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June 12, 2015

RE: April 2015 Ambient Air Monitoring Monthly Reports

Attached are the monthly ambient air monitoring reports for the LICA Airshed Zone's Cold Lake South, Maskwa, St. Lina, and Elk Point continuous stations.

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

Respectfully,

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

Michael Bisaga

Airshed Program Manager
Lakeland Industry and Community Association

cc (email): LICA Office

AMBIENT AIR MONITORING MONTHLY DATA REPORT
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
COLD LAKE SOUTH SITE

JOB #:2833-2015-04-01- C

APRIL 2015


Prepared for:

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
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Attention: MIKE BISAGA

DATE: **May 14, 2015**

Prepared by:



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SUMMARY

In APRIL 2015, the Air Services Group of Maxxam Analytics conducted an ambient air monitoring program on the Cold Lake South Site at Lakeland Industry & Community Association, near Bonnyville, Alberta. Sampling was carried out to determine the concentrations of non-compliance parameters as requested by the project coordinator.

All data collected this month were within the objectives outlined in the AMD1989 and AMD2006.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

WS/WSMax/WD/STDWDIR: Maxxam-owned RM Young wind system was replaced with the repaired LICA-owned MetOne wind system on April 16.

No passive sample results are included in this report as the sampling program has been changed from one-month sample collection to two-month sample collection as per client request, starting April 2015.

The summary of results is presented on the following pages.

Any deviations or modifications made to the sampling or analytical methods are outlined in Section 1.0 Discussion. On this basis, Maxxam is issuing this completed report to Lakeland Industry & Community Association, Cold Lake South Site.

Should you have any questions concerning the results or if we can be of further assistance, please contact us at 403-219-3677 or toll-free at 1-800-386-7247.

Monthly Continuous Data Summary

Lakeland Industry & Community Association Cold Lake South Site						MAXIMUM VALUES							OPERATIONAL TIME (%)
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	1-HOUR				24-HOUR			
	1-HR	24-HR	1-HR	24-HR		READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
SO2 (PPB)	172	48	0	0	0	1	VAR	VAR	VAR	VAR	0.2	VAR	100.0
TRS (PPB)	-	-	-	-	0	1	VAR	VAR	VAR	VAR	0.1	VAR	100.0
THC (PPM)	-	-	-	-	2.0	2.8	10, 19	VAR	VAR	VAR	2.2	19	99.9
NO2 (PPB)	159	-	0	-	2.6	17.6	27	5	2.2	ENE	5.1	27	100.0
NO (PPB)	-	-	-	-	0.5	19.3	10	6	0.5	ENE	2.5	10	100.0
NOX (PPB)	-	-	-	-	3.1	35.7	10	5	0.9	ESE	6.8	10	100.0
O3 (PPB)	82	-	0	-	32	52	28, 28	11, 12	14.3 9.6	SSE S	39.1	29	99.7
PM2.5 (UG/M3)	-	30	-	0	4.8	38.0	12	5	5.9	WSW	9.6	23	96.8
RELATIVE HUMIDITY (%)	-	-	-	-	55.6	100	1	VAR	VAR	VAR	94.2	1	100.0
AMBIENT TEMPERATURE (DEG C)	-	-	-	-	4.7	24.4	28	16	8.8	S	15.3	28	100.0
VECTOR WS (KPH)	-	-	-	-	7.0	24.0	18	12	-	NW	13.0	18	99.6
VECTOR WD (DEG)	-	-	-	-	NW	-	-	-	-	-	-	-	99.6

NA-NOT AVAILABLE VAR-VARIOUS

Volatile Organics (VOCs) Data Summary

Sample Collected Date	Maximum reading (PPB)	Volatile Organic Compound
APRIL 6,, 2015	<4.0	n - Dodecane
APRIL 12,, 2015	<4.0	n - Dodecane
APRIL 18,, 2015	3.7	Acetone
APRIL 24,, 2015	2.2	Acetone
APRIL 30,, 2015	2.9	Acetone

Note: NA

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

Sample Collected Date	Maximum reading (ug)	Semi-Volatile Organic
APRIL 6,, 2015	0.12	Phenanthrene
APRIL 12,, 2015	0.05	Phenanthrene
APRIL 18,, 2015	0.10	Phenanthrene
APRIL 24,, 2015	0.06	Phenanthrene
APRIL 30,, 2015	0.13	Phenanthrene

Note: NA

Partisol Sampler Summary

Sample Collected Date	Concentration (mg)
APRIL 6	0.071
APRIL 12	0.026
APRIL 18	0.023
APRIL 24	0.065
APRIL 30	0.029

Note: NA

Exceedence Summary Report

SO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

SO₂ 24- Hour Exceedences

No Exceedences Recorded During the Month

H₂S 1- Hour Exceedences

No Exceedences Recorded During the Month

H₂S 24- Hour Exceedences

No Exceedences Recorded During the Month

NO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

PM_{2.5} 24- Hour Exceedences

No Exceedences Recorded During the Month

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Analytical Results

VOCs Samples

PAHs Samples

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Chain of Custody

1.0 Discussion

This monthly report consists of data for parameters SO₂, TRS, THC, NO_x, NO, NO₂, O₃, PM_{2.5}, WS, WD, RH and Temperature. It also includes results for non-continuous parameters VOC, PAH and Partisol.

Sample filters for all continuous air monitors are changed before the calibration is started. The sample manifold is cleaned during the site visit on a monthly basis.

Control checks, consisting of zero and span of the analyzer are conducted on a daily basis on all continuous air monitors. In place of the air sample, zero air (from scrubbed air or gas cylinder) is used for zero checks and a known concentration of the pollutant being analyzed is used for span checks. These checks are controlled by automatic timers and valves. The total zero span cycle is completed within an hour, the commencement of the zero span cycle is at the beginning of the hour.

Multipoint calibration is done a minimum of once a month for each continuous air monitor. In addition calibration is required under the following conditions: 1) within three days after the initial start-up and stabilization of a newly installed instrument, 2) prior to shut-down or moving of an instrument which has been working to specification, and 3) when major repair has been done on the instrument.

The AMD requires each instrument and accompanying data recording system to be operational 90% of the time (minimum), on a monthly basis.

All sampling, analysis, and QA/QC for this project was performed by Maxxam Analytics and complies with the Alberta Air Monitoring Directive.

Hourly/minute data have been reviewed based on daily zero/span results and multi-points calibration results. Data may be considered as invalid if a zero-corrected span check in excess of +/- 10% of the span concentration (established by the previous multi-point calibration) is encountered and/or significant differences in the calibration factor (greater than 15%).

Hourly data is corrected using daily zero information.

SULPHUR DIOXIDE (SO₂)

The analyzer was working well throughout the month.

The routine monthly calibration was performed on April 6.

TOTAL REDUCED SULPHUR (TRS)

The analyzer was working well throughout the month.

The routine monthly calibration was performed on April 6.

TOTAL HYDROCARBONS (THC)

The analyzer was working well throughout the month. The routine monthly calibration was performed on April 6. The analyzer was put into Maintenance mode at hour 8 on April 24 while the zero air generator was being relocated in order to reduce interference with the Teom unit.

NITROGEN DIOXIDE (NO2)

The analyzer was working well throughout the month.
The routine monthly calibration was performed on April 6.

OZONE (O3)

The analyzer was working well throughout the month. The routine monthly calibration was performed on April 7. The analyzer was put into Maintenance mode on April 16 between hour 10 and hour 11 for a calibrator check.

PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5)

Two Teom audits were performed this month: one was completed on April 7, and the other audit was performed on April 27. Both the inlet filter and the FDMS filter were replaced during the audits. Data was corrected using Alberta air quality guideline. If the data was between 0 to -3 ug/m^3 , the data was corrected to 0 ug/m^3 . If the data was below -3 ug/m^3 , the data was invalidated. 23 hours of data were invalidated as the data were below -3 ug/m^3 this month.

WIND SPEED (WS), WIND DIRECTION (WD) and STANDARD DEVIATION WIND DIRECTION (STDWD)

The wind system is reported as vector wind speed and vector wind direction. The wind direction data included in this report represents where the wind was coming from.
Maxxam-supplied RM Young wind system unit was removed and the repaired LICA-owned MetOne unit was installed on April 16. The MetOne unit was sent back to the manufacturer for repair/calibration after a failed attempt at installation last month. The wind system data channel was reconfigured from 200 km/h to 180 km/h when the RM Young wind system was installed on April 16.

RELATIVE HUMIDITY (RH)

The humidity sensor was working well throughout the month.

AMBIENT TEMPERATURE (TPX)

The temperature sensor was working well throughout the month.

PASSIVE SAMPLES

No passive sample results are included in this report as the sampling program has been changed from one-month sample collection to two-month sample collection as per client request, starting April 2015.

VOC SAMPLES

The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the VOCs were reported as ppb in 2 decimal places.

Samples were collected on April 6, 12, 18, 24 and 30. They were sent to the lab for analysis. Results are included in this report.

PAH SAMPLES

The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the PAHs were reported as μg in 2 decimal places.

Samples were collected on April 6, 12, 18, 24 and 30. They were sent to the lab for analysis. Results are included in this report.

PARTISOL SAMPLES

The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the Partisol were reported as mg in 2 decimal places.

Samples were collected on April 6, 12, 18, 24 and 30. They were sent to the lab for analysis. Results are included in this report.

2.0 Project Personnel

Mike Bisaga was the contact for Lakeland Industry & Community Association, and the Maxxam field sampling team consisted of Alexander Yakupov and Christopher Wesson.

3.0 Plant Monthly Required AMD Summary

All data collected this month were within the objectives outlined in the AMD1989 and AMD2006.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

4.0 Calculations and Results

All calculations and reporting of results follow the method described in the Air Monitoring Directive, 1989, and 2006 Amendments to the Air Monitoring Directive, 1989 (AMD 2006).

5.0 Methods and Procedures

The following methods and procedures were used to complete the test program:

- Maxxam AIR SOP-00208: RM Young Monitor Calibration
- Maxxam AIR SOP-00210: Ambient TRS Monitoring
- Maxxam AIR SOP-00211: Ambient SO₂ Monitoring
- Maxxam AIR SOP-00212: Ambient O₃ Monitoring
- Maxxam AIR SOP-00213: Ambient NO/NO₂/NO_x Monitoring
- Maxxam AIR SOP-00214: Ambient Hydrocarbon (THC) Monitoring
- Maxxam AIR SOP-00215: Teom Operation
- Maxxam AIR SOP-00225: The Collection of VOCs in Ambient Air Using Canister and Xontech

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

- Sulphur Dioxide - Thermo 43i UV Fluorescent Analyzer
- Total Reduced Sulphur - Thermo 450i UV Fluorescent Analyzer
- Total Hydrocarbons - Thermo 51C FID Analyzer
- Oxides of Nitrogen - Thermo 42C Chemiluminescent Analyzer
- Ozone - Thermo 49i Photometric Analyzer
- Particulate Matter (PM_{2.5}) - R&P 1405F Teom Unit
- Wind System - RM Young Unit and MetOne Unit
- Relative Humidity - Met One Unit
- Ambient Temperature - Met One Unit
- Datalogger - ESC 8832
- Partisol - R&P 2000H Unit

APPENDIX I
CONTINUOUS MONITORING DATA RESULTS

SULPHUR DIOXIDE

SULPHUR DIOXIDE (SO2) hourly averages in ppb

MST

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

STATUS FLAG CODES

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

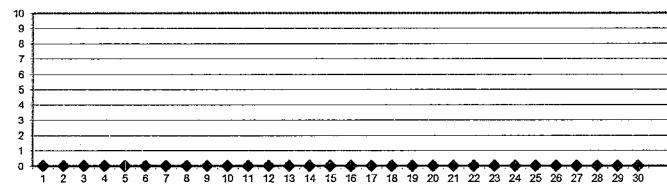
OBJECTIVE LIMIT:

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

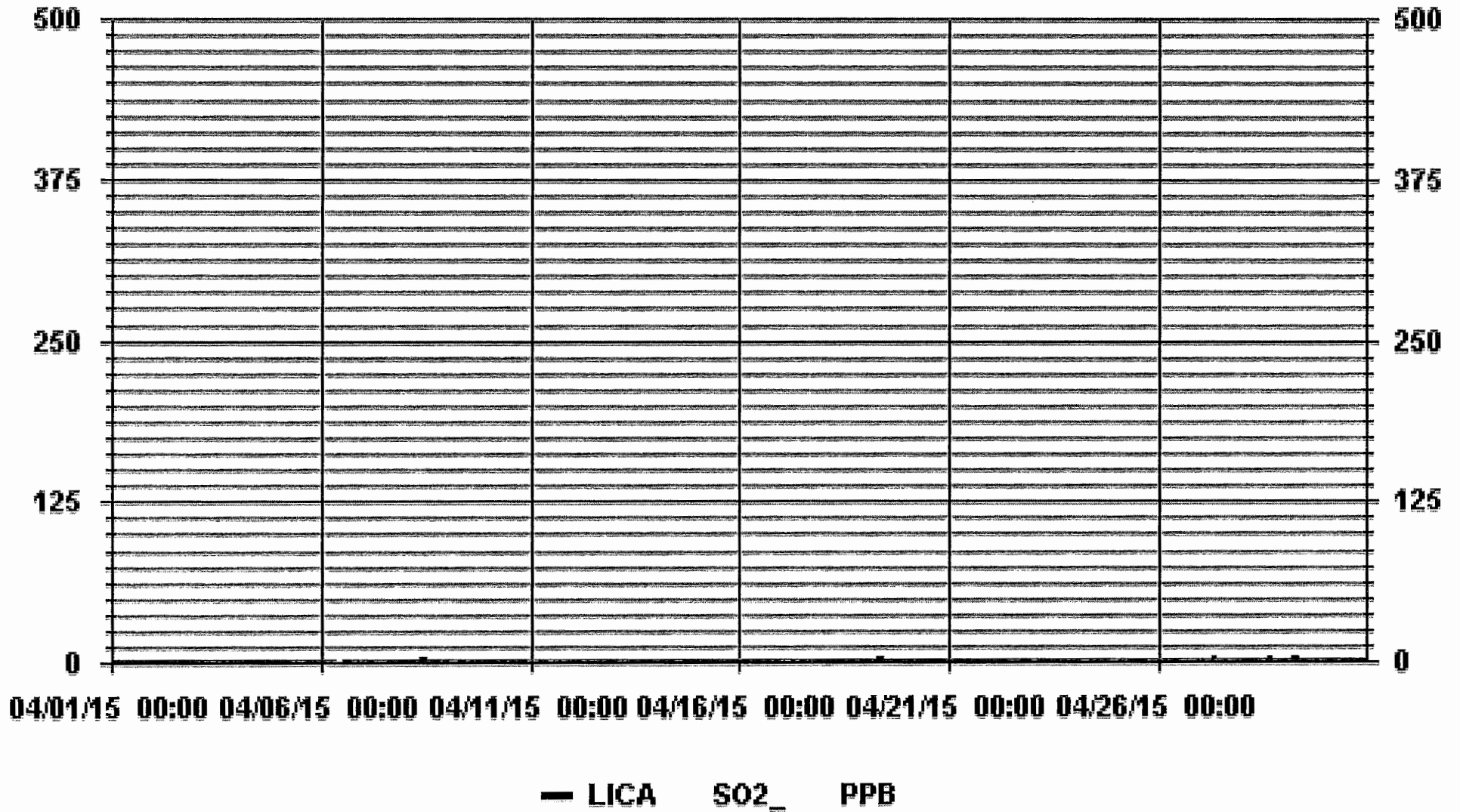
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	23					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.2	PPB			ON DAY(S)	VAR
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.18		MONTHLY AVERAGE:	0	PPB	

24 HOUR AVERAGES FOR APRIL 2015



01 Hour Averages





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Site - APRIL 2015

JOB # 2833-2015-04-01- C

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

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

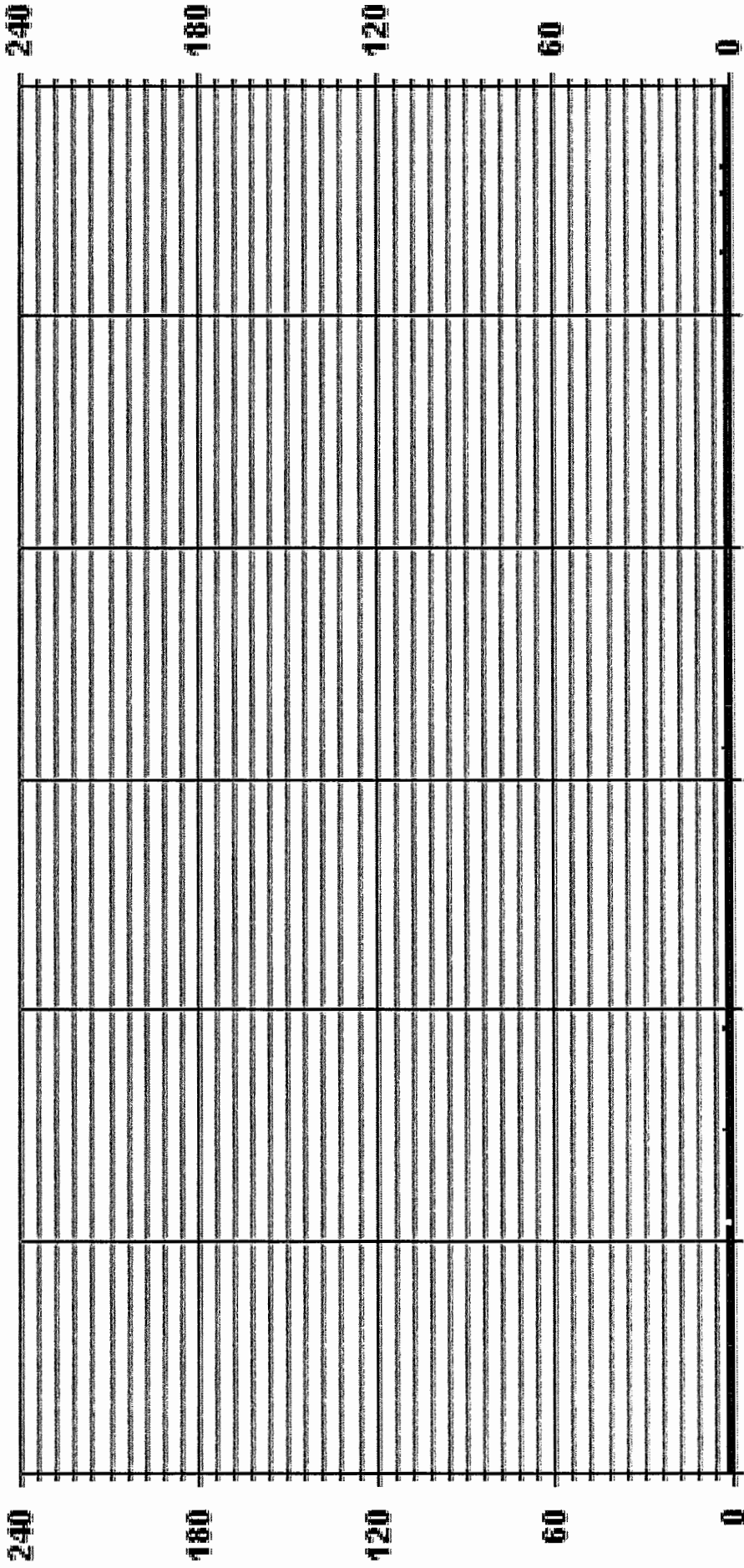
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	667					
MAXIMUM INSTANTANEOUS VALUE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
				VAR-VARIOUS		
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.19					

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA SO2MAX PPB

LICA
 SO2_ / WDR Joint Frequency Distribution (Percent)

April 2015

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	3.37	5.58	11.16	6.60	8.37	5.72	10.42	3.23	3.81	3.37	3.96	11.89	8.66	8.22	2.79	2.79	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.37	5.58	11.16	6.60	8.37	5.72	10.42	3.23	3.81	3.37	3.96	11.89	8.66	8.22	2.79	2.79	

Calm : .00 %

Total # Operational Hours : 681

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	23	38	76	45	57	39	71	22	26	23	27	81	59	56	19	19	681
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	23	38	76	45	57	39	71	22	26	23	27	81	59	56	19	19	

Calm : .00 %

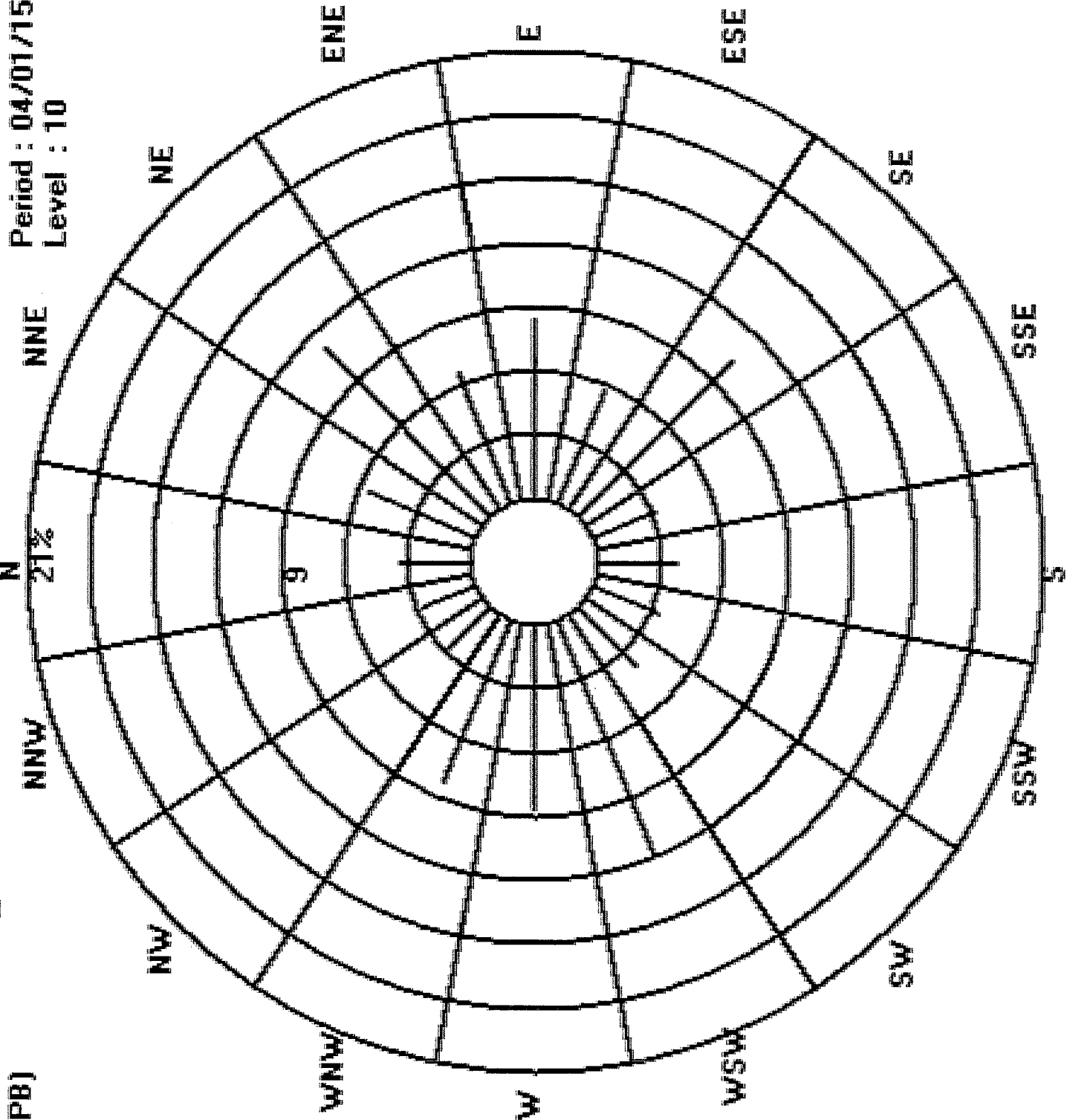
Total # Operational Hours : 681

Logger : 01 Parameter : SO2_

Site : LICA

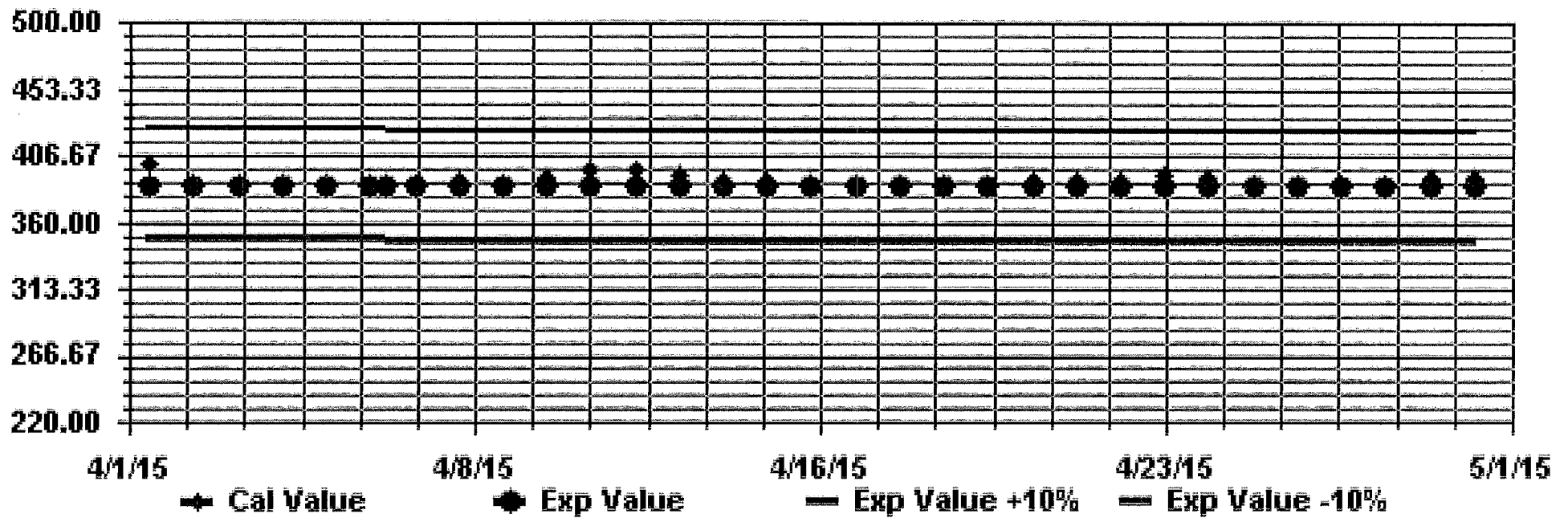
Period : 04/01/15-04/30/15

Level : 10



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

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



TOTAL REDUCED SULPHUR



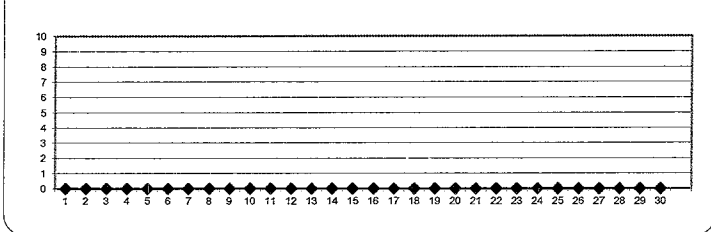
TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

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

STATUS FLAG CODES

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

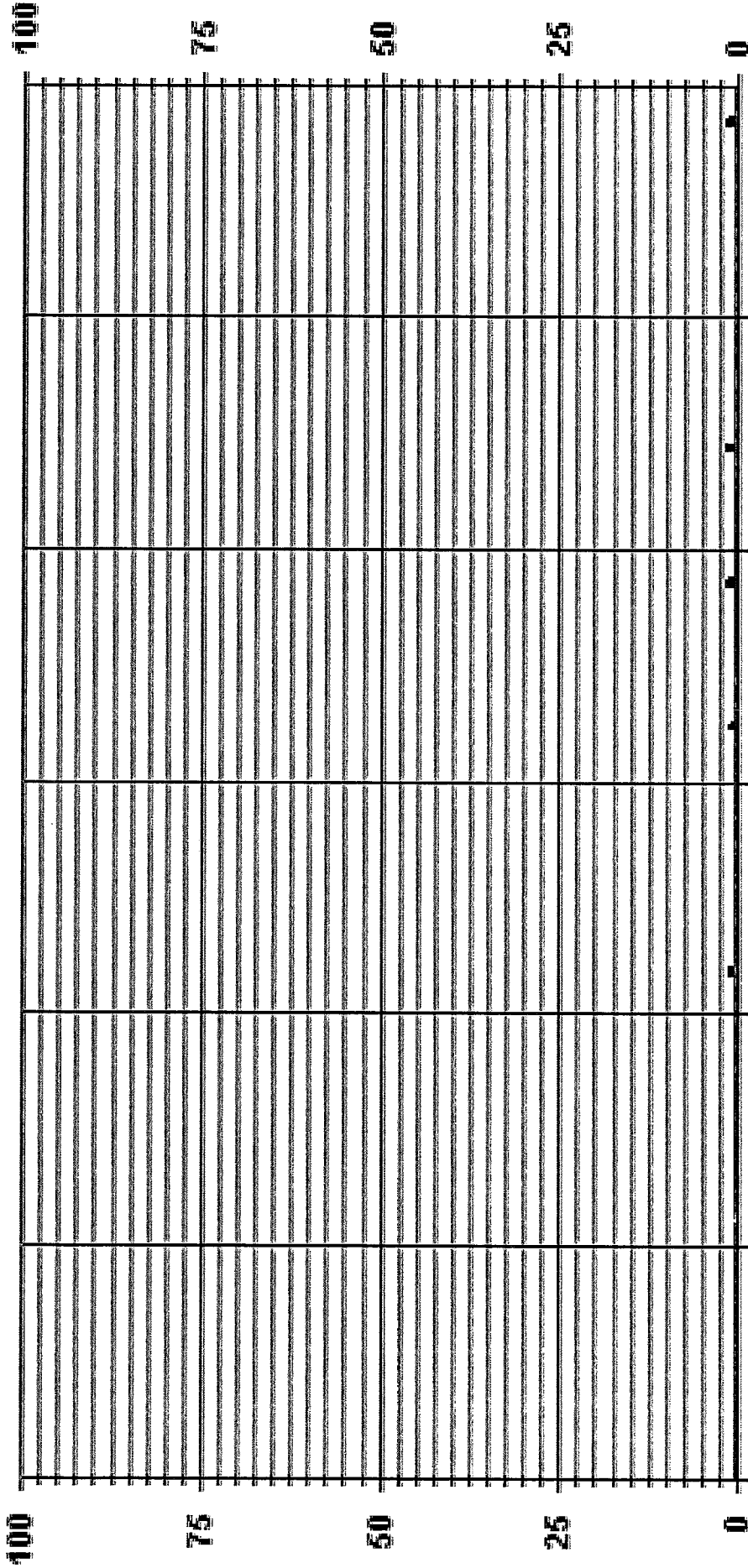
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

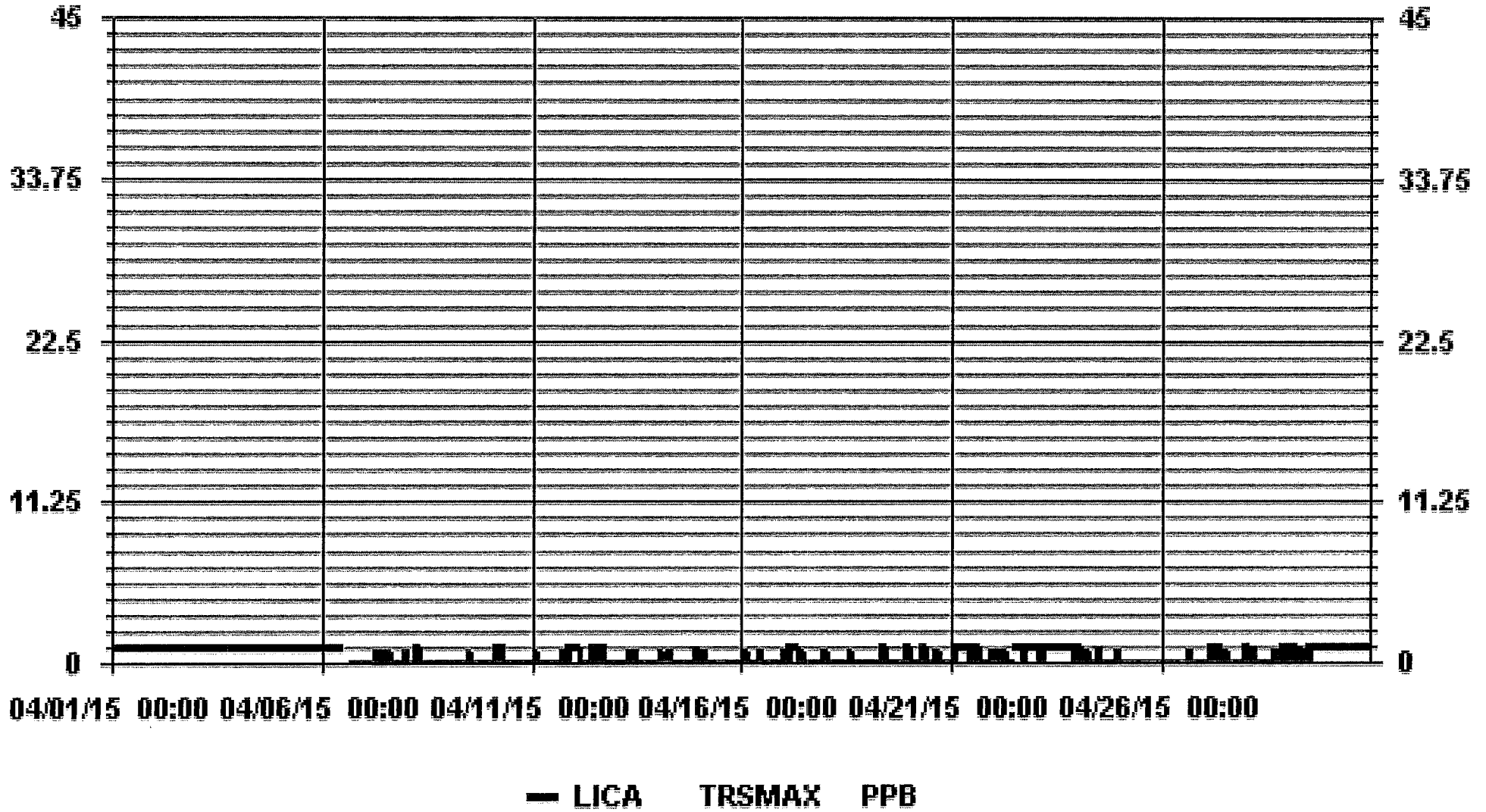
NUMBER OF NON-ZERO READINGS:	9					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.1	PPB			ON DAY(S)	VAR
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.11		MONTHLY AVERAGE:	0	PPB	

01 Hour Averages



— LICA TRS_ PPB

01 Hour Averages



LICA
 TRS_ / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	3.37	5.57	11.14	6.59	8.35	6.01	10.41	3.07	3.81	3.37	3.95	11.87	8.65	8.21	2.78	2.78	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.37	5.57	11.14	6.59	8.35	6.01	10.41	3.07	3.81	3.37	3.95	11.87	8.65	8.21	2.78	2.78	

Calm : .00 %

Total # Operational Hours : 682

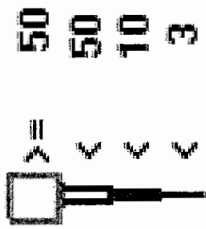
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	23	38	76	45	57	41	71	21	26	23	27	81	59	56	19	19	682
< 10																	
< 50																	
>= 50																	
Totals	23	38	76	45	57	41	71	21	26	23	27	81	59	56	19	19	

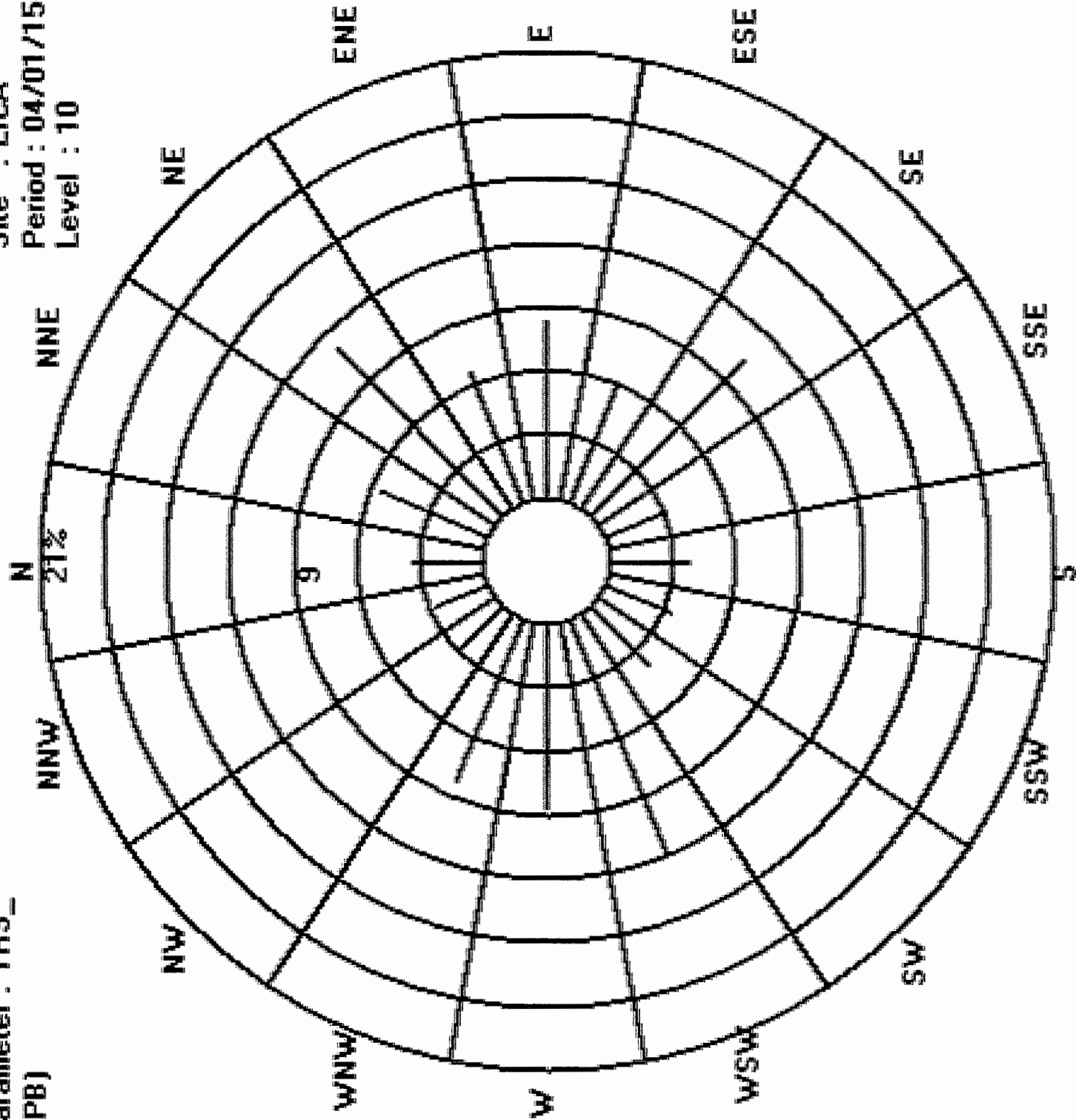
Calm : .00 %

Total # Operational Hours : 682

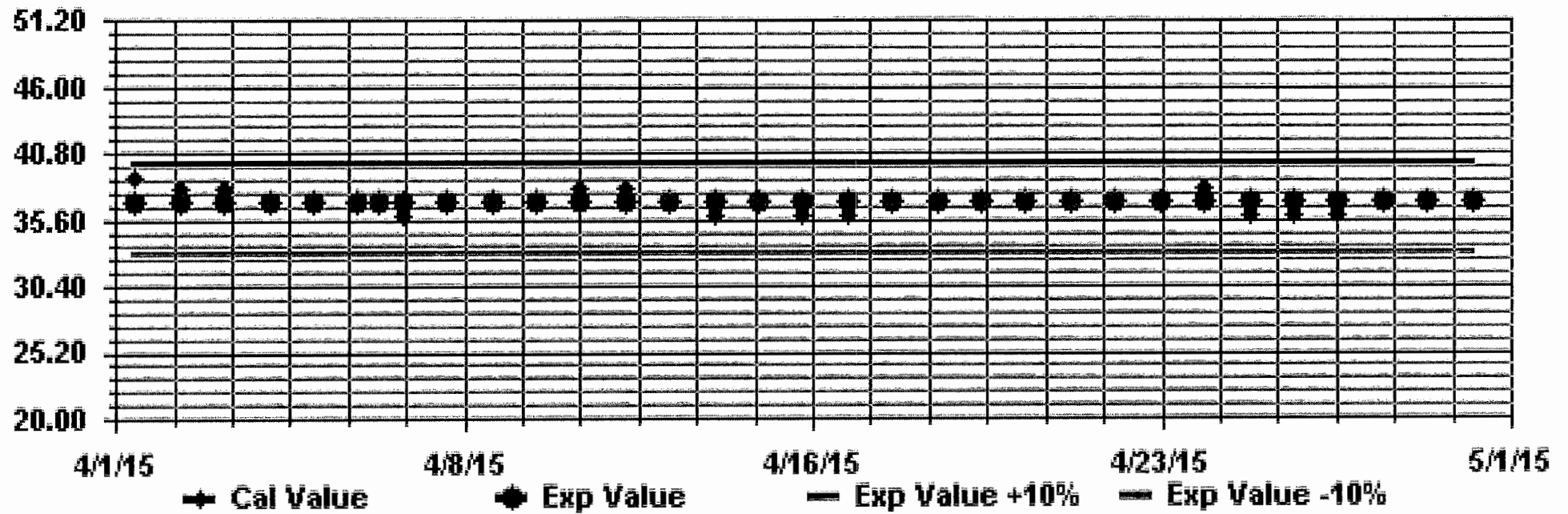
Logger : 01 Parameter : TRS_
Class Limits (PPB)



Site : LICA
Period : 04/01/15-04/30/15
Level : 10



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



TOTAL HYDROCARBON

TOTAL HYDROCARBONS (THC) hourly averages in ppm

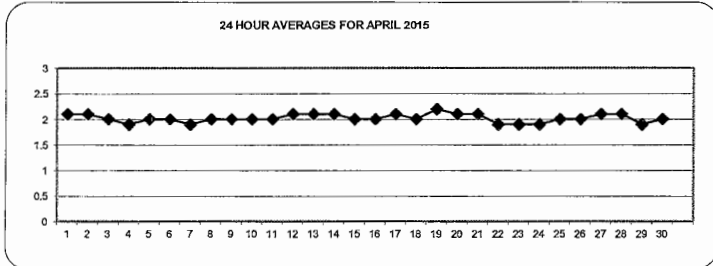
MST

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

STATUS FLAG CODES

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

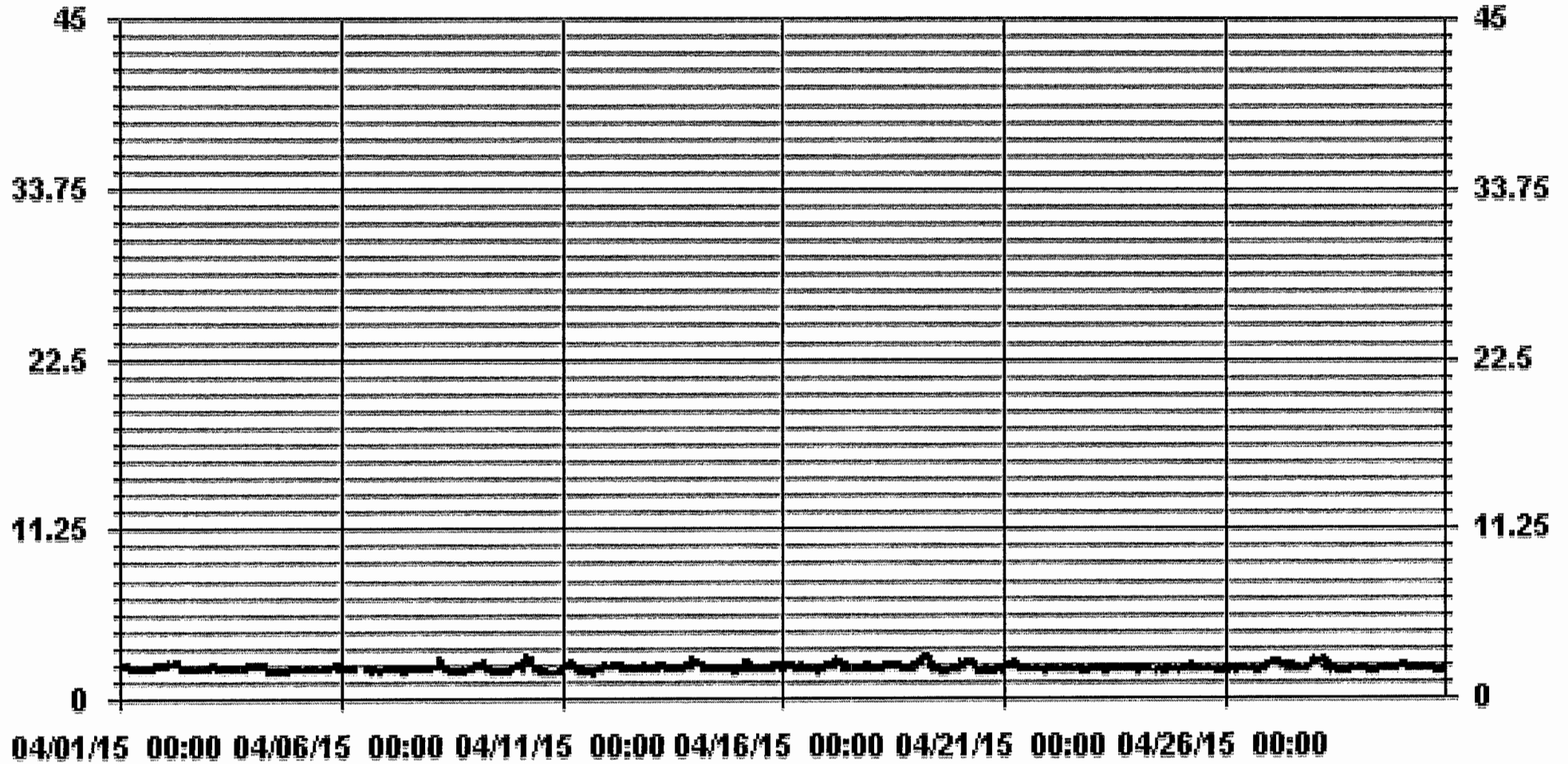
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

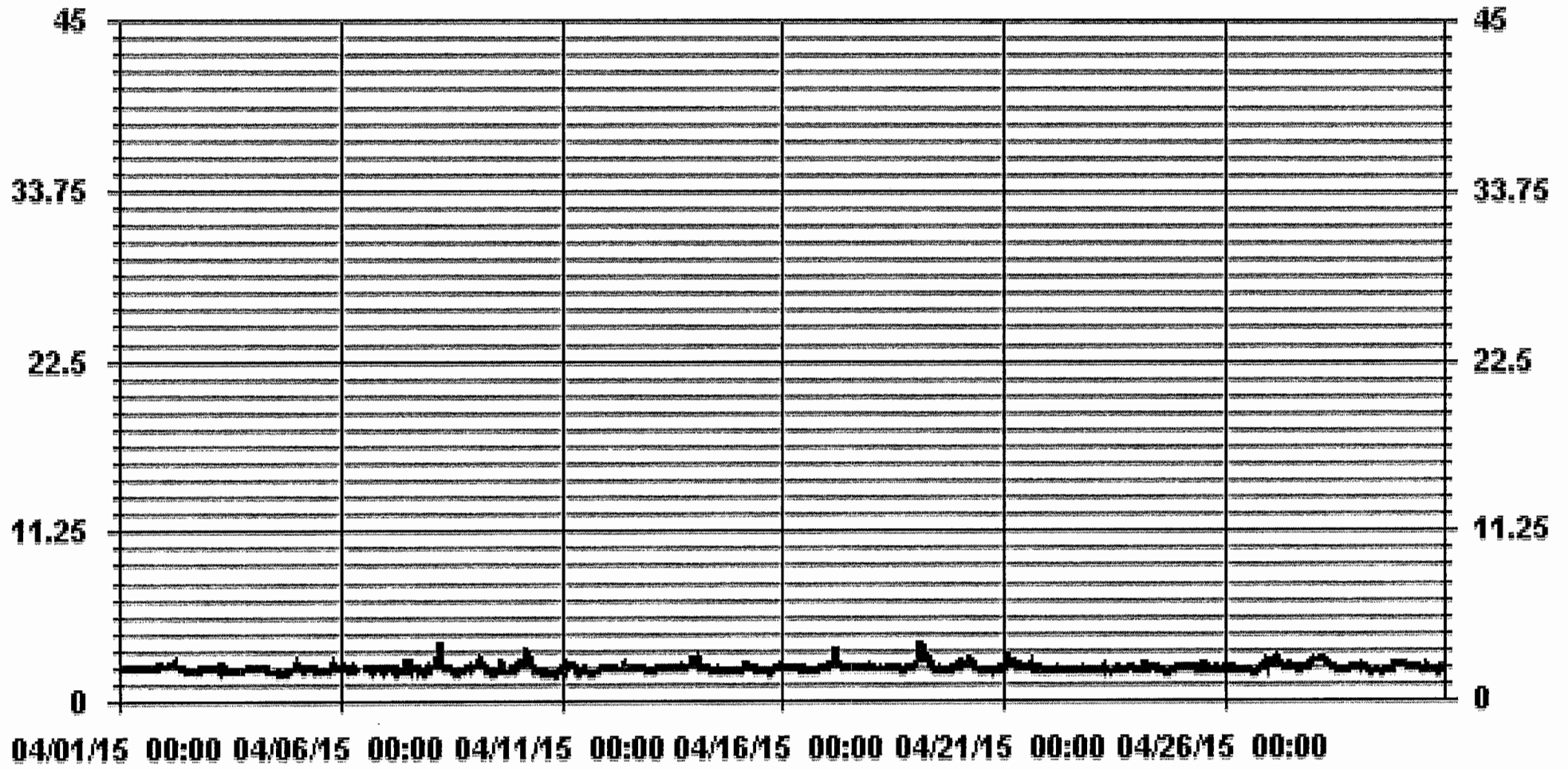
NUMBER OF NON-ZERO READINGS:	683				
MAXIMUM 1-HR AVERAGE:	2.8	PPM	@ HOUR(S)	VAR	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	2.2	PPM			ON DAY(S)
					VAR-VARIOUS
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	99.9	%
STANDARD DEVIATION:	0.17		MONTHLY AVERAGE:	2.0	PPM

01 Hour Averages



— LICA THC PPM

01 Hour Averages



— LICA THC MAX PPM

LICA
 THC / WD Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	3.38	5.58	11.02	6.61	8.38	5.73	10.44	3.23	3.82	3.38	3.97	11.91	8.67	8.23	2.79	2.79	100.00
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.38	5.58	11.02	6.61	8.38	5.73	10.44	3.23	3.82	3.38	3.97	11.91	8.67	8.23	2.79	2.79	

Calm : .00 %

Total # Operational Hours : 680

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	23	38	75	45	57	39	71	22	26	23	27	81	59	56	19	19	680
< 10.0																	
< 50.0																	
>= 50.0																	
Totals	23	38	75	45	57	39	71	22	26	23	27	81	59	56	19	19	

Calm : .00 %

Total # Operational Hours : 680

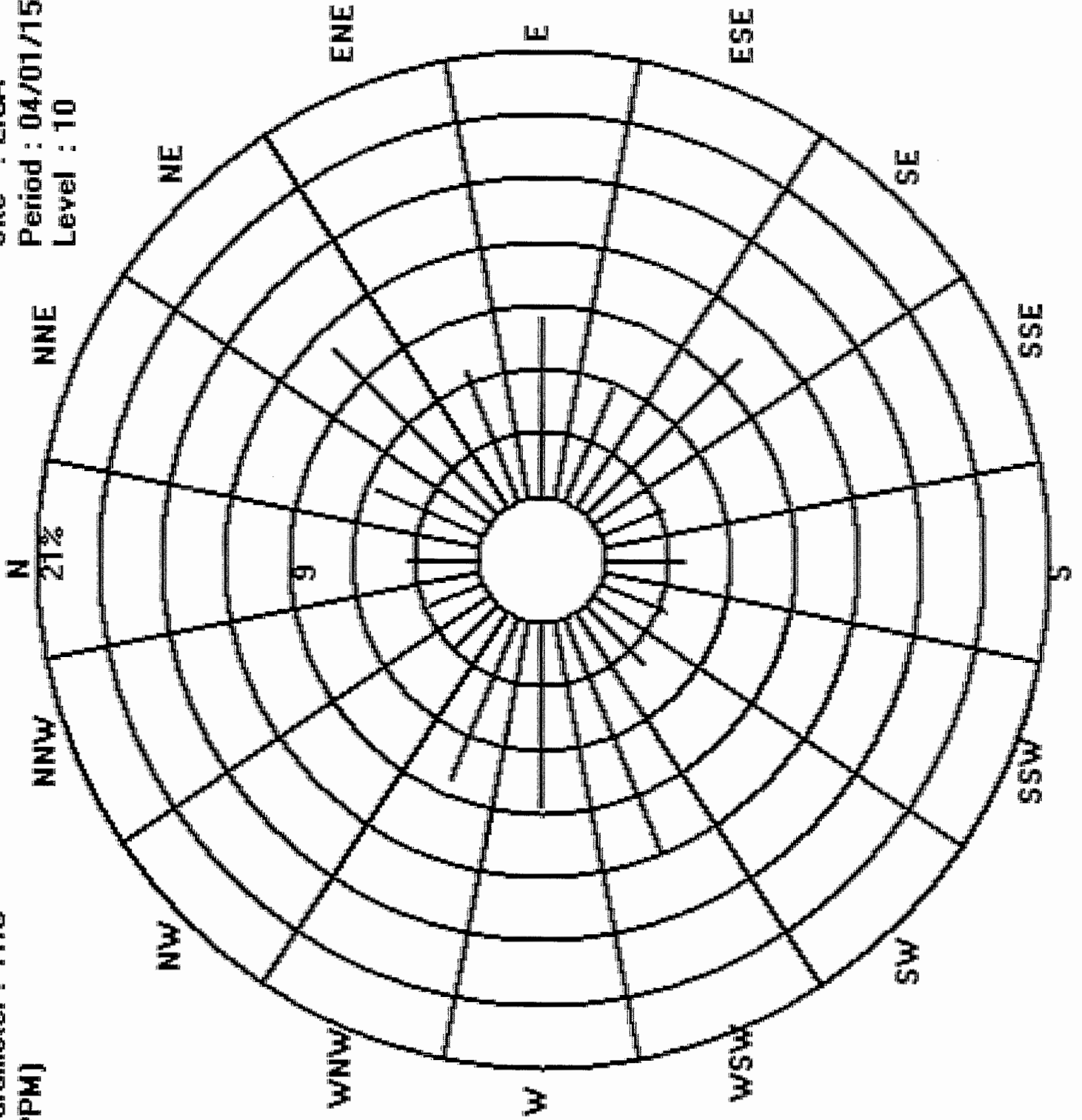
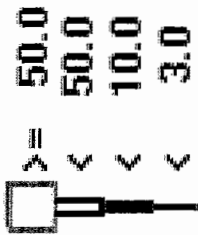
Logger : 01

Parameter : THC

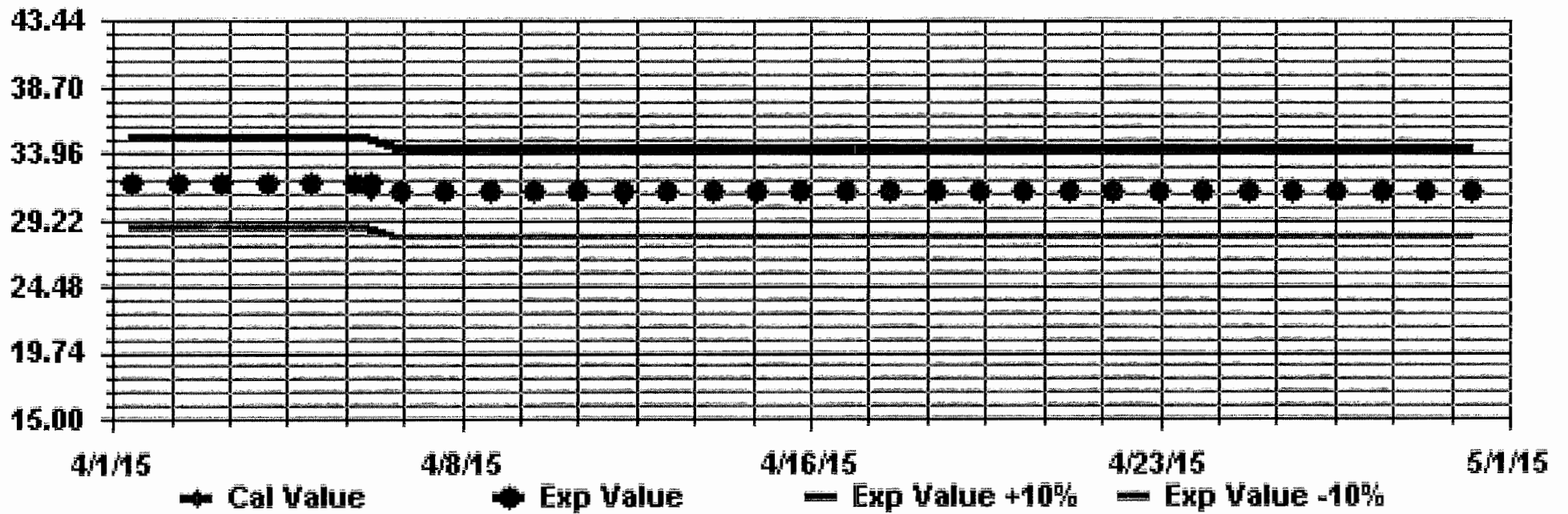
Site : LICA

Period : 04/01/15-04/30/15

Level : 10



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



OXIDES OF NITROGEN



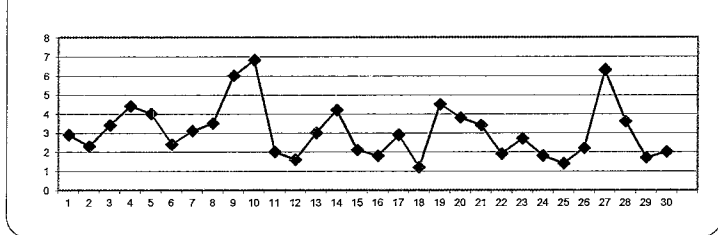
OXIDES OF NITROGEN (NOx) hourly averages in ppb

DAY	HOURS																								DAILY MAX.	24-HOUR AVG.	RDGS.
	0:00-1:00	1:00-2:00	2:00-3:00	3:00-4:00	4:00-5:00	5:00-6:00	6:00-7:00	7:00-8:00	8:00-9:00	9:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00	19:00-20:00	20:00-21:00	21:00-22:00	22:00-23:00	23:00-24:00			
1	1.2	1.8	3.9	2.4	3.1	3	2.7	1.7	1.1	5.2	S	5.6	13.3	14.2	0.6	0.6	0.6	0.5	0.5	0.8	0.9	1	0.5	0.4	14.2	2.9	24
2	0.5	0.7	0.8	1	1.8	2.4	4.4	1.7	2.2	5	3.5	3.9	2.6	2.5	3.9	3.6	2.2	2.8	2.1	2.4	2.4	2.4	2.4	1.6	4.4	2.3	24
3	1	2.6	4.1	3.9	6.4	6.3	2.3	2.6	5	2.1	2.3	1.9	1.5	1.8	1.9	1.2	1.2	1.3	1.3	2.2	1.9	7.8	11.5	8.3	11.5	3.4	24
4	7.7	8.9	8.3	7.1	10.7	14.3	8.6	5	6.7	1.6	1	0.6	0.5	0.6	0.7	1.3	1.7	2.1	1.9	2.4	2.8	3.5	3.5	5.7	14.3	4.4	24
5	5.7	3.9	8.5	8.3	5.8	5.7	5	2	1.2	1	1.1	1.3	0.9	1.1	0.8	1	1.8	2	2.6	4.8	8.4	7.3	8	7.7	8.5	4.0	24
6	3.5	4.3	4.3	3.8	1.6	5	3.2	3.2	2.1	C	C	C	C	C	C	1.1	1.1	1.9	3	1.2	1.1	1.1	1.3	4.3	2.4	24	
7	0.9	2.3	5.9	9.3	5	9.4	4.1	2.7	2.7	1.3	1.7	1.2	1.4	1.5	1.5	1.8	2	2.1	2.6	3.7	3.2	2.7	4	2.7	9.4	3.1	24
8	2.9	2.2	2.2	5	2.1	6.5	7.9	4.7	2.8	3.1	3.3	4.2	3.5	2	1.1	0.8	0.9	0.7	1.5	4.1	5.5	4.8	7.5	6.3	7.9	3.5	24
9	5.4	7.7	5	14.3	15.8	25.9	20.9	12	1.4	1.9	2.1	1	1.8	1.1	1.3	1	1.3	1.1	1.5	5.6	3.9	3.2	4	3.6	25.9	6.0	24
10	2.8	5	4	9.3	18.4	35.7	33.6	26.4	4.7	2.6	1.5	1.2	1.2	1	0.8	1	1	0.9	1	2.6	1	1.1	2.6	1.5	35.7	6.8	24
11	5	2.5	2.4	3	3.7	3.1	3	4	3.5	2.9	1.6	1.9	2.2	0.5	0.6	0.9	1	0.6	1	0.5	0.6	1.5	2.7	5	4	2.0	24
12	4.6	4.2	2.9	3	2.5	2.1	1.7	1.4	0.8	0.6	0.5	0.4	0.6	0.5	0.6	0.5	0.9	0.8	1.2	1.5	1.1	5	1.2	4.6	1.6	24	
13	1.1	1.3	1.3	1.3	1.6	1.8	2.5	2.2	1.8	1.2	0.8	0.5	0.5	0.8	0.6	0.5	0.5	0.5	0.7	13.4	7.9	5	9.6	16.8	16.8	3.0	24
14	15.2	13	13.4	8.7	4.2	3.1	5.3	4.9	3.6	2.4	2.3	1.7	3	2.9	3.6	1.9	1.2	1.3	1.2	1.1	5	0.8	0.7	0.7	15.2	4.2	24
15	2.1	3.6	3	2.9	4.7	5.9	5.3	1.5	0.9	0.7	0.5	0.5	0.5	0.5	0.7	0.6	0.6	1.1	5	3.1	2.5	2.3	3.3	5.9	2.1	24	
16	2.3	2.2	2.7	2.7	2.8	3.1	4.1	2.9	1.9	1.5	2.3	1.2	0.9	0.8	1.3	1.1	1	2	5	0.8	0.7	0.8	1.3	1.6	4.1	1.8	24
17	3	3.2	4	3.5	4.7	9.4	9.8	3	3.9	1.7	1	0.7	0.9	0.8	0.9	1.4	1.2	5	2.1	1.6	1.2	2.3	2.1	3.4	9.8	2.9	24
18	2.9	1.3	1.2	1.2	0.7	0.7	0.5	0.5	0.5	0.4	0.7	1.4	1	0.7	0.7	5	1.6	1.1	0.7	0.9	1.5	2.7	3.7	3.7	1.2	24	
19	2.2	4.2	4	7.8	8.4	5.3	8.4	12.8	11.3	6	3.9	3	1.5	1.1	1	5	0.8	0.9	2.9	5.4	5.2	1.6	1.7	4.7	12.8	4.5	24
20	4	5.4	7.2	4.9	3	6.1	9.8	14.9	8.9	5.8	3.3	0.7	0.7	0.7	5	1.1	1.2	1.3	1.4	3.2	1.8	0.5	0.5	14.9	3.8	24	
21	0.7	1.4	3.4	3	12.9	26	5.8	2.8	2.5	2.2	1.7	1.2	1.4	5	1.1	1	1	0.9	1	3.3	2.7	1.1	1.1	1.1	26	3.4	24
22	1.2	1.4	1.9	2.2	2.8	3.6	3.4	2.3	1.7	1.7	2.1	1.4	5	1.4	1.8	2.2	2	1.9	2.3	1.9	1.7	1.5	1.1	1	3.6	1.9	24
23	1.3	1.9	1.7	2.1	2	2.5	3.1	4.6	4.5	4.3	2.7	5	2.4	3.3	4.2	3.4	2.5	2.7	2.4	2.7	2.2	2	1.6	4.6	2.7	24	
24	2.3	1.8	1.5	2.1	1.8	2.1	1.6	1.3	1.4	1.2	5	0.8	1.3	0.7	1.1	0.8	0.9	0.9	1.2	3	3.5	5.4	3.4	1.8	5.4	1.8	24
25	1.4	1.6	1.3	1.1	1.4	1.9	1	1.3	0.9	5	0.8	0.7	0.8	0.5	0.5	0.6	0.8	1.2	1.2	1.8	2.3	2.5	2.8	4	4	1.4	24
26	4	2.4	3.1	2.9	2.6	2.8	1.7	1.1	5	0.6	0.4	0.7	0.4	0.6	0.4	0.6	0.8	1	3.6	4.2	5.8	5.6	3.6	5.8	2.2	24	
27	6.6	8.7	10	11.4	23.3	31.8	7.9	5	3.4	3	1.5	1.4	1.7	1	1	1	1.3	1.3	1.3	5	6.3	4.9	5.6	5.5	31.8	6.3	24
28	4.5	5.2	5.3	7.3	15.1	23.2	5	6.6	3.2	2.2	1.2	0.6	0.8	0.5	0.2	0.2	0.5	0.8	0.7	0.7	1.6	0.8	0.8	1	23.2	3.6	24
29	0.9	1.6	2.6	2.6	2.1	5	2.9	2.6	2.7	1	1.1	1.5	1.6	1.5	0.7	0.5	0.6	0.7	0.7	1	3.7	3.4	2.2	1.9	3.7	1.7	24
30	3	3.5	3.9	3.7	5	3.6	3.3	2.9	2.9	1.5	1	1.1	1.1	1	0.8	0.8	0.8	0.8	1	0.9	1.4	1.8	2.2	2.2	3.9	2.0	24
HOURLY MAX	15.2	13	13.4	14.3	23.3	35.7	33.6	26.4	11.3	6	3.9	5.6	13.3	14.2	4.2	3.6	2.5	2.8	2.9	13.4	8.4	7.8	11.5	16.8			
HOURLY AVG	3.3	3.6	4.1	4.7	5.9	8.8	6.0	4.7	3.1	2.2	1.7	1.5	1.8	1.6	1.2	1.2	1.1	1.3	1.4	2.9	2.9	2.7	3.3	3.4			

