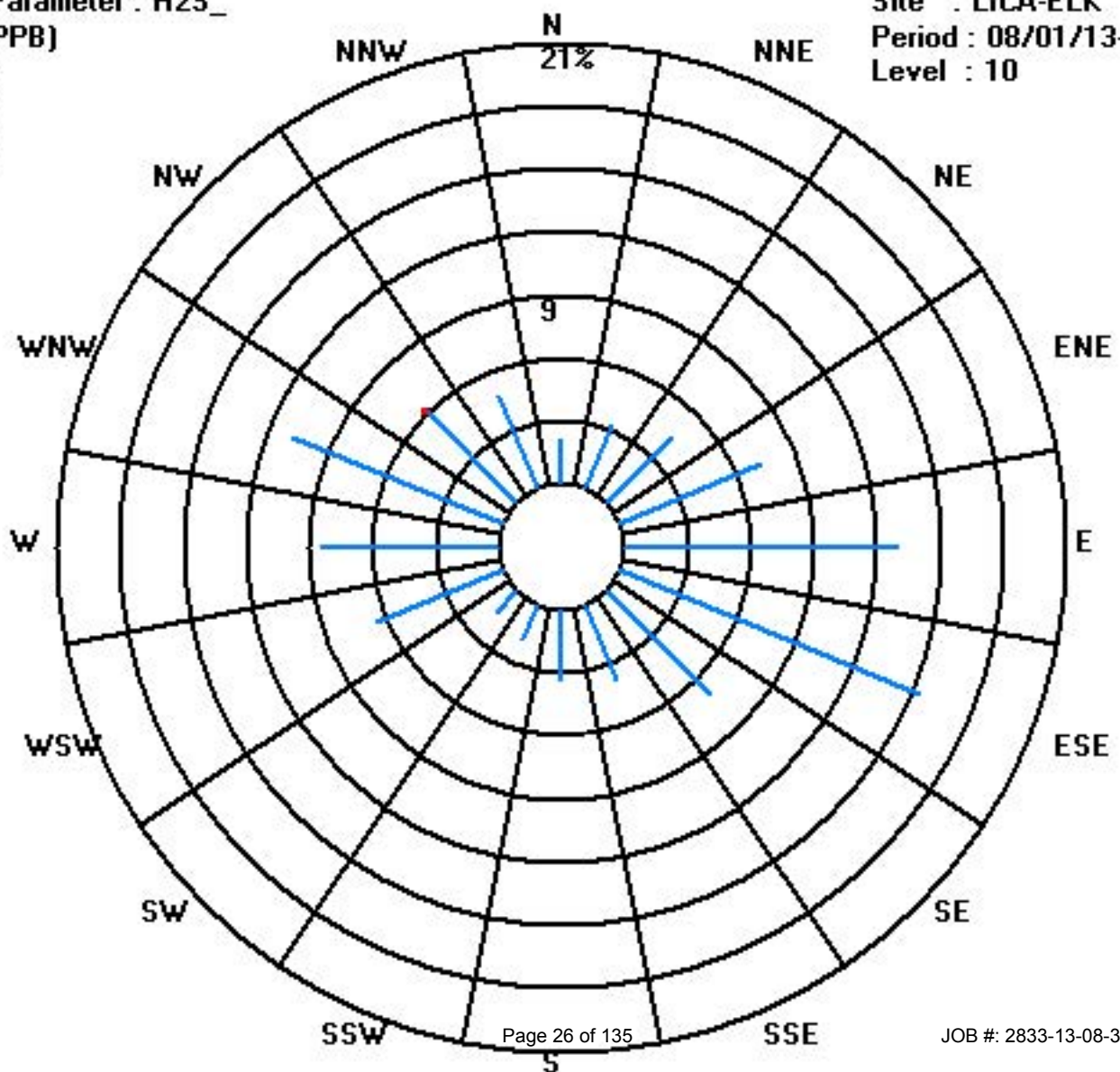
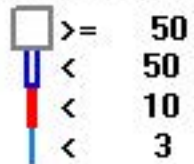
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	15	23	31	51	91	108	49	27	24	13	10	46	59	76	43	34	700
< 10															1		1
< 50																	
>= 50																	
Totals	15	23	31	51	91	108	49	27	24	13	10	46	59	76	44	34	

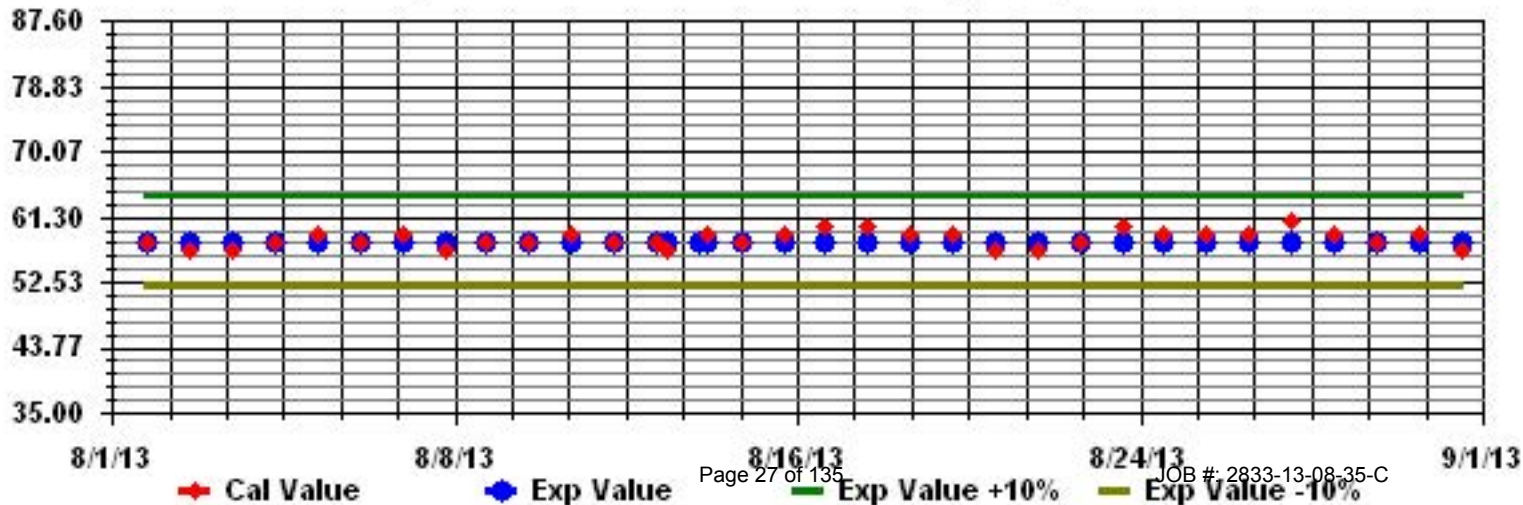
Calm : .00 %

Total # Operational Hours : 701

Class Limits (PPB)



Calibration Graph for Site: LICA35 Parameter: H2S\_ Sequence: H2S Phase: SPAll



# Particulate Matter 2.5

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

AUGUST 2013

PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m<sup>3</sup>

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		2	7	6	9	8	0	14	25	9	10	1	2	13	13	4	4	9	8	3	2	6	11	12	10	25	7.8	24
2		9	9	8	8	2	3	9	4	8	3	6	5	4	3	8	14	1	10	8	10	17	21	11	16	21	8.2	24
3		10	6	11	0	4	X	3	14	6	3	1	9	13	10	5	X	7	10	5	9	8	15	6	3	15	7.2	22
4		10	10	7	3	27	6	8	16	6	21	14	9	17	6	11	15	7	4	9	4	14	11	17	11	27	11.0	24
5		7	14	11	9	12	9	8	16	11	10	15	11	10	0	5	9	6	8	3	8	12	9	5	17	17	9.4	24
6		12	5	14	19	17	25	26	34	31	26	19	26	30	16	11	18	12	16	20	15	21	27	29	21	34	20.4	24
7		16	18	19	16	17	21	20	34	20	22	24	24	30	0	4	15	8	16	11	9	4	12	12	11	34	16.0	24
8		X	10	12	14	9	6	16	24	10	11	10	X	10	5	9	7	4	2	4	3	14	8	8	7	24	9.2	22
9		0	X	15	10	12	10	0	13	4	13	4	6	X	6	0	1	10	7	0	0	13	13	11	7	15	7.0	22
10		5	13	8	9	7	X	7	5	8	8	6	8	4	1	9	4	X	1	7	5	6	8	12	13	13	7.0	22
11		8	11	7	8	11	5	13	4	2	12	13	9	5	0	13	0	9	11	7	5	11	7	6	6	13	7.6	24
12		4	6	3	10	7	3	6	11	4	8	C	2	2	3	8	6	2	3	7	0	11	1	11	3	11	5.3	24
13		14	10	6	6	7	14	9	5	10	3	15	7	16	3	X	12	10	15	15	11	12	13	12	15	16	10.4	23
14		11	9	19	11	16	13	14	12	20	18	17	15	1	19	14	16	4	15	18	9	10	12	13	13	20	13.3	24
15		20	21	12	10	6	12	10	8	10	9	9	11	13	12	19	19	15	10	16	22	13	17	12	9	22	13.1	24
16		11	7	9	10	11	10	4	22	17	22	7	7	9	10	7	12	7	7	13	5	0	11	7	10	22	9.8	24
17		15	8	7	13	12	8	4	13	13	9	10	13	13	8	10	15	6	8	6	6	15	11	8	6	15	9.9	24
18		10	15	2	8	1	7	7	8	6	5	7	4	6	7	10	9	4	0	5	11	6	15	6	6	15	6.9	24
19		5	7	X	7	10	18	7	10	4	10	7	6	1	6	7	7	X	8	6	0	2	5	13	5	18	6.9	22
20		9	X	5	0	1	13	18	0	0	3	1	2	5	8	3	2	8	3	4	3	3	5	14	11	18	5.3	23
21		1	8	X	3	5	3	X	2	0	0	5	7	3	C	C	X	6	7	13	0	20	4	6	2	20	5.0	21
22		5	12	7	2	15	0	2	7	18	6	8	7	6	4	15	11	9	9	8	8	6	9	6	19	19	8.3	24
23		11	13	14	8	10	6	3	12	0	9	5	7	1	11	7	8	7	5	4	2	11	5	9	10	14	7.4	24
24		7	11	12	11	3	X	8	0	5	6	6	8	5	4	14	10	5	7	4	14	8	8	11	6	14	7.5	23
25		22	X	25	X	7	24	0	16	10	13	11	6	9	10	0	5	13	12	7	6	9	8	7	7	25	10.3	22
26		6	3	9	4	17	28	X	2	2	2	0	4	6	16	2	4	6	0	0	1	8	X	16	10	28	6.6	22
27		5	0	15	8	7	0	10	10	6	C	C	0	15	7	0	2	7	3	5	0	5	5	4	0	15	5.2	24
28		2	0	0	1	7	5	8	8	9	8	9	6	7	6	1	0	6	9	4	4	8	3	9	1	9	5.0	24
29		0	3	12	11	11	12	1	8	5	9	6	3	0	0	0	0	5	2	5	3	3	1	8	4	12	4.7	24
30		0	5	4	11	0	1	9	5	3	4	4	5	4	7	7	7	2	4	1	6	X	0	0	X	11	4.0	22
31		2	1	1	6	8	6	6	2	6	6	7	5	3	7	3	0	6	8	6	9	8	14	8	7	14	5.6	24
HOURLY MAX		22	21	25	19	27	28	26	34	31	26	24	26	30	19	19	19	15	16	20	22	21	27	29	21			
HOURLY AVG		8.0	8.6	9.7	8.2	9.3	9.6	8.6	11.3	8.5	9.6	8.5	7.8	8.7	6.9	7.1	8.0	6.9	7.4	7.2	6.1	9.5	9.6	10.0	8.9			

STATUS FLAG CODES

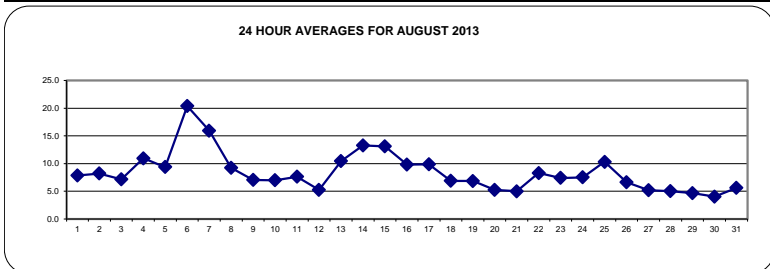
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

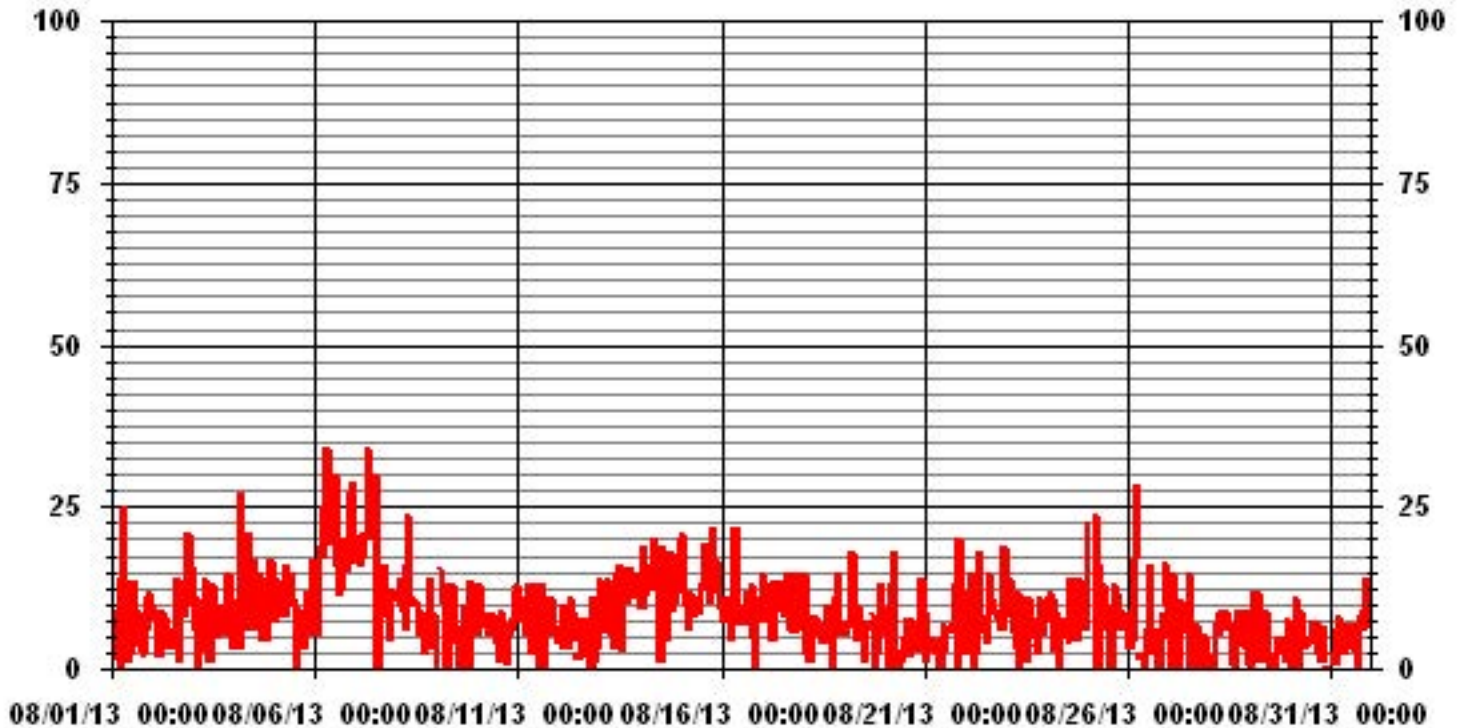
ALBERTA ENVIRONMENT:	1-HR	-	PPB	24-HR	30	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	669
MAXIMUM 1-HR AVERAGE:	34 UG/M <sup>3</sup> @ HOUR(S) 7,7 ON DAY(S) 6,7
MAXIMUM 24-HR AVERAGE:	20.4 UG/M <sup>3</sup> ON DAY(S) 6
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	5.85
OPERATIONAL TIME:	722 HRS
AMD OPERATION UPTIME:	97.0 %
MONTHLY AVERAGE:	8.50 UG/M <sup>3</sup>



# 01 Hour Averages





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

August 2013

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	2.23	2.92	4.46	7.53	12.27	16.17	7.67	3.62	3.34	1.95	1.53	5.99	8.08	10.32	6.55	4.60	99.30
< 60	.00	.13	.00	.27	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.69
< 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	2.23	3.06	4.46	7.81	12.41	16.17	7.67	3.62	3.34	1.95	1.53	5.99	8.08	10.32	6.55	4.74	

Calm : .00 %

Total # Operational Hours : 717

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	16	21	32	54	88	116	55	26	24	14	11	43	58	74	47	33	712
< 60		1		2	1											1	5
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	16	22	32	56	89	116	55	26	24	14	11	43	58	74	47	34	

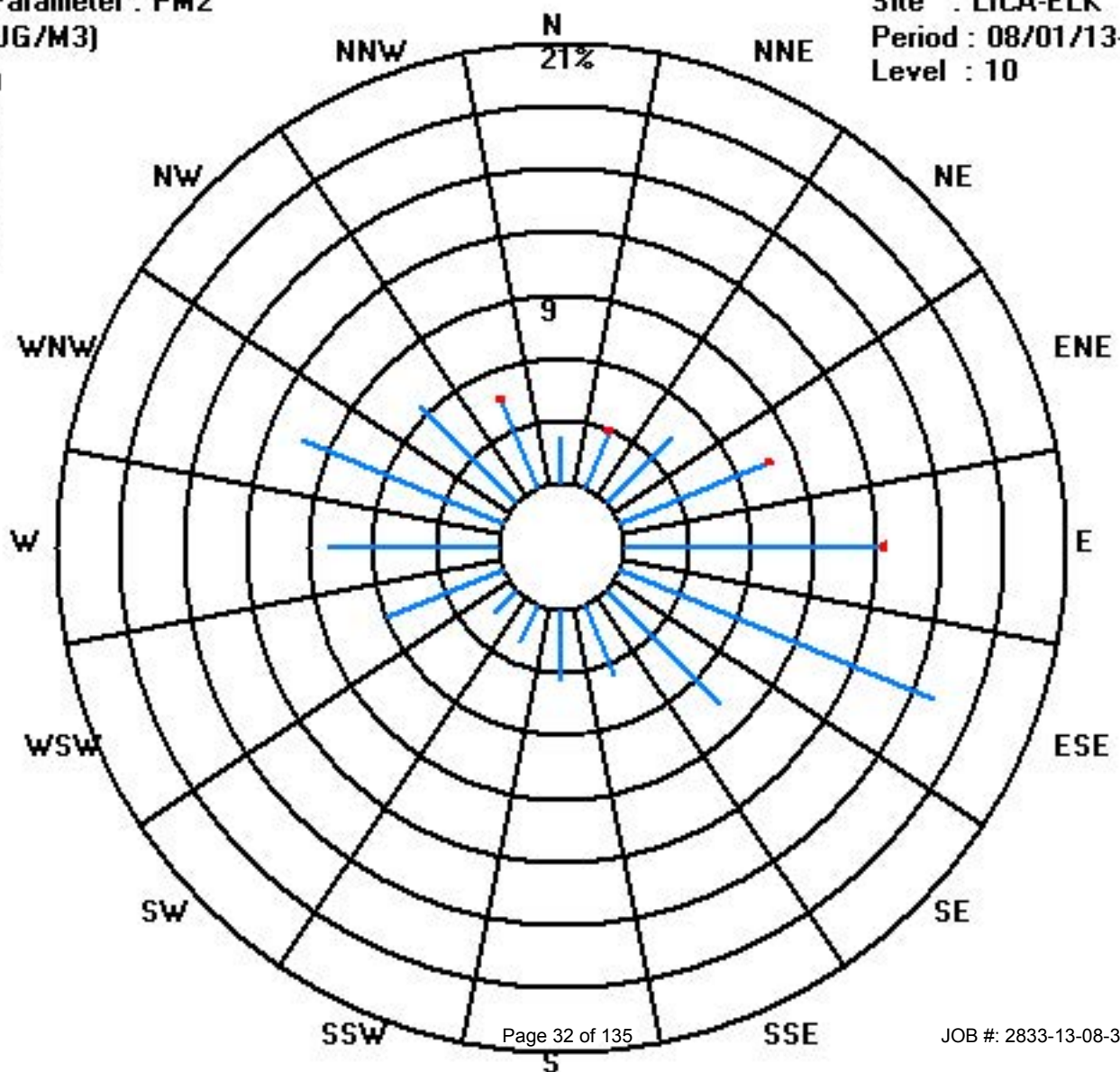
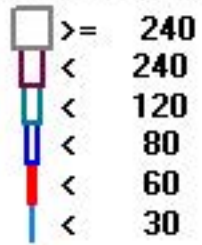
Calm : .00 %

Total # Operational Hours : 717

Class Limits (UG/M3)

Period : 08/01/13-08/31/13

Level : 10



# Nitrogen Dioxide

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

AUGUST 2013

## NITROGEN DIOXIDE hourly averages in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY 24-HOUR	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	MAX.	AVG.	
1	7.6	7	10.5	9.4	8.7	8.1	8.2	9.1	3.9	1.4	0.6	0.4	0.2	0.3	0.6	0.6	0.7	0.5	0.3	S	7.7	13.4	11.3	10.3	13.4	5.3	24
2	9.5	4.3	6.1	6.4	8.1	11.6	5.1	4	3.3	1.6	1	0.7	0.3	0.5	0.4	0.8	0.3	1.3	S	6.4	14.7	18.1	14.2	11	18.1	5.6	24
3	13.6	11.2	10.2	11.4	6.7	8.6	7.1	4.6	3.6	2.6	1.9	1.9	1.4	1.2	1.4	1.4	1.4	S	5	9.8	6.1	13.4	11.2	9.6	13.6	6.3	24
4	9.2	8	10.4	13	11.8	6.9	5.9	5.2	5.6	4.1	2.3	1.5	0.8	0.6	1	0.6	S	0.7	0.6	1.1	7	4.5	2.2	3.2	13	4.6	24
5	7.8	6.5	13.8	7	12.2	13.7	11.2	5.9	5	1.9	1.4	1.5	1.3	1	1	S	0.8	1.2	1.1	3.5	2.6	3.7	3	2.8	13.8	4.8	24
6	2.8	1.7	1.6	0.8	1.4	1.5	2.2	2.3	1.9	1.4	1	0.8	0.5	1.9	S	0.5	0.5	0.5	2.6	6.3	6.7	12.3	9.6	5.5	12.3	2.9	24
7	7.7	11.1	4.7	2.9	2.6	1.4	1.1	2.8	2.6	1.3	0.8	0.7	0.5	S	0.2	0.7	0.4	0.7	1.4	1.8	2.9	5.5	5.4	4.6	11.1	2.8	24
8	3.7	2.5	3	2.6	3.2	3.9	3.1	2.1	1.6	1.6	0.5	0.4	S	0	0.6	0.1	0.2	0.5	0.6	8.1	13	12.3	9.8	8.6	13	3.6	24
9	8.9	8.3	5.5	5.5	5.7	6	6.7	6.9	6	4.9	2.3	S	0.8	0.9	0.9	1.4	1	2.6	4	8.1	14	15.6	13.8	15.1	15.6	6.3	24
10	13.1	13.6	11.5	8.9	9.7	9.1	7.4	5.2	3.7	2.5	S	1	0.8	0.9	1	0.7	0.9	0.8	1.6	5.4	10.9	15.2	15.5	12.2	15.5	6.6	24
11	10.3	8.4	7.5	8.5	7.5	7	5.3	3.7	3.5	S	3.7	2	2.8	1.8	2.4	2	1.4	2.7	1.9	1.5	2	3.4	2.9	3.2	10.3	4.1	24
12	4.5	4	3.3	6.5	7.4	4.5	5.5	3.3	S	C	C	C	C	C	1.3	1.8	1.9	2.7	5	6.7	3.6	3.7	4.2	4	7.4	4.1	24
13	6.9	12.7	7.1	5.9	5.5	7.2	6	S	1.9	2.2	1.9	1.7	1.7	C	C	2.2	2.5	2.4	4	8.8	9	15.8	11.1	10.3	15.8	6.0	24
14	8.4	9.5	9.5	9.4	8.4	9.8	S	4.3	2.9	C	C	C	C	C	C	3	2.8	2.6	6.4	11.6	17.3	15.2	13.9	17.3	8.4	24	
15	8.3	6.9	8.3	10.9	10.8	S	6.3	4	2.8	2.8	2.7	2.5	2.2	2.5	2.7	3.8	2.5	3.1	5.8	8.5	8.7	12.9	11.2	4.7	12.9	5.9	24
16	3.1	4.8	2	4.5	S	5	7	11.1	6.1	6.1	5.9	2.3	2.6	3.3	1	1.2	1.8	2.4	1.8	5.4	5	7.5	2.2	1.9	11.1	4.1	24
17	8.2	10.5	8.9	S	9.5	8.1	6.8	5.1	5.6	4.1	1.9	1.4	1.6	2.6	7.7	5.6	5	5.4	5.6	10.9	12.5	11.4	8.4	5.9	12.5	6.6	24
18	8.8	8.3	S	12.4	13.5	10.3	7.4	4.5	6.6	6.1	4	2.2	1.7	1.6	1.4	1	1	1.4	2.3	8.6	9.9	1.9	1.7	1	13.5	5.1	24
19	4.5	S	9	3.1	7.1	7.3	5.8	2.6	3	1	0.5	0.4	0.4	0.2	0.3	0.6	1.5	3.1	1.3	2.6	9.9	11.8	20.4	11.3	20.4	4.7	24
20	S	3.3	3.1	4.1	5.9	4.5	4.1	S	1.3	0.8	0.4	0.2	0.4	0.3	0.6	0.2	0.6	0.8	3.9	8.4	16.7	7	3.3	S	16.7	3.3	24
21	2.4	2.6	4.3	5.3	2.9	3.7	4.3	1.5	C	C	C	0.1	0.5	0.8	0.7	0.8	0.6	0.5	1.9	6.2	10.1	19.6	S	14.9	19.6	4.2	24
22	11.1	10.2	10	9.8	10.4	12.4	9.2	6.2	5.8	2.8	1.4	1.3	1.6	1.8	1.9	2.8	3.4	4.2	3.9	7.9	16	S	24.8	20.1	24.8	7.8	24
23	17	14.9	15.3	13.6	15.6	15.1	6.6	3.3	8.4	6	2.8	1.5	0.8	0.5	0.5	0.5	1.2	1.7	1.7	0.7	S	1	4.1	1.8	17	5.9	24
24	1.2	2.2	1.7	1.4	2.3	12.6	12.7	4	2.3	1.1	1	0.8	0.4	0.4	0.3	0.3	0.5	0.8	2	S	10.8	15.6	14.5	13.8	15.6	4.5	24
25	15.4	11.5	11.2	9.8	11.4	10.8	8.5	6.3	5	3	2.4	2.1	2.5	2.3	1.5	1.7	2.4	1.7	S	0.7	1	0.6	0.8	0.9	15.4	4.9	24
26	1.1	1.5	2.5	4.2	5.1	8.6	9	2.8	1.9	1	1.6	3.7	7.4	C	C	0.4	0.2	S	0.3	1	1.1	1.6	1.6	1.4	9	2.8	24
27	1.2	2.6	3.1	4.4	12.2	8	7.9	6.2	4.3	Y	Y	Y	Y	Y	Y	C	C	S	2.3	1.8	4	8.4	11.1	9.9	2	12.2	19
28	2.3	2.5	3	5.1	8.6	2.7	2.2	3.6	5.2	4.1	3.4	2.1	2	1.3	0.9	S	1.4	0.9	1.3	2	1.1	1.8	2	1.5	8.6	2.7	24
29	1.5	0.9	1.1	1	4.9	2.8	1.5	1.3	1.1	0.4	0.1	0.2	0.2	0.1	S	0.5	0.5	0.4	1.4	1.5	0.6	1.6	3	3.4	4.9	1.3	24
30	4	3	1.8	4	5	3.2	2.3	1.6	1.7	1.5	1.4	1.2	0.7	S	0.8	0.8	0.6	0.9	0.6	0.7	0.8	0.4	0.2	0.3	5	1.6	24
31	0.3	0.3	0.5	0.6	0.8	1	0.9	1.5	0.9	0.5	0.2	0.1	S	0.2	0.2	0.5	1.3	1.2	2.9	12.5	11.6	16.8	17.4	13.4	17.4	3.7	24
HOURLY MAX	17.0	14.9	15.3	13.6	15.6	15.1	12.7	11.1	8.4	6.1	5.9	3.7	7.4	3.3	7.7	5.6	5.0	5.4	5.8	12.5	16.7	19.6	24.8	20.1			
HOURLY AVG	6.8	6.5	6.4	6.4	7.5	7.2	5.9	4.3	3.7	2.6	1.8	1.3	1.4	1.1	1.3	1.2	1.4	1.7	2.4	5.4	7.9	9.2	8.5	7.1			

### 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

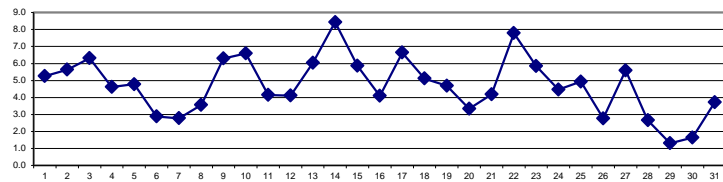
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

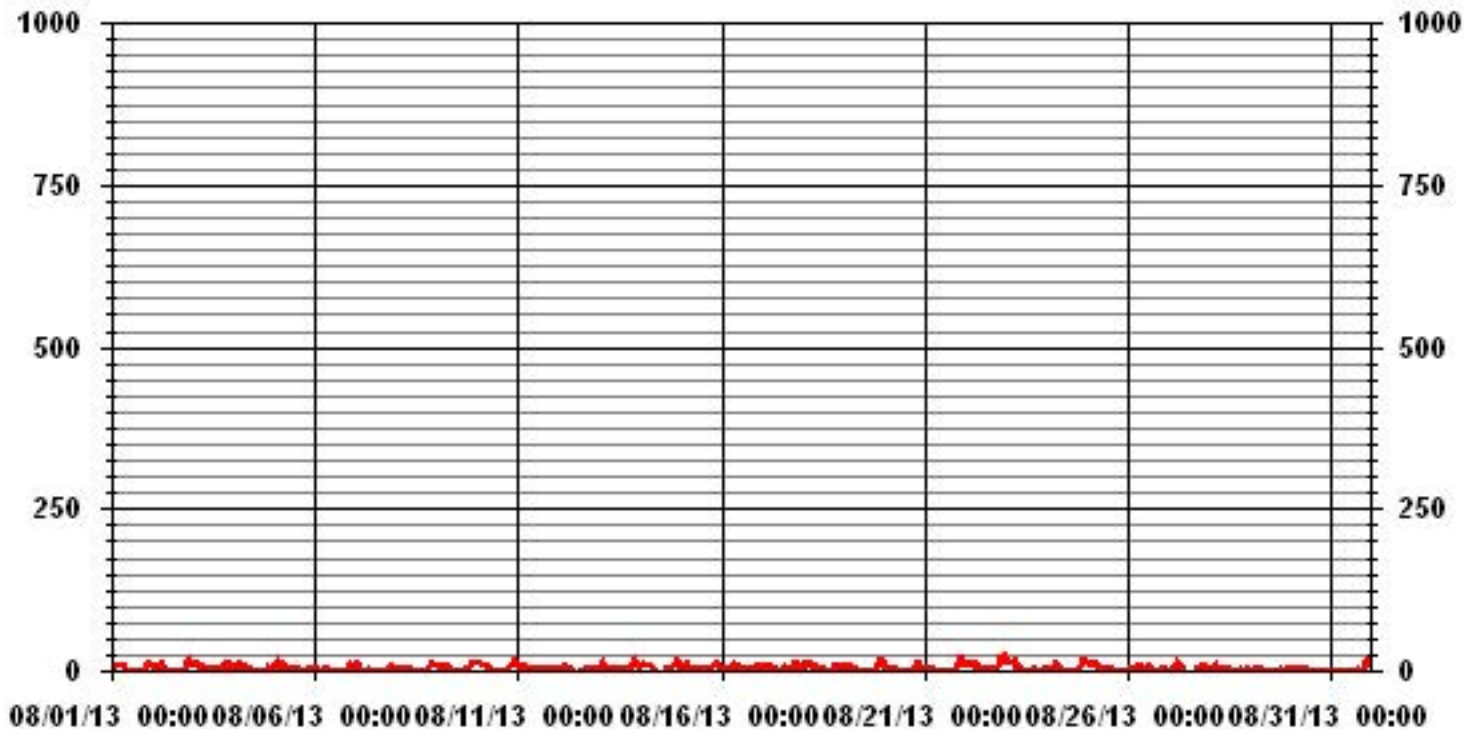
### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	684					
MAXIMUM 1-HR AVERAGE:	24.8	PPB	@ HOUR(S)	22	ON DAY(S)	22
MAXIMUM 24-HR AVERAGE:	8.4	PPB			ON DAY(S)	14
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	739	HRS	
MONTHLY CALIBRATION TIME:	21	HRS	AMD OPERATION UPTIME:	99.3	%	
STANDARD DEVIATION:	4.37		MONTHLY AVERAGE:	4.68	PPB	

24 HOUR AVERAGES FOR AUGUST 2013



### 01 Hour Averages



— LICA35 IIO2\_ PPB

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

AUGUST 2013

## NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	12.5	11	11.4	10.8	16.1	10.7	11	13.5	7.1	2.6	1.3	1.1	0.9	0.8	1.2	1.2	1.2	1.2	0.9	S	17	18.9	16.5	16.3	18.9	8.1	24	
2	11.8	8.1	12	10.9	17.3	13	8.2	4.6	3.9	2.2	1.4	1.5	1.1	2.6	2.3	1.7	1.1	3	S	13.5	18.9	21.5	18.5	14.6	21.5	8.4	24	
3	15	12.9	10.6	12.6	8.7	9.5	7.8	5.1	4.8	3.7	2.6	3	2.3	2.7	2.3	2.9	2.8	S	11.9	20.5	8.7	22.6	15.5	17.4	22.6	9.0	24	
4	15.2	12.5	14.8	15	15.4	7.8	7.4	5.7	6.3	5.9	3.5	2.9	1.3	1.4	1.5	1.3	S	1.2	1.3	1.9	16.8	9.7	2.8	4.9	16.8	6.8	24	
5	14.9	11.4	18.8	11.1	16	15.9	17	7.3	6.5	3.1	2	2	1.9	1.5	1.6	S	1.2	1.7	1.6	6.9	5.2	8.6	6.4	3.7	18.8	7.2	24	
6	3.5	3.4	2.8	1.5	2.2	2.3	3.5	2.7	2.3	1.9	1.5	1.5	1.1	29	S	0.7	1	1	6.9	9.8	10.3	21.8	13.7	6.5	29	5.7	24	
7	15	14.7	11.9	5.6	3.5	2.8	2.8	3.7	4.8	1.9	1.2	1.2	0.9	S	0.9	1.8	1.1	1.8	2.6	5.5	5.1	8.1	6.8	6.7	15	4.8	24	
8	4.4	3	3.7	3.4	3.9	5.4	5.1	3	2.4	2.5	1.2	0.9	S	0.3	2.9	0.8	0.8	1.2	2.1	16.3	17	17	15.4	10.7	17	5.4	24	
9	10.5	9.9	7.4	8.4	7	6.4	8	8.1	7.1	5.9	7.2	S	2.2	1.7	1.8	2.9	2.5	4.6	7.9	14.1	28	19.5	24.2	24.2	28	9.5	24	
10	17.7	16.3	14	9.9	11.5	9.8	8.3	6.9	4.9	3.6	S	1.8	1.9	2.3	3	3.1	2.4	3	3.8	12	15.1	21.6	19.4	15.9	21.6	9.1	24	
11	11.3	12.2	9.3	10.7	9.4	8.9	7	4.3	4.2	S	5.6	2.8	5.4	4.1	3.8	4	1.8	4.8	4.2	2	3.4	6.7	5	4.6	12.2	5.9	24	
12	8.5	7.5	4.5	8.5	9	7.3	9.6	5	S	C	C	C	C	C	C	C	2.8	3.3	4.2	7.9	8.8	6.6	5.2	5.3	7	9.6	6.5	24
13	12.7	16.6	10.4	7.5	8.7	13.7	8	S	2.4	3.6	2.4	2.3	2.1	C	C	3.4	3.7	3.6	7.6	17.9	18.9	21.2	17.7	12.4	21.2	9.4	24	
14	11.3	11.7	10.6	10.2	9.7	14.4	S	9	C	C	C	C	C	C	C	C	5	4.5	12.2	21.8	26.9	19	22.6	26.9	13.5	24		
15	10.5	10.5	13.1	16.5	14	S	8	6.2	3.4	3.3	3.5	3.5	3.4	4.8	4.9	5.2	5.2	5.5	10.6	11.8	13.1	20	14.6	9.1	20	8.7	24	
16	4.9	7	3.7	9.6	S	9	9.9	14.3	7.9	7.2	8.6	4.3	3.9	4.7	8.7	1.9	2.8	3.9	3.2	10.7	9.9	11.1	4	4.7	14.3	6.8	24	
17	11.8	13.1	11	S	15.7	10.2	9.2	7	6.8	6.7	3.9	2.2	2.6	5.6	15.6	9.6	7.2	9.2	11.2	18.2	16.3	20.1	10.1	11	20.1	10.2	24	
18	12.6	11.7	S	19.8	15	13.4	8.3	7.7	8.4	8.6	5.5	4	3.6	2.7	2.7	2.7	2.3	2.1	5.5	14.8	15.9	9.5	3.2	4.4	19.8	8.0	24	
19	7.7	S	17.3	4.7	16.2	12.4	10.1	5.5	49.7	7.8	1	1.1	1.3	1.1	1.3	2.4	5.9	3.5	11.9	27.5	21.2	25.7	16.1	49.7	11.0	24		
20	S	5.2	4.4	8.4	11.4	6.4	5.2	S	2.3	3.4	4.9	0.9	1.2	0.9	1.2	1.2	1.7	2.2	18.1	18.3	20.4	20.4	7.9	S	20.4	7.0	24	
21	5.4	3.8	6.5	11.2	4.1	4.6	5.8	2.2	C	C	C	C	1	9.9	1.8	2.3	1.3	1.2	4.7	15.7	23.4	23.1	S	18.6	23.4	7.7	24	
22	13.6	12.1	11.2	11.1	12.6	13.3	12.8	7.7	7	6.3	2.5	2.9	3.3	3.8	4.1	7.5	6.9	7.1	6.5	18.8	49.8	S	29.7	22.3	49.8	11.9	24	
23	21.6	17.2	19	14.8	21.9	17.2	11.6	5.9	12.4	32.4	4	4.5	1.2	0.8	0.8	2.2	2	2.4	3.4	1.1	S	2.5	9.8	3.6	32.4	9.2	24	
24	3.1	8.3	3.2	3	5.2	20.7	19.9	8.1	30.5	2.3	2.1	1.7	1.3	1.1	1.1	1	1.3	2	8.5	S	14.5	19.1	17.5	16.9	30.5	8.4	24	
25	18.4	14.7	12	11.7	14	12	10.4	7.4	7.5	5.2	3.1	3.2	3.6	3.1	2.3	2.4	3.1	2.8	S	1.4	1.7	1.2	1.8	1.6	18.4	6.3	24	
26	1.9	2.2	5.8	8.8	7.3	16.9	16.4	4.9	3.3	2.8	2.9	7.7	13.8	C	C	1.1	0.8	S	1.2	1.4	1.8	2.4	2.4	2.4	16.9	5.2	24	
27	2	P	5.1	6.9	13.6	13.9	11.5	11.7	6.5	Y	Y	Y	Y	Y	C	C	S	3.9	3.1	7.1	16.7	18	21.6	2.9	21.6	9.6	18	
28	3.5	3.9	4	8.2	13.1	6.4	4.9	7.3	6.6	5.5	4.5	3.8	3.5	2.4	2.1	S	2.3	1.3	1.9	3.6	1.8	2.6	3.2	2.3	13.1	4.3	24	
29	2.1	1.8	1.9	1.8	7.7	5.5	2.2	2.2	1.8	1	0.6	0.7	0.7	0.7	S	0.8	1	0.8	3.2	3.2	1.9	2.6	8.3	5.8	8.3	2.5	24	
30	6.3	5.1	2.4	8.6	8	7.2	6.4	2.9	4.1	2.4	2.3	1.9	1.5	S	1.1	1.3	1.1	3.1	1.6	1.3	2.4	1.6	0.7	0.8	8.6	3.2	24	
31	0.8	1.1	1.1	1.1	1.3	1.3	1.5	4.6	1.1	0.7	0.7	0.7	S	0.5	0.5	1	9.1	2	8.1	21.6	23	21.9	19.7	16	23	6.1	24	
HOURLY MAX	21.6	17.2	19.0	19.8	21.9	20.7	19.9	14.3	49.7	32.4	8.6	7.7	13.8	29.0	15.6	9.6	9.1	9.2	18.1	21.6	49.8	26.9	29.7	24.2				
HOURLY AVG	9.7	9.3	8.8	9.1	10.7	9.9	8.6	6.4	7.7	5.1	3.1	2.5	2.6	3.7	2.9	2.5	2.6	3.2	5.4	10.4	14.4	14.2	12.2	10.2				

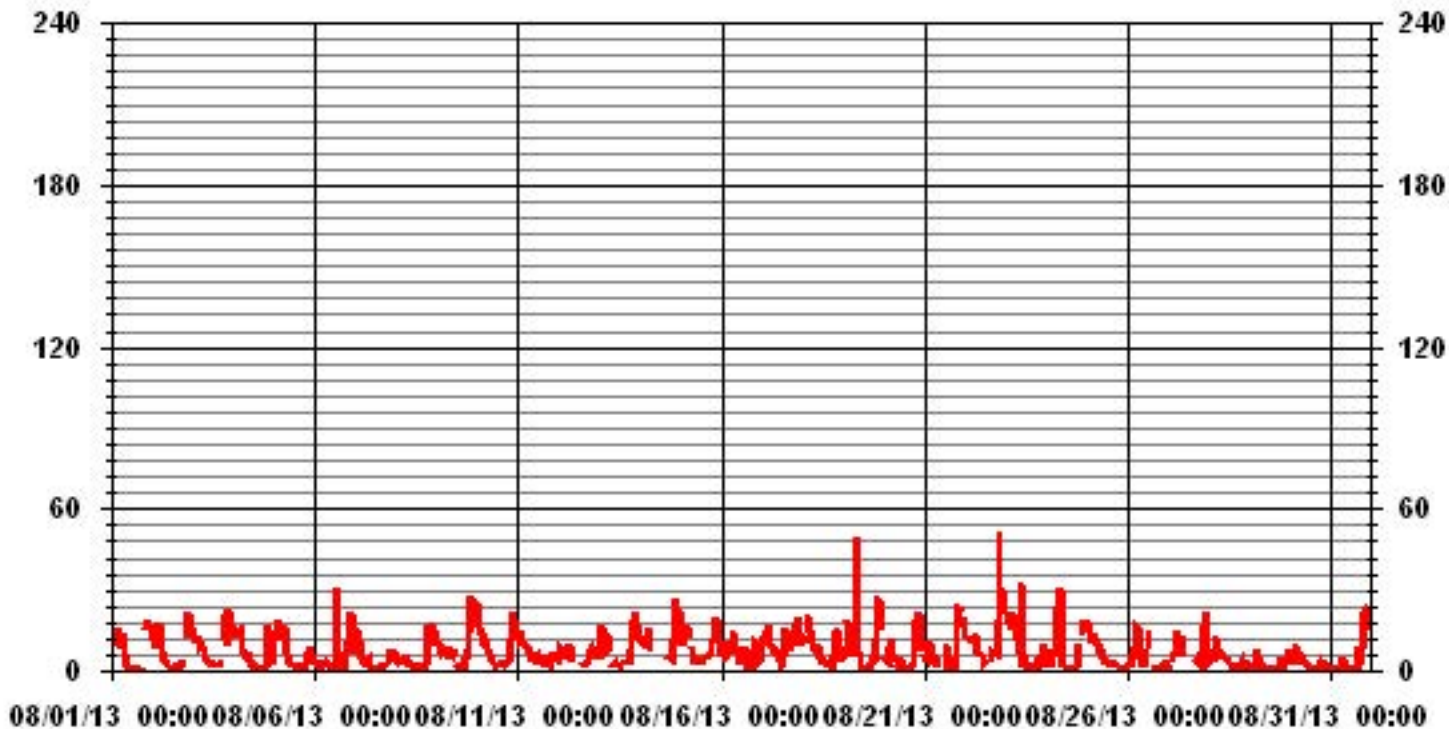
**STATUS FLAG CODES**

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:	680					
MAXIMUM INSTANTANEOUS VALUE:	49.8	PPB	@ HOUR(S)	20	ON DAY(S)	22
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	738	HRS	
MONTHLY CALIBRATION TIME:	25	HRS				
STANDARD DEVIATION:	6.64					

