

Lakeland Industry & Community Association

Cold Lake Monitoring Site
Ambient Air Monitoring
Data Report
For
August 2009

Prepared By:



September 23, 2009

Lakeland Industry & Community Association Ambient Air Monitoring

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Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: Cold Lake
Data Period: August 2009

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Craig Snider

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

Calibration Procedure

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

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

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

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

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

MONTHLY CONTINUOUS DATA SUMMARY

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Continuous Ambient Monitoring – August 2009

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION COLD LAKE SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						1-HOUR				24-HOUR			
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO ₂ (PPB)	172	57	0	0	0.02	3	4	11	7.3	314(NW)	0.2	4	100.0
TRS (PPB)	-	-	-	-	0.03	6	14, 15	23, 0	0.7, 0.7	243(WSW), 220(SW)	0.4	17	100.0
NO ₂ (PPB)	212	106	0	0	1.65	9	31	19	2.1	101(E)	3.4	11	100.0
NO (PPB)	-	-	-	-	0.44	18	25	6, 7	0.1, 1.6	275(W), 93(E)	2.0	25	100.0
NO _x (PPB)	-	-	-	-	2.35	24	25	7	1.6	93(E)	4.4	11	100.0
O ₃ (PPB)	82	-	0	-	18.50	55	10	14	6.7	148(SE)	30.3	30	100.0
THC (PPM)	-	-	-	-	2.14	3.6	7	7	0.3	344(NNW)	2.4	31	100.0
PM 2.5 (UG/M ³)	-	30	-	0	5.42	27.6	17	7	4.5	243(WSW)	12.3	10	96.8
TEMPERATURE (DEG C)	-	-	-	-	15.34	28.7	31	15	4.6	203(SSW)	19.4	30	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	72.76	99.0	7	VAR	VAR	VAR	83.2	14	100.0
VECTOR WS (KPH)	-	-	-	-	4.17	20.0	21	13	-	132(SE)	11.1	21	100.0
VECTOR WD (DEGREES)	-	-	-	-	245(WSW)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS

Monthly Non-Continuous Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Passive Ambient Monitoring Network – August 2009

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO ₂	#28	0.5	0.2
H ₂ S	#17	0.54	0.22
NO ₂	#28	3.3	1.3
O ₃	#32	28.6	18.5

General Monthly Summary - Cold Lake

Equipment Operation

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

AQM STATION – LICA – COLD LAKE

Sulphur Dioxide (PPB)

- Analyzer make / model – Thermo 43i

No operational issues observed during the month. The inlet filter was changed before the monthly calibration was started on August 13th. Data was corrected using daily zero information.

Total Reduced Sulphur (PPB)

- Analyzer make / model –TEI 450i
- Converter - CD NOVA CDN 101

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

Nitrogen Dioxide (PPB)

- Analyzer make / model - TECO 42C

No operational issues observed during this month. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Total HydroCarbon (PPM)

- Analyzer make / model -TECO 51C-LT

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

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Ozone (PPB)

- Analyzer make / model - TECO 49I

No operational issues observed during the month. The inlet filter was changed before the monthly calibration was started.

Particulate Matter 2.5 (ug/m³)

- Analyzer make / model –TEOM1405F

No operational issues observed during this month. A Teom audit was performed on August 4th. The FDMS filters was replaced on August 4th. Sixteen hours of data were invalidated as it was below –3.0 ug/m³.

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

- System make / model – Met One 50.5

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

Relative Humidity (PERCENT)

- System make / model - Rotronic Hygroclip-S3

No operational issues observed during the month.

Ambient Temperature (DEGC)

- System make / model - Rotronic Hygroclip-S3

No operational issues observed during the month.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Trailer Temperature (DEGC)

- System make / model - R&R 61

No operational issues observed during the month.

Datalogger

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

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

Trailer

No issue was observed during this month. The manifold was cleaned on August 13th.

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. 13 hours of fair AQI values recorded in August 2009, and all were due to Ozone. The highest hourly concentration of Ozone was 55 ppb and an AQI value of 29 on August 10th, hour 14. The highest hourly concentration of PM2.5 was 27.6 UG/M3 and an AQI value of 23 on August 17th, hour 7.

Passive Network

No issue was observed during this month.

Continuous Monitoring

Cold Lake

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 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	IZS	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
2	0	0	0	IZS	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
3	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
4	0	IZS	0	0	0	0	1	C	C	C	C	3	0	0	0	0	0	0	0	0	0	0	0	0	3	0.2	24
5	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0.0	24
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0.0	24
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0.0	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	0	0	0	0	0	0	0	0	0.0	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0.0	24
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
19	0	0	0	0	0	0	0	0	1	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
20	0	0	0	0	0	0	0	0	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	0	0	0	0	0	0	NA	1	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0		
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

STATUS FLAG CODES

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

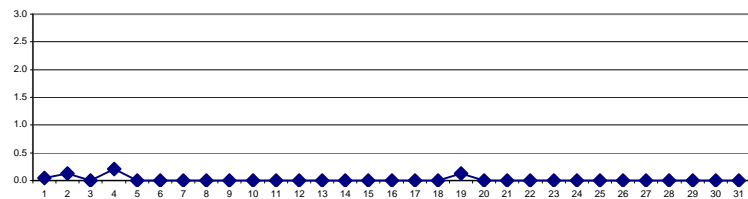
OBJECTIVE LIMIT:

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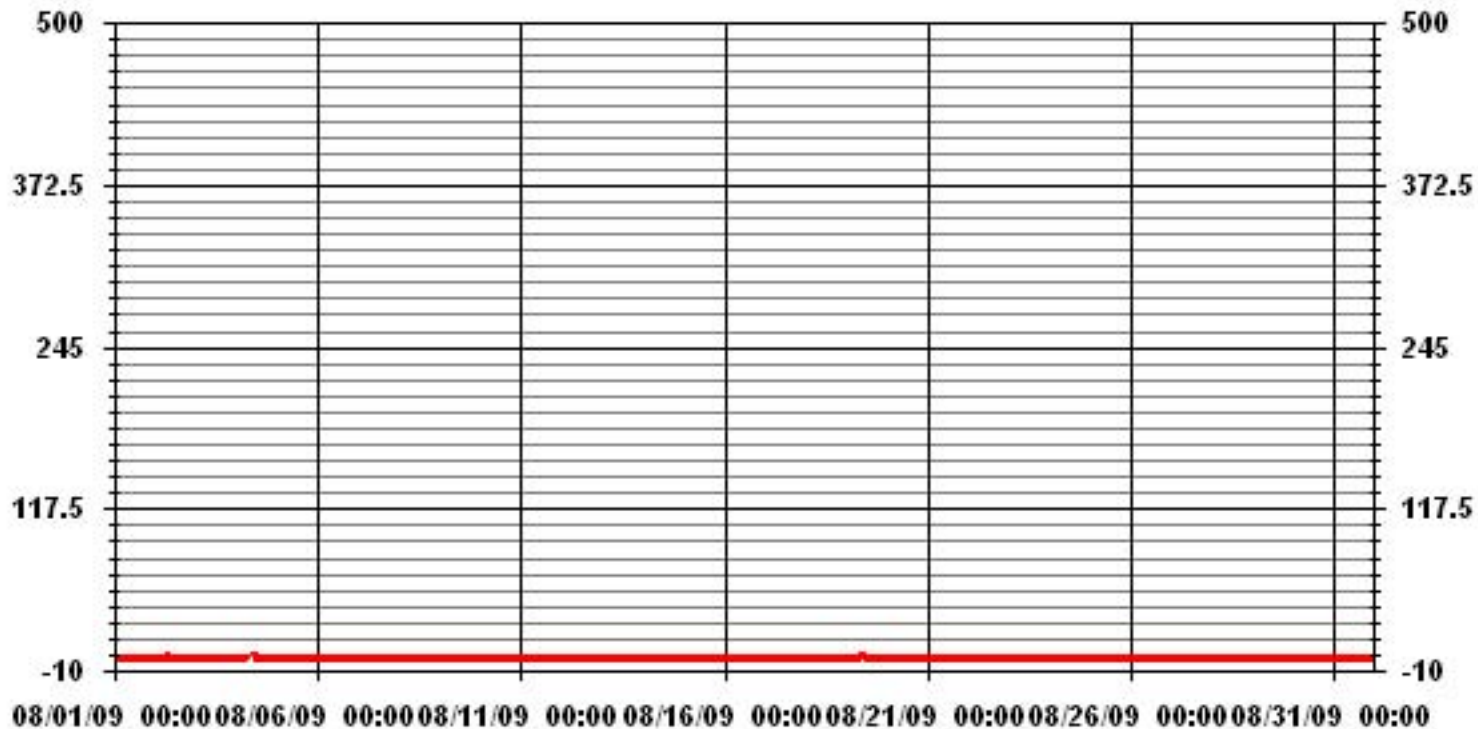
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	9		
MAXIMUM 1-HR AVERAGE:	3 PPB @ HOUR(S) 11 ON DAY(S) 4		
MAXIMUM 24-HR AVERAGE:	0.2 PPB ON DAY(S) 4		
IZS CALIBRATION TIME:	33 HRS	OPERATIONAL TIME:	744 HRS
MONTHLY CALIBRATION TIME:	4 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.15	MONTHLY AVERAGE:	0.02 PPB

24 HOUR AVERAGES FOR AUGUST 2009



01 Hour Averages



— LICA SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

SULPHUR DIOXIDE MAX instantaneous maximum in ppt

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

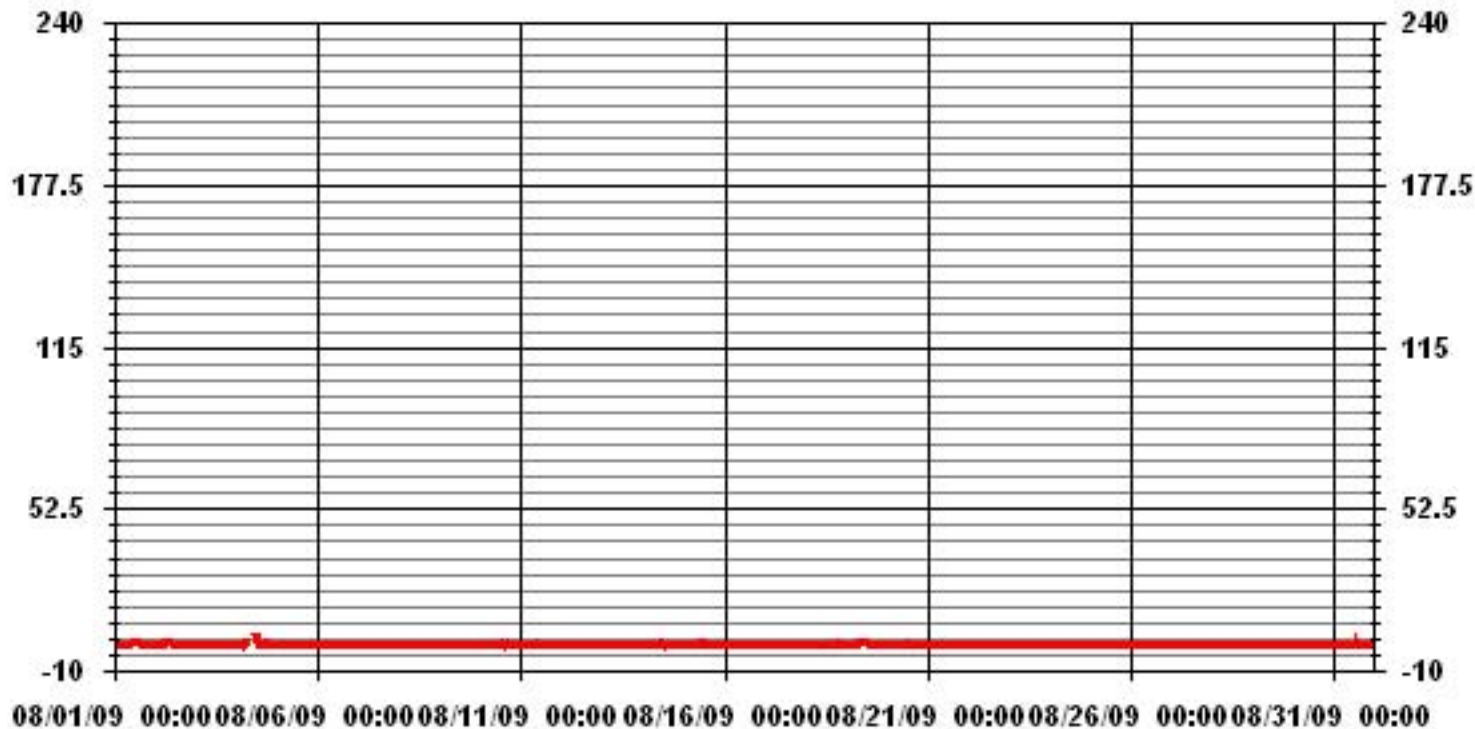
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	37					
MAXIMUM INSTANTANEOUS VALUE:	4	PPB	@ HOUR(S)	11	ON DAY(S)	4
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	0.28					

01 Hour Averages



— LICA SO2MAX PPB

LICA
 SO2_ / WDR Joint Frequency Distribution (Percent)

August 2009

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	4.10	3.67	4.66	4.52	5.79	12.02	4.10	5.23	7.07	12.16	11.03	8.62	6.08	5.23	3.67	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	4.10	3.67	4.66	4.52	5.79	12.02	4.10	5.23	7.07	12.16	11.03	8.62	6.08	5.23	3.67	

Calm : .00 %

Total # Operational Hours : 707

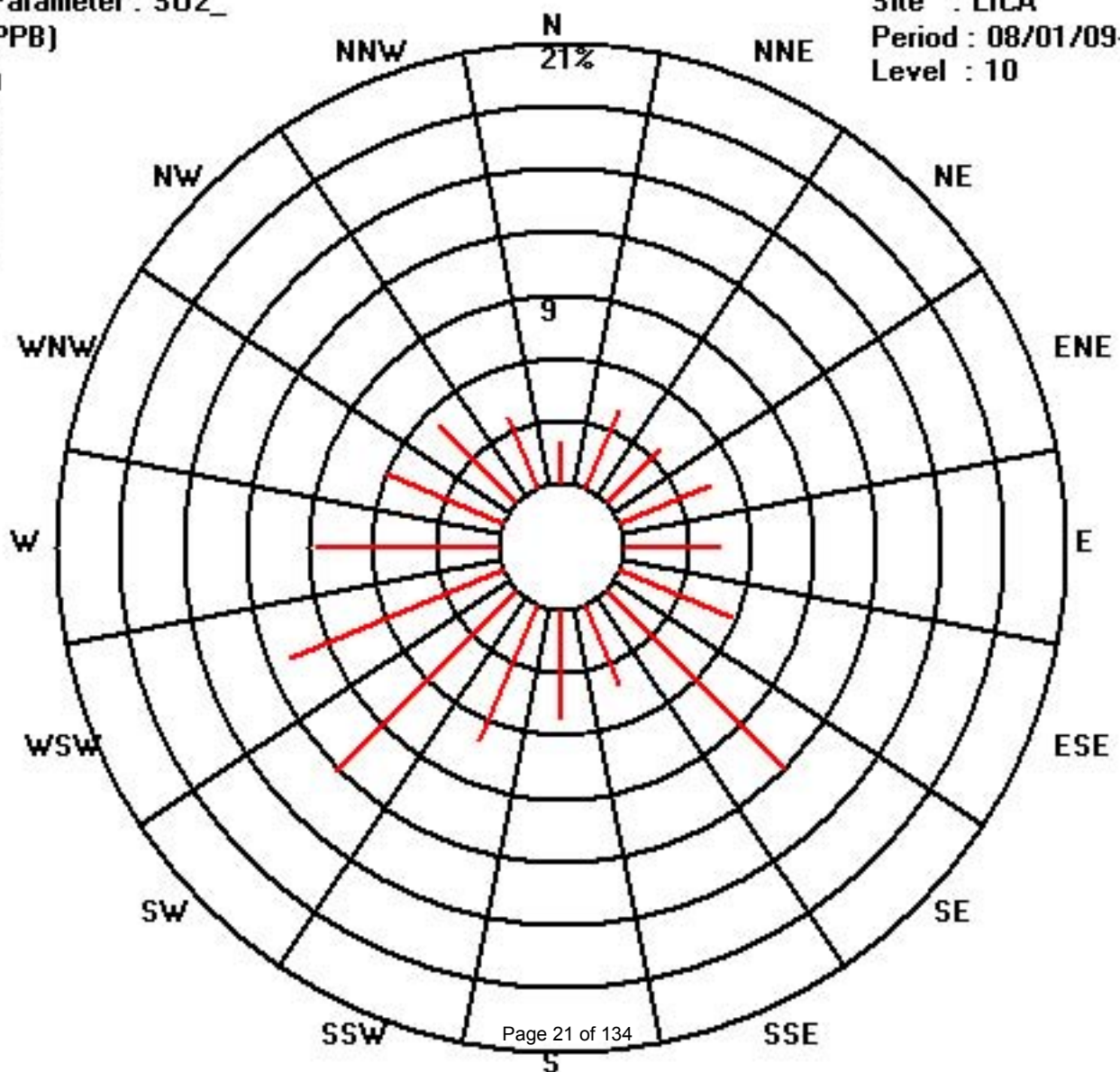
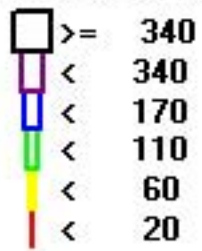
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	14	29	26	33	32	41	85	29	37	50	86	78	61	43	37	26	707
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	14	29	26	33	32	41	85	29	37	50	86	78	61	43	37	26	

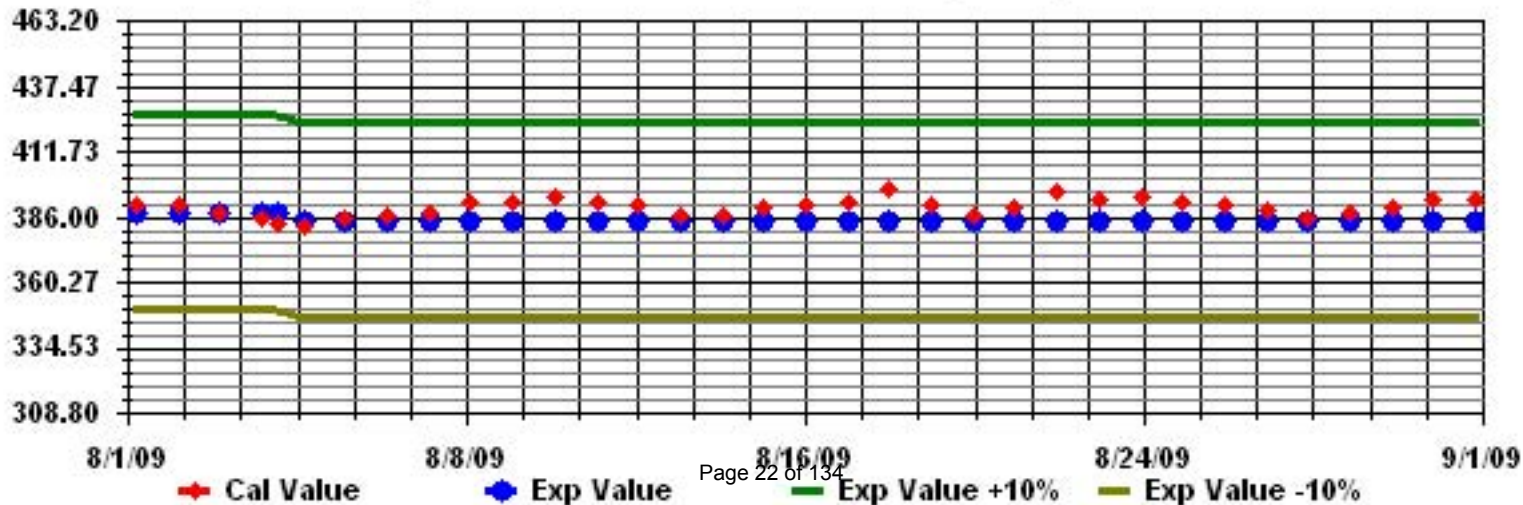
Calm : .00 %

Total # Operational Hours : 707

Class Limits (PPB)



Calibration Graph for Site: LICA Parameter: SO2_ Sequence: SO2 Phase: SPAN



Total Reduced Sulphur

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

MST

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

STATUS FLAG CODES

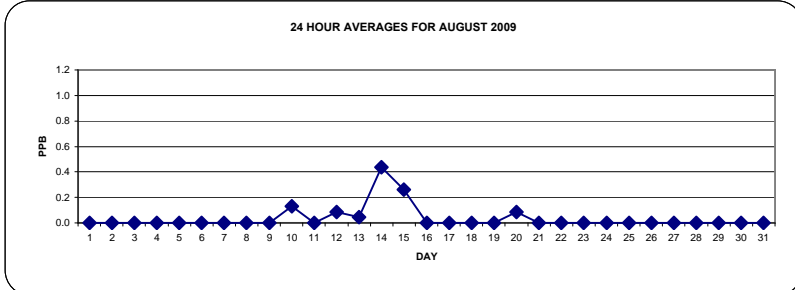
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

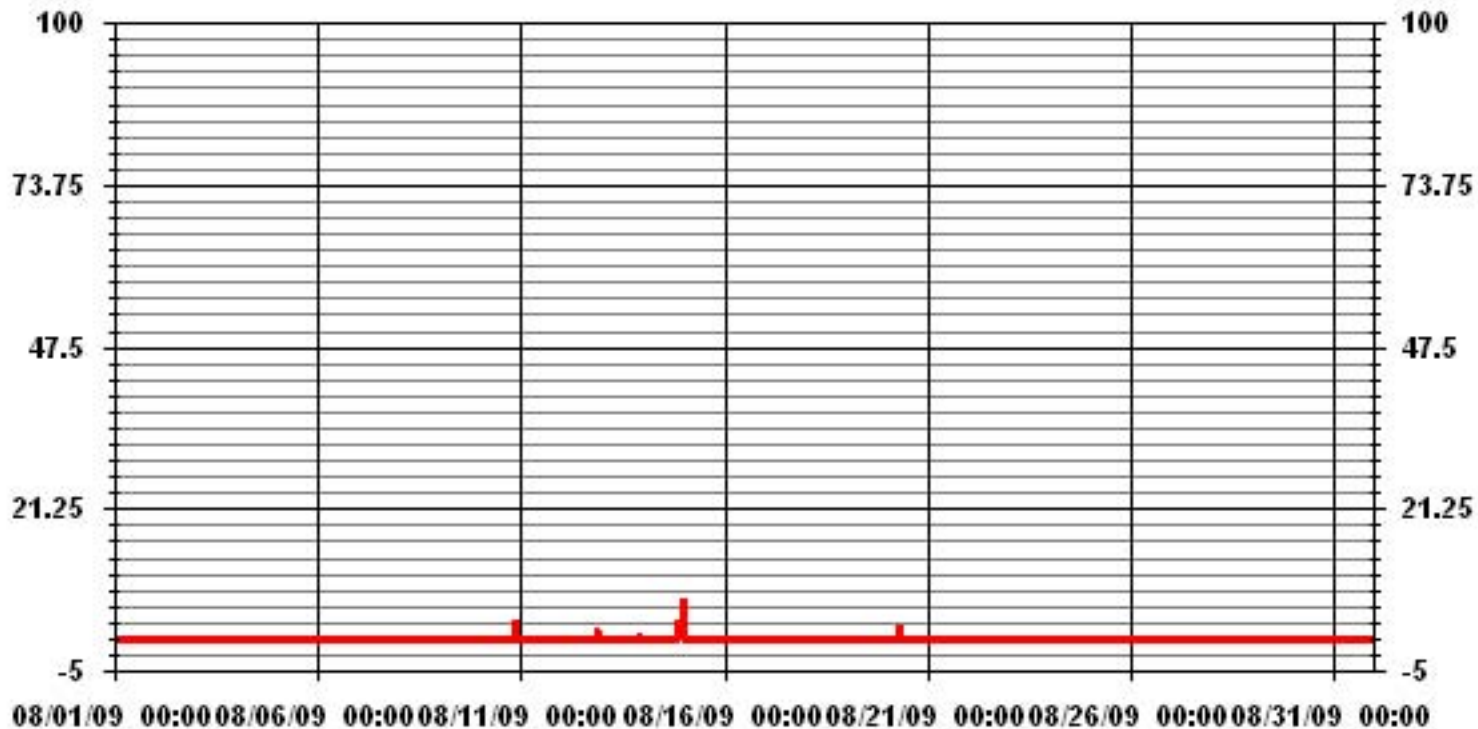
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	57	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	8					
MAXIMUM 1-HR AVERAGE:	6	PPB	@ HOUR(S)	23, 0	ON DAY(S)	14, 15
MAXIMUM 24-HR AVERAGE:	0.4	PPB			ON DAY(S)	17
				VAR-VARIOUS		
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.37		MONTHLY AVERAGE:	0.03	PPB	



01 Hour Averages



— LICA TRS_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

TOTAL REDUCED SULPHUR MAX instantaneous maximum in ppb

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	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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	3	0.2	24	
2	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
3	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
4	0	IZS	0	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
5	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0.0	24
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0.0	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0.0	24
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	0	0	0	0	0	0	0.0	24
10	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	12	26	0	0	26	1.7	24	
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	1	0.0	24	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	13	4	0	13	0.7	24	
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	9	0	4	4	0	9	0.7	24		
14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	16	3	1	25	25	2.0	24	
15	39	1	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	39	1.7	24	
16	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17	0	0	0	0	0	0	1	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
18	0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
20	0	0	0	0	0	0	7	7	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0.6	24	
21	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
22	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
23	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
24	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
25	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
26	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
27	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
28	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	IZS	0	0	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0.0	24
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0.0	24
HOURLY MAX	39	1	0	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	9	16	26	4	25				
HOURLY AVG	1.4	0.1	0.0	0.0	0.0	0.0	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	0.3	1.1	1.6	0.3	0.9				

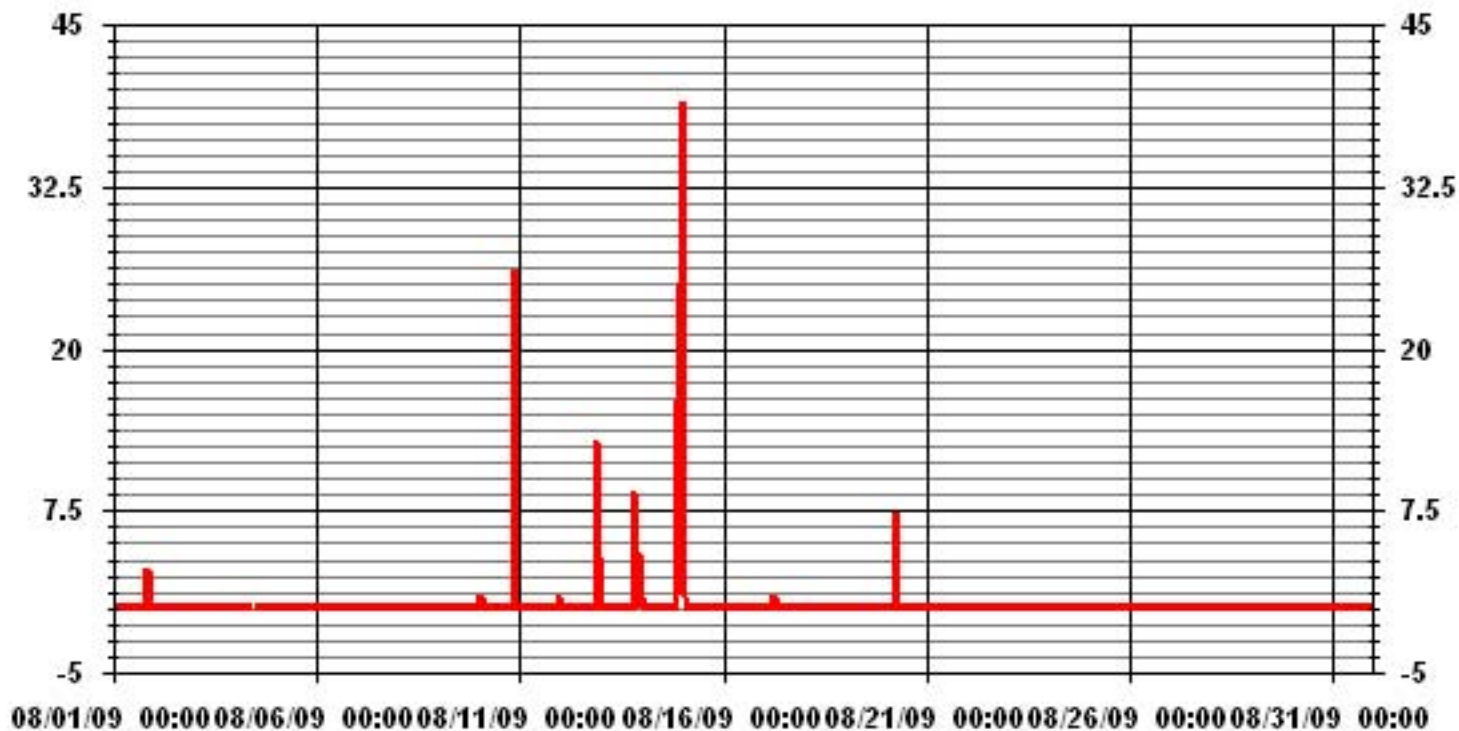
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	21					
MAXIMUM INSTANTANEOUS VALUE:	39	PPB	@ HOUR(S)	0	ON DAY(S)	15
VAR - VARIOUS						
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	2.26					

01 Hour Averages



LICA
 TRS_ / WD Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	1.98	4.10	3.67	4.66	4.52	5.79	12.02	4.10	5.23	7.07	12.02	10.89	8.76	5.94	5.09	3.53	99.43
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.28	.00	.14	.00	.00	.56
< 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	4.10	3.67	4.66	4.52	5.79	12.02	4.10	5.23	7.07	12.16	11.17	8.76	6.08	5.09	3.53	

Calm : .00 %

Total # Operational Hours : 707

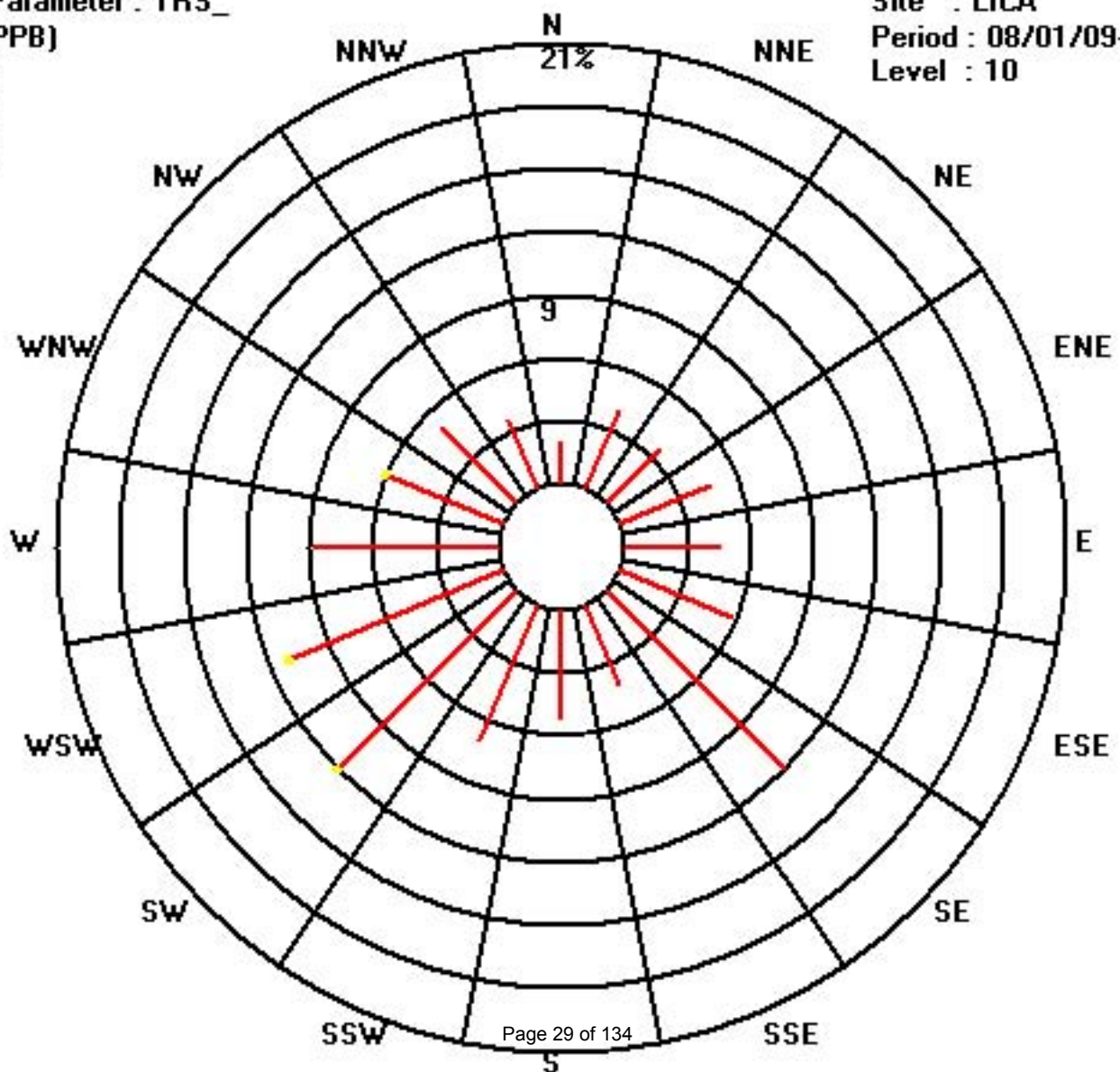
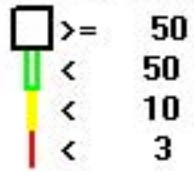
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	14	29	26	33	32	41	85	29	37	50	85	77	62	42	36	25	703
< 10											1	2		1			4
< 50																	
>= 50																	
Totals	14	29	26	33	32	41	85	29	37	50	86	79	62	43	36	25	

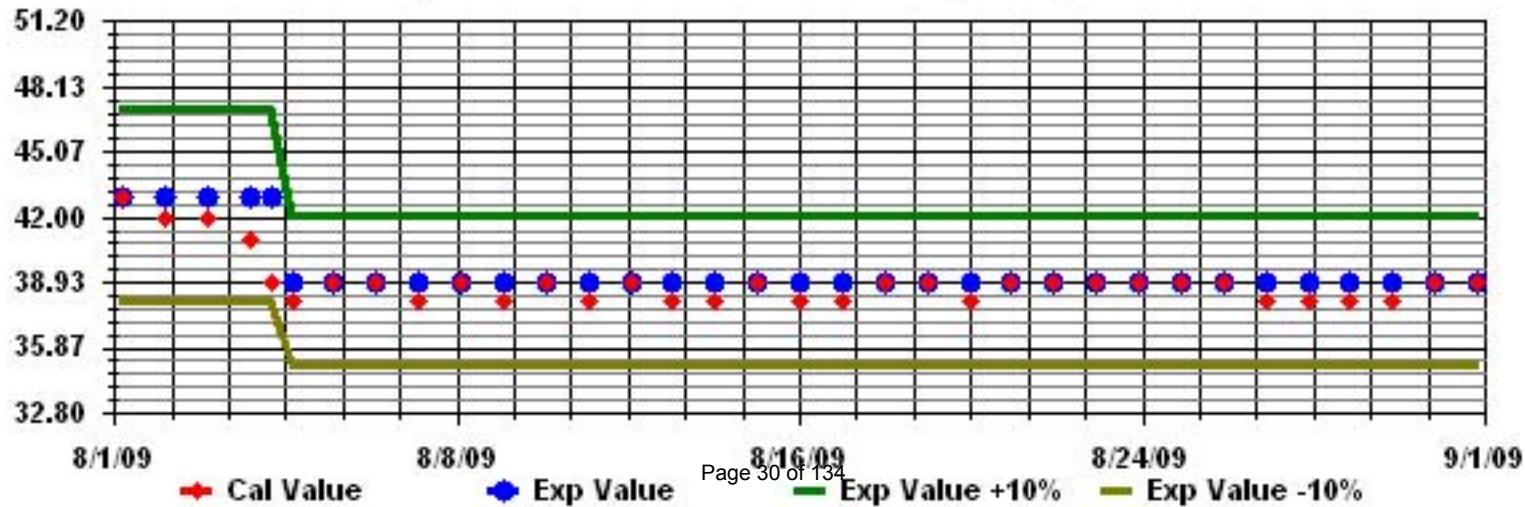
Calm : .00 %

Total # Operational Hours : 707

Class Limits (PPB)



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

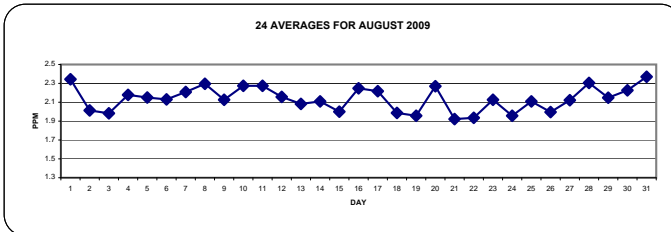
AUGUST 2009

TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	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		2.5	2.4	2.6	2.7	IZS	2.6	2.6	2.7	2.6	2.6	2.4	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.2	2.2	2	2	2.1	2.3	2.7	2.3	24		
2		2.1	2	2	IZS	2.3	2.2	2.2	2.1	2.1	2	2.1	2.1	2	1.9	2	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.3	2.0	24	
3		1.9	2	IZS	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2.1	2.3	2.5	2.5	2.0	24		
4		2.7	IZS	2.4	2.3	2.4	2.4	2.3	2.2	2.1	2.1	2.1	2	C	C	C	C	C	1.9	1.9	2	2.1	2	2.1	2.2	2.7	2.2	24		
5		IZS	2.4	2.4	2.4	2.5	2.6	2.9	2.4	2.2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.1	2.1	2.2	IZS	2.9	2.2	24		
6		2.2	2.2	2.3	2.3	2.4	2.5	2.5	2.4	2.3	2.2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	2	1.9	2	2	IZS	2.1	2.5	24		
7		2.2	2.2	2.2	2.2	2.2	2.2	2.9	3.6	3.1	2.5	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	IZS	2.1	2.2	3.6	2.2	24		
8		2.4	2.5	2.6	2.9	3	2.9	3	2.6	2.6	2.2	2	2	2.1	2.1	2	1.9	1.9	1.9	1.9	1.9	2	IZS	2.1	2.1	3.0	2.3	24		
9		2.2	2.3	2.4	2.5	2.6	2.5	2.4	2.3	2.1	2	2.1	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	2	2	2.2	2.6	24		
10		2.3	2.4	2.4	2.5	2.7	2.8	2.6	2.3	2.2	2.2	2.1	2.2	2.1	2.2	2.3	2	2	2	IZS	2.1	2.2	2.3	2.1	2.3	2.8	2.3	24		
11		2.5	2.6	2.7	2.8	2.7	2.8	2.6	2.8	2.7	2.2	2.1	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	1.9	2	2.1	2.4	2.8	2.3	24	
12		2.5	2.4	2.4	2.4	2.4	2.5	2.6	2.4	2.1	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	1.9	2	2.2	2.2	2.2	2.6	2.2	24
13		2.3	2.3	2.5	2.8	2.4	2.2	2.1	2.2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	2	2.8	2.1	24	
14		2	2	2.2	2.3	2.5	2.7	2.4	2.4	2.2	2.1	2.1	2	2	2	IZS	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	2.1	2.7	2.1	24
15		2.2	2.1	2.1	2.6	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2.1	2.2	2.6	2.0	24	
16		2.6	2.9	2.8	2.9	2.8	2.9	2.8	2.8	2	1.9	1.9	1.9	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.1	2.2	2.9	2.2	24		
17		2.3	2.4	2.4	2.5	2.5	2.8	2.9	2.7	2.5	2.1	2	IZS	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2.1	2.2	2.2	2.9	2.2	24	
18		2.2	2.3	2.5	2.4	2.1	2	2	2	2	1.9	IZS	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.1	1.9	2	1.9	1.9	2.5	2.0	24	
19		1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.2	2.4	2.2	2.4	2.0	24	
20		2.5	2.8	2.8	2.8	2.9	3	3	2.6	IZS	2.3	2.1	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	1.9	3.0	2.3	24	
21		2	1.9	2	2	2	2	2	IZS	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.9	2.0	1.9	24	
22		1.9	1.9	2	2	1.9	1.9	IZS	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.3	2.3	2.3	1.9	24		
23		2.3	2.4	2.5	2.7	2.6	IZS	2.9	2.8	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	1.9	1.9	2.9	2.1	24		
24		1.9	1.9	2.1	2.1	IZS	2	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.1	2.1	2.1	2.1	2.0	24		
25		2.2	2.4	2.5	IZS	2.6	2.7	2.7	2.7	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	2.7	2.1	24		
26		1.9	2	IZS	2.1	2.2	2.2	2.2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2.1	2.1	2	2	2.2	2.0	24	
27		2	IZS	2.1	2.1	2.4	2.3	2.2	2.5	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.5	2.1	24	
28		IZS	2.5	2.7	2.7	2.8	2.8	2.9	3	2.6	2.2	2.1	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	IZS	3.0	2.3	24	
29		2.1	2.1	2.1	2.1	2.2	2.3	2.2	2.2	2.1	2.2	2.2	2.1	2.1	2.1	2	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	IZS	2.3	2.3	2.1	24	
30		2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.4	2.3	2.2	2.2	2.2	2.2	2.1	2	2	2	2	2	2	2	2.1	2.1	IZS	2.1	2.2	2.5	2.2	24
31		2.3	2.6	2.6	2.5	2.6	2.6	2.7	2.7	2.5	2.5	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.3	2.2	IZS	2.2	2.3	2.4	2.7	2.4	24		
HOURLY MAX		2.7	2.9	2.8	2.9	3.0	3.0	3.0	3.6	3.1	2.6	2.4	2.3	2.3	2.3	2.3	2.1	2.2	2.2	2.3	2.2	2.2	2.3	2.4	2.5					
HOURLY AVG		2.2	2.3	2.4	2.4	2.4	2.4	2.5	2.4	2.2	2.1	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.1	2.2					

STATUS FLAG CODES

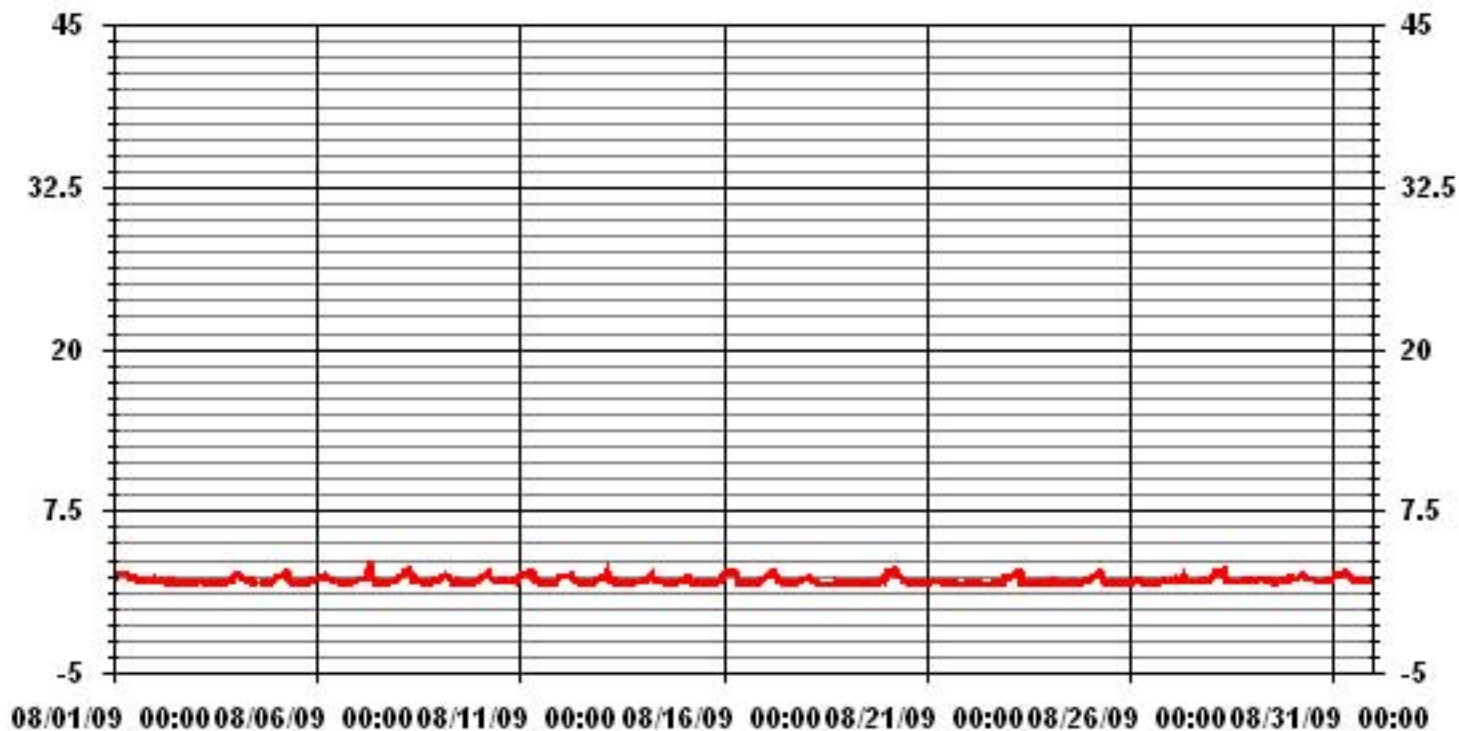
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	706		
MAXIMUM 1-HR AVERAGE:	3.6 PPM	@ HOUR(S)	7 ON DAY(S)
MAXIMUM 24-HR AVERAGE:	2.4 PPM		31 ON DAY(S)
IZS CALIBRATION TIME:	33 HRS	OPERATIONAL TIME:	744 HRS
MONTHLY CALIBRATION TIME:	5 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.28	MONTHLY AVERAGE:	2.14 PPM

01 Hour Averages



— LICA THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

TOTAL HYDROCARBONS MAX instantaneous maximum in ppr

MST																										DAILY	24-HOUR	
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	2.7	2.7	2.9	3.7	IZS	2.7	2.7	2.7	2.7	2.7	2.7	2.3	2.6	2.4	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.1	2.4	2.7	3.7	2.5	24	
2	2.3	2	2.1	IZS	2.5	2.4	2.2	2.2	2.1	2.1	2.2	2.2	2.1	2	2.1	2	2.1	2	2	2	2	2	2	2	2	2.5	2.1	24
3	2	2	IZS	2	2	2.1	2	2	2	1.9	2.1	1.9	2	2	2	2	2.3	2	2	2	2.2	2.2	2.5	2.7	2.7	2.1	24	
4	2.9	IZS	2.5	2.4	2.4	2.5	2.5	2.3	2.2	2.2	2.2	2.1	C	C	C	C	C	C	2.1	2	2.4	2.2	2.1	2.4	2.9	2.3	24	
5	IZS	2.5	2.5	2.6	2.6	2.7	3.2	2.7	2.3	2.1	2	1.9	2	2	2	2	2.1	2	2.1	2.1	2.1	2.2	2.3	IZS	3.2	2.3	24	
6	2.3	2.3	2.4	2.4	2.6	2.6	2.6	2.6	2.4	2.4	2.1	2.2	2.3	2.1	2.3	2	2	2	2.1	2	2.1	2	2.1	2.2	IZS	2.2	2.6	24
7	2.4	2.3	2.3	2.3	2.3	2.3	4.8	4.2	3.5	2.8	2.3	2	2	1.9	2.1	2	1.9	2	2.1	2.1	2.1	IZS	2.2	2.3	4.8	2.4	24	
8	2.5	2.6	3	3	3.1	3.2	3.1	2.8	2.8	2.5	2.1	2.5	2.2	2.2	2	2	2	1.9	2	2.1	IZS	2.2	2.2	2.2	3.2	2.4	24	
9	2.3	2.5	2.5	2.6	2.7	2.7	2.5	2.4	2.2	2.1	2.3	2.2	2	1.9	1.9	1.9	2	2.1	1.9	IZS	2	2.1	2.1	2.5	2.7	2.2	24	
10	2.6	2.5	2.5	2.7	2.9	3	2.8	2.4	2.3	2.2	2.2	2.4	2.1	2.4	2.4	2.2	2	2	IZS	2.2	2.6	2.8	2.5	2.5	3	2.4	24	
11	2.6	2.8	3	2.9	2.8	2.9	2.8	3	2.8	2.7	2.1	2.3	2	1.9	1.9	1.9	1.9	IZS	1.9	2	2	2.2	2.4	2.7	3	2.4	24	
12	2.8	2.5	2.5	2.6	2.5	2.7	2.7	2.5	2.2	2.1	2	2	2	1.9	2	1.9	IZS	1.9	2	2	2.2	2.5	2.2	2.3	2.8	2.3	24	
13	2.4	2.5	2.6	3.2	2.9	2.3	2.2	2.3	2	2	1.9	2	2	2	2	IZS	1.9	2	2.2	2.2	2	2.1	2.2	2	3.2	2.2	24	
14	2.2	2.1	2.3	2.5	2.6	3	2.7	2.5	2.3	2.2	2.3	2.1	2	2	IZS	1.9	1.9	1.9	1.9	1.9	1.9	2.2	2.1	2.2	2.3	3	2.2	24
15	2.4	2.2	2.4	2.8	2.8	2	1.9	2	1.9	2	2	2	1.9	IZS	1.9	1.9	1.9	1.9	1.9	2.2	2	2	2.3	2.2	2.4	2.8	2.1	24
16	3	3	2.9	3.1	3.1	3.2	3.1	3	2.5	2.1	2	1.9	IZS	1.9	2	2	1.9	1.9	2	2	2	2.1	2.1	2.6	3.2	2.4	24	
17	2.4	2.5	2.7	2.7	2.7	3.1	3	2.9	2.7	2.3	2.1	IZS	2.1	2	1.9	2	1.9	1.9	1.9	2	2.1	2.4	2.4	2.5	3.1	2.4	24	
18	2.4	2.4	3.3	3.1	2.2	2.1	2.1	2	2	2	IZS	1.8	1.8	1.8	1.8	1.8	1.8	1.8	6.3	2.6	2.4	2	2	2	6.3	2.3	24	
19	1.9	1.9	1.9	1.9	1.9	2.1	2.2	2.1	2	IZS	1.9	1.9	2	1.9	1.9	1.9	1.9	2	1.9	2.1	2.2	2.5	2.6	2.4	2.6	2.0	24	
20	2.9	2.9	3.1	3	3	3.1	3.2	2.8	IZS	2.4	2.2	2.1	2.1	2	3.4	2.1	2	2	2	2	2	2.1	2.1	2	3.4	2.5	24	
21	2	2	2	2	2	2	2	IZS	2.1	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.0	24
22	1.9	1.9	2.3	2.2	2	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	2	2	2.1	2	2.2	2.4	2.3	2.4	2.0	24
23	2.5	2.6	2.7	3	2.7	IZS	3.3	3.3	2.3	1.9	1.9	1.9	1.9	2.2	2	1.9	1.9	2	2	2	2	2.2	1.9	2	3.3	2.3	24	
24	2	2.1	2.1	2.1	IZS	2.1	2	2.1	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.2	2.2	2.2	2.2	2.2	2.0	24
25	2.3	2.6	2.7	IZS	2.7	2.8	2.8	2.8	2.5	2	2	2	2	1.9	2	1.9	1.9	2.1	2	2.3	2	2	2	2	2.8	2.2	24	
26	2	2.5	IZS	2.8	3.2	2.3	2.5	2	2	2	2	2.1	2	2	2	2	2	2	2	2	2.3	2.4	2.2	2.1	2	3.2	2.2	24
27	2.2	IZS	2.1	2.3	2.5	2.5	2.5	3.6	2.4	2.2	2.1	2.1	2	2	2	2.1	2.2	2	2	2.1	2.1	2.2	2.2	2.2	2.4	3.6	2.3	24
28	IZS	2.7	2.8	2.8	3.1	2.8	3.2	3.1	3	2.4	2.3	2.1	2.1	2.1	2.4	2.3	2.1	2.2	2	2.2	2.2	2.2	2.2	IZS	3.2	2.5	24	
29	2.1	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.2	2.2	2.6	2.3	2.2	2.2	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.4	2.3	IZS	2.5	2.6	24	
30	2.3	2.4	2.4	2.6	2.5	2.6	2.6	2.7	2.5	2.4	2.3	2.2	2.3	2.3	2.2	2	2	2	2	2.1	2.2	2.2	IZS	2.2	2.3	2.7	2.3	24
31	2.6	2.8	2.8	2.7	2.8	2.7	2.9	3.6	2.8	2.6	2.5	2.4	2.3	2.2	2.2	2.2	2.2	2.5	2.3	2.3	IZS	2.3	2.4	2.6	3.6	2.6	24	
HOURLY MAX	3	3	3	4	3	3	5	4	4	3	3	3	3	2	3	2	2	3	6	3	3	3	3	3	3			
HOURLY AVG	2.4	2.4	2.5	2.6	2.6	2.6	2.7	2.6	2.4	2.2	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.2	2.1	2.2	2.2	2.2	2.3			

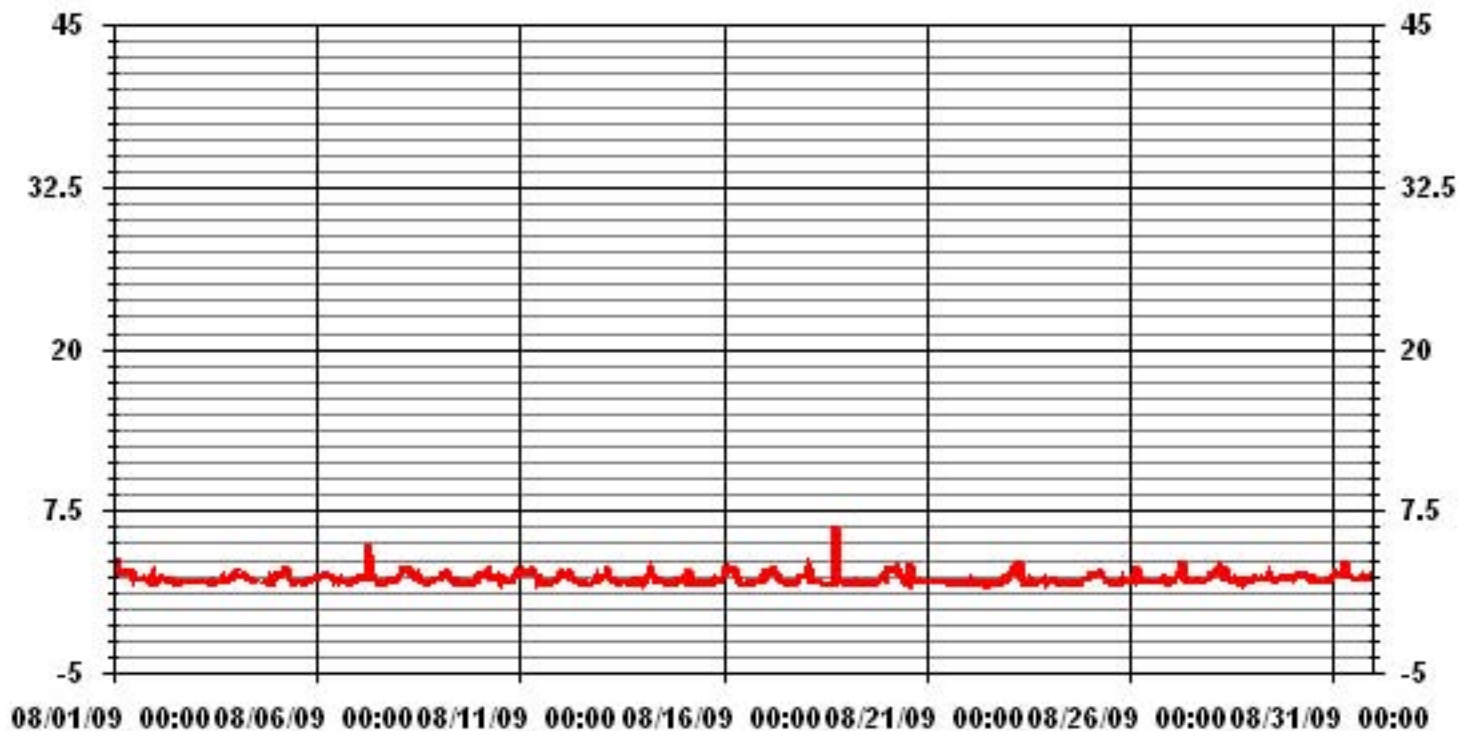
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	705					
MAXIMUM INSTANTANEOUS VALUE:	6.3	PPM	@ HOUR(S)	18	ON DAY(S)	18
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744 HRS		
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	0.40					

01 Hour Averages



— LICA THCMAX PPM

LICA
 THC / WD Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	1.84	4.10	3.54	4.67	4.53	5.80	12.03	3.96	5.09	7.08	12.18	11.04	8.49	6.23	5.09	3.25	99.00
< 10.0	.00	.00	.14	.00	.00	.00	.00	.14	.14	.00	.00	.14	.28	.00	.00	.14	.99
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.84	4.10	3.68	4.67	4.53	5.80	12.03	4.10	5.24	7.08	12.18	11.18	8.78	6.23	5.09	3.39	

Calm : .00 %

Total # Operational Hours : 706

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	13	29	25	33	32	41	85	28	36	50	86	78	60	44	36	23	699
< 10.0			1					1	1			1	2			1	7
< 50.0																	
>= 50.0																	
Totals	13	29	26	33	32	41	85	29	37	50	86	79	62	44	36	24	

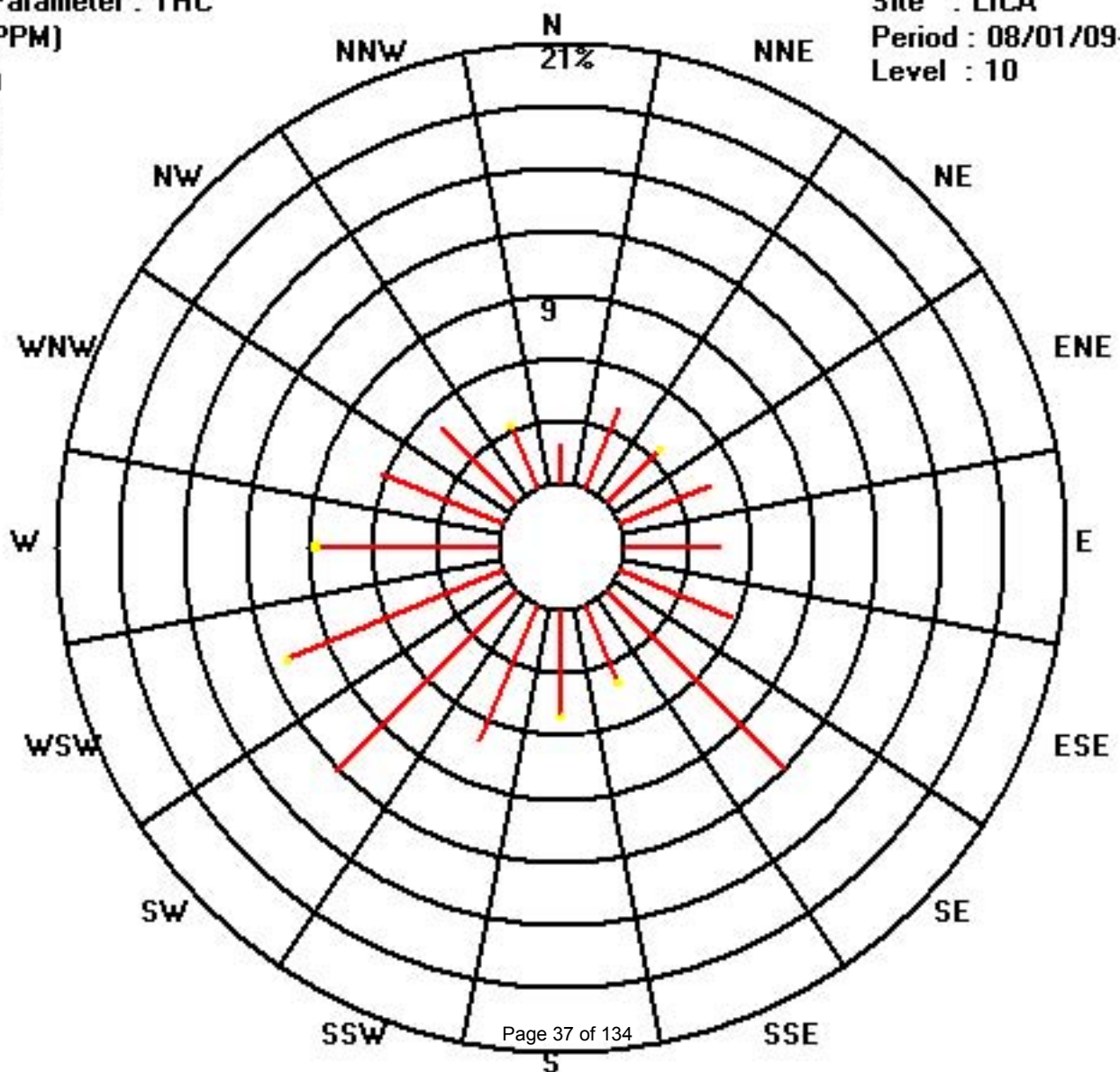
Calm : .00 %

Total # Operational Hours : 706

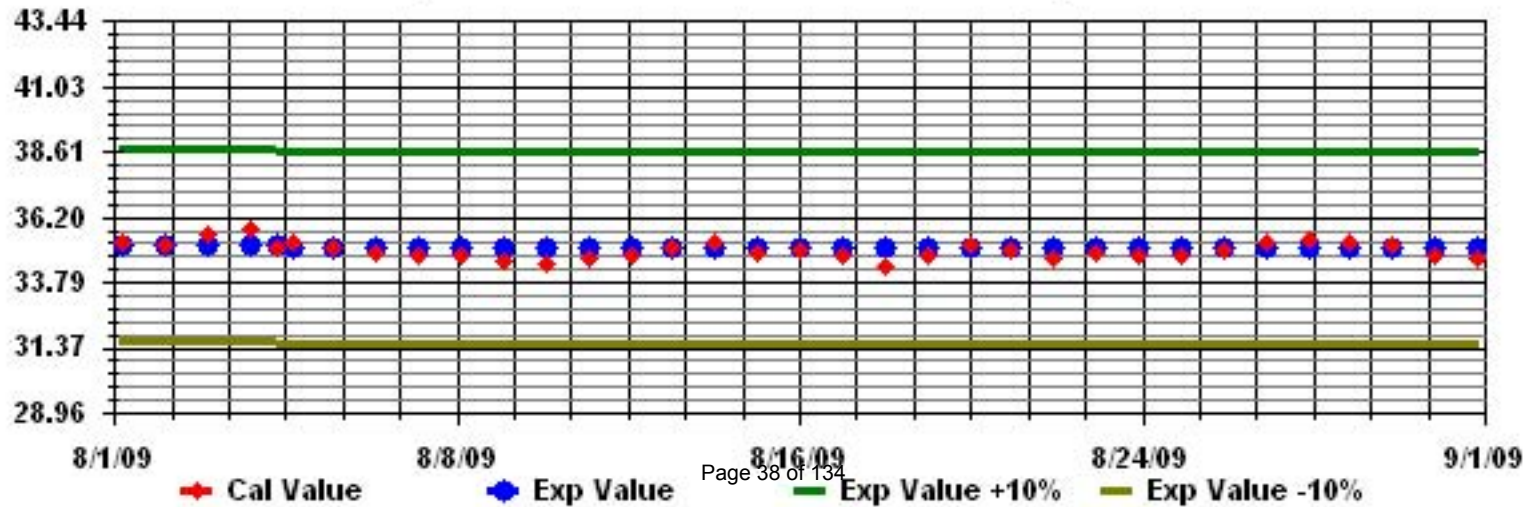
Class Limits (PPM)

Period : 08/01/09-08/31/09

Level : 10



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



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

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

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	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
1	4	4.9	2.6	5.3	6.7	7	5.2	4.5	7.5	13.9	11.5	14.2	11.5	10.7	16	13.4	14.7	8.7	13.9	23.8	15.8	9.5	5.6	8.1	23.8	10.0	24	
2	12.3	9.5	12	12.7	10.3	12.2	9.6	12.5	15.1	11.6	6.7	9.6	7.4	14.7	10.3	10	10.9	11.9	11	5.3	2.8	0	2.2	1.4	15.1	9.3	24	
3	4.9	0.4	0	0	2.2	0.7	4	0	N	1.7	1.5	1.9	0	0	0.6	0	4.3	5.2	9	5.9	0	1.7	1.7	2.2	9.0	2.1	23	
4	3	7.1	2.4	3	4.1	1.8	5.6	1.6	M	C	C	M	M	M	M	5	1	N	12.5	16.2	12.3	10.7	3.4	1.7	16.2	5.7	18	
5	12.9	10.8	10.4	12.6	9.9	3	3.8	3.6	6	20.6	4.9	N	0.5	3.9	0	0	0.2	1.3	1.6	0	0	0	0.5	1.9	20.6	4.7	23	
6	0	0.7	0	3.4	N	N	10.6	10.6	N	21.5	9	17.1	6.1	9.3	8.7	7.3	10.4	6.1	1.4	0	7.1	5.2	N	0	21.5	6.7	20	
7	7	11.7	1.3	0.1	1.4	1.5	2	2.7	1	0	8.3	8.3	4.5	5.6	7.3	5.2	5	4	4.8	0	2.9	12.7	4.7	4.2	12.7	4.4	24	
8	0	N	0	N	16.8	2.3	0	4.6	1.6	3	9.8	0	0	6.8	8.5	5	3.8	8.9	4	4.8	2.5	5.8	18.5	10.4	18.5	5.3	22	
9	N	3	9.6	9	2.9	2.5	8.6	7	9.9	7	9.4	14	21.7	7.5	4.4	8	9.4	22.6	6.9	2.1	4.6	11	6.4	5.7	22.6	8.4	23	
10	5	7.2	6.1	3.2	4	5.1	4.1	5.7	7.5	10.7	12	12.9	17.9	17.2	22	21.5	19.7	15	9.1	19.3	15	20	18.5	16.6	22.0	12.3	24	
11	15.2	12.8	13.2	9	9.9	6.3	13.1	11	16.3	9.7	8.8	12.3	9.9	4.2	3.7	9.8	8.1	5.1	4.9	1.2	5.3	0.4	3.2	0	16.3	8.1	24	
12	6.1	3.9	4.8	0	2.8	6.6	8.1	4.1	2.3	4.4	6.3	9.5	4.3	6.6	0	0.5	5.5	3.5	4.3	2.3	0.7	3.2	5.4	1.6	9.5	4.0	24	
13	0	2.2	4.8	1.9	0	0	N	0	4.6	3.4	0.3	6.6	4.9	3.5	3.3	0.9	2.8	0	1.6	5.7	12.9	10.7	5.7	10.6	12.9	3.8	23	
14	0	1.9	2.7	3.6	2.2	0.2	7.9	14.4	3.9	0	6.4	5.8	0	2.4	0	0.9	5.6	1.2	3.6	0	0	4.1	6	1.1	14.4	3.1	24	
15	0	0.2	0	1.4	2	3.1	2.1	0.2	0.1	4.7	7.9	2.3	4.2	4.9	1.7	4.2	6.9	4.2	2.9	0	6.2	7.6	5.9	6.1	7.9	3.3	24	
16	0	3.3	6	4.9	1	1.2	0	3.7	4.4	4.5	3.9	3.3	1.9	5.8	6.2	0.3	0	5.2	10.7	11.5	6.5	2.1	2.3	4.9	11.5	3.9	24	
17	7.2	5.9	6.1	0.9	3.7	1.2	0.7	27.6	7	8.5	3.8	2.3	2.9	7.2	2.9	4.2	2	2	9.2	7	9.7	9.9	3.9	3.1	27.6	5.8	24	
18	6.2	4.2	2.3	3	2.5	4.7	4.8	4.3	4.4	6.1	5.5	6.4	4.5	0.4	0	0	4.5	6.9	8.6	24.4	0.4	N	0	0	24.4	4.5	23	
19	0.1	0	0	1	1	2.2	0	2.4	0	3.1	4.5	5.2	0	0.3	7.4	2.7	0.6	1.7	0	0	3.5	0.3	3.1	1.8	7.4	1.7	24	
20	0.3	0.1	2.9	0.6	3.9	5.5	1.1	3.7	0.8	1.7	4.6	5.3	4.3	8.1	1	0	6.7	7.3	13.7	1.7	5	3.6	3.8	0	13.7	3.6	24	
21	3.2	4.9	5.8	1.3	2.2	0.3	0.3	1.8	6.4	2.6	5.4	0	1.6	4.9	2.3	8.6	10.7	11.4	11.3	3.4	0.9	1.3	3.6	4.5	11.4	4.1	24	
22	3.1	1.6	5.7	3	0	5.2	6.7	8.4	5.3	5.6	5.1	8.2	3.3	1.5	6.4	9	6.8	6.2	0.4	2.6	0	0.8	1.4	3.1	9.0	4.1	24	
23	5.6	3.3	6.5	0	1	4.6	7.9	7.2	3.9	1	0	3.3	0.9	3.9	6.3	4.2	2.2	5.4	7.4	6.3	2.3	2.5	1.3	0	7.9	3.6	24	
24	1.8	1.4	3.1	2.3	3.3	7.6	4.4	4.1	5.5	5.8	3.2	4.7	8.3	11.6	2.6	0	N	2.4	2.6	6.6	4.5	4.3	3.6	2.4	11.6	4.2	23	
25	5.1	2.1	0	0.6	4.7	3.6	0	3.9	2.9	2.5	0.8	5.3	4.8	N	0	1.6	4.9	N	0	2.4	1.9	3.8	4.4	2.2	5.3	2.6	22	
26	2.2	1	0.3	3.1	1.3	2	1.7	4.9	2.6	2.1	2.3	3.2	1.7	0	2.6	3.7	4	6.2	3.1	5.4	0	5.3	6.3	2.7	6.3	2.8	24	
27	3.2	2.6	2.2	0.5	4.4	1.5	3.3	5.1	5.3	7	3	7.8	7.4	1.7	0	1.5	7.7	7.8	8.2	6.8	4.7	5.3	4.5	4.5	8.2	4.4	24	
28	6.2	10.8	7	7.9	6.2	5.7	0.3	2.9	8.2	5.3	M	M	M	M	14.2	11.5	11.1	9.7	5.6	9.7	10.7	15	10.8	11.1	7.6	15.0	8.5	21
29	10.4	11.1	8.9	9.6	4.5	10.1	6.5	8.5	10	7.1	6.2	6.1	8.5	7.8	0	7	11.5	5.8	10.4	5.5	11.1	7.4	8.3	8.1	11.5	7.9	24	
30	11.5	8.2	7.3	9.9	8.8	16.7	17.5	10.1	9.2	7.7	6.6	6.9	6.6	8.1	5	4.5	4.7	0.5	7.2	6.7	8.6	N	4.7	9.1	17.5	8.1	23	
31	8.1	4.6	5.1	4.3	4.4	10.5	0	3.7	9.8	8.5	11.3	7.5	8.3	5.6	11.5	7	13.4	12.3	10.1	3.6	5.3	8	8.7	9.2	13.4	7.5	24	
HOURLY MAX	15	13	13	13	17	17	18	28	16	22	12	17	22	17	22	22	20	23	14	24	16	20	19	17				
HOURLY AVG	4.8	4.7	4.5	3.9	4.3	4.5	4.7	6.0	5.8	6.4	5.8	6.8	5.4	6.2	5.1	5.1	6.6	6.4	6.6	6.2	5.4	5.8	5.3	4.3				

STATUS FLAG CODES

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

OBJECTIVE LIMIT:

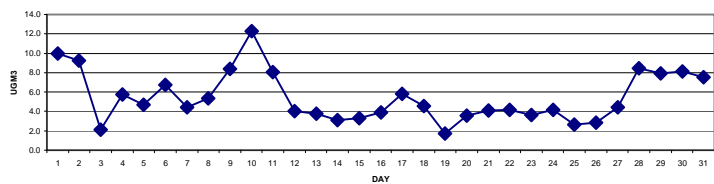
ALBERTA ENVIRONMENT:

1-HR	-	PPB	24-HR	30	PPB
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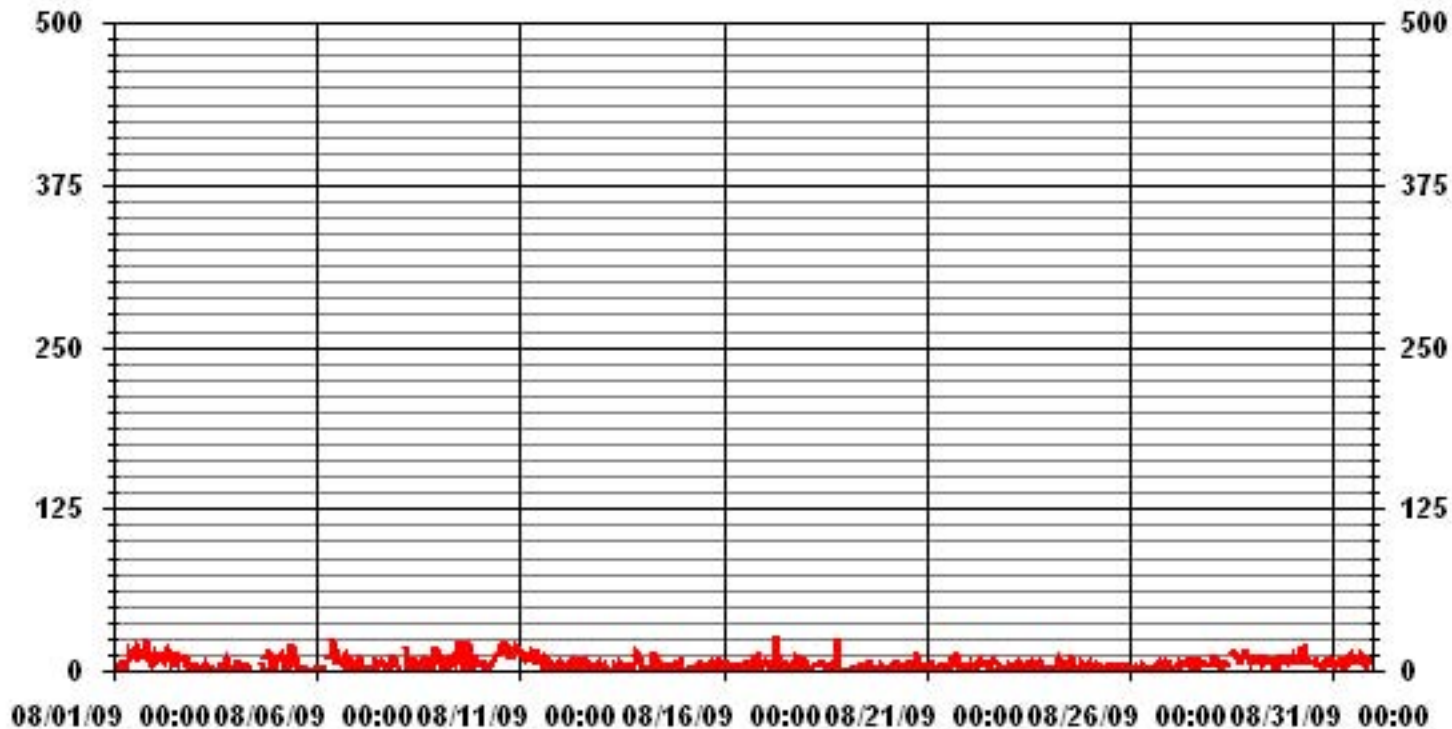
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-
NUMBER OF 24-HR EXCEEDENCES:	1 PROPOSED CANADA WIDE GUIDELINE
NUMBER OF NON-ZERO READINGS:	645
MAXIMUM 1-HR AVERAGE:	27.6 UG/M ³ @ HOUR(S) 7 ON DAY(S) 17
MAXIMUM 24-HR AVERAGE:	12.3 UG/M ³ ON DAY(S) 10
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	2 HRS
STANDARD DEVIATION:	4.57
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	96.8 %
MONTHLY AVERAGE:	5.42 UG/M ³

24 HOUR AVERAGES FOR AUGUST 2009



01 Hour Averages



— LICA PM2 UG/M3

LICA
 PM2 / WD Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30.0	2.22	4.17	3.76	4.45	4.45	5.57	12.39	4.03	4.87	7.10	12.53	11.00	9.05	5.71	5.29	3.34	100.00
< 60.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 80.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.22	4.17	3.76	4.45	4.45	5.57	12.39	4.03	4.87	7.10	12.53	11.00	9.05	5.71	5.29	3.34	

Calm : .00 %

Total # Operational Hours : 718

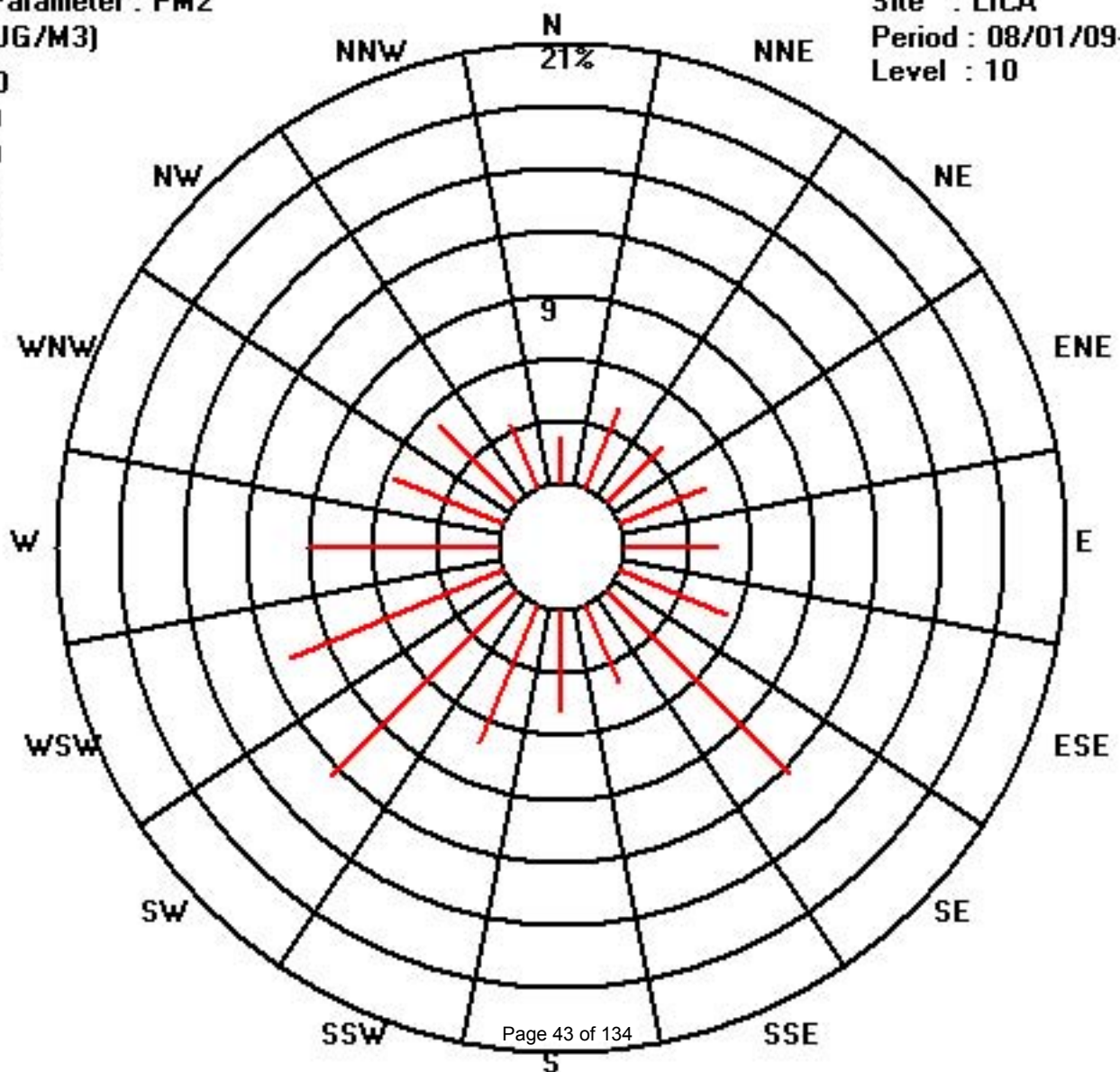
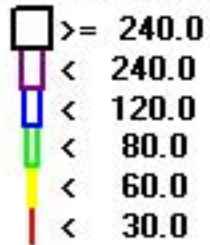
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30.0	16	30	27	32	32	40	89	29	35	51	90	79	65	41	38	24	718
< 60.0																	
< 80.0																	
< 120.0																	
< 240.0																	
>= 240.0																	
Totals	16	30	27	32	32	40	89	29	35	51	90	79	65	41	38	24	

Calm : .00 %

Total # Operational Hours : 718

Class Limits (UG/M3)



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

NITROGEN DIOXIDE hourly averages in ppb

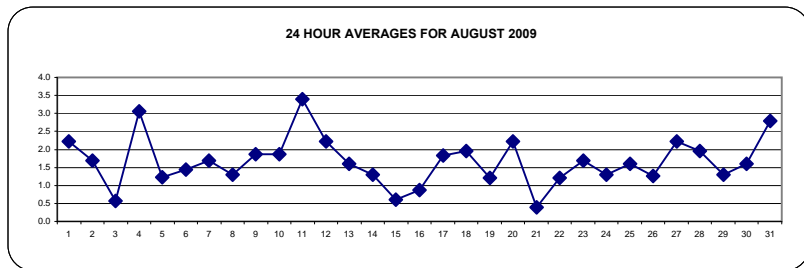
MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR					
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	1	1	1	1	IZS	1	2	2	2	3	3	3	2	2	2	2	2	4	4	1	2	3	5	5	5	2.2	24				
2	3	1	1	IZS	2	5	5	5	5	5	2	1	1	1	1	0	0	0	0	0	0	0	0	0	5	1.7	24				
3	0	1	IZS	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	3	3	0.6	24				
4	6	IZS	5	6	5	5	6	C	C	C	C	C	C	C	0	0	1	0	0	2	5	4	2	2	6	3.1	24				
5	IZS	2	1	1	1	1	3	3	2	2	0	1	1	0	0	0	0	0	0	1	3	3	2	IZS	3	1.2	24				
6	1	1	1	1	1	3	3	2	2	3	0	1	1	1	1	1	0	1	1	1	3	2	IZS	2	3	1.4	24				
7	2	1	2	1	2	2	3	5	3	2	2	1	1	1	0	0	1	1	1	2	2	IZS	2	2	5	1.7	24				
8	2	2	1	2	1	1	2	4	2	2	1	1	1	1	0	0	0	0	1	1	IZS	2	2	1	4	1.3	24				
9	2	2	2	2	2	3	3	5	2	2	2	2	1	1	1	1	1	1	0	IZS	2	4	1	1	5	1.9	24				
10	1	1	1	1	1	2	3	2	2	1	1	1	1	1	1	1	1	1	IZS	4	3	4	3	6	6	1.9	24				
11	3	4	4	3	4	5	6	6	6	3	2	2	1	2	3	2	2	IZS	1	2	3	3	3	8	8	3.4	24				
12	5	2	2	2	2	4	5	3	2	1	0	0	0	0	1	IZS	1	0	2	5	5	4	3	5	2.2	24					
13	2	2	3	4	3	3	2	4	1	1	0	1	1	0	0	IZS	1	1	1	2	2	1	1	1	4	1.6	24				
14	1	0	2	3	2	1	2	1	2	2	3	1	1	2	IZS	0	0	1	1	1	1	1	1	1	3	1.3	24				
15	1	1	1	3	1	0	1	0	0	0	0	0	0	IZS	0	0	1	1	0	1	1	0	1	1	3	0.6	24				
16	2	2	2	1	1	1	1	2	1	0	0	0	IZS	0	0	0	0	0	1	1	1	1	2	1	2	0.9	24				
17	1	1	0	0	0	0	3	4	3	3	1	IZS	1	1	1	1	1	2	4	2	3	3	5	2	5	1.8	24				
18	2	2	1	4	4	4	5	3	2	1	IZS	1	0	0	1	1	0	0	4	4	1	2	2	1	5	2.0	24				
19	0	0	1	1	1	1	2	2	1	IZS	1	0	1	1	0	0	1	1	0	3	2	3	3	3	3	1.2	24				
20	4	5	3	2	1	3	3	4	IZS	3	2	1	1	1	1	1	1	1	3	4	5	2	0	0	5	2.2	24				
21	0	0	0	0	0	1	3	IZS	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	1	3	0.4	24				
22	1	1	2	2	1	1	IZS	2	1	1	0	0	0	0	0	0	0	1	2	3	4	2	1	3	4	1.2	24				
23	3	3	2	3	2	IZS	4	5	2	1	1	1	0	1	1	1	1	1	1	1	2	2	0	1	5	1.7	24				
24	1	1	1	1	IZS	1	2	1	2	1	1	0	0	0	0	0	0	1	3	2	4	3	3	2	4	1.3	24				
25	2	2	1	IZS	2	2	3	5	3	1	1	0	1	1	1	1	1	2	2	3	2	1	0	0	5	1.6	24				
26	0	0	IZS	2	1	1	4	2	1	1	1	1	0	0	0	0	1	2	1	2	4	3	1	1	4	1.3	24				
27	0	IZS	2	1	3	3	4	8	4	2	2	2	1	0	1	1	1	1	2	3	3	3	2	2	8	2.2	24				
28	IZS	2	2	1	1	1	2	5	4	3	3	1	1	1	1	1	1	1	1	4	4	2	1	IZS	5	2.0	24				
29	1	1	2	1	1	2	2	3	1	1	1	1	1	0	0	1	1	2	2	2	1	1	IZS	2	3	1.3	24				
30	1	2	1	1	2	4	3	3	1	1	1	1	1	1	1	1	0	1	1	3	2	IZS	2	3	4	1.6	24				
31	3	3	2	1	2	1	6	4	2	2	2	2	2	1	1	1	1	2	5	9	IZS	6	4	2	9	2.8	24				
HOURLY MAX	6	5	5	6	5	5	6	8	6	5	3	3	2	2	3	2	2	2	5	9	5	6	5	8							
HOURLY AVG	1.8	1.6	1.7	1.8	1.7	2.0	3.1	3.3	2.1	1.7	1.2	0.9	0.8	0.7	0.6	0.6	0.7	1.0	1.5	2.3	2.4	2.3	1.8	2.1							

STATUS FLAG CODES

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

OBJECTIVE LIMIT:

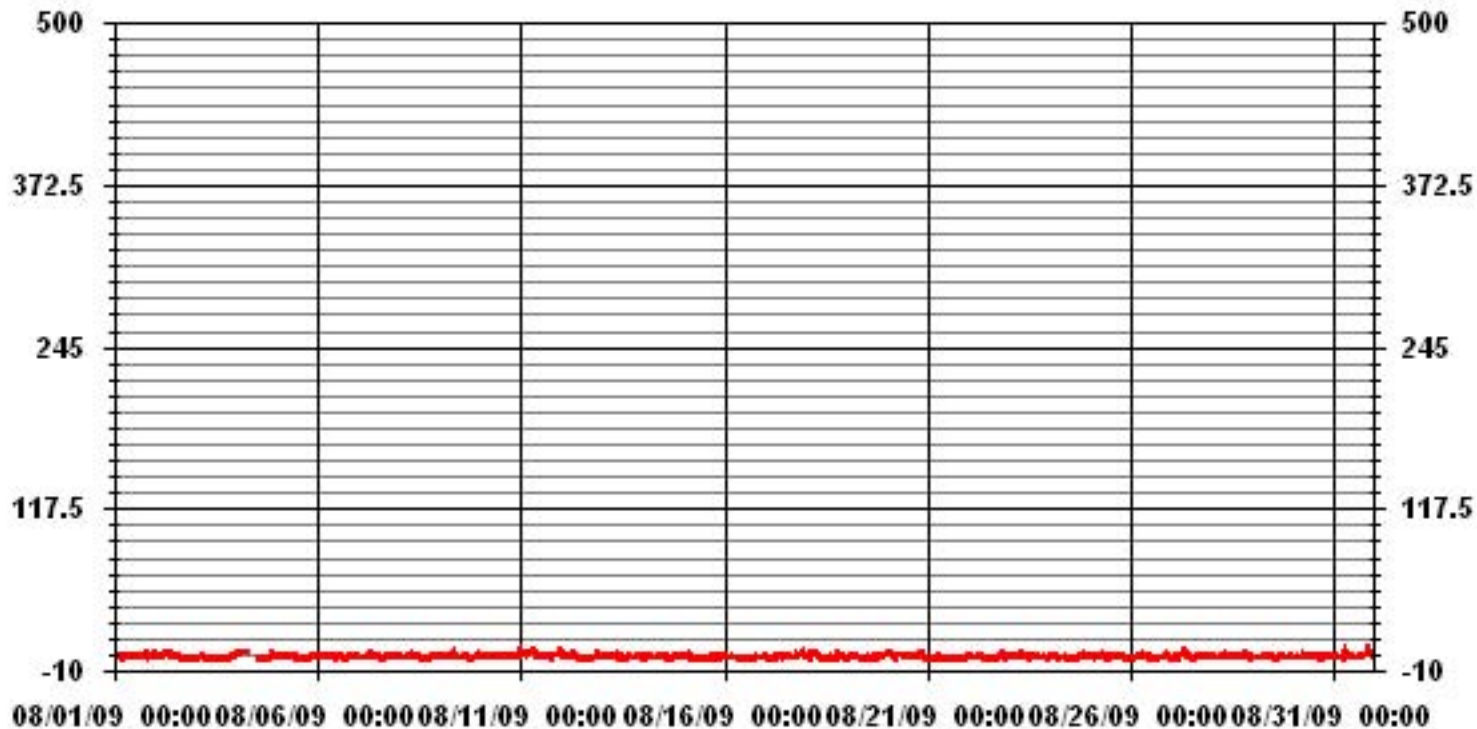
ALBERTA ENVIRONMENT:	1-HR	212	PPB	24-HR	106	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	569
MAXIMUM 1-HR AVERAGE:	9 PPB @ HOUR(S) 19 ON DAY(S) 31
MAXIMUM 24-HR AVERAGE:	3.4 PPB ON DAY(S) 11
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	1.42
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME:	100.0 %
MONTHLY AVERAGE:	1.65 PPB