STATUS FLAG CODES

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

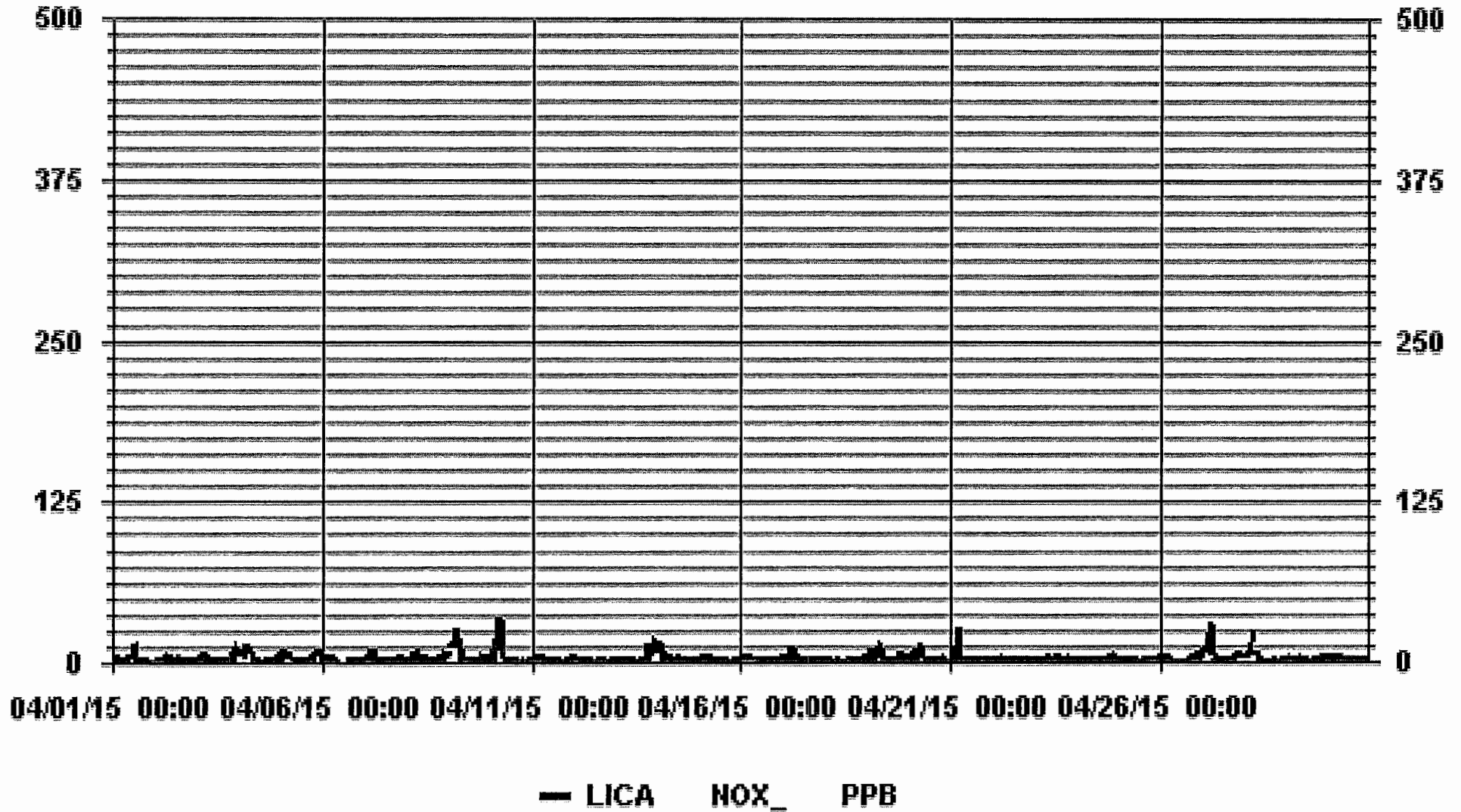
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	682			
MAXIMUM 1-HR AVERAGE:	35.7	PPB	@ HOUR(S)	5 ON DAY(S) 10
MAXIMUM 24-HR AVERAGE:	6.8	PPB		ON DAY(S) 10
				VAR-VARIOUS
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720 HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	3.96		MONTHLY AVERAGE:	3.1 PPB

01 Hour Averages





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Site - APRIL 2015

JOB # 2833-2015-04-01- C

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX	AVG.	RDGS.
DAY																												
1		2.5	6.0	6.0	4.5	4.5	4.5	8.5	3.0	2.5	58.0	S	61.0	53.5	65.4	3.0	3.5	2.5	1.0	4.5	1.5	1.4	1.4	1.5	65.4	13.1	24	
2		1.4	1.9	1.9	3.4	2.4	3.4	7.4	8.4	12.9	S	12.4	6.9	8.9	4.9	20.4	8.0	8.0	8.0	6.0	5.5	5.5	5.5	5.5	1.9	20.4	6.5	24
3		3.4	7.4	6.9	8.4	13.9	10.4	6.9	7.4	S	3.0	10.5	3.5	2.5	3.0	4.5	2.0	6.0	2.5	2.0	4.5	6.9	28.4	35.9	12.4	35.9	8.4	24
4		15.4	13.4	12.9	14.9	39.4	21.4	18.9	S	13.9	3.9	4.0	4.0	1.5	1.0	1.0	3.5	3.0	5.0	3.5	5.5	13.4	5.0	10.0	10.9	39.4	9.8	24
5		12.5	11.9	14.9	16.4	14.9	15.9	S	15.9	2.9	1.9	3.4	3.4	2.4	4.5	3.0	3.5	7.5	5.5	6.0	10.0	12.0	11.0	10.9	16.4	16.4	9.0	24
6		9.9	8.9	6.9	10.9	7.4	S	6.1	7.5	4.0	C	C	C	C	C	C	4.0	4.0	4.0	4.5	12.0	3.0	2.5	2.5	3.0	12.0	6.1	24
7		2.0	10.0	20.0	34.5	S	18.5	10.5	4.5	22.0	6.0	4.0	4.0	7.0	7.0	3.0	8.0	10.0	6.9	9.0	29.5	8.0	8.0	9.0	7.5	34.5	10.8	24
8		6.0	4.0	9.5	S	6.5	17.0	10.4	8.0	3.5	5.0	9.5	7.0	6.0	3.0	2.0	1.5	2.0	1.5	2.5	9.0	15.5	10.5	13.5	8.5	17.0	7.0	24
9		16.5	26.9	S	25.0	23.5	43.9	44.9	20.0	2.0	4.0	3.5	1.5	9.0	3.5	11.0	2.5	15.5	1.5	2.5	16.0	6.0	5.5	9.0	8.0	44.9	13.1	24
10		3.5	S	20.0	14.0	32.4	66.0	50.5	44.5	6.5	4.5	6.0	3.0	5.5	2.5	9.0	7.0	2.0	1.5	1.5	13.0	2.0	2.0	5.0	4.0	66.0	13.3	24
11		S	6.5	6.0	4.5	9.0	7.5	5.5	5.5	4.5	3.5	2.5	3.5	3.0	1.0	1.0	1.0	2.0	1.0	2.0	1.0	1.5	5.0	4.5	S	9.0	3.7	24
12		7.9	6.4	4.9	4.4	3.4	4.4	4.4	2.4	2.4	1.4	1.4	0.9	0.9	1.9	2.4	4.4	1.9	1.4	2.4	2.9	2.4	S	2.5	7.9	3.0	24	
13		2.0	3.0	2.5	2.5	3.0	3.5	3.5	4.0	14.5	11.0	1.5	1.0	1.0	2.5	1.0	1.5	1.5	1.0	2.5	78.5	27.5	S	38.9	31.5	78.5	10.4	24
14		26.9	18.0	20.5	18.0	6.9	6.0	8.0	7.5	5.5	4.0	6.5	4.0	6.0	6.5	10.0	8.0	2.5	8.5	3.5	2.5	S	3.0	2.0	2.0	26.9	8.1	24
15		5.0	5.0	4.5	9.0	7.5	12.0	9.0	2.5	1.0	1.0	1.5	2.5	1.0	1.0	1.0	4.5	1.0	1.0	2.0	S	5.9	6.9	8.0	9.0	12.0	4.4	24
16		4.0	4.0	9.0	7.0	7.5	7.5	7.0	5.0	4.0	2.0	6.5	2.0	2.5	3.5	9.5	9.0	4.0	2.5	S	1.5	1.0	2.0	3.5	3.0	9.5	4.7	24
17		5.0	5.0	8.0	4.5	11.0	19.0	18.0	5.0	5.5	2.5	2.5	2.5	1.5	6.0	1.5	4.0	5.0	S	4.5	5.5	2.0	4.5	10.0	9.0	19.0	6.2	24
18		6.0	2.5	3.5	3.5	2.5	1.5	1.0	1.5	1.0	1.0	1.0	1.0	2.0	2.0	1.5	1.0	S	2.5	4.0	2.5	3.0	4.0	5.0	7.0	7.0	2.6	24
19		4.5	12.5	10.5	27.4	44.9	11.4	14.4	14.0	13.5	9.0	6.5	5.5	5.5	4.5	3.5	S	3.5	3.0	8.0	25.9	21.5	4.0	5.0	6.9	44.9	11.5	24
20		8.5	16.5	15.5	14.0	5.5	15.9	21.4	23.4	14.5	7.5	5.5	2.0	1.5	1.0	S	2.0	4.0	9.5	4.5	6.0	5.0	1.0	2.5	2.0	23.4	8.2	24
21		3.0	8.5	12.9	9.5	114.5	32.9	29.5	22.5	7.4	5.0	12.4	8.5	2.0	S	2.0	3.0	1.5	1.5	1.5	7.5	7.0	2.0	3.5	1.5	114.5	13.0	24
22		4.0	3.5	6.5	4.5	5.0	8.5	6.0	4.5	5.5	3.0	3.0	2.5	S	2.0	3.5	3.0	3.0	5.0	4.5	3.5	3.0	2.0	1.5	1.5	8.5	3.9	24
23		2.0	3.0	3.0	3.5	4.5	5.5	5.5	14.0	7.5	28.5	7.0	S	12.5	14.0	5.5	10.5	4.5	3.5	4.0	8.0	5.0	4.0	5.0	2.5	28.5	7.1	24
24		8.0	4.0	3.0	13.5	2.5	6.0	13.0	3.0	4.5	3.5	S	1.5	5.5	3.9	3.9	2.4	2.9	2.5	5.5	5.5	5.5	5.0	11.0	5.0	13.5	5.4	24
25		3.0	3.9	2.9	2.9	4.9	17.4	2.9	3.4	2.4	S	6.0	3.0	7.0	1.5	2.0	1.0	2.5	2.5	2.0	6.1	4.6	5.1	7.1	9.6	17.4	4.5	24
26		10.6	5.1	6.1	8.1	9.0	6.1	5.6	3.0	S	2.9	1.4	7.9	1.4	1.4	0.9	1.4	1.9	1.5	1.5	27.9	11.4	26.9	17.5	5.5	27.9	7.2	24
27		25.0	26.4	15.9	21.9	45.4	46.4	23.4	S	7.4	11.9	4.5	2.0	13.4	2.9	2.4	5.4	6.9	2.9	2.0	9.5	20.9	9.5	9.4	8.9	46.4	14.1	24
28		6.4	7.4	7.5	16.5	55.5	50.5	S	18.9	22.0	7.5	11.9	2.5	2.4	6.4	0.9	1.4	1.4	9.4	3.4	1.9	2.5	1.0	1.0	1.5	55.5	10.4	24
29		1.5	3.0	4.5	4.0	5.5	S	4.5	3.0	3.5	2.5	2.0	2.0	11.4	2.9	1.4	0.9	1.0	2.0	1.0	1.5	19.0	8.4	3.9	3.9	19.0	4.1	24
30		3.9	7.0	6.9	9.0	S	10.5	5.5	5.0	5.0	3.0	3.0	17.0	2.0	5.5	1.5	4.0	5.0	1.0	6.0	1.5	3.5	2.5	2.9	3.4	17.0	5.0	24
HOURLY MAX		26.9	26.9	20.5	34.5	114.5	66.0	50.5	44.5	22.0	58.0	12.4	61.0	53.5	65.4	20.4	10.5	15.5	9.5	9.0	78.5	27.5	28.4	38.9	31.5			
HOURLY AVG		7.3	8.3	8.7	11.0	17.6	16.9	12.6	9.5	7.2	7.3	5.2	5.9	6.4	5.9	4.0	3.8	4.1	3.5	3.6	10.5	7.8	6.3	8.4	6.6			

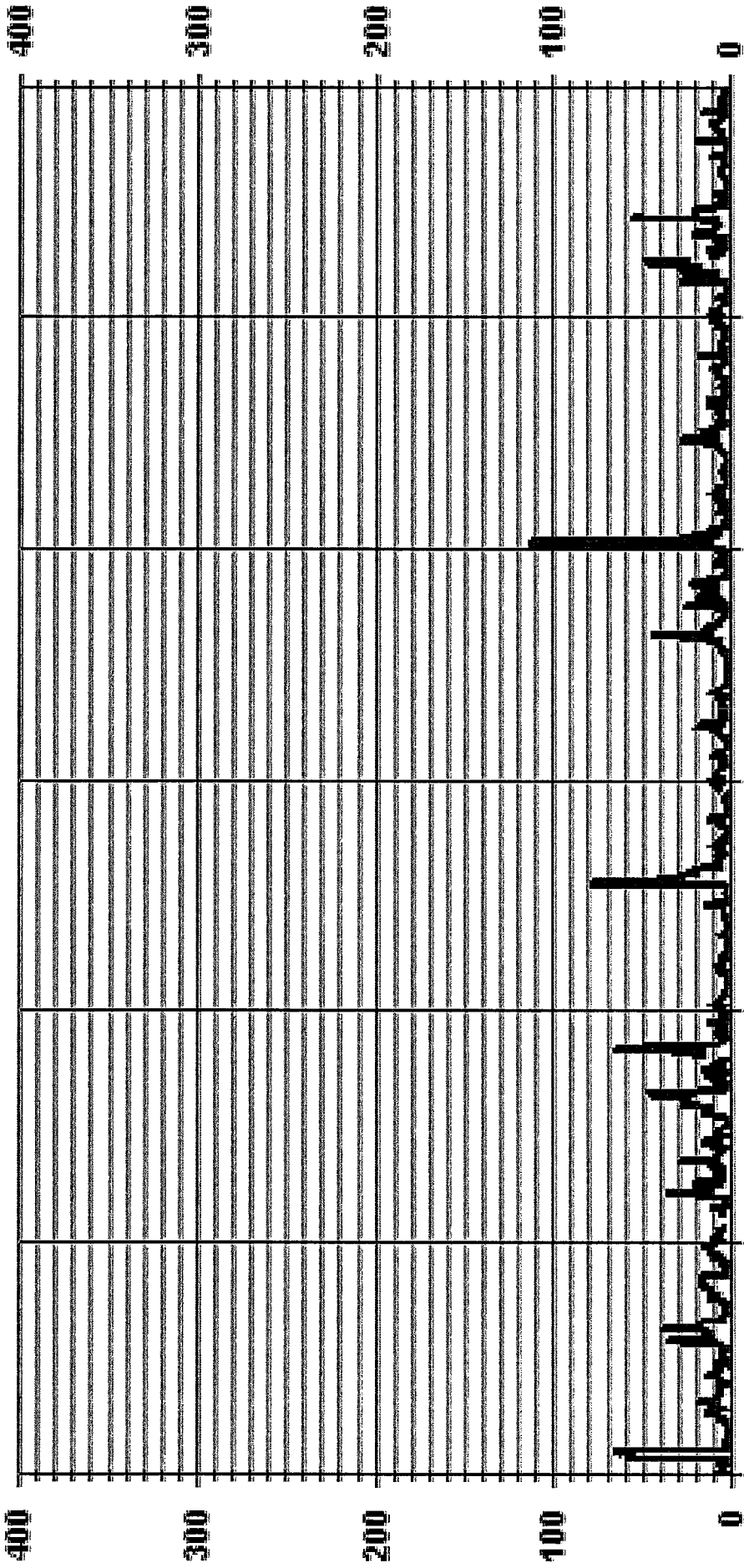
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	682
MAXIMUM INSTANTANEOUS VALUE:	114.5 PPB @ HOUR(S) 4 ON DAY(5) 21
	VAR-VARIOUS
HOURS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	10.28
OPERATIONAL TIME:	720 HRS

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA NOXMAX PPB

LICA
NOX_ / WD Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	3.38	5.59	11.19	6.62	8.39	5.59	10.30	3.24	3.82	3.38	3.97	11.92	8.68	8.24	2.79	2.79	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.38	5.59	11.19	6.62	8.39	5.59	10.30	3.24	3.82	3.38	3.97	11.92	8.68	8.24	2.79	2.79	

Calm : .00 %

Total # Operational Hours : 679

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	23	38	76	45	57	38	70	22	26	23	27	81	59	56	19	19	679
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	23	38	76	45	57	38	70	22	26	23	27	81	59	56	19	19	

Calm : .00 %

Total # Operational Hours : 679





Logger : 01 Parameter : NOX_

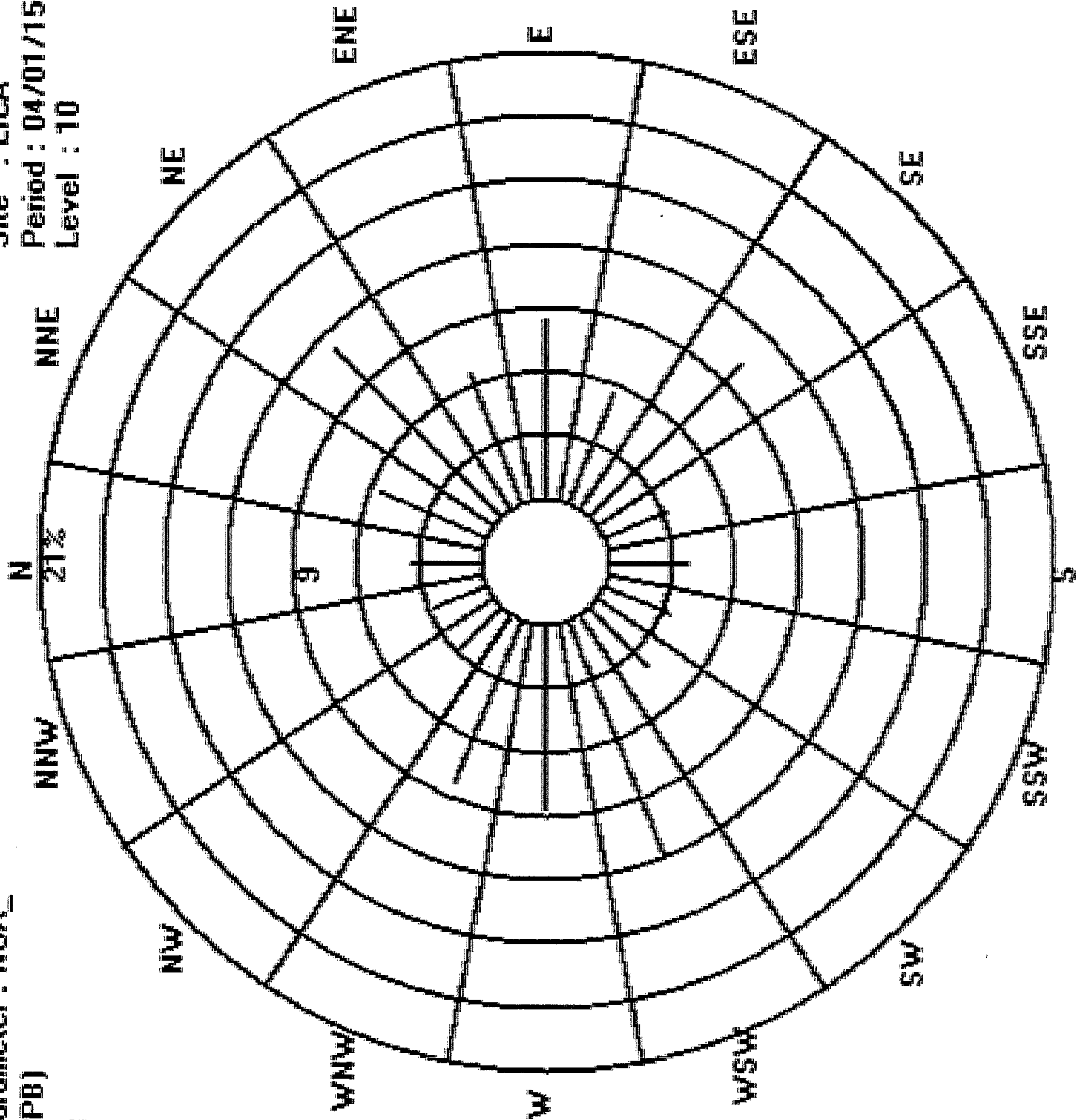
Site : LICA

Period : 04/01/15-04/30/15

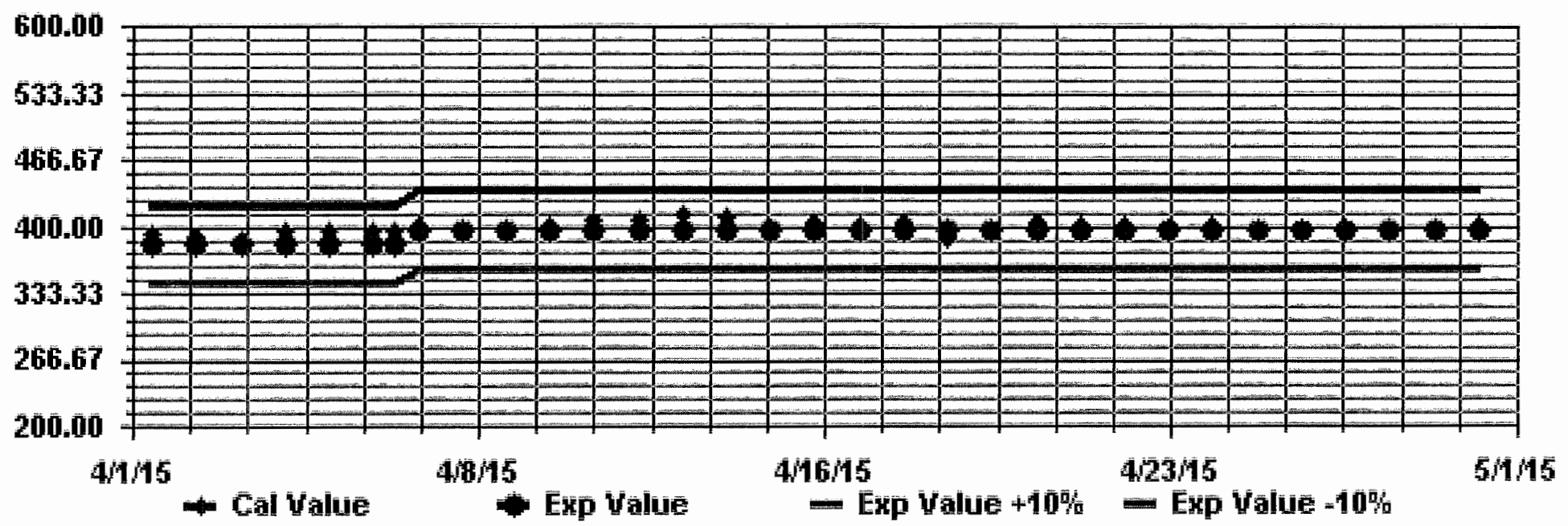
Level : 10

Class Limits (PPB)

-  >= 210.0
-  < 210.0
-  < 110.0
-  < 50.0



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



NITRIC OXIDES



NITRIC OXIDE (NO) hourly averages in ppb

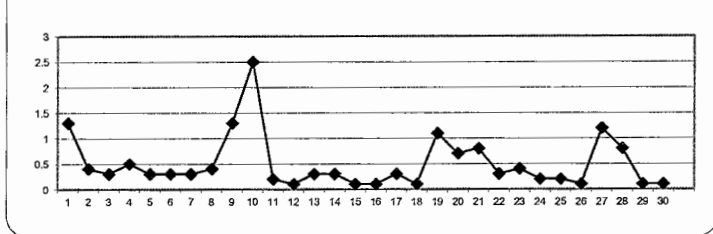
MST

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	DAILY MAX	24-HOUR AVG.	RDGS.		
1	0	0	0.1	0.1	0.1	0.1	0.2	0.2	0	3.7	S	3.4	10.4	11	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	11	1.3	24	
2	0.1	0.1	0.1	0.1	0	0	0.5	0.3	0.6	S	0.9	1.1	0.7	0.7	1.1	1.2	0.6	0.6	0.2	0.1	0.2	0.2	0.1	0	1.2	0.4	24	
3	0.1	0.1	0.1	0.2	0.5	0.2	0.1	0.5	S	0.6	0.9	0.6	0.4	0.4	0.5	0.1	0.2	0.1	0.1	0	0	0.6	1.1	0.3	1.1	0.3	24	
4	0.5	0.7	0.5	0.1	1.5	1.5	1.7	S	2.5	0.5	0.2	0.1	0	0	0	0.1	0.3	0.4	0.2	0.2	0.1	0	0	0	2.5	0.5	24	
5	0.1	0.4	0.4	0.5	0.4	0.7	S	0.5	0.4	0.4	0.4	0.4	0.2	0.2	0	0.1	0.4	0.4	0.3	0.1	0	0.3	0	0.5	0.7	0.3	24	
6	0.6	0.8	0.6	0.9	0.1	S	0.3	0.7	0.5	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0.9	0.3	24	
7	0	0.2	0.2	0.9	S	0.7	0.5	0.5	0.7	0.1	0.3	0.1	0.2	0.3	0.1	0.2	0.5	0.4	0.2	0.2	0.2	0.2	0.1	0	0.9	0.3	24	
8	0	0	0.1	S	0.2	1.1	1.4	1.4	0.9	0.9	1	1.2	0.8	0.4	0	0	0	0	0	0	0.1	0	0	0	1.4	0.4	24	
9	0.2	1	S	1.5	3.1	9.6	7.6	3.8	0.2	0.5	0.5	0	0.3	0.1	0.1	0	0.2	0	0	0.1	0	0	0	0	9.6	1.3	24	
10	0	S	0.2	0.5	4.1	19.0	19.3	13.6	1	0.5	0.2	0	0	0	0.1	0	0	0	0	0	0	0	0	0	19.3	2.5	24	
11	S	0	0	0	0.2	0	0.4	0.8	0.6	0.5	0.3	0.4	0.4	0	0	0	0	0	0	0	0	0	0.1	S	0.8	0.2	24	
12	0.1	0.1	0.2	0	0	0.1	0.3	0.4	0.3	0	0	0	0	0	0	0	0.1	0	0	0	0.1	0	0	S	0.1	0.4	24	
13	0	0.1	0.1	0.1	0	0.1	0.3	0.5	0.8	0.2	0	0	0	0	0	0	0	0	0	3.1	0.2	S	0.6	0.9	3.1	0.3	24	
14	0.9	0.7	0.9	0.5	0.2	0.3	0.5	0.6	0.5	0.4	0.5	0.1	0.4	0.3	0.4	0.1	0	0.1	0	0	S	0	0	0	0.9	0.3	24	
15	0	0	0	0.1	0.1	0.6	0.9	0.4	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.1	0.9	0.1	24
16	0	0.1	0.2	0.2	0.1	0.1	0.5	0.5	0.4	0.3	0.5	0.1	0	0	0.1	0	0.1	0	S	0	0	0	0.1	0	0.5	0.1	24	
17	0	0	0.1	0	0.2	1.4	2.1	0.6	1	0.4	0.1	0	0	0.1	0	0	0.2	S	0	0	0	0	0	0	2.1	0.3	24	
18	0.1	0	0.1	0.1	0	0	0	0	0	0	0	0	0.3	0.1	0	0	S	0.1	0	0	0	0	0	0.1	0.3	0.3	0.1	24
19	0.1	0.3	0.6	2.5	3	1.5	3.3	5.1	4.7	2.1	1.2	0.6	0.2	0.1	0	S	0	0	0.2	0.2	0.1	0	0	0	5.1	1.1	24	
20	0	0.1	0.4	0.1	0	0.7	3.3	5.3	2.8	1.6	0.8	0	0	0	S	0	0.3	0.1	0.1	0.3	0.1	0.3	0	0	5.3	0.7	24	
21	0	0	0.4	0.1	3	9.5	1.6	0.8	0.6	0.5	0.4	0.1	0.1	S	0.1	0.1	0.1	0	0	0.1	0.1	0	0.1	0	9.5	0.8	24	
22	0.1	0.1	0.2	0.2	0.5	0.8	0.8	0.7	0.7	0.6	0.6	0.4	S	0.2	0.2	0.4	0.3	0.2	0.1	0	0	0	0	0	0.8	0.3	24	
23	0	0	0	0.1	0.1	0.3	0.3	0.6	0.6	0.8	0.5	S	0.4	0.9	0.9	1	0.6	0.5	0.2	0.2	0.3	0.1	0.2	0	1	0.4	24	
24	0.5	0.2	0	0.4	0.1	0.4	0.2	0.2	0.3	0.2	S	0.1	0.4	0.1	0.2	0.1	0.3	0.1	0.3	0.2	0.2	0.3	0.2	0.1	0.5	0.2	24	
25	0.1	0.1	0	0.2	0.3	0.4	0.2	0.5	0.2	S	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.3	0.2	0.1	0.1	0.5	0.5	0.2	24	
26	0.3	0.1	0.3	0.4	0.4	0.3	0.4	0.3	S	0.1	0	0.1	0	0	0	0	0	0	0.3	0	0.3	0.3	0.1	0	0.4	0.1	24	
27	0.6	0.6	0.4	1.1	7.7	14.2	1.6	S	0.6	0.7	0.1	0.1	0.2	0	0	0	0.1	0	0	0	0.1	0	0	0	14.2	1.2	24	
28	0	0.1	0.1	0.5	3.8	10	S	1.5	0.8	0.5	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0.8	24	
29	0	0	0	0	0	S	0.2	0.3	0.4	0	0	0.1	0.2	0.2	0	0	0	0	0	0	0	0	0	0	0.4	0.1	24	
30	0	0.1	0.2	0.1	S	0.5	0.6	0.7	0.7	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0.1	24	
HOURLY MAX	0.9	1	0.9	2.5	7.7	19	19.3	13.6	4.7	3.7	1.2	3.4	10.4	11	1.1	1.2	0.6	0.6	0.3	3.1	0.3	0.6	1.1	0.9				
HOURLY AVG	0.2	0.2	0.2	0.4	1.1	2.6	1.8	1.5	0.8	0.6	0.4	0.3	0.6	0.5	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1				

STATUS FLAG CODES

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

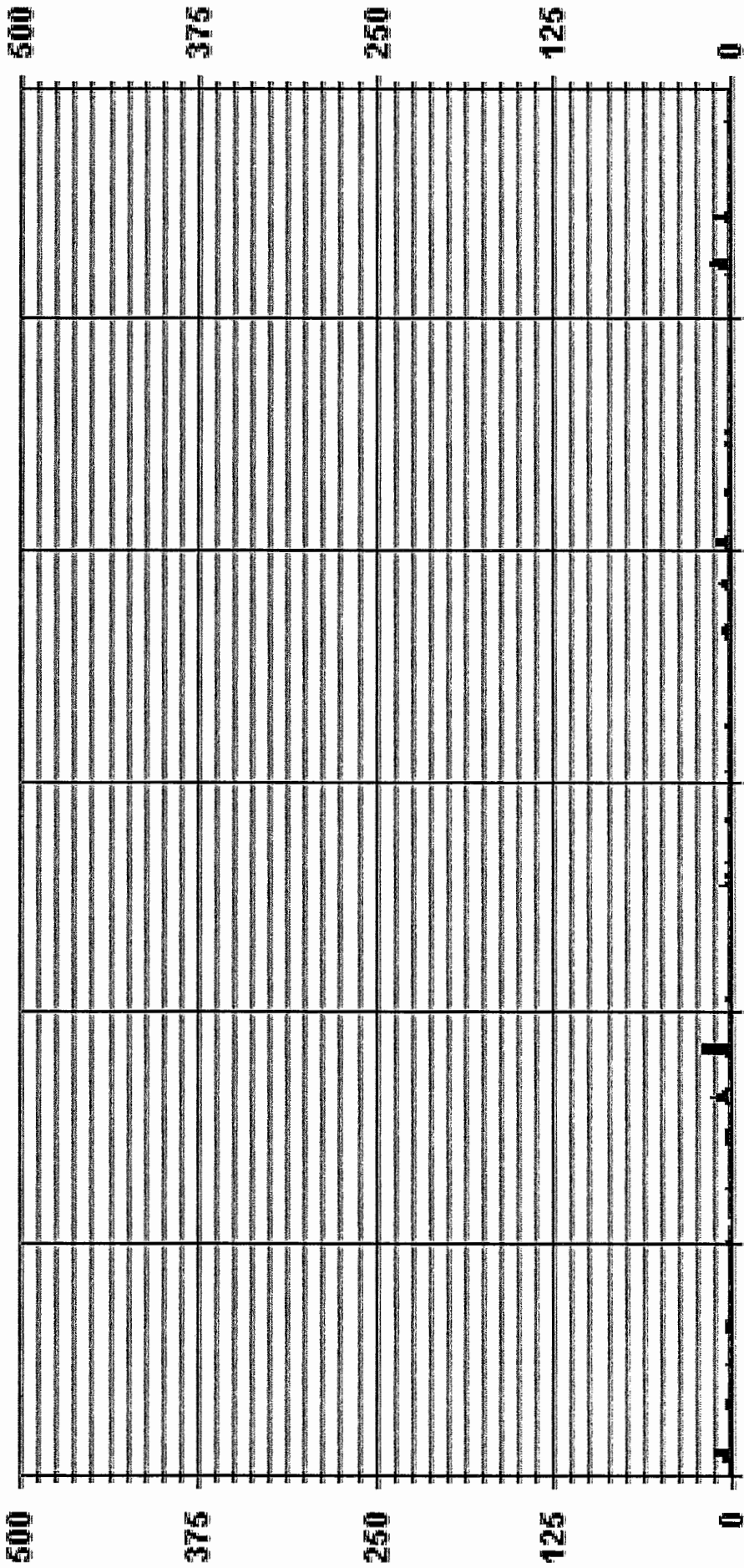
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	428			
MAXIMUM 1-HR AVERAGE:	19.3	PPB @ HOUR(S)	6	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	2.5	PPB		ON DAY(S)
				VAR-VARIOUS
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0
STANDARD DEVIATION:	1.67		MONTHLY AVERAGE:	0.5
				PPB

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA NO_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Site - APRIL 2015

JOB # 2833-2015-04-01- C

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	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	
DAY																											
1	0.5	1.0	3.0	1.5	1.5	1.5	2.5	0.5	0.5	83.5	S	67.6	56.6	48.6	1.5	7.6	1.6	0.6	1.6	0.6	0.5	0.5	0.5	0.6	83.5	12.4	24
2	0.5	0.5	0.5	1.0	0.5	0.5	3.0	2.0	5.0	S	8.0	3.5	3.0	2.5	3.0	3.1	2.6	2.1	3.1	0.6	1.0	1.5	1.0	0.5	8.0	2.1	24
3	0.5	2.0	1.0	1.0	5.0	1.5	2.0	2.5	S	1.0	6.9	2.0	1.0	1.0	2.0	0.5	5.5	1.0	0.9	0.5	1.0	6.5	28.4	1.9	28.4	3.3	24
4	5.5	2.9	2.9	1.4	17.4	5.4	6.0	S	4.9	1.9	2.5	3.0	0.5	0.5	0.5	1.5	1.5	2.0	1.5	2.5	3.5	0.5	0.9	0.4	17.4	3.0	24
5	3.4	13.4	2.9	4.4	3.9	4.4	S	5.4	1.4	0.9	1.4	1.4	0.9	1.5	0.9	1.0	3.5	6.0	2.5	3.0	0.5	1.5	1.4	3.4	13.4	3.0	24
6	2.9	2.9	1.9	28.4	1.9	S	1.0	4.5	1.5	C	C	C	C	C	C	1.5	1.0	0.5	1.0	1.0	0.5	0.5	0.5	28.4	3.2	24	
7	0.5	2.0	6.0	18.0	S	6.5	3.0	1.0	12.4	1.5	3.0	1.0	2.0	3.5	1.0	1.0	10.5	6.9	3.0	8.5	2.0	2.0	1.5	0.5	18.0	4.2	24
8	0.5	1.5	3.0	S	2.5	9.0	2.4	2.5	1.5	1.5	4.5	4.5	2.0	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	9.0	1.9	24
9	4.5	13.5	S	8.5	8.5	22.4	23.9	7.4	0.5	3.0	1.5	0.5	2.5	1.0	3.0	0.5	8.5	0.5	0.5	4.5	0.5	0.5	2.5	0.5	23.9	5.2	24
10	0.5	S	6.9	2.5	14.0	41.5	32.5	24.5	1.5	1.0	1.5	1.5	1.5	2.0	5.0	0.5	0.5	0.5	0.0	1.0	1.5	0.5	0.0	0.5	41.5	6.1	24
11	S	1.0	1.0	0.5	3.5	1.0	1.0	1.5	1.0	1.0	0.5	0.5	1.0	0.0	0.5	0.0	0.5	0.0	0.5	0.0	0.5	1.0	1.0	S	3.5	0.8	24
12	1.0	1.0	1.5	1.0	0.5	2.0	1.0	1.5	0.5	0.5	0.9	0.5	0.5	0.5	0.5	0.5	1.0	0.5	0.5	1.0	1.0	0.5	S	1.0	2.0	0.8	24
13	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	18.5	8.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	32.5	4.0	S	15.5	7.5	32.5	4.3	24
14	5.0	4.0	5.5	2.9	1.5	1.5	2.0	1.5	1.5	1.0	3.5	1.0	1.5	4.5	1.5	3.5	0.5	4.0	1.0	0.5	S	0.5	1.0	1.0	5.5	2.2	24
15	0.5	0.5	0.5	2.5	1.0	4.5	2.0	1.0	0.5	0.5	0.5	1.0	0.5	0.5	0.9	1.5	0.0	0.5	0.5	S	0.0	0.5	3.0	2.5	4.5	1.1	24
16	1.0	1.0	3.0	4.0	2.5	2.0	1.5	2.0	1.5	0.5	2.5	0.5	1.0	0.5	2.5	1.0	10.5	0.5	S	0.0	0.0	0.5	2.0	0.9	10.5	1.8	24
17	0.5	1.0	2.5	1.5	1.5	5.5	6.0	1.5	1.5	0.9	1.5	0.9	0.5	6.9	0.5	1.0	10.5	S	0.5	1.5	0.5	0.5	1.5	1.5	10.5	2.2	24
18	2.0	0.5	1.5	1.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	S	0.5	2.5	0.5	1.0	0.5	0.5	3.0	3.0	0.9	24
19	0.9	3.5	4.5	13.4	24.4	5.4	6.0	5.5	6.0	3.5	1.5	2.0	1.5	1.4	0.9	S	1.5	0.9	8.0	6.0	4.0	0.5	0.5	0.5	24.4	4.4	24
20	0.5	3.0	3.5	3.5	0.9	2.9	9.9	11.4	6.0	3.0	1.5	0.5	0.5	S	0.5	0.6	6.0	5.5	3.5	1.0	2.0	0.0	0.9	0.5	11.4	2.9	24
21	0.5	1.0	4.0	2.0	58.4	15.0	12.5	12.5	4.0	3.5	8.0	3.5	0.5	S	1.0	0.6	0.6	0.1	0.1	0.6	2.1	0.1	1.6	0.6	58.4	5.8	24
22	1.6	1.0	2.1	2.1	2.1	4.6	2.1	2.1	10.6	3.6	1.1	1.1	S	0.5	1.0	1.5	1.0	1.5	1.0	0.5	0.5	0.0	0.0	0.0	10.6	1.8	24
23	0.5	0.5	0.5	1.0	1.0	2.5	2.0	8.5	1.5	10.0	5.0	S	13.5	13.5	1.5	4.5	1.5	2.5	0.5	3.5	4.5	1.5	2.0	0.5	13.5	3.6	24
24	3.0	2.0	1.5	9.0	1.0	6.9	5.0	1.0	2.0	1.0	S	0.5	4.0	0.9	2.9	0.9	11.5	1.4	5.5	1.0	1.5	2.0	3.5	2.5	11.5	3.1	24
25	0.5	0.9	0.4	1.4	1.9	10.4	1.4	5.9	0.9	S	4.0	2.0	5.0	5.5	0.5	1.0	0.5	1.0	0.5	3.5	2.0	0.6	1.1	2.6	10.4	2.3	24
26	5.1	1.1	1.1	3.1	4.0	1.6	1.6	1.0	S	3.4	0.4	5.4	0.4	1.4	0.4	0.4	0.4	1.0	0.5	10.4	1.9	8.4	2.0	1.5	10.4	2.5	24
27	8.0	7.4	1.4	4.4	26.4	29.9	7.9	S	2.4	13.4	0.5	0.5	1.5	0.9	0.9	3.9	3.4	0.4	0.5	0.5	4.0	0.5	0.4	0.4	29.9	5.2	24
28	0.4	0.9	1.0	3.0	30.0	47.5	S	5.0	11.5	3.0	4.4	0.5	0.9	0.4	0.4	0.4	0.9	1.9	0.4	0.4	0.0	0.0	0.0	0.0	47.5	4.9	24
29	0.0	0.5	0.0	0.4	0.4	S	0.5	0.5	0.5	0.5	0.5	0.5	4.4	0.9	0.4	2.4	0.0	0.5	0.0	1.0	0.5	0.4	1.4	4.4	0.7	24	
30	1.4	3.5	2.5	3.5	S	5.5	2.0	3.4	1.5	1.0	0.5	2.0	0.5	1.0	0.5	2.0	2.0	0.0	0.5	0.0	0.0	0.0	0.4	0.0	5.5	1.5	24
HOURLY MAX	8.0	13.5	6.9	28.4	58.4	47.5	32.5	24.5	18.5	83.5	8.0	67.6	56.6	48.6	5.0	7.6	11.5	6.9	8.0	32.5	4.5	8.4	28.4	7.5			
HOURLY AVG	1.8	2.6	2.3	4.4	7.8	8.7	5.1	4.2	3.6	5.7	2.5	3.9	3.9	3.7	1.3	1.5	3.1	1.5	1.4	3.0	1.5	1.1	2.6	1.3			

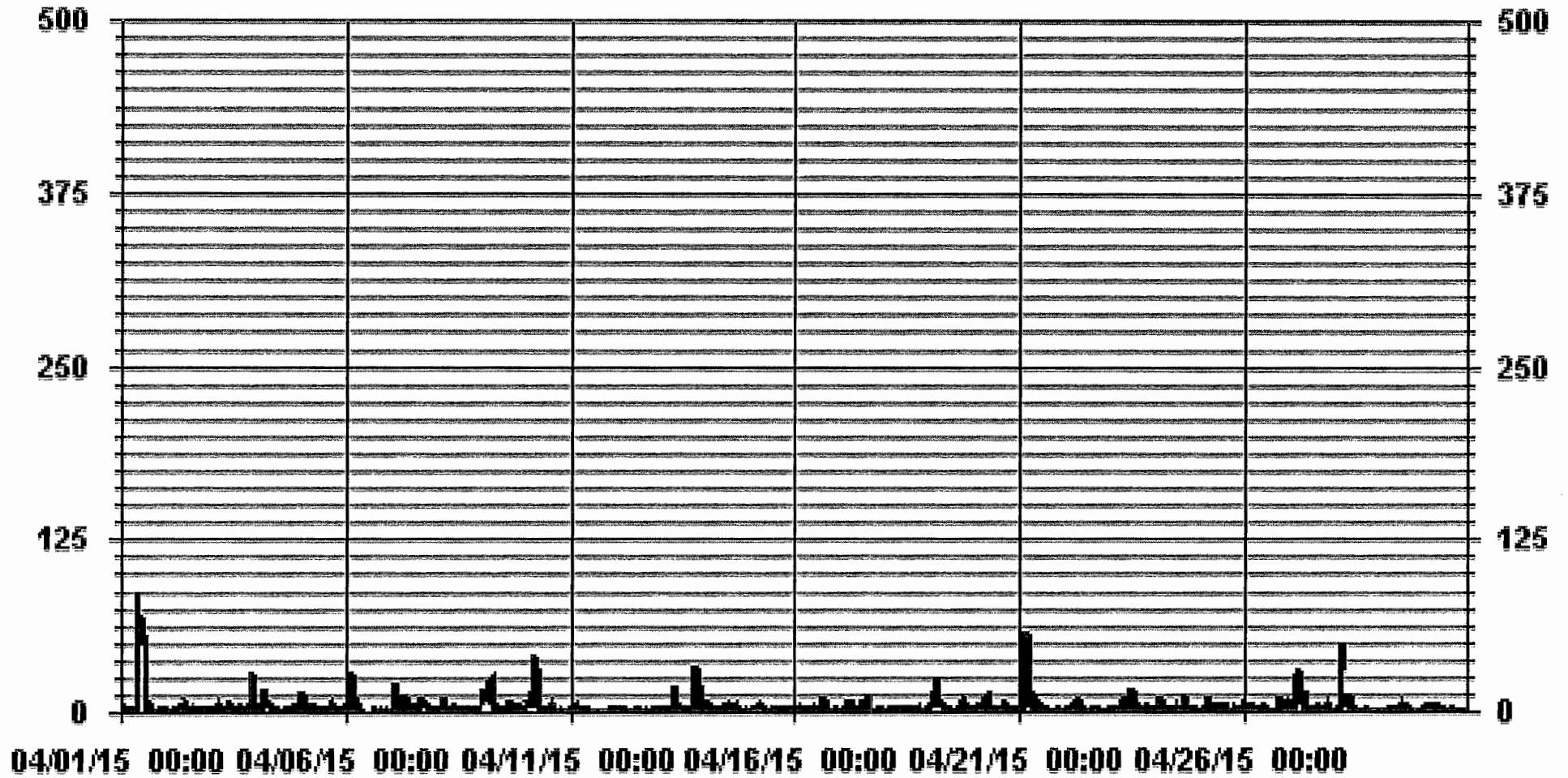
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	653
MAXIMUM INSTANTANEOUS VALUE:	83.5 PPB @ HOUR(S) 9 ON DAY(S) 1
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	720 HRS
STANDARD DEVIATION:	7.12

01 Hour Averages



— LICA NOMAX PPB

LICA
 NO_ / WD Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	3.38	5.59	11.19	6.62	8.39	5.59	10.30	3.24	3.82	3.38	3.97	11.92	8.68	8.24	2.79	2.79	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.38	5.59	11.19	6.62	8.39	5.59	10.30	3.24	3.82	3.38	3.97	11.92	8.68	8.24	2.79	2.79	

Calm : .00 %

Total # Operational Hours : 679

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	23	38	76	45	57	38	70	22	26	23	27	81	59	56	19	19	679
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	23	38	76	45	57	38	70	22	26	23	27	81	59	56	19	19	

Calm : .00 %

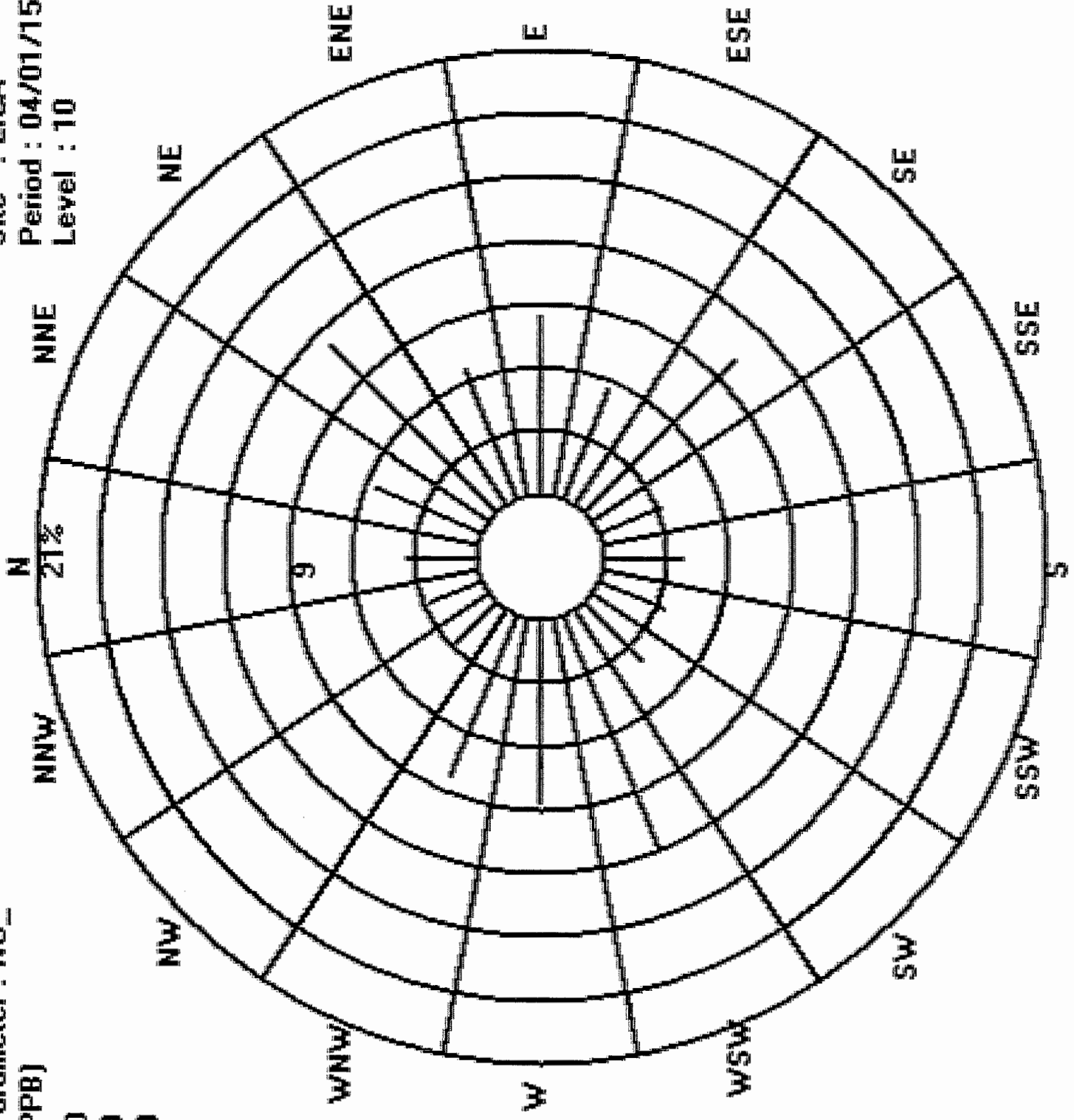
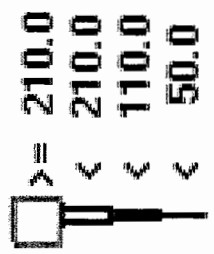
Total # Operational Hours : 679

Logger : 01 Parameter : NO_

Site : LICA

Class Limits (PPB)

Period : 04/01/15-04/30/15
Level : 10



NITROGEN DIOXIDE

NITROGEN DIOXIDE (NO2) hourly averages in ppb

DAY	HOUR																								DAILY MAX	24-HOUR AVG	RDGS
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00			
1	1.2	1.8	3.8	2.3	3.0	2.9	2.5	1.5	1.1	1.5	S	2.2	2.9	3.2	0.5	0.4	0.5	0.4	0.4	0.7	0.8	0.9	0.4	0.3	3.8	1.5	24
2	0.4	0.6	0.7	0.9	1.8	2.4	3.9	1.4	1.6	S	2.6	2.8	1.9	1.8	2.8	2.4	1.6	2.2	1.9	2.3	2.2	2.2	2.3	1.6	3.9	1.9	24
3	0.9	2.5	4.0	3.7	5.9	6.1	2.2	2.1	S	1.5	1.4	1.3	1.1	1.4	1.4	1.1	1.0	1.2	1.2	2.2	1.9	7.2	10.4	8.0	10.4	3.0	24
4	7.2	8.2	7.8	7.0	9.2	12.8	6.9	S	4.2	1.1	0.8	0.5	0.5	0.6	0.7	1.2	1.4	1.7	1.7	2.2	2.7	3.5	3.5	5.7	12.8	4.0	24
5	5.6	3.5	8.1	7.8	5.4	5.0	S	1.5	0.8	0.6	0.7	0.9	0.7	0.9	0.8	0.9	1.4	1.6	2.3	4.7	8.4	7.0	8.0	7.2	8.4	3.6	24
6	2.9	3.5	3.7	2.9	1.5	S	2.9	2.5	1.6	C	C	C	C	C	C	1.1	1.1	1.9	3.0	1.2	1.1	1.1	1.3	3.7	2.1	24	
7	0.9	2.1	5.7	8.4	S	8.7	3.6	2.2	2.0	1.2	1.4	1.1	1.2	1.2	1.4	1.6	1.5	1.7	2.4	3.5	3.0	2.5	3.9	2.7	8.7	2.8	24
8	2.9	2.2	2.1	S	1.9	5.4	6.5	3.3	1.9	2.2	2.3	3.0	2.7	1.6	1.1	0.8	0.9	0.7	1.5	4.1	5.4	4.8	7.5	6.3	7.5	3.1	24
9	5.2	6.7	S	12.8	12.7	16.3	13.3	8.2	1.2	1.4	1.6	1.0	1.5	1.0	1.2	1.0	1.1	1.1	1.5	5.5	3.9	3.2	4.0	3.6	16.3	4.7	24
10	2.8	S	3.8	8.8	14.3	16.7	14.3	12.8	3.7	2.1	1.3	1.2	1.2	1.0	0.7	1.0	1.0	0.9	1.0	2.6	1.0	1.1	2.6	1.5	16.7	4.2	24
11	S	2.5	2.4	3.0	3.5	3.1	2.6	3.2	2.9	2.4	1.3	1.5	1.8	0.5	0.6	0.9	1.0	0.6	1.0	0.5	0.6	1.5	2.6	S	3.5	1.8	24
12	4.5	4.1	2.7	3.0	2.5	2.4	1.8	1.3	1.1	0.8	0.6	0.5	0.4	0.6	0.5	0.6	0.5	0.8	0.8	1.2	1.4	1.1	S	1.1	4.5	1.5	24
13	1.1	1.2	1.2	1.2	1.6	1.7	2.2	1.7	1.0	1.0	0.8	0.5	0.5	0.8	0.6	0.5	0.5	0.5	0.7	10.3	7.7	S	9.0	15.9	15.9	2.7	24
14	14.3	12.3	12.5	8.2	4.0	2.8	4.8	4.3	3.1	2.0	1.8	1.6	2.6	2.6	3.2	1.8	1.2	1.2	1.2	1.1	S	0.8	0.7	0.7	14.3	3.9	24
15	2.1	3.6	3.0	2.8	4.6	5.3	4.4	1.1	0.9	0.7	0.5	0.5	0.5	0.5	0.5	0.7	0.6	0.6	1.1	S	3.1	2.5	2.3	3.2	5.3	2.0	24
16	2.3	2.1	2.5	2.5	2.7	3.0	3.6	2.4	1.5	1.2	1.8	1.1	0.9	0.8	1.2	1.1	0.9	2.0	S	0.8	0.7	0.8	1.2	1.6	3.6	1.7	24
17	3.0	3.2	3.9	3.5	4.5	8.0	7.7	2.4	2.9	1.3	0.9	0.7	0.9	0.7	0.9	1.4	1.0	S	2.1	1.6	1.2	2.3	2.1	3.4	8.0	2.6	24
18	2.8	1.3	1.1	1.1	0.7	0.7	0.5	0.5	0.5	0.4	0.7	1.1	0.9	0.7	0.7	S	1.5	1.1	0.7	0.9	1.5	2.6	3.4	3.4	1.1	24	
19	2.1	3.9	3.4	5.3	5.4	3.8	5.1	7.7	6.6	3.9	2.7	2.4	1.3	1.0	1.0	S	0.8	0.9	2.7	5.2	5.1	1.6	1.7	4.7	7.7	3.4	24
20	4.0	5.3	6.8	4.8	3.0	5.4	6.5	9.6	6.1	4.2	2.5	0.7	0.7	0.7	S	1.1	0.9	1.2	1.3	2.9	1.8	0.5	0.5	0.5	9.6	3.1	24
21	0.7	1.4	3.0	2.9	9.9	16.5	4.2	2.0	1.9	1.7	1.3	1.1	1.3	S	1.0	0.9	0.9	1.0	3.2	2.6	1.1	1.0	1.1	16.5	2.7	24	
22	1.1	1.3	1.7	2.0	2.3	2.8	2.6	1.6	1.0	1.1	1.5	1.0	S	1.2	1.6	1.8	1.7	1.7	2.2	1.9	1.7	1.5	1.1	1.0	2.8	1.6	24
23	1.3	1.9	1.7	2.0	1.9	2.2	2.8	4.0	3.9	3.5	2.2	S	2.0	2.4	3.3	2.4	1.9	2.2	2.2	2.5	2.3	2.1	1.8	1.6	4.0	2.4	24
24	1.8	1.6	1.5	1.7	1.7	1.7	1.4	1.1	1.1	1.0	S	0.7	0.9	0.6	0.9	0.7	0.6	0.8	0.9	2.8	3.3	5.1	3.2	1.7	5.1	1.6	24
25	1.3	1.5	1.3	0.9	1.1	1.5	0.8	0.8	0.7	S	0.5	0.5	0.6	0.3	0.4	0.5	0.7	1.0	1.1	1.5	2.1	2.4	2.7	3.5	3.5	1.2	24
26	3.7	2.3	2.8	2.5	2.2	2.5	1.3	0.8	S	0.5	0.4	0.6	0.4	0.6	0.4	0.6	0.8	1.0	3.3	4.2	5.5	5.5	3.6	5.5	2.0	24	
27	6.0	8.1	9.6	10.3	15.6	17.6	6.3	S	2.8	2.3	1.4	1.3	1.5	1.0	1.0	1.0	1.2	1.3	1.3	5.0	6.2	4.9	5.6	5.5	17.6	5.1	24
28	4.5	5.1	5.2	6.8	11.3	13.2	S	5.1	2.4	1.7	1.0	0.6	0.8	0.5	0.2	0.2	0.5	0.8	0.7	0.7	1.6	0.8	0.8	1.0	13.2	2.8	24
29	0.9	1.6	2.6	2.6	2.1	S	2.7	2.3	2.3	1.0	1.1	1.4	1.4	1.3	0.7	0.5	0.6	0.7	0.7	1.0	3.7	3.4	2.2	1.9	3.7	1.7	24
30	3.0	3.4	3.7	3.6	S	3.1	2.7	2.2	2.2	1.2	1.0	1.1	1.1	1.0	0.8	0.8	0.8	0.8	1.0	0.9	1.4	1.8	2.2	2.2	3.7	1.8	24
HOURLY MAX	14.3	12.3	12.5	12.8	15.6	17.6	14.3	12.8	6.6	4.2	2.7	3.0	2.9	3.2	3.3	2.4	1.9	2.2	2.7	10.3	8.4	7.2	10.4	15.9			
HOURLY AVG	3	3	4	4	5	6	4	3	2	2	1	1	1	1	1	1	1	1	1	3	3	3	3	3			

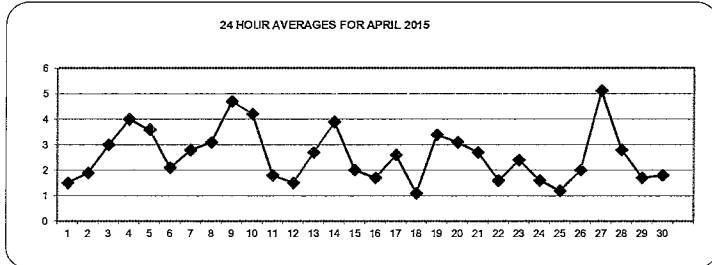
STATUS FLAG CODES

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

OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR: 159 PPB

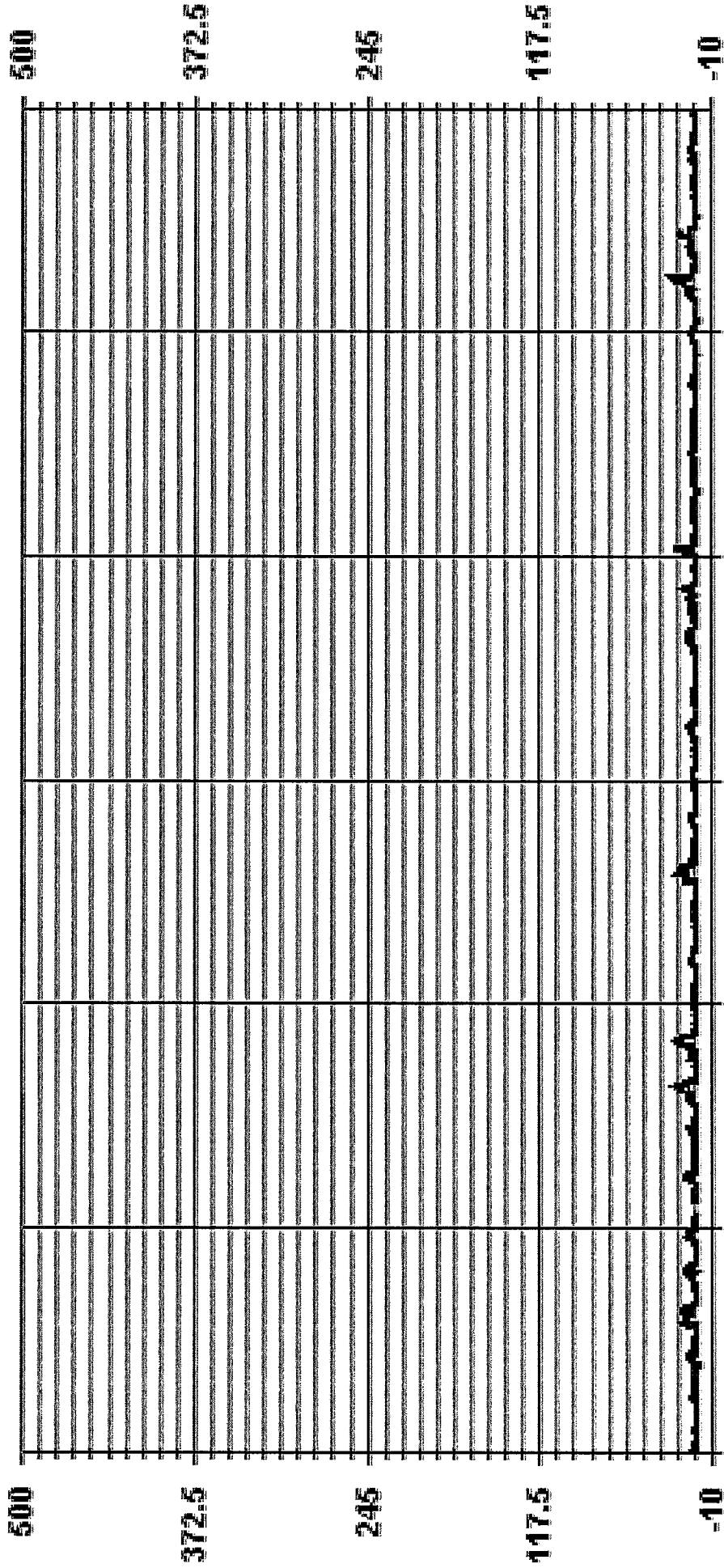
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	682		
MAXIMUM 1-HR AVERAGE:	17.6	PPB @ HOUR(S)	5 ON DAY(S) 27
MAXIMUM 24-HR AVERAGE:	5.1	PPB	ON DAY(S) 27
			VAR-VARIOUS
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME: 720 HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME: 100.0 %
STANDARD DEVIATION:	2.72		MONTHLY AVERAGE: 2.6 PPB