### 01 Hour Averages



— LICA35 NO2MAX PPB

LICA-ELK  
 NO2\_ / WDR Joint Frequency Distribution (Percent)

August 2013

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	2.18	3.35	4.23	7.44	13.13	15.47	6.86	3.79	3.50	1.75	1.31	6.13	8.46	10.94	6.42	4.96	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.18	3.35	4.23	7.44	13.13	15.47	6.86	3.79	3.50	1.75	1.31	6.13	8.46	10.94	6.42	4.96	

Calm : .00 %

Total # Operational Hours : 685

Distribution By Samples

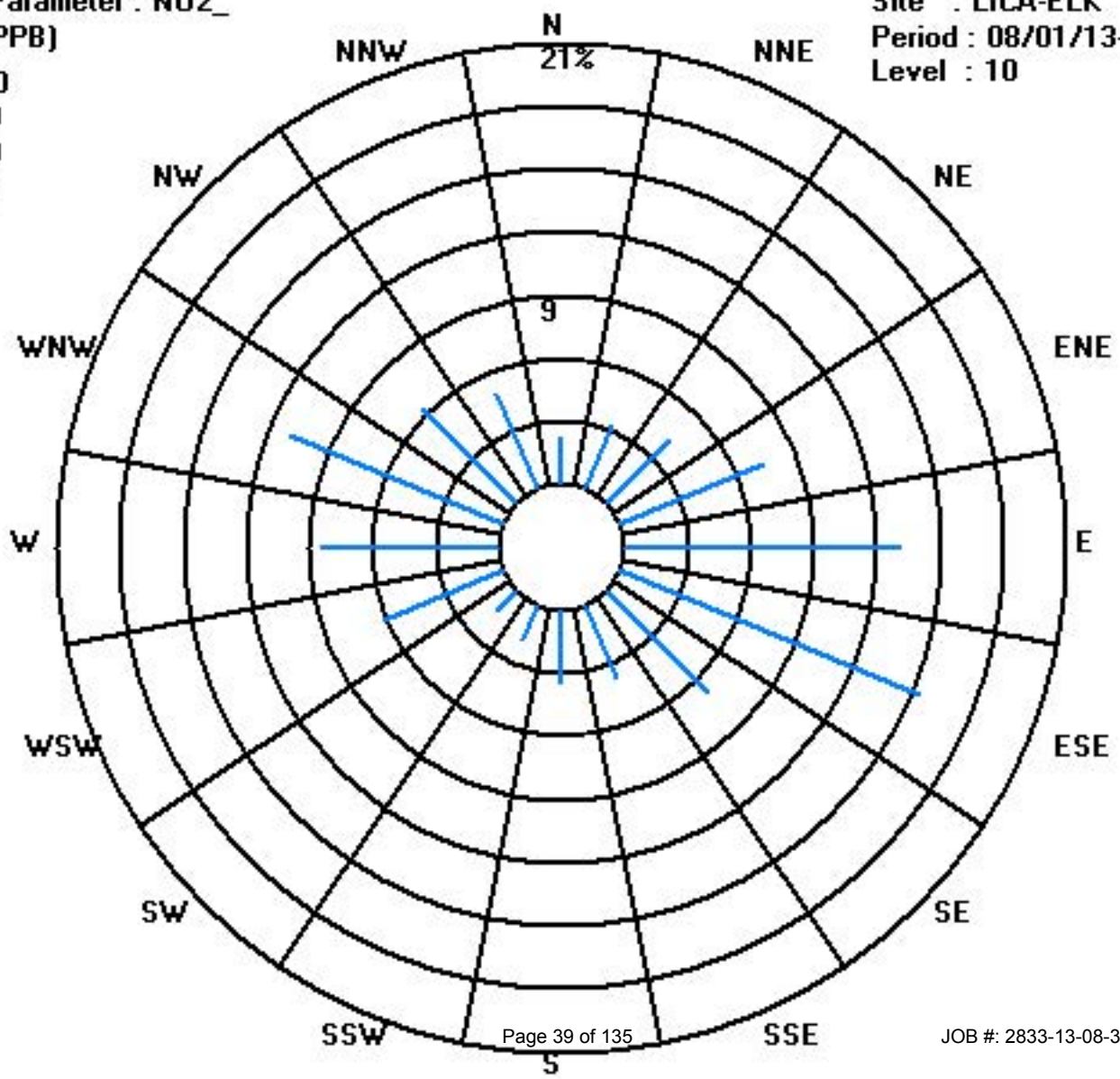
Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	15	23	29	51	90	106	47	26	24	12	9	42	58	75	44	34	685
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	15	23	29	51	90	106	47	26	24	12	9	42	58	75	44	34	

Calm : .00 %

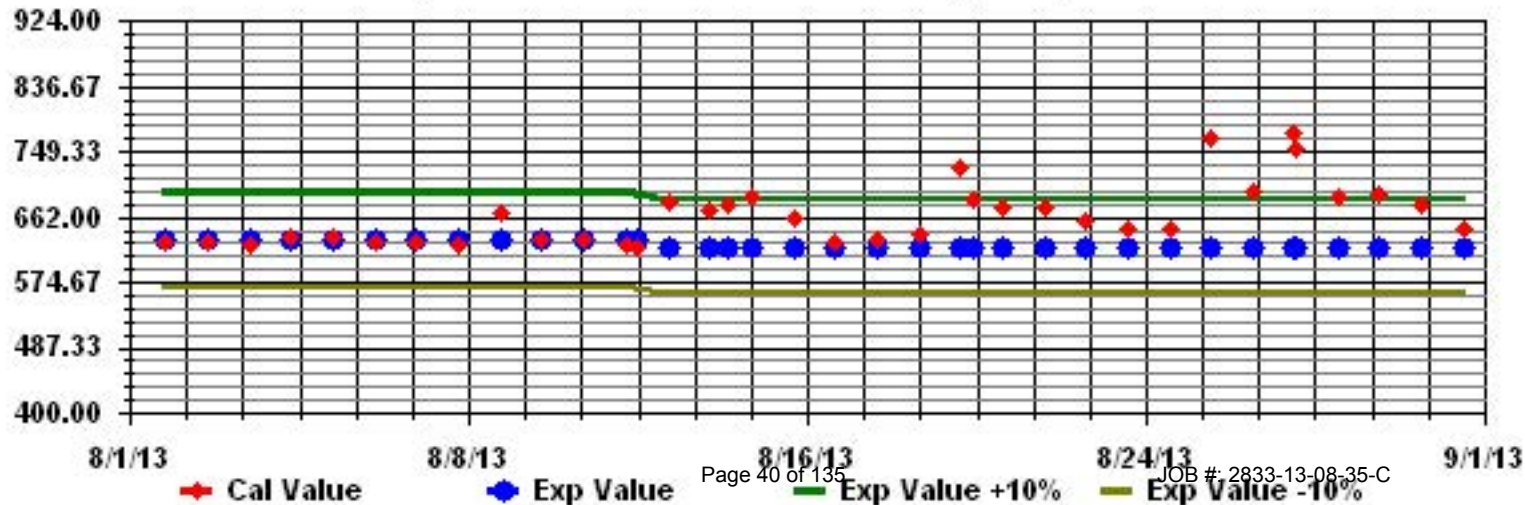
Total # Operational Hours : 685



Class Limits (PPB)



Calibration Graph for Site: LICA35 Parameter: NO2\_ Sequence: NO2 Phase: SPAN



# Nitric Oxide

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

AUGUST 2013

## NITRIC OXIDE hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	0.2	0.1	0.8	0.5	3.9	6.9	11.9	10.1	2.5	0.3	0.2	0	0.1	0.1	0	0	0.1	0	0.1	S	0.5	0.2	0.4	1.1	11.9	1.7	24	
2	0.6	0	0.7	0.5	6.1	8.8	3.2	2	1.5	0.3	0	0	0	0	0	0	0	0	S	1	1.8	3.2	0.3	0.7	8.8	1.3	24	
3	10.5	3.2	12	11.9	4.4	8.9	6.2	3.7	2	0.8	0.4	0.6	0.2	0.1	0.1	0.1	0.1	S	1.8	2.1	0.3	1.8	0.5	0.1	12	3.1	24	
4	0.7	0.2	1.6	3.4	4.2	8.3	4.9	4.4	3.9	1.8	0.5	0.2	0.1	0	0	0	S	0.2	0	0	0.7	0	0	0	8.3	1.5	24	
5	0.2	0.1	1.4	0	0.2	2.2	3.8	1.8	2.6	0.4	0	0	0	0	0	S	0.1	0	0	0	0	0	0	0	3.8	0.6	24	
6	0	0	0	0	0	0	0	0.5	0.7	0.2	0	0	0	1.6	S	0.4	0.1	0.1	0.5	0.4	0.2	1.7	0.6	0	1.7	0.3	24	
7	1.2	0.6	0	0.2	0	0	0	0	0.5	0.2	0.1	0	0	S	0.6	0.4	0.2	0.2	0.1	0	0	0.6	0.7	0.3	1.2	0.3	24	
8	0.3	0	0.1	0.1	1	4.4	4	1.4	0.9	0.9	0.2	0.2	S	0.3	0.3	0.1	0	0	0	1.3	3.1	1.7	4.2	5.3	5.3	1.3	24	
9	9.2	7.8	5.6	13	13.8	27.1	10.2	9.4	7.4	4.1	1.1	S	0.7	0.6	0.5	0.6	0.4	0.8	0.9	1.3	3.3	4.8	3.9	16.1	27.1	6.2	24	
10	8.2	6.8	4.9	4.4	3.5	11.7	9.7	5.4	3.9	1.9	S	0.8	0.6	0.5	0.5	0.4	0.4	0.3	0.2	0.7	1.2	2.1	0.5	0.7	11.7	3.0	24	
11	0.1	0.5	0.4	0.5	1.2	1.5	2.7	1.7	1.3	S	0.8	0	0.6	0.4	0.5	0.6	0.3	0	0	0	0	0.3	0	0	0	2.7	0.6	24
12	0	0.2	0	0.2	0.1	0	0.5	0.1	S	C	C	C	C	C	C	1.2	0.2	0.2	0.2	0.2	0.1	0	0	0	0	1.2	0.2	24
13	0	0	0	0	0	1.1	1.4	S	1.1	1	0.4	0.3	0	C	C	0	0	0	0	0.4	0.3	2.2	0.2	0.7	2.2	0.4	24	
14	0	0	0	0	0	3	S	4	3	C	C	C	C	C	C	0.3	0.3	0	0.1	0.5	1	0.6	1	4	0.9	24		
15	0.3	0.1	0.2	1.5	0.7	S	3.9	2.5	1.5	1.4	0.9	0.6	0.3	0.4	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.4	0.2	0.1	3.9	0.7	24	
16	0	0.2	0	0.6	S	1.9	10.2	13.4	2.5	4.5	3.4	0.6	0.5	0.6	0	0.2	0.2	0.1	0	0.3	0.1	0.2	0	0	13.4	1.7	24	
17	0.1	0.5	1.1	S	16.4	22.6	23.4	9.6	9.4	2.6	0.3	0.1	0.2	0.5	0.7	0.3	0.6	0.8	0.8	1.7	0.7	0.4	0	0.4	23.4	4.1	24	
18	1.2	0.5	S	9.2	9.4	2.8	2.9	3.7	4.8	2.9	1.5	0.6	0.6	0.4	0.3	0.2	0.2	0.2	0.3	0.5	0.4	0.1	0	0.1	9.4	1.9	24	
19	0.1	S	0.8	0	2.4	0.9	1.8	0.8	0.6	0.3	0	0	0.1	0	0	0	0.1	0.5	0	0	0.8	0.1	3	0	3	0.5	24	
20	S	1.5	0.8	0.7	1	0.8	1.7	S	1.6	0.8	0.5	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.7	1.2	1.7	2.3	0.3	S	2.3	0.8	24	
21	0.4	0.1	0	0.4	0.2	0.5	1.2	0.6	C	C	C	1.1	0.5	0.3	0.4	0.2	0.1	0.1	0.3	1.5	1.3	8.1	S	12	12	1.5	24	
22	8.1	8.6	3.4	6.2	5	11.7	9.1	6.7	6	1.7	0.6	0.6	0.6	0.8	0.6	1.1	1.1	1	0.5	0.4	4	S	8.3	14.7	14.7	4.4	24	
23	8.3	8.9	15.3	20.4	81.4	65.8	15.5	1.3	5	2.7	1	0.8	0.3	0.2	0	0.2	0.2	0.3	0.3	0.1	S	0.3	0.2	0.1	81.4	9.9	24	
24	0.2	0	0	0	0	1.8	4.6	1.2	3.4	0.3	0.2	0.1	0.1	0	0	0	0	0	0	S	0.8	0.8	1.3	0.9	4.6	0.7	24	
25	7	3.8	7.4	1.2	3.9	3.3	4.3	3.2	2.2	1.1	0.7	0.5	0.2	0.3	0.2	0	0.1	0.2	S	0.6	0.2	0.3	0.2	0.2	7.4	1.8	24	
26	0.2	0.1	0.3	0.3	0.5	1.6	2	1	0.9	0.5	0.6	0.6	1.2	C	C	0.3	0.3	S	0.3	0	0	0	0	0	2	0.5	24	
27	0	0	0	0	7.1	8.2	6.7	4.7	2.1	Y	Y	Y	Y	Y	Y	C	C	S	1.1	0.3	0.3	0.9	1.2	0.9	0.1	8.2	2.1	19
28	0	0.1	0.1	1	4.2	0.7	2.4	2.6	4	2.4	1.2	0.5	0.2	0	0	S	0.5	0.2	0.2	0.2	0.1	0.2	0.3	0.3	4.2	0.9	24	
29	0.2	0.3	0.2	0.1	0.7	0.3	0.4	0.5	0.4	0.3	0.2	0.2	0.2	0.2	S	0.1	0	0	0	0	0	0	0.5	0.4	0.7	0.2	24	
30	0.1	0	0	0.4	0.1	0.9	0.6	0.2	0.5	0.2	0.2	0.2	0.2	S	0.3	0	0	0	0	0	0	0	0	0	0.9	0.2	24	
31	0	0	0	0	0	0	0	0.4	0	0	0	0	0	S	0.1	0	0	0	0	0	0.9	1.3	2.1	7.4	4.8	7.4	0.7	24
HOURLY MAX	10.5	8.9	15.3	20.4	81.4	65.8	23.4	13.4	9.4	4.5	3.4	1.1	1.2	1.6	1.2	1.1	1.1	1.1	1.8	2.1	4.0	8.1	8.3	16.1				
HOURLY AVG	1.9	1.5	1.9	2.6	5.7	6.9	5.0	3.3	2.6	1.3	0.6	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.5	0.8	1.2	1.2	2.0				

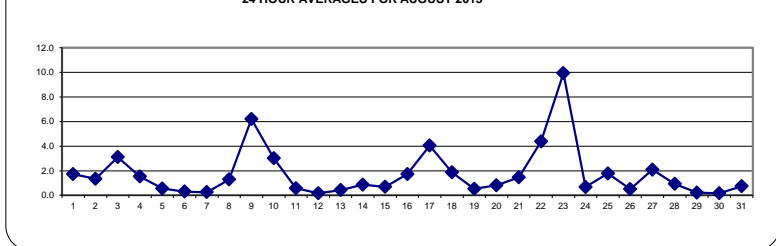
### STATUS FLAG CODES

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

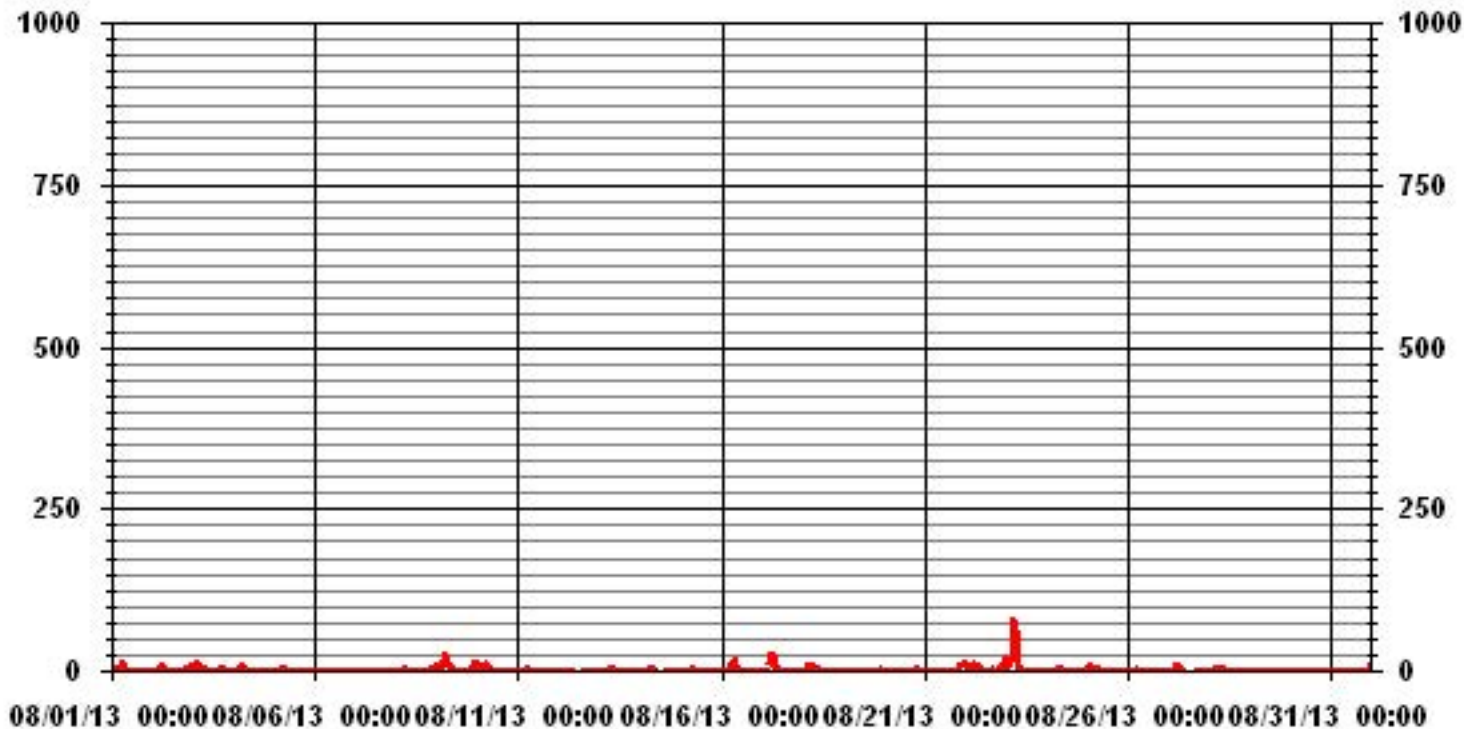
### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	522					
MAXIMUM 1-HR AVERAGE:	81.4	PPB	@ HOUR(S)	4	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	9.9	PPB			ON DAY(S)	23
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	739	HRS	
MONTHLY CALIBRATION TIME:	21	HRS	AMD OPERATION UPTIME:	99.3	%	
STANDARD DEVIATION:	5.04		MONTHLY AVERAGE:	1.77	PPB	

24 HOUR AVERAGES FOR AUGUST 2013



### 01 Hour Averages



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

AUGUST 2013

## NITRIC OXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	1.0	0.9	2.8	1.5	56.4	13.3	21.6	18.1	6.7	0.9	0.7	0.5	0.9	0.5	0.5	0.5	0.5	0.5	0.6	S	1.7	1.5	4.1	8.7	56.4	6.3	24	
2	2.6	0.5	4.1	3.2	42.4	13.5	6.9	3.0	2.3	1.0	0.4	0.3	0.4	0.8	0.7	0.4	0.2	0.8	S	2.3	5.6	8.3	2.6	4.3	42.4	4.6	24	
3	17.4	11.5	20.4	24.3	8.3	13.7	8.5	4.7	4.2	2.2	1.1	1.8	1.0	1.0	1.2	1.2	1.0	S	4.2	7.6	1.6	10.8	3.5	1.5	24.3	6.6	24	
4	4.0	1.3	7.0	6.8	14.2	15.8	9.4	5.6	5.3	3.6	1.3	0.9	0.6	0.3	0.6	0.5	S	1.0	0.6	0.4	14.1	0.6	0.2	0.2	15.8	4.1	24	
5	2.5	1.2	4.1	0.3	1.7	4.5	9.2	3.0	4.1	1.6	0.3	0.3	0.4	0.4	0.4	S	0.7	0.5	0.6	0.5	0.2	0.2	0.1	0.2	9.2	1.6	24	
6	0.1	0.1	0.2	0.1	0.1	0.4	0.7	1.1	1.3	1.0	0.5	0.3	0.3	77.2	S	1.0	0.5	0.5	1.6	1.1	0.9	7.9	2.2	0.4	77.2	4.3	24	
7	7.1	3.0	1.2	1.4	0.5	0.3	0.3	0.8	1.6	0.8	0.7	0.5	0.4	S	1.3	1.4	0.8	1.0	0.6	0.8	0.7	1.7	3.0	2.7	7.1	1.4	24	
8	0.8	0.8	0.7	0.8	4.5	10.6	11.3	2.3	1.7	1.7	0.7	0.7	S	1.0	1.5	0.7	0.5	0.5	0.6	5.2	13.0	4.2	18.2	10.7	18.2	4.0	24	
9	13.4	16.5	9.5	37.6	21.9	47.1	17.8	11.2	10.2	6.5	5.0	S	2.2	1.3	1.3	2.0	1.3	1.8	2.1	4.0	51.4	14.2	31.2	45.9	51.4	15.5	24	
10	49.8	21.2	16.0	7.6	6.3	28.6	16.9	7.9	5.6	3.7	S	1.6	1.8	1.5	1.6	1.6	1.3	1.4	1.8	2.6	6.6	6.4	2.0	4.8	49.8	8.6	24	
11	0.7	2.0	2.2	1.7	3.9	4.3	4.7	3.5	2.1	S	2.7	0.7	1.5	1.7	1.7	1.9	0.9	0.7	0.6	0.4	0.4	1.8	0.5	0.5	4.7	1.8	24	
12	0.6	1.6	0.3	0.8	1.1	1.1	2.0	0.8	S	C	C	C	C	C	C	C	0.9	0.9	0.7	0.9	1.3	0.3	0.2	0.0	0.2	2.0	0.8	24
13	1.2	1.3	0.1	0.2	1.5	6.6	2.8	S	2.0	2.0	1.2	1.0	0.6	C	C	0.8	0.6	0.7	0.6	3.1	3.3	8.7	2.2	4.0	8.7	2.1	24	
14	0.4	0.7	0.5	0.5	0.6	10.4	S	23.2	C	C	C	C	C	C	C	C	C	0.9	0.7	0.5	2.5	3.2	1.7	5.5	23.2	3.7	24	
15	0.8	0.6	1.5	5.7	2.0	S	5.8	4.9	2.2	2.0	1.5	1.3	0.9	1.6	0.8	0.9	0.9	0.7	0.9	0.9	0.6	1.6	0.7	0.5	5.8	1.7	24	
16	0.5	1.3	0.4	2.0	S	4.4	22.9	26.5	5.0	8.5	6.5	2.1	1.5	1.5	1.8	1.4	1.3	0.6	0.5	0.7	0.8	0.7	0.7	0.3	26.5	4.0	24	
17	1.1	1.3	7.2	S	50.2	37.1	44.1	15.6	14.9	7.6	1.3	0.6	1.0	1.4	1.5	1.2	1.2	1.9	2.6	5.4	3.0	2.2	0.5	4.7	50.2	9.0	24	
18	3.8	1.3	S	29.9	17.5	5.2	4.0	4.6	6.7	5.1	2.5	1.1	1.3	0.9	1.1	1.0	0.8	0.8	0.8	1.1	1.2	0.8	0.5	0.7	29.9	4.0	24	
19	0.7	S	8.4	0.3	12.8	3.8	3.7	2.9	7.9	1.3	0.5	0.7	0.6	0.2	0.3	0.3	0.6	1.1	0.9	0.5	20.9	1.6	10.0	0.5	20.9	3.5	24	
20	S	2.8	1.2	1.2	1.9	1.7	4.2	S	3.0	1.6	1.3	0.7	0.9	1.0	0.7	0.7	0.8	0.7	5.4	5.5	6.0	14.9	1.1	S	14.9	2.7	24	
21	1.0	0.5	0.9	1.5	1.1	1.8	2.6	1.3	C	C	C	C	1.2	1.5	1.2	0.9	0.9	0.6	1.1	24.1	5.0	14.6	S	19.9	24.1	4.3	24	
22	13.6	18.7	7.9	12.5	13.5	19.6	18.1	8.9	8.7	5.6	1.3	1.5	1.7	2.2	1.8	3.9	2.8	2.0	1.5	2.0	86.3	S	34.6	28.1	86.3	12.9	24	
23	15.1	14.7	19.4	29.3	171.3	85.8	56.2	2.3	10.1	11.7	2.0	3.3	0.9	0.8	0.5	1.0	0.9	0.8	0.9	0.6	S	1.0	0.6	0.5	171.3	18.7	24	
24	0.7	0.9	0.5	0.5	0.7	5.0	10.7	2.8	99.9	0.8	0.9	0.7	0.5	0.4	0.4	0.4	0.3	0.6	S	1.6	2.1	5.4	4.5	99.9	6.1	24		
25	17.0	7.0	15.9	2.5	7.9	8.1	8.0	4.8	3.7	2.5	1.2	1.2	0.8	0.9	0.7	0.5	0.6	0.6	S	1.6	0.7	0.6	0.7	0.6	17.0	3.8	24	
26	0.5	0.5	1.3	1.3	1.7	5.4	3.7	2.2	1.8	1.5	1.2	1.8	2.9	C	C	0.8	0.7	S	1.1	0.5	0.5	0.3	0.4	0.2	5.4	1.4	24	
27	0.2	P	0.5	0.6	28.8	36.9	11.2	13.7	4.4	Y	Y	Y	Y	Y	C	C	S	2.1	0.9	1.0	4.5	4.9	3.7	0.6	36.9	7.6	18	
28	0.6	0.8	0.9	2.3	14.7	4.4	9.2	5.4	5.2	3.8	1.9	1.3	0.9	0.3	0.3	S	1.3	0.8	0.8	0.6	0.6	0.7	0.6	0.7	14.7	2.5	24	
29	0.7	0.7	0.8	0.6	2.9	0.7	0.9	1.0	0.9	0.9	0.7	0.7	0.7	0.7	S	0.7	0.5	0.2	0.5	0.4	0.4	0.3	3.5	3.4	3.5	1.0	24	
30	1.0	0.6	0.4	2.8	0.8	7.2	6.4	1.2	1.6	1.1	1.2	0.7	0.9	S	1.0	0.4	0.4	0.4	0.2	0.4	0.2	0.1	0.1	0.1	7.2	1.3	24	
31	0.2	0.1	0.2	0.1	0.2	0.1	0.2	3.4	0.5	0.4	0.1	0.2	S	0.9	0.4	0.3	7.6	0.5	0.4	2.7	23.1	4.8	19.5	14.4	23.1	3.5	24	
HOURLY MAX	49.8	21.2	20.4	37.6	171.3	85.8	56.2	26.5	99.9	11.7	6.5	3.3	2.9	77.2	1.8	3.9	7.6	2.1	5.4	24.1	86.3	14.9	34.6	45.9				
HOURLY AVG	5.3	3.9	4.6	6.0	16.4	13.2	10.8	6.4	8.0	3.1	1.5	1.0	1.0	4.2	1.0	1.0	1.1	0.9	1.2	2.7	8.6	4.0	5.1	5.6				

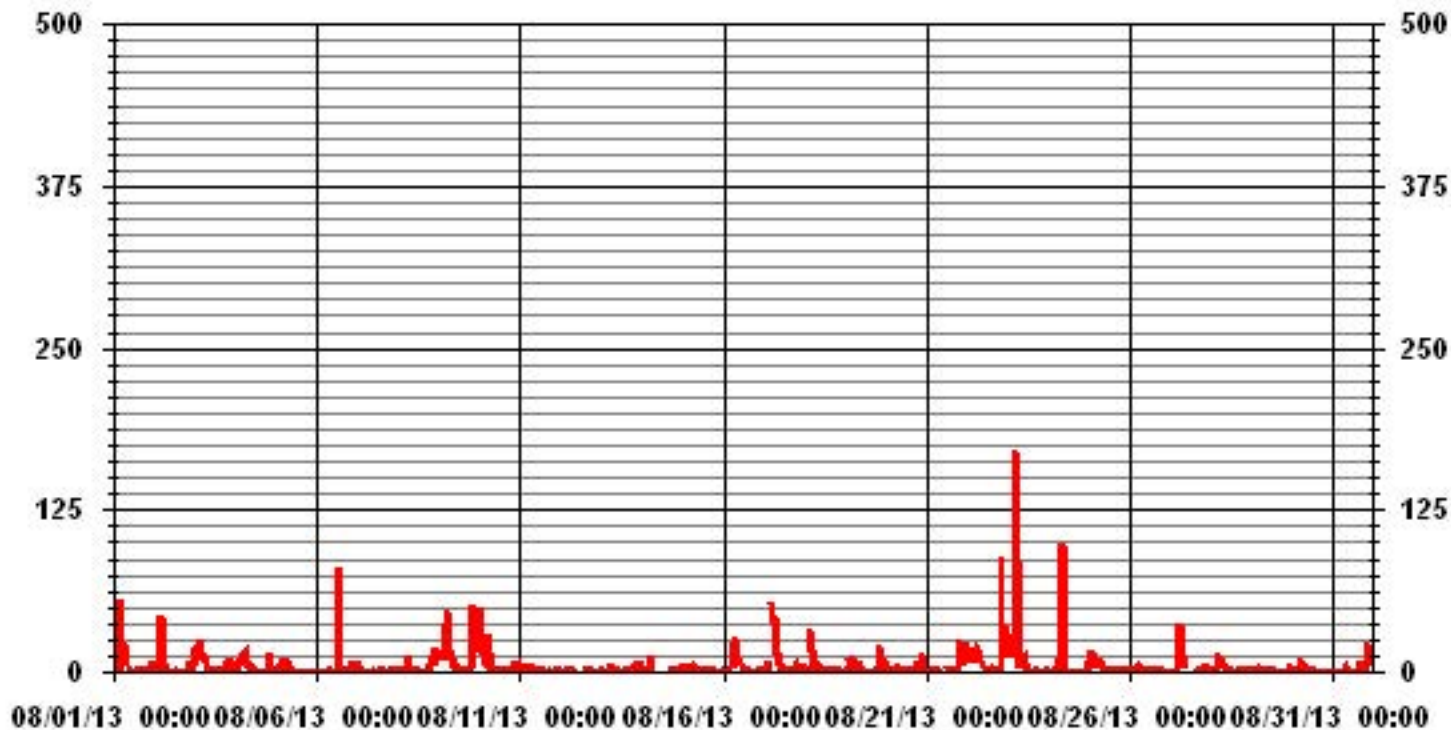
**STATUS FLAG CODES**

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:	679					
MAXIMUM INSTANTANEOUS VALUE:	171.3	PPB	@ HOUR(S)	4	ON DAY(S)	23
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	738	HRS	
MONTHLY CALIBRATION TIME:	25	HRS				
STANDARD DEVIATION:	11.95					

### 01 Hour Averages



LICA-ELK  
 NO\_ / WDR Joint Frequency Distribution (Percent)

August 2013

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	2.18	3.35	4.23	7.44	13.13	15.47	6.86	3.79	3.50	1.75	1.31	6.13	8.46	10.65	6.42	4.96	99.70
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.29	.00	.00	.29
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.18	3.35	4.23	7.44	13.13	15.47	6.86	3.79	3.50	1.75	1.31	6.13	8.46	10.94	6.42	4.96	

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
< 50.0	15	23	29	51	90	106	47	26	24	12	9	42	58	73	44	34	683
< 110.0														2			2
< 210.0																	
>= 210.0																	
Totals	15	23	29	51	90	106	47	26	24	12	9	42	58	75	44	34	

Calm : .00 %

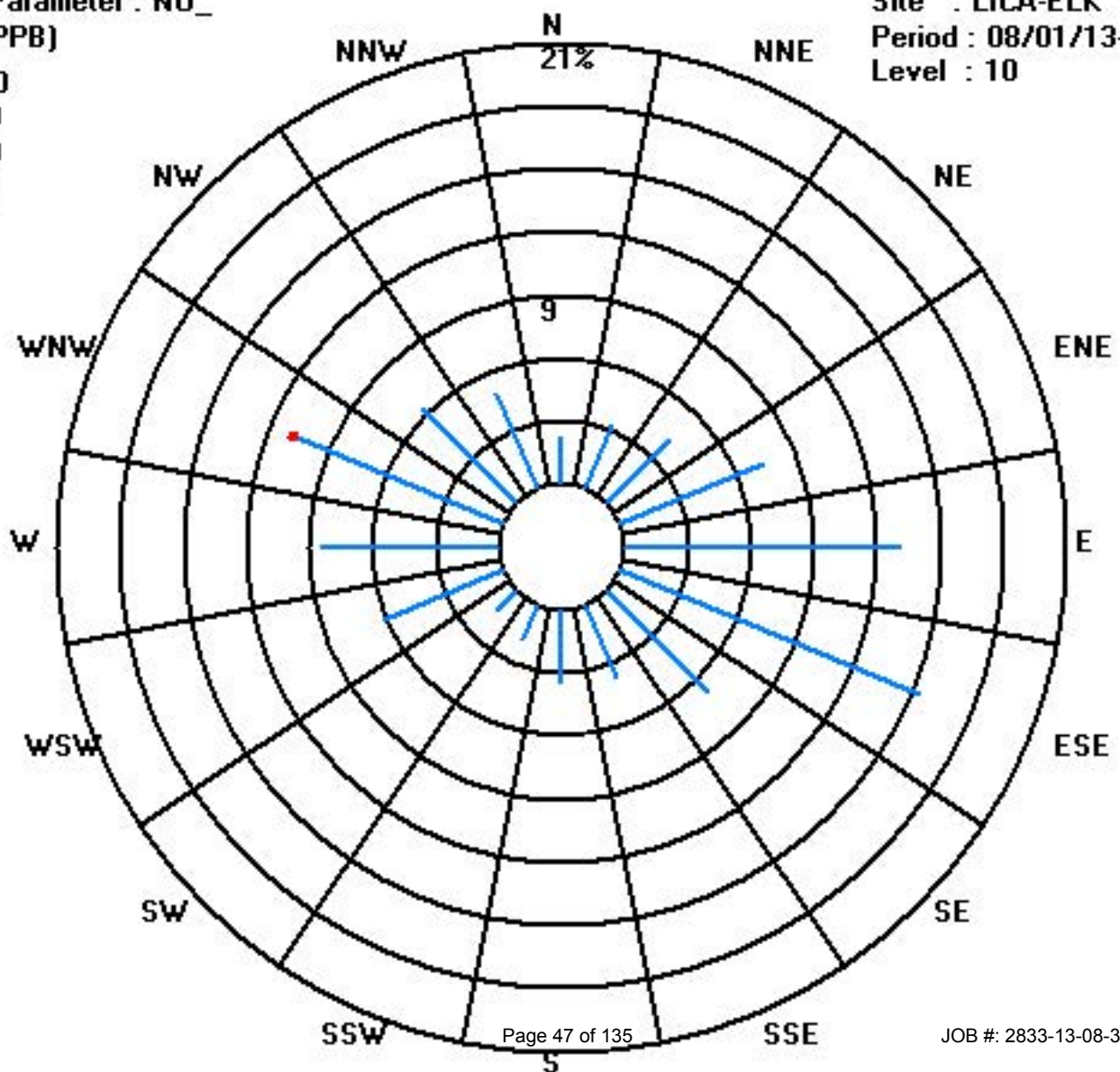
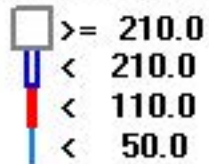
Total # Operational Hours : 685



Class Limits (PPB)

Period : 08/01/13-08/31/13

Level : 10



# Oxides of Nitrogen

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

AUGUST 2013

OXIDES OF NITROGEN hourly averages in ppb

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	7.8	7.1	11.3	9.9	12.6	15	20.1	19.2	6.4	1.7	0.8	0.4	0.3	0.4	0.6	0.6	0.8	0.5	0.4	S	8.2	13.6	11.7	11.4	20.1	7.0	24	
2	10.1	4.3	6.8	6.9	14.2	20.4	8.3	6	4.8	1.9	1	0.7	0.3	0.5	0.4	0.8	0.3	1.3	S	7.4	16.5	21.3	14.5	11.7	21.3	7.0	24	
3	24.1	14.4	22.2	23.3	11.1	17.5	13.3	8.3	5.6	3.4	2.3	2.5	1.6	1.3	1.5	1.5	1.5	S	6.8	11.9	6.4	15.2	11.7	9.7	24.1	9.4	24	
4	9.9	8.2	12	16.4	16	15.2	10.8	9.6	9.5	5.9	2.8	1.7	0.9	0.6	1	0.6	S	0.9	0.6	1.1	7.7	4.5	2.2	3.2	16.4	6.1	24	
5	8	6.6	15.2	7	12.4	15.9	15	7.7	7.6	2.3	1.4	1.5	1.3	1	1	S	0.9	1.2	1.1	3.5	2.6	3.7	3	2.8	15.9	5.3	24	
6	2.8	1.7	1.6	0.8	1.4	1.5	2.2	2.8	2.6	1.6	1	0.8	0.5	3.5	S	0.9	0.6	0.6	3.1	6.7	6.9	14	10.2	5.5	14	3.2	24	
7	8.9	11.7	4.7	3.1	2.6	1.4	1.1	2.8	3.1	1.5	0.9	0.7	0.5	S	0.8	1.1	0.6	0.9	1.5	1.8	2.9	6.1	6.1	4.9	11.7	3.0	24	
8	4	2.5	3.1	2.7	4.2	8.3	7.1	3.5	2.5	2.5	0.7	0.6	S	0.3	0.9	0.2	0.2	0.5	0.6	9.4	16.1	14	14	13.9	16.1	4.9	24	
9	18.1	16.1	11.1	18.5	19.5	33.1	16.9	16.3	13.4	9	3.4	S	1.5	1.5	1.4	2	1.4	3.4	4.9	9.4	17.3	20.4	17.7	31.2	33.1	12.5	24	
10	21.3	20.4	16.4	13.3	13.2	20.8	17.1	10.6	7.6	4.4	S	1.8	1.4	1.4	1.5	1.1	1.3	1.1	1.8	6.1	12.1	17.3	16	12.9	21.3	9.6	24	
11	10.4	8.9	7.9	9	8.7	8.5	8	5.4	4.8	S	4.5	2	3.4	2.2	2.9	2.6	1.7	2.7	1.9	1.5	2	3.7	2.9	3.2	10.4	4.7	24	
12	4.5	4.2	3.3	6.7	7.5	4.5	6	3.4	S	C	C	C	C	C	2.5	2	2.1	2.9	5.2	6.8	3.6	3.7	4.2	4	7.5	4.3	24	
13	6.9	12.7	7.1	5.9	5.5	8.3	7.4	S	3	3.2	2.3	2	1.7	C	C	2.2	2.5	2.4	4	9.2	9.3	18	11.3	11	18	6.5	24	
14	8.4	9.5	9.5	9.4	8.4	12.8	S	8.3	5.9	C	C	C	C	C	C	3.3	3.1	2.6	6.5	12.1	18.3	15.8	14.9	18.3	9.3	24		
15	8.6	7	8.5	12.4	11.5	S	10.2	6.5	4.3	4.2	3.6	3.1	2.5	2.9	2.9	4	2.6	3.2	6	8.7	8.8	13.3	11.4	4.8	13.3	6.6	24	
16	3.1	5	2	5.1	S	6.9	17.2	24.5	8.6	10.6	9.3	2.9	3.1	3.9	1	1.4	2	2.5	1.8	5.7	5.1	7.7	2.2	1.9	24.5	5.8	24	
17	8.3	11	10	S	25.9	30.7	30.2	14.7	15	6.7	2.2	1.5	1.8	3.1	8.4	5.9	5.6	6.2	6.4	12.6	13.2	11.8	8.4	6.3	30.7	10.7	24	
18	10	8.8	S	21.6	22.9	13.1	10.3	8.2	11.4	9	5.5	2.8	2.3	2	1.7	1.2	1.2	1.6	2.6	9.1	10.3	2	1.7	1.1	22.9	7.0	24	
19	4.6	S	9.8	3.1	9.5	8.2	7.6	3.4	3.6	1.3	0.5	0.4	0.5	0.2	0.3	0.6	1.6	3.6	1.3	2.6	10.7	11.9	23.4	11.3	23.4	5.2	24	
20	S	4.8	3.9	4.8	6.9	5.3	5.8	S	2.9	1.6	0.9	0.4	0.7	0.6	0.8	0.5	0.8	1	4.6	9.6	18.4	9.3	3.6	S	18.4	4.2	24	
21	2.8	2.7	4.3	5.7	3.1	4.2	5.5	2.1	C	C	C	1.2	1	1.1	1.1	1	0.7	0.6	2.2	7.7	11.4	27.7	S	26.9	27.7	5.7	24	
22	19.2	18.8	13.4	16	15.4	24.1	18.3	12.9	11.8	4.5	2	1.9	2.2	2.6	2.5	3.9	4.5	5.2	4.4	8.3	20	S	33.1	34.8	34.8	12.2	24	
23	25.3	23.8	30.6	34	97	80.9	22.1	4.6	13.4	8.7	3.8	2.3	1.1	0.7	0.5	0.7	1.4	2	2	0.8	S	1.3	4.3	1.9	97	15.8	24	
24	1.4	2.2	1.7	1.4	2.3	14.4	17.3	5.2	5.7	1.4	1.2	0.9	0.5	0.4	0.3	0.3	0.5	0.8	2	S	11.6	16.4	15.8	14.7	17.3	5.1	24	
25	22.4	15.3	18.6	11	15.3	14.1	12.8	9.5	7.2	4.1	3.1	2.6	2.7	2.6	1.7	1.7	2.5	1.9	S	1.3	1.2	0.9	1	1.1	22.4	6.7	24	
26	1.3	1.6	2.8	4.5	5.6	10.2	11	3.8	2.8	1.5	2.2	4.3	8.6	C	C	0.7	0.5	S	0.6	1	1.1	1.6	1.6	1.4	11	3.3	24	
27	1.2	2.6	3.1	4.4	19.3	16.2	14.6	10.9	6.4	Y	Y	Y	Y	Y	Y	C	C	S	3.4	2.1	4.3	9.3	12.3	10.8	2.1	19.3	7.7	19
28	2.3	2.6	3.1	6.1	12.8	3.4	4.6	6.2	9.2	6.5	4.6	2.6	2.2	1.3	0.9	S	1.9	1.1	1.5	2.2	1.2	2	2.3	1.8	12.8	3.6	24	
29	1.7	1.2	1.3	1.1	5.6	3.1	1.9	1.8	1.5	0.7	0.3	0.4	0.4	0.3	S	0.6	0.5	0.4	1.4	1.5	0.6	1.6	3.5	3.8	5.6	1.5	24	
30	4.1	3	1.8	4.4	5.1	4.1	2.9	1.8	2.2	1.7	1.6	1.4	0.9	S	1.1	0.8	0.6	0.9	0.6	0.7	0.8	0.4	0.2	0.3	5.1	1.8	24	
31	0.3	0.3	0.5	0.6	0.8	1	0.9	1.9	0.9	0.5	0.2	0.1	S	0.3	0.2	0.5	1.3	1.2	2.9	13.4	12.9	18.9	24.8	18.2	24.8	4.5	24	
HOURLY MAX	25.3	23.8	30.6	34.0	97.0	80.9	30.2	24.5	15.0	10.6	9.3	4.3	8.6	3.9	8.4	5.9	5.6	6.2	6.8	13.4	20.0	27.7	33.1	34.8				
HOURLY AVG	8.7	8.0	8.3	9.0	13.2	14.1	10.9	7.7	6.3	3.9	2.4	1.6	1.7	1.4	1.5	1.5	1.6	2.0	2.7	5.9	8.7	10.4	9.6	9.1				