01 Hour Averages



— LICA H02_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	2	2	1	2	IZS	2	4	3	3	4	4	4	3	5	3	3	3	3	8	8	2	4	8	7	8	3.8	24	
2	5	1	2	IZS	4	7	6	6	6	6	3	2	2	4	4	2	2	0	1	1	0	0	0	0	7	2.8	24	
3	1	1	IZS	2	2	1	1	0	0	0	0	0	1	1	0	1	1	2	1	1	4	3	5	5	5	1.4	24	
4	8	IZS	7	8	7	7	8	C	C	C	C	C	C	C	C	3	2	2	2	5	9	6	3	2	9	5.3	24	
5	IZS	3	2	2	3	2	5	5	3	8	6	10	7	1	2	0	1	1	4	3	5	4	4	IZS	10	3.7	24	
6	2	3	2	2	2	5	5	3	4	9	1	9	1	2	2	3	4	1	2	3	8	4	IZS	3	9	3.5	24	
7	3	2	2	3	3	3	6	6	7	3	4	7	1	9	3	1	1	6	4	5	4	IZS	3	3	9	3.9	24	
8	3	3	3	2	2	2	3	6	3	4	2	7	2	1	2	1	1	2	11	3	IZS	4	3	3	11	3.2	24	
9	3	2	2	2	7	8	5	7	4	2	2	2	3	2	2	2	3	2	1	IZS	3	18	2	3	18	3.8	24	
10	2	2	2	2	2	3	4	5	4	2	2	8	2	2	2	4	2	3	IZS	17	10	5	6	9	17	4.3	24	
11	5	4	6	4	8	13	9	7	9	9	3	4	2	4	5	2	4	IZS	3	3	4	6	6	14	14	5.8	24	
12	9	3	2	3	3	4	5	7	7	3	3	1	1	1	1	3	IZS	1	1	7	9	7	5	3	9	3.9	24	
13	3	3	4	5	4	5	4	6	2	5	2	2	1	1	0	IZS	2	2	3	6	4	1	2	3	6	3.0	24	
14	1	1	5	5	3	3	3	2	5	4	10	7	2	3	IZS	3	1	2	1	2	2	2	3	3	10	3.2	24	
15	2	2	1	4	3	1	2	1	5	2	1	2	1	2	IZS	4	1	5	4	3	1	1	1	2	2	5	2.2	24
16	3	3	3	2	1	1	2	3	2	1	0	1	IZS	4	1	1	9	2	4	3	3	3	3	2	9	2.5	24	
17	1	1	1	1	1	2	5	5	4	4	3	IZS	1	2	2	2	2	7	6	7	8	5	7	3	8	3.5	24	
18	3	3	2	6	5	4	8	4	4	2	IZS	1	2	3	1	1	0	0	15	15	2	3	4	2	15	3.9	24	
19	1	1	1	2	2	3	3	2	IZS	3	1	2	3	1	1	2	1	1	1	8	4	5	5	4	8	2.5	24	
20	8	7	4	3	2	11	6	7	IZS	4	6	2	4	2	8	3	4	5	4	13	7	5	1	1	13	5.1	24	
21	0	0	0	1	1	1	88	IZS	2	1	3	12	5	8	3	1	5	2	5	2	1	5	1	1	88	6.4	24	
22	2	1	3	3	2	4	IZS	4	3	1	1	1	1	1	1	1	0	1	4	11	9	3	3	5	11	2.8	24	
23	5	4	4	4	4	IZS	6	7	4	2	17	1	1	8	2	3	2	4	3	2	3	5	1	3	17	4.1	24	
24	3	2	2	2	IZS	2	4	2	2	1	2	1	1	0	3	1	2	6	16	6	6	5	5	4	16	3.4	24	
25	3	3	2	IZS	3	4	6	11	8	2	1	1	5	8	6	5	3	9	5	14	4	3	1	1	14	4.7	24	
26	2	2	IZS	4	3	4	8	5	2	1	2	10	1	5	0	1	3	4	9	5	6	6	3	2	10	3.8	24	
27	2	IZS	4	3	4	4	9	12	5	4	3	3	2	1	2	2	3	2	5	7	5	5	4	3	12	4.1	24	
28	IZS	3	3	2	4	3	4	7	5	5	3	4	3	1	8	3	2	2	9	9	3	3	3	IZS	9	4.1	24	
29	1	2	5	2	2	3	5	8	2	4	2	2	2	2	2	3	2	15	9	10	7	2	IZS	4	15	4.2	24	
30	3	18	2	3	10	9	5	4	2	2	3	4	1	1	1	3	1	2	3	7	4	IZS	2	12	18	4.4	24	
31	6	8	2	2	5	3	8	7	4	18	9	13	16	2	2	2	2	8	8	14	IZS	14	9	4	18	7.2	24	
HOURLY MAX	9	18	7	8	10	13	88	12	9	18	17	13	16	9	8	8	9	15	16	17	10	18	9	14				
HOURLY AVG	3.2	3.1	2.7	3.0	3.5	4.1	7.9	5.3	3.9	3.9	3.6	4.2	2.7	3.1	2.3	2.2	2.5	3.4	4.8	6.6	4.9	4.7	3.6	3.8				

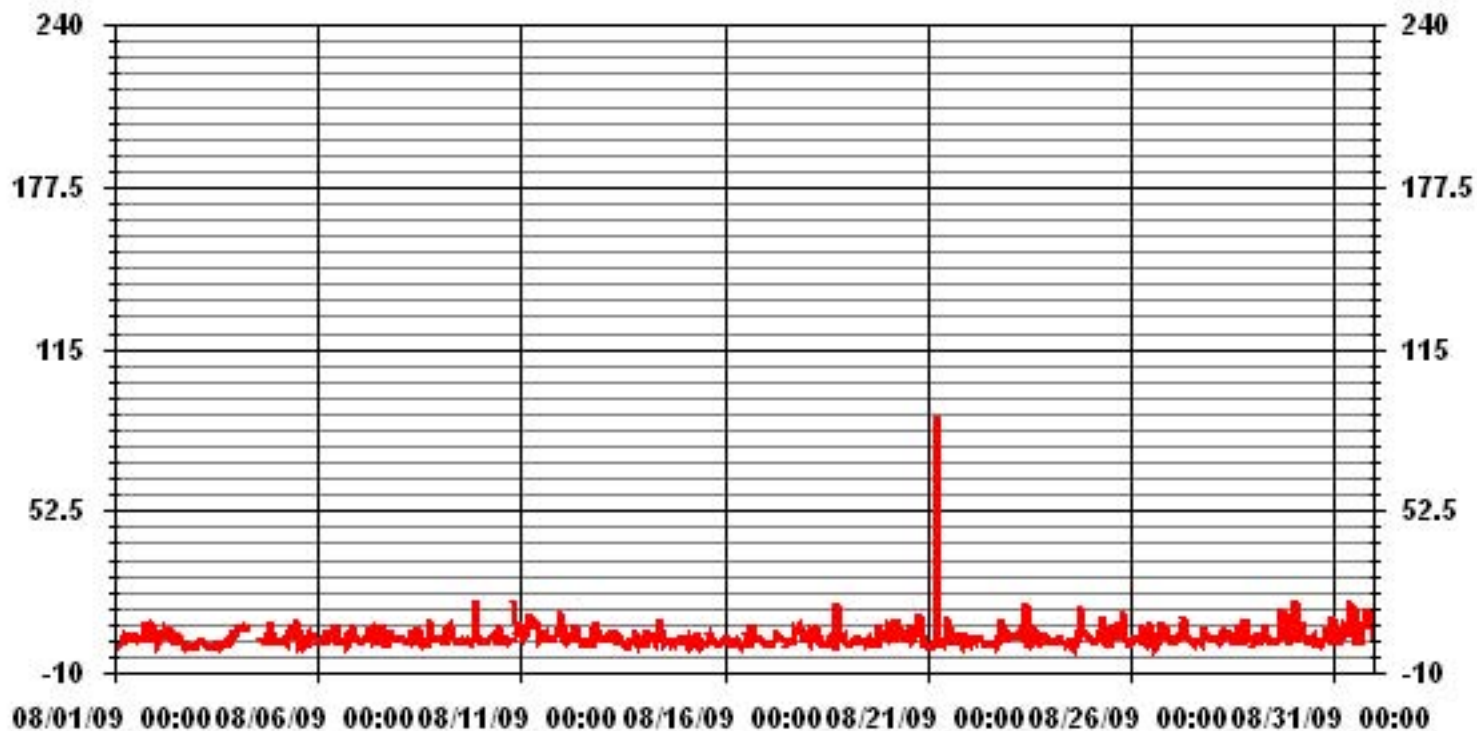
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	681					
MAXIMUM INSTANTANEOUS VALUE:	88	PPB	@ HOUR(S)	6	ON DAY(S)	21
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION	4.36					

01 Hour Averages



— LICA NO2MAX PPB

LICA
 NO2_ / WD Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	1.98	4.11	3.69	4.68	4.54	5.82	12.07	4.11	5.25	7.10	12.21	11.07	8.66	5.96	5.11	3.55	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.98	4.11	3.69	4.68	4.54	5.82	12.07	4.11	5.25	7.10	12.21	11.07	8.66	5.96	5.11	3.55	

Calm : .00 %

Total # Operational Hours : 704

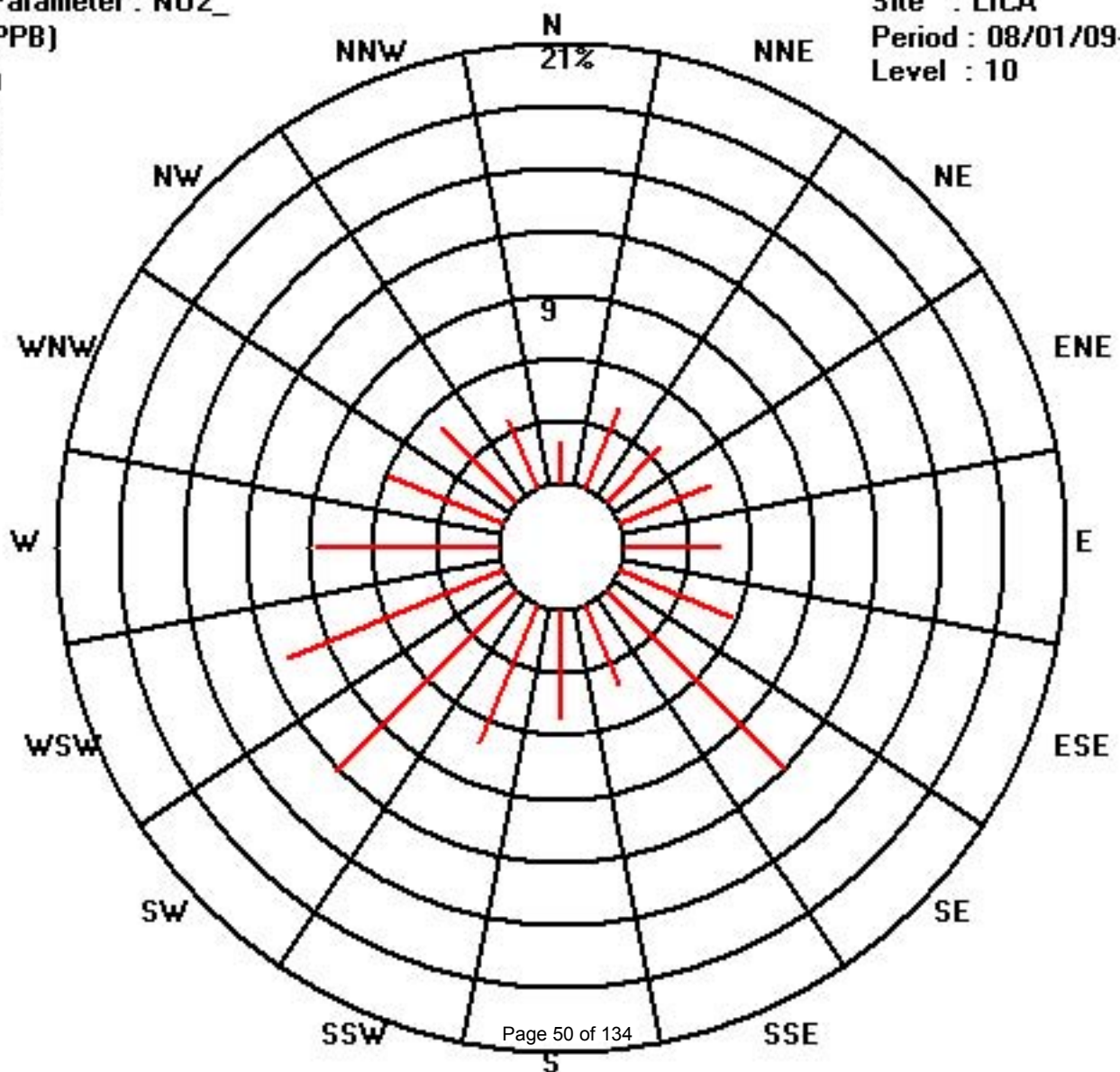
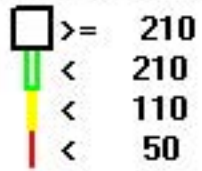
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	14	29	26	33	32	41	85	29	37	50	86	78	61	42	36	25	704
< 110																	
< 210																	
>= 210																	
Totals	14	29	26	33	32	41	85	29	37	50	86	78	61	42	36	25	

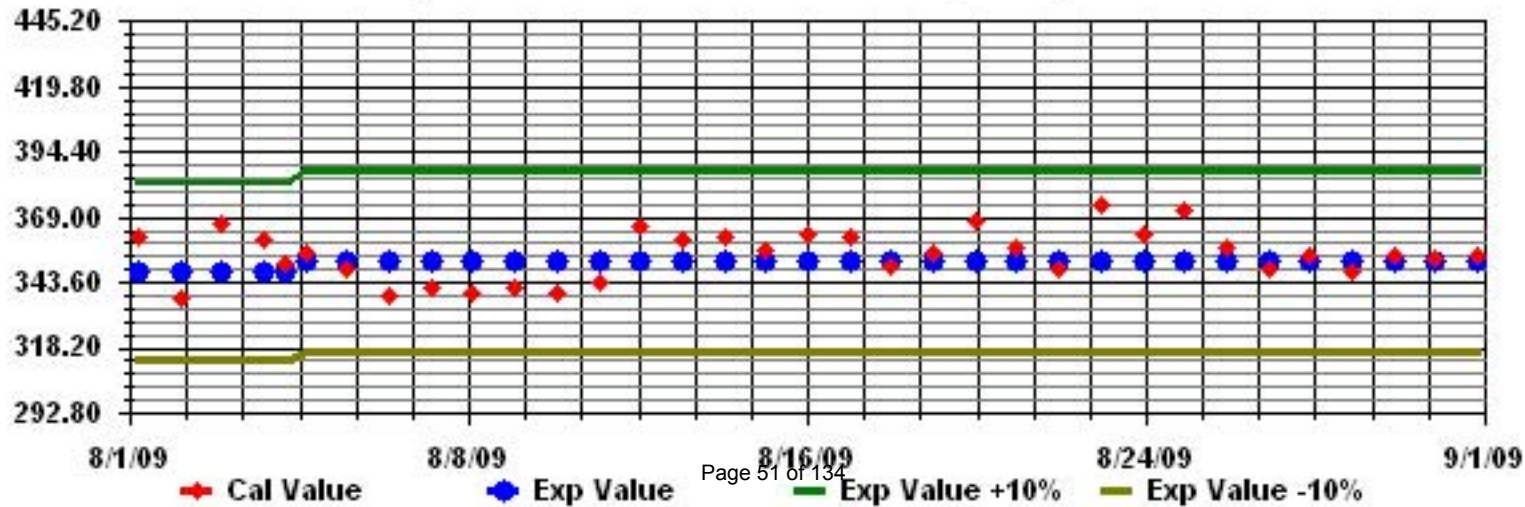
Calm : .00 %

Total # Operational Hours : 704

Class Limits (PPB)



Calibration Graph for Site: LICA Parameter: H02_ Sequence: H02 Phase: SPAN



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

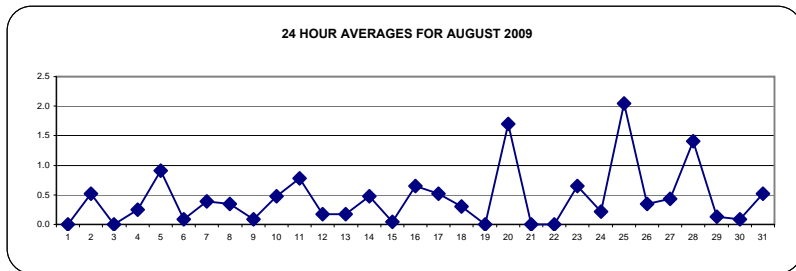
NITRIC OXIDE hourly averages in ppb

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 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	IZS	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	IZS	0	2	3	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.5	24
3	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
4	0	IZS	0	0	0	1	3	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24	
5	IZS	1	0	0	1	5	6	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	6	0.9	24
6	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0.1	24	
7	0	0	0	0	0	0	1	4	2	1	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	4	0.4	24	
8	0	0	0	0	0	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	3	0.3	24	
9	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	0	0	1	0.1	24	
10	0	0	0	0	0	4	6	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	6	0.5	24	
11	0	0	0	0	0	5	4	4	4	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	5	0.8	24	
12	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0	IZS	IZS	0	0	0	0	0	0	0	2	0.2	24	
13	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	3	0.2	24	
14	0	0	0	0	0	1	3	1	2	1	1	1	0	0	IZS	1	0	0	0	0	0	0	0	0	3	0.5	24	
15	0	0	0	0	0	0	0	0	0	0	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
16	0	1	1	1	1	2	4	5	0	0	0	0	0	IZS	IZS	0	0	0	0	0	0	0	0	0	5	0.7	24	
17	0	0	0	0	0	2	6	3	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	6	0.5	24	
18	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	3	4	0	0	0	0	4	0.3	24	
19	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
20	0	0	0	0	1	11	16	8	IZS	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	16	1.7	24	
21	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
22	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
23	0	0	0	1	1	IZS	6	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0.7	24	
24	0	0	0	0	IZS	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	3	0.2	24	
25	0	0	0	IZS	1	6	18	18	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	18	2.0	24	
26	0	0	IZS	0	0	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0.3	24	
27	0	IZS	0	0	0	0	1	3	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.4	24	
28	IZS	0	0	0	1	5	12	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	1.4	24	
29	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24	
30	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	0.1	24	
31	0	0	0	0	0	0	8	2	0	0	1	0	0	0	0	0	0	0	0	0	IZS	0	1	0	8	0.5	24	
HOURLY MAX	0	1	1	1	1	11	18	18	4	2	1	1	0	0	0	1	0	0	3	4	0	1	1	1				
HOURLY AVG	0.0	0.1	0.0	0.1	0.2	1.6	3.7	3.0	0.8	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0				

STATUS FLAG CODES

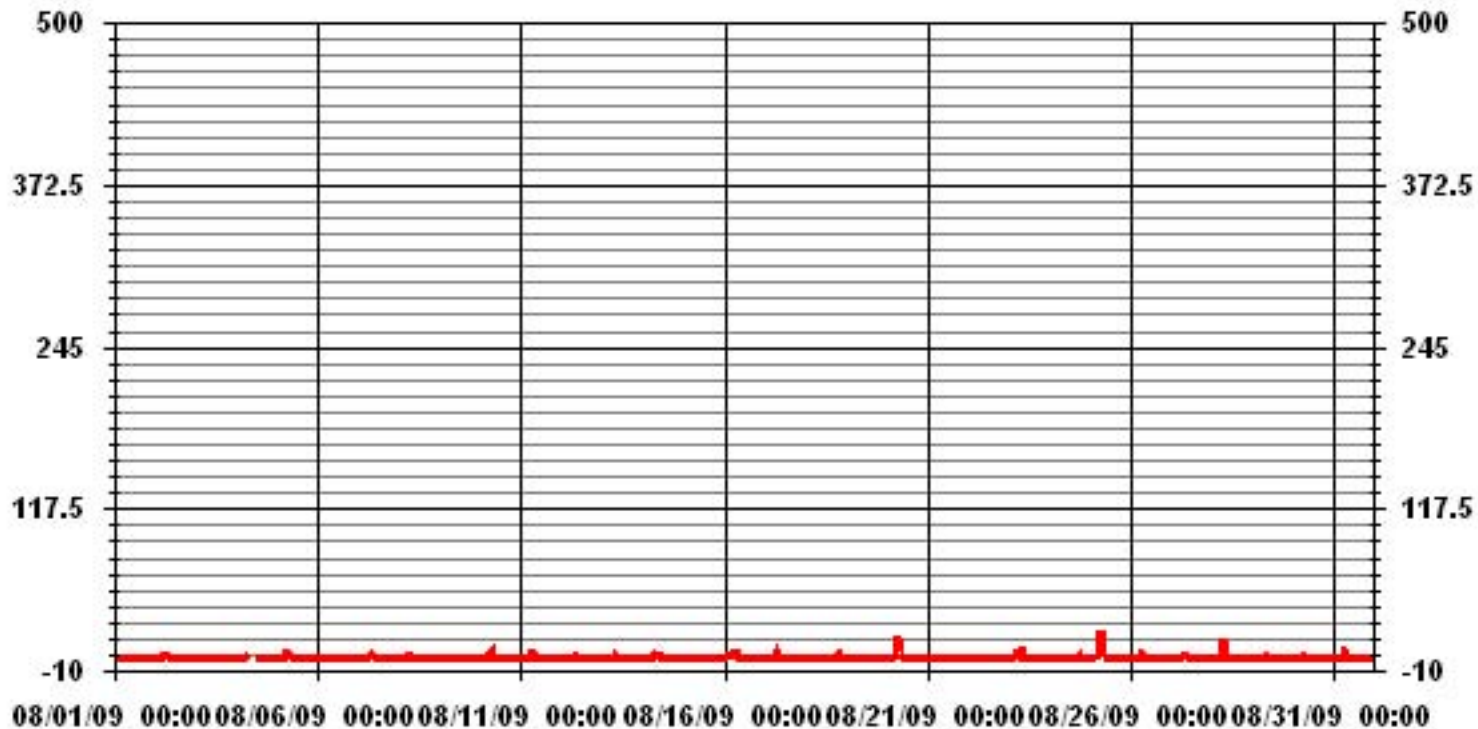
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	100
MAXIMUM 1-HR AVERAGE:	18 PPB @ HOUR(S) 6, 7 ON DAY(S) 25
MAXIMUM 24-HR AVERAGE:	2.0 PPB ON DAY(S) 25
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	1.70
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME:	100.0 %
MONTHLY AVERAGE:	0.44 PPB

01 Hour Averages



— LICA NO₂ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	0	0	0	0	IZS	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.3	24	
2	0	0	0	IZS	0	4	3	4	4	2	2	0	0	0	6	0	2	0	0	0	0	0	0	0	6	1.2	24	
3	0	0	IZS	0	0	0	0	0	0	0	0	0	4	0	0	0	0	1	0	0	1	0	8	0	8	0.6	24	
4	1	IZS	1	1	1	4	4	C	C	C	C	C	C	C	C	1	4	22	0	0	0	2	0	2	22	2.9	24	
5	IZS	1	1	1	7	12	9	7	4	4	1	15	5	19	1	1	0	0	2	1	7	0	3	IZS	19	4.6	24	
6	0	1	1	0	0	1	5	3	5	6	1	4	0	1	0	2	2	0	0	1	1	1	IZS	1	6	1.6	24	
7	1	0	0	0	0	1	6	5	7	2	5	4	0	5	0	0	0	3	0	0	2	IZS	1	1	7	1.9	24	
8	2	1	1	1	1	4	4	6	1	1	0	8	1	0	0	1	0	0	2	0	IZS	1	1	0	8	1.6	24	
9	0	0	0	0	3	2	1	2	1	0	0	0	1	0	0	0	0	0	0	IZS	0	31	0	1	31	1.8	24	
10	1	1	1	1	1	9	12	17	0	0	0	11	1	0	0	0	0	0	IZS	19	2	0	0	0	19	3.3	24	
11	0	0	0	1	14	23	8	5	7	4	0	0	1	0	4	4	1	IZS	0	0	0	0	6	4	1	23	3.6	24
12	1	0	0	0	0	0	1	4	3	2	1	0	0	0	0	1	IZS	0	0	0	2	0	0	1	4	0.7	24	
13	0	0	0	1	1	7	1	4	2	4	0	1	0	0	0	IZS	1	0	2	0	0	0	0	0	2	7	1.1	24
14	0	0	0	1	1	7	7	3	19	2	5	8	1	3	IZS	47	0	0	0	1	0	0	0	1	47	4.6	24	
15	1	1	0	0	0	0	1	1	8	6	0	37	0	IZS	6	1	3	7	3	0	0	0	1	1	37	3.3	24	
16	1	3	2	6	3	4	6	7	1	1	2	0	IZS	7	1	0	5	0	0	0	0	0	2	5	7	2.4	24	
17	1	1	1	1	1	7	10	5	2	1	0	IZS	0	0	0	1	1	0	0	1	1	0	0	0	10	1.5	24	
18	0	0	0	0	0	0	1	0	1	0	IZS	1	0	3	0	0	0	0	0	19	24	0	0	0	24	2.1	24	
19	0	0	0	0	0	0	4	1	0	IZS	9	0	1	5	0	0	0	0	0	2	0	1	1	1	9	1.1	24	
20	1	1	0	1	1	33	26	13	IZS	4	2	8	1	6	2	9	12	12	0	13	2	6	0	1	33	6.7	24	
21	1	0	0	0	0	1	7	IZS	20	0	5	19	2	2	4	0	4	3	3	7	5	10	1	0	20	4.1	24	
22	0	0	0	0	0	4	IZS	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	1	15	0.9	24	
23	6	1	1	2	1	IZS	11	12	2	0	3	0	1	12	0	1	0	1	0	0	0	0	0	0	12	2.3	24	
24	0	0	0	0	IZS	0	1	1	3	0	0	0	0	0	2	0	0	6	20	0	0	0	7	7	20	2.0	24	
25	1	1	1	IZS	3	13	33	31	21	2	0	3	1	1	3	7	3	4	2	10	19	5	1	0	33	7.2	24	
26	2	1	IZS	1	1	4	13	4	1	0	0	1	4	0	0	2	4	3	2	0	0	0	0	1	13	1.9	24	
27	1	IZS	1	0	1	3	14	7	4	5	2	1	0	0	0	0	0	0	1	0	0	0	0	0	14	1.7	24	
28	IZS	1	1	1	7	17	19	24	4	2	1	0	1	0	0	4	0	0	0	4	5	0	1	IZS	24	4.2	24	
29	0	0	1	0	0	1	5	9	0	1	4	0	0	10	0	0	0	4	9	6	4	0	IZS	0	10	2.3	24	
30	0	10	0	0	7	6	2	3	0	0	0	0	0	0	0	1	0	0	0	0	1	IZS	0	9	10	1.7	24	
31	2	2	0	0	1	1	17	7	7	10	31	2	8	0	2	0	0	0	0	0	IZS	10	18	1	31	5.2	24	
HOURLY MAX	6	10	2	6	14	33	33	31	21	10	31	37	8	19	6	47	12	22	20	24	19	31	18	9				
HOURLY AVG	0.8	0.9	0.4	0.7	1.9	5.6	7.7	6.4	4.4	2.1	2.6	4.2	1.1	2.6	1.1	2.8	1.4	2.2	2.2	3.5	1.8	2.6	1.7	1.3				

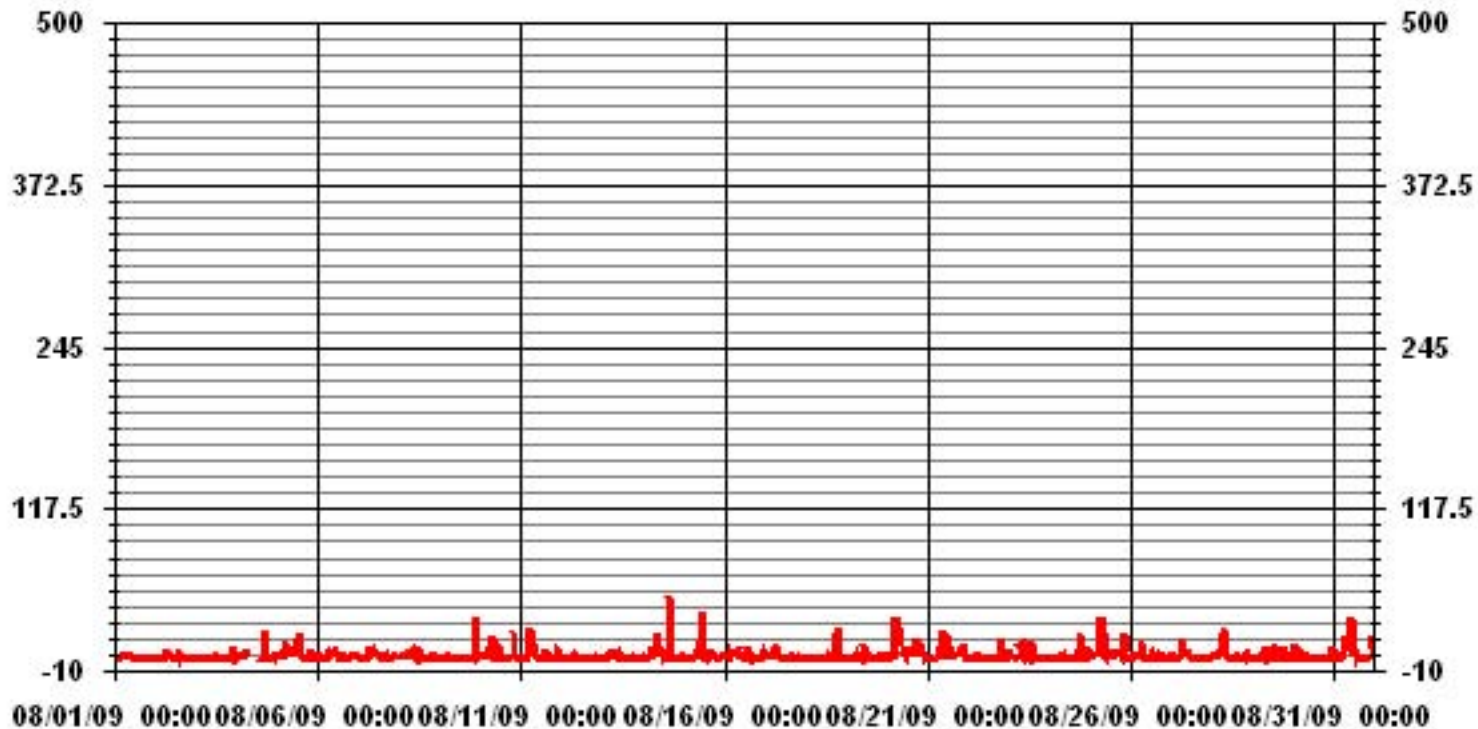
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	377					
MAXIMUM INSTANTANEOUS VALUE:	47	PPB	@ HOUR(S)	15	ON DAY(S)	14
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION	5.24					

01 Hour Averages



— LICA NOMAX PPB

LICA
 NO_ / WD Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	1.98	4.11	3.69	4.68	4.54	5.82	12.07	4.11	5.25	7.10	12.21	11.07	8.66	5.96	5.11	3.55	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.98	4.11	3.69	4.68	4.54	5.82	12.07	4.11	5.25	7.10	12.21	11.07	8.66	5.96	5.11	3.55	

Calm : .00 %

Total # Operational Hours : 704

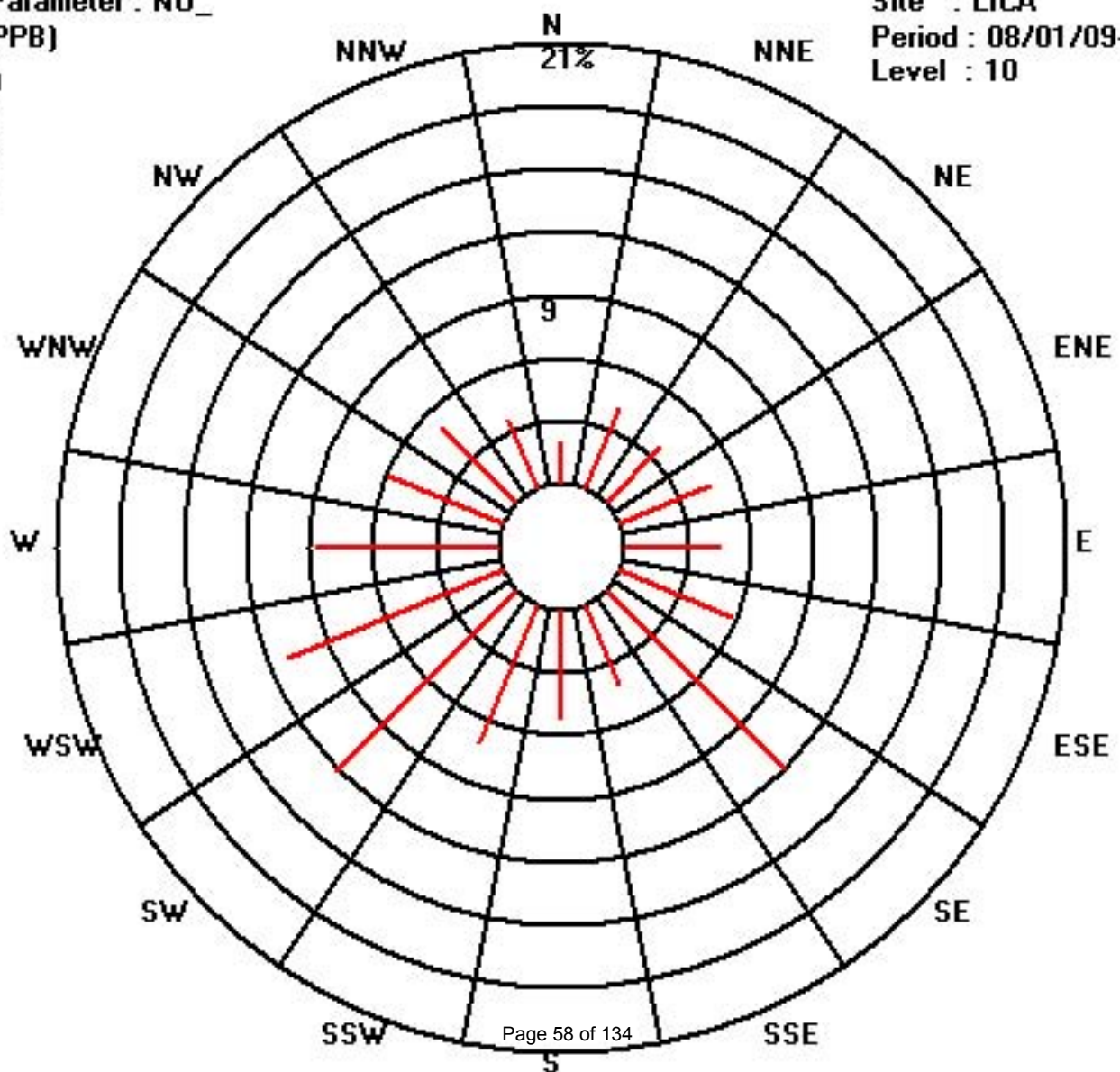
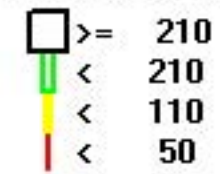
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	14	29	26	33	32	41	85	29	37	50	86	78	61	42	36	25	704
< 110																	
< 210																	
>= 210																	
Totals	14	29	26	33	32	41	85	29	37	50	86	78	61	42	36	25	

Calm : .00 %

Total # Operational Hours : 704

Class Limits (PPB)



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

OXIDES OF NITROGEN hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 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	1	1	1	1	IZS	2	2	3	3	3	4	3	3	3	2	2	2	2	4	5	1	2	4	5	5	2.6	24	
2	3	1	2	IZS	2	7	8	9	8	6	2	1	1	1	1	1	1	0	0	0	0	0	0	0	9	2.3	24	
3	0	1	IZS	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	4	4	0.7	24	
4	6	IZS	6	7	5	7	10	C	C	C	C	C	C	0	0	1	1	0	3	5	4	2	2	10	3.7	24		
5	IZS	3	2	1	3	6	10	8	5	3	1	1	1	0	0	0	0	0	0	1	4	3	3	IZS	10	2.5	24	
6	1	1	1	1	1	3	4	3	3	4	1	1	1	1	1	1	1	1	1	1	3	2	IZS	2	4	1.7	24	
7	2	1	2	1	2	2	4	9	6	4	4	1	1	1	1	0	0	1	1	2	2	IZS	2	2	9	2.2	24	
8	3	3	2	2	2	3	5	8	3	2	1	1	1	1	0	0	0	0	1	1	IZS	2	2	1	8	1.9	24	
9	2	2	2	2	2	4	3	6	3	2	2	2	1	1	1	1	1	1	0	IZS	2	5	1	2	6	2.1	24	
10	1	2	2	1	2	6	9	3	2	1	1	2	1	1	1	1	1	1	IZS	4	4	4	3	6	9	2.6	24	
11	3	4	4	3	5	11	10	10	4	3	3	2	2	3	2	2	IZS	1	2	3	3	4	8	11	4.4	24		
12	5	2	2	2	2	3	4	8	4	4	2	1	0	0	1	1	IZS	1	0	2	6	5	4	3	8	2.7	24	
13	3	3	3	4	3	4	2	8	2	1	1	2	1	0	0	IZS	1	1	1	2	2	1	1	1	8	2.0	24	
14	1	0	2	3	3	3	6	3	4	3	4	3	2	3	IZS	1	0	1	1	1	1	1	1	2	1	6	2.1	24
15	1	1	1	3	1	0	1	1	1	1	0	1	0	IZS	1	0	1	1	0	1	1	0	1	1	3	0.8	24	
16	2	3	4	3	2	3	5	8	2	1	0	0	IZS	1	0	0	1	0	1	2	2	2	2	2	8	2.0	24	
17	1	1	1	1	1	3	9	8	4	4	1	IZS	1	1	1	1	1	3	4	2	3	3	5	2	9	2.7	24	
18	2	2	1	4	4	4	5	4	3	1	IZS	1	0	1	1	1	0	0	8	8	1	2	2	1	8	2.4	24	
19	0	0	1	1	1	1	3	3	2	IZS	2	1	1	2	0	0	0	1	1	0	3	2	3	4	3	4	1.5	24
20	4	5	3	3	2	14	20	12	IZS	6	3	2	2	2	2	1	2	2	3	4	5	3	0	0	20	4.3	24	
21	0	0	0	0	0	1	4	IZS	1	1	1	1	1	1	1	0	1	1	2	1	0	1	0	1	4	0.8	24	
22	1	1	2	2	1	1	IZS	2	1	1	0	0	0	0	0	0	0	1	2	3	4	2	2	3	4	1.3	24	
23	4	3	3	4	3	IZS	11	13	2	1	2	1	1	1	1	2	1	1	1	1	2	2	0	1	13	2.7	24	
24	1	1	1	1	IZS	1	3	2	3	2	1	0	0	0	0	0	0	1	7	2	5	4	3	4	7	1.8	24	
25	3	2	2	IZS	3	8	21	24	6	1	1	1	1	1	1	2	1	3	3	4	2	2	0	0	24	4.0	24	
26	0	0	IZS	2	2	2	12	4	1	1	1	1	0	0	0	0	1	2	2	2	4	3	1	1	12	1.8	24	
27	0	IZS	2	1	4	4	6	11	7	5	3	2	1	0	1	1	1	1	2	3	3	3	3	2	11	2.9	24	
28	IZS	3	2	2	3	7	15	17	5	4	4	1	1	1	1	1	1	1	1	4	4	2	1	IZS	17	3.7	24	
29	1	1	2	1	1	2	3	6	2	2	1	1	1	1	0	1	1	2	2	2	1	1	IZS	2	6	1.6	24	
30	1	2	1	1	2	4	4	4	2	2	2	1	1	1	1	1	0	1	1	3	2	IZS	2	3	4	1.8	24	
31	3	3	2	1	3	2	14	6	3	3	3	3	2	1	1	1	1	3	6	9	IZS	7	5	2	14	3.7	24	
HOURLY MAX	6	5	6	7	5	14	21	24	10	6	4	3	3	3	3	2	2	3	8	9	6	7	5	8				
HOURLY AVG	1.9	1.8	2.0	2.1	2.3	4.0	7.1	7.0	3.4	2.5	1.8	1.3	1.0	1.0	0.8	0.7	0.8	1.1	1.8	2.6	2.6	2.6	2.1	2.2				

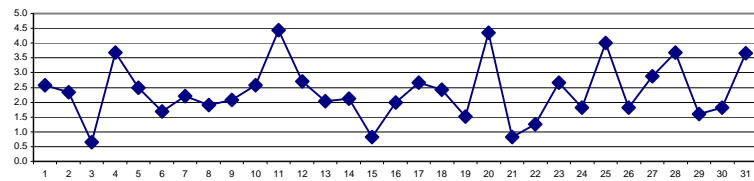
STATUS FLAG CODES

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

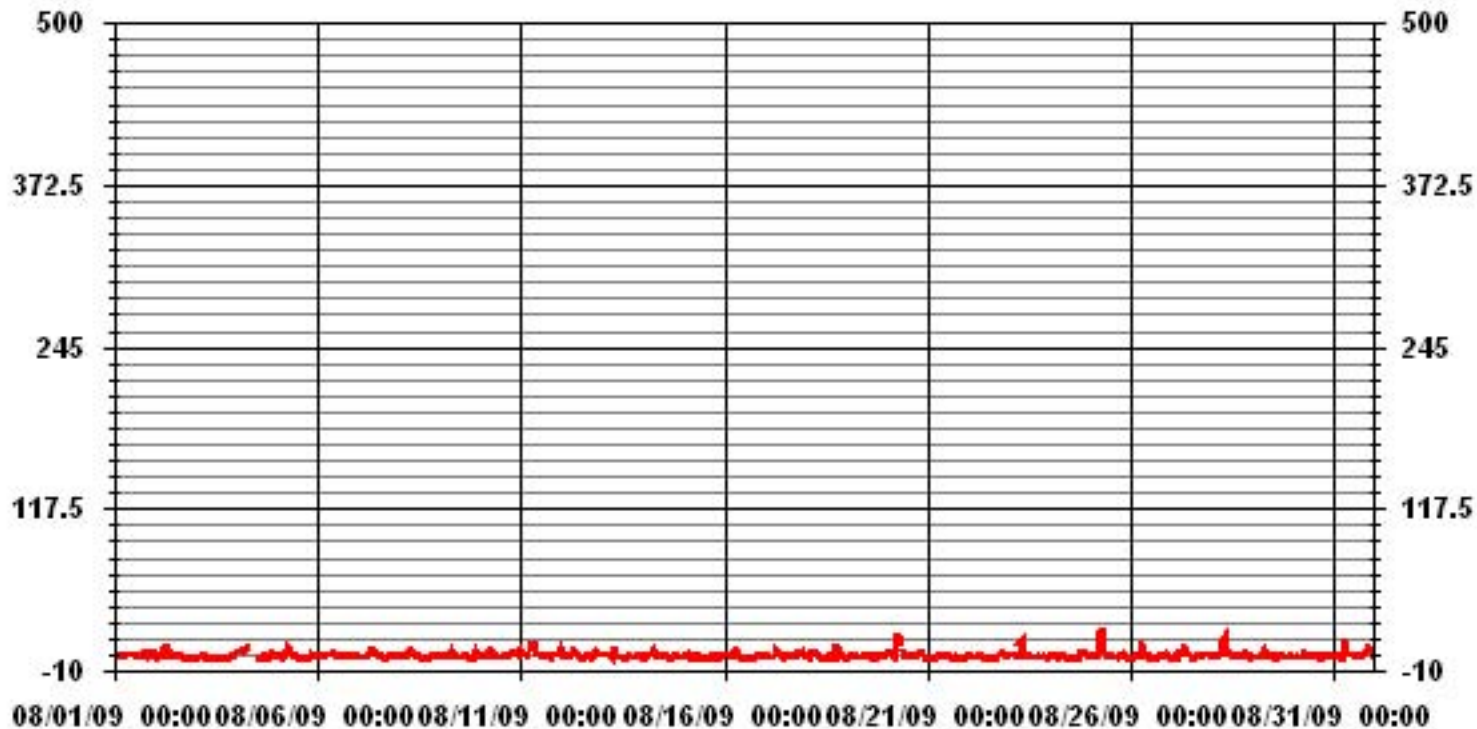
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	605					
MAXIMUM 1-HR AVERAGE:	24	PPB	@ HOUR(S)	7	ON DAY(S)	25
MAXIMUM 24-HR AVERAGE:	4.4	PPB			ON DAY(S)	11
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	2.63		MONTHLY AVERAGE:	2.35	PPB	

24 HOUR AVERAGES FOR AUGUST 2009



01 Hour Averages



— LICA NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	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	2	2	2	IZS	4	5	4	4	5	5	4	4	6	3	3	3	4	8	8	3	6	8	7	8	4.4	24
2		5	1	3	IZS	4	11	9	10	10	8	6	2	2	5	11	3	3	1	1	1	0	0	0	0	11	4.2	24
3		1	1	IZS	2	2	2	2	1	1	0	0	1	2	2	0	1	1	3	2	1	5	4	10	5	10	2.1	24
4		8	IZS	8	8	7	11	12	C	C	C	C	C	C	C	C	5	6	15	2	6	9	8	3	4	15	7.5	24
5		IZS	4	3	2	10	14	13	12	7	13	6	26	13	2	3	1	1	1	6	4	9	4	7	IZS	26	7.3	24
6		2	4	3	2	2	7	10	5	7	15	2	13	2	2	3	3	5	2	2	3	10	5	IZS	3	15	4.9	24
7		3	3	3	3	3	4	12	12	13	5	6	10	3	10	3	2	1	9	4	6	5	IZS	4	3	13	5.5	24
8		5	4	3	3	3	5	7	11	4	6	2	15	2	1	2	1	1	3	14	3	IZS	4	5	4	15	4.7	24
9		3	2	2	2	11	11	6	10	5	3	2	3	4	3	3	2	4	2	1	IZS	3	49	3	3	49	6.0	24
10		2	3	2	3	4	12	16	20	5	2	2	13	3	2	2	4	3	4	IZS	35	11	5	6	9	35	7.3	24
11		5	4	6	4	19	36	16	12	15	14	4	5	2	5	6	4	5	IZS	3	3	5	11	9	16	36	9.1	24
12		10	3	2	3	3	4	6	11	11	5	4	2	1	1	2	5	IZS	1	1	8	10	7	6	4	11	4.8	24
13		4	4	5	6	5	13	5	10	5	6	3	3	2	1	1	IZS	3	2	5	6	4	1	3	6	13	4.5	24
14		2	1	6	6	4	11	10	4	21	7	16	14	3	5	IZS	26	2	2	2	3	2	3	3	5	26	6.9	24
15		2	3	2	4	3	1	3	3	13	7	1	4	1	IZS	8	1	8	11	3	1	1	1	3	3	13	3.8	24
16		4	6	5	9	4	5	8	10	4	2	2	1	IZS	6	2	1	14	2	4	3	3	3	4	7	14	4.7	24
17		3	2	2	2	1	9	14	10	6	5	3	IZS	2	2	2	3	4	8	6	9	9	5	7	3	14	5.1	24
18		3	3	3	6	6	4	9	5	5	2	IZS	2	3	6	1	2	1	0	34	35	3	3	4	2	35	6.2	24
19		1	1	1	2	2	3	4	3	3	IZS	10	1	4	8	1	1	2	2	1	10	4	5	6	5	10	3.5	24
20		8	8	4	5	4	42	33	19	IZS	9	7	6	6	3	11	5	12	10	4	24	10	10	1	1	42	10.5	24
21		1	0	1	1	1	3	94	IZS	7	1	7	12	6	9	5	1	5	2	7	6	5	13	2	1	94	8.3	24
22		3	1	3	3	2	6	IZS	5	3	1	1	1	1	1	1	1	1	2	4	25	9	3	3	6	25	3.7	24
23		11	6	4	6	5	IZS	18	18	6	3	22	2	2	19	3	4	3	5	5	3	3	5	2	3	22	6.9	24
24		3	2	2	2	IZS	2	6	3	5	3	3	2	2	1	6	1	3	11	35	7	7	6	12	11	35	5.9	24
25		4	3	3	IZS	5	16	40	43	30	4	2	3	6	9	10	7	5	14	7	21	10	7	1	1	43	10.9	24
26		4	4	IZS	5	3	8	21	9	3	2	3	11	4	5	1	3	6	6	11	5	7	6	3	4	21	5.8	24
27		3	IZS	5	3	6	7	23	18	9	10	6	4	2	1	2	3	3	3	6	7	6	5	4	3	23	6.0	24
28		IZS	4	3	3	11	18	21	32	9	7	6	3	6	3	1	11	4	2	2	14	11	3	4	IZS	32	8.1	24
29		1	2	7	2	2	4	9	16	3	6	6	2	2	3	3	4	2	20	19	15	12	3	IZS	4	20	6.4	24
30		3	24	2	3	16	15	7	7	2	3	4	4	1	2	1	4	1	2	4	7	6	IZS	2	21	24	6.1	24
31		8	11	3	2	6	4	26	12	10	20	17	16	24	3	4	3	3	8	8	14	IZS	23	27	4	27	11.1	24
HOURLY MAX		11	24	8	9	19	42	94	43	30	20	22	26	24	19	11	26	14	20	35	35	12	49	27	21			
HOURLY AVG		3.9	4.0	3.4	3.6	5.3	9.7	15.5	11.6	7.8	6.0	5.4	6.4	4.0	4.3	3.5	3.8	3.8	5.2	7.0	9.8	6.3	7.2	5.2	5.1			

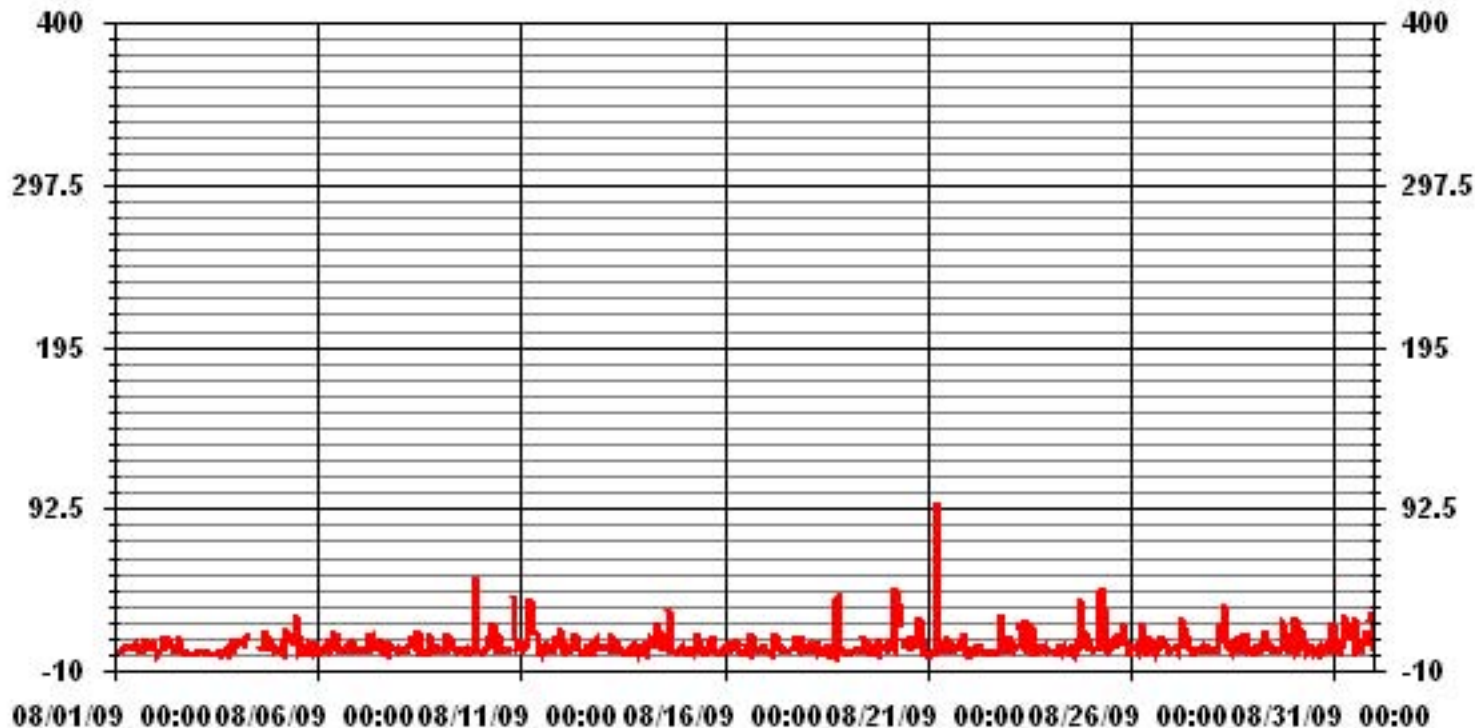
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	694
MAXIMUM INSTANTANEOUS VALUE:	94 PPB @ HOUR(S) 6 ON DAY(S) 21
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	8 HRS
STANDARD DEVIATION	7.13
OPERATIONAL TIME:	744 HRS

01 Hour Averages



— LICA NOXMAX PPB

LICA
 NOX_ / WD Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	1.98	4.11	3.69	4.68	4.54	5.82	12.07	4.11	5.25	7.10	12.21	11.07	8.66	5.96	5.11	3.55	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.98	4.11	3.69	4.68	4.54	5.82	12.07	4.11	5.25	7.10	12.21	11.07	8.66	5.96	5.11	3.55	

Calm : .00 %

Total # Operational Hours : 704

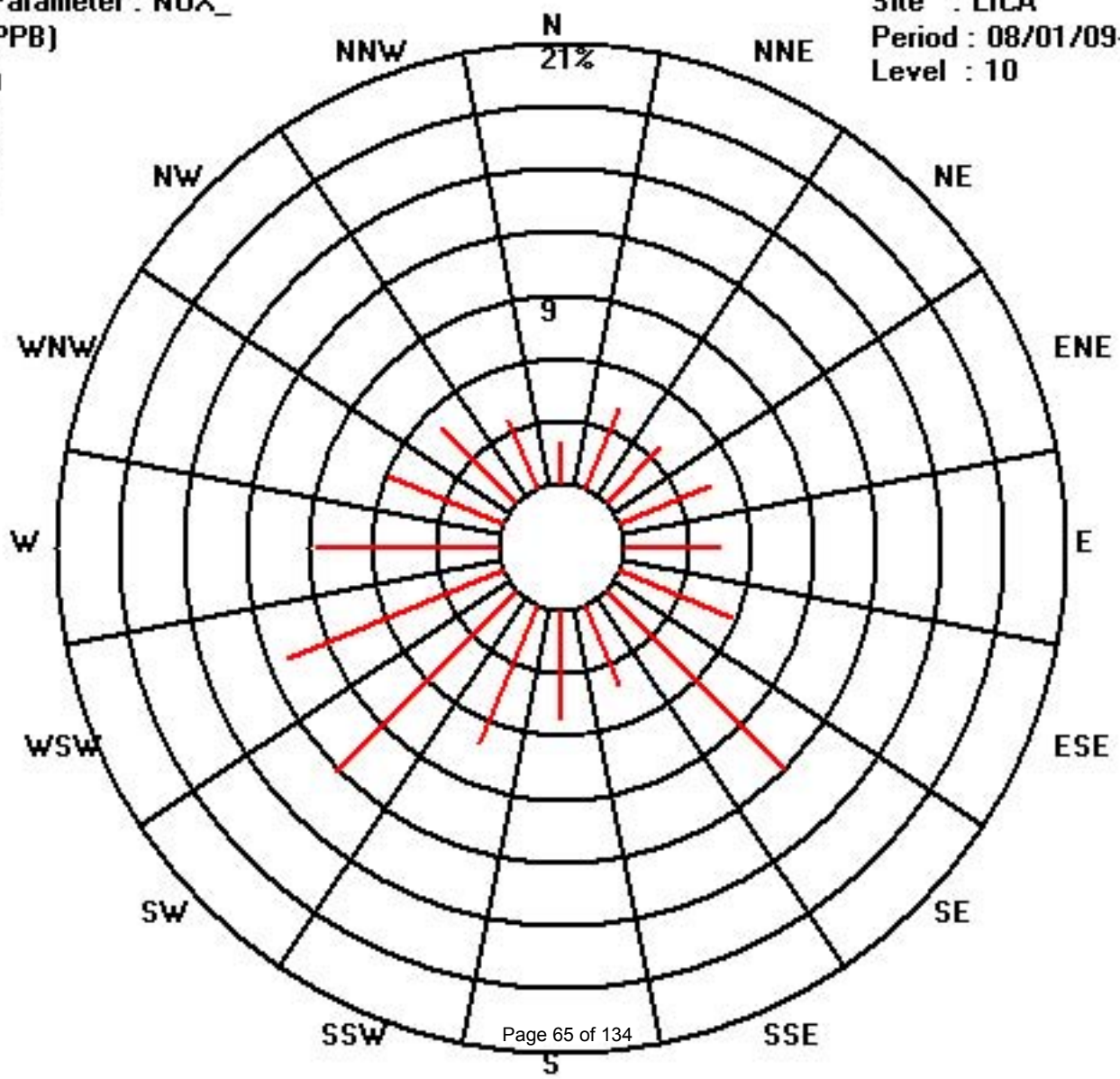
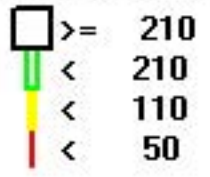
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	14	29	26	33	32	41	85	29	37	50	86	78	61	42	36	25	704
< 110																	
< 210																	
>= 210																	
Totals	14	29	26	33	32	41	85	29	37	50	86	78	61	42	36	25	

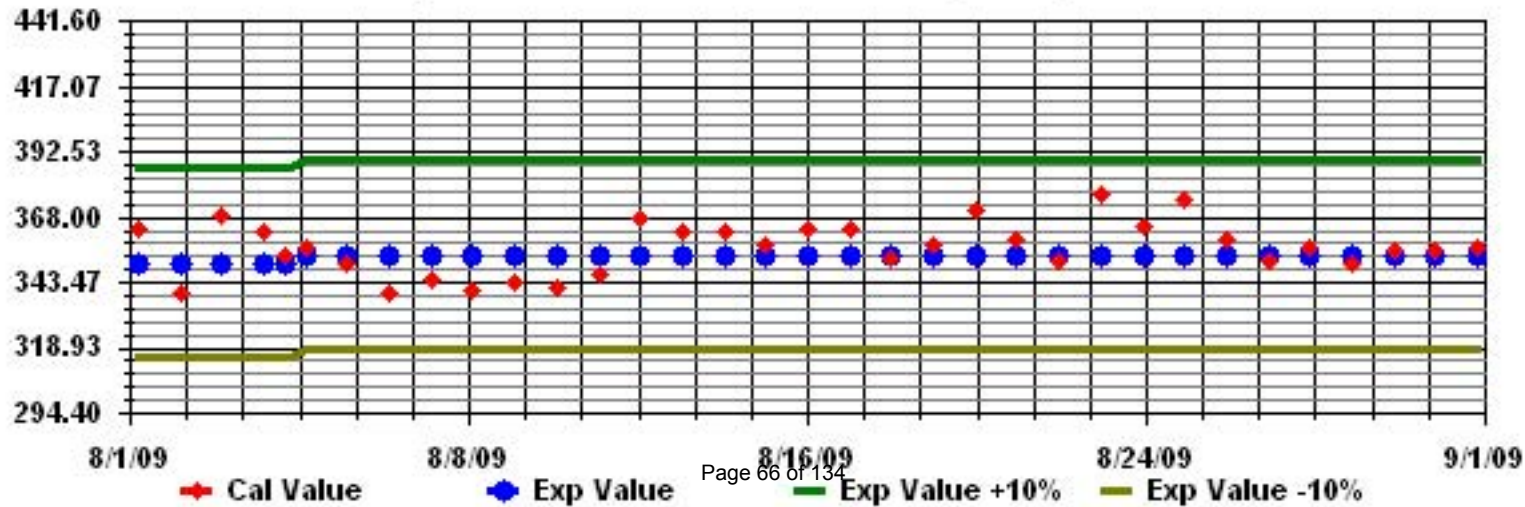
Calm : .00 %

Total # Operational Hours : 704

Class Limits (PPB)



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



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

OZONE (O₃) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	7	11	5	3	IZS	5	12	16	22	29	39	41	41	41	40	37	37	35	24	24	20	10	7	8	41	22.3	24
2	14	17	8	IZS	4	4	7	11	15	17	23	26	25	20	22	24	18	23	28	29	25	25	24	24	29	18.8	24
3	22	19	IZS	16	14	14	15	22	22	21	20	22	23	23	23	24	25	24	23	22	11	5	4	1	25	18.0	24
4	0	IZS	3	3	2	2	4	6	10	14	21	27	28	C	C	C	C	32	24	17	7	3	2	1	32	10.8	24
5	IZS	0	0	0	0	0	4	9	15	23	30	33	35	36	36	36	33	33	29	19	7	4	3	IZS	36	17.5	24
6	2	1	5	7	7	5	6	11	11	19	28	28	29	27	27	29	29	28	22	22	15	9	IZS	6	29	16.2	24
7	3	3	5	5	6	7	7	5	7	15	23	33	37	39	37	37	38	37	30	12	8	IZS	3	2	39	17.3	24
8	1	0	0	0	0	0	2	12	22	32	38	39	41	41	40	40	41	41	41	30	IZS	18	23	23	41	22.8	24
9	21	21	19	19	15	14	21	22	26	30	33	32	29	31	32	33	34	35	35	IZS	21	8	7	4	35	23.6	24
10	2	0	1	0	0	0	4	17	24	28	32	40	47	53	55	52	52	47	IZS	23	19	17	24	18	55	24.1	24
11	20	15	9	7	3	2	4	7	13	24	25	26	30	26	25	31	30	IZS	28	14	6	4	2	2	31	15.3	24
12	3	4	11	13	13	14	13	13	17	18	25	29	29	29	29	32	IZS	31	30	23	10	9	14	6	32	18.0	24
13	4	5	4	3	6	6	11	6	17	20	23	22	24	25	24	IZS	25	25	23	14	7	13	6	4	25	13.8	24
14	3	3	1	0	0	0	3	6	9	12	17	16	20	20	IZS	20	19	18	17	15	10	6	5	3	20	9.7	24
15	2	3	2	2	10	12	12	13	14	14	14	14	15	IZS	14	14	14	15	13	10	8	5	2	1	15	9.7	24
16	0	0	0	0	0	0	0	4	13	18	20	24	IZS	27	28	28	28	28	23	9	6	4	2	1	28	11.4	24
17	1	0	0	0	0	0	3	10	17	23	29	IZS	30	33	34	33	34	28	28	29	20	21	17	15	34	17.6	24
18	14	12	6	10	12	13	13	15	17	22	IZS	21	22	22	21	21	22	20	16	17	16	21	15	13	22	16.6	24
19	15	14	12	12	11	10	9	11	13	IZS	18	22	22	20	19	18	19	17	17	10	6	2	1	1	22	13.0	24
20	1	3	1	0	0	0	1	5	IZS	16	25	32	38	39	40	39	36	32	23	12	8	13	16	16	40	17.2	24
21	16	15	13	12	11	10	10	IZS	15	17	18	20	21	21	22	24	24	22	19	21	20	20	20	19	24	17.8	24
22	18	18	14	14	30	26	IZS	26	27	36	41	38	32	32	39	41	39	38	34	19	11	9	7	2	41	25.7	24
23	1	3	1	0	0	IZS	1	6	21	27	29	31	31	31	32	31	29	26	26	20	13	11	15	21	32	17.7	24
24	28	23	19	16	IZS	22	19	18	18	21	23	23	23	23	23	22	22	21	18	16	5	5	3	1	28	17.9	24
25	1	1	0	IZS	0	0	0	3	13	20	22	23	24	24	26	28	27	25	22	19	18	18	18	18	28	15.2	24
26	18	16	IZS	5	2	2	2	13	17	20	20	22	25	25	25	25	26	24	19	12	5	10	14	14	26	15.7	24
27	12	IZS	4	2	2	2	5	3	6	11	17	27	30	38	45	46	43	41	36	17	12	7	3	3	46	17.9	24
28	IZS	0	0	0	0	0	0	4	19	36	44	47	52	53	51	54	54	51	42	26	22	25	26	IZS	54	27.5	24
29	25	20	16	20	7	4	4	15	24	28	29	33	40	47	52	52	52	48	40	35	33	32	IZS	24	52	29.6	24
30	29	31	28	19	12	7	5	13	24	30	36	41	44	45	46	45	46	43	36	28	28	IZS	28	25	46	30.0	24
31	16	11	10	9	7	6	3	16	22	24	31	37	39	43	47	49	51	44	30	23	IZS	8	6	5	51	23.3	24
HOURLY MAX	29	31	28	20	30	26	21	26	27	36	44	47	52	53	55	54	54	51	42	35	33	32	28	25			
HOURLY AVG	10.3	9.3	6.8	6.8	6.0	6.2	6.7	11.3	17.0	22.2	26.4	29.0	30.9	32.2	32.9	33.3	32.7	31.1	26.5	19.6	13.7	11.8	10.9	9.7			

STATUS FLAG CODES

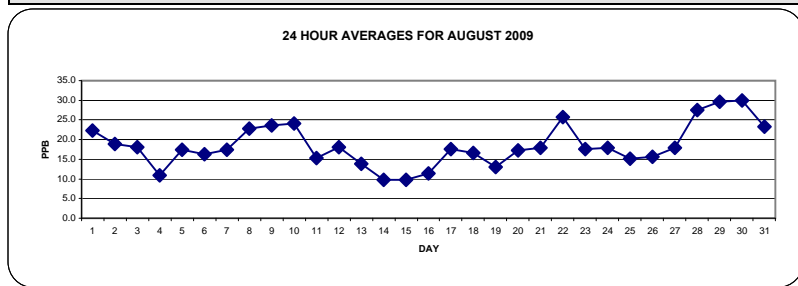
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

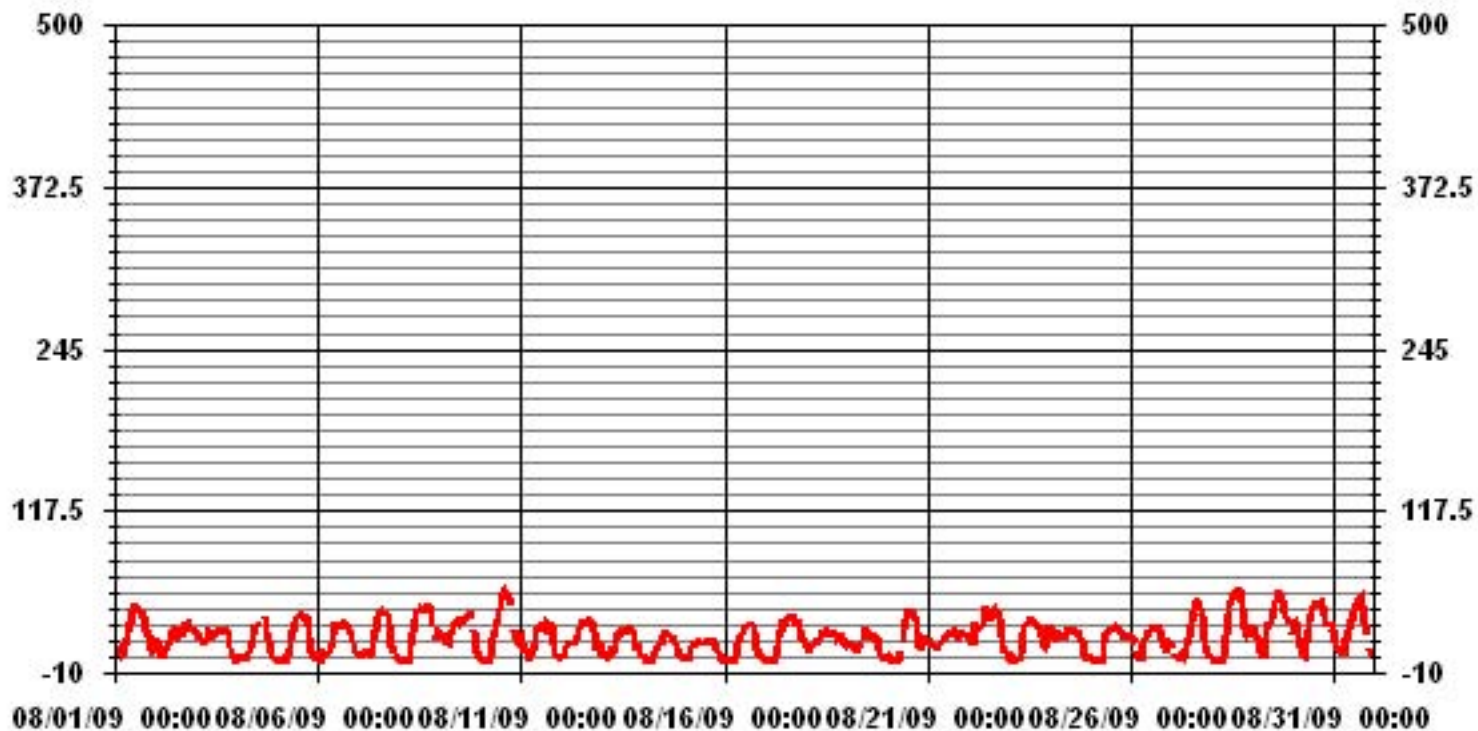
ALBERTA ENVIRONMENT: 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	662
MAXIMUM 1-HR AVERAGE:	55 PPB @ HOUR(S) 14 ON DAY(S) 10
MAXIMUM 24-HR AVERAGE:	30.0 PPB ON DAY(S) 30
	VAR-VARIOUS
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION	13.04
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME	100.0 %
MONTHLY AVERAGE	18.50 PPB



01 Hour Averages



— LICA 03_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

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	14	16	9	6	IZS	12	14	20	27	33	44	44	44	44	41	44	43	32	27	24	19	10	9	44	27.0	24	
2	17	18	16	IZS	7	7	9	13	18	20	27	29	28	23	25	28	20	27	32	32	28	26	25	25	32	21.7	24
3	24	21	IZS	17	15	15	18	25	24	22	22	25	25	24	24	25	26	25	25	24	19	7	7	2	26	20.0	24
4	1	IZS	5	5	4	3	5	9	12	21	25	31	33	C	C	C	C	C	31	24	11	5	4	2	33	12.8	24
5	IZS	1	0	0	0	1	6	12	19	28	32	35	36	37	38	38	36	36	34	26	9	6	5	IZS	38	19.8	24
6	4	4	9	9	10	9	9	15	15	29	30	31	31	29	29	32	31	32	25	24	20	14	IZS	12	32	19.7	24
7	5	4	7	8	8	12	12	7	10	20	30	36	40	41	39	39	40	40	36	16	13	IZS	6	4	41	20.6	24
8	3	1	1	1	1	1	5	20	28	37	40	43	44	43	42	42	43	43	43	37	IZS	22	25	24	44	25.6	24
9	23	23	22	22	20	22	24	24	28	33	35	34	31	33	33	35	36	43	42	IZS	25	17	10	8	43	27.1	24
10	5	1	2	1	1	1	12	21	27	32	37	43	53	57	57	56	54	52	IZS	29	30	22	27	24	57	28.0	24
11	24	18	15	15	5	8	8	10	22	29	29	30	33	31	29	34	33	IZS	30	27	10	7	4	5	34	19.8	24
12	6	8	15	16	17	16	15	16	20	21	28	30	30	30	30	33	IZS	32	32	30	14	16	17	9	33	20.9	24
13	6	9	8	5	9	15	15	12	21	22	24	24	26	27	26	IZS	27	27	26	25	13	16	12	7	27	17.5	24
14	5	5	3	1	2	1	6	9	11	15	18	18	22	23	IZS	23	21	19	18	17	13	12	10	5	23	12.0	24
15	5	5	4	5	13	13	14	14	15	15	15	16	16	IZS	15	15	15	16	15	12	12	8	4	4	16	11.6	24
16	0	0	0	0	0	0	2	9	19	19	22	29	IZS	29	29	29	29	29	29	14	11	9	4	3	29	13.7	24
17	1	1	1	0	0	1	7	13	22	27	32	IZS	32	35	36	35	37	31	33	33	25	25	21	17	37	20.2	24
18	16	16	9	12	13	14	15	17	22	23	IZS	23	24	24	23	23	24	21	21	23	18	26	18	14	26	19.1	24
19	16	15	13	13	13	11	11	12	15	IZS	22	23	23	21	20	19	20	19	18	16	9	6	2	2	23	14.7	24
20	3	4	2	1	0	0	3	7	IZS	22	31	35	41	42	42	41	38	37	31	19	11	16	17	17	42	20.0	24
21	16	16	14	12	12	11	11	IZS	16	18	19	22	22	22	24	25	25	24	21	21	21	20	21	20	25	18.8	24
22	19	19	17	25	32	29	IZS	28	31	42	44	42	36	37	41	43	41	39	38	28	16	13	11	4	44	29.3	24
23	9	9	3	1	1	IZS	2	14	27	30	32	32	33	33	35	33	31	28	32	24	18	14	18	23	35	21.0	24
24	30	29	22	20	IZS	23	21	19	19	22	24	24	24	24	24	23	23	22	21	20	10	7	7	2	30	20.0	24
25	2	2	1	IZS	0	0	1	6	20	21	24	24	25	25	27	30	29	27	24	21	19	19	18	19	30	16.7	24
26	19	20	IZS	10	4	4	5	17	19	21	22	25	26	27	26	26	28	26	24	17	7	15	16	16	28	18.3	24
27	15	IZS	6	4	2	4	9	5	10	14	22	31	33	43	49	49	45	43	41	30	17	12	7	7	49	21.7	24
28	IZS	1	2	1	0	0	1	10	30	41	49	49	55	55	54	56	57	56	47	34	29	30	30	IZS	57	31.2	24
29	28	28	26	27	16	9	8	23	27	30	32	36	44	50	54	55	54	52	45	37	34	35	IZS	29	55	33.9	24
30	32	33	32	28	19	11	8	23	27	36	40	43	45	47	48	47	49	45	42	34	32	IZS	30	29	49	33.9	24
31	21	17	16	14	14	9	11	22	24	28	35	40	52	50	51	53	52	33	31	IZS	13	9	12	53	28.1	24	
HOURLY MAX	32	33	32	28	32	29	24	28	31	42	49	49	55	57	57	56	57	56	47	37	34	35	30	29			
HOURLY AVG	12.7	11.9	9.7	9.6	8.2	8.7	9.6	15.1	20.8	25.7	29.5	31.6	33.2	34.8	34.9	35.4	34.8	34.0	30.7	25.1	17.9	15.8	13.6	12.2			

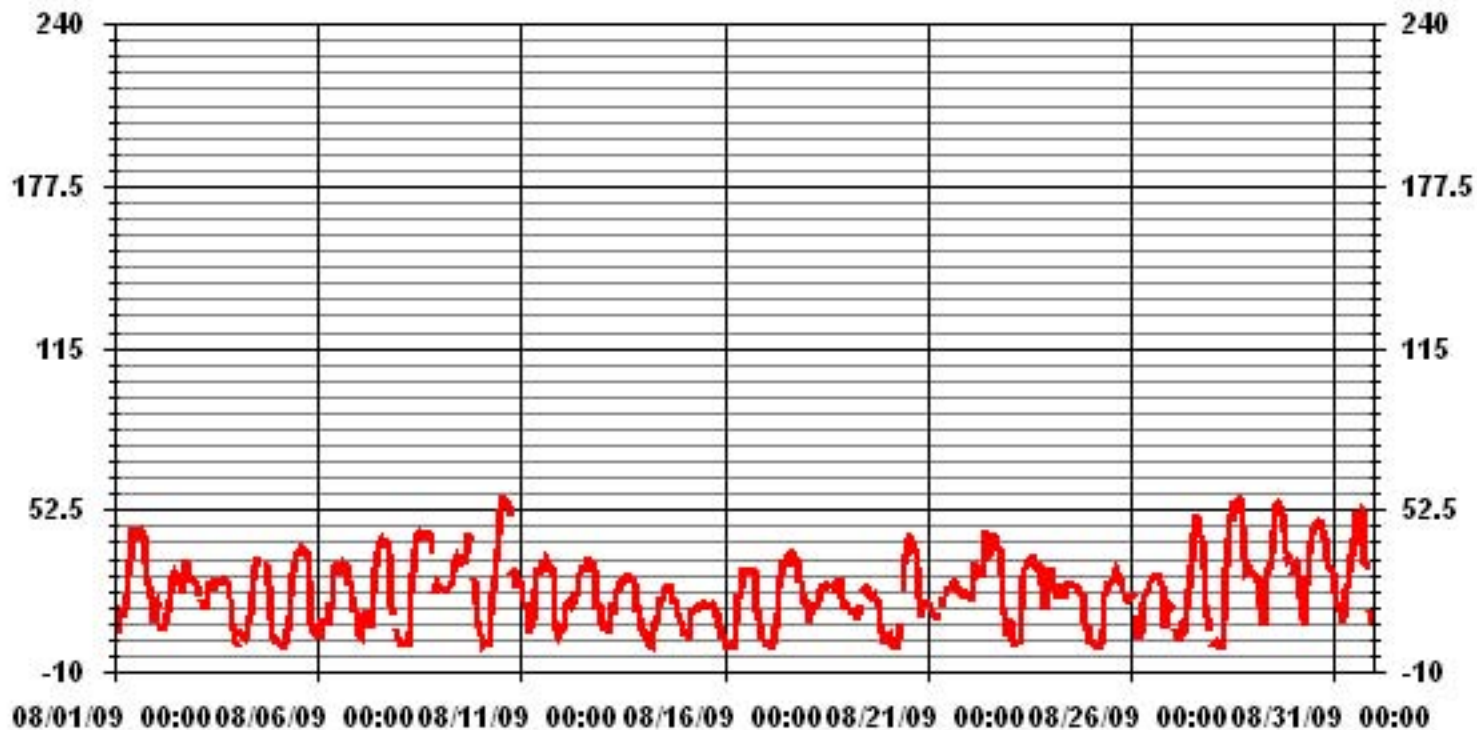
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	689					
MAXIMUM INSTANTANEOUS VALUE:	57	PPB	@ HOUR(S)	VAR	ON DAY(S)	10, 28
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744 HRS		
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION	13.33					

01 Hour Averages



— LICA O3MAX PPB

LICA
O3_ / WD Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	1.83	4.10	3.67	4.66	4.52	5.79	11.45	3.67	4.80	7.07	12.16	11.03	8.62	6.08	5.09	3.39	98.01
< 110	.00	.00	.00	.00	.00	.00	.56	.42	.42	.00	.00	.14	.14	.28	.00	.00	1.98
< 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	1.83	4.10	3.67	4.66	4.52	5.79	12.02	4.10	5.23	7.07	12.16	11.17	8.76	6.36	5.09	3.39	

Calm : .00 %

Total # Operational Hours : 707

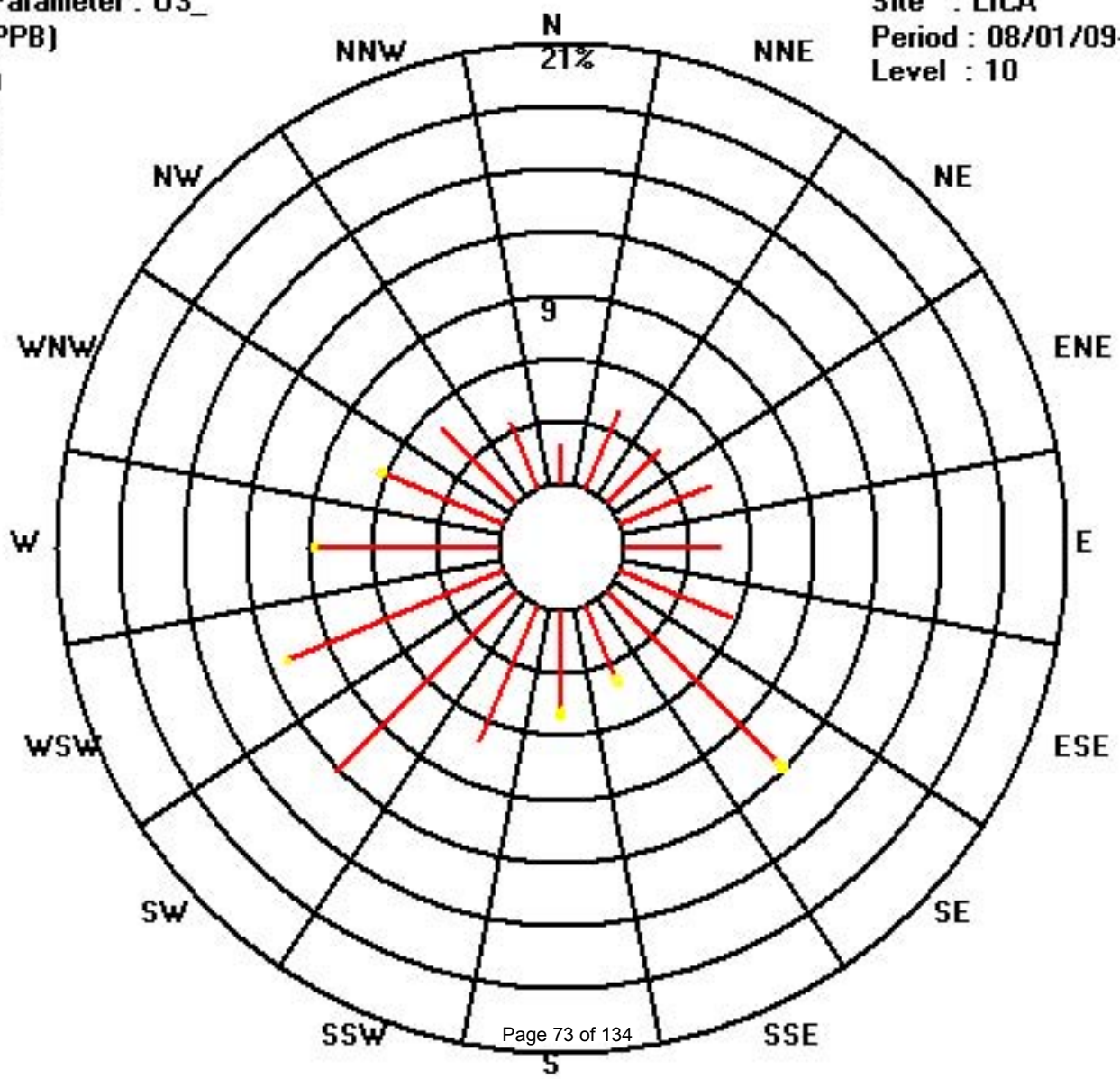
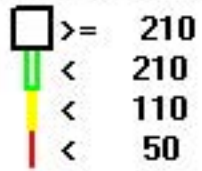
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	13	29	26	33	32	41	81	26	34	50	86	78	61	43	36	24	693
< 110							4	3	3			1	1	2			14
< 210																	
>= 210																	
Totals	13	29	26	33	32	41	85	29	37	50	86	79	62	45	36	24	

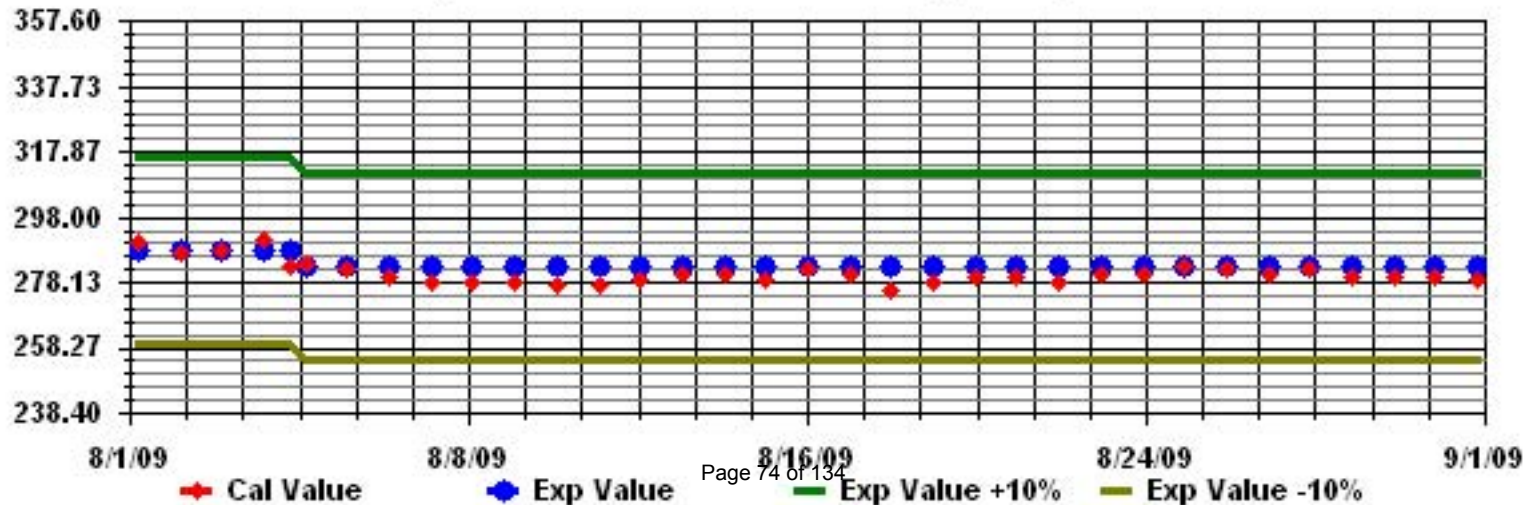
Calm : .00 %

Total # Operational Hours : 707

Class Limits (PPB)