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA NO2_ PPB



NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOURLY START	HOURLY END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY 1		2.1	5.6	5.1	3.6	4.1	4.1	6.0	2.6	2.1	29.0	S	46.9	31.9	35.4	1.5	3.0	1.5	1.0	3.5	1.5	1.4	1.4	0.9	1.5	46.9	8.5	24
2		0.9	1.4	1.4	2.4	2.4	2.9	6.4	6.4	7.9	S	7.0	5.5	6.0	3.0	18.5	5.6	6.1	6.5	4.6	5.1	4.6	4.5	4.5	2.0	18.5	5.0	24
3		3.0	6.0	7.0	8.0	10.0	10.0	5.0	5.5	S	2.0	4.6	2.6	2.0	2.6	3.6	1.6	3.6	2.1	2.1	4.1	6.1	23.0	19.0	11.0	23.0	6.3	24
4		11.0	11.5	11.5	13.5	24.5	18.5	17.0	S	9.5	3.0	2.1	1.6	1.1	1.1	1.1	2.6	2.1	3.6	2.6	3.6	10.0	5.1	9.1	10.5	24.5	7.7	24
5		10.0	9.0	12.5	12.0	11.5	12.0	S	11.0	2.0	1.5	2.0	2.5	1.5	3.1	2.0	2.6	4.1	4.1	4.6	10.1	11.6	10.6	10.5	14.0	14.0	7.2	24
6		7.5	6.5	6.0	5.0	5.5	S	5.0	6.0	3.0	C	C	C	C	C	C	2.6	3.6	4.1	11.1	2.1	2.1	2.6	2.6	11.1	4.7	24	
7		2.0	8.1	14.6	16.5	S	14.1	8.1	4.1	12.5	4.6	3.6	3.1	5.6	4.1	2.1	7.0	5.1	4.0	6.5	21.6	6.0	7.0	8.1	7.0	21.6	7.6	24
8		6.0	3.6	6.5	S	4.0	9.4	8.4	5.5	2.0	3.5	5.9	4.0	4.5	2.5	1.9	1.0	1.5	1.0	2.5	8.5	13.4	10.5	11.5	8.5	13.4	5.5	24
9		12.4	14.9	S	18.1	17.1	22.5	23.0	13.0	1.6	3.6	2.6	1.6	7.0	2.6	8.1	2.1	8.1	1.6	2.1	16.1	6.1	5.6	7.0	8.1	23.0	8.9	24
10		3.6	S	13.4	12.0	19.4	28.4	18.0	19.4	5.0	3.5	4.0	2.0	4.0	2.0	6.0	5.9	2.0	1.0	1.5	12.0	1.5	1.5	5.0	3.5	28.4	7.6	24
11		S	5.5	5.5	4.0	8.0	7.0	4.0	4.0	3.5	2.5	2.0	3.5	2.5	1.0	1.0	1.0	1.5	1.0	1.5	1.0	1.5	4.0	4.0	S	8.0	3.2	24
12		7.0	6.5	4.1	4.1	3.6	4.1	3.6	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.6	2.6	4.1	1.6	1.6	2.1	2.6	2.1	S	2.1	7.0	2.7	24
13		2.1	2.1	2.1	2.1	2.5	3.1	3.1	3.1	3.1	9.1	1.1	1.1	1.1	2.0	1.1	1.1	1.6	1.1	2.1	49.1	23.1	S	24.1	24.6	49.1	7.2	24
14		22.1	16.1	18.6	15.0	6.0	5.1	7.1	6.6	4.6	3.1	3.1	4.1	5.1	4.6	8.6	4.1	2.6	4.1	3.1	2.1	S	2.5	1.1	1.6	22.1	6.6	24
15		4.6	4.6	4.1	7.0	7.1	8.1	7.5	2.1	1.1	1.1	1.1	1.6	1.1	1.1	1.0	3.1	1.1	1.1	2.0	S	6.0	6.1	5.1	8.1	8.1	3.7	24
16		4.1	3.6	7.6	5.1	5.1	6.0	6.5	4.1	3.1	2.1	4.1	2.1	2.0	2.6	7.5	8.1	1.6	2.6	S	1.5	1.0	1.5	2.5	2.5	8.1	3.8	24
17		5.0	4.5	6.4	4.5	10.4	14.4	13.9	4.0	4.5	2.0	1.5	1.5	1.5	3.5	1.5	3.5	4.0	S	3.5	5.0	1.5	4.0	8.5	9.0	14.4	5.1	24
18		5.0	2.0	2.5	2.0	1.5	1.5	1.0	1.0	0.9	1.0	1.0	1.0	1.5	1.5	1.5	1.0	S	2.1	2.1	2.1	2.6	3.6	4.6	6.1	6.1	2.1	24
19		4.1	9.1	7.5	15.0	20.0	7.5	9.0	8.6	7.6	6.1	5.1	4.6	4.1	3.1	2.5	S	2.5	2.0	5.6	19.5	17.6	3.6	5.1	6.5	20.0	7.7	24
20		8.0	13.5	12.1	10.6	4.6	13.5	12.5	12.5	10.0	5.6	4.1	1.6	1.1	1.1	S	1.6	3.6	4.6	3.1	5.6	4.6	1.1	1.6	2.0	13.5	6.0	24
21		2.6	7.5	11.6	7.5	56.0	18.6	17.6	10.1	4.0	2.6	5.6	5.1	1.6	S	1.6	2.5	1.1	1.6	1.6	7.0	5.1	2.1	2.6	1.6	56.0	7.7	24
22		2.6	3.1	4.6	4.0	3.6	6.5	4.1	3.6	3.6	2.1	2.1	1.6	S	2.1	3.1	2.6	2.6	4.1	3.6	3.1	2.6	2.1	1.6	1.6	6.5	3.1	24
23		2.1	2.6	2.6	3.1	3.6	4.6	4.6	6.5	6.1	20.0	3.1	S	5.9	6.4	4.5	6.4	3.0	3.0	3.5	5.0	3.0	3.0	3.5	2.5	20.0	4.7	24
24		6.4	3.5	2.5	6.0	2.5	4.0	9.0	1.5	3.5	3.0	S	1.1	4.5	3.0	3.0	1.5	2.5	1.5	5.1	5.6	5.1	7.6	7.6	3.1	9.0	4.0	24
25		2.6	3.0	2.5	2.0	3.0	8.5	1.5	2.0	1.5	S	2.5	1.0	6.5	1.0	1.5	1.0	2.0	2.0	2.0	4.6	4.1	5.1	6.5	7.0	8.5	3.2	24
26		9.6	4.1	5.1	5.6	5.5	5.1	4.1	1.6	S	1.0	1.5	3.5	1.0	1.0	1.0	1.0	1.5	1.1	1.6	18.0	9.0	19.5	16.0	4.6	19.5	5.3	24
27		17.6	19.5	15.0	18.5	21.0	27.5	16.0	S	5.0	5.5	4.1	1.6	13.5	2.0	2.0	3.5	3.5	3.0	2.1	9.1	17.0	9.5	9.0	8.5	27.5	10.2	24
28		6.5	6.5	7.0	13.5	26.0	19.0	S	14.0	13.5	5.1	8.0	2.1	2.0	6.0	0.5	1.5	1.0	8.0	3.0	2.0	2.6	1.1	1.1	1.5	26.0	6.6	24
29		1.6	3.1	4.6	4.1	5.0	S	4.6	3.1	3.1	2.1	2.1	2.0	7.0	2.5	1.5	1.0	1.1	2.1	1.1	1.6	18.6	7.5	4.0	3.5	18.6	3.8	24
30		4.0	4.6	6.1	6.1	S	6.0	3.5	3.4	3.5	2.0	2.5	16.5	1.5	4.0	1.5	2.5	3.0	1.0	5.5	1.5	3.5	2.5	2.9	3.4	16.5	4.0	24
HOURLY MAX		22.1	19.5	18.6	18.5	56.0	28.4	23.0	19.4	13.5	29.0	8.0	46.9	31.9	35.4	18.5	8.1	8.1	8.0	6.5	49.1	23.1	23.0	24.1	24.6			
HOURLY AVG		6.1	6.6	7.2	8.0	10.5	10.4	8.2	6.0	4.6	4.7	3.2	4.5	4.6	3.8	3.3	2.9	2.8	2.6	3.0	8.2	6.7	5.5	6.5	5.8			

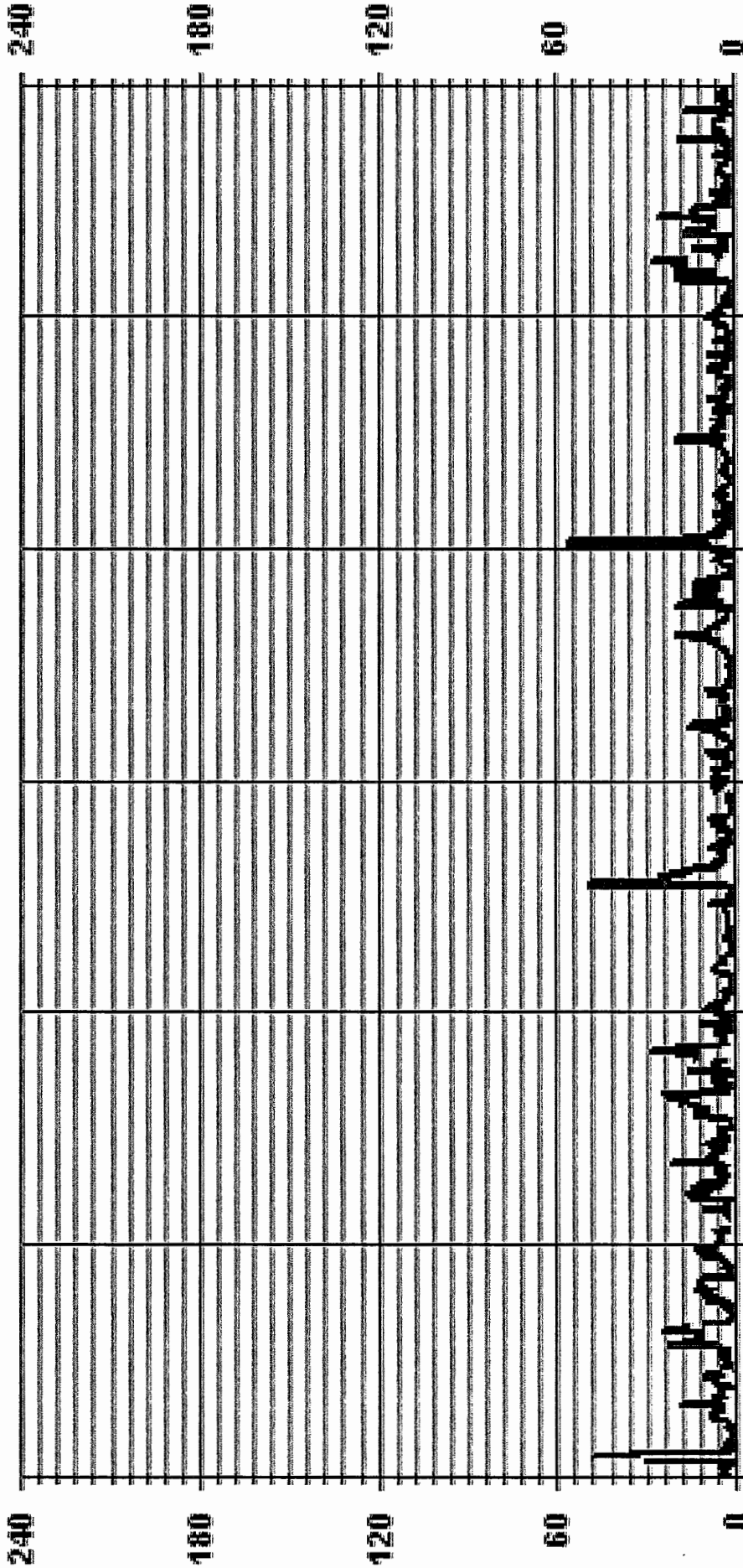
STATUS FLAG CODES

C	- CALIBRATION	O	- QUALITY ASSURANCE
M	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MAGNETIC JUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	682
MAXIMUM INSTANTANEOUS VALUE:	56 PPB @ HOUR(5) 4 ON DAY(5) 21
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	6.02
OPERATIONAL TIME:	720 HRS

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA NO2MAX PPB

LICA
 NO2_ / WD Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	3.38	5.59	11.19	6.62	8.39	5.59	10.30	3.24	3.82	3.38	3.97	11.92	8.68	8.24	2.79	2.79	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.38	5.59	11.19	6.62	8.39	5.59	10.30	3.24	3.82	3.38	3.97	11.92	8.68	8.24	2.79	2.79	

Calm : .00 %

Total # Operational Hours : 679

Distribution By Samples





Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	23	38	76	45	57	38	70	22	26	23	27	81	59	56	19	19	679
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	23	38	76	45	57	38	70	22	26	23	27	81	59	56	19	19	

Calm : .00 %

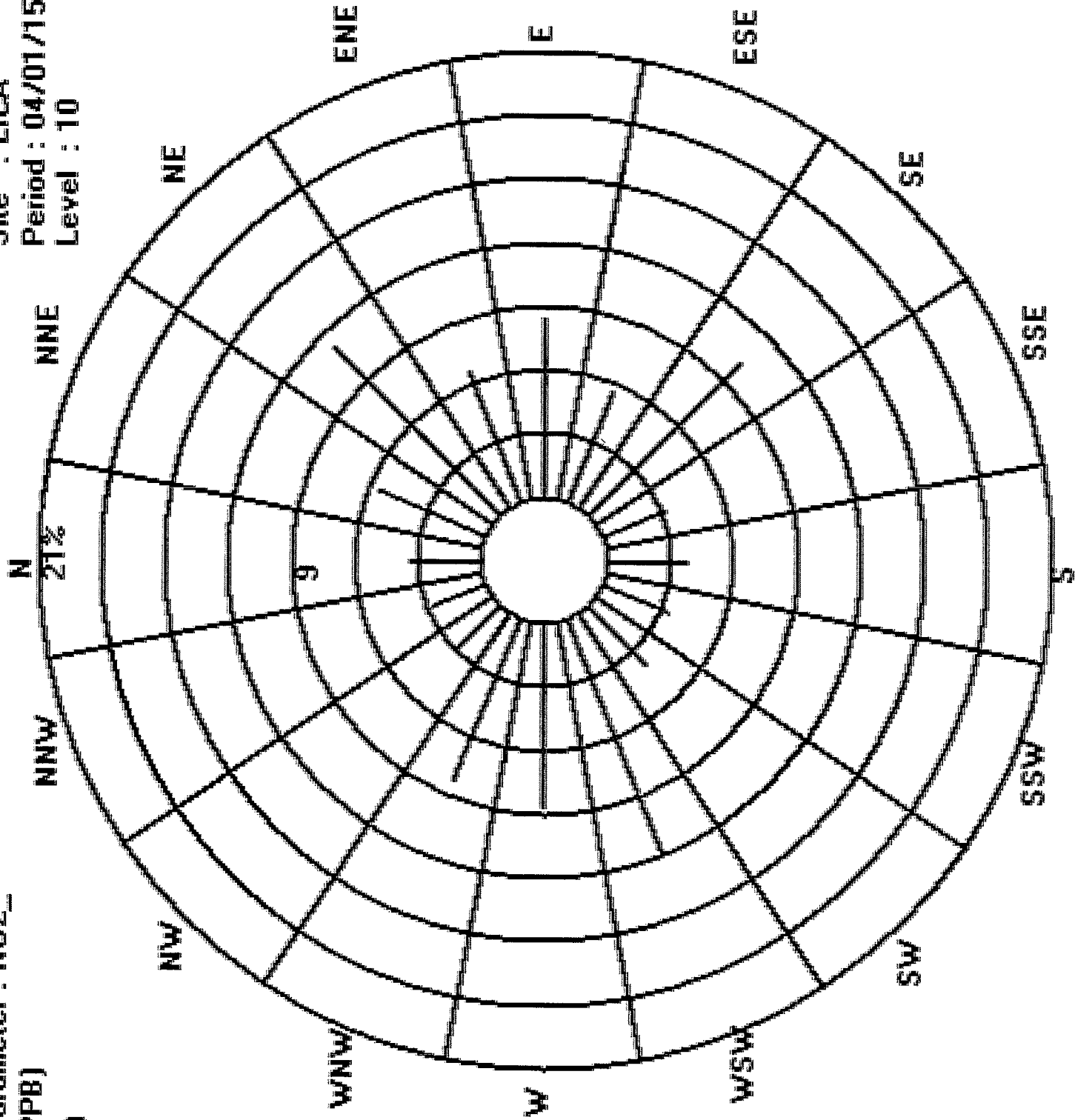
Total # Operational Hours : 679

Logger : 01 Parameter : ND2_

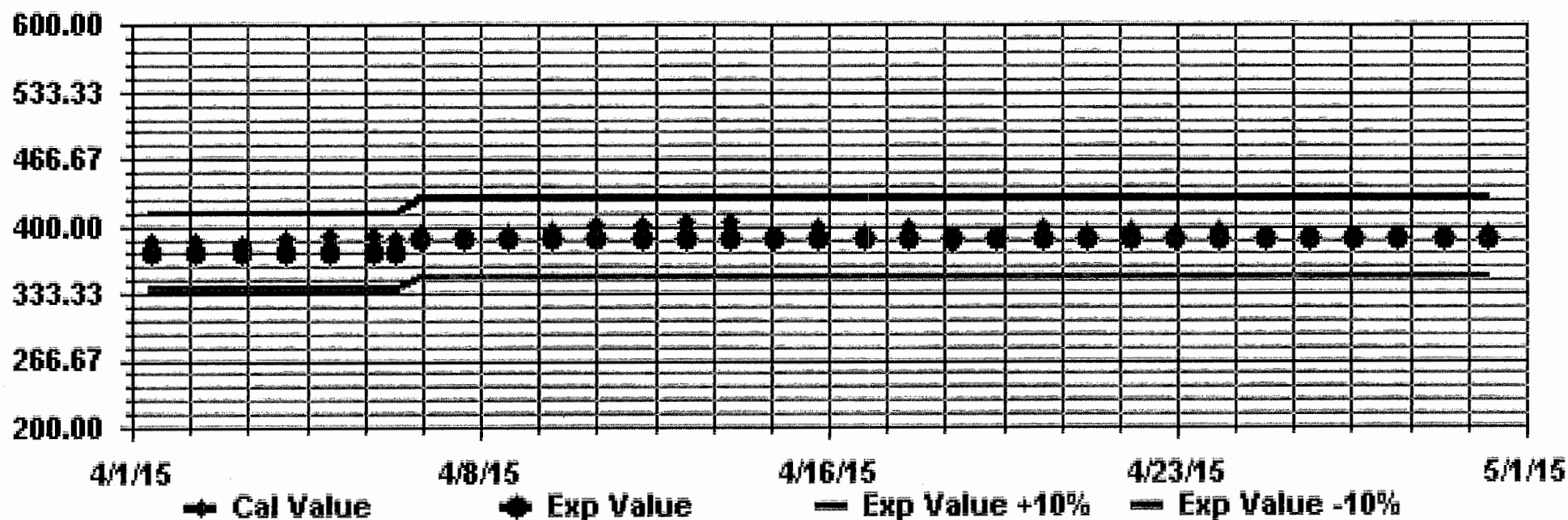
Class Limits (PPB)

-  >= 210.0
-  < 210.0
-  < 110.0
-  < 50.0

Site : LICA
Period : 04/01/15-04/30/15
Level : 10



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



OZONE

OZONE (O3) hourly averages in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX	24-HOUR AVG.	RDGS.
1	32	24	26	25	24	24	22	26	31	30	S	32	32	31	34	32	32	35	36	33	31	31	34	34	36	30.0	24
2	34	33	31	28	24	26	26	31	32	S	39	36	35	36	37	37	38	38	37	35	34	35	32	30	39	33.2	24
3	27	21	14	15	16	21	26	28	S	29	32	32	33	35	37	38	39	39	40	39	34	21	13	20	40	28.2	24
4	20	17	18	16	14	15	23	S	30	38	40	42	44	44	44	44	43	40	39	38	36	33	25	16	44	31.3	24
5	11	11	7	18	24	29	S	31	34	35	36	38	41	41	42	41	42	42	41	35	23	26	26	27	42	30.5	24
6	34	35	36	37	39	S	34	35	34	35	36	38	41	42	43	43	43	40	38	40	40	40	39	43	38.5	24	
7	38	36	30	26	S	27	32	C	C	C	C	C	34	34	33	32	32	31	30	27	26	23	21	20	38	29.6	24
8	17	17	13	S	6	10	13	17	21	25	29	31	33	38	42	43	42	41	39	29	21	17	18	18	43	25.2	24
9	15	11	5	5	4	2	8	23	37	37	39	42	43	45	45	47	46	46	44	34	28	23	20	16	47	28.7	24
10	16	5	12	7	3	1	3	13	35	42	48	51	50	50	49	51	51	50	48	44	41	40	36	40	51	34.0	24
11	5	32	24	24	22	17	18	29	34	37	42	44	45	47	47	46	45	46	43	43	43	41	37	5	47	36.6	24
12	32	31	32	30	30	30	31	35	38	40	41	42	42	41	42	41	40	38	40	39	38	38	5	36	42	36.8	24
13	35	34	33	34	33	33	34	36	38	39	40	42	44	45	45	45	45	45	44	30	25	S	19	10	45	36.0	24
14	10	13	10	22	36	36	34	34	35	37	38	40	40	39	38	39	39	38	36	34	S	32	31	29	40	32.2	24
15	26	21	12	8	10	13	19	30	36	39	41	43	44	45	44	44	43	43	42	S	27	23	24	26	45	30.6	24
16	24	30	32	32	31	30	29	32	38	41	Y	Y	43	43	44	46	47	45	S	41	40	38	36	35	47	37.0	22
17	30	30	27	23	17	11	19	30	33	38	43	44	45	45	46	46	45	S	42	41	39	36	36	33	46	34.7	24
18	32	34	32	30	31	31	31	31	32	34	34	34	35	37	37	39	S	37	37	37	34	20	15	9	39	31.4	24
19	10	8	4	2	1	2	7	14	19	27	33	36	39	40	40	S	41	41	38	30	25	33	34	27	41	24.0	24
20	19	16	10	10	12	9	9	15	27	34	40	44	45	45	S	46	43	43	42	39	37	39	37	35	46	30.3	24
21	33	26	17	17	10	3	23	28	29	31	36	42	41	S	44	46	46	46	44	35	36	39	38	36	46	32.4	24
22	36	34	31	29	29	28	27	31	31	32	33	35	S	38	39	40	38	37	37	38	37	37	38	39	40	34.5	24
23	38	37	35	32	32	31	30	28	27	26	26	S	24	22	22	23	26	24	23	22	23	22	23	23	38	26.9	24
24	22	20	20	20	22	26	26	26	28	29	S	31	32	32	32	33	32	32	33	31	29	27	27	27	33	27.7	24
25	28	26	27	27	26	25	26	27	32	S	33	34	35	37	38	39	39	38	38	38	36	32	27	30	39	32.1	24
26	30	30	28	28	29	29	30	33	S	38	38	38	39	40	41	42	42	44	45	38	28	25	23	19	45	33.8	24
27	15	13	10	7	3	4	27	S	33	36	41	43	44	45	45	46	46	48	49	40	31	31	24	19	49	30.4	24
28	16	11	10	10	4	3	S	34	39	40	50	52	52	51	50	50	51	51	48	46	43	43	41	41	52	36.3	24
29	41	37	29	28	33	S	38	40	40	41	41	43	44	47	48	47	47	45	45	44	37	31	28	26	48	39.1	24
30	25	28	25	26	S	26	26	29	32	38	41	41	42	42	46	46	46	45	44	44	41	39	40	37	46	36.9	24
HOURLY MAX	41	37	36	37	39	36	38	40	40	42	50	52	52	51	50	51	51	51	49	46	43	43	41	41			
HOURLY AVG	25.7	24.7	21.9	21.2	20.2	19.4	24.0	28.4	32.4	35.1	38.1	39.6	40.0	40.6	41.2	41.8	41.7	41.1	40.1	36.6	33.2	31.6	29.1	27.5			

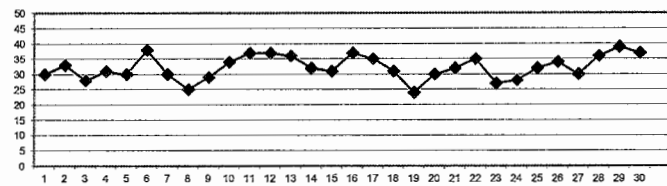
STATUS FLAG CODES

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

OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 82 PPB

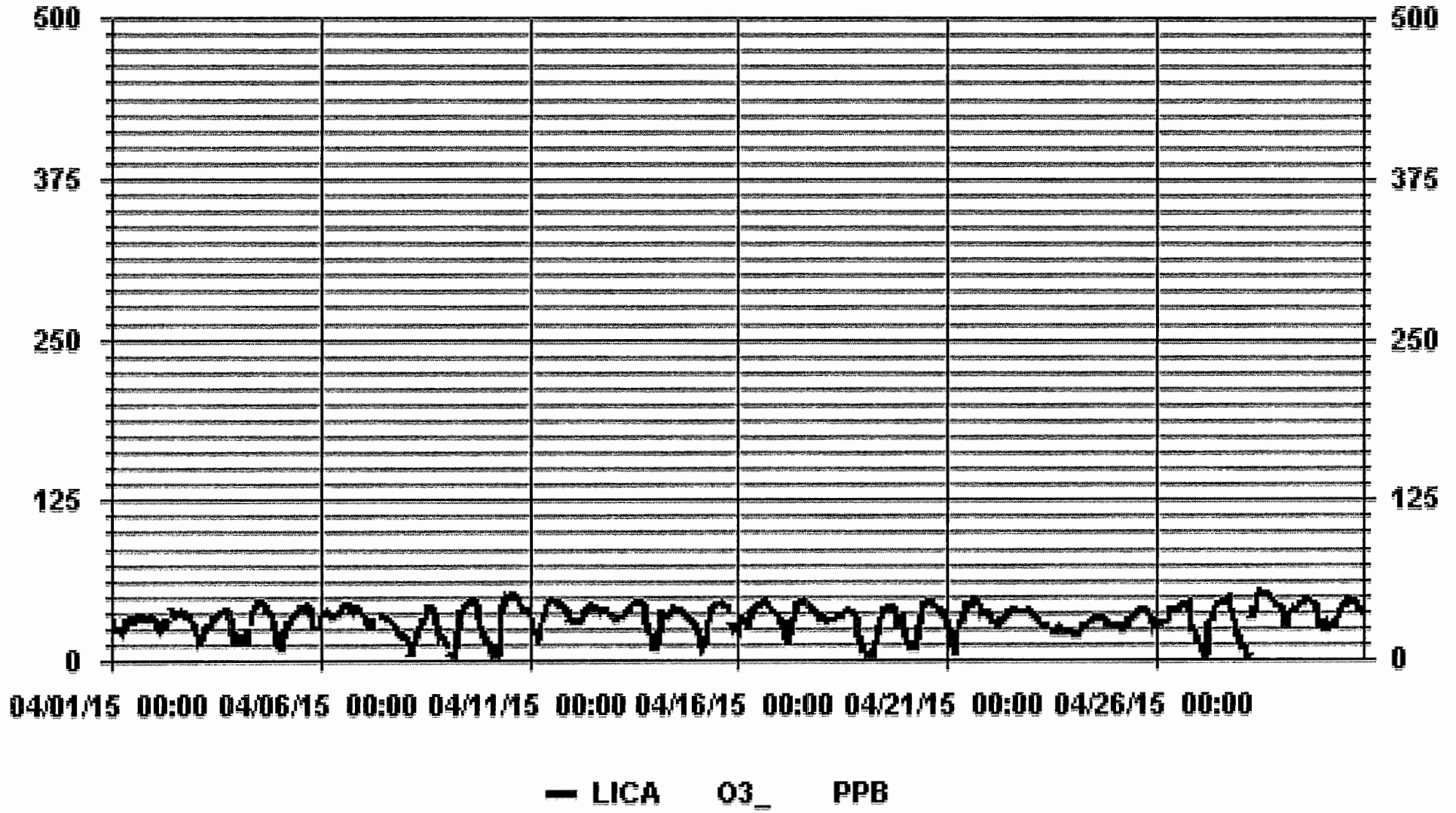
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	682					
MAXIMUM 1-HR AVERAGE:	52	PPB	@ HOUR(S)	11, 12	ON DAY(S)	28, 28
MAXIMUM 24-HR AVERAGE:	39.1	PPB			ON DAY(S)	29
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	10.71		MONTHLY AVERAGE:	32	PPB	

01 Hour Averages





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Site - APRIL 2015

JOB # 2833-2015-04-01- C

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	37	33	30	29	25	24	32	32	32	S	34	35	35	35	33	33	38	38	36	31	32	35	35	38	32.6	24	
2	35	34	33	31	27	30	30	33	33	S	44	38	36	37	38	38	40	40	39	38	36	37	36	32	44	35.4	24
3	30	29	18	17	18	25	29	30	S	32	33	34	35	37	38	40	40	40	41	41	39	30	18	25	41	31.3	24
4	24	19	26	21	20	18	26	S	34	41	42	44	45	45	45	46	44	42	40	39	38	37	30	22	46	34.3	24
5	13	15	12	23	26	32	S	33	35	36	37	40	43	43	43	42	43	43	42	39	29	30	31	36	43	33.3	24
6	36	36	38	39	41	S	37	37	35	36	37	42	42	43	45	45	44	44	43	40	41	41	41	40	45	40.1	24
7	39	38	34	32	S	31	35	C	C	C	C	35	35	34	34	33	32	30	28	26	25	26	39	32.2	24		
8	21	20	18	S	9	14	16	20	24	27	31	33	35	43	43	43	43	42	41	38	27	21	22	25	43	28.5	24
9	22	17	S	8	10	5	13	38	39	38	42	44	45	46	47	48	47	47	46	43	38	31	23	25	48	33.1	24
10	25	S	15	11	6	3	5	33	38	47	51	53	52	53	51	52	52	50	47	43	42	41	41	53	37.5	24	
11	S	37	29	32	30	22	25	32	37	40	44	45	47	48	48	47	46	47	45	43	44	43	38	S	48	39.5	24
12	34	32	33	32	31	31	32	37	39	40	42	43	42	42	43	42	41	39	40	41	39	39	S	37	43	37.9	24
13	35	35	35	35	33	34	36	38	39	40	42	44	45	46	46	46	45	45	43	30	S	28	16	46	38.3	24	
14	15	21	14	36	37	38	36	36	37	38	39	41	41	40	41	41	41	39	37	36	S	33	32	31	41	34.8	24
15	29	25	17	11	13	16	27	34	39	40	43	44	45	46	45	45	44	44	44	S	37	29	33	33	46	34.0	24
16	32	34	34	33	33	32	32	36	40	42	Y	Y	Y	44	45	48	48	48	S	43	43	39	38	37	48	39.1	21
17	36	32	31	30	20	17	30	32	36	42	45	46	46	46	47	48	46	S	44	43	42	39	38	36	48	37.9	24
18	35	36	34	31	32	32	31	32	34	35	35	35	39	39	40	40	S	38	39	38	38	32	21	17	40	34.0	24
19	14	15	5	4	4	4	12	17	23	32	36	37	41	42	42	S	42	42	41	35	31	37	37	32	42	27.2	24
20	28	25	18	12	18	15	11	27	30	37	44	45	46	46	S	47	46	43	43	42	39	39	38	37	47	33.7	24
21	34	33	24	24	18	8	27	29	32	32	40	43	42	S	46	47	47	46	46	45	42	41	39	38	47	35.8	24
22	37	35	34	30	30	29	30	32	33	33	35	37	S	39	40	42	42	39	39	38	38	38	39	39	42	36.0	24
23	39	37	36	33	33	32	32	30	28	28	28	S	25	25	25	25	27	25	25	24	24	24	24	24	39	28.3	24
24	24	23	22	21	25	28	27	28	30	30	S	32	34	33	34	34	33	33	34	33	31	28	29	29	34	29.3	24
25	29	28	28	28	27	26	27	31	33	S	34	35	36	38	39	40	41	39	38	39	38	34	31	32	41	33.5	24
26	32	32	30	30	30	30	32	34	S	39	38	39	41	42	42	43	43	46	46	43	34	31	32	26	46	36.3	24
27	19	18	17	14	4	10	33	S	34	40	43	44	45	46	47	47	47	49	49	48	39	42	35	26	49	34.6	24
28	21	22	14	17	7	7	S	40	40	47	52	52	53	52	51	52	52	52	49	48	45	45	42	42	53	39.2	24
29	42	42	33	34	34	5	40	41	41	42	42	45	46	48	50	49	49	47	47	45	43	39	36	30	50	42.0	24
30	30	32	28	28	S	27	28	31	36	42	42	42	43	44	47	47	47	46	46	46	43	41	41	40	47	39.0	24
HOURLY MAX	42	42	38	39	41	38	40	41	41	47	52	53	53	53	51	52	52	52	50	48	45	45	42	42	47		
HOURLY AVG	29.2	28.8	25.5	25.0	22.9	22.2	27.3	32.3	34.5	37.3	40.0	41.1	41.4	42.2	42.6	43.1	43.0	42.3	41.7	40.2	36.9	35.2	32.9	31.3			

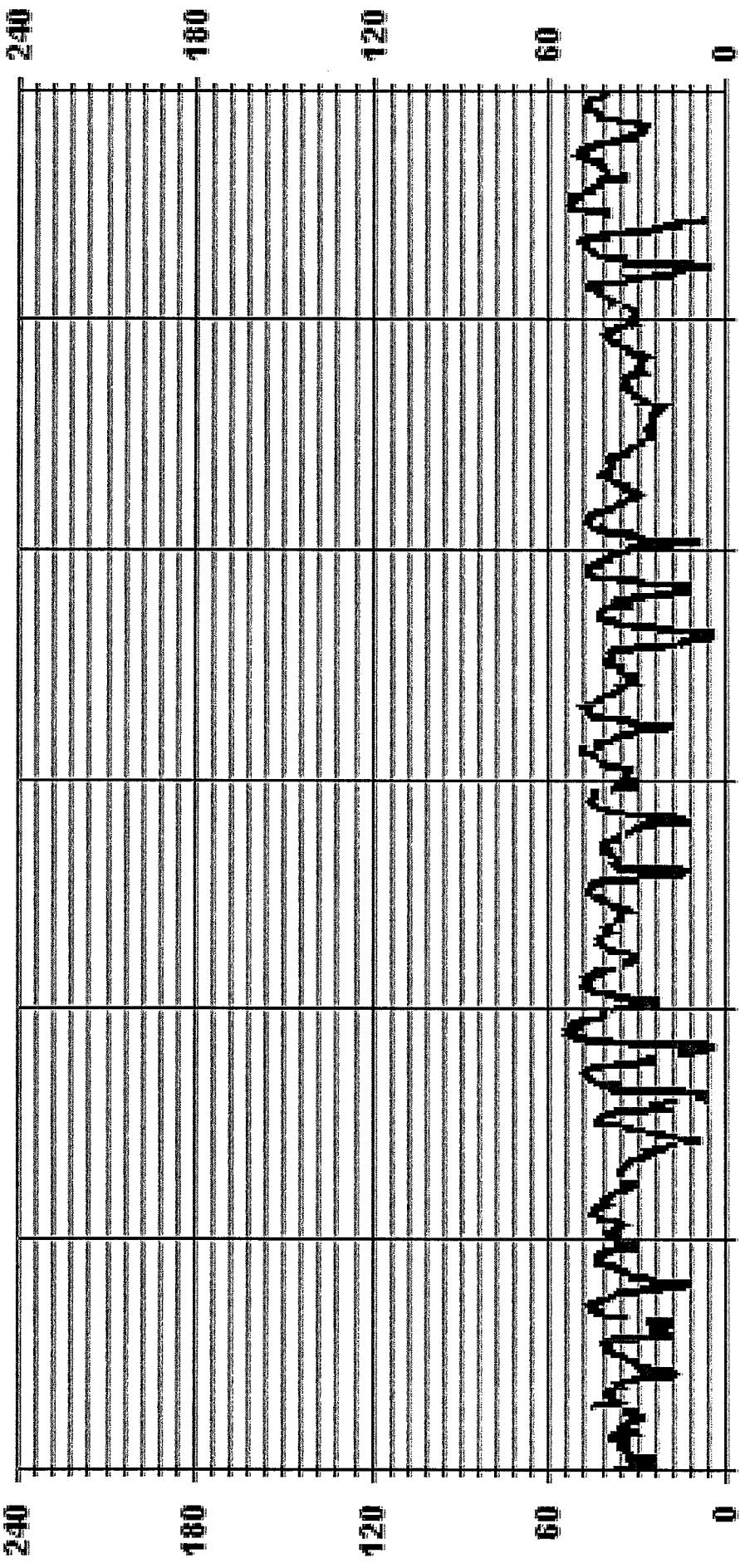
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	681
MAXIMUM INSTANTANEOUS VALUE:	53 PPB @ HOUR(S) VAR, 12 ON DAY(S) 10, 28
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	9.72
OPERATIONAL TIME:	717 HRS

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA O3MAX PPB

LICA
 O3_ / WD Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

Logger Id : 01
 Site Name : LICA
 Parameter : O3
 Units : PPB

Wind Parameter : WD
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50	3.38	5.59	11.19	6.62	8.39	5.89	10.30	2.94	3.09	2.50	3.82	11.92	8.39	8.24	2.79	2.79	97.93
< 110	.00	.00	.00	.00	.00	.00	.00	.29	.73	.88	.14	.00	.00	.00	.00	.00	2.06
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.38	5.59	11.19	6.62	8.39	5.89	10.30	3.24	3.82	3.38	3.97	11.92	8.39	8.24	2.79	2.79	

Calm : .00 %

Total # Operational Hours : 679

Distribution By Samples

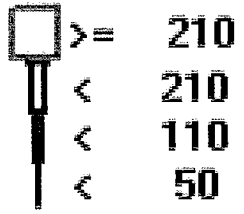
Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50	23	38	76	45	57	40	70	20	21	17	26	81	57	56	19	19	665
< 110								2	5	6	1						14
< 210																	
>= 210																	
Totals	23	38	76	45	57	40	70	22	26	23	27	81	57	56	19	19	

Calm : .00 %

Total # Operational Hours : 679

Logger : 01 Parameter : 03_

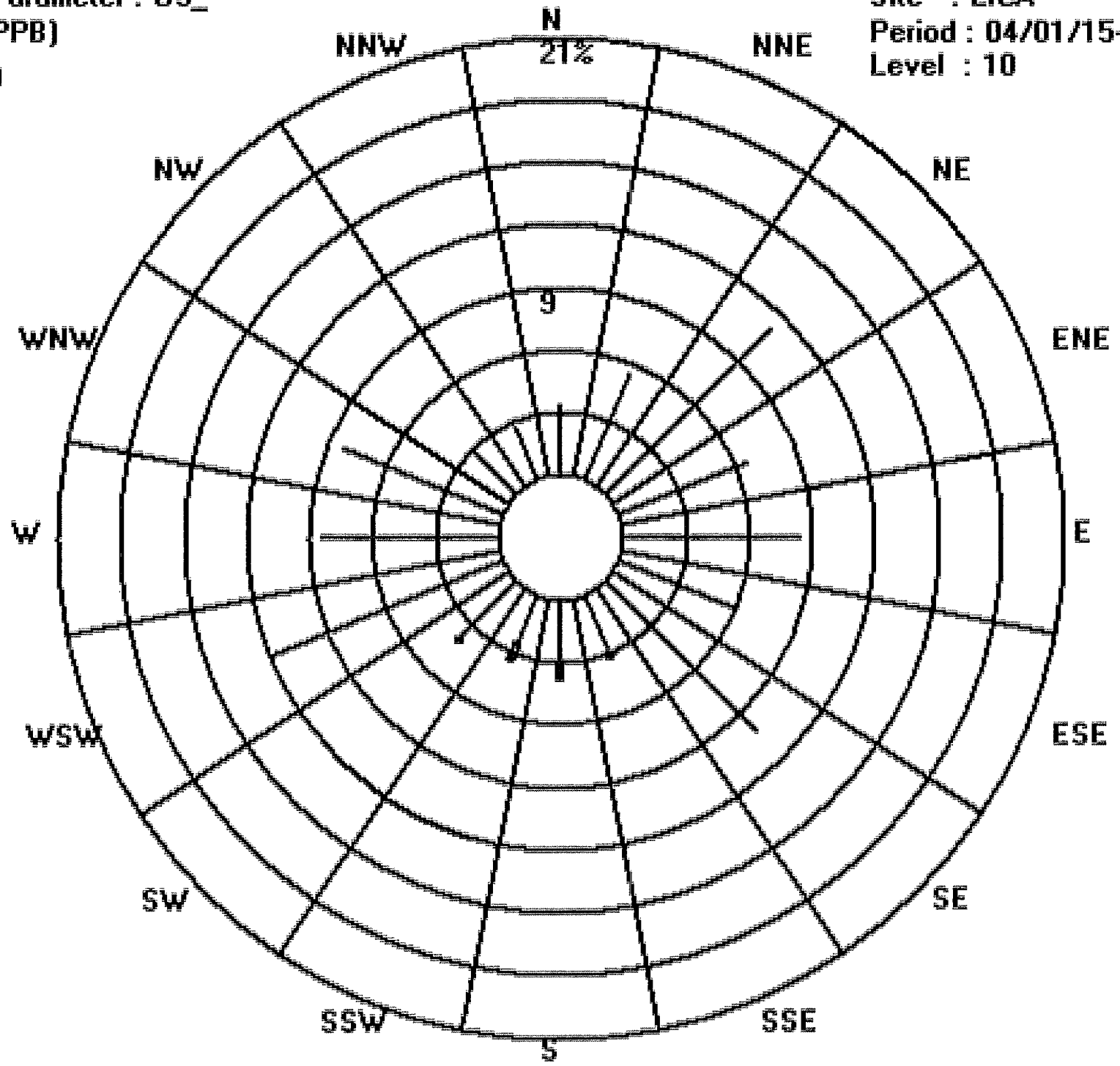
Class Limits (PPB)



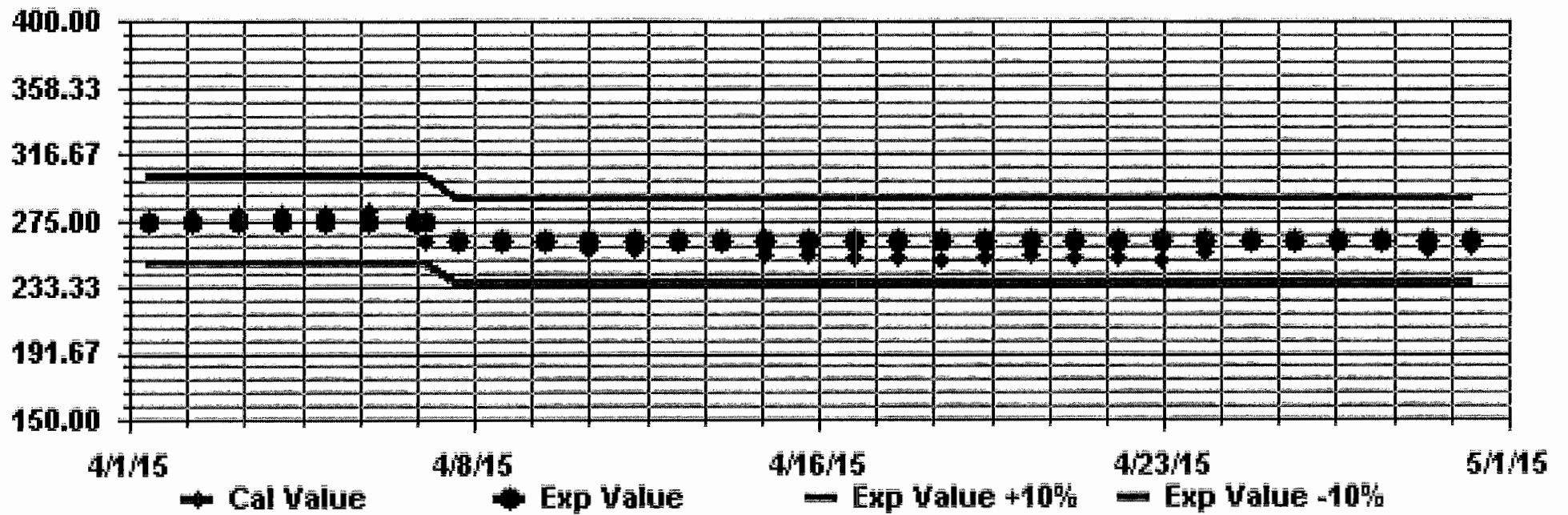
Site : LICA

Period : 04/01/15-04/30/15

Level : 10



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



PARTICULATE MATTER 2.5

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

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	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	13	8	9	7	7	2	6	7	6	10	5	4	2	7	5	4	4	3	4	4	4	4	9	6	13	5.8	24	
2	3	6	5	0	X	0	0	3	1	2	7	9	8	14	2	5	8	0	3	8	7	6	6	2	14	4.6	23	
3	3	2	6	9	7	8	3	6	12	16	1	4	2	3	2	2	6	5	1	6	9	7	4	6	16	5.4	24	
4	0	4	3	5	5	11	13	6	9	5	5	4	8	6	6	5	9	11	9	6	10	7	4	1	13	6.3	24	
5	11	3	5	10	11	7	6	4	1	6	3	10	11	6	8	3	9	7	3	7	8	7	6	8	11	6.7	24	
6	11	5	0	8	4	3	4	15	4	0	12	7	X	0	0	0	1	7	0	X	X	9	6	2	15	4.7	21	
7	8	3	7	10	7	4	2	0	0	4	C	1	5	4	5	5	3	5	3	5	4	2	4	9	10	4.3	24	
8	5	6	4	5	5	7	3	5	0	5	4	9	6	7	1	4	4	1	4	2	3	8	9	3	9	4.6	24	
9	8	7	6	8	8	9	4	3	4	2	4	5	X	3	3	0	3	1	8	7	7	11	8	5	11	5.4	23	
10	7	6	4	5	8	8	8	17	11	14	7	5	4	4	3	3	2	4	2	5	1	7	9	10	17	6.4	24	
11	5	6	3	5	1	7	6	4	0	6	4	4	2	0	3	2	2	X	2	0	2	0	2	3	7	3.0	23	
12	0	1	X	1	0	38	X	12	5	4	11	7	0	4	0	3	5	4	X	4	3	0	2	2	38	5.0	21	
13	4	0	4	4	0	0	13	X	1	0	6	0	0	0	X	3	X	6	2	15	5	2	10	8	15	4.0	21	
14	4	6	2	X	0	2	5	12	1	2	8	5	4	3	1	5	7	5	7	0	7	2	4	0	12	4.0	23	
15	0	6	3	4	3	3	6	5	8	4	0	1	2	2	3	4	3	0	0	3	1	4	2	2	8	2.9	24	
16	3	6	4	4	3	3	1	5	4	0	X	0	7	0	X	4	0	1	4	5	3	4	X	0	7	2.9	21	
17	4	4	4	6	6	5	3	0	1	0	X	0	0	0	2	7	0	7	1	0	0	1	3	7	7	2.7	23	
18	8	5	1	0	1	X	0	0	8	0	2	0	1	10	2	0	1	1	5	2	2	0	2	2	10	2.3	23	
19	6	3	4	5	6	5	3	4	10	3	4	1	1	X	1	7	0	0	2	9	15	8	5	1	15	4.5	23	
20	4	5	4	7	5	5	8	8	13	3	3	2	X	4	0	X	0	0	1	8	6	3	4	0	13	4.2	22	
21	7	7	5	4	8	11	7	4	8	3	6	0	6	5	0	3	2	0	0	4	3	12	2	1	12	4.5	24	
22	3	8	5	1	1	4	4	6	6	4	3	0	8	10	8	10	10	7	6	5	5	6	8	4	10	5.5	24	
23	12	11	11	5	8	5	10	10	12	4	5	9	6	12	9	6	13	12	14	9	14	13	9	11	14	9.6	24	
24	8	14	10	2	4	8	6	4	6	6	2	3	0	1	6	1	6	6	4	6	8	13	11	1	14	5.7	24	
25	5	2	9	6	5	5	7	6	3	1	7	4	6	7	5	1	6	11	8	8	5	5	5	7	11	5.6	24	
26	6	8	8	4	8	5	5	2	6	6	4	4	4	10	0	2	0	5	5	14	18	9	9	9	18	6.3	24	
27	10	7	5	6	6	9	8	8	9	3	0	0	8	C	X	8	12	7	0	1	9	6	4	6	12	6.0	23	
28	5	2	1	2	10	11	16	8	0	3	0	3	1	1	0	0	5	2	3	4	5	6	5	5	16	4.1	24	
29	6	0	3	4	5	7	3	0	3	0	X	0	0	4	5	1	0	4	7	0	5	3	6	2	7	3.0	23	
30	4	0	3	3	7	11	0	9	9	1	8	11	11	5	0	1	3	6	7	6	6	2	5	0	11	4.9	24	
HOURLY MAX	13	14	11	10	11	38	16	17	13	16	12	11	11	14	9	10	13	12	14	15	18	13	11	11				
HOURLY AVG	5.8	5.0	4.8	4.8	5.1	7.0	5.5	6.0	5.4	3.9	4.7	3.7	4.2	4.7	3.0	3.4	4.3	4.4	4.0	5.3	6.0	5.6	5.6	4.1				

STATUS FLAG CODES

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

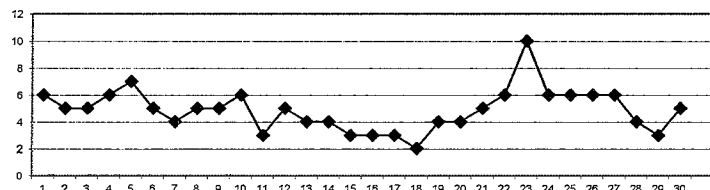
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 24-HR: 30 ug/m3

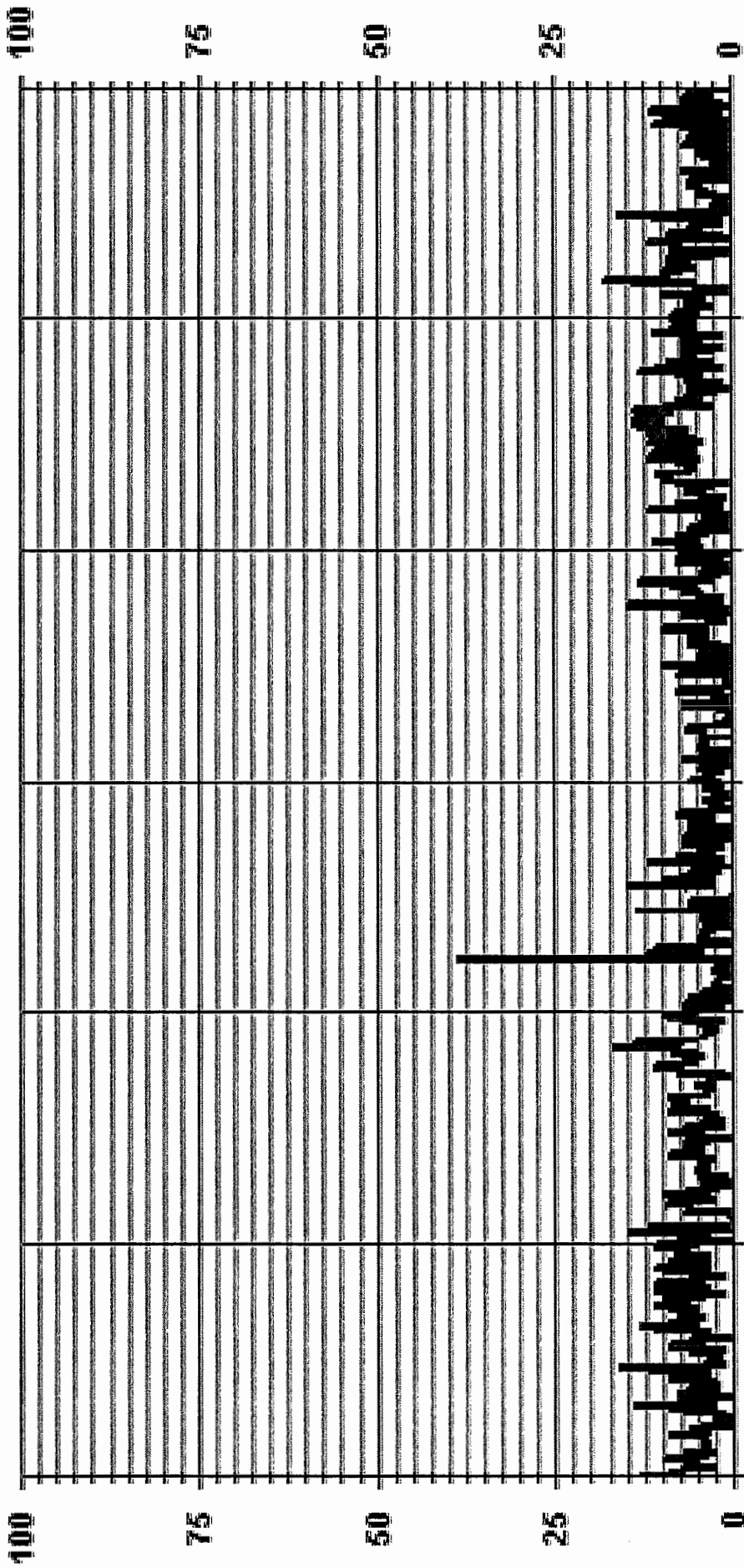
MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	605
MAXIMUM 1-HR AVERAGE:	38 ug/m3 @ HOUR(S) 5 ON DAY(S) 12
MAXIMUM 24-HR AVERAGE:	9.6 ug/m3 ON DAY(S) 23 VAR-VARIOUS
MONTHLY CALIBRATION TIME:	2 HRS
MONTHLY OPERATIONAL TIME:	697 HRS
MONTHLY STANDARD DEVIATION:	3.71
MONTHLY AMD OPERATION UPTIME:	96.8 %
MONTHLY AVERAGE:	4.8 ug/m3

24 HOUR AVERAGES FOR APRIL 2015



01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA - - - - PM2 UG/M3

LICA
PM2 / WD Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	3.32	5.92	11.56	6.64	8.52	6.50	10.54	3.17	3.90	3.17	4.19	11.41	7.80	7.65	2.60	2.89	99.85
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.14
< 80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.32	5.92	11.56	6.64	8.52	6.50	10.54	3.17	3.90	3.17	4.19	11.56	7.80	7.65	2.60	2.89	

Calm : .00 %

Total # Operational Hours : 692

Distribution By Samples

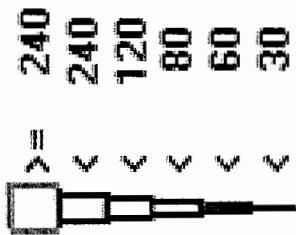
Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	23	41	80	46	59	45	73	22	27	22	29	79	54	53	18	20	691
< 60												1					1
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	23	41	80	46	59	45	73	22	27	22	29	80	54	53	18	20	

Calm : .00 %

Total # Operational Hours : 692

Logger : 01 Parameter : PM2

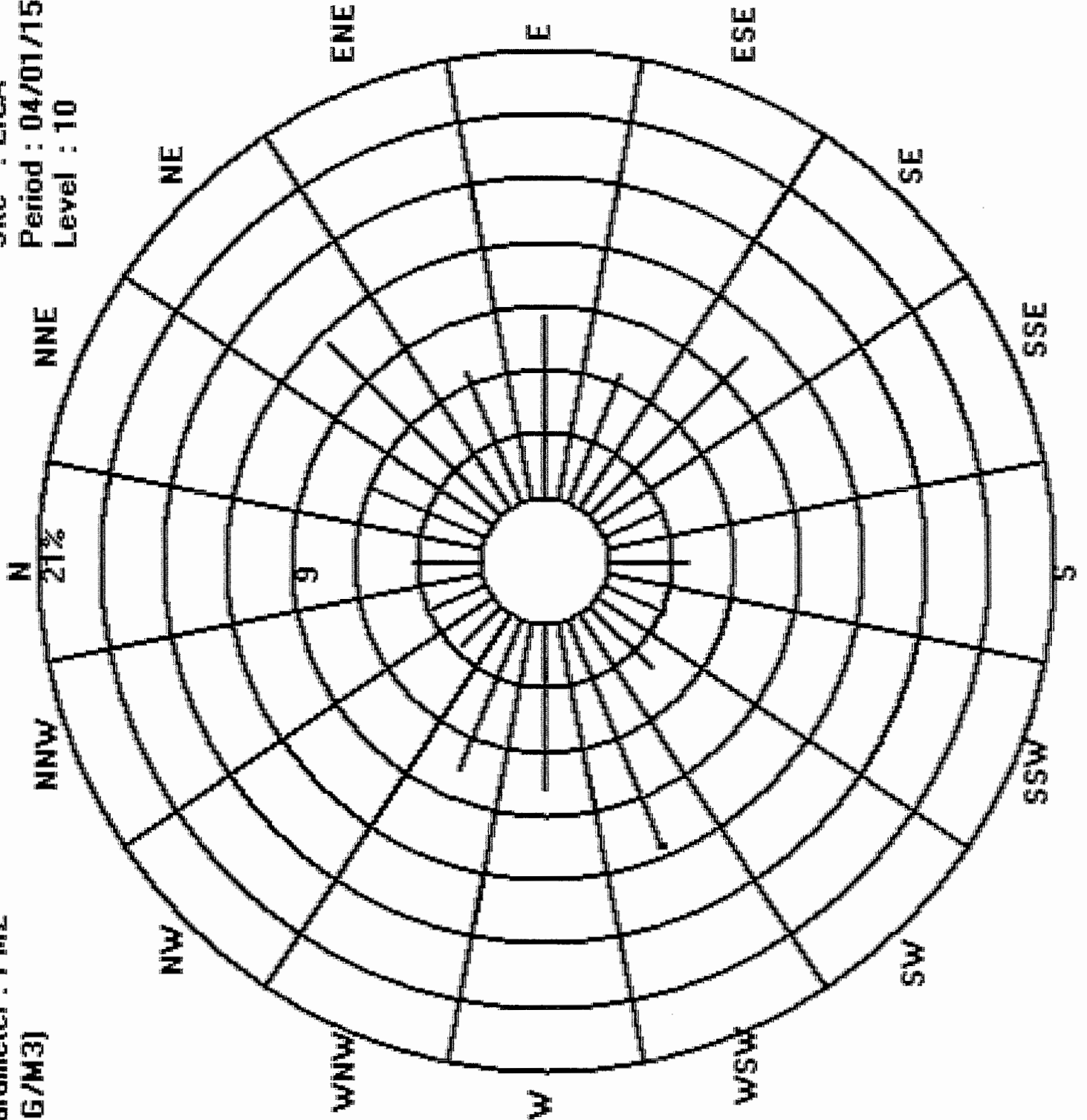
Class Limits (UG/M3)



Site : LICA

Period : 04/01/15-04/30/15

Level : 10



WIND SPEED



WIND SPEED (WS) hourly averages in km/hr

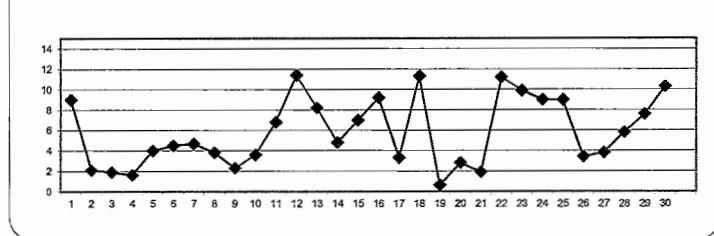
MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.
DAY	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MAX.	AVG.	
1	0.6	1.5	3.6	6.7	8.1	7.4	4.1	5.8	8.0	7.2	8.7	9.5	11.9	17.7	16.1	17.5	14.8	18.3	18.9	15.9	14.9	13.0	11.8	10.5	18.9	10.5	24
2	7.7	5.7	2.9	2.5	1.0	3.2	2.2	2.2	1.7	0.2	1.1	2.0	3.5	2.7	5.4	4.9	5.2	3.5	2.2	1.9	2.8	2.3	0.7	0.7	7.7	2.8	24
3	1.2	0.3	0.1	0.5	1.1	2.1	3.1	2.0	5.6	6.0	5.7	2.8	3.3	3.4	5.9	9.8	9.6	9.4	9.0	3.4	0.8	0.5	0.6	1.3	9.8	3.6	24
4	1.0	0.9	0.5	0.3	0.9	1.1	2.5	1.6	1.6	5.0	1.7	4.4	2.6	4.2	5.3	7.0	8.1	7.7	6.4	4.1	2.9	1.6	0.1	0.3	8.1	3.0	24
5	0.1	0.3	0.2	1.5	2.6	3.4	4.7	6.5	7.9	8.3	7.7	7.8	8.0	9.4	6.9	5.9	5.7	4.9	3.8	1.6	0.5	1.5	0.7	2.1	9.4	4.3	24
6	3.3	3.9	3.3	3.8	4.8	2.6	3.3	4.7	5.9	7.0	6.1	4.7	5.1	4.1	2.3	2.7	5.4	4.8	5.0	5.9	6.0	5.3	6.2	5.8	7.0	4.7	24
7	6.1	3.8	1.8	2.1	3.4	3.9	4.8	5.5	6.5	9.4	7.4	8.1	7.1	8.0	8.1	6.1	8.1	4.9	3.0	2.9	1.6	1.5	1.2	1.0	9.4	4.8	24
8	0.6	1.3	0.8	0.9	0.9	1.3	1.1	1.8	2.5	5.0	7.3	9.1	9.5	11.3	13.9	13.4	10.6	7.3	4.4	2.1	0.3	0.6	0.4	0.9	13.9	4.5	24
9	0.6	0.4	0.5	0.8	0.9	0.6	1.3	2.9	9.1	7.5	4.3	3.8	5.6	8.0	6.3	9.7	8.4	7.4	4.2	1.8	1.8	1.3	0.8	0.2	9.7	3.7	24
10	0.3	0.2	0.3	0.4	0.9	0.9	0.5	0.3	2.5	3.9	7.0	6.6	8.2	9.5	9.6	9.2	8.2	6.7	3.4	5.4	4.6	2.4	3.2	3.5	9.6	4.1	24
11	2.4	1.2	0.9	1.1	0.7	0.3	1.2	4.9	6.2	6.5	8.0	11.1	10.4	12.0	11.8	13.2	11.9	8.7	13.0	15.3	12.5	7.3	7.4	7.3	15.3	7.3	24
12	6.0	6.2	6.8	6.5	7.4	5.9	7.1	11.8	15.6	16.5	18.4	18.9	19.0	16.2	15.0	15.3	11.4	11.7	13.0	13.9	10.7	9.9	9.6	8.2	19.0	11.7	24
13	8.9	8.2	7.8	9.5	8.9	7.4	10.2	14.1	14.7	13.2	15.5	17.2	15.5	15.5	14.6	11.5	10.8	6.9	4.9	1.0	1.0	0.9	0.8	1.5	17.2	9.2	24
14	1.2	2.0	0.7	4.0	7.0	6.6	6.3	7.7	7.5	10.7	10.2	10.6	12.2	11.4	7.5	6.9	7.4	7.1	6.5	7.9	5.9	6.0	6.6	3.0	12.2	6.8	24
15	4.0	1.9	1.7	2.1	3.9	3.1	3.8	8.3	16.6	15.0	16.1	13.5	12.8	13.8	13.6	12.6	13.1	10.0	6.3	1.9	1.0	1.1	0.7	3.3	16.6	7.5	24
16	3.1	5.3	4.8	5.8	5.3	5.0	4.9	Y	Y	Y	10.2	12.6	13.5	15.7	16.8	12.2	15.8	14.9	18.0	13.6	12.3	7.5	5.4	4.7	18.0	9.9	21
17	4.9	5.5	5.7	2.5	1.6	0.9	2.1	4.2	3.0	6.2	10.0	9.0	7.4	8.6	8.6	12.3	12.6	9.3	6.7	4.1	9.9	5.2	3.6	6.0	12.6	6.2	24
18	5.2	11.6	9.4	8.0	14.0	13.5	15.9	14.8	15.2	17.0	19.2	22.5	24.0	17.9	19.6	20.5	19.0	15.1	9.3	9.7	4.2	2.0	2.4	0.9	24.0	13.0	24
19	3.0	1.0	1.4	0.1	0.5	0.8	3.0	4.0	4.1	1.7	1.3	7.3	8.4	4.3	7.8	2.9	2.9	4.3	5.6	2.0	2.1	5.7	4.4	1.9	8.4	3.4	24
20	0.6	1.0	0.6	0.6	1.0	1.2	0.9	0.6	5.4	7.0	10.5	13.4	13.7	14.7	12.6	15.4	15.7	13.9	11.7	7.8	8.7	10.0	9.4	6.6	15.7	7.6	24
21	4.5	2.1	0.5	0.9	1.3	1.4	6.8	7.1	5.1	6.5	5.7	9.5	8.3	7.6	7.6	8.3	6.4	4.4	2.8	1.5	5.1	5.8	4.8	3.8	9.5	4.9	24
22	6.6	6.1	5.6	7.1	8.0	5.8	6.9	10.0	8.5	9.4	12.1	13.3	15.2	16.8	15.5	15.9	19.7	16.2	12.9	13.1	14.4	14.9	12.8	13.2	19.7	11.7	24
23	13.3	13.7	12.3	12.1	13.3	11.6	9.9	8.4	9.2	10.8	10.9	11.9	10.3	7.6	10.2	9.0	10.0	10.1	8.5	8.8	8.0	7.6	8.2	6.9	13.7	10.1	24
24	8.3	6.0	5.9	5.0	5.8	10.1	11.8	12.3	12.3	11.6	12.5	12.2	9.9	10.2	8.8	11.6	14.2	14.4	12.3	6.7	5.9	4.7	5.2	4.5	14.4	9.3	24
25	4.5	3.6	4.5	7.3	7.5	6.3	9.5	9.5	14.3	12.6	15.7	16.2	14.7	15.5	15.2	13.6	10.8	10.3	8.3	7.9	7.1	2.9	2.1	2.9	16.2	9.3	24
26	2.4	3.3	3.1	3.2	3.5	3.6	5.3	6.8	7.7	9.3	10.5	9.4	9.0	7.0	3.9	3.8	3.1	2.9	4.0	3.4	1.9	3.7	1.4	1.7	10.5	4.7	24
27	0.5	1.1	0.8	0.4	2.4	2.2	4.8	7.2	8.3	6.1	8.3	10.1	9.6	9.4	11.5	11.8	13.5	10.6	8.7	1.9	1.4	1.4	1.3	0.7	13.5	5.6	24
28	0.5	0.2	0.3	1.1	1.6	2.0	2.5	4.5	6.1	6.8	12.7	14.3	9.6	11.2	9.9	10.0	8.8	7.8	6.6	5.7	6.9	8.4	11.0	11.7	14.3	6.7	24
29	11.3	2.0	1.1	1.0	5.6	5.1	13.0	15.6	13.6	16.7	13.0	15.2	14.6	13.3	12.2	12.4	16.2	15.6	12.9	7.3	2.4	1.4	1.4	3.1	16.7	9.4	24
30	5.0	6.8	4.7	5.9	6.1	6.2	8.4	7.7	8.7	11.5	13.5	15.4	17.1	11.7	18.3	16.3	15.9	19.4	16.7	11.3	5.4	7.0	7.6	5.0	19.4	10.5	24
HOURLY MAX	13.3	13.7	12.3	12.1	14.0	13.5	15.9	15.6	16.6	17.0	19.2	22.5	24.0	17.9	19.6	20.5	19.7	19.4	18.9	15.9	14.9	14.9	12.8	13.2			
HOURLY AVG	3.9	3.6	3.1	3.5	4.3	4.2	5.4	6.6	8.0	8.8	9.7	10.7	10.7	10.6	10.7	10.7	10.8	9.6	8.3	6.3	5.4	4.8	4.4	4.1			