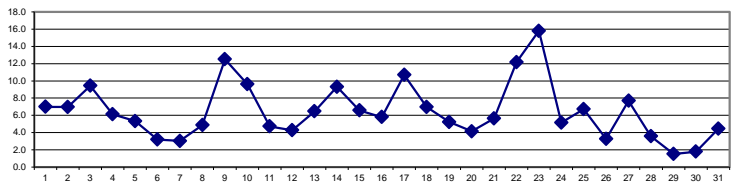
STATUS FLAG CODES

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

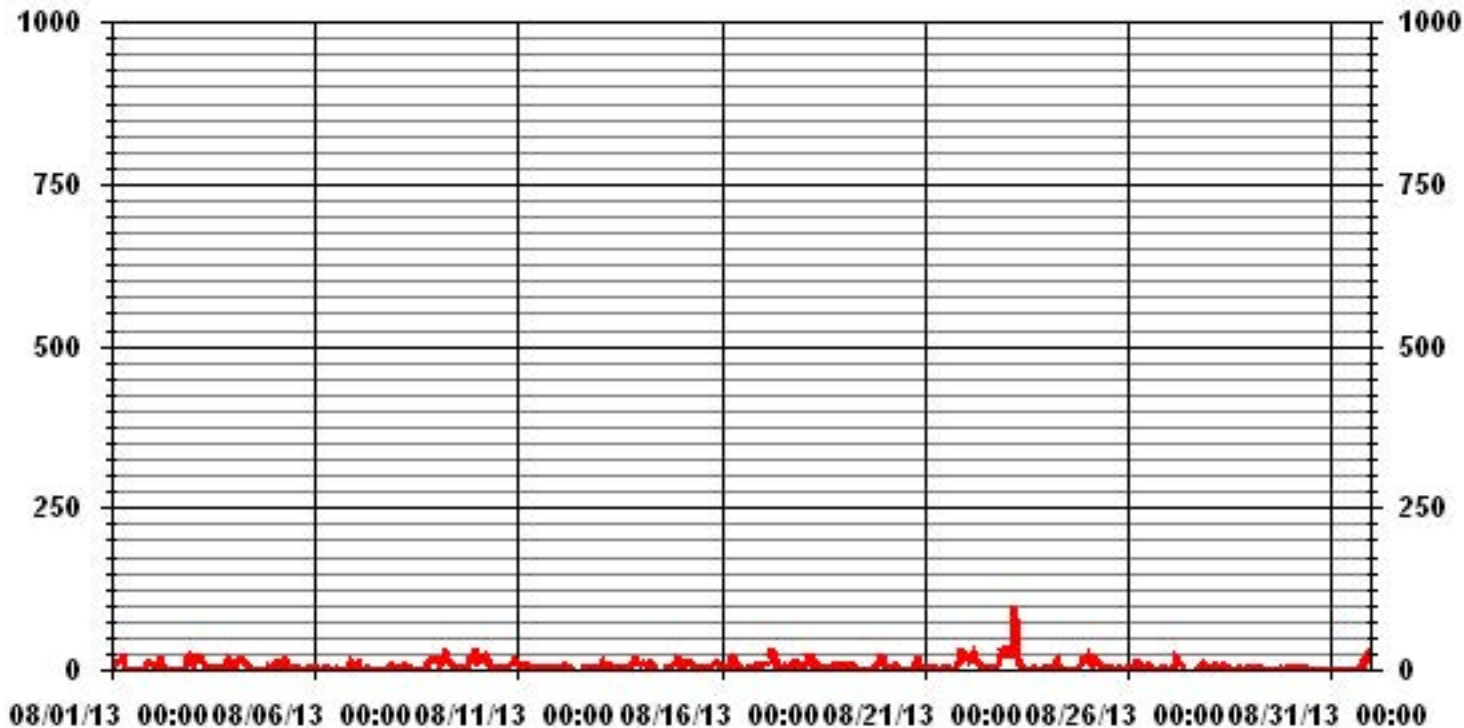
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	685		
MAXIMUM 1-HR AVERAGE:	97.0	PPB	@ HOUR(S) 4 ON DAY(S) 23
MAXIMUM 24-HR AVERAGE:	15.8	PPB	ON DAY(S) 23
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME: 739 HRS
MONTHLY CALIBRATION TIME:	21	HRS	AMD OPERATION UPTIME: 99.3 %
STANDARD DEVIATION:	7.88		MONTHLY AVERAGE: 6.45 PPB

24 HOUR AVERAGES FOR AUGUST 2013



# 01 Hour Averages



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

AUGUST 2013

## OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY MAX.	24-HOUR AVG.	RDGS.
1	13.3	11.9	14.3	12.1	67.3	23.4	32.3	31.7	13.7	3.3	1.9	1.2	1.1	1	1.1	1	1.4	1.1	0.8	S	18.4	21	19.3	25.1	67.3	13.8	24	
2	14.7	8.5	16.1	13.7	58.9	26.9	15.6	7.7	6.1	3.1	1.7	1.8	1.5	3	2.9	1.8	0.9	3.6	S	15.7	24.3	30.3	21.5	19.5	58.9	13.0	24	
3	30.2	24.4	31.7	37.2	14.7	23.1	16.1	9.9	9	6	3.7	4.5	3.2	3.6	3.3	4.2	3.8	S	15.9	28	10.1	34	18.8	19.1	37.2	15.4	24	
4	19	13.7	21	20.1	22.4	24	17.3	11.1	10.9	9.1	4.5	3	1.6	1.6	1.9	1.2	S	1.6	1.5	2	27.3	10	2.8	5.1	27.3	10.1	24	
5	17.4	12.2	22.3	11.3	17.5	19.5	26.4	9.7	10.3	4.6	2.2	2	2	1.5	1.7	S	1.5	1.9	1.7	7.2	5.3	8.8	6.6	3.3	26.4	8.6	24	
6	3.4	3.2	2.6	1.4	2	2.7	4.1	3.5	3.4	2.6	1.7	1.4	0.9	106.4	S	1.3	1.4	1.2	8	10.6	10.9	28.9	15.8	6.9	106.4	9.8	24	
7	22.7	18	13.3	6.8	4	2.9	3.1	4.3	6.5	2.7	1.7	1.2	1.1	S	1.5	2.7	1.6	2.4	3.2	6	5.6	9.5	10	9.4	22.7	6.1	24	
8	5	3.8	4.4	4.4	8.7	16.4	16.3	5	3.8	3.8	1.4	1	S	0.9	4.3	1.3	1	1.3	2.3	21.1	30.2	20.7	33.8	19.1	33.8	9.1	24	
9	24.1	26.8	17.1	44.6	28.3	53.6	26.2	19.4	17.4	12.2	12	S	4.3	2.9	2.8	5	3.8	6.2	10	18	71.9	31.9	56	60.1	71.9	24.1	24	
10	65.6	36.9	30	15.5	15.4	37.2	25.5	15.2	10.4	7.4	S	3.1	3.2	3.5	4.4	4.3	3.1	4.2	5.2	14.2	21.5	27.9	20.9	20	65.6	17.2	24	
11	11.9	14.3	10.9	12.2	12.8	12.5	11.2	7.8	6.2	S	8.3	3.3	6.8	5.7	5.4	5.8	2.7	5.1	4.5	2.1	3.6	7.9	5.8	5.2	14.3	7.5	24	
12	8.9	9	4.8	9.2	9.7	8.6	11.3	5.7	S	C	C	C	C	C	C	3.6	4	4.4	8.4	9.4	6.3	4.9	4.9	6.9	11.3	7.1	24	
13	13.6	17.9	10.3	7.2	9.9	20	9.6	S	4.3	5.4	3.2	2.9	2.6	C	C	4	4.4	4.3	8.4	20	22.3	30	19.9	15.3	30	11.2	24	
14	11.5	12.3	10.8	10.7	10.4	25.1	S	30.8	C	C	C	C	C	C	C	C	C	5.4	4.6	12.1	23.8	29	19.7	27.8	30.8	16.7	24	
15	10.7	10.1	13.9	21.7	14.5	S	13.3	10.8	5.4	5	4.4	4.3	4	6.2	5.3	6	6	5.6	11.5	12	13.4	21.4	14.9	9	21.7	10.0	24	
16	5.1	7.5	3.7	11.4	S	13	30.8	38.4	12.9	15.4	15.1	5.7	4.6	5.5	9.7	2.3	3.1	4.1	3.4	11.1	10.3	11.2	4.2	4.7	38.4	10.1	24	
17	12.8	14	17.7	S	60.8	45.7	51.9	21.5	18.8	14.4	4.9	2.3	3.2	6.7	16.2	10.4	7.9	10.7	13.5	22.9	18	21.4	10.3	15.4	60.8	18.3	24	
18	16.5	12.8	S	45.1	31.3	17.6	11.8	11.1	14.5	13.4	7.6	4.7	4.3	3	3.5	3.2	2.4	2.5	6	15.4	16.2	9.8	3.1	4.8	45.1	11.3	24	
19	8.2	S	24.3	4.8	29.3	16	13	8	51.9	8	1.2	1.1	1.5	1	0.8	1.4	2.7	6.6	3.8	12.2	48.5	21.6	32.7	16.6	51.9	13.7	24	
20	S	7.3	5	9.2	12.7	7.9	8.5	S	4.5	4.5	5.1	1.1	1.7	1.6	1.4	1.5	1.8	2.3	23.5	23.7	26.2	35.1	8.7	S	35.1	9.2	24	
21	5.9	4.5	7.6	12.1	5.2	6.1	8.4	3.2	C	C	C	C	1.8	11.1	2.9	3.2	1.7	1.8	5.7	31.6	27.8	36.4	S	36.1	36.4	11.2	24	
22	25.1	30.6	18.6	22.9	26.3	32.3	31	15.4	15.2	11.8	3.4	3.8	4.6	5.3	5.7	11.1	9.5	8.7	7.6	20.7	124.6	S	63	50.1	124.6	23.8	24	
23	34.9	32.1	37	44	191.9	101.6	68	8.2	22.2	41	5.7	7.5	1.8	1.3	0.9	3.2	3.1	2.9	4.2	1.3	S	2.7	9.8	3.6	191.9	27.3	24	
24	3	8.8	2.8	2.8	5.3	25.3	28.9	10.5	99.4	2.5	2	1.6	1.1	0.7	1	0.7	1.2	1.5	8.4	S	15.8	20.6	22.9	21.3	99.4	12.5	24	
25	32.3	20.2	26.9	13.5	22	18.4	18.5	11	10.3	7.8	4.1	3.6	4	3.5	2.6	2.7	3.5	3	S	1.9	1.9	1.5	1.9	1.5	32.3	9.4	24	
26	2.1	2.1	6.8	9.2	8.4	20.7	19.8	6.3	4.7	3.7	3.6	8.9	16.5	C	C	1.3	1	S	1.7	1.7	1.7	2.3	2.5	2.3	20.7	6.1	24	
27	2.1	P	5.4	7.3	42.2	50.3	22.8	23.8	10.8	Y	Y	Y	Y	Y	C	C	S	5	3.3	7.6	20.8	20.8	25.1	2.7	50.3	16.7	18	
28	3.3	3.9	4.1	9.6	27.5	7.8	13.5	12.1	11.3	8.6	5.6	4.4	3.5	1.8	1.5	S	3.4	1.6	2.2	3.6	2.2	2.7	3.3	2.3	27.5	6.1	24	
29	2.2	1.7	2.2	1.9	10.5	5.9	2.5	2.5	1.9	1.4	0.9	0.9	1.1	0.9	S	1.1	1	0.8	3.3	3.2	2	2.4	11.3	9	11.3	3.1	24	
30	6.9	5	2.3	10.8	8.3	13.6	13	3.8	5.4	3.5	3.2	2.2	2.2	S	1.8	1.4	1.3	3.1	2	1.7	2.5	1.6	0.9	0.7	13.6	4.2	24	
31	0.7	1	1	1.1	1.3	1.5	1.5	8	1.5	0.9	0.7	0.6	S	0.9	0.8	1.4	14.7	2.4	8.5	23.6	45.5	26.7	39.3	31	45.5	9.3	24	
HOURLY MAX	65.6	36.9	37.0	45.1	191.9	101.6	68.0	38.4	99.4	41.0	15.1	8.9	16.5	106.4	16.2	11.1	14.7	10.7	23.5	31.6	124.6	36.4	63.0	60.1				
HOURLY AVG	14.4	12.9	13.0	14.5	26.0	22.7	19.1	12.3	14.0	7.8	4.2	3.0	3.2	7.5	3.5	3.2	3.4	3.6	6.3	12.4	22.0	17.8	17.0	15.1				

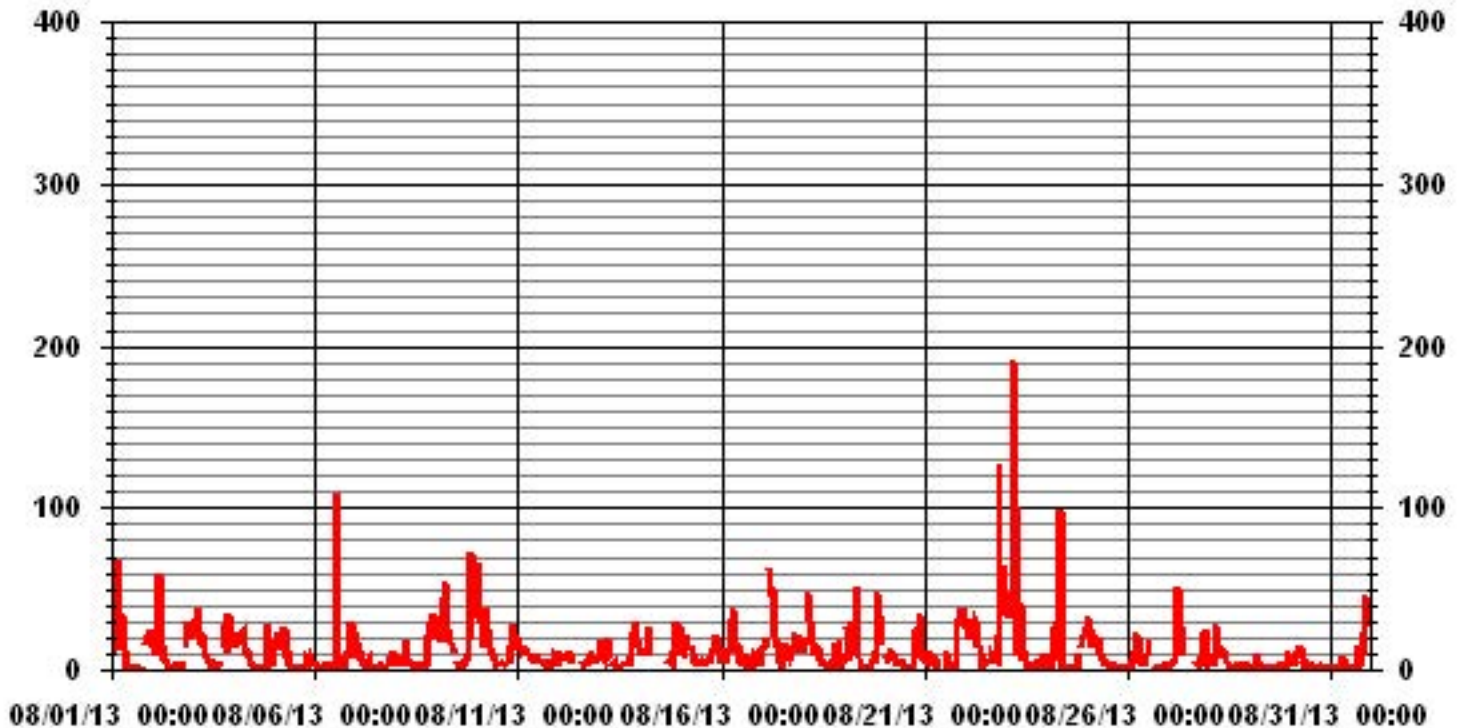
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	680
MAXIMUM INSTANTANEOUS VALUE:	191.9 PPB @ HOUR(S) 4 ON DAY(S) 23
I/ZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	25 HRS
STANDARD DEVIATION:	15.61
OPERATIONAL TIME:	738 HRS

### 01 Hour Averages



— LICA35 NOXMAX PPB

LICA-ELK  
 NOX\_ / WDR Joint Frequency Distribution (Percent)

August 2013

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	2.18	3.35	4.23	7.44	13.13	15.47	6.86	3.79	3.50	1.75	1.31	6.13	8.46	10.65	6.42	4.96	99.70
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.29	.00	.00	.29
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.18	3.35	4.23	7.44	13.13	15.47	6.86	3.79	3.50	1.75	1.31	6.13	8.46	10.94	6.42	4.96	

Calm : .00 %

Total # Operational Hours : 685

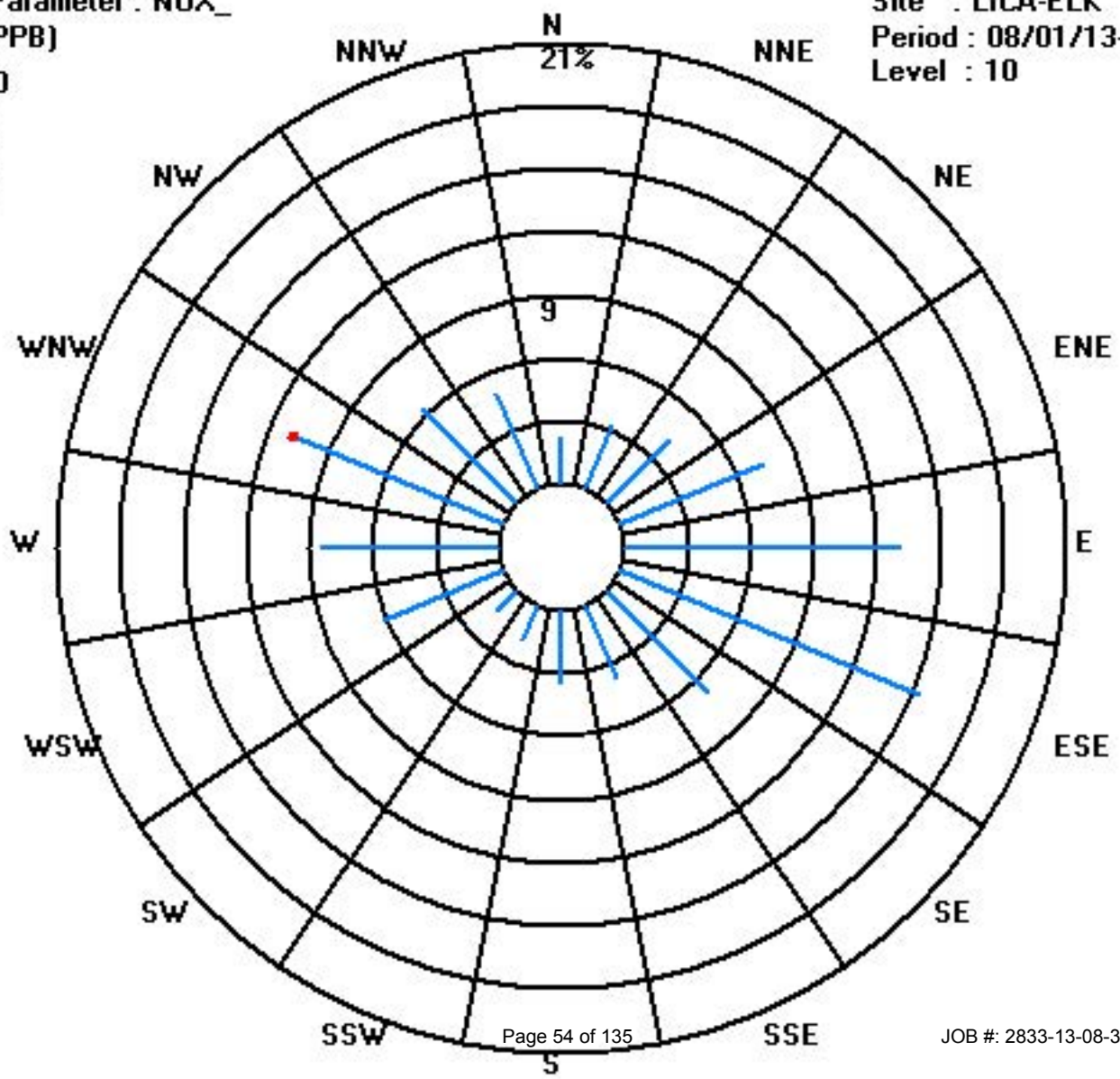
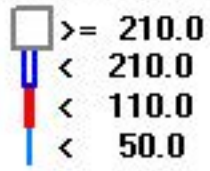
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	15	23	29	51	90	106	47	26	24	12	9	42	58	73	44	34	683
< 110.0														2			2
< 210.0																	
>= 210.0																	
Totals	15	23	29	51	90	106	47	26	24	12	9	42	58	75	44	34	

Calm : .00 %

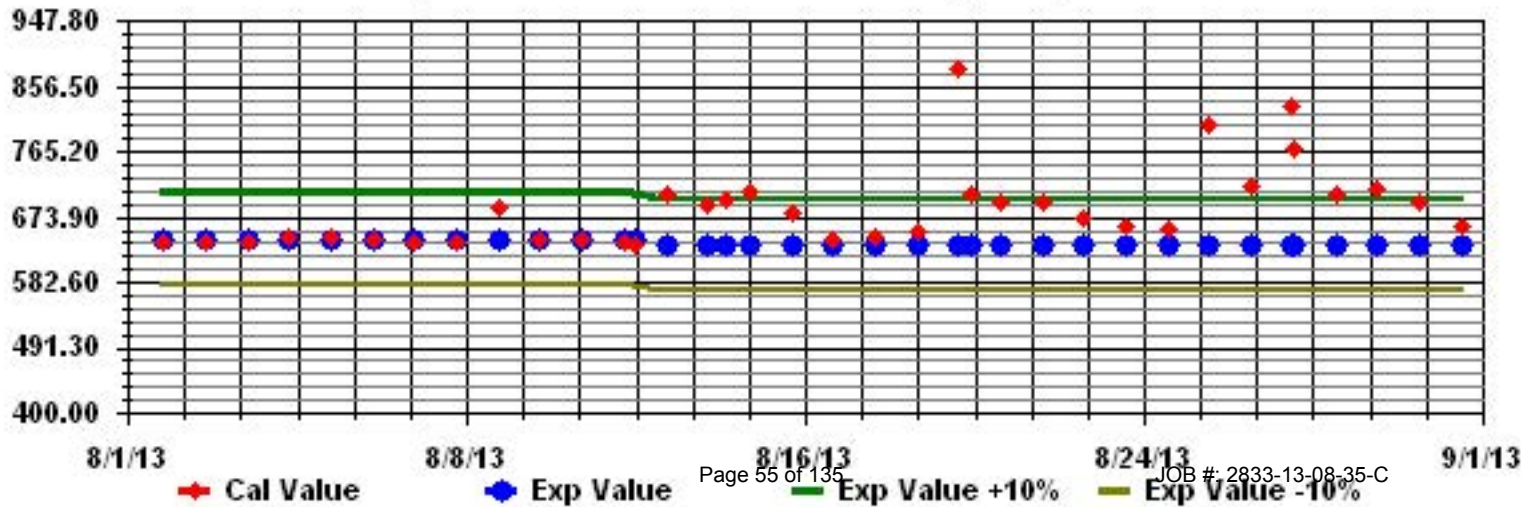
Total # Operational Hours : 685

Class Limits (PPB)





Calibration Graph for Site: LICA35 Parameter: NOX\_ Sequence: NO2 Phase: SPAN



# Ozone

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

AUGUST 2013

### OZONE (O<sub>3</sub>) 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	RDGS.
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	
1	1	10	9	5	5	4	3	6	11	21	32	35	34	35	38	45	49	51	49	46	<b>S</b>	26	17	14	10	51	24.1	24
2	2	7	13	11	10	8	4	13	19	24	29	31	33	35	36	37	38	36	33	<b>S</b>	24	12	6	9	6	38	20.6	24
3	3	1	2	1	1	1	2	8	13	20	30	35	38	40	40	40	40	<b>S</b>	34	26	27	15	14	12	40	20.9	24	
4	4	10	8	5	2	1	2	8	12	19	29	40	44	47	49	48	50	<b>S</b>	46	42	40	27	20	20	17	50	25.5	24
5	5	11	11	7	16	11	10	12	13	13	31	45	49	49	48	43	<b>S</b>	45	44	38	31	28	24	21	19	49	26.9	24
6	6	19	20	23	26	21	17	18	16	17	22	27	31	35	37	<b>S</b>	39	40	39	35	30	27	15	12	13	40	25.2	24
7	7	11	9	18	23	19	20	19	14	14	18	23	26	27	<b>S</b>	23	26	25	25	21	19	16	8	7	4	27	18.0	24
8	8	3	5	3	2	2	2	7	14	23	26	30	32	<b>S</b>	33	34	33	34	34	29	18	9	5	4	1	34	16.7	24
9	9	0	1	1	0	0	1	5	9	12	19	28	<b>S</b>	32	34	35	34	33	31	27	19	9	5	3	2	35	14.8	24
10	10	1	1	1	1	1	1	5	11	14	20	<b>S</b>	32	34	34	35	36	35	35	33	24	16	8	8	9	36	17.2	24
11	11	6	7	7	6	6	6	9	13	14	<b>S</b>	16	21	26	31	28	25	26	27	25	26	25	26	26	26	31	18.6	24
12	12	21	19	18	10	8	16	14	16	<b>S</b>	20	22	29	32	37	33	33	32	31	25	22	21	20	20	19	37	22.5	24
13	13	17	10	12	13	12	12	15	<b>S</b>	22	24	29	32	36	42	47	48	45	42	35	25	22	10	14	8	48	24.9	24
14	14	12	8	10	8	9	6	<b>S</b>	16	20	25	32	39	43	46	<b>Y</b>	52	49	50	46	35	23	14	14	11	52	25.8	23
15	15	9	15	12	6	5	<b>S</b>	10	14	19	24	32	43	47	46	47	49	43	33	25	20	12	13	14	49	25.4	24	
16	16	10	7	6	4	<b>S</b>	2	3	3	8	6	9	13	24	27	40	42	44	45	40	28	19	15	19	18	45	18.8	24
17	17	9	5	5	<b>S</b>	0	1	2	6	9	28	45	47	48	43	32	39	38	37	35	21	15	14	17	14	48	22.2	24
18	18	9	8	<b>S</b>	2	0	2	6	12	20	31	38	48	51	50	48	44	43	43	42	30	21	32	28	28	51	27.7	24
19	19	23	<b>S</b>	13	17	10	13	15	19	21	28	31	34	36	36	37	38	41	37	42	38	22	18	6	20	42	25.9	24
20	20	<b>S</b>	26	26	23	19	18	19	21	24	26	28	30	31	32	33	32	31	30	25	20	8	18	22	<b>S</b>	33	24.6	24
21	21	21	20	19	17	18	17	15	19	21	24	26	<b>C</b>	<b>C</b>	30	31	32	31	30	29	20	11	2	<b>S</b>	1	32	20.7	24
22	22	1	0	1	1	1	1	6	9	14	31	40	42	46	46	46	45	45	43	41	31	18	<b>S</b>	2	1	46	22.2	24
23	23	1	1	1	0	1	1	8	19	20	30	34	37	35	34	32	31	27	23	22	<b>S</b>	35	32	38	38	21.0	24	
24	24	40	36	40	41	32	14	14	28	38	43	45	46	44	45	48	51	53	<b>54</b>	49	<b>S</b>	28	16	12	6	<b>54</b>	<b>35.8</b>	24
25	25	1	2	1	3	2	2	8	12	19	31	39	45	46	48	45	48	52	46	<b>S</b>	31	27	27	25	25	52	25.4	24
26	26	26	23	17	17	15	10	8	17	26	32	31	25	16	24	28	31	32	<b>S</b>	32	27	24	22	22	21	32	22.9	24
27	27	20	17	16	13	2	5	4	13	13	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	42	<b>S</b>	43	37	28	17	13	13	11	43	18.1	24
28	28	8	7	6	4	2	3	5	13	15	22	32	40	45	46	48	<b>S</b>	47	43	34	30	35	29	22	21	48	24.2	24
29	29	24	24	20	21	13	13	17	17	17	22	26	30	33	33	<b>S</b>	29	25	23	22	20	18	18	16	14	33	21.5	24
30	30	16	13	14	9	7	8	8	9	12	16	22	29	30	<b>S</b>	33	34	30	28	25	27	23	20	21	21	34	19.8	24
31	31	25	24	20	16	15	13	13	11	13	17	20	23	<b>S</b>	29	29	30	28	30	29	14	15	4	1	1	30	18.3	24
HOURLY MAX		40	36	40	41	32	20	19	28	38	43	45	49	51	50	48	52	53	54	49	40	35	35	32	38			
HOURLY AVG		12.4	11.7	11.3	10.6	8.2	7.5	10.0	14.0	18.1	25.4	30.7	34.7	37.1	38.4	37.9	38.6	38.2	37.4	33.6	25.9	20.3	16.3	15.2	13.7			

#### STATUS FLAG CODES

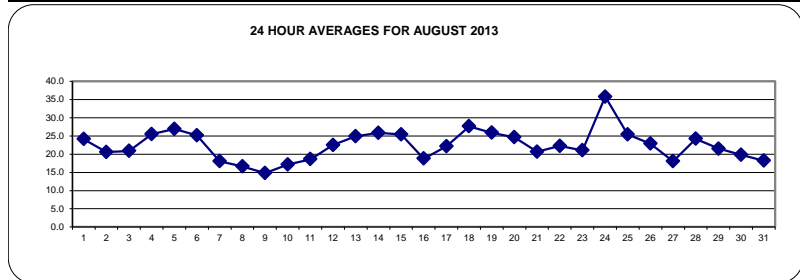
C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR

OBJECTIVE LIMIT:

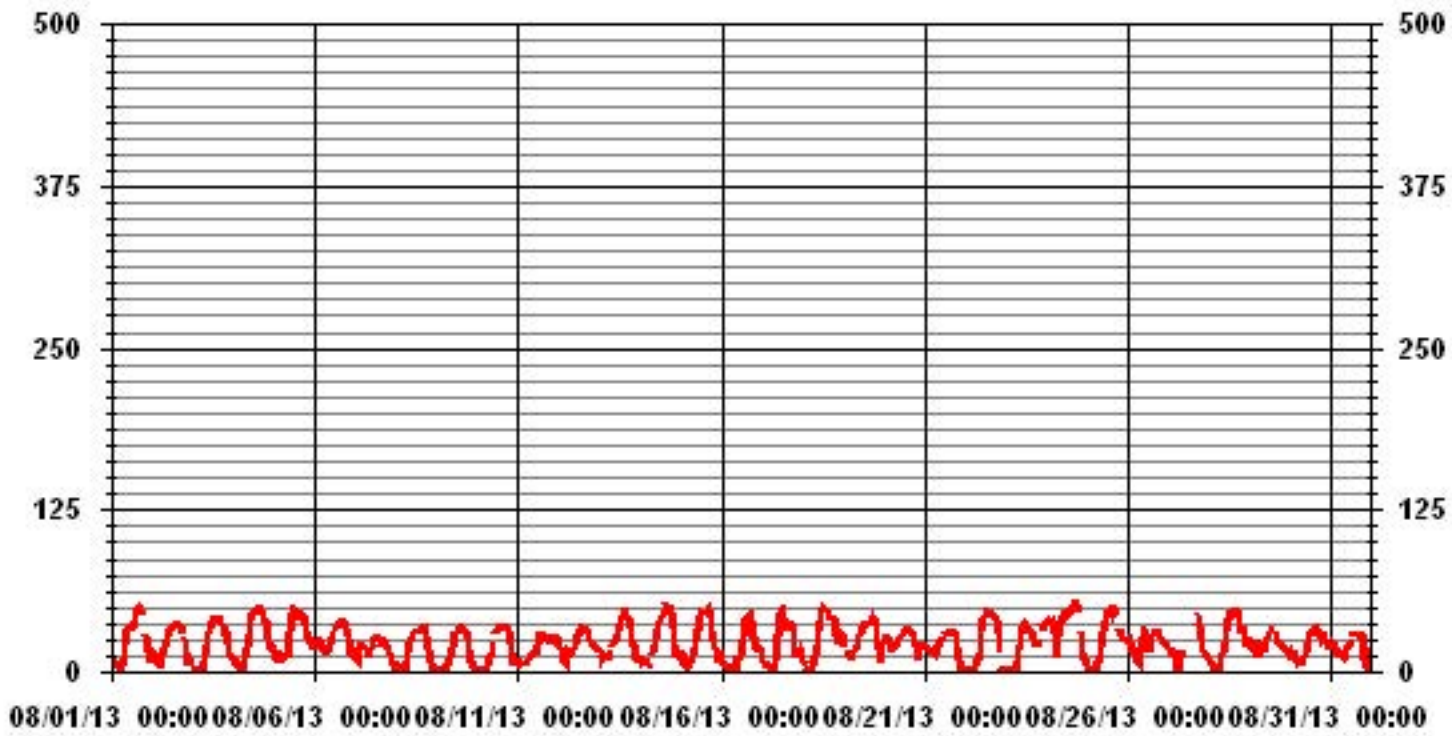
ALBERTA ENVIRONMENT: 1-HR 82 PPB

#### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	696					
MAXIMUM 1-HR AVERAGE:	54	PPB	@ HOUR(S)	17	ON DAY(S)	24
MAXIMUM 24-HR AVERAGE:	35.8	PPB			ON DAY(S)	24
					VAR-VARIOUS	
IJS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	13.76		MONTHLY AVERAGE:	22.49	PPB	



### 01 Hour Averages



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

AUGUST 2013

## 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	13	12	7	8	6	6	7	16	27	37	37	36	38	41	49	52	53	52	48	S	34	26	24	17	53	28.1	24
2	10	18	19	14	15	8	18	22	27	31	32	34	36	38	39	39	39	36	S	31	19	12	14	10	39	24.4	24
3	3	4	1	1	2	5	12	15	24	34	38	40	41	42	42	41	41	S	40	35	32	27	24	16	42	24.3	24
4	14	11	9	6	3	4	11	14	22	35	44	46	49	51	50	51	S	49	46	43	36	24	23	21	51	28.8	24
5	18	15	16	21	16	15	17	16	18	45	48	52	52	52	47	S	47	47	40	37	32	27	26	21	52	31.5	24
6	21	21	28	28	24	19	20	16	20	26	30	36	37	39	S	41	42	41	40	34	32	20	18	18	42	28.3	24
7	19	15	24	26	23	32	27	15	17	21	25	30	29	S	25	28	26	26	24	21	20	14	11	6	32	21.9	24
8	5	6	6	3	3	3	12	18	28	29	33	34	S	36	36	35	36	36	35	26	18	10	10	4	36	20.1	24
9	1	3	3	1	1	3	8	10	16	22	32	S	33	36	36	35	34	35	31	27	15	12	6	6	36	17.7	24
10	5	2	1	1	2	2	8	12	16	25	S	34	36	35	36	37	36	36	35	31	22	17	12	11	37	19.7	24
11	9	10	9	8	9	7	12	15	16	S	19	25	32	33	31	30	30	29	26	28	30	29	30	28	33	21.5	24
12	27	22	21	16	12	20	20	19	S	22	26	35	36	39	37	35	34	33	30	25	24	23	21	21	39	26.0	24
13	21	15	16	15	15	16	18	S	23	26	31	34	39	44	52	51	52	43	40	32	29	16	18	13	52	28.7	24
14	14	11	12	11	12	12	S	20	22	30	38	42	45	50	Y	Y	53	53	50	43	31	21	20	17	53	28.9	22
15	12	18	18	12	7	S	14	18	23	28	36	48	49	48	52	49	51	50	40	28	26	17	15	18	52	29.4	24
16	13	9	7	6	S	3	9	6	12	12	12	16	28	36	44	44	46	48	44	39	24	19	21	20	48	22.5	24
17	14	10	9	S	1	1	6	10	12	37	49	49	50	47	41	47	41	44	43	29	25	24	22	18	50	27.3	24
18	17	17	S	10	2	5	9	18	30	35	42	53	53	52	52	46	45	45	44	41	28	37	32	32	53	32.4	24
19	27	S	19	19	18	17	18	22	23	31	33	36	38	37	39	42	43	41	47	44	31	24	20	24	47	30.1	24
20	S	28	27	27	23	22	20	23	26	27	31	32	32	33	34	34	33	32	31	28	15	25	26	S	34	27.7	24
21	23	22	20	20	20	19	19	21	23	26	28	C	C	32	32	34	34	33	32	29	22	4	S	2	34	23.6	24
22	2	1	2	4	4	3	9	11	20	36	43	43	48	49	49	48	48	47	45	39	28	S	4	2	49	25.4	24
23	4	3	1	1	1	1	16	21	28	33	38	39	38	34	34	33	30	26	23	23	S	40	X	42	42	23.1	23
24	43	42	42	42	42	27	26	33	42	45	47	47	46	48	51	52	55	55	54	S	37	26	20	12	55	40.6	24
25	4	7	3	5	3	4	13	15	28	35	43	47	49	49	47	54	55	48	S	35	29	29	28	28	55	28.6	24
26	27	25	23	21	21	20	13	21	33	34	33	30	20	31	29	33	33	S	35	29	26	24	23	22	35	26.3	24
27	22	P	18	17	9	9	9	20	19	C	C	C	C	C	C	44	S	47	41	30	29	21	20	14	47	23.1	23
28	11	9	9	8	7	5	10	17	18	29	36	43	48	49	50	S	48	47	41	33	38	36	26	23	50	27.9	24
29	25	25	23	22	18	16	19	18	20	24	30	32	35	34	S	33	27	27	24	23	20	19	19	19	35	24.0	24
30	20	17	17	13	11	12	10	12	16	19	26	33	34	S	36	36	33	31	29	29	27	22	23	22	36	23.0	24
31	27	27	23	18	17	14	15	13	16	20	22	25	S	31	30	32	30	33	33	27	21	13	2	2	33	21.3	24
HOURLY MAX	43	42	42	42	42	32	27	33	42	45	49	53	53	52	52	54	55	55	54	44	38	40	32	42			
HOURLY AVG	15.7	14.7	14.4	13.5	11.6	11.0	14.2	16.9	22.2	29.4	33.9	37.5	39.7	40.9	40.7	40.6	40.5	40.3	37.6	31.7	26.7	21.9	19.2	17.0			

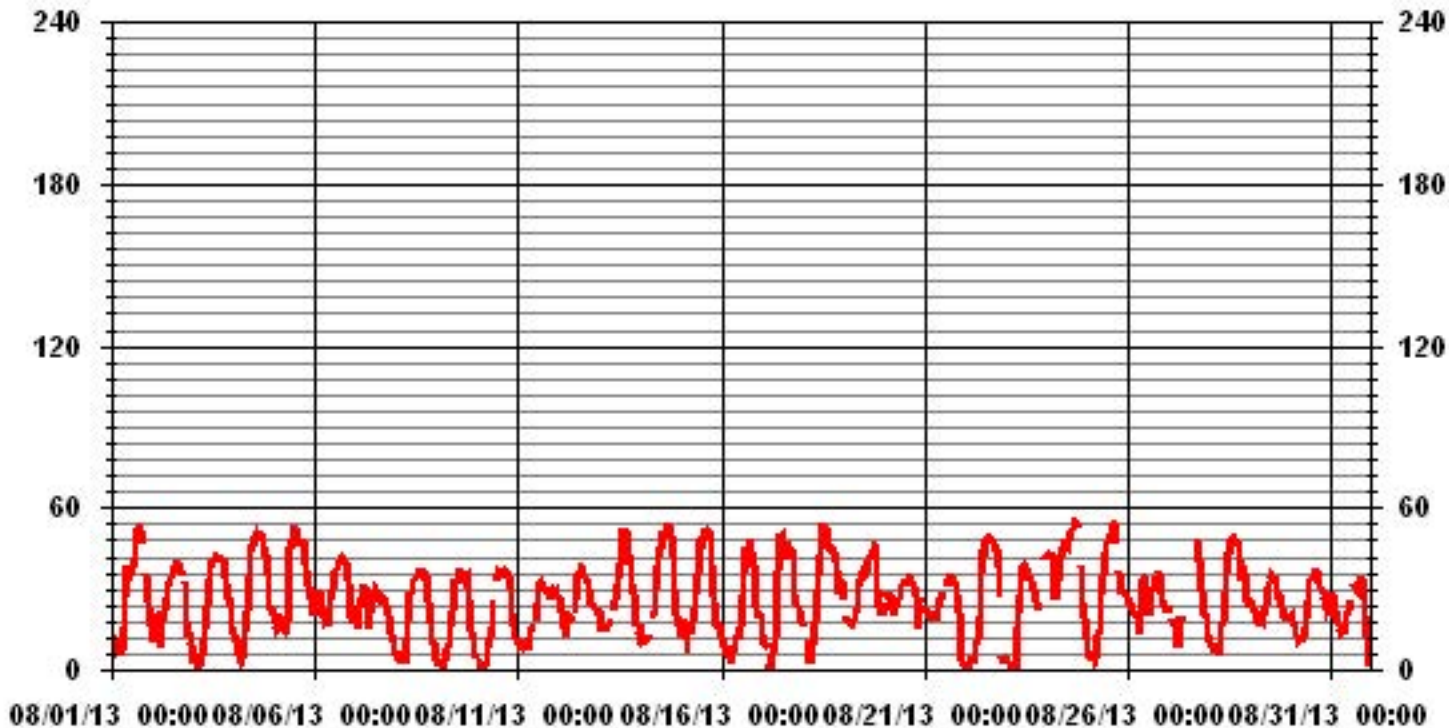
### STATUS FLAG CODES

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:	700				
MAXIMUM INSTANTANEOUS VALUE:	55	PPB	@ HOUR(S)	var	ON DAY(S) 24, 25
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS
MONTHLY CALIBRATION TIME:	8	HRS			
STANDARD DEVIATION:	13.69				

# 01 Hour Averages



LICA-ELK  
O3\_ / WDR Joint Frequency Distribution (Percent)

August 2013

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	2.13	2.98	4.40	7.11	12.66	16.07	7.11	3.84	3.12	1.70	1.28	6.11	8.39	10.52	6.25	4.83	98.57
< 110	.00	.28	.00	.14	.28	.00	.28	.00	.28	.00	.00	.00	.00	.14	.00	.00	1.42
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.13	3.27	4.40	7.25	12.94	16.07	7.39	3.84	3.41	1.70	1.28	6.11	8.39	10.66	6.25	4.83	

Calm : .00 %

Total # Operational Hours : 703

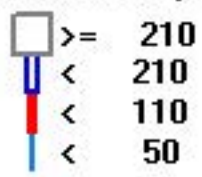
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	15	21	31	50	89	113	50	27	22	12	9	43	59	74	44	34	693
< 110		2		1	2		2		2					1			10
< 210																	
>= 210																	
Totals	15	23	31	51	91	113	52	27	24	12	9	43	59	75	44	34	

Calm : .00 %

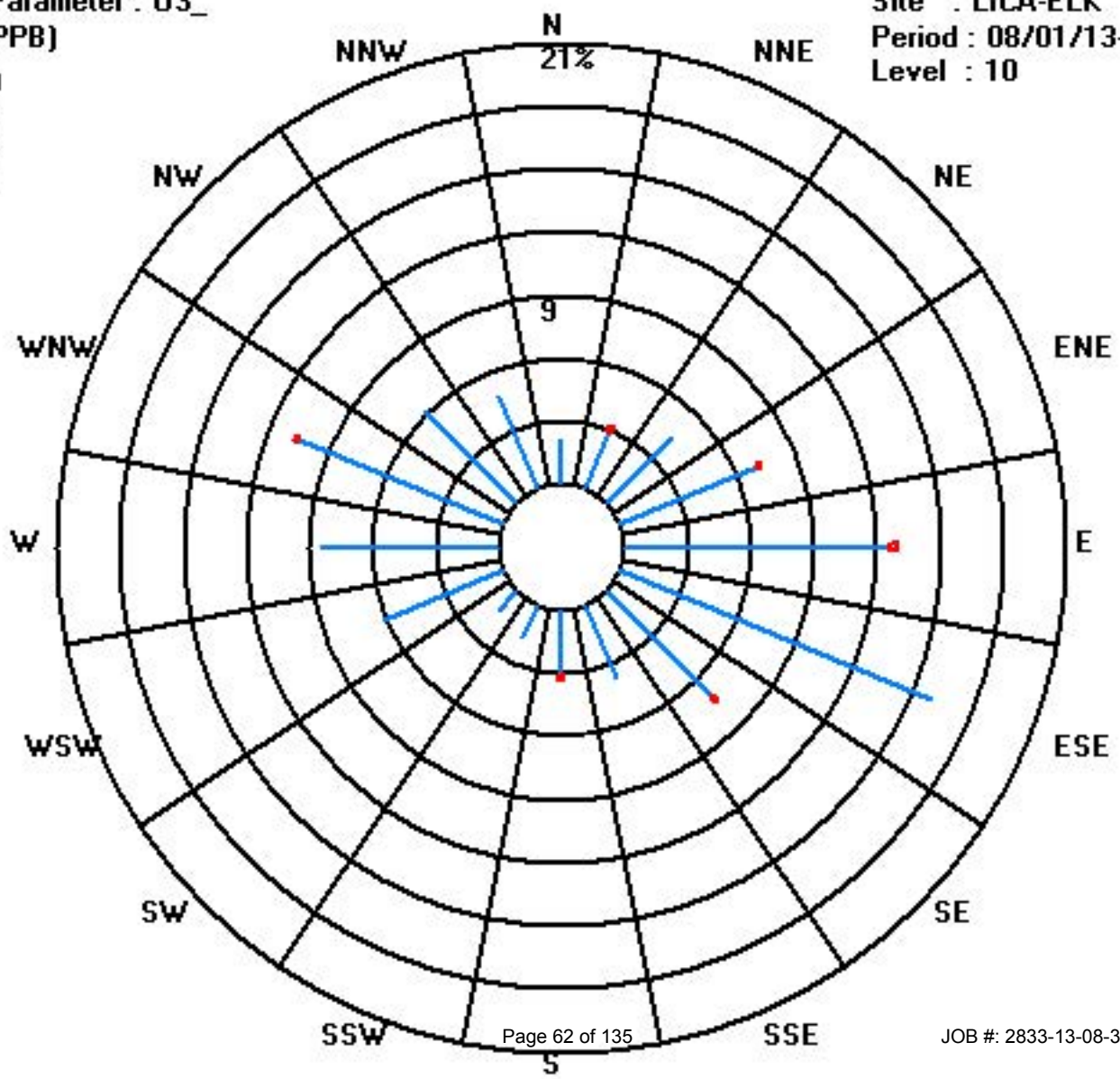
Total # Operational Hours : 703

Class Limits (PPB)