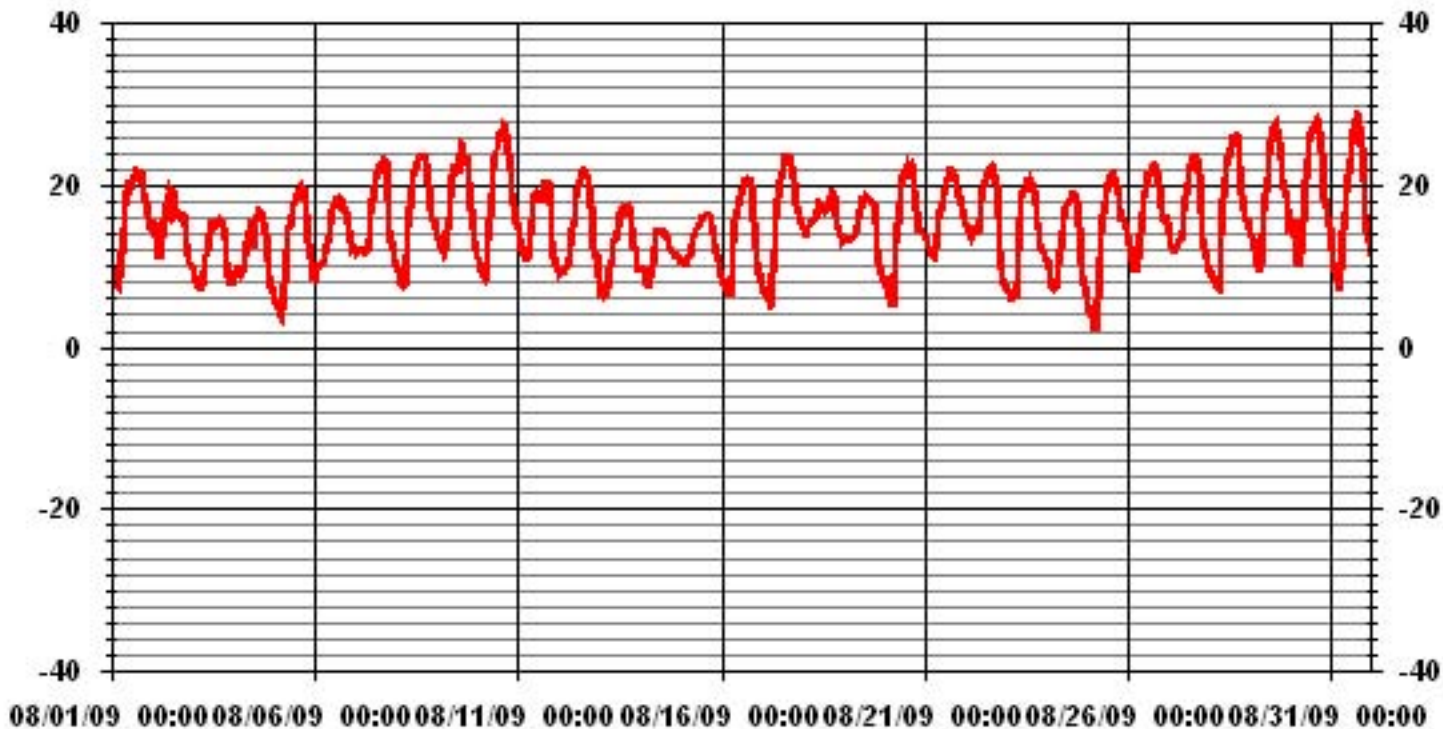


Calibration Graph for Site: LICA Parameter: 03_ Sequence: 03 Phase: SPAll



Ambient Temperature

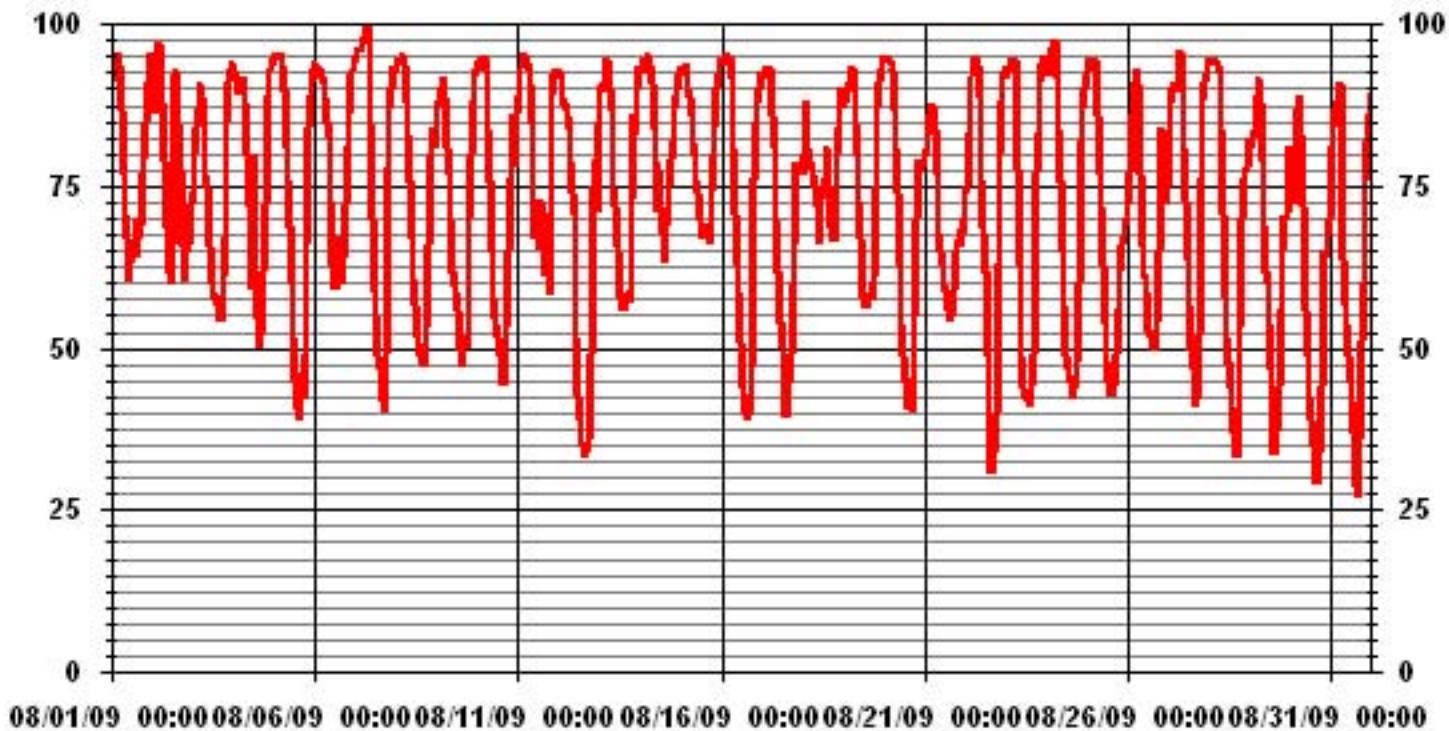
01 Hour Averages



— LICA TPX DGC

Relative Humidity

01 Hour Averages



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

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

MST

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	DAILY MAX.	24-HOUR AVG.	RDGS.
1	1	0.2	0.4	0.1	0.3	0.9	1.4	2.6	3.2	2.9	3.2	5.5	5.1	3.8	4.9	5.5	2.6	0.7	2.1	2.6	4.1	0.9	3.2	2.8	5.5	0.7	24
2	5.6	4.2	0.2	2.7	3.6	4.3	2.9	3	2.8	1.2	3.5	5.3	2.5	2	3.9	7.4	8.1	9	8.8	10	7.4	6.4	6.8	5.6	10	3.6	24
3	7.7	7.2	6.1	4.4	5.1	6.5	4.5	7.7	8.9	7.5	2.8	3.2	5.4	5.8	6.6	6	4.8	5.8	5.1	3.9	1.9	1.4	1.2	1.1	8.9	4.2	24
4	1.6	1.6	2.9	1.9	2	1.3	2.9	2.4	1.5	3.2	6.3	7.3	5.7	7.6	8	7.9	5.6	7.1	2.6	3.4	2.5	0.9	0.6	0.4	8	2.9	24
5	1.9	0.7	0.3	1.3	0.5	0.6	2.9	1.1	0.4	2.9	2.9	2.6	3.1	2.3	2.7	2.4	2.6	1.2	2.3	2.5	0.9	0.9	0.3	0.2	3.1	1.6	24
6	0.3	0.6	1.1	0.8	0.7	0.5	1.4	1.5	1.3	2.9	7.1	6	4.7	7	5.9	7.4	9.3	4.2	2.1	3.6	1.4	1.2	1.6	1.3	9.3	3.1	24
7	0.9	1	1.7	0.4	1.2	0.8	3.7	0.3	1.3	0.7	2.4	1.6	3.1	3.2	1.4	3.3	3.1	2.6	2.1	1.7	0.6	0.5	0.6	0.5	3.7	1.6	24
8	0.3	0.5	0.1	0.2	0.2	0.4	0.6	3.3	4.7	4.6	5.6	4.6	6.4	6.5	6.1	6.7	5.1	4.5	3	3.2	3	3.4	3.6	1.7	6.7	3.3	24
9	0.6	1.8	1	0.4	0.8	1.2	3.3	6.1	5.8	5.1	7.4	9.6	9.5	9.2	8.4	7.4	7.7	7.5	3.6	1.4	0.7	0.6	0.4	0.3	9.6	4.2	24
10	0.3	0.6	0.5	0.6	0.1	0.3	0.8	3.7	4.6	3.4	4.4	8.2	11.1	7.3	6.7	4.6	5.1	3	1.3	3.4	1.3	3.5	4.8	3.7	11.1	3.5	24
11	3.4	3.4	2.3	1.7	0.8	0.6	0.4	2.4	3.4	3.8	4.5	6.8	8.4	5.4	4.3	4.8	4.6	3.2	3.7	1.2	1.1	0.8	0.4	2.5	8.4	3.1	24
12	1.5	1.3	2.6	3.6	2.7	3.8	4	4	5.5	6.2	6.6	8.4	7.6	11.8	11.9	12.7	9.8	9.1	6.1	2.9	2.5	3.9	3.5	0.9	12.7	5.5	24
13	1.7	2.7	2.3	3.4	2.5	2.4	4.4	4.7	6.8	5.2	3.9	4.7	4.1	5.2	6	4.3	3	2.6	2	0.9	0.5	2.7	0.8	0.8	6.8	3.2	24
14	1.1	0.9	1	0.9	0.8	1.5	1.7	3.4	1.6	1	3.1	4.1	3.5	3.7	5.3	3.3	5.9	4.2	4.1	2.3	1.2	0.8	0.6	0.7	5.9	2.4	24
15	0.7	1.3	0.7	2	3.3	3.2	3.5	4.9	6.1	6.2	5.2	5.7	5	6.5	5.5	5.6	5.7	4.7	5.6	1.3	1	0.8	0.2	0.5	6.5	3.6	24
16	0.6	0.2	0.9	0.6	1.3	0.9	0.4	1.3	4.5	7.1	6.6	7.4	7.4	7.5	7.1	6.4	4.2	3.2	1.4	1.3	0.7	0.5	0.4	0.2	7.5	3.0	24
17	0.1	0.1	0.5	0.6	0.6	0.5	1.5	4.5	4.5	3.8	4.2	5.8	5.3	7.2	9.4	4.6	5	6.2	2.6	1.6	0.6	3.9	4.3	3.7	9.4	3.4	24
18	3.5	1.2	1.3	4.4	5	4.8	5.2	6.3	6.9	9.9	10.6	12.3	14.1	13.3	10.1	10.3	9.9	7.5	6.7	4.9	4.6	9	4.9	4.3	14.1	7.1	24
19	6.8	6.9	7.2	8.3	7.4	6.3	7.9	8.9	10.1	11	13	13.9	12	11.6	12.7	11.6	12.1	8.6	5.7	3.2	3.1	2.9	1.1	1.1	13.9	8.1	24
20	3.7	4.1	0.8	0.5	0.4	0.8	0.7	2.7	0.2	1.2	1.4	0.2	3	0.9	5.2	4.8	4.6	2.9	2.2	2.7	3.4	6.6	7.6	7.6	2.6	24	
21	7.2	8.6	8.3	7	7	6.8	8.2	9.8	11.8	13.4	14.2	18.4	19	20	16.7	13.8	12.4	9.8	6.2	10.5	12.5	11.6	6.6	5.9	20.0	11.1	24
22	5.5	0.6	1.2	7.9	10.8	3.8	7.1	6.1	7.9	9	9.9	10	10.4	11.8	12.9	14	12.3	9.6	5.7	2.1	0.7	0.7	1.4	0.8	14.0	6.8	24
23	0.7	0.3	0.6	0.5	0.6	0.5	2.4	3.3	6.4	8.9	9.1	10.5	13.9	10.1	9.4	9.1	11.3	4	3.5	5.2	2.9	7.4	7.2	8.6	13.9	5.7	24
24	8.5	4.5	3.2	3.6	4.6	5.7	5.6	9	11.1	12.5	15.5	16.2	15.4	13.6	15	14.4	11.8	10.4	5.2	3.8	2.6	2.6	0.3	0.2	16.2	8.1	24
25	0.4	0.8	0.2	0.5	0.3	0.1	0.1	1.6	4.6	5.5	7.7	10.1	10	10	10.2	11.2	8.9	6	5.6	5.3	4.5	5.8	5.8	5.3	11.2	5.0	24
26	4.8	2.7	1.6	0.7	0.6	0.8	0.4	3.7	4.9	2.4	5.8	6.3	5.6	6.5	6.3	6.3	5.5	3.8	3.6	0.5	0.8	1.9	3.5	2.7	6.5	3.4	24
27	1.9	1.5	0.8	0.8	1.3	1	2.3	1.7	2.4	1.5	1.7	2.2	4.4	5.3	5.1	5.6	5.8	4.7	3	1.3	1.7	0.5	0.6	1.6	5.8	2.4	24
28	0.2	0.7	0.6	0.2	0.2	0.5	1	0.3	1.3	1.2	0.7	1.2	2.5	2.4	4.3	3.5	1.5	5.5	4.8	2.7	3.8	4.6	5.3	3.3	5.5	2.2	24
29	5.2	3	2.8	1.7	0.6	0.3	0.4	5.6	4.9	5.4	6.3	6.3	4.3	4.5	5.8	4.9	6.8	7.2	7.4	7.1	7	5.5	1.8	1.8	7.4	4.4	24
30	2.1	1.7	0.8	0.1	0.5	0.9	0.7	0.7	3.2	3.8	2.4	4.5	7.5	8.2	7.8	7.2	6	3.5	1.9	1.6	2.1	2.2	1.7	1.5	8.2	3.0	24
31	0.8	0.3	0.3	0.4	0.2	0.2	1.7	2.7	3	1.7	2.1	3.3	4.5	4.2	6.1	4.6	3.7	2.5	1.9	2.1	0.9	0.3	0.7	0.1	6.1	2.0	24
HOURLY MAX	8.5	8.6	8.3	8.3	10.8	6.8	8.2	9.8	11.8	13.4	15.5	18.4	19.0	20.0	16.7	14.4	12.4	10.4	8.8	10.5	12.5	11.6	7.2	8.6			
HOURLY AVG	2.6	2.1	1.8	2.0	2.1	2.0	2.7	3.8	4.8	5.0	5.8	6.9	7.2	7.3	7.3	7.2	6.6	5.4	4.0	3.2	2.6	3.0	2.6	2.3			

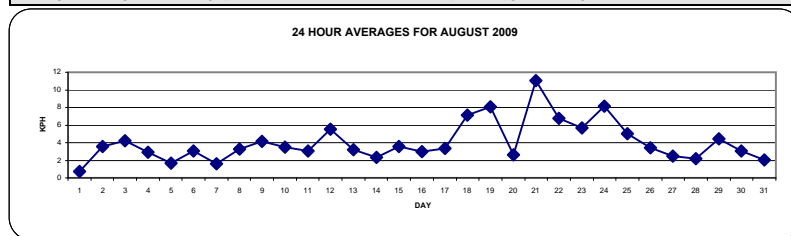
STATUS FLAG CODES

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

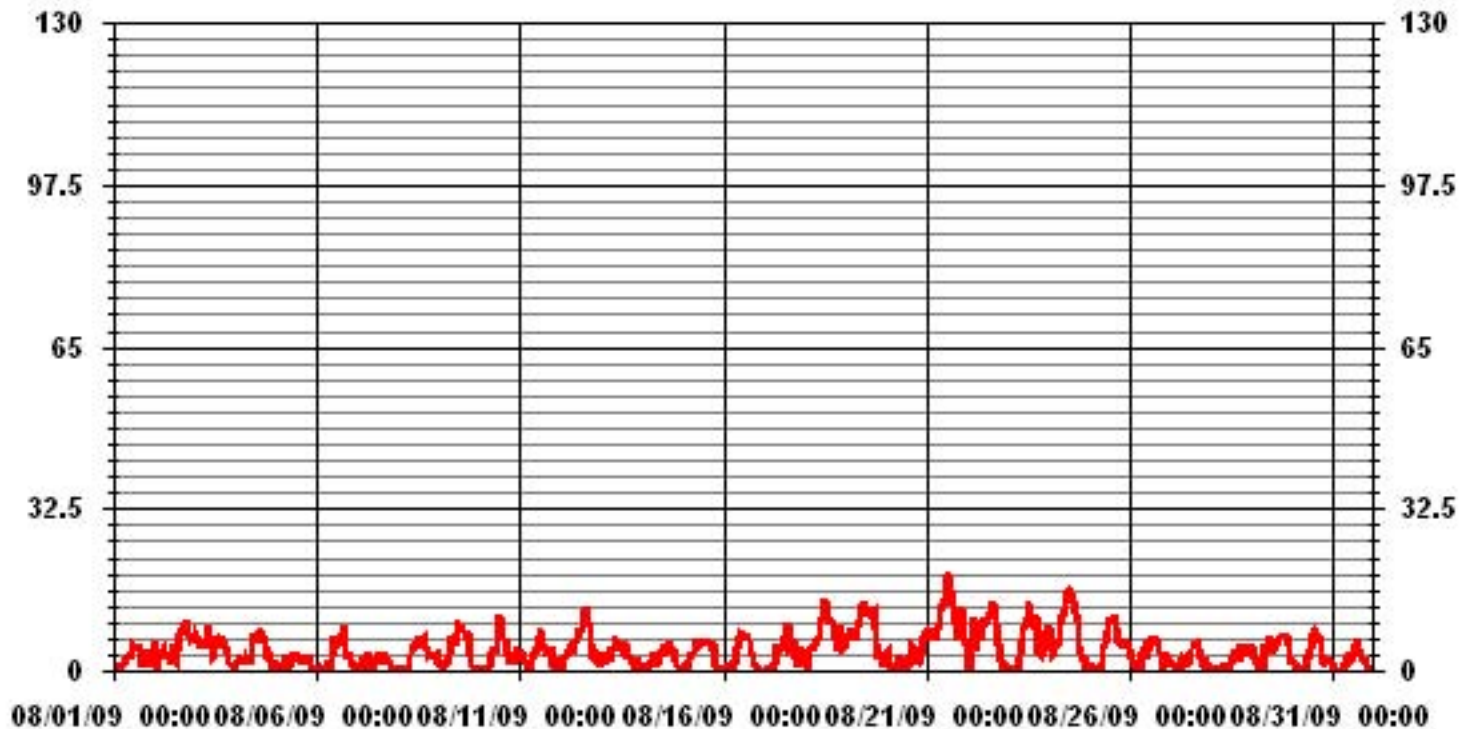
LAST CALIBRATION: November 5, 2008

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	20.0	KPH	@ HOUR(S)	13	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	11.1	KPH			ON DAY(S)	21
CALMS (\leq 1 KPH)	5.78	%	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	3.52		MONTHLY AVERAGE:	4.17	KPH	



01 Hour Averages



— LICA WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	
HOUR START		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	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		2.1	2.3	2.4	2.9	1.8	3.1	3.8	7.1	7.4	18.1	7.8	9.8	9.3	8.4	8.4	8.1	5.5	4.7	5.5	5	6.6	3.8	4.7	4.2	18.1	
2		8.5	7.8	3.9	4.1	5.9	6.3	4.7	6.2	6.3	4.3	8.5	9.5	9.1	5.8	7.2	13.1	14.3	14.5	14.6	14.7	10.4	10.4	10.6	11	14.7	
3		11.1	9.6	8.4	8.6	8	9.9	7.6	14.8	13.1	13.1	9.6	11	8.9	9.9	12.8	10.7	8	9.4	8.4	6.5	3.5	3.9	3.5	3.3	14.8	
4		3.4	4.5	4.9	3.6	6.2	3.7	5.1	4	4.5	8.4	13.7	19.4	18.5	13.9	15.9	14.8	14.4	12.7	6.5	6	4.6	2.3	2.6	2.6	19.4	
5		3.6	3.4	3.4	3.2	3.5	3.8	6.7	3.3	5.4	7.4	8.3	8.6	7.5	10	8.3	9.7	6.7	4.2	5.3	4.6	2.2	2.2	1.7	1.8	10	
6		3.3	2.4	4.3	2.8	4.7	3.3	4.4	5.1	3.2	8.3	12.5	12.2	8.5	11.5	9.8	14.8	13.8	6.6	5.5	6	4.1	4.5	3.7	4.3	14.8	
7		5.4	4.4	5.1	2.8	3.2	3.7	7.1	5.4	3.5	5.6	7.2	7.3	11.1	8.4	8	8.4	7.5	6.6	3.7	3.2	2.4	1.8	3.5	2.9	11.1	
8		2	1.8	1.8	1.5	2	2	1.8	7.8	8.1	11	12.4	11.4	13.8	14.2	11.6	14.2	10.2	8.8	6.8	4.1	4.1	4.4	6.7	5.6	14.2	
9		3.7	3.9	2.7	3	3.6	3.5	6.9	10	11.8	8.9	12	14.8	14.5	14	13.7	14.1	18.4	13.9	16	2.9	2.7	1.8	1.4	1.4	18.4	
10		1.5	2.1	3.2	3.9	2.5	2.2	3.6	7.5	8.8	8.1	8.4	12.6	17.2	14	12.1	8.7	10.5	6	3.2	8.4	6.7	7.7	7.5	4.9	17.2	
11		5.2	4.9	5.2	4.7	3.6	2.9	3.4	7.4	6.7	7.6	9	12.9	15.1	11.3	7	8.9	8.6	5.7	9.8	3.6	2.7	2.6	3	5.1	15.1	
12		3.6	3.1	4.8	5	6	5.8	7.4	8.6	8.7	11	13.3	13	14.1	18.9	18.4	20.6	17.6	18.3	11.8	5.6	3.3	6.2	9.4	2.7	20.6	
13		3.6	4.7	4.8	5	6.9	11.4	9.5	8.4	12.4	8.8	9.5	9.2	10.9	11	11.3	8.8	7.6	9.1	4.2	3	3.6	4.2	3.9	3.1	12.4	
14		3.5	2.9	4.4	3.7	4.7	3.8	4.5	7.2	5.4	5.2	6.7	8	7.2	9.1	9.6	5.2	9.2	7.2	5.7	4.3	3.2	2.3	3.5	2.2	9.6	
15		3	3.5	2.9	4.1	5.6	4.7	7.7	8.1	9.5	9.5	11.1	10.1	10.1	9.4	10.6	9.4	9.2	10.4	8.5	11.2	3.5	2.3	2.5	3.4	3	11.2
16		2.8	3.4	4	2.7	3.4	3.7	2.1	3.8	11.6	12.5	12.1	12.5	12.7	13.5	13	11.9	10.2	7.7	7.7	3.1	4.9	2.9	2	2.1	13.5	
17		2.6	3	2.8	2.4	3.2	2	4	8.9	7.8	8.6	8.7	10.4	10.2	18.5	16.6	11.9	13.6	9.7	6.4	4.6	3.1	5.9	6.2	5.8	18.5	
18		6.1	4.2	3.1	7.2	7.9	8.4	9.6	9.9	15.3	15.3	19.5	18.7	24.4	25.4	18.8	19.6	16	11.5	12	10.4	9.2	17.5	7.4	7.3	25.4	
19		11.2	9.4	12.4	13.2	11	9.5	12.3	14.5	16	16.2	20.4	22.2	20.1	19.7	18.5	19.7	18.4	13.2	9.6	4.7	4.8	3.7	3.6	3.3	22.2	
20		6.4	6.2	4.7	2.5	2.8	1.7	3.8	5.9	5.6	6	8.5	7.4	9	8.3	5.9	8.7	10.7	9.9	5.3	3.7	4.5	5.4	9.1	11.4	11.4	
21		9.4	13.3	11.7	10	10.8	9.7	12.8	14.9	17.8	19.9	22.6	24.7	26.2	29	24.2	19.8	19.8	19.4	10.9	17	17.1	17.4	13.9	9.4	29	
22		9.5	10.5	5.1	31	20.4	11.3	12.4	11.1	13.5	16.7	14.6	17	16.4	20.2	22	20.9	20	15.7	12.2	4.8	2.8	3.3	3.5	2	31	
23		5.7	3	3.5	3.9	2.6	4.2	6.3	7.6	11.3	15.7	14.1	15.9	24.2	17.1	15.2	13.4	19	16.7	20.7	15.7	9.9	11.6	10.8	13.1	24.2	
24		14.8	8	5	5.8	8.1	8.8	9	14.4	16	19.7	24.4	25.3	23.1	22.8	23.3	20.6	17.1	16	10.3	5.7	4.4	5	2.8	1.6	25.3	
25		3	3.4	2.8	2.5	3.2	2.8	1.8	5.6	9.8	10.3	13.1	17.1	17.4	17.3	17.8	16.8	16.6	9.9	8.6	8.7	7.5	12.6	11.5	8.3	17.8	
26		7	6.3	4.3	5.2	3.1	5.1	6.9	8.1	9.7	7.6	11	11.4	11.5	12.1	11.3	13.1	9	6.6	7.2	2.6	2.1	4.9	7.4	6.9	13.1	
27		5	5.5	5	3.8	2.9	3.7	11.2	5.2	7.5	4.7	6	7.4	10.7	10.4	12.3	11.3	10.7	8	5	2.8	3.4	1.6	3.1	3.8	12.3	
28		1.7	2.9	3.3	2.2	2.6	2.7	3.6	3.1	3.2	5.2	5	8.1	10.3	10	9.8	8.8	7.8	8.7	8.2	4.1	6.2	6.4	7.2	5.7	10.3	
29		7.1	6.5	5.3	6.5	1.9	1.7	3.6	10.1	9.3	9.3	10.6	10.3	9.9	11.4	12.3	10.7	12.9	10.7	10.8	9.5	9.5	8.1	4.9	3.9	12.9	
30		4.3	3.9	2.8	2.7	2.2	1.8	1.4	5	6.1	7.9	6.7	8.8	14.1	13.7	17.2	15.2	11.5	7.6	3.3	3.1	3.3	3.8	3.6	2.9	17.2	
31		2.1	2.5	1	3.6	2.6	2.4	3.5	5.2	7.5	7	7.1	8.9	9.6	10.2	12.4	9.4	8.5	8.7	4.5	4.3	1.4	1.3	1.6	1.7	12.4	
PEAK		14.8	13.3	12.4	31.0	20.4	11.4	12.8	14.9	17.8	19.9	24.4	25.3	26.2	29.0	24.2	20.9	20.0	19.4	20.7	17.0	17.1	17.5	13.9	13.1		

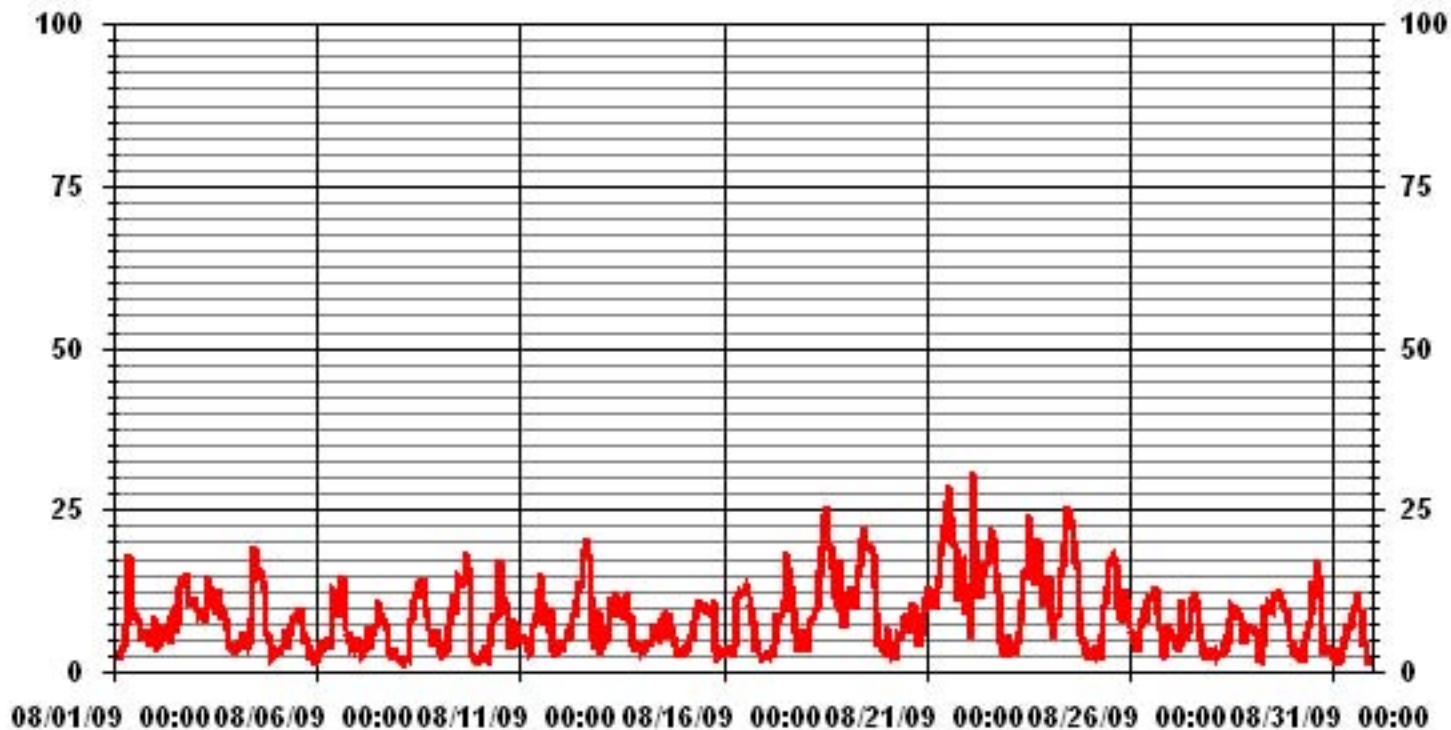
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	31	KPH		@ HOUR(S)	3
				ON DAY(S)	22

01 Hour Averages



— LICA WSMAX KPH

LICA
WSP / WD Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	1.74	2.41	2.55	3.36	3.36	2.95	7.66	3.36	4.43	5.51	9.81	7.93	5.37	3.22	2.68	2.15	68.54
< 12.0	.40	1.47	.80	.67	.53	1.88	3.09	.40	.13	.80	1.61	2.01	2.41	2.55	1.74	1.20	21.77
< 20.0	.00	.00	.00	.00	.13	.00	1.07	.00	.00	.00	.00	.40	1.07	.26	.80	.00	3.76
< 29.0	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.15	3.89	3.36	4.03	4.03	4.83	11.96	3.76	4.56	6.31	11.42	10.34	8.87	6.04	5.24	3.36	

Calm : 5.77 %

Total # Operational Hours : 744

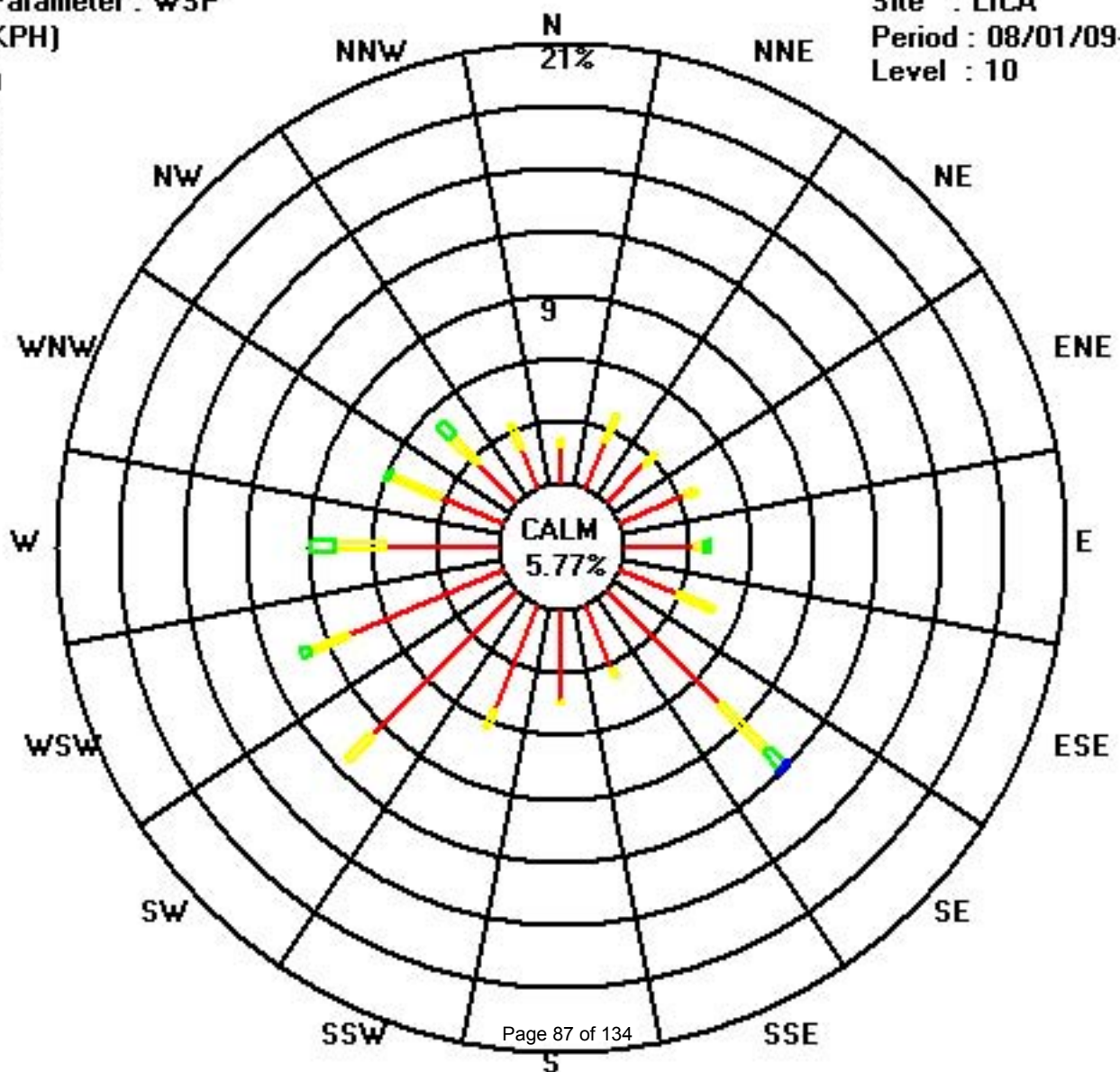
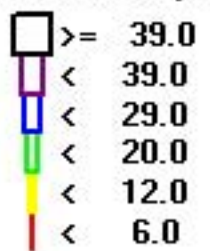
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	13	18	19	25	25	22	57	25	33	41	73	59	40	24	20	16	510
< 12.0	3	11	6	5	4	14	23	3	1	6	12	15	18	19	13	9	162
< 20.0					1		8					3	8	2	6		28
< 29.0							1										1
< 39.0																	
>= 39.0																	
Totals	16	29	25	30	30	36	89	28	34	47	85	77	66	45	39	25	

Calm : 5.77 %

Total # Operational Hours : 744

Class Limits (KPH)



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

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	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	AVG.	QUADRANT		
DAY																												
1	232	230	249	236	139	167	202	224	211	1	53	41	130	69	38	21	11	284	358	312	309	270	255	277	5	N	24	
2	318	325	14	280	257	258	269	252	263	272	220	227	228	304	348	22	12	333	328	342	331	324	331	325	316	NW	24	
3	315	315	320	325	311	303	323	2	349	324	320	11	23	358	347	16	19	42	356	342	288	226	224	252	340	NNW	24	
4	232	263	264	267	251	257	255	256	269	296	302	314	285	336	331	307	356	340	293	234	230	217	226	250	299	WNV	24	
5	230	262	167	232	202	189	249	258	167	67	24	59	36	103	94	123	186	155	164	143	136	98	52	353	125	SE	24	
6	120	143	134	128	174	125	141	160	153	92	124	108	97	29	10	126	128	140	191	228	177	114	145	112	117	ESE	24	
7	293	302	333	307	195	141	308	344	247	23	59	35	358	35	109	326	305	312	283	210	188	139	110	170	328	NNW	24	
8	172	121	212	172	148	213	281	241	239	235	218	195	159	194	171	149	184	184	171	135	140	140	152	197	183	S	24	
9	186	207	192	186	155	176	216	225	231	234	236	228	233	235	235	219	276	259	230	216	226	142	145	222	232	SW	24	
10	115	106	192	166	257	45	122	124	129	140	121	124	130	145	148	190	160	198	172	130	222	255	247	237	154	SSE	24	
11	245	253	251	226	198	319	199	275	240	253	234	239	239	229	211	231	220	205	268	243	192	192	231	233	236	SW	24	
12	241	213	241	242	216	237	234	222	238	223	260	258	247	253	252	247	266	282	272	266	234	265	301	162	251	WSW	24	
13	219	247	254	256	266	329	279	277	301	319	331	270	276	297	284	354	349	344	23	252	261	329	264	134	295	WNW	24	
14	218	209	192	170	238	245	150	134	209	142	87	125	247	327	343	352	331	328	347	351	299	228	148	243	310	NW	24	
15	220	231	285	290	346	344	21	58	44	50	73	49	41	23	22	17	15	75	128	161	198	292	177	230	37	NE	24	
16	127	224	216	214	242	244	201	273	24	37	37	22	8	35	25	45	59	92	100	211	142	186	182	226	35	NE	24	
17	249	113	225	172	174	238	244	243	235	223	211	214	204	214	241	202	213	227	190	158	241	233	232	223	220	SW	24	
18	231	218	245	229	235	231	238	246	246	268	271	267	313	308	304	293	290	292	288	339	286	299	281	268	279	W	24	
19	287	290	280	292	292	298	304	303	308	311	313	310	308	305	299	297	309	302	288	257	240	246	232	228	298	WNW	24	
20	247	250	216	59	213	50	261	286	262	329	55	297	271	101	15	62	93	87	126	126	109	119	128	125	116	ESE	24	
21	121	125	129	128	124	129	127	127	129	129	125	129	130	132	131	134	130	119	110	121	124	124	109	89	125	SE	24	
22	77	65	325	279	317	27	249	254	249	272	277	269	280	268	262	264	267	257	250	218	186	188	222	135	269	W	24	
23	135	73	237	66	181	274	237	62	74	83	75	85	89	79	87	65	57	27	79	301	269	259	262	251	73	ENE	24	
24	273	236	222	209	222	215	220	232	238	249	249	262	269	278	282	272	277	282	282	248	224	228	184	113	257	WSW	24	
25	143	198	91	152	195	152	275	93	89	97	109	119	109	107	110	112	106	73	63	55	51	69	79	81	95	E	24	
26	61	57	47	81	278	277	60	47	96	111	18	31	52	25	23	29	33	37	135	136	64	85	86	62	49	NE	24	
27	231	293	132	114	46	26	224	126	249	189	304	265	266	268	265	249	263	270	260	209	212	143	165	228	251	WSW	24	
28	113	177	209	145	63	204	252	170	226	308	294	188	251	288	292	275	128	130	131	121	127	124	129	131	157	SSE	24	
29	126	116	109	98	42	81	60	123	102	124	130	115	157	167	187	179	137	127	129	131	133	135	183	198	135	SE	24	
30	140	172	143	203	76	82	32	183	222	219	203	210	215	212	210	213	202	190	150	136	144	151	148	130	194	SSW	24	
31	196	199	67	343	117	291	130	137	167	153	142	118	103	139	198	203	147	103	88	101	70	63	59	255	142	SE	24	
HOURLY AVG	318	325	333	343	346	344	323	344	349	329	331	314	358	358	348	354	356	344	358	351	331	329	331	353				

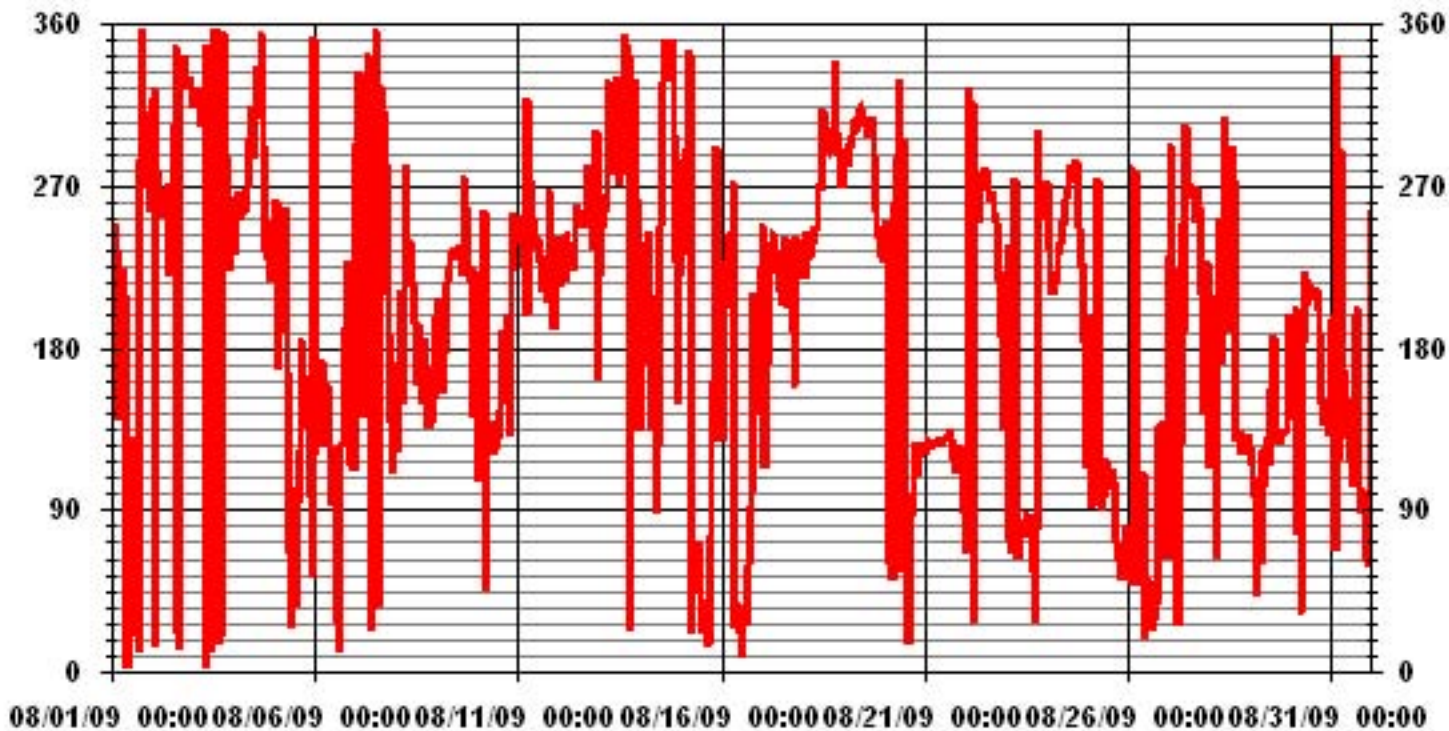
STATUS FLAG CODES

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

LAST CALIBRATION:	November 5, 2008
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION	88.71		AMD OPERATION UPTIME	100.0	%
			MONTHLY AVERAGE	245	DEG

01 Hour Averages



— LICA WDR DEG

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

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	53	84	61	62	61	49	39	32	38	37	39	24	23	23	30	26	32	44	41	24	15	46	11	16
2	13	18	57	17	11	10	19	27	33	46	37	27	42	56	22	21	21	18	17	18	15	13	14	16
3	15	13	15	14	11	13	18	21	24	33	49	54	33	28	24	32	29	22	18	19	22	58	33	46
4	25	21	13	42	26	32	22	23	37	42	26	22	26	25	26	27	31	23	18	15	47	41	47	43
5	19	39	55	29	45	41	26	47	67	53	49	56	51	64	45	51	42	62	28	11	28	29	47	63
6	62	56	44	57	58	66	34	53	45	48	27	29	33	25	29	44	14	15	25	19	25	45	56	42
7	48	51	27	62	29	62	17	30	53	53	43	65	51	52	68	42	35	36	21	14	53	38	45	39
8	39	50	51	52	59	60	54	27	28	36	32	43	39	41	37	33	39	37	35	13	11	14	25	45
9	81	43	52	61	60	52	31	21	26	32	21	23	21	24	25	27	24	25	24	30	49	32	41	39
10	60	33	58	58	59	49	68	16	28	38	26	17	17	29	36	38	30	29	32	22	55	23	15	13
11	12	16	46	45	57	46	47	34	26	26	23	24	20	20	29	28	22	26	22	46	25	45	50	21
12	44	38	25	15	31	16	18	23	21	23	29	26	36	25	25	22	23	20	20	17	12	10	22	35
13	23	23	16	12	28	50	24	21	28	25	40	34	51	39	26	30	48	59	42	39	47	21	54	56
14	49	43	37	25	36	49	22	23	51	58	47	27	24	31	21	24	17	21	18	22	42	44	27	27
15	31	45	59	23	22	23	21	23	22	24	24	24	30	23	28	25	24	25	19	30	33	38	37	40
16	68	42	53	49	31	43	42	58	34	24	30	28	34	29	33	29	37	37	41	30	43	50	42	60
17	47	62	56	53	50	54	56	22	28	27	38	33	28	33	25	31	35	21	32	40	43	16	14	18
18	16	37	46	16	20	21	16	18	21	20	21	21	17	17	18	18	19	20	19	24	19	15	16	17
19	17	17	18	16	16	15	15	16	17	16	17	18	17	20	18	17	15	16	18	11	9	9	48	55
20	12	14	67	65	70	39	48	31	37	62	54	54	67	45	65	29	28	26	17	14	18	16	11	12
21	12	13	13	13	14	12	14	14	15	15	13	14	14	15	14	15	16	17	20	17	15	15	24	19
22	21	35	39	28	23	45	19	19	20	23	23	22	25	21	22	21	21	19	17	19	49	64	20	28
23	44	70	57	56	51	47	47	52	22	21	24	22	21	22	23	20	18	46	64	36	29	19	20	16
24	20	17	21	20	20	21	24	19	20	20	19	21	21	21	21	23	23	20	18	12	14	16	63	72
25	58	50	76	47	54	52	40	51	26	28	24	22	23	25	25	23	23	21	19	16	16	20	21	21
26	16	23	27	71	61	48	43	28	27	50	41	28	33	32	27	28	24	22	16	49	56	42	23	36
27	58	40	64	47	33	25	59	46	35	51	48	55	39	35	37	38	30	20	16	23	19	35	36	46
28	69	30	57	61	54	35	47	62	49	72	52	55	69	62	43	51	55	15	8	14	12	11	11	13
29	10	25	19	46	54	36	45	24	23	23	24	25	43	42	41	38	26	11	10	10	12	17	34	29
30	35	50	64	54	54	34	32	64	30	28	59	37	30	29	30	31	30	34	32	38	32	34	42	32
31	30	65	57	65	35	57	29	27	41	62	65	53	34	44	36	37	30	40	35	15	16	40	34	58

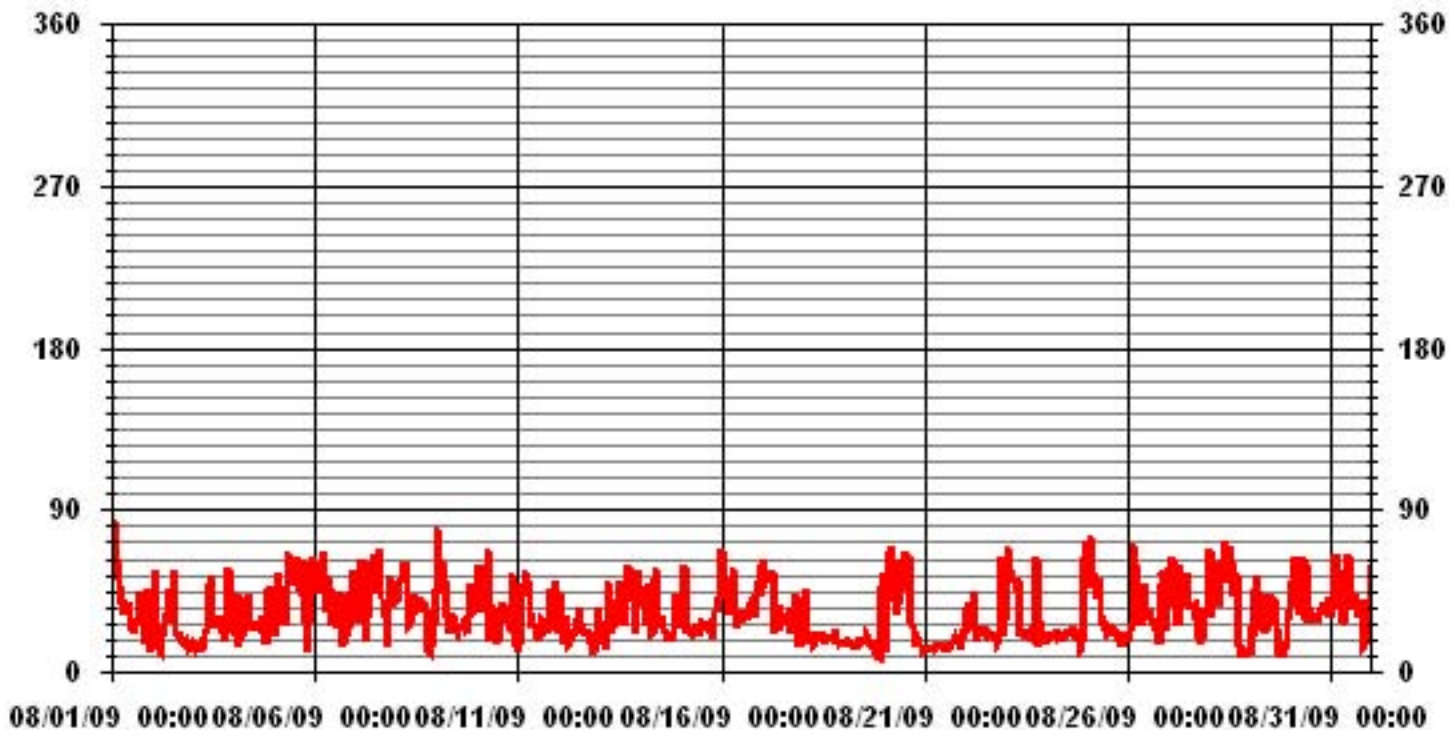
STATUS FLAG CODES

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

LAST CALIBRATION: November 5, 2008

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

01 Hour Averages



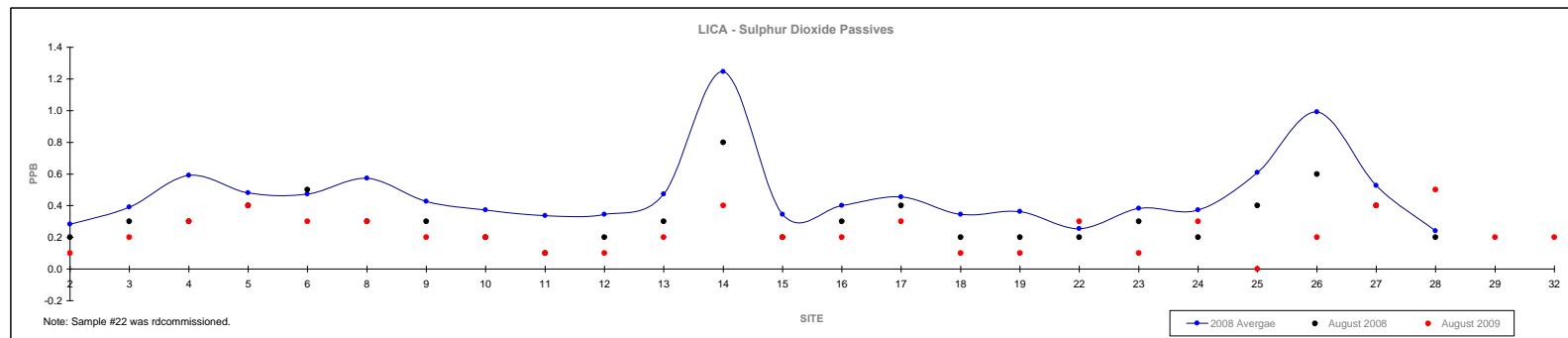
— LICA STDWDIR DEG

Non-Continuous Monitoring

Passive Summary Results for August 2009

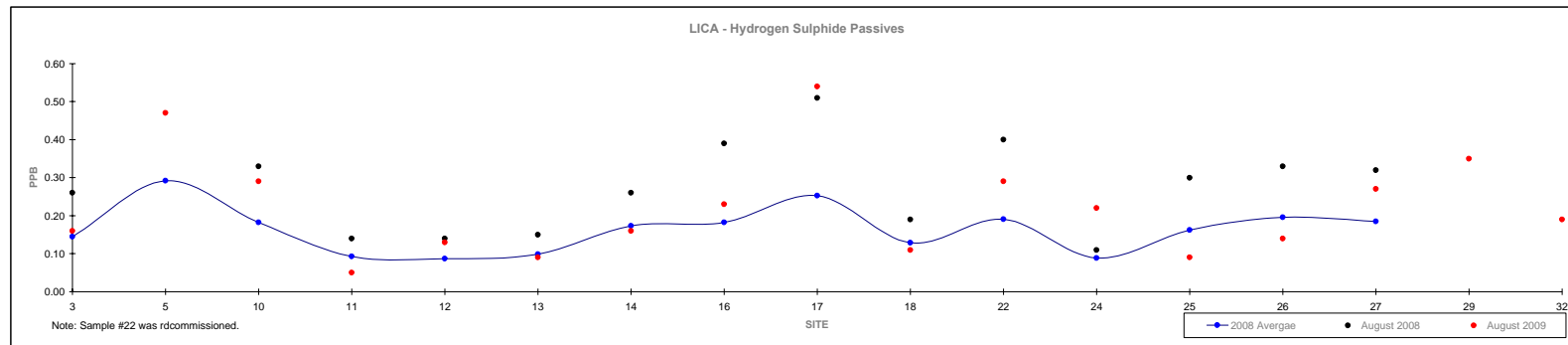
Lakeland Industry & Community Association

	Sulphur Dioxide ppb																												July 2009	Site
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	25	26	27	28	29	Reading	Site			
Mean	0.3	0.4	0.6	0.5	0.5	0.6	0.4	0.4	0.3	0.3	0.5	1.2	0.3	0.4	0.5	0.3	0.4	0.4	0.3	0.4	0.4	0.6	1.0	0.5	0.2	0.2	-			
Minimum	0.1	0.1	0.2	0.3	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.7	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.6	0.3	0.1	<0.1	VARIOUS			
Maximum	0.3	0.4	0.5	0.4	0.6	1.4	1.3	1.1	1.0	1.0	1.3	2.1	1.0	1.3	1.2	1.2	1.2	0.8	0.8	1.1	1.3	1.3	1.9	1.1	0.5	0.5	#28			



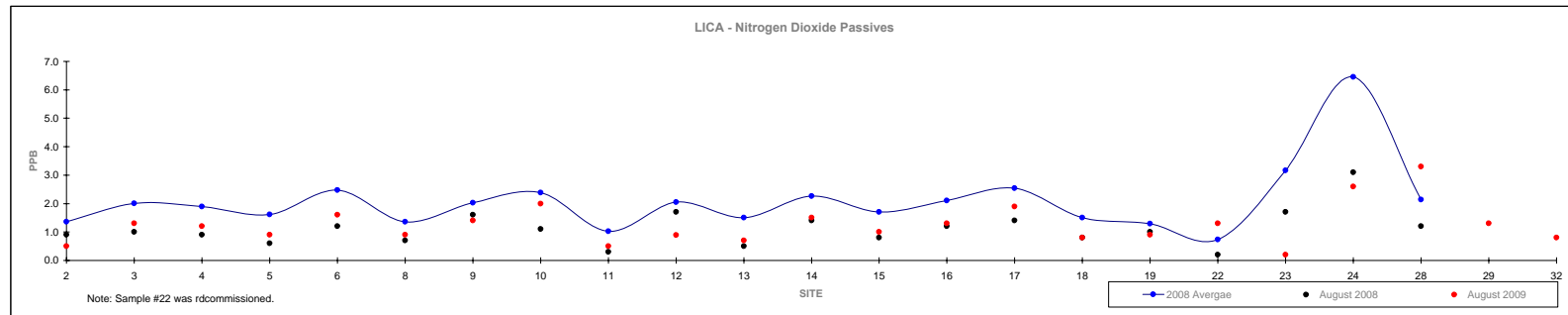
Passive Summary Results for August 2009 Lakeland Industry & Community Association

	Hydrogen Sulphide ppb															July 2009		
	3	5	10	11	12	13	14	16	17	18	22	24	25	26	27	29	Reading	Site
Mean	0.1	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.22	-
Minimum	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.05	#11
Maximum	0.3	1.0	0.5	0.2	0.2	0.2	0.3	0.4	0.5	0.2	0.3	0.4	0.2	0.3	0.3	0.3	0.54	#17



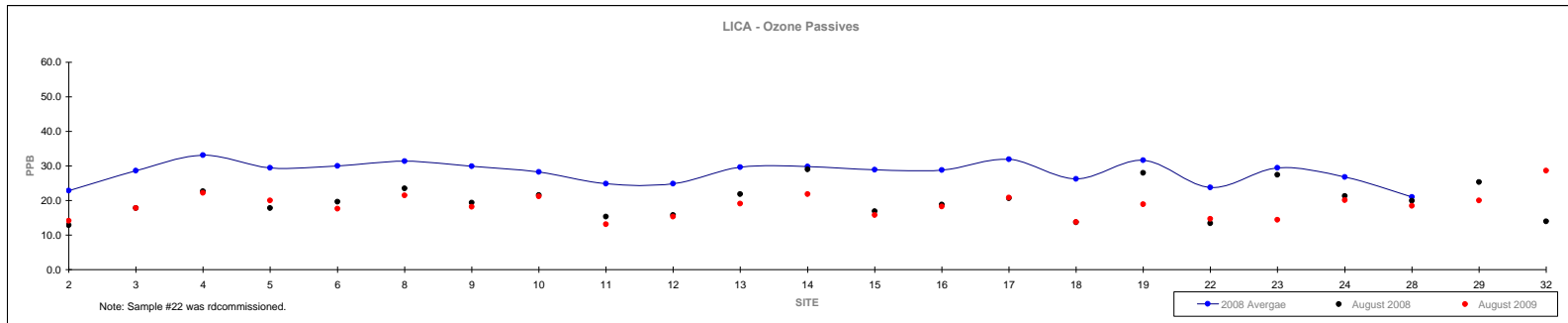
Passive Summary Results for August 2009 Lakeland Industry & Community Association

	Nitrogen Dioxide ppb																													July 2009	Site
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	28	29	Reading	Site							
Mean	1.4	2.0	1.9	1.6	2.5	1.4	2.0	2.4	1.0	2.0	1.5	2.3	1.7	2.1	2.5	1.5	1.3	2.8	0.7	3.2	6.5	2.1	1.3	-							
Minimum	0.5	0.9	0.4	0.6	1.2	0.6	1.0	1.1	0.3	0.9	0.5	1.1	0.8	1.1	0.9	0.8	0.4	0.9	0.2	1.7	3.1	1.2	0.2	#23							
Maximum	2.9	4.3	4.8	4.3	4.8	2.9	4.4	5.5	2.3	6.0	3.4	3.8	4.4	4.4	5.1	3.2	3.2	6.8	2.8	6.6	13.2	3.5	3.3	#28							



Passive Summary Results for August 2009 Lakeland Industry & Community Association

	1	2	3	4	5	7	8	9	10	11	2008 12	13	14	15	16	17	18	19	20	21	25	26	July 2009 Reading	Site
Mean	22.9	28.6	33.1	29.5	30.0	31.4	29.9	28.3	24.9	24.9	29.6	29.8	28.9	28.8	32.0	26.2	31.7	26.2	23.8	29.5	26.8	21.0	18.5	-
Minimum	12.8	17.8	20.8	17.8	18.2	18.5	19.3	16.3	12.6	14.1	17.2	17.8	16.9	18.8	16.6	13.7	20.9	15.7	13.4	17.7	15.5	17.7	13.1	#11
Maximum	39.1	47.6	54.5	46.9	47.6	47.2	45.4	44.3	40.1	41.9	48.2	43.9	50.3	47.7	52.9	45.4	46.8	40.4	36.9	51.1	45.9	26.8	28.6	#11 #32



Calibration Reports

Cold Lake

Sulphur Dioxide

SO₂ Calibration Report

Station Information

Calibration Date	August 4, 2009	Previous Calibration	July 13, 2009
Company	Lakeland Community and Industry Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	7:20	End Time (MST)	10:30
Reason:	Monthly Calibration		
Barometric Pressure	717 mmHg	Station Temperature	24 Deg C
Cal Gas	52.2 ppm	Cal Gas Expiry date	12/19/2010
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermon 43i	S/N :	806528242	Method:	UV absorbtion
Converter Make / Model:	-	S/N :	-		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	263		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 500 ppb		
Sample Flow / Box Temp	451 ccm, 28.3 Deg C	450 ccm, 27.9 Deg C	
HVPS / Lamp Setting	-631, 745	-631, 745	
PMT / RxCell Temp	OK Deg C, 45.0 Deg C	OK Deg C, 44.9 Deg C	
Converter / IZS Temp	NA Deg C, 45.0 Deg C	NA Deg C, 45.0 Deg C	
Offset / Slope	5, 1.041	5, 1.041	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4999	0	0	0	N/A
4962	38.3	400	398	1.0046
4974	23.9	250	250	0.9985
4983	14.4	150	151	0.9961
4999	0	0	0	N/A
Sum of Least Squares				0.3477
New Correction Factor				1.0046

Before Calibration

After Calibration

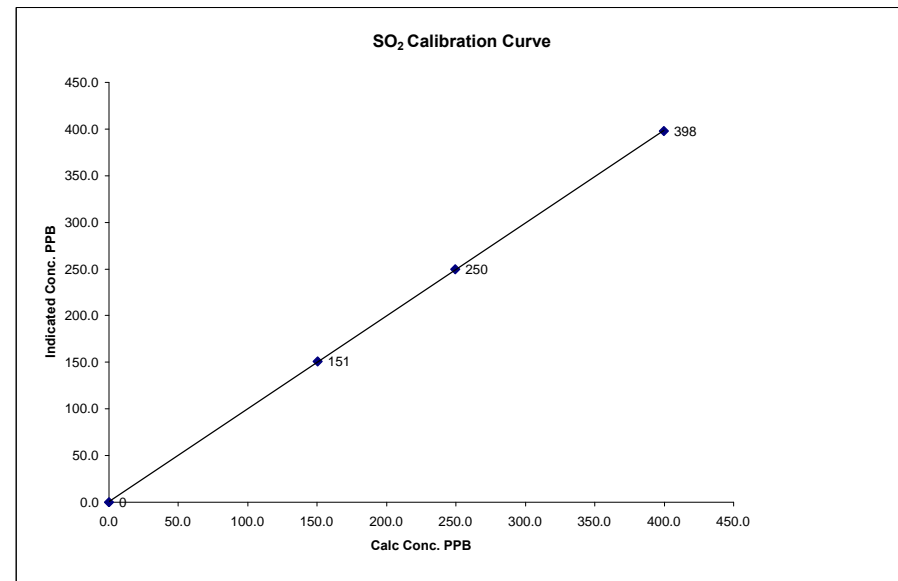
Auto Zero	-0.1	0.1
Auto Span	387.0	385.0
Sample Lines Connected	YES	
Percent Change from Previous Calibration	-0.5%	

Calibration Performed by: Shea Beaton

SO₂ Calibration Curve

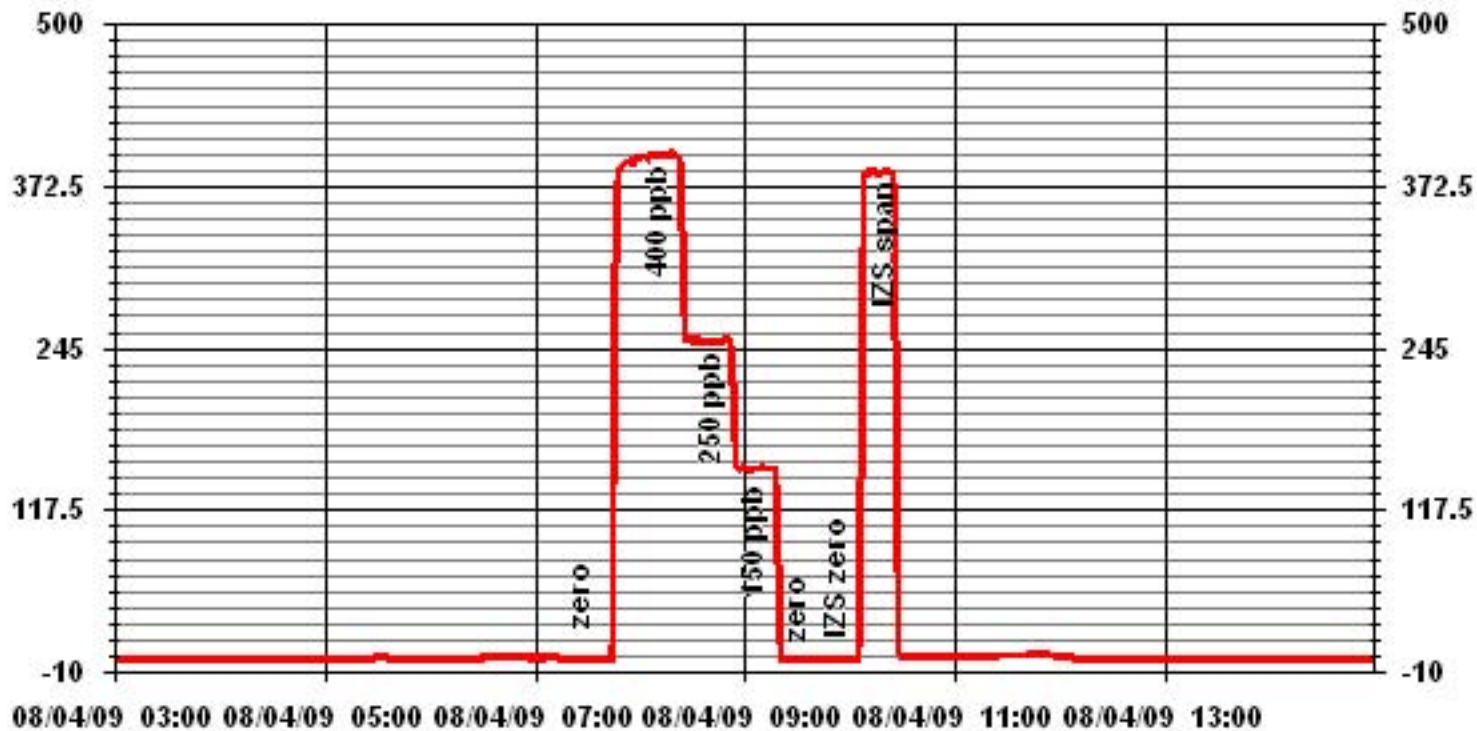
Calibration Date	August 4, 2009
Company	Lakeland Community and Industry Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	7:20
End Time (MST)	10:30

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope (≥ 0.995) (0.85 to 1.15)	Intercept (± 3% F.S.)
0	0	n/a	0.999976	0.99574
150	151	0.9961		
250	250	0.9985		
400	398	1.0046		0.669267



Notes:

01 Minute Averages



Total Reduced Sulphur

**TRS Calibration Report
Station Information**

Calibration Date	August 4, 2009	Previous Calibration	July 13, 2009
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	9:45	End Time (MST)	13:26
Reason:	Monthly Calibration		
Barometric Pressure	717 mm Hg	Station Temperature	23 Deg C
Cal Gas	10.8 ppm	Cal Gas Expiry date	June 22, 2010
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	TEI 4501	S/N :	812728560	Method:	Fluorescent
Converter Make / Model:	CD Nova CDN 101	S/N :	250		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	263		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 100 ppb		
Sample Flow / Box Temp	364 ccm, 30.4 Deg C	364 ccm, 30.7 Deg C	
HVPS / Lamp Setting	-622.7, 760	-623.1, 759	
PMT / RxCell Temp	OK Deg C, 44.9 Deg C	OK Deg C, 45.2 Deg C	
Converter / IZS Temp	850 Deg C, 45.0 Deg C	850 Deg C, 45.0 Deg C	
Offset / Slope	11.7, 1.222	10.8, 1.13	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4999	0	0	0	N/A
4963	37	80	86	0.9293
4963	37	80	80	0.9990
4978	20.8	45	45	0.9986
4990	11.6	25	25	1.0019
4999	0	0	0	N/A
Sum of Least Squares				0.9991
New Correction Factor				0.9990

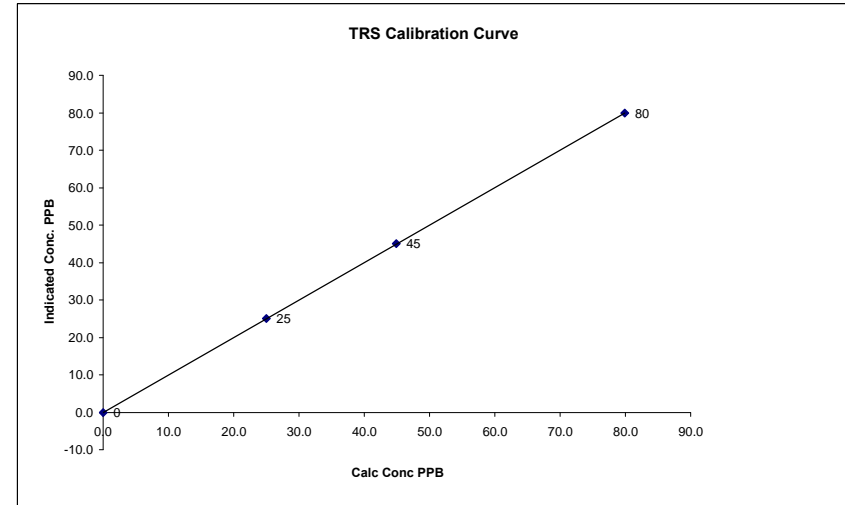
	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	42.0	39.0
Sample Lines Connected		YES
Percent Change from Previous Calibration		6.2%

Calibration Performed by: Shea Beaton

TRS Calibration Curve

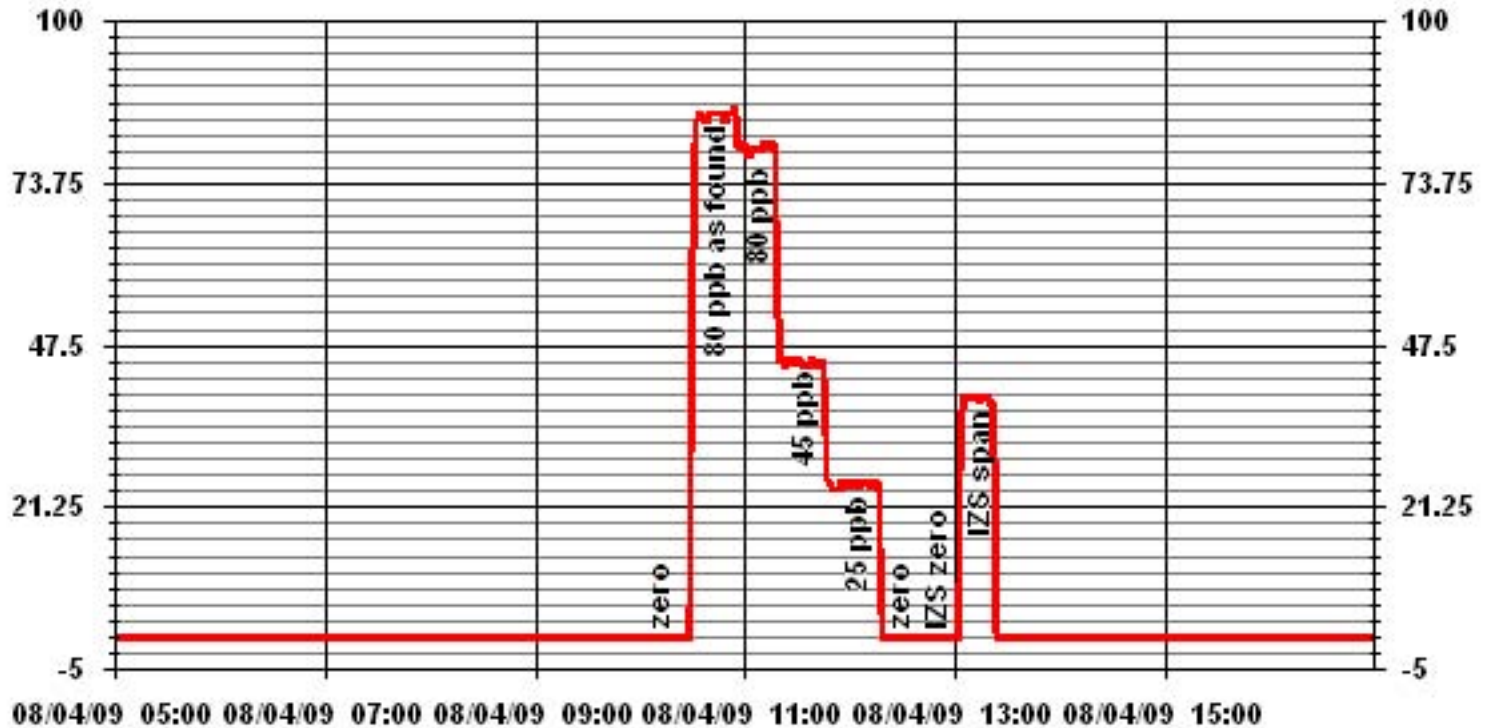
Calibration Date	August 4, 2009
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	9:45
End Time (MST)	13:26

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	Slope (0.85 to 1.15)	Intercept (± 3% F.S.)
0	0	n/a	0.999999	1.001302	-0.025497
25	25	1.0019			
45	45	0.9986			
80	80	0.9990			



Notes: _____

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	August 4, 2009	Previous Calibration	July 13, 2009
Company:	Lakeland Industry and Community Association		
Plant / Location:	LICA1/Cold Lake		
Start Time (MST)	13:23	End Time (MST)	17:02
Reason:	Monthly Calibration		
Barometric Pressure:	717 mmHg	Station Temperature:	22 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	299Prop/1019Meth	ppm	Cal Gas Expiry Date: 8/11/2011
DAS make & Model:	ESC 8832	S/N :	263
Output Voltage Range:	0 - 10 VDC		

Analyzer Information

Make / Model	TECO 51C-LT	S/N :	51CLT-42740-8718	Method	Flame Ionization
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Analyzer Settings

	Before Calibration	After Calibration
Concentration Range	0 - 50 ppm	0 - 50 ppm
Sample Pressure	6.9 psi	6.9 psi
Hydrogen Pressure	8 psi	8 psi
Air Pressure	19.5 psi	19.5 psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor	
3020	0	0.0	0.0	N/A	
3035	66.6	39.5	40.3	0.9811	
3035	66.6	39.5	39.5	1.0009	
3030	35.6	21.4	21.1	1.0134	
3021	20.4	12.4	12.0	1.0292	
3004	0	0.0	0.0	N/A	
				Correction Factor:	1.0009

Percent Change

Previous Calibration Correction Factor:	1.0011
Current Correction Factor Before Span Adjust:	0.9811
Percent Change:	2.0%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	35.8	35.1
Sample Lines Connected		YES

Cylinder Pressures

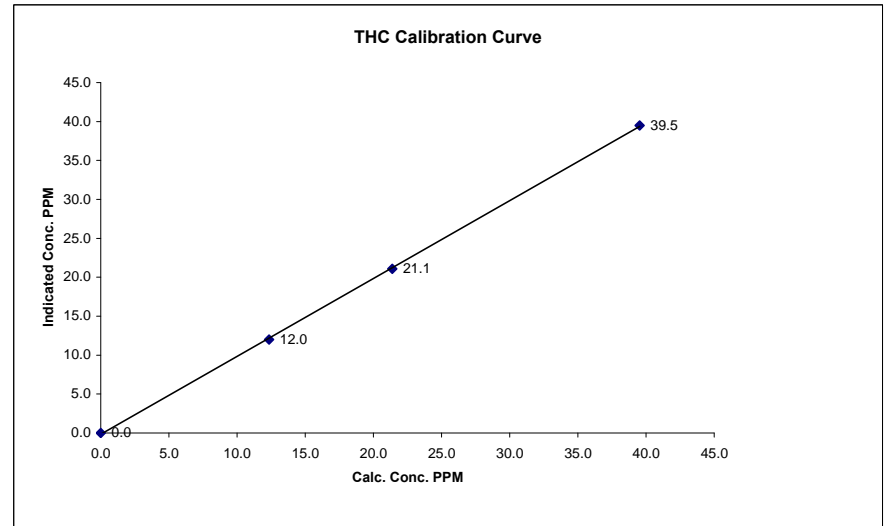
Span	1500 psi
Hydrogen	1500 psi
Zero Air	unlimited psi Maxxam-owned API 701 zero air supply with catalytic oxidizer

Calibration Performed by: Shea Beaton

THC Calibration Curve

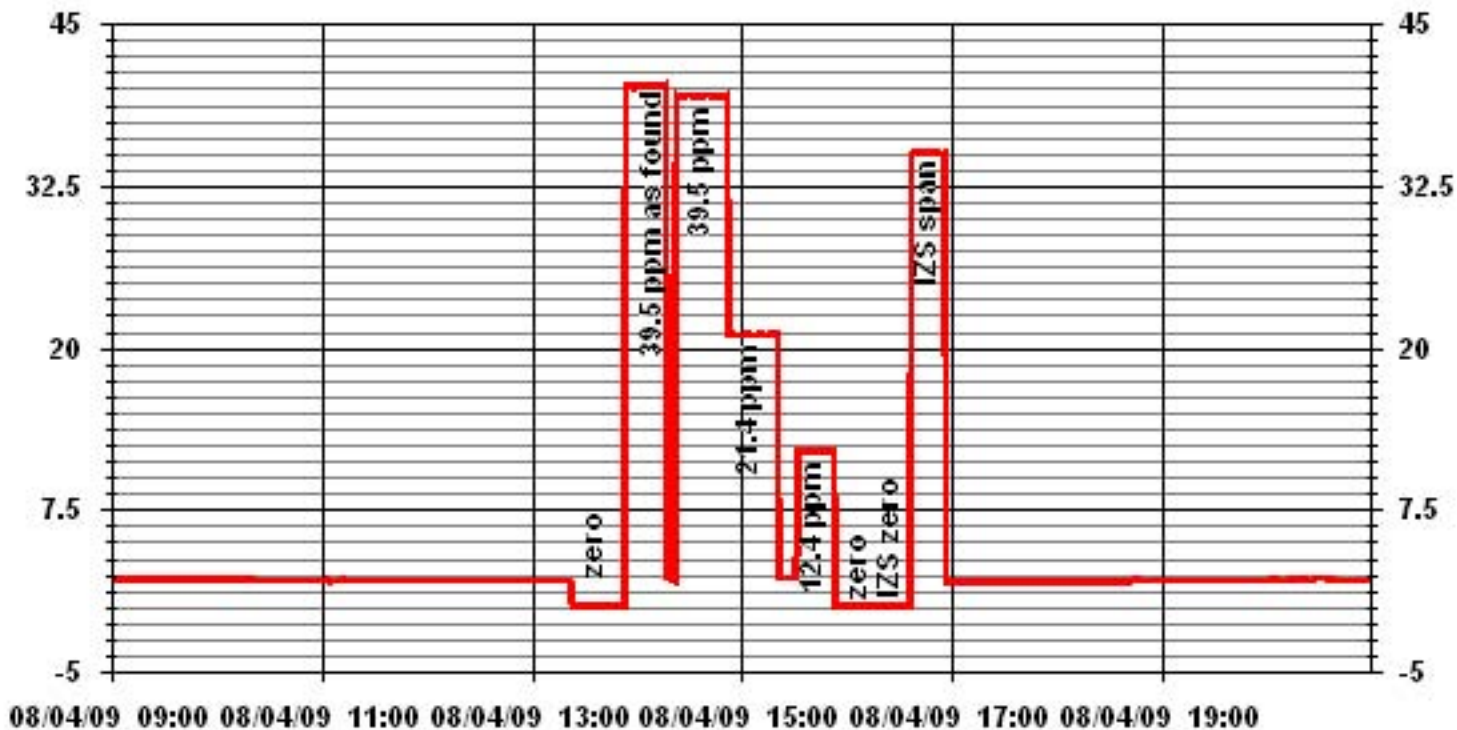
Calibration Date	August 4, 2009		
Company	Lakeland Industry and Community Association		
Plant / Location	LICA1/Cold Lake		
Start Time (MST)	13:23	End Time (MST)	17:02

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999890
0.0	0.0		Intercept	(0.85 to 1.15)	1.000535
12.4	12.0	1.0292		(± 3% F.S.)	-0.176998
21.4	21.1	1.0134			
39.5	39.5	1.0009			



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOM® 1405F Audit

Station
 Date: August 4, 2009
 Station Name: LICA 1
 Location: Cold Lake South
 Operator: LICA

Audit Transfer Standard
 Make/Model: Bios DC2
 Serial Number: 1193
 Cell s/n: 2272
 Thermometer s/n: 2178

Sampler
 Make/Model: Thermo Scientific Series 1405F
 Unit #: AMU 1775
 Unit s/n: 1405A201620804
 Firmware Ver.: 1.22
 Parameter: PM 2.5 (with FDMS)

Set-up and current Sampler readings
 F-Main Set Pt (l/min): 3.00
 F-Aux Set Pt (l/min): 13.67
 Filter Load (%): 32%
 K_o Factor: 14578.0
 Temp (°C): 12.8
 Press (ATM): 0.938

Conversion from mmHg or "Hg to ATM (Atmospheres)

$$\text{ATM} = (\text{mmHg}) \times (1.316 \times 10^{-3}) \quad \text{or} \quad \text{ATM} = (\text{"Hg}) \times (3.34207 \times 10^{-2})$$

Note: Tolerances are noted as BOLD in Brackets

Audit

Status			
Noise <0.10ug	0.010	Warnings	None
Pump Vacuum	0.35		
Temperature/Pressure			
Measured Temp (± 2 °C)	13.4	Δ °C	-0.6
Measured Press (± 0.01atm)	0.944	ΔATM	-0.006
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	4.24%
Measured Main Flow (l/min)	3.02	Flow Adjusted to Measured?	YES
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	3.83%
Measured Bypass Flow (l/min)	13.74	Flow Adjusted to Measured?	YES
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	NA	Flow Control = Active	
Aux (< 0.15 l/min)	NA	Report Conditions = Standard (25.0 C and 1atm)	
K_o Factor			
Measured	NA		
K _o Difference (± 2.5%)	NA		

Start Time: 9:40 **Finish Time:** 10:30

Sample Inlet Cleaned: Yes **New Filters Installed:** NO
New Filter Loading %: 31.9%

Comments: Only changed the FDMS filter, the TEOM filter loading only increased by 4% since last changed. Inlet not cleaned, will clean tomorrow. Allowed data to stabilize prior to enabling the channel.

Auditor/s: Shea Beaton

Nitrogen Dioxide

NOx - NO- NO₂ Calibration Report

Station Information

Calibration Date	August 4, 2009		Previous Calibration	July 13, 2009	
Company	Lakeland Ind & Comm. Assoc.		Plant/Location	LICA 1 - Cold Lake South	
Start Time (MST)	7:20	End Time (MST)	14:05		
Reason:	Monthly Calibration				
Barometric Pressure	717 mmHg	Station Temperature	24.0 Deg C		
Cal Gas Concentration	NOx 51.8 ppm	NO	51.6 ppm	Cal Gas Expiry date	12/19/2010
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts		

Equipment Information

Analyzer Make / Model:	TECO 42C	S/N :	42-7408-716	Method:	Chemiluminescent
Calibrator Make / Model:	EnviroNics 2000	S/N:	1991		
DAS Make / Model:	ESC 8832	S/N :	263		
Flow Meter:	EnviroNics 2000	S/N :	1991		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 1000	ppb	0 - 1000
Sample Flow/Conv. Temp	717 ccm	Deg C	317 Deg C
Ozone Flow / Vacuum	OK	mmHg	185.6 mmHg
HVPS	-820	Volts	-820
Rx/ Temp / PMT Temp	49.9 Deg C	-2.5 Deg C	49.5 Deg C
Box Temp / IZS Temp	28.5 Deg C	OK	26.8 Deg C
Offset	3.9 NOx	3.7 NO	3.8 NOx
Slope	1.005 NOx	0.971 NO	1.005 NOx

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration		Indicated Concentration			Correction Factor	
			NOx	NO	NOx	NO	NO ₂	NOx	NO
5002.0	0.0	N/A	0	0	0	0	0	N/A	N/A
4962.0	38.8	N/A	402	400	407	405	2	0.9875	0.9885
4962.0	38.8	N/A	402	400	401	401	1	1.0023	0.9984
4975.0	24.2	N/A	251	250	251	251	0	0.9990	0.9952
4986.0	14.6	N/A	151	151	151	150	1	1.0016	1.0044
5007.0	0.0	N/A	0	0	0	0	0	N/A	N/A
Converter Efficiency									
4967.0	38.8	N/A	402	400	402	401	1	N/A	
4967.0	38.8	300	402	400	399	126	273	99%	
4967.0	38.8	200	402	400	401	207	194	99%	
4967.0	38.8	100	402	400	402	306	97	101%	
4967.0	38.8	N/A	402	400	403	401	2	N/A	
5012.0	0	N/A	0	0	0	0	0	N/A	N/A

Linearity OK?	Yes	No	Sum of Least Squares	1.0014	0.9981
Flows Checked on-site?	Yes	No	New Correction Factor	1.0023	0.9984
			Average Converter Efficiency	100%	

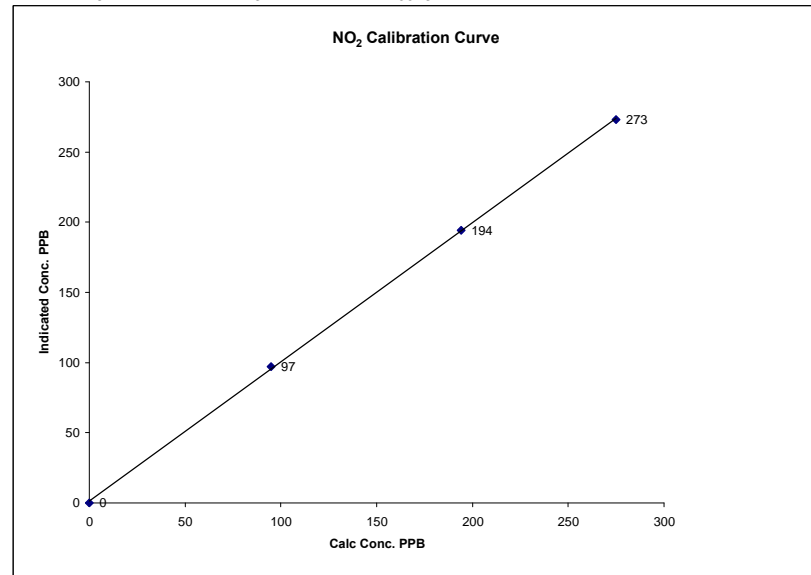
Before Calibration		After Calibration	
Auto Zero	0.6 NOx	0.6 NO ₂	0.4 NOx
Auto Span	363.0 NOx	361.0 NO ₂	354.0 NOx
Sample Lines Connected	YES		
Percent Change from Previous Calibration	NOx	1.3%	NO
			1.0%

Calibration Performed by: Shea Beaton

NO₂ Calibration Curve

Calibration Date	August 4, 2009	
Company	Lakeland Ind & Comm. Assoc.	
Plant / Location	LICA 1 - Cold Lake South	
Start Time (MST)	7:20	End Time (MST)
		14:05

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
0	0	N/A	Slope (0.85 to 1.15)	0.991581
95	97	0.9794	Intercept (± 3% F.S.)	1.18704
194	194	1.0000		
275	273	1.0073		

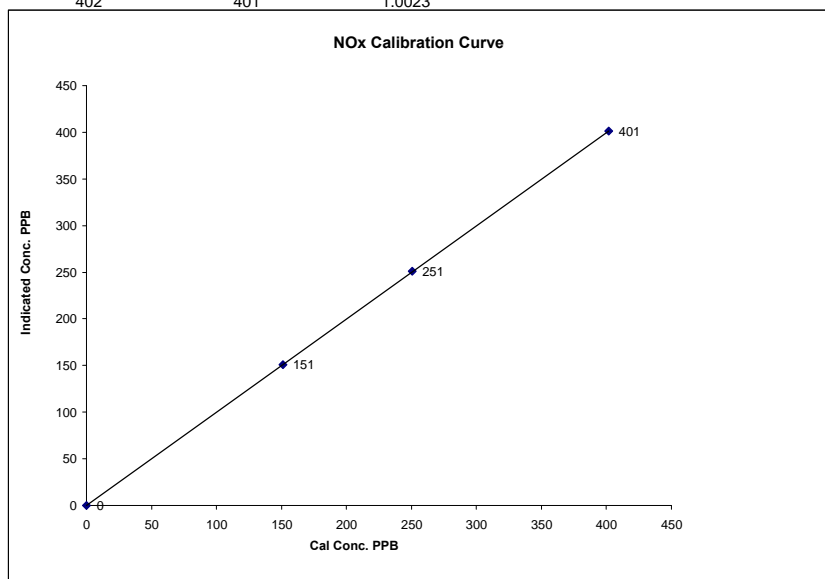


Notes: _____

NOx Calibration Curve

Calibration Date August 4, 2009
 Company Lakeland Ind & Comm. Assoc.
 Plant / Location LICA 1 - Cold Lake South
 Start Time (MST) 7:20 End Time (MST) 14:05

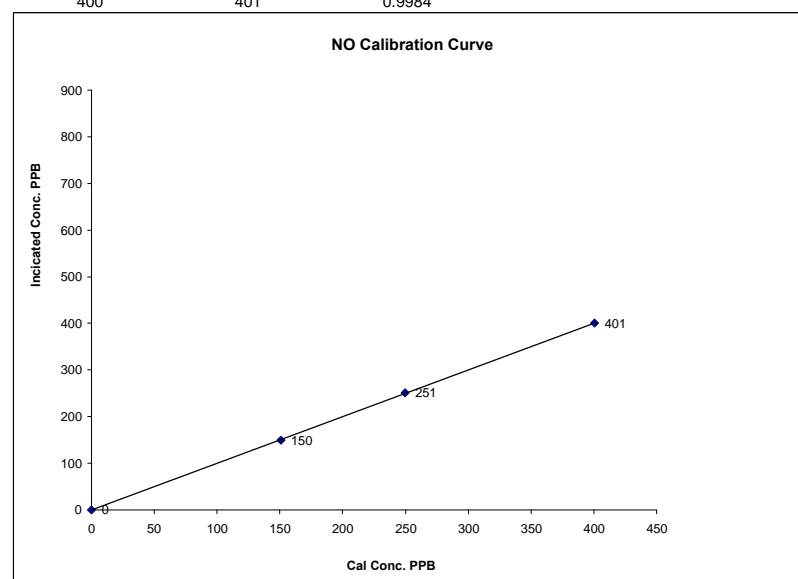
Calculated Conc.	Indicated Response	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999995
ppb	ppb		Slope	(0.85 to 1.15)	0.998164
0	0	N/A	Intercept	(± 3% F.S.)	0.14566
151	151	1.0016			
251	251	0.9990			
402	401	1.0023			



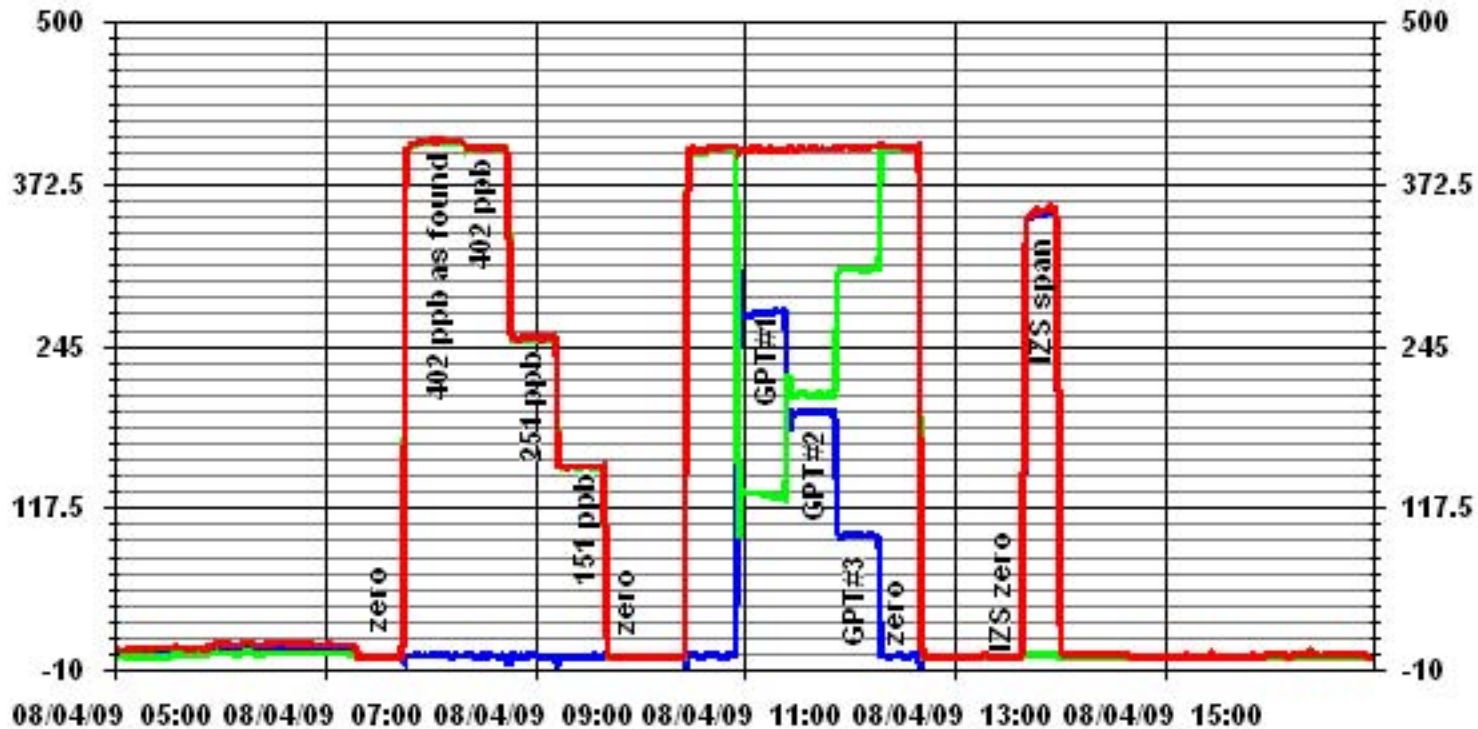
NO Calibration Curve

Calibration Date August 4, 2009
 Company Lakeland Ind & Comm. Assoc.
 Plant / Location LICA 1 - Cold Lake South
 Start Time (MST) 7:20 End Time (MST) 14:05

Calculated Conc.	Indicated Response	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999984
ppb	ppb		Slope	(0.85 to 1.15)	1.004480
0	0	N/A	Intercept	(± 3% F.S.)	2.1583
151	150	1.0044			
250	251	0.9952			
400	401	0.9984			



01 Minute Averages



Ozone

O₃ Calibration Report

Station Information

Calibration Date	August 4, 2009	Previous Calibration	July 13, 2009
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	13:23	End Time (MST)	17:03
Reason:	Monthly Calibration		
Barometric Pressure	717 mm Hg	Station Temperature	22 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	TEI 49i	S/N :	700419951	Method:	Fluorescent
Calibrator Make / Model:	EnviroNics 2000	S/N :	1991	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	263		

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 500		ppb	
Bench Temp/ Pressure	28.3	Deg C	28.5	Deg C
O ₃ Set Level	29%		29%	
Bench Lamp/O ₃ Lamp				
Sample Flow A/B	0.744 LPM	0.757 LPM	0.742 LPM	0.756 LPM
Offset / Slope	0.7	1.063	0.7	1.063

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5001	0	0	0	N/A
5001	400	386	398	0.9698
4998	400	386	386	1.0000
4998	200	195	193	1.0104
4999	100	95	94	1.0106
5006	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				1.0000

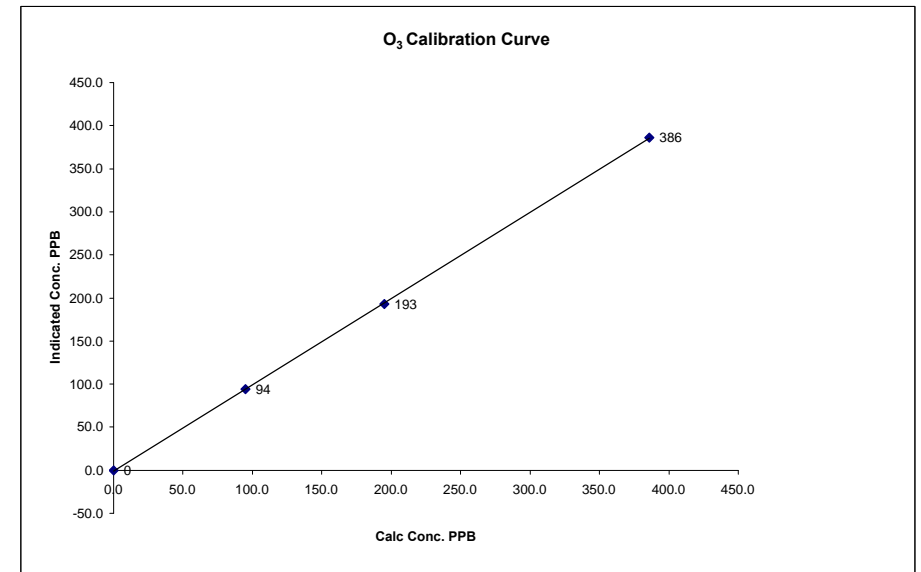
	Before Calibration	After Calibration
Auto Zero	-0.1	-0.2
Auto Span	292.0	283.0
Sample Lines Connected	YES	
Percent Change from Previous Calibration	2.6%	

Calibration Performed by: Shea Beaton

O₃ Calibration Curve

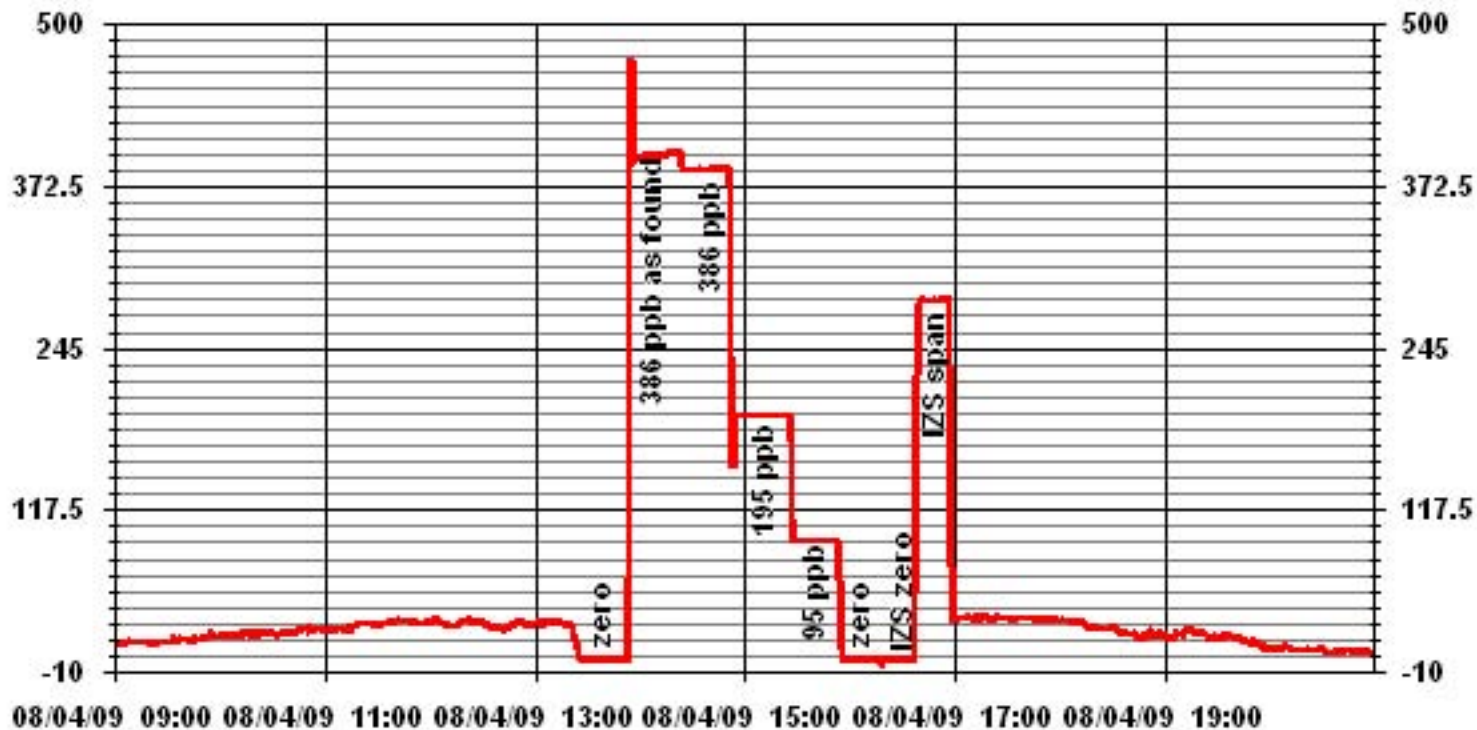
Calibration Date	August 4, 2009		
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	13:23	End Time (MST)	17:03

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope (≥ 0.995) (0.85 to 1.15)	Intercept (± 3% F.S.)	
0	0	n/a			0.999966
95	94	1.0106			1.000269
195	193	1.0104			
386	386	1.0000			-0.795451



Notes: Bench Temp=53.5C, O₃ lamp temp=67.7C.