STATUS FLAG CODES

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

LAST CALIBRATION:	April 1, 2015
DECLINATION:	MAGNETIC DECLINATION 19 DEGREE EAST

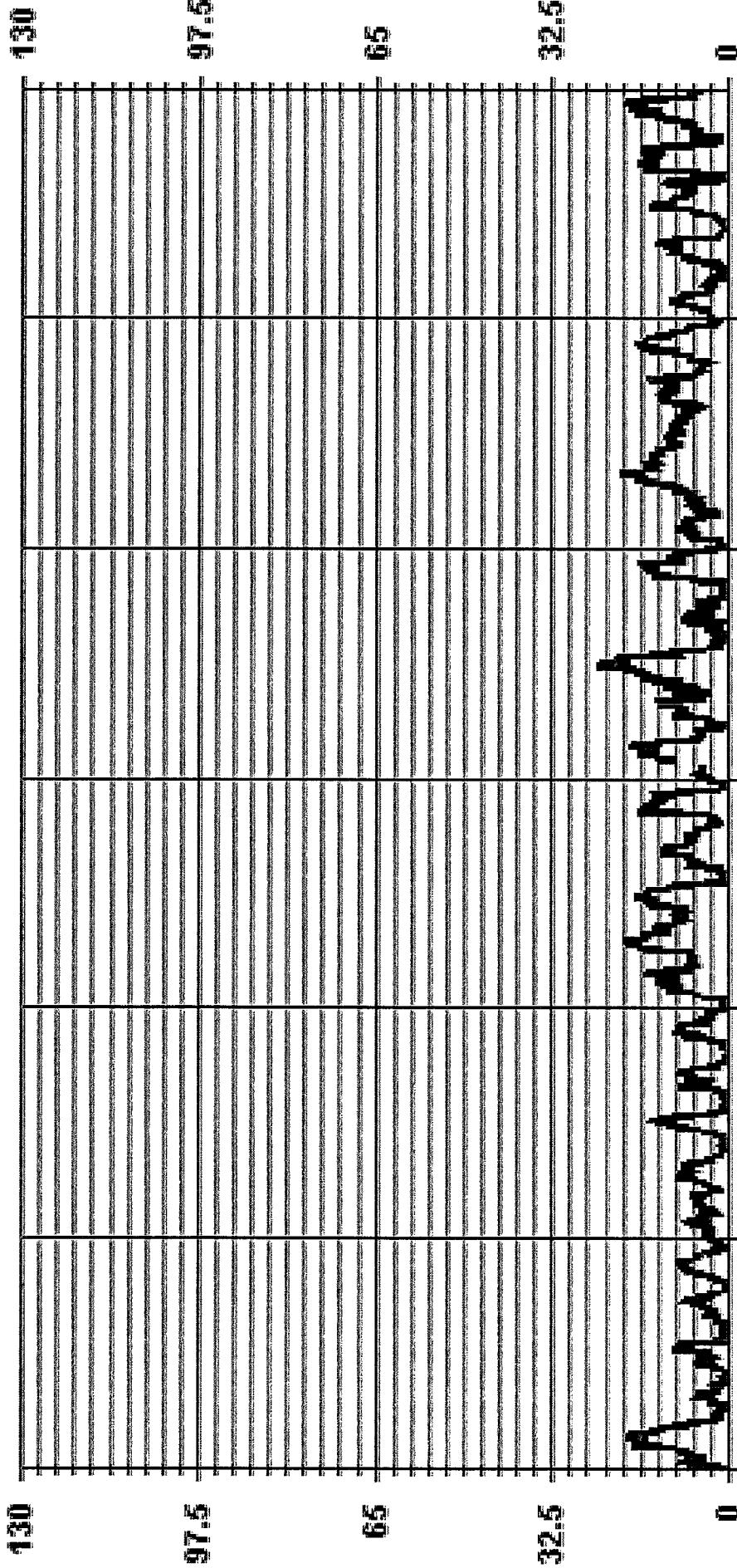
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	717
MAXIMUM 1-HR AVERAGE:	24.0 KPH @ HOUR(S) 12 ON DAY(S) 18
MAXIMUM 24-HR AVERAGE:	13.0 KPH ON DAY(S) 18
	VAR-VARIOUS
MONTHLY CALIBRATION TIME:	0 HRS
OPERATIONAL TIME:	717 HRS
AMD OPERATION UPTIME:	99.6 %
STANDARD DEVIATION:	4.96
MONTHLY AVERAGE:	7.0 KPH

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA WSP KPH



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Site - APRIL 2015

JOB # 2833-2015-04-01- C

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	4.7	5.1	7.4	12.0	12.9	10.2	9.2	13.8	12.0	12.1	12.8	15.1	18.4	25.3	22.1	24.8	21.1	25.8	26.9	25.1	21.8	20.0	18.7	16.9	26.9	16.4	24
2	13.0	10.8	5.6	5.0	3.0	6.8	5.5	5.2	5.7	5.1	4.5	7.2	7.4	5.8	9.2	8.5	9.4	6.3	5.2	3.5	4.4	4.9	3.3	3.1	13.0	6.2	24
3	3.5	2.7	2.4	4.7	5.3	4.0	4.8	3.8	8.1	9.8	9.5	8.2	7.1	10.3	11.1	15.5	17.0	15.9	16.2	8.9	4.7	1.8	1.5	2.6	17.0	7.5	24
4	1.9	2.2	1.7	1.7	2.0	2.3	4.8	3.2	3.9	7.5	8.4	11.4	9.4	12.2	13.4	15.9	11.1	14.2	10.0	7.7	5.2	3.9	0.5	0.4	15.9	6.5	24
5	1.7	1.7	1.1	3.3	4.4	5.8	10.5	11.1	11.8	13.6	11.6	12.9	16.5	15.3	13.6	10.9	8.4	9.2	6.0	4.3	2.3	3.0	3.7	6.5	16.5	7.9	24
6	5.7	6.8	7.1	7.0	10.1	7.1	11.3	10.0	10.8	12.5	10.7	9.7	10.1	14.0	12.1	11.7	12.0	8.8	11.0	9.9	8.2	7.6	8.9	7.4	14.0	9.6	24
7	9.0	7.5	3.3	3.7	5.1	5.4	9.2	9.2	13.5	16.3	14.6	16.3	12.8	14.2	12.3	10.7	10.8	8.1	8.5	5.1	3.3	2.8	2.7	6.2	16.3	8.8	24
8	2.1	3.4	2.0	1.9	2.8	3.3	3.5	4.5	6.6	9.7	12.8	16.1	14.9	17.4	20.4	21.0	18.2	13.1	10.3	3.9	0.9	2.3	8.8	5.2	21.0	8.5	24
9	2.9	2.9	2.3	2.1	2.7	1.9	3.3	12.2	13.4	12.6	10.2	10.1	12.8	16.7	15.0	16.4	12.4	12.4	9.5	2.9	2.9	2.2	2.3	0.4	16.7	7.6	24
10	0.4	1.8	0.5	1.4	2.4	2.5	2.0	3.1	5.9	10.9	13.3	14.9	17.0	20.2	22.1	15.7	20.5	13.5	8.2	10.1	9.0	9.3	7.0	5.6	22.1	9.1	24
11	6.6	3.9	2.7	3.8	3.2	1.4	3.3	10.0	11.4	11.9	13.5	18.5	18.8	18.8	22.1	19.5	21.1	24.5	22.1	23.2	19.2	10.6	10.0	10.1	24.5	12.9	24
12	9.1	9.3	9.9	9.4	10.5	9.3	11.3	18.6	24.9	24.3	26.6	27.4	32.2	25.3	24.6	24.4	19.5	18.5	22.5	19.8	17.1	14.1	15.9	12.0	32.2	18.2	24
13	14.1	11.5	12.1	13.9	12.5	11.1	17.6	20.7	25.7	21.0	22.6	28.4	21.8	23.5	25.3	20.8	19.5	15.5	12.7	3.5	2.8	2.3	2.5	2.9	28.4	15.2	24
14	2.6	3.7	2.8	8.5	10.4	11.8	10.7	12.1	12.4	18.8	18.9	17.4	20.9	20.2	16.7	11.6	13.3	13.6	10.9	13.3	9.8	9.6	11.5	8.6	20.9	12.1	24
15	7.2	4.7	3.1	6.2	5.9	5.3	9.8	14.9	24.0	22.2	23.9	20.1	21.7	20.2	20.6	20.2	19.6	16.5	13.9	4.1	2.7	3.3	2.9	8.5	24.0	12.6	24
16	6.0	9.0	7.1	8.7	10.0	7.4	9.4	Y	Y	Y	17.2	23.1	22.0	26.2	32.4	24.9	25.2	29.3	39.7	25.9	19.6	11.3	7.8	7.3	39.7	17.6	21
17	7.3	7.0	8.3	6.5	3.8	2.4	5.7	10.3	7.7	11.0	21.1	19.3	18.3	18.2	22.1	18.5	20.7	16.4	10.3	18.7	24.3	15.7	8.6	13.1	24.3	13.1	24
18	9.9	17.5	15.5	17.6	25.9	22.6	23.7	25.0	22.2	29.0	30.7	32.6	36.4	29.2	36.2	32.2	30.9	24.1	22.6	20.0	7.3	5.1	5.4	4.6	36.4	21.9	24
19	5.7	6.6	4.6	2.3	3.6	3.7	5.9	8.0	8.3	7.7	10.9	13.9	19.0	14.8	20.3	11.9	9.9	13.9	10.2	4.0	4.0	7.9	6.1	5.5	20.3	8.7	24
20	4.3	2.8	2.1	1.5	2.9	2.4	5.1	7.5	10.6	12.3	16.5	22.4	22.7	23.5	22.2	22.7	23.7	21.5	18.5	14.5	14.9	17.0	13.3	12.8	23.7	13.2	24
21	7.4	5.4	2.2	1.8	2.1	2.8	10.3	10.6	11.5	12.5	13.1	17.4	17.7	16.6	16.5	19.0	13.5	10.2	9.2	3.5	13.6	8.8	8.0	8.7	19.0	10.1	24
22	9.0	8.8	8.4	9.2	10.4	8.3	11.0	15.7	12.7	14.7	20.7	24.1	25.9	26.6	23.2	24.2	32.3	24.4	18.8	18.1	19.8	22.1	21.1	20.0	32.3	17.9	24
23	22.6	24.9	19.5	17.7	18.1	19.8	15.2	15.2	18.1	17.4	15.6	18.1	14.8	13.1	14.7	18.1	15.7	16.3	15.8	15.4	13.6	13.3	13.0	11.0	24.9	16.5	24
24	12.8	9.7	8.7	8.3	9.8	17.8	16.6	18.5	17.4	16.9	19.5	18.1	17.4	14.9	14.4	16.7	19.6	19.1	19.0	10.8	9.3	6.5	8.0	7.2	19.6	14.0	24
25	6.9	5.5	7.9	12.9	13.2	9.4	12.5	19.1	21.0	20.6	26.0	21.3	22.0	25.5	23.0	22.2	15.3	16.4	12.6	12.0	10.7	5.0	4.9	5.0	26.0	14.6	24
26	5.6	5.0	6.2	4.9	7.3	6.4	8.4	10.2	12.5	14.3	18.6	17.7	16.2	14.6	11.5	14.0	11.1	10.3	8.7	5.7	4.8	5.5	4.9	4.6	18.6	9.5	24
27	4.1	2.6	4.9	5.0	4.3	4.1	9.8	11.7	13.8	16.2	17.2	20.9	23.1	16.6	24.4	21.5	23.4	19.9	14.8	3.9	3.6	3.9	3.5	1.9	24.4	11.5	24
28	2.0	1.6	2.3	2.3	2.8	4.8	4.6	9.2	9.9	11.2	22.3	23.6	21.6	32.5	17.6	20.4	15.6	15.2	11.3	9.9	12.3	15.1	16.0	14.9	32.5	12.5	24
29	15.7	17.5	5.1	15.0	8.5	10.9	21.0	24.0	21.5	25.0	19.6	23.2	21.3	21.3	21.4	23.0	25.6	23.0	20.7	12.6	5.9	3.6	2.9	6.0	25.6	16.4	24
30	6.1	10.8	6.3	8.3	11.3	8.6	14.9	12.4	15.3	22.2	26.3	25.8	32.6	30.5	27.6	26.1	26.2	26.5	30.5	22.4	11.0	15.6	12.0	8.5	32.6	18.2	24
HOURLY MAX	22.6	24.9	19.5	17.7	25.9	22.6	23.7	25.0	25.7	29.0	30.7	32.6	36.4	32.5	36.2	32.2	32.3	29.3	39.7	25.9	24.3	22.1	21.1	20.0			
HOURLY AVG	7.0	7.1	5.8	6.9	7.6	7.3	9.7	12.1	13.5	15.1	17.0	18.5	19.1	19.5	19.6	18.8	18.1	16.7	15.2	11.4	9.6	8.5	7.9	7.6			

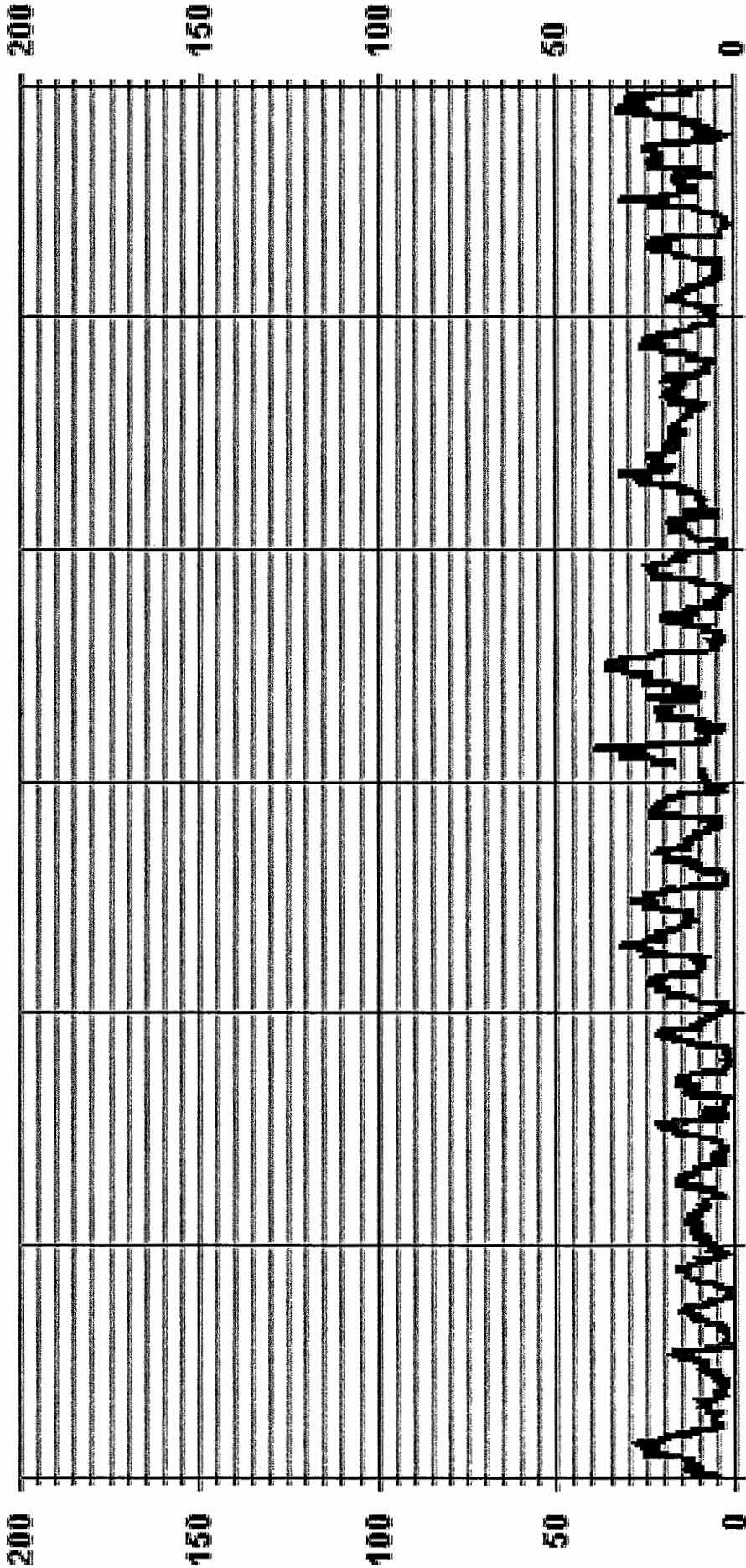
STATUS FLAG CODES

C	CALIBRATION	Q1	QUALITY ASSURANCE
Y	MAINTENANCE	R	RECOVERY
S	DAILY ZERO/SPAN CHECK	X	MACHINE MALFUNCTION
P	POWER FAILURE	O	OPERATOR ERROR
G	OUT FOR REPAIR	K	COLLECTION ERROR

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	39.7	KPH	@ HOUR(S)	18	ON DAY(S)	16
					VAR-VARIOUS	
OPERATIONAL TIME:				717	HRS	

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA WSMAX KPH

LICA
WSP / WD Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	1.11	.97	5.99	4.04	3.48	3.34	5.43	2.37	2.51	1.53	3.06	5.29	1.81	1.25	1.11	.97	44.35
< 12.0	1.11	3.62	3.20	1.95	3.20	1.81	4.60	.41	1.11	1.39	.83	5.16	3.62	1.95	.13	.00	34.17
< 20.0	.97	.83	1.67	.41	1.53	1.25	.27	.27	.00	.00	.00	1.11	2.92	4.32	1.25	1.53	18.41
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.27	.13	.41
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.20	5.43	10.87	6.41	8.22	6.41	10.32	3.06	3.62	2.92	3.90	11.57	8.36	7.53	2.78	2.64	

Calm : 2.64 %

Total # Operational Hours : 717

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	8	7	43	29	25	24	39	17	18	11	22	38	13	9	8	7	318
< 12.0	8	26	23	14	23	13	33	3	8	10	6	37	26	14	1		245
< 20.0	7	6	12	3	11	9	2	2				8	21	31	9	11	132
< 29.0															2	1	3
< 39.0																	
>= 39.0																	
Totals	23	39	78	46	59	46	74	22	26	21	28	83	60	54	20	19	

Calm : 2.64 %

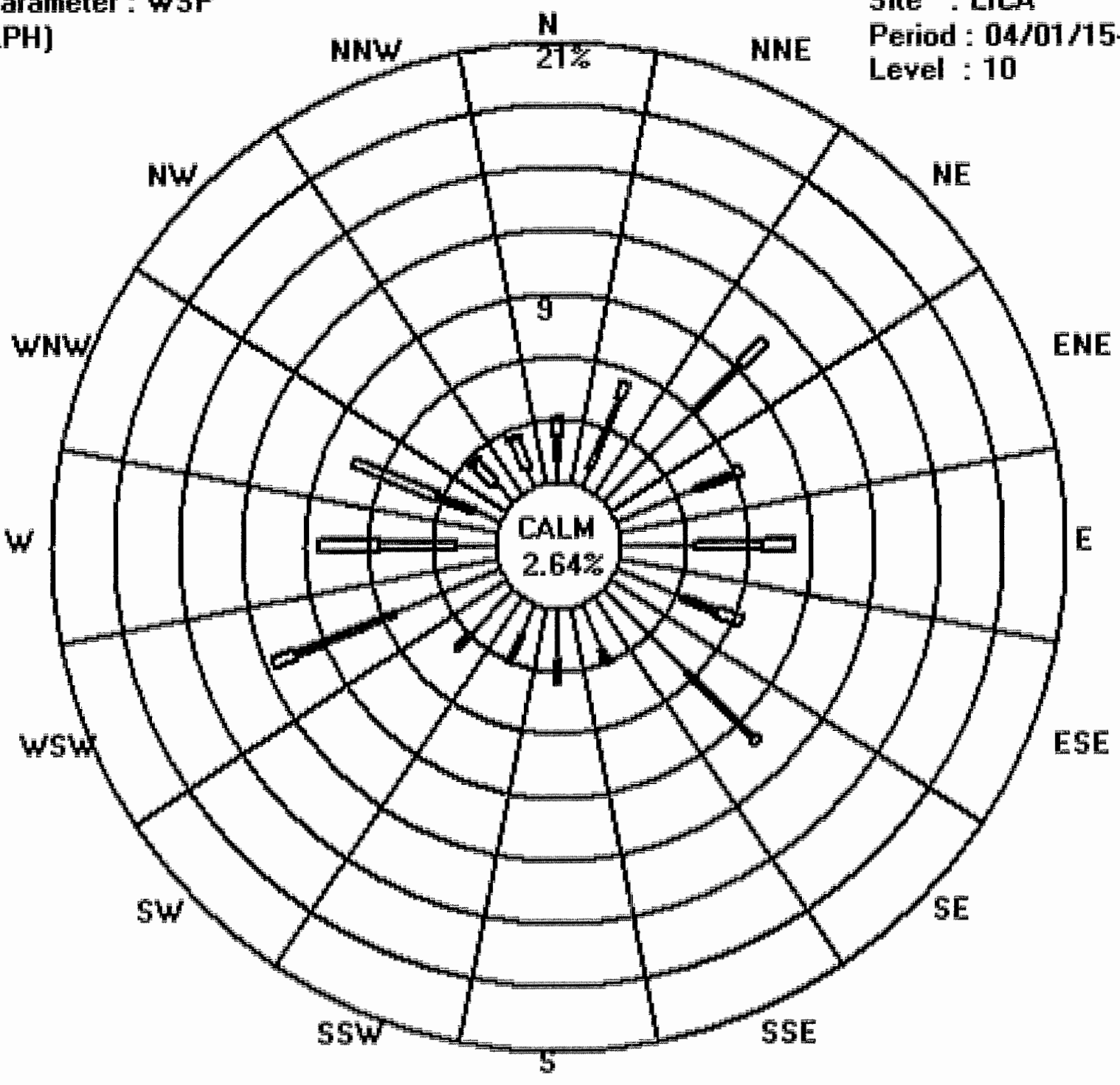
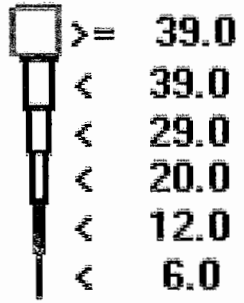
Total # Operational Hours : 717

Logger : 01 Parameter : WSP

Site : LICA

Class Limits (KPH)

Period : 04/01/15-04/30/15



WIND DIRECTION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Site - APRIL 2015

JOB # 2833-2015-04-01- C

WIND DIRECTION (WD) hourly averages

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR AVG	RDGS.
HOURLY START	HOURLY END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	QUADRANT		
1	S	W	WNW	WSW	W	W	WNW	N	NNE	NNE	NNE	NNE	NNE	NNE	NNE	N	N	N	N	N	N	N	N	N	N	N	24
2	N	N	NW	NW	NW	NW	NW	N	NE	NNE	N	E	E	E	NE	NNE	NE	NE	NE	NNE	N	NE	W	SSW	NNE	NNE	24
3	WSW	NE	NNW	NW	NE	SE	SE	SE	SE	SE	SE	S	WSW	N	NE	NNE	NNE	NNE	NNE	NE	NNW	ENE	ENE	ENE	ENE	ENE	24
4	NE	NE	ENE	NNE	ENE	ENE	ENE	NE	E	SE	SE	WSW	WSW	W	NW	N	NE	NE	NE	NNE	NNE	NNW	N	NNE	NNE	NNE	24
5	WNW	WNW	ENE	NE	NE	ENE	NE	NNE	NNE	NNE	NE	ENE	NNE	NNE	NE	NE	NE	ENE	E	ENE	NE	ENE	E	NE	NE	NE	24
6	ESE	ESE	E	ESE	SE	ESE	SE	SE	ESE	SE	ESE	ESE	ESE	SE	ESE	SE	SSE	SSE	SSE	SE	SE	SE	SE	SE	SE	SE	24
7	SE	SE	E	E	E	E	ESE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	24
8	SW	WSW	SSW	SE	SSE	SE	SE	SW	SW	WSW	WSW	WSW	WSW	W	WNW	WNW	WNW	WNW	WNW	WNW	WSW	SSW	SW	NE	W	W	24
9	SSW	ENE	E	ESE	E	ESE	ENE	SE	SE	SE	SE	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	S	S	S	S	S	SE	SSW	24
10	S	WSW	NE	E	E	ESE	ENE	SE	S	SSE	SSW	S	SSW	SSW	SSW	SSW	SSW	SSW	S	SE	S	SW	SE	SSE	S	SE	24
11	S	SW	S	SSW	SSW	SW	WSW	WSW	WSW	W	W	WNW	WNW	NW	WNW	W	W	W	WNW	WNW	WNW	W	WSW	W	WSW	W	24
12	W	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WNW	W	W	W	W	W	W	WNW	WNW	W	W	W	W	WSW	WSW	WSW	W	24
13	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	WNW	W	W	W	WNW	WNW	WNW	NW	NW	ESE	SE	ESE	E	ENE	W	24	
14	ENE	ENE	NE	ENE	E	E	E	E	E	E	ESE	ESE	E	E	ENE	NNE	N	N	NNE	N	N	N	NNE	NNW	ENE	ENE	24
15	WNW	WNW	SW	SW	WSW	WSW	WSW	WNW	NW	NW	WNW	WNW	W	WNW	WNW	W	WNW	W	SSW	S	S	WSW	W	WNW	W	WNW	24
16	WSW	WSW	WSW	WSW	WSW	WSW	WSW	Y	Y	Y	W	WSW	WSW	WSW	W	W	WSW	WNW	NW	WNW	WNW	W	W	WNW	W	21	
17	WSW	WSW	WSW	SW	S	S	WSW	SW	WSW	SE	SE	SSE	SSW	SE	SE	SE	SE	SE	ESE	SSW	W	NNW	NNW	W	S	24	
18	W	W	W	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NNW	NNW	NNW	NNW	NNW	NE	NNE	WNW	SW	WSW	WSW	NW	24	
19	WSW	WSW	SW	SSW	S	SW	WSW	WSW	SW	W	S	ENE	NNE	N	NNE	NE	WNW	NNE	E	ESE	SE	SE	SE	SE	NE	24	
20	S	E	ENE	SSE	SW	SSW	NW	SW	W	W	WNW	WNW	NW	NNW	NNE	NE	NE	NE	E	ESE	SE	SE	SE	SE	NNE	24	
21	SE	SE	ESE	ESE	E	ESE	SE	SE	SE	SE	SSE	SW	SW	SW	WSW	SW	W	SW	SSW	NE	NE	NE	NE	S	24		
22	ENE	ENE	ENE	ENE	ENE	NE	ENE	E	E	E	E	ESE	ESE	E	ESE	ESE	E	E	E	E	E	E	E	E	E	E	24
23	E	E	ESE	E	E	E	E	E	E	E	E	ESE	ESE	ESE	ESE	E	E	ESE	E	E	E	ENE	ENE	ENE	ENE	E	24
24	ENE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	ENE	NE	NE	NE	ENE	E	E	E	ENE	NE	NE	NE	24
25	NE	NE	NE	NE	NE	NE	NE	NE	ENE	ENE	NE	NE	NE	NE	NNE	NNE	NNE	NNE	NNE	NE	ENE	NE	NE	NE	NE	NE	24
26	ENE	NE	NNE	NE	NE	ENE	NE	NE	NE	NNE	NNE	NE	NE	ENE	ENE	E	S	S	SSE	SSE	SE	SSE	SW	ENE	ENE	24	
27	SE	E	ESE	ENE	ENE	ENE	SE	SE	SE	S	S	SSW	S	SSW	WSW	SW	WSW	WSW	W	SSE	SE	SSE	ESE	S	SSW	24	
28	ENE	NE	SSE	E	E	ENE	ENE	ESE	SE	ESE	SSE	SSE	S	S	SSW	SSW	S	S	SSE	SE	SE	SE	SE	SE	SE	24	
29	SE	WSW	NE	NNE	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	WNW	WNW	W	WNW	WNW	W	SW	SSW	SW	NW	24	
30	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	24

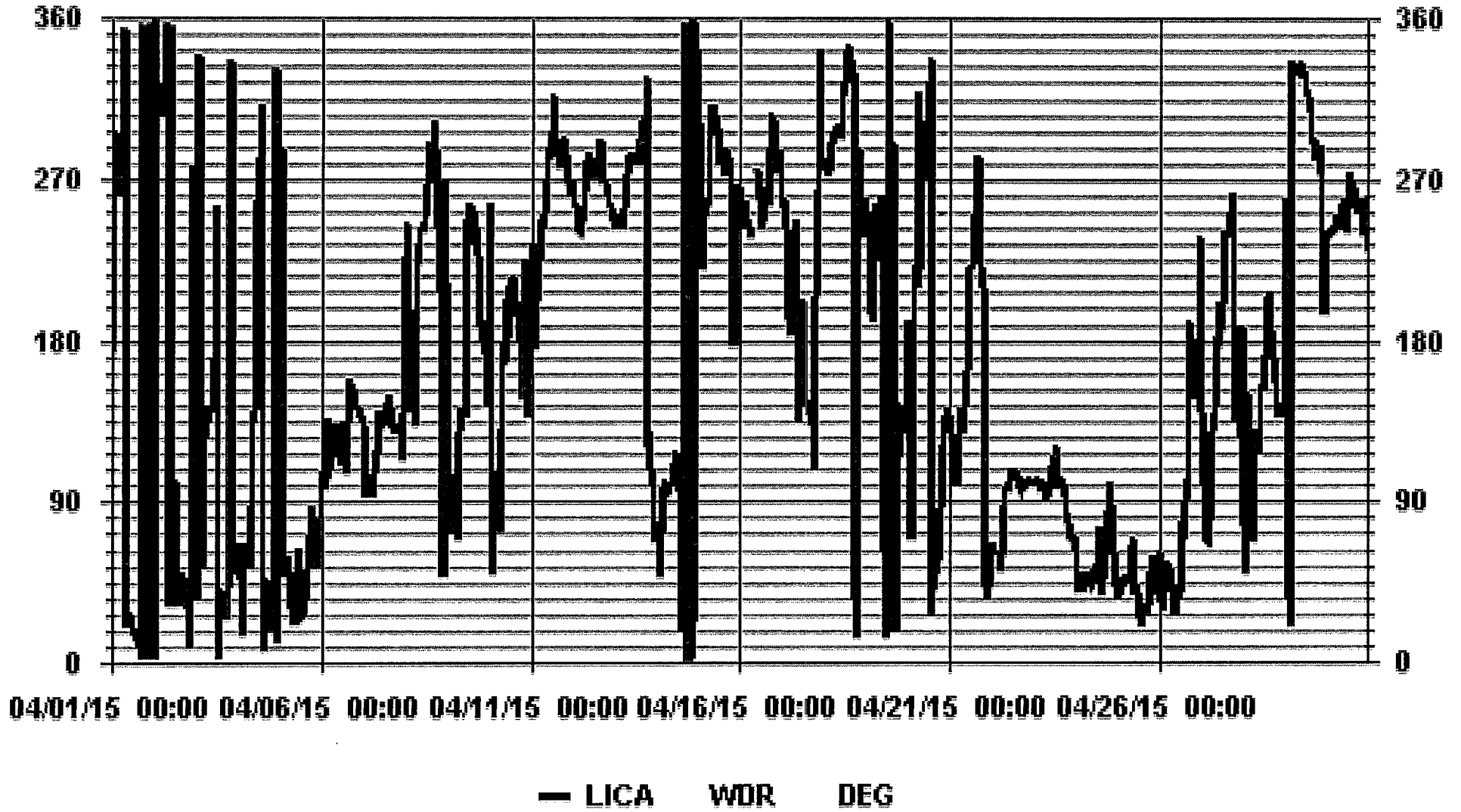
STATUS FLAG CODES

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

LAST CALIBRATION: April 1, 2015
DECLINATION: MAGNETIC DECLINATION 19 DEGREE EAST

MONTHLY CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 717 HRS
STANDARD DEVIATION: 98.98 AMD OPERATION UPTIME: 99.6 %
MONTHLY AVERAGE: NW

01 Hour Averages



STANDARD DEVIATION WIND DIRECTION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Site - APRIL 2015

JOB # 2833-2015-04-01- C

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	
DAY																										
1		52	52	20	21	19	20	23	17	18	21	21	21	20	18	19	19	18	18	19	19	19	17	18	16	
2		19	17	15	20	33	18	26	41	44	62	34	39	31	29	22	22	26	21	21	17	13	29	39	42	
3		23	60	36	61	41	15	9	18	12	18	22	39	31	30	22	20	22	20	21	22	37	31	14	20	
4		9	11	24	16	8	12	13	20	33	18	59	46	66	47	40	32	20	21	22	20	16	17	50	9	
5		42	46	26	17	15	15	21	21	21	23	22	26	24	27	32	22	22	17	13	34	31	37	27		
6		19	20	22	22	17	25	22	22	25	23	26	38	40	52	55	60	36	32	22	14	14	15	13	15	
7		14	14	12	14	18	16	22	23	24	20	23	21	21	21	18	24	16	21	21	19	14	19	29	25	
8		31	30	22	17	16	41	26	39	37	31	29	24	25	24	22	23	21	19	17	10	21	15	64	63	
9		28	73	39	31	14	14	11	23	18	19	46	40	36	30	35	25	22	20	20	17	23	23	24	22	
10		10	40	25	30	16	10	20	50	44	39	40	46	38	38	35	38	41	42	37	21	40	45	22	34	
11		43	45	22	52	38	21	23	20	22	25	25	24	26	21	21	22	21	27	22	21	20	17	15	16	
12		18	15	16	18	18	20	20	20	22	22	23	22	22	21	23	23	24	20	21	18	18	19	20	20	
13		20	20	20	20	20	19	20	22	21	25	23	24	26	24	23	28	24	29	19	25	12	10	21	17	
14		18	13	56	15	18	22	20	20	22	23	25	26	23	23	22	22	23	23	21	19	19	20	20	22	
15		17	14	25	21	13	17	18	22	17	20	22	25	28	22	26	27	22	24	20	20	27	25	28	13	
16		18	20	15	16	14	15	21	Y	Y	Y	28	24	24	22	22	26	21	21	21	21	18	19	18	18	
17		16	13	12	35	39	46	42	21	52	30	28	37	36	32	43	20	17	19	23	42	21	23	34	36	
18		20	21	19	21	20	21	21	21	20	21	20	16	16	18	19	17	16	16	23	29	26	34	24	51	
19		30	57	46	73	62	33	15	25	27	62	81	35	27	57	36	45	48	31	19	16	21	11	14	42	
20		56	51	31	39	33	21	38	55	29	28	30	25	25	21	26	20	19	18	17	22	15	13	14		
21		15	27	45	35	23	27	12	16	28	31	46	36	37	44	39	41	35	40	28	24	53	17	18	21	
22		17	16	12	12	14	17	16	20	26	25	24	24	23	22	23	22	19	20	17	17	18	18	20	20	
23		21	22	21	20	20	20	21	21	19	21	21	24	23	19	23	22	20	20	21	20	17	18	20		
24		15	17	17	19	18	18	19	20	18	19	20	20	25	23	26	20	18	18	17	19	18	15	21	17	
25		19	21	21	19	18	18	18	18	19	24	20	20	22	21	18	22	20	19	20	18	14	18	14	24	
26		21	20	19	20	23	20	20	22	24	25	28	29	30	39	51	61	70	49	40	23	29	11	36	42	
27		24	36	36	65	15	38	22	19	19	41	41	41	41	39	34	26	24	24	17	28	27	48	51	52	
28		43	61	59	22	13	26	20	26	26	27	30	29	38	38	36	37	38	34	30	22	14	13	12	12	
29		13	69	48	56	17	23	15	18	17	17	18	19	20	25	23	29	19	21	20	20	25	29	26	22	
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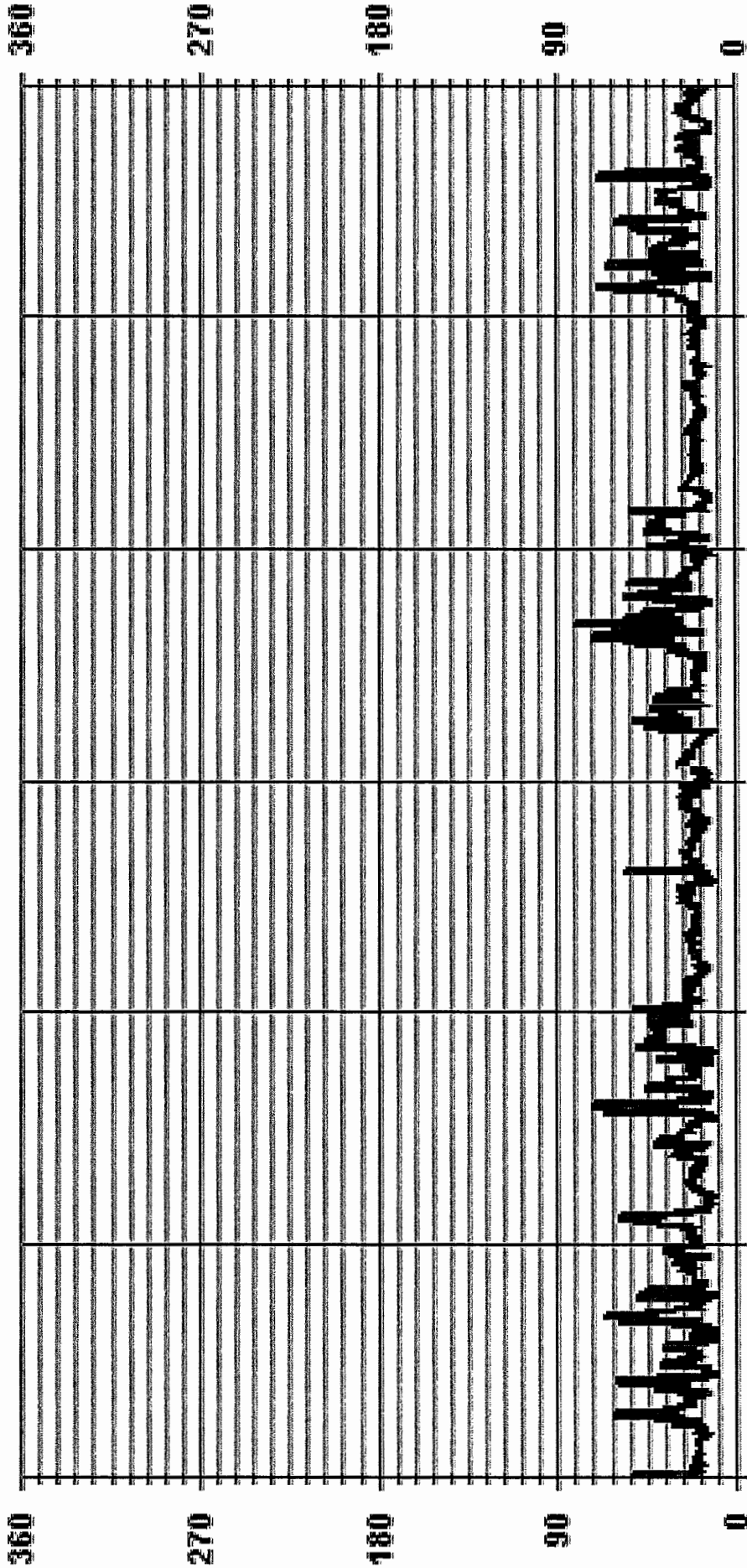
STATUS FLAG CODES

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

LAST CALIBRATION: April 1, 2015

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 717 HRS

01 Hour Averages



— LICA STDWDIR DEG

RELATIVE HUMIDITY



RELATIVE HUMIDITY (RH) hourly averages in %

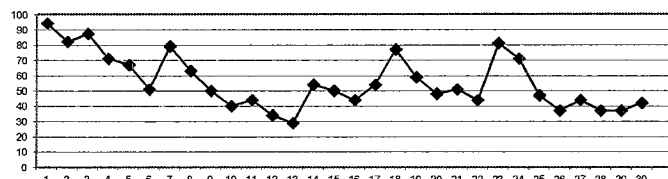
MST

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	DAILY MAX	24-HOUR AVG.	RDGS.
1	88	94	97	97	98	99	99	100	99	98	96	96	94	94	97	100	100	100	100	92	84	82	78	78	100	94.2	24						
2	80	82	86	89	91	89	86	81	77	74	69	75	80	82	86	78	77	75	79	84	86	88	89	91	81.6	24							
3	90	92	93	93	92	92	92	92	91	89	83	77	79	87	85	83	84	83	79	78	83	89	91	91	93	87.0	24						
4	91	89	88	87	87	87	85	77	66	52	45	35	34	35	37	44	65	76	83	84	84	85	90	91	91	70.7	24						
5	90	89	89	89	89	90	87	79	69	61	54	47	45	54	54	51	51	50	48	55	68	69	70	65	90	67.2	24						
6	57	56	54	53	65	67	66	73	65	58	52	43	36	34	35	37	34	36	41	46	50	51	52	55	73	50.7	24						
7	57	60	65	68	66	68	74	85	86	80	81	80	83	77	77	78	86	89	89	89	90	91	92	92	92	79.3	24						
8	92	93	94	95	94	95	93	86	76	69	63	55	47	36	27	24	23	25	29	43	58	68	67	71	95	63.5	24						
9	77	80	81	83	84	86	77	58	47	40	31	26	24	23	23	21	21	23	25	36	47	56	62	67	86	49.9	24						
10	73	77	80	79	81	83	75	56	36	25	19	15	15	14	12	13	13	13	15	21	28	33	37	35	83	39.5	24						
11	40	49	60	60	63	71	67	47	38	33	28	26	24	24	28	36	36	45	48	48	45	51	54	71	43.5	24							
12	49	48	45	50	51	56	53	44	38	34	28	24	22	25	23	22	22	23	24	27	26	30	35	56	34.3	24							
13	40	42	43	43	45	47	41	32	28	25	21	15	11	9	11	11	12	11	12	22	33	43	49	54	54	29.2	24						
14	58	57	61	50	31	32	32	31	29	28	26	26	25	44	66	76	79	80	85	86	87	88	89	89	54.1	24							
15	91	92	93	95	96	93	81	58	40	34	29	24	21	20	21	20	19	21	31	43	53	55	56	96	50.3	24							
16	58	54	50	48	51	56	52	46	39	36	33	31	30	28	27	26	23	29	46	54	53	58	64	67	67	44.1	24						
17	74	76	80	83	87	89	78	73	62	47	33	23	21	20	25	26	25	27	29	38	68	67	68	74	89	53.9	24						
18	79	77	80	80	75	74	75	77	77	76	72	76	74	79	82	68	61	58	70	78	83	88	93	94	94	76.9	24						
19	95	95	94	94	93	92	89	85	71	52	43	42	41	34	38	34	27	28	34	44	56	48	45	51	95	59.4	24						
20	67	74	77	81	84	85	81	64	45	33	26	22	21	21	23	22	25	28	30	34	42	47	53	61	85	47.8	24						
21	68	75	82	84	85	84	81	77	69	58	41	27	28	27	24	22	22	24	34	36	42	42	50	55	85	51.0	24						
22	58	64	70	73	73	73	66	50	45	40	37	33	30	28	26	26	27	28	30	33	35	38	40	41	73	44.3	24						
23	43	46	56	59	61	65	76	87	83	85	91	94	94	93	87	84	86	88	91	93	94	95	95	95	95	80.8	24						
24	97	96	98	98	98	97	96	89	83	77	72	65	60	52	47	44	47	48	48	49	58	63	64	65	98	71.3	24						
25	70	72	73	70	73	74	69	62	47	40	37	35	31	28	27	25	27	30	32	33	33	40	52	57	74	47.4	24						
26	54	55	61	60	56	52	50	38	30	24	23	22	20	19	19	18	18	17	18	25	40	44	52	67	67	36.8	24						
27	71	67	69	77	74	72	58	52	49	40	33	28	27	23	22	20	18	19	20	27	38	40	48	60	77	43.8	24						
28	68	71	76	76	76	75	58	37	30	27	17	17	17	16	15	16	16	17	19	21	25	28	31	33	76	36.8	24						
29	32	38	50	55	54	56	46	38	36	31	30	27	28	30	31	31	31	24	20	24	30	38	46	54	56	36.7	24						
30	60	60	68	71	73	69	61	50	40	30	27	25	26	32	22	21	22	24	29	31	38	43	43	51	73	42.3	24						
HOURLY MAX	97	96	98	98	98	99	99	100	99	98	96	96	94	94	97	100	100	100	100	92	93	94	95	95									
HOURLY AVG	68.9	70.7	73.8	74.7	74.9	75.6	71.5	64.2	56.4	49.9	44.7	41.0	39.6	39.0	39.3	38.8	39.8	40.7	43.4	48.4	54.9	58.1	61.5	64.9									

STATUS FLAG CODES

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

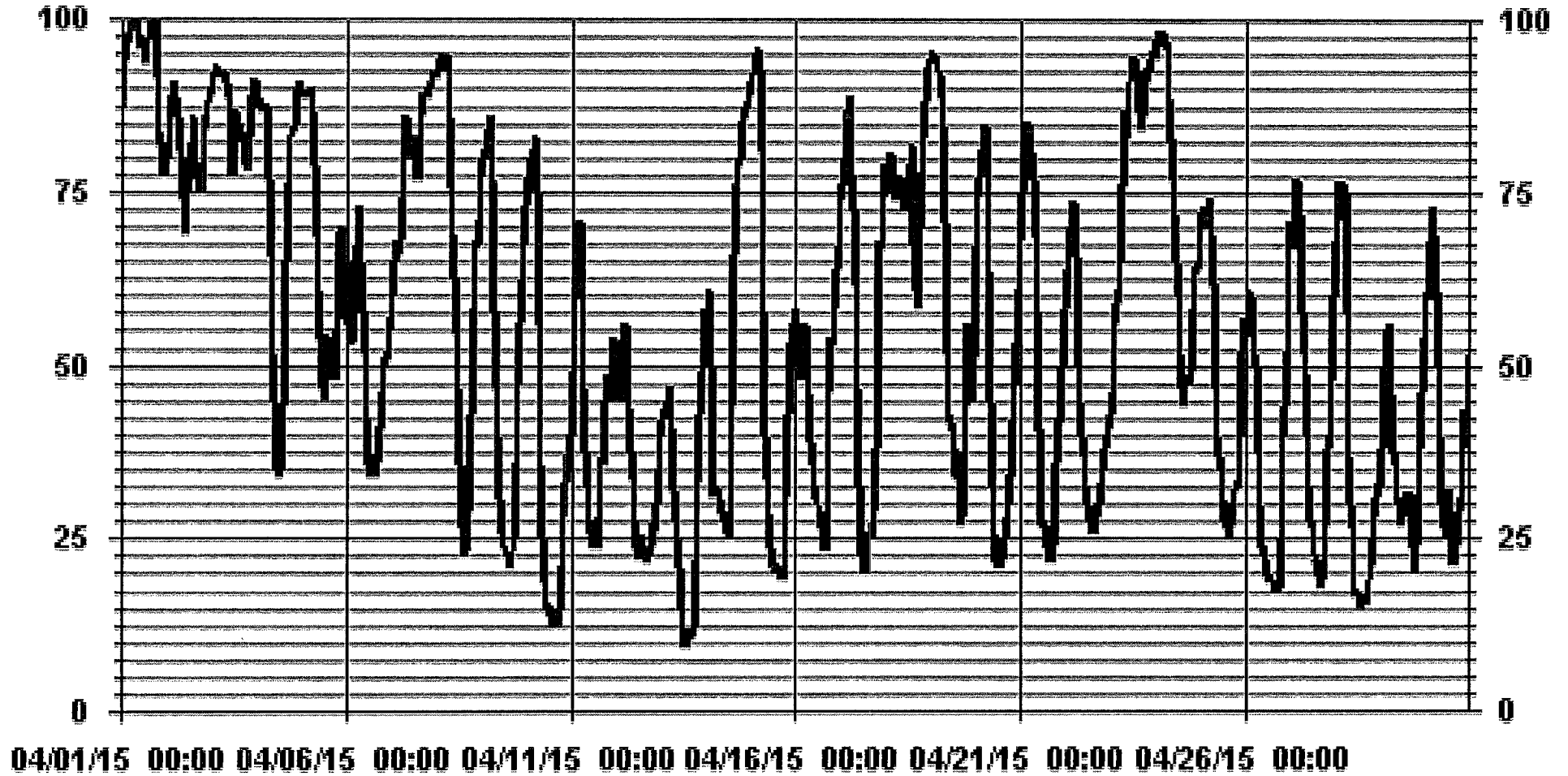
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	100	%	@ HOUR(S)	VAR	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	94.2	%			ON DAY(S)	1
					VAR-VARIOUS	
OPERATIONAL TIME:					720	HRS
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	25.39				56	%
MONTHLY AVERAGE:						

01 Hour Averages



— LICA RH %FS

AMBIENT TEMPERATURE

AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

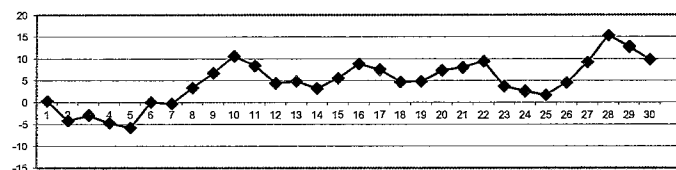
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	3.9	3.6	3.3	1.0	0.4	0.4	0.5	0.5	0.3	0.3	0.6	0.7	1.0	0.6	0.2	-0.4	-0.1	0.1	0.1	-0.3	-1.2	-2.1	-2.9	-3.7	3.9	0.3	24
2	-4.5	-5.2	-6.0	-6.8	-7.0	-6.5	-5.9	-5.5	-5.0	-4.2	-3.5	-3.6	-3.5	-3.1	-3.2	-2.5	-2.6	-2.4	-2.3	-2.5	-2.8	-3.2	-3.3	-3.3	-2.3	-4.1	24
3	-3.3	-4.2	-4.3	-4.3	-4.2	-4.1	-4.0	-3.3	-2.7	-1.9	-0.7	0.3	0.9	0.1	0.5	-0.6	-2.3	-2.5	-2.8	-3.4	-4.1	-5.4	-6.8	-7.6	0.9	-2.9	24
4	-8.6	-9.9	-10.6	-11.7	-12.2	-11.9	-11.1	-8.1	-5.5	-3.3	-1.0	0.7	1.2	2.0	1.9	0.9	-0.4	-1.4	-2.4	-2.9	-3.0	-3.5	-5.1	-6.5	2.0	-4.7	24
5	-7.8	-8.9	-9.4	-10.1	-11.1	-11.1	-11.0	-10.9	-9.7	-8.0	-6.2	-3.8	-2.6	-1.9	-1.1	-0.2	-0.6	-0.7	-1.0	-2.4	-4.1	-5.4	-5.6	-4.5	-0.2	-5.8	24
6	-4.3	-5.2	-5.8	-5.5	-6.1	-6.0	-5.4	-4.6	-3.3	-1.4	0.9	3.1	4.6	5.9	6.0	5.4	5.6	5.3	4.3	2.9	1.9	1.0	0.5	-0.1	6.0	0.0	24
7	-0.4	-0.8	-1.4	-1.7	-1.1	-1.2	-1.2	-1.1	-0.4	0.1	0.5	0.7	0.6	1.1	1.0	0.9	0.3	0.3	0.1	0.0	-0.3	-0.8	-0.7	-0.9	1.1	-0.3	24
8	-1.0	-1.3	-2.4	-3.6	-4.4	-4.6	-3.4	-1.4	1.2	3.6	6.0	7.9	9.7	11.2	11.4	11.9	11.6	11.1	9.8	6.0	2.2	-0.1	-0.3	-1.1	11.9	3.3	24
9	-2.1	-2.7	-3.1	-3.5	-3.8	-4.2	-2.0	3.1	5.5	8.1	11.0	13.4	14.7	15.8	16.8	17.2	17.3	17.0	15.6	10.4	6.7	4.5	2.9	1.6	17.3	6.7	24
10	0.3	-0.7	-1.4	-1.8	-2.1	-2.3	-0.3	5.6	10.4	14.2	16.4	18.1	19.1	19.7	20.2	19.6	19.3	18.8	17.5	15.2	14.7	12.9	10.5	10.2	20.2	10.6	24
11	8.7	5.8	2.5	2.2	1.8	0.4	1.6	6.5	9.3	11.6	14.2	15.3	16.1	15.5	15.5	14.2	12.5	11.9	10.8	8.3	6.6	4.9	3.2	2.7	16.1	8.4	24
12	2.7	1.6	1.0	0.0	-0.6	-1.2	0.3	3.0	4.9	6.0	7.2	7.9	8.3	7.3	7.1	7.7	7.7	7.8	7.2	6.2	4.9	4.1	3.2	2.1	8.3	4.4	24
13	1.3	0.7	0.3	0.3	-0.2	-0.5	1.1	3.7	5.3	7.1	8.2	9.2	10.1	10.5	10.8	11.1	11.0	11.2	10.3	5.8	1.8	-0.5	-1.8	-2.4	11.2	4.8	24
14	-3.0	-2.9	-3.0	-1.8	0.9	0.9	1.6	2.6	4.1	5.4	6.8	8.1	8.6	8.5	7.1	5.5	4.7	4.7	4.5	3.5	2.9	2.7	2.6	2.2	8.6	3.2	24
15	1.4	1.0	-0.3	-0.9	-0.8	-0.9	0.4	3.9	6.2	7.9	8.8	10.1	10.7	11.1	11.5	11.9	12.2	12.5	11.9	7.9	4.0	1.7	0.9	0.3	12.5	5.6	24
16	0.6	1.6	3.0	3.9	3.3	2.4	4.1	6.8	9.8	10.7	11.9	12.6	13.6	14.5	15.1	15.8	16.6	14.8	12.0	10.0	9.1	8.0	6.3	5.0	16.6	8.8	24
17	2.7	1.8	0.4	-0.8	-2.1	-2.6	1.1	3.8	6.9	9.7	11.3	12.6	12.7	12.9	13.4	13.5	13.3	12.7	12.0	9.8	8.5	7.4	6.3	13.5	7.5	24	
18	5.4	5.1	4.1	4.5	5.1	4.6	4.4	4.3	4.7	4.8	5.6	5.5	6.0	5.7	7.4	7.7	8.1	5.9	4.5	3.6	1.9	0.1	-1.0	8.1	4.7	24	
19	-1.8	-2.0	-2.8	-3.4	-3.9	-4.1	-1.4	1.7	4.7	8.4	10.0	9.5	9.3	10.8	10.1	10.5	12.0	11.5	9.8	7.0	3.8	5.1	5.3	4.4	12.0	4.8	24
20	1.9	-0.5	-1.6	-2.4	-3.0	-3.2	-2.0	2.3	6.7	11.0	14.3	15.6	16.2	16.5	16.0	15.3	13.8	12.3	11.5	10.0	8.4	6.9	5.5	4.1	16.5	7.3	24
21	2.7	0.9	-1.1	-2.0	-2.5	0.2	2.2	4.2	6.6	10.1	12.3	13.9	15.6	17.0	17.5	18.1	18.1	17.2	13.0	9.9	8.7	6.6	5.3	18.1	8.0	24	
22	4.7	3.3	2.0	1.2	0.8	0.4	1.8	4.5	6.7	9.3	11.2	13.4	14.8	16.0	17.0	16.8	16.4	15.7	15.0	13.3	11.8	10.4	9.5	8.7	17.0	9.4	24
23	7.8	7.0	5.7	4.1	3.1	2.2	1.3	0.8	1.2	2.0	1.9	2.0	2.6	3.3	4.2	5.9	6.1	5.3	5.0	4.2	3.5	3.3	3.1	3.0	7.8	3.7	24
24	3.0	2.7	2.3	2.4	2.5	2.3	1.1	0.2	-0.2	0.1	1.0	2.3	3.8	5.3	5.9	6.3	5.5	4.9	4.4	3.7	2.5	1.4	0.6	-0.5	6.3	2.6	24
25	-1.4	-1.8	-1.8	-1.8	-2.7	-3.1	-2.0	-0.6	0.6	2.0	2.6	3.2	4.3	4.9	5.4	5.8	5.5	5.4	4.8	4.1	3.4	2.3	0.5	0.0	5.8	1.7	24
26	0.0	-0.7	-1.3	-1.0	-0.8	-0.5	0.6	2.4	3.9	5.2	6.2	7.6	8.1	9.0	10.0	10.7	11.2	11.8	11.2	8.7	4.3	2.2	0.9	-0.6	11.8	4.5	24
27	-1.5	-2.1	-2.6	-3.3	-3.4	-2.3	2.8	5.8	8.0	11.4	13.5	14.9	16.1	17.6	18.3	19.1	19.3	19.1	17.9	15.0	11.8	10.4	8.2	5.8	19.3	9.2	24
28	4.3	2.9	1.8	1.0	0.6	1.2	6.9	12.6	15.3	17.7	21.7	22.4	22.9	24.0	24.2	24.1	24.4	23.9	23.3	21.5	19.2	18.2	17.1	16.3	24.4	15.3	24
29	16.0	14.1	10.5	8.8	9.5	10.1	12.0	12.6	12.9	13.9	14.4	15.2	15.9	16.6	17.1	17.5	16.3	15.1	13.6	12.5	10.9	8.4	6.6	5.4	17.5	12.7	24
30	4.9	4.8	3.1	2.6	2.6	3.3	5.4	8.0	10.4	13.0	14.0	14.9	14.8	14.2	15.2	15.7	15.3	14.7	13.5	12.3	10.5	8.8	7.9	5.8	15.7	9.8	24
HOURLY MAX	16.0	14.1	10.5	8.8	9.5	10.1	12.0	12.6	15.3	17.7	21.7	22.4	22.9	24.0	24.2	24.1	24.4	23.9	23.3	21.5	19.2	18.2	17.1	16.3			
HOURLY AVG	1.1	0.3	-0.6	-1.1	-1.4	-1.5	-0.1	2.0	3.9	5.7	7.3	8.4	9.2	9.7	10.0	10.1	9.9	9.6	8.7	6.9	5.1	3.8	2.8	1.9			

STATUS FLAG CODES

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

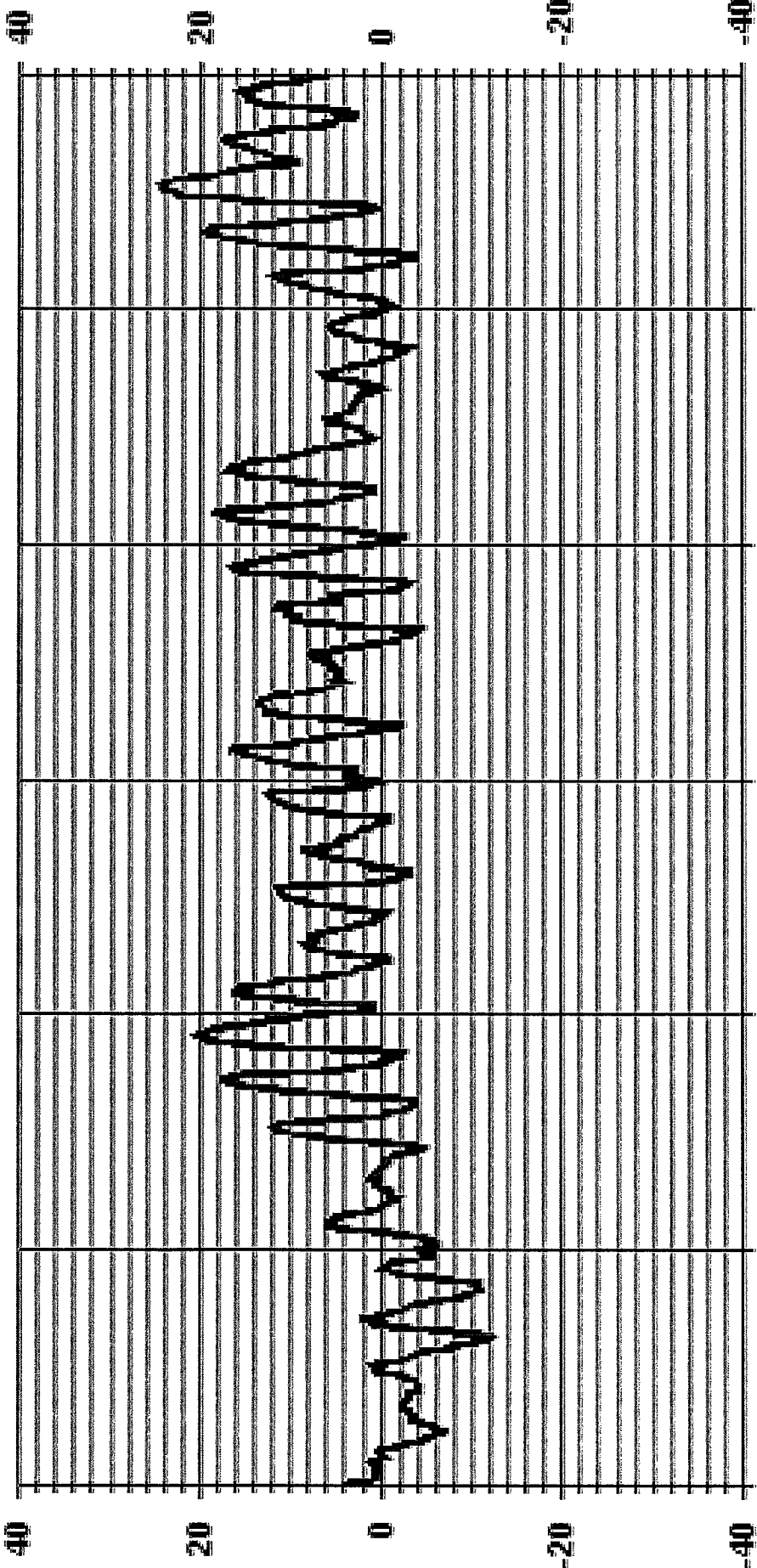
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-12.2 °C	@ HOUR(S)	4	ON DAY(S)	4
MAXIMUM 1-HR AVERAGE:	24.4 °C	@ HOUR(S)	16	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	15.3 °C			ON DAY(S)	28
				VAR-VARIOUS	
OPERATIONAL TIME:				720	HRS
AMD OPERATION UPTIME:				100.0	%
STANDARD DEVIATION:	7.10	MONTHLY AVERAGE:		4.7	°C

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA TPX DGC

APPENDIX II
NON-CONTINUOUS MONITORING DATA RESULTS

VOC RESULTS

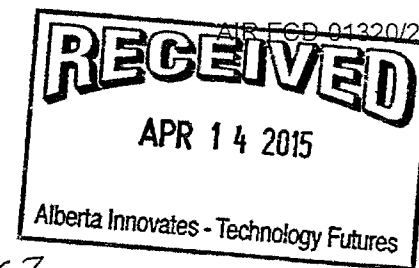
Sample ID: 15040066-001

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/April 6, 2015

Maxxam

VOC Sample Collection Data Sheet



Client: LICA
Location: CLS
Station ID: LICA
Field Sample ID: LICA/VOC/CLS/APRIL 6, 2015

Sampler S/N: 6167
Canister ID: H 2834
Canister Installation Date/Time: April 3, 2015 @ 11:08
Canister Removal Date/Time: April 10, 2015 @ 09:54

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
April 6, 2015	00:00 April 6, 2015	00:00 April 7, 2015	24

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	6.52	24

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
28.8	24.0

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

Comments:

Technician Signature:

Sample in by Alex Yakupov
Sample out by Alex Yakupov

Date: April 10, 2015

Volatile Organics Data Results

Date: APRIL 6, 2015
Canister ID: H2834

PARAMETERS	CONCENTRATION (PPB)
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	< 0.03
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.03
1,2-Dichloropropane	0.01
1,3,5-Trimethylbenzene	< 0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	< 0.02
1-Hexene	< 0.02
1-Pentene	< 0.01
2,2,4-Trimethylpentane	< 0.01
2,2-Dimethylbutane	0.02
2,3,4-Trimethylpentane	0.02
2,3-Dimethylbutane	0.04
2,3-Dimethylpentane	0.02
2,4-Dimethylpentane	0.02
2-Methylheptane	0.02
2-Methylhexane	< 0.01
2-Methylpentane	0.07
3-Methylheptane	< 0.02
3-Methylhexane	0.02
3-Methylpentane	0.04
Acetone	2.1
Acrolein	< 0.3
Benzene	0.19
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	0.01
Carbon disulfide	< 0.01
Carbon tetrachloride	0.11
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.02
Chloromethane	0.74
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	< 0.02
cis-2-Pentene	< 0.02
Cyclohexane	0.03
Cyclopentane	0.01
Dibromochloromethane	< 0.01
Ethanol	0.8
Ethyl acetate	< 0.4
Ethylbenzene	0.03
Freon-11	0.35

Volatile Organics Data Results

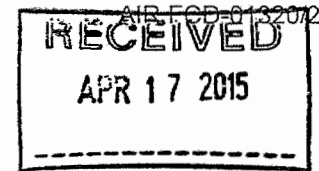
Date: APRIL 6, 2015
Canister ID: H2834

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.10
Freon-114	0.03
Freon-12	0.76
Hexachloro-1,3-butadiene	< 0.50
Isobutane	0.28
Isopentane	0.24
Isoprene	0.02
Isopropyl alcohol	< 0.4
Isopropylbenzene	0.02
m,p-Xylene	0.06
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	< 0.3
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.03
Methylcyclopentane	0.03
Methylene chloride	< 0.3
n-Butane	0.58
n-Decane	< 0.06
n-Dodecane	< 4
n-Heptane	0.03
n-Hexane	0.06
n-Nonane	0.01
n-Octane	< 0.02
n-Pentane	< 0.1
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	< 2
o-Ethyltoluene	< 0.01
o-Xylene	0.03
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.09
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	0.03
trans-2-Pentene	< 0.02
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02

Sample ID: 15040124-001

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/April 12, 2015



Maxxam

VOC Sample Collection Data Sheet

Client: LICA
Location: CLS
Station ID: LICA
Field Sample ID: LICA/VOC/CLS/April 12, 2015

Sampler S/N: 6167
Canister ID: ~~H-2834~~ (A-Y) 1833
Canister Installation Date/Time: April 10, 2015 @ 09:58
Canister Removal Date/Time: April 16, 2015 @ 08:55

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
April 12, 2015	00:00 April 12, 2015	00:00 April 13, 2015	24

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	6.52	24

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
2 P.P	23, P

23 P.P
SMP

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

Comments:

Technician Signature:

Sample in - by Alex Yakupov
Sample out by Alex Yakupov

Date: April 16, 2015

Volatile Organics Data Results

Date: APRIL 12, 2015
Canister ID: 1833

PARAMETERS	CONCENTRATION (PPB)
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	< 0.03
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.03
1,2-Dichloropropane	0.01
1,3,5-Trimethylbenzene	< 0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	< 0.02
1-Hexene	< 0.02
1-Pentene	< 0.01
2,2,4-Trimethylpentane	< 0.01
2,2-Dimethylbutane	0.02
2,3,4-Trimethylpentane	< 0.01
2,3-Dimethylbutane	0.04
2,3-Dimethylpentane	< 0.02
2,4-Dimethylpentane	0.02
2-Methylheptane	< 0.01
2-Methylhexane	< 0.01
2-Methylpentane	0.04
3-Methylheptane	< 0.02
3-Methylhexane	< 0.02
3-Methylpentane	0.02
Acetone	2.7
Acrolein	< 0.3
Benzene	0.14
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	0.01
Carbon disulfide	< 0.01
Carbon tetrachloride	0.13
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.03
Chloromethane	0.82
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	< 0.02
cis-2-Pentene	< 0.02
Cyclohexane	0.05
Cyclopentane	0.02
Dibromochloromethane	< 0.01
Ethanol	2.5
Ethyl acetate	< 0.4
Ethylbenzene	0.01
Freon-11	0.39

Volatile Organics Data Results

Date: APRIL 12, 2015
Canister ID: 1833

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.11
Freon-114	0.03
Freon-12	0.84
Hexachloro-1,3-butadiene	< 0.50
Isobutane	0.26
Isopentane	0.16
Isoprene	< 0.01
Isopropyl alcohol	< 0.4
Isopropylbenzene	0.01
m,p-Xylene	0.04
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	< 0.3
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.06
Methylcyclopentane	0.04
Methylene chloride	< 0.3
n-Butane	0.45
n-Decane	< 0.06
n-Dodecane	< 4.0
n-Heptane	0.02
n-Hexane	0.05
n-Nonane	< 0.01
n-Octane	< 0.02
n-Pentane	< 0.1
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	< 2.0
o-Ethyltoluene	< 0.01
o-Xylene	0.02
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.05
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	< 0.01
trans-2-Pentene	< 0.02
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02

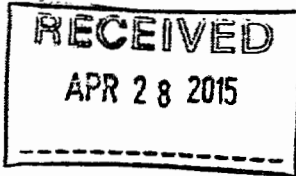
Sample ID: 15040220-001

AIR FCD-01320/2

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/April 18, 2015

Maxxam



VOC Sample Collection Data Sheet

Client: LICA
Location: CLS
Station ID: LICA 01
Field Sample ID: LICA/VOC/CLS/April 18, 2015

Sampler S/N: 6167
Canister ID: 2660
Canister Installation Date/Time: April 16, 2015 @ 09:58
Canister Removal Date/Time: April 22, 2015 @ 16:14

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
April 18, 2015	00:00 April 18, 2015	00:00 April 19, 2015	24

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	6.52	24

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
28.8	23.9

24 psi
SWP

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

Comments:

Technician Signature:

Sample in - by Alex Vakupov
Sample out by Alex Vakupov

Date: April 22, 2015

Volatile Organics Data Results

Date: APRIL 18, 2015
Canister ID: 2660

PARAMETERS	CONCENTRATION (PPB)
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	0.04
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.02
1,2-Dichloropropane	< 0.01
1,3,5-Trimethylbenzene	< 0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	0.06
1-Hexene	< 0.02
1-Pentene	< 0.01
2,2,4-Trimethylpentane	0.02
2,2-Dimethylbutane	0.02
2,3,4-Trimethylpentane	0.01
2,3-Dimethylbutane	< 0.02
2,3-Dimethylpentane	< 0.02
2,4-Dimethylpentane	< 0.01
2-Methylheptane	0.02
2-Methylhexane	< 0.01
2-Methylpentane	0.08
3-Methylheptane	< 0.02
3-Methylhexane	0.02
3-Methylpentane	0.05
Acetone	3.7
Acrolein	< 0.3
Benzene	0.30
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	< 0.01
Carbon disulfide	< 0.01
Carbon tetrachloride	0.09
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.02
Chloromethane	0.70
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	0.02
cis-2-Pentene	< 0.02
Cyclohexane	0.04
Cyclopentane	0.02
Dibromochloromethane	< 0.01
Ethanol	1.1
Ethyl acetate	< 0.4
Ethylbenzene	0.07
Freon-11	0.29

Volatile Organics Data Results

Date: APRIL 18, 2015
Canister ID: 2660

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.09
Freon-114	0.02
Freon-12	0.63
Hexachloro-1,3-butadiene	< 0.50
Isobutane	0.21
Isopentane	0.22
Isoprene	0.02
Isopropyl alcohol	< 0.4
Isopropylbenzene	< 0.01
m,p-Xylene	0.12
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	0.9
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.04
Methylcyclopentane	0.04
Methylene chloride	< 0.3
n-Butane	0.53
n-Decane	< 0.06
n-Dodecane	< 0.4
n-Heptane	0.08
n-Hexane	0.12
n-Nonane	0.04
n-Octane	0.05
n-Pentane	< 0.1
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	< 0.5
o-Ethyltoluene	0.02
o-Xylene	0.06
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.31
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	< 0.01
trans-2-Pentene	0.02
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02

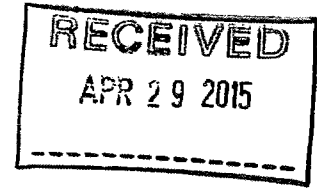
Sample ID: 15040242-001

AIR FCD-01320/2

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/April 24, 2015

Maxxam



VOC Sample Collection Data Sheet

Client: LICA Sampler S/N: 6167
 Location: CLS Canister ID: 85682
 Station ID: LICA 01 Canister Installation Date/Time: April 22, 2015 @ 16:16
 Field Sample ID: LICA/VOC/CLS/April 24, 2015 Canister Removal Date/Time: April 28, 2015 @ 08:51

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
April 24, 2015	00:00 April 24, 2015	00:00 April 28, 2015	24.0

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	6.52	24

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
28.8	24.3

24 psi
imp.