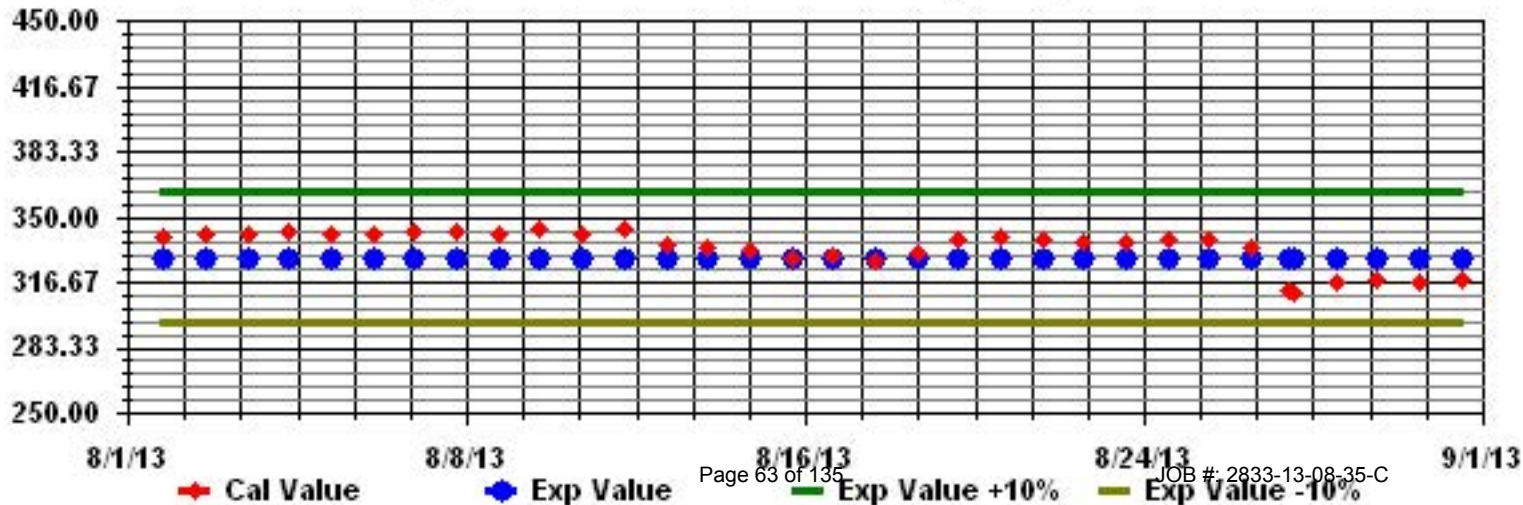
Period : 08/01/13-08/31/13

Level : 10





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



# Total Hydrocarbons (55i)

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

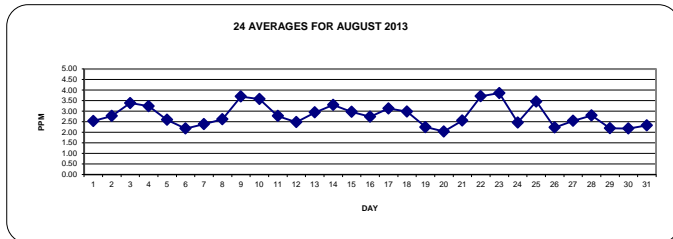
AUGUST 2013

### TOTAL HYDROCARBONS (55i) hourly averages in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	1	2.9	2.6	2.9	3.0	3.0	3.3	3.6	3.3	2.6	2.1	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.8	1.8	S	2.4	3.2	3.2	3.7	3.7	2.54	24
2	2	4.0	3.0	3.0	2.9	2.6	3.4	2.8	2.7	2.5	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	2.0	S	2.3	3.8	5.0	4.0	4.2	5.0	2.77	24
3	3	4.7	4.9	5.2	5.4	5.8	5.9	4.6	3.6	3.0	2.3	2.0	1.9	1.9	1.9	1.9	1.9	S	2.1	2.6	2.6	3.6	4.1	4.1	5.9	3.39	24	
4	4	4.0	4.3	4.4	5.8	5.4	5.3	4.7	4.3	3.8	3.3	2.6	2.2	1.9	1.9	1.9	S	2.0	1.9	2.1	2.6	2.7	2.6	2.9	5.8	3.24	24	
5	5	3.6	3.5	4.2	3.0	3.5	3.8	3.5	2.5	2.6	2.1	1.9	2.0	1.9	1.9	2.0	S	1.9	2.0	2.0	2.2	2.4	2.4	2.4	4.2	2.60	24	
6	6	2.6	2.4	2.1	2.0	2.1	2.0	2.1	2.0	2.1	2.0	1.9	1.9	1.8	1.8	S	1.8	1.8	1.8	2.0	2.3	2.3	3.3	3.1	3.0	3.3	2.18	24
7	7	3.3	3.5	2.8	2.3	2.3	2.1	2.2	2.4	2.3	2.2	2.0	1.9	1.9	S	1.9	2.0	1.9	1.9	2.1	2.4	2.3	2.7	3.0	3.6	3.6	2.39	24
8	8	3.7	3.0	3.2	2.8	2.8	3.4	3.2	2.8	2.4	2.3	1.9	1.9	S	1.9	1.9	1.9	1.9	1.9	1.9	2.3	3.0	3.0	3.1	4.0	4.0	2.62	24
9	9	4.5	4.3	4.0	5.6	6.2	5.7	5.3	4.7	4.1	3.4	2.4	S	2.0	1.9	2.0	2.0	1.9	2.0	2.1	2.9	3.4	4.2	4.7	5.7	6.2	3.70	24
10	10	5.0	6.1	6.1	5.5	5.0	5.6	4.6	3.5	3.2	2.5	S	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.4	3.4	4.6	4.3	5.1	6.1	3.57	24
11	11	4.6	3.4	3.7	4.0	3.8	3.7	3.1	3.1	2.8	S	2.8	2.3	2.3	2.1	2.2	2.3	2.2	2.3	2.2	2.1	2.2	2.1	2.2	2.3	4.6	2.77	24
12	12	2.5	2.3	2.3	2.6	3.1	2.7	2.8	2.6	S	2.3	2.3	C	C	C	2.1	2.2	2.0	2.0	2.1	2.2	3.0	2.5	2.8	2.7	3.1	2.48	24
13	13	2.8	4.4	3.8	2.9	3.1	3.0	3.0	S	2.5	2.3	2.2	2.3	2.1	2.1	2.0	2.1	2.1	2.1	2.2	2.5	3.4	5.7	4.1	5.0	5.7	2.94	24
14	14	3.6	3.8	4.1	4.9	4.0	5.3	S	3.0	2.6	2.5	2.3	2.3	2.3	2.2	2.2	3.4	2.2	2.2	2.2	2.6	3.2	4.2	6.0	4.8	6.0	3.30	24
15	15	4.2	3.6	3.7	5.2	4.2	S	3.3	3.2	2.9	2.8	2.8	2.5	2.1	2.0	2.0	2.0	2.0	2.2	2.6	2.6	3.0	3.3	3.2	2.9	5.2	2.97	24
16	16	2.7	3.0	2.9	3.0	S	3.6	4.3	5.0	2.8	3.5	3.0	2.7	2.4	2.3	2.0	2.0	2.0	2.0	1.9	2.3	2.4	2.7	2.3	2.2	5.0	2.74	24
17	17	2.9	3.2	2.8	S	5.5	6.6	5.8	3.9	3.3	2.7	2.0	1.9	1.9	2.0	2.4	2.2	2.1	2.2	2.3	3.0	3.4	3.3	3.5	3.1	6.6	3.13	24
18	18	3.1	3.6	S	5.6	6.7	5.0	4.1	4.1	3.7	3.1	2.7	2.3	2.2	2.1	1.9	1.8	1.8	1.8	2.2	2.6	2.0	2.0	1.9	6.7	2.98	24	
19	19	2.2	S	2.7	2.0	2.9	2.4	2.4	2.0	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	2.4	3.1	4.6	2.8	4.6	2.25	24
20	20	S	2.1	2.0	2.2	2.2	2.4	2.1	2.1	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.2	3.0	2.3	2.1	S	3.0	2.04	24
21	21	2.1	2.0	2.2	2.4	2.2	2.1	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.9	C	C	1.8	1.9	1.9	2.0	2.8	5.4	S	9.8	9.8	2.55	24
22	22	5.8	8.2	5.2	6.3	5.0	4.7	3.7	4.1	3.6	2.2	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.1	3.0	3.5	S	6.2	6.2	8.2	3.71	24
23	23	5.1	6.5	6.0	7.4	12.0	9.3	5.4	3.0	4.5	3.2	2.4	1.9	1.9	1.9	1.9	1.9	2.1	2.2	2.2	2.1	S	2.0	1.8	2.0	12.0	3.86	24
24	24	1.9	2.2	2.1	2.0	2.0	3.4	3.4	2.5	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.8	1.9	1.9	2.0	S	3.5	4.1	3.9	4.4	4.4	2.47	24
25	25	6.0	6.0	7.1	5.5	6.3	5.5	5.1	4.6	3.7	2.8	2.5	2.3	2.3	2.3	2.0	1.9	1.9	1.9	S	2.0	2.0	1.9	2.0	2.0	7.1	3.46	24
26	26	2.0	2.1	2.1	2.6	2.4	3.2	3.6	2.7	2.2	1.9	2.0	2.1	2.4	2.2	2.0	1.9	1.9	S	1.9	1.9	2.0	2.0	2.1	2.1	3.6	2.23	24
27	27	2.1	1.9	2.3	2.5	3.8	3.7	3.2	2.7	2.4	2.3	2.1	2.1	2.1	2.1	2.1	2.2	S	2.1	2.2	2.3	2.7	3.4	3.5	2.7	3.8	2.54	24
28	28	2.9	3.3	3.3	3.9	4.4	3.4	3.1	3.7	3.9	3.1	2.7	2.4	2.3	2.1	2.0	S	2.0	2.0	2.2	2.5	2.2	2.4	2.4	2.2	4.4	2.80	24
29	29	2.2	2.1	2.1	2.1	2.6	2.5	2.4	2.3	2.2	2.1	2.0	2.0	1.9	1.9	S	2.0	2.0	2.1	2.5	2.3	2.1	2.2	2.3	2.5	2.6	2.19	24
30	30	2.5	2.4	2.3	3.1	3.5	2.5	2.5	2.2	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	1.9	3.5	2.18	24
31	31	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	S	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.4	3.9	4.8	5.3	5.3	2.33	24
HOURLY MAX		6.0	8.2	7.1	7.4	12.0	9.3	5.8	5.0	4.5	3.5	3.0	2.7	2.4	2.3	2.4	3.4	2.2	2.3	2.6	3.0	3.8	5.7	6.2	9.8			
HOURLY AVG		3.4	3.5	3.4	3.7	4.0	3.9	3.5	3.1	2.8	2.4	2.2	2.1	2.0	2.0	2.0	1.9	2.0	2.1	2.4	2.7	3.2	3.3	3.6				

#### STATUS FLAG CODES

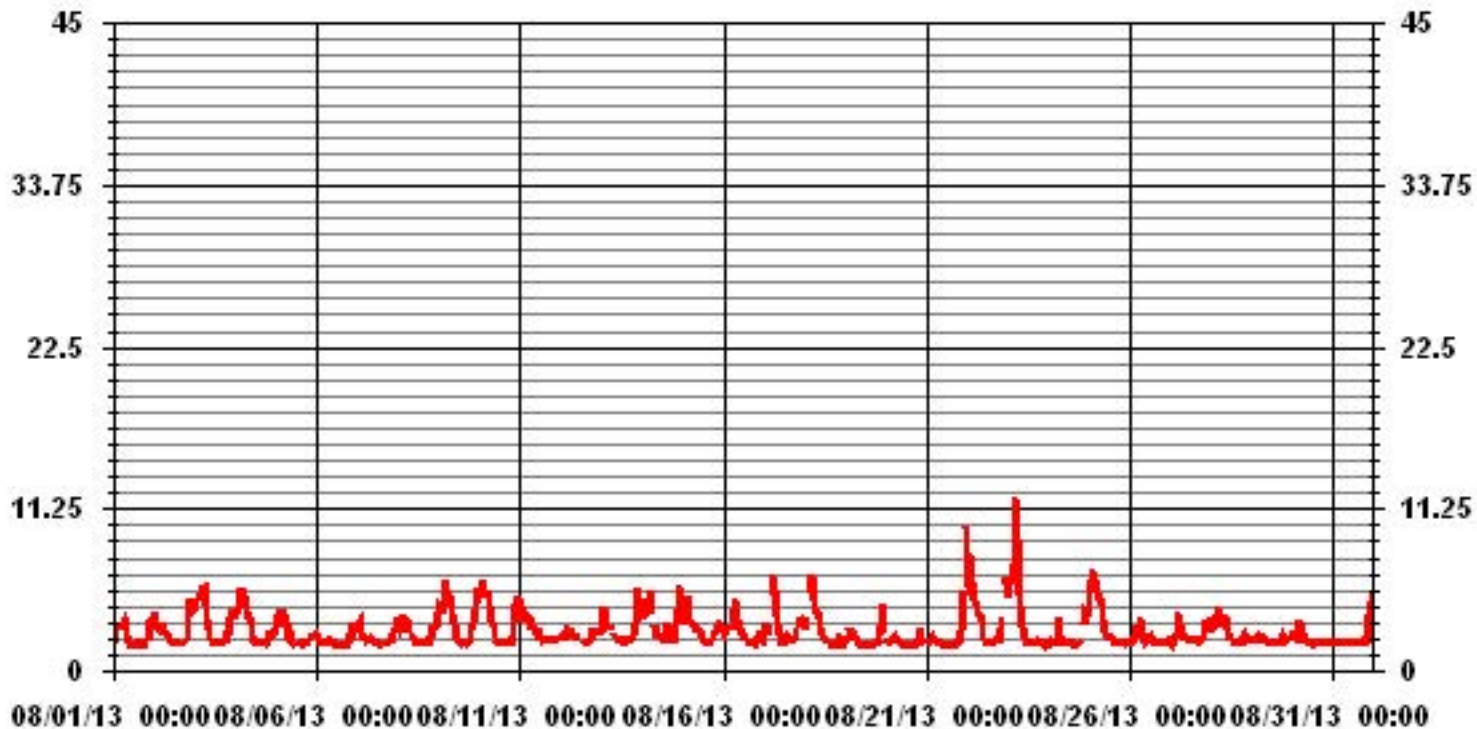
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



#### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM 1-HR AVERAGE:	12.0	PPM	@ HOUR(S)	4	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	3.86	PPM			ON DAY(S)	23
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	1.22		MONTHLY AVERAGE:	2.81	PPM	

### 01 Hour Averages



— LICA35 THC55 PPM

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

AUGUST 2013

## TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST																												
DAY	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00			
1		3.5	3.3	3.3	3.4	3.6	3.9	4.1	4.2	3.5	2.5	2.0	2.0	1.9	2.0	2.1	1.9	2.0	1.9	S	3.0	4.4	4.2	6.0	6.0	3.1	24	
2		5.1	4.5	4.9	4.3	3.0	4.6	3.6	3.1	2.7	2.4	2.3	2.3	2.1	2.1	2.0	2.2	2.1	2.2	S	2.8	6.4	6.7	5.9	5.2	6.7	3.6	24
3		5.8	7.9	6.3	7.6	6.8	10.0	5.8	4.0	3.6	2.9	2.1	2.1	2.1	2.0	2.1	2.1	2.0	S	3.0	3.7	5.4	5.9	6.2	6.1	10.0	4.6	24
4		5.6	5.0	6.8	8.8	7.0	6.6	5.9	4.9	4.4	3.8	3.1	2.5	2.0	2.0	2.1	2.1	S	2.3	2.1	2.4	3.2	3.2	3.2	3.2	8.8	4.0	24
5		5.2	4.0	6.2	4.4	4.2	4.5	5.0	3.1	3.2	2.4	2.1	2.2	2.2	2.3	2.2	S	2.6	2.4	2.3	2.9	3.6	2.9	3.0	2.6	6.2	3.3	24
6		2.8	2.8	2.5	2.3	2.4	2.2	2.3	2.3	2.3	2.2	2.0	2.1	2.1	S	2.1	2.0	2.0	2.4	2.5	2.8	4.8	3.6	3.5	4.8	2.5	24	
7		4.2	3.9	4.7	3.1	2.7	2.5	3.2	3.0	3.0	2.8	2.4	2.2	2.1	S	2.1	2.5	2.1	2.3	3.1	4.0	3.7	3.7	4.0	4.7	3.1	24	
8		4.0	3.5	3.5	3.4	3.4	8.1	6.0	3.3	2.9	2.7	2.1	2.1	S	3.2	2.3	2.1	2.0	2.3	2.3	2.9	4.1	3.8	4.2	4.7	8.1	3.4	24
9		5.5	5.0	5.3	7.8	7.6	6.4	8.6	5.3	4.6	3.8	3.8	S	2.2	2.1	2.3	2.4	2.1	2.3	2.4	6.4	6.5	7.2	6.7	9.8	9.8	5.0	24
10		6.5	10.2	9.0	6.3	6.2	7.0	6.0	4.1	3.7	3.0	S	2.2	2.1	2.2	2.2	2.0	2.1	2.2	3.7	7.0	10.4	7.4	6.9	10.4	5.0	24	
11		8.9	4.5	5.1	5.5	4.8	4.6	3.4	3.5	3.2	S	3.2	2.8	3.1	2.6	2.9	3.5	2.7	3.4	3.3	2.4	3.0	2.6	3.1	3.0	8.9	3.7	24
12		5.4	3.5	3.5	3.1	5.1	3.0	3.4	2.8	S	2.6	2.5	C	C	C	2.5	2.3	2.2	2.3	2.4	4.4	3.6	3.2	3.0	3.9	5.4	3.2	24
13		5.1	6.2	5.0	3.2	4.3	4.3	4.4	S	3.5	2.6	2.5	2.5	2.5	2.3	2.2	2.3	2.3	2.4	2.8	3.2	5.6	14.2	9.1	7.4	14.2	4.3	24
14		4.8	4.1	5.4	7.3	6.9	10.7	S	3.6	3.1	2.8	2.8	2.9	2.6	2.6	Y	Y	3.0	2.8	2.6	2.9	4.3	9.1	15.1	7.3	15.1	5.1	22
15		4.8	4.1	4.8	9.1	5.1	S	3.7	3.6	3.3	3.0	3.0	3.0	2.5	2.4	2.2	2.3	2.2	2.9	3.1	2.9	4.1	3.7	3.5	3.3	9.1	3.6	24
16		3.1	3.4	3.4	3.8	S	4.4	5.4	8.1	3.2	7.9	3.7	3.1	3.0	2.6	2.2	2.3	2.2	2.6	2.2	3.2	3.3	3.2	2.7	2.6	8.1	3.5	24
17		3.3	3.7	3.7	S	9.3	7.6	9.4	4.4	3.6	3.4	2.5	2.2	2.1	2.5	3.3	3.0	2.4	2.7	2.8	3.9	4.1	4.1	4.7	3.6	9.4	4.0	24
18		4.2	5.0	S	8.6	9.4	7.7	4.5	4.5	4.3	3.9	3.1	3.1	2.4	2.5	2.4	2.2	2.0	2.0	2.1	2.5	4.0	3.5	2.3	2.1	9.4	3.8	24
19		2.6	S	3.8	2.1	4.7	3.0	3.6	2.3	2.3	2.1	2.0	2.1	1.9	1.9	2.0	1.9	1.9	2.1	2.1	2.6	3.5	4.5	6.4	3.4	6.4	2.8	24
20		S	2.8	2.3	2.7	2.7	3.0	2.5	2.3	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.4	2.6	3.7	3.4	2.3	S	3.7	2.4	24
21		2.5	2.2	2.6	3.2	2.5	2.6	2.2	2.0	2.1	1.9	2.0	1.9	2.0	C	C	C	2.0	1.9	2.0	2.4	4.3	9.4	S	25.6	25.6	3.9	24
22		7.0	14.8	8.0	9.9	5.7	5.8	4.4	4.9	4.5	3.1	2.1	2.0	2.1	2.8	2.1	2.3	2.3	2.9	2.5	6.0	7.4	S	8.1	8.0	14.8	5.2	24
23		5.8	9.9	7.5	10.9	17.5	10.7	9.6	3.4	7.6	4.8	3.0	2.1	2.2	2.1	2.1	2.2	2.4	2.5	2.8	2.5	S	2.8	2.6	2.4	17.5	5.2	24
24		2.3	6.2	2.6	2.4	2.5	5.3	4.6	2.9	2.2	2.2	2.3	2.1	2.1	2.0	2.1	2.1	2.0	2.1	3.5	S	8.4	5.0	5.3	5.4	8.4	3.4	24
25		14.4	8.5	10.3	7.4	9.6	9.4	6.0	5.7	4.3	3.3	2.8	2.5	2.7	2.5	2.2	2.1	2.1	2.2	S	2.4	2.2	2.2	2.3	2.3	14.4	4.8	24
26		2.3	2.5	2.4	6.5	3.8	5.1	4.1	3.2	2.8	2.1	2.2	2.4	3.0	2.8	2.3	2.1	2.1	S	2.4	2.1	2.2	2.2	2.5	2.3	6.5	2.8	24
27		2.2	P	3.0	3.3	6.5	7.8	4.0	4.0	3.0	2.6	2.3	2.3	2.4	2.3	2.3	2.5	S	3.1	2.4	2.6	4.5	4.5	5.2	3.1	7.8	3.4	23
28		3.2	3.6	3.9	7.1	6.7	3.8	3.5	4.5	4.6	3.6	3.0	2.8	2.6	2.4	2.4	S	2.3	2.2	2.5	3.4	2.5	2.6	2.7	2.5	7.1	3.4	24
29		2.4	2.4	2.3	2.3	3.5	2.9	2.6	2.6	2.4	2.4	2.2	2.1	2.2	2.2	S	2.2	2.4	2.3	4.2	4.2	2.4	2.4	3.1	4.3	4.3	2.7	24
30		3.3	3.1	2.6	5.3	4.9	2.8	3.5	2.4	2.4	2.4	2.2	2.3	2.2	S	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	5.3	2.6	24
31		2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.2	2.1	2.1	2.1	2.1	S	2.0	1.9	2.0	2.6	2.1	2.0	3.0	3.0	5.4	5.8	6.1	6.1	2.7	24
HOURLY MAX		14.4	14.8	10.3	10.9	17.5	10.7	9.6	8.1	7.6	7.9	3.8	3.1	3.1	3.2	3.3	3.5	3.0	3.4	4.2	6.4	8.4	14.2	15.1	25.6			
HOURLY AVG		4.6	4.9	4.6	5.2	5.5	5.4	4.6	3.7	3.3	3.0	2.5	2.3	2.3	2.3	2.2	2.3	2.2	2.4	2.5	3.2	4.1	4.8	4.7	5.1			

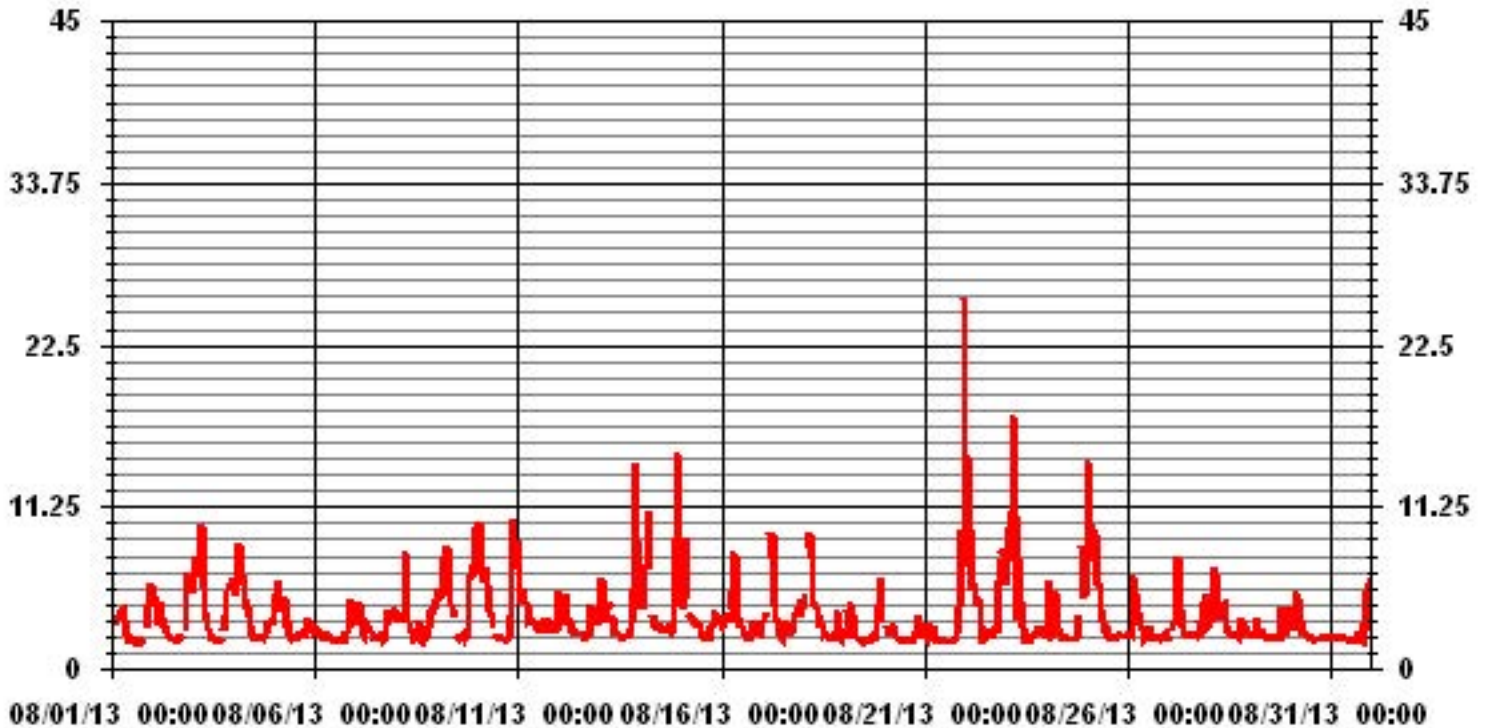
**STATUS FLAG CODES**

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:	703					
MAXIMUM INSTANTANEOUS VALUE:	25.6	PPB	@ HOUR(S)	23	ON DAY(S)	21
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	741	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	2.26					

### 01 Hour Averages



— LICA35 THC55MAX PPM

LICA35  
 THC55 / WDR Joint Frequency Distribution (Percent)

August 2013

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	1.98	2.82	3.53	6.08	6.78	6.08	5.23	3.25	2.54	1.55	1.41	5.37	6.08	6.64	5.09	4.38	68.88
< 10.0	.14	.42	.84	1.13	6.08	9.47	2.26	.56	.84	.28	.00	1.13	2.40	3.81	1.13	.42	30.97
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.14
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.12	3.25	4.38	7.21	12.87	15.55	7.49	3.81	3.39	1.83	1.41	6.50	8.48	10.60	6.22	4.80	

Calm : .00 %

Total # Operational Hours : 707

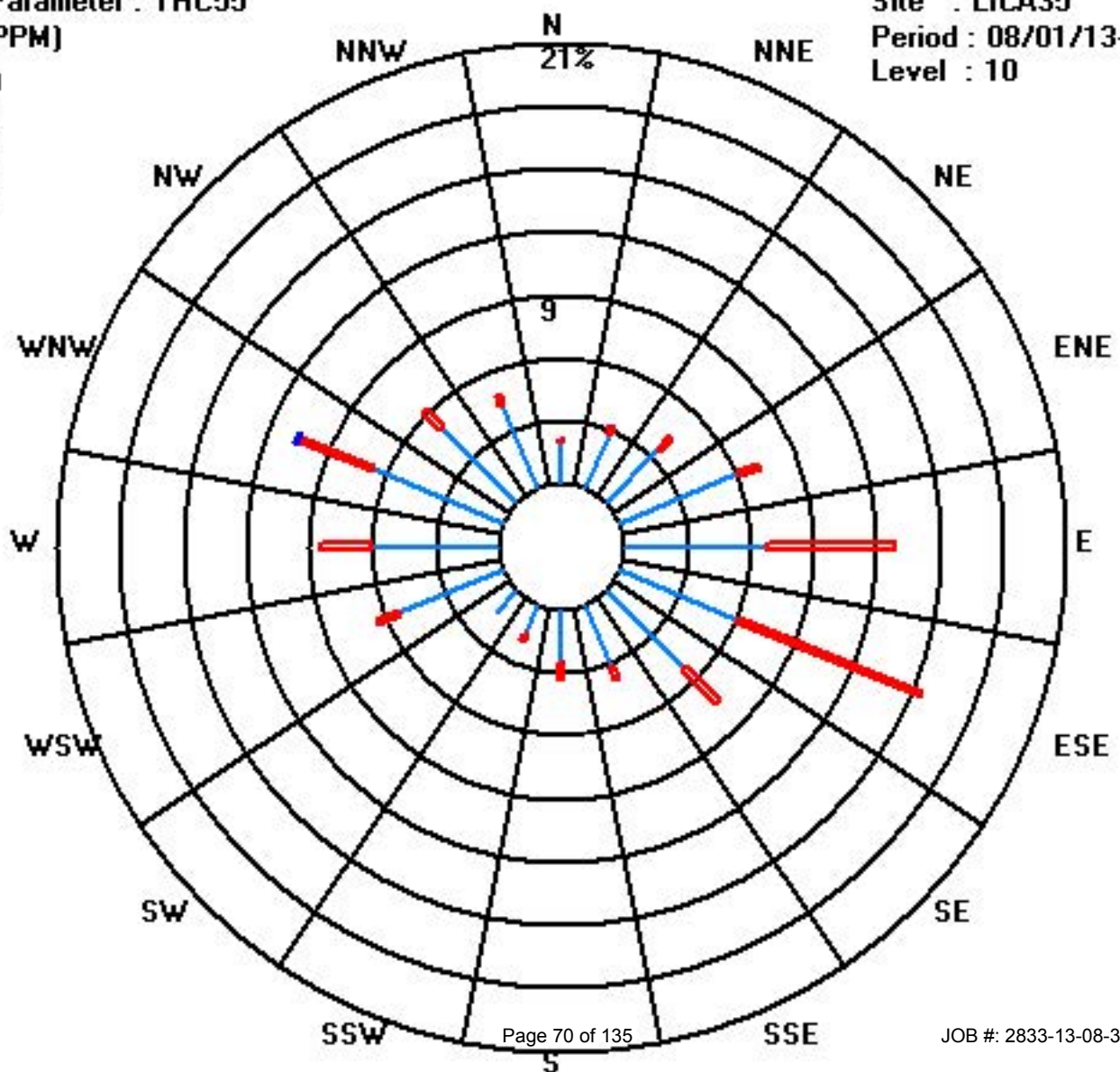
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	14	20	25	43	48	43	37	23	18	11	10	38	43	47	36	31	487
< 10.0	1	3	6	8	43	67	16	4	6	2		8	17	27	8	3	219
< 50.0														1			1
>= 50.0																	
Totals	15	23	31	51	91	110	53	27	24	13	10	46	60	75	44	34	

Calm : .00 %

Total # Operational Hours : 707

Class Limits (PPM)





# Methane

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

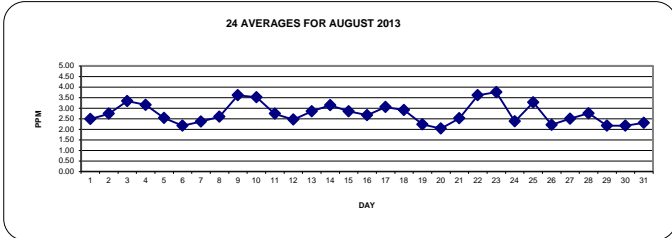
AUGUST 2013

METHANE 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	24-HOUR	
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	1	2.9	2.5	2.8	2.9	3.0	3.2	3.5	3.2	2.5	2.1	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.8	1.8	S	2.3	3.1	3.1	3.6	3.6	2.49	24	
2	2	3.8	3.0	3.0	2.9	2.6	3.3	2.8	2.7	2.5	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	S	2.3	3.7	4.9	3.9	4.0	4.9	2.73	24	
3	3	4.6	4.8	5.0	5.3	5.7	5.8	4.5	3.5	3.0	2.3	2.0	1.9	1.9	1.9	1.9	1.9	S	2.1	2.5	2.6	3.5	4.0	4.0	5.8	3.33	24		
4	4	3.9	4.2	4.3	5.7	5.3	5.2	4.5	4.1	3.6	3.1	2.5	2.1	1.9	1.9	1.9	S	1.9	1.9	2.1	2.5	2.6	2.5	2.8	5.7	3.15	24		
5	5	3.5	3.3	4.0	2.9	3.3	3.6	3.4	2.4	2.6	2.1	1.9	2.0	1.9	1.9	S	1.9	2.0	2.0	2.1	2.4	2.4	2.4	2.4	4.0	2.53	24		
6	6	2.6	2.4	2.1	2.0	2.1	2.0	2.1	2.1	2.0	1.9	1.9	1.8	1.8	S	1.8	1.8	1.8	2.0	2.2	2.3	3.2	3.0	2.9	3.2	2.17	24		
7	7	3.2	3.4	2.7	2.3	2.3	2.1	2.2	2.3	2.3	2.2	2.0	1.9	1.9	S	1.9	2.0	1.9	1.9	2.1	2.4	2.3	2.7	2.9	3.6	3.6	2.37	24	
8	8	3.6	3.0	3.2	2.8	2.8	3.3	3.2	2.8	2.4	2.3	1.9	1.9	S	1.9	1.9	1.9	1.9	1.9	2.3	2.9	2.9	3.1	3.8	3.8	2.59	24		
9	9	4.3	4.1	3.9	5.4	6.1	5.6	5.1	4.6	4.0	3.3	2.4	S	2.0	1.9	2.0	2.0	1.9	2.0	2.1	2.8	3.3	4.1	4.6	5.5	6.1	3.61	24	
10	10	4.9	6.0	6.0	5.4	4.9	5.5	4.4	3.5	3.1	2.5	S	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.4	3.3	4.5	4.2	4.9	6.0	3.51	24	
11	11	4.5	3.3	3.6	3.9	3.7	3.6	3.0	3.0	2.8	S	2.7	2.3	2.3	2.1	2.2	2.3	2.2	2.3	2.2	2.1	2.2	2.1	2.2	2.3	4.5	2.73	24	
12	12	2.5	2.3	2.3	2.6	3.1	2.7	2.8	2.5	S	2.3	2.3	C	C	C	2.1	2.0	2.0	2.1	2.2	2.9	2.5	2.7	2.7	2.7	3.1	2.47	24	
13	13	2.8	4.2	3.7	2.8	3.0	2.9	2.9	S	2.3	2.2	2.2	2.2	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.4	3.3	5.5	4.0	4.8	5.5	2.85	24	
14	14	3.5	3.6	3.9	4.7	3.8	5.2	S	2.9	2.6	2.5	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.5	3.1	4.1	5.8	4.6	5.8	3.14	24	
15	15	4.0	3.5	3.6	5.0	4.0	S	3.1	3.0	2.8	2.7	2.6	2.4	2.1	1.9	2.0	2.0	2.1	2.1	2.5	2.5	2.9	3.1	3.0	2.7	5.0	2.85	24	
16	16	2.6	2.8	2.8	2.9	S	3.4	4.1	4.8	2.8	3.4	2.9	2.6	2.3	2.3	2.0	2.0	2.0	2.0	1.9	2.3	2.4	2.6	2.3	2.2	4.8	2.67	24	
17	17	2.8	3.1	2.7	S	5.2	6.3	5.6	3.7	3.2	2.6	2.0	1.9	1.9	2.0	2.4	2.2	2.1	2.2	2.3	2.9	3.3	3.2	3.5	3.1	6.3	3.05	24	
18	18	3.0	3.5	S	5.4	6.5	4.9	4.0	3.9	3.6	3.0	2.7	2.2	2.2	2.1	1.9	1.8	1.8	1.8	2.1	2.5	2.0	2.0	1.9	6.5	2.91	24		
19	19	2.2	S	2.7	2.0	2.8	2.3	2.4	2.0	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	2.3	3.1	4.5	2.7	4.5	2.23	24	
20	20	S	2.1	2.0	2.2	2.2	2.4	2.1	2.1	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.2	3.0	2.3	2.1	S	3.0	2.04	24	
21	21	2.1	2.0	2.2	2.4	2.2	2.1	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.8	C	C	1.8	1.9	1.9	2.0	2.8	5.3	S	9.4	9.4	2.52	24	
22	22	5.6	7.9	5.0	6.2	4.8	4.6	3.6	4.0	3.5	2.2	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.9	3.4	S	5.9	5.9	7.9	3.61	24		
23	23	4.8	6.2	5.8	7.2	11.6	9.0	5.2	2.9	4.3	3.1	2.4	1.9	1.9	1.9	1.9	2.1	2.2	2.2	2.1	S	2.0	1.8	2.0	11.6	3.76	24		
24	24	1.9	2.2	2.1	2.0	2.0	3.3	3.3	2.5	2.0	2.0	2.0	1.9	1.9	1.9	1.8	1.8	1.9	1.9	S	3.2	3.6	3.5	4.0	4.0	2.37	24		
25	25	4.8	5.3	6.4	5.2	6.1	5.4	4.9	4.4	3.5	2.7	2.4	2.2	2.3	2.2	2.0	1.9	1.9	S	2.0	2.0	1.9	2.0	2.0	6.4	3.28	24		
26	26	2.0	2.1	2.1	2.5	2.4	3.1	3.4	2.6	2.2	1.9	2.0	2.1	2.4	2.2	2.0	1.9	1.9	S	1.9	1.9	2.0	2.0	2.1	2.1	3.4	2.21	24	
27	27	2.1	1.9	2.3	2.5	3.7	3.6	3.1	2.6	2.4	2.2	2.1	2.1	2.1	2.0	2.2	S	2.1	2.2	2.3	2.6	3.3	3.3	2.7	3.7	2.50	24		
28	28	2.8	3.2	3.2	3.8	4.3	3.3	3.1	3.6	3.8	3.0	2.7	2.4	2.3	2.1	2.0	S	2.0	2.0	2.2	2.4	2.2	2.4	2.4	2.2	4.3	2.76	24	
29	29	2.2	2.1	2.1	2.1	2.6	2.4	2.4	2.3	2.2	2.1	2.0	1.9	1.9	1.9	S	1.9	2.0	2.0	2.5	2.3	2.1	2.2	2.3	2.5	2.6	2.17	24	
30	30	2.5	2.4	2.3	3.0	3.4	2.5	2.5	2.2	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	1.9	3.4	2.17	24	
31	31	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.9	S	1.9	1.9	1.9	1.9	1.9	1.9	2.4	2.3	3.8	4.7	5.2	5.2	2.30	24	
HOURLY MAX		5.6	7.9	6.4	7.2	11.6	9.0	5.6	4.8	4.3	3.4	2.9	2.6	2.4	2.3	2.4	2.3	2.2	2.3	2.5	2.9	3.7	5.5	5.9	9.4				
HOURLY AVG		3.26	3.41	3.32	3.60	3.91	3.82	3.37	3.00	2.73	2.39	2.17	2.04	2.00	1.97	1.96	1.95	1.94	1.98	2.05	2.31	2.65	3.10	3.19	3.48				

**STATUS FLAG CODES**

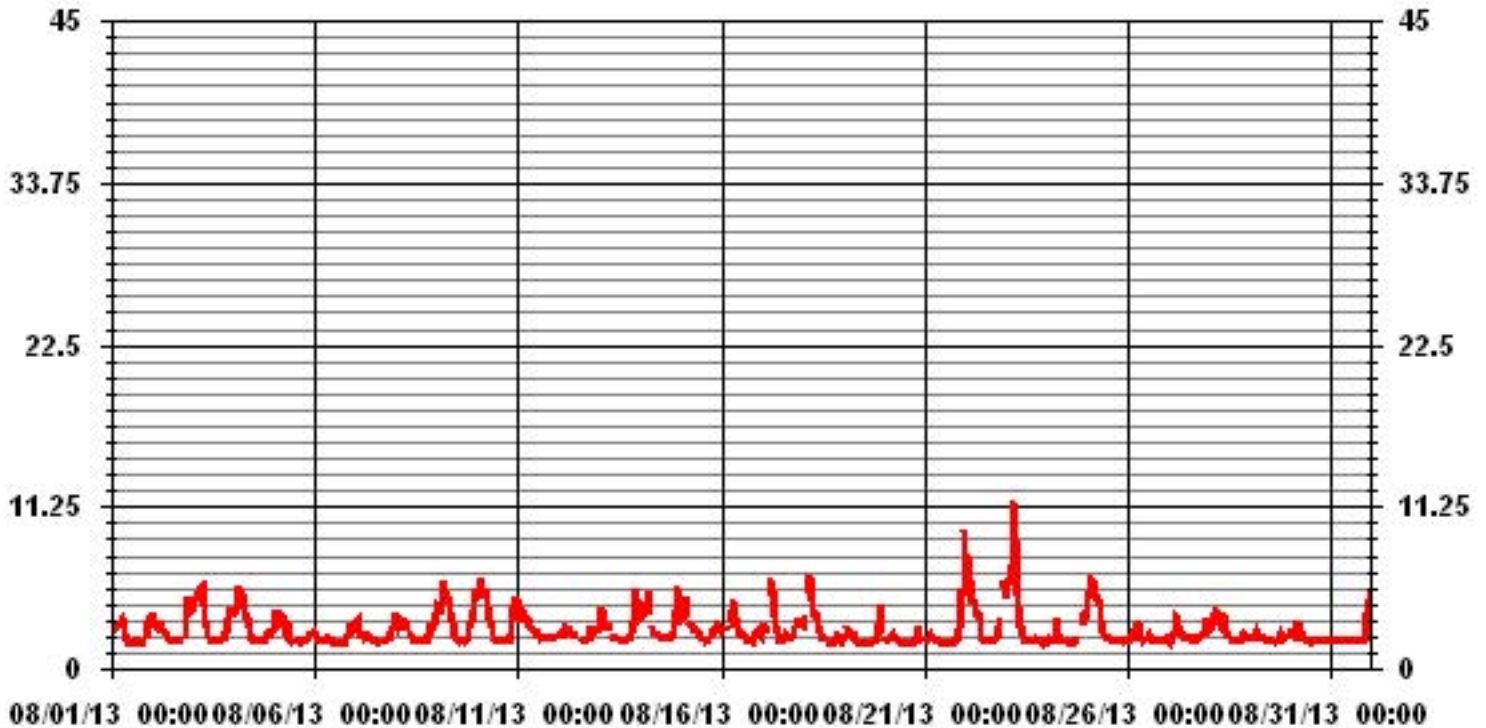
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM 1-HR AVERAGE:	11.6	PPM	@ HOUR(S)	4	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	3.76	PPM			ON DAY(S)	23
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	1.16		MONTHLY AVERAGE:	2.75	PPM	