01 Minute Averages



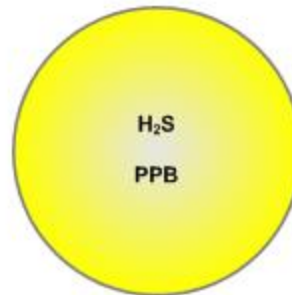
Passive Bubble Maps

Lakeland Industry & Community Association H₂S Passive Bubble Map

AUGUST 2009

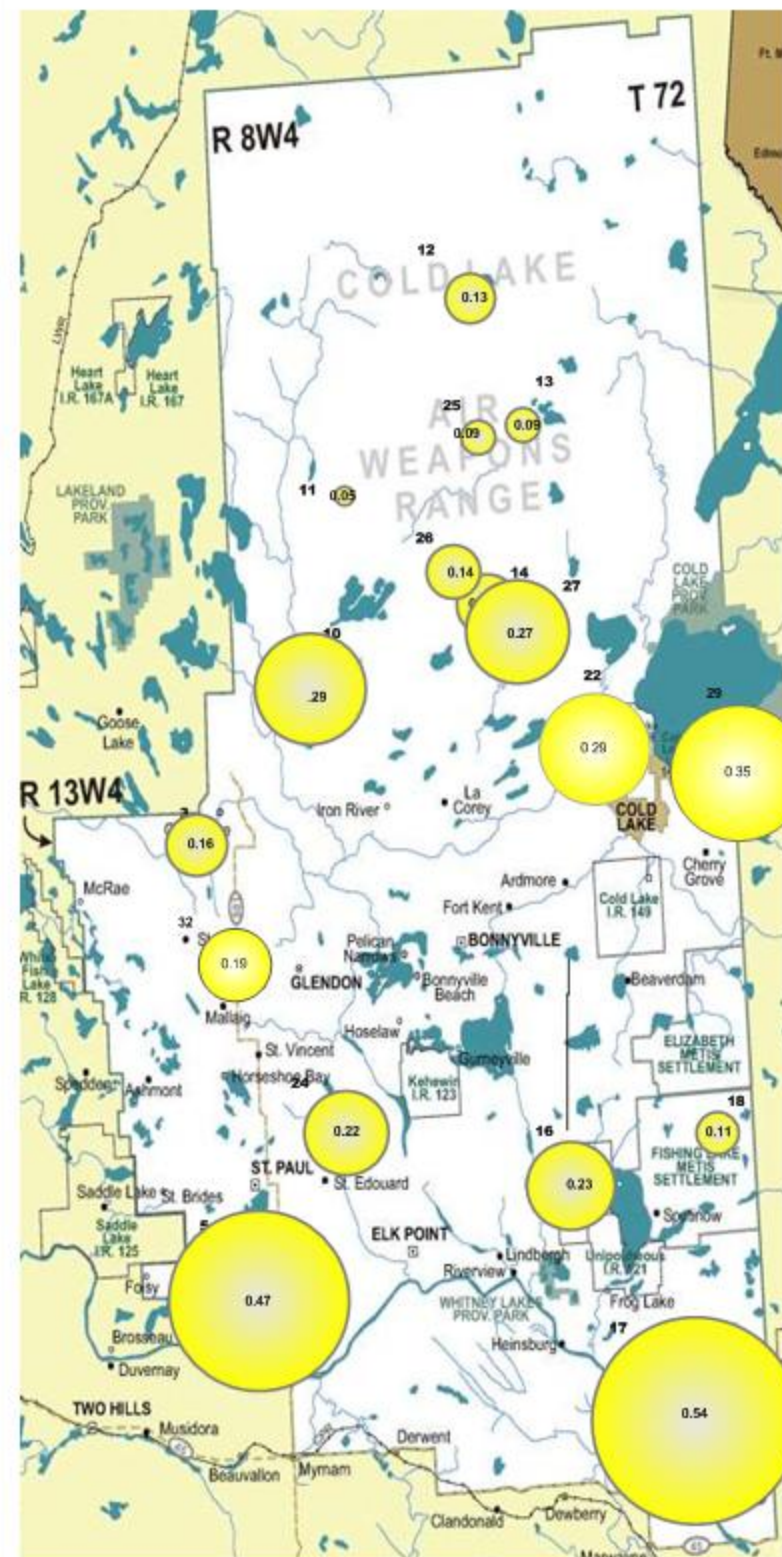
PASSIVE STATIONS

		DUPLICATE
3 – Therien	0.17 PPB	0.15 PPB
5 – Lake Eliza	0.47 PPB	NA
10 – La Corey	0.29 PPB	NA
11 – Wolf Lake	0.07 PPB	<0.02 PPB
12 – Foster Creek	0.13 PPB	NA
13 – Primrose	0.09 PPB	0.09 PPB
14 – Maskwa	0.16 PPB	NA
16 – Frog Lake	0.22 PPB	0.23 PPB
17 – Clear Range	0.54 PPB	NA
18 – Fishing Lake	0.11 PPB	0.10 PPB
22 – Cold Lake South	0.29 PPB	NA
24 – Fort George	0.22 PPB	NA
25 – Burnt Lake	0.09 PPB	0.09 PPB
26 – Mahihkan	0.14 PPB	NA
27 – Mahkeses	0.27 PPB	0.26 PPB
29 – Cold Lake South 2	0.35 PPB	NA
32 – St. Lina	0.19 PPB	NA



Summary

Minimum : 0.05 PPB – Wolf Lake
Maximum: 0.54 PPB – Clear Range
Average: 0.22 PPB *Includes Duplicates

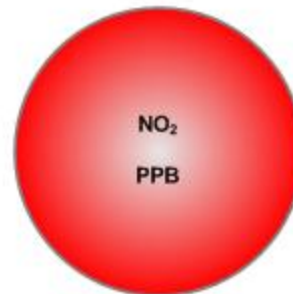


Lakeland Industry & Community Association NO₂ Passive Bubble Map

AUGUST 2009

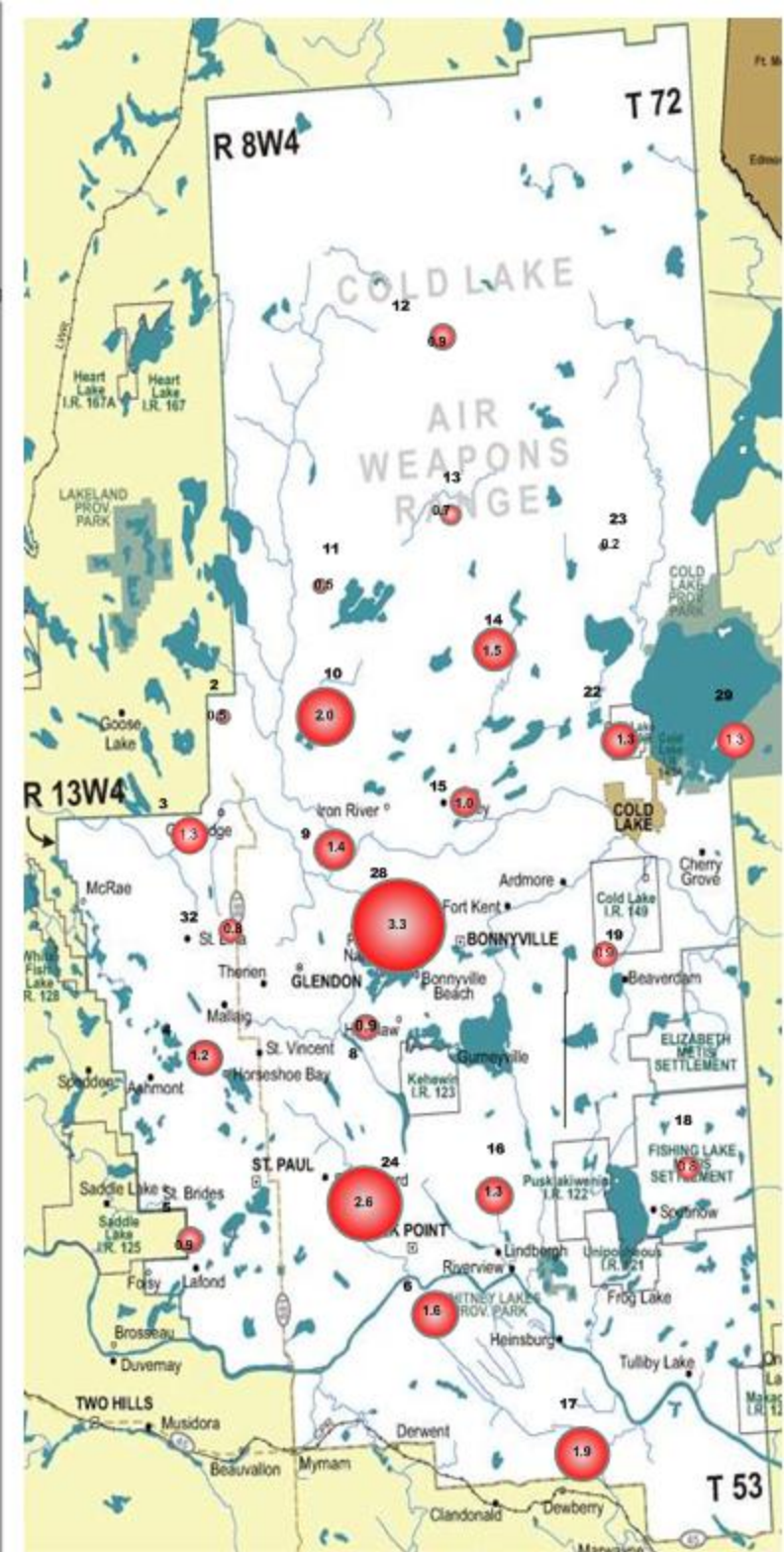
PASSIVE STATIONS

Station Number	Location	Reading 1 (PPB)	Reading 2 (PPB)
2	Sand River	0.5	0.5
3	Therien	1.3	NA
4	Flat Lake	1.1	1.3
5	Lake Eliza	0.9	NA
6	Telegraph Creek	1.7	1.5
8	Muriel-Kehewin	0.9	NA
9	Dupre	1.3	1.4
10	La Corey	2.0	NA
11	Wolf Lake	0.4	0.5
12	Foster Creek	0.9	NA
13	Primrose	0.7	0.6
14	Maskwa	1.5	NA
15	Ardmore	1.1	0.9
16	Frog Lake	1.3	NA
17	Clear Range	1.8	2.0
18	Fishing Lake	0.8	NA
19	Beaverdam	0.8	1.0
22	Cold Lake South	1.3	NA
23	Medley-Martineau	0.2	NA
24	Fort George	2.7	2.4
28	Town of Bonnyville	3.3	NA
29	Cold Lake South 2	1.3	1.2
32	St. Lina	0.8	NA



Summary

Minimum : 0.2 PPB – Medley-Martineau
 Maximum: 3.3 PPB – Town of Bonnyville
 Average: 1.3 PPB *Includes Duplicates

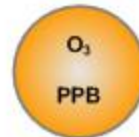


Lakeland Industry & Community Association O₃ Passive Bubble Map

AUGUST 2009

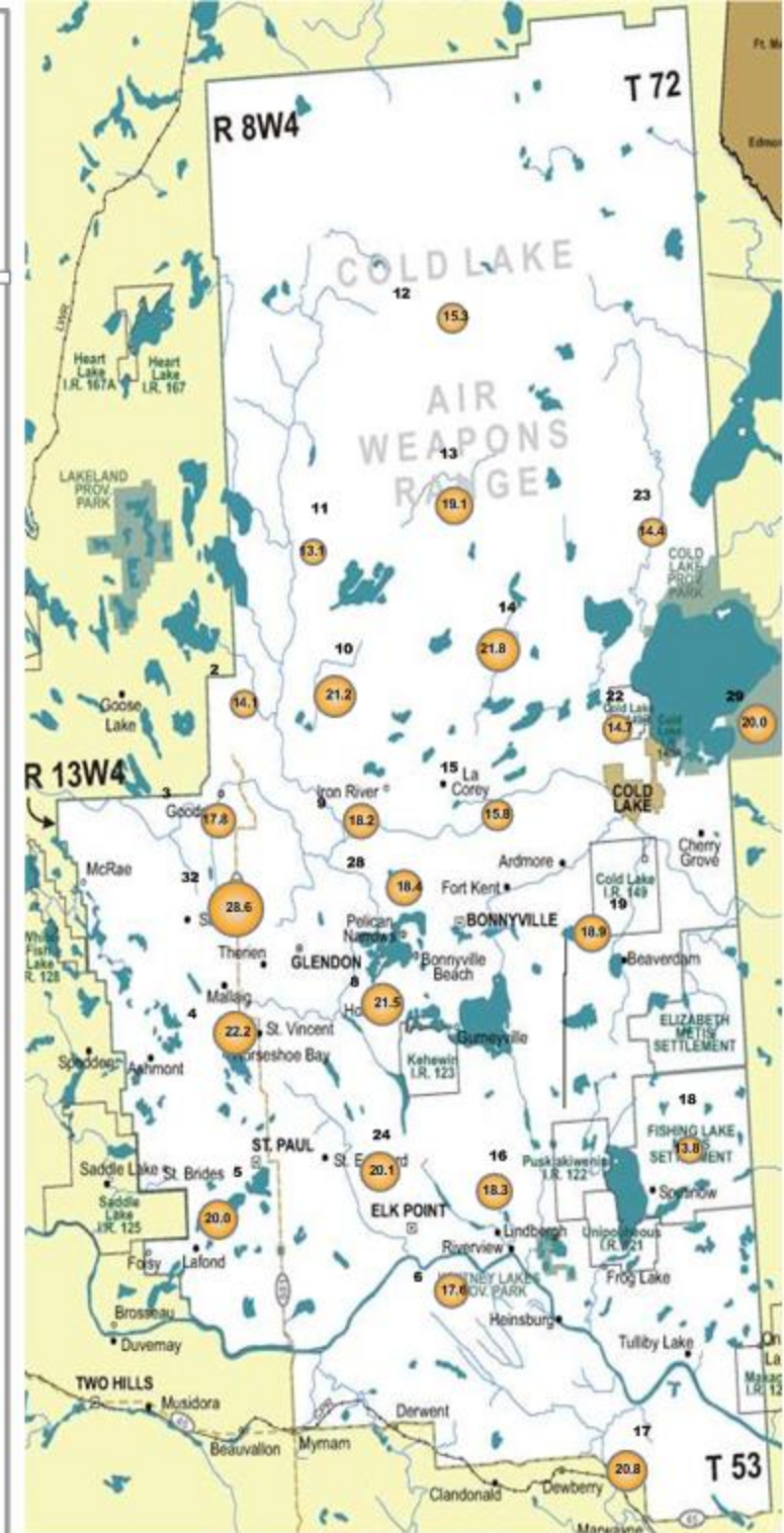
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	13.0 PPB	15.1 PPB
3 – Therien	17.8 PPB	NA
4 – Flat Lake	22.2 PPB	22.1 PPB
5 – Lake Eliza	20.0 PPB	NA
6 – Telegraph Creek	17.1 PPB	18.1 PPB
8 – Muriel-Kehewin	21.5 PPB	NA
9 – Dupre	17.8 PPB	18.6 PPB
10 – La Corey	21.2 PPB	NA
11 – Wolf Lake	12.8 PPB	13.3 PPB
12 – Foster Creek	15.3 PPB	NA
13 – Primrose	18.8 PPB	19.4 PPB
14 – Maskwa	21.8 PPB	NA
15 – Ardmore	15.5 PPB	16.0 PPB
16 – Frog Lake	18.3 PPB	NA
17 – Clear Range	21.4 PPB	20.2 PPB
18 – Fishing Lake	13.8 PPB	NA
19 – Beaverdam	18.5 PPB	19.2 PPB
22 – Cold Lake South	14.7 PPB	NA
23 – Medley-Martineau	14.4 PPB	NA
24 – Fort George	19.6 PPB	20.6 PPB
28 – Town of Bonnyville	18.4 PPB	NA
29 – Cold Lake South 2	19.7 PPB	20.2 PPB
32 – St. Lina	28.6 PPB	NA



Summary

Minimum : 13.1 PPB –Wolf Lake
 Maximum: 28.6 PPB –St. Lina
 Average: 18.5 PPB *Includes Duplicates



Lakeland Industry & Community Association SO₂ Passive Bubble Map

AUGUST 2009

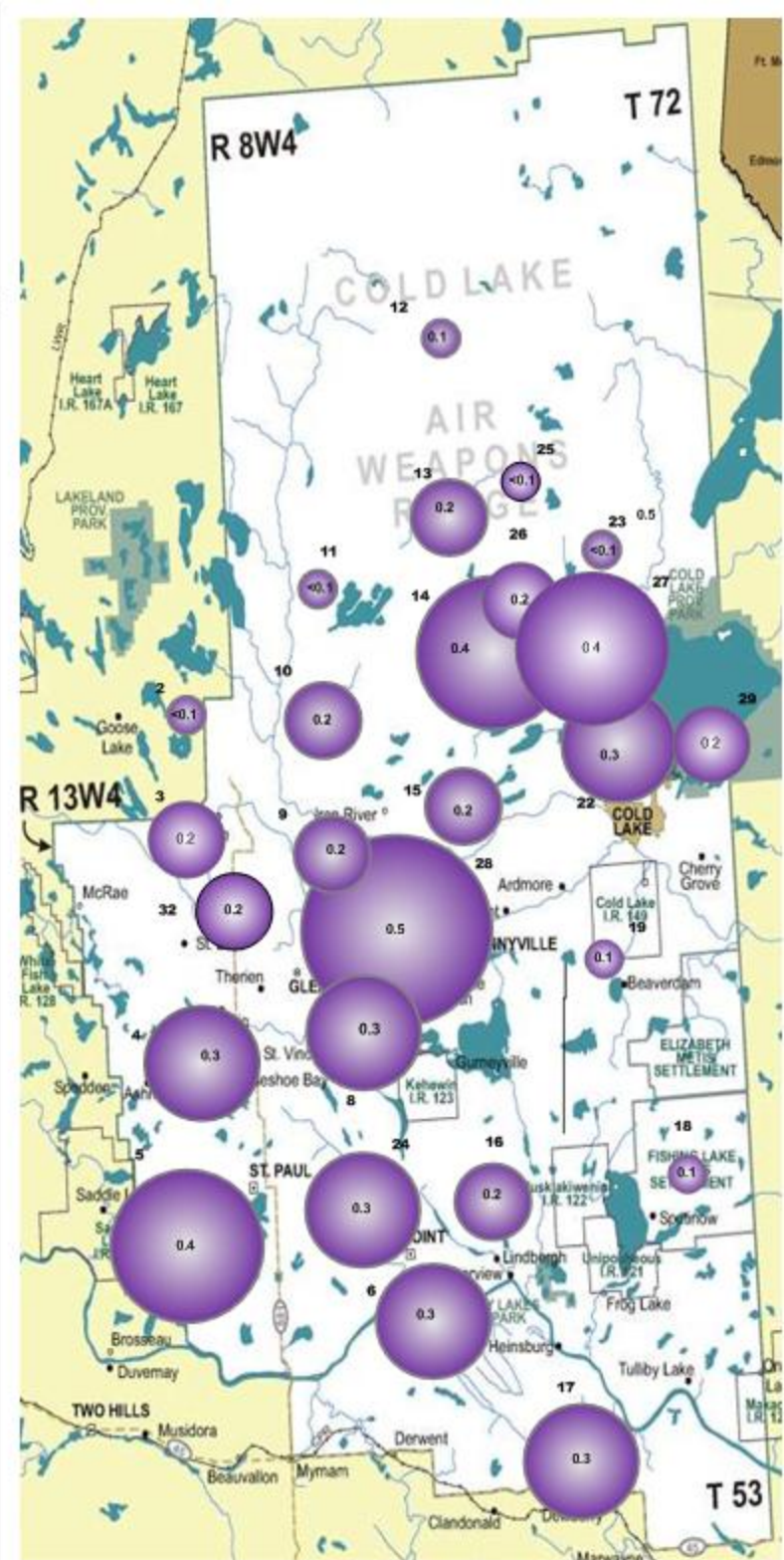
PASSIVE STATIONS

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



Summary

Minimum : < 0.1 PPB – VARIOUS
 Maximum: 0.5 PPB –Town of Bonnyville
 Average: 0.2 PPB *Includes Duplicates



Passive Network Laboratory Analysis



Your Project #: 2009/07/29 - 2009/08/30
Site:LICA

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

Report Date: 2009/09/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A948079
Received: 2009/09/03, 15:20

Sample Matrix: Air
Samples Received: 44

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis (0)	24	2009/09/21	2009/09/22		EDM SOP-0320
NO2 Passive Analysis (0)	34	2009/09/22	2009/09/22		EDM SOP-0318
O3 Passive Analysis (0)	1	2009/09/16	2009/09/22		EDM SOP-0317
O3 Passive Analysis (0)	33	2009/09/21	2009/09/22		EDM SOP-0317
SO2 Passive Analysis (0)	38	2009/09/22	2009/09/22		EDM SOP-0319

* 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,
Email:
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. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 1

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		Q58761		Q58762	Q58764		
Sampling Date		2009/07/29 11:15		2009/07/29 11:15	2009/07/29 10:30		
	Units	2	QC Batch	2A (DUP)	3	RDL	QC Batch

Passive Monitoring							
Calculated H2S	ppb				0.17	0.02	3430740
Calculated NO2	ppb	0.5	3434697	0.5	1.3	0.1	3434697
Calculated O3	ppb	13.0	3433572	15.1	17.8	0.1	3433506
Calculated SO2	ppb	<0.1	3434717	<0.1	0.2	0.1	3434717
RDL = Reportable Detection Limit							

Maxxam ID		Q58765	Q58766	Q58767	Q58768		
Sampling Date		2009/07/29 10:30	2009/07/30 14:25	2009/07/30 14:25	2009/07/30 13:35		
	Units	3A (DUP)	4	4A (DUP)	5	RDL	QC Batch

Passive Monitoring							
Calculated H2S	ppb	0.15			0.47	0.02	3430740
Calculated NO2	ppb		1.1	1.3	0.9	0.1	3434697
Calculated O3	ppb		22.2	22.1	20.0	0.1	3433506
Calculated SO2	ppb		0.2	0.3	0.4	0.1	3434717
RDL = Reportable Detection Limit							

Maxxam ID		Q58769	Q58770	Q58771	Q58772		
Sampling Date		2009/07/30 11:40	2009/07/30 11:40	2009/07/30 15:20	2009/07/29 08:55		
	Units	6	6A (DUP)	8	9	RDL	QC Batch

Passive Monitoring							
Calculated NO2	ppb	1.7	1.5	0.9	1.3	0.1	3434697
Calculated O3	ppb	17.1	18.1	21.5	17.8	0.1	3433506
Calculated SO2	ppb	0.2	0.3	0.3	0.2	0.1	3434717
RDL = Reportable Detection Limit							

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		Q58773	Q58774	Q58777	Q58821		
Sampling Date		2009/07/29 08:55	2009/07/29 11:55	2009/07/29 12:40	2009/07/29 12:40		
	Units	9A (DUP)	10	11	11A (DUP)	RDL	QC Batch

Passive Monitoring							
Calculated H2S	ppb		0.29	0.07	<0.02	0.02	3430740
Calculated NO2	ppb	1.4	2.0	0.4	0.5	0.1	3434697
Calculated O3	ppb	18.6	21.2	12.8	13.3	0.1	3433506
Calculated SO2	ppb	0.2	0.2	<0.1	<0.1	0.1	3434717
RDL = Reportable Detection Limit							

Maxxam ID		Q58822	Q58834	Q58836	Q58837		
Sampling Date		2009/07/29 13:50	2009/07/29 15:25	2009/07/29 15:25	2009/07/29 16:15		
	Units	12	13	13A (DUP)	14	RDL	QC Batch

Passive Monitoring							
Calculated H2S	ppb	0.13	0.09	0.09	0.16	0.02	3430740
Calculated NO2	ppb	0.9	0.7	0.6	1.5	0.1	3434702
Calculated O3	ppb	15.3	18.8	19.4	21.8	0.1	3433506
Calculated SO2	ppb	0.1	0.2	0.2	0.4	0.1	3434717
RDL = Reportable Detection Limit							

Maxxam ID		Q58839	Q58841	Q58843	Q58845		
Sampling Date		2009/07/29 07:40	2009/07/29 07:40	2009/07/30 10:05	2009/07/30 10:05		
	Units	15	15A (DUP)	16	16A (DUP)	RDL	QC Batch

Passive Monitoring							
Calculated H2S	ppb			0.22	0.23	0.02	3430740
Calculated NO2	ppb	1.1	0.9	1.3		0.1	3434702
Calculated O3	ppb	15.5	16.0	18.3		0.1	3433506
Calculated SO2	ppb	0.2	0.2	0.2		0.1	3434719
RDL = Reportable Detection Limit							

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		Q58846	Q58849	Q58850	Q58851		
Sampling Date		2009/07/30 10:55	2009/07/30 10:55	2009/07/30 09:15	2009/07/30 09:15		
	Units	17	17A (DUP)	18	18A (DUP)	RDL	QC Batch

Passive Monitoring							
Calculated H2S	ppb	0.54		0.11	0.10	0.02	3430740
Calculated NO2	ppb	1.8	2.0	0.8		0.1	3434702
Calculated O3	ppb	21.4	20.2	13.8		0.1	3433506
Calculated SO2	ppb	0.3	0.3	0.1		0.1	3434719

RDL = Reportable Detection Limit

Maxxam ID		Q58852	Q58853		Q58854		
Sampling Date		2009/07/30 08:00	2009/07/30 08:00		2009/07/29 06:45		
	Units	19	19A (DUP)	QC Batch	22	RDL	QC Batch

Passive Monitoring							
Calculated H2S	ppb			3430740	0.29	0.02	3430740
Calculated NO2	ppb	0.8	1.0	3434702	1.3	0.1	3434702
Calculated O3	ppb	18.5	19.2	3433506	14.7	0.1	3433572
Calculated SO2	ppb	0.1	0.1	3434719	0.3	0.1	3434719

RDL = Reportable Detection Limit

Maxxam ID		Q58855	Q58856	Q58857	Q58858		
Sampling Date		2009/07/29 17:30	2009/07/30 12:40	2009/07/30 12:40	2009/07/29 15:00		
	Units	23	24	24A (DUP)	25	RDL	QC Batch

Passive Monitoring							
Calculated H2S	ppb		0.22		0.09	0.02	3430740
Calculated NO2	ppb	0.2	2.7	2.4		0.1	3434702
Calculated O3	ppb	14.4	19.6	20.6		0.1	3433572
Calculated SO2	ppb	<0.1	0.2	0.3	<0.1	0.1	3434719

RDL = Reportable Detection Limit

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		Q58859	Q58860	Q58861	Q58862		
Sampling Date		2009/07/29 15:00	2009/07/29 16:00	2009/07/29 16:00	2009/07/29 16:35		
	Units	25A (DUP)	26	26A (DUP)	27	RDL	QC Batch

Passive Monitoring							
Calculated H2S	ppb	0.09	0.14		0.27	0.02	3430740
Calculated SO2	ppb		0.2	0.2	0.4	0.1	3434719

RDL = Reportable Detection Limit

Maxxam ID		Q58863	Q58864	Q58865	Q58866		
Sampling Date		2009/07/29 16:35	2009/07/29 08:20	2009/07/29 08:20	2009/07/29 06:55		
	Units	27A (DUP)	28	28A (DUP)	29	RDL	QC Batch

Passive Monitoring							
Calculated H2S	ppb	0.26			0.35	0.02	3430740
Calculated NO2	ppb		3.3		1.3	0.1	3434702
Calculated O3	ppb		18.4		19.7	0.1	3433572
Calculated SO2	ppb		0.5	0.4	0.2	0.1	3434719

RDL = Reportable Detection Limit

Maxxam ID		Q59341	Q59342		
Sampling Date		2009/07/29 06:55	2009/07/29 09:50		
	Units	29A (DUP)	32	RDL	QC Batch

Passive Monitoring					
Calculated H2S	ppb		0.19	0.02	3430740
Calculated NO2	ppb	1.2	0.8	0.1	3434702
Calculated O3	ppb	20.2	28.6	0.1	3433572
Calculated SO2	ppb		0.2	0.1	3434719

RDL = Reportable Detection Limit



Maxxam Job #: A948079
Report Date: 2009/09/22

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2009/07/29 - 2009/08/30
Site Reference: LICA
Sampler Initials: SB

General Comments

Results relate only to the items tested.

Quality Assurance Report
 Maxxam Job Number: PA948079

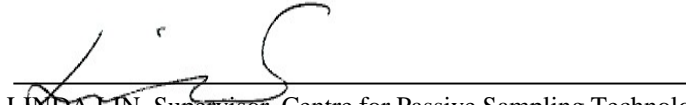
QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3430740 TM5	Calibration Check	Calculated H2S	2009/09/21		100	%	80 - 120
	Spiked Blank	Calculated H2S	2009/09/21		100	%	N/A
3433506 OZ	Calibration Check	Calculated O3	2009/09/21		97	%	91 - 107
	Spiked Blank	Calculated O3	2009/09/21		100	%	N/A
	Method Blank	Calculated O3	2009/09/21	<0.1		ppb	
3433572 OZ	Calibration Check	Calculated O3	2009/09/21		99	%	91 - 107
	Spiked Blank	Calculated O3	2009/09/21		100	%	N/A
	Method Blank	Calculated O3	2009/09/21	<0.1		ppb	
3434697 DF4	Calibration Check	Calculated NO2	2009/09/22		103	%	76 - 118
	Spiked Blank	Calculated NO2	2009/09/22		96	%	N/A
	Method Blank	Calculated NO2	2009/09/22	<0.1		ppb	
3434702 DF4	Calibration Check	Calculated NO2	2009/09/22		102	%	76 - 118
	Spiked Blank	Calculated NO2	2009/09/22		96	%	N/A
	Method Blank	Calculated NO2	2009/09/22	<0.1		ppb	
3434717 DF4	Calibration Check	Calculated SO2	2009/09/22		99	%	95 - 105
	Spiked Blank	Calculated SO2	2009/09/22		98	%	N/A
	Method Blank	Calculated SO2	2009/09/22	<0.1		ppb	
3434719 DF4	Calibration Check	Calculated SO2	2009/09/22		99	%	95 - 105
	Spiked Blank	Calculated SO2	2009/09/22		103	%	N/A
	Method Blank	Calculated SO2	2009/09/22	<0.1		ppb	

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

Validation Signature Page

Maxxam Job #: A948079

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



LINDA LIN, Supervisor, Centre for Passive Sampling Technology

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Passive Field Data

Field Notes

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
2	SO ₂ /NO ₂ /O ₃	07/29/09	11:15	08/30/09	10:55	
2A (Dup)	SO ₂ /NO ₂ /O ₃	07/29/09	11:15	08/30/09	10:55	
3	H ₂ S/SO ₂ /NO ₂ /O ₃	07/29/09	10:30	08/30/09	10:20	
3A (Dup)	H ₂ S	07/29/09	10:30	08/30/09	10:20	
4	SO ₂ /NO ₂ /O ₃	07/30/09	14:25	08/31/09	13:10	
4A (Dup)	SO ₂ /NO ₂ /O ₃	07/30/09	14:25	08/31/09	13:10	
5	H ₂ S/SO ₂ /NO ₂ /O ₃	07/30/09	13:35	08/31/09	12:25	
5A (Dup)	NA	NA	NA	NA	NA	
6	SO ₂ /NO ₂ /O ₃	07/30/09	11:40	08/31/09	10:50	
6A (Dup)	SO ₂ /NO ₂ /O ₃	07/30/09	11:40	08/31/09	10:50	
8	SO ₂ /NO ₂ /O ₃	07/30/09	15:20	08/31/09	14:05	
8A (Dup)	NA	NA	NA	NA	NA	
9	SO ₂ /NO ₂ /O ₃	07/29/09	08:55	08/30/09	08:45	
9A (Dup)	SO ₂ /NO ₂ /O ₃	07/29/09	08:55	08/30/09	08:45	
10	H ₂ S/SO ₂ /NO ₂ /O ₃	07/29/09	11:55	08/30/09	11:50	
10A (Dup)	NA	NA	NA	NA	NA	
11	H ₂ S/SO ₂ /NO ₂ /O ₃	07/29/09	12:40	08/30/09	12:25	
11A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	07/29/09	12:40	08/30/09	12:25	
12	H ₂ S/SO ₂ /NO ₂ /O ₃	07/29/09	13:50	08/30/09	13:45	
12A (Dup)	NA	NA	NA	NA	NA	
13	H ₂ S/SO ₂ /NO ₂ /O ₃	07/29/09	15:25	08/30/09	15:10	
13A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	07/29/09	15:25	08/30/09	15:10	
14	H ₂ S/SO ₂ /NO ₂ /O ₃	07/29/09	16:15	08/30/09	16:05	
14A (Dup)	NA	NA	NA	NA	NA	
15	SO ₂ /NO ₂ /O ₃	07/29/09	07:40	08/30/09	07:40	
15A (Dup)	SO ₂ /NO ₂ /O ₃	07/29/09	07:40	08/30/09	07:40	
16	H ₂ S/SO ₂ /NO ₂ /O ₃	07/30/09	10:05	08/31/09	09:10	
16A (Dup)	H ₂ S	07/30/09	10:05	08/31/09	09:10	

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
17	H ₂ S/SO ₂ /NO ₂ /O ₃	07/30/09	10:55	08/31/09	10:00	
17A (Dup)	SO ₂ /NO ₂ /O ₃	07/30/09	10:55	08/31/09	10:00	
18	H ₂ S/SO ₂ /NO ₂ /O ₃	07/30/09	09:15	08/31/09	08:20	
18A (Dup)	H ₂ S	07/30/09	09:15	08/31/09	08:20	
19	SO ₂ /NO ₂ /O ₃	07/30/09	08:00	08/31/09	07:15	
19A (Dup)	SO ₂ /NO ₂ /O ₃	07/30/09	08:00	08/31/09	07:15	
22	H ₂ S/SO ₂ /NO ₂ /O ₃	07/29/09	06:45	08/30/09	07:05	
22A (Dup)	NA	NA	NA	NA	NA	
23	SO ₂ /NO ₂ /O ₃	07/29/09	17:30	08/30/09	17:35	
23A (Dup)	NA	NA	NA	NA	NA	
24	H ₂ S/SO ₂ /NO ₂ /O ₃	07/30/09	12:40	08/31/09	11:30	
24A (Dup)	SO ₂ /NO ₂ /O ₃	07/30/09	12:40	08/31/09	11:30	
25	H ₂ S/SO ₂	07/29/09	15:00	08/30/09	14:55	
25A (Dup)	H ₂ S	07/29/09	15:00	08/30/09	14:55	
26	H ₂ S/SO ₂	07/29/09	16:00	08/30/09	15:45	
26A (Dup)	SO ₂	07/29/09	16:00	08/30/09	15:45	
27	H ₂ S/SO ₂	07/29/09	16:35	08/30/09	16:30	
27A (Dup)	H ₂ S	07/29/09	16:35	08/30/09	16:30	
28	SO ₂ /NO ₂ /O ₃	07/29/09	08:20	08/30/09	08:15	
28A (Dup)	SO ₂	07/29/09	08:20	08/30/09	08:15	
29	H ₂ S/SO ₂ /NO ₂ /O ₃	07/29/09	06:55	08/30/09	06:45	
29A (Dup)	NO ₂ /O ₃	07/29/09	06:55	08/30/09	06:45	
32	H ₂ S/SO ₂ /NO ₂ /O ₃	07/29/09	09:50	08/30/09	09:45	
32A (Dup)	NA	NA	NA	NA	NA	

Lakeland Industry & Community Association

Maskwa Monitoring Site
Ambient Air Monitoring
Data Report
For
August 2009

Prepared By:



September 9, 2009

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 2009

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Craig Snider

The monthly analytical report for static & passive monitoring:

- Authorized by Levi Manchak

Calibration Procedure

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

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

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

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

The calibrations conducted at the LICA - Maskwa Air Monitoring Stations conform to the following Maxxam Analytics 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 2009

LICA MASKWA SITE						MAXIMUM VALUES						OPERATIONAL TIME (PERCENT)	
						OBJECTIVES			EXCEEDENCES		MONTHLY AVERAGE		1-HOUR
PARAMETER	1-HR	24-HR	1-HR	24-HR	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING			DAY
SO2 (PPB)	172	57	0	0	0.09	5	10	22	4.6	296(WNW)	0.5	19	100.0
H2S (PPB)	10	3	0	0	0.02	2	31	VAR	VAR	VAR	0.3	31	99.7
THC (PPM)	-	-	-	-	2.13	3.2	12	5	4	228(SW)	2.3	VAR	98.1
NOx (PPB)	-	-	-	-	2.35	28	20	6	1.7	232(SW)	5.6	18	100.0
NO (PPB)	-	-	-	-	0.50	21	20	6	1.7	232(SW)	1.7	20	100.0
NO ₂ (PPB)	212	106	0	0	1.48	13	10	22	4.6	296(WNW)	3.8	18	100.0
VECTOR WS (KPH)	-	-	-	-	4.57	15.7	21	12	-	147(SE)	8.9	21	100.0
VECTOR WD (DEGREES)	-	-	-	-	227(SW)	-	-	-	-	-	-	-	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	71.69	94	VAR	VAR	VAR	VAR	83.5	15	99.9
TEMPERATURE (DEG C)	-	-	-	-	15.05	28.5	31	16	5.7	165(SSE)	20.0	30	99.9
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	943	956	28	VAR	VAR	VAR	953.3	28	100.0
PRECIPITATION (MM)	-	-	-	-	0.04	8.3	22	4	4.4	0(N)	11.6	22	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 – Maskwa

Sulphur Dioxide (PPB)

- Analyzer make / model - API 100E

No operational issue was observed during the month. The inlet filter was changed before the monthly calibration was performed. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

- Analyzer make / model - API 101E

No operational issue was observed during the month. The UV lamp was peaked and a factory calibration was performed following the as found points on August 25th. A multi-points calibration was performed on August 26th. The inlet filter was changed before the monthly calibration was performed. Data was corrected using daily zero information.

Total HydroCarbon (PPM)

- Analyzer make / model –TECO 51C-LT

The monthly calibration was performed on August 26th. It was noticed that the as found span showed a little noisy. Adjusted the zero air supply pressure and bypass pressure to eliminate noise. Hydrogen regulator was replaced on August 26th. The inlet filter was changed before the monthly calibration was started. The analyzer flamed out on August 26th, hour of 19:00, and it was relit on August 27th. A total of 13 hours of data was invalidated. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – Maskwa

Nitrogen Dioxide (PPB)

- Analyzer make / model - API 200E

No operational issue was observed during the month. The analog output to the data logger was adjusted following the as found points on August 25th. During the first GPT point, the ozone concentration being generated by the calibrator changed slightly; allowed the point to re-stabilize and then repeated the point. 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 - Climatronics MIII

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

Relative Humidity (PERCENT)

- System make / model - Met One 083

No operational issues observed during the month. The RH sensor was checked on August 26th. The sensor was working properly.

Precipitation (MM)

- System make / model - Met One 387

No operational issue was observed during the month. The tipping bucket was cleaned and the operation was checked on August 26th. The sensor was working correctly.

General Monthly Summary

AQM STATION – LICA – Maskwa

Barometric Pressure (MILLIBAR)

- System make / model - Met One 092

No operation issue was observed during the month. The BP sensor was checked using Bios 1193. The sensor was working properly (0.1% difference).

Ambient Temperature (DEGC)

- System make / model - Met One 060

No operational issue was observed during the month. The sensor was checked using Hg thermometer (S/N #: 2178). The sensor was working correctly.

Trailer Temperature (DEG C)

- System make / model – R&R 61

No operational issue was observed during the month.

Standard Deviation Wind Direction (DEG)

- System make / model – Climatronics MIII

No operational issue was observed during the month.

General Monthly Summary

AQM STATION – LICA – Maskwa

Datalogger

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

No operational issue was observed during the month.

Trailer

No issues with the station.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA
AUGUST 2009
SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST

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

STATUS FLAG CODES

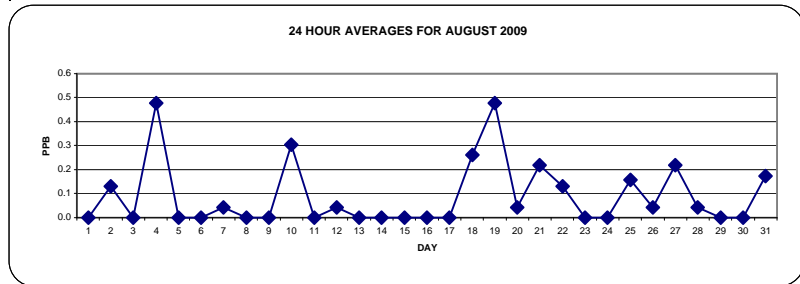
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

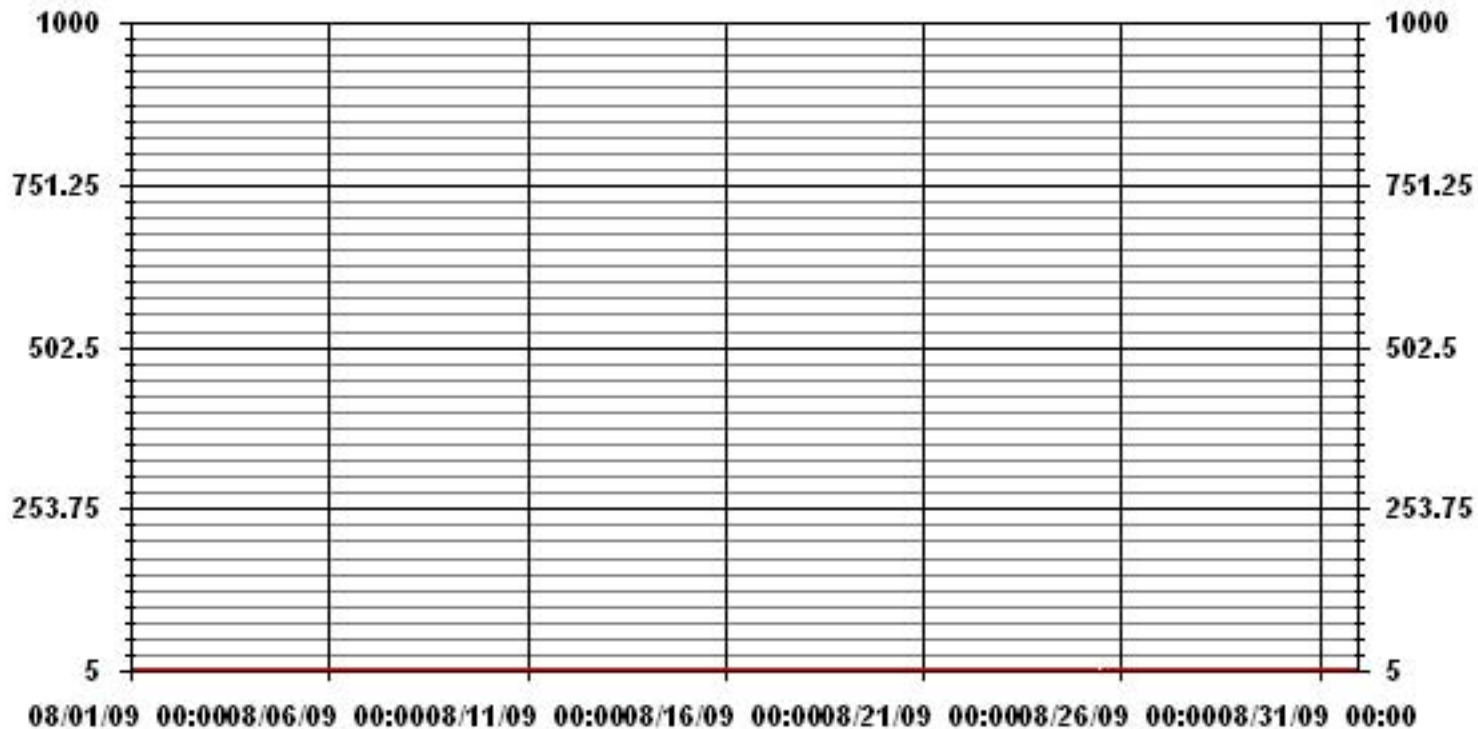
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	57	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	37					
MAXIMUM 1-HR AVERAGE:	5	PPB	@ HOUR(S)	22	ON DAY(S)	10
MAXIMUM 24-HR AVERAGE:	0.5	PPB			ON DAY(S)	19
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.44		MONTHLY AVERAGE:	0.09	PPB	



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

AUGUST 2009

SULPHUR DIOXIDE MAX instantaneous maximum in ppt

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

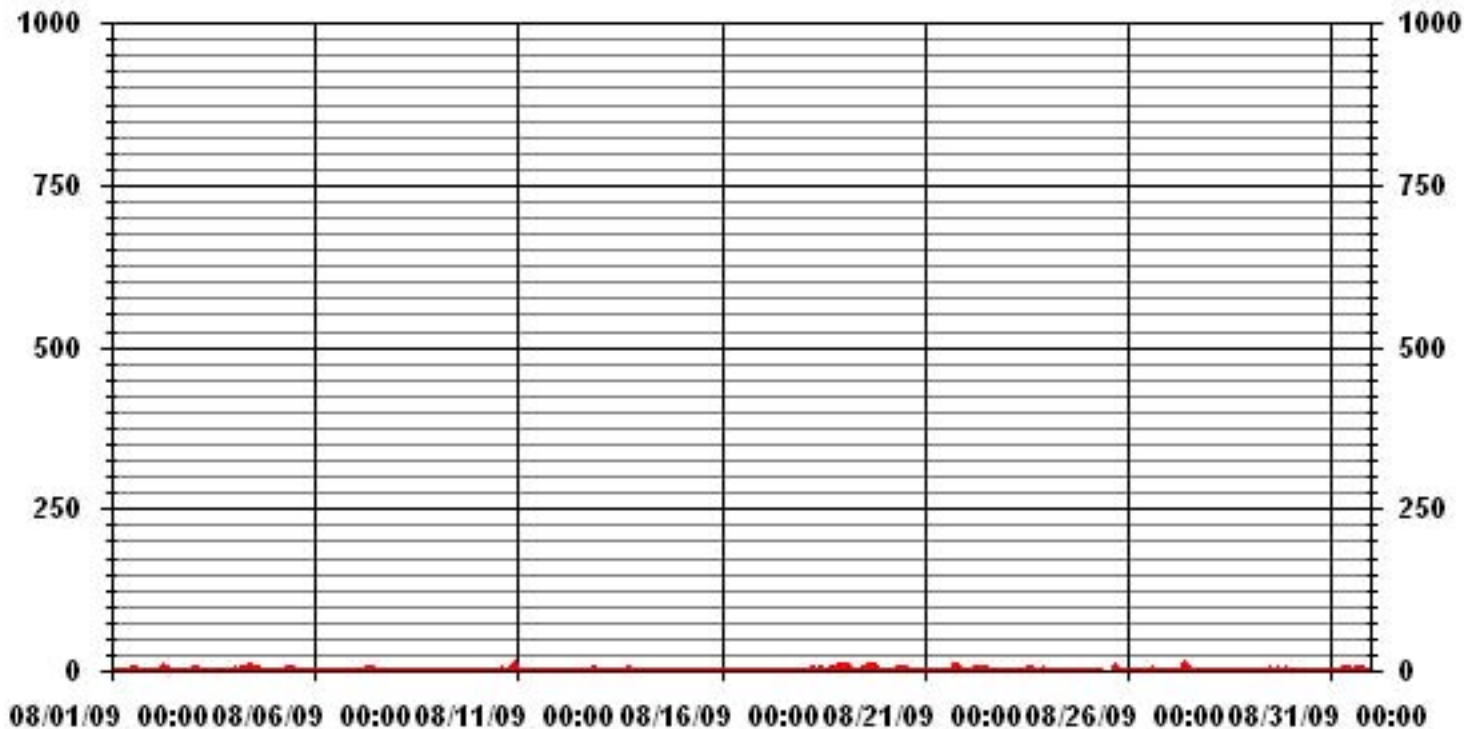
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	134					
MAXIMUM INSTANTANEOUS VALUE:	10	PPB	@ HOUR(S)	22	ON DAY(S)	10
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	1.40					

01 Hour Averages



— LICA30 SO2MAX PPB

LICA30
 SO2_ / WDR Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

Logger Id : 30
 Site Name : LICA30
 Parameter : SO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	5.64	4.37	6.49	5.08	1.97	2.68	4.37	6.35	6.63	17.09	10.16	6.21	6.49	6.49	4.51	5.36	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	5.64	4.37	6.49	5.08	1.97	2.68	4.37	6.35	6.63	17.09	10.16	6.21	6.49	6.49	4.51	5.36	

Calm : .00 %

Total # Operational Hours : 708

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	40	31	46	36	14	19	31	45	47	121	72	44	46	46	32	38	708
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	40	31	46	36	14	19	31	45	47	121	72	44	46	46	32	38	

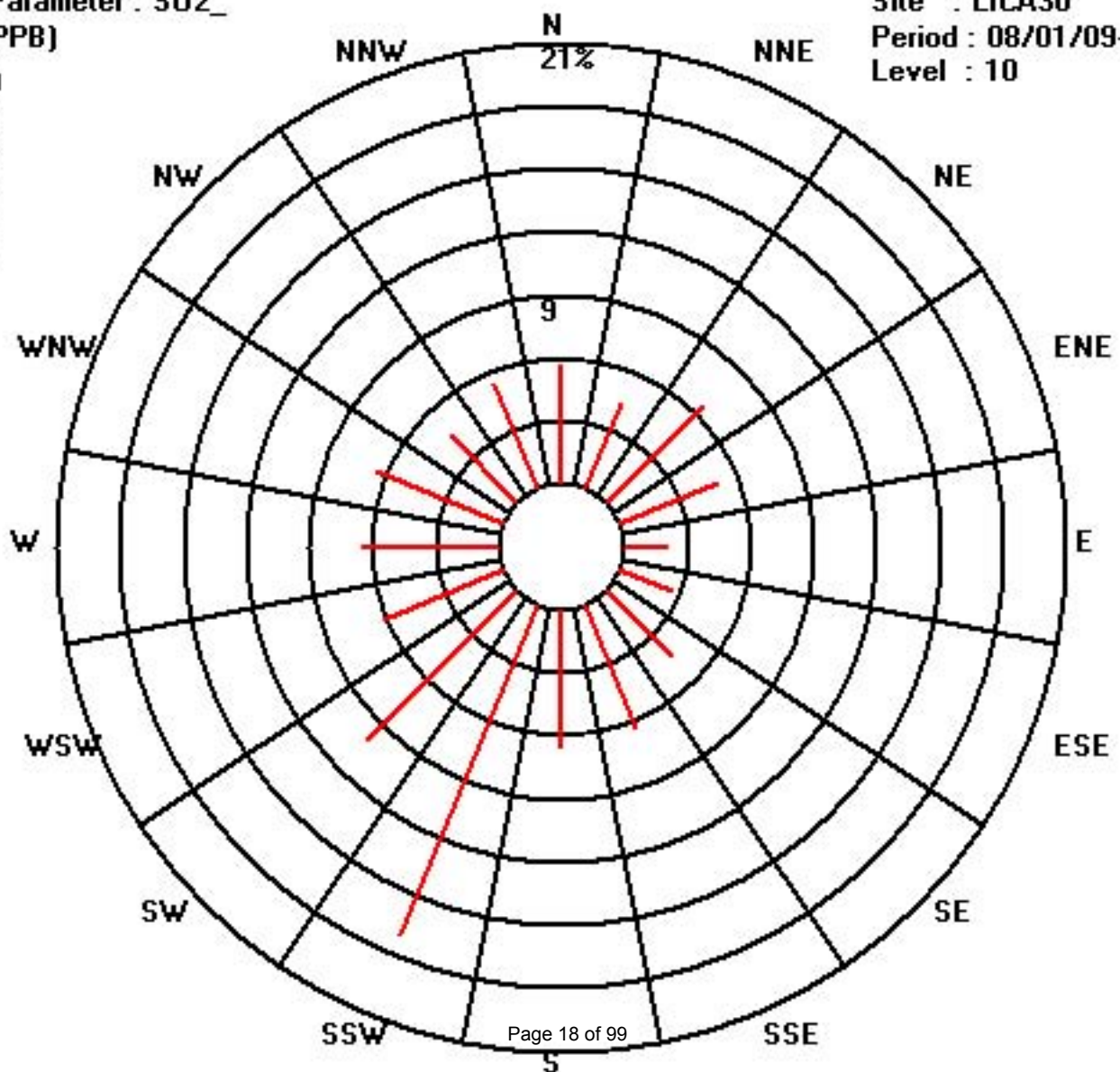
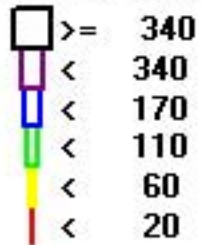
Calm : .00 %

Total # Operational Hours : 708

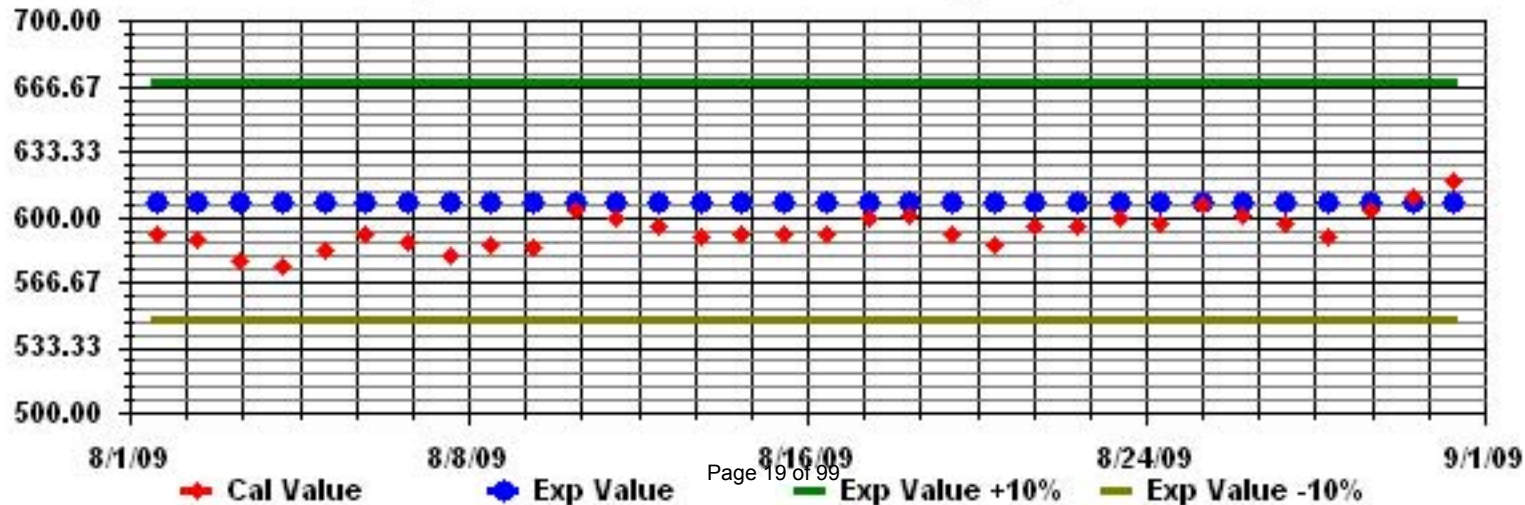
Class Limits (PPB)

Period : 08/01/09-08/31/09

Level : 10



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



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2009

HYDROGEN SULPHIDE (H₂S) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	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	0	0	0	1	1	0	0	0	0	0	0	IZS	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	IZS	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	IZS	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	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
6	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.0	24	
7	0	0	0	0	0	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
8	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
9	0	0	0	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
10	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
11	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
12	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
13	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
14	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
15	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.0	24	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0.0	24	
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0.0	24		
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0.0	24		
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0.0	24	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0.0	24	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	0	0	0	1	0.0	24	
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0.0	24	
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0.0	24	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
25	0	0	0	0	0	0	0	0	C	C	C	M	M	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0.0	22	
26	0	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
27	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
28	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
29	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
30	0	0	0	0	0	0	0	0	0	IZS	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
31	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	2	2	2	0	0	0	2	0.3	24	
HOURLY MAX	0	0	0	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	1	2	2	2	0	0	0				
HOURLY AVG	0.0	0.0	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	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0				

STATUS FLAG CODES

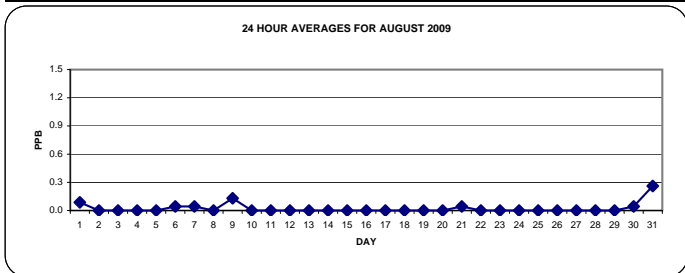
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

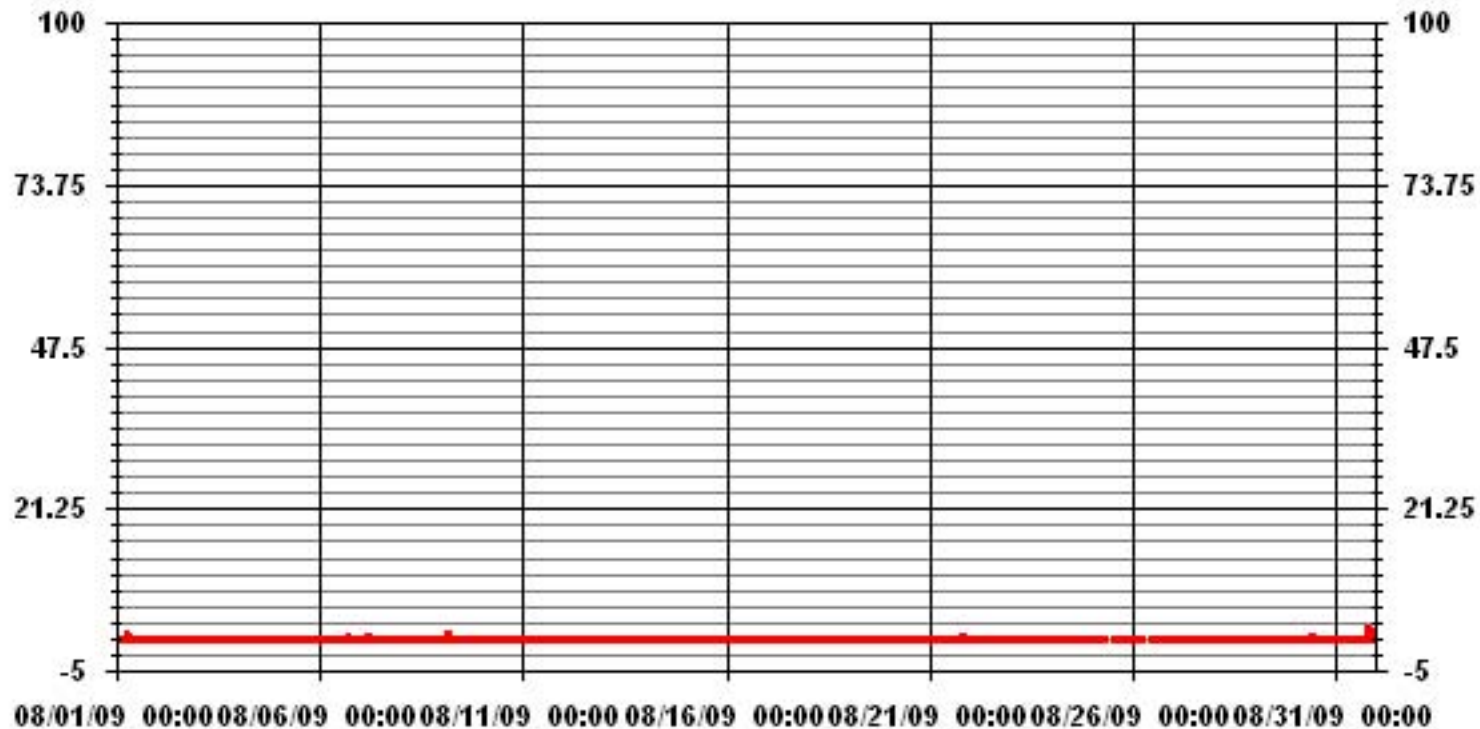
ALBERTA ENVIRONMENT: 1-HR 10 PPB 24-HR 3 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	12
MAXIMUM 1-HR AVERAGE:	2 PPB @ HOUR(S) VAR ON DAY(S) 31
MAXIMUM 24-HR AVERAGE:	0.3 PPB VAR-VARIOUS ON DAY(S) 31
IZS CALIBRATION TIME:	31 HRS OPERATIONAL TIME: 742 HRS
MONTHLY CALIBRATION TIME:	8 HRS AMD OPERATION UPTIME: 99.7 %
STANDARD DEVIATION:	0.17 MONTHLY AVERAGE: 0.02 PPB



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2009

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

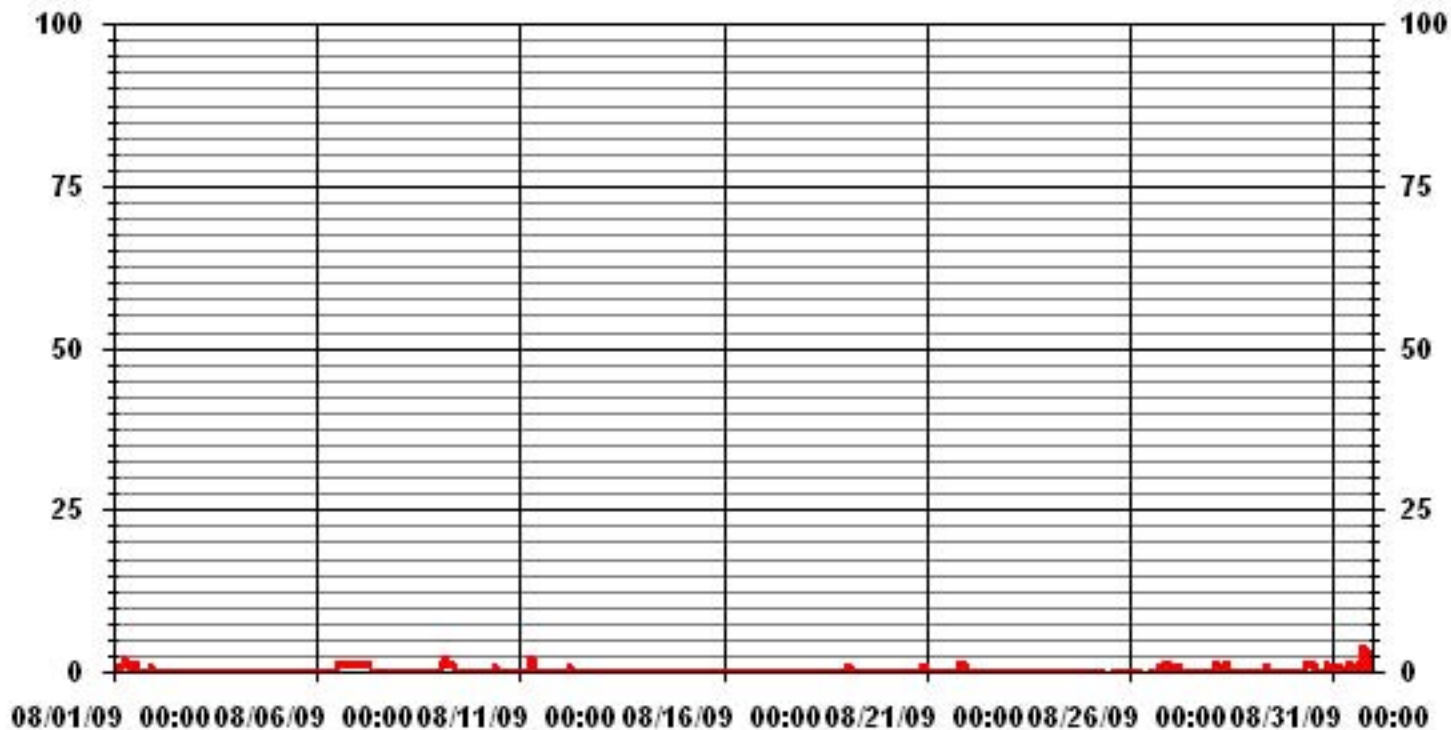
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	77					
MAXIMUM INSTANTANEOUS VALUE:	4	PPB	@ HOUR(S)	18	ON DAY(S)	31
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	10	HRS				
STANDARD DEVIATION:	0.41					

01 Hour Averages



— LICA30 H2S MAX PPB

LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	5.68	4.26	6.11	4.97	1.99	2.70	4.40	6.40	6.68	17.21	10.24	6.25	6.54	6.54	4.55	5.40	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.68	4.26	6.11	4.97	1.99	2.70	4.40	6.40	6.68	17.21	10.24	6.25	6.54	6.54	4.55	5.40	

Calm : .00 %

Total # Operational Hours : 703

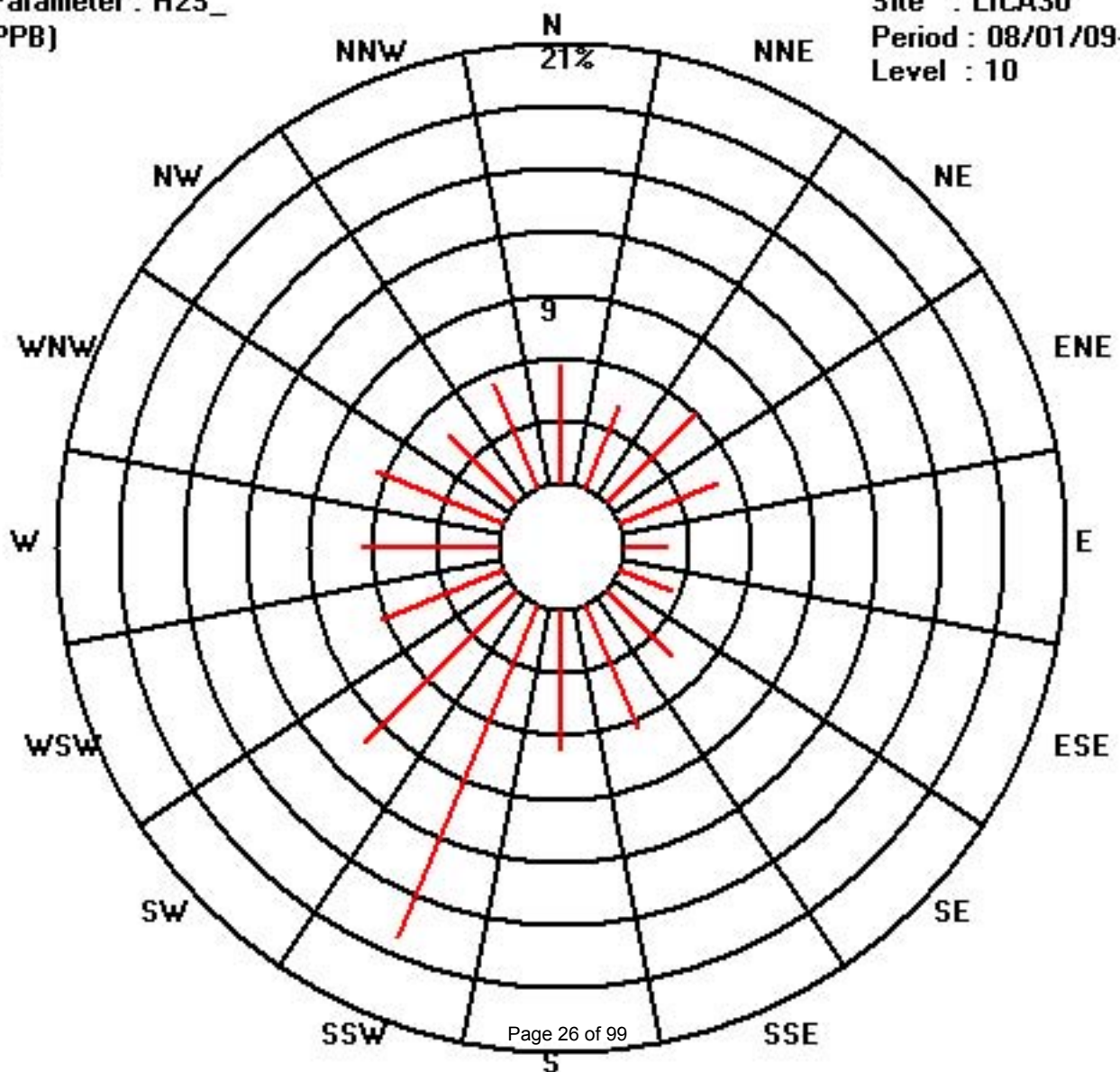
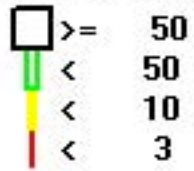
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	40	30	43	35	14	19	31	45	47	121	72	44	46	46	32	38	703
< 10																	
< 50																	
>= 50																	
Totals	40	30	43	35	14	19	31	45	47	121	72	44	46	46	32	38	

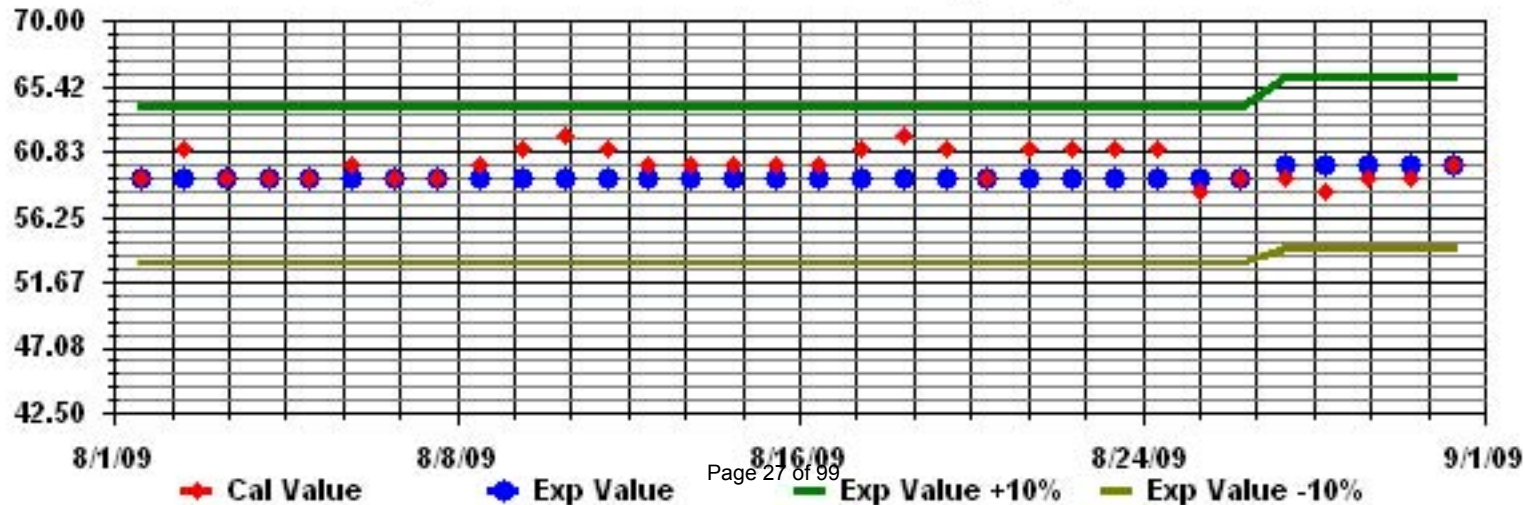
Calm : .00 %

Total # Operational Hours : 703

Class Limits (PPB)



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

AUGUST 2009

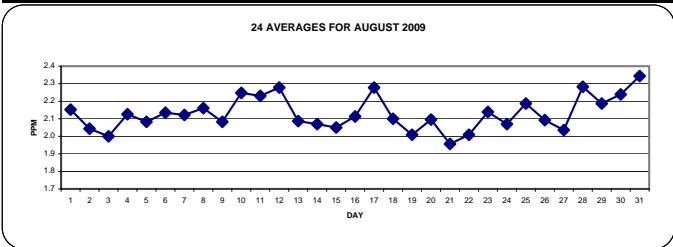
TOTAL HYDROCARBONS hourly averages in ppm

Table with columns: DAY, HOUR START, HOUR END, 24 hourly columns (0:00-23:00), DAILY MAX, 24-HOUR AVG, RDGS. Rows 1-31 for August 2009.