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

Comments:

Technician Signature: Sample in - by Alex Yakupov
Sample out by Alex Yakupov

Date: April 28, 2015

Volatile Organics Data Results

Date: APRIL 24, 2015
Canister ID: S5682

PARAMETERS	CONCENTRATION (PPB)
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	< 0.03
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.03
1,2-Dichloropropane	< 0.01
1,3,5-Trimethylbenzene	< 0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	< 0.02
1-Hexene	< 0.02
1-Pentene	< 0.01
2,2,4-Trimethylpentane	< 0.01
2,2-Dimethylbutane	0.01
2,3,4-Trimethylpentane	0.01
2,3-Dimethylbutane	0.03
2,3-Dimethylpentane	< 0.02
2,4-Dimethylpentane	< 0.01
2-Methylheptane	< 0.01
2-Methylhexane	< 0.01
2-Methylpentane	0.05
3-Methylheptane	< 0.02
3-Methylhexane	< 0.02
3-Methylpentane	0.03
Acetone	2.2
Acrolein	< 0.3
Benzene	0.12
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	< 0.01
Carbon disulfide	0.23
Carbon tetrachloride	0.09
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.02
Chloromethane	0.83
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	< 0.02
cis-2-Pentene	< 0.02
Cyclohexane	< 0.02
Cyclopentane	< 0.01
Dibromochloromethane	< 0.01
Ethanol	0.8
Ethyl acetate	< 0.4
Ethylbenzene	0.01
Freon-11	0.28

Volatile Organics Data Results

Date: APRIL 24, 2015
Canister ID: S5682

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.09
Freon-114	0.02
Freon-12	0.63
Hexachloro-1,3-butadiene	< 0.50
Isobutane	0.27
Isopentane	0.20
Isoprene	0.02
Isopropyl alcohol	< 0.4
Isopropylbenzene	< 0.01
m,p-Xylene	0.03
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	< 0.3
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.01
Methylcyclopentane	0.02
Methylene chloride	< 0.3
n-Butane	0.71
n-Decane	< 0.06
n-Dodecane	< 0.4
n-Heptane	< 0.01
n-Hexane	0.05
n-Nonane	< 0.01
n-Octane	< 0.02
n-Pentane	< 0.1
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	< 0.5
o-Ethyltoluene	< 0.01
o-Xylene	0.01
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.05
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	< 0.01
trans-2-Pentene	< 0.02
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02

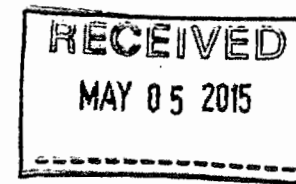
Sample ID: 15050025-003

AIR FCD-01320/2

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/April 30, 2015

Maxxam



VOC Sample Collection Data Sheet

Client: LICA Sampler S/N: 6167
 Location: CLS Canister ID: H 32P2
 Station ID: LICA 01 Canister Installation Date/Time: April 28, 2015 @ 08:54
 Field Sample ID: LICA/VOC/CLS/April 30, 2015 Canister Removal Date/Time: May 01, 2015 @ 13:51

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
April 30, 2015	00:00 April 30, 2015	00:00 May 1, 2015	24.0

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	6.52	24

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
- 21.2	21.8

21 psi
JWP

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

Comments:

Technician Signature: Sample in by Alex Yakupov
Sample out by Alex Yakupov

Date: May 1, 2015

Volatile Organics Data Results

Date: APRIL 30, 2015
Canister ID: H3282

PARAMETERS	CONCENTRATION (PPB)
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	< 0.03
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.02
1,2-Dichloropropane	< 0.01
1,3,5-Trimethylbenzene	< 0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	< 0.02
1-Hexene	< 0.02
1-Pentene	< 0.01
2,2,4-Trimethylpentane	< 0.01
2,2-Dimethylbutane	0.01
2,3,4-Trimethylpentane	< 0.01
2,3-Dimethylbutane	< 0.02
2,3-Dimethylpentane	< 0.02
2,4-Dimethylpentane	< 0.01
2-Methylheptane	< 0.01
2-Methylhexane	< 0.01
2-Methylpentane	0.05
3-Methylheptane	< 0.02
3-Methylhexane	< 0.02
3-Methylpentane	0.04
Acetone	2.9
Acrolein	< 0.3
Benzene	0.09
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	< 0.01
Carbon disulfide	< 0.01
Carbon tetrachloride	0.09
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.02
Chloromethane	0.69
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	< 0.02
cis-2-Pentene	< 0.02
Cyclohexane	0.04
Cyclopentane	< 0.01
Dibromochloromethane	< 0.01
Ethanol	0.9
Ethyl acetate	< 0.4
Ethylbenzene	0.01
Freon-11	0.29

Volatile Organics Data Results

Date: APRIL 30, 2015
Canister ID: H3282

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.09
Freon-114	0.03
Freon-12	0.60
Hexachloro-1,3-butadiene	< 0.50
Isobutane	0.23
Isopentane	0.19
Isoprene	< 0.01
Isopropyl alcohol	< 0.4
Isopropylbenzene	< 0.01
m,p-Xylene	< 0.03
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	< 0.3
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.05
Methylcyclopentane	0.04
Methylene chloride	< 0.3
n-Butane	0.43
n-Decane	< 0.06
n-Dodecane	< 0.4
n-Heptane	< 0.01
n-Hexane	0.07
n-Nonane	< 0.01
n-Octane	< 0.02
n-Pentane	< 0.1
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	< 0.5
o-Ethyltoluene	< 0.01
o-Xylene	< 0.01
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.26
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	< 0.01
trans-2-Pentene	< 0.02
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02

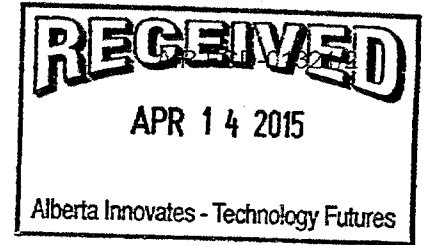
PAH RESULTS

Sample ID: 15040066-002

Customer ID: LICA

Cust Samp ID: LICA/PUF/CLS/April 6, 2015

Maxxam



Hi-Vol PUF+ Sample Collection Data Sheet

Client: LICA
Location: CLS
Station ID: LICA 01
Field Sample ID: LICA/PUF/CLS/April 6, 2015

Puf+ S/N: TE-01 (1st see comments)
Motor S/N: 113P
Installation Date/Time: April 3, 2015 @ 10:52 (A.Y.)
Removal Date/Time: April 10, 2015 @ 09:30

Table with 4 columns: Sample Date, Start Time (MST), End Time (MST), Elapsed Time (Hours). Row 1: April 6, 2015, 00:00, April 7, 2015, 24

Table with 4 columns: Date Received, Date Shipped, Puf Expiration Date, QFF Prep Date. All cells contain NA

Set Flow Rate (slpm): 230
Date of Last Calibration: 01-SEP-11

Table with 4 columns: Average Pressure (mmHg), Average Flow (Qstd slpm), Average Temperature (C), Volume (Vstd m³). Row 1: 715, 229, 0.7 °C, 330.19

Time set correctly prior to sampling? YES/NO
Timer set correctly prior to sampling? YES/NO
Sampling data saved to memory card after sampling? YES/NO

Comments: 1st No form for the green tag (for the filter) was provided

Technician Signature: Sample in - by Alex Yakupov
Sample out by - Alex Yakupov
Date: April 10, 2015

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: APRIL 6, 2015
PUF S/N: TE01

PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.03
2-Methylnaphthalene	0.05
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	< 0.01
Acenaphthene	0.02
Acenaphthylene	< 0.01
Acridine	< 0.01
Anthracene	0.01
Benzo(a)anthracene	< 0.01
Benzo(a)pyrene	< 0.01
Benzo(b,j,k)fluoranthene	0.02
Benzo(c)phenanthrene	< 0.01
Benzo(e)pyrene	< 0.01
Benzo(ghi)perylene	< 0.01
Chrysene	< 0.01
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(ah)anthracene	< 0.01
Fluoranthene	0.04
Fluorene	0.05
Indeno(1,2,3-cd)pyrene	< 0.01
Naphthalene	0.05
Perylene	< 0.01
Phenanthrene	0.12
Pyrene	0.03
Retene	0.01

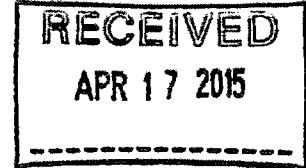
Sample ID: 15040124-002

AIR FCD-01321/2

Customer ID: LICA

Cust Samp ID: LICA/PUF/CLS/April 12, 2015

Maxxam



Hi-Vol PUF+ Sample Collection Data Sheet

Client: LICA
Location: CLS
Station ID: LICA 01
Field Sample ID: LICA/PUF/CLS/April 12, 2015

Puf+ S/N: TE-04
Motor S/N: 1138
Installation Date/Time: April 10, 2015 @ 09:40
Removal Date/Time: April 16, 2015 @ 08:42

Table with 4 columns: Sample Date, Start Time (MST), End Time (MST), Elapsed Time (Hours). Data: April 12, 2015, 00:00, April 13, 2015, 24.

Table with 4 columns: Date Received, Date Shipped, Puf Expiration Date, QFF Prep Date. Data: NA, NA, NA, NA.

Set Flow Rate (slpm): 230

Date of Last Calibration: 01-sep-11

Table with 4 columns: Average Pressure (mmHg), Average Flow (Qstd slpm), Average Temperature (C), Volume (Vstd m^3). Data: 703, 229, 4.8 C, 380.20.

Time set correctly prior to sampling? YES/NO
Timer set correctly prior to sampling? YES/NO
Sampling data saved to memory card after sampling? YES/NO

Comments: No form for a green tag was provided.

Technician Signature: Sample in - by Alex Yakupov
Sample out - by Alex Yakupov

Date: April 16, 2015

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: APRIL 12, 2015
PUF S/N: TE04

PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.02
2-Methylnaphthalene	0.04
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	< 0.01
Acenaphthene	0.01
Acenaphthylene	< 0.01
Acridine	< 0.01
Anthracene	< 0.01
Benzo(a)anthracene	< 0.01
Benzo(a)pyrene	< 0.01
Benzo(b,j,k)fluoranthene	0.01
Benzo(c)phenanthrene	< 0.01
Benzo(e)pyrene	< 0.01
Benzo(ghi)perylene	< 0.01
Chrysene	< 0.01
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(ah)anthracene	< 0.01
Fluoranthene	0.01
Fluorene	0.03
Indeno(1,2,3-cd)pyrene	< 0.01
Naphthalene	0.03
Perylene	< 0.01
Phenanthrene	0.05
Pyrene	0.01
Retene	< 0.01

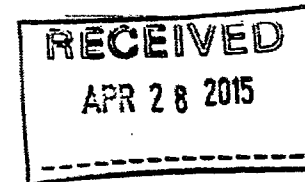
Sample ID: 15040220-002

AIR FCD-01321/2

Customer ID: LICA

Cust Samp ID: LICA/PUF/CLS/April 18, 2015

Maxxam



Hi-Vol PUF+ Sample Collection Data Sheet

Client: LICA Puf+ S/N: 9702 (A.Y.)
 Location: CLS Motor S/N: 1138
 Station ID: LICA 01 Installation Date/Time: April 16 2015 @ 09:44
 Field Sample ID: LICA/PUF/CLS/April 18, 2015 Removal Date/Time: April 22, 2015 @ 16:22

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
April 18, 2015	00:00 April 18, 2015	00:00 April 19, 2015	24

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
NA	NA	NA	NA

Set Flow Rate (slpm): 230

Date of Last Calibration: 01-SEP-11

Sampling Data			
Average Pressure (mmHg)	Average Flow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
715	228	6.1 °C	327.79

Time set correctly prior to sampling? YES / NO
 Timer set correctly prior to sampling? YES / NO
 Sampling data saved to memory card after sampling? YES / NO
 A.Y.

Comments: Data had to be retrieved from internal log memory. No data on the screen saved.

Technician Signature:

Sample in - by Alex Vakupov
Sample out by Alex Vakupov

Date: April 22, 2015

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: APRIL 18, 2015
PUF S/N: 9702

PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.03
2-Methylnaphthalene	0.04
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	< 0.01
Acenaphthene	0.02
Acenaphthylene	< 0.01
Acridine	< 0.01
Anthracene	< 0.01
Benzo(a)anthracene	< 0.01
Benzo(a)pyrene	< 0.01
Benzo(b,j,k)fluoranthene	0.02
Benzo(c)phenanthrene	< 0.01
Benzo(e)pyrene	< 0.01
Benzo(ghi)perylene	< 0.01
Chrysene	< 0.01
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(ah)anthracene	< 0.01
Fluoranthene	0.03
Fluorene	0.05
Indeno(1,2,3-cd)pyrene	< 0.01
Naphthalene	0.03
Perylene	< 0.01
Phenanthrene	0.10
Pyrene	0.02
Retene	< 0.01

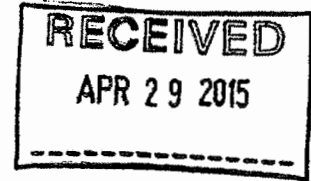
Sample ID: 15040242-002

AIR FCD-01321/2

Customer ID: LICA

Cust Samp ID: LICA/PUF/CLS/April 24, 2015

Maxxam



Hi-Vol PUF+ Sample Collection Data Sheet

Client: LICA
Location: CLS
Station ID: LICA 01
Field Sample ID: LICA/PUF/CLS/April 24, 2015

Puf+ S/N: TE 03
Motor S/N: 1138
Installation Date/Time: April 22, 2015 @ 16:24
Removal Date/Time: April 28, 2015 @ 08:46

Table with 4 columns: Sample Date, Start Time (MST), End Time (MST), Elapsed Time (Hours). Row 1: April 24, 2015, 00:00, April 25, 2015, 24.0

Table with 4 columns: Date Received, Date Shipped, Puf Expiration Date, QFF Prep Date. Row 1: NA, NA, NA, NA

Set Flow Rate (slpm): 230

Date of Last Calibration: 01-sep-11

Table with 4 columns: Average Pressure (mmHg), Average Flow (Qstd slpm), Average Temperature (C), Volume (Vstd m³). Row 1: 708, 229, 3.3 °C, 330.21

Time set correctly prior to sampling? YES/NO
Timer set correctly prior to sampling? YES/NO
Sampling data saved to memory card after sampling? YES/NO

Comments: [Blank lines for handwritten notes]

Technician Signature: Sample in - by Alex Yakupov
Sample out by Alex Yakupov

Date: April 28, 2015

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: APRIL 24, 2015
PUF S/N: TE03

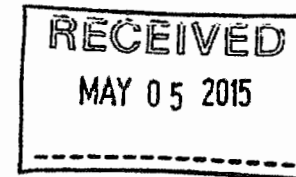
PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.02
2-Methylnaphthalene	0.04
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	< 0.01
Acenaphthene	0.01
Acenaphthylene	< 0.01
Acridine	< 0.01
Anthracene	< 0.01
Benzo(a)anthracene	< 0.01
Benzo(a)pyrene	< 0.01
Benzo(b,j,k)fluoranthene	< 0.01
Benzo(c)phenanthrene	0.02
Benzo(e)pyrene	< 0.01
Benzo(ghi)perylene	< 0.01
Chrysene	< 0.01
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(ah)anthracene	< 0.01
Fluoranthene	0.02
Fluorene	0.04
Indeno(1,2,3-cd)pyrene	< 0.01
Naphthalene	0.04
Perylene	< 0.01
Phenanthrene	0.06
Pyrene	0.02
Retene	0.01

Sample ID: 15050025-004

AIR FCD-01321/2

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/April 30, 2015

Maxxam



Hi-Vol PUF+ Sample Collection Data Sheet

Client: LICA
Location: CLS
Station ID: LICA 01
Field Sample ID: LICA/PUF/CLS/April 30, 2015

Puf+ S/N: TE-02
Motor S/N: 1138
Installation Date/Time: April 29, 2015 @ 08:48
Removal Date/Time: May 01, 2015 @ 14:21

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
April 30, 2015	00:00 April 30, 2015	00:00 May 1, 2015	24.0

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
NA	NA	NA	NA

Set Flow Rate (slpm): 230
Date of Last Calibration: 01-SEP-11

Sampling Data			
Average Pressure (mmHg)	Average Flow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
708	229	10.7 °C	330.21

Time set correctly prior to sampling? YES/NO
Timer set correctly prior to sampling? YES/NO
Sampling data saved to memory card after sampling? YES/NO

Comments: No form for a green tag was provided

Technician Signature: Sample in - by Alex Yakupov
Sample out - by Alex Yakupov
Date: May 1, 2015

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: APRIL 30, 2015
PUF S/N: TE02

PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.06
2-Methylnaphthalene	0.11
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	< 0.01
Acenaphthene	0.03
Acenaphthylene	0.03
Acridine	< 0.01
Anthracene	0.01
Benzo(a)anthracene	< 0.01
Benzo(a)pyrene	< 0.01
Benzo(b,j,k)fluoranthene	0.02
Benzo(c)phenanthrene	< 0.01
Benzo(e)pyrene	< 0.01
Benzo(ghi)perylene	< 0.01
Chrysene	< 0.01
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(ah)anthracene	< 0.01
Fluoranthene	0.04
Fluorene	0.06
Indeno(1,2,3-cd)pyrene	< 0.01
Naphthalene	0.09
Perylene	< 0.01
Phenanthrene	0.13
Pyrene	0.03
Retene	0.02

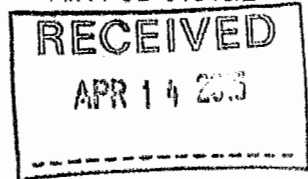
PARTISOL RESULTS

Sample ID: 15040065-001

Customer ID: LICA

Cust Samp ID: LICA P4131702

AIR FCD-01318/2



Partisol Sample Data Sheet

Priority: Normal

Date Sampled: April 6, 2015

Location: CLS

Parameter: TSP PM10

PM2.5

Filter #: LICA P4131702

Start Time 00:00 April 6, 2015

End Time 00:00 April 7, 2015

Status OK

Std Vol 23.028

Valid Time 22:48

Total Time 24

Comments: Weather Conditions, etc.

Empty lines for additional comments.

Technician Signature:

Alex Yakupov

Date: April 10, 2015 at 09:30

Programming

- 1) Make sure system is in "Stop Mode"
2) "ESC" to Time Screen then "Program"
3) Enter Beg 1 0:00
4) Enter Dur 24:00:00
5) Enter Beg D dd-Aug
6) Enter End D dd-Aug
7) "Stop/Run"

Note: Beginning & End Date should be same date

Sample ID: 15040123-001

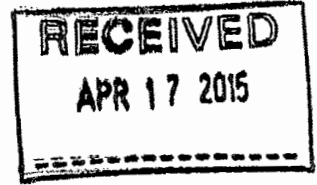
Customer ID: LICA

Cust Samp ID: LICA P4131470

AIR FCD-01318/2

Partisol Sample Data Sheet

Priority: Normal



Date Sampled: April 12, 2015

Location: CLS

Parameter: TSP PM10

PM2.5

Filter #: LICA P413 1470

Start Time 00:00 April 12, 2015

End Time 00:00 April 13, 2015

Status OK

Std Vol 23.714

Valid Time 23:55

Total Time 24

Comments: Weather Conditions, etc.

Horizontal lines for handwritten comments.

Technician Signature: Alex Yakupov

Date: April 16, 2015

Programming

- 1) Make sure system is in "Stop Mode"
- 2) "ESC" to Time Screen then "Program"
- 3) Enter Beg 1 0:00
- 4) Enter Dur 24:00:00
- 5) Enter Beg D dd-Aug
- 6) Enter End D dd-Aug
- 7) "Stop/Run"

Note: Beginning & End Date should be same date

Sample ID: 15040219-001

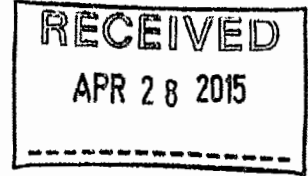
Customer ID: LICA

Cust Samp ID: LICA Filter #P4131471

AIR FCD-01318/2

Partisol Sample Data Sheet

Priority: Normal



Date Sampled: April 18, 2015

Location: CLS

Parameter: TSP PM10

PM2.5

Filter #: LICA P413 1471

Start Time 00:00 April 18, 2015

End Time 00:00 April 19, 2015

Status OK

Std Vol 24.164

Valid Time 23:56

Total Time 24

Comments: Weather Conditions, etc.

Horizontal lines for handwritten comments.

Technician Signature: Alex Yakupov

Date: April 22, 2015

Programming

- 1) Make sure system is in "Stop Mode"
- 2) "ESC" to Time Screen then "Program"
- 3) Enter Beg 1 0:00
- 4) Enter Dur 24:00:00
- 5) Enter Beg D dd-Aug
- 6) Enter End D dd-Aug
- 7) "Stop/Run"

Note: Beginning & End Date should be same date

Sample ID: 15040240-001

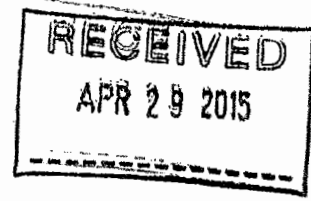
Customer ID: LICA

Cust Samp ID: Lica Filter #P4131704

AIR FCD-01318/2

Partisol Sample Data Sheet

Priority: Normal



Date Sampled: April 24, 2015

Location: CLS

Parameter: TSP PM10

PM2.5

Filter #: LICA P413 1704

Start Time 00:00 April 24, 2015

End Time 00:00 April 25, 2015

Status OK

Std Vol 22.988

Valid Time 23:06

Total Time 24

Comments: Weather Conditions, etc.

Horizontal lines for handwritten comments.

Technician Signature: Aley Yakupov

Date: April 28, 2015

Programming

- 1) Make sure system is in "Stop Mode"
- 2) "ESC" to Time Screen then "Program"
- 3) Enter Beg 1 0:00
- 4) Enter Dur 24:00:00
- 5) Enter Beg D dd-Aug
- 6) Enter End D dd-Aug
- 7) "Stop/Run"

Note: Beginning & End Date should be same date .

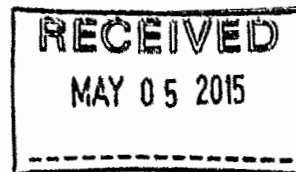
Sample ID: 15050024-001

Customer ID: LICA
Cust Samp ID: LICA Filter #P4131548

AIR FCD-01318/2

Partisol Sample Data Sheet

Priority: Normal



Date Sampled: April 30, 2015

Location: CLS

Parameter: TSP PM10

PM2.5

Filter #: LICA P413 1548

Start Time 00:00 April 30, 2015

End Time 00:00 May 1, 2015

Status OK

Std Vol 23.450

Valid Time 23:56

Total Time 24

Comments: Weather Conditions, etc.

Technician Signature: Alex Vakepov

Date: May 1, 2015
(at 14:09)

Programming

- 1) Make sure system is in "Stop Mode"
- 2) "ESC" to Time Screen then "Program"
- 3) Enter Beg 1 0:00
- 4) Enter Dur 24:00:00
- 5) Enter Beg D dd-Aug
- 6) Enter End D dd-Aug
- 7) "Stop/Run"

Note: Beginning & End Date should be same date



Partisol Sampler Results

Date	Filter NO.	Concentration (mg)
APRIL 6	P4131702	0.071
APRIL 12	P4131470	0.026
APRIL 18	P4131471	0.023
APRIL 24	P4131704	0.065
APRIL 30	P4131548	0.029

APPENDIX III
ANALYZER CALIBRATION RESULTS

SULPHUR DIOXIDE

Maxxam Thermo 43i SO2 Analyzer Calibration

Date: 6-Apr-15 **Start/End Time (mst):** 9:24 / 13:20
Company: LICA **Calibration Purpose:** Monthly
Station Name/Location: Cold Lake South **Converter Make & Model:** NA
Performed by: Alex Yakupov **Converter Serial #:** NA
Application H₂S/TRS/SO₂: SO₂ **Cal Gas Expiry Date:** 26-Mar-17

Analyzer:
Serial Number: 806528242 **Range ppb:** 500
Last Calibration Date: 3-Mar-15 **As Found C.F.:** 0.993
Previous Cal High Point C.F.: 0.994 **New C.F.:** 1.002

<p>MOTHERBOARD:</p> <p>As found:</p> <p>BKG: 7.0 COEF: 1.120 3.3 3.3 5.0 5.0 15.0 15.0 24.0 23.9 -3.3 -3.2</p> <p>INTERFACE BOARD:</p> <p>PMT: -632.0 FLASH: 712 3.3 3.3 5.0 5.0 15.0 14.8 -15.0 -15.1 24.0 23.7 INTERNAL: 28.4 CHAMBER: 45.1 PERM OVEN GAS: 45.0 PERM OVEN HEATER: 44.19 PRESSURE: 678.0 SAMPLE FLOW: 0.439 LAMP INTENSITY: 76% CONVERTER: NA CONVERTER SET: NA Internal Span: 387.4</p>	<p>As left:</p> <p>BKG: 7.0 COEF: 1.113 3.3 3.3 5.0 5.0 15.0 15.0 24.0 23.9 -3.3 -3.2</p> <p>PMT: -632.0 FLASH: 716 3.3 3.3 5.0 5.0 15.0 14.8 -15.0 -15.1 24.0 23.7 INTERNAL: 28.9 CHAMBER: 45.2 PERM OVEN GAS: 45.0 PERM OVEN HEATER: 44.20 PRESSURE: 681.6 SAMPLE FLOW: 0.441 LAMP INTENSITY: 76% CONVERTER: NA CONVERTER SET: NA Internal Span: 385.5</p>
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Calibrator: Flow Meter ID's: NA
 Make & Model: Environconics
 Serial #: 4760
 Cal Gas Cylinder I.D. #: LL42475
 Cal Gas Conc. (ppm): 50.3

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

Calibration:

Point	Calibrator Flow Rates (cc/min)			Calculated Concentration (ppb)	Indicated Concentration (ppb)	Correction Factors
	Diluent	Cal Gas	Total			
as found zero	4993	0.0	4993	0	0.0	NA
adjusted zero	NA	0.0				NA
as found high	4953	41.13	4994	414.3	417.0	0.993
adjusted high	4953	41.13	4994	414.3	414.0	1.001
mid	4972	20.55	4993	207.0	207.0	1.000
low	4985	10.28	4996	103.5	103.0	1.005
calibrator zero	4995	0.00	4995	0	0.0	NA
Average C.F. =						1.002

Linear Regression/Calibration Results:

Correlation Coefficient = 1.000 Slope = 1.000 b (Intercept as % of full scale) = 0.03% % change in C.F. from last cal = 0.06%	LIMITS Pass/Fail ? > or = 0.995 PASS 0.85-1.15 PASS ± 3% F.S. PASS ± 15% PASS
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Converter Efficiency Check for H₂S/TRS application:

run converter efficiency test immediately following zero adjust

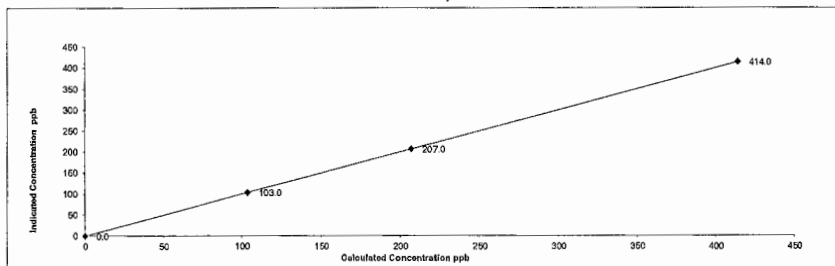
SO₂ High Point gas concentration: NA Time gas run (mst): NA

Zero corrected analyzer response: NA

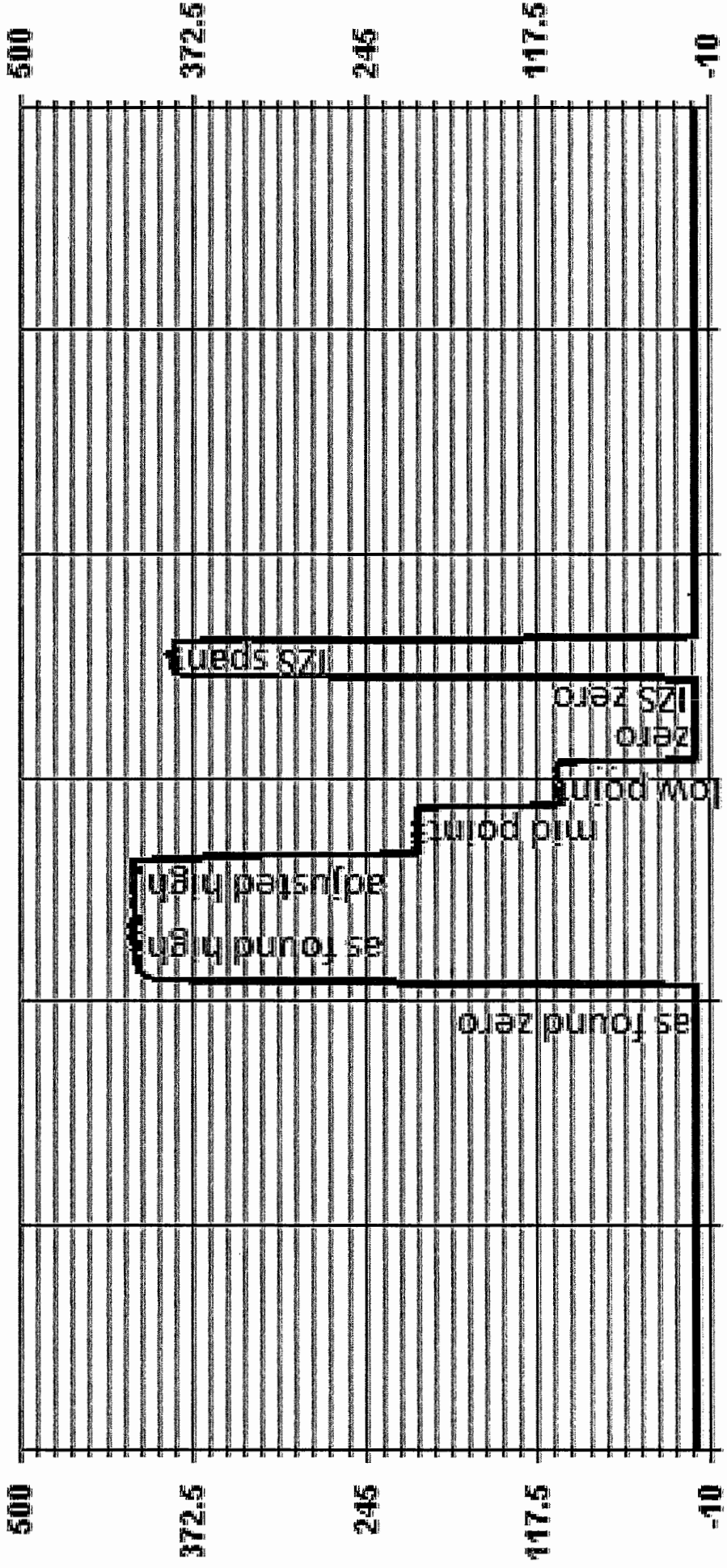
Comments:

Sample filter changed. No ZARO adjustment made.

Thermo 43i SO2 Analyzer Calibration



01 Minute Averages



— LICA SO2_ PPB

TOTAL REDUCED SULPHUR

Maxxam Thermo 450i TRS Analyzer Calibration

Date: 6-Apr-15 **Start/End Time (mst):** 12:47 / 16:20
Company: LICA **Calibration Purpose:** Monthly
Station Name/Location: Cold Lake South **Converter Make & Model:** Thermo CDN -101
Performed by: Alex Yakupov **Converter Serial #:** 501
Application H₂S/TRS/SO₂: TRS **Cal Gas Expiry Date:** 25-Dec-15

Analyzer:
Serial Number: 812728560 **Range ppb:** 100
Last Calibration Date: 3-Mar-15 **As Found C.F.:** 0.975
Previous Cal High Point C.F.: 1.000 **New C.F.:** 1.000

<p>MOTHERBOARD:</p> <p style="text-align: center;">As found:</p> <p>BKG: 13.2 COEF: 0.955 3.3 3.3 5.0 5.0 15.0 15.0 24.0 23.9 -3.3 -3.2</p> <p>INTERFACE BOARD:</p> <p>PMT: -650.5 FLASH: 742 3.3 3.2 5.0 5.0 15.0 14.7 -15.0 -15.0 24.0 23.4 INTERNAL: 32.1 CHAMBER: 45.1 CONVERTER TEMP: 324.7 CONVERTER SET: 325 PERM OVEN GAS: 45.0 PERM OVEN HTR: 44.38 PRESSURE: 654.7 SAMPLE FLOW: 0.508 LAMP INTENSITY: 91% Internal Span: 36.77</p>	<p style="text-align: center;">As left:</p> <p>BKG: 12.7 COEF: 0.922 3.3 3.3 5.0 5.0 15.0 15.0 24.0 23.9 -3.3 -3.2</p> <p>PMT: -650.5 FLASH: 745 3.3 3.2 5.0 5.0 15.0 14.6 -15.0 -15.0 24.0 23.5 INTERNAL: 31.8 CHAMBER: 45.0 CONVERTER TEMP: 324.7 CONVERTER SET: 325 PERM OVEN GAS: 45.0 PERM OVEN HTR: 44.38 PRESSURE: 656.6 SAMPLE FLOW: 0.510 LAMP INTENSITY: 92% Internal Span: 36.68</p>
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Calibrator: Flow Meter ID's: NA
 Make & Model: API 700
 Serial #: 830
 Cal Gas Cylinder I.D. #: BLM005049
 Cal Gas Conc. (ppm): 10.1

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

Calibration:

Point	Calibrator Flow Rates (cc/min)			Calculated Concentration (ppb)	Indicated Concentration (ppb)	Correction Factors
	Diluent	Cal Gas	Total			
as found zero	5000	0.0	5000	0	0.0	NA
adjusted zero	NA					NA
as found high	4958	38.60	4997	78.0	80.0	0.975
adjusted high	4958	38.60	4997	78.0	78.0	1.000
mid	4979	18.80	4998	38.0	38.0	1.000
low	4990	10.90	5001	22.0	22.0	1.001
calibrator zero	4995	0.00	4995	0	0.0	NA
Average C.F.=						1.000

Linear Regression/Calibration Results:

Correlation Coefficient = 1.000 Slope = 1.000 b (Intercept as % of full scale) = 0.00% % change in C.F. from last cal = 2.47%	LIMITS Pass/Fail ? > or = 0.995 PASS 0.85-1.15 PASS ± 3% F.S. PASS ± 15% PASS
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Converter Efficiency Check for H₂S/TRS application:

run converter efficiency test immediately following zero adjust

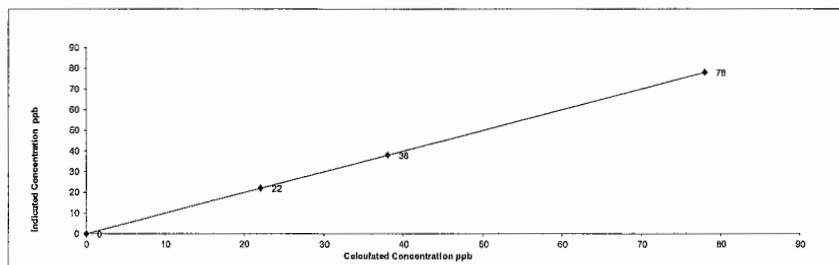
SO₂ High Point gas concentration: NA Time gas run (mst): NA

Zero corrected analyzer response: NA

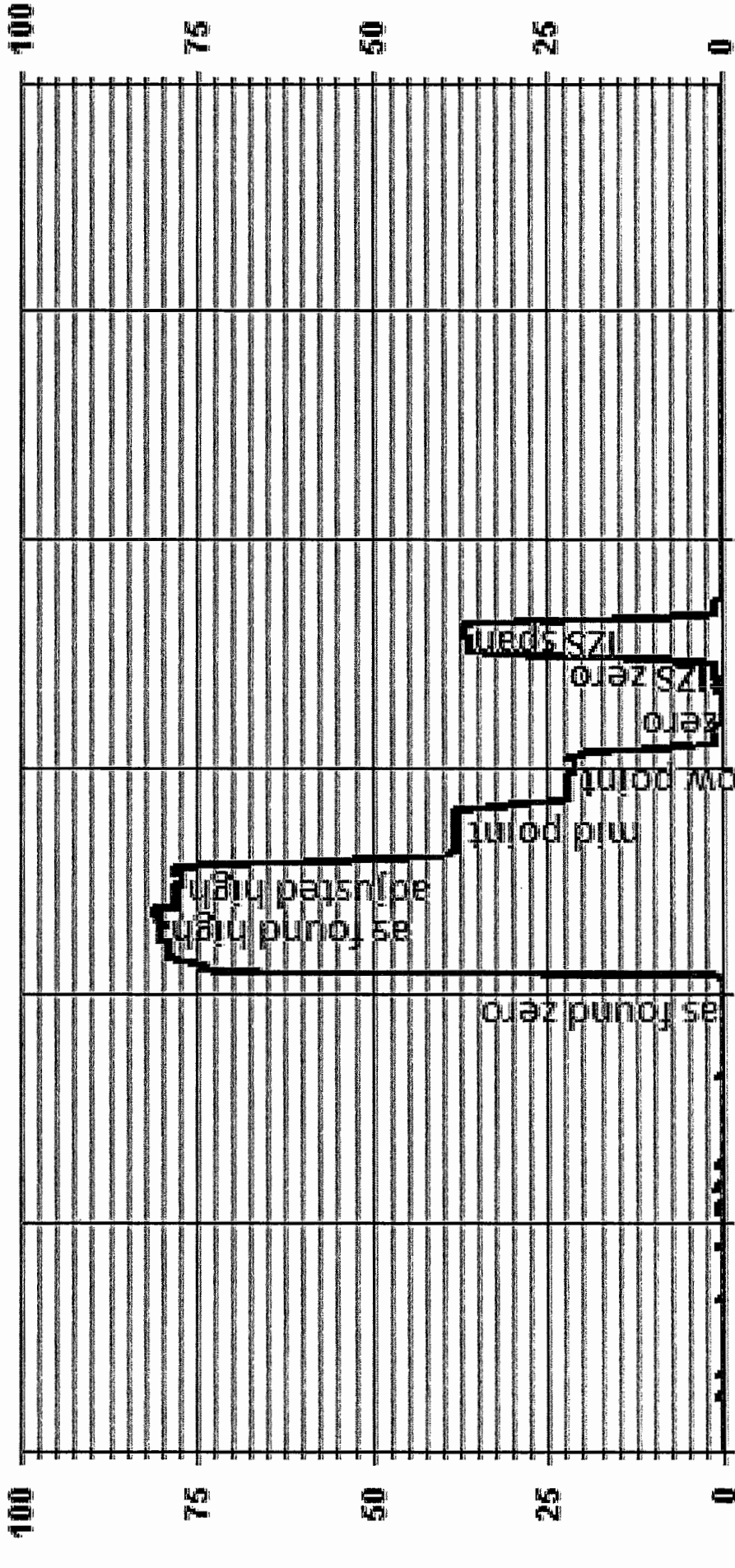
Comments:

Filter changed. No ZERO adjustment made.

Thermo 450i TRS Analyzer Calibration



01 Minute Averages



— LICA TRS_ PPB

TOTAL HYDROCARBON

Maxxam Thermo 51C THC Analyzer Calibration

Date: 6-Apr-15 Start Time (mst): 9:24
 Company: LICA End Time (mst): 13:22
 Station Name/Location: Cold Lake South Calibration Purpose: Monthly Calibration
 Performed by: Alex Yakupov Cal Gas Expiry Date: 12-Aug-17

Analyzer: 427408718 Range ppm: 50
 Serial Number: 427408718 As Found C.F.: 0.981
 Last Calibration Date: 3-Mar-15 New C.F.: 1.011
 Previous Cal High Point C.F.: 1.000

	As found:	As left:
H ₂ cylinder (psi):	<u>900</u>	<u>900</u>
H ₂ cylinder reg set (psi):	<u>22</u>	<u>22</u>
Span Cylinder (psi):	<u>1200</u>	<u>1200</u>
Span Cylinder Reg Set (psi):	<u>30</u>	<u>30</u>
Zero Air Gen Pressure:	<u>33</u>	<u>33</u>
measurement alarms:	<u>None</u>	<u>None</u>
service alarms:	<u>None</u>	<u>None</u>
FID status:	cnt: <u>2315</u>	cnt: <u>1448</u>
	rng: <u>1</u>	rng: <u>1</u>
	try: <u>3</u>	try: <u>3</u>
	flm: <u>184.4</u>	flm: <u>184.2</u>
	det: <u>125.3</u>	det: <u>125.8</u>
Oven Readings:	Flame: <u>184</u>	Flame: <u>184</u>
	Filter: <u>125</u>	Filter: <u>125</u>
	Base: <u>125</u>	Base: <u>125</u>
	Pump: <u>6.50</u>	Pump: <u>6.51</u>
Voltages:	+5 <u>5</u>	+5 <u>5</u>
	+15 <u>14.8</u>	+15 <u>14.8</u>
	-15 <u>-15.1</u>	-15 <u>-15.1</u>
	Internal Span: <u>31.94</u>	Internal Span: <u>31.16</u>

Calibrator: Flow Meter ID's: <u>NA</u> Make & Model: <u>API 700</u> Serial #: <u>830</u> Cal Gas Cylinder I.D. #: <u>LL33674</u> CH ₄ /C ₃ H ₈ Cylinder Conc. (ppm): <u>601.4</u> <u>202.0</u> CH ₄ as propane/total CH ₄ equivalents (ppm): <u>555.5</u> <u>1156.9</u>	Calibrator Flow Targets:			
	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
	zero	2000	0	2000
	high	1935	65	2000
	mid	1969	31	2000
	low	1984	16	2000

Point	Calibrator Flow Rates (cc/min)			Calculated Concentration (ppm)	Indicated Concentration (ppm)	Correction Factors
	Diluent	Cal Gas	Total			
as found zero	1999	0.00	1999	0	-0.10	NA
adjusted zero	1999	0.00	1999	0	0.00	NA
as found high	1932	65.00	1997	37.66	38.40	0.981
adjusted high	1932	65.00	1997	37.66	37.50	1.004
mid	1963	31.00	1994	17.99	17.80	1.010
low	1983	16.00	1999	9.26	9.10	1.018
calibrator zero	1997	0.00	1997	0	0.00	NA
Average C.F. =						1.011

Linear Regression/Calibration Results:

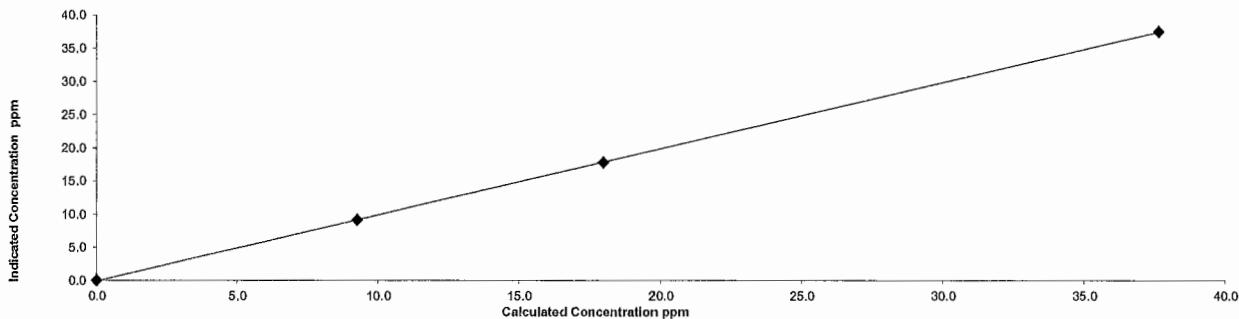
Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>0.997</u>	> or = 0.995	PASS
b (Intercept as % of full scale) =	<u>-0.144%</u>	0.85-1.15	PASS
% change in C.F. from last cal	<u>1.94%</u>	± 3% F.S.	PASS
		± 15%	PASS

Comments:

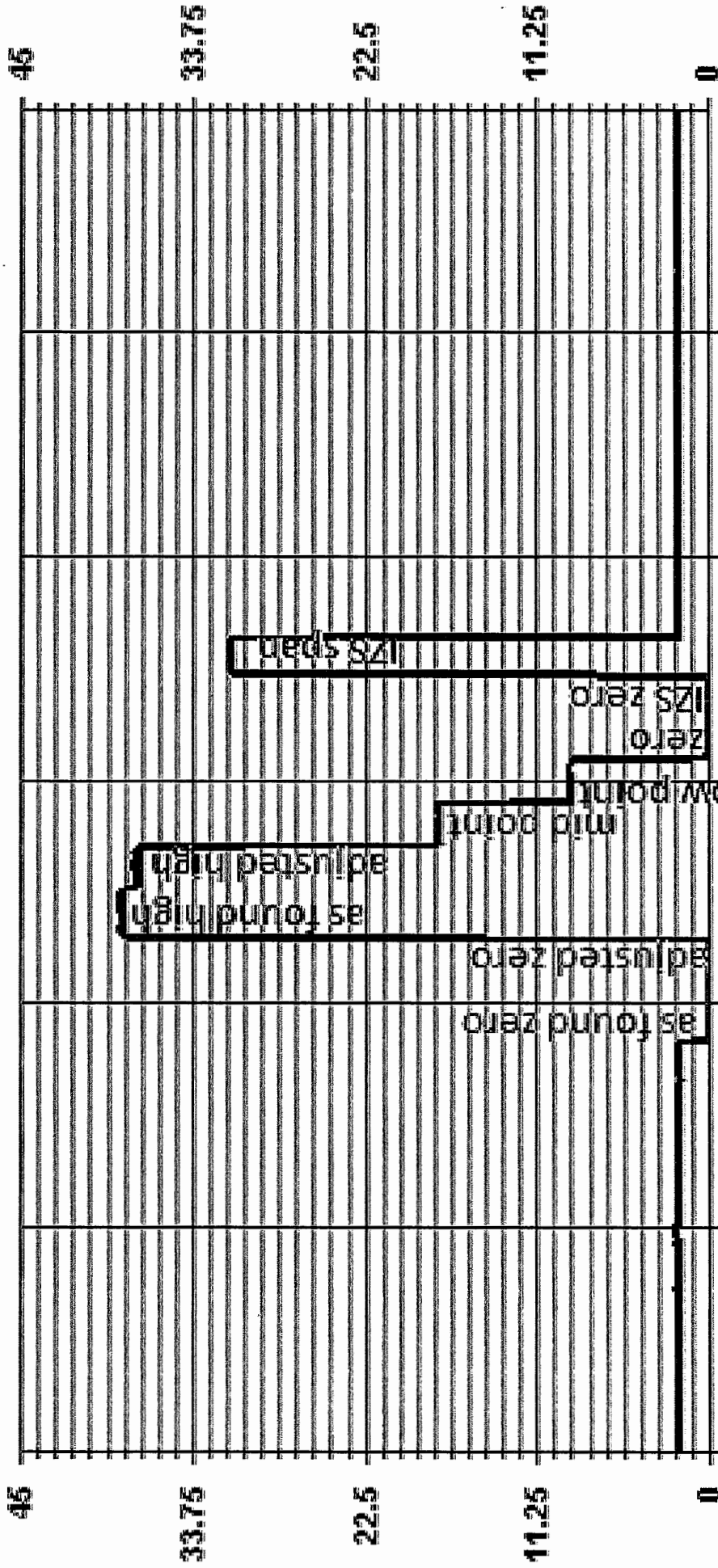
Sample filter changed.

Thermo 51C THC Analyzer Calibration

THC Calibration Curve

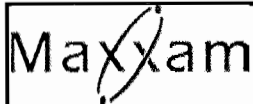


01 Minute Averages



— LICA - - - - THC PPM

NITROGEN DIOXIDE



Thermo 42C NOx Analyzer Calibration

Date: 6-Apr-15
 Company: LICA
 Station Name/Location: Cold Lake South
 Performed by: Alex Yakupov

Start Time (mst): 9:24
 End Time (mst): 15:56
 Calibration Purpose: Monthly
 Cal Gas Expiry Date: 26-Mar-17

Correction Factors:

Analyzer Serial Number: 427408716
 Last Calibration Date: 3-Mar-15
 Range ppb: 500

As found C.F. Previous Cal High Point C.F.:
 NO= 1.004 NO= 1.000
 NOx= 1.004 NOx= 0.993
 NO₂= 1.003 NO₂= 0.992

As found:
 NO Bkg ppb: 4.6
 NOx Bkg ppb: 4.8
 NO Coef: 0.936
 NOx Coef: 1.013
 NO₂ Coef: 1.003
 PMT: -850
 +15: 15.1
 +5: 5.0
 +15: 15.1
 -15: -15.1
 Battery: 3.2
 Internal: 27.5
 Chamber: 49.6
 Cooler: -2.5
 Converter: 318
 Converter Set: 319
 Pressure: 186.1
 Sample Flow: 0.543
 Ozonator Flow: OK
 Internal Span: 381.4/6.05/375.3

As left:
 NO Bkg ppb: 4.7
 NOx Bkg ppb: 4.9
 NO Coef: 0.940
 NOx Coef: 1.015
 NO₂ Coef: 1.003
 PMT: -850
 +15: 15.1
 +5: 5.0
 +15: 15.1
 -15: -15.1
 Battery: 3.2
 Internal: 28.1
 Chamber: 49.5
 Cooler: -2.5
 Converter: 318
 Converter Set: 319
 Pressure: 186.8
 Sample Flow: 0.547
 Ozonator Flow: OK
 Internal Span: 395.5/6.4/389

Calibrator Flow Targets:

Make & Model: EnviroNics 6100
 Serial #: 4760
 Cal Gas Cylinder I.D. #: LL42475
 NO Cylinder Conc. (ppm): 48.5
 NOx Cylinder Conc. (ppm): 48.5

point	diluent (cc/min)	cal gas (cc/min)	O ₃ setting (v or ppb)	total (cc/min)
zero	4995	0	0	4995
high	4916	40	290.00	4956
mid	4957	20	160.00	4977
low	4975	10	70.00	4985

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	4993	0.0	4993	0	0	0.0	0.0	NA	NA
adjusted zero	NA							NA	NA
as found high	4953	41.13	4994	399.4	399.4	398	398	1.004	1.004
adjusted high	4953	41.13	4994	399.4	399.4	399	399	1.001	1.001
mid	4972	20.55	4993	199.6	199.6	199	199	1.003	1.003
low	4985	10.28	4996	99.8	99.8	99	99	1.008	1.008
calibrator zero	4995	0.00	4995	0	0	0.0	0.0	NA	NA
Average C.F.=								1.004	1.004

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ increase	NO ₂ C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4953	41.14	4994	0.0	399.0	399.0	0.0	0.0	0.0	
as found NO ₂	4953	41.1	4994	290.0	79.0	398.0	319.0	320.0	319.0	1.003
adjusted NO ₂	4953	41.1	4994	290.0	79.0	398.0	319.0	320.0	319.0	1.003
gpt mid	4953	41.1	4994	160.0	217.0	398.0	181.0	182.0	181.0	1.006
gpt low	4953	41.14	4994	70.0	323.0	398.0	76.0	76.0	76.0	1.000
Average NO ₂ C.F.=										1.003

Linear Regression/Calibration Results:

	NO	NOx	NO ₂	LIMITS
Correlation Coefficient =	1.000	1.000	1.000	> or = 0.995
Slope =	0.999	0.999	0.996	0.85-1.15
b (Intercept as % of full scale)=	-0.07%	-0.07%	0.01%	± 3% F.S.
% change in C.F. from last cal=	-0.36%	-1.07%	-1.12%	+/-15%
NO ₂ converter efficiency			99.7%	>85%

Comments:

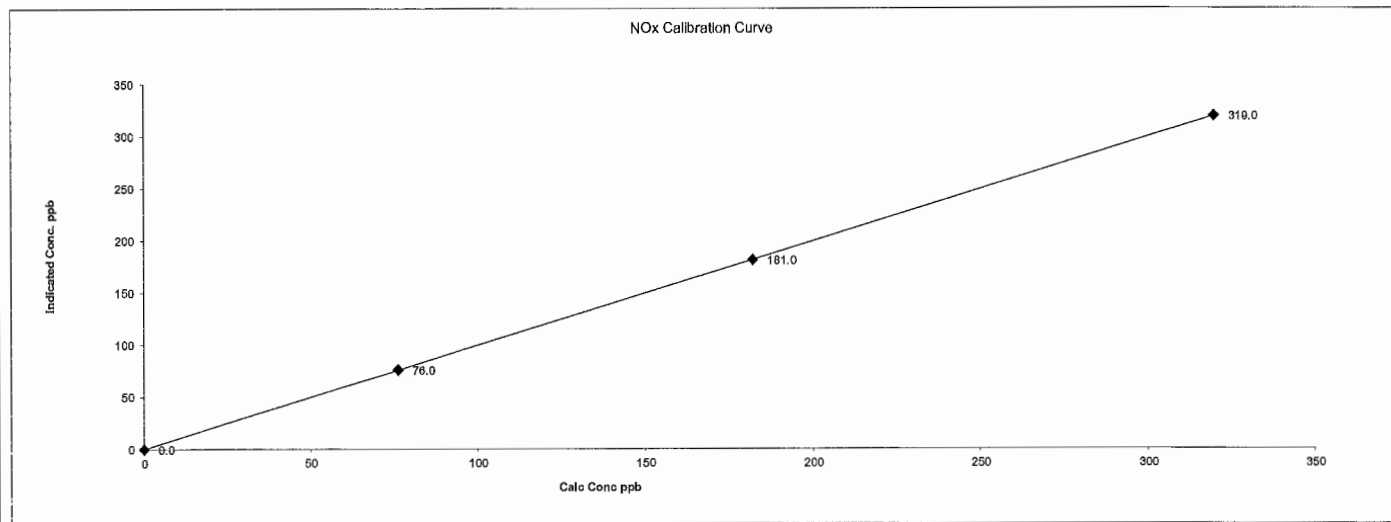
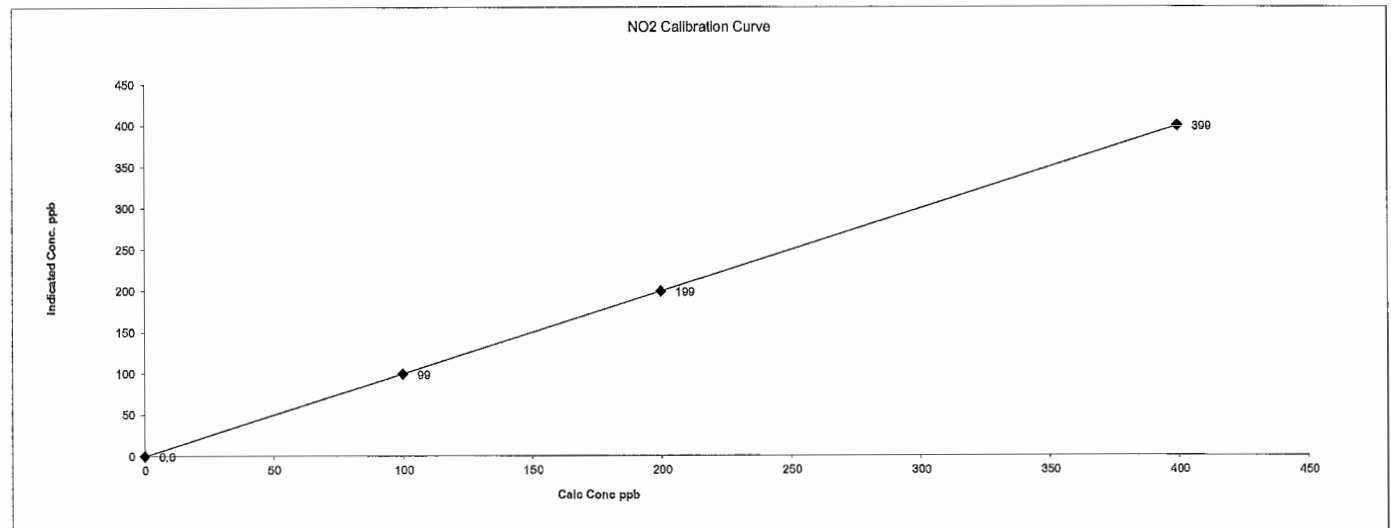
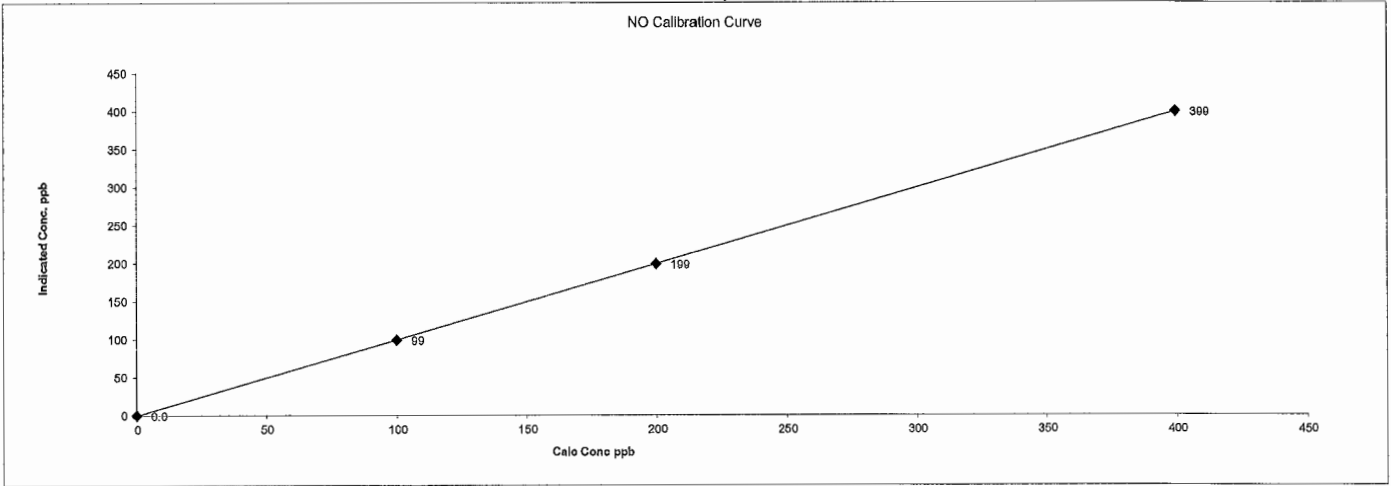
No ZERO adjustment made. Filter changed

NO₂ adjustment not made. Values copied from GPT as-found for calculation only.