# 01 Hour Averages



— LICA35 METHANE PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

AUGUST 2013

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	24:00	DAILY	24-HOUR	
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1		3.3	3.2	3.2	3.3	3.5	3.9	3.9	4.0	3.4	2.4	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	S	3.0	4.4	4.0	5.8	5.8	5.8	2.97	24	
2		4.9	4.4	4.8	4.2	3.0	4.4	3.6	3.0	2.7	2.4	2.1	2.1	2.0	1.9	2.0	2.2	2.0	2.1	S	2.7	6.2	6.6	5.7	5.0	6.6	3.48	24	
3		5.6	7.6	6.1	7.5	6.6	9.9	5.6	3.9	3.5	2.8	2.2	2.1	2.1	2.0	2.1	2.0	S	3.0	3.5	5.3	5.7	6.0	5.9	9.9	4.47	24		
4		5.4	4.9	6.6	8.6	6.8	6.4	5.7	4.7	4.2	3.6	3.0	2.4	2.0	2.0	2.0	S	2.3	2.0	2.4	3.1	3.0	3.0	3.0	8.6	3.88	24		
5		4.9	3.8	6.0	4.1	4.0	4.3	4.7	3.0	3.0	2.4	2.0	2.1	2.0	2.1	S	2.0	2.4	2.3	2.8	3.4	2.9	2.9	2.5	6.0	3.12	24		
6		2.7	2.7	2.4	2.1	2.3	2.1	2.2	2.2	2.2	2.1	2.0	2.0	1.9	S	1.9	1.9	1.9	1.9	2.4	2.5	2.8	4.6	3.4	3.3	4.6	2.41	24	
7		4.0	3.7	4.5	3.0	2.4	2.3	3.2	3.0	3.0	2.6	2.4	2.1	2.0	S	2.1	2.5	2.2	2.3	3.1	4.0	3.7	3.7	3.5	3.9	4.5	3.00	24	
8		3.9	3.4	3.5	3.3	3.4	7.9	6.0	3.2	2.8	2.6	2.0	2.0	S	2.0	2.3	1.9	2.0	2.1	2.2	2.9	3.8	3.7	4.0	4.5	7.9	3.27	24	
9		5.2	4.8	5.0	7.5	7.5	6.2	8.5	5.1	4.4	3.7	3.7	S	2.2	2.1	2.1	2.4	2.1	2.3	2.4	6.2	6.4	7.0	6.6	9.5	9.5	4.92	24	
10		6.4	10.0	8.9	6.2	6.1	6.9	5.8	3.9	3.6	3.0	S	2.2	2.1	2.2	2.2	2.0	2.1	2.3	3.6	7.0	10.2	7.1	6.6	10.2	4.89	24		
11		8.8	4.3	5.0	5.4	4.6	4.4	3.2	3.4	3.1	S	3.1	2.5	3.0	2.6	2.8	3.3	2.7	3.3	3.3	2.3	3.0	2.6	3.1	2.9	8.8	3.59	24	
12		5.2	3.5	3.5	3.1	5.0	2.9	3.3	2.7	S	2.5	2.5	C	C	C	2.5	2.2	2.1	2.2	2.3	4.2	3.4	3.0	2.8	3.8	5.2	3.14	24	
13		4.9	6.0	4.9	3.0	4.1	4.1	4.3	S	2.4	2.4	2.3	2.4	2.2	2.1	2.1	2.2	2.2	2.3	2.5	3.0	5.4	14.0	8.8	7.1	14.0	4.12	24	
14		4.5	3.9	5.1	7.1	6.7	10.5	S	3.4	2.9	2.8	2.7	2.7	2.4	2.5	Y	Y	3.0	2.8	2.4	2.8	4.1	8.8	14.9	7.0	14.9	4.90	22	
15		4.6	3.8	4.6	9.0	4.9	S	3.4	3.4	3.1	2.8	2.9	2.9	2.4	2.3	2.1	2.1	2.7	2.9	2.7	3.9	3.6	3.2	3.2	9.0	3.41	24		
16		2.9	3.3	3.3	3.6	S	4.2	5.1	7.8	2.9	7.7	3.5	3.0	2.9	2.4	2.2	2.1	2.2	2.6	2.0	3.0	3.1	3.1	2.5	2.5	7.8	3.37	24	
17		3.1	3.5	3.5	S	8.8	7.4	9.0	4.2	3.5	3.2	2.5	2.0	2.0	2.4	3.1	2.9	2.4	2.7	2.7	3.8	3.9	4.1	4.6	3.5	9.0	3.84	24	
18		3.9	4.7	S	8.4	9.3	7.5	4.3	4.4	4.1	3.8	3.0	2.7	2.3	2.4	2.3	2.0	1.9	1.9	2.3	3.9	3.4	2.2	2.0	9.3	3.68	24		
19		2.5	S	3.7	2.1	4.5	2.8	3.5	2.2	2.3	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.1	2.6	3.4	4.4	6.2	3.2	6.2	2.74	24	
20		S	2.7	2.3	2.7	2.5	3.0	2.4	2.3	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.4	2.6	3.6	3.2	2.3	S	3.6	2.34	24	
21		2.5	2.1	2.6	3.0	2.5	2.4	2.1	2.0	2.0	1.9	1.9	1.9	2.0	C	C	C	1.9	2.0	2.0	2.3	4.2	9.2	S	20.3	20.3	3.54	24	
22		6.9	13.6	7.8	9.5	5.6	5.7	4.3	4.8	4.3	3.1	2.0	2.0	2.1	2.8	2.1	2.2	2.3	2.6	2.5	5.7	7.0	S	7.7	7.6	13.6	4.97	24	
23		5.6	9.4	7.4	10.6	16.9	10.6	9.4	3.3	7.3	4.6	2.9	2.0	2.0	2.0	2.0	2.1	2.3	2.4	2.8	2.3	S	2.8	2.6	2.4	16.9	5.02	24	
24		2.2	6.1	2.6	2.4	2.5	5.1	4.4	2.9	2.1	2.1	2.1	2.0	2.0	1.9	1.9	1.9	2.0	1.9	2.4	S	5.1	4.3	4.5	4.8	6.1	3.01	24	
25		7.7	8.1	9.9	7.2	9.3	9.1	5.8	5.4	4.2	3.0	2.6	2.3	2.5	2.4	2.2	2.0	2.0	2.0	S	2.3	2.2	2.0	2.1	2.1	9.9	4.28	24	
26		2.1	2.3	2.2	5.3	3.6	5.0	3.9	3.1	2.7	2.1	2.2	2.3	3.0	2.8	2.1	2.0	1.9	S	2.4	2.0	2.1	2.2	2.5	2.3	5.3	2.70	24	
27		2.3	P	2.9	3.2	6.3	7.6	3.7	3.8	2.9	2.5	2.2	2.2	2.2	2.2	2.3	S	3.1	2.4	2.5	4.3	4.3	5.0	3.0	7.6	3.31	23		
28		3.1	3.5	3.9	6.9	6.5	3.6	3.4	4.3	4.4	3.4	2.9	2.7	2.5	2.3	2.2	S	2.3	2.2	2.4	3.3	2.4	2.5	2.5	2.3	6.9	3.28	24	
29		2.3	2.2	2.2	2.2	3.4	2.8	2.6	2.4	2.3	2.2	2.1	2.0	2.0	2.0	S	2.0	2.1	2.1	4.0	4.0	2.4	2.4	3.0	4.1	4.1	2.56	24	
30		3.1	3.1	2.5	5.1	4.7	2.7	3.3	2.4	2.3	2.2	2.1	2.2	2.1	S	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.1	2.51	24	
31		2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	1.9	S	1.9	1.9	2.0	2.1	1.9	2.0	2.8	2.8	5.3	5.6	5.9	5.9	2.53	24	
HOURLY MAX		8.8	13.6	9.9	10.6	16.9	10.6	9.4	7.8	7.3	7.7	3.7	3.0	3.0	2.8	3.1	3.3	3.0	3.3	4.0	6.2	7.0	14.0	14.9	20.3				
HOURLY AVG		4.22	4.70	4.42	5.05	5.30	5.26	4.42	3.54	3.18	2.87	2.42	2.23	2.19	2.18	2.15	2.15	2.11	2.29	2.44	3.06	3.88	4.63	4.48	4.73				

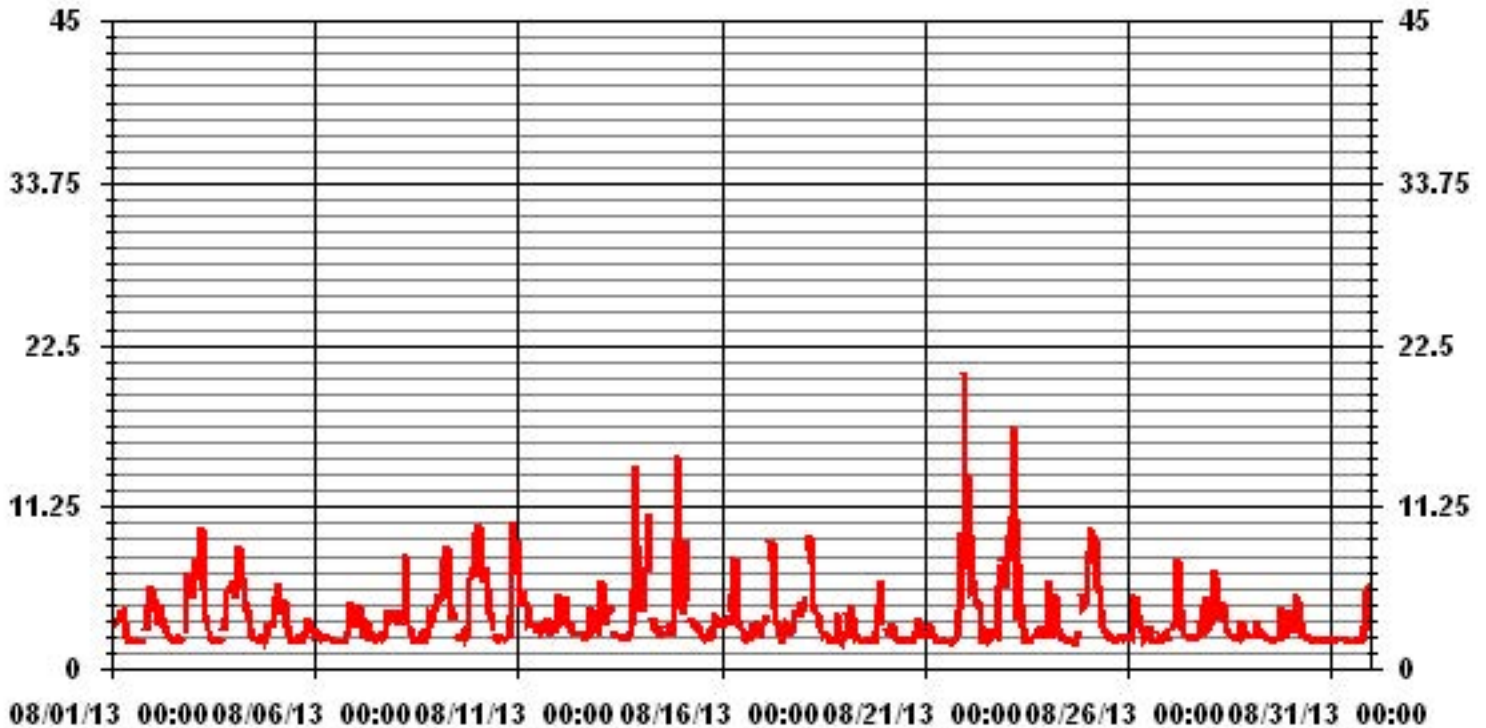
STATUS FLAG CODES

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:	703					
MAXIMUM INSTANTANEOUS VALUE:	20.3	PPM	@ HOUR(S)	23	ON DAY(S)	21
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	741	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	2.10					

### 01 Hour Averages



— LICA35 MATHMAX PPM

LICA35  
 METHANE / WDR Joint Frequency Distribution (Percent)

August 2013

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	1.98	2.82	3.67	6.08	6.78	6.64	5.51	3.25	2.82	1.55	1.41	5.37	6.50	7.21	5.23	4.52	71.42
< 10.0	.14	.42	.70	1.13	6.08	8.91	1.98	.56	.56	.28	.00	1.13	1.98	3.25	.99	.28	28.42
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.14
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.12	3.25	4.38	7.21	12.87	15.55	7.49	3.81	3.39	1.83	1.41	6.50	8.48	10.60	6.22	4.80	

Calm : .00 %

Total # Operational Hours : 707

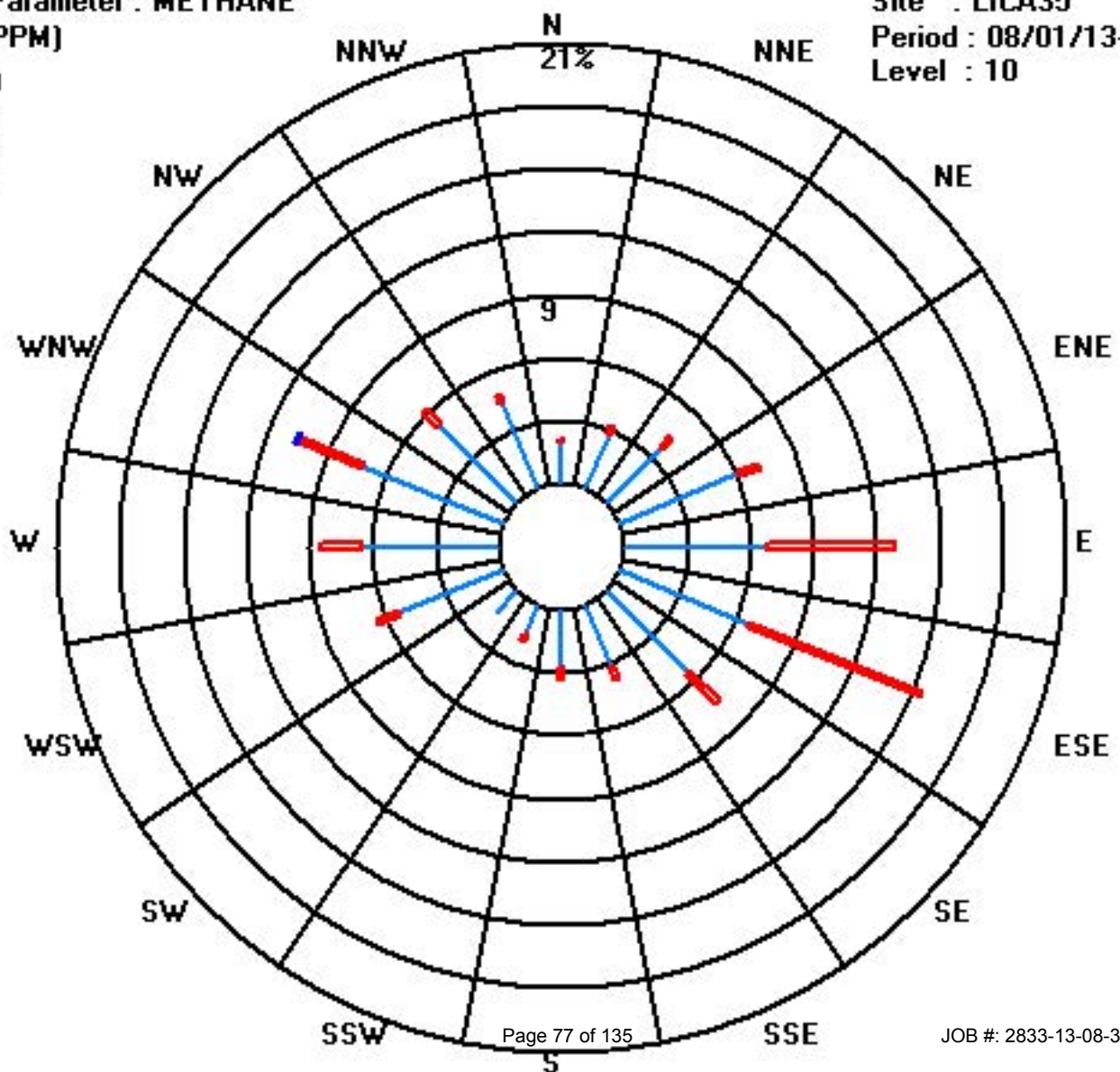
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	14	20	26	43	48	47	39	23	20	11	10	38	46	51	37	32	505
< 10.0	1	3	5	8	43	63	14	4	4	2		8	14	23	7	2	201
< 50.0														1			1
>= 50.0																	
Totals	15	23	31	51	91	110	53	27	24	13	10	46	60	75	44	34	

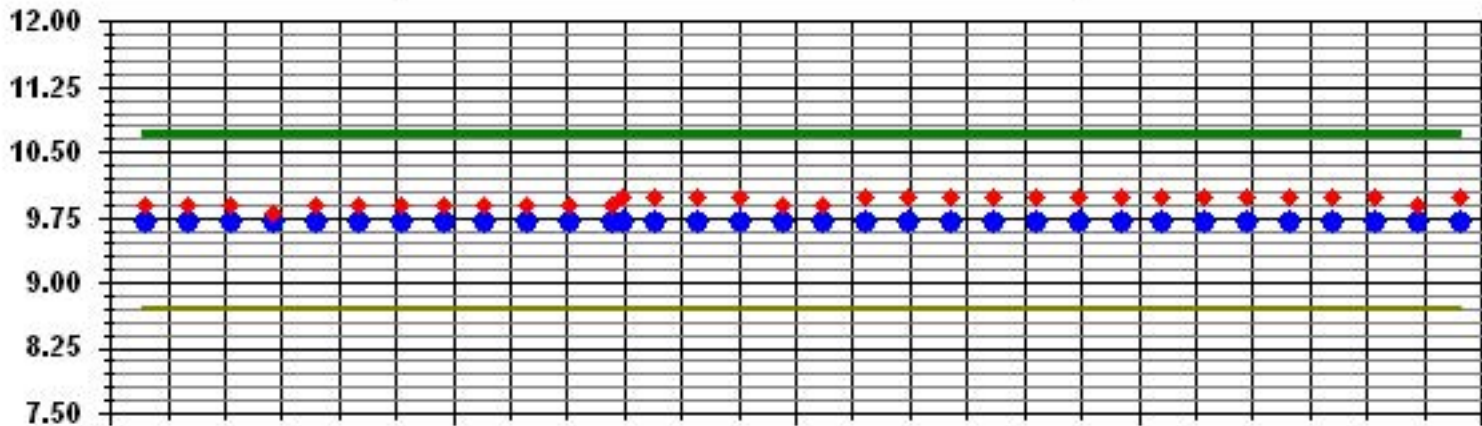
Calm : .00 %

Total # Operational Hours : 707

Class Limits (PPM)



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



8/1/13

8/8/13

8/16/13

8/24/13

9/1/13

◆ Cal Value

◆ Exp Value

— Exp Value +10%

— Exp Value -10%



# Non-Methane Hydrocarbons

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

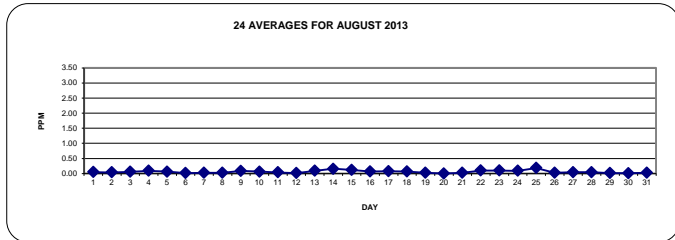
AUGUST 2013

### NON-METHANE HYDROCARBONS hourly averages in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY	24-HOUR		
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
1		0	0.1	0.1	0.1	0	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0	S	0.1	0.1	0.1	0.1	0.1	0.1	0.05	24	
2		0.2	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.1	S	0	0.1	0.1	0.1	0.2	0.2	0.04	24		
3		0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	S	0	0.1	0	0.1	0.1	0.1	0.2	0.06	24		
4		0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0	0	0	S	0.1	0	0	0	0.1	0.1	0.1	0.1	0.2	0.09	24		
5		0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0	0	0	0	0	0	0.1	S	0	0	0	0	0.1	0	0	0	0	0.2	0.06	24	
6		0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.1	0	0.1	0.1	0.1	0.02	24		
7		0.1	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	0.1	0	0.1	0.02	24	
8		0.1	0	0	0	0	0.1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.1	0.1	0	0.2	0.2	0.03	24	
9		0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0	S	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.2	0.2	0.09	24	
10		0.1	0.1	0.1	0.1	0.1	0.1	0.2	0	0.1	0	S	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.2	0.2	0.06	24
11		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	S	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.04	24
12		0	0	0	0	0	0	0	0.1	S	0	0	C	C	C	0	0	0	0	0	0	0.1	0	0.1	0	0	0.1	0.02	24	
13		0	0.2	0.1	0.1	0.1	0.1	S	0.2	0.1	0	0.1	0	0.1	0	0.1	0	0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.09	24	
14		0.1	0.2	0.2	0.2	0.2	0.1	S	0.1	0	0	0	0	0.1	0.1	0.1	1.3	0.1	0.1	0	0.1	0.1	0.1	0.1	0.2	0.2	1.3	0.16	24	
15		0.2	0.1	0.1	0.2	0.2	S	0.2	0.2	0.1	0.1	0.2	0.1	0	0	0.1	0	0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.12	24	
16		0.1	0.2	0.1	0.1	S	0.2	0.2	0.2	0	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0.1	0	0	0.2	0.07	24	
17		0.1	0.1	0.1	S	0.3	0.3	0.2	0.2	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0	0	0	0.3	0.08	24
18		0.1	0.1	S	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0	0.1	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0	0	0.2	0.07	24
19		0	S	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0.1	0.1	0.02	24	
20		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	0.00	24
21		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	C	C	0	0	0	0	0	0.1	S	0.4	0.4	0.03	24	
22		0.2	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0.1	0	0.1	0.1	S	0.3	0.3	0.3	0.3	0.10	24	
23		0.3	0.3	0.2	0.2	0.4	0.3	0.2	0.1	0.2	0.1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.4	0.10	24
24		0	0	0	0	0	0.1	0.1	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0.1	S	0.3	0.5	0.4	0.4	0.5	0.09	24	
25		1.2	0.7	0.7	0.3	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0	0.1	0	0	0	0	0	S	0	0	0	0	0	1.2	0.18	24	
26		0	0	0	0.1	0	0.1	0.2	0.1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.2	0.02	24
27		0	0	0	0	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	0.1	0	S	0	0	0	0	0.1	0.1	0.2	0	0.2	0.04	24	
28		0.1	0.1	0.1	0.1	0.1	0.1	0	0.1	0.1	0.1	0	0	0	0	0	S	0	0	0	0	0.1	0	0	0	0	0	0.1	0.04	24
29		0	0	0	0	0	0.1	0	0	0	0	0	0.1	0	0	S	0.1	0	0.1	0	0	0	0	0	0	0	0	0.1	0.02	24
30		0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.01	24
31		0	0	0	0	0.1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.03	24
HOURLY MAX		1.2	0.7	0.7	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	1.3	0.1	0.1	0.1	0.1	0.1	0.3	0.5	0.4	0.4				
HOURLY AVG		0.12	0.11	0.09	0.08	0.10	0.10	0.09	0.08	0.05	0.04	0.02	0.03	0.01	0.01	0.02	0.05	0.00	0.02	0.01	0.04	0.06	0.08	0.08	0.10					

#### STATUS FLAG CODES

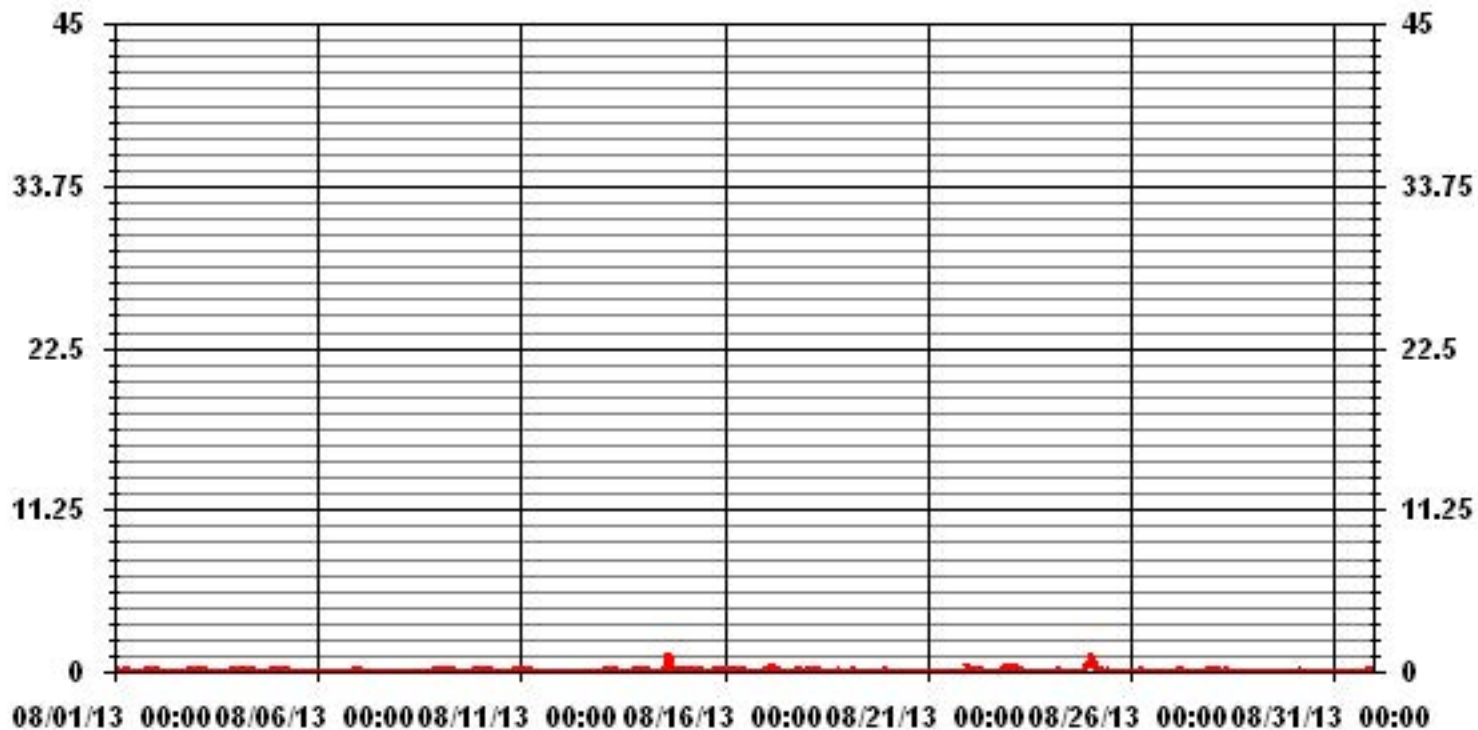
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



#### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	289					
MAXIMUM 1-HR AVERAGE:	1.3	PPM	@ HOUR(S)	15	ON DAY(S)	14
MAXIMUM 24-HR AVERAGE:	0.18	PPM			ON DAY(S)	25
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.11		MONTHLY AVERAGE:	0.06	PPM	

### 01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

AUGUST 2013

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	24:00	DAILY	24-HOUR	
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1		0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.1	0.1	0.0	0.2	0.0	S	0.2	0.3	0.3	0.2	0.3	0.3	0.18	24	
2		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.2	0.2	0.2	0.1	0.0	0.1	0.3	S	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.17	24	
3		0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.0	0.2	0.2	0.0	S	0.1	0.2	0.2	0.3	0.2	0.2	0.3	0.20	24	
4		0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.2	0.0	0.1	0.2	0.2	S	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.21	24	
5		0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.1	0.2	0.3	0.2	S	0.6	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.6	0.24	24
6		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.2	0.2	0.2	S	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.18	24	
7		0.2	0.2	0.4	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.1	S	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.18	24	
8		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.1	S	1.2	0.1	0.2	0.0	0.2	0.2	0.2	0.3	0.2	0.2	0.4	1.2	0.24	24	
9		0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.1	S	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.22	24	
10		0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.2	S	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.3	0.4	0.3	0.4	0.21	24	
11		0.3	0.2	0.3	0.2	0.3	0.2	0.2	0.2	S	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.2	0.3	0.20	24
12		0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	S	0.1	0.2	C	C	C	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.20	24
13		0.2	0.3	0.3	0.2	0.2	0.3	0.2	S	1.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.3	1.2	0.28	24	
14		0.3	0.3	0.3	0.3	0.2	0.3	S	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.3	Y	Y	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.29	22
15		0.3	0.3	0.2	0.3	0.3	S	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.26	24
16		0.3	0.3	0.2	0.3	S	0.3	0.3	0.4	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.1	0.4	0.25	24
17		0.2	0.3	0.2	S	0.5	0.5	0.5	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.5	0.26	24
18		0.3	0.4	S	0.3	0.4	0.3	0.2	0.3	0.3	0.2	0.3	0.4	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.1	0.2	0.2	0.4	0.24	24
19		0.2	S	0.2	0.1	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.3	0.2	0.2	0.2	0.3	0.15	24	
20		S	0.2	0.0	0.1	0.2	0.2	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.0	S	0.2	0.08	24	
21		0.1	0.2	0.1	0.2	0.2	0.3	0.1	0.0	0.2	0.0	0.1	0.0	0.0	C	C	C	0.1	0.0	0.0	0.2	0.2	0.3	S	0.9	0.9	0.15	24	
22		0.3	1.1	0.3	0.5	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.2	0.3	0.4	S	0.4	0.4	1.1	0.28	24	
23		0.4	0.5	0.4	0.4	0.7	0.5	0.4	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	S	0.2	0.2	0.2	0.2	0.7	0.29	24	
24		0.2	0.2	0.2	0.1	0.0	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	1.1	S	3.3	0.8	0.9	0.7	3.3	0.43	24	
25		6.7	1.7	1.9	0.4	0.4	0.3	0.3	0.3	0.4	0.3	0.2	0.2	0.3	0.2	0.1	0.2	0.2	0.2	S	0.2	0.2	0.2	0.2	0.3	6.7	0.67	24	
26		0.2	0.2	0.2	1.3	0.2	0.2	0.3	0.2	0.2	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.2	S	0.2	0.2	0.2	0.2	0.1	0.0	1.3	0.22	24	
27		0.1	P	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	S	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.20	23	
28		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.3	S	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.20	24	
29		0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.2	0.2	S	0.2	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.20	24	
30		0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	S	0.0	0.1	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.3	0.17	24	
31		0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.2	0.1	0.2	0.2	0.1	S	0.1	0.0	0.1	0.6	0.2	0.1	0.3	0.3	0.3	0.3	0.4	0.6	0.19	24	
HOURLY MAX		6.7	1.7	1.9	1.3	0.7	0.5	0.5	0.4	1.2	0.3	0.3	0.4	0.3	1.2	0.3	0.3	0.6	0.3	1.1	0.3	3.3	0.8	0.9	0.9				
HOURLY AVG		0.45	0.32	0.28	0.27	0.25	0.26	0.24	0.21	0.24	0.19	0.17	0.17	0.17	0.19	0.16	0.16	0.18	0.18	0.20	0.21	0.33	0.25	0.25	0.28				

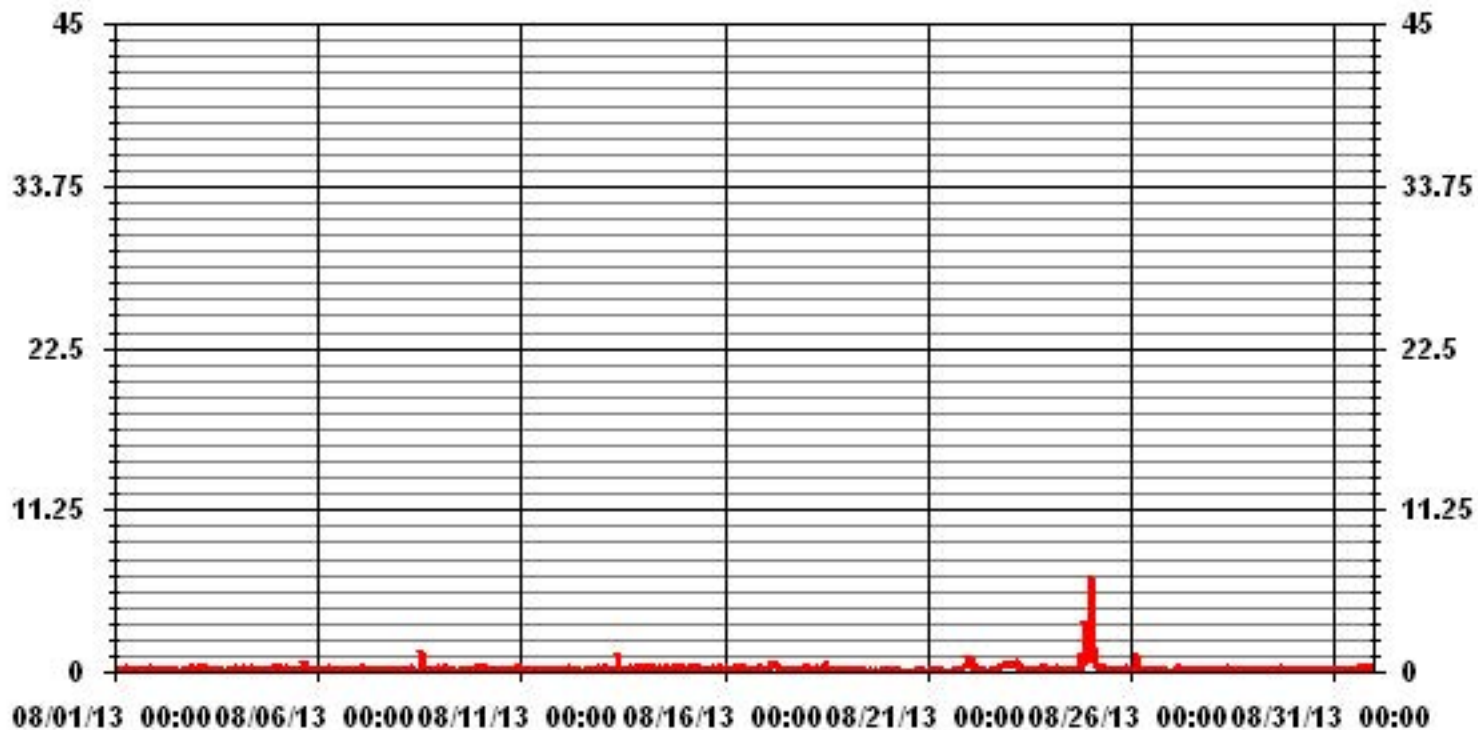
STATUS FLAG CODES

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:	669
MAXIMUM INSTANTANEOUS VALUE:	6.7 PPM @ HOUR(S) 0 ON DAY(S) 25
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	6 HRS
OPERATIONAL TIME:	741 HRS
STANDARD DEVIATION:	0.31

### 01 Hour Averages



— LICA35 IMHCMAX PPM

LICA35  
 NMHC / WDR Joint Frequency Distribution (Percent)

August 2013

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	2.12	3.11	4.38	6.93	12.44	15.27	7.21	3.53	3.39	1.83	1.41	6.36	8.34	9.90	6.22	4.80	97.31
< .5	.00	.14	.00	.28	.00	.14	.14	.28	.00	.00	.00	.14	.14	.70	.00	.00	1.98
< 1.0	.00	.00	.00	.00	.28	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.42
< 2.0	.00	.00	.00	.00	.14	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.28
< 4.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 4.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.12	3.25	4.38	7.21	12.87	15.55	7.49	3.81	3.39	1.83	1.41	6.50	8.48	10.60	6.22	4.80	

Calm : .00 %

Total # Operational Hours : 707

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< .2	15	22	31	49	88	108	51	25	24	13	10	45	59	70	44	34	688
< .5		1		2		1	1	2				1	1	5			14
< 1.0					2	1											3
< 2.0					1		1										2
< 4.0																	
>= 4.0																	
Totals	15	23	31	51	91	110	53	27	24	13	10	46	60	75	44	34	

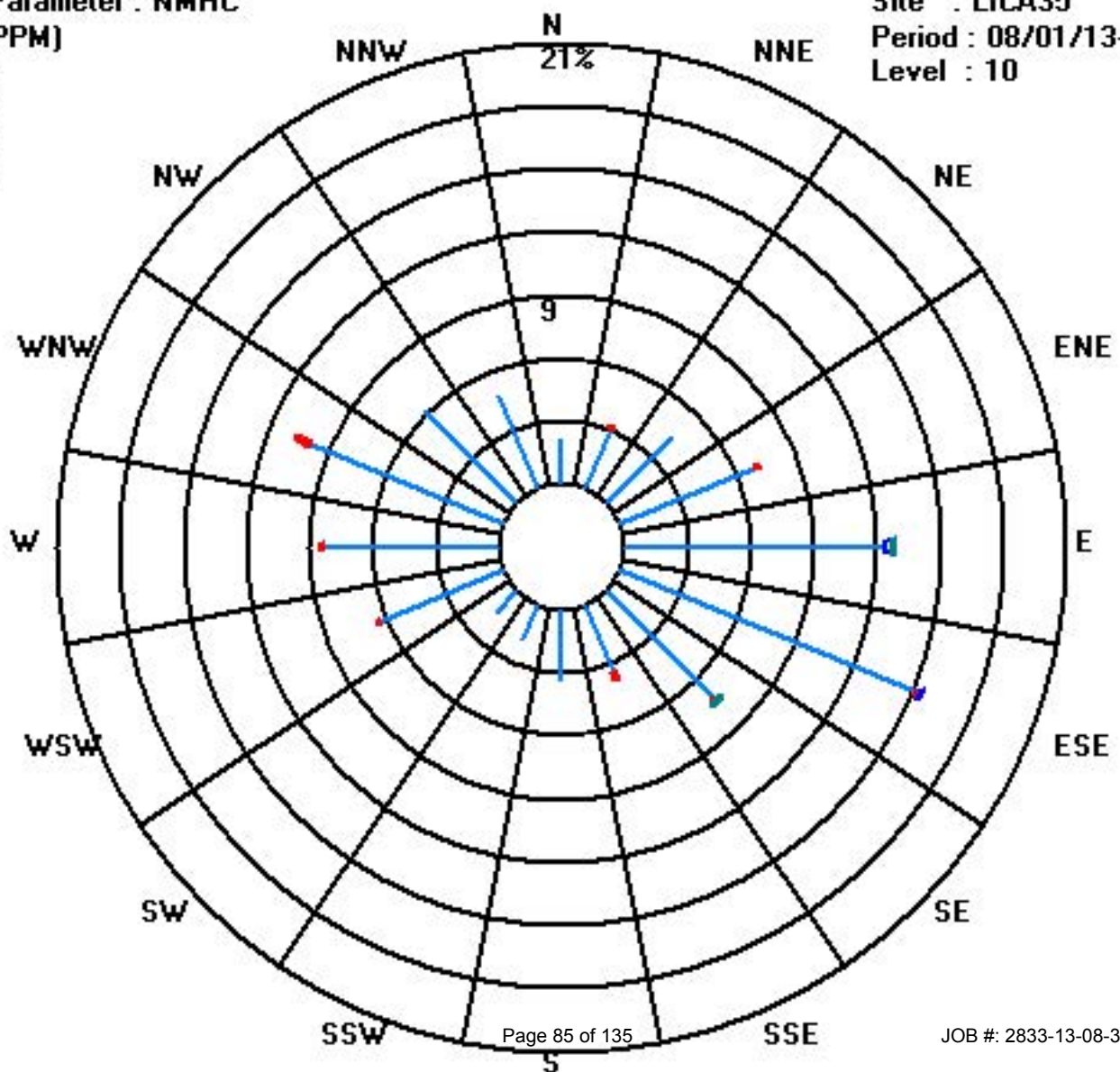
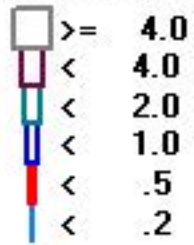
Calm : .00 %

Total # Operational Hours : 707

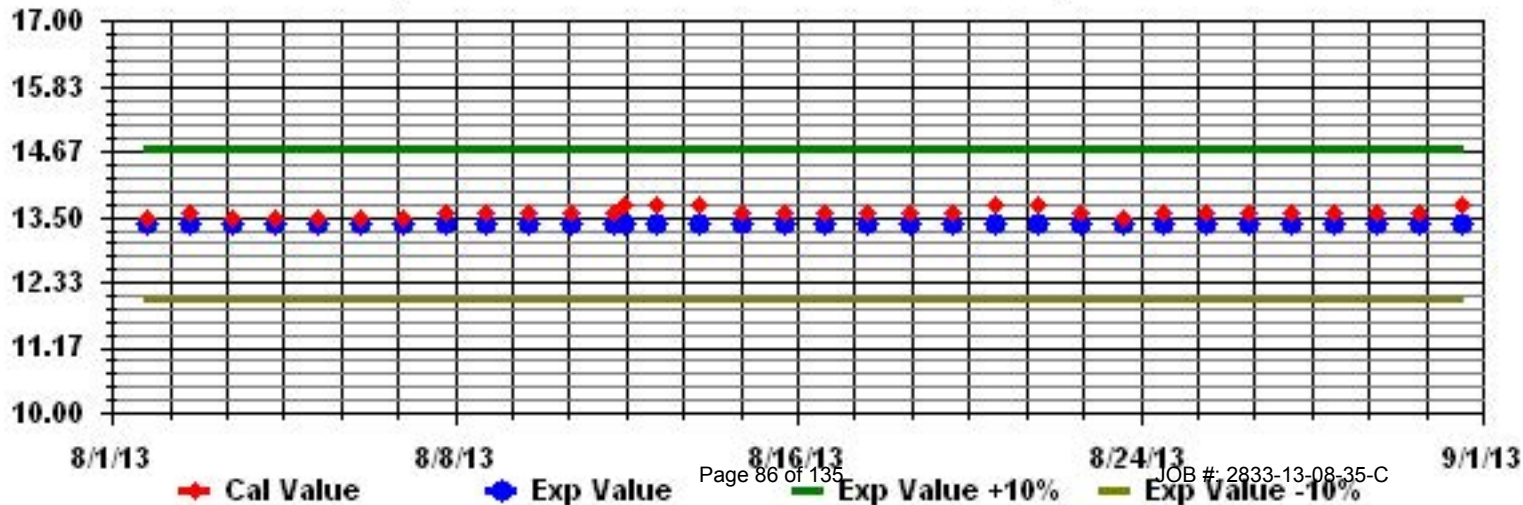
Class Limits (PPM)