STATUS FLAG CODES

Legend table for status flags: S - OUT OF SERVICE, IZS - IZS - DAILY ZERO/SPAN CHECK, N - INVALID DATA, M - MAINTENANCE, D - INSTRUMENT DRIFT, P - POWER FAILURE, C - CALIBRATION, NA - NOT APPLICABLE

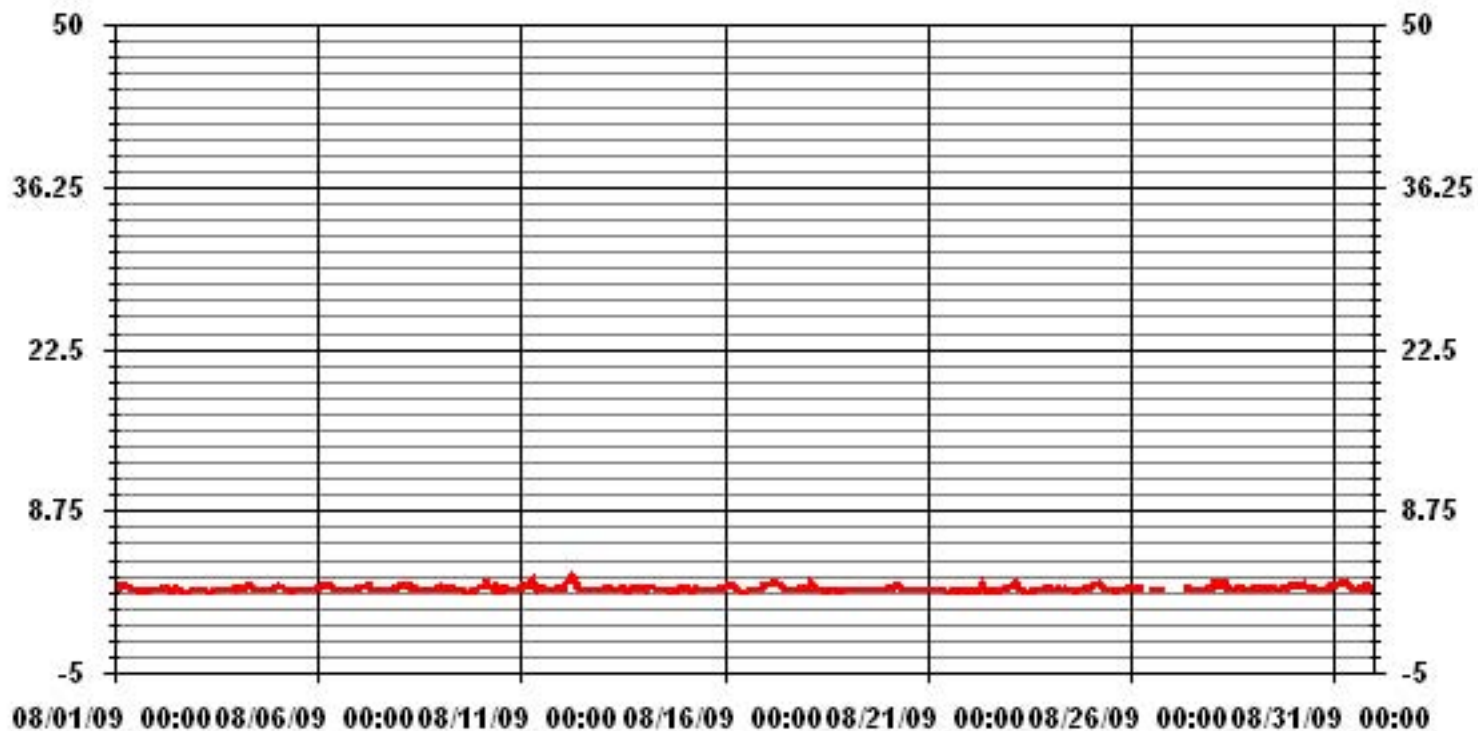
24 AVERAGES FOR AUGUST 2009



MONTHLY SUMMARY

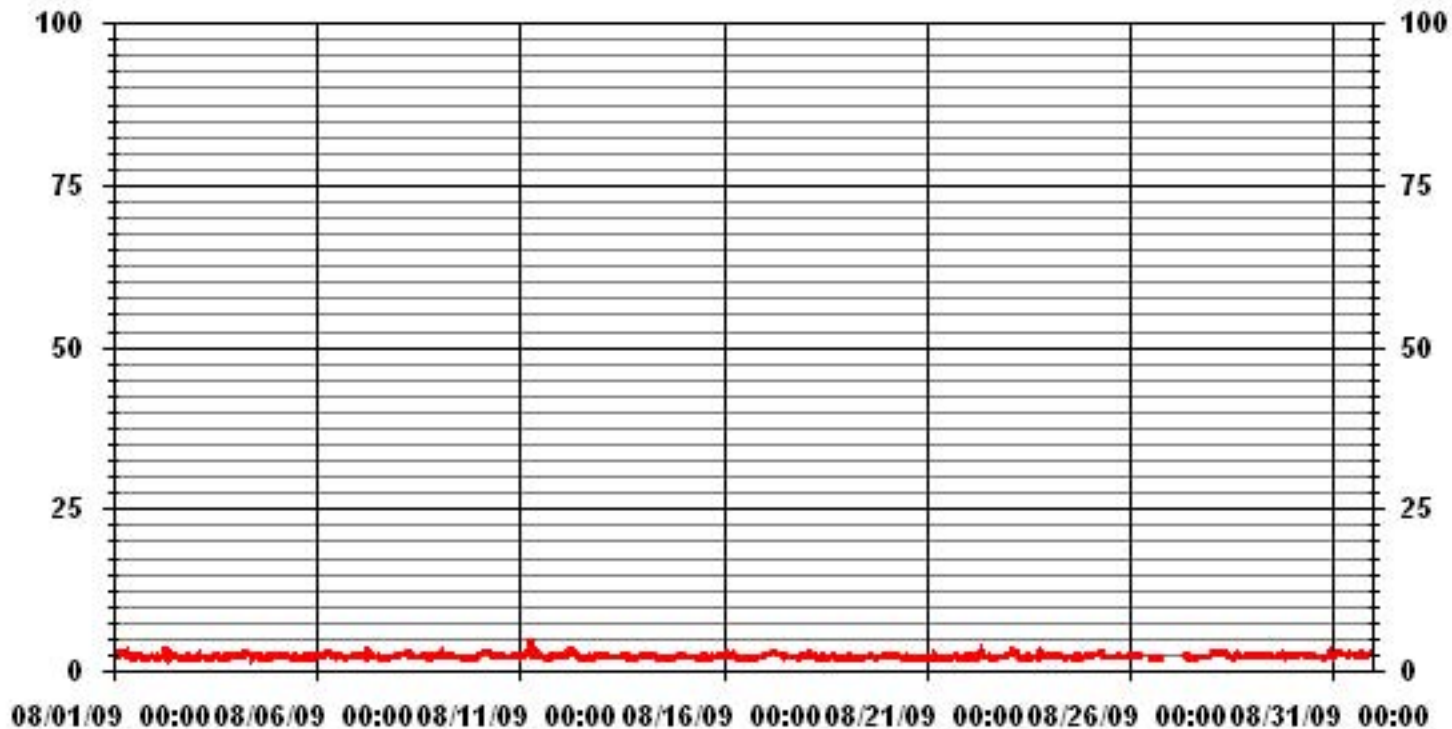
Summary table containing: NUMBER OF NON-ZERO READINGS: 693; MAXIMUM 1-HR AVERAGE: 3.2 PPM @ HOUR(S) 5 ON DAY(S) 12; MAXIMUM 24-HR AVERAGE: 2.3 PPM ON DAY(S) VAR VAR- VARIOUS; IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 730 HRS; MONTHLY CALIBRATION TIME: 5 HRS AMD OPERATION UPTIME: 98.1 %; STANDARD DEVIATION: 0.20 MONTHLY AVERAGE: 2.13 PPM

01 Hour Averages



— LICA30 THC PPM

01 Hour Averages



— LICA30 THCMAX PPM

LICA30
 THC / WDR Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	5.62	4.32	5.77	4.90	1.87	2.30	4.76	6.49	6.78	17.17	10.24	6.20	6.49	6.63	4.47	5.48	99.56
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.28	.14	.00	.00	.00	.00	.00	.43
< 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	5.62	4.32	5.77	4.90	1.87	2.30	4.76	6.49	6.78	17.46	10.38	6.20	6.49	6.63	4.47	5.48	

Calm : .00 %

Total # Operational Hours : 693

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	39	30	40	34	13	16	33	45	47	119	71	43	45	46	31	38	690
< 10.0										2	1						3
< 50.0																	
>= 50.0																	
Totals	39	30	40	34	13	16	33	45	47	121	72	43	45	46	31	38	

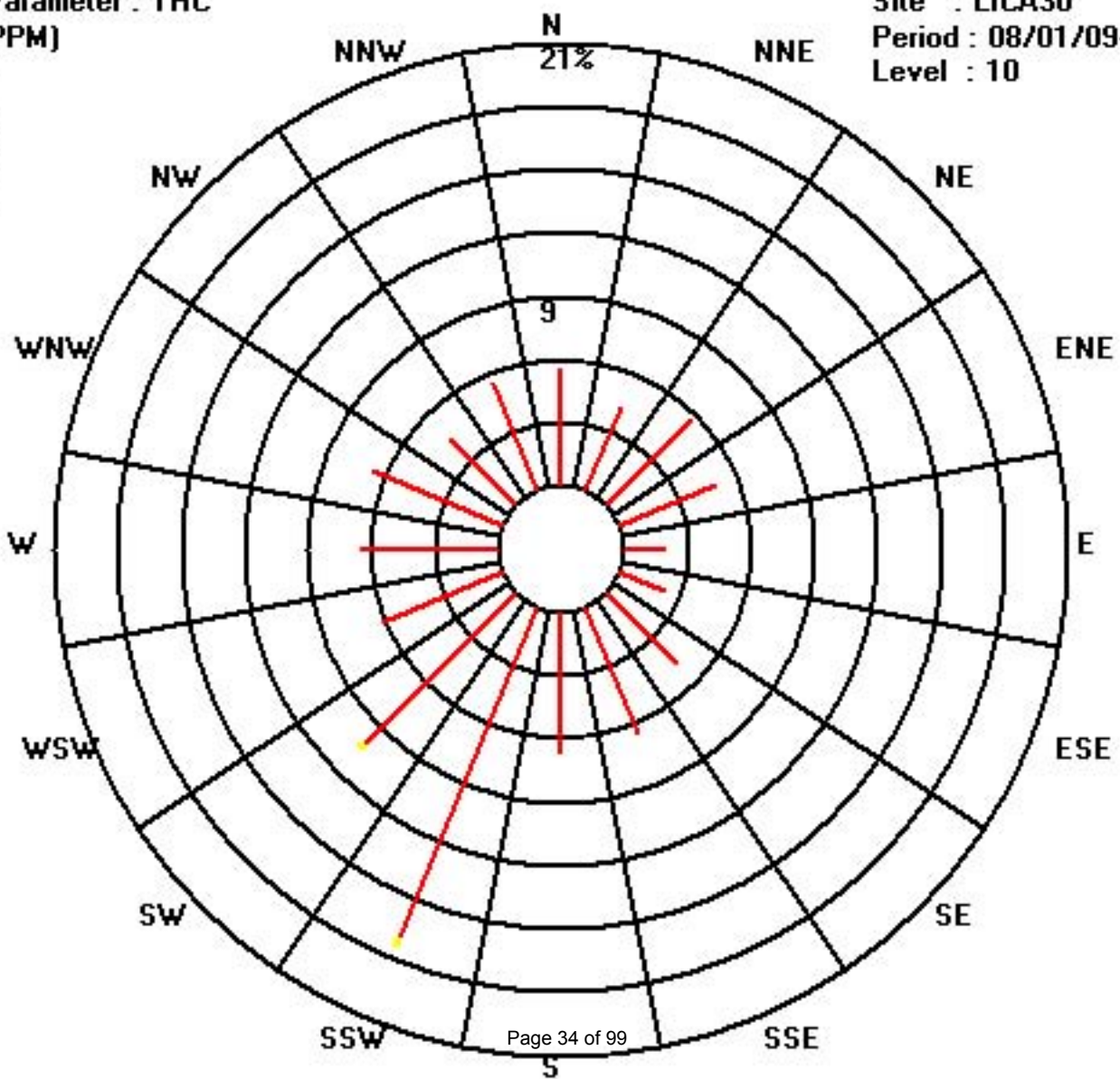
Calm : .00 %

Total # Operational Hours : 693

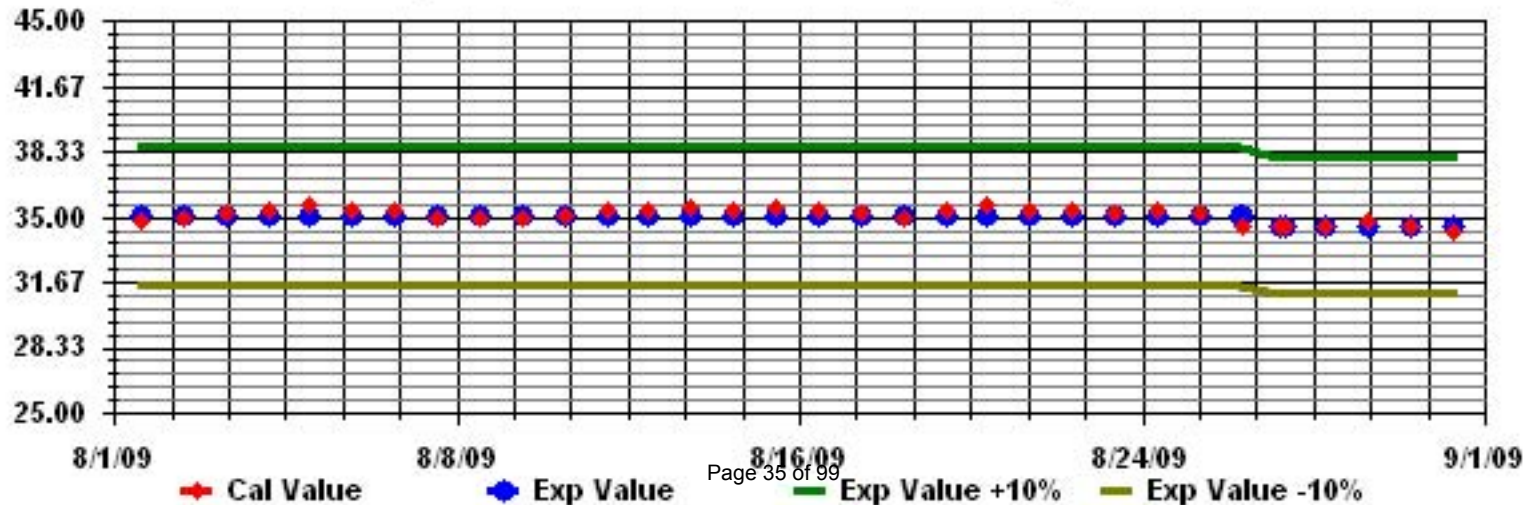
Class Limits (PPM)

Period : 08/01/09-08/31/09

Level : 10



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



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2009

NITROGEN DIOXIDE hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	4	3	4	3	1	2	3	3	2	3	2	1	2	2	IZS	2	1	1	1	1	1	2	5	2	5	2.2	24	
2	4	2	2	3	6	5	6	4	4	6	1	1	2	IZS	1	1	1	1	1	1	1	1	1	3	6	2.5	24	
3	3	6	3	4	5	5	2	1	0	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	6	1.4	24	
4	1	2	2	2	2	2	4	5	6	2	1	IZS	4	1	3	2	1	1	2	1	1	2	2	2	6	2.2	24	
5	3	3	3	1	1	2	0	1	0	0	IZS	1	1	1	0	0	0	0	0	1	0	0	0	0	3	0.8	24	
6	1	1	0	0	2	1	1	4	3	IZS	2	1	2	0	0	0	0	0	0	0	0	0	0	0	4	0.8	24	
7	0	0	0	0	0	0	1	3	IZS	3	4	2	2	1	2	1	0	0	1	1	3	3	2	2	4	1.3	24	
8	3	2	2	2	1	2	10	IZS	8	3	2	1	1	1	1	1	0	0	0	1	1	1	2	2	10	2.0	24	
9	5	9	5	2	3	5	IZS	5	3	3	0	0	0	2	1	0	0	0	1	2	2	4	3	3	9	2.5	24	
10	1	0	0	0	0	IZS	1	2	1	1	2	2	2	2	2	1	1	2	1	1	5	6	13	3	13	2.1	24	
11	0	2	3	2	IZS	8	8	7	7	3	6	5	5	2	1	1	0	0	0	0	0	0	1	0	8	2.7	24	
12	0	1	3	IZS	7	8	7	10	5	1	1	0	0	0	0	0	0	0	0	0	1	6	5	2	10	2.5	24	
13	4	2	IZS	3	0	0	1	0	0	0	2	1	1	2	2	0	1	0	0	0	0	0	0	0	4	0.8	24	
14	0	IZS	0	0	0	1	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0.2	24	
15	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.0	24
16	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	IZS	0	2	0.2	24	
17	0	0	0	0	0	0	0	6	6	5	2	2	2	2	1	1	1	0	0	1	1	IZS	1	1	6	1.4	24	
18	3	5	8	4	4	6	9	6	1	1	3	2	0	1	0	2	3	4	7	3	IZS	3	8	5	9	3.8	24	
19	0	2	8	6	0	0	0	0	0	0	0	1	1	2	3	0	2	3	3	IZS	1	0	3	2	8	1.6	24	
20	2	4	3	3	4	3	6	5	2	1	2	2	1	0	1	1	1	0	IZS	0	0	0	0	0	6	1.8	24	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	7	5	0	1	2	1	7	0.7	24	
22	0	1	2	4	1	0	8	10	6	5	2	1	1	0	0	0	IZS	0	0	0	1	0	1	2	10	2.0	24	
23	3	4	3	2	2	2	1	2	1	0	0	0	0	0	1	IZS	0	0	0	1	1	5	7	5	7	1.7	24	
24	9	4	0	0	1	1	5	4	1	0	0	0	0	0	IZS	0	1	0	0	0	0	0	0	0	9	1.1	24	
25	0	1	2	0	0	0	0	0	C	C	C	C	C	C	C	C	C	0	0	0	0	0	0	0	2	0.2	24	
26	0	0	0	0	0	0	0	1	0	0	1	0	IZS	0	0	0	0	0	0	0	0	0	0	2	2	0.2	24	
27	0	0	3	1	0	0	1	1	1	4	4	IZS	1	1	0	0	1	0	1	1	1	1	1	1	4	1.0	24	
28	5	4	3	1	1	2	5	4	7	7	IZS	2	2	1	1	2	1	1	1	1	1	1	1	0	7	2.3	24	
29	0	0	0	0	0	0	0	1	2	IZS	1	1	1	0	0	0	1	1	1	1	1	2	1	1	2	0.7	24	
30	1	1	1	1	1	2	2	2	IZS	2	2	1	1	2	1	1	1	1	1	1	0	1	1	1	2	1.2	24	
31	1	1	1	1	1	2	1	IZS	2	3	2	1	2	1	1	1	1	1	1	1	1	2	1	1	0	3	1.3	24
HOURLY MAX	9	9	8	6	7	8	10	10	8	7	6	5	5	2	3	2	3	4	7	5	5	6	13	5				
HOURLY AVG	1.8	2.0	2.0	1.5	1.4	2.0	2.8	3.0	2.5	1.9	1.5	1.0	1.2	0.9	0.8	0.6	0.7	0.5	1.0	0.7	0.9	1.3	2.0	1.3				

STATUS FLAG CODES

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

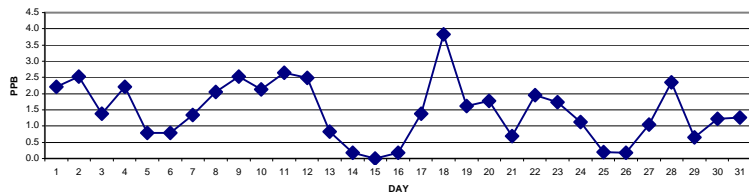
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	212	PPB	24-HR	106	PPB
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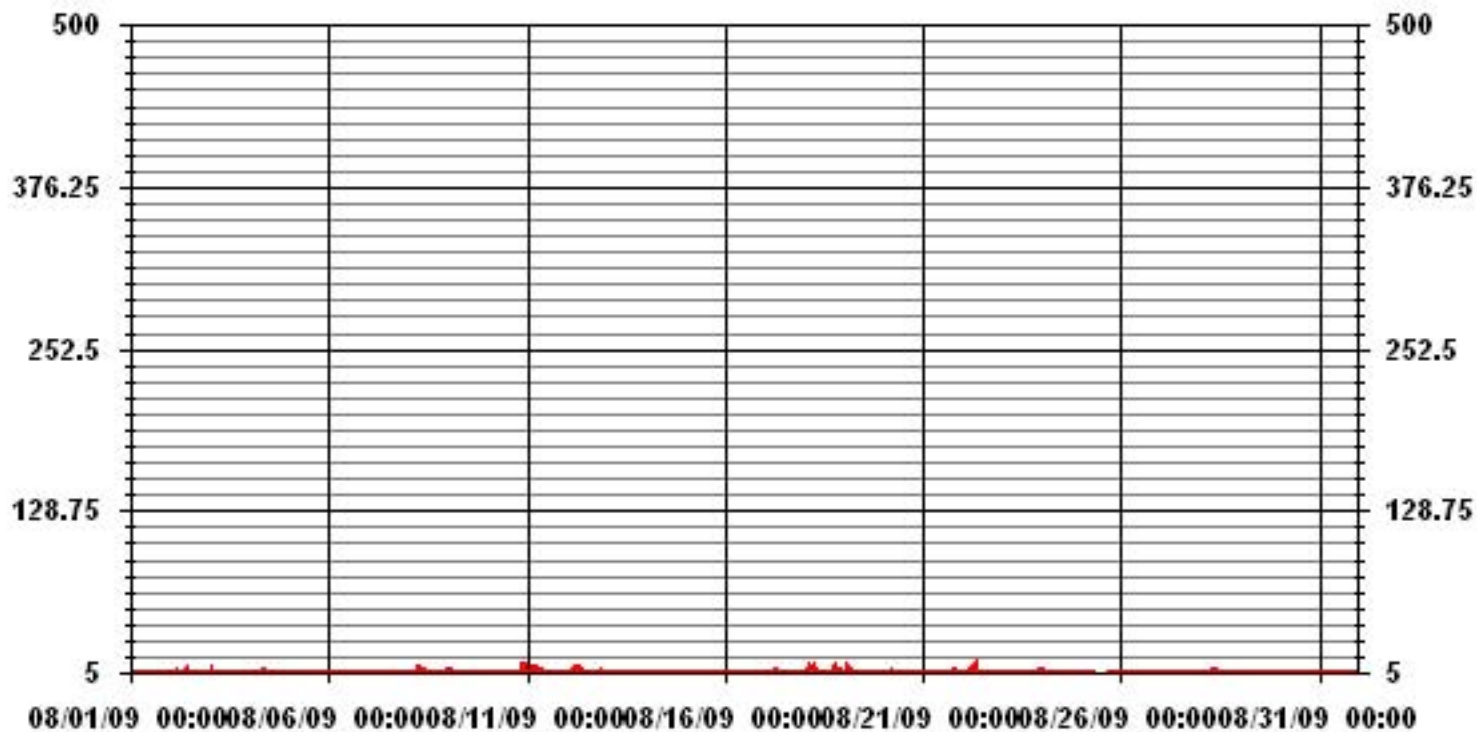
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	422		
MAXIMUM 1-HR AVERAGE:	13 PPB @ HOUR(S) 22 ON DAY(S) 10		
MAXIMUM 24-HR AVERAGE:	3.8 PPB ON DAY(S) 18		
IZS CALIBRATION TIME:	31 HRS	OPERATIONAL TIME:	744 HRS
MONTHLY CALIBRATION TIME:	9 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	1.96	MONTHLY AVERAGE:	1.48 PPB

24 HOUR AVERAGES FOR AUGUST 2009



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2009

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	7	6	6	5	3	3	4	4	3	7	2	4	3	4	IZS	4	3	4	1	1	1	3	12	4	12	4.1	24	
2	5	4	3	4	9	7	9	7	9	11	2	2	2	IZS	2	2	1	1	1	1	2	2	2	7	11	4.1	24	
3	4	9	9	6	7	6	3	1	1	1	2	1	IZS	0	0	0	0	0	1	1	0	1	0	0	9	2.3	24	
4	2	5	4	3	3	3	5	6	9	6	4	IZS	12	3	7	5	3	1	3	4	2	3	2	3	12	4.3	24	
5	6	5	3	3	2	5	1	2	4	1	IZS	2	3	3	6	1	0	1	1	1	1	1	1	1	6	2.3	24	
6	1	2	1	1	4	2	3	8	5	IZS	6	2	4	1	1	1	0	0	0	1	1	1	0	0	8	2.0	24	
7	0	0	0	0	0	1	2	5	IZS	6	77	3	4	3	4	7	1	1	1	2	6	5	4	3	77	5.9	24	
8	8	3	3	2	2	5	17	IZS	18	5	4	2	4	3	2	6	6	1	2	2	2	2	2	3	18	4.5	24	
9	8	11	7	3	5	6	IZS	9	7	7	2	2	3	3	3	1	1	1	3	3	3	6	5	5	11	4.5	24	
10	4	1	1	1	1	IZS	1	3	2	3	2	2	2	2	3	2	3	24	1	1	12	15	24	11	24	5.3	24	
11	3	3	4	4	IZS	28	20	18	10	8	11	8	7	4	2	12	2	1	0	1	1	1	1	1	28	6.5	24	
12	2	2	4	IZS	9	10	10	14	7	3	2	1	1	1	1	1	0	0	1	8	16	10	5	16	4.7	24		
13	10	4	IZS	6	0	1	1	1	1	1	6	3	6	5	8	0	3	5	5	0	1	0	0	0	10	2.9	24	
14	0	IZS	0	1	1	2	1	1	5	3	1	0	4	4	1	1	0	0	0	0	0	0	1	0	5	1.1	24	
15	IZS	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0.1	24
16	0	0	0	0	1	1	4	2	0	1	1	0	0	1	0	0	0	0	0	1	1	1	1	IZS	1	4	0.7	24
17	0	0	0	0	1	1	2	9	9	9	4	7	4	3	3	2	2	1	1	2	4	IZS	4	2	9	3.0	24	
18	4	6	10	6	6	9	15	14	3	3	9	12	0	4	4	4	10	9	11	14	IZS	9	15	12	15	8.2	24	
19	2	4	12	12	2	2	1	2	1	1	2	7	6	7	11	3	10	7	10	IZS	3	2	6	4	12	5.1	24	
20	3	6	4	5	6	4	12	7	5	4	5	10	4	2	4	3	2	1	IZS	1	0	1	0	0	12	3.9	24	
21	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	IZS	12	10	1	5	5	1	12	2.1	24		
22	1	2	6	11	4	1	18	21	10	9	5	6	7	0	0	0	IZS	0	1	1	1	1	1	5	21	4.8	24	
23	5	5	4	3	3	5	4	3	2	1	0	0	0	4	5	IZS	0	0	8	8	2	8	12	11	12	4.0	24	
24	17	14	2	2	3	3	17	7	4	1	0	1	1	8	IZS	0	6	0	0	1	0	0	0	0	17	3.8	24	
25	1	2	3	2	0	2	8	1	C	C	C	C	C	C	C	C	C	2	0	0	0	0	0	0	8	1.4	24	
26	0	0	0	0	0	0	2	13	1	1	2	2	IZS	2	1	1	0	1	1	0	1	0	1	9	13	1.7	24	
27	2	2	7	1	1	1	2	2	1	9	8	IZS	5	5	1	1	3	1	1	2	2	1	1	4	9	2.7	24	
28	6	5	4	3	1	5	50	8	13	14	IZS	3	3	2	3	5	2	2	2	2	1	2	1	1	50	6.0	24	
29	0	0	0	1	0	0	3	1	3	IZS	2	2	2	1	1	1	1	1	1	1	2	2	2	2	3	1.3	24	
30	2	2	2	2	3	3	3	3	IZS	4	2	2	2	5	4	5	1	1	1	1	1	2	2	2	5	2.4	24	
31	2	2	2	1	2	5	4	IZS	3	4	8	2	2	2	2	2	2	1	1	2	2	2	2	1	8	2.4	24	
HOURLY MAX	17	14	12	12	9	28	50	21	18	14	77	12	12	8	11	12	10	24	12	14	12	16	24	12				
HOURLY AVG	3.5	3.5	3.4	3.0	2.7	4.1	7.4	6.0	4.9	4.4	6.1	3.1	3.3	2.9	2.9	2.4	2.2	2.2	2.3	2.2	2.0	3.1	3.8	3.3				

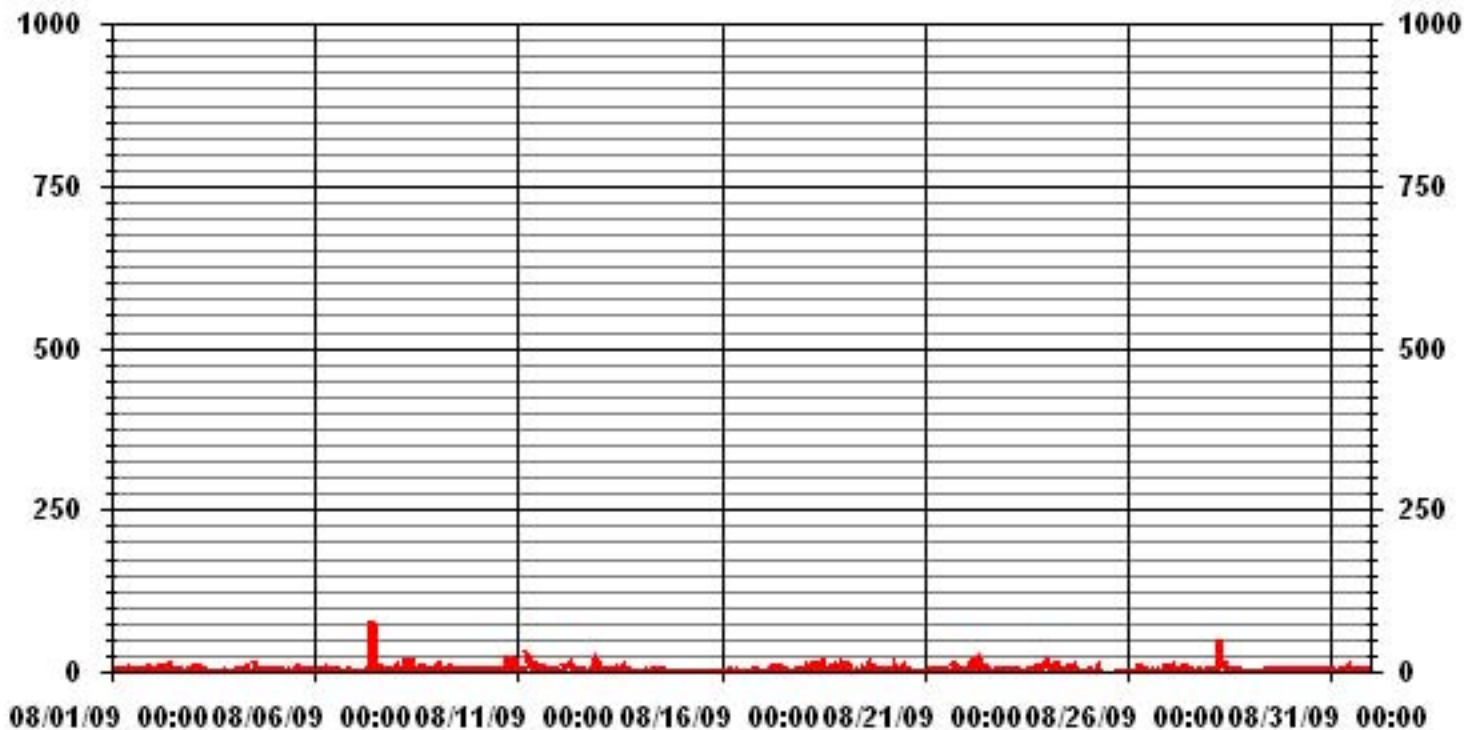
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	585					
MAXIMUM INSTANTANEOUS VALUE:	77	PPB	@ HOUR(S)	10	ON DAY(S)	7
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION	5.05					

01 Hour Averages



— LICA30 NO2MAX PPB

LICA30
 NO2_ / WDR Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	5.68	4.40	6.39	5.11	1.84	2.41	4.40	6.39	6.67	17.18	10.22	6.25	6.53	6.53	4.54	5.39	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.68	4.40	6.39	5.11	1.84	2.41	4.40	6.39	6.67	17.18	10.22	6.25	6.53	6.53	4.54	5.39	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	40	31	45	36	13	17	31	45	47	121	72	44	46	46	32	38	704
< 110																	
< 210																	
>= 210																	
Totals	40	31	45	36	13	17	31	45	47	121	72	44	46	46	32	38	

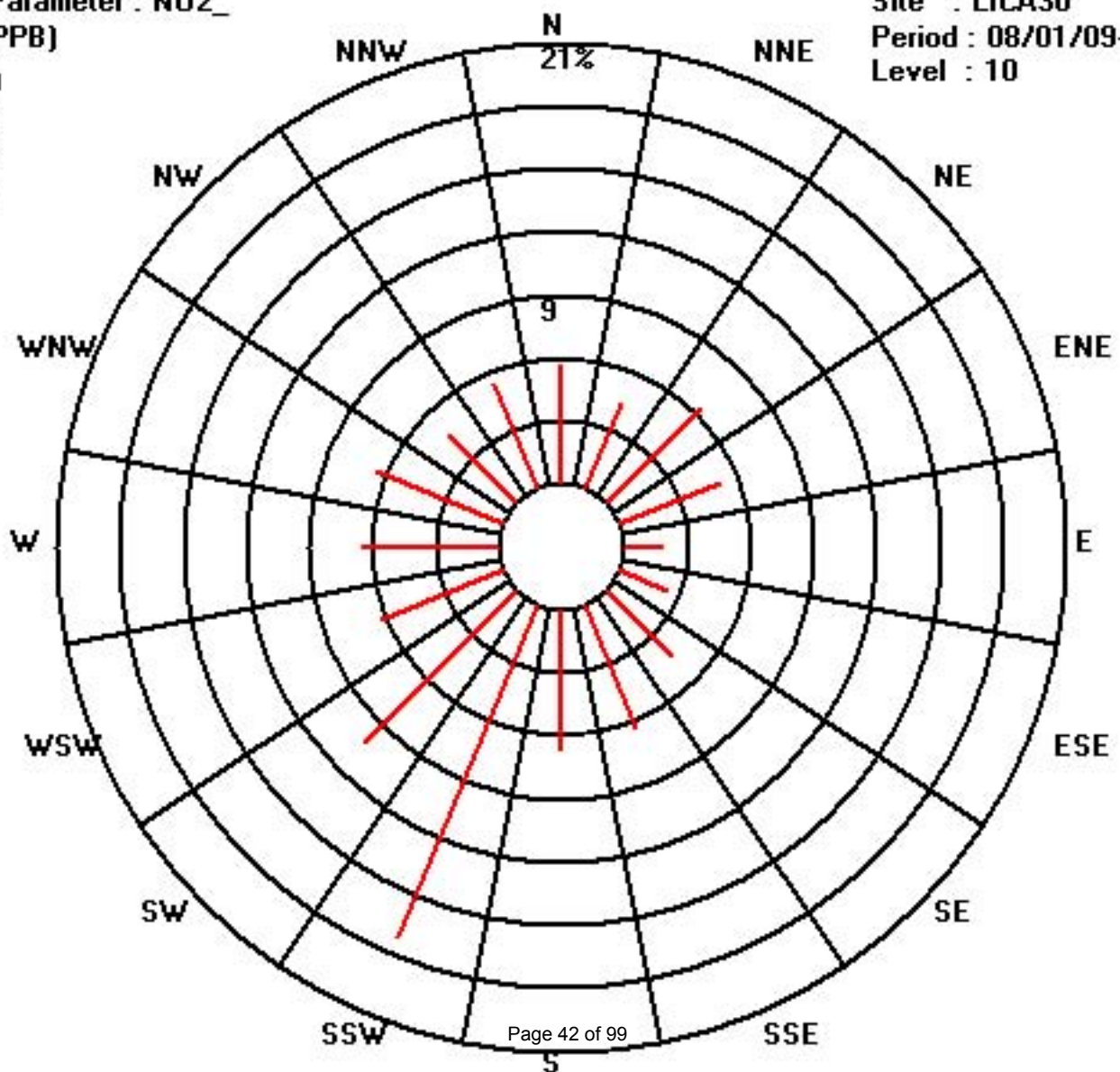
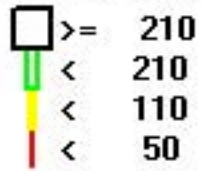
Calm : .00 %

Total # Operational Hours : 704

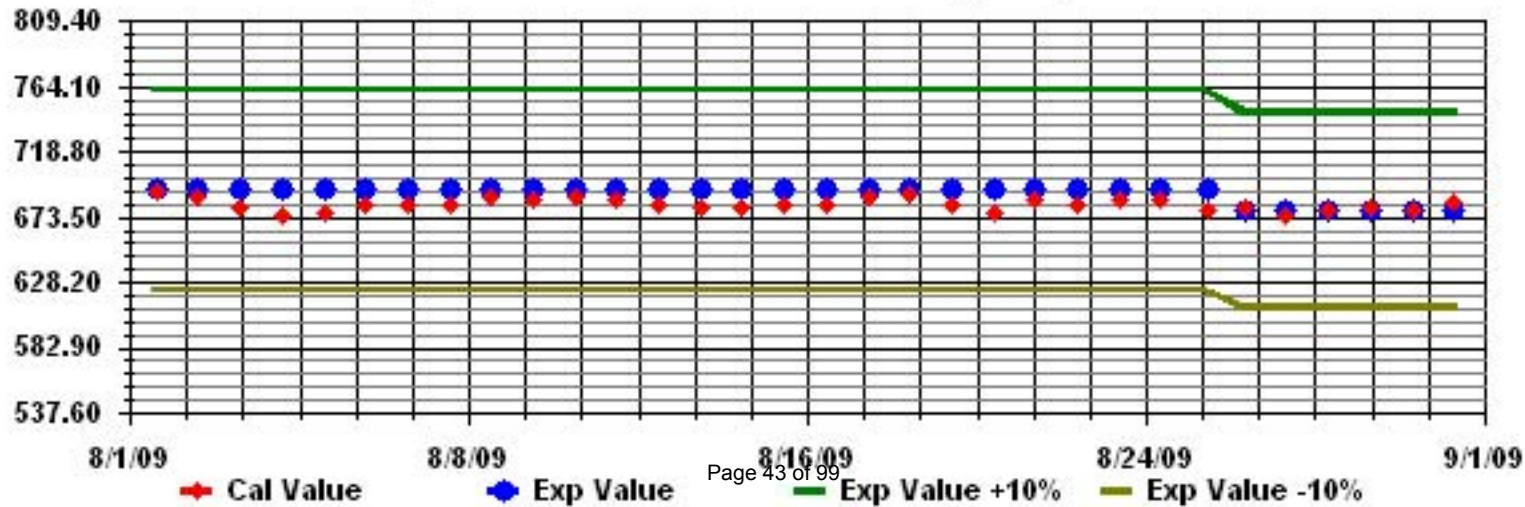
Class Limits (PPB)

Period : 08/01/09-08/31/09

Level : 10



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



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOICATION - MASKWA

AUGUST 2009

NITRIC OXIDE hourly averages in ppb

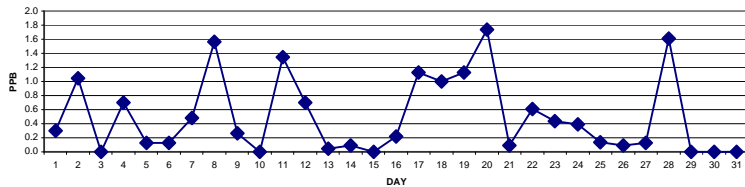
MST

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	1	0	0	0	1	0	0	0	0	0	0	0	0	0	IZS	1	0	1	0	0	0	1	1	1	1	1	0.3	24
2	1	1	1	1	1	2	4	3	3	4	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	4	1.0	24
3	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
4	0	0	0	0	0	0	0	3	7	1	0	0	IZS	3	0	1	1	0	0	0	0	0	0	0	0	7	0.7	24
5	0	0	0	0	0	2	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24	
6	0	0	0	0	0	0	0	3	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.1	24	
7	0	0	0	0	0	0	1	2	IZS	1	1	1	1	1	0	0	0	0	0	0	1	0	1	1	2	0.5	24	
8	2	1	1	1	1	4	18	IZS	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	1.6	24	
9	0	0	0	0	0	0	IZS	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24	
10	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
11	0	0	0	0	IZS	5	7	7	5	0	3	2	2	0	0	0	0	0	0	0	0	0	0	0	7	1.3	24	
12	0	0	0	IZS	0	1	2	8	3	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	8	0.7	24	
13	0	0	IZS	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
14	0	IZS	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
15	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.0	24
16	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.2	24	
17	0	0	0	0	0	1	4	12	5	3	1	0	0	0	0	0	0	0	0	0	0	0	IZS	0	12	1.1	24	
18	0	0	0	0	0	0	1	2	0	0	2	1	0	1	0	1	2	2	3	1	IZS	0	4	3	4	1.0	24	
19	0	1	8	6	0	0	0	0	0	0	0	1	1	2	3	0	1	1	2	IZS	0	0	0	0	8	1.1	24	
20	0	0	0	0	2	4	21	10	2	0	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	21	1.7	24	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	1	1	0.1	24	
22	1	1	1	2	0	0	1	2	1	1	0	0	0	0	0	0	IZS	0	0	0	1	1	1	1	2	0.6	24	
23	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	1	1	0	1	0.4	24	
24	0	0	0	0	0	0	3	5	1	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	5	0.4	24	
25	0	0	0	0	0	0	2	0	C	C	C	C	C	C	C	C	C	0	0	0	0	0	0	0	2	0.1	24	
26	0	0	0	0	0	0	0	1	0	0	1	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0.1	24	
27	0	0	0	0	0	0	0	0	0	2	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24	
28	1	1	1	1	1	2	14	9	5	2	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	14	1.6	24	
29	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
30	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
31	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
HOURLY MAX	2	1	8	6	2	5	21	12	7	4	3	2	3	2	3	1	2	2	3	1	1	2	4	3				
HOURLY AVG	0.2	0.2	0.4	0.4	0.2	0.8	2.8	2.4	1.5	0.6	0.4	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.1	0.2	0.3	0.2				

STATUS FLAG CODES

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

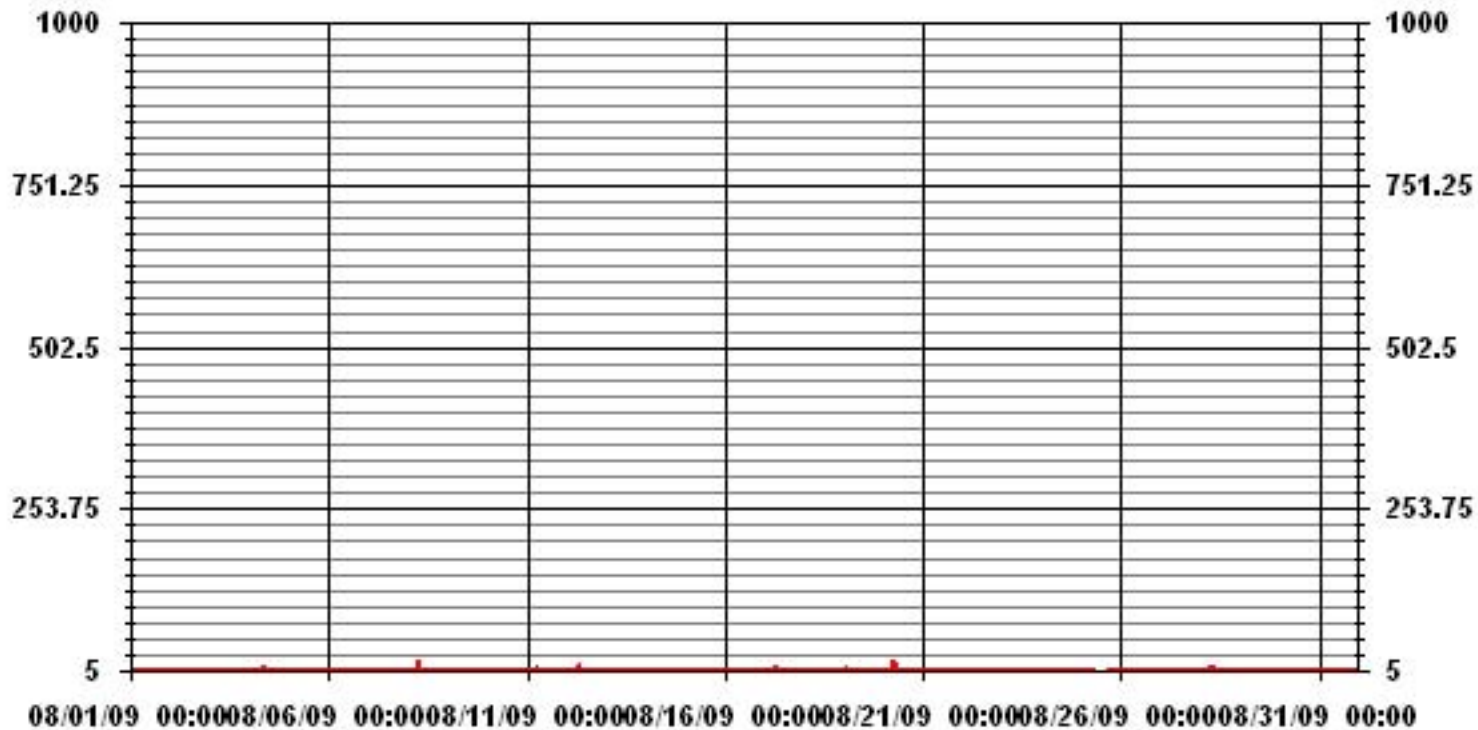
24 HOUR AVERAGES FOR AUGUST 2009



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	143
MAXIMUM 1-HR AVERAGE:	21 PPB @ HOUR(S) 6 ON DAY(S) 20
MAXIMUM 24-HR AVERAGE:	1.7 PPB ON DAY(S) 20
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	9 HRS
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	1.69
MONTHLY AVERAGE:	0.50 PPB

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2009

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	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	0	0	0	1	1	1	1	2	0	1	0	0	0	2	IZS	2	1	1	1	1	1	1	2	1	2	2	0.9	24
2	1	1	1	1	2	3	9	6	7	8	1	1	1	IZS	1	0	0	0	0	0	0	0	0	0	0	9	1.9	24
3	0	2	2	0	0	1	1	1	0	0	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
4	0	0	0	0	0	0	3	5	12	5	2	IZS	13	1	4	3	1	0	0	0	0	0	0	0	13	2.1	24	
5	0	0	0	0	0	11	1	0	1	0	IZS	1	2	2	3	0	0	0	1	1	1	0	0	0	11	1.0	24	
6	0	0	0	0	0	0	2	9	2	IZS	2	1	1	0	0	0	0	0	0	0	0	0	0	0	9	0.7	24	
7	0	0	0	0	0	1	2	5	IZS	4	20	2	2	1	2	2	0	0	0	1	1	1	1	1	20	2.0	24	
8	10	1	1	1	1	12	42	IZS	18	3	1	1	2	1	1	3	3	0	0	0	0	0	0	0	42	4.4	24	
9	0	0	0	0	0	1	IZS	5	5	7	0	0	1	1	1	0	0	0	0	0	0	0	0	0	7	0.9	24	
10	0	0	0	0	0	IZS	1	1	0	0	0	0	0	0	0	0	0	16	0	0	0	0	3	0	16	0.9	24	
11	0	0	0	0	IZS	27	33	22	9	3	6	3	3	2	1	7	0	0	0	0	0	0	0	0	33	5.0	24	
12	0	0	0	IZS	2	3	4	13	8	4	1	1	1	1	1	0	0	0	0	0	1	11	1	0	13	2.3	24	
13	1	0	IZS	1	0	0	0	0	0	0	3	1	4	3	4	0	1	2	2	0	0	0	0	0	4	1.0	24	
14	0	IZS	0	0	0	7	3	1	6	2	0	0	2	1	0	0	0	0	0	0	0	0	0	0	7	1.0	24	
15	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0.1	24	
16	0	0	0	0	0	1	15	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	15	0.8	24
17	0	0	0	0	0	3	10	22	8	7	3	3	1	1	1	1	0	0	0	0	0	IZS	0	0	22	2.7	24	
18	0	0	0	0	0	2	4	4	1	1	7	9	0	3	2	2	7	8	6	8	IZS	2	16	13	16	4.1	24	
19	1	2	17	16	1	1	0	2	1	0	1	11	5	8	12	2	11	5	10	IZS	0	0	1	0	17	4.7	24	
20	0	0	0	4	4	10	49	15	8	2	2	4	2	1	2	1	0	0	IZS	0	0	0	0	0	49	4.5	24	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	IZS	3	2	0	1	1	1	3	0.4	24	
22	1	1	4	4	1	0	8	8	4	4	1	3	4	0	0	0	IZS	0	1	1	1	1	1	1	8	2.1	24	
23	1	1	1	1	2	4	2	2	1	0	0	0	0	1	1	IZS	0	1	1	1	0	3	5	2	5	1.3	24	
24	2	0	0	0	0	0	17	10	3	1	0	0	0	6	IZS	0	4	0	0	0	0	0	0	0	17	1.9	24	
25	0	0	0	0	0	3	30	0	C	C	C	C	C	C	C	C	C	1	0	0	0	0	0	0	30	2.3	24	
26	0	0	0	0	0	0	3	41	0	1	2	1	IZS	1	1	0	0	0	0	0	0	0	0	1	41	2.2	24	
27	0	0	0	0	0	0	0	2	0	7	4	IZS	2	1	1	1	1	1	1	1	1	1	1	1	7	1.1	24	
28	1	1	1	1	1	10	127	14	11	7	IZS	1	1	1	1	1	1	1	1	1	1	1	1	0	127	8.1	24	
29	0	0	0	0	0	0	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
30	0	0	0	0	0	0	0	0	IZS	1	0	0	0	1	1	13	1	1	1	1	0	0	0	0	13	0.8	24	
31	0	0	0	0	0	0	0	IZS	1	1	4	0	0	0	0	0	0	0	0	0	1	1	1	0	4	0.4	24	
HOURLY MAX	10	2	17	16	4	27	127	41	18	8	20	11	13	8	12	13	11	16	10	8	1	11	16	13				
HOURLY AVG	0.6	0.3	0.9	1.0	0.5	3.4	12.3	6.7	3.8	2.5	2.2	1.5	1.7	1.3	1.5	1.3	1.1	1.2	0.9	0.7	0.3	0.8	1.1	0.7				

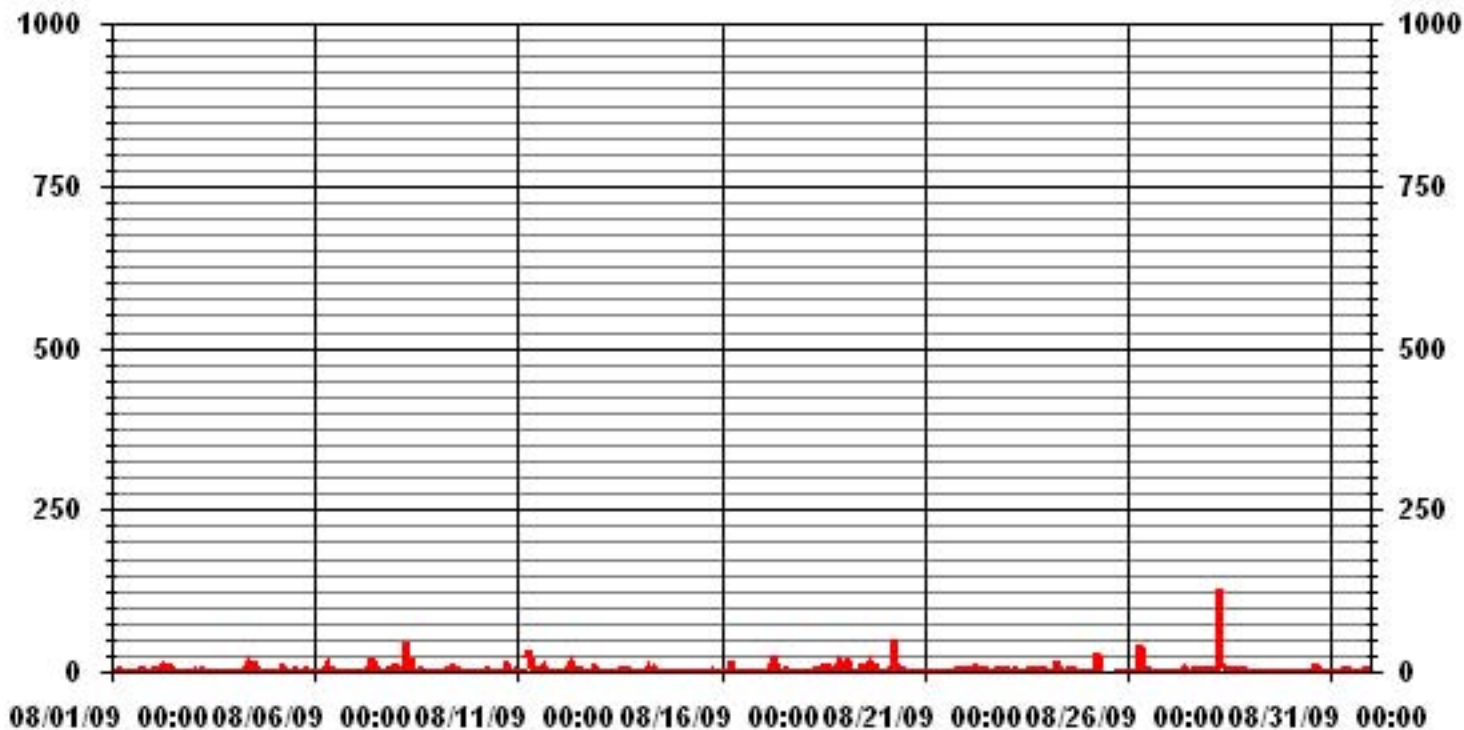
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	321					
MAXIMUM INSTANTANEOUS VALUE:	127	PPB	@ HOUR(S)	6	ON DAY(S)	28
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION	6.58					

01 Hour Averages



LICA30
 NO_ / WDR Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	5.68	4.40	6.39	5.11	1.84	2.41	4.40	6.39	6.67	17.18	10.22	6.25	6.53	6.53	4.54	5.39	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.68	4.40	6.39	5.11	1.84	2.41	4.40	6.39	6.67	17.18	10.22	6.25	6.53	6.53	4.54	5.39	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	40	31	45	36	13	17	31	45	47	121	72	44	46	46	32	38	704
< 110																	
< 210																	
>= 210																	
Totals	40	31	45	36	13	17	31	45	47	121	72	44	46	46	32	38	

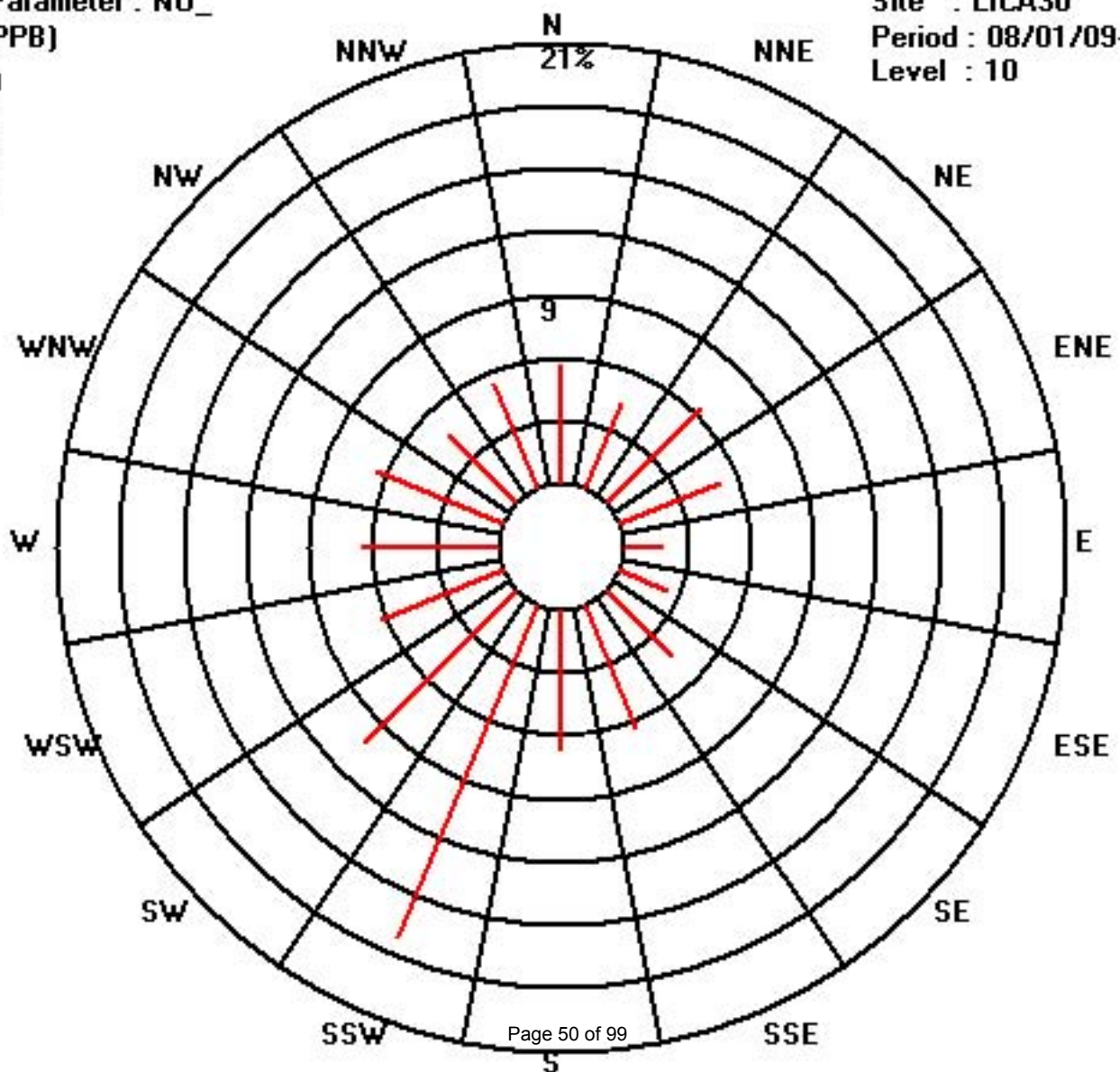
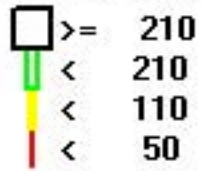
Calm : .00 %

Total # Operational Hours : 704

Class Limits (PPB)

Period : 08/01/09-08/31/09

Level : 10



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2009

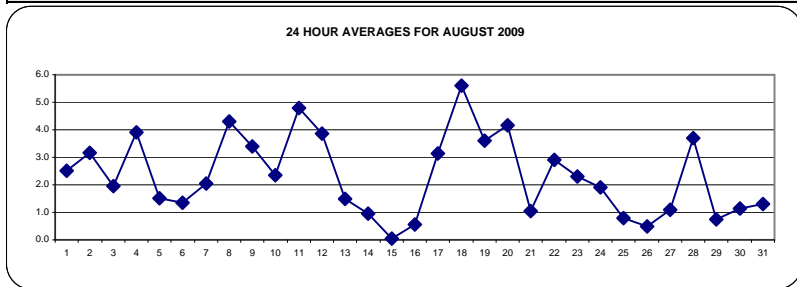
OXIDES OF NITROGEN hourly averages in ppb

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	24:00	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	4	4	4	3	2	2	3	4	3	4	2	2	2	2	IZS	2	1	2	1	1	1	2	5	2	5	2.5	24	
2	4	3	2	3	7	6	9	6	6	9	1	1	2	IZS	2	1	1	1	1	1	1	1	1	4	9	3.2	24	
3	3	6	4	4	5	5	2	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	6	2.0	24	
4	2	4	4	3	4	3	7	11	15	5	3	IZS	7	1	4	4	1	1	2	2	1	2	2	2	15	3.9	24	
5	3	3	3	2	2	5	2	2	1	0	IZS	2	2	2	1	0	0	0	1	1	1	1	1	0	5	1.5	24	
6	1	1	1	1	2	2	2	8	5	IZS	3	1	2	1	1	0	0	0	0	0	0	0	0	0	8	1.3	24	
7	0	0	0	0	0	0	3	6	IZS	5	6	3	3	2	2	2	0	0	1	1	3	4	3	3	6	2.0	24	
8	4	2	2	2	1	6	27	IZS	16	6	4	3	2	3	2	3	2	1	1	2	2	2	3	3	27	4.3	24	
9	6	10	6	3	4	6	IZS	9	6	5	1	0	1	3	1	0	0	0	1	2	2	5	4	3	10	3.4	24	
10	1	0	0	0	0	IZS	1	2	2	2	2	2	2	2	2	1	1	3	1	1	5	6	14	4	14	2.3	24	
11	1	2	4	3	IZS	14	17	16	14	4	10	8	7	4	2	1	1	0	0	0	0	0	1	1	17	4.8	24	
12	1	1	3	IZS	8	10	11	19	10	3	1	1	1	1	0	0	0	0	0	0	1	9	6	3	19	3.9	24	
13	5	2	IZS	3	0	1	1	1	1	1	4	2	3	3	3	0	2	1	1	0	0	0	0	0	5	1.5	24	
14	0	IZS	0	1	1	5	3	1	5	1	1	0	1	2	1	0	0	0	0	0	0	0	0	0	5	1.0	24	
15	IZS	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0.0	24
16	0	0	0	0	0	1	8	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	IZS	0	8	0.6	24	
17	0	0	0	0	0	2	5	19	12	9	4	3	3	2	2	1	1	1	1	2	2	IZS	2	1	19	3.1	24	
18	3	6	8	5	5	7	12	9	1	2	5	3	0	3	1	3	6	7	11	5	IZS	4	14	9	14	5.6	24	
19	1	3	16	13	1	1	0	1	1	1	1	3	3	5	7	1	4	5	6	IZS	2	1	4	3	16	3.6	24	
20	2	5	3	4	8	8	28	16	4	3	3	3	2	1	2	2	1	1	IZS	0	0	0	0	0	28	4.2	24	
21	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	IZS	9	6	1	1	2	1	9	1.0	24	
22	1	1	2	5	2	1	11	14	9	7	3	3	2	0	0	0	IZS	0	0	1	1	1	1	2	14	2.9	24	
23	4	4	3	2	3	3	2	3	1	0	0	0	0	1	1	IZS	0	0	1	1	1	8	9	6	9	2.3	24	
24	10	4	0	0	1	2	9	10	3	1	1	0	0	1	IZS	0	2	0	0	0	0	0	0	0	10	1.9	24	
25	1	2	2	1	0	1	4	1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	0	4	0.8	24
26	0	0	0	0	0	0	0	3	1	1	2	1	IZS	1	0	0	0	0	0	0	0	0	0	2	3	0.5	24	
27	0	0	3	1	0	0	1	1	1	7	5	IZS	1	2	0	0	0	0	0	1	1	0	0	1	7	1.1	24	
28	5	4	3	1	1	3	18	12	13	11	IZS	2	2	1	1	1	1	1	1	1	1	1	1	0	18	3.7	24	
29	0	0	0	0	0	0	1	1	2	IZS	1	2	1	1	1	0	1	1	1	0	0	2	1	1	2	0.7	24	
30	1	1	1	1	1	2	2	2	IZS	3	2	1	1	2	1	1	0	0	0	0	1	1	1	1	3	1.1	24	
31	1	1	1	1	0	2	2	IZS	3	4	3	1	2	1	1	1	1	1	1	1	1	1	0	0	4	1.3	24	
HOURLY MAX	10	10	16	13	8	14	28	19	16	11	10	8	7	5	7	4	6	7	11	6	5	9	14	9				
HOURLY AVG	2.1	2.3	2.5	2.1	1.9	3.3	6.4	6.3	4.9	3.4	2.5	1.7	1.9	1.7	1.4	0.9	0.9	0.9	1.4	1.0	1.0	1.8	2.5	1.8				

STATUS FLAG CODES

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

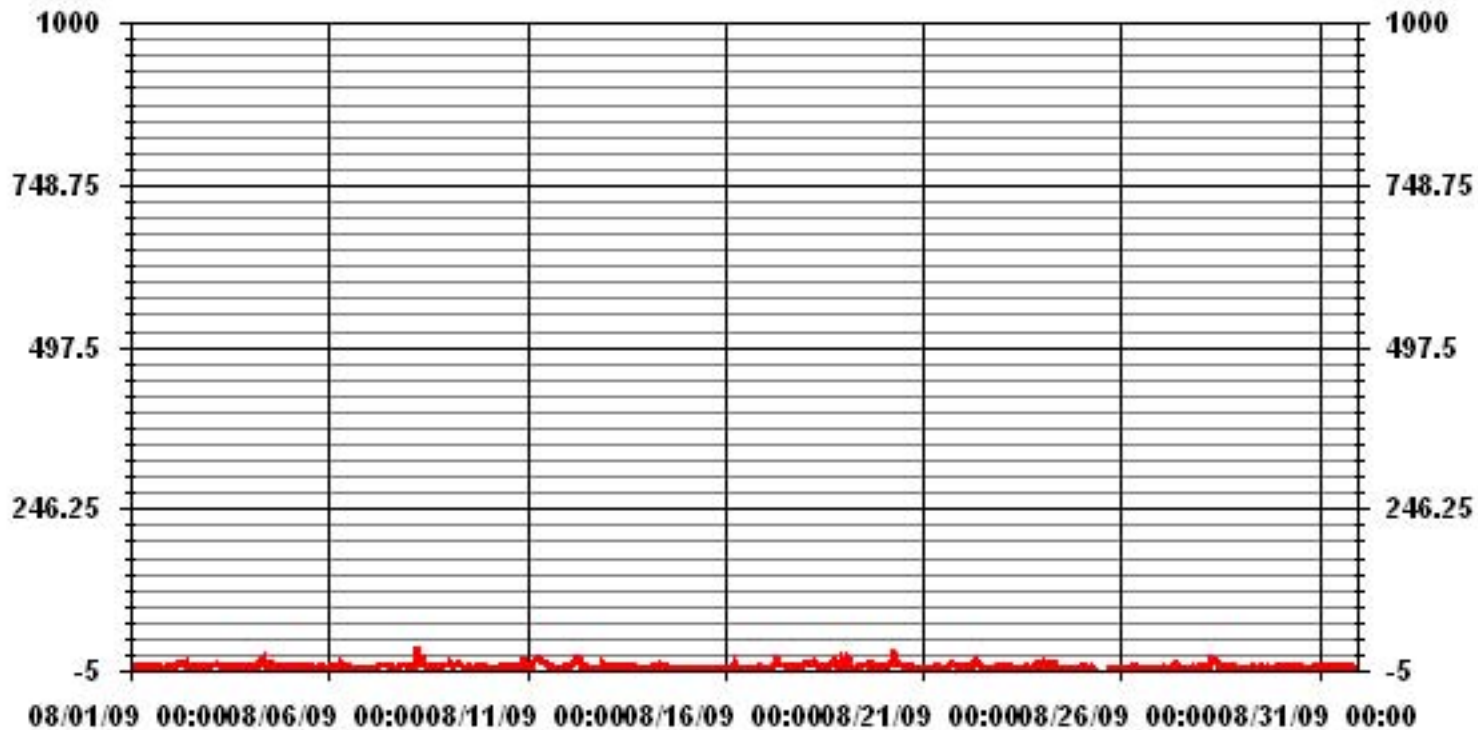
24 HOUR AVERAGES FOR AUGUST 2009



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	505
MAXIMUM 1-HR AVERAGE:	28 PPB @ HOUR(S) 6 ON DAY(S) 20
MAXIMUM 24-HR AVERAGE:	5.6 PPB ON DAY(S) 18
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	9 HRS
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	3.38
MONTHLY AVERAGE:	2.35 PPB

01 Hour Averages



— LICA30 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2009

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	7	6	6	5	3	3	5	6	5	9	3	5	4	6	IZS	6	3	5	1	1	1	4	13	4	13	4.8	24	
2	5	4	3	4	10	8	16	12	15	17	2	2	2	IZS	2	2	2	2	2	1	2	2	2	7	17	5.4	24	
3	4	11	11	7	7	7	4	2	1	1	3	1	IZS	1	1	1	1	1	2	2	1	2	2	2	11	3.3	24	
4	3	7	6	4	5	5	11	13	22	13	8	IZS	25	4	11	8	5	2	4	4	2	3	3	3	25	7.4	24	
5	6	5	4	3	3	18	3	4	7	2	IZS	3	6	4	10	1	1	1	1	2	1	1	1	1	18	3.8	24	
6	2	2	2	1	4	3	6	17	7	IZS	9	3	5	1	1	1	1	1	1	1	1	1	1	1	17	3.1	24	
7	0	0	1	1	1	3	4	10	IZS	11	89	5	6	4	7	10	1	1	2	3	7	5	4	3	89	7.7	24	
8	17	3	3	2	2	17	54	IZS	36	9	6	4	7	6	4	11	10	2	3	3	3	3	3	4	54	9.2	24	
9	9	13	9	4	6	8	IZS	15	11	14	4	3	4	4	5	1	2	1	4	3	3	6	5	4	15	6.0	24	
10	4	1	1	1	1	IZS	2	4	3	3	3	3	2	3	4	3	4	40	1	2	12	16	29	12	40	6.7	24	
11	3	4	4	4	IZS	55	50	41	20	12	17	12	11	7	4	18	3	1	1	1	1	1	2	1	55	11.9	24	
12	2	2	4	IZS	11	14	14	28	15	8	3	3	3	3	2	1	1	1	0	1	10	28	11	6	28	7.4	24	
13	11	5	IZS	7	0	2	2	2	1	2	10	5	11	9	13	1	5	7	7	1	1	1	1	1	13	4.6	24	
14	1	IZS	1	1	2	11	6	4	12	7	3	1	8	7	2	1	1	1	0	0	0	1	1	0	12	3.1	24	
15	IZS	1	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	IZS	3	0.5	24	
16	1	1	0	1	1	3	19	6	1	1	1	0	1	1	1	1	0	0	1	2	2	IZS	1	19	2.0	24		
17	1	0	1	0	1	5	14	31	16	16	7	10	6	5	5	2	3	2	2	3	4	IZS	4	2	31	6.1	24	
18	5	7	10	7	6	11	20	18	4	4	16	21	1	7	7	6	18	17	17	23	IZS	11	31	25	31	12.7	24	
19	3	8	29	28	4	4	2	4	3	2	3	19	11	16	23	5	21	13	20	IZS	3	2	8	4	29	10.2	24	
20	4	7	4	9	9	15	60	23	14	6	7	14	6	3	6	5	3	1	IZS	1	1	1	1	1	60	8.7	24	
21	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	15	13	2	5	6	1	15	2.5	24		
22	2	2	9	14	4	2	27	29	15	14	7	11	12	1	1	0	IZS	1	1	1	2	1	1	5	29	7.0	24	
23	5	5	4	3	3	8	4	4	2	1	1	1	1	5	6	IZS	1	0	10	10	3	12	18	13	18	5.2	24	
24	18	14	3	3	3	4	33	18	8	2	2	1	2	15	IZS	1	10	1	0	2	1	1	1	1	33	6.3	24	
25	1	2	4	2	1	6	35	1	C	C	C	C	C	C	C	C	C	3	0	0	0	0	0	0	35	3.7	24	
26	0	0	0	0	0	0	5	51	2	2	4	3	IZS	4	2	1	0	1	0	0	0	0	1	10	51	3.7	24	
27	2	3	8	1	1	2	2	5	2	16	13	IZS	7	7	1	1	3	1	1	2	2	1	1	4	16	3.7	24	
28	6	5	4	3	1	14	169	21	24	22	IZS	4	4	2	4	6	2	1	1	1	1	1	1	169	13.0	24		
29	0	0	0	0	0	0	4	2	3	IZS	3	2	2	1	1	1	1	1	1	1	1	3	2	2	4	1.3	24	
30	2	2	2	2	3	3	3	4	IZS	6	3	2	2	6	5	15	1	1	1	1	2	1	2	2	15	3.1	24	
31	2	2	2	1	1	5	4	IZS	4	5	13	2	3	2	2	2	2	1	1	2	2	2	1	1	13	2.7	24	
HOURLY MAX	18	14	29	28	11	55	169	51	36	22	89	21	25	16	23	18	21	40	20	23	12	28	31	25				
HOURLY AVG	4.2	4.1	4.5	4.0	3.1	7.9	19.3	13.0	9.1	7.4	8.6	5.0	5.5	4.7	4.7	3.9	3.7	3.7	3.3	3.0	2.4	3.9	5.2	4.1				

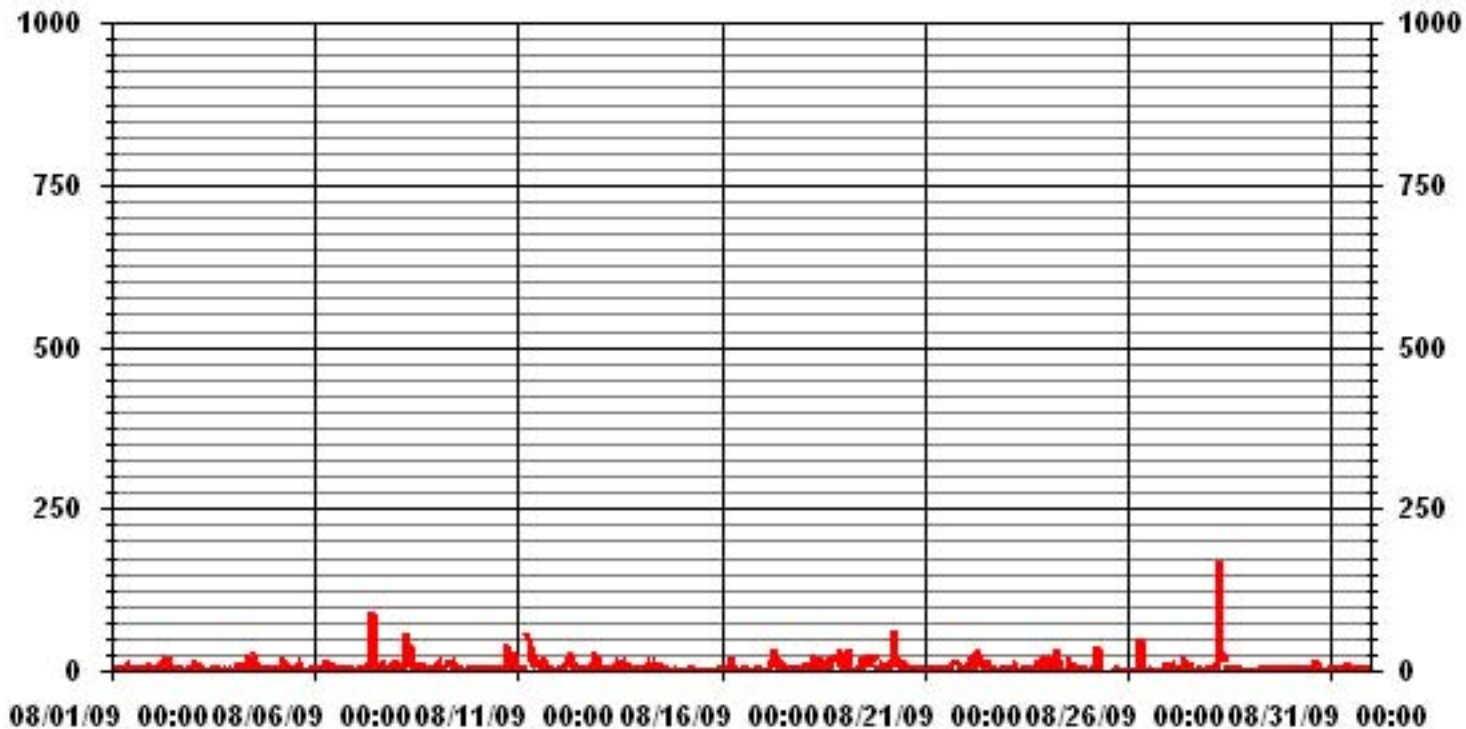
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	648					
MAXIMUM INSTANTANEOUS VALUE:	169	PPB	@ HOUR(S)	6	ON DAY(S)	28
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION	10.18					

01 Hour Averages



— LICA30 NOXMAX PPB

LICA30
 NOX_ / WDR Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	5.68	4.40	6.39	5.11	1.84	2.41	4.40	6.39	6.67	17.18	10.22	6.25	6.53	6.53	4.54	5.39	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.68	4.40	6.39	5.11	1.84	2.41	4.40	6.39	6.67	17.18	10.22	6.25	6.53	6.53	4.54	5.39	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	40	31	45	36	13	17	31	45	47	121	72	44	46	46	32	38	704
< 110																	
< 210																	
>= 210																	
Totals	40	31	45	36	13	17	31	45	47	121	72	44	46	46	32	38	

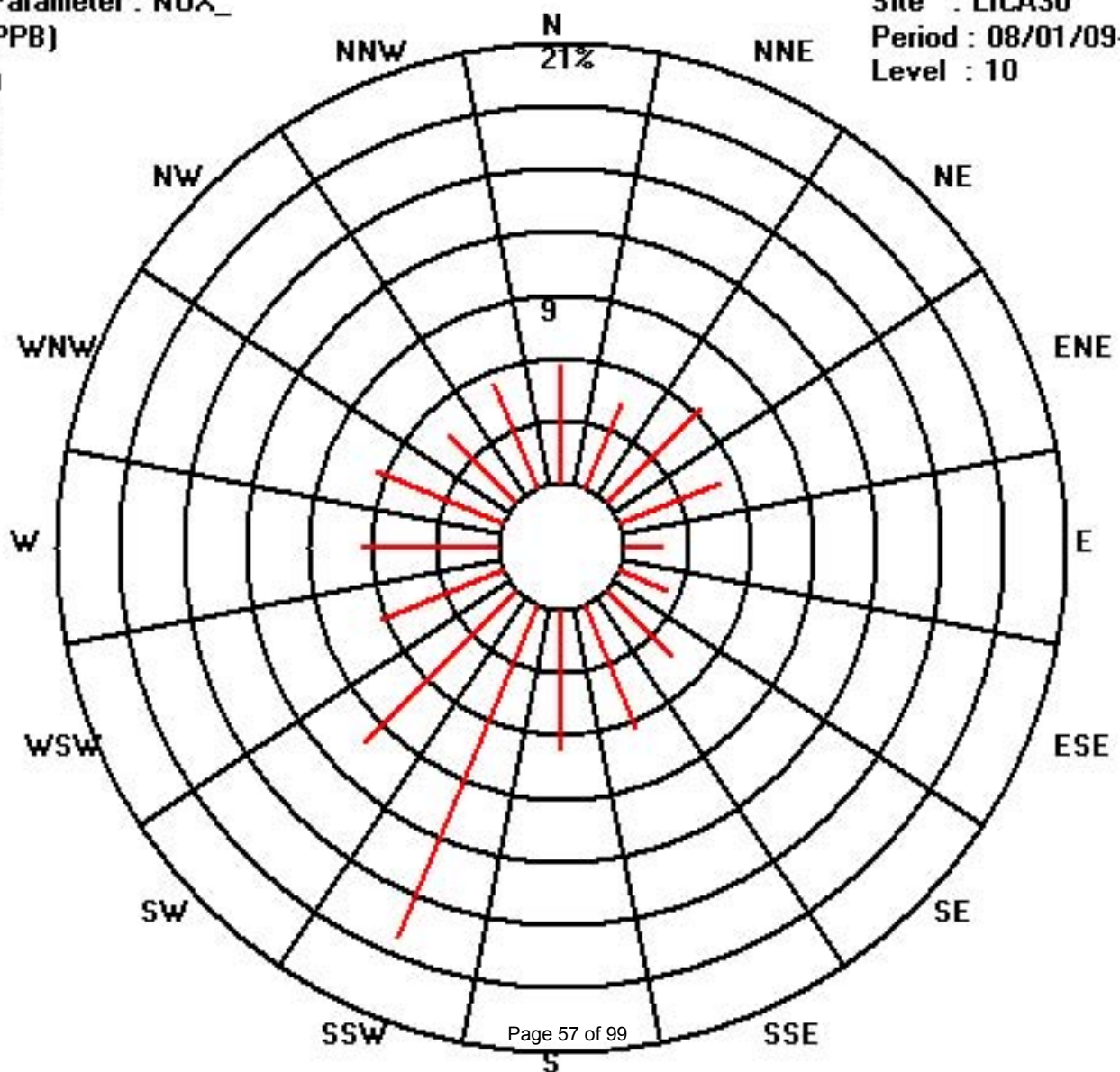
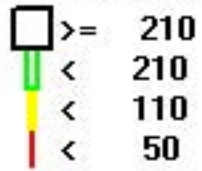
Calm : .00 %

Total # Operational Hours : 704

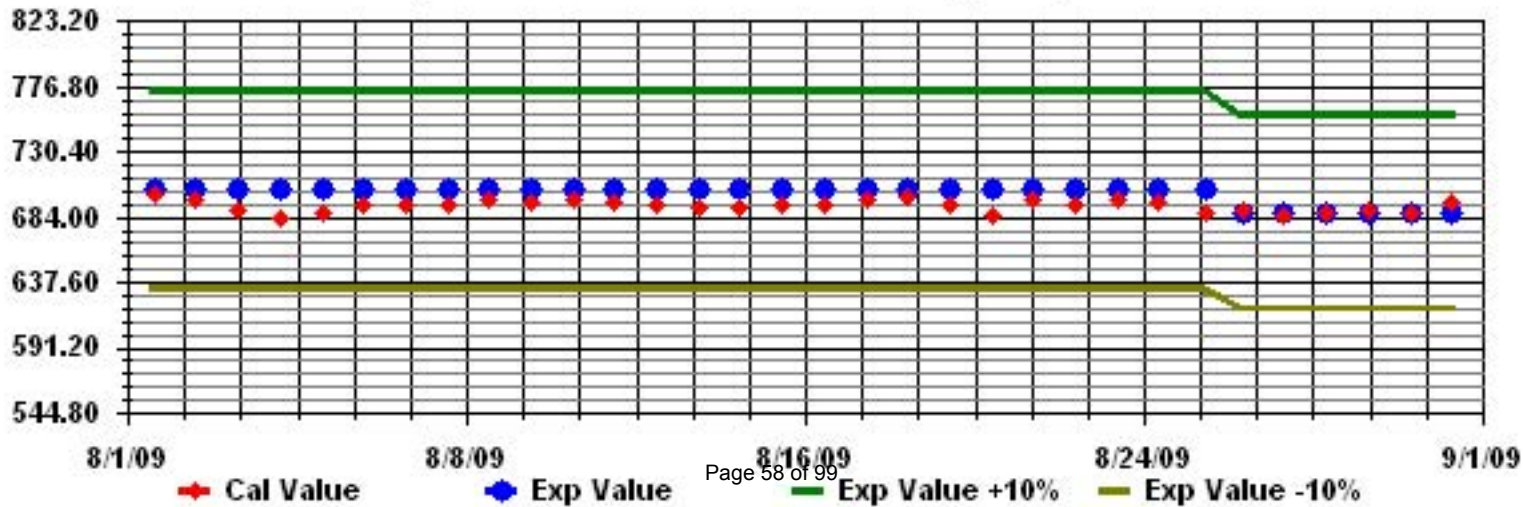
Class Limits (PPB)

Period : 08/01/09-08/31/09

Level : 10

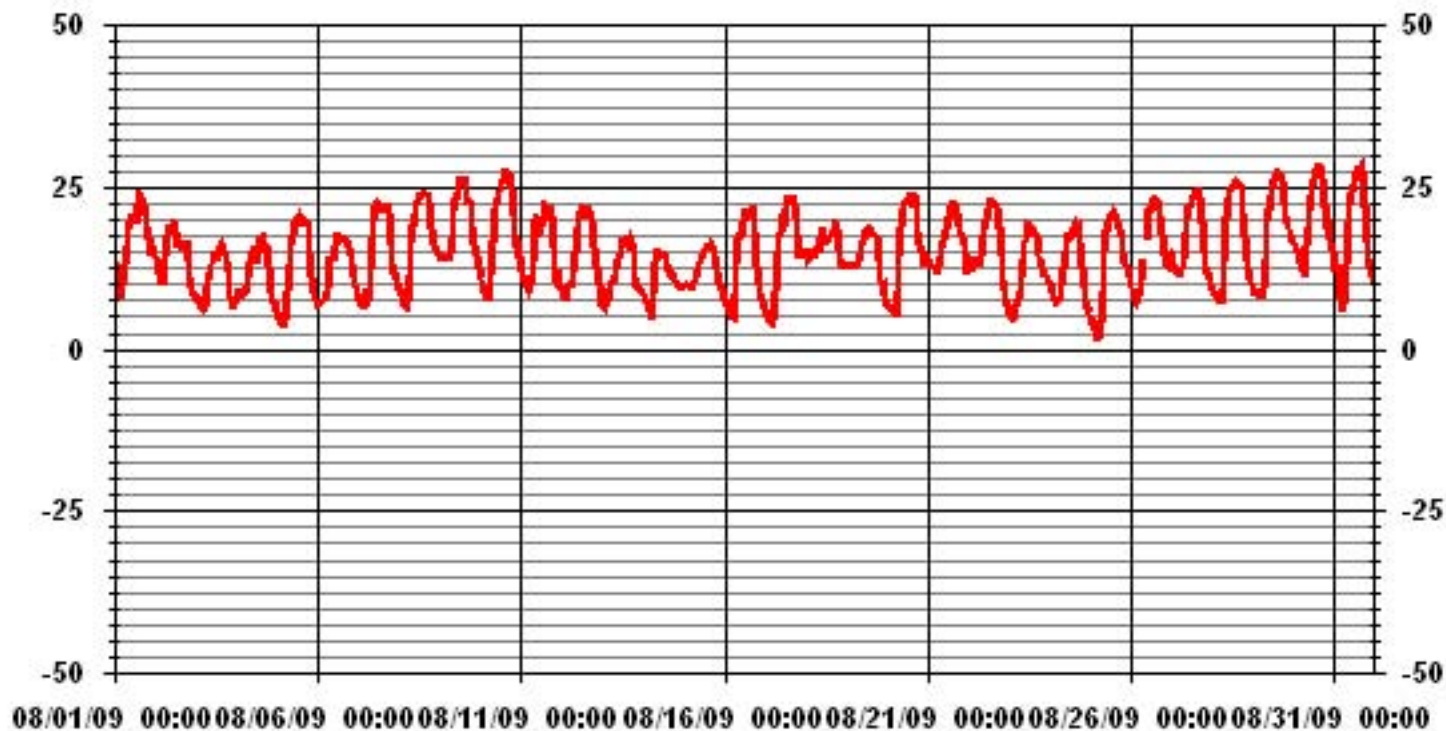


Calibration Graph for Site: LICA30 Parameter: NOX_ Sequence: NO2 Phase: SPAN



Temperature

01 Hour Averages



— LICA30 TPX DGC

Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2009

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	DAILY	DAILY		
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.	TOTAL	RDGS.	
1	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
2	0.0	0	0	0	0	0	0	0	0	0	0	0	0	1	2.5	0.1	0.1	0	0	0	0	0	0	0	0	0	2.5	3.7	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	0.0	24	
4	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.2	0	0	0	0	0	0	0	0	0	0.2	0.3	24	
5	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
6	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5	0	0	0	0	0	0	0	0	0.5	0.8	24	
7	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
8	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	0.0	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	0.0	24	
11	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	0.0	24	
13	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
14	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0.2	0.2	24	
15	0.0	0.3	1	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1.0	2.5	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	0.0	24	
17	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
18	0.0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.6	0	0	0	0	0.3	0.7	0.5	0.1	0	0	0.7	2.4	24	
19	0.0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	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	0.0	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	0.0	24	
22	0.0	1	1.2	0.8	8.3	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8.3	11.6	24	
23	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.4	0.3	0	0	0	0	0	2.4	2.7	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	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	0.0	24	
26	0.0	0	0	0	0	0	0	0	0	0	2.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.4	2.4	24	
27	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	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	0.0	24	
29	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
30	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
31	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
HOURLY MAX		0.0	1.0	1.2	0.8	8.3	0.3	0.0	0.0	0.0	2.4	0.0	0.2	1.0	2.5	0.3	0.5	0.0	2.4	1.0	0.7	0.5	0.1	0.0	0.0				

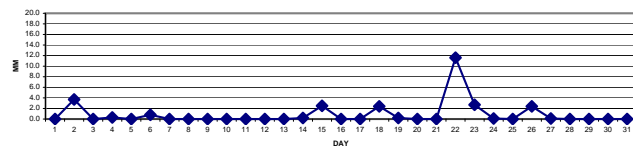
STATUS FLAG CODES

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

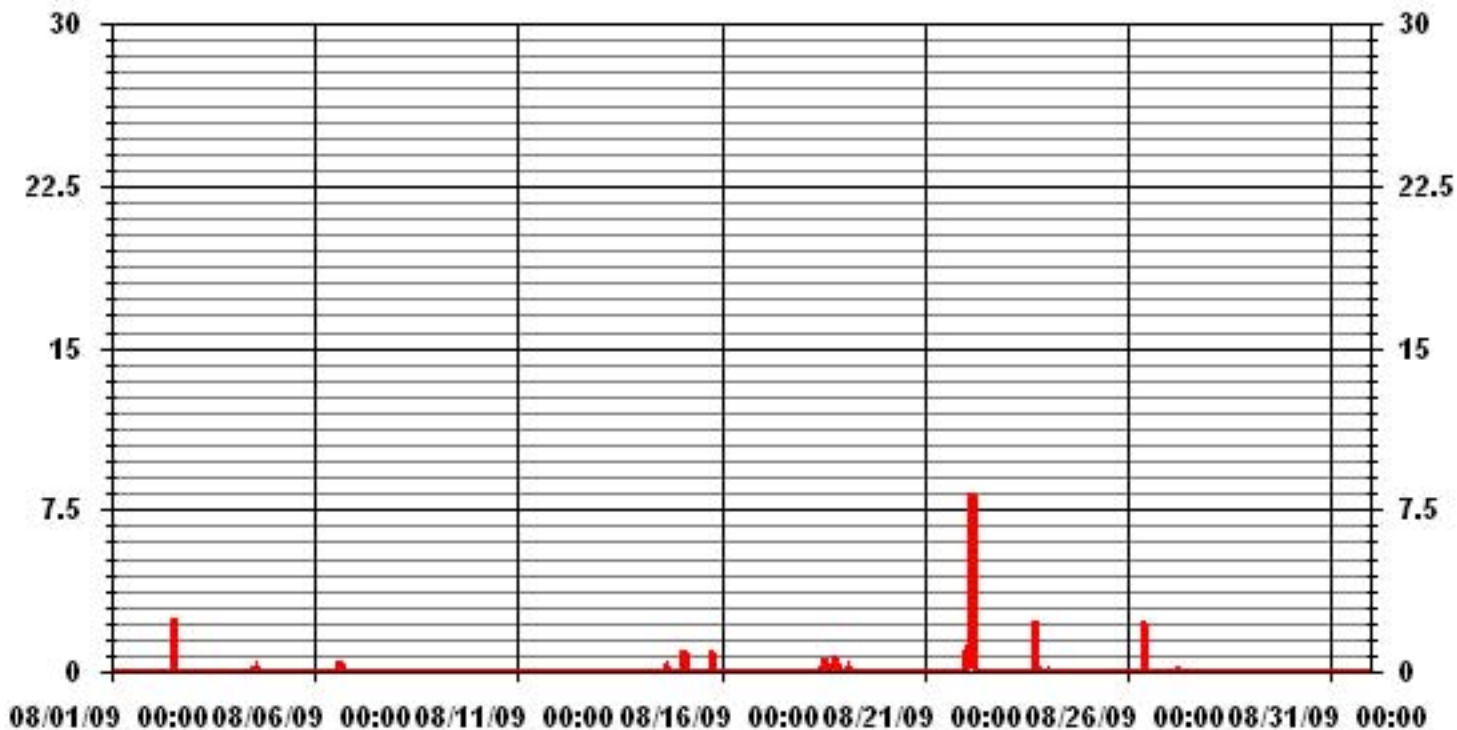
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	8.3	MM	HOUR(S)	4	ON DAY(S)	22
MAXIMUM DAILY TOTAL	11.6	MM			ON DAY(S)	22
MONTHLY TOTAL	27.0	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	0.36		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	0.04	MM	

DAILY TOTALS FOR AUGUST 2009



01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

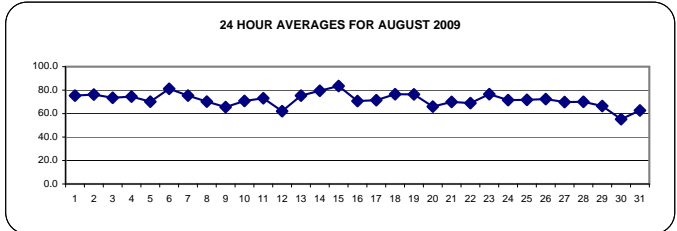
AUGUST 2009

RELATIVE HUMIDITY hourly averages (%)

MST																												
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	DAILY MAX.	24-HOUR AVG.	RDGS.
1	1	85	83	86	90	92	91	83	73	66	64	63	66	71	60	56	64	56	59	68	77	83	91	92	89	92	75.3	24
2	2	88	86	89	92	93	93	82	71	64	63	62	63	73	89	84	84	80	70	61	59	67	69	73	74	93	76.2	24
3	3	78	81	83	87	89	89	82	78	73	67	62	61	60	57	55	53	57	60	62	69	86	91	92	92	92	73.5	24
4	4	90	86	85	86	88	88	86	81	74	64	58	68	60	61	56	51	56	59	55	72	87	92	92	93	93	74.5	24
5	5	93	93	93	93	93	93	91	77	62	55	48	45	46	44	47	48	44	46	50	68	80	90	92	93	93	70.2	24
6	6	93	93	92	92	92	92	89	77	75	76	66	59	64	66	67	75	70	71	79	88	91	93	93	94	94	81.1	24
7	7	94	94	94	93	94	94	94	93	76	63	54	52	51	53	51	54	54	49	56	80	88	92	93	93	94	75.4	24
8	8	94	94	94	94	94	94	93	77	67	61	56	53	50	50	47	45	45	47	51	67	76	79	79	78	94	70.2	24
9	9	79	81	80	78	80	81	77	71	60	56	53	49	44	47	42	35	52	54	54	66	77	81	85	91	91	65.5	24
10	10	93	93	93	94	94	94	93	79	56	54	54	56	55	55	50	47	45	45	61	69	73	82	78	86	94	70.8	24
11	11	93	93	94	94	94	94	94	90	64	55	71	69	68	58	46	44	46	42	44	66	85	80	85	85	94	73.1	24
12	12	85	90	92	91	88	87	84	80	70	52	44	38	35	35	34	33	34	34	38	53	67	63	75	88	92	62.1	24
13	13	89	85	88	91	88	86	84	80	75	68	65	62	57	57	58	59	56	58	63	81	86	90	90	92	92	75.3	24
14	14	91	92	93	93	93	93	90	78	65	60	61	61	61	60	65	75	79	77	80	85	88	89	89	89	93	79.5	24
15	15	88	89	91	92	92	91	89	87	82	79	77	75	71	72	70	66	65	75	90	92	93	93	93	93	93	83.5	24
16	16	93	94	93	94	94	94	93	84	69	60	56	43	39	39	39	39	37	36	56	78	89	92	93	93	94	70.7	24
17	17	93	93	93	93	93	94	92	76	65	62	55	58	53	42	40	45	45	52	66	74	85	85	82	79	94	71.5	24
18	18	77	81	79	78	77	79	78	80	71	66	63	76	75	77	77	69	69	64	67	83	87	88	88	87	88	76.5	24
19	19	88	89	89	89	89	89	87	84	80	73	67	61	58	57	59	57	59	60	63	76	88	91	88	92	92	76.4	24
20	20	93	93	93	93	93	93	93	78	62	52	46	42	40	39	36	38	41	45	56	63	69	80	71	74	93	66.0	24
21	21	76	77	78	79	82	82	79	73	70	66	62	62	58	59	56	53	54	60	67	71	72	74	82	87	87	70.0	24
22	22	86	85	91	91	91	91	91	88	77	72	67	63	57	44	32	30	31	31	43	59	76	83	86	90	91	69.0	24
23	23	92	92	93	93	93	91	84	78	69	60	53	54	50	50	53	54	59	80	84	89	92	91	91	91	93	76.5	24
24	24	89	91	92	92	93	93	91	82	73	64	57	51	51	48	47	44	46	43	52	67	79	89	91	92	93	71.5	24
25	25	93	93	93	93	93	93	93	87	72	61	54	48	48	45	48	50	51	56	59	71	76	79	80	85	93	71.7	24
26	26	90	92	93	93	93	91	89	83	M	69	56	52	52	49	47	47	43	50	64	81	86	88	80	77	93	72.4	23
27	27	79	83	87	88	88	90	87	84	70	64	57	53	49	46	41	41	40	41	56	76	85	88	90	93	93	69.8	24
28	28	93	94	94	94	94	94	94	89	66	52	45	42	43	41	41	40	41	43	57	71	84	87	90	92	94	70.0	24
29	29	93	93	94	94	94	94	94	88	63	56	51	49	46	42	39	34	38	43	56	62	66	68	69	69	94	66.5	24
30	30	69	70	70	70	74	77	81	66	59	52	50	46	40	35	29	29	30	34	48	56	54	61	62	64	81	55.3	24
31	31	74	69	67	87	91	92	90	70	51	46	44	41	38	36	35	33	31	35	54	72	79	85	91	93	93	62.7	24
HOURLY MAX		94	94	94	94	94	94	94	93	87	82	79	77	75	89	84	80	80	84	90	92	93	93	94	94			
HOURLY AVG		87.5	87.8	88.6	89.7	90.2	90.3	88.0	80.1	68.4	61.8	57.4	55.5	53.8	52.0	50.0	49.7	50.2	51.9	59.5	72.2	80.4	84.0	85.0	86.7			

STATUS FLAG CODES

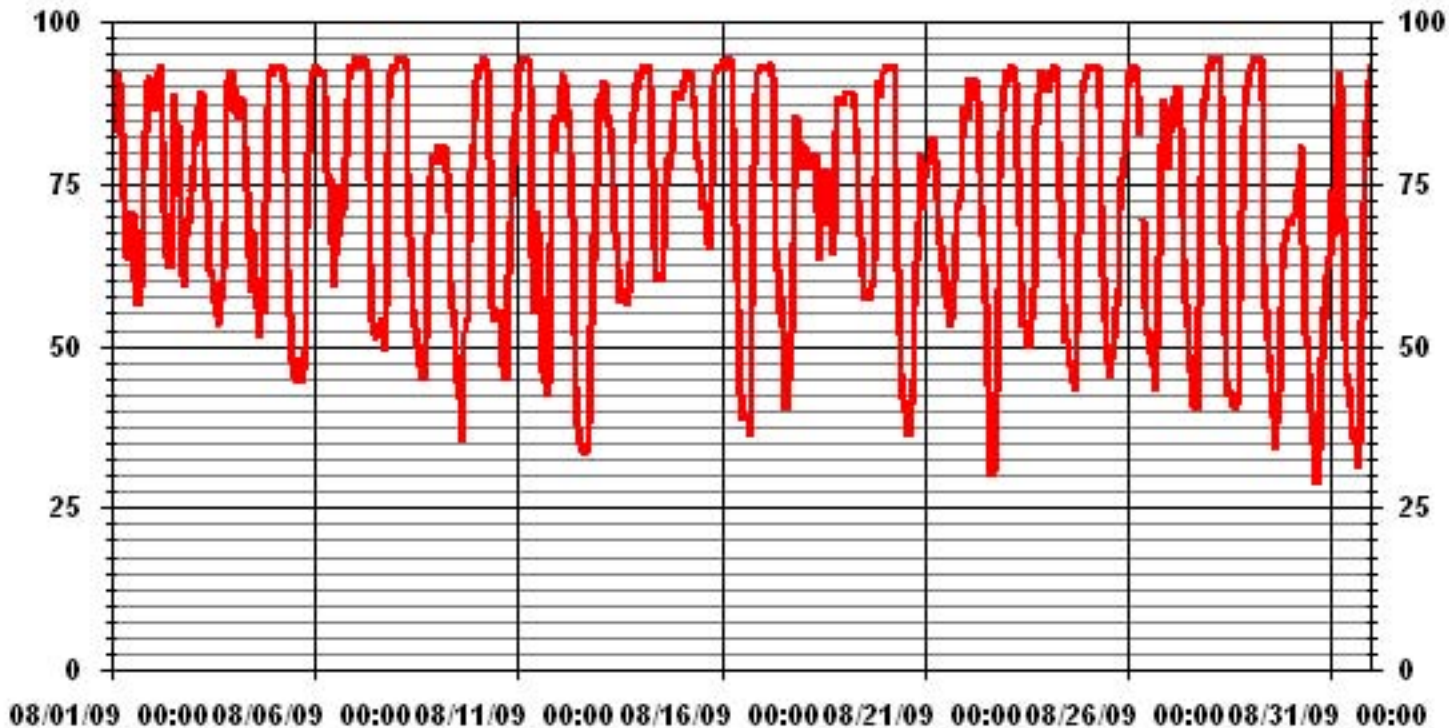
S - OUT OF SERVICE	IZS - IZS - DAILY ZERO/SPAN CHECK
N - INVALID DATA	M - MAINTENANCE
D - INSTRUMENT DRIFT	P - POWER FAILURE
C - CALIBRATION	NA - NOT APPLICABLE



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	94	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	83.5	%			ON DAY(S)	15
VAR-VARIOUS						
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	743	HRS	
STANDARD DEVIATION:	18.31		AMD OPERATION UPTIME:	99.9	%	
			MONTHLY AVERAGE:	71.69	%	

01 Hour Averages



— LICA30 RH %FS

Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

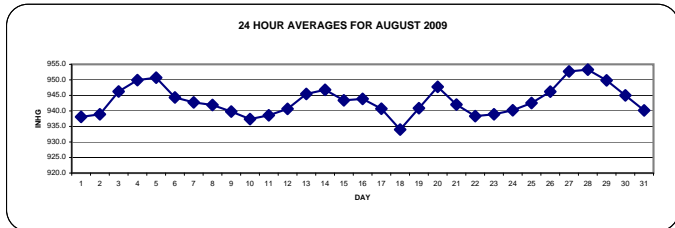
AUGUST 2009

BAROMETRIC PRESSURE hourly averages (inHg)