Date: 6-Apr-15
 Company: LICA
 Station Name/Location: Cold Lake South
 Performed by: Alex Yakupov

Start Time (mst): 9:24
 End Time (mst): 15:56
 Calibration Purpose: Monthly
 Cal Gas Expiry Date: 26-Mar-17

Thermo 42C NOx Analyzer Calibration



01 Minute Averages



04/06/15 06:40 04/06/15 08:40 04/06/15 10:40 04/06/15 12:40 04/06/15 14:40 04/06/15 16:40

— LICA NOX_ PPB — LICA NO_ PPB — LICA NO2_ PPB

OZONE

Maxxam Thermo 49i O₃ Analyzer Calibration

Date: <u>7-Apr-15</u>	Start Time (mst): <u>7:39</u>
Company: <u>LICA</u>	End Time (mst): <u>11:19</u>
Station Name/Location: <u>Cold Lake South</u>	Calibration Purpose: <u>Monthly Calibration</u>
Performed by: <u>Alex Yakupov</u>	G.P.T. Date: <u>6-Apr-15</u>

Analyzer:	Range ppm: <u>500</u>
Serial Number: <u>700419951</u>	As Found C.F.: <u>0.941</u>
Last Calibration Date: <u>3-Mar-15</u>	New C.F.: <u>1.010</u>
Previous Cal High Point C.F.: <u>1.000</u>	

	As found:	As left:
Motherboard:	O ₃ Bkg: <u>0.3</u>	O ₃ Bkg: <u>0.2</u>
	O ₃ Coef: <u>1.009</u>	O ₃ Coef: <u>0.949</u>
	<u>3.3</u>	<u>3.3</u>
	<u>15.0</u>	<u>15.1</u>
	<u>24.0</u>	<u>23.9</u>
Interface Board:	<u>-3.3</u>	<u>-3.2</u>
	<u>3.3</u>	<u>3.2</u>
	<u>5.0</u>	<u>4.9</u>
	<u>15.0</u>	<u>14.8</u>
	<u>-15.0</u>	<u>-14.8</u>
Photo Lamp	<u>8.7</u>	<u>8.7</u>
	<u>24.0</u>	<u>23.7</u>
O ₃ Lamp	<u>9.0</u>	<u>9.0</u>
Bench:	<u>28.2</u>	<u>28.3</u>
Bench Lamp:	<u>53.5</u>	<u>53.5</u>
O ₃ Lamp:	<u>67.4</u>	<u>67.4</u>
Pressure:	<u>686.5</u>	<u>701.4</u>
Cell A lpm:	<u>0.701</u>	<u>0.710</u>
Cell B lpm:	<u>0.739</u>	<u>0.749</u>
O ₃ ppb:	<u>32.5</u>	<u>0.0</u>
Cell A ppb:	<u>42.3</u>	<u>10.9</u>
Cell B ppb:	<u>22.1</u>	<u>-11.0</u>
Cell A Int:	<u>59619</u>	<u>59640</u>
Cell B Int:	<u>57849</u>	<u>57878</u>
Internal Span:	<u>275</u>	<u>262.2</u>

Calibrator: Make & Model: <u>Enviroincs 6100</u> Serial #: <u>4760</u> NOx Gas Cylinder I.D. #: <u>LL42475</u> NOx Cylinder Conc. (ppm): <u>48.5</u>	Calibrator Flow Targets: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>point</th> <th>total flow (cc/min)</th> <th>O₃ setting (v or ppb)</th> </tr> </thead> <tbody> <tr> <td>zero</td> <td>4995</td> <td>0</td> </tr> <tr> <td>high</td> <td>4995</td> <td>290</td> </tr> <tr> <td>mid</td> <td>4995</td> <td>160</td> </tr> <tr> <td>low</td> <td>4995</td> <td>70</td> </tr> </tbody> </table>	point	total flow (cc/min)	O ₃ setting (v or ppb)	zero	4995	0	high	4995	290	mid	4995	160	low	4995	70
point	total flow (cc/min)	O ₃ setting (v or ppb)														
zero	4995	0														
high	4995	290														
mid	4995	160														
low	4995	70														

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4995	0.0	4995	0.0	0.0	NA
adjusted zero	NA	0.0				NA
as found high	4995	290.00	5285	320.0	340.0	0.941
adjusted high	4995	290.00	5285	320.0	320.0	1.000
mid	4995	160.00	5155	182.0	179.0	1.017
low	4995	70.00	5065	76.0	75.0	1.013
calibrator zero	4995	0.00	4995	0.0	0.0	NA

Average C.F.= 1.010

Linear Regression/Calibration Results:

Correlation Coefficient = <u>1.000</u>	LIMITS > or = 0.995	PASS
Slope = <u>0.999</u>	0.85-1.15	PASS
b (Intercept as % of full scale) = <u>-0.178%</u>	± 3% F.S.	PASS
% change in C.F. from last cal = <u>6%</u>	± 15%	PASS

Comments:

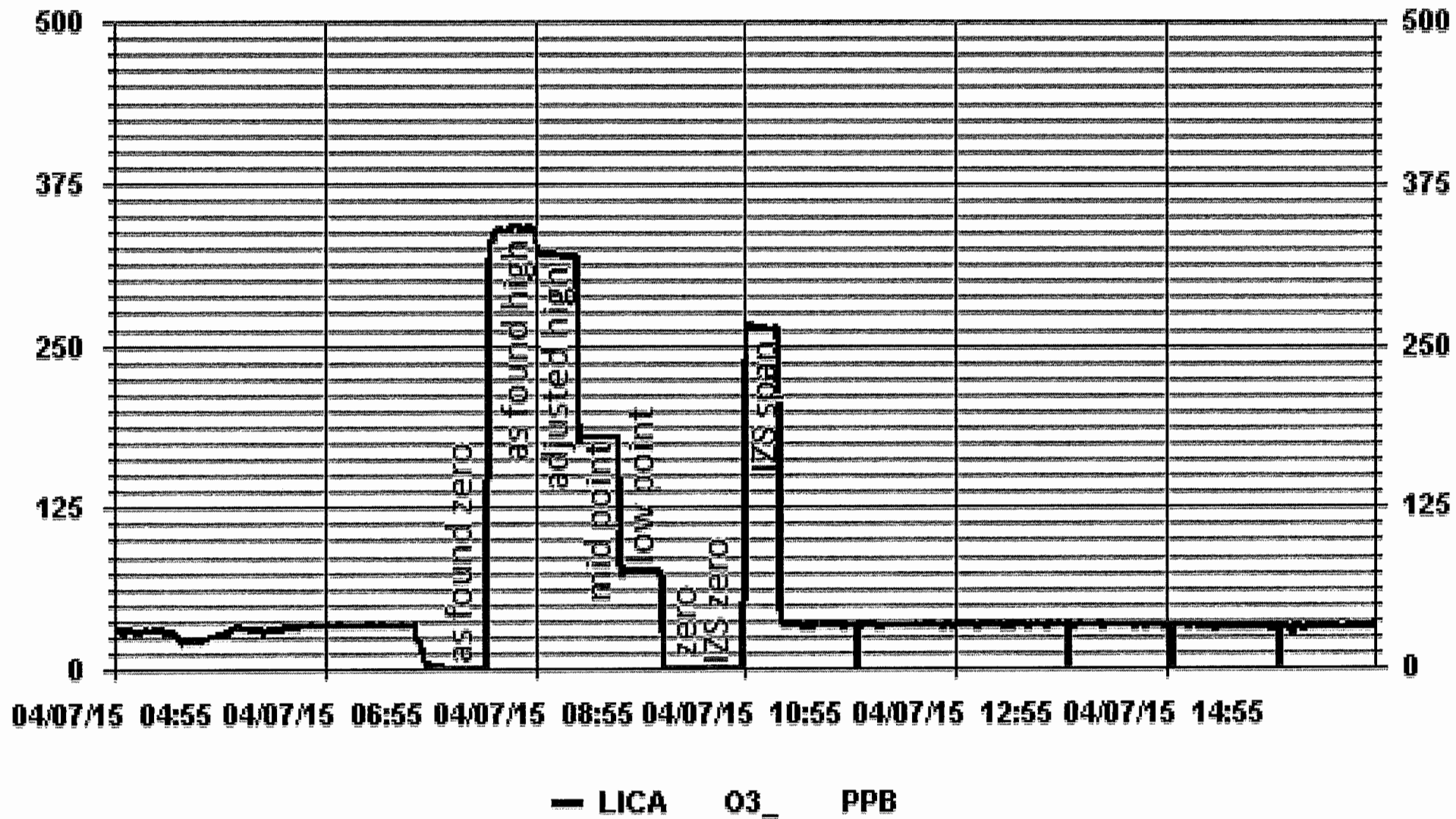
Filter changed. No Zero adjustments made

Thermo 49i O₃ Analyzer Calibration

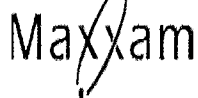
O₃ Calibration Curve

Calc Conc (ppb)	Indicated Conc (ppb)
0.0	0.0
76.0	75.0
170.0	170.0
320.0	320.0

01 Minute Averages



PARTICULATE MATTER



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: 7-Apr-15
 Company: LICA
 Station Name/Location: Cold Lake South
 Previous Audit Date: 18-Mar-15

Parameter: PM 2.5
 Performed by: Alex Yakupov
 Start/End Time (mst): 10:34 / 11:49
 Calibration Purpose: 1st Audit

1400A Information and Status:

Serial Number:	<u>1405A201620804</u>	As Found Filter Loading %:	<u>24.51</u>
Ko Factor:	<u>14578</u>	As Left Filter Loading %:	<u>27.16</u>
Ambient Temperature °C:	<u>3.9</u>	As Found Noise:	<u>0.013</u>
Ambient Pressure atm:	<u>0.935</u>	As Left Noise:	<u>0.018</u>
Main Flow Reading lpm:	<u>3.00</u>	Pump Vacuum:	<u>0.36</u>
Aux Flow Reading lpm:	<u>13.67</u>	Warnings:	<u>None</u>

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	<u>Dwyer</u>	<u>Fisher</u>	<u>Fisher</u>
Model:	<u>475 Mark III</u>	<u>FB61291</u>	<u>FB61291</u>
Serial Number:	<u>NA</u>	<u>130168457</u>	<u>130168457</u>
Calibration Date:	<u>NA</u>	<u>18-Mar-15</u>	<u>18-Mar-15</u>

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.01	0.22	0.03	0.22
	limit	0.15	0.22	0.15	0.22
Bypass Flow	actual	0.28	0.28	0.22	0.28
	limit	0.60	0.28	0.60	0.28

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

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.01	0.22	0.03	0.22
	limit	0.15	0.22	0.15	0.22
Bypass Flow	actual	0.28	0.28	0.22	0.28
	limit	0.60	0.28	0.60	0.28

As found temperature and pressure:

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>3.9</u>	1405F pressure atm:	<u>0.935</u>
reference temperature °C:	<u>3.9</u>	reference pressure:	<u>0.937</u>
difference °C:	<u>0.0</u>	difference :	<u>-0.002</u>

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

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>3.9</u>	1405F pressure atm:	<u>0.935</u>
reference temperature °C:	<u>3.9</u>	reference pressure:	<u>0.937</u>
difference °C:	<u>0.0</u>	difference :	<u>0.002</u>

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>13.67</u>
reference main flow lpm: <u>3.00</u>	reference total/aux flow lpm: <u>13.66</u>
difference lpm: <u>0.00</u>	difference lpm: <u>-0.01</u>

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

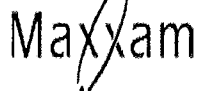
main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>13.67</u>
reference main flow lpm: <u>3.00</u>	reference total/aux flow lpm: <u>13.66</u>
difference lpm: <u>0.00</u>	difference lpm: <u>-0.01</u>

K_o Audit:

Last K_o audit date: 18-Mar-15
 1405F K_o factor: 14578
 Measured K_o factor: 14753.2000
 % difference: 1.20

Comments:

Filters changed



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: 27-Apr-15
 Company: LICA
 Station Name/Location: Cold Lake South
 Previous Audit Date: 7-Apr-15

Parameter: PM 2.5
 Performed by: Alex Yakupov
 Start/End Time (mst): 13:14 - 14:15
 Calibration Purpose: 2nd Audit

1400A Information and Status:

Serial Number:	<u>1405A201620804</u>	As Found Filter Loading %:	<u>31.24</u>
Ko Factor:	<u>14578</u>	As Left Filter Loading %:	<u>17.97</u>
Ambient Temperature °C:	<u>20.86</u>	As Found Noise:	<u>0.006</u>
Ambient Pressure atm:	<u>0.941</u>	As Left Noise:	<u>0.000</u>
Main Flow Reading lpm:	<u>3.00</u>	Pump Vacuum:	<u>0.36</u>
Aux Flow Reading lpm:	<u>13.67</u>	Warnings:	<u>None</u>

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	<u>Dwyer</u>	<u>Fisher</u>	<u>Fisher</u>
Model:	<u>475 Mark III</u>	<u>FB61291</u>	<u>FB61291</u>
Serial Number:	<u>NA</u>	<u>130168457</u>	<u>130168457</u>
Calibration Date:	<u>NA</u>	<u>18-Mar-15</u>	<u>18-Mar-15</u>

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.02	0.23	0.04	0.23
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.28	0.29	0.23	0.29
	limit	0.60	0.60	0.60	0.60

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

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.02	0.23	0.04	0.23
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.28	0.29	0.23	0.29
	limit	0.60	0.60	0.60	0.60

As found temperature and pressure:

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>20.9</u>	1405F pressure atm:	<u>0.941</u>
reference temperature °C:	<u>19.7</u>	reference pressure:	<u>0.942</u>
difference °C:	<u>-1.2</u>	difference :	<u>-0.001</u>

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

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>19.7</u>	1405F pressure atm:	<u>0.942</u>
reference temperature °C:	<u>19.7</u>	reference pressure:	<u>0.942</u>
difference °C:	<u>0.0</u>	difference :	<u>0.000</u>

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>16.67</u>
reference main flow lpm: <u>2.91</u>	reference total/aux flow lpm: <u>17.02</u>
difference lpm: <u>-0.09</u>	difference lpm: <u>0.35</u>

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

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>16.67</u>
reference main flow lpm: <u>3.00</u>	reference total/aux flow lpm: <u>16.66</u>
difference lpm: <u>0.00</u>	difference lpm: <u>-0.01</u>

K_o Audit:

Last K_o audit date: 18-Mar-15
 1405F K_o factor: 14578
 Measured K_o factor: 14753.2000
 % difference: 1.20

Comments:

WIND SYSTEM



Met One Instruments
 1600 NW Washington Blvd.
 Grants Pass, Oregon 97526
 Telephone 541-471-7111
 Facsimile 541-471-7116

Regional Service
 3206 Main St. Suite 106
 Rowlett, Texas 75088
 Telephone 972-412-4715
 Facsimile 972-412-4716

Sonic Wind Sensor Certificate of Calibration

Sensor Model No: 50.5H Sonic Sensor Serial No: F1644
 Customer: _____ P.O. No: _____ Sales Order: _____
 Final Calibration By: Kevin Ricks Calibration Date: 04-01-15
 Quality Control Inspected By: AJZ Inspection Date: APR 03 2015

New Unit Repair/Adjust Re-Calibration As Found
 Unit Within Tolerance as Found Unit Within Tolerance as Left

Calibration Equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal. Due
Digital Multimeter 1	Agilent/HP	34401A	MY41039534	4/11/2015
Digital Multimeter 2	Agilent/HP	34401A	US36094551	8/26/2015
Frequency Counter	Agilent/HP	53131A	MY40009285	5/22/2015
Standard Sensor	MOI	010C-1	P22383	7/11/2017
Temperature Probe	MOI	920005/PC8340	E3402	9/03/2015

Test 1: Average Wind Tunnel Speed: 3.08 Meters per Second Firmware Version: 3194-01 R2.62

WD Setting (Deg)	WD Output (Volts)	WD Indication (Deg)	WD Error (+/- 3 Deg)	WS Standard (m/s)	WS Output (Volts)	WS Indication (m/s)	WS Error (+/- .20 m/s)	Output Type:
30	.084	30.3	.3	3.06	.059	2.96	-.1	0 to 1 volt <input checked="" type="checkbox"/>
60	.165	59.3	-.7	3.07	.059	2.94	-.13	0 to 2.5 volt <input type="checkbox"/>
120	.334	120.2	.2	3.08	.059	2.94	-.14	0 to 5 volt <input type="checkbox"/>
150	.415	149.5	-.5	3.07	.059	2.94	-.13	RS-232 <input checked="" type="checkbox"/>
210	.583	210	0	3.08	.059	2.95	-.12	SDI-12 <input type="checkbox"/>
240	.668	240.3	.3	3.08	.06	2.98	-.1	RS-422 <input type="checkbox"/>
300	.834	300.4	.4	3.07	.06	3.02	-.04	RS-485 <input type="checkbox"/>
330	.916	329.8	-.2	3.09	.059	2.97	-.12	<input type="checkbox"/>

Test 2: Average Wind Tunnel Speed: 11.85 Meters per Second Output Range: 0-50 m/s

WD Setting (Deg)	WD Output (Volts)	WD Indication (Deg)	WD Error (+/- 3 Deg)	WS Standard (m/s)	WS Output (Volts)	WS Indication (m/s)	WS Error (+/- .24 m/s)	Test Items:
30	.081	29.3	-.7	11.79	.235	11.76	-.04	Array Alignment <input checked="" type="checkbox"/>
60	.165	59.5	-.5	11.85	.237	11.87	.01	Jumper Config <input checked="" type="checkbox"/>
120	.331	119.1	-.9	11.85	.236	11.81	-.03	Firmware Config <input checked="" type="checkbox"/>
150	.415	149.3	-.7	11.88	.236	11.8	-.08	Zero Calibration <input checked="" type="checkbox"/>
210	.582	209.5	-.5	11.81	.236	11.79	-.02	Low Speed Test OK <input checked="" type="checkbox"/>
240	.666	239.9	-.1	11.88	.235	11.73	-.16	High Speed Test OK <input checked="" type="checkbox"/>
300	.833	299.7	-.3	11.87	.235	11.73	-.13	Sensor Function <input checked="" type="checkbox"/>
330	.915	329.6	-.4	11.84	.238	11.9	.06	Physical Inspection <input checked="" type="checkbox"/>

The standards used for this calibration have accuracies equal to or greater than the instruments tested. These standards are on record and traceable to NIST to the extent allowed by the institute's calibration facility. Unless otherwise stated hereon, all instruments are calibrated to meet the manufacturer's published specifications. The calibration system complies with MIL-STD-45662A. Calibration performed by direct comparison to the above standard following test procedure: 50.5-6100 Rev E

CALIBRATORS

Company: Maxxam **Operator:** Limin Li

Calibrator:		Flow Measurement Device:	
Make/Model	<u>API 700</u>	Make/Model	<u>N/A</u>
Serial Number	<u>830</u>	Serial Number	<u>N/A</u>
Last Verification Date	<u>Oct 2013</u>	Temperature (°C)	<u>N/A</u>
SO ₂ Cylinder Conc.	<u>50.3</u>	Barometric Pressure	<u>N/A</u>
SO ₂ Cylinder S/N	<u>LL42475</u>		

Flow Measurements

Pt. No. 1 79.5 **Pt. No. 2** 39.8 **Pt. No. 3** 19.9

Calibrator Flow (scm)	Calculated Concentration (ppm)	Indicated Concentration (ppm)	% Difference	
			vs Audit Gas	% Diff. Limit
Zero Air	0.000	0.000		
4918	0.800	0.798	0%	± 10%
4960	0.400	0.398	-1%	± 10%
4977	0.200	0.200	0%	± 10%
Absolute Average Percent Difference			0%	± 10%

LINEAR REGRESSION ANALYSIS
y=mx+b (where x=calculated concentration, y=indicated concentration)

<u>SO₂</u>	LIMITS
Correlation=	1.0000 ≥ 0.995
m (Slope)=	0.9971 0.90-1.10
b (Intercept % of FS)=	0.0000 ± 3% F.S.

AENV Standards	SO ₂ Analyzer
Audit Calibrator	Make/Model <u>Teco 43C</u>
Make/Model <u>R&R MFC 201</u>	Serial/AMU Number <u>AMU 1623</u>
Serial/AMU Number <u>AMU 1690</u>	Last Calibration Date <u>Dec 15/14</u>
	Full Scale (ppm) <u>1.0</u>

COMMENTS: H2S gas was slow to move through the calibrator. Check for contamination inside calibrator. SO2 moves through quickly.

Auditor: Al Clark Date: December 16, 2014
 Operator Signature: _____ Location: McIntyre Center Edmonton

Company Maxxam Operator: Limin Li

Calibrator:		Flow Measurement Device:	
Make/Model	<u>EnviroNics 6100</u>	Make/Model	<u>N/A</u>
Serial Number	<u>4760</u>	Serial Number	<u>N/A</u>
Last Verification Date	<u>December 2013</u>	Temperature (°C)	<u>N/A</u>
NO Cylinder S/N	<u>LL42475</u>	Barometric Pressure	<u>N/A</u>
NO/NOX Concentration	<u>48.5/48.5</u>		

Dilution Flow (scm)			
Pt. #1	<u>5000</u>	Pt. #2	<u>5000</u>
Pt. #3	<u>5000</u>		
Gas Flow (scm)			
Pt. #1	<u>80</u>	Pt. #2	<u>40</u>
Pt. #3	<u>20</u>	Gas flows not available from display.	

Callibrator Flow (scm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
4980	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
4993	0.0	0.799	0.799	0.840	-0.001	0.839	5%	5%
4994	0.0	0.399	0.399	0.420	-0.001	0.419	5%	5%
4991	0.0	0.200	0.200	0.211	0.000	0.211	5%	5%
Absolute Average Percent Difference							5%	5%

LINEAR REGRESSION ANALYSIS *y=mx+b (where x=calculated concentration, y=indicated concentration)*

NO		LIMITS		NOx	
Correlation=	1.0000	≥	0.990	Correlation=	1.0000
m (Slope)=	1.0511		0.90-1.10	m (Slope)=	1.0496
b (Intercept % of FS)=	0.0400	±	3% F.S.	b (Intercept % of FS)=	0.0400

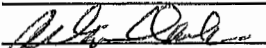
Flow	O ₂ Conc	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
4993	0.000	0.000	0.823	-0.001	0.822	NO ₂	% Diff. Limit
4993	0.480	0.530	0.293	0.530	0.823	0	± 10%
4993	0.240	0.269	0.554	0.269	0.823	0	± 10%
4993	0.090	0.096	0.727	0.097	0.824	0	± 10%
Absolute Average Percent Difference						0	± 10%

LINEAR REGRESSION ANALYSIS *y=mx+b (where x=calculated concentration, y=indicated concentration)*

NO ₂		LIMITS	
Correlation=	1.0000	≥	0.995
m (Slope)=	1.0006		0.90-1.10
b (Intercept % of FS)=	-0.0132	±	3% F.S.

AENV Standards		NO _x Analyzer	
Audit Calibrator		Make/Model	<u>Teco 421</u>
Make/Model	<u>Teco 1461</u>	Serial/AMU Number	<u>AMU 1868</u>
Serial/AMU Number	<u>AMU 1809</u>	Last Calibration Date	<u>December 15, 2014</u>
		Full Scale (ppm)	<u>1.0</u>

COMMENTS:

Auditor: Al Clark
Operator Signature: 

Date: December 17, 2014
Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

NO Cylinder Gas

File No. 2014-252CGA

Company: Maxxam Operators name: Limin Li
Cylinder #: LL42475 Conc (PPM) 48.5/48.5 Tolerance (%) 1 Certified By: Air Liquide

Reference Calibrator and Gas:				Flow Measurement Device:	
Make/Model	<u>Teco 146i</u>			Make/Model	<u>Blos DC2</u>
Serial Number	<u>AMU 1809</u>			Serial Number	<u>AMU 1659</u>
Last Verification Date	<u>December 15, 2014</u>			Temp. °C	<u>23.0 C</u>
Gas Type	<u>NO</u>	Conc.	<u>48.79</u>	B.P.	<u>702 mmhg</u>
Cylinder Number	<u>CAL017892</u>				

Reference Analyzer:
Make/Model Teco 42i Serial/AMU Number: 1868
Instrument Settings Zero: 4.3 Span: 1.017 Range: 1.0
Last Calibration: Date: Dec15/14 C.F. 1.000 Done By: Al Clark

Calibrator Flows (scem)		Indicated Conc. (ppm)		Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration	
Dilution	Gas	NO	NOX			NO	NOX
5000	0.0	0.000	0.000	0.00408	245.369	50.5	50.5
4983	82.8	0.830	0.832	0.01662	60.181	50.0	50.1
4998	40.9	0.414	0.415	0.00818	122.200	50.6	50.7
4981	20.3	0.206	0.206	0.00408	245.369	50.5	50.5
Average Cylinder Concentration:						50.4	50.4

	NO	NOx
Previous Stated Concentration PPM:	<u>48.5</u>	<u>48.5</u>
Percent variance from Stated:	<u>3.8</u>	<u>4.0</u>

Cylinder gas tolerances based on NO only

Meets Manufacturer Tolerance. Use manufacturers stated concentration COMMENTS: _____
 <=5% Outside Manufacturer Tolerance. Use manufacturers concentration Contains 50.3 ppm of SO2.
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder

Auditor: Al Clark Date: December 16, 2014
Operator Signature: [Signature] Location: McIntyre Center Edmonton



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2014-257CGA

Company: Maxxam Operator's Name: Lim/n LI
Cylinder #: LL42475 Concentration PPM: 50.3 Tolerance(%) 1 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: December 15, 2014
Gas Type: SO2 Conc. 98.57
Cylinder Number: CAL016720

Flow Measurement Device:

Make/Model: Bios DC2
Serial Number: AMU 1659
Temp. °C: 22.5 C
B.P. 701 mmhg

Reference Analyzer:

Make/Model: Teco 43C Serial/AMU Number: 1623
Instrument Settings: Zero: 7.7 Span: 1.018 Range: 1.0
Last Calibration: Date: Dec15/14 C.F. 1.000 Done By: Al Clark

Calibrator Flows (scm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.000	0.01019	228.386	48.9
5114	52.1	0.502	0.01019	98.157	49.3
5093	22.3	0.214	0.00438	228.386	48.9
5073	10.9	0.105	0.00215	465.413	48.9
Average Cylinder Concentration:					49.0

Previous Stated Concentration PPM: 50.3

Percent variance from Stated: 2.6

Meets Manufacturer Tolerance, Use manufacturers stated concentration COMMENTS: _____
 <=5% Outside Manufacturer Tolerance. Use manufacturers concentration
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder

Auditor: Al Clark
Operator Signature: *Al Clark*

Date: December 16, 2014
Location: McIntyre Center Edmonton



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2013-324CGA

Company: Maxxam Operator's Name: Chris Wesson
 Cylinder #: BLM005049 Concentration PPM: 10.1 Tolerance(%) 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
 Serial Number: AMU 1690
 Last Verification Date: February 21, 2013
 Gas Type: H2S Conc. 20.02
 Cylinder Number: D249556

Flow Measurement Device:

Make/Model: Bios DC2
 Serial Number: AMU 1659
 Temp. °C: 21.0 C
 B.P. 696 mmhg

Reference Analyzer:

Make/Model: Teco 45C Serial/AMU Number: 1624
 Instrument Settings: Zero: 7.5 Span: 1.023 Range: 0.1
 Last Calibration: Date: Feb 21/13 C.F. 1.000 Done By: Al Clark

Calibrator Flows (scm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.0000	0.00749	133.586	10.3
5103	38.2	0.0768	0.00749	133.586	10.3
5087	17.9	0.0355	0.00352	284.190	10.1
5064	9.2	0.0182	0.00182	550.435	10.0
Average Cylinder Concentration:					10.1

Previous Stated Concentration PPM: 10.1

Percent variance from Stated: 0.2

Meets Manufacturer Tolerance. Use manufacturers stated concentration COMMENTS: _____
 <=5% Outside Manufacturer Tolerance. Use manufacturers concentration _____
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder _____

Auditor: Al Clark
 Operator Signature: *Al Clark*

Date: February 21, 2013
 Location: McIntyre Center Edmonton



Praxair Canada, Inc.
 9925 54th Street
 Edmonton, AB T5B 2K5
 Tel: 780-419-0775
 Fax: 780-419-5302

03/27/2014

MAXAM ANALYTICS INC "NA"
 9372 49TH ST
 EDMONTON, AB T6B 2L7

Work Order No. 20248856
 Customer Reference No.

Product Lot/Batch No. Z582 4 065 02
 Product Part No. NI ME600P2P-AQ

CERTIFICATE OF ANALYSIS
Primary Standard

Component	Requested Concentration	Certified Concentration	Analytical Structure	Analytical Accuracy
Methane	800 ppm	801 ppm	U	±1% rel
Propane	200 ppm	202 ppm	U	±1% rel
Nitrogen	Balance	Balance		

Analytical Instruments: Mettler-Toledo Analytical Balance-102xx-USA--
 Hewlett-Packard Agilent-1190--GC-FID

Cylinder Style: AQ
 Filling Method: Gravimetric
 Cylinder Pressure (PSI): 2200 psi
 Date of Fill: 03/24/2014
 Cylinder Volume: 33.0 L
 Expiration Date: 03/28/2017
 Valve Other Connection: COA-213
 Valve No: 113474

[Signature]
 Analyst: [Name]

This certificate is valid only when used in conjunction with the product it certifies. It is provided for informational purposes only and does not constitute a warranty. The information herein is provided for informational purposes only and does not constitute a warranty. The information herein is provided for informational purposes only and does not constitute a warranty.

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APPENDIX IV
ANALYTICAL RESULTS

VOCs

<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040066-001</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/CLS/April 6, 2015</p> <p>CANISTER ID: H2834</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 06-Apr-15 0:00</p> <p>DATE RECEIVED: 14-Apr-15</p> <p>REPORT CREATED: 24-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1,1-Dichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Apr-15
1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	17-Apr-15
1,2,4-Trichlorobenzene	K, T, U	< 0.8	ppbv	0.8	AC-058	17-Apr-15
1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Apr-15
1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Apr-15
1,2-Dichloroethane	I	0.03	ppbv	0.01	AC-058	17-Apr-15
1,2-Dichloropropane	I	0.01	ppbv	0.01	AC-058	17-Apr-15
1,3,5-Trimethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1,3-Butadiene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1,3-Dichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Apr-15
1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Apr-15
1,4-Dioxane	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Apr-15
1-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1-Hexene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1-Pentene	K, T, U	< 0.01	ppbv	0.01	AC-058	17-Apr-15
2,2,4-Trimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	17-Apr-15
2,2-Dimethylbutane	I	0.02	ppbv	0.01	AC-058	17-Apr-15
2,3,4-Trimethylpentane	I	0.02	ppbv	0.01	AC-058	17-Apr-15
2,3-Dimethylbutane	I	0.04	ppbv	0.02	AC-058	17-Apr-15
2,3-Dimethylpentane	I	0.02	ppbv	0.02	AC-058	17-Apr-15
2,4-Dimethylpentane	I	0.02	ppbv	0.01	AC-058	17-Apr-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By:</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040066-001 MATRIX: Ambient Air CLIENT SAMPLE ID: LICA/VOC/CLS/April 6, 2015 CANISTER ID: H2834 DESCRIPTION: CLS DATE SAMPLED: 06-Apr-15 0:00 DATE RECEIVED: 14-Apr-15 REPORT CREATED: 24-Apr-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
2-Methylheptane	I	0.02	ppbv	0.01	AC-058	17-Apr-15
2-Methylhexane	K, T, U	< 0.01	ppbv	0.01	AC-058	17-Apr-15
2-Methylpentane	I	0.07	ppbv	0.01	AC-058	17-Apr-15
3-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
3-Methylhexane	I	0.02	ppbv	0.02	AC-058	17-Apr-15
3-Methylpentane	I	0.04	ppbv	0.01	AC-058	17-Apr-15
Acetone		2.1	ppbv	0.4	AC-058	17-Apr-15
Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Apr-15
Benzene	I	0.19	ppbv	0.01	AC-058	17-Apr-15
Benzyl chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Apr-15
Bromodichloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
Bromomethane	I	0.01	ppbv	0.01	AC-058	17-Apr-15
Carbon disulfide	K, T, U	< 0.01	ppbv	0.01	AC-058	17-Apr-15
Carbon tetrachloride	I	0.11	ppbv	0.01	AC-058	17-Apr-15
Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
Chloroform	I	0.02	ppbv	0.02	AC-058	17-Apr-15
Chloromethane		0.74	ppbv	0.02	AC-058	17-Apr-15
cis-1,2-Dichloroethene	K, T, U	< 0.01	ppbv	0.01	AC-058	17-Apr-15
cis-1,3-Dichloropropene	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Apr-15
cis-2-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
Cyclohexane	I	0.03	ppbv	0.02	AC-058	17-Apr-15
Cyclopentane	I	0.01	ppbv	0.01	AC-058	17-Apr-15
Dibromochloromethane	K, T, U	< 0.01	ppbv	0.01	AC-058	17-Apr-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040066-001</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/CLS/April 6, 2015</p> <p>CANISTER ID: H2834</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 06-Apr-15 0:00</p> <p>DATE RECEIVED: 14-Apr-15</p> <p>REPORT CREATED: 24-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
Ethanol		0.8	ppbv	0.3	AC-058	17-Apr-15
Ethyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Apr-15
Ethylbenzene	I	0.03	ppbv	0.01	AC-058	17-Apr-15
Freon-11		0.35	ppbv	0.02	AC-058	17-Apr-15
Freon-113	I	0.10	ppbv	0.01	AC-058	17-Apr-15
Freon-114	I	0.03	ppbv	0.02	AC-058	17-Apr-15
Freon-12		0.76	ppbv	0.02	AC-058	17-Apr-15
Hexachloro-1,3-butadiene	K, T, U	< 0.50	ppbv	0.5	AC-058	17-Apr-15
Isobutane	I	0.28	ppbv	0.02	AC-058	17-Apr-15
Isopentane	I	0.24	ppbv	0.03	AC-058	17-Apr-15
Isoprene	I	0.02	ppbv	0.01	AC-058	17-Apr-15
Isopropyl alcohol	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Apr-15
Isopropylbenzene	I	0.02	ppbv	0.01	AC-058	17-Apr-15
m,p-Xylene	I	0.06	ppbv	0.03	AC-058	17-Apr-15
m-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Apr-15
m-Ethyltoluene	K, T, U	< 0.08	ppbv	0.08	AC-058	17-Apr-15
Methyl butyl ketone	K, T, U	< 0.50	ppbv	0.5	AC-058	17-Apr-15
Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Apr-15
Methyl isobutyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Apr-15
Methyl methacrylate	K, T, U	< 0.07	ppbv	0.07	AC-058	17-Apr-15
Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Apr-15
Methylcyclohexane	I	0.03	ppbv	0.01	AC-058	17-Apr-15
Methylcyclopentane	I	0.03	ppbv	0.02	AC-058	17-Apr-15
Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Apr-15
n-Butane		0.58	ppbv	0.03	AC-058	17-Apr-15
n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	17-Apr-15

Qualifiers

K Off-scale low. Actual value is known to be less than the value given
T Value reported is less than the laboratory method detection limit
U Compound was analyzed for but not detected
I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

Certified By:

On behalf of: PJ Pretorius, Portfolio Manager, EAS

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040066-001</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/CLS/April 6, 2015</p> <p>CANISTER ID: H2834</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 06-Apr-15 0:00</p> <p>DATE RECEIVED: 14-Apr-15</p> <p>REPORT CREATED: 24-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
n-Dodecane	K, T, U	< 4	ppbv	4	AC-058	17-Apr-15
n-Heptane	I	0.03	ppbv	0.01	AC-058	17-Apr-15
n-Hexane	I	0.06	ppbv	0.01	AC-058	17-Apr-15
n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
n-Pentane	K, T, U	< 0.1	ppbv	0.1	AC-058	17-Apr-15
n-Propylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	17-Apr-15
n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	17-Apr-15
Naphthalene	K, T, U	< 2	ppbv	2	AC-058	17-Apr-15
n-Nonane	I	0.01	ppbv	0.01	AC-058	17-Apr-15
o-Ethyltoluene	K, T, U	< 0.01	ppbv	0.01	AC-058	17-Apr-15
o-Xylene	I	0.03	ppbv	0.01	AC-058	17-Apr-15
p-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Apr-15
p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	17-Apr-15
Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Apr-15
Tetrachloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Apr-15
Tetrahydrofuran	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Apr-15
Toluene	I	0.09	ppbv	0.01	AC-058	17-Apr-15
trans-1,2-Dichloroethylene	K, T, U	< 0.01	ppbv	0.01	AC-058	17-Apr-15
trans-1,3-Dichloropropylene	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Apr-15
trans-2-Butene	I	0.03	ppbv	0.01	AC-058	17-Apr-15
trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
Trichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Apr-15
Vinyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Apr-15
Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By:</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040124-001</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/CLS/April 12, 2015</p> <p>CANISTER ID: 1833</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 12-Apr-15 0:00</p> <p>DATE RECEIVED: 17-Apr-15</p> <p>REPORT CREATED: 24-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1,1-Dichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Apr-15
1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	18-Apr-15
1,2,4-Trichlorobenzene	K, T, U	< 0.8	ppbv	0.8	AC-058	18-Apr-15
1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Apr-15
1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Apr-15
1,2-Dichloroethane	I	0.03	ppbv	0.01	AC-058	18-Apr-15
1,2-Dichloropropane	I	0.01	ppbv	0.01	AC-058	18-Apr-15
1,3,5-Trimethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1,3-Butadiene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1,3-Dichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Apr-15
1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Apr-15
1,4-Dioxane	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Apr-15
1-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1-Hexene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1-Pentene	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
2,2,4-Trimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
2,2-Dimethylbutane	I	0.02	ppbv	0.01	AC-058	18-Apr-15
2,3,4-Trimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
2,3-Dimethylbutane	I	0.04	ppbv	0.02	AC-058	18-Apr-15
2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
2,4-Dimethylpentane	I	0.02	ppbv	0.01	AC-058	18-Apr-15

Qualifiers

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- T Value reported is less than the laboratory method detection limit
- U Compound was analyzed for but not detected
- I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

Certified By: Graham Knox, Ops Manager
On behalf of: PJ Pretorius, Portfolio Manager, EAS

Inquiries: (780) 632 8455
E-mail: EAS.Results@albertainnovates.ca

<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040124-001</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/CLS/April 12, 2015</p> <p>CANISTER ID: 1833</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 12-Apr-15 0:00</p> <p>DATE RECEIVED: 17-Apr-15</p> <p>REPORT CREATED: 24-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
2-Methylheptane	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
2-Methylhexane	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
2-Methylpentane	I	0.04	ppbv	0.01	AC-058	18-Apr-15
3-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
3-Methylhexane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
3-Methylpentane	I	0.02	ppbv	0.01	AC-058	18-Apr-15
Acetone		2.7	ppbv	0.4	AC-058	18-Apr-15
Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Apr-15
Benzene	I	0.14	ppbv	0.01	AC-058	18-Apr-15
Benzyl chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Apr-15
Bromodichloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
Bromomethane	I	0.01	ppbv	0.01	AC-058	18-Apr-15
Carbon disulfide	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
Carbon tetrachloride	I	0.13	ppbv	0.01	AC-058	18-Apr-15
Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
Chloroform	I	0.03	ppbv	0.02	AC-058	18-Apr-15
Chloromethane		0.82	ppbv	0.02	AC-058	18-Apr-15
cis-1,2-Dichloroethene	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
cis-1,3-Dichloropropene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Apr-15
cis-2-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
Cyclohexane	I	0.05	ppbv	0.02	AC-058	18-Apr-15
Cyclopentane	I	0.02	ppbv	0.01	AC-058	18-Apr-15
Dibromochloromethane	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15

Qualifiers

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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040124-001</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/CLS/April 12, 2015</p> <p>CANISTER ID: 1833</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 12-Apr-15 0:00</p> <p>DATE RECEIVED: 17-Apr-15</p> <p>REPORT CREATED: 24-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
Ethanol		2.5	ppbv	0.3	AC-058	18-Apr-15
Ethyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Apr-15
Ethylbenzene	I	0.01	ppbv	0.01	AC-058	18-Apr-15
Freon-11		0.39	ppbv	0.02	AC-058	18-Apr-15
Freon-113	I	0.11	ppbv	0.01	AC-058	18-Apr-15
Freon-114	I	0.03	ppbv	0.02	AC-058	18-Apr-15
Freon-12		0.84	ppbv	0.02	AC-058	18-Apr-15
Hexachloro-1,3-butadiene	K, T, U	< 0.50	ppbv	0.5	AC-058	18-Apr-15
Isobutane	I	0.26	ppbv	0.02	AC-058	18-Apr-15
Isopentane	I	0.16	ppbv	0.03	AC-058	18-Apr-15
Isoprene	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
Isopropyl alcohol	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Apr-15
Isopropylbenzene	I	0.01	ppbv	0.01	AC-058	18-Apr-15
m,p-Xylene	I	0.04	ppbv	0.03	AC-058	18-Apr-15
m-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Apr-15
m-Ethyltoluene	K, T, U	< 0.08	ppbv	0.08	AC-058	18-Apr-15
Methyl butyl ketone	K, T, U	< 0.50	ppbv	0.5	AC-058	18-Apr-15
Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Apr-15
Methyl isobutyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Apr-15
Methyl methacrylate	K, T, U	< 0.07	ppbv	0.07	AC-058	18-Apr-15
Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Apr-15
Methylcyclohexane	I	0.06	ppbv	0.01	AC-058	18-Apr-15
Methylcyclopentane	I	0.04	ppbv	0.02	AC-058	18-Apr-15
Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Apr-15
n-Butane		0.45	ppbv	0.03	AC-058	18-Apr-15
n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	18-Apr-15

Qualifiers

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RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040124-001 MATRIX: Ambient Air CLIENT SAMPLE ID: LICA/VOC/CLS/April 12, 2015 CANISTER ID: 1833 DESCRIPTION: CLS DATE SAMPLED: 12-Apr-15 0:00 DATE RECEIVED: 17-Apr-15 REPORT CREATED: 24-Apr-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
n-Dodecane	K, T, U	< 4.0	ppbv	0.4	AC-058	18-Apr-15
n-Heptane	I	0.02	ppbv	0.01	AC-058	18-Apr-15
n-Hexane	I	0.05	ppbv	0.01	AC-058	18-Apr-15
n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
n-Pentane	K, T, U	< 0.1	ppbv	0.1	AC-058	18-Apr-15
n-Propylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	18-Apr-15
n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	18-Apr-15
Naphthalene	K, T, U	< 2.0	ppbv	0.5	AC-058	18-Apr-15
n-Nonane	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
o-Ethyltoluene	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
o-Xylene	I	0.02	ppbv	0.01	AC-058	18-Apr-15
p-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Apr-15
p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	18-Apr-15
Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Apr-15
Tetrachloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Apr-15
Tetrahydrofuran	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Apr-15
Toluene	I	0.05	ppbv	0.01	AC-058	18-Apr-15
trans-1,2-Dichloroethylene	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
trans-1,3-Dichloropropylene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Apr-15
trans-2-Butene	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
Trichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Apr-15
Vinyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Apr-15
Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15

Qualifiers

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RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040220-001 MATRIX: Ambient Air CLIENT SAMPLE ID: LICA/VOC/CLS/April 18, 2015 CANISTER ID: 2660 DESCRIPTION: CLS DATE SAMPLED: 18-Apr-15 0:00 DATE RECEIVED: 28-Apr-15 REPORT CREATED: 12-May-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,1-Dichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	30-Apr-15
1,2,4-Trichlorobenzene	K, T, U	< 0.8	ppbv	0.8	AC-058	30-Apr-15
1,2,4-Trimethylbenzene	I	0.04	ppbv	0.03	AC-058	30-Apr-15
1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	30-Apr-15
1,2-Dichloroethane	I	0.02	ppbv	0.01	AC-058	30-Apr-15
1,2-Dichloropropane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
1,3,5-Trimethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,3-Butadiene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,3-Dichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	30-Apr-15
1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
1,4-Dioxane	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
1-Butene	I	0.06	ppbv	0.02	AC-058	30-Apr-15
1-Hexene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1-Pentene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
2,2,4-Trimethylpentane	I	0.02	ppbv	0.01	AC-058	30-Apr-15
2,2-Dimethylbutane	I	0.02	ppbv	0.01	AC-058	30-Apr-15
2,3,4-Trimethylpentane	I	0.01	ppbv	0.01	AC-058	30-Apr-15
2,3-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
2,4-Dimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040220-001 MATRIX: Ambient Air CLIENT SAMPLE ID: LICA/VOC/CLS/April 18, 2015 CANISTER ID: 2660 DESCRIPTION: CLS DATE SAMPLED: 18-Apr-15 0:00 DATE RECEIVED: 28-Apr-15 REPORT CREATED: 12-May-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
2-Methylheptane	I	0.02 ppbv	0.01	AC-058	30-Apr-15
2-Methylhexane	K, T, U	< 0.01 ppbv	0.01	AC-058	30-Apr-15
2-Methylpentane	I	0.08 ppbv	0.01	AC-058	30-Apr-15
3-Methylheptane	K, T, U	< 0.02 ppbv	0.02	AC-058	30-Apr-15
3-Methylhexane	I	0.02 ppbv	0.02	AC-058	30-Apr-15
3-Methylpentane	I	0.05 ppbv	0.01	AC-058	30-Apr-15
Acetone		3.7 ppbv	0.4	AC-058	30-Apr-15
Acrolein	K, T, U	< 0.3 ppbv	0.3	AC-058	30-Apr-15
Benzene		0.30 ppbv	0.01	AC-058	30-Apr-15
Benzyl chloride	K, T, U	< 0.4 ppbv	0.4	AC-058	30-Apr-15
Bromodichloromethane	K, T, U	< 0.02 ppbv	0.02	AC-058	30-Apr-15
Bromoform	K, T, U	< 0.02 ppbv	0.02	AC-058	30-Apr-15
Bromomethane	K, T, U	< 0.01 ppbv	0.01	AC-058	30-Apr-15
Carbon disulfide	K, T, U	< 0.01 ppbv	0.01	AC-058	30-Apr-15
Carbon tetrachloride	I	0.09 ppbv	0.01	AC-058	30-Apr-15
Chlorobenzene	K, T, U	< 0.02 ppbv	0.02	AC-058	30-Apr-15
Chloroethane	K, T, U	< 0.02 ppbv	0.02	AC-058	30-Apr-15
Chloroform	I	0.02 ppbv	0.02	AC-058	30-Apr-15
Chloromethane		0.70 ppbv	0.02	AC-058	30-Apr-15
cis-1,2-Dichloroethene	K, T, U	< 0.01 ppbv	0.01	AC-058	30-Apr-15
cis-1,3-Dichloropropene	K, T, U	< 0.04 ppbv	0.04	AC-058	30-Apr-15
cis-2-Butene	I	0.02 ppbv	0.02	AC-058	30-Apr-15
cis-2-Pentene	K, T, U	< 0.02 ppbv	0.02	AC-058	30-Apr-15
Cyclohexane	I	0.04 ppbv	0.02	AC-058	30-Apr-15
Cyclopentane	I	0.02 ppbv	0.01	AC-058	30-Apr-15
Dibromochloromethane	K, T, U	< 0.01 ppbv	0.01	AC-058	30-Apr-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040220-001 MATRIX: Ambient Air CLIENT SAMPLE ID: LICA/VOC/CLS/April 18, 2015 CANISTER ID: 2660 DESCRIPTION: CLS DATE SAMPLED: 18-Apr-15 0:00 DATE RECEIVED: 28-Apr-15 REPORT CREATED: 12-May-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
Ethanol		1.1	ppbv	0.3	AC-058	30-Apr-15
Ethyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Ethylbenzene	I	0.07	ppbv	0.01	AC-058	30-Apr-15
Freon-11	I	0.29	ppbv	0.02	AC-058	30-Apr-15
Freon-113	I	0.09	ppbv	0.01	AC-058	30-Apr-15
Freon-114	I	0.02	ppbv	0.02	AC-058	30-Apr-15
Freon-12		0.63	ppbv	0.02	AC-058	30-Apr-15
Hexachloro-1,3-butadiene	K, T, U	< 0.50	ppbv	0.5	AC-058	30-Apr-15
Isobutane	I	0.21	ppbv	0.02	AC-058	30-Apr-15
Isopentane	I	0.22	ppbv	0.03	AC-058	30-Apr-15
Isoprene	I	0.02	ppbv	0.01	AC-058	30-Apr-15
Isopropyl alcohol	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Isopropylbenzene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
m,p-Xylene	I	0.12	ppbv	0.03	AC-058	30-Apr-15
m-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
m-Ethyltoluene	K, T, U	< 0.08	ppbv	0.08	AC-058	30-Apr-15
Methyl butyl ketone	K, T, U	< 0.50	ppbv	0.5	AC-058	30-Apr-15
Methyl ethyl ketone		0.9	ppbv	0.3	AC-058	30-Apr-15
Methyl isobutyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Methyl methacrylate	K, T, U	< 0.07	ppbv	0.07	AC-058	30-Apr-15
Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	30-Apr-15
Methylcyclohexane	I	0.04	ppbv	0.01	AC-058	30-Apr-15
Methylcyclopentane	I	0.04	ppbv	0.02	AC-058	30-Apr-15
Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	30-Apr-15
n-Butane		0.53	ppbv	0.03	AC-058	30-Apr-15
n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	30-Apr-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040220-001</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/CLS/April 18, 2015</p> <p>CANISTER ID: 2660</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 18-Apr-15 0:00</p> <p>DATE RECEIVED: 28-Apr-15</p> <p>REPORT CREATED: 12-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
n-Dodecane	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
n-Heptane	I	0.08	ppbv	0.01	AC-058	30-Apr-15
n-Hexane	I	0.12	ppbv	0.01	AC-058	30-Apr-15
n-Octane	I	0.05	ppbv	0.02	AC-058	30-Apr-15
n-Pentane	K, T, U	< 0.1	ppbv	0.1	AC-058	30-Apr-15
n-Propylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	30-Apr-15
n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	30-Apr-15
Naphthalene	K, T, U	< 0.5	ppbv	0.5	AC-058	30-Apr-15
n-Nonane	I	0.04	ppbv	0.01	AC-058	30-Apr-15
o-Ethyltoluene	I	0.02	ppbv	0.01	AC-058	30-Apr-15
o-Xylene	I	0.06	ppbv	0.01	AC-058	30-Apr-15
p-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	30-Apr-15
Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
Tetrachloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
Tetrahydrofuran	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Toluene		0.31	ppbv	0.01	AC-058	30-Apr-15
trans-1,2-Dichloroethylene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
trans-1,3-Dichloropropylene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
trans-2-Butene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
trans-2-Pentene	I	0.02	ppbv	0.02	AC-058	30-Apr-15
Trichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
Vinyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040242-001 MATRIX: Ambient Air CLIENT SAMPLE ID: LICA/VOC/CLS/April 24, 2015 CANISTER ID: S5682 DESCRIPTION: CLS DATE SAMPLED: 24-Apr-15 0:00 DATE RECEIVED: 29-Apr-15 REPORT CREATED: 12-May-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,1-Dichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	30-Apr-15
1,2,4-Trichlorobenzene	K, T, U	< 0.8	ppbv	0.8	AC-058	30-Apr-15
1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	30-Apr-15
1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	30-Apr-15
1,2-Dichloroethane	I	0.03	ppbv	0.01	AC-058	30-Apr-15
1,2-Dichloropropane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
1,3,5-Trimethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,3-Butadiene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,3-Dichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	30-Apr-15
1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
1,4-Dioxane	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
1-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1-Hexene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1-Pentene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
2,2,4-Trimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
2,2-Dimethylbutane	I	0.01	ppbv	0.01	AC-058	30-Apr-15
2,3,4-Trimethylpentane	I	0.01	ppbv	0.01	AC-058	30-Apr-15
2,3-Dimethylbutane	I	0.03	ppbv	0.02	AC-058	30-Apr-15
2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
2,4-Dimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040242-001 MATRIX: Ambient Air CLIENT SAMPLE ID: LICA/VOC/CLS/April 24, 2015 CANISTER ID: S5682 DESCRIPTION: CLS DATE SAMPLED: 24-Apr-15 0:00 DATE RECEIVED: 29-Apr-15 REPORT CREATED: 12-May-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
2-Methylheptane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
2-Methylhexane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
2-Methylpentane	I	0.05	ppbv	0.01	AC-058	30-Apr-15
3-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
3-Methylhexane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
3-Methylpentane	I	0.03	ppbv	0.01	AC-058	30-Apr-15
Acetone		2.2	ppbv	0.4	AC-058	30-Apr-15
Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	30-Apr-15
Benzene	I	0.12	ppbv	0.01	AC-058	30-Apr-15
Benzyl chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Bromodichloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Bromomethane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
Carbon disulfide	I	0.23	ppbv	0.01	AC-058	30-Apr-15
Carbon tetrachloride	I	0.09	ppbv	0.01	AC-058	30-Apr-15
Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Chloroform	I	0.02	ppbv	0.02	AC-058	30-Apr-15
Chloromethane		0.83	ppbv	0.02	AC-058	30-Apr-15
cis-1,2-Dichloroethene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
cis-1,3-Dichloropropene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
cis-2-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Cyclohexane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Cyclopentane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
Dibromochloromethane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040242-001</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/CLS/April 24, 2015</p> <p>CANISTER ID: S5682</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 24-Apr-15 0:00</p> <p>DATE RECEIVED: 29-Apr-15</p> <p>REPORT CREATED: 12-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
Ethanol		0.8	ppbv	0.3	AC-058	30-Apr-15
Ethyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Ethylbenzene	I	0.01	ppbv	0.01	AC-058	30-Apr-15
Freon-11	I	0.28	ppbv	0.02	AC-058	30-Apr-15
Freon-113	I	0.09	ppbv	0.01	AC-058	30-Apr-15
Freon-114	I	0.02	ppbv	0.02	AC-058	30-Apr-15
Freon-12		0.63	ppbv	0.02	AC-058	30-Apr-15
Hexachloro-1,3-butadiene	K, T, U	< 0.50	ppbv	0.5	AC-058	30-Apr-15
Isobutane	I	0.27	ppbv	0.02	AC-058	30-Apr-15
Isopentane	I	0.20	ppbv	0.03	AC-058	30-Apr-15
Isoprene	I	0.02	ppbv	0.01	AC-058	30-Apr-15
Isopropyl alcohol	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Isopropylbenzene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
m,p-Xylene	I	0.03	ppbv	0.03	AC-058	30-Apr-15
m-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
m-Ethyltoluene	K, T, U	< 0.08	ppbv	0.08	AC-058	30-Apr-15
Methyl butyl ketone	K, T, U	< 0.50	ppbv	0.5	AC-058	30-Apr-15
Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	30-Apr-15
Methyl isobutyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Methyl methacrylate	K, T, U	< 0.07	ppbv	0.07	AC-058	30-Apr-15
Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	30-Apr-15
Methylcyclohexane	I	0.01	ppbv	0.01	AC-058	30-Apr-15
Methylcyclopentane	I	0.02	ppbv	0.02	AC-058	30-Apr-15
Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	30-Apr-15
n-Butane		0.71	ppbv	0.03	AC-058	30-Apr-15
n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	30-Apr-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040242-001</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/CLS/April 24, 2015</p> <p>CANISTER ID: S5682</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 24-Apr-15 0:00</p> <p>DATE RECEIVED: 29-Apr-15</p> <p>REPORT CREATED: 12-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
n-Dodecane	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
n-Heptane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
n-Hexane	I	0.05	ppbv	0.01	AC-058	30-Apr-15
n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
n-Pentane	K, T, U	< 0.1	ppbv	0.1	AC-058	30-Apr-15
n-Propylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	30-Apr-15
n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	30-Apr-15
Naphthalene	K, T, U	< 0.5	ppbv	0.5	AC-058	30-Apr-15
n-Nonane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
o-Ethyltoluene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
o-Xylene	I	0.01	ppbv	0.01	AC-058	30-Apr-15
p-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	30-Apr-15
Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
Tetrachloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
Tetrahydrofuran	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Toluene	I	0.05	ppbv	0.01	AC-058	30-Apr-15
trans-1,2-Dichloroethylene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
trans-1,3-Dichloropropylene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
trans-2-Butene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Trichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
Vinyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmain Code 780-812-2182 5107W-50th Street Box 8237 Bonnyville AB</p>	<p>LABORATORY SAMPLE ID: 15050025-003</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/CLS/April 30, 2015</p> <p>CANISTER ID: H3282</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 30-Apr-15 0:00</p> <p>DATE RECEIVED: 05-May-15</p> <p>REPORT CREATED: 20-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1,1-Dichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-May-15
1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	06-May-15
1,2,4-Trichlorobenzene	K, T, U	< 0.8	ppbv	0.8	AC-058	06-May-15
1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-May-15
1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-May-15
1,2-Dichloroethane	I	0.02	ppbv	0.01	AC-058	06-May-15
1,2-Dichloropropane	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
1,3,5-Trimethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1,3-Butadiene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1,3-Dichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	06-May-15
1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	06-May-15
1,4-Dioxane	K, T, U	< 0.4	ppbv	0.4	AC-058	06-May-15
1-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1-Hexene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1-Pentene	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
2,2,4-Trimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
2,2-Dimethylbutane	I	0.01	ppbv	0.01	AC-058	06-May-15
2,3,4-Trimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
2,3-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
2,4-Dimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmain Code 780-812-2182 5107W-50th Street Box 8237 Bonnyville AB</p>	<p>LABORATORY SAMPLE ID: 15050025-003</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/CLS/April 30, 2015</p> <p>CANISTER ID: H3282</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 30-Apr-15 0:00</p> <p>DATE RECEIVED: 05-May-15</p> <p>REPORT CREATED: 20-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
2-Methylheptane	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
2-Methylhexane	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
2-Methylpentane	I	0.05	ppbv	0.01	AC-058	06-May-15
3-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
3-Methylhexane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
3-Methylpentane	I	0.04	ppbv	0.01	AC-058	06-May-15
Acetone		2.9	ppbv	0.4	AC-058	06-May-15
Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	06-May-15
Benzene	I	0.09	ppbv	0.01	AC-058	06-May-15
Benzyl chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	06-May-15
Bromodichloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
Bromomethane	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
Carbon disulfide	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
Carbon tetrachloride	I	0.09	ppbv	0.01	AC-058	06-May-15
Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
Chloroform	I	0.02	ppbv	0.02	AC-058	06-May-15
Chloromethane		0.69	ppbv	0.02	AC-058	06-May-15
cis-1,2-Dichloroethene	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
cis-1,3-Dichloropropene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-May-15
cis-2-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
Cyclohexane	I	0.04	ppbv	0.02	AC-058	06-May-15
Cyclopentane	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
Dibromochloromethane	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmain Code 780-812-2182 5107W-50th Street Box 8237 Bonnyville AB</p>	<p>LABORATORY SAMPLE ID: 15050025-003</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/CLS/April 30, 2015</p> <p>CANISTER ID: H3282</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 30-Apr-15 0:00</p> <p>DATE RECEIVED: 05-May-15</p> <p>REPORT CREATED: 20-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
Ethanol		0.9 ppbv	0.3	AC-058	06-May-15
Ethyl acetate	K, T, U	< 0.4 ppbv	0.4	AC-058	06-May-15
Ethylbenzene	I	0.01 ppbv	0.01	AC-058	06-May-15
Freon-11	I	0.29 ppbv	0.02	AC-058	06-May-15
Freon-113	I	0.09 ppbv	0.01	AC-058	06-May-15
Freon-114	I	0.03 ppbv	0.02	AC-058	06-May-15
Freon-12		0.60 ppbv	0.02	AC-058	06-May-15
Hexachloro-1,3-butadiene	K, T, U	< 0.50 ppbv	0.5	AC-058	06-May-15
Isobutane	I	0.23 ppbv	0.02	AC-058	06-May-15
Isopentane	I	0.19 ppbv	0.03	AC-058	06-May-15
Isoprene	K, T, U	< 0.01 ppbv	0.01	AC-058	06-May-15
Isopropyl alcohol	K, T, U	< 0.4 ppbv	0.4	AC-058	06-May-15
Isopropylbenzene	K, T, U	< 0.01 ppbv	0.01	AC-058	06-May-15
m,p-Xylene	K, T, U	< 0.03 ppbv	0.03	AC-058	06-May-15
m-Diethylbenzene	K, T, U	< 0.04 ppbv	0.04	AC-058	06-May-15
m-Ethyltoluene	K, T, U	< 0.08 ppbv	0.08	AC-058	06-May-15
Methyl butyl ketone	K, T, U	< 0.50 ppbv	0.5	AC-058	06-May-15
Methyl ethyl ketone	K, T, U	< 0.3 ppbv	0.3	AC-058	06-May-15
Methyl isobutyl ketone	K, T, U	< 0.4 ppbv	0.4	AC-058	06-May-15
Methyl methacrylate	K, T, U	< 0.07 ppbv	0.07	AC-058	06-May-15
Methyl tert butyl ether	K, T, U	< 0.03 ppbv	0.03	AC-058	06-May-15
Methylcyclohexane	I	0.05 ppbv	0.01	AC-058	06-May-15
Methylcyclopentane	I	0.04 ppbv	0.02	AC-058	06-May-15
Methylene chloride	K, T, U	< 0.3 ppbv	0.3	AC-058	06-May-15
n-Butane		0.43 ppbv	0.03	AC-058	06-May-15
n-Decane	K, T, U	< 0.06 ppbv	0.06	AC-058	06-May-15

Qualifiers

- K Off-scale low. Actual value is known to be less than the value given
- T Value reported is less than the laboratory method detection limit
- U Compound was analyzed for but not detected
- I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

Certified By: Graham Knox, Ops Manager

On behalf of: PJ Pretorius, Portfolio Manager, EAS

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmain Code 780-812-2182 5107W-50th Street Box 8237 Bonnyville AB</p>	<p>LABORATORY SAMPLE ID: 15050025-003</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/CLS/April 30, 2015</p> <p>CANISTER ID: H3282</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 30-Apr-15 0:00</p> <p>DATE RECEIVED: 05-May-15</p> <p>REPORT CREATED: 20-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
n-Dodecane	K, T, U	< 0.4	ppbv	0.4	AC-058	06-May-15
n-Heptane	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
n-Hexane	I	0.07	ppbv	0.01	AC-058	06-May-15
n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
n-Pentane	K, T, U	< 0.1	ppbv	0.1	AC-058	06-May-15
n-Propylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	06-May-15
n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	06-May-15
Naphthalene	K, T, U	< 0.5	ppbv	0.5	AC-058	06-May-15
n-Nonane	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
o-Ethyltoluene	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
o-Xylene	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
p-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-May-15
p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	06-May-15
Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-May-15
Tetrachloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-May-15
Tetrahydrofuran	K, T, U	< 0.4	ppbv	0.4	AC-058	06-May-15
Toluene	I	0.26	ppbv	0.01	AC-058	06-May-15
trans-1,2-Dichloroethylene	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
trans-1,3-Dichloropropylene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-May-15
trans-2-Butene	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
Trichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-May-15
Vinyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	06-May-15
Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15

Qualifiers

K Off-scale low. Actual value is known to be less than the value given
T Value reported is less than the laboratory method detection limit
U Compound was analyzed for but not detected
I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

Certified By: Graham Knox, Ops Manager
On behalf of: PJ Pretorius, Portfolio Manager, EAS

Inquiries: (780) 632 8455
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PAHs

RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040066-002 MATRIX: Air Filter CLIENT SAMPLE ID: LICA/PUF/CLS/April 6, 2015 CANISTER ID: TE-01 DESCRIPTION: CLS DATE SAMPLED: 06-Apr-15 0:00 DATE RECEIVED: 14-Apr-15 REPORT CREATED: 24-Apr-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
1-Methylnaphthalene		0.03	ug/Filter	0.01	NA-017	21-Apr-15
2-Methylnaphthalene		0.05	ug/Filter	0.01	NA-017	21-Apr-15
3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Acenaphthene		0.02	ug/Filter	0.01	NA-017	21-Apr-15
Acenaphthylene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Acridine	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Anthracene		0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(b,j,k)fluoranthene		0.02	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Chrysene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Fluoranthene		0.04	ug/Filter	0.01	NA-017	21-Apr-15
Fluorene		0.05	ug/Filter	0.01	NA-017	21-Apr-15
Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Naphthalene		0.05	ug/Filter	0.01	NA-017	21-Apr-15
Perylene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Phenanthrene		0.12	ug/Filter	0.01	NA-017	21-Apr-15
Pyrene		0.03	ug/Filter	0.01	NA-017	21-Apr-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040066-002</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA/PUF/CLS/April 6, 2015</p> <p>CANISTER ID: TE-01</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 06-Apr-15 0:00</p> <p>DATE RECEIVED: 14-Apr-15</p> <p>REPORT CREATED: 24-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
Retene		0.01 ug/Filter	0.01	NA-017	21-Apr-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By:</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040124-002</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA/PUF/CLS/April 12, 2015</p> <p>CANISTER ID: TE-04</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 12-Apr-15 0:00</p> <p>DATE RECEIVED: 17-Apr-15</p> <p>REPORT CREATED: 24-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
1-Methylnaphthalene		0.02	ug/Filter	0.01	NA-017	21-Apr-15
2-Methylnaphthalene		0.04	ug/Filter	0.01	NA-017	21-Apr-15
3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Acenaphthene		0.01	ug/Filter	0.01	NA-017	21-Apr-15
Acenaphthylene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Acridine	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(b,j,k)fluoranthene		0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Chrysene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Fluoranthene		0.01	ug/Filter	0.01	NA-017	21-Apr-15
Fluorene		0.03	ug/Filter	0.01	NA-017	21-Apr-15
Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Naphthalene		0.03	ug/Filter	0.01	NA-017	21-Apr-15
Perylene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Phenanthrene		0.05	ug/Filter	0.01	NA-017	21-Apr-15
Pyrene		0.01	ug/Filter	0.01	NA-017	21-Apr-15

Qualifiers

- K Off-scale low. Actual value is known to be less than the value given
- T Value reported is less than the laboratory method detection limit
- U Compound was analyzed for but not detected
- I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

Certified By: Graham Knox, Ops Manager
On behalf of: PJ Pretorius, Portfolio Manager, EAS

Inquiries: (780) 632 8455
E-mail: EAS.Results@albertainnovates.ca

<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040124-002</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA/PUF/CLS/April 12, 2015</p> <p>CANISTER ID: TE-04</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 12-Apr-15 0:00</p> <p>DATE RECEIVED: 17-Apr-15</p> <p>REPORT CREATED: 24-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
Retene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15

Qualifiers

- K Off-scale low. Actual value is known to be less than the value given
- T Value reported is less than the laboratory method detection limit
- U Compound was analyzed for but not detected
- I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

Certified By: Graham Knox, Ops Manager
On behalf of: PJ Pretorius, Portfolio Manager, EAS

Inquiries: (780) 632 8455
E-mail: EAS.Results@albertainnovates.ca

RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040220-002 MATRIX: Air Filter CLIENT SAMPLE ID: LICA/PUF/CLS/April 18, 2015 CANISTER ID: 9702 DESCRIPTION: CLS DATE SAMPLED: 18-Apr-15 0:00 DATE RECEIVED: 28-Apr-15 REPORT CREATED: 12-May-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
1-Methylnaphthalene		0.03 ug/Filter	0.01	NA-017	09-May-15
2-Methylnaphthalene		0.04 ug/Filter	0.01	NA-017	09-May-15
3-Methylcholanthrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Acenaphthene		0.02 ug/Filter	0.01	NA-017	09-May-15
Acenaphthylene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Acridine	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Benzo(a)anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Benzo(a)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Benzo(b,j,k)fluoranthene		0.02 ug/Filter	0.01	NA-017	09-May-15
Benzo(c)phenanthrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Benzo(e)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Benzo(ghi)perylene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Chrysene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,h)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,i)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,l)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Dibenzo(ah)anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Fluoranthene		0.03 ug/Filter	0.01	NA-017	09-May-15
Fluorene		0.05 ug/Filter	0.01	NA-017	09-May-15
Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Naphthalene		0.03 ug/Filter	0.01	NA-017	09-May-15
Perylene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Phenanthrene		0.10 ug/Filter	0.01	NA-017	09-May-15
Pyrene		0.02 ug/Filter	0.01	NA-017	09-May-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040220-002</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA/PUF/CLS/April 18, 2015</p> <p>CANISTER ID: 9702</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 18-Apr-15 0:00</p> <p>DATE RECEIVED: 28-Apr-15</p> <p>REPORT CREATED: 12-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
Retene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040242-002</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA/PUF/CLS/April 24, 2015</p> <p>CANISTER ID: TE03</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 24-Apr-15 0:00</p> <p>DATE RECEIVED: 29-Apr-15</p> <p>REPORT CREATED: 12-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
1-Methylnaphthalene		0.02 ug/Filter	0.01	NA-017	09-May-15
2-Methylnaphthalene		0.04 ug/Filter	0.01	NA-017	09-May-15
3-Methylcholanthrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Acenaphthene		0.01 ug/Filter	0.01	NA-017	09-May-15
Acenaphthylene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Acridine	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Benzo(a)anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Benzo(a)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Benzo(b,j,k)fluoranthene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Benzo(c)phenanthrene		0.02 ug/Filter	0.01	NA-017	09-May-15
Benzo(e)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Benzo(ghi)perylene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Chrysene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,h)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,i)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,l)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Dibenzo(ah)anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Fluoranthene		0.02 ug/Filter	0.01	NA-017	09-May-15
Fluorene		0.04 ug/Filter	0.01	NA-017	09-May-15
Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Naphthalene		0.04 ug/Filter	0.01	NA-017	09-May-15
Perylene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Phenanthrene		0.06 ug/Filter	0.01	NA-017	09-May-15
Pyrene		0.02 ug/Filter	0.01	NA-017	09-May-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040242-002</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA/PUF/CLS/April 24, 2015</p> <p>CANISTER ID: TE03</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 24-Apr-15 0:00</p> <p>DATE RECEIVED: 29-Apr-15</p> <p>REPORT CREATED: 12-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
Retene		0.01 ug/Filter	0.01	NA-017	09-May-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmain Code 780-812-2182 5107W-50th Street Box 8237 Bonnyville AB</p>	<p>LABORATORY SAMPLE ID: 15050025-004</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA/PUF/CLS/April 30, 2015</p> <p>CANISTER ID: TE-02</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 30-Apr-15 0:00</p> <p>DATE RECEIVED: 05-May-15</p> <p>REPORT CREATED: 20-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
1-Methylnaphthalene		0.06	ug/Filter	0.01	NA-017	09-May-15
2-Methylnaphthalene		0.11	ug/Filter	0.01	NA-017	09-May-15
3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Acenaphthene		0.03	ug/Filter	0.01	NA-017	09-May-15
Acenaphthylene		0.03	ug/Filter	0.01	NA-017	09-May-15
Acridine	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Anthracene		0.01	ug/Filter	0.01	NA-017	09-May-15
Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Benzo(b,j,k)fluoranthene		0.02	ug/Filter	0.01	NA-017	09-May-15
Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Chrysene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Fluoranthene		0.04	ug/Filter	0.01	NA-017	09-May-15
Fluorene		0.06	ug/Filter	0.01	NA-017	09-May-15
Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Naphthalene		0.09	ug/Filter	0.01	NA-017	09-May-15
Perylene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Phenanthrene		0.13	ug/Filter	0.01	NA-017	09-May-15
Pyrene		0.03	ug/Filter	0.01	NA-017	09-May-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmain Code 780-812-2182 5107W-50th Street Box 8237 Bonnyville AB</p>	<p>LABORATORY SAMPLE ID: 15050025-004</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA/PUF/CLS/April 30, 2015</p> <p>CANISTER ID: TE-02</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 30-Apr-15 0:00</p> <p>DATE RECEIVED: 05-May-15</p> <p>REPORT CREATED: 20-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
Retene		0.02 ug/Filter	0.01	NA-017	09-May-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Mike Bisaga 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040065-001</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA P4131702</p> <p>CANISTER ID:</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 06-Apr-15 0:00</p> <p>DATE RECEIVED: 14-Apr-15</p> <p>REPORT CREATED: 21-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
Particulate Weight		0.071 mg	0.004	AC-029	17-Apr-15

<p><u>Qualifiers</u></p>	<p>Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Mike Bisaga 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040123-001</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA P4131470</p> <p>CANISTER ID:</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 12-Apr-15 0:00</p> <p>DATE RECEIVED: 17-Apr-15</p> <p>REPORT CREATED: 28-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
Particulate Weight		0.026 mg	0.004	AC-029	24-Apr-14

<p>Qualifiers</p>	<p>Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Mike Bisaga 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040219-001</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA Filter # P4131471</p> <p>CANISTER ID:</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 18-Apr-15 0:00</p> <p>DATE RECEIVED: 28-Apr-15</p> <p>REPORT CREATED: 08-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
Particulate Weight		0.023 mg	0.004	AC-029	07-May-15

<p><u>Qualifiers</u></p>	<p>Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Mike Bisaga 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040240-001</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: Lica Filter # P4131704</p> <p>CANISTER ID:</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 24-Apr-15 0:00</p> <p>DATE RECEIVED: 29-Apr-15</p> <p>REPORT CREATED: 12-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
Particulate Weight		0.065 mg	0.004	AC-029	08-May-15

<p><u>Qualifiers</u></p>	<p>Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Mike Bisaga 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15050024-001</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA Filter # P4131548</p> <p>CANISTER ID:</p> <p>DESCRIPTION: CLS</p> <p>DATE SAMPLED: 30-Apr-15 0:00</p> <p>DATE RECEIVED: 05-May-15</p> <p>REPORT CREATED: 12-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
Particulate Weight		0.029 mg	0.004	AC-029	08-May-15

<p><u>Qualifiers</u></p>	<p>Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca</p>
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APPENDIX V
CHAIN OF CUSTODY



Maxxam Analytics - Air Services Group

Project Chain of Custody

Client: <u>Lakeland Industry & Community Association</u>	Project #: <u>2833-2015-04-01- C</u>
Site: <u>Cold Lake South Site</u>	Contact: <u>Mike Bisaga</u>

QA Check Complete msclmha Date 13 - May - 15

QA Check Review msclmha Date 13 - May - 15

Report Complete msclmha Date 29 - May - 2015

Report Reviewed E. Tangang Date 29 - May - 2015

Report Shipped _____ Date _____

Notes

AMBIENT AIR MONITORING MONTHLY DATA REPORT
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
MASKWA SITE

JOB #:2833-2015-04-30- C

APRIL 2015

Prepared for:

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
BOX 8237, 5107W - 50 STREET
BONNYVILLE, ALBERTA
T9N 2J5

Attention: MIKE BISAGA

DATE: **May 4, 2015**

Prepared by:



Wunmi Adekanmbi, M.Sc.

Project Manager Assistant, Source Testing, Maxxam Analytics

Reviewed by:



Lily Lin, B.Sc.

Senior Project Manager, Air Services, Maxxam Analytics

SUMMARY

In APRIL 2015, the Air Services Group of Maxxam Analytics conducted an ambient air monitoring program on the Maskwa Site at Lakeland Industry & Community Association, near Bonnyville, Alberta. Sampling was carried out to determine the concentrations of non-compliance parameters as requested by the project coordinator.

All data collected this month were within the objectives outlined in the AMD1989 and AMD2006.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

The summary of results is presented on the following pages.

Any deviations or modifications made to the sampling or analytical methods are outlined in Section 1.0 Discussion. On this basis, Maxxam is issuing this completed report to Lakeland Industry & Community Association, Maskwa Site.

Should you have any questions concerning the results or if we can be of further assistance, please contact us at 403-219-3677 or toll-free at 1-800-386-7247.

Monthly Continuous Data Summary

Lakeland Industry & Community Association Maskwa Site						MAXIMUM VALUES							OPERATIONAL TIME (%)
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	1-HOUR			24-HOUR		
	1-HR	24-HR	1-HR	24-HR				HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
SO2 (PPB)	172	48	0	0	1	8	15, 16	4, 18	6.2 9.1	WNW NW	1.9	23	100.0
H2S (PPB)	10	3	0	0	0	1	VAR	VAR	VAR	VAR	0.8	23	100.0
THC (PPM)	-	-	-	-	2.1	2.6	16, 30	VAR	VAR	VAR	2.2	VAR	100.0
NO2 (PPB)	159	-	0	-	1.7	16.4	15	4	6.2	WNW	3.9	15	100.0
NO (PPB)	-	-	-	-	0.3	9.6	15	4	6.2	WNW	1.2	15	100.0
NOX (PPB)	-	-	-	-	2.0	26	15	4	6.2	WNW	5.1	15	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	54.2	91	VAR	VAR	VAR	VAR	86.7	1	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	939	950	18, 19	VAR	VAR	VAR	947	19	100.0
AMBIENT TEMPERATURE (DEG C)	-	-	-	-	4.3	23.9	28	13	12.7	S	15.3	28	100.0
PRECIPITATION (MM)	-	-	-	-	0.0	4.6	1	4	1.5	W	0.8	1	100.0
VECTOR WS (KPH)	-	-	-	-	6.2	17.3	1	14	-	NNE	9.9	1	100.0
VECTOR WD (DEG)	-	-	-	-	NNW	-	-	-	-	-	-	-	100.0

NA-NOT AVAILABLE VAR-VARIOUS

Exceedence Summary Report

SO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

SO₂ 24- Hour Exceedences

No Exceedences Recorded During the Month

H₂S 1- Hour Exceedences

No Exceedences Recorded During the Month

H₂S 24- Hour Exceedences

No Exceedences Recorded During the Month

NO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

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5.0 Methods and Procedures	6
Appendix I	Continuous Monitoring Data Results
	Sulphur Dioxide
	Hydrogen Sulphide
	Total Hydrocarbon
	Oxides of Nitrogen
	Nitric Oxides
	Nitrogen Dioxide
	Wind Speed
	Wind Direction
	Standard Deviation Wind Direction
	Relative Humidity
	Barometric Pressure
	Ambient Temperature
	Precipitation
Appendix II	Analyzer Calibration Results
	Sulphur Dioxide
	Hydrogen Sulphide
	Total Hydrocarbon
	Nitrogen Dioxide
	Wind System
	Calibrators
	Calibration Gases
Appendix III	Chain of Custody

1.0 Discussion

This monthly report consists of data for parameters SO₂, H₂S, THC, NO_x, NO, NO₂, WS, WD, RH, BP, Precipitation and Temperature.

Sample filters for all continuous air monitors are changed before the calibration is started. The sample manifold is cleaned during the site visit on a monthly basis.

Control checks, consisting of zero and span of the analyzer are conducted on a daily basis on all continuous air monitors. In place of the air sample, zero air (from scrubbed air or gas cylinder) is used for zero checks and a known concentration of the pollutant being analyzed is used for span checks. These checks are controlled by automatic timers and valves. The total zero span cycle is completed within an hour, the commencement of the zero span cycle is at the beginning of the hour.

Multipoint calibration is done a minimum of once a month for each continuous air monitor. In addition calibration is required under the following conditions: 1) within three days after the initial start-up and stabilization of a newly installed instrument, 2) prior to shut-down or moving of an instrument which has been working to specification, and 3) when major repair has been done on the instrument.

The AMD requires each instrument and accompanying data recording system is to be operational 90% of the time (minimum), on a monthly basis.

All sampling, analysis, and QA/QC for this project was performed by Maxxam Analytics and complies with the Alberta Air Monitoring Directive.

Hourly/minute data have been reviewed based on daily zero/span results and multi-points calibration results. Data may be considered as invalid if a zero-corrected span check in excess of +/- 10% of the span concentration (established by the previous multi-point calibration) is encountered and/or significant differences in the calibration factor (greater than 15%).

Hourly data is corrected using daily zero information.

Trailer inspection was performed on April 23.

SULPHUR DIOXIDE (SO₂)

The analyzer was working well throughout the month. The routine monthly calibration was performed on April 23.

HYDROGEN SULPHIDE (H₂S)

The analyzer was working well throughout the month. The routine monthly calibration was performed on April 23.

TOTAL HYDROCARBONS (THC)

The analyzer was working well throughout the month. The routine monthly calibration was performed on April 23.

NITROGEN DIOXIDE (NO2)

The analyzer was working well throughout the month. The routine monthly calibration was performed on April 23. The purafill/charcoal was renewed on the same day.

WIND SPEED (WS), WIND DIRECTION (WD) and STANDARD DEVIATION WIND DIRECTION (STDWD)

The wind system is reported as vector wind speed and vector wind direction. The wind direction data included in this report represents where the wind was coming from.

The wind system was working well throughout the month.

RELATIVE HUMIDITY (RH)

The humidity sensor was working well throughout the month.

BAROMETRIC PRESSURE (BP)

The pressure sensor was working well throughout the month.

PRECIPITATION

Both the rain gauge system and heating system were working well throughout the month.

AMBIENT TEMPERATURE (TPX)

The temperature sensor was working well throughout the month.

2.0 Project Personnel

Mike Bisaga was the contact for Lakeland Industry & Community Association, and the Maxxam field sampling personnel was Alexander Yakupov.

3.0 Plant Monthly Required AMD Summary

All data collected this month were within the objectives outlined in the AMD1989 and AMD2006.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

4.0 Calculations and Results

All calculations and reporting of results follow the method described in the Air Monitoring Directive, 1989, and 2006 Amendments to the Air Monitoring Directive, 1989 (AMD 2006).

5.0 Methods and Procedures

The following methods and procedures were used to complete the test program:

- Maxxam AIR SOP-00209: Ambient H₂S Monitoring
- Maxxam AIR SOP-00211: Ambient SO₂ Monitoring
- Maxxam AIR SOP-00213: Ambient NO/NO₂/NO_x Monitoring
- Maxxam AIR SOP-00214: Ambient Hydrocarbon (THC) Monitoring
- Maxxam AIR SOP-00242: Precipitation Collector Installation /Maintenance

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

- Sulphur Dioxide - API 100E UV Fluorescent Analyzer
- Hydrogen Sulphide - API 101E UV Fluorescent Analyzer
- Total Hydrocarbons - Thermo 51C FID Analyzer
- Oxides of Nitrogen - API 200E Chemiluminescent Analyzer
- Wind System - Met One Unit
- Relative Humidity - Met One Unit
- Barometric Pressure - Met One Unit
- Ambient Temperature - Met One Unit
- Precipitation - Met One Unit
- Datalogger - ESC 8832

APPENDIX I
CONTINUOUS MONITORING DATA RESULTS

SULPHUR DIOXIDE

SULPHUR DIOXIDE (SO2) hourly averages in ppb

MST

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

STATUS FLAG CODES

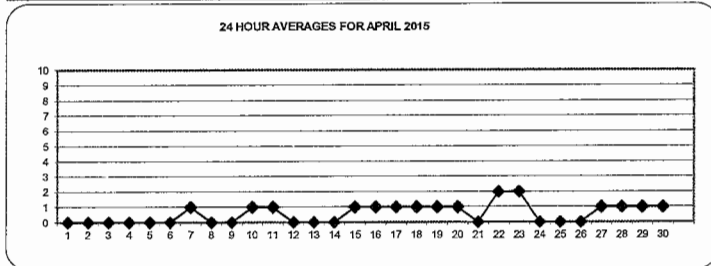
C	CALIBRATION	Q	QUALITY ASSURANCE
Y	MAINTENANCE	R	RECOVERY
S	DAILY ZERO/SPAN CHECK	X	MACHINE MALFUNCTION
P	POWER FAILURE	O	OPERATOR ERROR
G	OUT FOR REPAIR	K	COLLECTION ERROR

OBJECTIVE LIMIT:

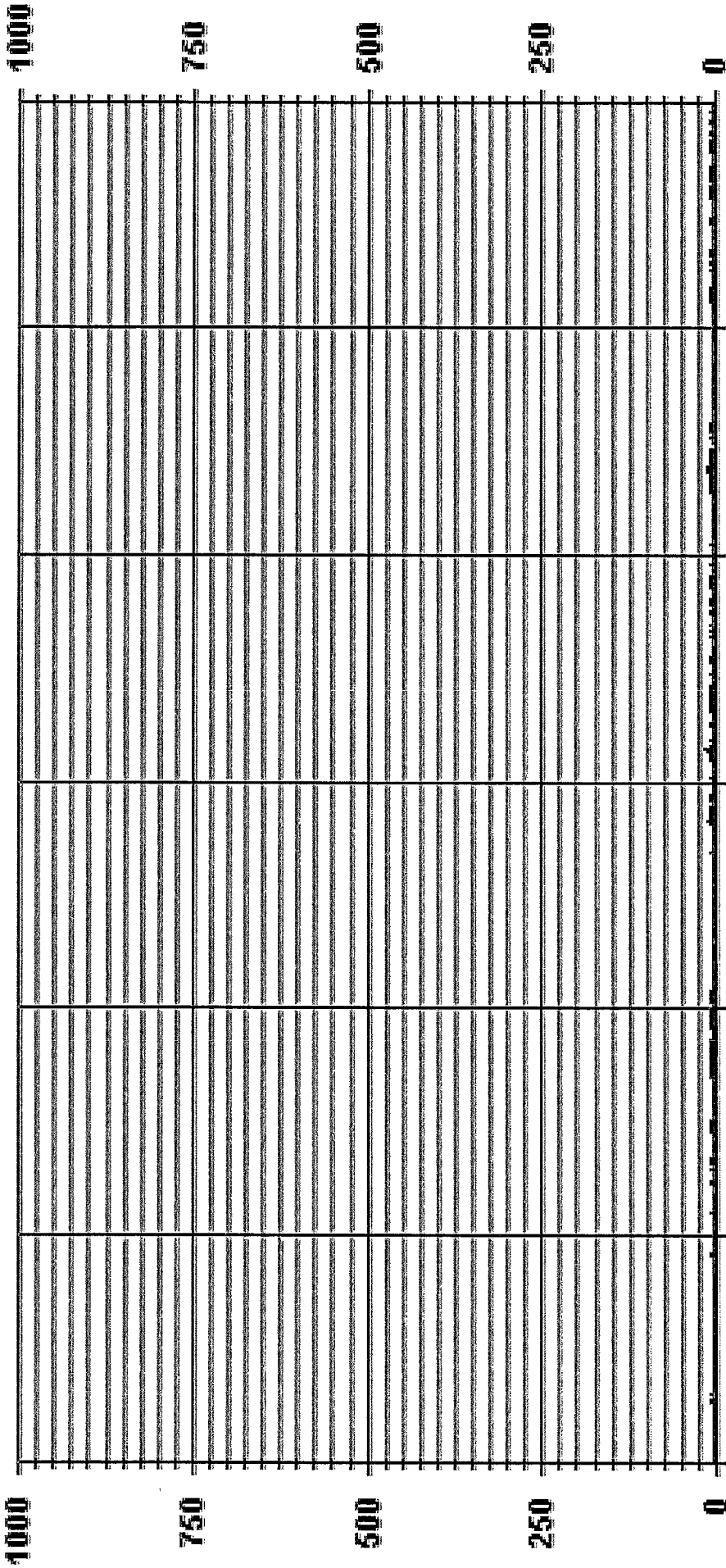
ALBERTA ENVIRONMENT: 1-HR: 172 PPB; 24-HR: 48 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	266
MAXIMUM 1-HR AVERAGE:	8 PPB @ HOUR(S) 4, 18 ON DAY(S) 15, 16
MAXIMUM 24-HR AVERAGE:	1.9 PPB ON DAY(S) 23
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	5 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	1.00
MONTHLY AVERAGE:	1 PPB



01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA30 SO2_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - APRIL 2015

JOB # 2833-2015-04-30- C

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	1	2	0.2	24
2	0	0	0	0	0	0	0	2	1	3	3	3	2	2	2	1	1	1	0	0	5	0	0	0	3	0.9	24
3	0	0	0	0	0	0	0	0	1	2	1	1	0	1	0	0	0	0	0	5	0	0	0	0	2	0.3	24
4	0	0	0	0	0	0	0	0	0	1	1	0	1	1	8	0	1	0	5	0	0	0	0	0	8	0.6	24
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7	1	5	1	0	0	0	0	0	7	0.5	24
6	0	0	0	0	0	0	0	0	1	2	1	2	1	2	2	2	5	3	1	1	2	1	2	1	3	1.0	24
7	0	1	0	0	1	4	4	5	4	2	4	4	2	2	2	1	5	2	2	2	1	1	1	1	5	2.0	24
8	1	1	1	1	1	1	1	1	1	2	2	2	2	1	5	0	0	0	0	0	0	0	0	0	2	0.8	24
9	0	0	0	0	0	0	0	0	1	3	2	0	0	5	1	1	1	1	1	1	1	1	1	1	3	0.7	24
10	1	1	1	1	2	2	2	2	2	2	2	2	5	1	1	1	1	1	2	1	1	1	1	2	2	1.5	24
11	2	2	2	2	2	2	2	3	3	3	3	5	6	0	0	0	0	1	0	0	0	0	0	0	6	1.4	24
12	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	5	0.2	24
13	0	0	0	0	0	0	0	0	0	5	0	1	6	3	11	4	8	3	1	1	0	0	0	0	11	1.7	24
14	0	0	1	0	0	0	0	1	5	1	4	7	7	5	2	2	1	0	0	0	0	0	0	0	7	1.3	24
15	1	0	3	2	15	13	1	5	6	14	10	9	3	2	2	2	2	1	1	1	1	1	1	1	15	4.0	24
16	1	3	2	2	1	2	5	1	1	3	2	1	1	1	2	2	2	2	13	11	1	1	1	16	16	3.1	24
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19	0	0	1	5	2	1	3	4	1	6	6	4	4	1	2	2	7	4	3	1	1	1	7	6	7	2.9	24
20	2	1	5	0	0	1	1	3	4	5	5	7	6	9	1	1	1	1	1	1	8	1	1	1	9	2.7	24
21	1	5	1	0	0	1	3	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	3	1.1	24
22	5	1	1	1	1	1	0	1	1	1	6	2	6	6	5	7	5	3	3	7	7	10	10	5	10	3.9	24
23	8	5	4	3	3	3	3	3	C	C	C	C	C	3	3	1	1	1	3	1	1	2	5	0	8	2.7	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	1	0.0	24
25	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	5	1	1	1	1	0.3	24
26	1	1	1	1	1	1	1	1	1	1	1	2	2	4	2	2	1	1	1	5	1	2	1	1	4	1.3	24
27	1	1	1	1	1	1	1	2	3	2	2	1	1	1	1	2	2	5	0	0	0	0	0	3	1.1	24	
28	1	0	0	0	0	0	0	2	2	2	2	2	1	1	1	1	5	3	2	10	1	1	2	10	1.5	24	
29	2	2	2	2	2	11	1	1	1	1	3	5	1	10	4	2	5	1	1	1	1	1	1	1	11	2.5	24
30	1	2	1	2	1	1	2	2	2	1	1	1	1	1	1	5	1	1	1	1	2	1	1	1	2	1.3	24
HOURLY MAX	10	5	4	3	15	13	4	5	9	14	10	9	7	10	11	7	8	13	13	11	15	10	10	16			
HOURLY AVG	1.2	0.8	0.9	0.7	1.2	1.6	0.9	1.5	1.8	2.4	2.6	2.4	2.0	2.1	1.9	1.7	1.5	1.6	2.0	1.3	1.9	1.0	1.2	1.4			

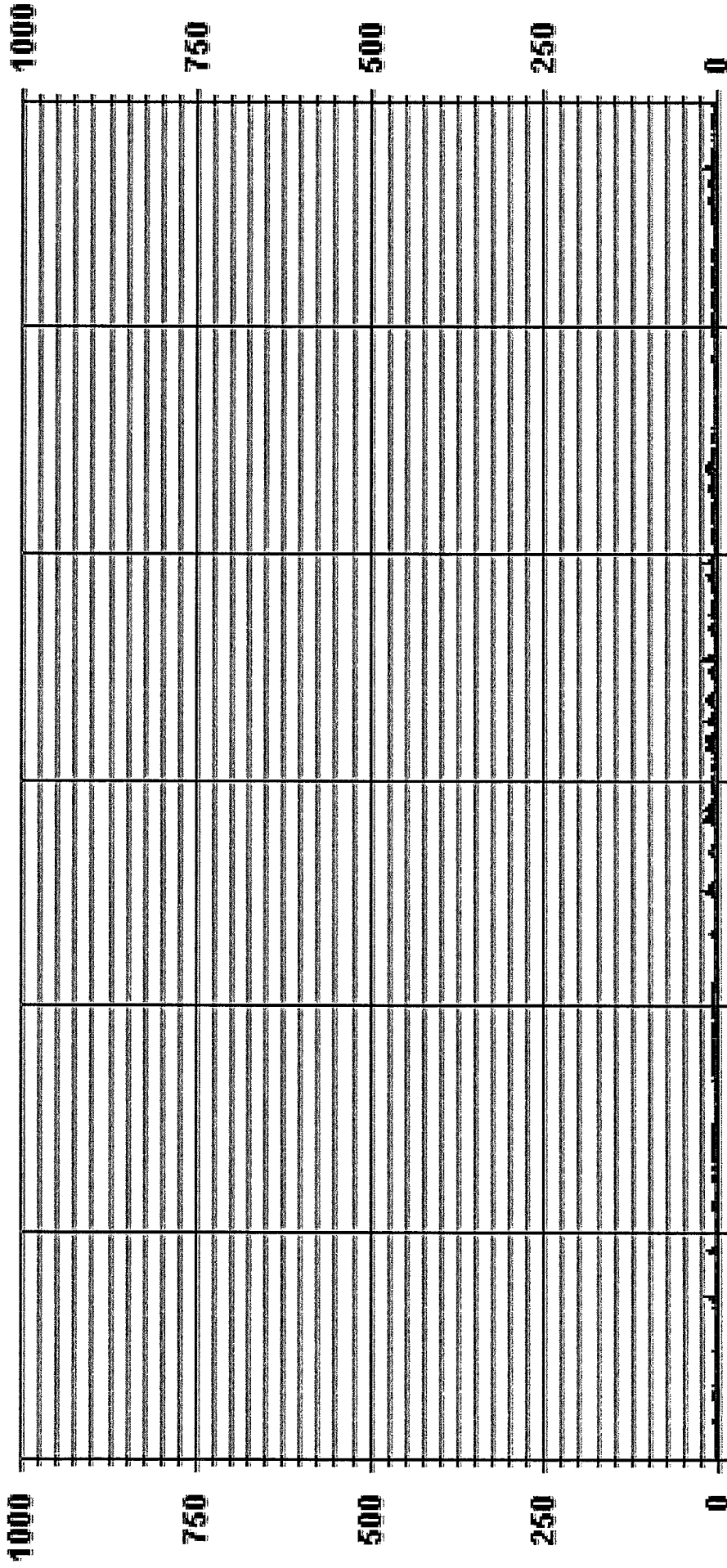
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	443
MAXIMUM INSTANTANEOUS VALUE:	16 PPB @ HOUR(S) 23 ON DAY(S) 16
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	2.35
OPERATIONAL TIME:	720 HRS

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA30 SO2MAX PPB

LICA30
 SO2_ / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	2.92	5.26	14.32	8.33	5.26	5.26	5.40	4.97	4.82	11.25	5.26	4.09	7.30	9.94	2.48	3.07	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.92	5.26	14.32	8.33	5.26	5.26	5.40	4.97	4.82	11.25	5.26	4.09	7.30	9.94	2.48	3.07	

Calm : .00 %

Total # Operational Hours : 684

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	20	36	98	57	36	36	37	34	33	77	36	28	50	68	17	21	684
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	20	36	98	57	36	36	37	34	33	77	36	28	50	68	17	21	

Calm : .00 %

Total # Operational Hours : 684

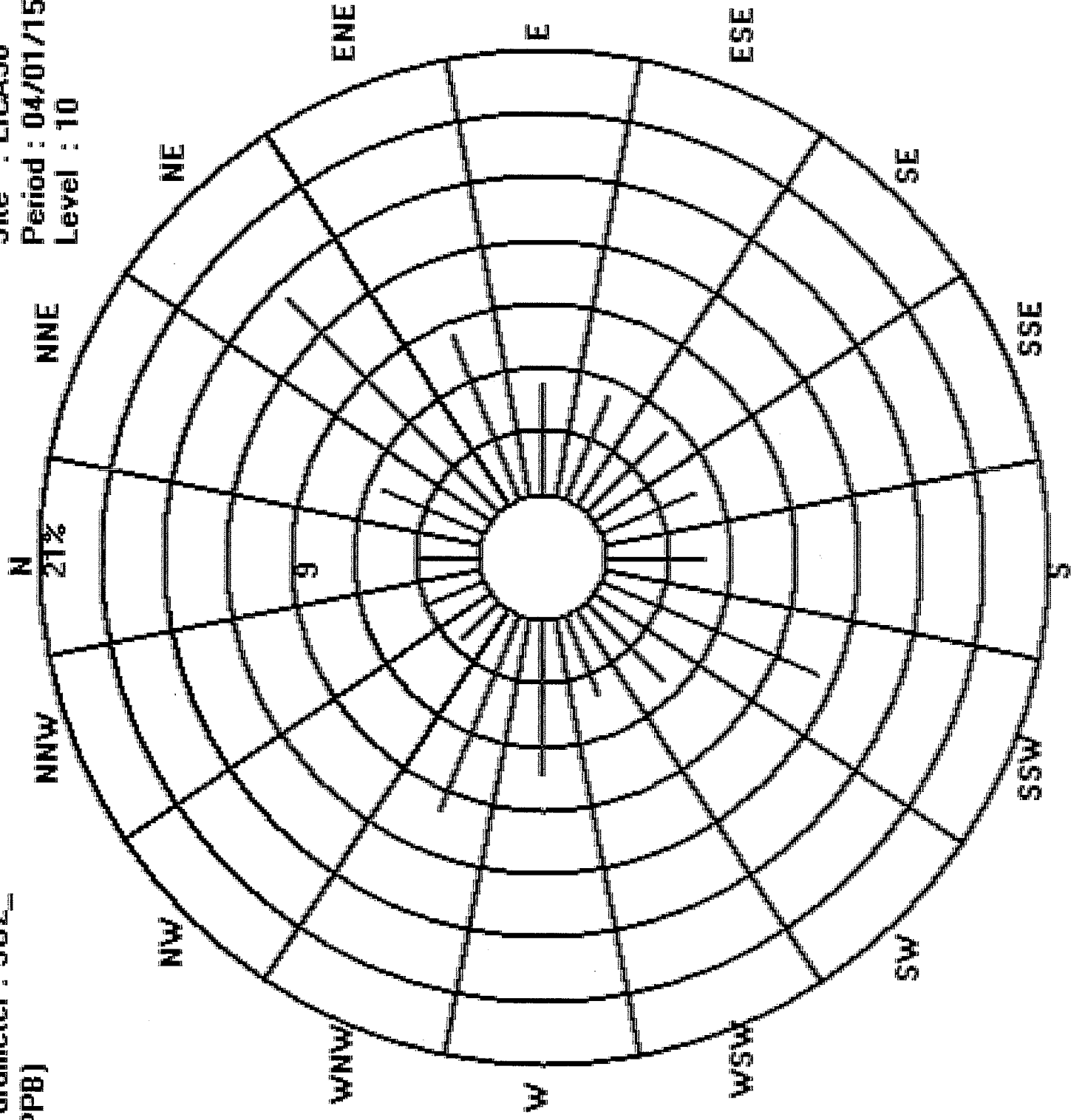
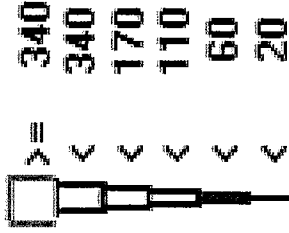
Logger : 30

Parameter : SO2_

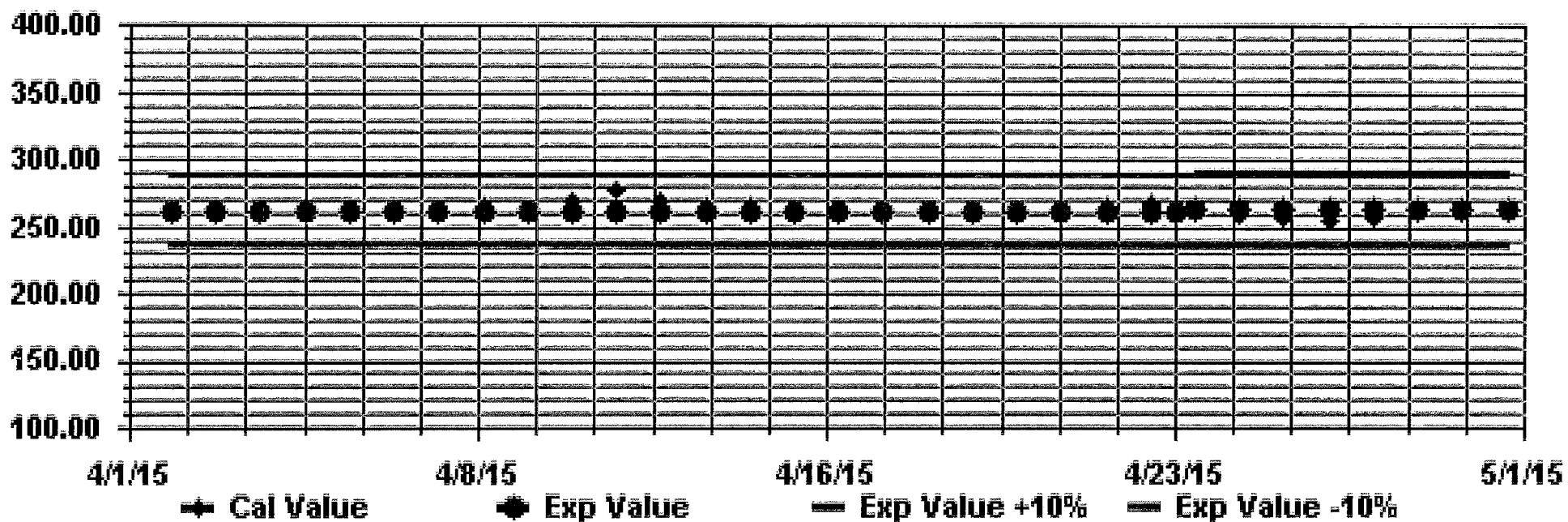
Site : LICA30

Period : 04/01/15-04/30/15

Level : 10



Calibration Graph for Site: LICA30 Parameter: SO2_ Sequence: SO2 Phase: SPAN



HYDROGEN SULPHIDE



HYDROGEN SULPHIDE (H2S) hourly averages in ppb

MST

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

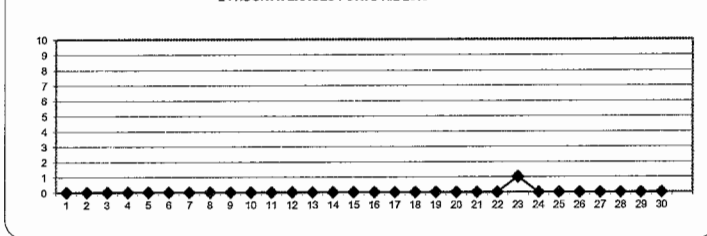
STATUS FLAG CODES

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

OBJECTIVE LIMIT:

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

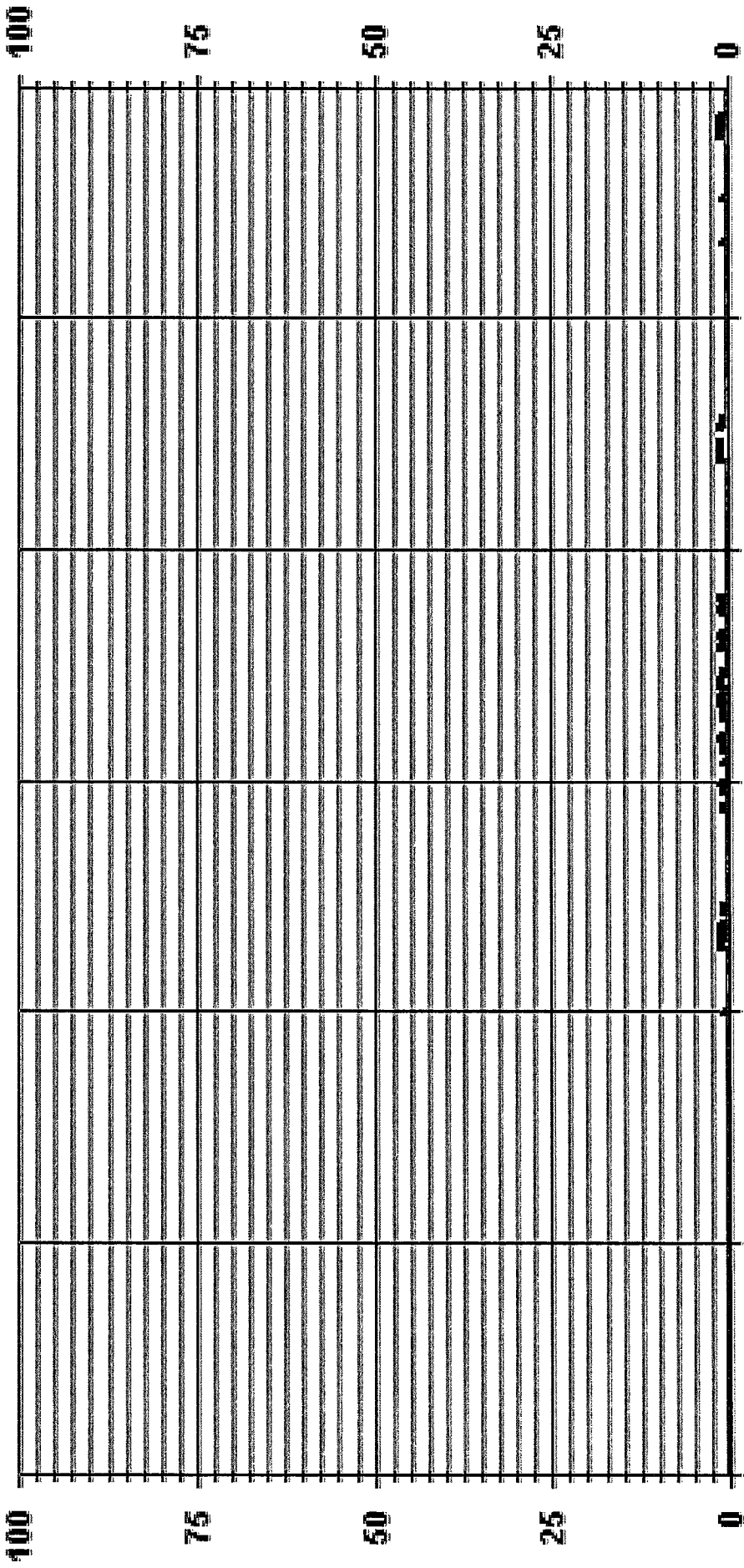
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	69
MAXIMUM 1-HR AVERAGE:	1 PPB @ HOUR(S) VAR
MAXIMUM 24-HR AVERAGE:	0.8 PPB ON DAY(S) VAR 23 VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	5 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.30
MONTHLY AVERAGE:	0 PPB

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA30 H2S_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - APRIL 2015

JOB # 2833-2015-04-30- C

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST

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

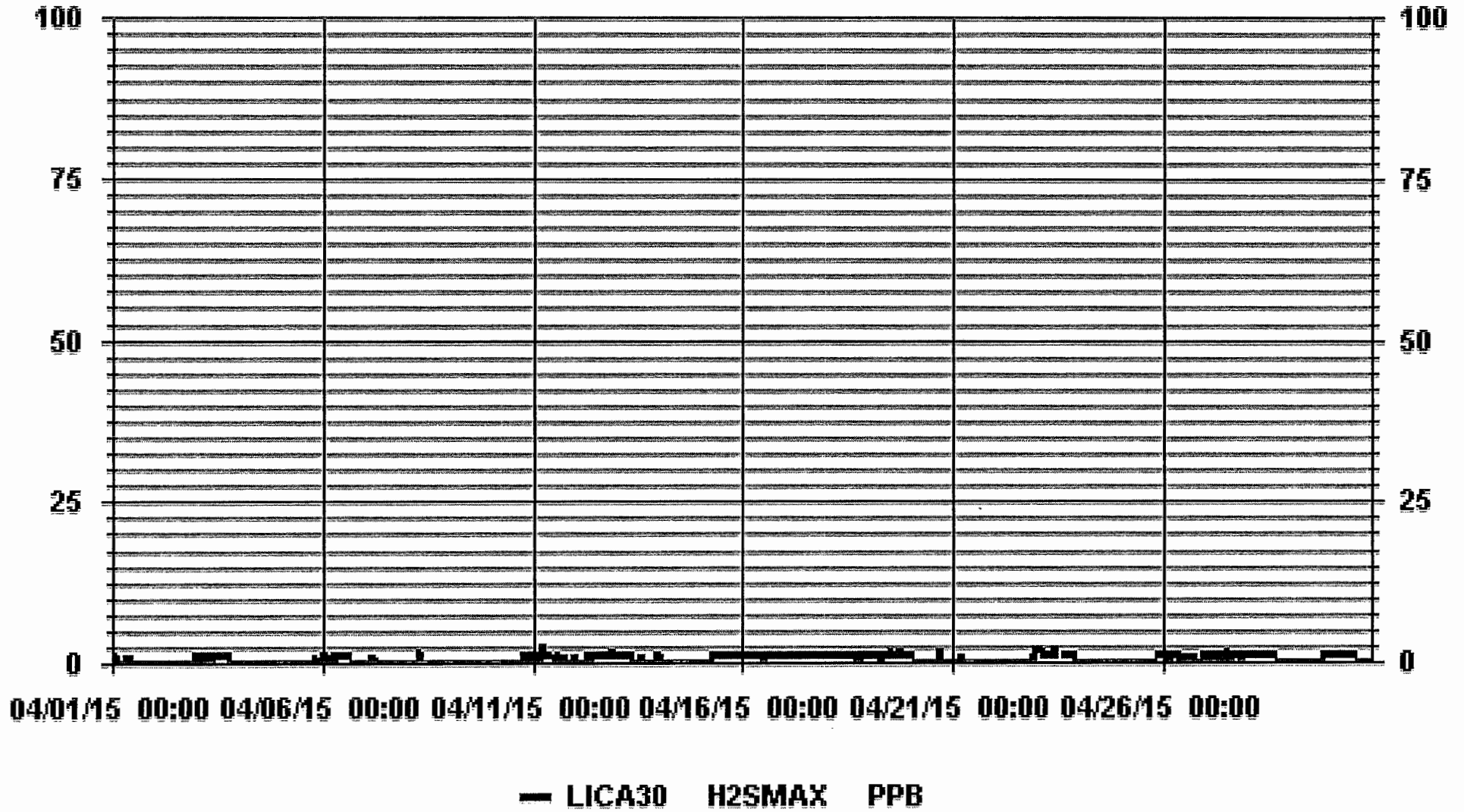
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	279
MAXIMUM INSTANTANEOUS VALUE:	3 PPB @ HOUR(S) 6 ON DAY(S) 11
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	0.53
OPERATIONAL TIME:	720 HRS

01 Hour Averages



LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

April 2015

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	2.92	5.26	14.32	8.33	5.40	5.11	5.40	4.97	4.82	11.25	5.26	4.09	7.30	9.94	2.48	3.07	100.00
<	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals		2.92	5.26	14.32	8.33	5.40	5.11	5.40	4.97	4.82	11.25	5.26	4.09	7.30	9.94	2.48	3.07	

Calm : .00 %

Total # Operational Hours : 684

Distribution By Samples

		Direction																
Limit		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3	20	36	98	57	37	35	37	34	33	77	36	28	50	68	17	21	684
<	10																	
<	50																	
>=	50																	
Totals		20	36	98	57	37	35	37	34	33	77	36	28	50	68	17	21	

Calm : .00 %

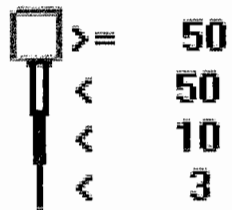
Total # Operational Hours : 684

Logger : 30 Parameter : H2S_

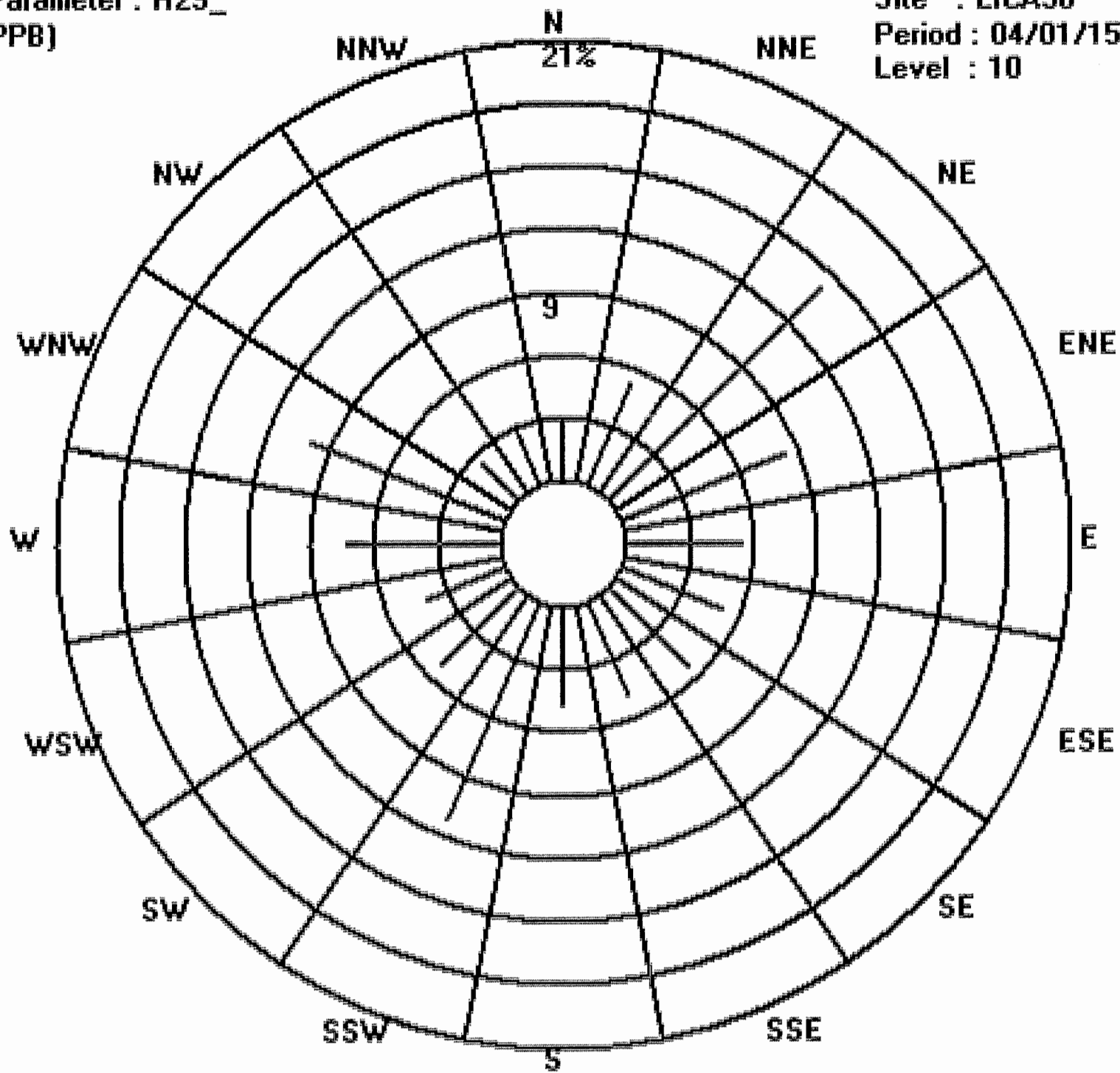
Site : LICA30

Class Limits (PPB)

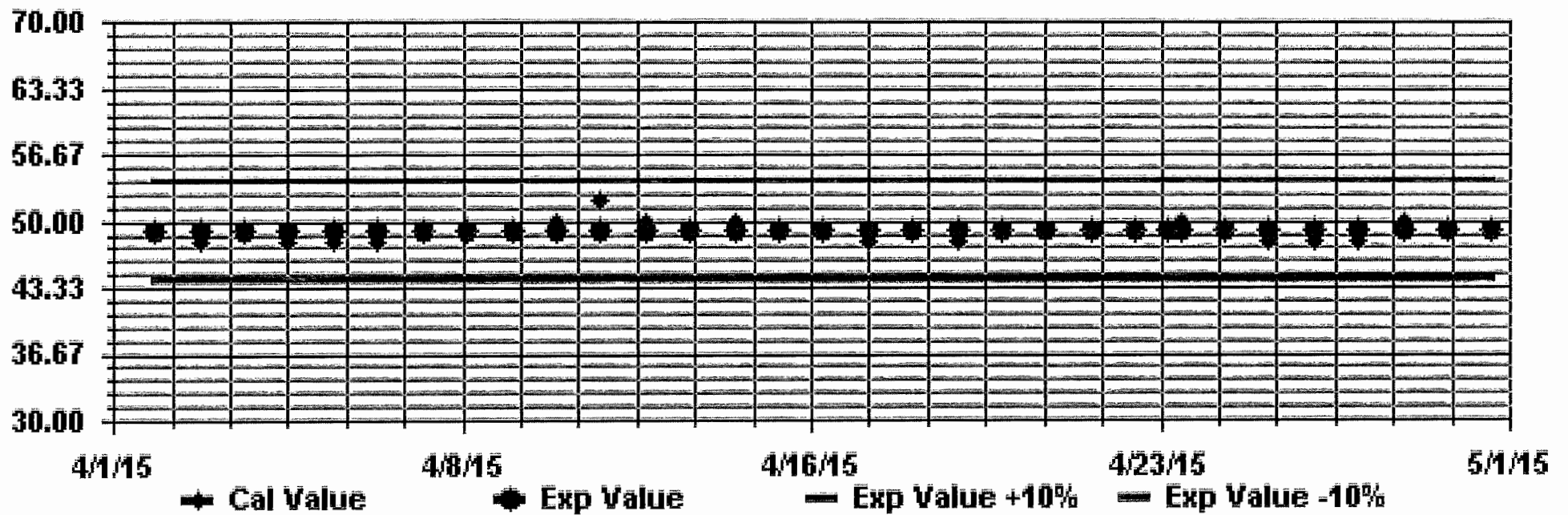
Period : 04/01/15-04/30/15



Level : 10



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



TOTAL HYDROCARBON



TOTAL HYDROCARBONS (THC) hourly averages in ppm

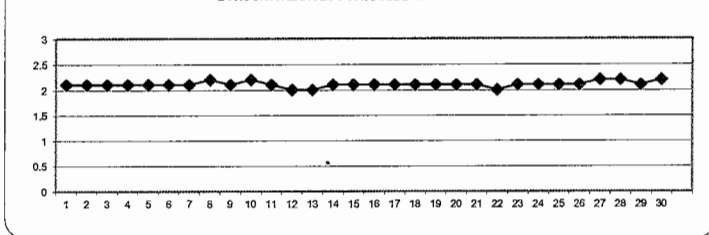
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	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	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	S	2.1	2.1	2.2	2.1	24	
2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	24	
3	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.3	24	
4	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.2	24	
5	2.1	2.2	2.2	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	24	
6	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	24	
7	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24
8	2.1	2.2	2.2	2.2	2.2	2.3	2.4	2.4	2.4	2.5	2.4	2.5	2.2	S	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.5	24	
9	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.1	2.1	S	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	24	
10	2.2	2.1	2.2	2.2	2.2	2.3	2.2	2.3	2.5	2.4	2.4	2.2	S	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.5	24	
11	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.3	2.4	2.4	2.2	S	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.4	24	
12	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	24	
13	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	S	2.0	2.0	2.0	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.0	24	
14	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.1	24	
15	2.1	2.2	2.2	2.2	2.2	2.2	2.1	S	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.1	24	
16	2.3	2.3	2.2	2.4	2.5	2.6	S	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.6	24	
17	2.1	2.1	2.1	2.1	2.1	S	2.1	2.4	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.4	2.1	24	
18	2.0	2.0	2.0	2.0	S	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	24	
19	2.1	2.2	2.2	S	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	24	
20	2.2	2.3	S	2.4	2.4	2.4	2.5	2.4	2.3	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.5	2.1	24	
21	2.1	S	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.1	2.2	2.1	24	
22	S	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	S	2.1	2.0	24	
23	2.0	2.0	2.0	2.0	2.0	2.0	2.0	C	C	C	C	C	C	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	24	
24	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	24	
25	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	24	
26	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.2	2.2	2.2	24	
27	2.2	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.2	2.2	2.3	24	
28	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.1	S	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.3	24	
29	2.2	2.2	2.2	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	S	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.1	24	
30	2.2	2.3	2.3	2.3	2.4	2.6	2.6	2.6	2.5	2.1	2.1	2.0	2.0	2.0	S	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.6	24	
HOURLY MAX	2.3	2.3	2.3	2.4	2.5	2.6	2.6	2.6	2.5	2.4	2.5	2.4	2.5	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.3			
HOURLY AVG	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1		

STATUS FLAG CODES

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

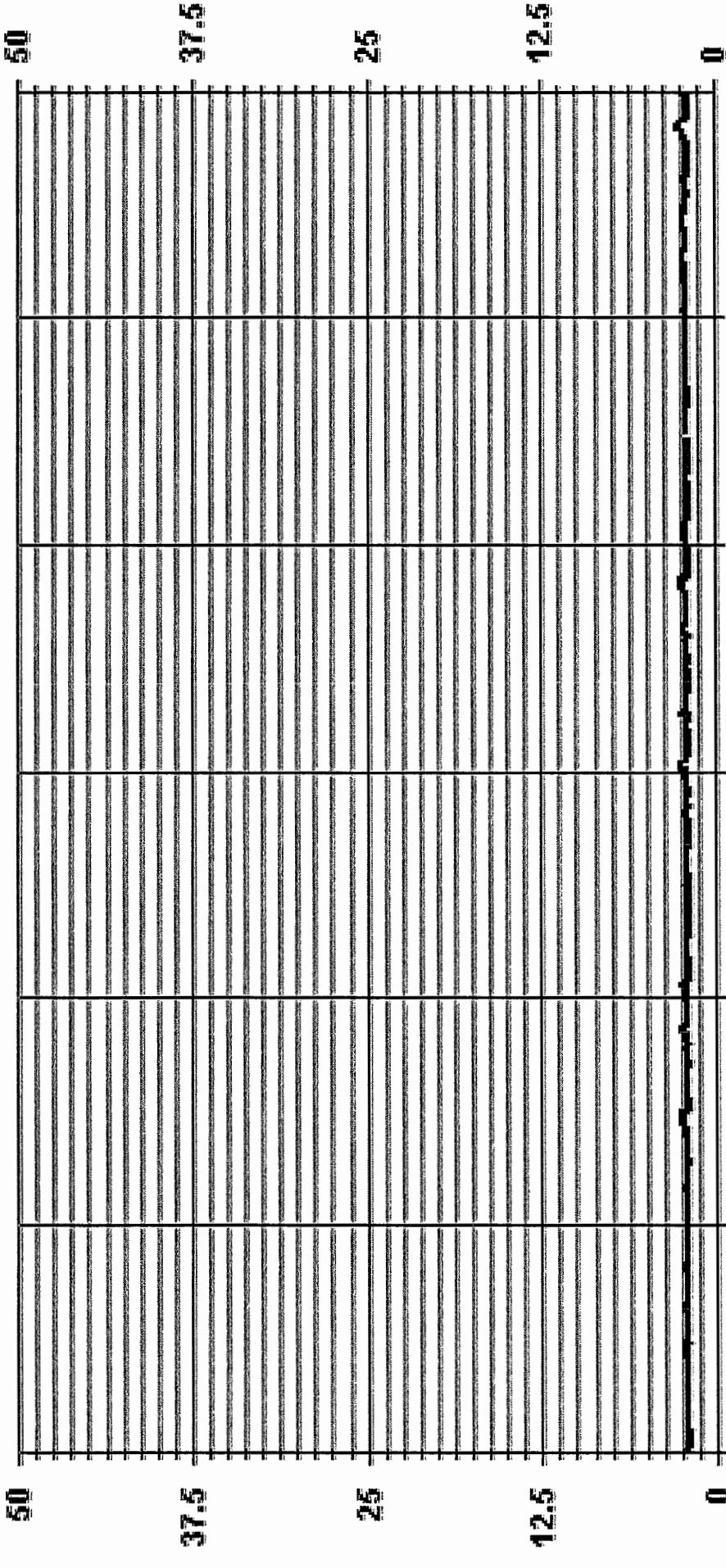
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	684			
MAXIMUM 1-HR AVERAGE:	2.6 PPM	@ HOUR(S)	VAR	ON DAY(S) 16, 30
MAXIMUM 24-HR AVERAGE:	2.2 PPM			ON DAY(S) VAR
				VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS	OPERATIONAL TIME:	720 HRS	
MONTHLY CAUBRATION TIME:	5 HRS	AMD OPERATION UPTIME:	100.0 %	
STANDARD DEVIATION:	0.10	MONTHLY AVERAGE:	2.1 PPM	

01 Hour Averages



— LICA30 - - - THC . . . PPM



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - APRIL 2015

JOB # 2833-2015-04-30- C

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

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

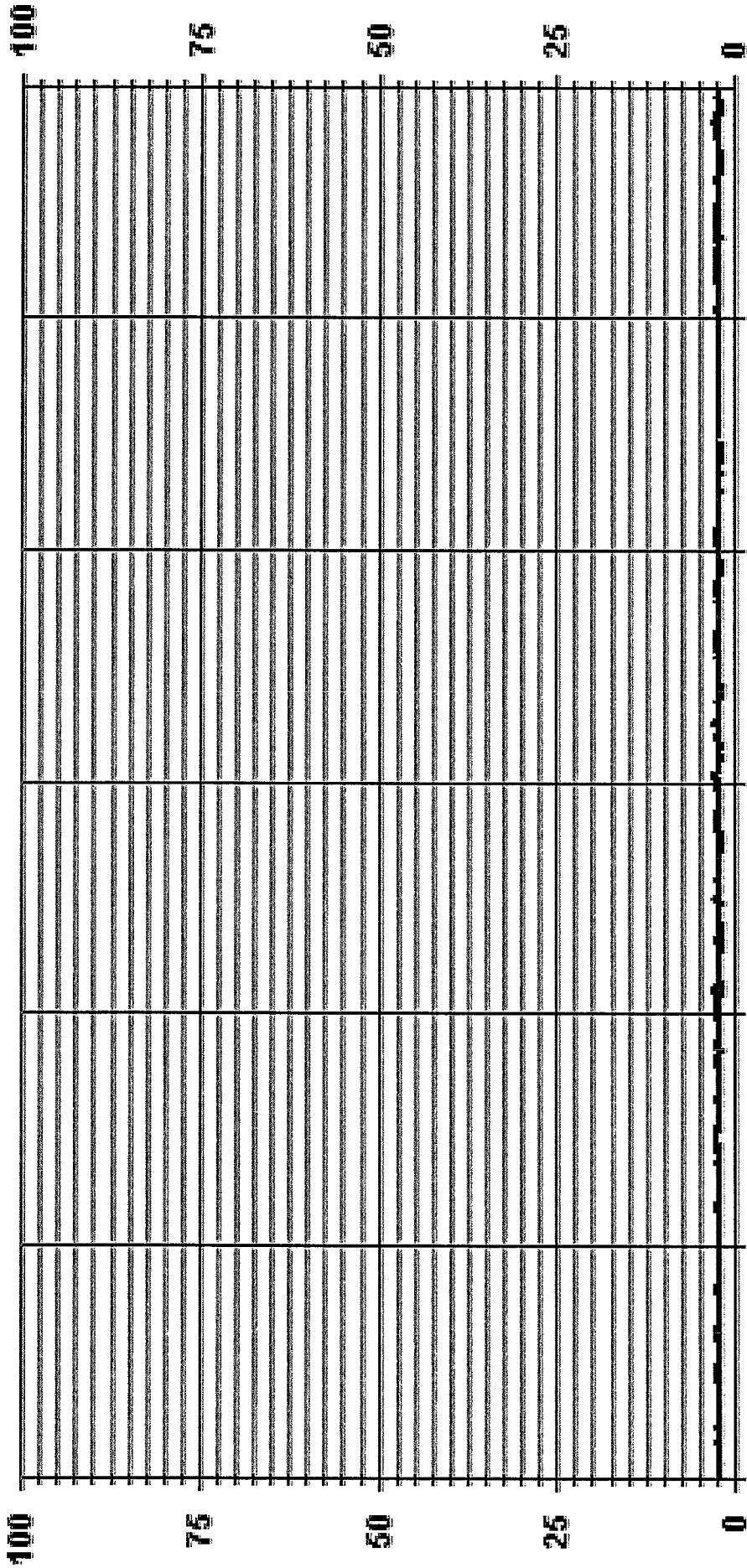
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	684
MAXIMUM INSTANTANEOUS VALUE:	2.8 PPM @ HOUR(S) 12, 5 ON DAY(S) 13, 30
VAR-VARIOUS	
I2S CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	0.13
OPERATIONAL TIME:	720 HRS