Period : 08/01/13-08/31/13

Level : 10



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





# Vector Wind Speed

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

AUGUST 2013

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

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	11.7	8.2	8.2	7.2	3.6	1.5	2.3	4	2.1	1.6	6.9	9.4	10.6	11.9	10.7	9.6	10	9.4	6.8	4.4	5.5	3.1	1.1	3.9	11.9	4	24	
2	5.7	7.1	5.8	6	1.5	3.6	5.1	10.9	13.3	11.3	9.6	7.6	9.1	5.5	9.6	10.3	10	11.5	13.1	8	5.8	4.6	4.2	4.4	13.3	7.3	24	
3	4.6	5.4	5	3.4	5.7	6.1	5.6	7.5	5.9	12.4	15.5	16.2	12.2	11.6	13.6	14.2	12.7	14.6	14.9	7.7	6.3	5.5	5.3	4.3	16.2	7.8	24	
4	5.2	4.8	3.1	4.5	3.9	5.2	4.1	4.6	2.4	7	6.9	8.1	7.1	4.8	2.7	3	8.7	6	4.8	3.4	1.9	4.2	3.7	0.2	8.7	2	24	
5	1.4	0.3	5.4	6.6	6.4	7.8	4.9	7	8.8	7	5.3	6	9.9	11.4	20	12.9	11.5	12	10.4	4.2	4.9	3.1	1.2	5.7	20.0	7.3	24	
6	6.7	6.6	10.3	4.8	5.7	4.9	1.6	4.5	5.2	4.1	7.9	7.8	7.1	7.4	6.5	5.3	9.1	5.4	8.6	6.2	6.9	1.6	0.1	6.4	10.3	5.9	24	
7	3.8	3.1	10.7	11.6	9.9	10.1	7	11.3	10.9	10.8	13.3	14.7	13.1	14.4	16.9	16	12.8	12.6	9.1	6.8	4.6	0.1	2.7	6.9	16.9	9.7	24	
8	3.7	4.3	6.6	6.1	2.9	0.3	0.6	1.6	6	6.4	6.1	5.4	6.3	3.6	2.4	6.9	6	6.2	9.7	3.5	1.9	1.4	0.1	0.4	9.7	4.1	24	
9	0.2	0.8	2.6	1.3	1.4	1.2	2.5	5.1	4.4	6.7	7.5	9.7	10.2	11.3	11.8	11.9	10.7	9.4	5	4.7	4.6	5	4.4	6	11.9	5.8	24	
10	6	6.2	6.3	6.3	5.1	3.9	6.2	10.3	10.2	10.3	14.3	15.3	14.2	13.7	14.9	12.8	11.5	12	8.9	7	8	4.9	5.2	7.2	15.3	9.2	24	
11	6.3	8.3	6.7	7.1	7.8	6.3	10.4	9.3	12.2	16.2	3.7	14.2	21.9	20	8.4	13.7	16.9	11.2	11.1	9.6	10.8	16.1	11	9.3	21.9	11.2	24	
12	8.5	6	5.4	1.2	5.1	8.4	2.5	3.3	9.7	9.5	13.1	14.6	15.2	16.5	17.9	17.5	16.5	13.1	8.6	8.2	7.1	8.7	8.6	6.7	17.9	9.7	24	
13	8	5.4	7.7	4	12.3	10.7	10.8	14.5	10.5	12.1	12.1	10.7	15.1	16.3	17.9	17.5	18.9	17.5	10.8	8	7.8	6.6	5	7.6	18.9	11.2	24	
14	8.5	7.4	4.9	6.4	6.3	4.6	7.5	10.2	6.8	8.4	11.4	12.4	13.7	12.5	14.6	14.4	12.4	12.7	7.8	5.8	5.9	5.2	5.6	6.8	14.6	8.8	24	
15	6.3	5.8	5.4	6.4	7.4	6.8	8.7	10.4	8.7	9.7	11.9	13.9	14.1	14	15	11.5	13.7	9.5	6.3	6.8	8.1	6.8	11	5.3	15.0	9.3	24	
16	5.1	4.9	5.6	3.6	2.1	4.5	3.7	7.6	1.8	4.5	2.8	4.1	2	4.7	4.8	3.6	3.2	5.5	6.9	7.1	5.5	9.9	9.7	7.3	9.9	5.0	24	
17	5.9	5.2	5	3.5	3.3	1	5.1	2	1.4	3.5	10.3	9.1	10.7	10	8	4.4	3.1	8.1	3.8	4.5	4.6	3.5	3.3	0.8	10.7	5.0	24	
18	3.1	3.6	2.3	3.7	5.1	3.2	2	2	3.9	1.5	4.5	3.2	4	7.1	9.7	9.2	10.9	10.7	7.5	6.1	5.2	10.4	10.1	6.6	10.9	5.7	24	
19	7.1	6.9	9.5	8.7	9.5	6.7	9.2	16.3	12.6	14.1	19.5	19.5	21.8	20.2	22.7	20.3	15.5	15.3	21.7	5.6	4.2	3.1	4.4	13.6	22.7	12.8	24	
20	16.5	14.1	14.2	12.8	14.9	15.2	14.7	17	19.6	23.7	28.4	32.5	32	34	<b>38</b>	37.9	33.2	26.4	14.2	8.9	8.4	13	17	11.7	<b>38.0</b>	<b>20.8</b>	24	
21	15.2	15.9	13.7	13.4	14.9	15.7	14.7	22.2	27.3	23.3	23	22.3	25.6	23.5	23.9	21.3	16.6	9.8	7.9	2.6	0.6	1	0.1	0.3	27.3	14.8	24	
22	0.4	2.5	2.5	6.5	6	6.9	6.4	4.4	5	12.5	17	14.5	17.6	18.8	18.8	20.2	18.2	12.1	6.7	5.7	3.7	0.2	1.4	0.8	20.2	8.7	24	
23	2.6	4.3	3.6	2.6	8.2	6.5	6	2.1	2.6	6.7	8	9.8	9.4	11.7	13	10.7	8.8	6.3	6.5	6.6	10.3	17.4	4.4	13.1	17.4	7.6	24	
24	13.4	13.6	15.5	9.4	2.7	4.4	6.9	6.3	6.2	2.5	4.4	9.2	8.5	8.6	9.1	8.7	7.6	7	5.1	6.1	2.7	1.6	0.7	0.4	15.5	6.7	24	
25	2.4	4.3	5.3	4.9	9.8	7.7	8.1	10.7	9.8	8.9	8.8	6	4.7	7.4	12.9	18.7	16.8	12.5	10.7	6.8	10.2	12.2	11	9.8	18.7	9.2	24	
26	7.2	7.5	2.1	5	1.6	2.4	5	4.3	12.9	18.7	17.8	5	4.8	10.6	10.1	18.3	19.4	19	15.8	10.9	9.5	12.4	9.9	10.4	19.4	10.0	24	
27	6.7	8.2	7.9	2.1	8.5	7	4.1	5.3	5.6	5.9	3.6	2.1	5.7	4.4	3.9	4.2	6.3	9.2	7.1	4.8	1.4	1.8	1	5.2	9.2	5.1	24	
28	3.5	2.6	0.9	0.7	0.2	3.4	1.7	2.5	9.6	6.1	3.7	6.1	4.4	5.5	6.1	4.4	9.1	6.1	10.4	5.9	8.1	5.4	7.8	9.8	10.4	5.2	24	
29	11.2	11.9	8.6	2	5.2	9.1	9.1	7.1	7.4	9.8	10.8	12.6	14	11.8	11.7	11.3	11	12.4	11.7	8	8.6	10.2	7.9	10.8	14.0	9.8	24	
30	6.3	4.3	6.4	4.7	3	1.9	9.1	9.3	10.2	13.8	16.7	22.8	22.5	21.6	20.9	27.9	27.6	24.3	22.8	26.1	19.9	17.9	14.7	14.6	27.9	15.4	24	
31	15.9	16.9	15.9	16.7	15.8	15.5	13.9	9.9	11.7	13.1	12.4	11.7	9.3	8	4.4	6.2	8.7	10	6.3	6	5.5	3.6	1.5	1.5	16.9	10.0	24	
HOURLY MAX	16.5	16.9	15.9	16.7	15.8	15.7	14.7	22.2	27.3	23.7	28.4	32.5	32.0	34.0	38.0	37.9	33.2	26.4	22.8	26.1	19.9	17.9	17.0	14.6				
HOURLY AVG	6.7	6.7	6.9	5.9	6.3	6.2	6.4	7.9	8.5	9.7	10.9	11.5	12.2	12.3	12.9	13.1	12.8	11.5	9.7	7.0	6.4	6.5	5.6	6.4				

### STATUS FLAG CODES

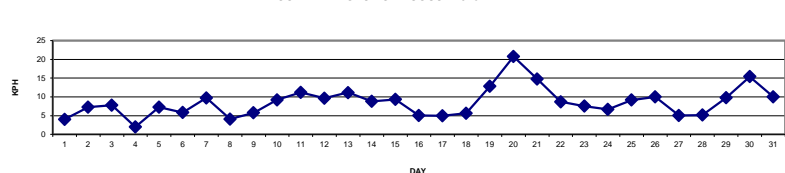
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: November 24, 2011

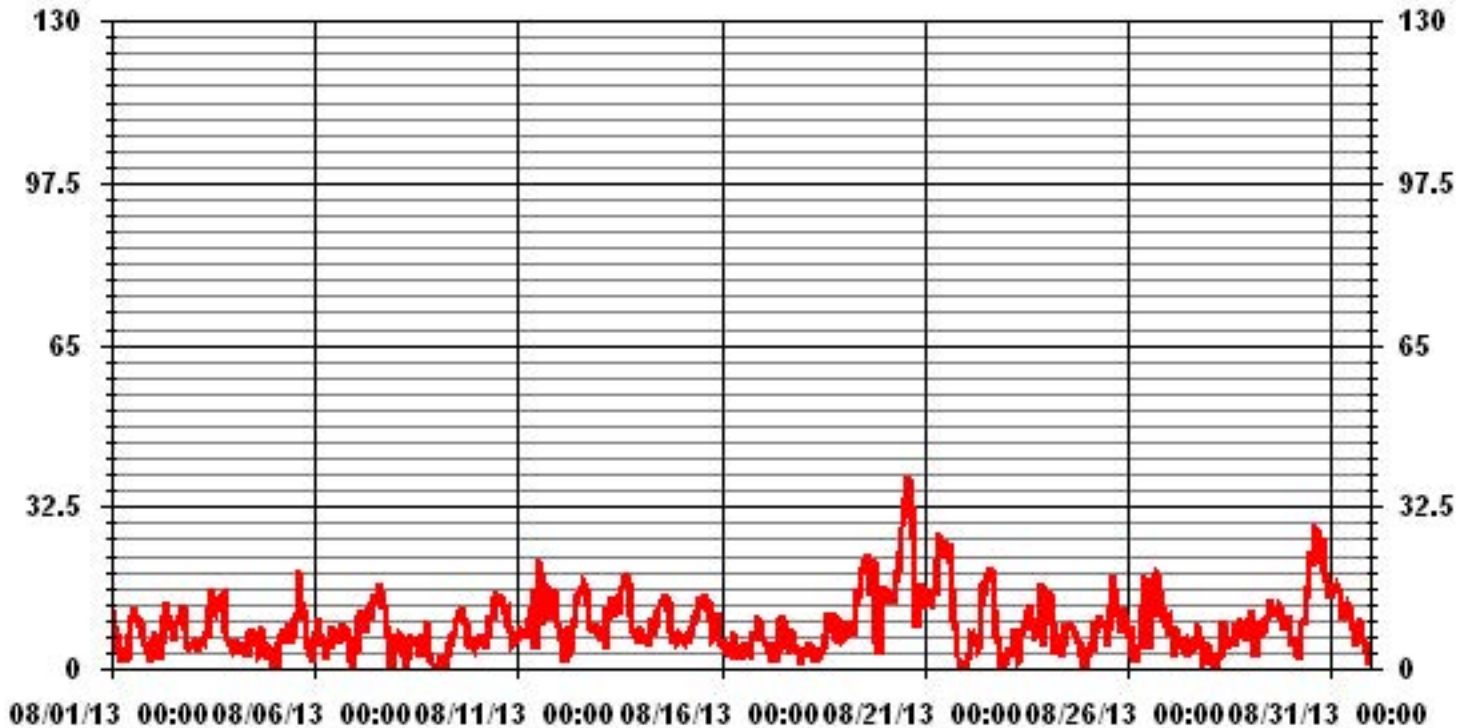
### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	38.0	KPH	@ HOUR(S)	14	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:	20.8	KPH			ON DAY(S)	20
CALMS (≤ 0 KPH)	1.48	%	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	5.81		MONTHLY AVERAGE:	8.75	KPH	

24 HOUR AVERAGES FOR AUGUST 2013



# 01 Hour Averages



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

AUGUST 2013

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST																								DAILY	
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	
DAY																									
1	16.1	14.2	10.7	12	7.5	5.8	5.2	7.5	9.7	14.4	21	23.9	29.4	28	28.4	27.2	22.9	18.3	13.4	9.6	9.1	6.7	5.5	10.8	29.4
2	10.4	10.7	9.1	9.7	5.9	5.5	13	17.3	20.9	25.3	22.6	23.2	22.1	17.9	21.6	26	22.6	22.8	21.2	14.1	8.4	6.7	5.8	6.2	26
3	6.8	6.9	6.9	6.3	9.8	11	11.5	13.3	14.6	24	30.1	32.2	30.5	29.9	30.3	29	28	29.6	24	13.7	9.9	7.7	7.9	7.2	32.2
4	7.5	7.7	6.6	7.7	6.4	7.8	9.3	9	10	17.1	17.3	20.2	24	20.7	19.6	12.6	15.8	12.8	8.1	8.1	8.8	10.9	10.9	4.8	24
5	9.2	4.9	21.4	11.7	9.7	12.1	9.5	12.9	14.5	16.2	18	20.2	19.6	44.6	38.7	25.9	23.2	26.1	20.4	8.2	10	8.5	9.8	10.7	44.6
6	13.9	18	20.9	11.9	9.8	8.7	9.1	11.4	12.6	14.5	15.4	18.8	18.9	26.2	17.9	20	18.2	22.1	17.5	10.6	12	9.2	3.4	14.2	26.2
7	8.8	8.3	28.3	22.9	17	22.7	20.1	20.7	19.4	19	21.8	24.8	22.7	0	28.1	24.6	23.6	21	21.3	14.1	8.6	2.8	4.7	9.3	28.3
8	6.7	6.9	8.6	8.2	6.1	3.4	3.6	7.6	11.7	15.7	17.5	19	16.2	16.8	13.3	15.8	20.7	15	19.5	7.4	5.7	5.4	3.1	3.1	20.7
9	3.1	3.7	5.8	6.5	4.2	4.6	6.1	9.7	9.7	17.7	19.5	21.6	26.1	25	24.2	33.6	21.5	19	9.9	6.9	6.5	8.4	7.7	10.5	33.6
10	9.9	7.6	8.5	9.6	8.5	7.6	14.9	15.1	17.1	21.1	27.8	27.4	28.6	27.1	27.5	25.2	24.5	23.5	16.1	11.3	10	7.3	7.6	9.1	28.6
11	8.7	12.4	10.7	10.2	11.9	10.2	17.8	16.4	19.4	24.4	50	36.7	40.9	37.7	32.5	43.6	28.6	45	18.1	24.2	30.6	35.6	22	15.6	50
12	13.6	12.6	11.8	4.7	12.2	16.7	11.1	9.8	18.4	17.2	22.4	25.8	24.4	30.4	27.5	27	26.8	22.8	12.2	13.8	12.3	12.9	12.6	11.5	30.4
13	10.6	8.9	14.6	9.4	17.7	16.8	20.3	24.3	17.5	21.8	24.1	25.7	28	31	28.7	29.6	29.7	24.6	20.1	11.8	12.2	8.4	7.4	12	31
14	13.1	11.1	8.2	10.7	12	7.2	15	15.9	15.9	18.1	25.2	25.5	25.6	24.7	30	25.4	24.3	21.2	17.5	11.3	9.3	6.7	8.2	11.4	30
15	10.2	9.7	11.5	9.6	11.6	12.4	14.4	17.4	14.4	19.3	20.5	31.9	28.5	27.1	29	27.5	22.5	19.7	9.9	12.8	16.5	13.7	14.2	9.8	31.9
16	7.6	7.1	8	7.9	6	7.5	7.7	14.2	9.9	9.9	12.9	12.7	14.1	13.1	17.3	10.2	11.8	13.4	11.8	13.3	12.7	13.7	15.1	12.4	17.3
17	10	8.5	10	6.8	6.9	6.4	14.8	9.9	7.3	13.6	20.7	23.7	21.5	20.9	24.2	21.3	9.4	16.2	16.3	9.3	7.2	8.1	7	3.5	24.2
18	6.7	11.9	7	12.5	10	11	7.2	10.1	12.6	13.2	14.2	12.5	14.3	18.7	22	19.7	25.8	20	15.2	11.6	44.6	60.4	32.9	19.3	60.4
19	12.9	12.8	18.5	15.1	13.7	14.5	21.3	26.3	25.4	27.5	35.4	33.7	45	37	40.6	42.3	32.2	29.4	59.8	13.9	9.4	12	10.7	26.5	59.8
20	29.7	28.4	27	22.3	25	23.5	24.5	28.8	40	44	58	68.4	57.1	57.2	63	69.7	51.1	43.5	28.5	13.6	16.1	25.1	32.5	18.1	69.7
21	24.5	24.4	20.5	23.3	23.3	23.7	29	38.9	45.6	39.4	37.4	37.9	44.7	40.5	40.8	35.7	32.5	23.4	17.9	4.7	4.2	8.1	1.9	4.6	45.6
22	5	6	9	10.1	9.7	9	8.9	8.4	10.4	25.2	32.7	28.3	37.8	35.6	36.3	34.2	34.9	27.6	16.6	8.8	9.3	4.2	6.3	5.7	37.8
23	6	9.4	6.6	8.8	10	10.5	11	9.3	9.9	16.3	19.6	20.5	22.3	24.5	20.7	18.7	14.6	12.8	13.6	14.3	27.3	36.8	25.6	24.6	36.8
24	30.4	29.4	30.5	20.5	11.1	13.8	9.8	10.3	12	11.9	13.6	19.4	21.1	20.1	21.1	20.7	20.2	13.4	9.1	10.3	7.3	5.6	3.7	3.4	30.5
25	5.7	7.9	8.2	7.9	15.5	13.4	12.7	17.8	20.4	18.3	20.3	15.9	17.5	15.4	25.4	27	33	22.2	20.2	12.4	19.2	17.7	19.3	14.3	33
26	14	12.4	7.9	10.9	8.6	11.4	11.6	14.9	28.5	31.4	29.5	20.2	21.5	29.9	21.2	35.9	33.3	32.2	27.9	20.1	17.5	19.4	14.4	16.6	35.9
27	13.2	P	22.3	18.6	15.5	10.9	9.7	11.1	11.1	12.3	10.6	12.5	13	12.4	13	13.9	16.4	18.4	11	8.4	5.9	6.2	9.8	9.4	22.3
28	8.9	5.8	3.6	4.7	13.3	8	5.7	12	17.1	14.4	12.6	20.9	21.3	17.8	18.1	12.9	14.8	13.9	17.7	19.3	16.5	14.1	21.4	19.8	21.4
29	20	22.9	22.3	13.6	14.8	20.2	16.9	14.3	14.2	16.7	22.7	26	25.9	25	21.1	22.1	19.2	21.3	20.2	12.9	13.6	19.2	20.1	29.2	29.2
30	22.3	17.5	21.2	12.2	11.9	10.5	17.4	18.2	21.5	22.5	32.4	34.4	34.1	34.7	42.1	41.9	43.5	37.3	38	42.6	31.7	31.3	24.5	25.1	43.5
31	25.4	27.4	31	30.8	29.9	25.7	24.8	21.4	19	25.3	22.6	21.4	20.3	16.5	13.6	15.6	17.6	26.7	14.6	9.6	10.1	6.1	4.7	4.7	31
PEAK	30.4	29.4	31.0	30.8	29.9	25.7	29.0	38.9	45.6	44.0	58.0	68.4	57.1	57.2	63.0	69.7	51.1	45.0	59.8	42.6	44.6	60.4	32.9	29.2	

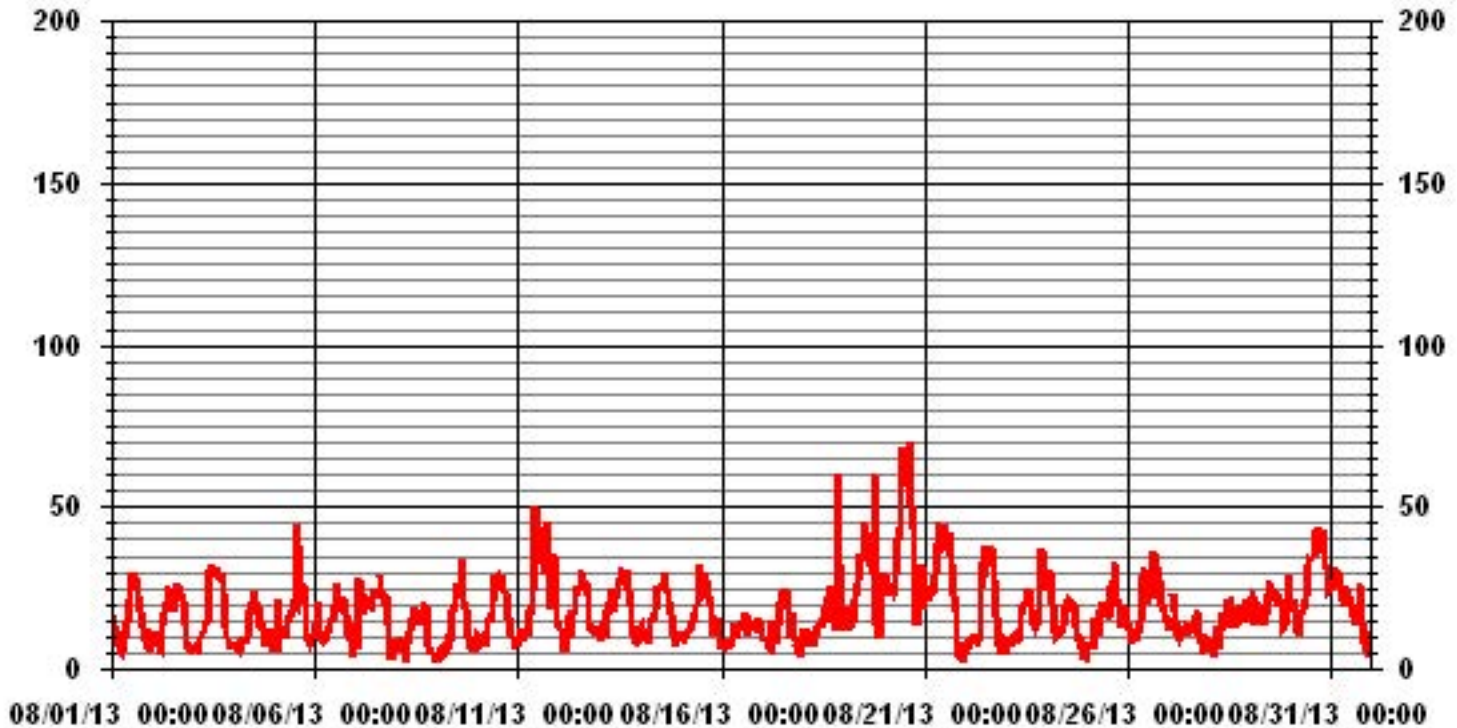
STATUS FLAG CODES

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 INSTANTANEOUS READING	69.7	KPH	@ HOUR(S)	15
			ON DAY(S)	20

# 01 Hour Averages



— LICA35 WSMAX KPH

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

August 2013

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	.67	1.47	1.88	2.28	5.24	4.56	2.95	1.20	1.20	.80	.53	2.28	2.15	4.30	2.41	1.47	35.48
< 12.0	1.34	1.61	2.01	4.30	5.10	8.46	2.28	1.74	.80	.13	.67	1.74	3.62	2.15	2.41	2.82	41.26
< 20.0	.13	.00	.40	1.20	2.01	2.95	2.01	.80	1.20	.80	.26	2.41	.80	1.47	1.74	.13	18.41
< 29.0	.00	.00	.00	.00	.00	.00	.26	.00	.00	.13	.00	.00	1.34	2.15	.00	.13	4.03
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.40	.40	.00	.00	.80
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.15	3.09	4.30	7.79	12.36	15.99	7.52	3.76	3.22	1.88	1.47	6.45	8.33	10.48	6.58	4.56	

Calm : .00 %

Total # Operational Hours : 744

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	5	11	14	17	39	34	22	9	9	6	4	17	16	32	18	11	264
< 12.0	10	12	15	32	38	63	17	13	6	1	5	13	27	16	18	21	307
< 20.0	1		3	9	15	22	15	6	9	6	2	18	6	11	13	1	137
< 29.0							2			1			10	16		1	30
< 39.0													3	3			6
>= 39.0																	
Totals	16	23	32	58	92	119	56	28	24	14	11	48	62	78	49	34	

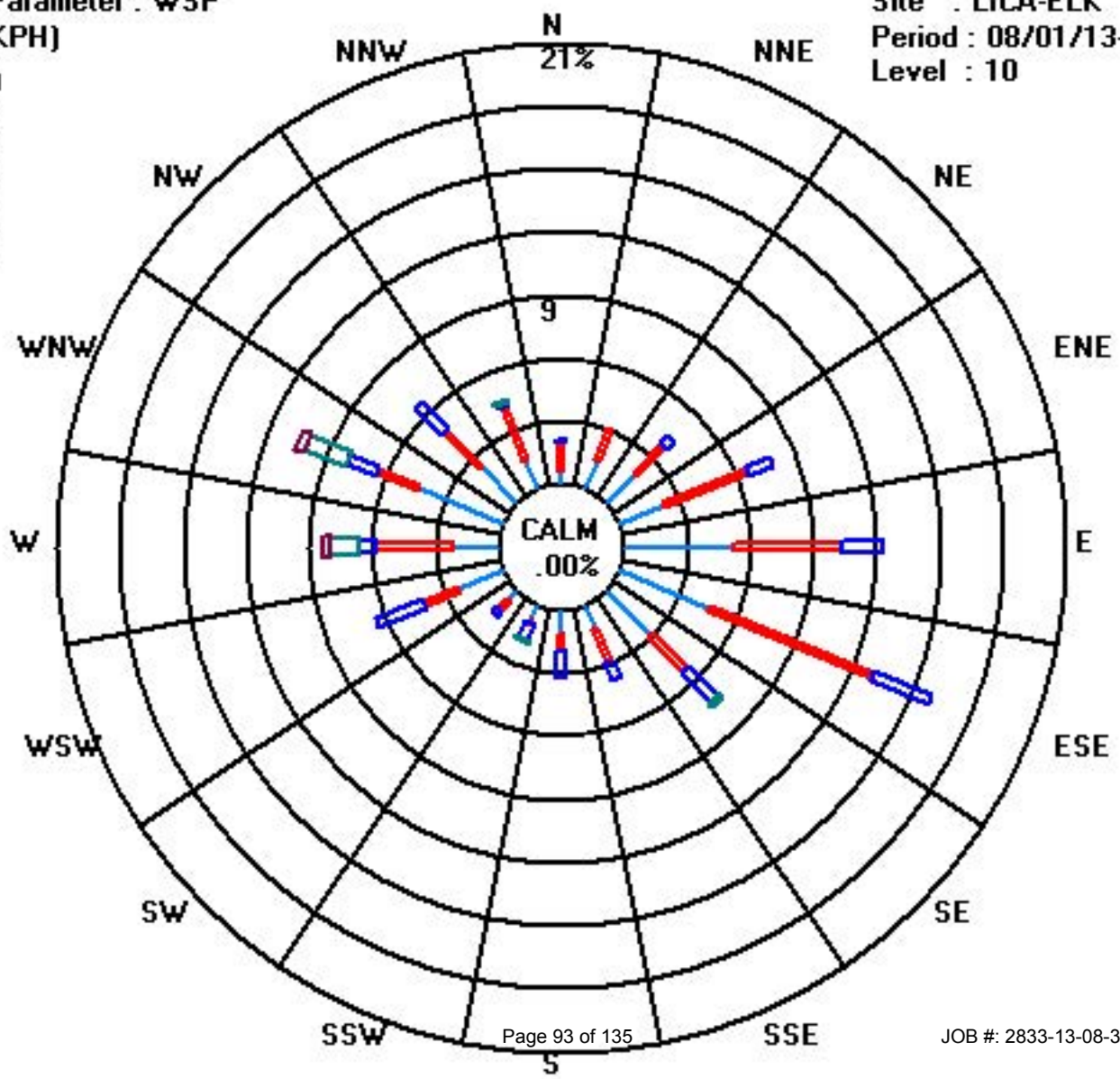
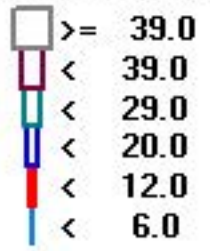
Calm : .00 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 08/01/13-08/31/13

Level : 10



# Vector Wind Direction



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

AUGUST 2013

## VECTOR 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		
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		255	268	280	274	272	280	297	301	346	308	311	328	334	328	356	350	18	29	3	56	107	102	38	85	330	NNW	24	
2		98	77	73	66	78	72	110	112	117	119	124	109	94	74	86	107	80	106	119	126	118	120	86	90	103	ESE	24	
3		105	98	112	108	97	100	114	121	138	183	179	178	168	170	172	153	143	127	128	134	147	129	91	65	144	SE	24	
4		97	93	97	118	89	104	91	108	144	184	184	178	165	213	133	99	63	2	332	45	84	326	312	16	115	ESE	24	
5		139	158	253	274	280	248	257	260	280	300	321	10	342	341	329	349	32	63	103	97	68	102	27	50	339	NNW	24	
6		67	53	13	305	287	285	317	20	68	359	317	308	329	321	318	354	303	8	116	163	165	189	285	49	349	NNW	24	
7		114	148	355	95	72	18	46	84	100	87	92	89	75	67	82	92	82	99	76	80	70	297	290	304	77	ENE	24	
8		311	308	302	302	293	189	28	74	88	93	115	82	77	32	160	45	75	72	90	145	177	287	97	208	64	ENE	24	
9		37	242	288	102	131	131	109	109	89	122	153	149	129	159	141	146	168	173	154	139	129	95	100	114	140	SE	24	
10		99	106	106	93	88	110	108	111	114	129	142	152	171	172	173	150	158	159	158	136	132	119	107	107	138	SE	24	
11		104	107	110	105	115	103	115	110	110	111	18	75	131	137	120	100	90	91	81	61	69	116	105	95	104	ESE	24	
12		106	88	74	241	83	85	59	37	71	82	109	119	117	118	117	120	120	125	113	104	70	76	74	87	103	ESE	24	
13		111	118	100	101	105	104	110	122	130	119	133	114	121	117	111	124	115	118	124	113	117	121	114	108	116	ESE	24	
14		117	105	93	99	103	101	112	117	99	108	124	130	128	129	129	134	140	138	156	159	144	109	99	102	123	ESE	24	
15		88	79	100	116	97	109	114	110	113	121	122	125	148	202	225	267	276	280	268	261	278	276	290	300	174	S	24	
16		288	297	298	310	224	310	284	264	282	317	330	320	126	327	345	289	218	238	270	294	269	287	301	287	290	WNW	24	
17		259	260	254	310	242	286	251	318	358	249	259	246	219	197	235	190	112	133	157	129	125	93	81	300	221	SW	24	
18		282	277	204	132	109	36	53	299	255	209	134	135	181	183	214	227	250	257	257	251	277	297	303	306	248	WSW	24	
19		259	279	266	270	273	250	258	278	275	290	295	285	277	276	287	280	256	241	298	285	246	266	286	240	275	W	24	
20		245	255	249	244	243	245	247	245	258	266	272	272	272	282	286	281	284	283	293	261	293	291	276	247	270	W	24	
21		247	248	246	242	242	245	263	280	284	281	286	284	290	281	283	286	302	304	275	244	187	75	277	147	274	W	24	
22		136	60	82	90	100	110	106	87	115	207	222	211	212	192	197	192	189	188	168	170	256	322	145	267	186	S	24	
23		285	291	281	276	293	289	305	303	115	89	58	86	102	88	92	70	61	78	49	59	78	81	345	84	67	ENE	24	
24		53	98	93	93	341	289	295	311	339	36	346	339	331	333	3	14	63	99	100	135	122	114	14	151	37	NE	24	
25		100	93	95	78	99	95	114	112	121	134	135	156	171	230	268	288	300	308	320	329	330	321	325	328	326	NW	24	
26		350	332	335	46	33	181	31	47	89	105	113	130	289	45	42	62	74	86	77	66	56	74	63	69	70	ENE	24	
27		26	249	56	193	276	302	259	263	252	251	265	250	232	239	213	166	111	110	72	55	118	111	42	314	256	WSW	24	
28		318	300	286	281	345	293	297	107	122	121	87	70	127	65	55	76	99	50	333	6	21	40	339	348	39	NE	24	
29		359	355	310	89	105	335	20	15	30	35	42	53	55	51	69	60	57	59	91	69	52	63	95	107	48	NE	24	
30		125	26	32	98	345	14	326	312	311	296	294	285	281	283	275	282	295	293	296	301	302	311	316	322	298	WNW	24	
31		325	316	316	325	324	324	329	329	333	315	320	310	307	330	323	263	261	261	256	243	230	105	142	60	312	NW	24	
HOURLY AVG		359	355	355	325	345	335	329	329	358	359	346	339	342	341	356	354	303	308	333	329	330	326	345	348				

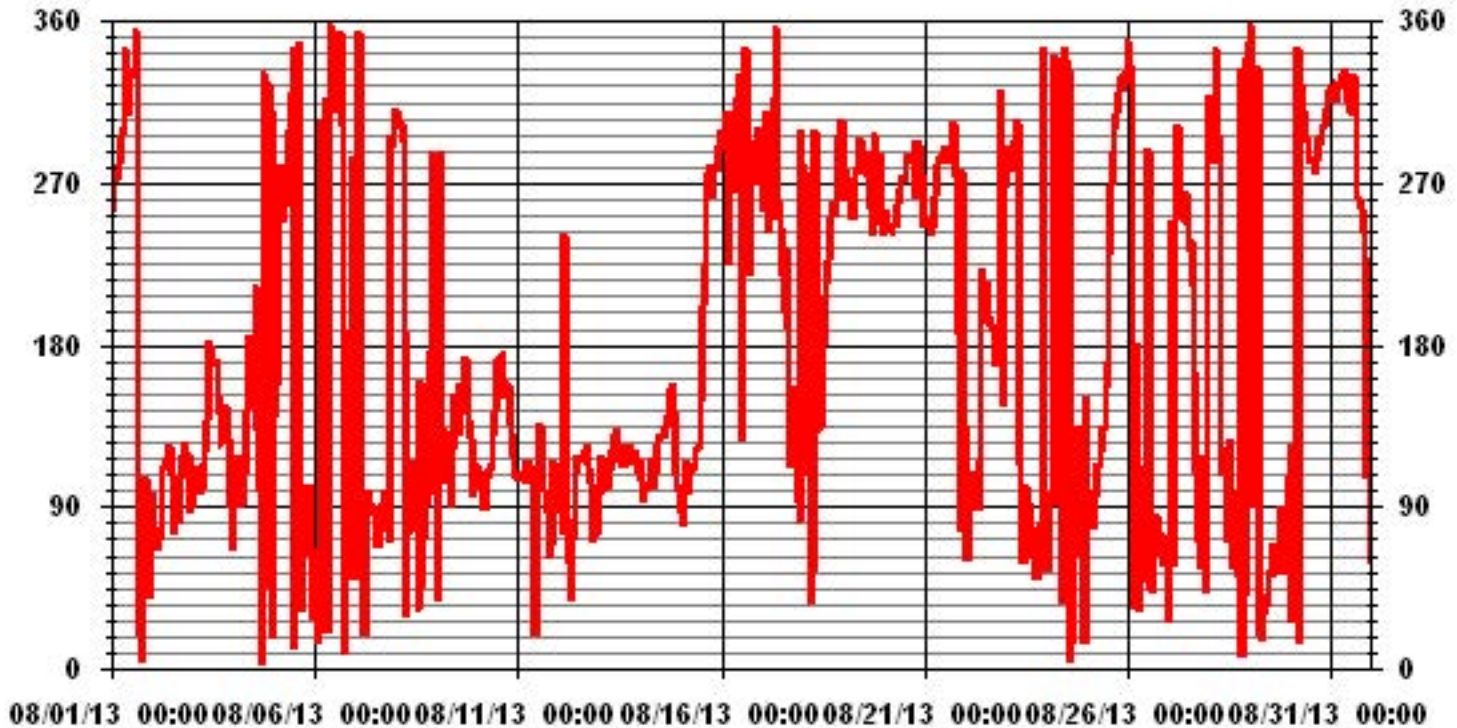
**STATUS FLAG CODES**

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 24, 2011
DECLINATION:	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	98.56	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	101 DEG

# 01 Hour Averages



# Standard Deviation Wind Direction

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

AUGUST 2013

**STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees**

MST

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

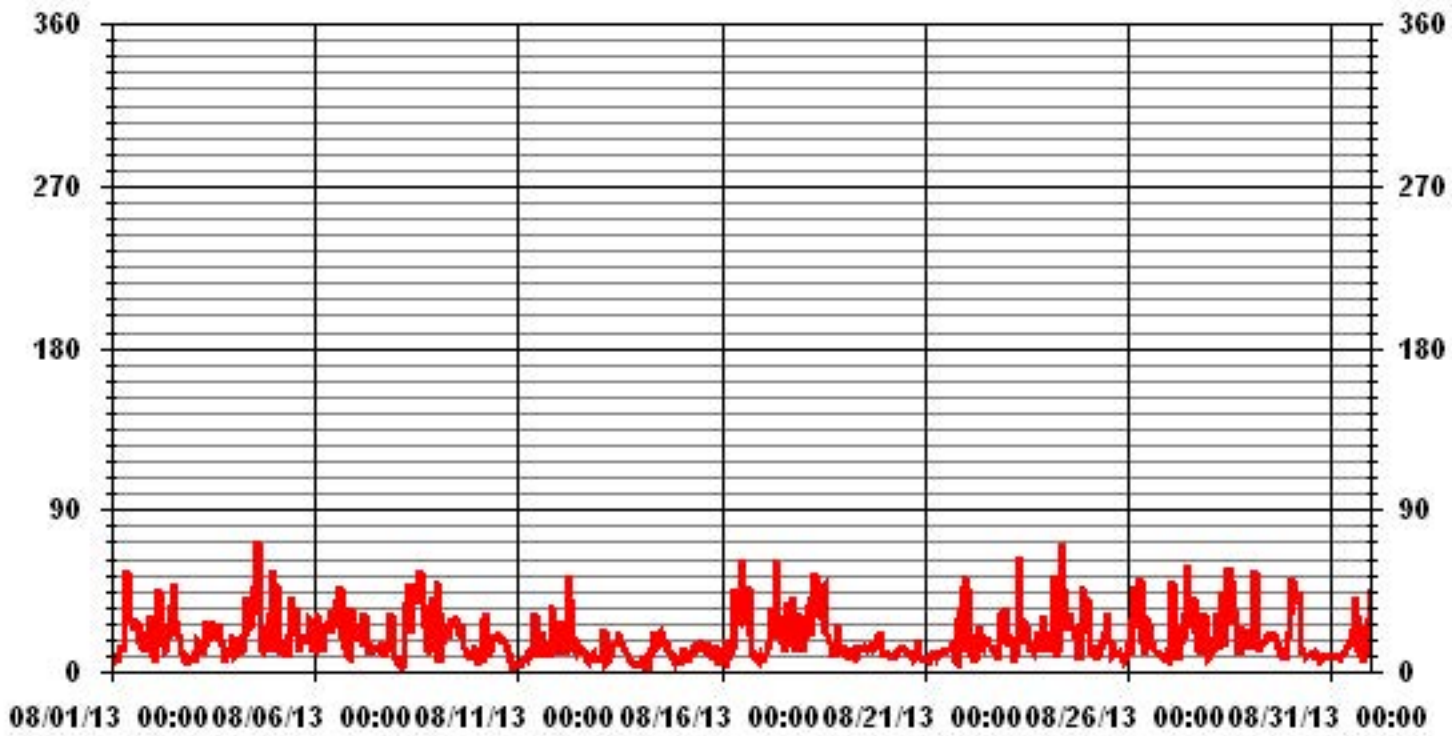
**STATUS FLAG CODES**

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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 24, 2011

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

# 01 Hour Averages



# Calibration Reports

# Sulphur Dioxide

**SO2 Calibration Report**  
**Station Information**

Calibration Date	August 13, 2013		Previous Calibration	July 4, 2013	
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	Portable / ELK Point Airport				
Start Time (MST)	8:45		End Time (MST)	9:30	
Reason:	AF Point				
Barometric Pressure	28.05	in HG	Station Temperature	22.5	Deg C
Cal Gas	49.6	ppm	Gas Cyl. #	BAL3031	Cal Gas Expiry date
DAS Output Voltage	0-1	Volts	Chart Rec. Output	N/A	Volts

**Equipment Information**

Analyzer Make / Model:	API 100E	S/N :	467	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	EnviroNics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	N/A	S/N :	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range	0-1000			ppb			
Sample Flow / Box Temp	575	ccm	31.5	Deg C	575	ccm	32.3
HVPS / Lamp Setting	612		1431	Deg C	612		1431
PMT / RxCell Temp	8.1	Deg C	50	Deg C	8.1	Deg C	50
Converter / IZS Temp	N/A	Deg C	45	Deg C	N/A	Deg C	45.0
Offset / Slope	122.6		1.185		122.6		1.185

**Calibration Data**

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	3	N/A
	No zero adj			
4915	79.8	792	808	0.9807
Sum of Least Squares New Correction Factor				0.9807

**IZS Calibration Data**

Before Calibration		After Calibration	
Auto Zero	0.0	Auto Zero	0.0
Auto Span	356.9	Auto Span	356.9
Sample Lines Connected		Sample Lines Connected	Yes

**Percent Change**

Previous Month's Calibration Correction Factor:	0.9980
Current Correction Factor Before Span Adjust:	0.9807
Percent Change:	1.8%

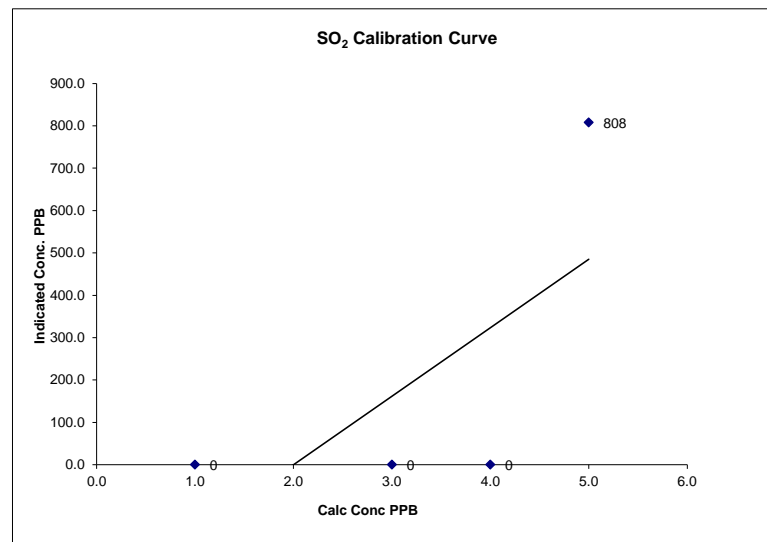
Notes: N/A : Not applicable


Calibration Performed by: Waseem Ahmed

**SO2 Calibration Curve**

Calibration Date	August 13, 2013		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Portable / ELK Point Airport		
Start Time (MST)	8:45	End Time (MST)	9:30

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0		N/A		
792	808	0.9807		



Notes:




### SO2 Calibration Report

#### Station Information

Calibration Date	August 13, 2013	Previous Calibration	N/A
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Portable / ELK Point Airport		
Start Time (MST)	10:20	End Time (MST)	13:13
Reason:	Post repair calibration		
Barometric Pressure	28.04 in HG	Station Temperature	25.5 Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	BAL3031
DAS Output Voltage	0-1 Volts	Cal Gas Expiry date	December 29, 2016
		Chart Rec. Output	N/A Volts

#### Equipment Information

Analyzer Make / Model:	API 100E	S/N :	467	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	EnviroNics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	N/A	S/N :	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

#### Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0-1000 ppb				
Sample Flow / Box Temp	575 ccm	31.5 Deg C	582 ccm	37.5 Deg C	
HVPS / Lamp Setting	612	1431	628	1427	
PMT / RxCell Temp	8.1 Deg C	50 Deg C	8.2 Deg C	50 Deg C	
Converter / IZS Temp	N/A Deg C	45 Deg C	N/A Deg C	45.0 Deg C	
Offset / Slope	122.6	1.185	103.4	1.148	

#### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	N/A
	No zero adj			
4915	79.7	792	792	1.0000
	No span adj.			
4955	39.9	396	402	0.9856
4975	19.9	198	210	0.9410
4994	0	0	13	N/A
Sum of Least Squares				0.9941
New Correction Factor				1.0000

#### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0	Auto Zero	0.0
Auto Span	356.9	Auto Span	356.9
Sample Lines Connected		Sample Lines Connected	Yes

#### Percent Change

Previous Month's Calibration Correction Factor:	N/A
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	#VALUE!

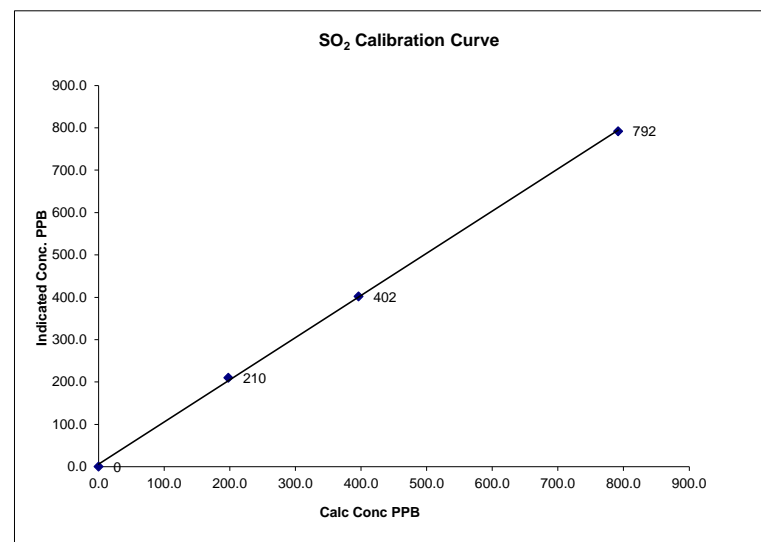
Notes: **N/A : Not applicable**  
 Change sample filter.