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	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	941	941	940	939	939	938	938	938	938	938	938	938	937	937	937	937	937	937	937	937	938	938	938	938	938	941	938.1	24	
2	938	938	938	938	938	938	938	939	940	940	939	938	938	938	937	937	938	939	939	940	940	941	941	941	941	941	941	938.9	24
3	942	942	943	943	944	945	946	946	947	947	947	947	947	947	947	948	948	948	948	948	948	947	947	948	948	948	946.3	24	
4	948	948	949	949	949	949	949	949	950	950	950	951	951	951	951	951	950	951	950	951	950	950	950	950	950	951	949.9	24	
5	951	951	951	951	951	951	952	953	953	953	953	953	953	952	952	951	951	950	950	949	949	948	948	947	947	953	950.7	24	
6	947	946	946	946	946	945	945	946	946	945	945	945	945	945	944	944	943	943	943	943	943	942	942	942	942	947	944.3	24	
7	942	942	942	941	941	941	942	943	944	944	944	944	944	943	943	943	943	943	943	943	943	943	943	943	943	944	942.8	24	
8	943	942	942	942	942	942	943	944	944	944	944	943	943	942	942	941	941	941	941	941	940	940	940	940	940	944	941.9	24	
9	940	939	939	939	939	939	940	940	941	941	941	941	941	940	940	940	940	940	940	940	939	939	939	939	939	941	939.8	24	
10	939	939	939	938	938	938	939	939	940	939	939	938	938	937	937	936	936	936	936	935	935	935	935	936	936	940	937.4	24	
11	936	936	936	937	937	937	938	939	939	940	940	940	940	940	940	939	939	939	939	939	939	939	939	939	939	940	938.6	24	
12	939	939	939	939	939	940	940	941	941	941	942	941	941	941	941	941	941	941	941	941	941	941	941	942	942	942	940.7	24	
13	942	942	942	943	944	944	944	945	945	946	946	946	947	947	947	946	947	946	947	946	947	947	947	947	947	947	947	945.5	24
14	947	946	946	946	946	946	947	948	948	948	948	948	948	948	948	947	947	947	946	946	946	946	945	945	948	946.8	24		
15	945	945	944	944	944	944	944	944	944	943	943	943	943	943	943	943	943	943	943	943	943	943	943	943	943	945	943.4	24	
16	943	943	943	943	943	943	944	945	945	945	945	945	944	944	944	944	944	944	944	944	944	944	944	943	943	945	943.9	24	
17	943	942	942	942	942	942	943	944	944	943	943	942	942	941	941	940	939	939	938	938	937	937	937	936	944	940.7	24		
18	936	935	935	934	934	933	933	933	932	933	933	933	933	934	934	934	934	934	934	935	935	935	935	935	935	936	934.0	24	
19	936	936	936	937	937	938	939	939	940	940	941	941	942	942	943	943	943	944	944	944	944	944	944	944	944	944	940.9	24	
20	945	945	945	946	946	946	947	948	949	949	950	949	949	949	949	949	949	948	948	948	948	948	948	948	948	950	947.8	24	
21	948	947	947	946	945	945	945	945	944	943	942	941	941	941	941	940	940	939	939	938	938	937	937	936	948	942.0	24		
22	935	936	937	937	937	934	936	937	938	938	939	939	939	939	939	940	940	940	940	940	940	940	940	940	940	940	938.3	24	
23	940	940	940	940	940	941	941	941	941	941	940	940	939	939	938	937	937	937	936	937	937	937	937	937	938	941	938.9	24	
24	938	938	938	938	938	939	939	940	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	942	940.2	24	
25	941	942	941	941	942	941	942	944	944	944	944	944	943	943	943	942	942	942	942	942	943	943	943	943	944	942.5	24		
26	943	943	943	944	944	945	945	946	946	947	947	947	947	947	947	947	947	947	947	947	948	948	949	948	949	946.2	24		
27	949	950	950	950	950	951	951	952	953	954	954	954	954	954	954	954	954	954	954	954	954	954	953	954	954	954	952.7	24	
28	953	953	953	954	954	954	954	955	956	956	956	955	955	954	953	953	952	952	952	952	951	951	951	951	951	956	953.3	24	
29	950	950	950	950	950	950	950	951	952	952	952	951	951	951	950	950	949	949	948	948	948	948	948	948	948	952	949.8	24	
30	947	947	947	947	947	946	946	947	947	947	947	947	946	946	945	945	944	944	943	943	942	942	942	942	941	947	945.0	24	
31	941	941	940	940	940	939	939	941	941	941	941	941	940	940	940	940	940	940	940	940	939	940	940	940	940	941	940.2	24	
HOURLY MAX	953	953	953	954	954	954	954	955	956	956	956	955	955	954	954	954	954	954	954	954	954	954	953	954	954				
HOURLY AVG	943	943	943	943	943	943	943	944	944	944	944	944	944	944	944	943	943	943	943	943	943	943	943	943	943				

STATUS FLAG CODES

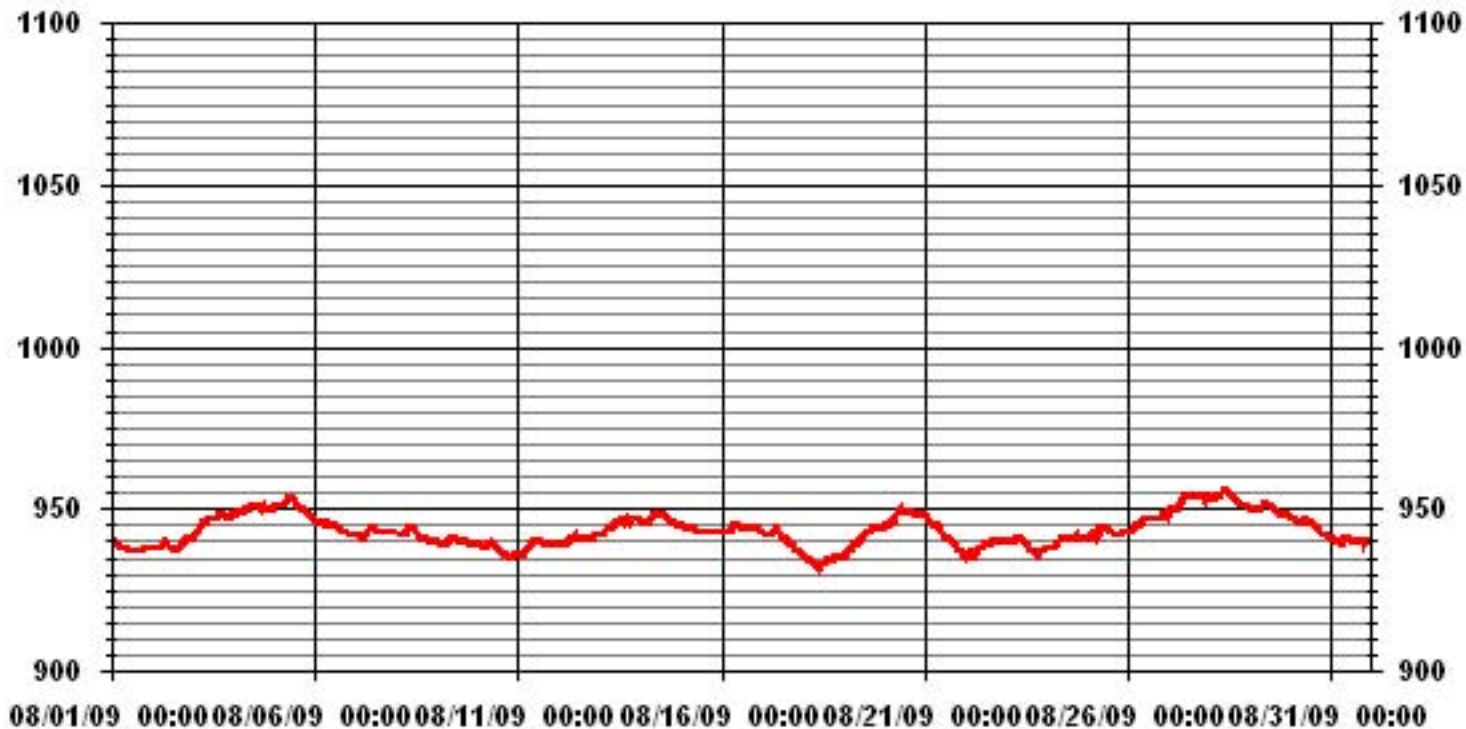
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	956	INHG	@ HOUR(S)	VAR	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	953.3	INHG			ON DAY(S)	28
VAR-VARIOUS						
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	4.94		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	943	INHG	

01 Hour Averages



— LICA30 BP MB

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2009

WIND SPEED hourly averages (km/hr)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		6.6	6.9	5.1	1.7	0.2	4.7	6.8	6.7	4.7	6.9	5.9	3.6	4.3	3.2	0.3	3.5	4.9	5	7.1	7.3	4.6	2	3.4	3.8	7.3	0.3	24	
2		4.9	4.4	2	1.1	2.1	2.6	3	2	1.9	1.8	4	4.7	1.8	2.6	6.4	9.8	10.6	9.4	9.2	12.2	5.7	6.1	5.7	6.8	12.2	3.5	24	
3		4.8	6	4.9	5	2.4	3.9	6	9.2	9.1	7.9	3.4	4.4	6.5	6.4	7.5	6.4	6.4	7.1	5.1	3.2	1	0.8	2.3	1.5	9.2	4.5	24	
4		2.1	1.7	2	1.4	1.9	1.7	1.1	1.7	2.9	4.6	5.3	2.9	3.3	9.6	3.3	4.7	6.7	3.6	4.3	1.9	0.9	1.5	1.4	1	9.6	2.1	24	
5		1.2	2.1	1.1	0.4	1.8	0.2	0.8	3.4	2.4	1.9	2.1	4.1	3.2	4.9	4.7	4.4	5.4	5.5	4.4	3.3	3.1	3.1	1.5	1.5	5.5	2	24	
6		1.6	1	0	0.1	2	0.8	2	3	3.8	1.6	3.4	4.1	3.1	6.8	3.3	5.6	6	3.2	0.9	0.9	0.7	0.8	0.8	1.9	6.8	1.2	24	
7		0.2	0.7	0.1	0.3	1.7	0.5	0.6	0.5	1.7	2.5	2.3	2.5	1.9	3.5	5.5	4.2	4	5.2	4.5	3.7	3.5	3.1	1.1	0.8	5.5	1.7	24	
8		0.7	0.3	1.3	0.3	0.4	0.4	2.8	3.9	5.5	6	7.8	8.6	8.9	8.6	11.5	12.8	11.5	9.3	6	4.4	5.1	5.2	5.4	6.5	12.8	5.4	24	
9		6.5	6.5	7.2	8.4	8	8.4	7.3	5.3	4	5	5.6	6.8	7.3	10.6	6.6	6.8	8.5	8.6	6.2	5.8	5.1	4.9	3.9	1.8	10.6	6.2	24	
10		1	0.7	0.3	0.2	0.3	0.9	1	1	1.9	4	6.6	7.1	8	7.2	7.2	6.8	3.6	4	2.9	2.3	2.2	0.5	4.6	1.6	8	2.2	24	
11		1.1	2.8	1.8	2.5	2.1	3.2	1.7	2.1	3	3.5	5.9	8.2	7.9	7.4	6	6.2	6	8.2	5.3	2.8	3.3	4.7	3	3.4	8.2	3.6	24	
12		2.6	2.3	2.3	5.7	4.5	4	3.6	5.4	5.2	6.6	6.7	8.7	9	11.5	10.4	9.7	8.7	7.8	5.3	3.6	3.4	4.9	2.2	0.8	11.5	5	24	
13		2.7	3.2	3.1	3.6	3.4	4.8	4.9	3.9	5.6	3.1	4.3	2.6	3.2	4.8	2.7	4.2	2.9	4	4	1.8	1.7	0.9	0.9	0.2	5.6	2.1	24	
14		0.9	1	1.2	0.9	1	0.8	0.8	1.2	3.8	4.4	4.4	3.6	5.3	4.8	3.7	3.8	3.4	3	1.8	1.8	2.3	0.6	1.1	0.6	5.3	1.4	24	
15		1.2	1.2	2.5	3.2	5.3	5.7	5.9	5.6	7.9	7.1	7.5	8.9	7.6	6.7	4.5	7.2	6.6	7.5	5.1	0.6	1	1.6	0.5	0.8	8.9	4.1	24	
16		0.8	1.1	0.6	0.5	1.1	1.6	1.2	2.9	3.3	6.2	4.7	8	3.4	4.1	6.5	6.8	7	9.5	1.9	3.6	2.4	0.3	0.3	0.7	9.5	1.9	24	
17		0.8	0.6	0.6	1.1	1	0.9	0.5	3	5.2	5.6	8.2	7.8	7.5	9	7.1	4.8	5	3.2	3	3.5	4.3	4.4	4	4.5	9	3.7	24	
18		4.7	5	5.5	4.6	5.4	4.2	4.5	3.4	5.2	7.9	12.3	10	9.9	9	7.7	9.2	7.1	8.1	5.9	4.7	5	5.6	5.9	7.4	12.3	5.1	24	
19		6.2	7.2	7	6.7	6.8	6	5.7	5.9	6.8	8.5	8.4	7.8	8.5	9.6	9.1	9.4	8	6.9	5.4	2.7	2.4	2.6	3	2.3	9.6	5.9	24	
20		2.9	2.5	2.2	1.1	1.8	1.1	1.7	3.1	1.6	1.9	3.6	4.3	3.1	3.8	3.4	4.4	6.4	6.3	4.6	4.4	4.6	5.1	9.3	7	9.3	1.5	24	
21		8.2	8.7	9.5	9.9	8.8	9.6	10.2	10.3	10.3	11.1	13.4	14	15.7	13.5	10.2	11.8	10.1	7	6.3	7.4	6.6	4.5	2.9	3.3	15.7	8.9	24	
22		3.8	1.7	0.7	2.7	4.4	9.7	7.4	6.7	9.3	10.2	9.2	10.2	8.4	9.3	11.8	10.9	8.9	7.7	4	4.1	3.2	2.6	1.2	2.3	11.8	5	24	
23		0.2	0.2	0.4	0.5	0.7	2.1	0.6	3.4	7	9.1	10.6	10	10	5.3	5.9	7.7	8.4	5.7	2.2	2.9	1.2	6.9	7.4	6	10.6	3.2	24	
24		9.1	5.8	5.8	3.8	7	7.2	8.9	8.4	8.7	8.2	11.1	13.5	12.6	12.8	12	11.5	11.2	10.2	4.7	3.8	3.1	3.1	1	1.7	13.5	6.6	24	
25		2.2	0.9	0.5	0.8	0.5	0.3	0.9	4.2	4.4	6	6.9	8.7	10	7.9	9.2	8.4	6.9	5.1	5.3	4.2	4.3	4.2	4.3	4.2	10	3.7	24	
26		3.2	1.7	3.2	2	2.5	3.7	1.4	3.7	3.6	3.8	2.8	6	6.5	4	6.3	6.8	6.6	3.8	1.9	2	2.2	2	4	4.5	6.8	3.3	24	
27		2.1	2	1.3	1.6	2.6	2.1	4.5	0.3	2.6	1.5	0.5	5.5	3	4	4.8	5.5	5.7	4.1	3.8	2.5	1.7	2	1.7	2.1	5.7	1.4	24	
28		1.4	1.4	0.8	1.5	0.7	0.7	0.3	0.1	0.9	2.8	3.1	3.7	4.5	4.8	6.4	7.3	7.5	6.9	4.6	3.8	2.9	1.6	1.6	0.4	7.5	2.3	24	
29		1	3.3	2.2	3.4	2.6	2.3	3.5	2.5	3.7	4.3	4.5	6.1	5.5	7.4	7.7	8.4	6.4	5	6.1	7.8	8	7.5	8	8.5	8.5	4.3	24	
30		7.8	7.6	7.6	8.1	6.2	5	1.4	4.9	7.2	6.4	5.2	7.5	9.9	9.6	10.6	10.1	8.6	6.8	4.7	5.9	7.1	5.2	5.4	4.9	10.6	6.7	24	
31		2.1	5.4	4.1	0.3	0	0.3	0.2	0.7	3	3.5	4.4	6.8	7	6.9	7.2	6.4	5.7	4.5	3.9	2.3	2.6	0.5	0.2	0.2	7.2	2.7	24	
HOURLY MAX		9.1	8.7	9.5	9.9	8.8	9.7	10.2	10.3	10.3	11.1	13.4	14.0	15.7	13.5	12.0	12.8	11.5	10.2	9.2	12.2	8.0	7.5	9.3	8.5				
HOURLY AVG		3.1	3.1	2.8	2.7	2.9	3.2	3.3	3.8	4.7	5.3	5.9	6.8	6.7	7.1	6.8	7.3	6.9	6.2	4.5	3.9	3.4	3.2	3.2	3.0				

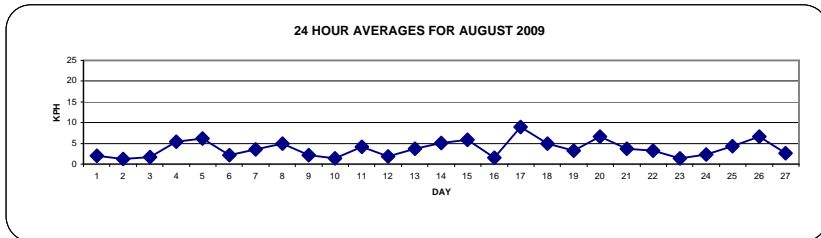
STATUS FLAG CODES

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

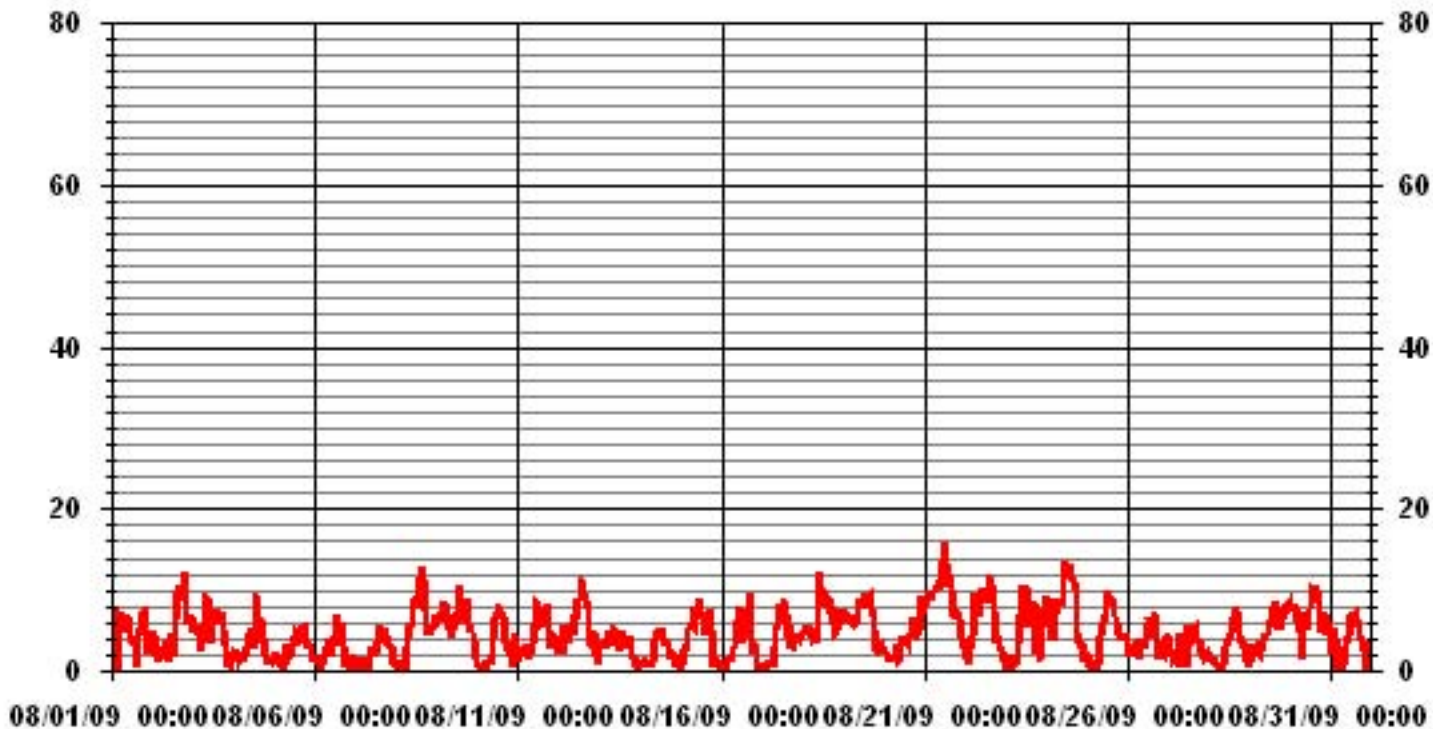
LAST CALIBRATION: November 7, 2007

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	15.7 KPH	@ HOUR(S)	12	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	8.9 KPH			ON DAY(S)	21
CALMS (≤ 1 KPH)	10.22 %	OPERATIONAL TIME:	744 HRS		
MONTHLY CALIBRATION TIME:	0 HRS	AMD OPERATION UPTIME	100.0 %		
STANDARD DEVIATION	3.01	MONTHLY AVERAGE	4.57 KPH		



01 Hour Averages



— LICA30 WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2009

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	11.7	13.9	10.6	7.3	4.3	13.2	13.8	12.8	11.8	18.3	14.2	11.9	11	9.7	6.6	12.2	16.8	16.5	17.9	16	13	5.3	10.9	10.7	18.3
2	11.3	10.7	7	5.3	6.4	8.8	7.8	6.8	7.5	10.1	9.9	12.9	13.3	13.2	19.5	21.2	23.7	22.7	28.4	27.9	12.4	12.2	11.9	15	28.4
3	12.4	17.5	16.5	13.5	10.4	9.4	12.9	19.1	22	16.3	12	10	15	17.3	16.6	16.2	14	13.3	11.7	7.3	3.9	3.9	5.5	4.5	22
4	4.7	4.7	7.3	6.8	6.5	6.1	6.5	6.2	8.4	13.3	16.2	22.4	19.7	26.7	18.7	15.5	25.3	10.4	12.3	9.5	4.5	3.8	4.8	3.2	26.7
5	3.9	5.1	4.4	2.8	3.5	3.2	3.7	7.7	10.8	12	12.1	13.5	15.9	15.2	16.6	14.2	15.7	13	10.2	6.9	5.8	5.5	5.2	7.4	16.6
6	5.8	3.7	4.5	3.2	8.1	4.7	7.4	10.9	10.6	6.2	11.8	12	10	14.6	8.7	11.9	13.7	8.3	5.2	8.5	3.9	3.4	3.2	4.2	14.6
7	3.7	3.6	2.5	2.1	3.8	3.4	3.8	3.7	5.7	9.4	11.7	11.7	13.7	13.4	15.5	11.4	9.2	10.4	9.2	5.7	5.1	4.9	4.8	3.3	15.5
8	3.2	1.4	4.3	1.6	2	3.6	8.2	9.7	11.5	13.6	17.3	21.8	22.5	22.1	23.5	24.9	23	18.8	16.4	7.3	9.5	9.6	10	11.7	24.9
9	13.1	11.4	12.4	13.9	15.2	15	14.9	13	10.3	11.5	15.6	19.4	21.6	23.3	22.2	19.4	21.9	17.7	13.7	9.1	8	7.4	7.6	6.6	23.3
10	5.5	4.3	4	8	5.2	3.6	5.1	6.2	9.1	9.2	20.2	16.3	18.9	16.4	19.5	15	11.6	12	4.5	12.4	16.5	8.5	13.7	8.5	20.2
11	6.3	5.9	4.7	6.2	5	7.2	6	6.3	8.7	9.8	14.3	17.7	19.5	17.3	15.6	16.2	17.4	22.2	17.9	6.3	7.3	7.6	8.7	9.5	22.2
12	8	5.1	4.1	10.5	10.1	13.3	9	11.8	10.7	16.9	23.2	22.7	24.4	29.1	29	28.2	24	19.3	17.3	11.2	10.5	19.6	6.4	6.9	29.1
13	7.5	9.5	6.5	14.5	11.7	14.5	13.3	13.2	14.4	12.2	14	12.1	14.5	14.3	12	10.6	11.7	12.8	12.4	10.6	7.1	4.2	3.3	3.2	14.5
14	3.6	3.5	3.3	3.4	2.8	2.9	3.2	7.5	9.1	11.1	11.2	10.2	13.7	13	8.9	10.7	7.5	6.4	5.6	3.8	4.4	2.8	3.6	2.7	13.7
15	3.9	4.5	6.8	5.8	9.7	10.8	10.4	11.7	17.8	15.8	14.9	18	15	14.2	13.3	14.1	13.6	14.6	11.8	3	5.3	4.4	2.7	3.2	18
16	2.6	3.1	3.1	3.7	3.7	3.9	4.8	7.1	13.5	15.1	13.6	21.3	19.6	14.4	20.7	22.8	21.6	21.7	13.1	5.9	4.7	1.8	3.3	2.8	22.8
17	2.9	4.4	3.9	2.9	4.1	5.9	3.9	6	11.3	9.9	15.2	16.4	15.3	28.6	23	10.3	14.2	12.4	5.6	8.6	8.4	8.1	9.5	8.3	28.6
18	8.9	9.1	10.6	7.5	9.2	7.6	16.5	10.5	16.9	22.7	29.6	29.2	29.4	23.1	21.3	23.3	25.4	22.3	18.1	17.4	28.9	12.8	15.7	21.1	29.6
19	18	19	18.5	16.2	22	18.1	17.2	16.2	18.4	22.3	22.7	23.5	23.3	22.3	26.4	26.6	22.6	21.2	15.1	9.6	7.1	8.7	8.8	4.5	26.6
20	5.8	6.3	5.6	3.3	3.4	2.7	4.4	6.6	6.6	7.4	15.2	15.8	16.1	15.4	14.8	11.3	14	15.5	11.1	8.6	7.8	14.7	17.5	14.1	17.5
21	21	17	20.3	19.4	19	20.6	25.6	24.6	23.8	23.3	33.1	34.3	35.2	31	25	26.2	23.3	15.3	17.7	18.8	17.2	14.4	8.2	7.7	35.2
22	10	15.2	8.6	38	29.9	31.1	20.7	18.2	23.6	24.4	22.6	27.3	23.6	25.4	35	31	23.9	25.5	12.7	10.5	9.4	5.8	4.5	4.4	38
23	0.6	0.4	3.4	3.4	5.3	7.2	5.4	10.8	16.4	22	24.9	22.4	22.5	16.7	16.2	18.8	18.8	19.4	23.4	12.9	11.8	19.2	18.4	14.5	24.9
24	23.8	13.9	14.8	8.8	13.9	14.9	17.3	18.1	19.8	21.8	30.5	33.3	33.7	28.8	35.2	31.6	30.8	27.8	15.9	9.9	7.9	5.2	4.2	5.8	35.2
25	6	3.1	3	3.2	2.3	3	3.4	8	12.1	17.2	16.4	19.7	21.8	24.5	24.8	20.3	19.9	12.7	11.5	8.8	9.6	9.1	9.3	7.3	24.8
26	6.6	6.3	8.1	6.1	6.5	8.2	8.1	12.4	9.5	11.6	10.4	15.9	13.7	13.8	18.9	16.8	16.9	10.1	6.9	5.1	5.6	7.1	9	11.9	18.9
27	13.1	7.9	6.1	8.8	7.2	7.4	11.4	5.6	8.8	9.1	11	13.8	12.5	12.9	17.6	19.6	16	11.8	9.9	7.4	5	4.7	4.1	3.8	19.6
28	3.1	4.7	2.9	6.2	5	3.4	0.3	0.3	4.3	8.1	10	11	14.6	15.2	20.3	16.6	17.8	14.6	9.6	7.8	8.3	6.6	5.1	3.9	20.3
29	6.6	7.5	6.4	6.8	6.1	4.6	6	8.4	9.6	9.8	11.5	15.1	17.2	16.5	17.4	18.2	16.8	10.2	13.7	16.7	14.7	14.7	15	14.9	18.2
30	16.2	13.7	13.5	14.3	11.7	9.2	6.1	11	15.1	17.6	11.7	15	18.8	21.4	24	22.3	18.3	13.6	9.8	13.3	13.8	13	9.9	11.4	24
31	6.4	10.2	11.9	2.4	0.3	0.3	3	5.9	6.9	9.2	13.1	14.3	16	15	16.6	13.4	14.4	11.1	9	4.9	4.9	3.3	3.1	0.3	16.6
PEAK	23.8	19.0	20.3	38.0	29.9	31.1	25.6	24.6	23.8	24.4	33.1	34.3	35.2	31.0	35.2	31.6	30.8	27.8	28.4	27.9	28.9	19.6	18.4	21.1	

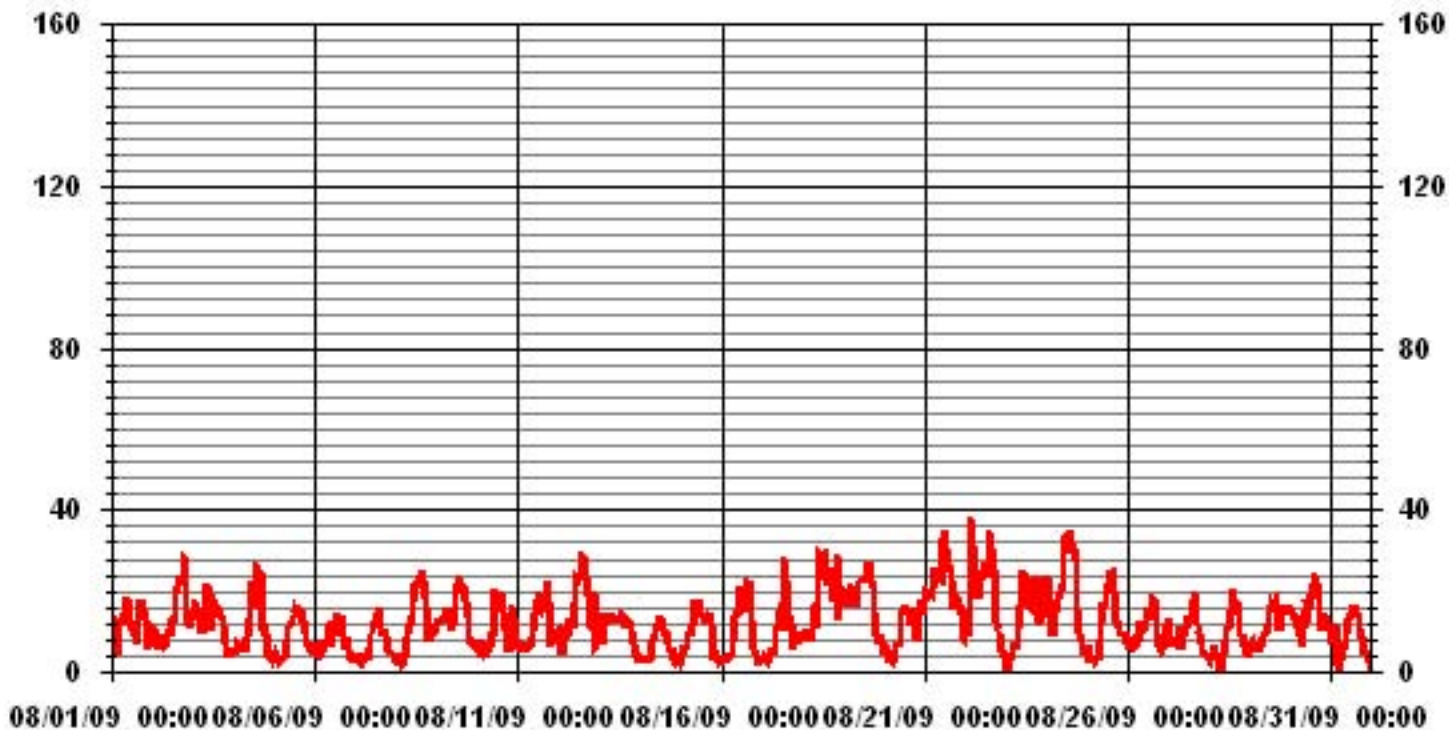
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	38	KPH	@ HOUR(S)	3
			ON DAY(S)	22

01 Hour Averages



— LICA30 WSMAX KPH

LICA30
WSP / WDR Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	3.89	2.28	3.76	4.30	1.74	2.01	2.68	3.09	5.37	10.61	8.19	5.10	5.10	3.22	3.36	3.36	68.14
< 12.0	1.74	1.88	2.55	.67	.53	.67	1.88	2.95	1.07	6.18	1.88	1.07	1.34	2.55	1.34	1.74	30.10
< 20.0	.00	.13	.00	.00	.00	.00	.26	.26	.00	.13	.00	.00	.26	.40	.00	.00	1.47
< 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	5.64	4.30	6.31	4.97	2.28	2.68	4.83	6.31	6.45	16.93	10.08	6.18	6.72	6.18	4.70	5.10	

Calm : .26 %

Total # Operational Hours : 744

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	29	17	28	32	13	15	20	23	40	79	61	38	38	24	25	25	507
< 12.0	13	14	19	5	4	5	14	22	8	46	14	8	10	19	10	13	224
< 20.0		1					2	2		1			2	3			11
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	42	32	47	37	17	20	36	47	48	126	75	46	50	46	35	38	

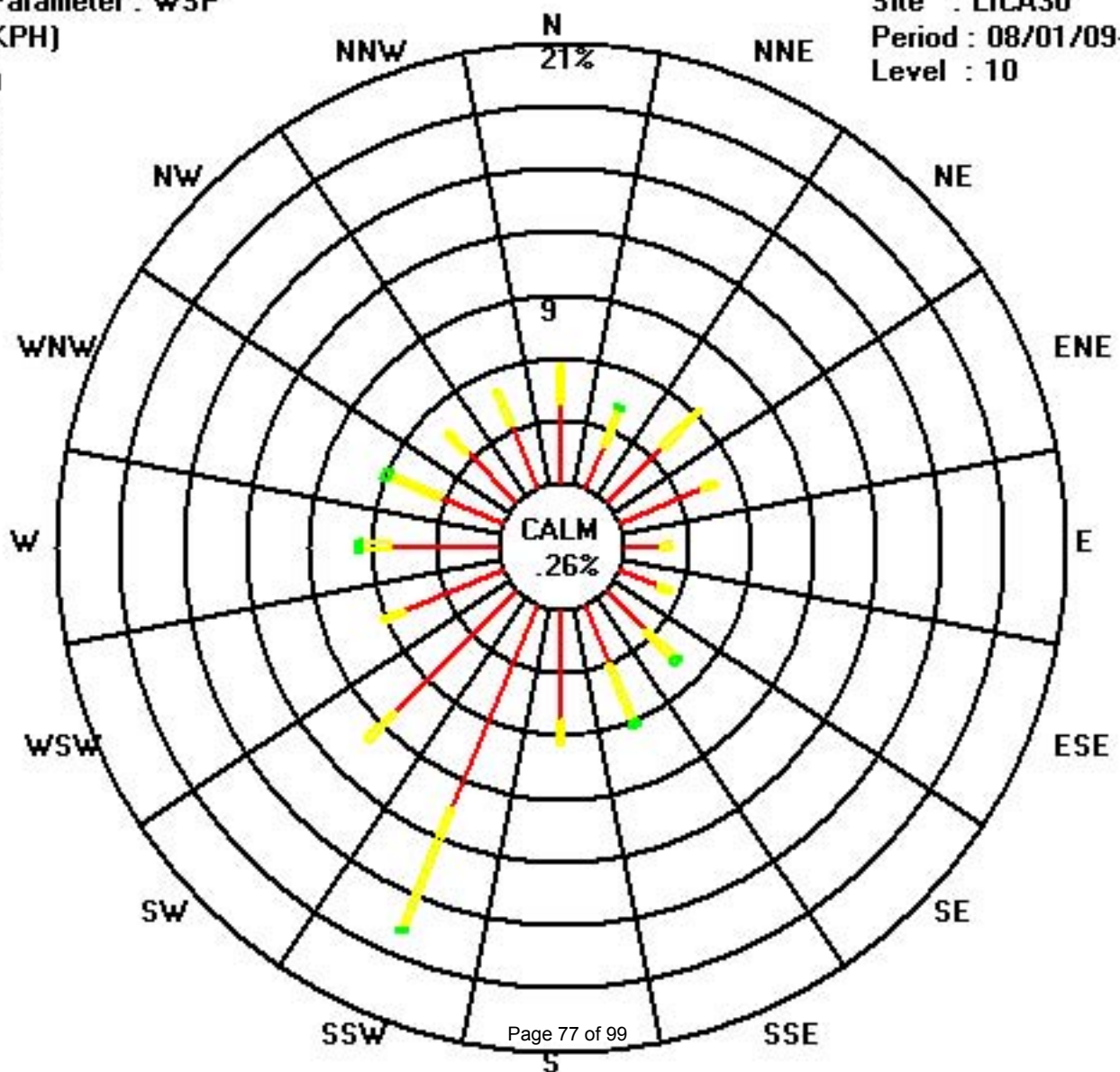
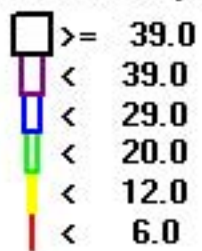
Calm : .26 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 08/01/09-08/31/09

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2009

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		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	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	210	209	212	219	283	210	208	213	207	39	66	150	158	144	265	56	335	345	13	7	4	1	309	349	253	WSW	24	
2	2	358	332	292	273	265	289	285	280	230	219	217	234	309	35	29	14	4	6	14	3	7	5	6	355	N	24	
3	355	333	346	356	348	9	12	23	19	25	353	326	9	5	24	5	8	17	15	3	265	289	209	235	4	N	24	
4	263	260	263	254	289	271	286	288	300	326	335	271	326	24	291	309	16	355	331	271	246	213	239	238	317	NW	24	
5	256	244	258	238	140	246	3	56	71	78	194	175	195	194	174	161	178	188	165	146	155	175	192	214	173	S	24	
6	194	103	219	249	190	85	76	192	206	93	127	133	84	38	67	46	46	62	78	220	229	164	192	177	96	E	24	
7	187	226	110	22	134	310	49	119	14	182	277	214	257	156	180	171	179	199	200	191	205	214	233	216	193	S	24	
8	228	209	209	184	226	250	215	224	215	215	205	197	197	200	195	196	195	194	191	175	179	186	197	201	198	SSW	24	
9	209	208	206	201	206	209	216	230	234	225	240	234	225	212	249	262	201	208	198	206	205	209	216	236	216	SW	24	
10	103	123	130	148	207	89	88	119	182	180	159	152	139	151	167	166	196	206	205	213	274	275	296	348	170	SSW	24	
11	224	213	215	178	193	205	244	233	300	250	213	211	216	216	236	264	280	290	283	234	214	212	238	229	235	SW	24	
12	241	208	210	209	209	228	213	205	219	243	250	252	246	244	257	267	281	285	278	259	276	319	272	267	250	WSW	24	
13	264	254	243	306	350	351	340	6	8	348	231	242	256	320	299	341	292	336	346	29	29	18	147	301	322	NW	24	
14	309	310	197	244	206	149	67	319	311	328	322	340	327	325	336	353	6	39	86	96	136	136	76	37	344	NNW	24	
15	9	328	338	23	32	25	25	35	38	39	47	37	40	52	74	34	49	36	36	233	301	178	178	242	37	NE	24	
16	182	131	241	240	229	173	275	47	27	16	4	36	43	2	24	2	2	21	154	178	164	207	166	192	22	NNE	24	
17	200	117	234	209	268	219	242	219	208	206	192	197	197	220	218	206	236	247	185	189	195	210	229	221	209	SSW	24	
18	220	217	218	215	211	230	279	244	264	287	292	320	340	333	332	303	300	295	312	336	326	293	304	322	294	WNW	24	
19	329	320	308	322	327	334	333	338	339	353	343	345	333	321	323	333	328	326	324	290	259	259	272	213	326	NW	24	
20	202	231	220	208	162	177	232	279	306	308	295	321	333	353	25	128	149	140	134	140	152	129	144	134	157	SSE	24	
21	141	138	146	151	141	147	152	150	150	147	140	141	147	150	146	154	149	133	111	119	124	114	74	58	141	SE	24	
22	66	292	271	241	0	11	310	308	292	296	294	298	287	287	280	278	267	267	260	242	216	226	194	207	288	WNW	24	
23	137	172	224	171	240	331	80	70	41	54	60	56	61	75	48	52	34	42	24	13	314	288	295	284	37	NE	24	
24	295	273	280	231	210	213	216	219	236	256	262	272	291	294	280	282	292	289	266	238	231	215	185	182	263	W	24	
25	185	201	203	184	190	71	23	34	55	92	126	141	132	117	102	86	107	75	80	70	66	68	56	59	98	E	24	
26	54	50	60	43	44	74	47	46	44	18	57	58	66	104	88	85	67	70	77	123	136	108	123	84	71	ENE	24	
27	272	257	304	1	42	48	87	41	39	34	231	211	302	253	266	253	284	263	266	237	240	234	222	194	263	W	24	
28	199	202	185	217	151	198	249	352	335	202	190	210	199	196	178	198	179	157	146	139	150	34	10	15	179	S	24	
29	71	64	67	63	60	96	108	127	116	166	160	165	171	168	163	183	164	154	149	148	155	171	188	193	155	SSE	24	
30	193	197	196	196	200	197	192	207	215	227	207	192	201	205	204	203	204	192	182	182	193	202	204	200	199	199	SSW	24
31	215	197	192	274	294	193	284	214	205	197	204	198	192	191	171	196	165	153	130	89	59	3	106	152	181	S	24	
HOURLY AVG	355	358	346	356	350	351	340	352	339	353	353	345	340	353	336	353	335	355	346	336	326	319	309	349				

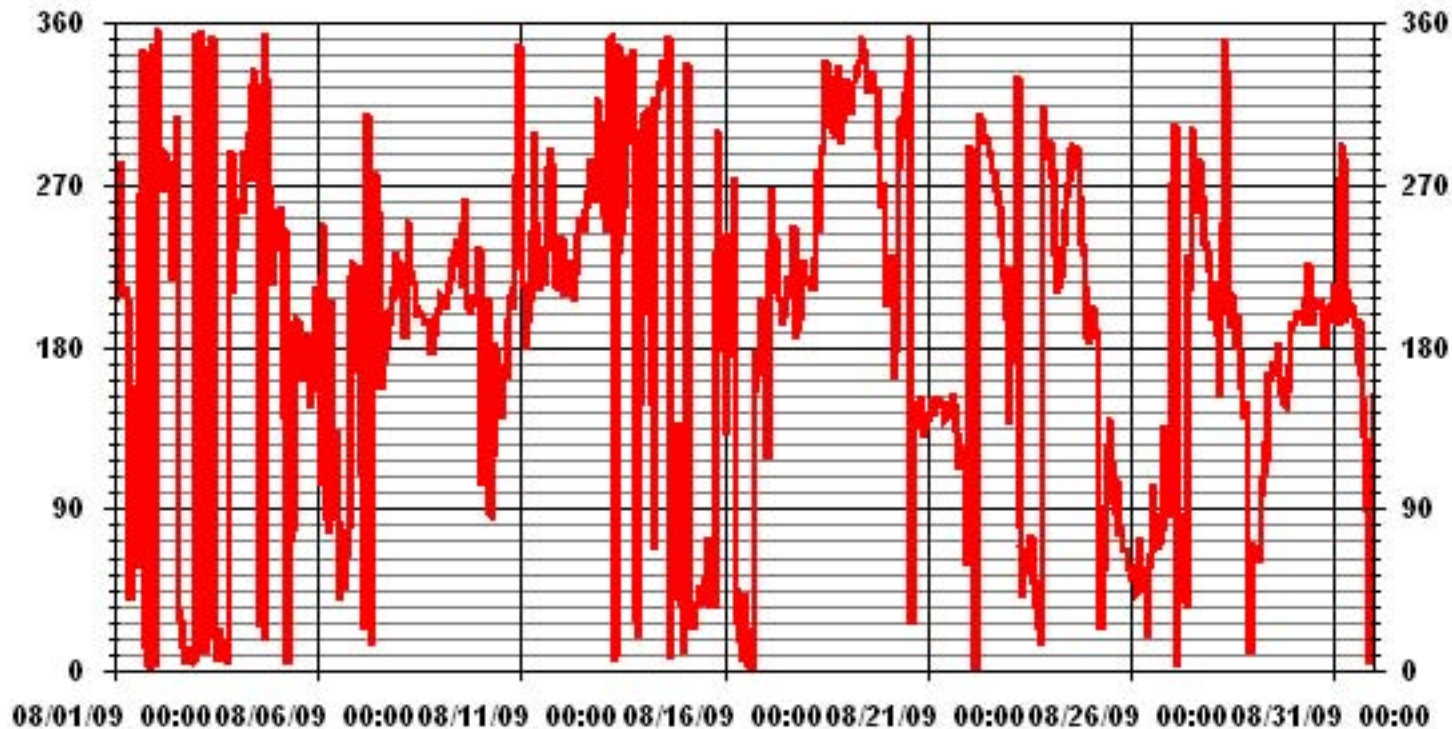
STATUS FLAG CODES

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

LAST CALIBRATION:	November 7, 2007
DECLINATION:	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION	95.14		AMD OPERATION UPTIME	100.0	%
			MONTHLY AVERAGE	227	DEG

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

AUGUST 2009

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	9	9	13	35	26	19	13	15	23	35	30	30	27	49	77	38	37	32	16	17	22	27	31	31	
2	21	24	41	37	28	27	27	32	29	48	27	26	50	32	24	14	15	21	21	14	18	14	18	17	
3	26	25	29	25	59	38	21	18	21	19	46	30	27	29	20	28	23	18	14	22	27	54	18	32	
4	17	23	34	28	31	26	34	34	34	38	37	32	39	35	48	36	34	31	31	32	18	16	27	31	
5	22	21	30	38	23	28	44	30	61	64	68	51	62	51	41	32	26	19	16	11	9	10	25	19	
6	33	63	56	37	36	54	35	32	27	29	32	35	37	17	33	18	17	21	18	22	12	22	35	30	
7	62	23	64	49	29	56	44	53	34	50	59	42	57	39	30	27	20	15	10	4	7	8	17	21	
8	23	30	19	21	36	19	21	25	21	25	27	24	27	24	18	16	19	15	14	9	8	8	9	10	
9	13	10	9	9	10	11	15	25	36	28	27	30	30	19	32	30	16	14	12	6	5	7	9	19	
10	33	49	68	69	39	61	32	44	43	29	25	22	25	26	26	19	23	17	9	27	37	37	29	38	
11	35	12	17	28	24	17	30	25	37	30	14	14	20	22	37	36	27	24	31	19	12	9	19	18	
12	26	18	8	8	10	21	16	13	20	28	35	31	33	26	29	30	32	28	29	25	27	26	32	44	
13	24	28	25	34	36	32	31	35	26	36	29	46	34	39	48	34	46	35	24	52	37	56	47	47	
14	28	51	23	29	34	31	49	64	31	31	32	44	32	31	33	31	27	24	31	25	10	39	41	40	
15	38	30	20	23	12	15	14	14	12	18	20	16	19	26	33	18	21	15	47	42	29	32	31	29	
16	37	37	26	31	27	28	54	27	48	30	27	30	63	58	33	31	31	15	32	8	15	29	46	31	
17	47	49	45	26	21	21	22	22	18	16	15	14	18	28	22	21	27	28	12	10	11	11	16	11	
18	12	9	12	11	9	14	31	22	28	32	21	27	29	31	34	28	30	25	32	30	26	25	26	27	
19	31	31	28	28	31	32	32	31	32	29	29	33	33	29	29	28	26	33	37	29	23	27	29	18	
20	19	21	21	28	20	13	22	25	53	56	48	43	55	31	58	35	25	20	13	11	12	11	14	15	
21	15	13	14	14	15	19	18	21	19	21	22	21	20	21	28	21	19	24	24	24	29	24	22	16	
22	19	43	51	44	27	26	27	28	23	23	26	27	34	29	26	27	29	31	29	21	15	16	15	13	
23	41	37	24	56	35	38	55	23	16	22	24	19	22	24	22	18	20	29	48	52	45	26	25	25	
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28	14	14	24	28	26	26	11	36	46	36	54	41	41	45	30	21	19	14	11	13	15	38	45	53	
29	56	30	46	14	17	18	11	26	27	34	32	31	47	24	25	22	19	13	12	11	12	13	12	11	
30	12	11	9	9	11	10	55	16	16	24	22	19	18	20	18	17	14	13	11	10	10	10	12	14	
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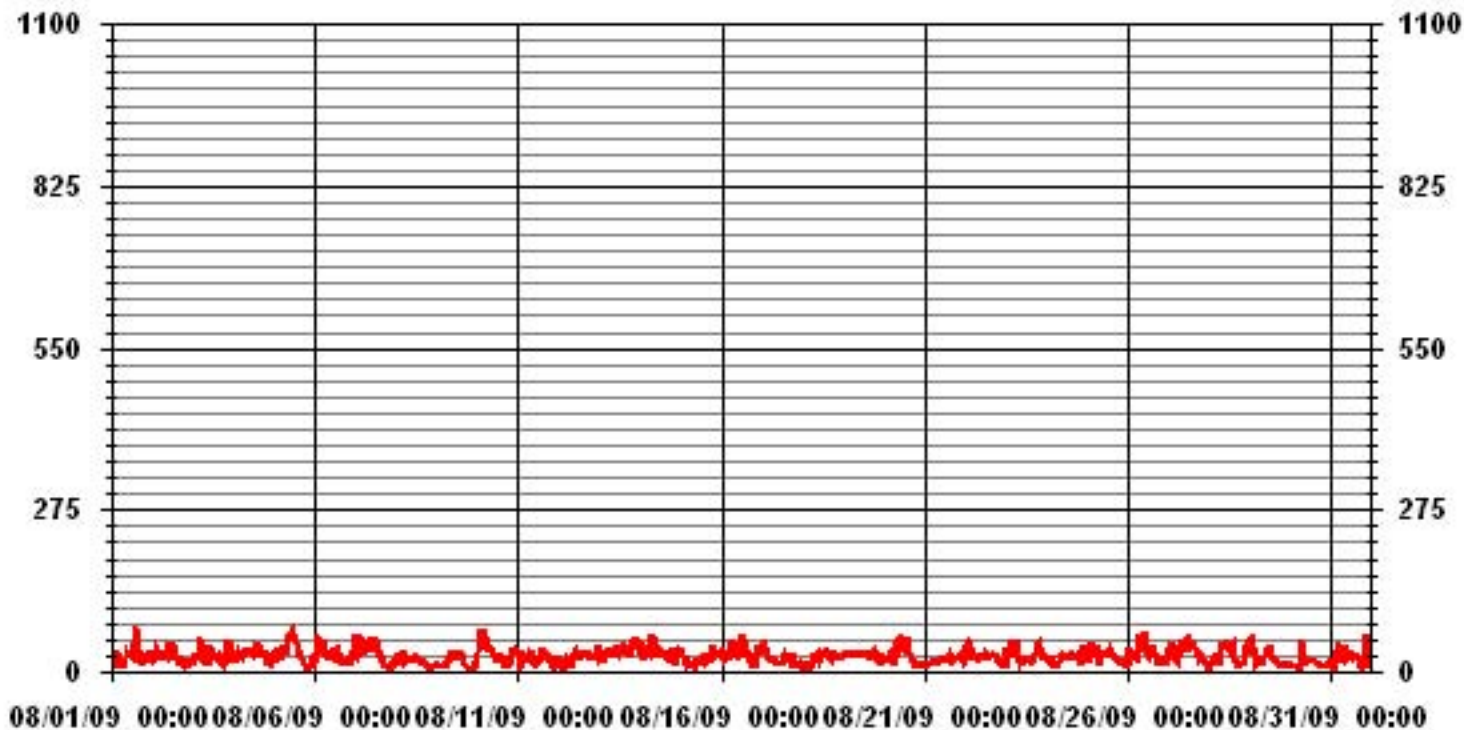
STATUS FLAG CODES

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

LAST CALIBRATION: November 7, 2007

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

01 Hour Averages



— LICA30 STDWDIR DEG

Calibration Reports

Sulphur Dioxide

SO₂ Calibration Report

Station Information

Calibration Date	August 25, 2009	Previous Calibration	July 10, 2009
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	9:30	End Time (MST)	0.684027778
Reason:	Monthly Calibration		
Barometric Pressure	945 mBar	Station Temperature	25 Deg C
Cal Gas	52.2 ppm	Cal Gas Expiry date	12/19/2010
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	0 - 1 Volts

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	508	Method:	Fluorescent
Converter Make / Model:	-	S/N :	-		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 1000	ppb	
Sample Flow / Box Temp	614 ccm 33.9 Deg C	613 ccm 33.7 Deg C	
HVPS / Lamp Setting	522 3426	522 3429	
PMT / RxCell Temp	7.7 Deg C 50 Deg C	7.7 Deg C 50 Deg C	
Converter / IZS Temp	NA Deg C 45 Deg C	NA Deg C 45 Deg C	
Offset / Slope	30.4 1.087	28.7 1.109	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000.0	0	0	-1	N/A
4999.0	0	0	0	N/A
4924.0	76.7	801	784	1.0212
4924.0	76.7	801	801	0.9995
4961.0	38.3	400	398	1.0048
4982.0	19.2	200	199	1.0070
4998.0	0	0	0	N/A
Sum of Least Squares				1.0009
New Correction Factor				0.9995

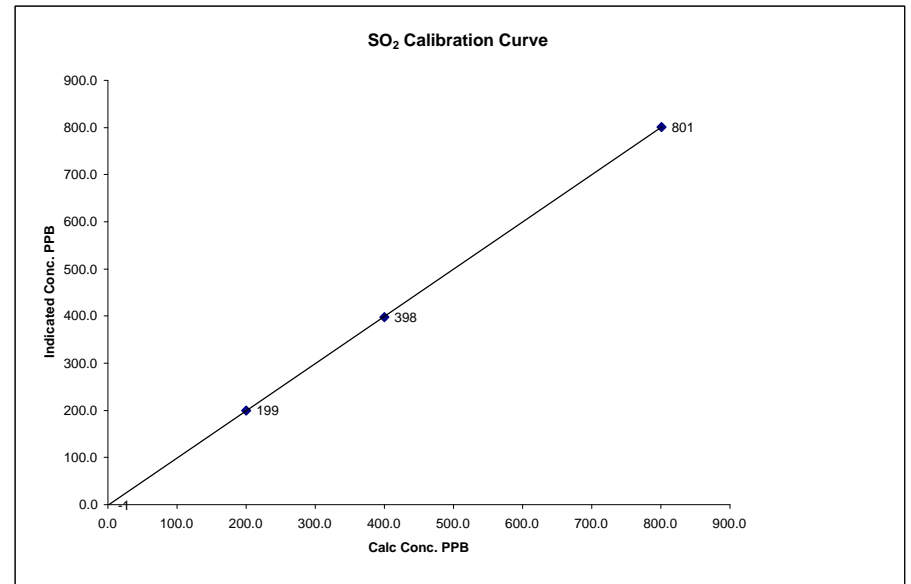
	Before Calibration	After Calibration
Auto Zero	-0.5	0.5
Auto Span	597.0	606.0
Sample Lines Connected		YES
Percent Change from Previous Calibration		-2.1%

Calibration Performed by: Shea Beaton

SO₂ Calibration Curve

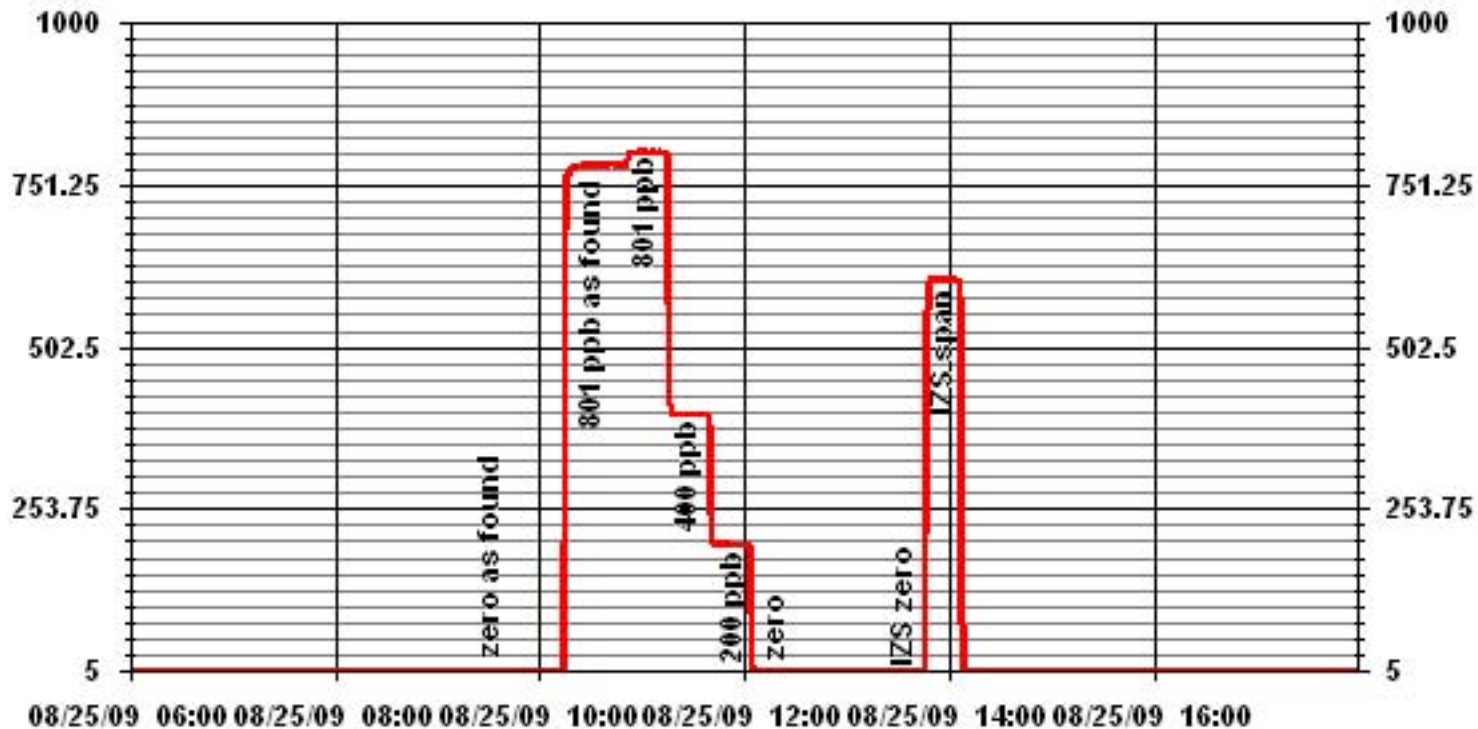
Calibration Date	August 25, 2009		
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	9:30	End Time (MST)	16:25

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999995
0	-1	n/a	Intercept	(± 3% F.S.)	-1.614782
200	199	1.0070			
400	398	1.0048			
801	801	0.9995			



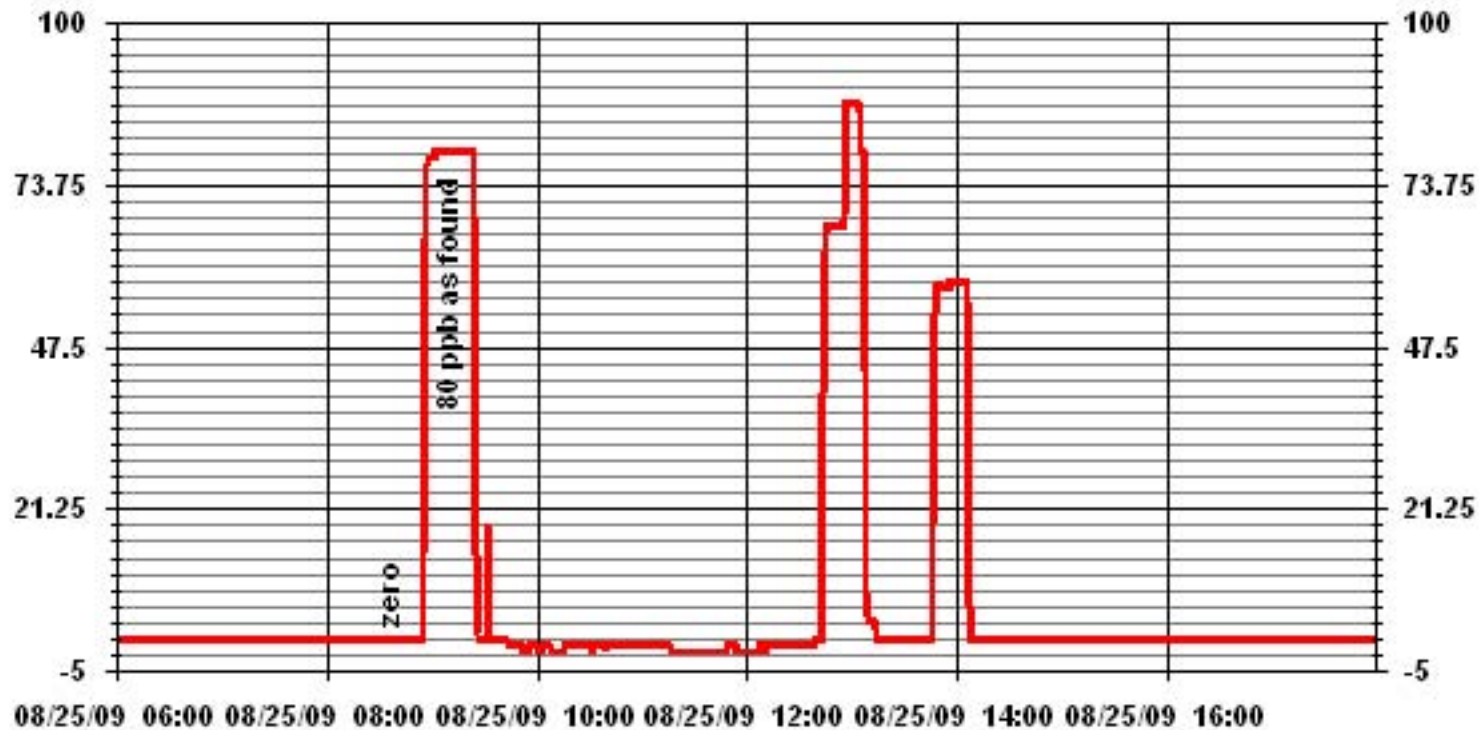
Notes: Dilution cal finished at 12:37. Daily cal finished at 14:15.

01 Minute Averages



Hydrogen Sulphide

01 Minute Averages



H₂S Calibration Report

Station Information

Calibration Date	August 26, 2009	Previous Calibration	July 9, 2009
Company	Lakelnad Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	7:30	End Time (MST)	12:00
Reason:	Monthly Calibration		
Barometric Pressure	945 mBar	Station Temperature	26 Deg C
Cal Gas	10.8 ppm	Cal Gas Install date	06/22/2009
DAS Output Voltage	0 - 1 Volts		

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	511	Method:	Fluorescent
Converter Make / Model:	Internal	S/N :	N/A		
Calibrator Make / Model:	Enviroics 2000	S/N :	1991	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Flow Meter:	Enviroics 2000	S/N :	1991		

Analyzer Settings

		Before Calibration		After Calibration	
Concentration Range		0 - 100		ppb	
Sample Flow / Box Temp	531 ccm	37 Deg C	529	35.5	Deg C
HVPS / Lamp Setting	532	3183	532	3180	
PMT / RxCell Temp	7.9 Deg C	50 Deg C	7.9 Deg C	50 Deg C	
Converter / IZS Temp	315.4 Deg C	45 Deg C	314.6 Deg C	45 Deg C	
Offset / Slope	25.6	1.035	24.1	1.075	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4999	0	0	-1	N/A
4963	37	80	76	1.0516
5001	0	0	0	N/A
4963	37	80	80	0.9990
4982	18.5	40	40	0.9989
4987	11.6	25	25	1.0025
5001	0	0	1	N/A
Sum of Least Squares				0.9992
New Correction Factor				0.9990

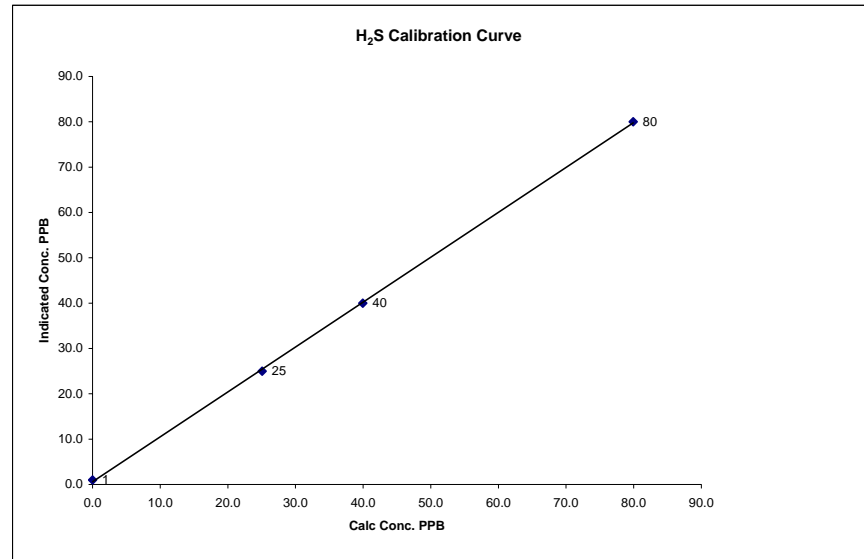
		Before Calibration	After Calibration
Auto Zero		0.2	0.6
Auto Span		58.0	60.0
Sample Lines Connected			YES
Percent Change from Previous Calibration			-5.0%

Calibration Performed by: Shea Beaton

H₂S Calibration Curve

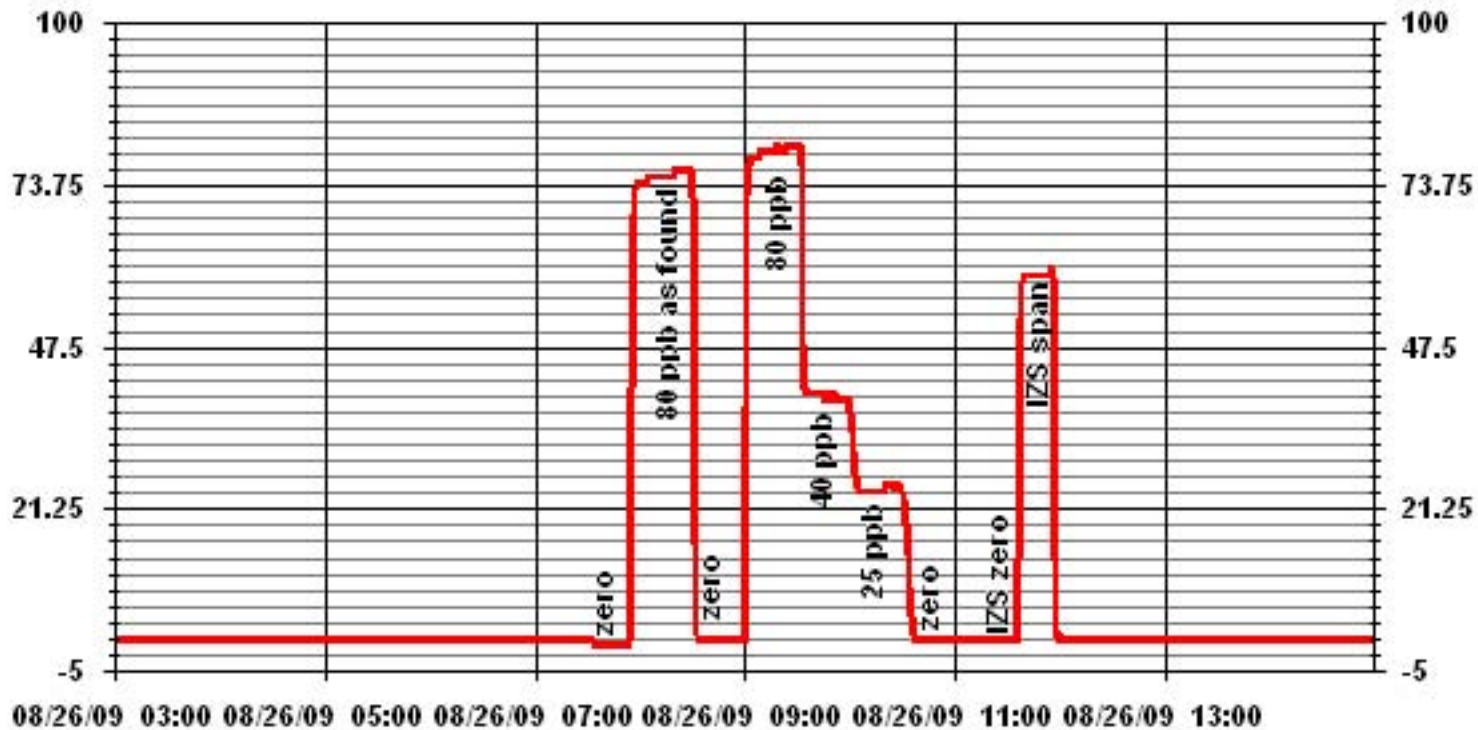
Calibration Date	August 26, 2009
Company	Lakelnad Industry & Community Association
Plant / Location	Cold Lake - Maskwa
Start Time (MST)	7:30
End Time (MST)	12:00

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999870
0	1	n/a	Intercept	(± 3% F.S.)	0.608958
25	25	1.0025			
40	40	0.9989			
80	80	0.9990			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	August 26, 2009	Previous Calibration	July 10, 2009
Company:	Lakeland Industry & Community Association		
Plant / Location:	Cold Lake - Maskwa		
:	(MST) 7:30	End Time	(MST) 12:35
Reason:	Monthly Calibration		
Barometric Pressure:	946 mBar	Station Temperature:	25 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	299 Prop/ 1019 Meth	ppm	Cal Gas Expiry Date: August 21, 2011
DAS make & Model:	ESC 8832	S/N :	AO 791
Output Voltage Range:	0 - 10	VDC	

Analyzer Information

Make / Model	TECO 51C-LT	S/N :	436609738	Method	Flame Ionization
--------------	-------------	-------	-----------	--------	------------------

Analyzer Settings

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

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
3003	0	0.0	0.0	N/A
2991	64.5	38.9	40.2	0.9669
3000	0.0	0.0	0.0	N/A
3000	65.1	39.1	39.2	0.9976
3003	35.2	21.3	21.1	1.0110
3001	20.2	12.3	12.0	1.0259
3015	0	0.0	0.0	N/A
Correction Factor:				0.9976

Previous Calibration Correction Factor:	0.9949
Current Correction Factor Before Span Adjust:	0.9976
Percent Change:	-0.27%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.1	0.0
Auto Span	35.3	34.6
Sample Lines Connected		YES

Cylinder Pressures

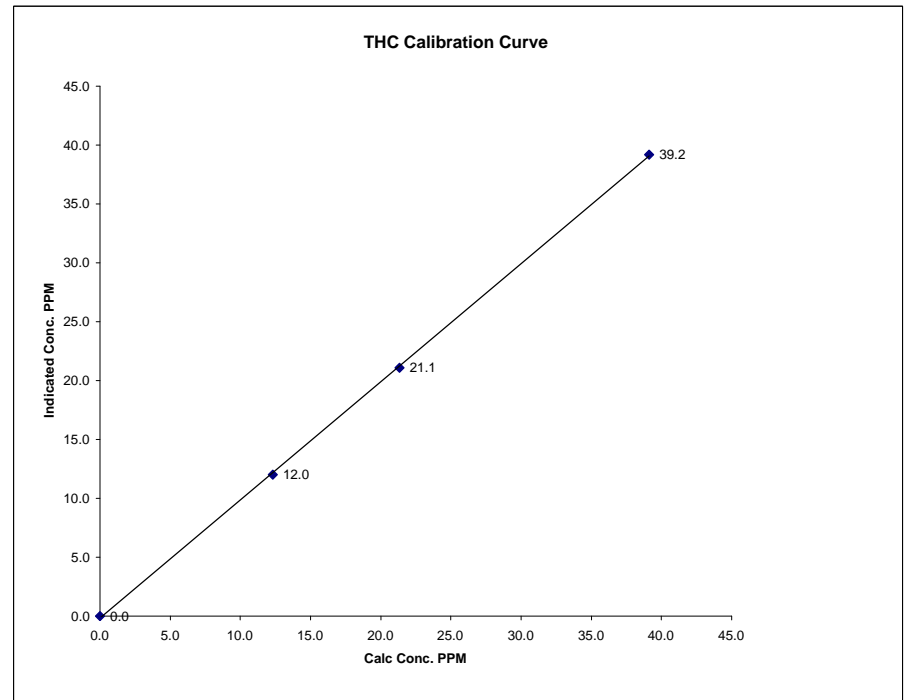
Span	700	psi
Hydrogen	1050	psi
Zero Air	-	psi

Calibration Performed by: Shea Beaton

THC Calibration Curve

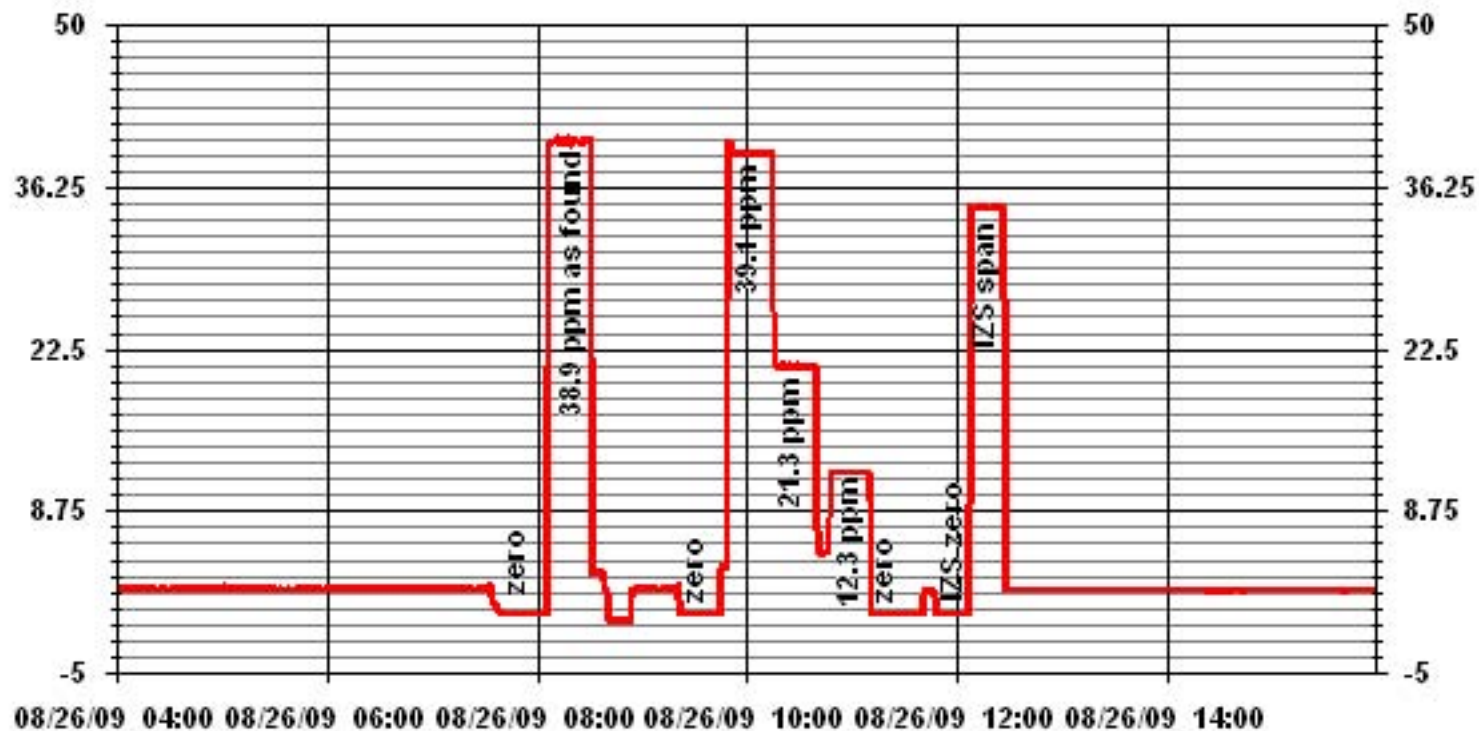
Calibration Date	August 26, 2009		
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	7:30	End Time (MST)	12:35

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999881
0.0	0.0		Intercept	(± 3% F.S.)	-0.180679
12.3	12.0	1.0259			
21.3	21.1	1.0110			
39.1	39.2	0.9976			



Notes: Flows manually measured.

01 Minute Averages



— LICA30 THC PPM

Nitrogen Dioxide

NOx - NO- NO₂ Calibration Report
Station Information

Calibration Date	August 25, 2009	Previous Calibration	July 10, 2009
Company	LICA	Plant/Location	Cold Lake - Maskwa
Start Time (MST)	8:25	End Time (MST)	16:25
Reason:	Monthly Calibration		
Barometric Pressure	945 mBar	Station Temperature	25.0 Deg C
Cal Gas Concentration	NOx 51.8 ppm	NO	51.6 ppm
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	0 - 1 Volts

Equipment Information

Analyzer Make / Model:	API 200E	S/N :	594	Method:	Chemiluminescent
Calibrator Make / Model:	EnviroNics 2000	S/N:	1991		
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Flow Meter:	EnviroNics 2000	S/N :	1991		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0 - 1000			ppb			
Sample Flow/Conv. Temp	460 ccm	315.6 Deg C		459 ccm	314.9 Deg C		
Ozone Flow / Vacuum	76 ccm	4.2 *Hg-A		76 ccm	4.2 *Hg-A		
HVPS	767 Volts			767 Volts			
Rx/ Temp / PMT Temp	50 Deg C	6.6 Deg C		50 Deg C	6.6 Deg C		
Box Temp / IZS Temp	36 Deg C	45 Deg C		34.4 Deg C	45 Deg C		
Offset	0.1 NOx	0 NO		0.9 NOx	0.6 NO		
Slope	1.13 NOx	1.123 NO		1.137 NOx	1.133 NO		

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration		Indicated Concentration			Correction Factor	
			NOx	NO	NOx	NO	NO2	NOx	NO
5019	0	N/A	0	0	1	0	1	N/A	N/A
4940.0	77.8	N/A	803	800	796	792	5	1.0090	1.0102
5022.0	0	N/A	0	0	0	0	0	N/A	N/A
4946.0	77.9	N/A	803	800	801	800	2	1.0028	1.0001
4981.0	38.9	N/A	401	400	401	400	1	1.0010	0.9996
5003.0	19.4	N/A	200	199	200	200	0	1.0004	0.9966
5025.0	0	N/A	0	0	0	0	0	N/A	N/A
Converter Efficiency									
4945.0	77.9	N/A	803	800	800	799	1	N/A	
4945.0	77.9	400	803	N/A	796	418	378	99%	
4945.0	77.9	200	803	N/A	798	607	191	99%	
4945.0	77.9	100	803	N/A	797	704	94	98%	
4945.0	77.9	N/A	803	800	798	798	0	N/A	
Correction Factor									
5025.0	0	N/A	0	0	1	1	0	N/A	N/A
Linearity OK? Yes No									
Flows Checked on-site? Yes No									
Sum of Least Squares								1.0023	0.9999
New Correction Factor								1.0028	1.0001
Average Converter Efficiency								99%	

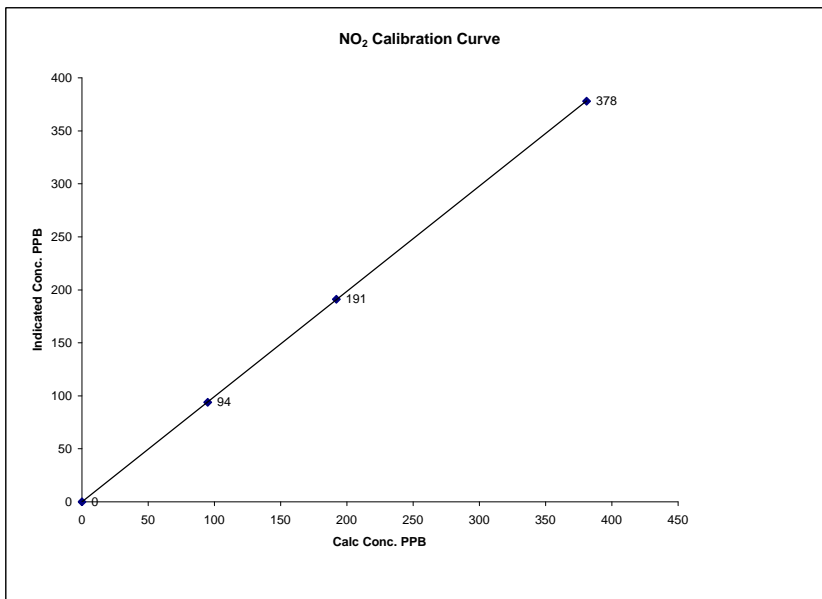
Before Calibration				After Calibration			
Auto Zero	-0.3 NOx	0.0 NO2		0.4 NOx	-0.4 NO2		
Auto Span	696.0 NOx	686.0 NO2		688.0 NOx	679.0 NO2		
Sample Lines Connected							
Percent Change from Previous Calibration							
	NOx	-0.9%	NO	-1.0%			

Calibration Performed by: Shea Beaton

NO₂ Calibration Curve

Calibration Date	August 25, 2009
Company	LICA
Plant / Location	Cold Lake - Maskwa
Start Time (MST)	8:25
End Time (MST)	16:25

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
95	94	1.0106		0.992515
192	191	1.0052		
381	378	1.0079		-0.000031

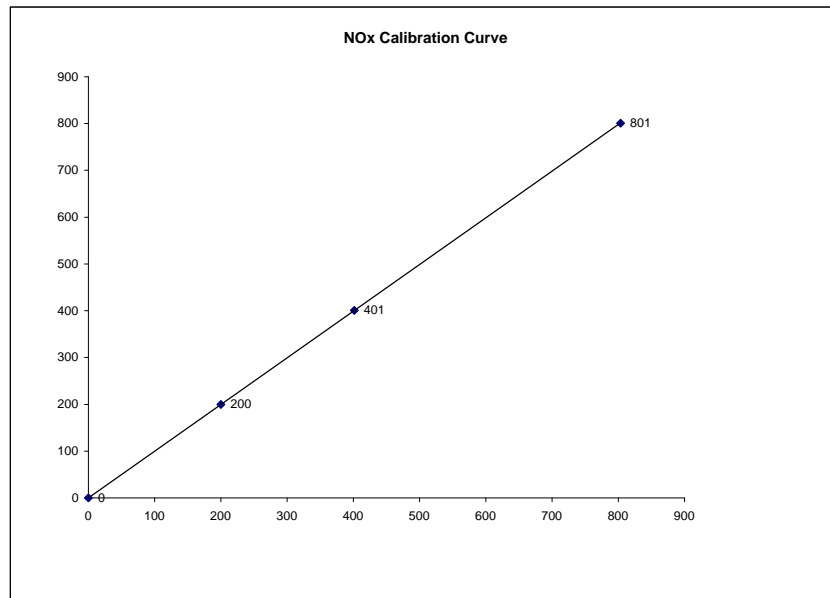


Notes: Towards the end of the first GPT point, the NO/NO₂ values changed, suspect that the calibrator O₃ concentration changed slightly. Allowed point to restabilize, repeated point.

NOx Calibration Curve

Calibration Date	August 25, 2009	
Company	LICA	
Plant / Location	Cold Lake - Maskwa	
Start Time (MST)	8:25	End Time (MST) 16:25

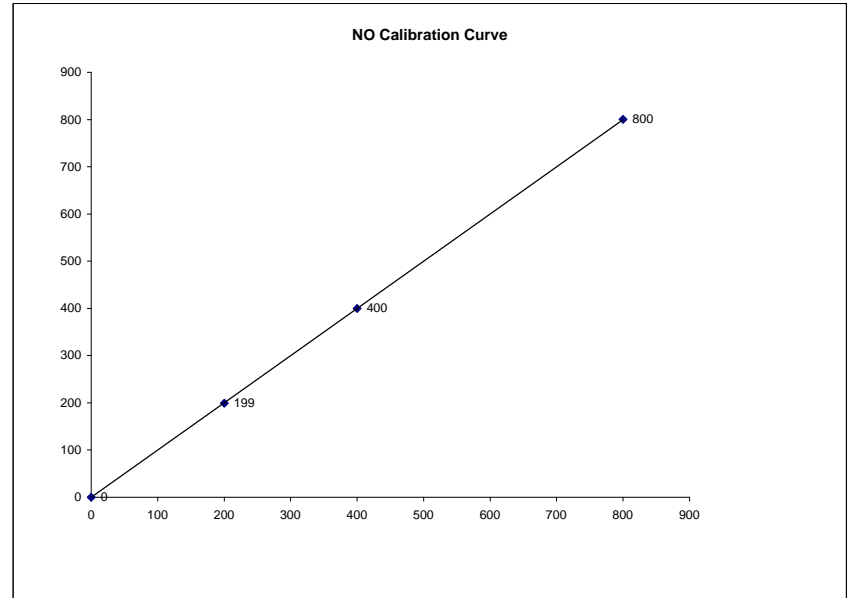
Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999999
0	0	N/A	Slope	(0.85 to 1.15)	0.997157
200	200	1.0004	Intercept	($\pm 3\%$ F.S.)	0.323882
401	401	1.0010			
803	801	1.0028			



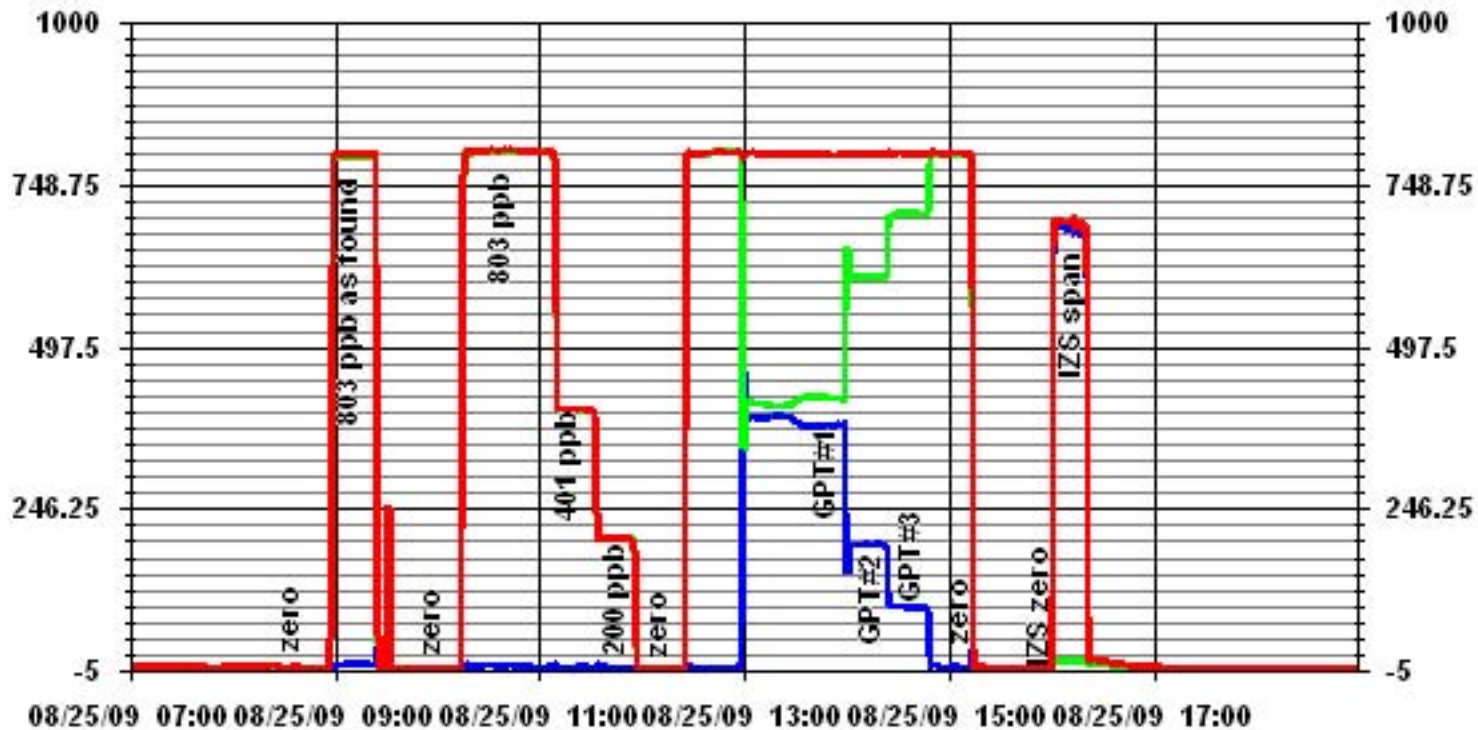
NO Calibration Curve

Calibration Date	August 25, 2009	
Company	LICA	
Plant / Location	Cold Lake - Maskwa	
Start Time (MST)	8:25	End Time (MST) 16:25

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999999
0	0	N/A	Slope	(0.85 to 1.15)	0.999593
199	200	0.9966	Intercept	($\pm 3\%$ F.S.)	0.323539
400	400	0.9996			
800	800	1.0001			



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 2009

Prepared By:



September 9, 2009

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 2009

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Craig Snider

Calibration Procedure

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

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

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

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

The calibrations conducted at the LICA – St. Lina Air Monitoring Stations conform to the following Maxxam Analytics 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 – ST. LINA

Continuous Ambient Monitoring – August 2009

LICA ST. LINA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						OBJECTIVES					1-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO2 (PPB)	172	57	0	0	0.07	3	10	10	12.3	161(SSE)	0.7	10	99.9
H2S (PPB)	10	3	0	0	0.02	1	VAR	VAR	VAR	VAR	0.2	30	99.9
THC (PPM)	-	-	-	-	2.02	3.9	2	5	6.6	303(WNW)	2.4	4	99.9
NOx (PPB)	-	-	-	-	0.74	10	17	8	6.8	194(SSW)	2.2	17	99.9
NO (PPB)	-	-	-	-	0.36	3	17	7, 8	5.8, 6.8	207(SSW), 194(SSW)	1.0	17	99.9
NO ₂ (PPB)	212	106	0	0	0.64	6	6, 17	8, 8	4.1, 6.8	113(ESE), 194(SSW)	2.1	1	99.9
VECTOR WS (KPH)	-	-	-	-	8.90	24.5	24	11	-	264(W)	14.6	21	99.9
VECTOR WD (DEGREES)	-	-	-	-	262(W)	-	-	-	-	-	-	-	99.9

VAR-VARI96.5OUS

General Monthly Summary

Equipment Operation

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

AQM STATION – LICA – St. Lina

Sulphur Dioxide (PPB)

- Analyzer make / model - API 100E

No operational issue was observed during this month. The inlet filter was changed before the monthly calibration was started. An hour of data is missing on August 28th between 22:00 and 22:59. Upon arrival the station on August 18th, the analyzer had a warning for “Front Panel Display”; this warning indicates a communication problem between the CPU and the front panel. Cleared the warning, no other signs of a problem appeared. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

- Analyzer make / model - API 101E

No operational issue was observed during this month. An hour of data is missing on August 28th between 22:00 and 22:59. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Total HydroCarbon (PPM)

- Analyzer make / model –TECO 51C

No operational issue was observed during this month. An hour of data is missing on August 28th between 22:00 and 22:59. The inlet filter was changed before the monthly calibration was started. Two spare Hydrogen gas cylinders and 2 Methane gas cylinders were dropped –off in the trailer on August 18th. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – St. Lina

Nitrogen Dioxide (PPB)

- Analyzer make / model - API 200E

No operational issue was observed during this month. An hour of data is missing on August 28th between 22:00 and 22:59. 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 – Met 50.5

The wind system is reported as vector wind speed and vector wind direction. An hour of data is missing on August 28th between 22:00 and 22:59.

Datalogger

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

The station is connected to a modem to allow for daily polling of the station. An hour of data is missing on August 28th between 22:00 and 22:59.

Trailer

The trailer is located at 54°12'59"N, 111°30'1"E, elevation 695M ASL.