Calibration Performed by: Waseem Ahmed

### SO2 Calibration Curve

Calibration Date	August 13, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	Portable / ELK Point Airport
Start Time (MST)	10:20
End Time (MST)	13:13

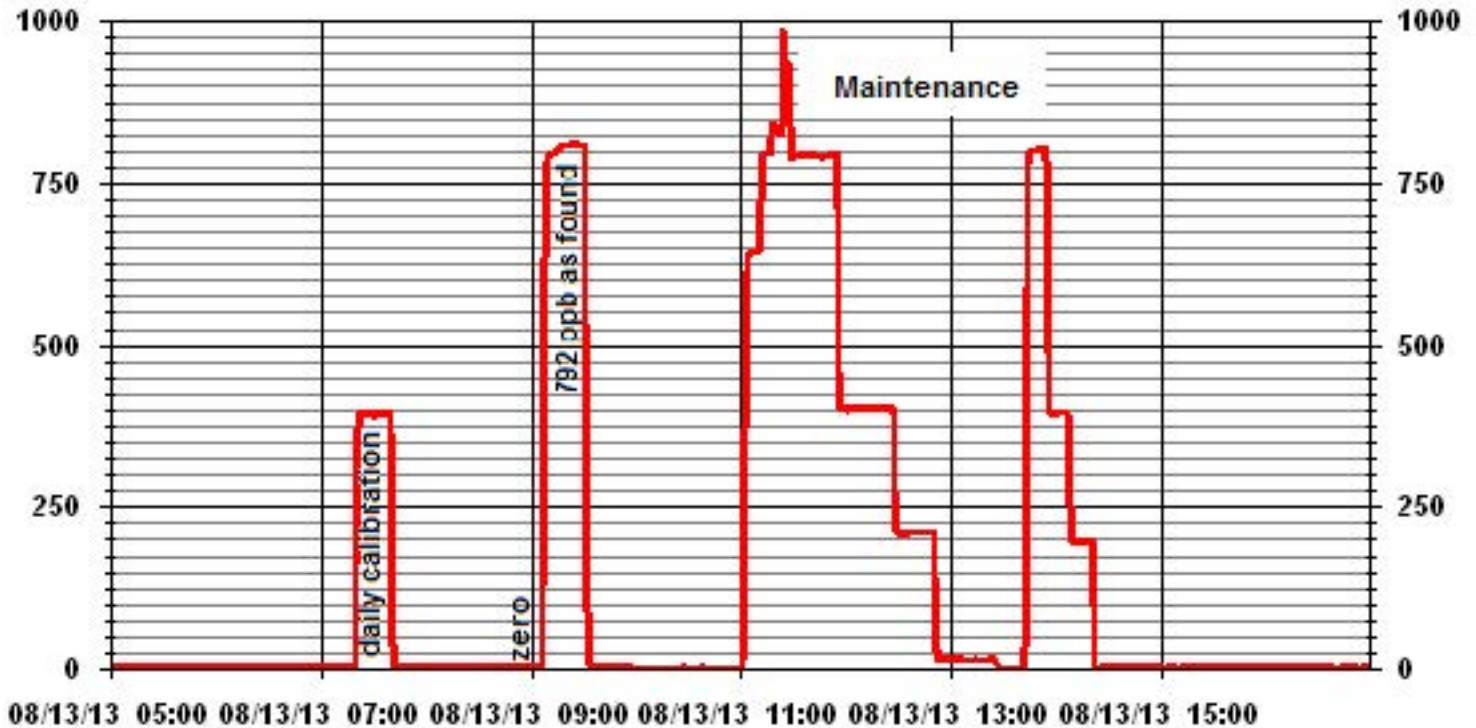
Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0	N/A		0.999716
198	210	0.9410		0.995655
396	402	0.9856		6.086298
792	792	1.0000		



Notes:

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# 01 Minute Averages



### SO2 Calibration Report

#### Station Information

Calibration Date	August 14, 2013	Previous Calibration	N/A
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Portable / ELK Point Airport		
Start Time (MST)	9:05	End Time (MST)	11:48
Reason:	Post repair calibration		
Barometric Pressure	27.96 in HG	Station Temperature	23 Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	BAL3031
DAS Output Voltage	0-1 Volts	Cal Gas Expiry date	December 29, 2016
		Chart Rec. Output	N/A Volts

#### Equipment Information

Analyzer Make / Model:	API 100E	S/N :	467	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	API 700	S/N :	690	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	N/A	S/N :	N/A		
Flow Meter:	API 700	S/N :	690		

#### Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0-1000 ppb				
Sample Flow / Box Temp	575 ccm	31.8 Deg C	573 ccm	36.6 Deg C	
HVPS / Lamp Setting	628	1431	628	1423	
PMT / RxCell Temp	8.1 Deg C	50 Deg C	8.2 Deg C	50 Deg C	
Converter / IZS Temp	N/A Deg C	45 Deg C	N/A Deg C	45.0 Deg C	
Offset / Slope	126.8	1.167	126.8	1.167	

#### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	N/A
	No zero adj			
4920	81.3	806	807	0.9991
	No span adj.			
4962	40.6	403	405	0.9939
4980	20.3	201	202	0.9969
4994	0	0	2	N/A
Sum of Least Squares				0.9980
New Correction Factor				0.9991

#### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0	Auto Zero	0.0
Auto Span	356.9	Auto Span	394.0
Sample Lines Connected		Sample Lines Connected	Yes

#### Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9991
Percent Change:	0.1%

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

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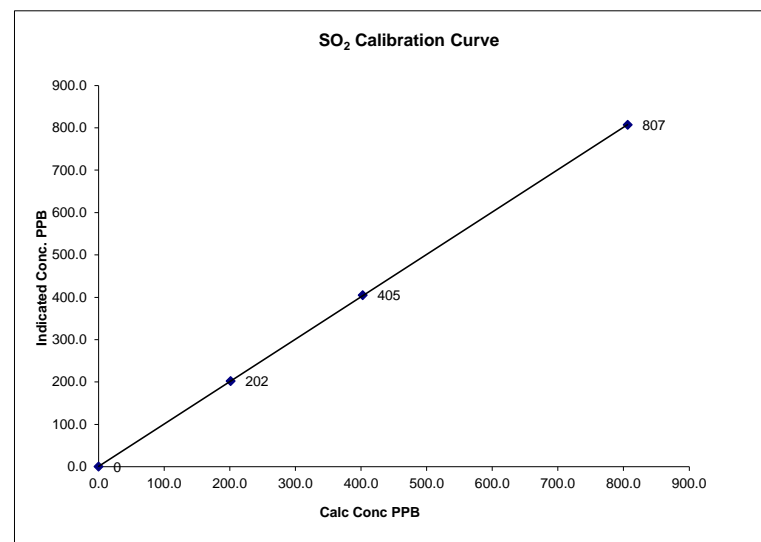
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Calibration Performed by: Waseem Ahmed

### SO2 Calibration Curve

Calibration Date	August 14, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	Portable / ELK Point Airport
Start Time (MST)	9:05
End Time (MST)	11:48

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0	N/A		0.999992
201	202	0.9969		1.000986
403	405	0.9939		0.604204
806	807	0.9991		



Notes:

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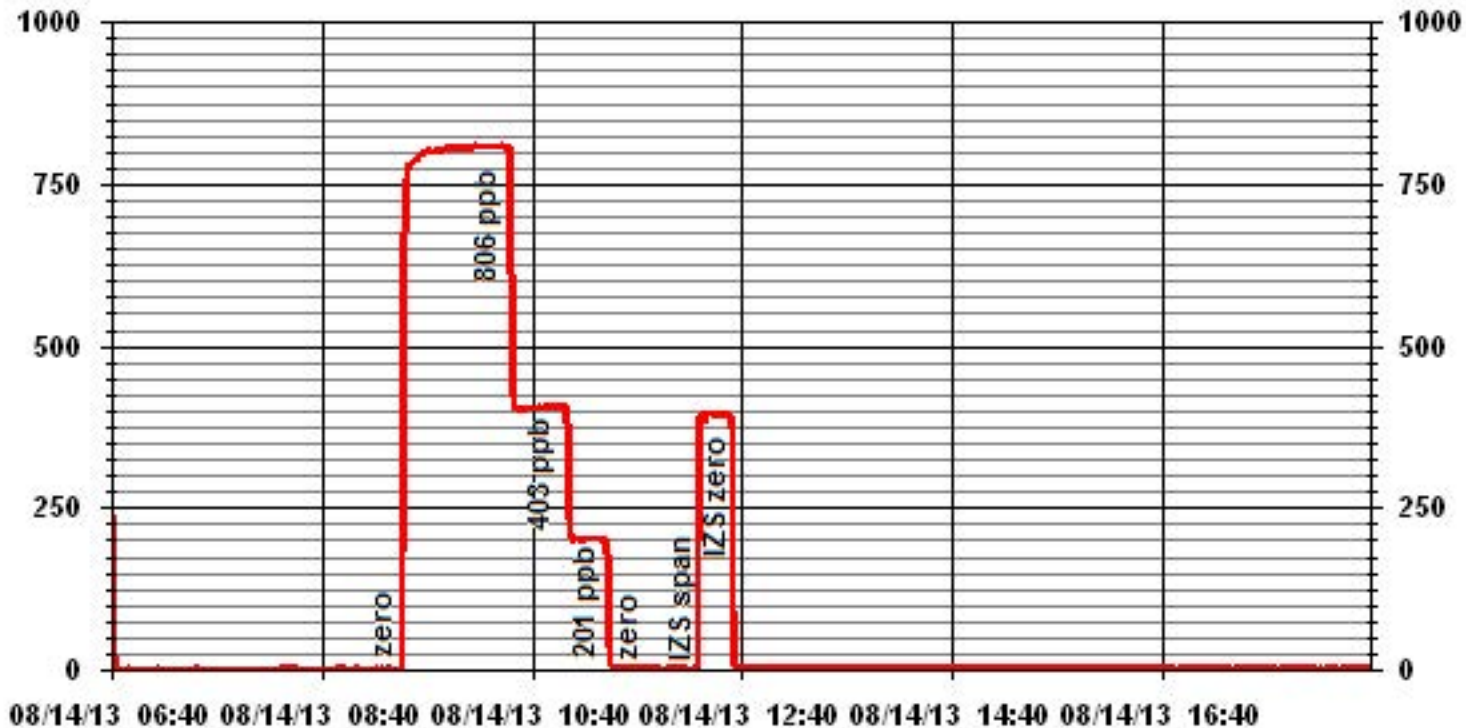


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### 01 Minute Averages



# Hydrogen Sulphide

**H2S Calibration Report**

**Station Information**

Calibration Date	August 13, 2013	Previous Calibration	July 4, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Portable / ELK Point Airport		
Start Time (MST)	8:45	End Time (MST)	9:30
Reason:	AF Point		
Barometric Pressure	28.05 in HG	Station Temperature	22.5 Deg C
Cal Gas	10.1 ppm	Gas Cyl. #	BLM0059
DAS Output Voltage	0-1 Volts	Cal Gas Expiry date	December 25, 2015
		Chart Rec. Output	NA Volts

**Equipment Information**

Analyzer Make / Model:	API 101E	S/N :	509	Method:	Fluorescent
Converter Make / Model:	Internal	S/N :	N/A		
Calibrator Make / Model:	API 700	S/N :	690	Method:	Dilution
DAS Make / Model:	ESC8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	S/N:		NA
Flow Meter:	API 700	S/N :	690		

**Analyzer Settings**

Before Calibration		After Calibration	
Concentration Range	0-100 ppb	0-100 ppb	
Sample Flow / Box Temp	513 ccm 31.8 Deg C	513 ccm 32.8 Deg C	
HVPS / Lamp Setting	540 1674	540 1675	
PMT / RxCell Temp	7.9 Deg C 50 Deg C	7.9 Deg C 50 Deg C	
Converter / IZS Temp	314.9 Deg C 45 Deg C	316 Deg C 45.0 Deg C	
Offset / Slope	114.4 0.962	114.4 0.962	

**Calibration Data**

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	2	NA
	No zero adj.			
4960	40.0	81	84	0.9619
Sum of Least Squares New Correction Factor				0.9619

**IZS Calibration Data**

Before Calibration		After Calibration	
Auto Zero	0.0	Auto Zero	0.0
Auto Span	57.97	Auto Span	57.97
Sample Lines Connected		Sample Lines Connected	Yes

**Percent Change**

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9619
Percent Change:	4.0%

Notes: **NA : Not Applicable**

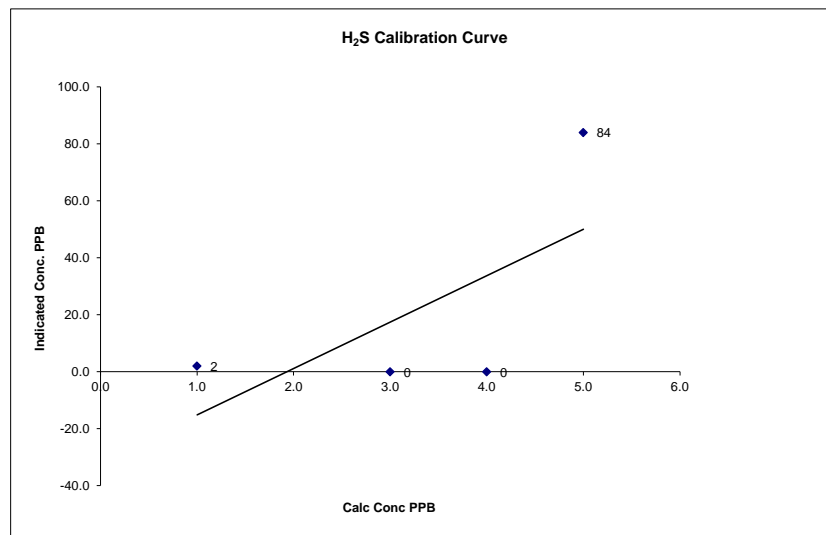
Calibration Performed by: Waseem Ahmed

**H<sub>2</sub>S Calibration Curve**

Calibration Date	August 13, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	Portable / ELK Point Airport
Start Time (MST)	8:45
End Time (MST)	9:30

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	( $\geq 0.995$ ) (0.85 to 1.15) ( $\pm 3\%$ F.S.)
0	2	NA		

81	84	0.9619
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Notes:

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### H2S Calibration Report

#### Station Information

Calibration Date	August 13, 2013	Previous Calibration	N/A
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Portable / ELK Point Airport		
Start Time (MST)	10:20	End Time (MST)	13:00
Reason:	Post repair calibration		
Barometric Pressure	28.04 in HG	Station Temperature	25.5 Deg C
Cal Gas	10.1 ppm	Gas Cyl. #	BLM0059
DAS Output Voltage	0-1 Volts	Cal Gas Expiry date	December 25, 2015
		Chart Rec. Output	NA Volts

#### Equipment Information

Analyzer Make / Model:	API 101E	S/N :	509	Method:	Fluorescent
Converter Make / Model:	Internal	S/N :	N/A		
Calibrator Make / Model:	API 700	S/N :	690	Method:	Dilution
DAS Make / Model:	ESC8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	S/N:	NA	
Flow Meter:	API 700	S/N :	690		

#### Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0-100 ppb	0-100 ppb	
Sample Flow / Box Temp	513 ccm 34.1 Deg C	505 ccm 36.1 Deg C	
HVPS / Lamp Setting	540 1674	540 1670	
PMT / RxCell Temp	7.9 Deg C 50 Deg C	7.9 Deg C 50 Deg C	
Converter / IZS Temp	314.9 Deg C 45 Deg C	316 Deg C 45.0 Deg C	
Offset / Slope	114.4 0.962	99 1.153	

#### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	NA
	No zero adj.			
4955	40.0	81	82	0.9864
	No span adj.			
4972	20.0	40	40	1.0000
4988	12.0	24	24	1.0000
5000	0	0	0	NA
Sum of Least Squares				0.9925
New Correction Factor				0.9864

#### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0	Auto Zero	0.0
Auto Span	57.97	Auto Span	57.97
Sample Lines Connected		Sample Lines Connected	Yes

#### Percent Change

Previous Month's Calibration Correction Factor:	N/A
Current Correction Factor Before Span Adjust:	0.9864
Percent Change:	#VALUE!

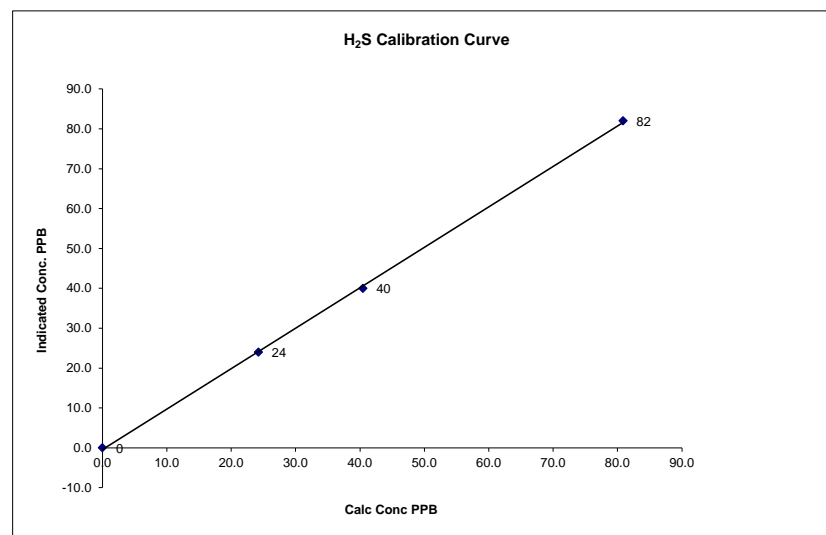
Notes:	NA : Not Applicable
	Change sample filter,

Calibration Performed by: Waseem Ahmed

### H<sub>2</sub>S Calibration Curve

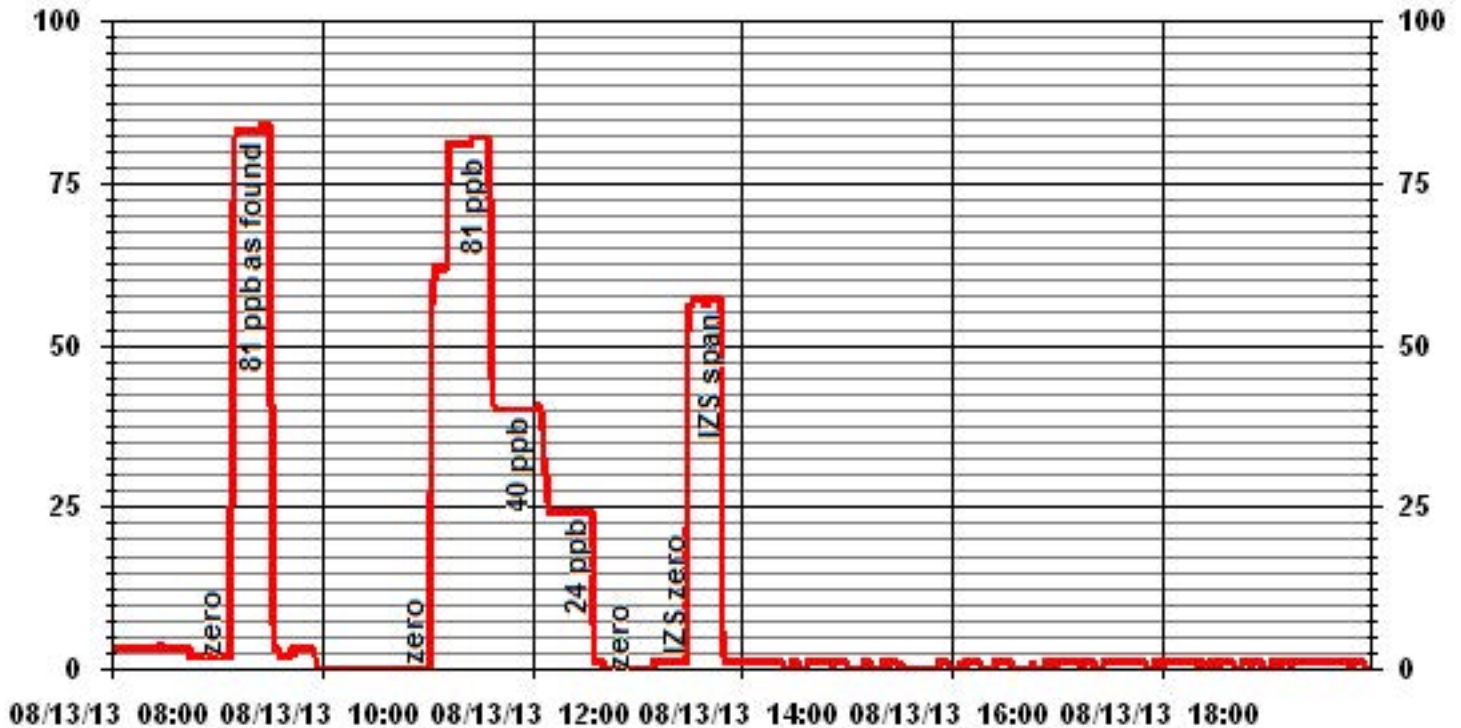
Calibration Date	August 13, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	Portable / ELK Point Airport
Start Time (MST)	10:20
End Time (MST)	13:00

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999793
0	0	NA	Intercept	(± 3% F.S.)	-0.429672
24	24	1.0100			
40	40	1.0116			
81	82	0.9864			



Notes:

# 01 Minute Averages





### H2S Calibration Report Station Information

Calibration Date	August 14, 2013	Previous Calibration	August 13, 2013			
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION					
Plant / Location	Portable / ELK Point Airport					
Start Time (MST)	9:00	End Time (MST)	9:58			
Reason:	AF Point					
Barometric Pressure	27.96	in HG	Station Temperature	23	Deg C	
Cal Gas	10.1	ppm	Gas Cyl. #	BLM0059	Cal Gas Expiry date	December 25, 2015
DAS Output Voltage	0-1	Volts	Chart Rec. Output	NA	Volts	

### Equipment Information

Analyzer Make / Model:	API 101E	S/N :	509	Method:	Fluorescent
Converter Make / Model:	Internal	S/N :	N/A		
Calibrator Make / Model:	Enviroics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	S/N:	NA	NA
Flow Meter:	Enviroics 6100	S/N :	4760		

### Analyzer Settings

Before Calibration		After Calibration				
Concentration Range	0-100	ppb				
Sample Flow / Box Temp	510	ccm	32.2	Deg C		
HVPS / Lamp Setting	540		1673			
PMT / RxCell Temp	7.9	Deg C	50	Deg C		
Converter / IZS Temp	314.5	Deg C	45	Deg C		
Offset / Slope	99		1.153			
			510	ccm	34.4	Deg C
			540		1671	
			7.9	Deg C	50	Deg C
			315.8	Deg C	45.0	Deg C
			99		1.153	

### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	NA
	No zero adj.			
4955	40.0	81	79	1.0238
Sum of Least Squares New Correction Factor				1.0238

### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	57.97	57.97
Sample Lines Connected		Yes

### Percent Change

Previous Month's Calibration Correction Factor:	0.9864
Current Correction Factor Before Span Adjust:	1.0238
Percent Change:	-3.7%

Notes: NA : Not Applicable

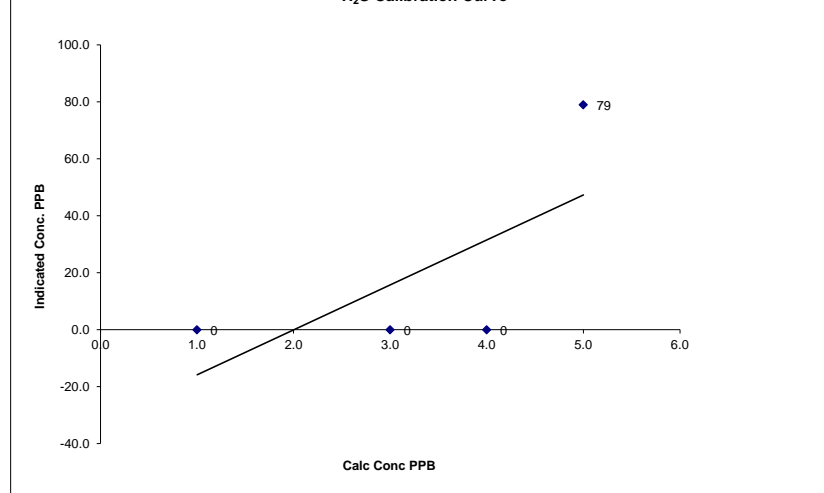
Calibration Performed by: Waseem Ahmed

### H<sub>2</sub>S Calibration Curve

Calibration Date	August 14, 2013		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Portable / ELK Point Airport		
Start Time (MST)	9:00	End Time (MST)	9:58

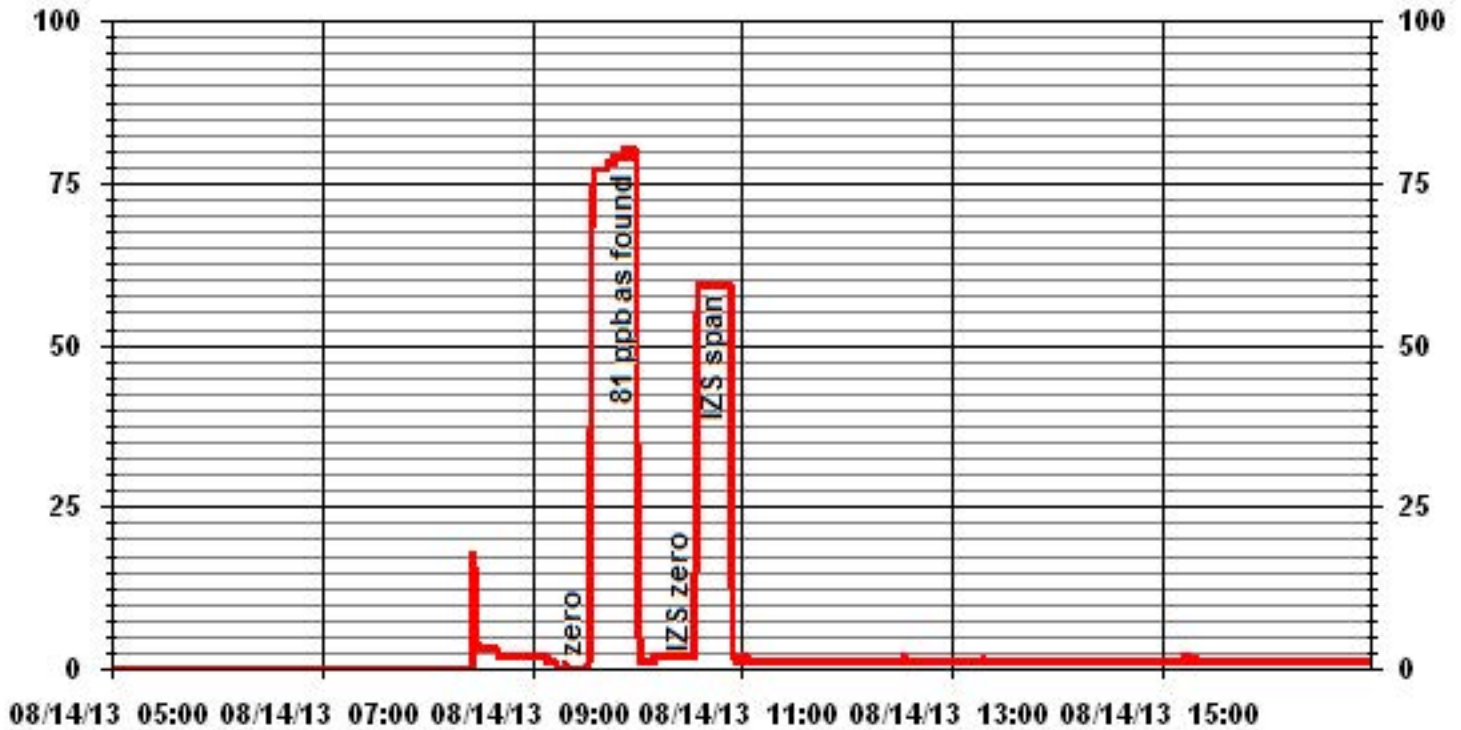
Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)
0	0	NA	Intercept	(± 3% F.S.)
81	79	1.0238		

H<sub>2</sub>S Calibration Curve



Notes:

# 01 Minute Averages



# Total Hydrocarbons (55i)

### Methane - Non Methane Hydrocarbon Calibration Report

#### Station Information

Calibration Date:	August 12, 2013	Previous Calibration	July 5, 2013
Company:	<b>Lakeland Industry and Community Association</b>		
Plant / Location:	<b>ELK Point Airport</b>		
Start Time (MST)	11:44	End Time (MST)	13:07
Reason:	Monthly calibration		
Barometric Pressure:	28.08 inHg	Station Temperature:	24.5 Deg C
Calibrator:	API700	S/N:	690
Cal Gas Concentration:	CH4 600 PPM	C3H8 204 PPM=	561 CH4
	Cyl. # LL155310	Cal Gas Expiry Date:	September 9, 2013
DAS make & Model:	ESC8832	S/N :	AO717
Chart Recorder:	N/A	S/N:	N/A
Output Voltage Range:	0-10	Chart Speed:	N/A cm/hr

#### Analyzer Information

Make / Model	Thermo 55i	S/N :	1236656107	Method:	GC FID
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#### Analyzer Settings

	CH4= 0-20		NMHC= 0-20		THC = 0-40	
	Befor Calibration		After Calibration			
Hydrogen Pressure	40.3	psi	40.3	psi		
Air Pressure	32.4	psi	32.4	psi		
Carrier Pressure	31.1	psi	31.1	psi		
Detector Oven	175	Deg C	175	Deg C		
Filter Temp	175	Deg C	175	Deg C		
Column Oven Temp	75	Deg C	75	Deg C		
Flame Temp	378	Deg C	379	Deg C		
Box Temp	38.2	Deg C	39.6	Deg C		

#### Calibration Data

Gas Flows (sccm)		Calculated Concentration		Actual Concentration		Correction factors	
Dilution Flow	Cal Gas Flow	CH4	NMHC	CH4	NMHC	CH4	NMHC
3000	0.00	0.00	0.00	0.00	0.00	0.000	0.000
	No Zero Adj.						
2982	18.00	3.60	3.37	3.53	3.29	1.0198	1.0231
2982	18.00	3.60	3.37	3.59	3.38	1.0028	0.9959
2964	36.00	7.20	6.73	7.22	6.64	0.9972	1.0139
2991	9.00	1.80	1.68	1.79	1.73	1.0056	0.9728
3000	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
Correction Factors:						1.0028	0.9959

#### Percent Change from Previous Calibration

	CH4	NMHC
Previous Calibration Correction Factor:	1.0056	1.0000
Current Correction Factor Before Span Adjust:	0.9863	0.9757
Percent Change:	2.0%	2.5%

#### IZS Calibration Data

		Before Calibration		After Calibration	
Auto Zero (ppm)		CH4 0.00	NMHC 0.00	CH4 0.00	NMHC 0.00
Auto Span (ppm)		CH4 9.76	NMHC 13.43	CH4 10.04	NMHC 13.76
Sample Lines Connected		YES			

Notes: Cylinder Pressures  
 Span 1100 psi  
 Hydrogen 1000 psi  
 Zero Air 45 psi  
 Nitrogen 900 psi

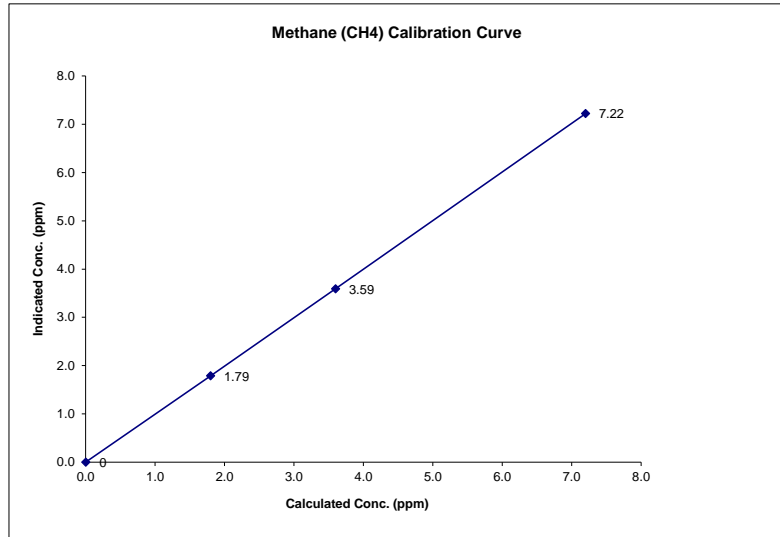
Notes: Change sample filter.  
 Spare cylinders: N2=1, H2=1 & Span =1

Calibration Performed by: Waseem ahmed

### Methane (CH4) Calibration Curve

Calibration Date	August 12, 2013		
Company	Lakeland Industry and Community Association		
Plant / Location	ELK Point Airport		
Start Time (MST)	11:44	End Time (MST)	13:07

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999989
0	0	0.0000	Slope	(0.85 to 1.15)	1.003175
1.80	1.79	1.0056	Intercept	(± 3% F.S.)	#####
3.60	3.59	1.0198			
7.20	7.22	0.9972			

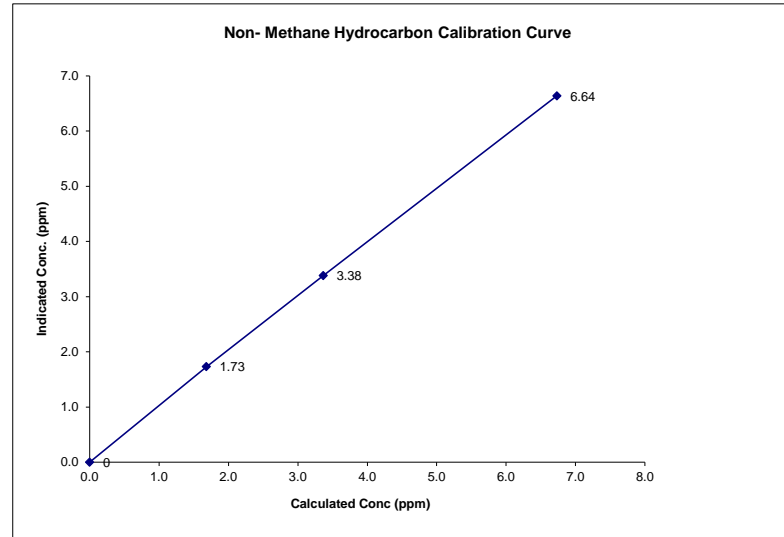


Notes:

### Non-Methane Hydrocarbon Calibration Curve

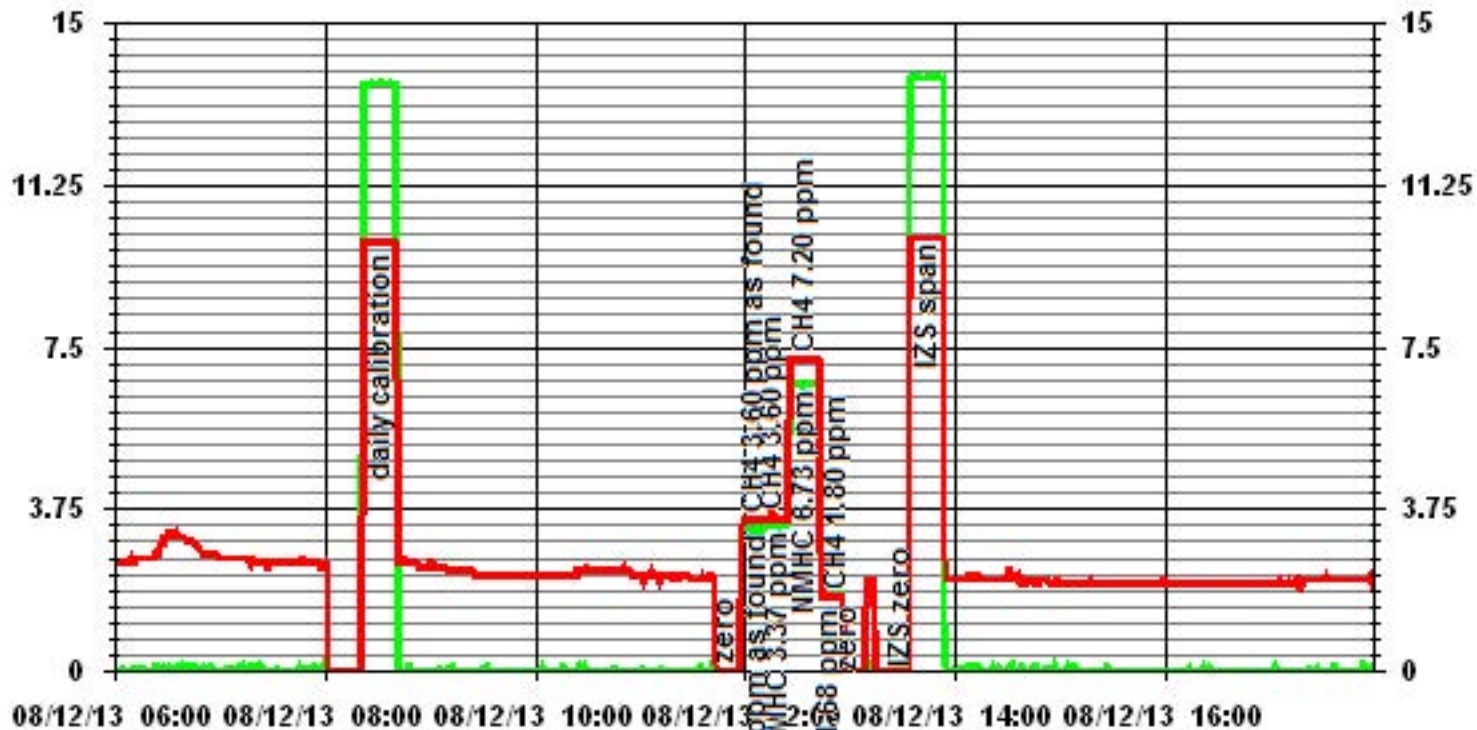
Calibration Date	August 12, 2013		
Company	Lakeland Industry and Community Association		
Plant / Location	ELK Point Airport		
Start Time (MST)	11:44	End Time (MST)	13:07

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999829
0	0	0.0000	Slope	(0.85 to 1.15)	0.983787
1.68	1.73	0.9728	Intercept	(± 3% F.S.)	0.040000
3.37	3.38	1.0231			
6.73	6.64	1.0139			



Notes:

### 01 Minute Averages



— LICA35 METHANE PPM NMHC PPM

# Particulate Matter 2.5

**TEOM 1405F Audit**

	<b><u>Station</u></b>		<b><u>Audit Transfer Standard</u></b>
Date:	August 12, 2013	Make/Model:	Fisher Brand
Station Name:	LICA Portable (CASA # 35)	Serial Number:	15-021B
Location:	ELK Point Air Port	Cell s/n:	N/A
Operator:	LICA	Thermometer s/n:	N/A
	<b><u>Sampler</u></b>		<b><u>Set-up and current Sampler readings</u></b>
Make/Model	Thermo Scientific Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	N/A	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A208301003	Filter Load (%)	26.3%
Firmware Ver.	1.52	K <sub>o</sub> Factor	13125.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	18.0
		Press (ATM)	0.938

**Conversion from mmHg or "Hg to ATM (Atmospheres)**

ATM = (mmHg) X (1.316 X 10<sup>-3</sup>) or ATM = ("Hg) X (3.34207 X 10<sup>-2</sup>)

**Note: Tolerances are noted as BOLD in Brackets**

**Audit**

<b>Status</b>			
Noise <b>&lt;0.10ug</b>	0.005	Warnings	None
Pump Vacuum <b>&lt;0.40atm</b>	0.37	Pump Gauge (inHg)	-18
<b>Temperature/Pressure</b>		<b>D °C</b>	
Measured Temp (± 2 °C)	19.06		-1.1
Measured Press (± 0.01atm)	0.940	<b>DATM</b>	-0.002
<b>Flow Audit</b>		<b>Main Flow Drift (±10.0%)</b>	
Indicated Main Flow (l/min)	3.00		0.40%
Measured Main Flow (l/min)	2.99	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	<b>Bypass Flow Drift (±10.0%)</b>	2.12%
Measured Bypass Flow (l/min)	13.70	Flow Adjusted to Measured?	Yes
<b>Leak Check</b>		<b>Instrument Setup</b>	
Main (< 0.15 l/min)	Base=NA, Ref.=NA	Flow Control = Active	
Aux (< 0.6 l/min)	Base=NA, Ref.=NA	Report Condition = Actual	
<b>K<sub>o</sub> Factor</b>			
Measured	N/A		
K <sub>o</sub> Difference (± 2.5%)	N/A		

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

**Sample Inlet Cleaned:** NA      **New Filters Installed:** NA  
**New Filter Loading %:** NA

**Comments:**

**Auditor/s:** Waseem Ahmed



**TEOM 1405F Audit**

	<b><u>Station</u></b>		<b><u>Audit Transfer Standard</u></b>
Date:	August 27, 2013	Make/Model:	Fisher Brand
Station Name:	LICA Portable (CASA # 35)	Serial Number:	15-021B
Location:	ELK Point Air Port	Cell s/n:	N/A
Operator:	LICA	Thermometer s/n:	N/A
	<b><u>Sampler</u></b>		<b><u>Set-up and current Sampler readings</u></b>
Make/Model	Thermo Scientific Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	N/A	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A208301003	Filter Load (%)	20.0%
Firmware Ver.	1.52	K <sub>o</sub> Factor	13125.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	16.0
		Press (ATM)	0.930

**Conversion from mmHg or "Hg to ATM (Atmospheres)**

ATM = (mmHg) X (1.316 X 10<sup>-3</sup>) or ATM = ("Hg) X (3.34207 X 10<sup>-2</sup>)

**Note: Tolerances are noted as BOLD in Brackets**

**Audit**

<b>Status</b>			
Noise <b>&lt;0.10ug</b>	0.005	Warnings	None
Pump Vacuum <b>&lt;0.40atm</b>	0.37	Pump Gauge (inHg)	-17
<b>Temperature/Pressure</b>		<b>D °C</b>	
Measured Temp (± 2 °C)	16.55		-0.6
Measured Press (± 0.01atm)	0.993	<b>DATM</b>	-0.063
<b>Flow Audit</b>		<b>Main Flow Drift (±10.0%)</b>	
Indicated Main Flow (l/min)	3.00		0.92%
Measured Main Flow (l/min)	2.98	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	<b>Bypass Flow Drift (±10.0%)</b>	3.17%
Measured Bypass Flow (l/min)	13.52	Flow Adjusted to Measured?	Yes
<b>Leak Check</b>		<b>Instrument Setup</b>	
Main (< 0.15 l/min)	Base=-0.04, Ref.=-0.04	Flow Control = Active	
Aux (< 0.6 l/min)	Base=00.00, Ref.=00.00	Report Condition = Actual	
<b>K<sub>o</sub> Factor</b>			
Measured	N/A		
K <sub>o</sub> Difference (± 2.5%)	N/A		

**Start Time:** 10:00      **Finish Time:** 11:30

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

**Comments:**

**Auditor/s:** Waseem Ahmed

# Nitrogen Dioxide

**NOx - NO- NO2 Calibration Report**  
**Station Information**

Calibration Date	August 12, 2013	Previous Calibration	July 26, 2013
Company	LICA	Plant/Location	ELK Point Airport
Start Time (MST)	9:10	End Time (MST)	13:25
Reason:	Monthly calibration		
Barometric Pressure	28.07 in Hg	Station Temperature	24 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO	49.2 ppm
Cal Gas Cylinder #	BAL3031	Cal Gas Expiry date	December 29, 2016
DAS Output Voltage	0-1 Volts	Chart Rec. Output	NA Volts

**Equipment Information**

Analyzer Make / Model:	API 200E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	EnviroNics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	EnviroNics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range			0-1000				
Sample Flow/Conv. Temp	477 ccm	314.5 Deg C		482 ccm	314.7 Deg C		
Ozone Flow / Vacuum	78 ccm	4.0 *Hg-A		78 ccm	4.0 *Hg-A		
HVPS / A ZERO	674 Volts	8.7 MV		674 Volts	9.2 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.7 Deg C		50.0 Deg C	6.7 Deg C		
Box Temp / IZS Temp	33.1 Deg C	45.2 Deg C		34.3 Deg C	45.0 Deg C		
Offset	0.4 NOx	0.5 NO		0.4 NOx	0.5 NO		
Slope	1.043 NOx	1.032 NO		1.031 NOx	1.018 NO		
NO2 COEF / Conv Efficiency	NA NO2	0.996		NA NO2	0.996		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
5000	0.0	NA	0	0	NA	0	0	0	NA	NA
	No zero adj.									
4920	81.4	NA	802	801	NA	809	809	0	0.9918	0.9898
4920	81.4	NA	802	801	NA	803	800	2	0.9992	1.0009
4960	40.6	NA	400	399	NA	398	398	1	1.0057	1.0037
4980	20.3	NA	200	200	NA	201	200	1	0.9958	1.0000
5000	0.0	NA	0	0	NA	0	0	0	NA	NA

**Gas Phase Titration Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4920	81.3	NA	801	800	NA	802	798	5	NA	NA
4920	81.3	600	801	NA	509	800	294	507	1.0039	99.60%
	No span adj.									
4920	81.3	300	801	NA	262	801	541	261	1.0038	99.61%
4920	81.3	120	801	NA	106	803	697	107	0.9907	100.99%

Linearity	Sum of Least Squares	NOx= 1.000	NO= 1.001	NO2= 1.003
OK?	Correction Factors:	NOx= 0.9992	NO= 1.0009	NO2= 1.0039
	Average Converter Efficiency=	100.07%		

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	644 NOx	631 NO2		635 NOx	623 NO2		
	Sample Lines Connected:			YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	0.998	1.000	1.000
Current Correction Factor Before Span Adjust	0.992	0.990	1.004
Percent Change	0.6%	1.0%	-0.4%

**Notes**      **NA : Not Applicable**

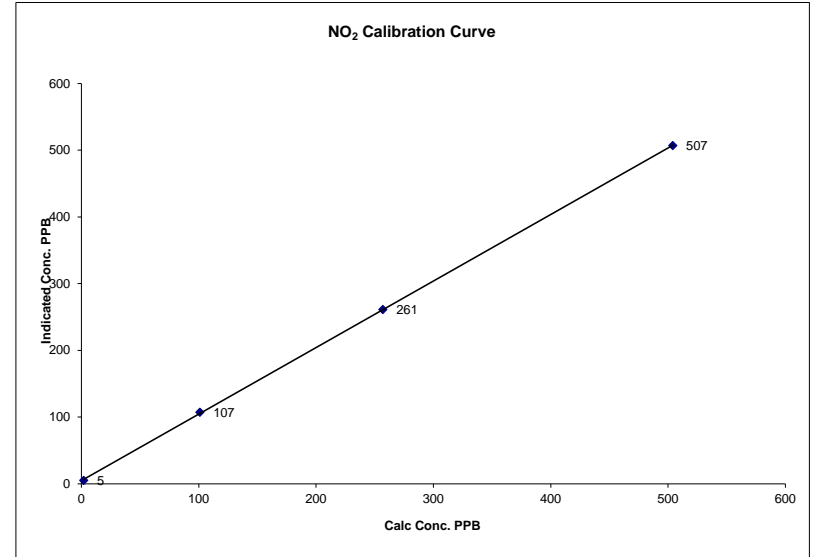
Change sample filter			
Additional Point: O3=450ppb	Dilution 4920	Source Flow	81.3
NOX 802	NO 415	NO2 387	