No issued was discovered. The manifold was cleaned during the trip on August 18th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

IMPERIAL OIL RESOURCES LTD. - COLD LAKE - MASKWA

AUGUST 2009

SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST

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

STATUS FLAG CODES

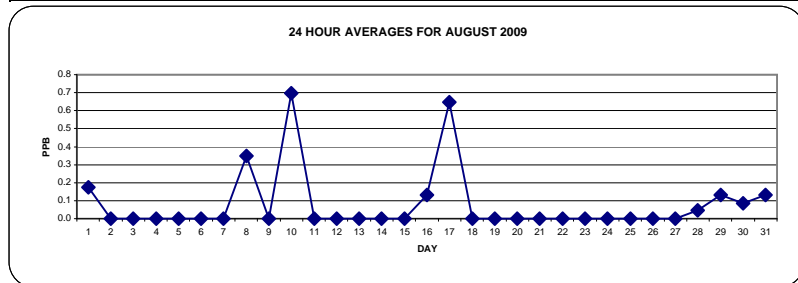
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

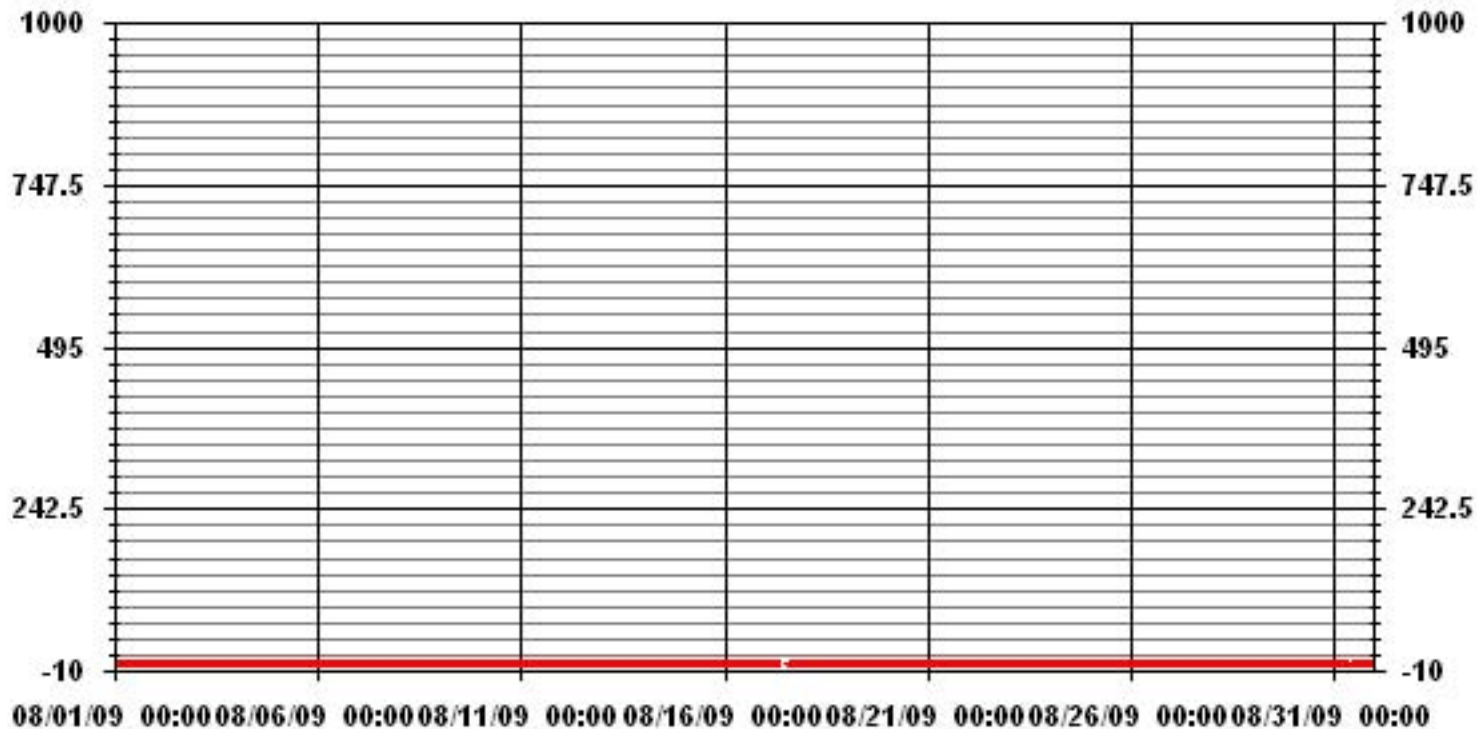
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	57	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	42		
MAXIMUM 1-HR AVERAGE:	3 PPB @ HOUR(S) 10 ON DAY(S) 10		
MAXIMUM 24-HR AVERAGE:	0.7 PPB ON DAY(S) 10		
IZS CALIBRATION TIME:	32 HRS	OPERATIONAL TIME:	743 HRS
MONTHLY CALIBRATION TIME:	5 HRS	AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	0.31	MONTHLY AVERAGE:	0.07 PPB



01 Hour Averages



— LICA31 SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

SULPHUR DIOXIDE MAX instantaneous maximum in ppt

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		0	0	0	0	0	0	1	1	2	2	2	2	1	1	1	1	IZS	1	1	0	0	0	1	1	2	0.8	24	
2		1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	0.9	24
3		1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0.0	24	
4		0	0	0	0	0	0	0	0	1	1	0	0	0	IZS	0	0	0	1	0	0	0	0	0	0	1	0.1	24	
5		0	0	0	0	0	0	0	1	0	1	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
6		0	0	0	0	0	0	0	0	1	0	0	IZS	1	0	1	1	1	0	1	1	0	0	0	0	1	0.3	24	
7		0	0	0	1	1	1	0	0	1	1	IZS	1	1	1	1	1	1	1	1	1	0	1	0	0	1	0.7	24	
8		0	0	0	1	0	0	1	1	1	IZS	1	1	3	2	1	3	3	2	2	1	1	1	1	1	3	1.2	24	
9		1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
10		1	1	1	1	1	1	1	IZS	1	2	4	3	3	2	2	2	1	2	2	2	1	2	1	1	4	1.7	24	
11		1	1	1	1	1	1	IZS	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	IZS	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	IZS	1	0	1	1	1	0	1	1	1	1	1	1	1	1	0	1	0	0	0	1	0.7	24	
14		0	0	0	IZS	0	0	1	0	0	1	0	0	1	0	1	1	0	0	0	0	1	1	1	1	1	0.4	24	
15		1	1	IZS	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
16		1	IZS	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
17		IZS	2	2	2	2	2	2	4	C	C	C	C	C	C	1	1	2	1	1	1	1	1	1	0	IZS	4	1.6	24
18		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	
19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
20		0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	2	0.2	24
21		0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	0.6	24	
22		1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	1	1	0	1	0.8	24
23		0	0	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	IZS	1	1	0	0	0	1	1	0.6	24	
24		0	0	0	0	0	0	0	1	1	0	1	1	1	1	0	1	IZS	0	0	1	0	0	0	0	1	0.3	24	
25		0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	IZS	1	1	1	1	1	1	0	0	1	0.5	24	
26		0	0	0	0	0	0	0	0	0	1	1	0	0	0	IZS	0	0	1	0	0	0	0	0	0	1	0.1	24	
27		0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0.0	24	
28		0	0	0	0	0	0	0	0	1	1	3	3	IZS	1	1	1	1	1	1	1	1	0	N	0	3	0.7	23	
29		0	0	0	0	0	0	0	0	1	2	4	IZS	1	1	1	1	1	1	1	1	1	0	1	0	4	0.7	24	
30		1	1	0	0	0	1	1	1	1	1	IZS	1	1	1	1	1	2	2	1	1	1	1	1	1	2	1.0	24	
31		1	1	1	1	1	1	1	1	2	IZS	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1.2	24	
HOURLY MAX		1	2	2	2	2	2	4	2	2	4	3	3	2	2	3	3	3	2	2	2	1	2	1	1				
HOURLY AVG		0.4	0.4	0.4	0.5	0.4	0.4	0.6	0.7	0.8	0.8	1.1	0.9	1.0	0.8	0.8	0.9	0.9	0.8	0.8	0.7	0.6	0.6	0.5	0.5				

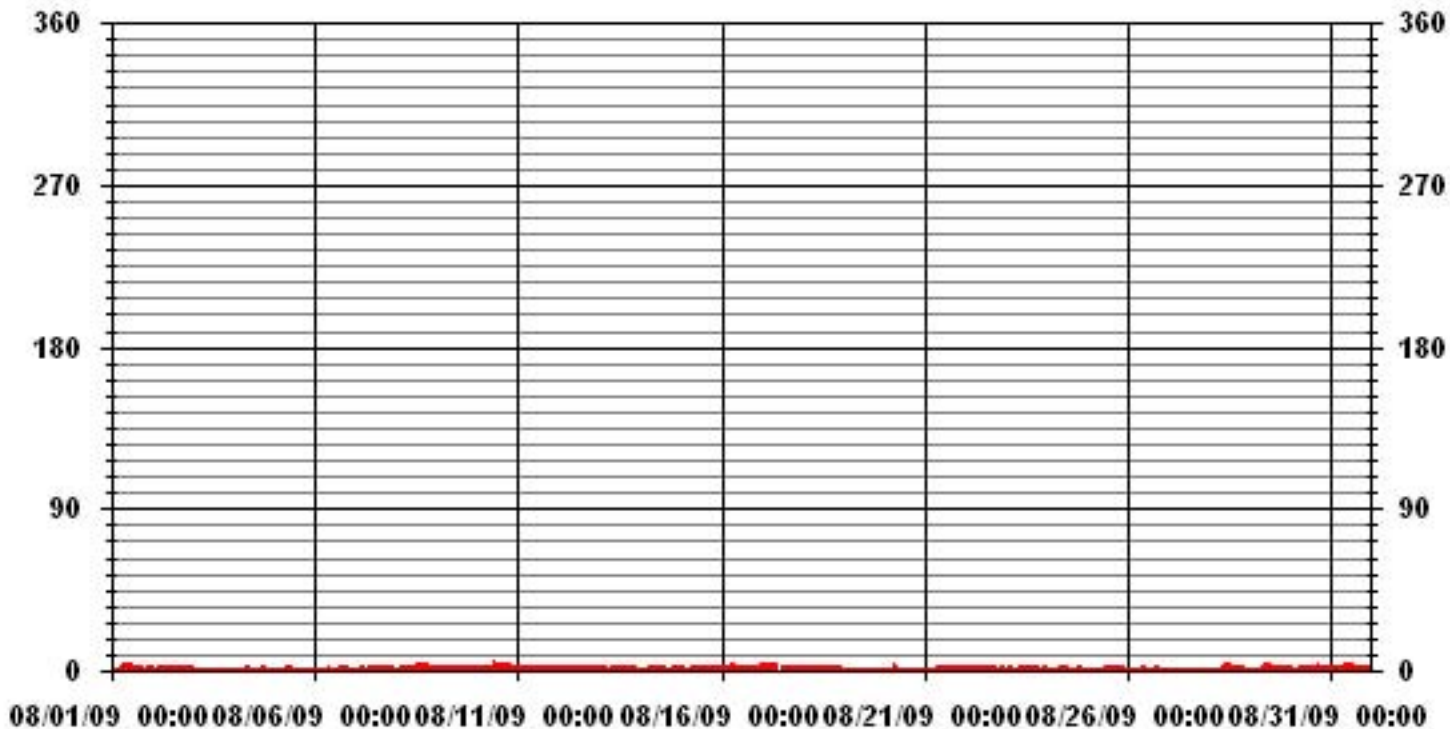
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	420					
MAXIMUM INSTANTANEOUS VALUE:	4	PPB	@ HOUR(S)	10,7	ON DAY(S)	10,17
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	0.65					

01 Hour Averages



— LICA31 SO2MAX PPB

LICA31
 SO2_ / WDR Joint Frequency Distribution (Percent)

August 2009

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	5.52	7.50	5.09	4.53	4.95	3.54	2.97	4.81	10.76	6.23	4.67	5.52	9.34	9.20	9.77	5.52	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	5.52	7.50	5.09	4.53	4.95	3.54	2.97	4.81	10.76	6.23	4.67	5.52	9.34	9.20	9.77	5.52	

Calm : .00 %

Total # Operational Hours : 706

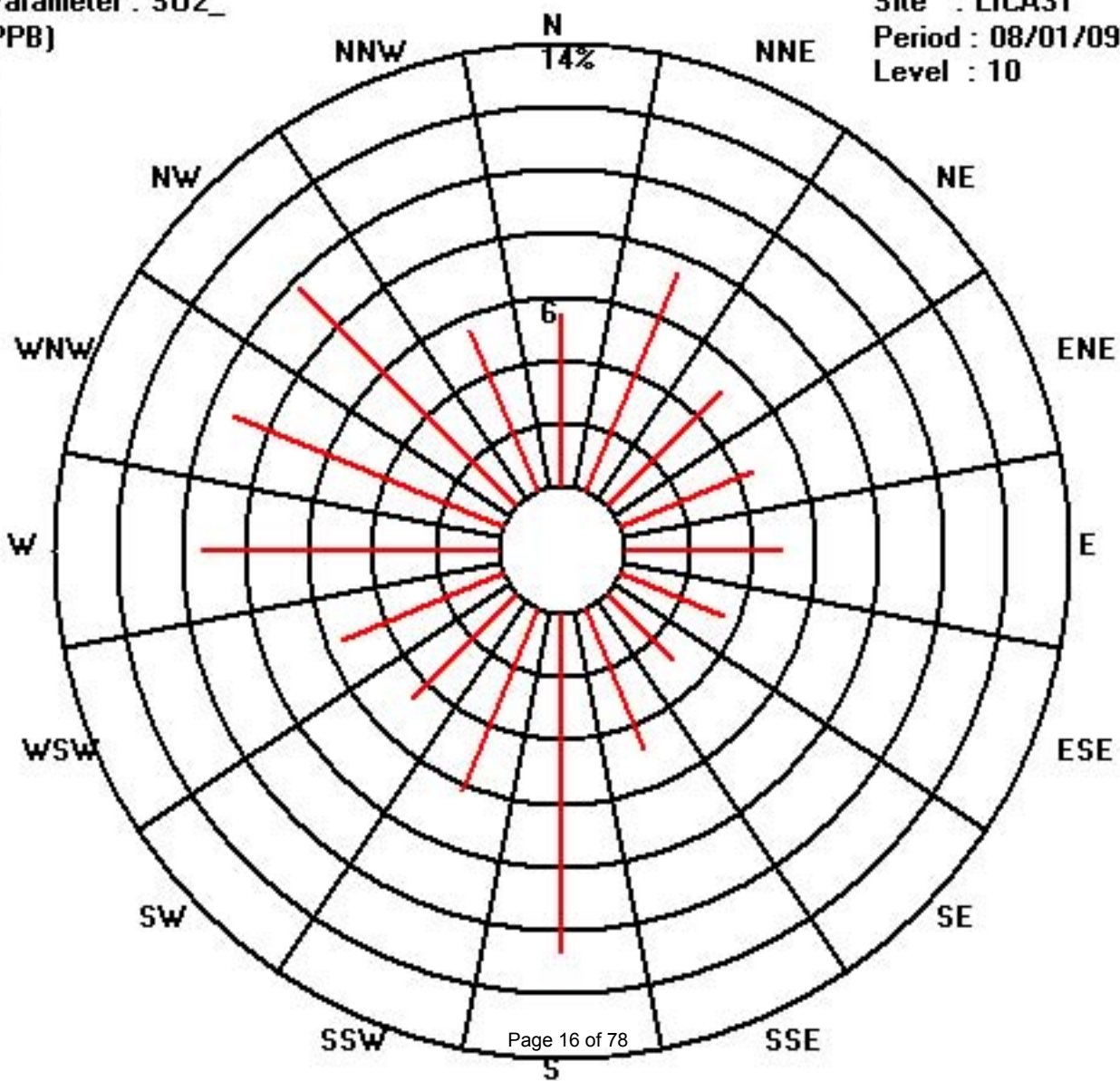
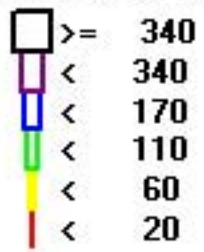
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	39	53	36	32	35	25	21	34	76	44	33	39	66	65	69	39	706
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	39	53	36	32	35	25	21	34	76	44	33	39	66	65	69	39	

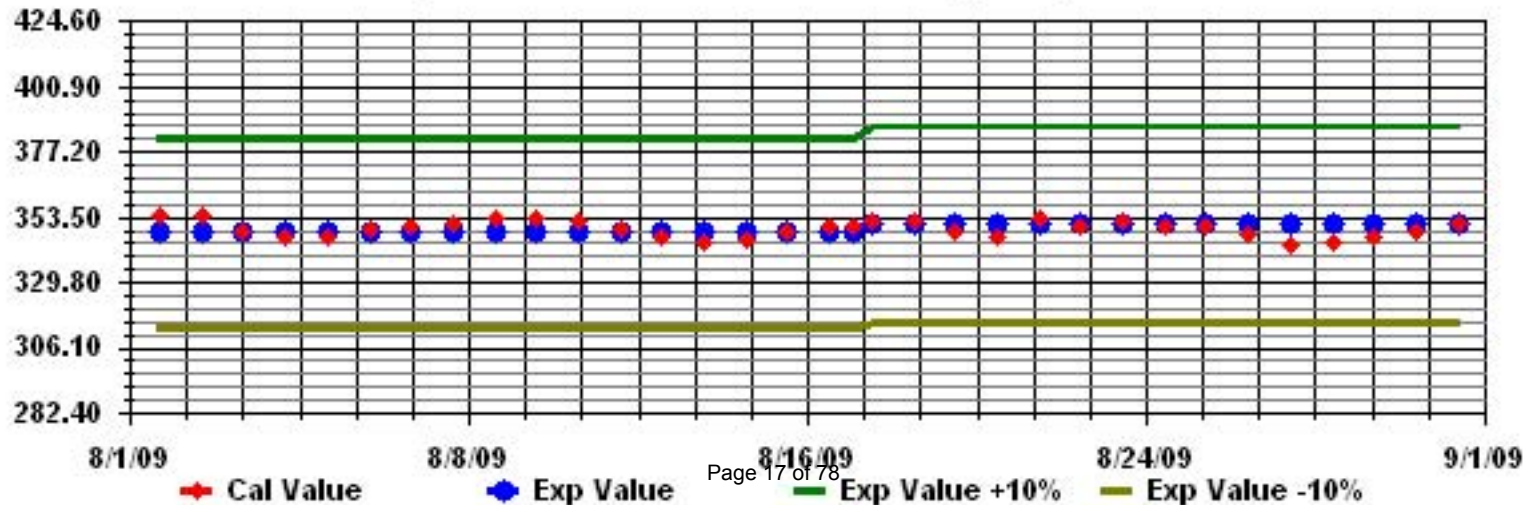
Calm : .00 %

Total # Operational Hours : 706

Class Limits (PPB)



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



Hydrogen Sulphide

IMPERIAL OIL RESOURCES LTD. - COLD LAKE - MASKWA

AUGUST 2009

HYDROGEN SULPHIDE (H₂S) hourly averages in ppb

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

STATUS FLAG CODES

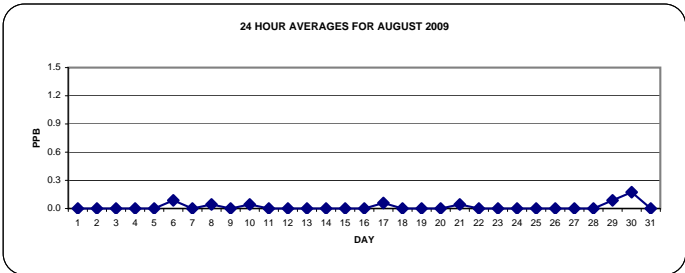
S - OUT OF SERVICE	IZS - IZS - DAILY ZERO/SPAN CHECK
N - INVALID DATA	M - MAINTENANCE
D - INSTRUMENT DRIFT	P - POWER FAILURE
C - CALIBRATION	NA - NOT APPLICABLE

OBJECTIVE LIMIT:

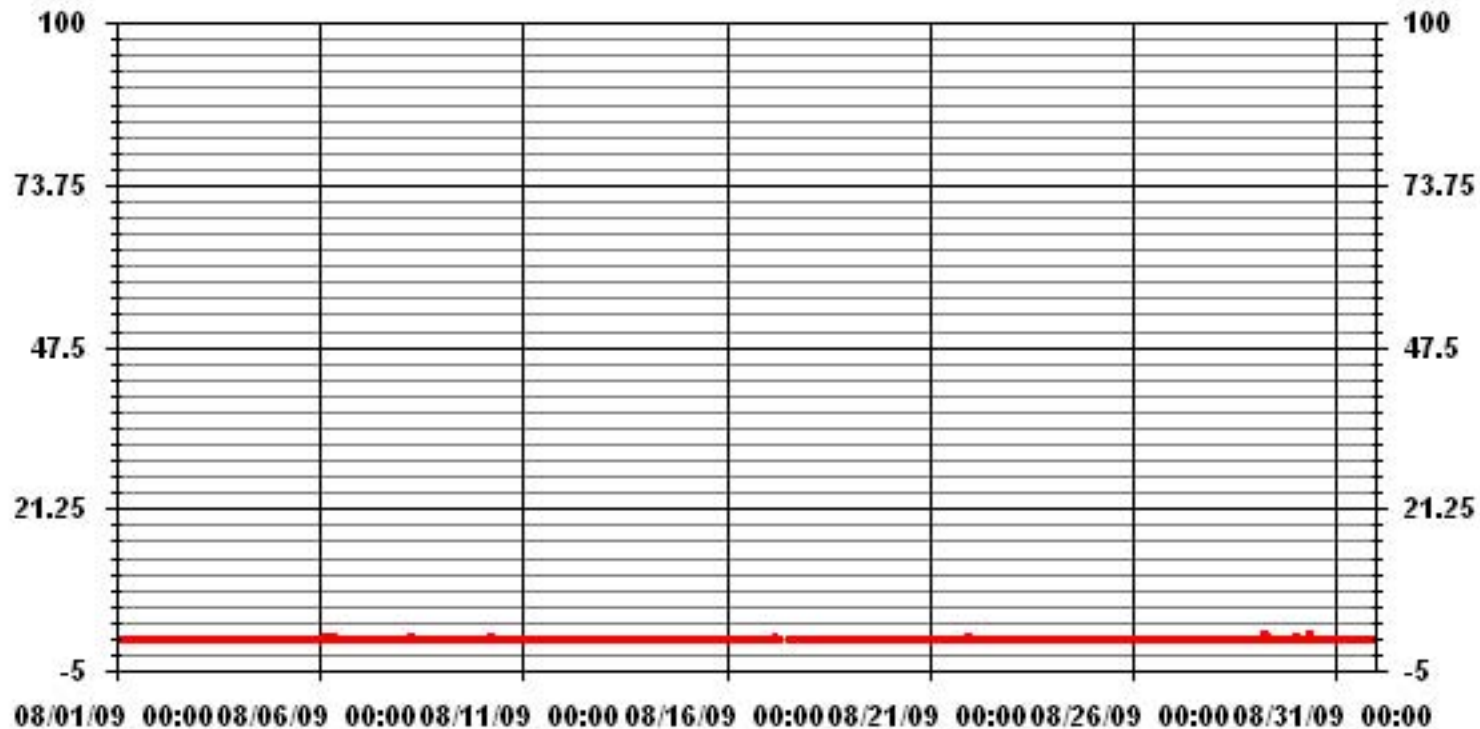
ALBERTA ENVIRONMENT: 1-HR 10 PPB 24-HR 3 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF 24-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	12				
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	0.2	PPB			ON DAY(S) 30
					VAR-VARIOUS
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743 HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	99.9 %	
STANDARD DEVIATION:	0.13		MONTHLY AVERAGE:	0.02 PPB	



01 Hour Averages



— LICA31 H2S_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

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

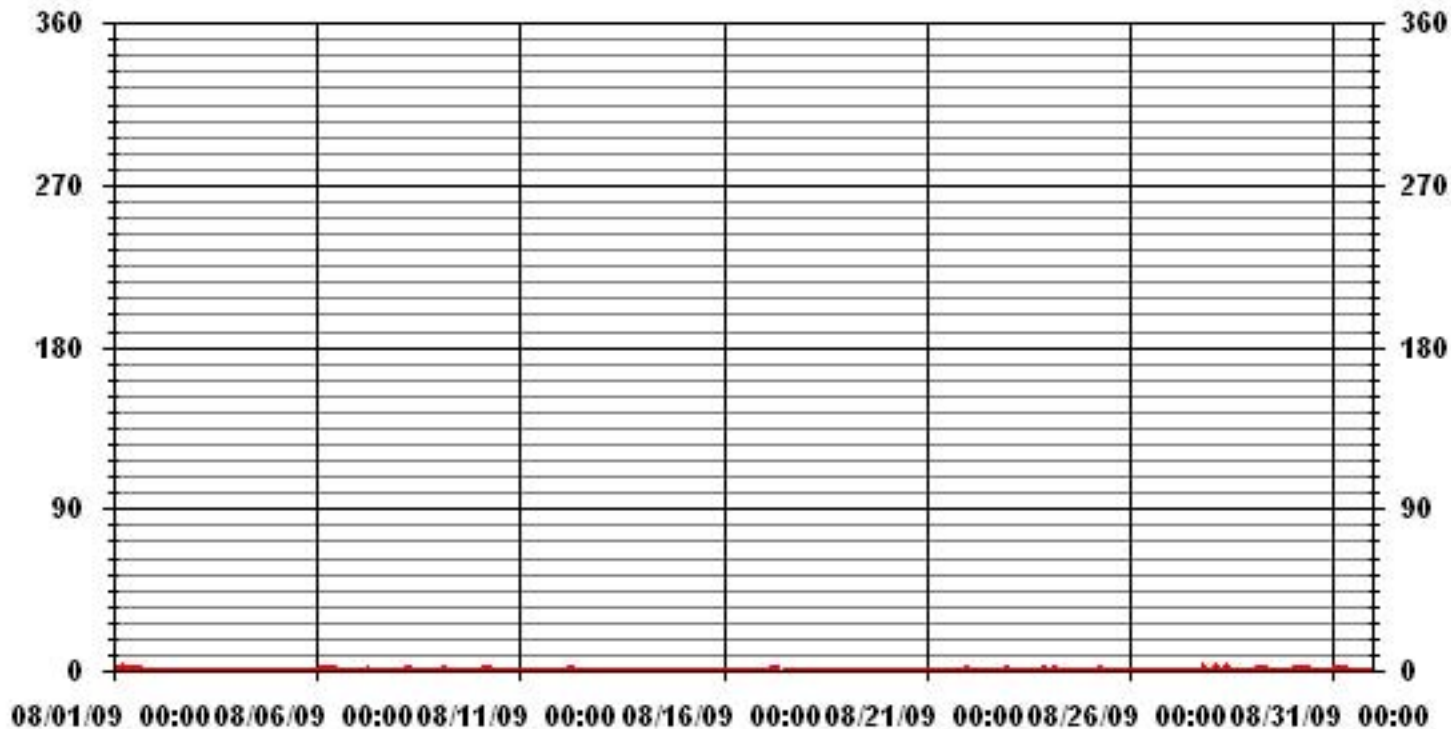
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	80					
MAXIMUM INSTANTANEOUS VALUE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
IZS CALIBRATION TIME:	32	HRS		OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	0.35					

01 Hour Averages



— LICA31 H2S MAX PPB

LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	5.52	7.50	5.09	4.53	4.95	3.54	2.97	4.81	10.76	6.23	4.67	5.52	9.34	9.20	9.77	5.52	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.52	7.50	5.09	4.53	4.95	3.54	2.97	4.81	10.76	6.23	4.67	5.52	9.34	9.20	9.77	5.52	

Calm : .00 %

Total # Operational Hours : 706

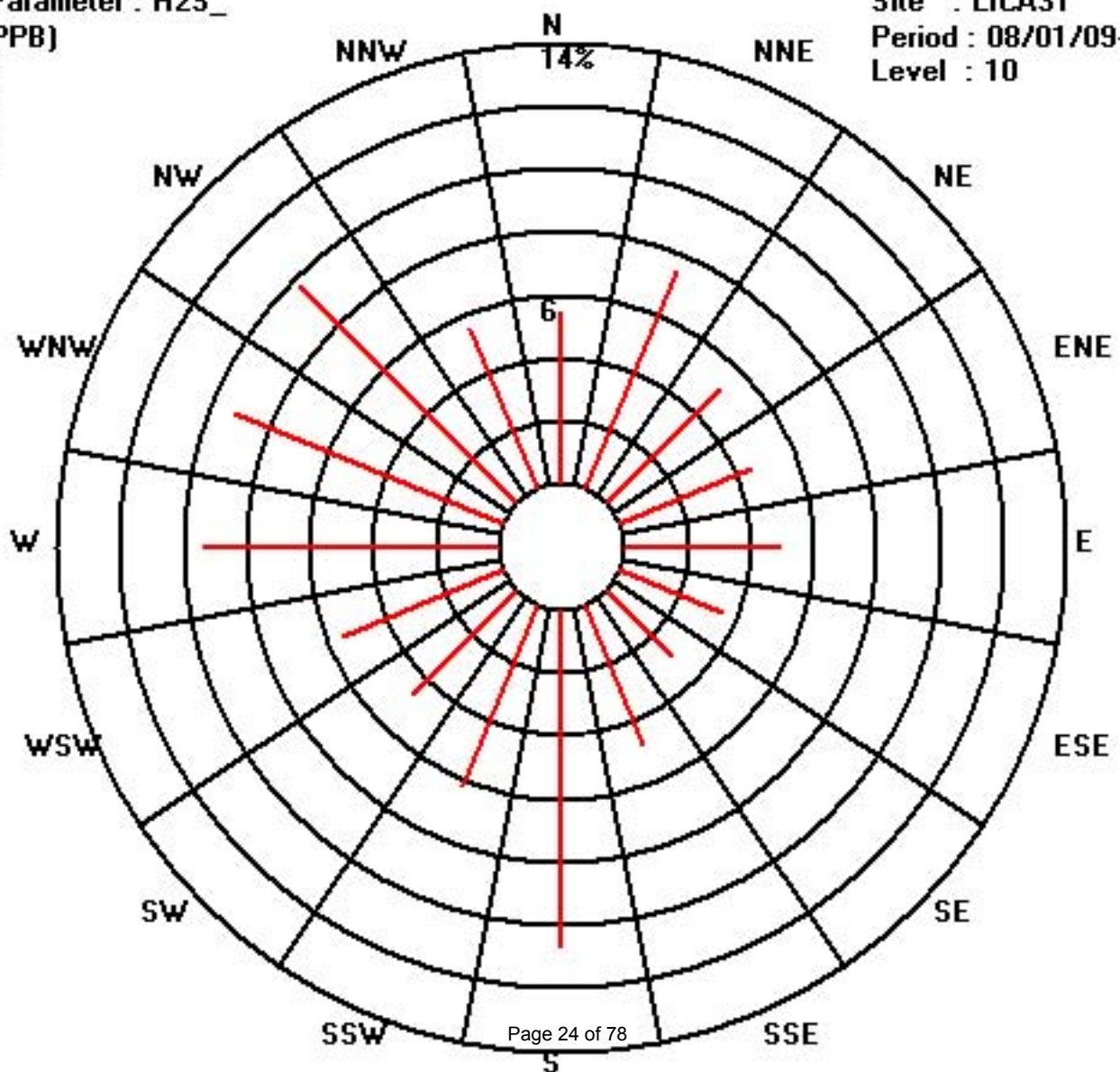
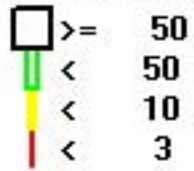
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	39	53	36	32	35	25	21	34	76	44	33	39	66	65	69	39	706
< 10																	
< 50																	
>= 50																	
Totals	39	53	36	32	35	25	21	34	76	44	33	39	66	65	69	39	

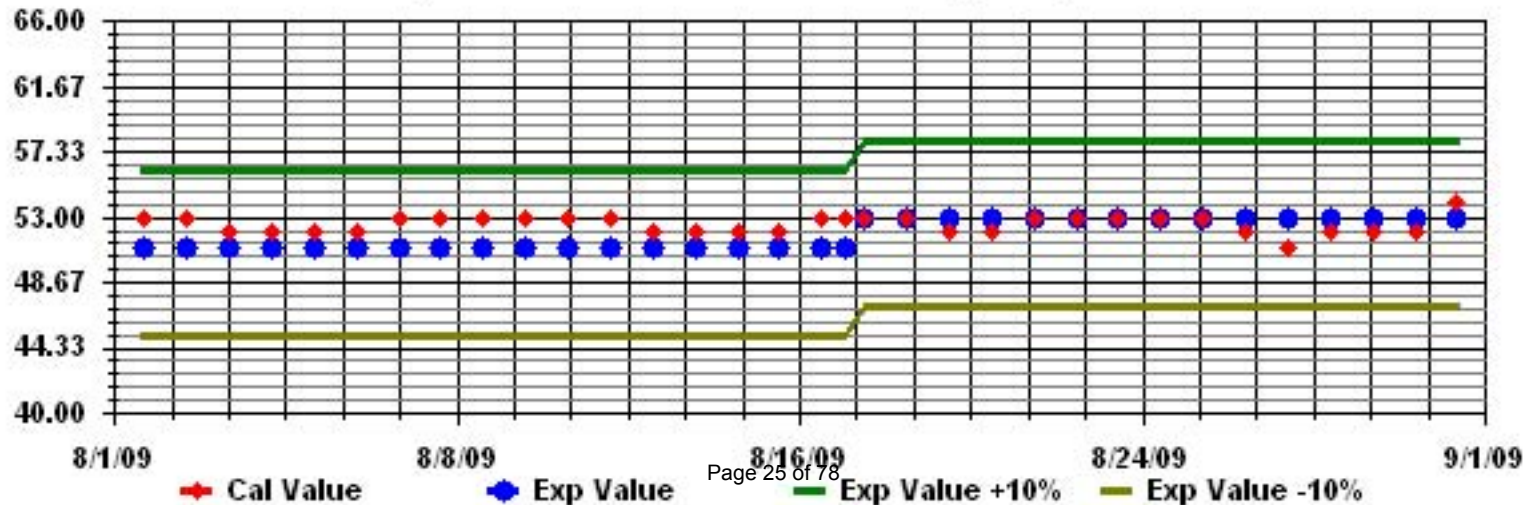
Calm : .00 %

Total # Operational Hours : 706

Class Limits (PPB)



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



Total Hydrocarbons

IMPERIAL OIL RESOURCES LTD. - COLD LAKE - MASKWA

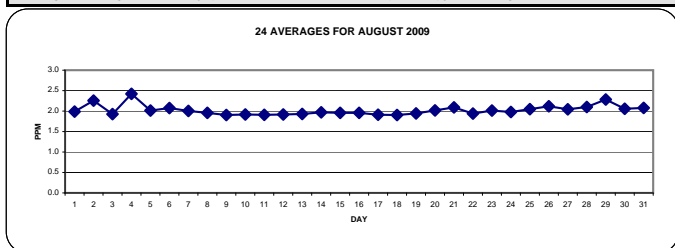
AUGUST 2009

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	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		1.8	1.9	1.9	2	2	2	2	2	1.9	1.9	1.9	2	1.9	1.9	2.2	1.8	IZS	1.9	1.9	1.9	1.8	1.9	2.5	2.7	2.7	2.0	24		
2		2	1.9	2.6	3.3	3.7	3.9	3.3	2.4	1.9	1.9	1.9	1.9	2	2.1	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.9	2.3	24		
3		1.9	1.9	1.9	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	1.9	1.9	1.9	1.9	2	2	1.9	2	2.0	1.9	24		
4		2	2	2	2	2.6	3.2	3.4	2.6	2.4	2.1	2.2	2	2	IZS	2	2.1	2.2	2.1	2.1	2	1.9	3.6	3.5	3.7	3.7	2.4	24		
5		3.1	2.2	2	2	2	2.1	2.3	2	1.9	1.9	1.9	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	3.1	2.0	24		
6		1.9	2.3	2	2	2.1	2	2.1	2.1	2.2	2.3	2.1	IZS	2	2	2	1.9	1.9	1.9	2.8	2.1	2	2	2	2	2.8	2.1	24		
7		2	2	2	2	1.9	2	2.2	2.9	2	1.9	IZS	1.9	2	1.9	1.9	1.9	1.9	2	2	2	1.9	1.9	1.9	2	2.9	2.0	24		
8		2	2	2	2	2.1	2.1	2.1	2.1	2	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.0	24	
9		2	2	2	2	2	2	1.9	IZS	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	24	
10		1.9	1.9	2	2	2	2	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	24	
11		1.9	2	1.9	1.9	2	2	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	24	
12		1.9	1.9	1.9	2	2	IZS	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	24	
13		1.9	1.9	2	2	IZS	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2.0	1.9	24		
14		2	2	1.9	IZS	1.9	2	2.1	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.1	2.1	2	2	2.1	2.0	24	
15		2	2	IZS	2	2	1.9	2	2	2	1.9	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.1	2	2.1	2.0	24		
16		2.1	IZS	2.1	2.1	2	1.9	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	1.9	1.9	2.1	2.0	24		
17		IZS	1.9	1.8	1.9	1.9	2	2	2	2	1.9	1.9	1.8	C	C	C	C	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	24	
18		1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	24	
19		1.9	1.9	1.9	1.9	2	1.9	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	2.1	IZS	2	2	2.2	1.9	24	
20		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2.0	24	
21		2.2	2.2	2.3	2.5	2.6	2.5	2.2	2.1	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	2	2	2.1	2.1	2.6	2.1	24
22		2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	2	IZS	2	2	2	2	2	2	2.0	1.9	24	
23		2.2	2	2	2	2	2	2	2	2.1	2.2	2.1	2	2	2	2	2	1.9	IZS	1.9	1.9	2	2	2	2	2	2.2	2.0	24	
24		2	2	2	2	2	2	2.1	2.1	2	2	2	1.9	1.9	1.9	1.9	2	IZS	2	2	1.9	2	2	1.9	1.9	1.9	2.1	2.0	24	
25		2	2	2	2	2	2	2.3	2.3	2.1	2.1	2	2.1	2	2	2	IZS	2.1	2	2	2	2	2	2	2	2	2.3	2.0	24	
26		2	2	2.1	2.1	2.3	2.3	2.3	2.3	2.2	2.2	2.1	2	2.1	2	IZS	2	2	2	2	2.1	2.1	2.1	2.2	2.1	2.1	2.3	2.1	24	
27		2	2	2.1	2.1	2.2	2.2	2.1	2	2.1	2	2	2	2	2	IZS	2	2	2	2	2.2	2	2	2	2	2	2.2	2.0	24	
28		2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	IZS	2	2	2	2	2	2	2.1	2.3	2.3	2.3	2.3	N	2.3	2.3	2.1	23
29		2.4	2.5	2.6	2.5	2.6	2.6	2.7	2.7	2.6	2.4	2.3	IZS	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2.1	2.1	2.7	2.3	24
30		2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.2	2.1	2.1	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2.1	24	
31		2	2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	IZS	2.2	2.1	2	2	2	2	2	2	2	2	2	2.1	2.1	2.2	2.2	2.2	2.1	24	
HOURLY MAX		3.1	2.5	2.6	3.3	3.7	3.9	3.4	2.9	2.6	2.4	2.3	2.1	2.1	2.1	2.2	2.1	2.2	2.1	2.8	2.3	2.3	3.6	3.5	3.7					
HOURLY AVG		2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.1	2.0	2.0	2.0	1.9	2.0	1.9	2.0	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.1	2.1					

STATUS FLAG CODES

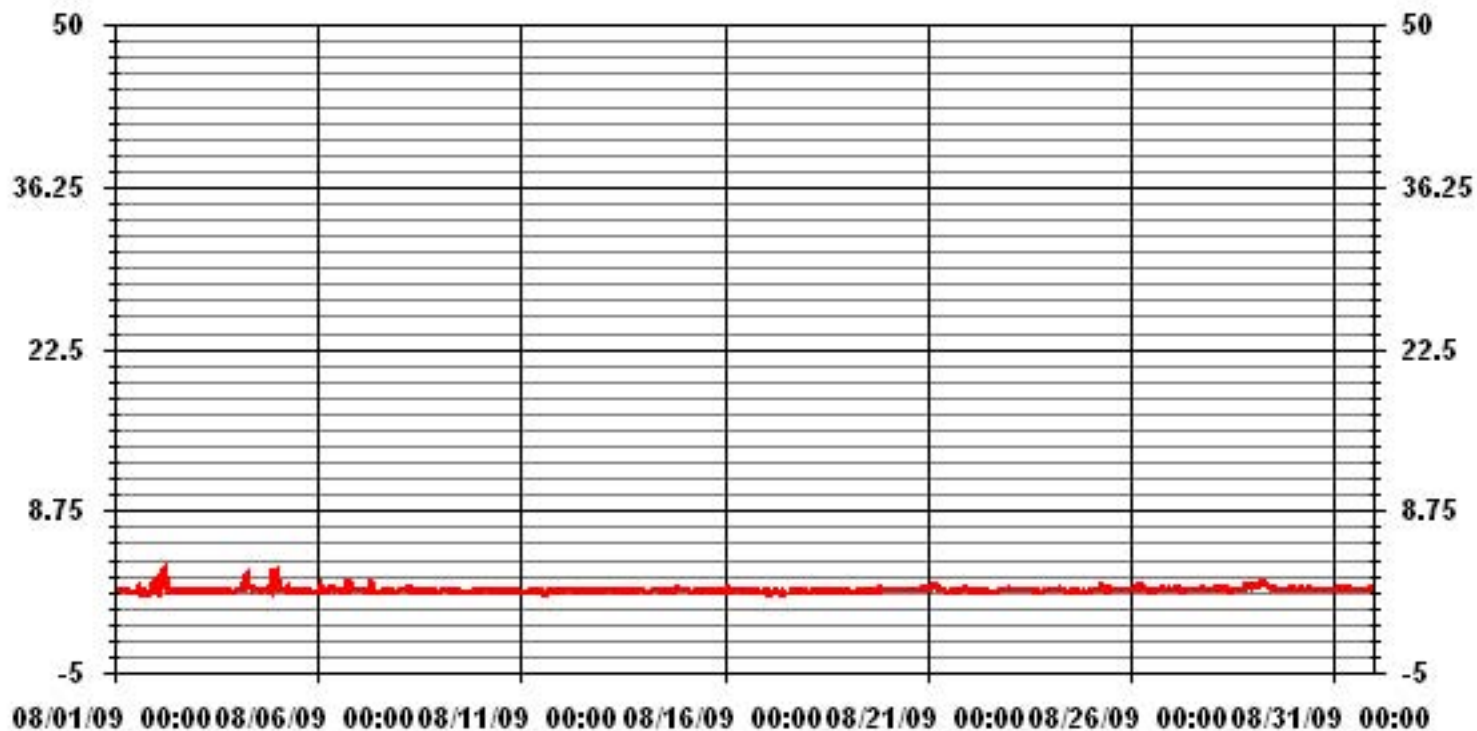
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM 1-HR AVERAGE:	3.9	PPM	@ HOUR(S)	5	ON DAY(S)	2
MAXIMUM 24-HR AVERAGE:	2.4	PPM			ON DAY(S)	4
					VAR- VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.23		MONTHLY AVERAGE:	2.02	PPM	

01 Hour Averages



— LICA31 THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

TOTAL HYDROCARBONS MAX instantaneous maximum in ppr

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	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.8	3.8	2	3.2	4.5	3.6	IZS	2.5	2.2	1.9	1.9	4	5.3	8.7	8.7	2.9	24	
2		4	2.7	10.3	11.7	7.6	10.1	8.7	6.2	2	2.4	2	2	2	3.5	3.3	IZS	1.9	1.9	1.9	2.1	1.9	1.9	1.9	1.9	1.9	11.7	4.1	24
3		2	1.9	2	2	2	2	2	1.9	2.4	2.8	2.1	1.9	3.9	1.9	IZS	1.9	2	1.9	1.9	2	2	2	2	2	2	3.9	2.1	24
4		2	2	2	2	9.9	7.6	7.5	4.9	6	3.6	4	3.5	3.5	IZS	2.9	3.8	4.5	5	3.5	3	2	13.1	16.8	9.8	16.8	5.3	24	
5		17.2	5.8	2.1	2	2	2.8	2.8	2.4	2	1.9	3	2.7	IZS	2	1.9	2	2	1.9	1.9	1.9	1.9	1.9	2	2	2	17.2	3.0	24
6		2	11.1	2.5	2.7	2.5	2.2	2.5	2.3	2.4	2.4	2.2	IZS	2	2	2.1	2	2	2	6.7	5.4	2	2.1	2.1	2.1	11.1	2.9	24	
7		2	2	2	2	2	3.4	5.8	6	2.5	2.7	IZS	2	4.5	3.1	2.3	3	1.9	2.5	2.5	2.4	2	1.9	2	2	6	2.7	24	
8		2	2	2.1	2	2.1	2.1	2.1	2	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2.1	2.0	24
9		2	2	2	2	2	2.1	2	2	IZS	2	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	2	1.9	1.9	24
10		2	1.9	2.6	2	2	2	2	IZS	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2.1	2	2	1.9	2	2.6	2.0	24
11		2	2.2	2	2	2	2.2	IZS	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	2.2	2.0	24
12		1.9	1.9	2	2	2	IZS	2	2.1	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	1.9	2	2	2.1	2.0	24	
13		2	2	2	2	IZS	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	2	2	2.0	24
14		2	2	2	IZS	2	2.3	2.2	2.1	2.7	2.5	2	1.9	1.9	1.9	1.9	1.9	1.9	2	2.2	2.2	2.2	2.3	2.1	2	2.7	2.1	24	
15		2	2.1	IZS	2	2	2	2	2	2	2	2	2	2	2	1.9	1.9	2	2	2	2	2	2	2.8	2.3	2	2.8	2.0	24
16		2.5	IZS	3	2.7	2.5	2	2.2	2.4	2.2	2.2	1.9	1.9	2	2.1	2.1	2.1	1.9	1.9	1.9	2.1	3	2.4	2.1	2	3	2.2	24	
17		IZS	1.9	1.9	1.9	2	2	2	2	2	2	2	1.8	C	C	C	C	1.9	2	1.9	1.9	2	1.9	2	IZS	2	2.0	24	
18		1.9	2	2	2.1	2.1	1.9	1.9	1.9	2.1	2.1	2	1.9	2	1.9	2	2.2	2	2	2	2	2.2	2.1	IZS	2.2	2.2	2.0	24	
19		2	2.1	2.2	2.1	2.3	2.1	2.1	2.2	2.1	2.1	2.2	2	2.1	2	2	2.3	2.2	2.1	2	3.3	3.6	IZS	2.4	2	3.6	2.2	24	
20		2	2	2	2	2	2.2	2	2.2	2	2	2.1	2.1	2	2	2	2	2.1	2.1	2	2	IZS	2.1	2.2	2.2	2.2	2.1	24	
21		2.2	2.2	2.4	2.5	2.6	2.6	2.3	2.1	2	2	2	2	2	2	1.9	1.9	1.9	1.9	2.1	IZS	2.1	2.1	2.2	2.2	2.6	2.1	24	
22		2.2	2.2	2.1	1.9	2	2.1	2	2.1	2	2	2	2	2	2	2.1	2.1	2	2.2	IZS	2.2	2.1	2.9	2.1	2.1	2.9	2.1	24	
23		2.5	2.1	2	2.1	2.1	2.2	2	2	2.2	2.2	2.2	2.1	2	2	2	2	IZS	2.1	2	2.1	2.2	2.1	2	2.5	2.1	24		
24		2.1	2.2	2.3	2	2	2	2.1	2.1	2	2	2	2	2	2	2.2	2	IZS	2.2	2.3	2	2.7	4.4	2	2	4.4	2.2	24	
25		2.2	2.1	2	2	2	2.3	2.5	2.4	2.2	2.2	2.1	2.1	2.2	2	2	IZS	2.2	2	2	2	2	2	2	2	2.5	2.1	24	
26		2	2.1	2.1	2.1	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.1	2.1	2	IZS	2	2	2.1	2.2	2.4	2.3	2.9	3.3	2.2	3.3	2.3	24	
27		2.3	2.3	2.2	3.7	4.5	3.4	2.2	2	2.1	2.1	2.1	2.1	2.1	IZS	2.2	2.1	2.1	2.4	3.2	2.1	2.1	2	2.1	2.1	4.5	2.4	24	
28		2	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2	2.1	2.1	2.1	2.1	2.3	2.4	2.4	2.3	N	2.4	2.4	2.2	23	
29		2.5	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.6	2.5	2.4	IZS	2.2	2.1	2.1	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.7	2.3	24
30		2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	IZS	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2.1	24	
31		2	2	2.1	2.1	2.1	2.2	2.2	2.3	2.3	IZS	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2.1	2.1	2.2	2.3	2.3	2.1	24
HOURLY MAX		17	11	10	12	10	10	9	6	6	4	4	4	5	4	5	4	5	5	5	7	5	4	13	17	10			
HOURLY AVG		2.7	2.5	2.4	2.5	2.7	2.7	2.7	2.5	2.3	2.2	2.2	2.1	2.2	2.1	2.2	2.2	2.1	2.1	2.3	2.2	2.1	2.6	2.7	2.5				

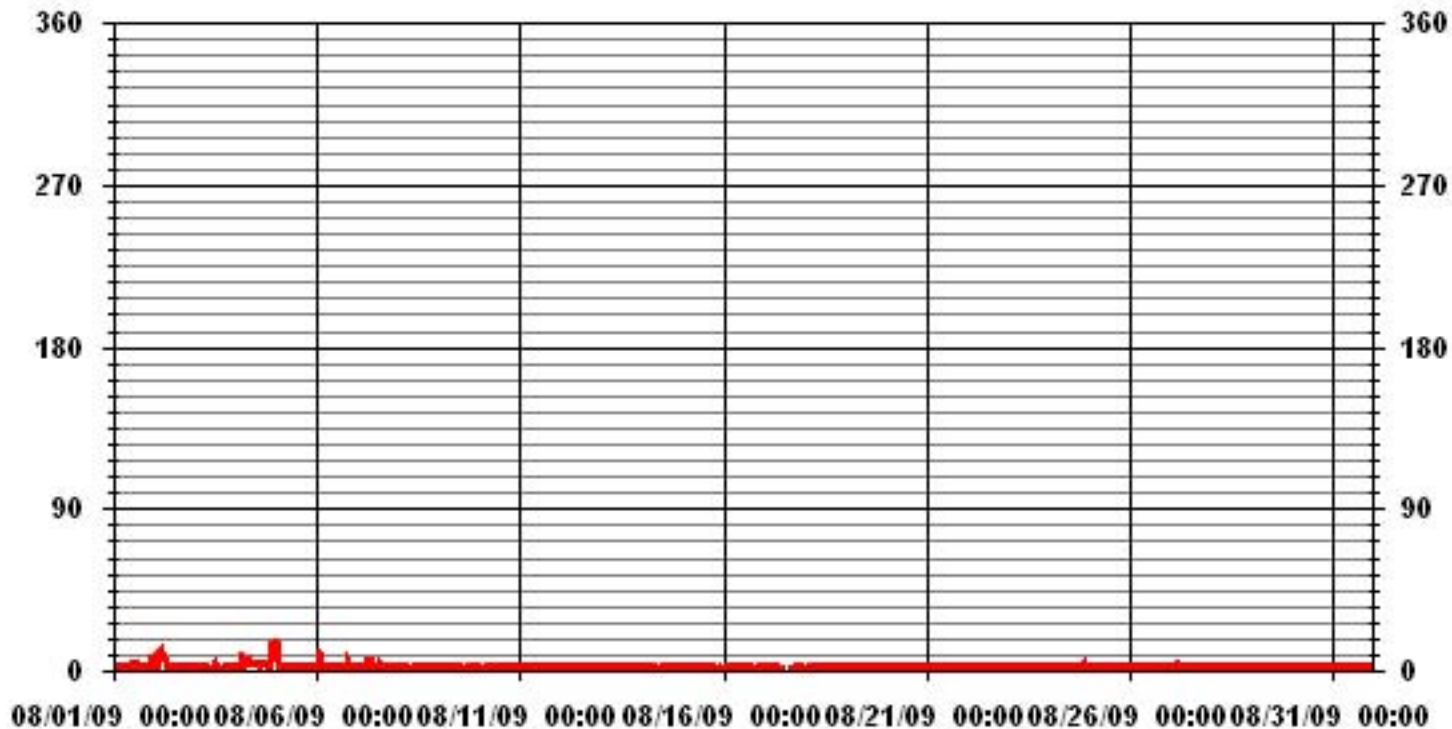
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	707
MAXIMUM INSTANTANEOUS VALUE:	17.2 PPM @ HOUR(S) 0 ON DAY(S) 5
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	1.38
OPERATIONAL TIME:	743 HRS

01 Hour Averages



— LICA31 THCMAX PPM

LICA31
 THC / WDR Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																	
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 3.0	5.51	7.49	5.09	4.52	4.95	3.53	2.97	4.80	10.74	6.36	4.80	5.37	9.33	8.20	9.33	5.51	98.58	
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.99	.42	.00	1.41	
< 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	5.51	7.49	5.09	4.52	4.95	3.53	2.97	4.80	10.74	6.36	4.80	5.37	9.33	9.19	9.75	5.51		

Calm : .00 %

Total # Operational Hours : 707

Distribution By Samples

	Direction																	
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 3.0	39	53	36	32	35	25	21	34	76	45	34	38	66	58	66	39	697	
< 10.0														7	3		10	
< 50.0																		
>= 50.0																		
Totals	39	53	36	32	35	25	21	34	76	45	34	38	66	65	69	39		

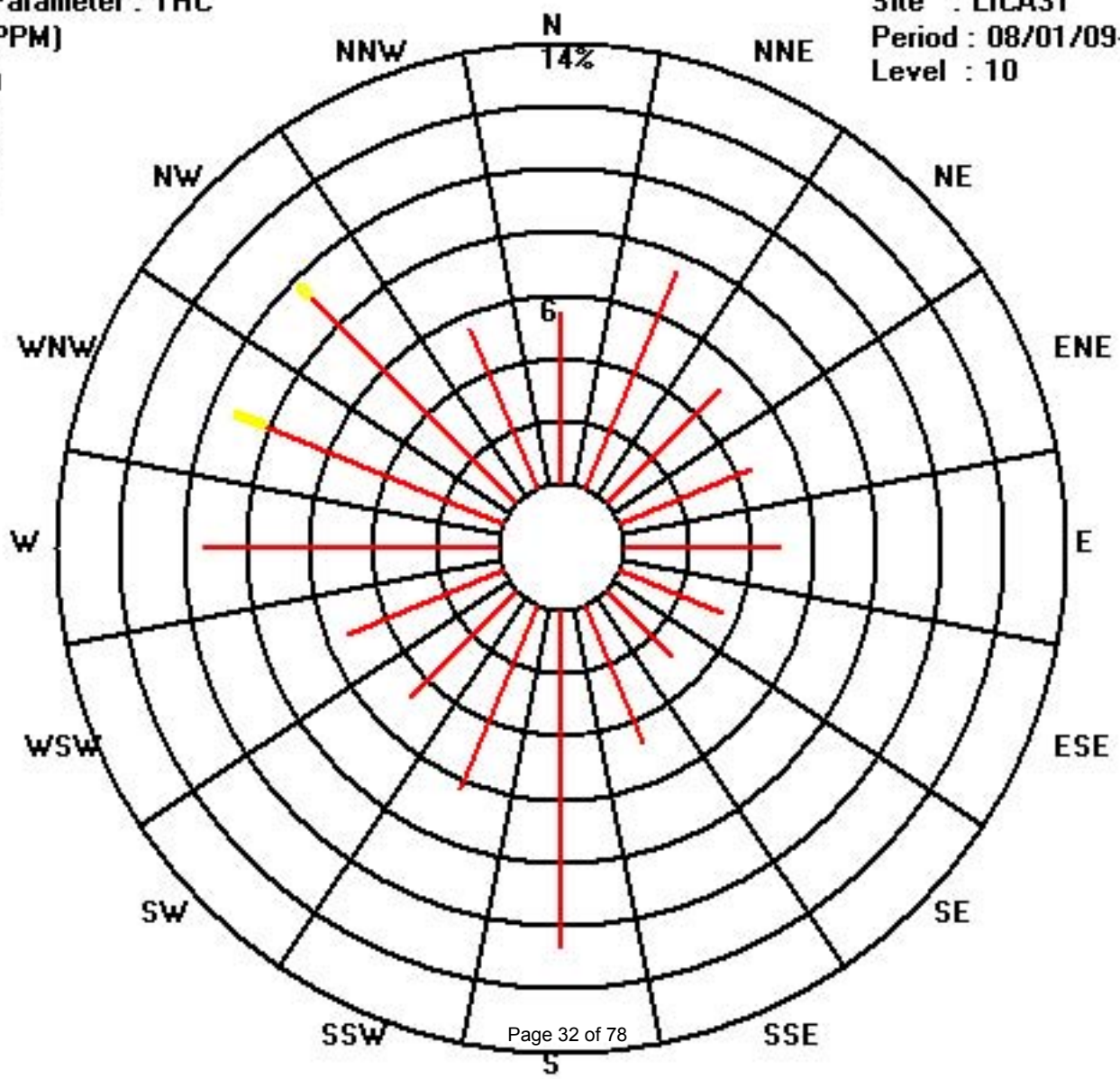
Calm : .00 %

Total # Operational Hours : 707

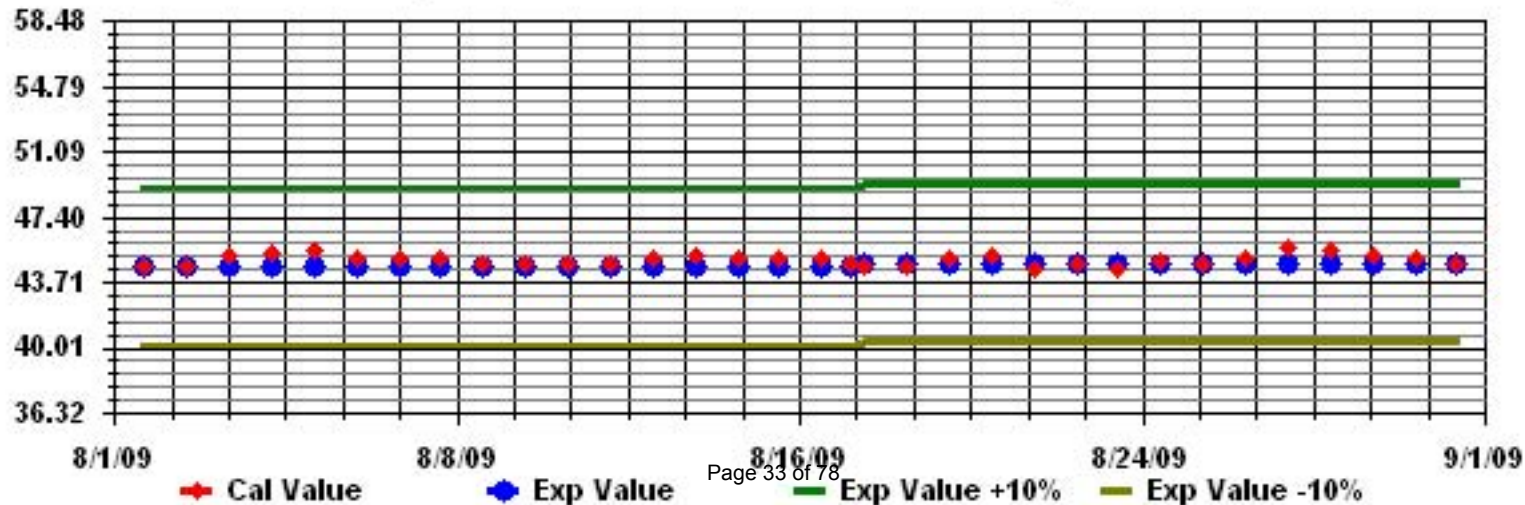
Class Limits (PPM)

Period : 08/01/09-08/31/09

Level : 10



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



Nitrogen Dioxide

IMPERIAL OIL RESOURCES LTD. - COLD LAKE - MASKWA

AUGUST 2009

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 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	1	2	2	3	4	4	4	4	4	3	3	2	2	1	1	1	IZS	1	1	1	1	1	1	1	1	4	2.1	24
2	1	2	1	1	2	1	1	1	0	0	1	1	1	1	1	IZS	0	0	0	1	1	0	0	0	0	2	0.7	24
3	0	1	1	1	1	1	1	0	0	0	0	0	0	0	IZS	0	3	0	0	0	0	0	1	1	1	3	0.5	24
4	1	1	0	1	1	1	2	1	1	0	0	0	0	0	IZS	0	0	0	0	0	0	1	1	1	1	2	0.5	24
5	1	1	1	2	1	1	1	1	0	0	0	0	IZS	0	0	0	0	0	0	0	1	1	2	2	2	2	0.7	24
6	1	1	1	1	1	1	1	4	6	2	1	IZS	0	0	0	1	0	1	1	1	1	1	2	1	6	1.3	24	
7	3	1	2	2	1	1	1	2	1	1	IZS	0	0	0	0	0	0	0	0	0	0	1	2	2	3	0.9	24	
8	3	3	2	2	3	3	3	2	2	IZS	0	1	1	1	1	1	1	1	1	1	1	2	2	2	3	1.7	24	
9	2	2	2	3	3	3	3	2	IZS	0	0	1	1	1	0	0	0	0	0	0	1	1	1	3	2	3	1.3	24
10	2	1	1	2	4	5	3	IZS	1	1	3	1	2	1	1	1	1	1	2	2	2	2	2	2	5	1.9	24	
11	2	2	1	1	2	2	IZS	1	0	1	1	1	1	0	0	0	0	0	0	0	1	1	1	2	2	0.9	24	
12	1	1	1	2	3	IZS	2	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.7	24	
13	1	1	1	1	IZS	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0.4	24	
14	1	1	0	IZS	0	1	1	1	1	1	1	1	0	0	1	1	0	0	0	1	2	2	1	2	2	0.8	24	
15	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	0.7	24	
16	1	IZS	1	1	2	2	2	2	1	1	0	0	1	1	0	0	0	0	1	1	0	0	0	1	2	0.8	24	
17	IZS	1	1	2	3	4	3	4	6	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	6	1.6	24	
18	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
20	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0.0	24	
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	0	0	0	0	0	0	0.0	24	
24	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	2	0.2	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	1	0	0	0	0	1	0.0	24	
26	0	0	0	0	1	2	2	1	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	1	0	2	0.3	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	1	0	0	0	0	0	1	0.0	24
28	0	0	0	1	1	1	3	2	0	0	0	0	0	IZS	0	0	0	0	0	0	1	1	N	1	3	0.5	23	
29	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	1	0	0	1	0.5	24	
30	0	0	1	0	0	0	0	0	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
31	0	0	0	0	1	1	2	2	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0.3	24
HOURLY MAX	3	3	2	3	4	5	4	4	6	3	3	2	2	1	1	1	3	1	2	2	2	2	3	2				
HOURLY AVG	0.8	0.8	0.7	1.0	1.2	1.3	1.4	1.2	1.0	0.5	0.4	0.3	0.4	0.3	0.2	0.2	0.2	0.1	0.2	0.4	0.4	0.6	0.7	0.8				

STATUS FLAG CODES

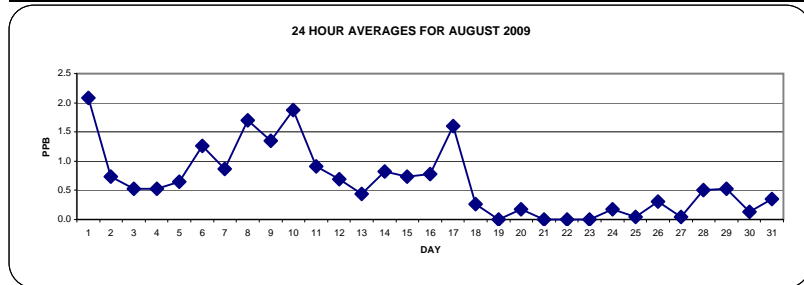
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

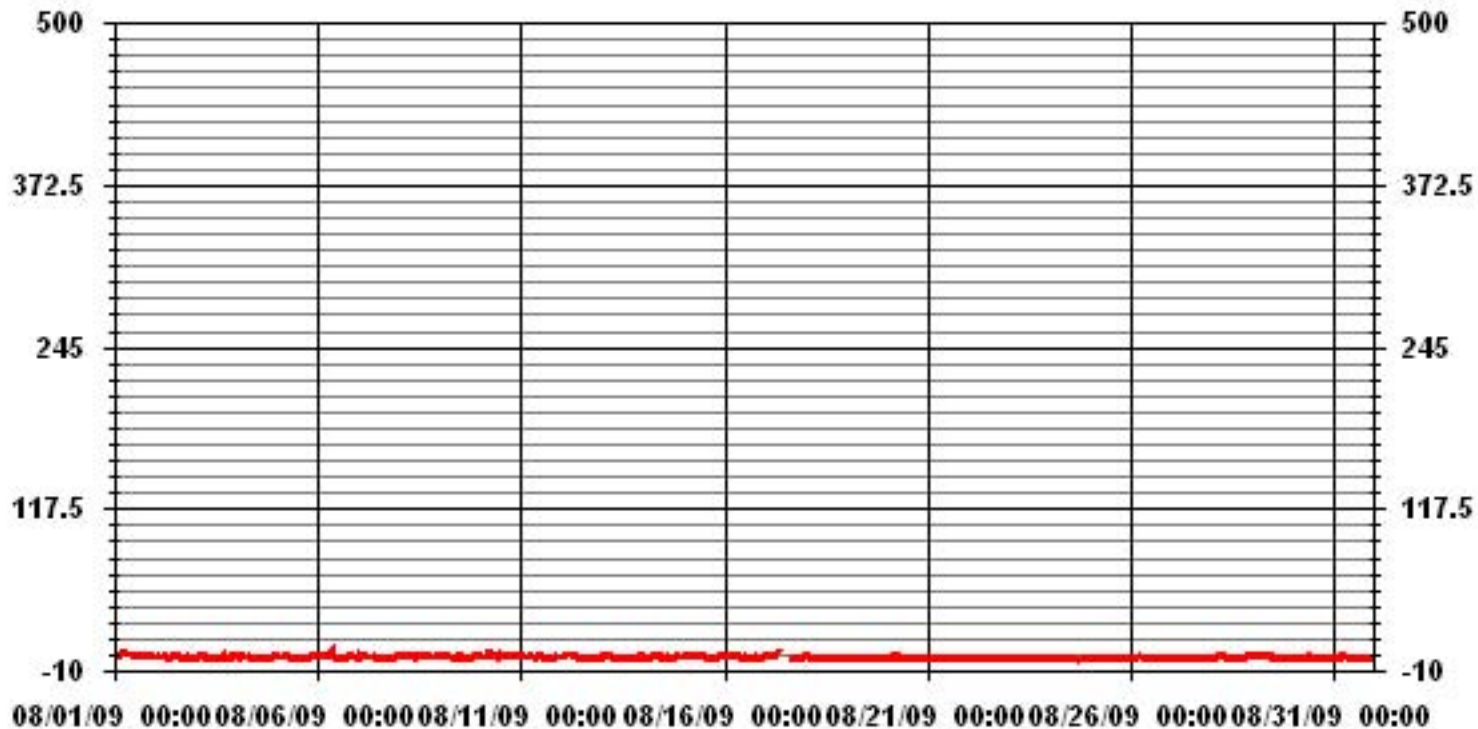
ALBERTA ENVIRONMENT:	1-HR	212	PPB	24-HR	106	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	300					
MAXIMUM 1-HR AVERAGE:	6	PPB	@ HOUR(S)	8, 8	ON DAY(S)	6, 17
MAXIMUM 24-HR AVERAGE:	2.1	PPB			ON DAY(S)	1
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.93		MONTHLY AVERAGE:	0.64	PPB	



01 Hour Averages



— LICA31 NO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
DAY																													
1	2	3	3	4	5	6	5	5	5	4	4	3	2	2	2	2	IZS	2	2	1	2	2	2	2	6	3.0	24		
2	2	3	2	2	2	2	2	1	1	1	1	1	1	2	1	IZS	1	1	1	2	2	1	1	1	3	1.5	24		
3	1	1	1	1	1	1	1	1	1	1	3	11	1	1	IZS	0	86	1	1	1	1	1	1	1	86	5.2	24		
4	1	1	1	1	2	2	3	2	1	1	2	1	1	IZS	0	1	1	1	1	2	2	4	2	2	4	1.5	24		
5	2	1	2	2	2	2	3	3	1	1	1	1	IZS	0	0	1	1	1	1	1	1	2	2	3	3	1.5	24		
6	2	2	2	2	2	2	2	20	111	2	2	IZS	1	1	1	1	1	1	2	2	2	2	2	2	111	7.3	24		
7	6	2	3	3	2	2	3	4	2	2	IZS	1	1	1	1	1	1	1	2	1	1	1	4	3	6	2.1	24		
8	4	3	3	3	4	5	4	3	3	IZS	1	1	2	1	1	2	1	2	3	2	2	2	3	4	5	2.6	24		
9	3	3	3	4	4	4	4	3	IZS	1	1	2	2	2	1	1	1	1	1	2	3	4	4	3	4	2.5	24		
10	2	3	2	3	5	7	6	IZS	2	2	45	2	3	2	2	2	3	2	2	3	3	3	3	3	45	4.8	24		
11	3	3	2	2	3	4	IZS	2	2	2	1	3	2	2	2	1	2	2	1	1	1	1	2	2	4	2.0	24		
12	2	1	2	3	4	IZS	4	4	3	2	1	2	2	1	1	1	1	1	1	1	1	1	1	1	4	1.8	24		
13	1	1	1	2	IZS	1	2	1	2	1	1	1	2	1	1	1	1	1	2	4	1	1	1	1	4	1.3	24		
14	1	1	1	IZS	1	1	1	2	3	1	3	2	1	1	1	1	1	1	1	2	3	3	2	2	3	1.6	24		
15	2	2	IZS	1	1	2	1	2	2	2	1	2	1	1	1	1	1	1	1	1	1	2	2	2	2	1.4	24		
16	2	IZS	1	2	3	3	3	3	2	1	1	1	1	1	1	1	1	1	2	2	1	1	1	2	3	1.6	24		
17	IZS	2	2	3	3	10	5	7	C	C	C	C	C	C	C	C	1	0	0	0	0	0	1	1	IZS	10	2.5	24	
18	3	3	3	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	3	0.5	24
19	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	IZS	0	1	0.1	24
20	0	0	1	2	2	1	14	2	1	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	14	1.0	24	
21	0	0	0	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	IZS	0	1	0	0	1	0.3	24	
22	0	0	0	0	0	0	1	16	0	0	0	0	0	0	0	0	0	0	IZS	0	2	0	1	1	16	0.9	24		
23	0	0	2	0	0	0	1	1	1	1	1	0	0	0	0	1	0	0	IZS	0	0	0	0	0	0	2	0.3	24	
24	0	0	0	1	1	2	3	2	1	1	0	0	0	0	0	0	IZS	0	10	1	0	0	0	0	10	1.0	24		
25	1	1	1	0	0	0	0	1	1	1	0	0	0	0	0	IZS	0	0	0	2	1	1	1	1	2	0.5	24		
26	0	0	0	1	2	2	2	2	1	1	1	0	0	0	IZS	0	0	0	0	0	1	1	1	1	2	0.7	24		
27	0	0	0	0	0	1	1	2	0	1	0	1	9	IZS	1	1	0	1	3	1	0	0	0	0	9	1.0	24		
28	1	1	2	3	2	4	8	4	1	1	1	1	IZS	14	1	1	0	0	0	1	2	1	N	1	14	2.3	23		
29	2	2	2	2	2	2	2	2	2	2	2	IZS	0	0	0	0	1	0	0	1	1	2	1	1	2	1.3	24		
30	1	1	1	1	1	1	1	1	16	2	IZS	0	1	0	0	0	0	1	1	0	0	0	1	1	16	1.3	24		
31	1	0	1	1	1	5	4	5	3	IZS	2	1	1	1	0	0	0	0	0	0	0	1	1	2	5	1.3	24		
HOURLY MAX	6	3	3	4	5	10	14	20	111	4	45	11	9	14	2	2	86	2	10	4	3	4	4	4					
HOURLY AVG	1.5	1.3	1.5	1.7	1.9	2.4	2.9	3.4	5.8	1.2	2.7	1.3	1.3	1.2	0.7	0.8	3.6	0.7	1.3	1.1	1.1	1.3	1.4	1.4					

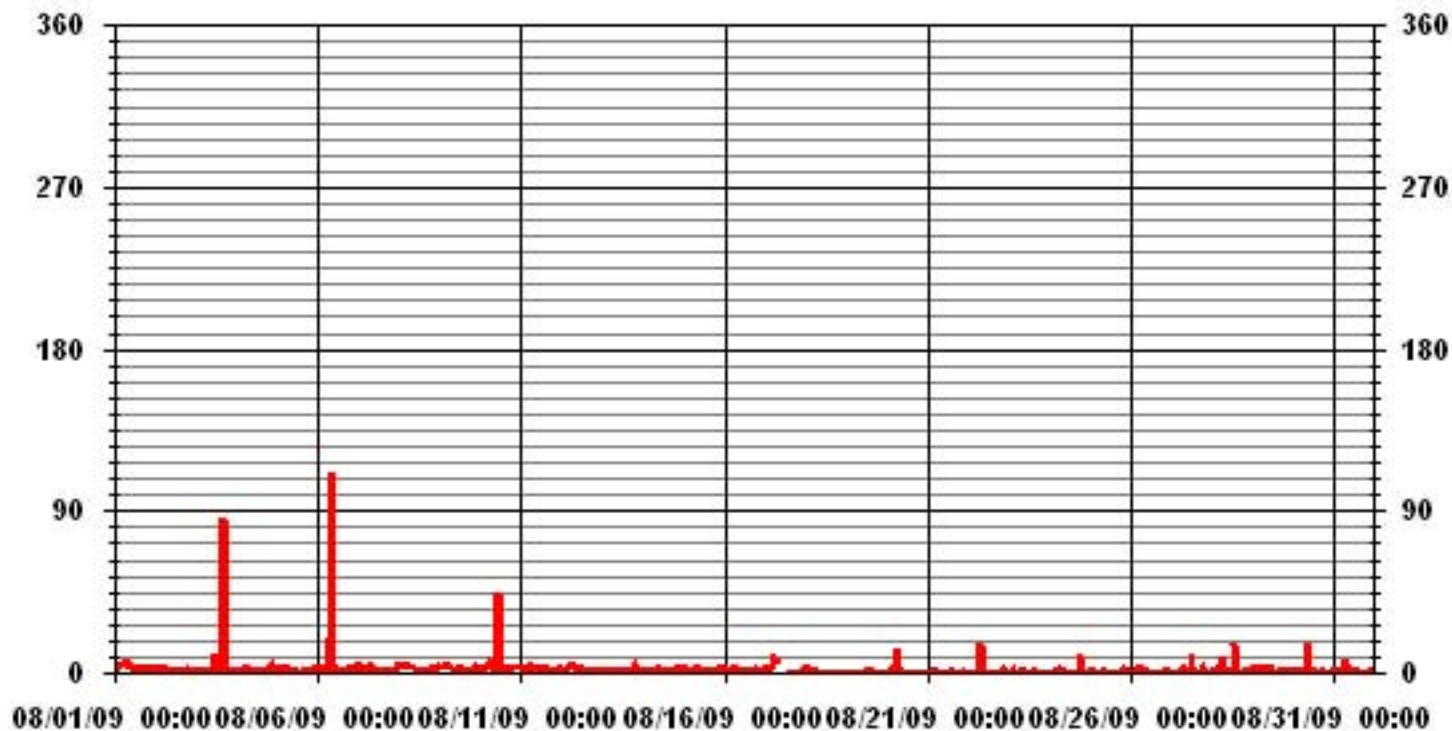
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	515					
MAXIMUM INSTANTANEOUS VALUE:	111	PPB	@ HOUR(S)	8	ON DAY(S)	6
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION	5.77					

01 Hour Averages



— LICA31 NO2MAX PPB

LICA31
 NO2_ / WDR Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	5.53	7.52	5.11	4.54	4.97	3.55	2.98	4.82	10.79	6.25	4.54	5.39	9.37	9.23	9.80	5.53	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	5.53	7.52	5.11	4.54	4.97	3.55	2.98	4.82	10.79	6.25	4.54	5.39	9.37	9.23	9.80	5.53	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	39	53	36	32	35	25	21	34	76	44	32	38	66	65	69	39	704
< 110																	
< 210																	
>= 210																	
Totals	39	53	36	32	35	25	21	34	76	44	32	38	66	65	69	39	

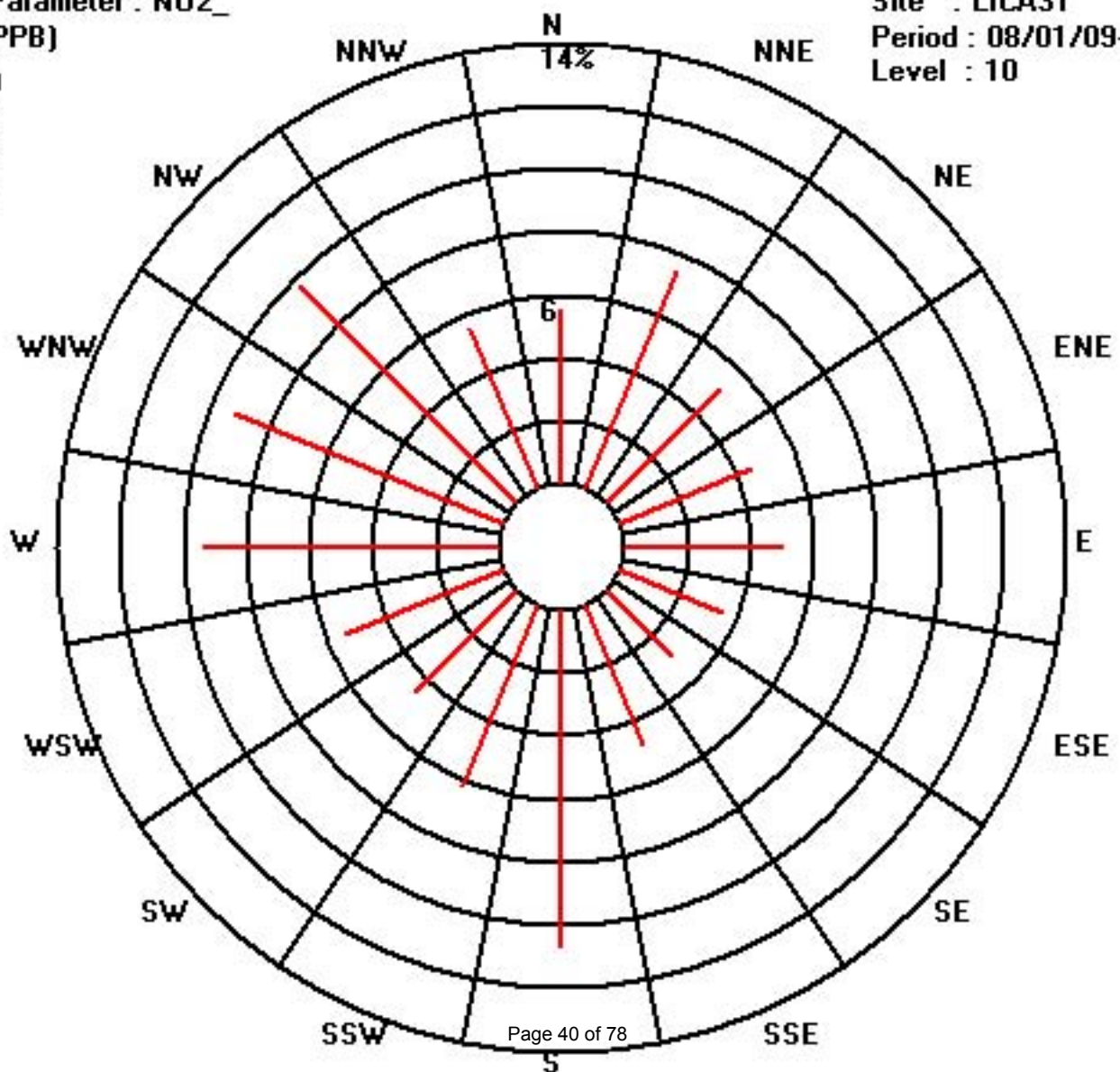
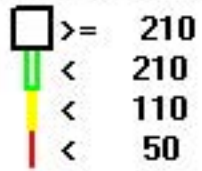
Calm : .00 %

Total # Operational Hours : 704

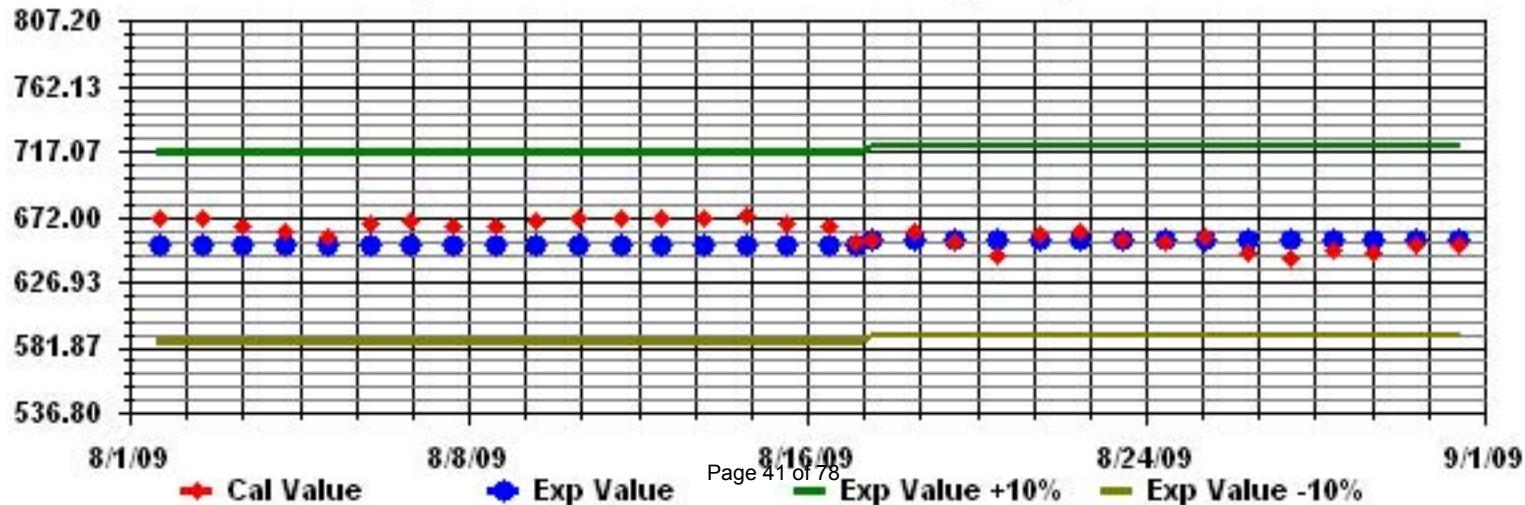
Class Limits (PPB)

Period : 08/01/09-08/31/09

Level : 10



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



Nitric Oxide

IMPERIAL OIL RESOURCES LTD. - COLD LAKE - MASKWA

AUGUST 2009

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

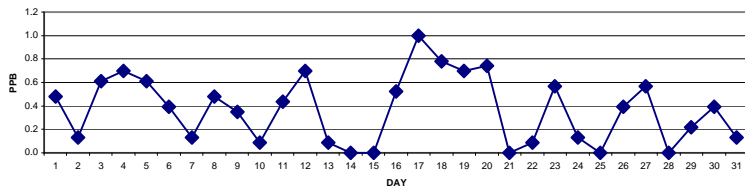
STATUS FLAG CODES

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

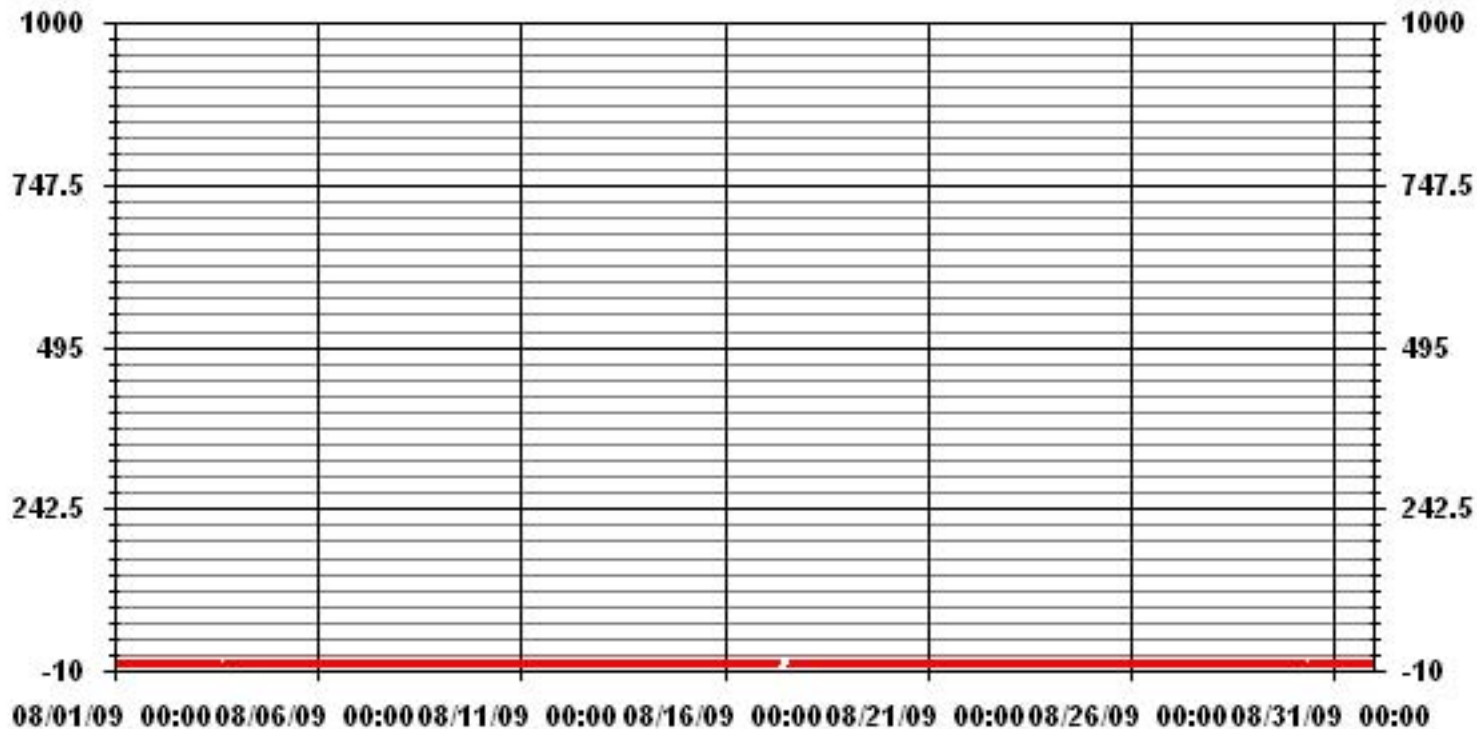
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	236					
MAXIMUM 1-HR AVERAGE:	3	PPB	@ HOUR(S)	7, 8	ON DAY(S)	17
MAXIMUM 24-HR AVERAGE:	1.0	PPB			ON DAY(S)	17
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.54		MONTHLY AVERAGE:	0.36	PPB	

24 HOUR AVERAGES FOR AUGUST 2009



01 Hour Averages



— LICA31 NO_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

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	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	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1	1	IZS	1	0	0	0	0	0	0	0	2	1.0	24
2	0	0	1	0	0	0	0	1	1	0	0	0	2	1	0	IZS	2	1	1	1	1	1	1	1	1	2	0.7	24
3	1	1	1	1	1	1	2	1	1	1	3	17	1	1	IZS	2	33	1	1	1	1	1	1	1	1	33	3.3	24
4	1	1	1	1	1	1	2	2	2	2	3	1	1	IZS	2	2	2	1	1	1	1	2	1	1	3	1.4	24	
5	1	1	1	1	1	1	2	2	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	2	2	1.2	24	
6	1	1	1	1	1	1	1	23	40	1	1	IZS	1	0	0	0	0	0	1	0	0	0	0	0	40	3.2	24	
7	0	0	0	0	0	1	1	4	0	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	4	0.9	24	
8	1	1	1	1	1	2	2	2	2	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.2	24	
9	1	1	1	1	1	1	1	1	IZS	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
10	1	1	1	1	1	2	2	IZS	1	0	13	0	0	0	0	1	1	1	0	0	0	0	0	0	13	1.1	24	
11	0	0	0	0	0	1	IZS	2	2	2	1	2	2	2	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
12	1	1	1	1	1	IZS	6	4	4	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	6	1.9	24	
13	1	1	1	1	IZS	2	3	1	2	1	1	2	2	1	1	0	1	0	1	3	0	0	0	0	3	1.1	24	
14	0	0	0	IZS	1	1	1	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24	
15	0	0	IZS	1	1	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
16	0	IZS	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24	
17	IZS	2	1	1	1	20	11	6	C	C	C	C	C	C	C	C	2	1	1	0	0	1	0	IZS	20	3.4	24	
18	2	1	1	1	1	2	5	2	2	2	2	1	2	2	1	2	2	1	1	1	1	1	IZS	2	5	1.7	24	
19	1	1	1	1	1	1	3	2	1	2	1	2	3	3	2	3	2	2	2	1	2	IZS	2	1	3	1.7	24	
20	1	1	1	1	2	2	26	3	2	1	1	1	1	1	1	1	1	1	1	1	IZS	1	0	0	26	2.2	24	
21	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	IZS	2	1	1	1	2	0.3	24	
22	1	1	1	1	1	1	1	11	1	1	2	1	1	1	1	1	1	1	IZS	2	2	1	1	1	11	1.6	24	
23	1	1	1	1	1	1	2	2	1	2	2	1	1	1	1	1	IZS	2	0	0	0	0	0	0	2	1.0	24	
24	0	0	0	0	1	2	2	3	2	1	1	0	0	0	0	IZS	2	14	1	0	1	0	0	14	1.3	24		
25	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0	IZS	2	0	0	0	0	0	0	0	2	0.3	24	
26	0	0	0	0	0	0	1	1	1	1	1	0	0	0	IZS	3	1	1	2	1	1	1	1	1	3	0.7	24	
27	1	1	1	1	1	2	1	2	1	2	2	3	10	IZS	2	1	0	0	1	0	0	0	0	0	10	1.4	24	
28	0	0	0	0	0	0	5	1	0	1	1	0	IZS	10	1	0	0	0	0	0	0	0	N	0	10	0.9	23	
29	0	0	0	0	0	0	0	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	2	0.7	24	
30	1	1	1	1	1	1	1	2	15	2	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	15	1.2	24	
31	0	0	0	0	0	1	3	2	IZS	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.5	24	
HOURLY MAX	2	2	1	1	2	20	26	23	40	2	13	17	10	10	2	3	33	2	14	3	2	2	2	2				
HOURLY AVG	0.6	0.6	0.7	0.7	0.7	1.7	2.9	2.9	3.2	1.3	1.8	1.6	1.4	1.2	0.8	1.0	2.1	0.8	1.3	0.7	0.6	0.6	0.6	0.6				