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

Calibration Date	August 12, 2013
Company	LICA
Plant / Location	ELK Point Airport
Start Time (MST)	9:10
End Time (MST)	13:25

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999963
2	5	NA	Intercept	(± 3% F.S.)	4.45712
101	107	0.9439			
261	261	0.9847			
504	507	0.9941			

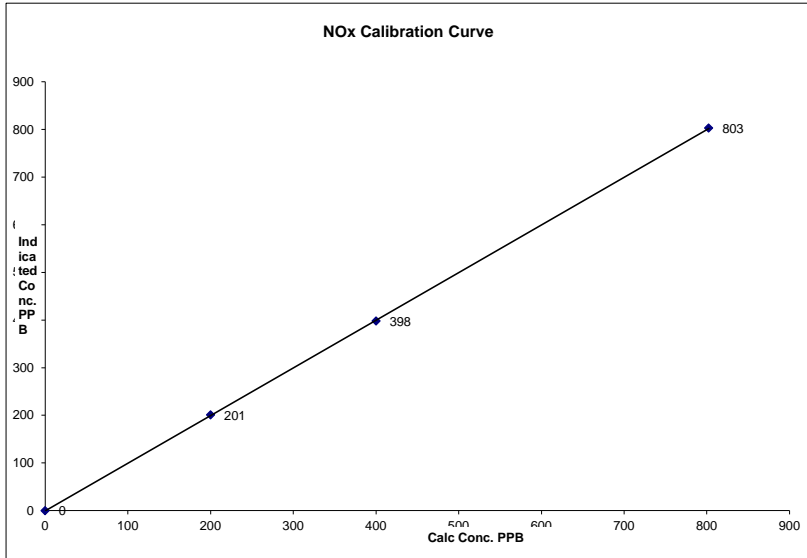


Notes:

**NOx Calibration Curve**

Calibration Date	August 12, 2013	
Company	LICA	
Plant / Location	ELK Point Airport	
Start Time (MST)	9:10	End Time (MST) 13:25

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999983
0	0	NA	Slope (0.85 to 1.15)	1.000112
200	201	0.9958	Intercept (± 3% F.S.)	-0.23751
400	398	1.0057		
802	803	0.9992		

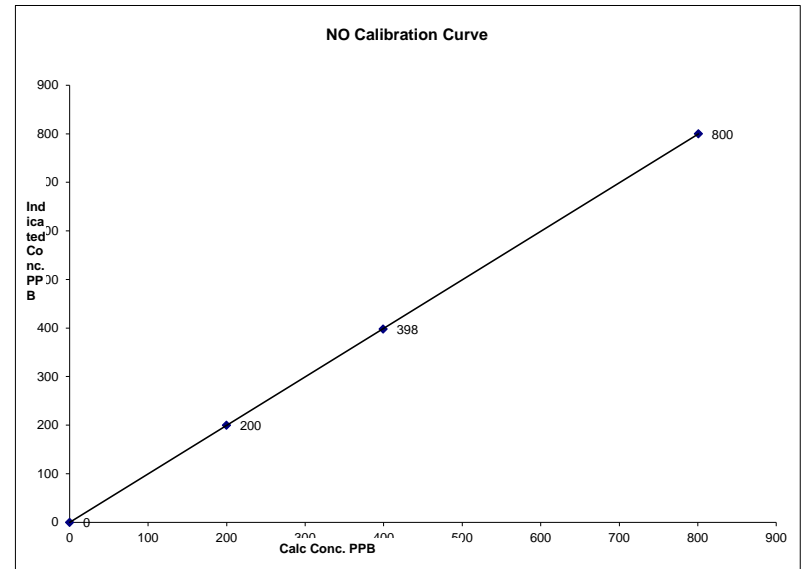


Notes:

**NO Calibration Curve**

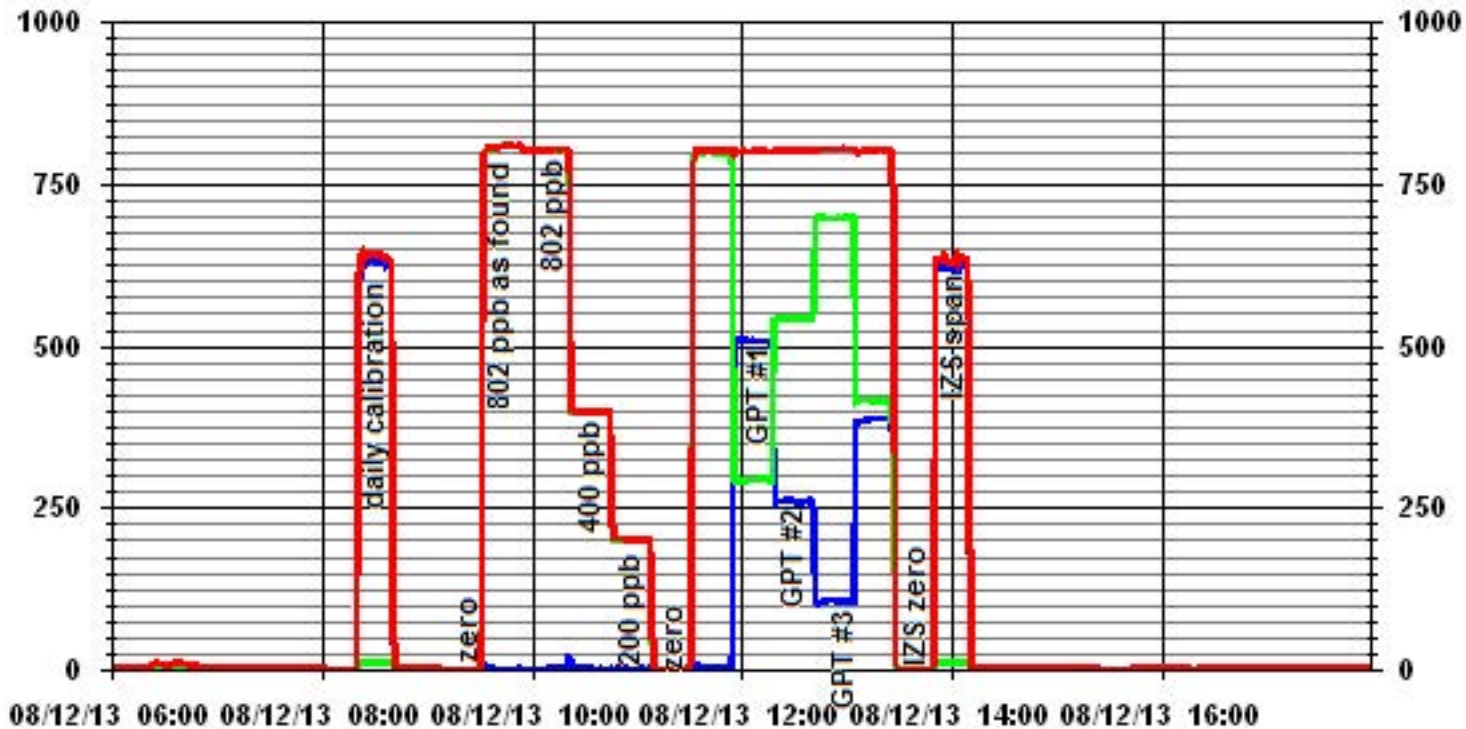
Calibration Date	August 12, 2013	
Company	LICA	
Plant / Location	ELK Point Airport	
Start Time (MST)	9:10	End Time (MST) 13:25

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999996
0	0	NA	Slope (0.85 to 1.15)	0.998717
200	200	1.0000	Intercept (± 3% F.S.)	-0.03791
399	398	1.0037		
801	800	1.0009		



Notes:

### 01 Minute Averages



**NOx - NO- NO2 Calibration Report**

**Station Information**

Calibration Date	August 13, 2013	Previous Calibration	August 12, 2013
Company	LICA	Plant/Location	ELK Point Airport
Start Time (MST)	13:25	End Time (MST)	14:30
Reason:	Zero Span Check		
Barometric Pressure	28.02 in HG	Station Temperature	28 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO	49.2 ppm
Cal Gas Cylinder #	BAL3031	Cal Gas Expiry date	December 29, 2016
DAS Output Voltage	0-1 Volts	Chart Rec. Output	NA Volts

**Equipment Information**

Analyzer Make / Model:	API 200E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	API 700	S/N:	690		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	690		

**Analyzer Settings**

Before Calibration			After Calibration			
Concentration Range	0-1000			ppb		
Sample Flow/Conv. Temp	477 ccm	314.5 Deg C	479 ccm	315 Deg C		
Ozone Flow / Vacuum	78 ccm	4.0 *Hg-A	78 ccm	4.0 *Hg-A		
HVPS / A ZERO	674 Volts	8.7 MV	674 Volts	9.3 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.7 Deg C	50.0 Deg C	6.8 Deg C		
Box Temp / IZS Temp	36.1 Deg C	45.2 Deg C	36.5 Deg C	45.1 Deg C		
Offset	0.4 NOx	0.5 NO	0.4 NOx	0.5 NO		
Slope	1.031 NOx	1.018 NO	1.031 NOx	1.018 NO		
NO2 COEF / Conv Efficiency	NA NO2	0.996	NA NO2	0.996		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
5000	0.0	NA	0	0	NA	0	-1	0	NA	NA
	No zero adj.									
4920	81.0	NA	799	797	NA	784	783	2	1.0185	1.0164
4960	40.0	NA	394	394	NA	387	387	0	1.0191	1.0144
4980	20.0	NA	197	197	NA	192	191	0	1.0271	1.0250
5000	0.0	NA	0	0	NA	0	0	0	NA	NA

**Gas Phase Titration Calibration Data**

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

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 1.019	NO= 1.018	NO2=
				NOx= 1.0185	NO= 1.0164	NO2=
				Average Converter Efficiency=		

**IZS Calibration Data**

	Before Calibration			After Calibration		
	Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2
Auto Span	635 NOx	623 NO2		635 NOx	623 NO2	
	Sample Lines Connected:			YES		

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	0.999	1.001	
Current Correction Factor Before Span Adjust	1.018	1.016	
Percent Change	-1.9%	-1.5%	

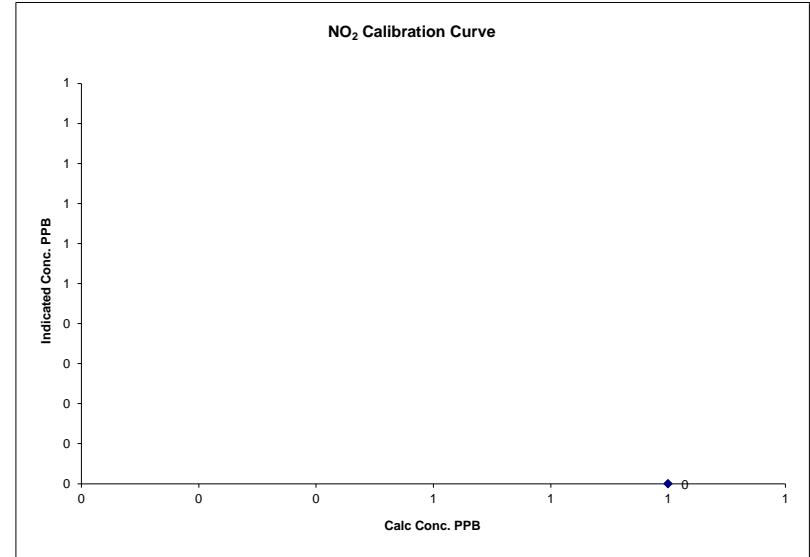
Notes: **NA : Not Applicable**

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

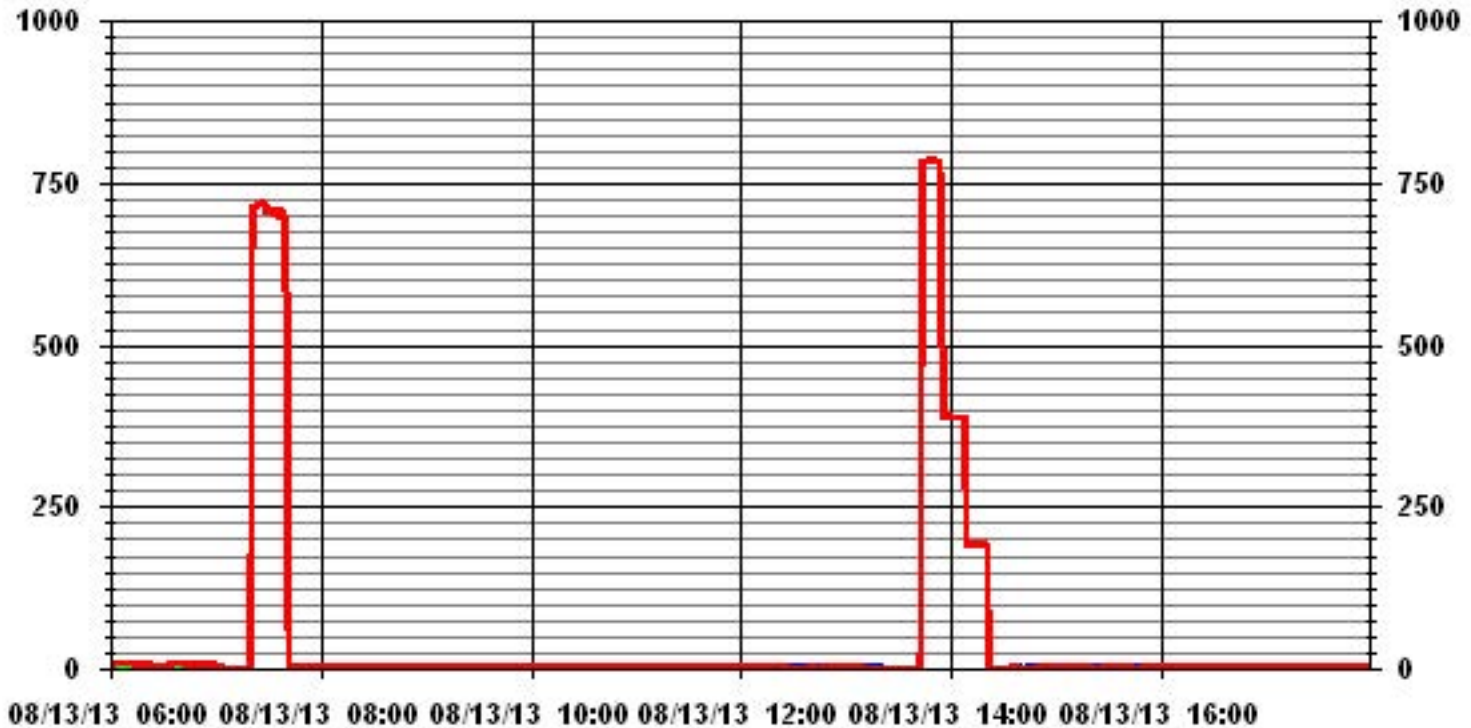
Calibration Date	August 13, 2013
Company	LICA
Plant / Location	ELK Point Airport
Start Time (MST)	13:25
End Time (MST)	14:30

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)
2			Slope (0.85 to 1.15)
			Intercept (± 3% F.S.)



Notes:

### 01 Minute Averages



— LICA35 IIOX\_ PPB

— LICA35 IIO\_ PPB

— LICA35 IIO2\_ PPB

**NOx - NO- NO2 Calibration Report**

**Station Information**

Calibration Date	August 14, 2013	Previous Calibration	August 12, 2013
Company	LICA	Plant/Location	ELK Point Airport
Start Time (MST)	9:00	End Time (MST)	15:23
Reason:	Monthly calibration (redo)		
Barometric Pressure	27.96 in Hg	Station Temperature	23 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO	49.2 ppm
Cal Gas Cylinder #	BAL3031	Cal Gas Expiry date	December 29, 2016
DAS Output Voltage	0-1 Volts	Chart Rec. Output	NA Volts

**Equipment Information**

Analyzer Make / Model:	API 200E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	API 700	S/N:	690		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	690		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range			0-1000				ppb
Sample Flow/Conv. Temp	482 ccm	314.4 Deg C		478 ccm	314.1 Deg C		
Ozone Flow / Vacuum	78 ccm	4.0 *Hg-A		78 ccm	4.0 *Hg-A		
HVPS / A ZERO	674 Volts	8.3 MV		673 Volts	9.9 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.7 Deg C		50.0 Deg C	6.8 Deg C		
Box Temp / IZS Temp	31.1 Deg C	45.2 Deg C		38.8 Deg C	45.2 Deg C		
Offset	0.4 NOx	0.5 NO		0.4 NOx	0.5 NO		
Slope	1.031 NOx	1.018 NO		1.060 NOx	1.043 NO		
NO2 COEF / Conv Efficiency	NA NO2	0.996		NA NO2	0.997		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
5000	0.0	NA	0	0	NA	0	0	0	NA	NA
	No zero adj.									
4920	81.3	NA	801	800	NA	782	780	2	1.0248	1.0254
4920	81.3	NA	801	800	NA	800	799	1	1.0018	1.0010
4962	40.6	NA	400	399	NA	399	398	1	1.0028	1.0033
4984	20.3	NA	200	200	NA	197	196	1	1.0152	1.0183
5000	0.0	NA	0	0	NA	0	0	0	NA	NA

**Gas Phase Titration Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4913	81.3	NA	803	801	NA	802	799	3	NA	NA
4913	81.3	600	803	NA	499	800	303	496	1.0060	99.40%
	No adj.									
4913	81.3	300	803	NA	263	806	539	265	0.9925	100.77%
4913	81.3	120	803	NA	109	805	693	111	0.9820	101.89%

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 1.003	NO= 1.002	NO2= 1.002
				NOx= 1.0018	NO= 1.0010	NO2= 1.0060
				Average Converter Efficiency= 100.68%		

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	635 NOx	623 NO2		700 NOx	680 NO2		
	Sample Lines Connected:			YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	0.999	1.001	1.004
Current Correction Factor Before Span Adjust	1.025	1.025	1.006
Percent Change	-2.5%	-2.4%	-0.2%

**Notes**      **NA : Not Applicable**

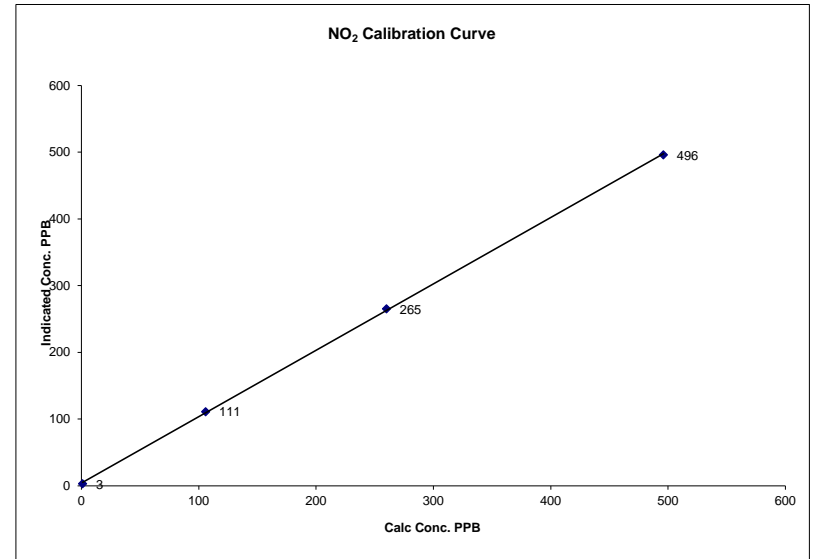
O3=450	Dilution 4913	Source flow 81.3
	Nox 803	NO 426    NO2 377

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

Calibration Date	August 14, 2013
Company	LICA
Plant / Location	ELK Point Airport
Start Time (MST)	9:00
End Time (MST)	15:23

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999899
1	3	NA	Intercept	(± 3% F.S.)	4.17786
106	111	0.9550			
260	265	0.9811			
496	496	1.0000			



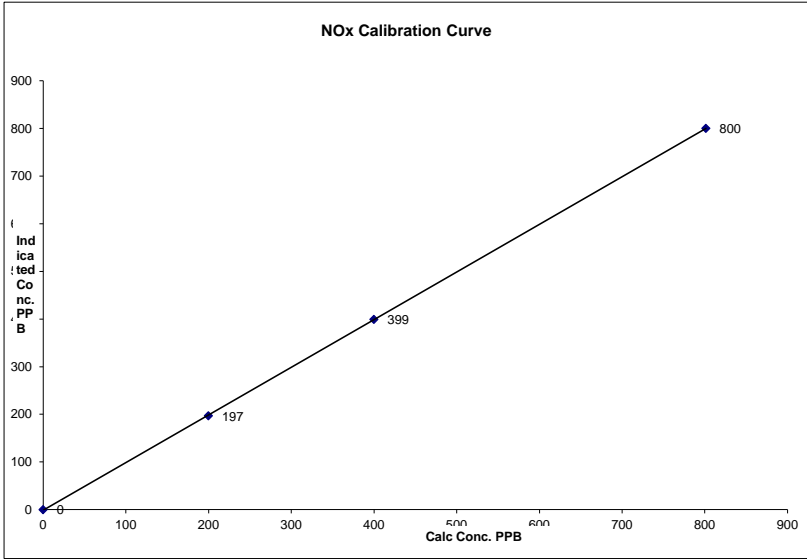
Notes:



**NOx Calibration Curve**

Calibration Date	August 14, 2013	
Company	LICA	
Plant / Location	ELK Point Airport	
Start Time (MST)	9:00	End Time (MST) 15:23

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999987
0	0	NA	Slope (0.85 to 1.15)	0.999312
200	197	1.0152	Intercept (± 3% F.S.)	-1.13470
400	399	1.0028		
801	800	1.0018		

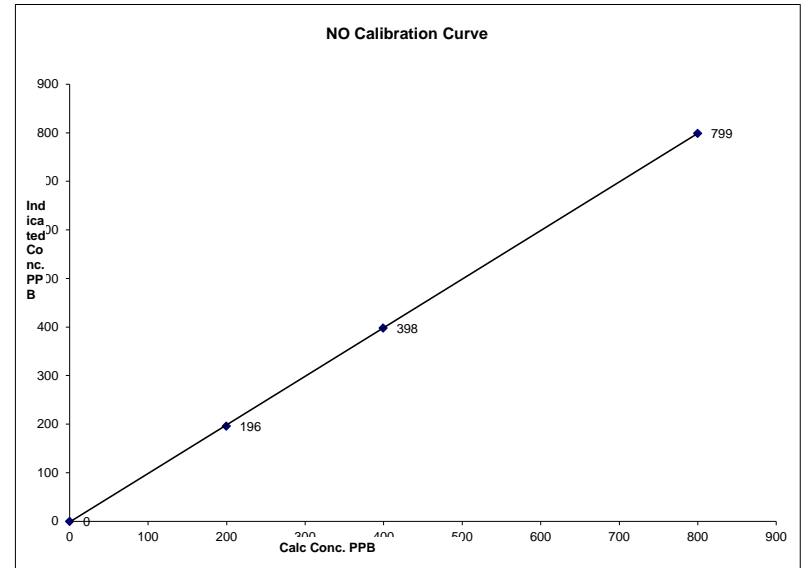


Notes:

**NO Calibration Curve**

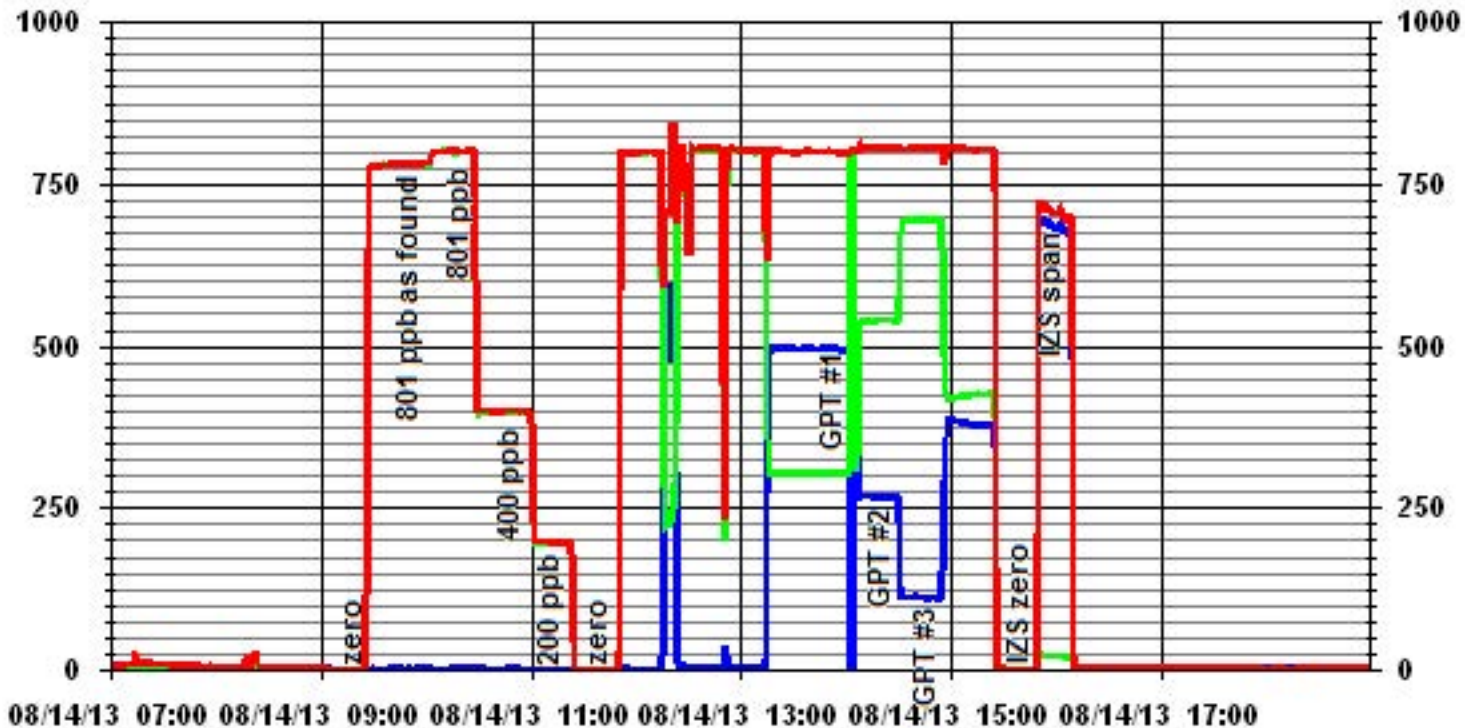
Calibration Date	August 14, 2013	
Company	LICA	
Plant / Location	ELK Point Airport	
Start Time (MST)	9:00	End Time (MST) 15:23

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999980
0	0	NA	Slope (0.85 to 1.15)	1.000343
200	196	1.0183	Intercept (± 3% F.S.)	-1.53523
399	398	1.0033		
800	799	1.0010		



Notes:

### 01 Minute Averages



— LICA35 IIOX\_ PPB

— LICA35 IIO\_ PPB

— LICA35 IIO2\_ PPB

**NOx - NO- NO2 Calibration Report**

**Station Information**

Calibration Date	August 26, 2013	Previous Calibration	August 14, 2013
Company	LICA	Plant/Location	ELK Point Airport
Start Time (MST)	13:15	End Time (MST)	14:11
Reason:	AF point		
Barometric Pressure	27.85 in HG	Station Temperature	20 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO	49.2 ppm
Cal Gas Cylinder #	BAL3031	Cal Gas Expiry date	December 29, 2016
DAS Output Voltage	0-1 Volts	Chart Rec. Output	NA Volts

**Equipment Information**

Analyzer Make / Model:	API 200E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	Enviro-nics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Enviro-nics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range	0-1000			ppb			
Sample Flow/Conv. Temp	481 ccm	315.5 Deg C		480 ccm	315 Deg C		
Ozone Flow / Vacuum	78 ccm	4.0 *Hg-A		78 ccm	4.0 *Hg-A		
HVPS / A ZERO	674 Volts	8.4 MV		674 Volts	8.6 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.7 Deg C		50.0 Deg C	6.8 Deg C		
Box Temp / IZS Temp	29.4 Deg C	45.3 Deg C		29.8 Deg C	45.2 Deg C		
Offset	0.4 NOx	0.5 NO		0.4 NOx	0.5 NO		
Slope	1.060 NOx	1.043 NO		1.060 NOx	1.043 NO		
NO2 COEF / Conv Efficiency	NA NO2	0.997		NA NO2	0.997		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	NA	0	0	NA	0	0	0	NA	NA
	No zero adj.									
4920	80.1	NA	790	788	NA	783	780	3	1.0086	1.0105

**Gas Phase Titration Calibration Data**

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

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 1.0086	NO= 1.0105	NO2=
				Average Converter Efficiency=		

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	635 NOx	623 NO2		635 NOx	623 NO2		
Sample Lines Connected:				YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	1.002	1.001	
Current Correction Factor Before Span Adjust	1.009	1.010	
Percent Change	-0.7%	-0.9%	

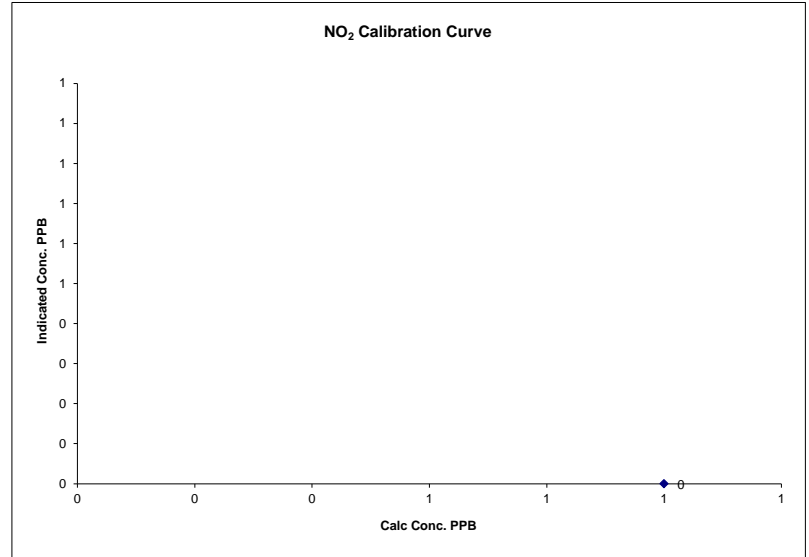
Notes: **NA : Not Applicable**

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

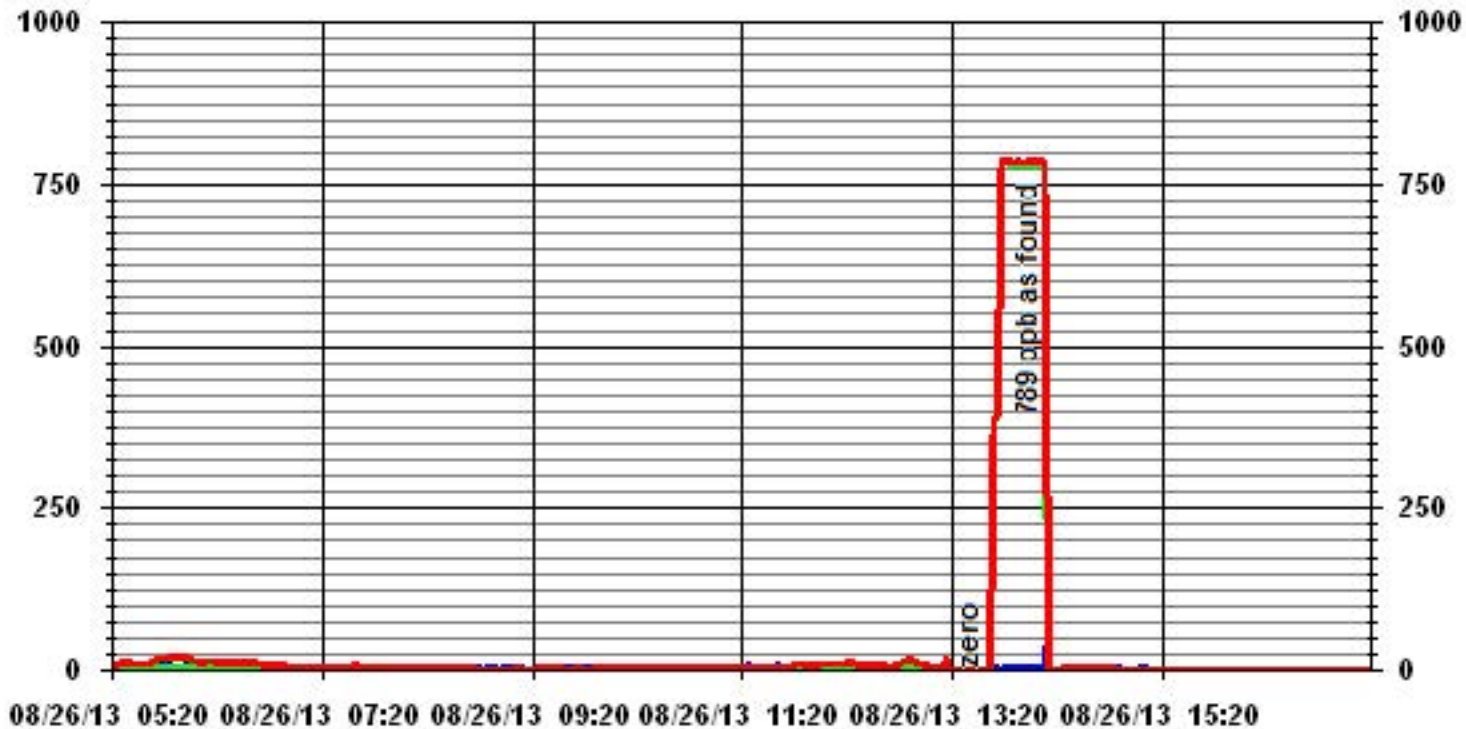
Calibration Date	August 26, 2013
Company	LICA
Plant / Location	ELK Point Airport
Start Time (MST)	13:15
End Time (MST)	14:11

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)
3			Slope (0.85 to 1.15)
			Intercept (± 3% F.S.)



Notes:

### 01 Minute Averages



— LICA35 IIOX\_ PPB

— LICA35 IIO\_ PPB

— LICA35 IIO2\_ PPB

**NOx - NO- NO2 Calibration Report**

**Station Information**

Calibration Date	August 27, 2013	Previous Calibration	August 14, 2013
Company	LICA	Plant/Location	ELK Point Airport
Start Time (MST)	14:20	End Time (MST)	15:07
Reason:	AF point		
Barometric Pressure	27.82 in HG	Station Temperature	26 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO	49.2 ppm
Cal Gas Cylinder #	BAL3031	Cal Gas Expiry date	December 29, 2016
DAS Output Voltage	0-1 Volts	Chart Rec. Output	NA Volts

**Equipment Information**

Analyzer Make / Model:	API 200E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	EnviroNics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	EnviroNics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range	0-1000			ppb			
Sample Flow/Conv. Temp	472 ccm	315.2 Deg C		474 ccm	314.4 Deg C		
Ozone Flow / Vacuum	78 ccm	4.0 *Hg-A		77 ccm	4.0 *Hg-A		
HVPS / A ZERO	674 Volts	14.0 MV		674 Volts	9.6 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.7 Deg C		50.0 Deg C	6.7 Deg C		
Box Temp / IZS Temp	33.0 Deg C	45.4 Deg C		33.7 Deg C	45.3 Deg C		
Offset	0.4 NOx	0.5 NO		0.4 NOx	0.5 NO		
Slope	1.060 NOx	1.043 NO		1.060 NOx	1.043 NO		
NO2 COEF / Conv Efficiency	NA NO2	0.997		NA NO2	0.997		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	NA	0	0	NA	0	0	0	NA	NA
	No zero adj.									
4920	80.0	NA	789	787	NA	790	782	6	0.9985	1.0066

**Gas Phase Titration Calibration Data**

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

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 0.9985	NO= 1.0066	NO2=
				Average Converter Efficiency=		

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	635 NOx	623 NO2		635 NOx	623 NO2		
Sample Lines Connected:				YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	1.002	1.001	
Current Correction Factor Before Span Adjust	0.998	1.007	
Percent Change	0.3%	-0.6%	

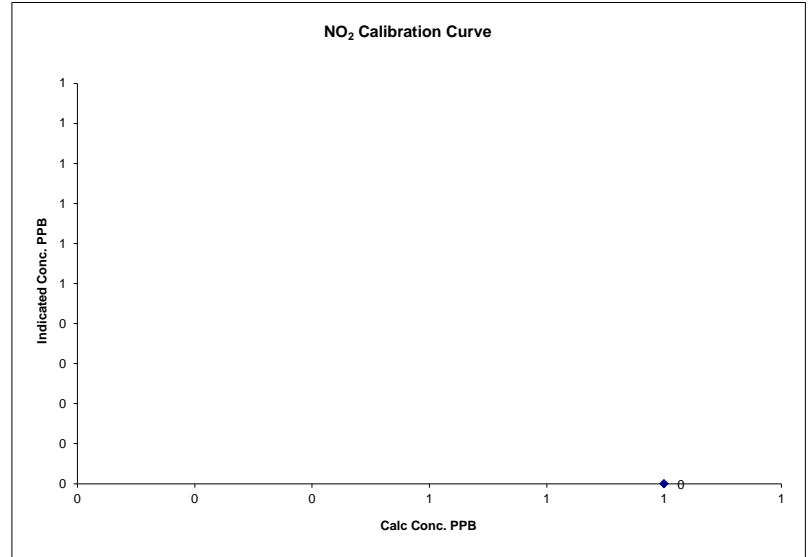
Notes: **NA : Not Applicable**

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

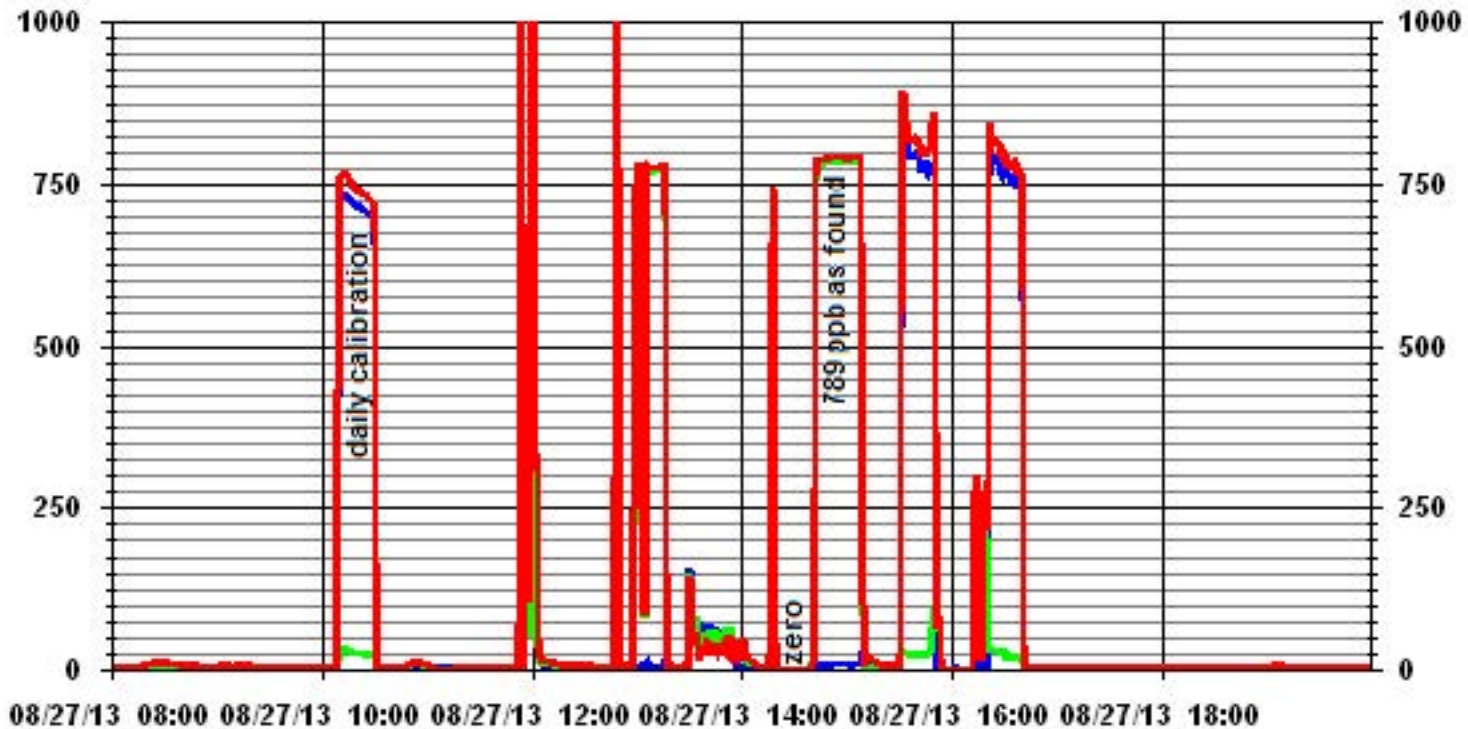
Calibration Date	August 27, 2013
Company	LICA
Plant / Location	ELK Point Airport
Start Time (MST)	14:20
End Time (MST)	15:07

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)
6			Slope (0.85 to 1.15)
			Intercept (± 3% F.S.)



Notes:

# 01 Minute Averages



— LICA35 IIOX\_ PPB

— LICA35 IIO\_ PPB

— LICA35 IIO2\_ PPB

# Ozone

### O<sub>3</sub> Calibration Report

#### Station Information

Calibration Date	August 27, 2013	Previous Calibration	July 5, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	EIK Point Airport		
Start Time (MST)	11:04	End Time (MST)	13:41
Reason:	Monthly calibration		
Barometric Pressure	27.84 in HG	Station Temperature	20 Deg C
DAS Output Voltage	0-10 Volts		

#### Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	1002240372	Method:	Photometric
Calibrator Make / Model:	Enviroics 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO717		

#### Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range	0-500 ppb							
Cell A Flow / Cell B Flow	753 LPM	695 LPM	760 LPM	752 LPM	761 LPM	695 LPM	752 LPM	761 LPM
O <sub>3</sub> Set Level	54.1 mmHg				54.1 mmHg			
Bench Lamp	54.1 Deg C				54.1 Deg C			
O <sub>3</sub> Lamp / Box Temp	68.2 Deg	30.4 Deg	30.4 Deg	68.2 Deg	30.3 Deg	30.3 Deg	30.3 Deg	30.3 Deg
Offset / Slope	-0.2		1.033		-0.2		0.969	

#### Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	N/A
	No zero adj			
4994	450	373	398	0.9372
4994	450	373	371	1.0054
4994	300	260	247	1.0526
4994	120	106	99	1.0707
4994	0	0	0	N/A
Sum of Least Squares				1.0228
New Correction Factor				1.0054

#### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	329	329
Sample Lines Connected		Yes
Previous Calibration Correction Factor:		0.9841
Current Correctio Factor Before Span Adjust:		0.9372
Percent Change:		5.0%

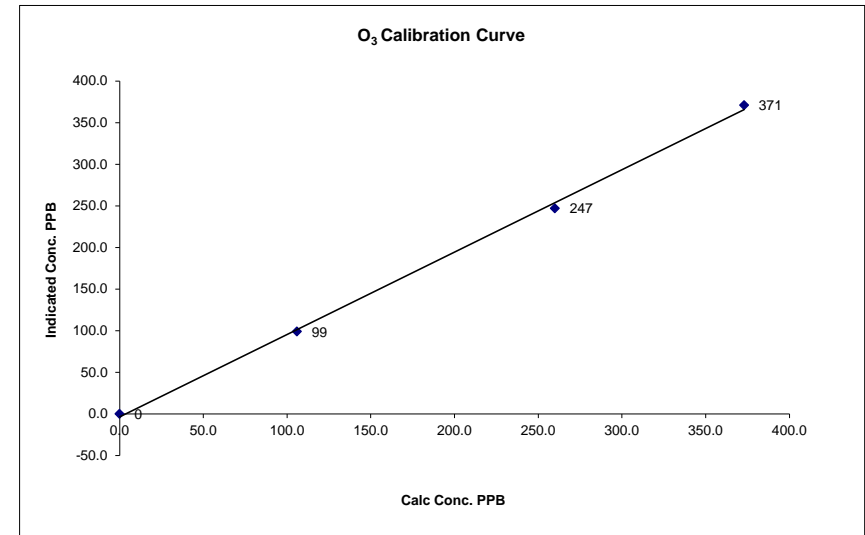
Note: N/A : Not Applicable

Calibration Performed by: Waseem Ahmed

### O<sub>3</sub> Calibration Curve

Calibration Date	August 27, 2013
Company	Lakeland Industry & Community Association
Plant / Location	EIK Point Airport
Start Time (MST)	11:04
End Time (MST)	13:41

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
0	0	N/A	Slope (0.85 to 1.15)	0.998836
106	99	1.0707	Intercept (± 3% F.S.)	0.990133
260	247	1.0526		-3.677110
373	371	1.0054		



Notes:



# 01 Minute Averages