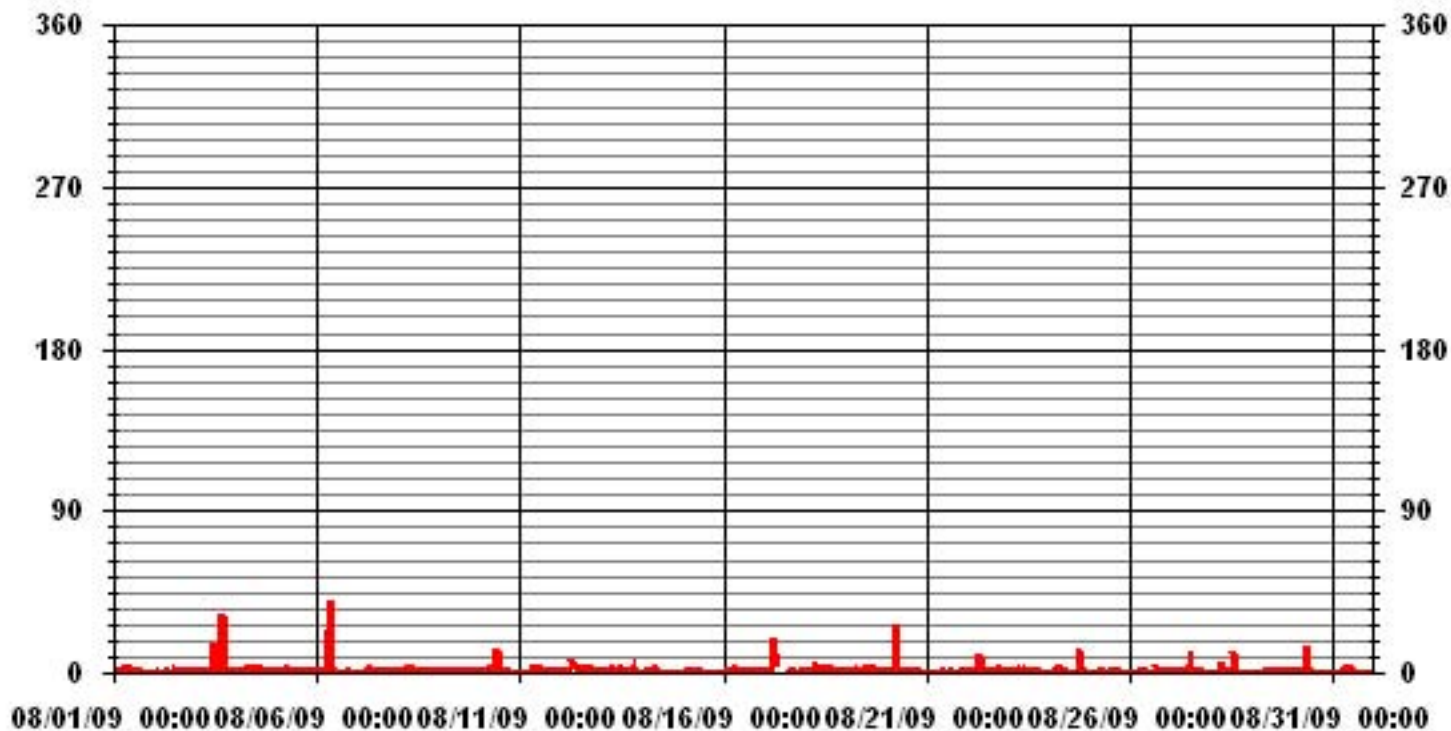
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	493					
MAXIMUM INSTANTANEOUS VALUE:	40	PPB	@ HOUR(S)	8	ON DAY(S)	6
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION	2.82					

01 Hour Averages



— LICA31 — NOMAX — PPB

LICA31
 NO_ / WDR Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	5.53	7.52	5.11	4.54	4.97	3.55	2.98	4.82	10.79	6.25	4.54	5.39	9.37	9.23	9.80	5.53	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	5.53	7.52	5.11	4.54	4.97	3.55	2.98	4.82	10.79	6.25	4.54	5.39	9.37	9.23	9.80	5.53	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	39	53	36	32	35	25	21	34	76	44	32	38	66	65	69	39	704
< 110																	
< 210																	
>= 210																	
Totals	39	53	36	32	35	25	21	34	76	44	32	38	66	65	69	39	

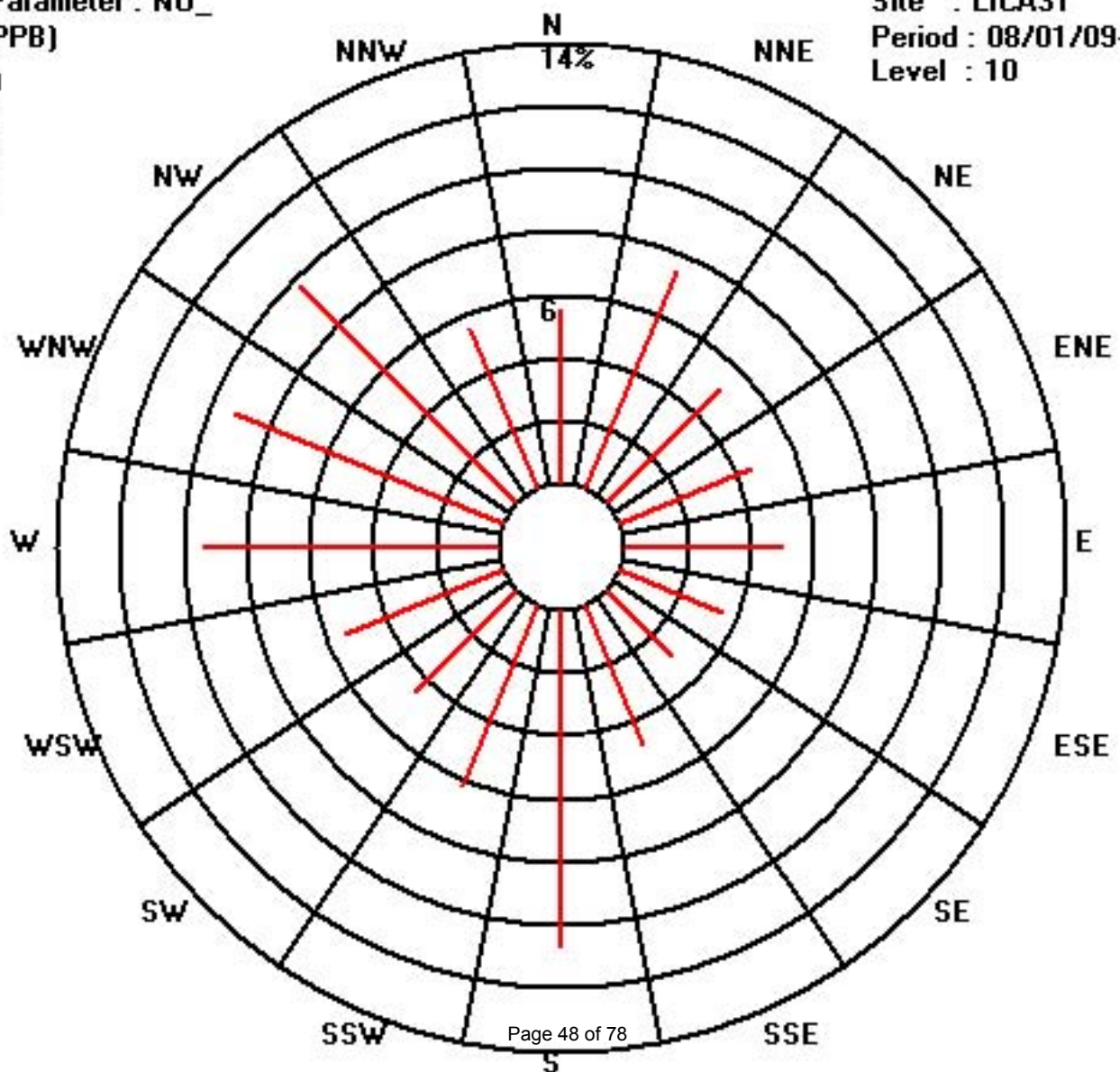
Calm : .00 %

Total # Operational Hours : 704

Class Limits (PPB)

Period : 08/01/09-08/31/09

Level : 10



Oxides of Nitrogen

IMPERIAL OIL RESOURCES LTD. - COLD LAKE - MASKWA

AUGUST 2009

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	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	1	2	2	3	4	4	4	5	5	4	3	2	1	1	1	1	IZS	1	1	1	0	1	1	1	5	2.1	24	
2	1	2	1	1	1	1	1	1	0	1	0	1	1	1	1	IZS	0	0	0	1	0	0	0	0	2	0.7	24	
3	0	0	0	1	1	1	1	0	0	0	0	0	0	0	IZS	0	5	0	0	0	0	0	0	1	5	0.4	24	
4	0	0	0	0	1	1	2	1	1	0	1	0	0	0	IZS	0	0	0	0	0	0	0	1	1	2	0.4	24	
5	1	1	1	1	1	1	2	2	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	2	1	2	0.6	24	
6	1	1	1	1	1	1	1	5	9	2	1	IZS	1	1	0	0	0	1	1	0	1	1	1	1	9	1.4	24	
7	3	1	2	2	1	1	2	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	2	2	3	0.8	24	
8	2	2	2	2	2	4	3	3	2	IZS	1	1	1	1	0	1	1	1	1	1	1	1	2	2	4	1.6	24	
9	2	2	2	2	3	3	3	1	IZS	0	0	1	1	1	0	0	0	0	0	1	1	1	3	2	3	1.3	24	
10	2	1	1	2	4	5	3	IZS	2	1	3	1	1	1	0	1	1	1	1	1	2	2	2	2	5	1.7	24	
11	2	2	1	1	2	2	IZS	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	1	1	2	0.7	24	
12	1	0	1	2	2	IZS	4	4	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	0.9	24	
13	1	0	0	1	IZS	1	1	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	1	0.3	24	
14	0	0	0	IZS	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	2	1	1	1	2	0.5	24	
15	1	1	IZS	1	1	1	1	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	1	1	2	0.7	24	
16	1	IZS	1	1	2	2	2	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.6	24
17	IZS	1	1	2	2	4	5	7	10	C	C	C	C	C	C	C	1	0	0	0	0	0	0	0	10	2.2	24	
18	2	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24	
19	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	IZS	0	0	1	0.1	24
20	1	0	1	2	2	1	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.6	24		
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0.0	24	
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	2	0	1	1	2	0.2	24	
23	0	1	1	1	0	0	0	1	1	2	2	0	1	1	0	1	1	IZS	0	0	0	0	0	0	2	0.6	24	
24	0	0	0	0	0	1	3	3	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	3	0.3	24	
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	2	1	1	1	2	0.3	24	
26	0	0	0	1	2	3	3	3	2	2	1	1	1	0	IZS	1	0	0	0	1	1	1	2	1	3	1.1	24	
27	0	1	0	0	0	1	1	1	1	1	1	1	1	IZS	0	0	0	0	1	0	0	0	0	0	1	0.4	24	
28	0	0	0	1	1	1	3	3	0	0	0	0	IZS	0	0	0	0	0	0	1	0	0	N	0	3	0.5	23	
29	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	0	0	0	0	1	0	1	1	2	1	2	0.8	24	
30	1	1	1	2	1	1	1	2	3	2	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.7	24	
31	0	0	0	0	1	1	2	3	2	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0.5	24	
HOURLY MAX	3	3	2	3	4	5	5	7	10	4	3	2	1	1	1	1	5	1	1	2	2	2	3	2				
HOURLY AVG	0.8	0.8	0.7	1.0	1.2	1.4	1.8	1.9	1.8	0.8	0.6	0.4	0.4	0.3	0.1	0.2	0.3	0.2	0.2	0.4	0.4	0.4	0.8	0.7				

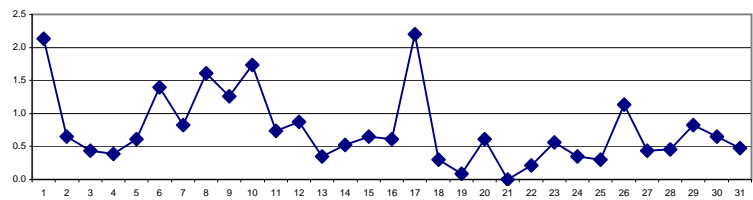
STATUS FLAG CODES

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

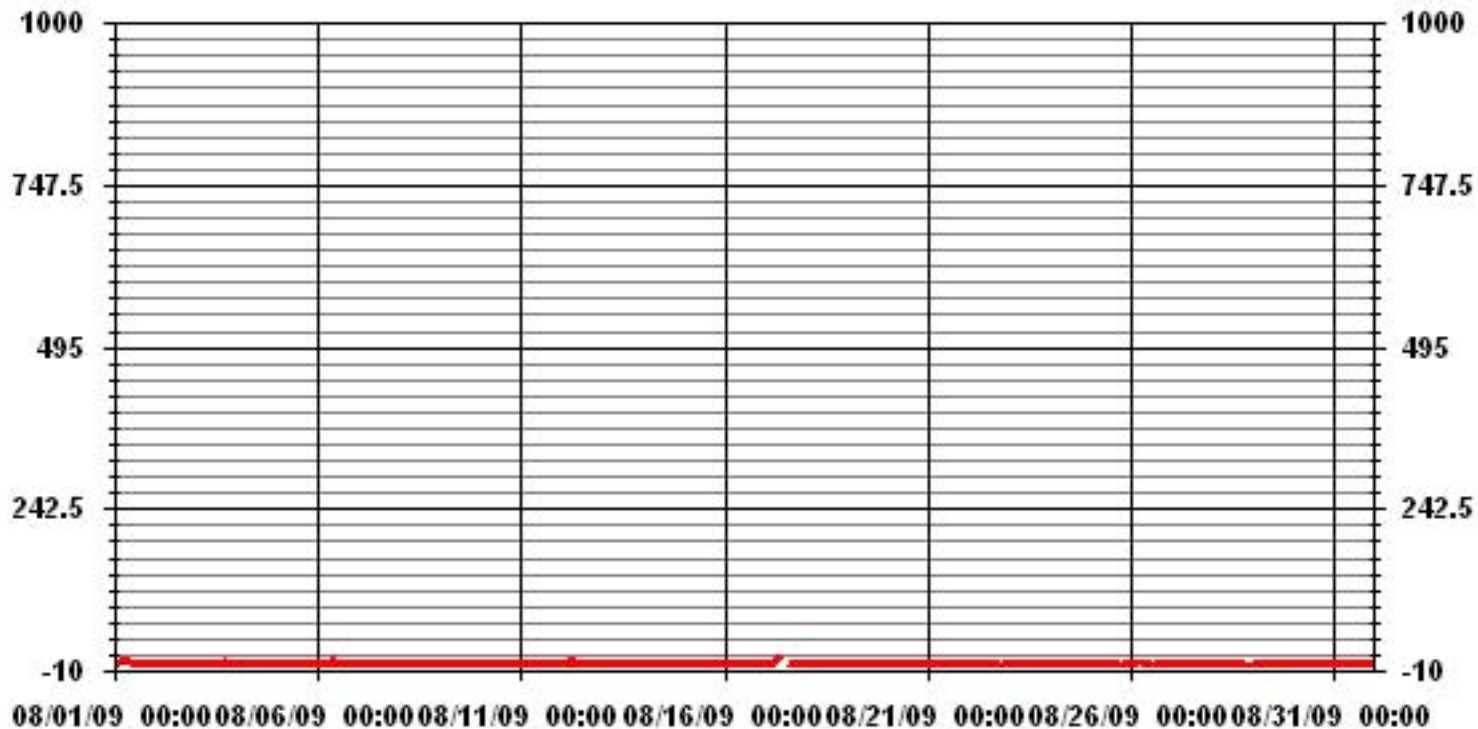
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	329					
MAXIMUM 1-HR AVERAGE:	10	PPB	@ HOUR(S)	8	ON DAY(S)	17
MAXIMUM 24-HR AVERAGE:	2.2	PPB			ON DAY(S)	17
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	1.10		MONTHLY AVERAGE:	0.74	PPB	

24 HOUR AVERAGES FOR AUGUST 2009



01 Hour Averages



— LICA31 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

AUGUST 2009

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
DAY																													
1	2	2	3	4	5	6	6	6	6	5	4	3	2	2	3	2	IZS	2	2	1	2	2	2	2	2	6	3.2	24	
2	2	3	4	2	2	2	2	2	2	1	1	2	3	2	2	IZS	1	1	1	2	2	1	1	1	1	4	1.8	24	
3	1	1	1	1	1	1	1	1	1	1	5	27	1	1	IZS	1	118	1	1	1	1	1	1	1	1	118	7.4	24	
4	1	1	1	1	1	2	4	2	2	2	4	1	1	IZS	1	1	2	1	1	2	2	4	2	2	2	4	1.8	24	
5	1	1	1	2	2	1	3	4	1	1	1	1	1	IZS	1	1	0	1	1	1	1	1	2	2	5	5	1.5	24	
6	1	1	2	2	1	1	1	42	148	2	2	IZS	2	1	1	1	1	1	2	1	2	2	2	2	148	9.6	24		
7	6	2	3	2	2	3	4	7	2	3	IZS	1	1	1	1	1	1	1	1	1	1	1	4	3	7	2.3	24		
8	3	3	3	3	4	5	5	4	3	IZS	2	1	2	1	1	2	1	1	3	2	1	2	3	4	5	2.6	24		
9	3	3	3	4	4	4	4	2	IZS	2	1	2	2	3	1	1	0	1	2	2	2	4	4	2	4	2.4	24		
10	2	3	3	3	5	8	7	IZS	3	2	55	2	3	2	1	2	5	3	2	2	3	3	3	2	55	5.4	24		
11	2	3	2	1	3	5	IZS	3	2	2	1	3	3	2	2	2	3	1	1	2	1	1	1	2	5	2.1	24		
12	2	1	2	3	3	IZS	8	6	6	3	2	2	2	2	1	2	1	2	2	1	1	1	1	1	8	2.4	24		
13	2	1	1	2	IZS	3	5	2	3	1	1	3	4	1	2	1	1	1	3	6	1	1	1	1	6	2.0	24		
14	1	1	1	IZS	1	1	1	1	4	3	3	2	1	1	1	1	1	1	1	1	2	2	2	2	4	1.5	24		
15	2	2	IZS	2	1	2	2	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	1.4	24		
16	2	IZS	2	2	3	3	4	4	3	2	1	1	1	1	1	1	1	1	2	2	1	1	1	1	4	1.8	24		
17	IZS	2	2	3	3	28	15	11	C	C	C	C	C	C	C	C	3	0	0	0	0	3	1	IZS	28	5.1	24		
18	3	3	3	1	0	0	2	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	IZS	1	3	0.8	24
19	2	2	2	2	2	2	4	3	2	3	2	2	4	4	3	4	2	2	3	2	2	IZS	1	1	4	2.4	24		
20	1	1	2	3	3	2	33	4	3	1	1	0	1	1	1	1	0	0	0	1	IZS	1	1	0	33	2.7	24		
21	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0	0	1	0	IZS	1	1	0	0	1	0.3	24		
22	0	0	0	0	0	0	1	26	0	0	0	0	0	0	0	0	0	0	IZS	2	3	1	2	2	26	1.6	24		
23	1	1	3	1	1	1	1	2	2	3	3	1	1	1	1	2	1	IZS	0	0	0	0	0	0	3	1.1	24		
24	0	0	0	1	1	2	4	4	3	1	0	0	0	0	0	0	IZS	0	21	2	0	0	0	0	21	1.7	24		
25	1	1	0	0	0	0	1	1	1	1	0	0	0	0	0	IZS	1	1	1	3	3	1	1	1	3	0.8	24		
26	1	1	1	2	3	3	4	4	3	3	3	1	1	1	IZS	1	1	1	1	1	2	2	2	2	4	1.9	24		
27	1	1	1	1	1	3	2	4	1	2	2	3	15	IZS	3	1	0	1	3	1	0	0	0	0	15	2.0	24		
28	1	1	3	3	2	4	13	5	1	2	1	1	IZS	23	2	1	0	0	0	1	1	1	N	1	23	3.0	23		
29	1	2	2	2	2	2	2	2	2	2	3	IZS	1	1	1	1	1	2	1	2	2	2	2	1	3	1.7	24		
30	2	2	2	2	2	2	2	3	30	4	IZS	1	2	0	0	0	0	0	1	0	0	0	0	1	30	2.4	24		
31	0	1	1	1	1	5	5	8	4	IZS	5	1	0	0	0	0	0	0	0	0	0	0	0	1	2	8	1.5	24	
HOURLY MAX	6	3	4	4	5	28	33	42	148	5	55	27	15	23	3	4	118	3	21	6	3	4	4	5					
HOURLY AVG	1.6	1.5	1.8	1.9	2.0	3.4	4.9	5.5	8.3	2.0	3.8	2.3	2.0	1.9	1.1	1.1	5.1	0.9	1.9	1.4	1.3	1.4	1.4	1.5					

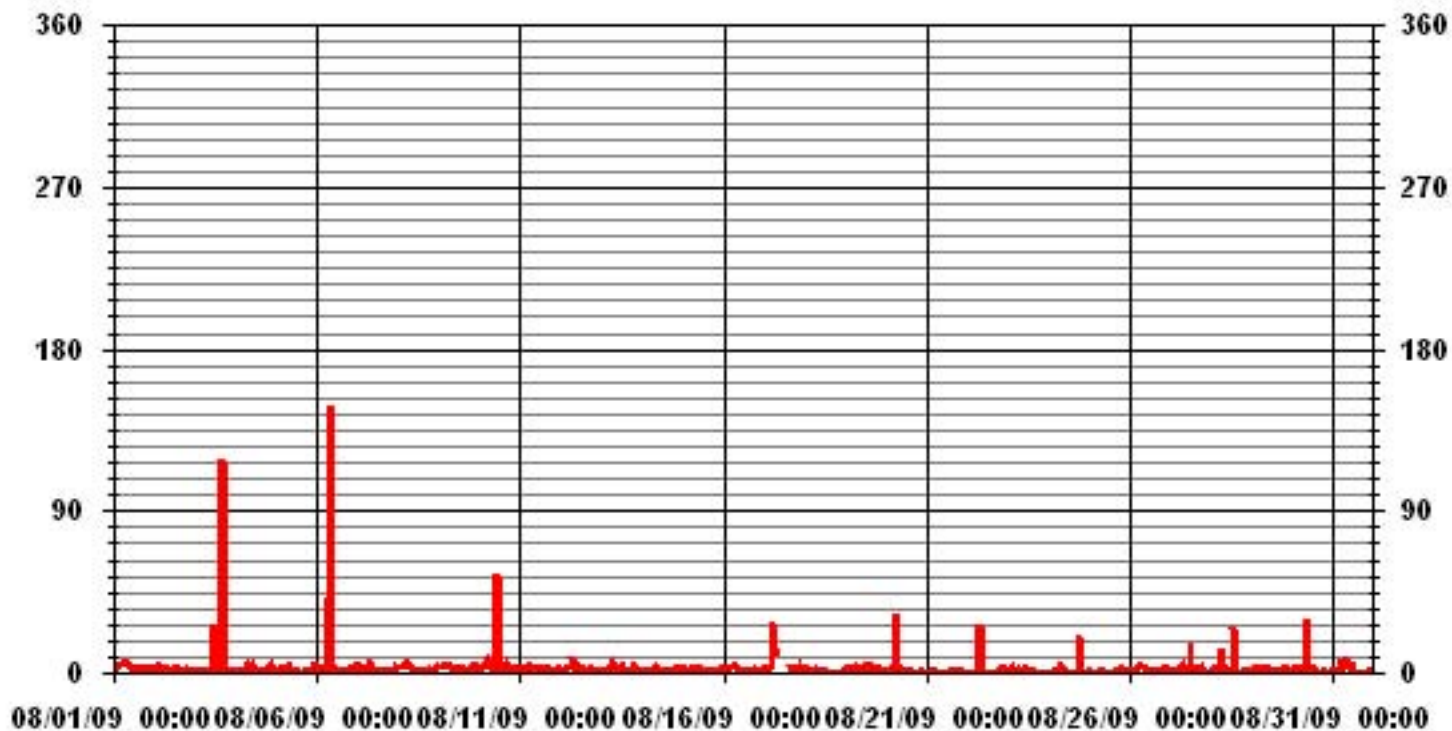
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	592					
MAXIMUM INSTANTANEOUS VALUE:	148	PPB	@ HOUR(S)	8	ON DAY(S)	6
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION	8.03					

01 Hour Averages



LICA31
 NOX_ / WDR Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	5.53	7.52	5.11	4.54	4.97	3.55	2.98	4.82	10.79	6.25	4.54	5.39	9.37	9.23	9.80	5.53	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	5.53	7.52	5.11	4.54	4.97	3.55	2.98	4.82	10.79	6.25	4.54	5.39	9.37	9.23	9.80	5.53	

Calm : .00 %

Total # Operational Hours : 704

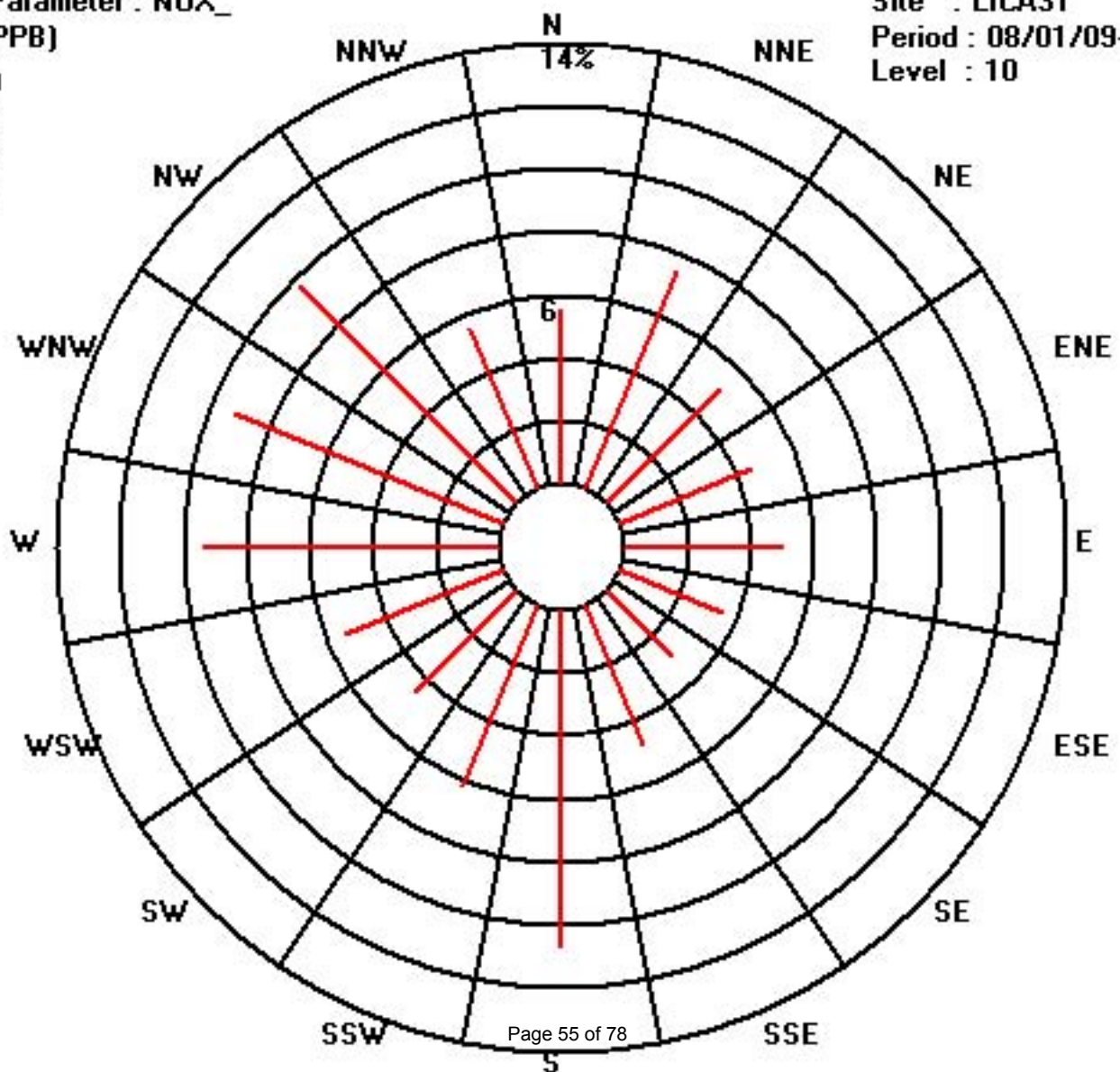
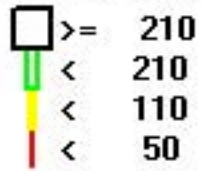
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	39	53	36	32	35	25	21	34	76	44	32	38	66	65	69	39	704
< 110																	
< 210																	
>= 210																	
Totals	39	53	36	32	35	25	21	34	76	44	32	38	66	65	69	39	

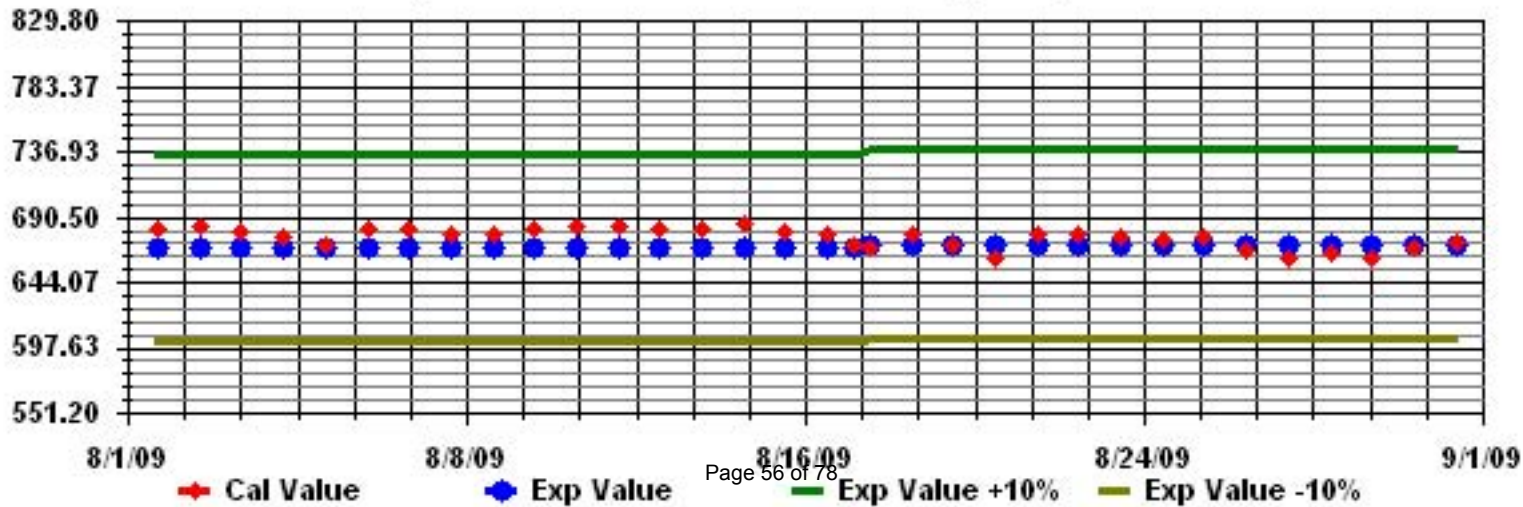
Calm : .00 %

Total # Operational Hours : 704

Class Limits (PPB)



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



Vector Wind Speed

IMPERIAL OIL RESOURCES LTD. - COLD LAKE - MASKWA

AUGUST 2009

WIND SPEED hourly averages (km/hr)

MST HOUR START HOUR END	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	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.
	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	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	7.5	7.2	6.7	6.7	6.9	8.6	8.3	6.4	8.7	9.2	9.9	13.7	9.3	3.3	9.2	10.2	12.1	9.4	7.9	10.4	9	8.7	7.9	7.2	13.7	4.2	24
2	7.3	6.5	6.5	6.6	8.3	6.6	4.6	3.5	4.7	7	13.3	17	20.6	16.6	16.7	14.5	14	15.9	10.9	6.3	8.6	7.6	9.4	9.9	20.6	6.6	24
3	7.8	8.4	8.3	9	7	7.1	7.3	6.5	4.7	5.9	5.1	7.6	6	7.2	7.4	5.9	6.3	6.2	7.2	5.6	6	5.7	6	5.7	9	6.3	24
4	6.2	6.1	5.7	6.2	4.9	8	8	6.5	7.3	9	8	7.1	8.4	9.3	10.3	10.5	10.5	8.6	7.3	5.6	6.2	6.3	8.6	7.8	10.5	7.1	24
5	6.9	6.8	6.9	6	6.1	3.1	4.7	4.9	4.2	2.5	0.2	2.1	3.5	5.1	4.7	4.2	4.4	4.5	6	6.5	5.7	6.2	6.5	7.3	7.3	1.4	24
6	6.3	3.9	5.3	4.6	3.6	3.9	5.8	5.9	4.1	4.9	5.3	6.7	7.1	2.6	4.7	4.6	5.5	4.6	6.2	2.9	3.8	4.6	3.5	2.4	7.1	2.2	24
7	2.1	4.9	4.8	5.2	3.2	5.7	8	3.7	4.8	6.4	5.1	4.9	3	3.9	1.5	3	1.5	1	0.4	0	2.7	4.1	6.1	6.1	8	1.7	24
8	6	5.4	5.8	7.5	6.8	5.4	5.6	5.8	8.2	8.9	10.7	13.2	13.5	13.9	13.2	13	13	11.2	8.4	7.9	9.5	9.1	9.9	9.3	13.9	9.1	24
9	9.4	9.1	9.3	8.4	11	13.2	10.7	9.5	7.2	7.4	6.1	10.2	11.6	14.3	14.4	19	17.1	13	8.5	6.5	6.3	5.6	6.1	7.5	19	8.8	24
10	4.7	1.3	4.2	8	7.6	7.8	9	7.9	6.6	9	12.3	13	12.3	12.9	12.7	12.5	9.2	10.6	10.5	10.1	9.5	9.9	9.3	8.1	13	5.2	24
11	5.6	5.8	7	7	6.8	5.3	10.2	7.6	7.5	4.5	7.6	8.6	7.4	8.6	10.8	12.1	10.3	10.7	9	5.9	8.4	9.7	11.9	9	12.1	7.6	24
12	9.2	8.7	7.8	6.8	8.3	7.7	7.3	6.7	5.6	10.1	11.4	12.7	14.8	21.1	20.8	19.7	14.3	16.2	12.1	7.6	8.2	9.7	8	9.3	21.1	9.7	24
13	11.6	8.6	9.3	9.1	7.5	9.6	8.8	7.6	6.3	5.2	5.7	8.4	9.3	6.4	9.7	8.9	9.6	8.2	4.7	6.2	6.9	6.1	6.3	7.1	11.6	7.1	24
14	5.6	5.9	6.5	6.5	5.4	4.6	3.1	3.5	4.1	4.2	3.5	5.1	5.3	4.5	5.3	5.6	5	3.8	4.4	5.8	6.3	7.9	7.8	3.7	7.9	4	24
15	3.9	7.9	8.2	8.1	6.4	7	8.1	6.3	6.4	7.6	7.1	6.7	6	4.8	4.8	6	6	5.3	4.5	3	2.5	3.2	2.3	5.1	8.2	4.5	24
16	7.8	5.9	8.6	9.3	9.8	9.3	6.8	6.2	3.6	4.1	7.8	7.2	7.8	8.1	8	8.2	8.2	6.7	4.8	5	5.6	6.3	8.5	8.9	9.8	5.7	24
17	11.5	9.7	10.2	8.3	7.2	8	5.6	5.8	6.8	8.1	12.6	10.6	15.1	17.6	16.2	13.9	14.8	16.2	14.5	8.6	5.9	7.3	7.1	7.5	17.6	9.7	24
18	8.5	10.1	9.3	10	10	11.6	15.1	14.2	14.6	19.7	21.5	19.1	18.7	18.4	19.5	16.6	13.9	16.3	14.1	13.2	9.6	11.7	12.6	10.5	21.5	13	24
19	11.4	12.8	12	13.3	12	9.9	9.9	13.2	13.1	13	12.1	13.7	13.4	13.1	13.6	13	10	11.4	6.7	5.4	6.5	6.2	6.9	8.4	13.7	10.4	24
20	9.2	7.6	9.5	12.6	9.2	7.2	7.2	6.2	5	3.9	1.8	2.3	3.1	4.5	1.9	5.8	5.5	7	11.5	10.8	13.4	15	15.3	13.5	15.3	1.6	24
21	14.4	14.3	14.7	15.2	16.5	14.3	15.6	18.8	19.7	23	23.7	23.2	22.6	19.6	18.1	20	17.3	10.5	7.2	9.5	7.9	9.4	9.2	9.3	23.7	14.6	24
22	2.3	19.5	22.6	15.2	9.1	9.2	9.1	9	14.3	15.1	16.8	15.6	17	18	16.7	12.4	11.1	8.3	7.2	5.9	3.2	5.4	1.9	5.1	22.6	10	24
23	10.7	10.1	9	4.5	9.7	5.7	11.3	12.6	12	14.5	14.7	15	13.7	11.6	12.7	13	11.2	12.2	17.5	13.2	13.2	11.5	14.2	13	17.5	6.8	24
24	12.3	9	7.2	7.8	8.7	9.6	9.6	12.3	18.7	20.8	23.2	24.5	24.1	20.8	18.7	18.4	16	12	8.7	6.3	6	5.2	5.9	2.8	24.5	10.9	24
25	0.9	8.1	7.8	6.8	7.8	8.4	8.5	9.2	10.1	13.5	16.4	16.3	16.7	14.1	14.7	14.6	12.4	13.1	12.9	11.2	12.1	11.2	12	10.4	16.7	9.5	24
26	11.1	10.8	9.7	9.3	8.9	8.2	8	7.9	6.2	6.4	8.8	9.5	10	8.7	8.8	9.4	11	7.9	6.3	6.2	7.6	7.1	4.1	12.8	12.8	7.1	24
27	9.3	7.2	8.2	3.9	4.5	4.8	5.4	4.1	2.1	2.9	7.4	7.3	6.8	8.3	6.4	8.7	7.4	5.2	3.2	4.1	4.2	4.3	3.7	6	9.3	2.4	24
28	6.8	5.8	7.7	8.4	7	7.7	5.8	4.8	4.2	4.4	4.5	5.6	5.7	4.6	4.5	3.2	1.3	3.7	7.9	9.8	11.1	12.6	N	9.6	12.6	4.8	23
29	10.7	10.7	9.8	11.7	10.6	8.2	10	10.6	9.6	8.4	8.2	10.9	13.5	13.7	11.3	13.1	12	10.8	8.4	9.1	9.4	9.3	10	10	13.7	10.1	24
30	10.3	11	11.7	11	11.5	10.1	9.8	8.5	8.6	7.7	7.9	8.9	12.3	16	15.1	13.2	11.9	10.9	11.1	9.4	9.2	10.4	9.8	10.3	16	10.4	24
31	9.8	9.5	9.2	9.7	8.7	7.8	8.8	6.8	6.2	4.6	4	5.7	7.2	12.6	8.5	7.5	7.3	8.2	7.4	9.9	11.5	10.2	4.5	8.1	12.6	6.8	24
HOURLY MAX	14.4	19.5	22.6	15.2	16.5	14.3	15.6	18.8	19.7	23.0	23.7	24.5	24.1	21.1	20.8	20.0	17.3	16.3	17.5	13.2	13.4	15.0	15.3	13.5			
HOURLY AVG	8.0	8.3	8.7	8.5	8.1	7.9	8.3	7.8	7.9	8.8	9.8	10.7	11.2	11.1	11.0	11.0	10.0	9.3	8.3	7.4	7.6	8.0	7.8	8.1			

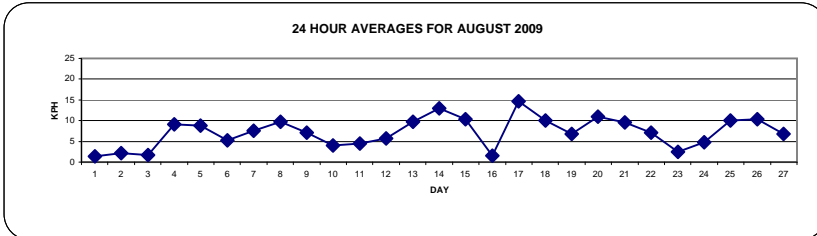
STATUS FLAG CODES

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

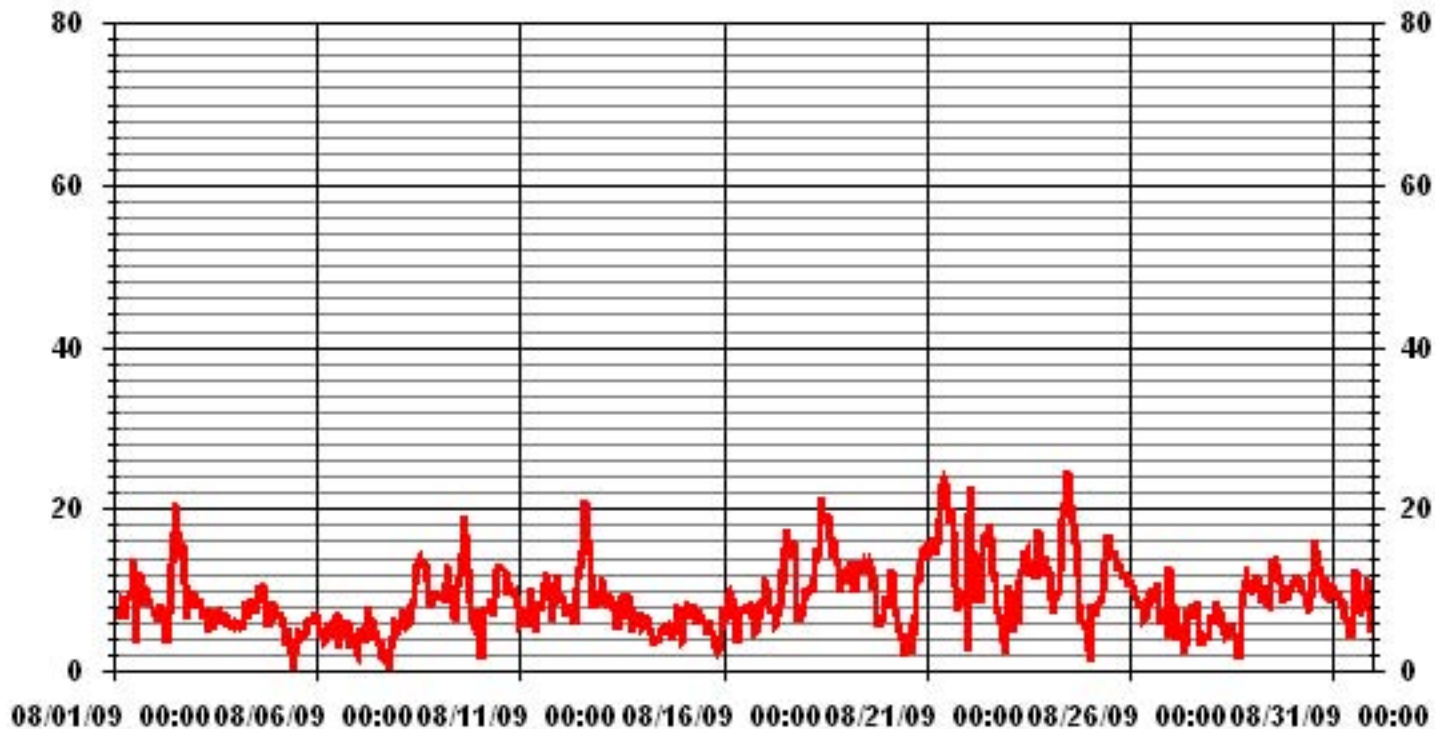
LAST CALIBRATION:	November 7, 2007
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MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	24.5 KPH	@ HOUR(S)	11	ON DAY(S)	24
MAXIMUM 24-HR AVERAGE:	14.6 KPH			ON DAY(S)	21
CALMS (≤ 1 KPH)	0.40 %	OPERATIONAL TIME:	743 HRS		
MONTHLY CALIBRATION TIME:	0 HRS	AMD OPERATION UPTIME	99.9 %		
STANDARD DEVIATION	4.17	MONTHLY AVERAGE	8.90 KPH		



01 Hour Averages



— LICA31 WSP KPH

LICA31
WSP / WDR Joint Frequency Distribution (Percent)

August 2009

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	1.74	3.63	1.88	1.74	2.42	1.21	.26	1.07	1.48	1.34	.80	.94	.80	.67	1.21	2.15	23.41
< 12.0	3.36	3.36	2.96	1.88	1.74	1.61	.94	2.55	7.67	3.63	3.36	2.28	6.19	5.11	5.92	2.69	55.31
< 20.0	.26	.26	.40	.80	.53	.80	1.61	.40	1.34	1.34	1.07	1.48	2.15	3.09	2.55	.67	18.84
< 29.0	.00	.00	.00	.00	.00	.00	.13	.53	.00	.00	.00	.67	.40	.13	.13	.00	2.01
< 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	5.38	7.26	5.24	4.44	4.71	3.63	2.96	4.57	10.49	6.32	5.24	5.38	9.55	9.01	9.82	5.51	

Calm : .40 %

Total # Operational Hours : 743

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	13	27	14	13	18	9	2	8	11	10	6	7	6	5	9	16	174
< 12.0	25	25	22	14	13	12	7	19	57	27	25	17	46	38	44	20	411
< 20.0	2	2	3	6	4	6	12	3	10	10	8	11	16	23	19	5	140
< 29.0							1	4				5	3	1	1		15
< 39.0																	
>= 39.0																	
Totals	40	54	39	33	35	27	22	34	78	47	39	40	71	67	73	41	

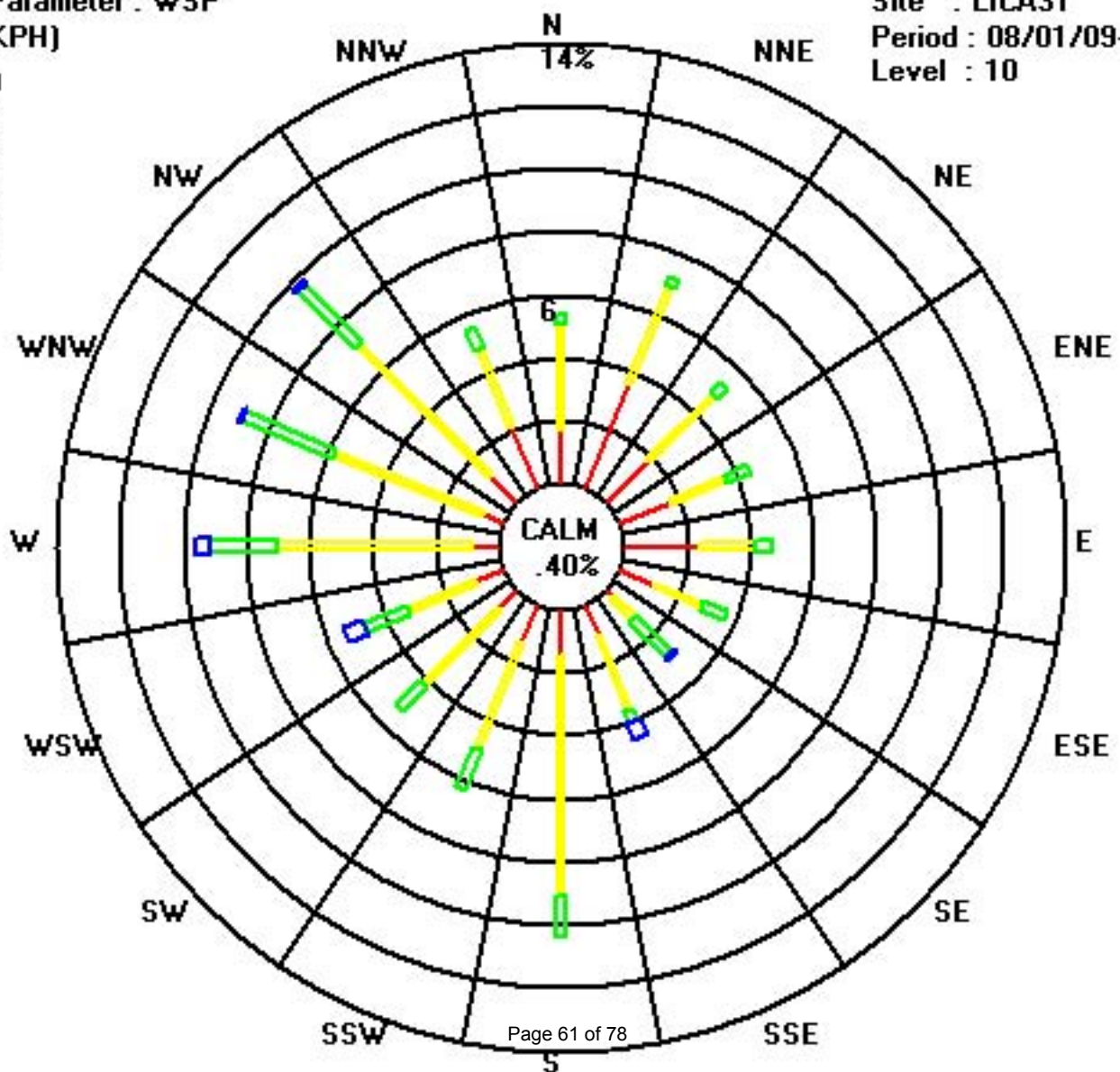
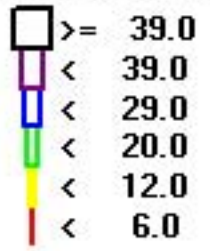
Calm : .40 %

Total # Operational Hours : 743

Class Limits (KPH)

Period : 08/01/09-08/31/09

Level : 10



Vector Wind Direction

IMPERIAL OIL RESOURCES LTD. - COLD LAKE - MASKWA

AUGUST 2009

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	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	AVG.	QUADRANT		
DAY																												
1	182	192	198	203	202	217	212	209	216	216	244	275	7	12	305	346	340	332	328	345	330	320	311	313	278	W	24	
2	322	326	312	294	297	303	298	275	237	235	240	246	255	280	310	336	1	9	5	352	18	24	18	18	313	NW	24	
3	0	342	341	340	354	6	12	16	12	350	17	37	3	12	0	14	26	32	36	31	24	26	14	17	9	N	24	
4	11	3	358	358	321	308	300	313	312	314	315	329	290	293	318	327	316	330	319	331	333	317	292	298	319	NW	24	
5	309	320	358	37	54	88	67	93	78	85	148	337	40	83	130	118	105	158	165	172	160	189	215	228	110	ESE	24	
6	225	266	184	184	28	101	102	102	113	81	33	41	32	92	62	47	13	5	310	34	27	42	61	99	56	NE	24	
7	25	12	15	8	36	327	321	319	353	346	23	36	351	46	64	71	103	85	284	359	227	195	180	192	4	N	24	
8	220	207	191	182	187	195	196	204	205	195	191	184	193	199	194	193	203	193	188	183	183	193	196	196	193	S	24	
9	195	199	193	196	219	235	270	286	312	279	252	217	219	228	240	248	255	267	260	250	237	212	232	262	240	WSW	24	
10	216	70	121	170	175	189	171	169	168	157	161	176	188	197	224	243	246	242	290	303	296	312	320	299	216	SW	24	
11	255	217	274	284	249	256	308	328	308	274	253	238	259	277	272	279	286	277	278	254	247	260	264	261	270	W	24	
12	264	275	234	221	233	220	227	212	215	278	284	275	266	247	251	254	279	262	270	279	312	331	316	312	263	W	24	
13	309	316	294	294	284	288	310	300	313	318	291	277	302	284	297	308	308	311	324	316	340	353	10	12	308	NW	24	
14	18	28	49	43	25	40	68	17	332	326	353	13	33	32	15	25	32	41	70	98	104	98	104	97	44	NE	24	
15	341	347	354	2	1	11	15	25	19	30	48	45	69	48	59	63	66	44	66	2	35	80	168	245	28	NNE	24	
16	275	287	292	293	304	311	297	297	307	338	28	16	353	358	0	355	354	359	345	332	314	276	269	261	319	NW	24	
17	265	265	267	253	229	224	213	207	194	203	227	218	223	245	242	230	232	263	267	267	259	234	237	227	239	WSW	24	
18	227	245	249	261	270	265	260	257	270	288	292	308	314	305	306	307	308	305	286	284	282	298	308	297	287	WNW	24	
19	298	303	306	294	298	294	294	305	316	317	330	320	311	313	329	321	325	332	330	306	286	278	274	268	308	NW	24	
20	274	265	251	264	266	267	273	307	349	358	270	344	329	87	155	97	80	103	110	118	124	128	129	134	154	SSE	24	
21	140	139	134	129	130	139	139	148	142	148	143	147	154	173	167	161	170	166	122	105	99	108	96	89	142	SE	24	
22	219	296	306	332	359	305	282	283	302	300	303	295	292	290	297	282	269	271	269	260	295	327	129	101	296	WNW	24	
23	68	61	46	80	18	342	56	50	53	62	69	68	73	58	31	14	21	317	301	311	296	285	282	283	19	NNE	24	
24	282	281	244	214	204	206	210	228	240	250	255	264	269	280	285	281	279	296	306	319	316	328	354	13	266	W	24	
25	159	179	176	164	138	119	85	91	102	119	120	112	105	97	93	110	95	79	74	63	59	53	53	51	97	E	24	
26	53	57	43	42	45	50	51	42	47	17	20	45	70	75	74	71	79	87	83	80	93	68	88	284	56	NE	24	
27	330	16	59	10	348	342	352	12	51	238	234	261	272	259	279	251	273	287	306	333	41	61	111	154	310	NW	24	
28	178	197	184	186	188	185	191	182	166	174	195	179	229	181	190	239	161	122	104	89	99	118	N	145	161	SSE	23	
29	164	165	145	156	161	132	162	166	168	158	148	152	173	183	170	185	182	177	184	186	184	177	170	171	168	SSE	24	
30	170	170	170	172	172	176	180	191	199	195	199	190	204	202	194	197	197	187	182	177	171	170	171	174	184	S	24	
31	172	179	177	178	180	190	184	177	188	175	161	174	168	178	170	174	168	152	129	120	133	139	74	28	162	SSE	24	
HOURLY AVG	341	347	358	358	359	342	352	328	353	358	353	344	353	358	329	355	354	359	345	359	340	353	354	313				

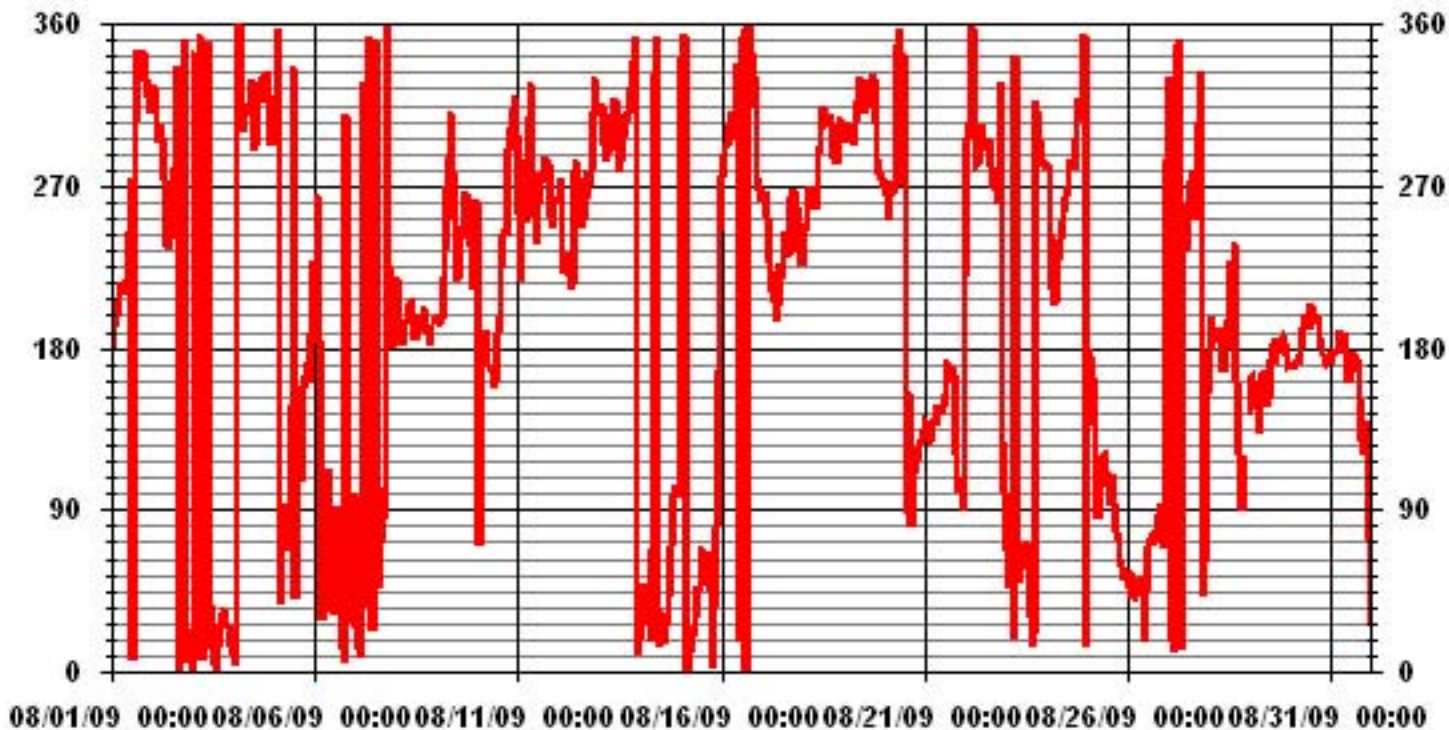
STATUS FLAG CODES

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

LAST CALIBRATION:	November 7, 2007
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	743 HRS
STANDARD DEVIATION	104.17	AMD OPERATION UPTIME	99.9 %
		MONTHLY AVERAGE	262 DEG

01 Hour Averages



— LICA31 WDR DEG

Calibration Reports

Sulphur Dioxide

SO₂ Calibration Report

Station Information

Calibration Date	August 15, 2009	Previous Calibration	July 21, 2009
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	8:55	End Time (MST)	13:00
Reason:	Monthly Calibration		
Barometric Pressure	698 mmHg	Station Temperature	23 Deg C
Cal Gas	52.2 ppm	Cal Gas Expiry date	12/19/2010
DAS Output Voltage	0 - 1 Volts		

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	468	Method:	Fluorescent
Converter Make / Model:	-	S/N :	-		
Calibrator Make / Model:	Enviroics 2000	S/N :	1991	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Flow Meter:	Enviroics 2000	S/N :	1991		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 1000 ppb		
Sample Flow / Box Temp	583 ccm 31.2 Deg C	578 ccm 31.7 Deg C	
HVPS / Lamp Setting	529 2611	529 2611	
PMT / RxCell Temp	7.8 Deg C 50 Deg C	7.8 Deg C 50 Deg C	
Converter / IZS Temp	NA Deg C 40 Deg C	NA Deg C 40 Deg C	
Offset / Slope	53.8 1.127	56.6 1.126	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5014.0	0	0	1	N/A
5022.0	0	0	0	N/A
4941.0	77.8	809	810	0.9990
4944.0	77.8	809	810	0.9984
4984.0	38.9	404	406	0.9957
5001.0	19.4	202	202	0.9986
5022.0	0	0	1	N/A
Sum of Least Squares				0.9979
New Correction Factor				0.9984

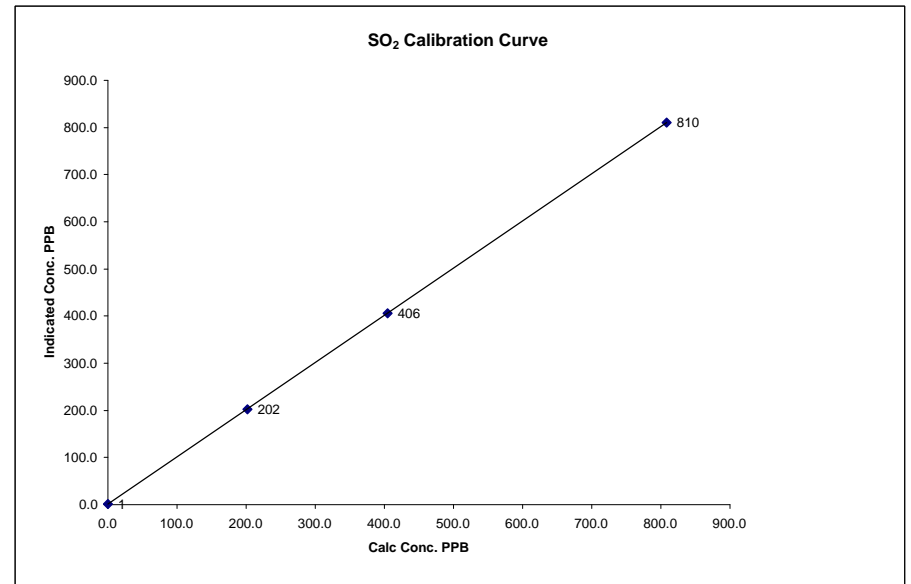
	Before Calibration	After Calibration
Auto Zero	2.0	1.0
Auto Span	351.0	351.0
Sample Lines Connected		YES
Percent Change from Previous Calibration		0.1%

Calibration Performed by: Shea Beaton

SO₂ Calibration Curve

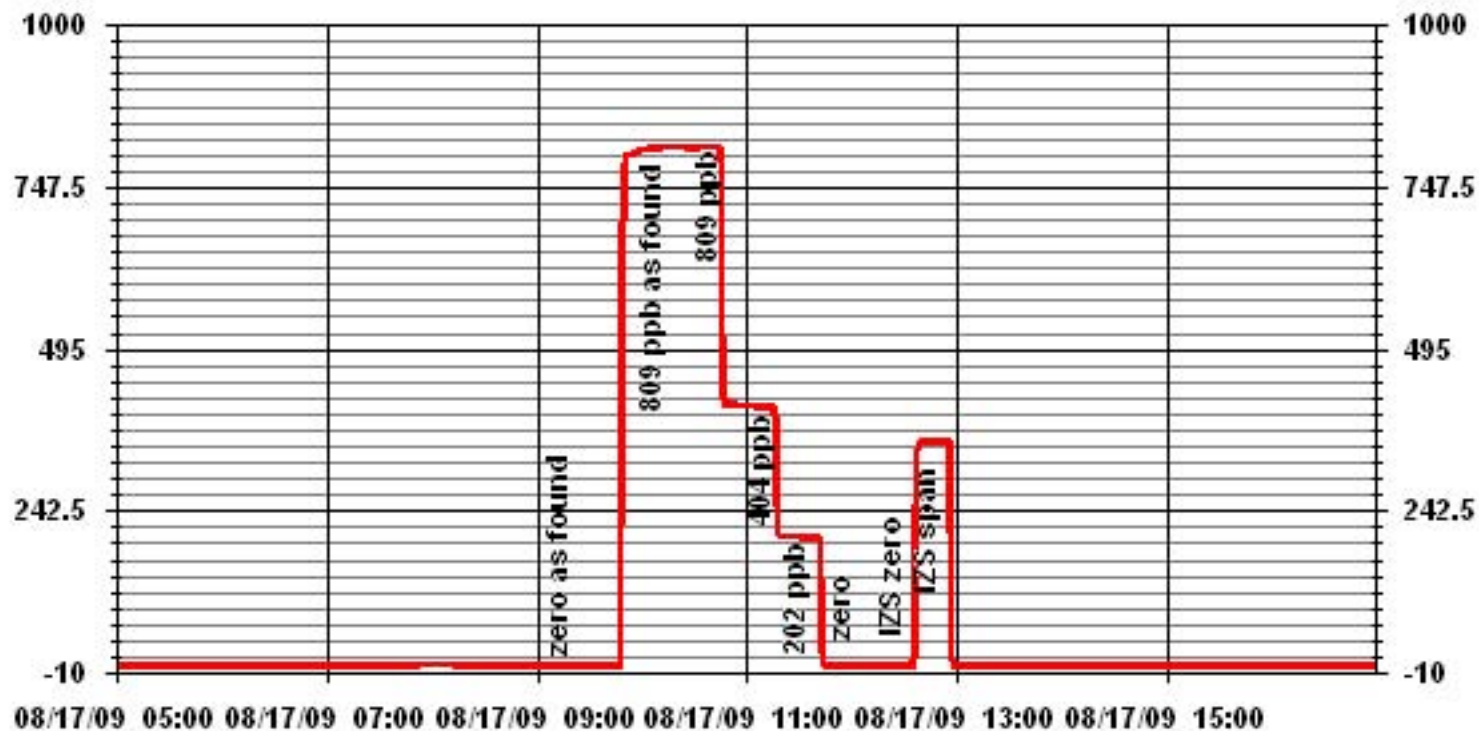
Calibration Date	August 15, 2009
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	8:55
End Time (MST)	13:00

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope (≥ 0.995) (0.85 to 1.15)	Intercept (± 3% F.S.)
0	1	n/a	0.999998	1.000781
202	202	0.9986		
404	406	0.9957		
809	810	0.9984		0.803014



Notes:

01 Minute Averages



Hydrogen Sulphide

H₂S Calibration Report

Station Information

Calibration Date	August 18, 2009	Previous Calibration	July 21, 2009
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST.LINA		
Start Time (MST)	8:55	End Time (MST)	12:50
Reason:	Monthly Calibration		
Barometric Pressure	698 mmHg	Station Temperature	23 Deg C
Cal Gas	10.8 ppm	Cal Gas Expiry date	06/22/2010
DAS Output Voltage	0 - 1 Volts		

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	510	Method:	Fluorescent
Converter Make / Model:	Internal	S/N :	N/A		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

		Before Calibration		After Calibration	
Concentration Range		0 - 100		ppb	
Sample Flow / Box Temp	550 ccm	32.8 Deg C	545	34	Deg C
HVPS / Lamp Setting	534	2177	534	2176	
PMT / RxCell Temp	8.4 Deg C	50 Deg C	8.4 Deg C	50 Deg C	
Converter / IZS Temp	315.4 Deg C	45 Deg C	315 Deg C	45 Deg C	
Offset / Slope	46.8	0.986	46.8	0.986	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4998	0	0	1	N/A
4998	0	0	0	N/A
4963	37	80	81	0.9867
4963	37	80	80	0.9990
4977	20.8	45	46	0.9771
4988	11.6	25	25	1.0023
4999	0	0	0	N/A
Sum of Least Squares				0.9943
New Correction Factor				0.9990

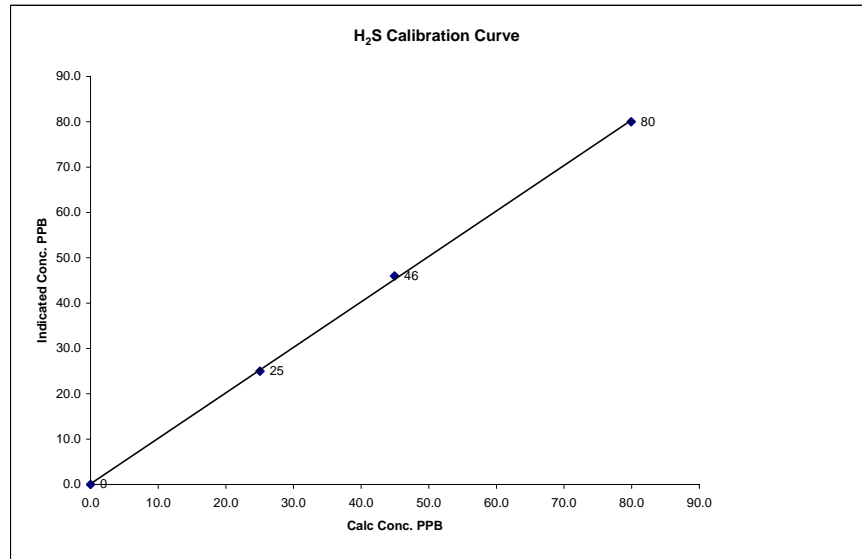
		Before Calibration	After Calibration
Auto Zero		1.3	1.0
Auto Span		53.0	53.0
Sample Lines Connected			YES
Percent Change from Previous Calibration			1.3%

Calibration Performed by: Shea Beaton

H₂S Calibration Curve

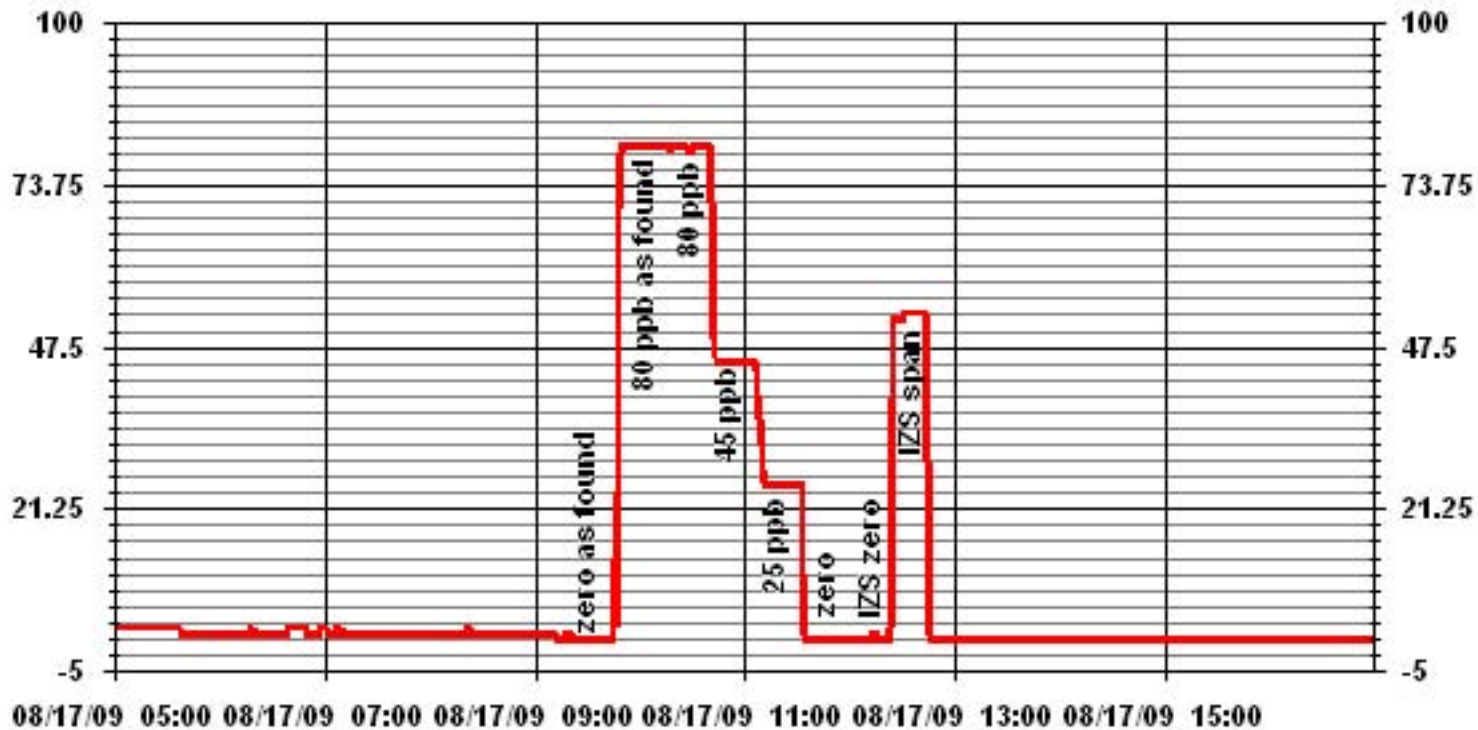
Calibration Date	August 18, 2009
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST.LINA
Start Time (MST)	8:55
End Time (MST)	12:50

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	(0.85 to 1.15)
0	0	n/a	Intercept		0.999771
25	25	1.0023			1.003505
45	46	0.9771			0.137194
80	80	0.9990			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	August 18, 2009	Previous Calibration	July 15, 2009
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	ST. LINA		
:	(MST) 12:15	End Time	(MST) 15:35
Reason:	Monthly Calibration		
Barometric Pressure:	698 mmHg	Station Temperature:	24 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	299 Prop/ 1019 Meth	ppm	Cal Gas Expiry Date: August 21, 2011
DAS make & Model:	ESC 8832	S/N :	A0717
Output Voltage Range:	0 - 10	VDC	

Analyzer Information

Make / Model	TECO 51C	S/N :	77021-384	Method	Flame Ionization
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Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 -50	ppm	0 - 50	ppm
Sample Pressure	6.9	psi	6.9	psi
Hydrogen Pressure	8	psi	8	psi
Air Pressure	20	psi	20	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2993	0.0	0.0	-0.2	N/A
2993	0.0	0.0	0.0	N/A
2989	64.8	39.1	39.1	0.9992
2985	35.0	21.3	20.9	1.0210
2991	20.1	12.3	11.9	1.0328
2993	0	0.0	0.0	N/A
Correction Factor:				0.9992

Previous Calibration Correction Factor:	0.9949
Current Correction Factor Before Span Adjust:	0.9992
Percent Change:	-0.43%

IZS Calibration Data

	Before Calibration		After Calibration	
Auto Zero	-1.3		0.0	
Auto Span	45.2		44.8	
Sample Lines Connected			YES	

Cylinder Pressures

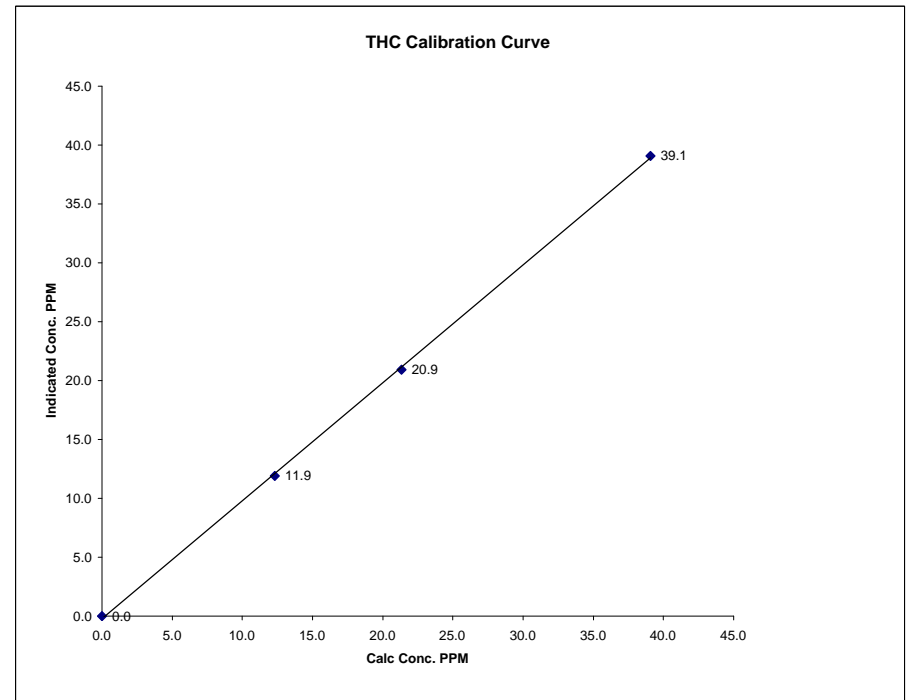
Span	1000	psi	
Hydrogen	900	psi	
Zero Air	N/A	psi	Unlimited API 701

Calibration Performed by: Shea Beaton

THC Calibration Curve

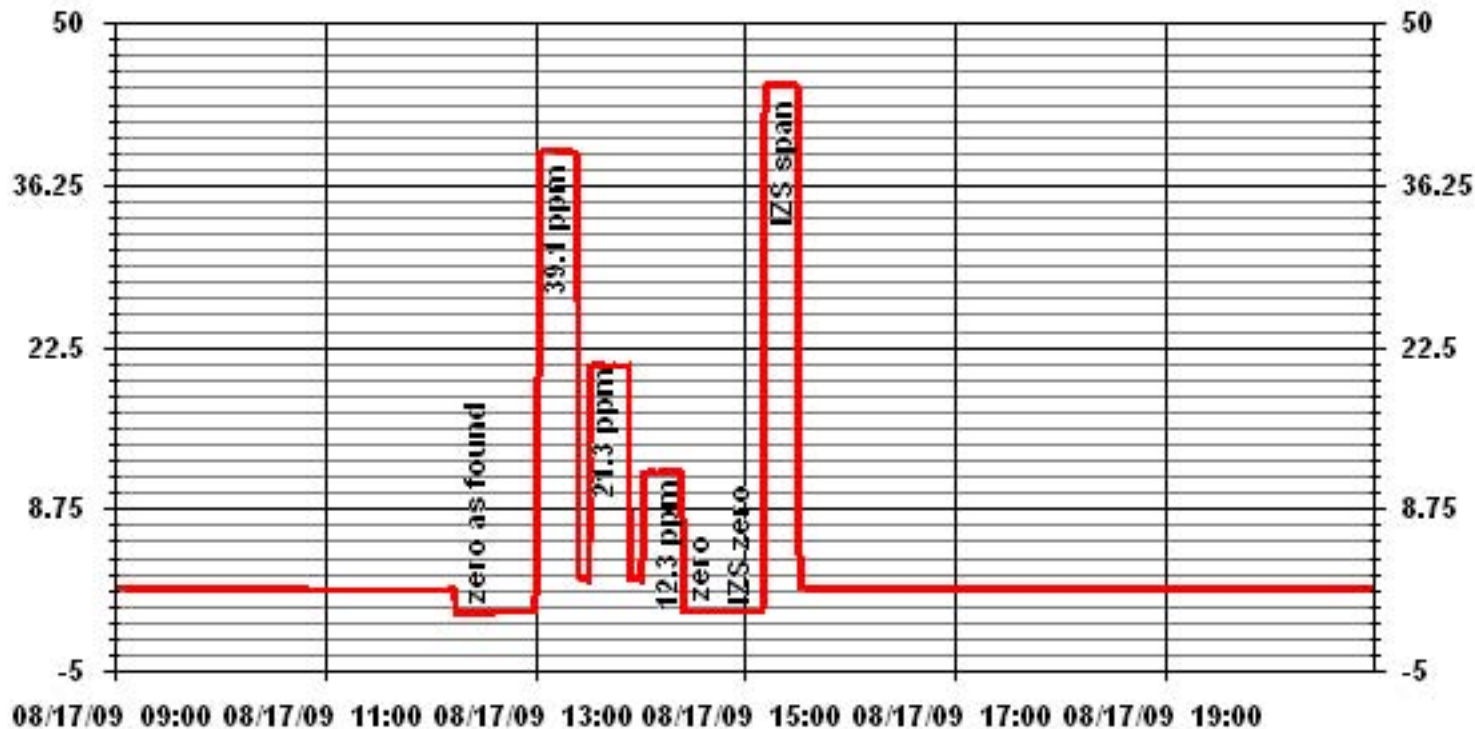
Calibration Date	August 18, 2009		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	12:15	End Time (MST)	15:35

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999775
0.0	0.0		Intercept	(± 3% F.S.)	-0.234342
12.3	11.9	1.0328			
21.3	20.9	1.0210			
39.1	39.1	0.9992			



Notes: Flame temp 177, Flows were manually measured for this cal.

01 Minute Averages



Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	August 18, 2009	Previous Calibration	July 15, 2009
Company	LICA	Plant/Location	ST. LINA
Start Time (MST)	8:55	End Time (MST)	15:41
Reason:	Monthly Calibration		
Barometric Pressure	698 mmHg	Station Temperature	23.0 Deg C
Cal Gas Concentration	NOx 51.8 ppm	NO	51.6 ppm
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	12/19/2010

Equipment Information

Analyzer Make / Model:	API 200E	S/N :	592	Method:	Chemiluminescent
Calibrator Make / Model:	EnviroNics 2000	S/N:	1991		
DAS Make / Model:	ESC 8832	S/N :	A0717		
Flow Meter:	EnviroNics 2000	S/N :	1991		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0 - 1000			ppb			
Sample Flow/Conv. Temp	451 ccm	316.4 Deg C		449 ccm	314.5 Deg C		
Ozone Flow / Vacuum HVPS	73 ccm	3.8 *Hg-A		72 ccm	3.7 *Hg-A		
	710 Volts			710 Volts			
Rx/ Temp / PMT Temp	50 Deg C	6.8 Deg C		50 Deg C	6.9 Deg C		
Box Temp / IZS Temp	30.3 Deg C	45.1 Deg C		31.8 Deg C	45.1 Deg C		
Offset	1.8 NOx	0.5 NO		3.8 NOx	0.3 NO		
Slope	1.001 NOx	0.996 NO		0.989 NOx	0.986 NO		

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration		Indicated Concentration			Correction Factor		
			NOx	NO	NOx	NO	NO2	NOx	NO	
5012	0	N/A	0	0	2	1	2	N/A	N/A	
5022.0	0	N/A	0	0	0	1	1	N/A	N/A	
4941.0	77.8	N/A	803	800	815	809	6	0.9853	0.9887	
4944.0	77.8	N/A	803	799	805	803	2	0.9969	0.9955	
4984.0	38.9	N/A	401	400	404	403	2	0.9930	0.9916	
5001.0	19.4	N/A	200	199	200	201	-1	1.0008	0.9920	
5011.0	0	N/A	0	0	0	2	-1	N/A	N/A	
Converter Efficiency										
4944.0	77.8	N/A	803	800	803	801	2	N/A		
4944.0	77.8	400	803	N/A	798	417	381	99%		
4944.0	77.8	200	803	N/A	801	609	193	99%		
4944.0	77.8	100	803	N/A	800	709	92	98%		
4944.0	77.8	N/A	803	799	802	801	2	N/A		
Correction Factor										
5009.0	0	N/A	0	0	0	2	-1	N/A	N/A	
Linearity OK? Yes No										
Flows Checked on-site? Yes No										
								Sum of Least Squares	0.9963	0.9946
								New Correction Factor	0.9969	0.9955
								Average Converter Efficiency	99%	

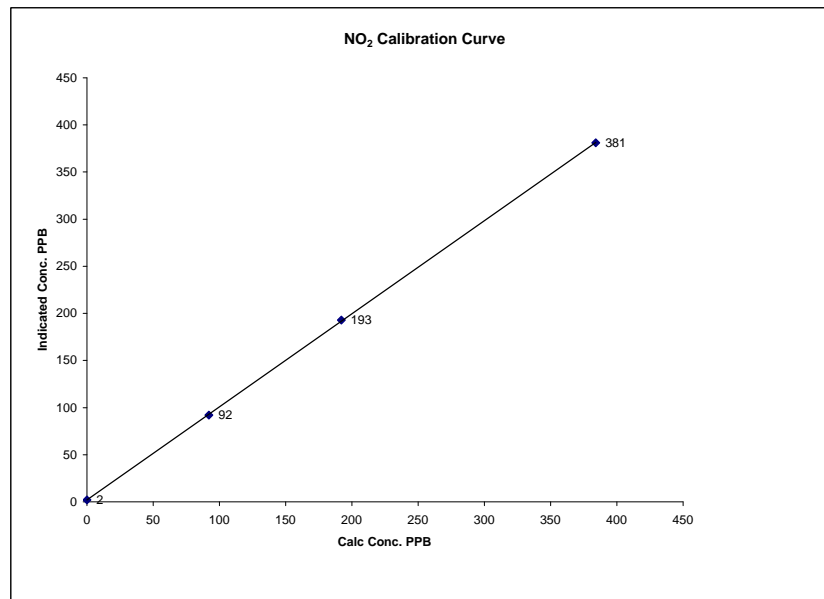
Before Calibration				After Calibration			
Auto Zero	0.0	NOx	0.0	NO2	-0.8	NOx	-1.4
Auto Span	679.0	NOx	666.0	NO2	671.0	NOx	656.0
Sample Lines Connected							
Percent Change from Previous Calibration							
				NOx	-0.3%	NO	0.8%

Calibration Performed by: Shea Beaton

NO2 Calibration Curve

Calibration Date	August 18, 2009
Company	LICA
Plant / Location	ST. LINA
Start Time (MST)	8:55
End Time (MST)	15:41

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	2	N/A		0.999967
92	92	1.0000		0.988181
192	193	0.9948		
384	381	1.0079		1.973704

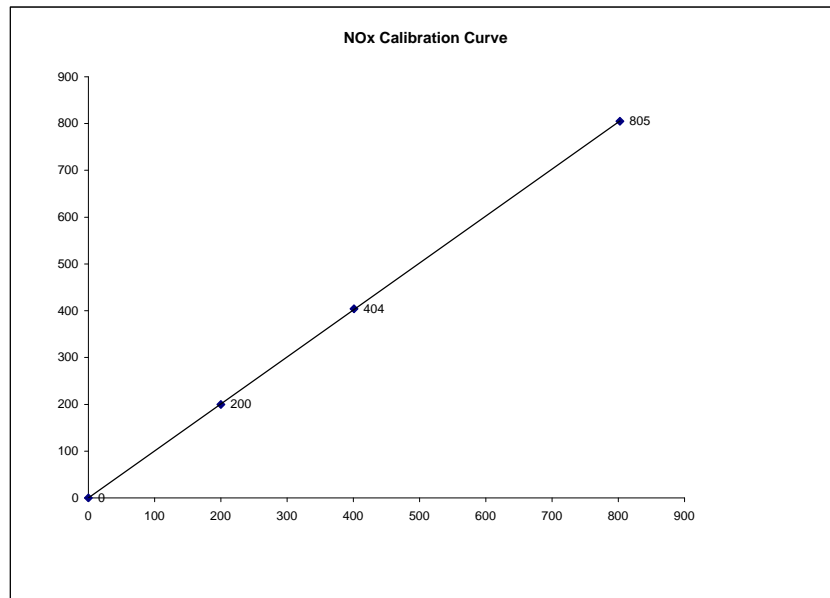


Notes:

NOx Calibration Curve

Calibration Date	August 18, 2009	
Company	LICA	
Plant / Location	ST. LINA	
Start Time (MST)	8:55	End Time (MST) 15:41

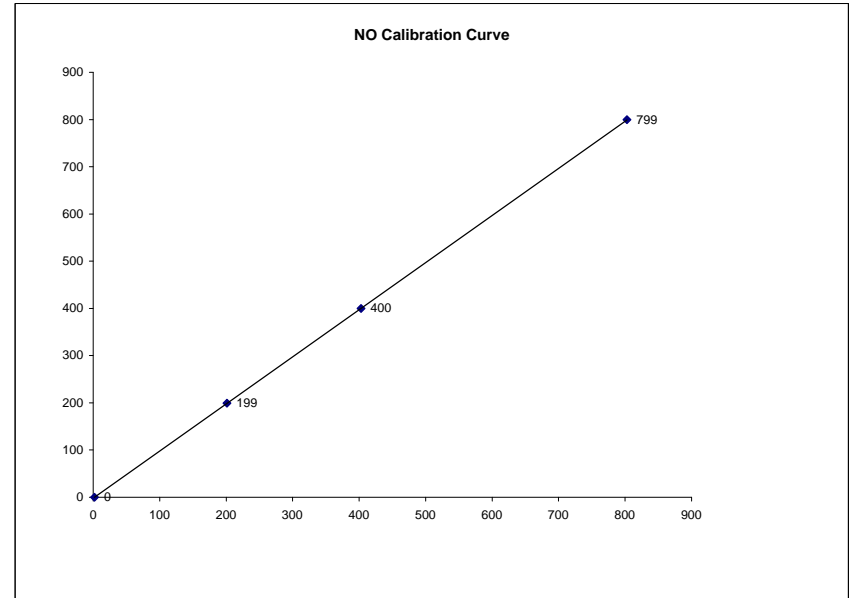
Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999992
0	0	N/A	Slope	(0.85 to 1.15)	1.003668
200	200	1.0008	Intercept	(± 3% F.S.)	0.001998
401	404	0.9930			
803	805	0.9969			



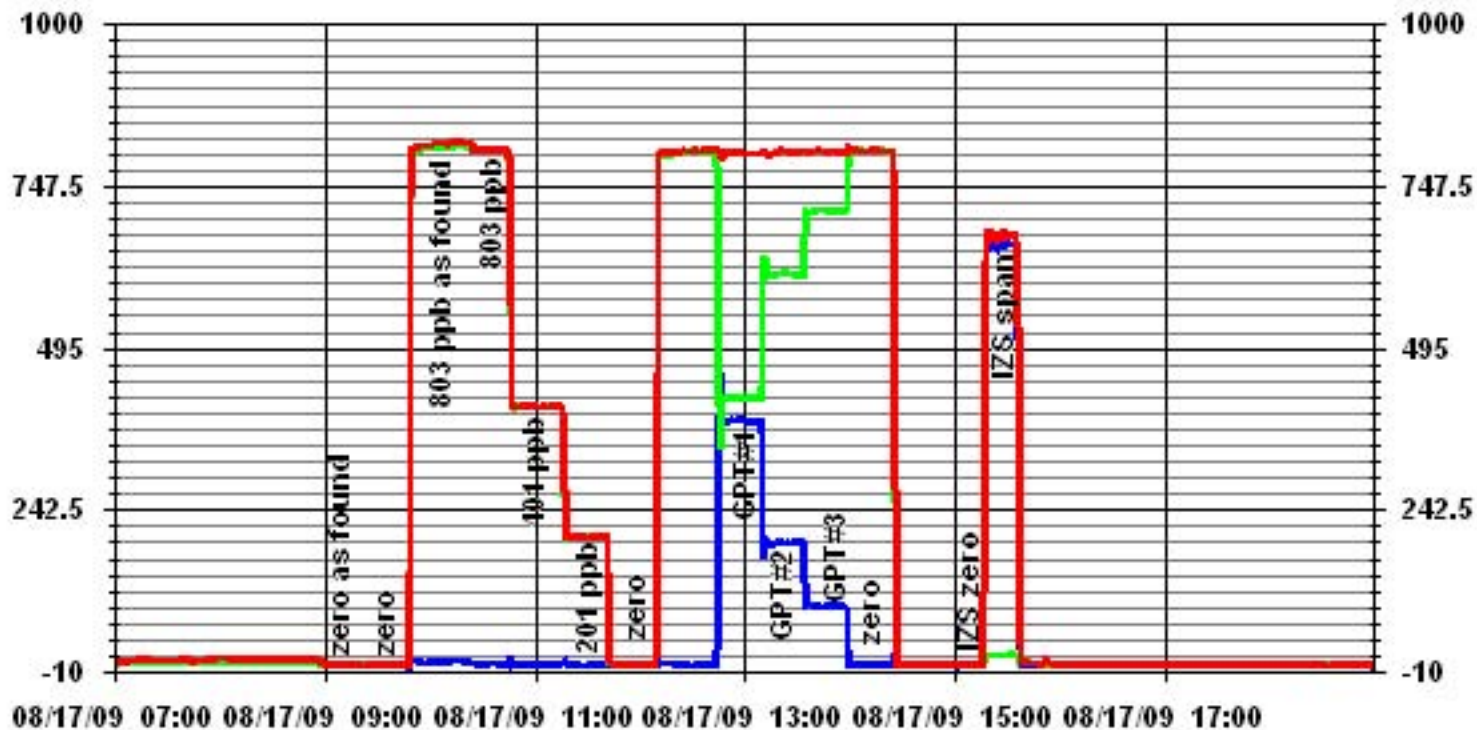
NO Calibration Curve

Calibration Date	August 18, 2009	
Company	LICA	
Plant / Location	ST. LINA	
Start Time (MST)	8:55	End Time (MST) 15:41

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999997
0	2	N/A	Slope	(0.85 to 1.15)	1.002412
199	201	0.9920	Intercept	(± 3% F.S.)	1.801004
400	403	0.9916			
799	803	0.9955			



01 Minute Averages



— LICA31 H2O2_ PPB
 — LICA31 H2O_ PPB
 — LICA31 H2O_ PPB