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA30 THCMAX PPM

LICA30
 THC / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	2.92	5.26	14.32	8.33	5.26	5.26	5.40	4.97	4.82	11.25	5.26	4.09	7.30	9.94	2.48	3.07	100.00
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.92	5.26	14.32	8.33	5.26	5.26	5.40	4.97	4.82	11.25	5.26	4.09	7.30	9.94	2.48	3.07	

Calm : .00 %

Total # Operational Hours : 684

Distribution By Samples

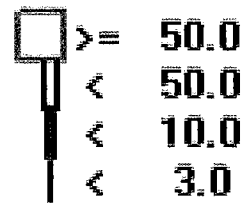
Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	20	36	98	57	36	36	37	34	33	77	36	28	50	68	17	21	684
< 10.0																	
< 50.0																	
>= 50.0																	
Totals	20	36	98	57	36	36	37	34	33	77	36	28	50	68	17	21	

Calm : .00 %

Total # Operational Hours : 684

Logger : 30 Parameter : THC

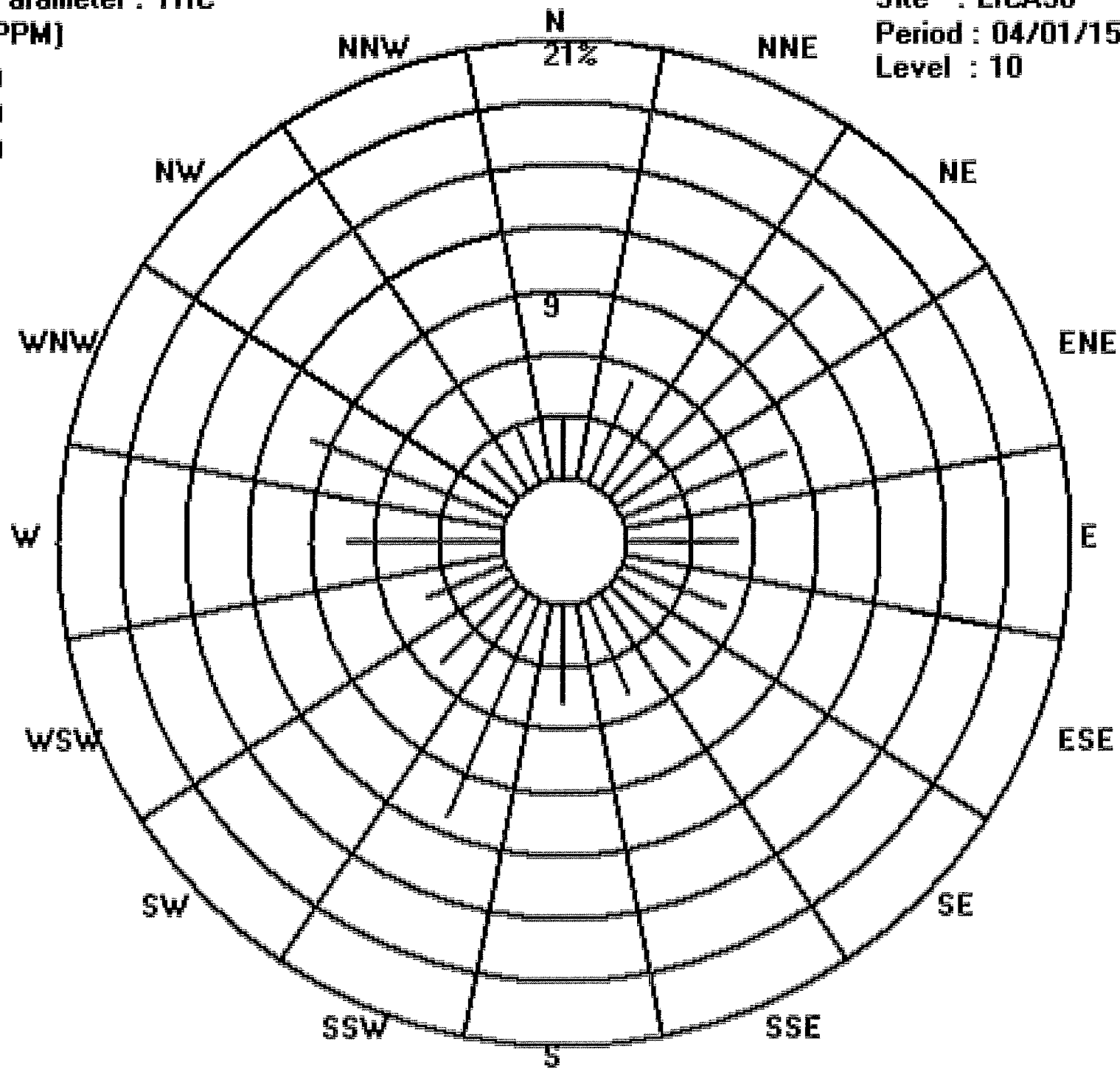
Class Limits (PPM)



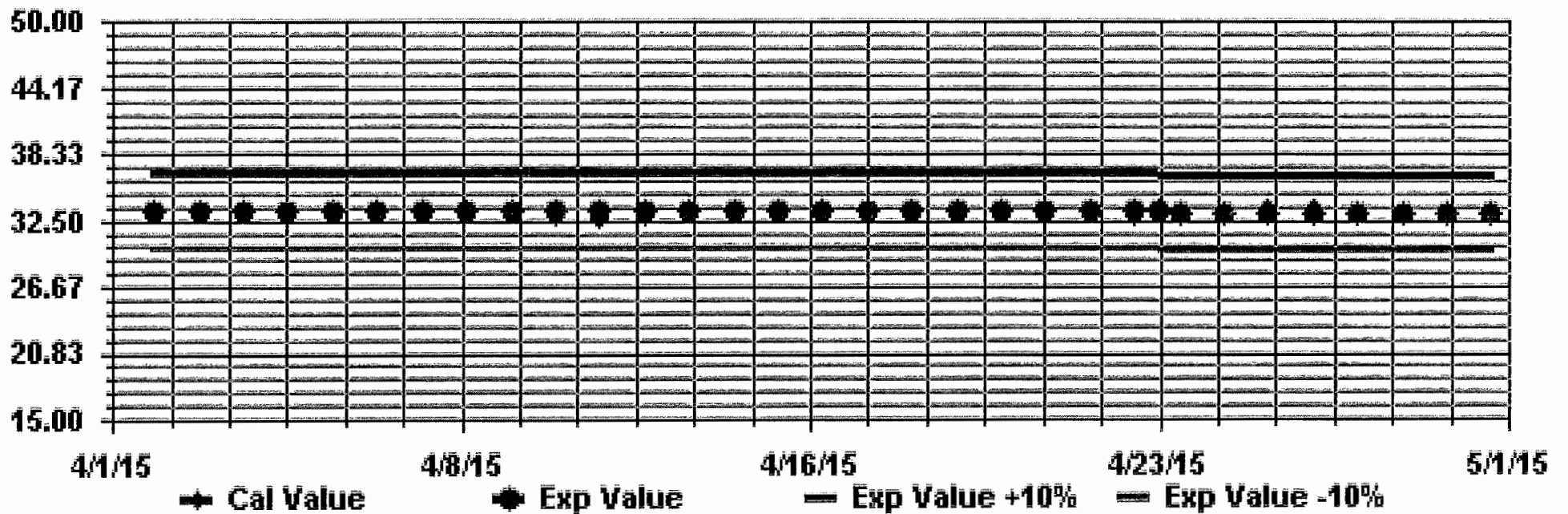
Site : LICA30

Period : 04/01/15-04/30/15

Level : 10



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



OXIDES OF NITROGEN



OXIDES OF NITROGEN (NOx) hourly averages in ppb

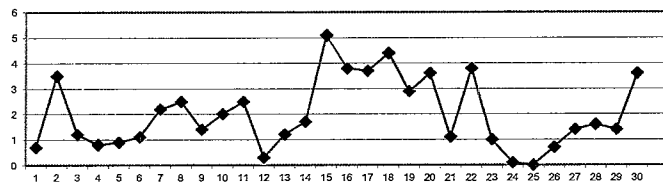
MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX	24-HOUR AVG.	RDGS.	
1	0.6	2.4	0.4	0.5	4	1.9	0.3	0	0	0	0	0.1	0.9	0.3	0	0	0	0	0.3	0.8	0.9	5	1.3	0.7	4	0.7	24	
2	0.6	0.8	1	1.1	4	3.4	3.1	6	2.9	5.7	10	10.6	6.3	4.1	6.2	2.8	3.4	2.2	2	1.5	5	0.9	0.7	1.1	10.6	3.5	24	
3	1.3	0.9	0.7	0.6	0.8	1.4	1.7	3.5	3.9	2.9	2.3	2.3	1.5	0.9	0.5	0.4	0.4	0.4	0.5	5	0.3	0	0	0	3.9	1.2	24	
4	0	0	0	0	0	0	0	0.2	1.1	2	0.3	0.8	1.6	1.9	4.1	0.6	1	1	5	1.1	0.8	0.7	1	0.8	4.1	0.8	24	
5	1	1.2	2.1	1.9	1.6	0.9	0.8	0.2	0	0	0	0	0.2	0.4	1.3	5.3	0.9	5	1	0.7	0.4	0.4	0.4	0.9	5.3	0.9	24	
6	0.3	0.3	0.3	0.4	0.4	0.2	0.3	0.8	2	2.4	0.9	2	1.2	1.8	1.9	2	5	1.2	0.5	0.7	1.4	1.8	2.2	1.4	2.4	1.1	24	
7	0.8	0.6	0.4	0.3	0.6	4.3	7.4	8.3	4.4	2.3	5.8	3.8	1.8	1.3	0.7	5	1.7	1.9	1.4	1	0.8	0.5	0.1	0.2	8.3	2.2	24	
8	0.5	1.9	3.2	2.5	2.2	3.4	3.9	4.5	4.5	3.7	6.1	6.1	7.2	3.7	5	0.5	0.5	0.5	0	0.2	0	0.5	0.6	0.6	7.2	2.5	24	
9	0.5	0.3	0.7	0.8	0.3	0.9	1.3	3.1	1.5	2.8	2.6	0.7	0.8	5	1.5	1	0.9	0.8	1	1	1.3	2.4	3.6	3.3	3.6	1.4	24	
10	1.8	1.6	3.8	4.3	1.9	2.1	2.5	6.6	5.7	4.5	3.9	1.7	5	1	0.3	0.1	0.4	0.3	0.1	0.4	0.8	0.8	1	1.1	6.6	2.0	24	
11	1.6	1.6	1.9	3.2	3.9	4.2	4.7	7.4	9.1	8.1	4.2	5	2.5	0.4	0.2	0.2	0	0.5	0.1	0	2.5	1.9	0	0	9.1	2.5	24	
12	0.1	0	0	0	0.1	0	0.5	0.3	0	0.2	5	0.6	0.5	0	0.5	2.7	0	0	0	0	0	0.1	0.1	0.3	2.7	0.3	24	
13	0	0.3	0.3	0.3	0.4	0.1	0.1	0.4	0.1	5	0.8	0.9	1.9	1.7	7	2.3	3.9	1.1	1.5	2.1	1.4	1	0.7	0.4	7	1.2	24	
14	0.3	0.8	0.6	0.7	0.6	0.9	1.6	5.7	5	0.5	4.1	6.4	4.8	3.4	2.6	4.8	0.3	0.1	0.1	0.4	0.3	0.3	0.5	0.3	6.4	1.7	24	
15	3.2	3.3	6.5	9.4	26.0	18.3	6.8	5	10.6	9.6	6.5	2.6	0.7	0.3	0.2	0.3	0.5	0.3	0.5	0	0.7	1.6	3.3	5.7	26.0	5.1	24	
16	3.2	8.9	4.6	8.8	7.4	10.2	5	2	1.2	2.5	0.7	0.5	0.7	0.7	0.7	0.9	0.7	17.9	4.2	0	0.6	1.1	8.3	17.9	3.8	24		
17	6.3	6.6	5.4	0.8	5.1	5	3.4	9.6	9	2.7	0.8	0.7	0.7	0.5	0.9	0.7	0.8	0.6	6.7	3.5	8.6	0.7	0.7	10	10	3.7	24	
18	1.6	0.4	8.1	0.4	5	3.3	7.6	7.4	5.5	9	13.2	8.2	1.3	0.9	0.3	0.4	0.7	8.9	9.3	0.7	0.6	1.5	4.5	6.8	13.2	4.4	24	
19	3.8	3.9	8.1	5	8.4	7.5	9.8	6	0.6	3	3.4	1.5	1	0	1.1	1.2	2.1	0.7	1.1	0	0	0	1.9	2.4	9.8	2.9	24	
20	1.2	1.4	5	2.2	4.8	9.5	13.1	11.3	13.3	8.5	3.6	2.9	1.4	1.8	0	0.2	0	0	0	0	7.2	0.2	0.1	0	13.3	3.6	24	
21	0.1	5	1.4	0.7	0.6	0.9	3.7	3.3	2.3	1.6	1.7	1.2	1.1	1.1	0.8	1.1	0.7	0.3	0.6	0.5	0.2	0.1	0.1	0.1	3.7	1.1	24	
22	5	0.2	0	0	0	0	0	0	0.1	0.1	1.8	2.5	4.7	3.3	5.6	7.6	3.7	1.9	2	8.7	11.7	14.1	16.6	5	16.6	3.8	24	
23	6.6	1.6	1.1	0.1	0.1	0	0	0.1	C	C	C	C	C	C	0.3	0	0	3.8	0.5	0	0.3	5	1.1	6.6	1.0	24		
24	5	5	1.1	0	0	0	0	0	5	0.2	0.1	0.1	0	0	0	0	0	0	0	0	0	5	0.1	0	1.1	0.1	24	
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0.5	0.1	0	0.5	0.0	24	
26	0	0	0	0	0	0.2	0	0	0	0	0	0.4	2.2	3	2.1	1.2	0.7	0.4	0.8	5	1.2	1.6	1.3	1.2	3	0.7	24	
27	1.7	1.4	1.1	0.9	0.7	0.7	1.5	2.4	3.3	2.5	2.2	1.4	1.4	0.8	0.9	0.5	0.6	1	5	1.5	1.2	1.1	1.3	1.9	3.3	1.4	24	
28	2.5	2.3	1.9	1.5	1.8	1.2	1.4	2.8	2.3	2.4	2.3	1.3	0.9	0.5	0.6	0.8	0.6	5	1.2	0.9	2.3	1.4	1.3	1.7	2.8	1.6	24	
29	1.9	1.9	3	1.9	1	3.4	5	1.4	1.1	1.3	1	2	0.5	3.7	3.1	0.5	5	0.4	0	0	0	0.3	1.7	1.7	3.7	1.4	24	
30	2	4.1	3.9	6.6	8.7	13.5	16.2	13.5	10.3	2	0.3	0.4	0.4	0	5	0	0	0	0	0	0	0	0	0	0	16.2	3.6	24
HOURLY MAX	6.6	8.9	8.1	9.4	26	18.3	16.2	13.5	13.3	9.6	13.2	10.6	7.2	4.1	7	7.6	3.9	8.9	17.9	8.7	11.7	14.1	16.6	10				
HOURLY AVG	1.6	1.7	2.1	1.7	2.9	3.2	3.3	3.7	3.5	2.9	2.8	2.2	1.7	1.4	1.5	1.4	0.9	0.9	1.9	1.1	1.6	1.3	1.6	1.8				

STATUS FLAG CODES

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

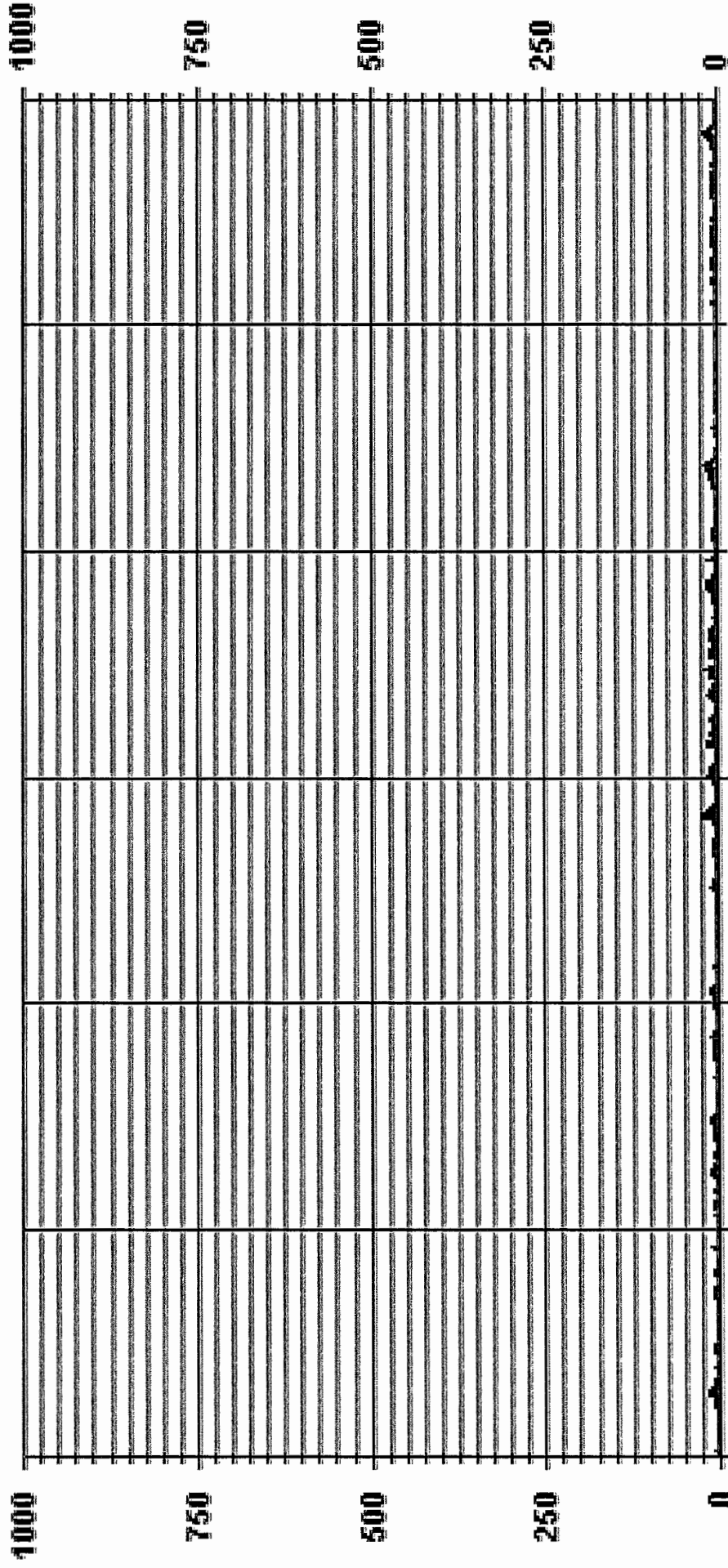
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	557
MAXIMUM 1-HR AVERAGE:	26.0 PPB @ HOUR(S) 4 ON DAY(S) 15
MAXIMUM 24-HR AVERAGE:	5.1 PPB ON DAY(S) 15 VAR-VARIOUS
IZS CALIBRATION TIME:	35 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	2.98
MONTHLY AVERAGE:	2.0 PPB

01 Hour Averages



— LICA30 NOX_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - APRIL 2015

JOB # 2833-2015-04-30- C

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY MAX	24-HOUR AVG.	RDGS.
1	1.5	3.9	2.4	2.8	8.1	4.1	1.1	0.6	0.7	1.1	0.9	1.1	3	1.9	0.3	0.3	0.3	0.1	1.2	1.4	1.5	S	2.4	1.3	8.1	1.8	24	
2	1.2	1.4	1.7	1.7	11.8	7.8	45.8	42.5	5.3	10.6	11.5	12.2	7.5	8.5	8	5.6	4.7	2.6	2.8	2.6	S	1.5	1.1	2.4	45.8	8.7	24	
3	2.1	1.7	1.3	1.2	1.4	2.3	2.5	5	5.3	3.7	3.6	3.7	2.3	1.6	1.1	0.8	0.9	0.9	0.9	S	1.1	0.6	0.4	0.1	5.3	1.9	24	
4	0.1	0.4	0.3	0.5	0.6	0.5	0.5	0.8	4.5	6	2.1	1.6	3.8	4.5	14.7	1.3	1.8	1.5	S	1.9	1.1	1.3	1.9	1.6	14.7	2.3	24	
5	1.7	1.8	3.3	2.5	2.7	1.4	1.4	0.8	0.5	0.3	0.4	0.6	0.8	0.9	3.8	10.6	2	S	2.7	1.3	1	0.9	0.9	3	10.6	2.0	24	
6	0.9	1	0.7	1	0.8	0.7	0.9	2.7	3.8	6.5	1.6	5.4	1.8	5	6.9	4.7	S	4.9	1.1	1.3	3.1	2.9	2.9	2.4	6.9	2.7	24	
7	1.4	1.2	0.9	0.9	2.2	11.9	13.1	14.2	14.2	5	10	9.1	5.3	3.3	2.1	S	2.4	2.6	2.2	1.4	1.4	1.1	0.5	0.8	14.2	4.7	24	
8	1.6	3.2	4.7	4.7	3.2	7	6.3	6	6.6	6.4	7.2	8.6	8.4	6.1	S	1.5	2.1	2.5	0.5	0.8	0.7	1	1.2	1.2	8.6	4.0	24	
9	1	0.8	1.7	1.6	1.1	5	3.5	4.8	2.3	4.2	4.4	1.5	3	S	3	2.3	1.5	1.3	1.4	1.4	2.2	3.1	5.6	5.5	5.6	2.7	24	
10	2.4	2.6	12.8	11.6	2.9	2.9	5.2	10.5	10	5.9	4.9	3.7	S	1.8	0.9	0.7	1.6	0.8	0.5	3.4	3.1	1.6	1.5	1.7	12.8	4.0	24	
11	2	2.2	2.6	4.4	5.3	7.8	6.4	9.2	10.6	8.6	8.8	S	5.8	1.4	1	0.6	0.7	2.7	0.6	0.2	12.3	13.6	0.6	0.5	13.6	4.7	24	
12	0.6	0.3	0.4	0.8	0.9	1.1	1.9	1.3	0.5	2.8	S	2.2	1.7	0.5	29.7	8.5	0.9	0.2	0.4	0.4	0.4	0.7	0.6	0.8	29.7	2.5	24	
13	0.7	0.8	0.8	0.8	1.3	0.7	1.1	1.5	1	S	2.7	12.4	15.2	5.7	27	9.4	13.2	5.6	3.7	3.4	2.2	1.7	1.2	1.1	27	4.9	24	
14	1.1	1.5	1.2	1.3	1.2	3.8	3.5	15.8	S	1.4	12	14.6	18	10.3	9.7	12	1	1	0.8	1	0.8	0.8	1	0.8	18	5.0	24	
15	8	4.4	16.3	19.1	47.7	37.9	13.8	S	14.9	22.3	17.8	15.6	3.2	3.4	3.1	2.9	2.3	2.7	2.5	0.8	1.8	3.1	6.4	12	47.7	11.4	24	
16	4.6	17.2	9.5	11.2	9.8	14.5	S	4.1	2.3	27.4	2.4	1.4	1.8	1.3	1.7	1.8	1.7	2.1	32.1	26.1	0.5	2.3	2.9	26.8	32.1	8.9	24	
17	22.5	20.2	16.8	5.9	10.4	S	6.4	13.6	29.2	4.8	1.7	15.2	1.4	1.2	1.4	1.2	1.8	1.6	18.3	8.5	50.6	1.4	1.4	23.2	50.6	11.2	24	
18	8.4	1.4	15.6	2	S	8.3	10.1	16	11.3	21.6	23.9	26	3.4	3.7	1	0.8	1.7	22.5	16.6	1.9	1.2	4.6	9.3	10.3	26	9.6	24	
19	7.3	5.3	12.9	S	10.4	11.5	17.6	17.7	1.6	7.8	7.9	5.1	5.3	1.1	2.4	2.3	7.2	5.5	4.7	0.6	0.3	0.5	3.9	3.7	17.7	6.2	24	
20	1.9	2.4	S	3.6	7.4	16.4	16.4	19.7	24.1	14.5	30	11.1	9.4	9	0.6	1.4	0.6	0.5	0.5	0.5	20	1.9	0.5	0.4	30	8.4	24	
21	0.6	S	2.3	1.5	1.1	3.2	6.4	4.2	3.1	2.1	2.3	1.8	1.6	2.4	2.2	31.4	2.5	1.1	1.6	1.2	0.9	0.5	0.5	0.7	31.4	3.3	24	
22	S	1.5	0.4	0.3	0.5	0.6	0.3	0.4	0.6	0.7	14.8	7.6	11.1	9.5	15.7	18.6	9	5.8	3.9	15.1	18.3	20.7	21.9	S	21.9	8.1	24	
23	14.6	5.2	2.8	0.7	0.6	0.5	0.6	0.8	C	C	C	C	C	C	C	2	0.4	2	10.3	3.1	0.2	5	S	1	14.6	3.1	24	
24	S	S	S	0.4	0	0	0	S	S	1	0.5	0.5	0.5	0.4	0.5	0.4	0.4	0.4	0.5	0.4	S	1	0.3	1	0.4	24		
25	0.4	0.1	0.3	0.3	0.1	0	0.1	0.1	0	0	0.2	0.3	0.3	0.1	0	0	0	0	0	0.2	S	1.3	0.6	0.6	1.3	0.2	24	
26	0.6	0.4	0.6	0.5	0.9	0.9	0.5	0.5	0.3	0.2	0.7	2.6	3.8	6.5	4.1	2.6	1.2	1	1.6	S	1.8	2.4	1.8	1.9	6.5	1.6	24	
27	2.3	1.9	1.8	1.4	1.2	1.4	2.7	3.2	4.1	4	2.7	2.2	2.4	1.2	2.1	1.2	1.2	1.9	S	2.1	1.9	1.7	2.3	2.6	4.1	2.2	24	
28	2.9	2.9	2.6	2.3	2.6	1.8	2.3	4.8	3.5	3.1	2.9	2.3	1.4	1.2	1.5	2.8	1.1	S	1.9	1.5	4.4	1.9	1.9	2.4	4.8	2.4	24	
29	2.4	2.5	3.9	3.1	1.7	18.4	S	S	2.4	2.5	3.8	9.9	1.2	15.1	7.1	2	S	1	0.5	0.5	0.5	1.3	2.5	2.5	18.4	4.0	24	
30	3.6	5.7	5	10.8	11.1	20.1	19.1	14.9	13.3	6.1	1.1	1.3	1.3	1.5	0.3	S	0.5	0.3	0.2	0.2	4.5	0.7	0	0	20.1	5.3	24	
HOURLY MAX	22.5	20.2	16.8	19.1	47.7	37.9	45.8	42.5	29.2	27.4	30	26	18	15.1	29.7	31.4	13.2	22.5	32.1	26.1	50.6	20.7	21.9	26.8				
HOURLY AVG	3.5	3.4	4.5	3.4	5.1	6.6	6.8	8.0	6.5	6.5	6.5	6.4	4.5	3.9	5.4	4.6	2.3	2.7	4.1	3.0	4.9	2.9	2.7	3.8				

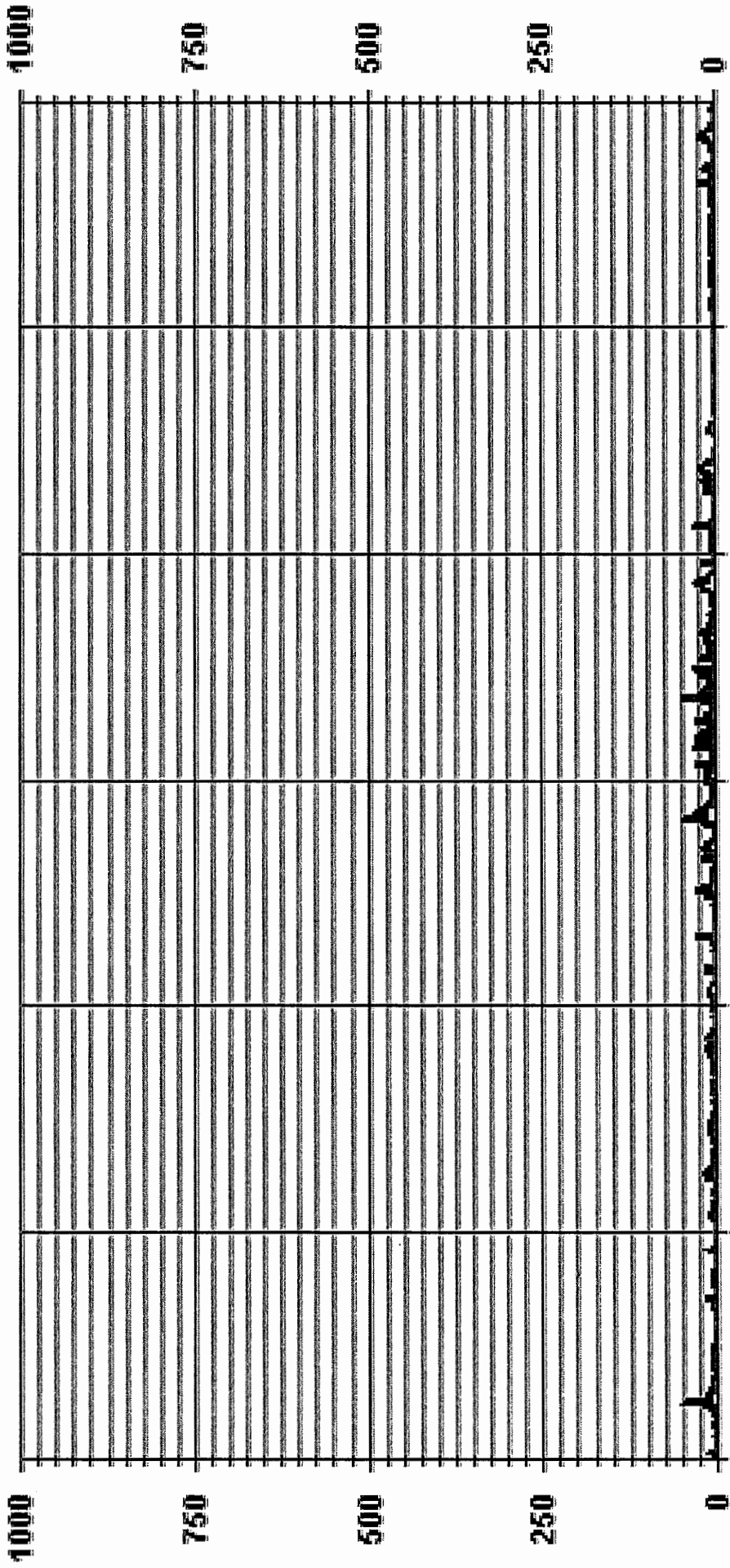
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	663
MAXIMUM INSTANTANEOUS VALUE:	50.6 PPB @ HOUR(S) 20 ON DAY(S) 17
	VAR-VARIOUS
IZS CALIBRATION TIME:	38 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	6.68
OPERATIONAL TIME:	720 HRS

01 Hour Averages



— LICA30 NOXMAX PPB

LICA30
 NOX_ / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	2.94	5.30	14.01	8.25	5.30	5.16	5.45	5.01	4.86	11.35	5.30	4.12	7.37	10.02	2.50	2.94	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.94	5.30	14.01	8.25	5.30	5.16	5.45	5.01	4.86	11.35	5.30	4.12	7.37	10.02	2.50	2.94	

Calm : .00 %

Total # Operational Hours : 678

Distribution By Samples




Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	20	36	95	56	36	35	37	34	33	77	36	28	50	68	17	20	678
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	20	36	95	56	36	35	37	34	33	77	36	28	50	68	17	20	

Calm : .00 %

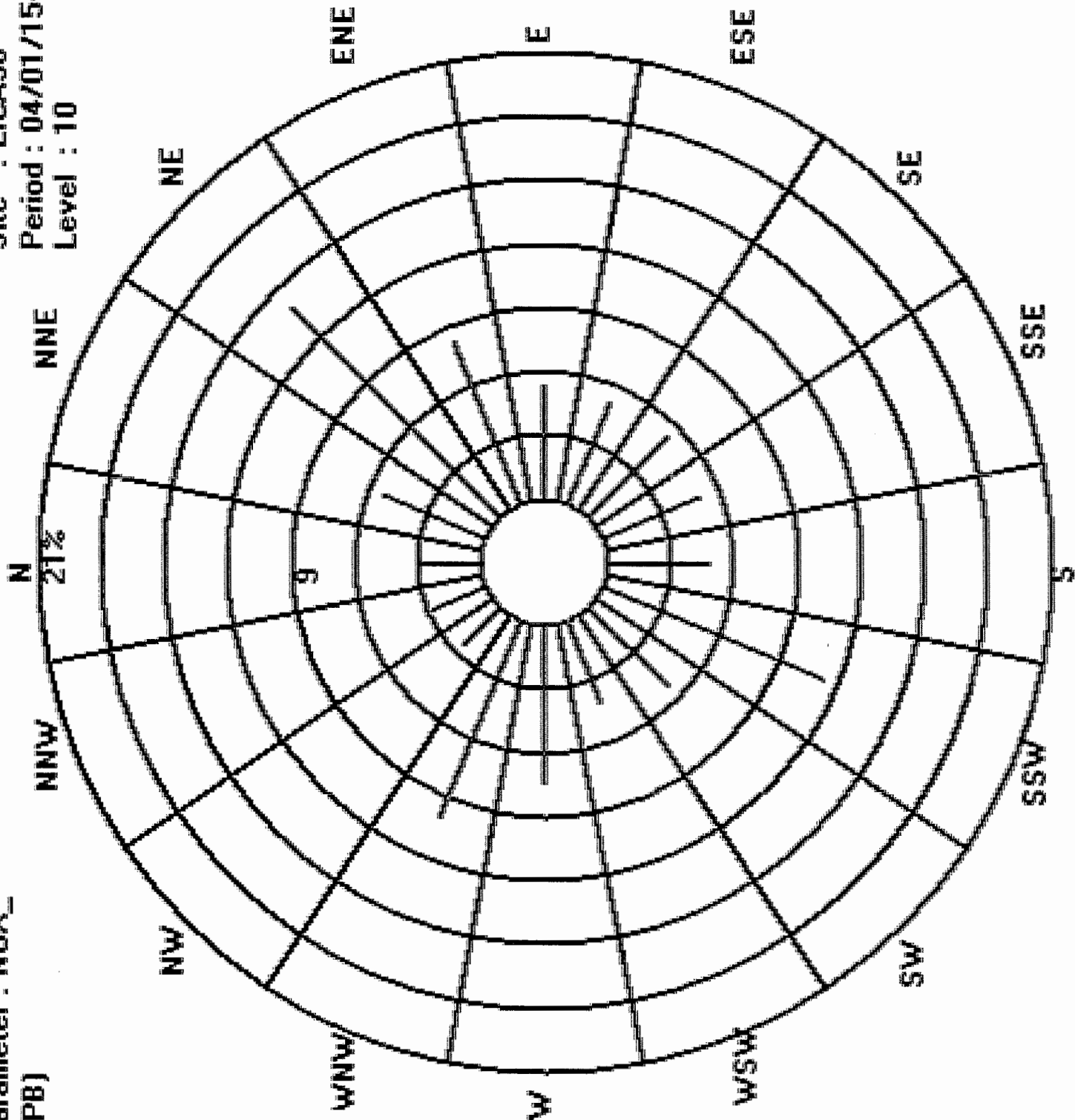
Total # Operational Hours : 678

Logger : 30 Parameter : NDX_

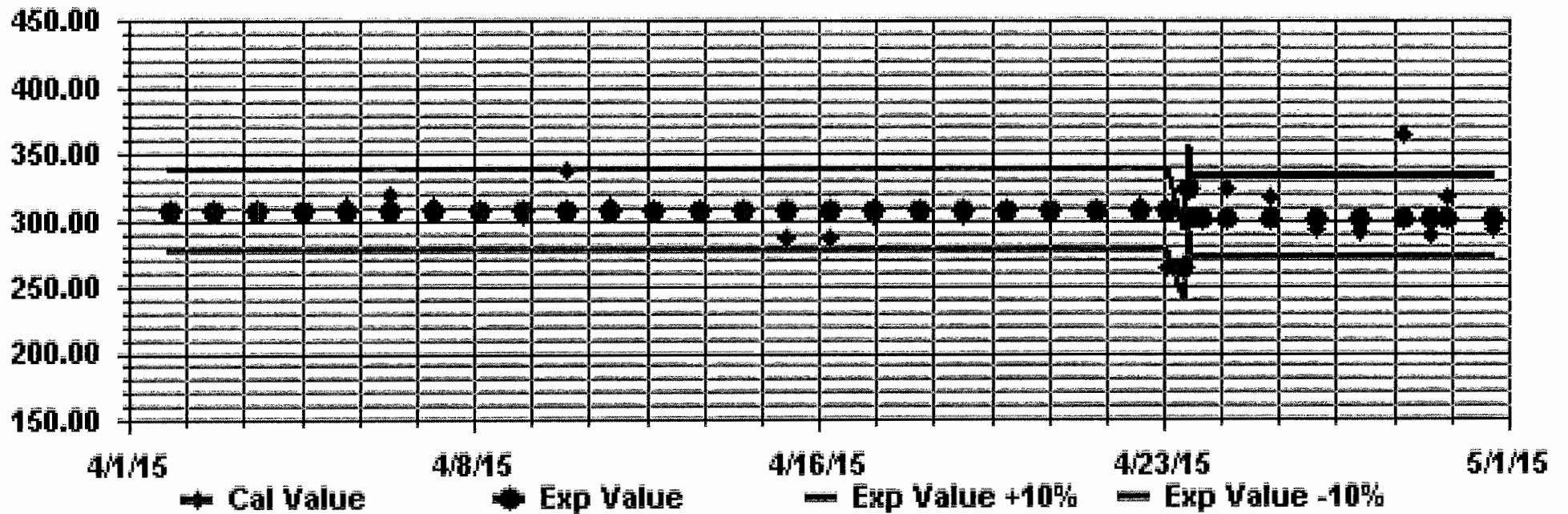
Class Limits (PPB)

-  \geq 210.0
-  $<$ 210.0
-  $<$ 110.0
-  $<$ 50.0

Site : LICA30
Period : 04/01/15-04/30/15
Level : 10



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



NITRIC OXIDES



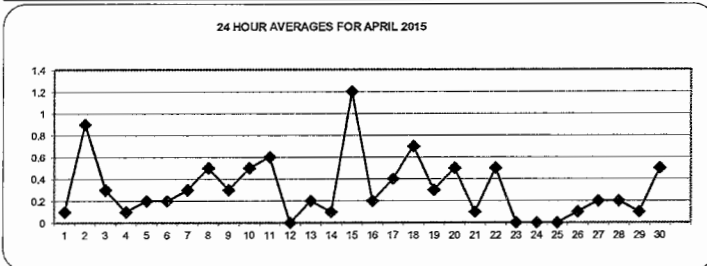
NITRIC OXIDE (NO) hourly averages in ppb

MST

DAY	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.											
1	0.5	0.4	0.4	0.2	0.4	0.3	0.1	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0.5	0.1	24		
2	0.4	0.5	0.5	0.5	0.8	0	0.6	1.9	0.6	1.6	3.3	3.4	2.1	1.1	2.1	0.5	0.5	0	0	0.1	0.1	0.1	0.1	0.2	3.4	0.9	24	
3	0.1	0	0	0	0	0	0	0.7	1	1	0.9	0.9	0.4	0.1	0.3	0.4	0.4	0.4	0.5	0.5	0	0	0	0	1	0.3	24	
4	0	0	0	0	0	0	0	0	0	0.1	0	0	0.2	0.4	1.2	0	0	0	0	0.1	0.1	0	0.1	0.1	1.2	0.1	24	
5	0.1	0.1	0	0	0	0	0.1	0.1	0	0	0	0	0.1	0.2	0.5	1.8	0.3	0.5	0.1	0	0.1	0.1	0	0.1	1.8	0.2	24	
6	0	0	0.1	0.1	0.1	0.1	0	0.2	0.6	0.7	0.3	0.8	0.4	0.7	0.7	0.6	0.5	0	0	0	0	0	0	0	0.8	0.2	24	
7	0	0	0	0	0	0.1	0.3	1.3	1	0.4	1.6	0.8	0.4	0.2	0.1	0.5	0.2	0.1	0	0	0	0	0	0	1.6	0.3	24	
8	0	0	0	0	0	0	0.3	0.9	1.6	1.2	2.4	2.1	2.7	1	0.5	0.1	0	0	0	0	0	0	0	0	2.7	0.5	24	
9	0	0	0	0	0	0	0.2	0.9	0.3	0.7	0.7	0	0	0.5	0.3	0.1	0.1	0	0	0	0	0.6	0.8	0.7	0.9	0.3	24	
10	0.7	0.7	0.4	0.1	0.1	0.1	0.4	2.4	1.9	1.7	1.6	0.8	0.5	0	0	0	0	0	0	0	0	0.1	0.4	0.4	2.4	0.5	24	
11	0.7	0.5	0.4	0.6	0.6	0.7	1	2.1	3.2	2.9	1.6	0.5	0	0	0	0	0	0	0	0	0	0	0	0	3.2	0.6	24	
12	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.3	0	0	0	0	0	0	0	0	0.3	0.0	24	
13	0	0	0	0	0	0	0	0	0	0	0.5	0.2	0.3	0.6	0.5	2.3	0.5	0.2	0	0	0	0	0	0	2.3	0.2	24	
14	0	0	0	0	0	0.1	0.3	1.5	0.5	0	0.4	0.7	0.3	0	0	0.1	0	0	0	0	0	0	0	0	1.5	0.1	24	
15	0	0	0.7	0.7	9.6	5.7	1.3	5	3.2	3.1	2	0.5	0	0	0	0	0	0	0	0	0	0	0	0	9.6	1.2	24	
16	0	0	0	0	0	0	0.5	0.2	0.1	0.8	0.2	0	0	0	0	0	0	0	0	2.7	0.1	0	0	0.5	2.7	0.2	24	
17	0	0	0	0	0	0.5	0.6	2.8	3.2	0.8	0.1	0.1	0	0	0	0	0	0	0	0	0	1.3	0	0.1	3.2	0.4	24	
18	0	0	0.1	0.1	0.5	0.1	0.6	1.5	1.3	2.6	4.3	2.6	0.4	0.2	0	0	0	2.1	1.1	0	0	0	0	0	4.3	0.7	24	
19	0	0	0.2	0.5	0.1	0.3	2.2	1.9	0	0.8	0.7	0	0.1	0	0	0	0.2	0	0	0	0	0	0	0	2.2	0.3	24	
20	0	0	0.5	0	0	0.3	1.8	2.5	4.1	2	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	4.1	0.5	24	
21	0	0.5	0	0	0	0	0.6	0.5	0.4	0.1	0.4	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0.6	0.1	24	
22	0.5	0	0	0	0	0	0	0	0	0	0.6	0.7	1	0.4	1.4	1.7	0.8	0.1	0	0.6	0.9	1.2	1.3	0.5	1.7	0.5	24	
23	0.4	0	0	0	0	0	0	0	0	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0.4	0.0	24	
24	0.5	0.5	0.2	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.0	24	
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24	
26	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0.9	0.4	0.1	0	0	0	0	0	0.1	0	0	0.9	0.1	24	
27	0	0	0.1	0	0.1	0.1	0.5	0.4	0.6	0.5	0.5	0.2	0.2	0	0.1	0	0	0	0	0.5	0.3	0.2	0.1	0.2	0.2	0.6	0.2	24
28	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.9	0.6	0.5	0.4	0.2	0.1	0.1	0.1	0.3	0.2	0.5	0.1	0	0	0	0	0	0.9	0.2	24	
29	0	0	0	0	0	0.2	0.5	0.5	0.1	0.4	0.3	0.2	0	0.5	0.3	0	0.5	0	0	0	0	0	0	0	0.5	0.1	24	
30	0	0	0	0	0	1.2	3.4	3.9	3.3	0.3	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	3.9	0.5	24	
HOURLY MAX	0.7	0.7	0.7	0.7	9.6	5.7	3.4	3.9	4.1	3.1	4.3	3.4	2.7	1.1	2.3	1.8	0.8	2.1	2.7	0.6	1.3	1.2	1.3	0.7				
HOURLY AVG	0.1	0.1	0.1	0.1	0.4	0.3	0.5	0.9	1.0	0.8	0.8	0.5	0.4	0.2	0.4	0.2	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.1				

STATUS FLAG CODES

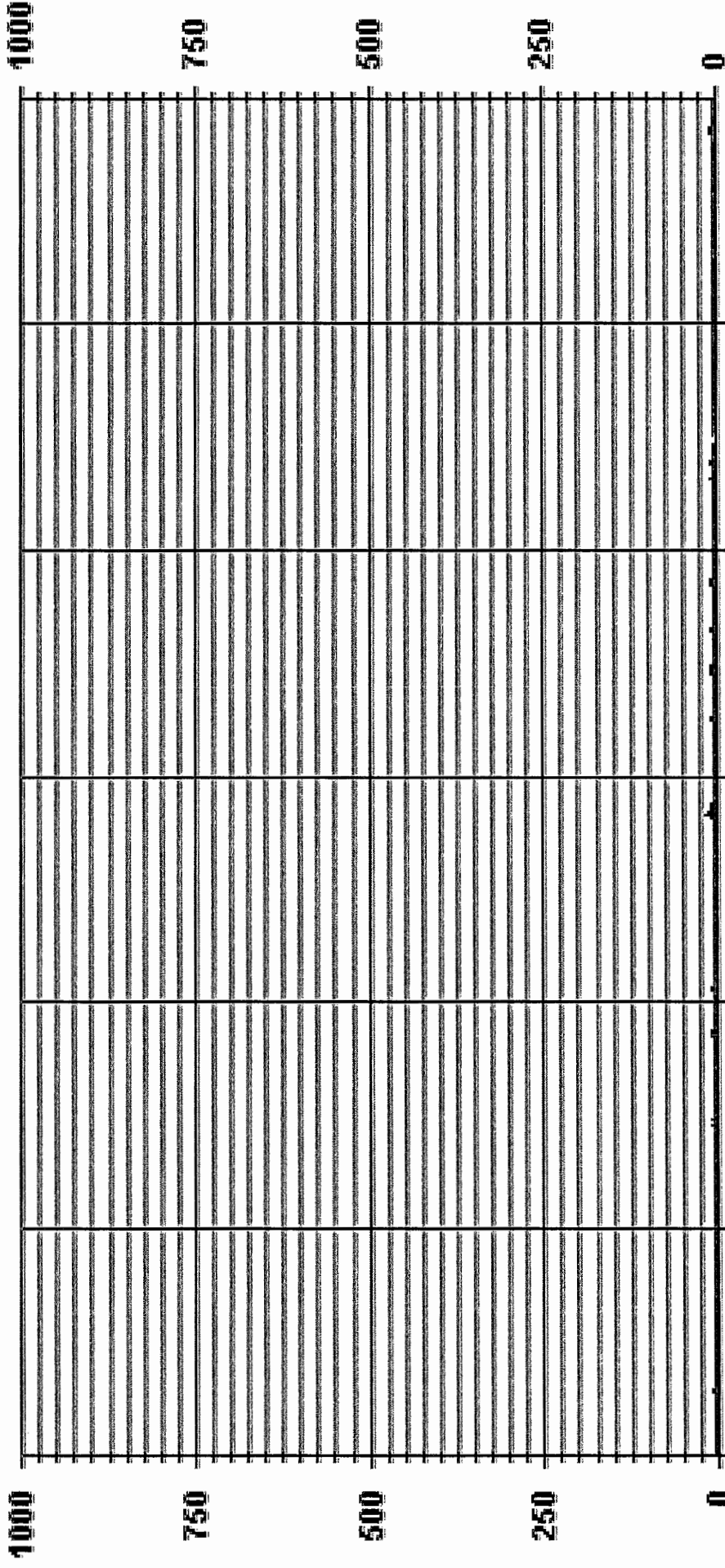
C	CALIBRATION	Q	QUALITY ASSURANCE
M	MAINTENANCE	R	RECOVERY
S	DAILY ZERO / SPAN CHECK	X	MACHINE MALFUNCTION
P	POWER FAILURE	O	OPERATOR ERROR
G	OUT FOR REPAIR	K	COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	278		
MAXIMUM 1-HR AVERAGE:	9.6 PPB	@ HOUR(S)	4 ON DAY(S) 15
MAXIMUM 24-HR AVERAGE:	1.2 PPB		ON DAY(S) 15
			VAR-VARIOUS
IZS CALIBRATION TIME:	35 HRS	OPERATIONAL TIME:	720 HRS
MONTHLY CALIBRATION TIME:	7 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.77	MONTHLY AVERAGE:	0.3 PPB

01 Hour Averages



— LICA30 NO_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - APRIL 2015

JOB # 2833-2015-04-30- C

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX	24-HOUR AVG.	RDGS.
1	1.3	1.1	1.2	1.1	1.2	1	1	0.9	1	1.1	1	0.9	1.4	1.1	0.8	1.1	0.8	0.7	0.9	0.6	0.9	S	0.9	0.9	1.4	1.0	24
2	0.7	1	1	1	3.7	1.2	30.5	24.9	1.7	3.8	4.5	4.5	3.2	3.3	3.3	1.8	1.4	0.9	0.9	1.1	S	1.1	1.1	1.1	30.5	4.2	24
3	1	0.8	0.9	0.8	0.9	0.9	1	2	2	1.9	2.1	2.2	1.4	1.3	1	0.9	1	1	1	S	0.2	0.2	0	0	2.2	1.1	24
4	0	0	0	0	0	0	0	0.3	1.7	2.7	0.7	0.8	1.3	2	5.4	0.5	0.4	0.3	S	0.6	0.6	0.5	0.7	0.5	5.4	0.8	24
5	0.5	0.5	0.7	0.4	0.4	0.6	0.7	0.7	0.4	0.4	0.5	0.5	0.7	0.7	1.8	3.6	0.7	S	0.6	0.7	0.4	0.7	0.5	0.8	3.6	0.8	24
6	0.5	0.5	0.5	0.5	0.7	0.4	1.4	1.7	2	1	2.5	1	2	2.4	1.6	S	0.9	0.4	0.2	0.4	0.4	0.3	0.4	2.5	1.0	24	
7	0.4	0.4	0.5	0.4	0.2	0.7	1.1	4.1	4.3	1.4	3.2	2.5	1.4	1	1	S	0.7	0.6	0.3	0.3	0.3	0.3	0.3	0.3	4.3	1.1	24
8	0.3	0.3	0.4	0.4	0.4	1.4	1.1	2	2.6	2.6	2.9	3.6	3.4	2.3	S	0.4	0.6	0.6	0.4	0.4	0.1	0.1	0.2	0.4	3.6	1.2	24
9	0.2	0.4	0.2	0.4	0.2	0.9	1.2	1.9	0.8	1.5	1.6	0.6	1.3	S	1.3	1	0.8	0.7	0.8	0.9	1.1	1.1	1.2	1.4	1.9	0.9	24
10	1.1	1	1.2	1	1	1.4	1.9	4.5	4.1	2.5	2.2	1.7	S	1	0.7	0.6	0.9	0.7	0.7	0.6	0.8	1	1.1	1.1	4.5	1.4	24
11	1.5	1	0.9	1.1	1.2	2.2	1.7	3.2	4	3.6	3.2	S	1.4	0.4	0.4	0.4	0.3	0.4	0.4	0.2	0.5	0.2	0.3	0.4	4	1.3	24
12	0.4	0.4	0.4	0.3	0.3	0.1	0.3	0.3	0.2	1.2	S	1.1	1.1	0.2	15.8	1.8	0.2	0.4	0.1	0.1	0.1	0.2	0.1	0.2	15.8	1.1	24
13	0.2	0.3	0.3	0.2	0.3	0.3	0.5	0.5	0.3	S	1.2	8.2	4.1	1.9	9.3	2.9	3	0.5	0.5	0.5	0.4	0.4	0.4	0.3	9.3	1.6	24
14	0.3	0.3	0.4	0.5	0.5	0.9	1.2	5.4	S	0.2	2.3	2.6	2.8	1.5	0.8	1.1	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	5.4	1.0	24
15	0.5	0.3	3.9	3.9	24.4	15.8	4.1	S	5.3	8.7	6.8	6.1	1.2	0.8	0.8	0.3	0.2	0.1	0.1	0	0.2	0.2	0.2	1	24.4	3.7	24
16	0.2	3.3	0.2	0.2	0.3	1.3	S	0.8	0.7	19.6	1	0.4	0.5	0.4	0.6	0.2	0.2	0.2	8.7	3.6	0.2	0.4	0.4	2.2	19.6	2.0	24
17	1.1	1	0.2	0.3	1.2	S	1.4	S	12.8	1.7	0.6	5.3	0.5	0.6	0.6	0.4	0.5	0.5	0.8	0.3	13.7	0.6	0.6	0.8	13.7	2.2	24
18	0.4	0.4	0.6	0.7	S	0.8	1.6	5.8	3.6	7.5	8.8	9.6	1.2	1.4	0.6	0.4	0.4	6.4	2.9	0.5	0.3	0.3	0.5	0.8	9.6	2.4	24
19	0.4	0.4	1.6	S	1	1.7	7.5	6.8	0.4	2.5	2.7	0.9	1.6	0.2	0.7	0.6	1.4	0.8	0.4	0.3	0	0.1	0.2	0.1	7.5	1.4	24
20	0.1	0	S	0.4	0.3	2.6	4	6.4	10.8	4.2	12.4	3	2	2.6	0.1	0.3	0.1	0.3	0.4	0.1	0.9	0.3	0.2	0	12.4	2.2	24
21	0.2	S	0.3	0.3	0.4	0.4	2.5	1	0.8	0.7	1	0.7	0.6	0.5	0.4	22.7	0.5	0.2	0.3	0.3	0.4	0.4	0.5	0.4	22.7	1.5	24
22	S	0.6	0.3	0.4	0.4	0.4	0.5	0.5	0.4	0.5	5.7	2.6	3.7	2.5	4.8	5.1	2.3	1	0.8	1.6	1.7	2.4	2.3	S	5.7	1.8	24
23	1.5	0.8	0.5	0.2	0.2	0.1	0	0.3	C	C	C	C	C	C	0	0	0	0	0	0	0	0	S	0.9	1.5	0.3	24
24	S	S	S	0.6	0.7	0.5	0.7	S	S	0.8	0.8	0.9	0.8	0.7	0.8	0.8	0.7	0.5	0.9	0.9	S	1	0.6	1	0.8	24	
25	0.8	0.7	1	1	0.9	0.8	0.7	1	0.5	0.8	0.9	0.9	0.9	0.8	0.7	0.5	1	1	0.7	0.6	S	0.9	0.7	1	1	0.8	24
26	1	0.7	0.7	0.7	0.4	0.5	0.5	0.6	0.6	1	0.6	0.9	1.8	2.1	1.5	0.9	0.7	0.8	0.4	S	0.8	0.6	0.6	0.9	2.1	0.8	24
27	0.7	0.7	0.8	0.8	0.7	0.9	1.3	1.3	1.6	1.4	1.4	1	1.2	0.6	0.8	0.7	0.8	0.6	S	1.2	1	0.8	1	0.9	1.6	1.0	24
28	0.8	0.8	1	0.8	1	0.8	1.4	2.4	1.2	1.4	1.4	1.1	0.8	0.9	1.1	1.4	1.3	S	1.1	1	0.9	0.6	0.9	0.9	2.4	1.1	24
29	0.7	1	0.8	0.5	0.8	3	S	S	1.4	1.3	1.5	3	0.5	3.6	1.9	0.8	S	0.8	0.5	0.4	0.5	0.3	1	0.9	3.6	1.2	24
30	0.7	0.5	0.5	0.4	0.4	5.3	4.4	4.9	4.8	2.5	0.5	0.7	0.6	0.7	0.5	S	1.2	1.2	1	0.9	0.9	0.8	0.9	1.1	5.3	1.5	24
HOURLY MAX	1.5	3.3	3.9	3.9	24.4	15.8	30.5	24.9	12.8	19.6	12.4	9.6	4.1	3.6	15.8	22.7	3	6.4	8.7	3.6	13.7	2.4	2.3	2.2			
HOURLY AVG	0.6	0.7	0.8	0.7	1.5	1.6	2.6	3.3	2.6	2.8	2.6	2.5	1.5	1.3	2.1	1.9	0.8	0.8	0.9	0.7	1.0	0.5	0.6	0.7			

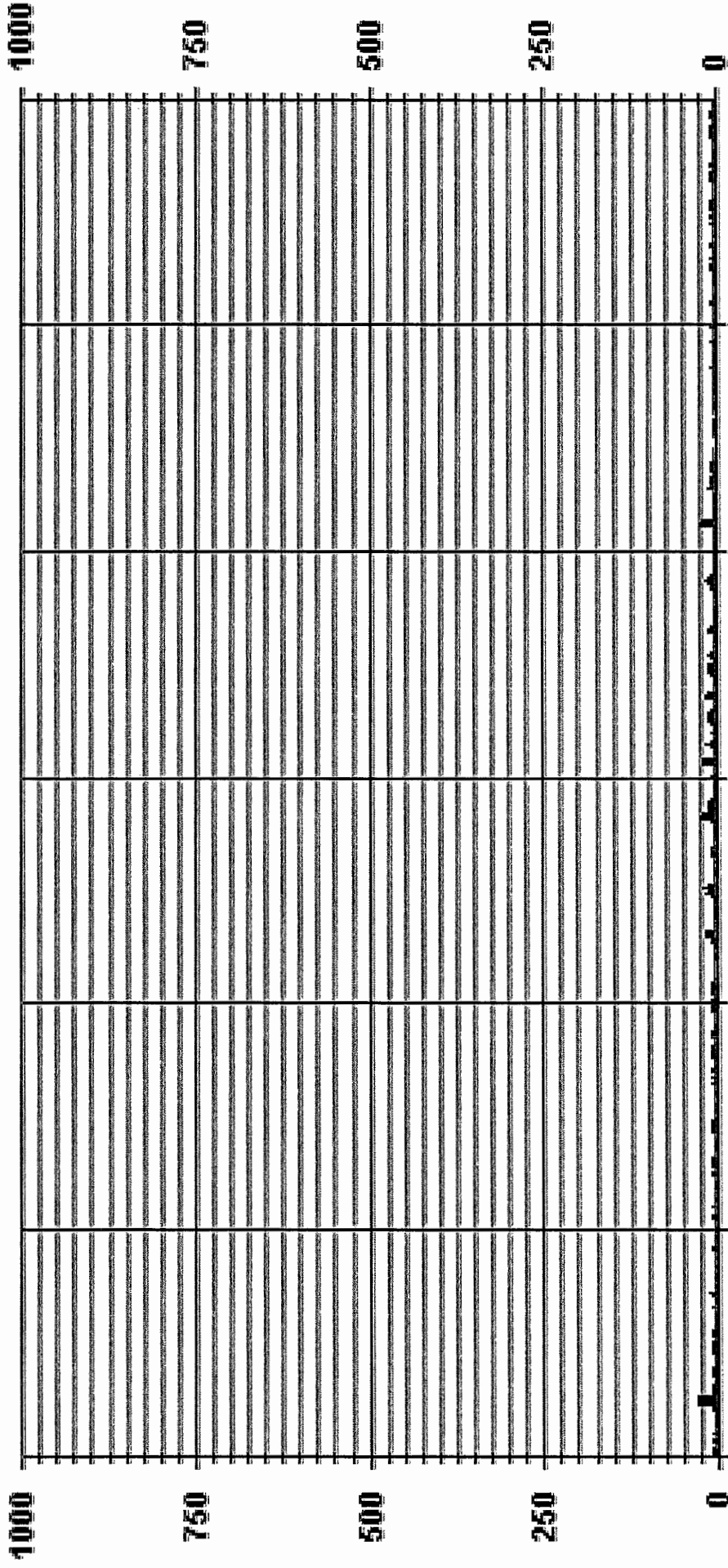
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	654
MAXIMUM INSTANTANEOUS VALUE:	30.5 PPB @ HOUR(S) 6 ON DAY(S) 2
	VAR-VARIOUS
IZS CALIBRATION TIME:	38 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	720 HRS
STANDARD DEVIATION:	2.71

01 Hour Averages



— LICA30 NOMAX PPB

LICA30
 NO_ / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	2.94	5.30	14.01	8.25	5.30	5.16	5.45	5.01	4.86	11.35	5.30	4.12	7.37	10.02	2.50	2.94	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.94	5.30	14.01	8.25	5.30	5.16	5.45	5.01	4.86	11.35	5.30	4.12	7.37	10.02	2.50	2.94	

Calm : .00 %

Total # Operational Hours : 678

Distribution By Samples





Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	20	36	95	56	36	35	37	34	33	77	36	28	50	68	17	20	678
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	20	36	95	56	36	35	37	34	33	77	36	28	50	68	17	20	

Calm : .00 %

Total # Operational Hours : 678

Logger : 30 Parameter : NO_

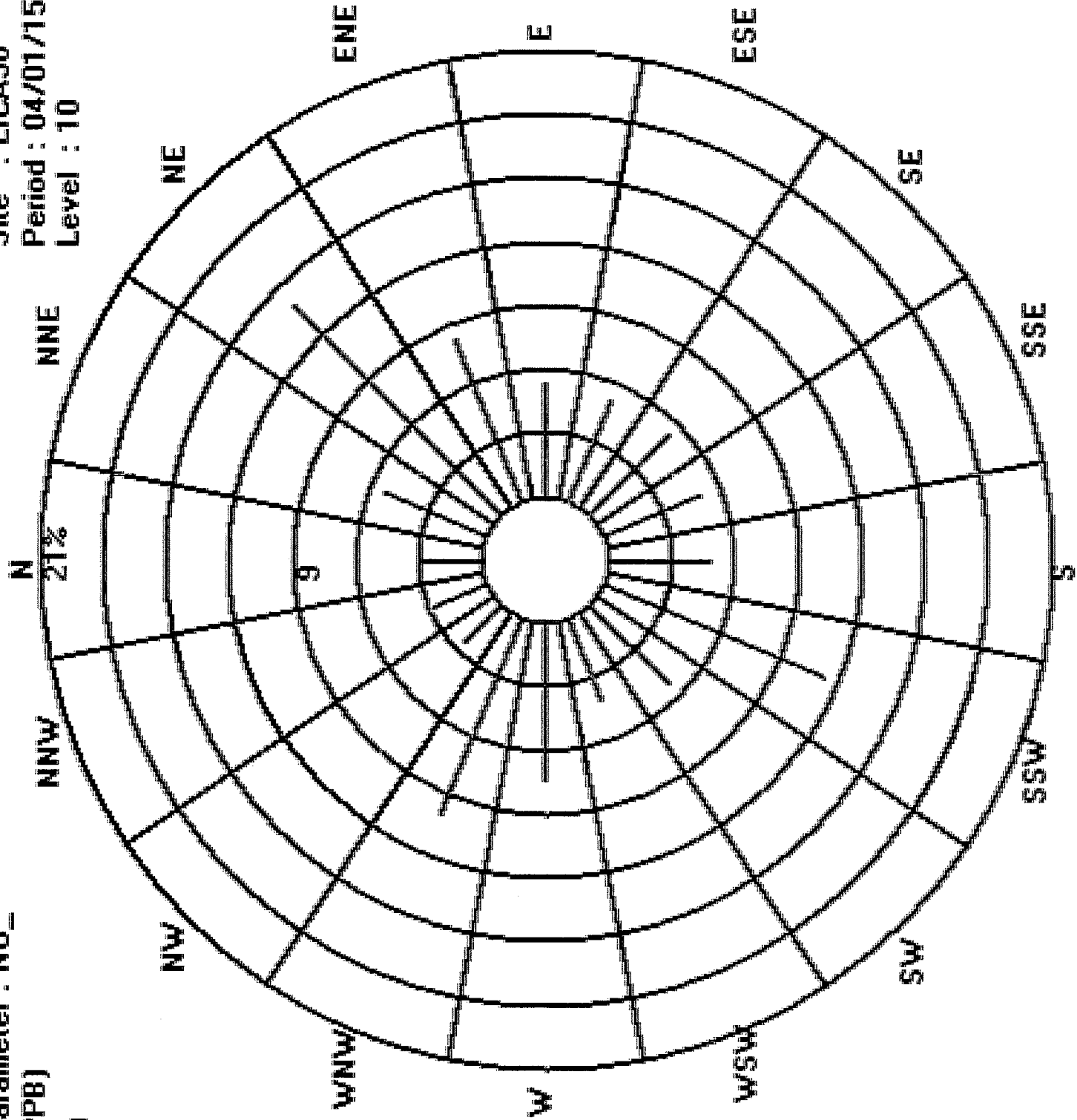
Class Limits (PPB)

-  \geq 210.0
-  $<$ 210.0
-  $<$ 110.0
-  $<$ 50.0

Site : LICA30

Period : 04/01/15-04/30/15

Level : 10



NITROGEN DIOXIDE

NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST

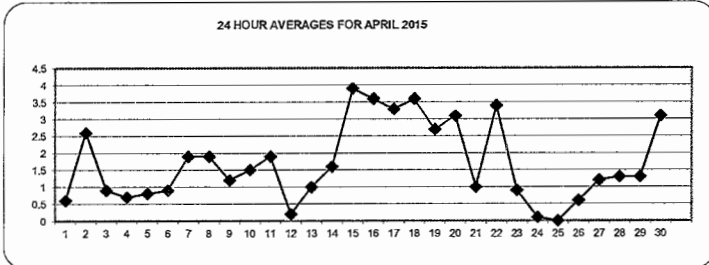
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
1	0.1	2.0	0.0	0.3	3.6	1.6	0.2	0.0	0.0	0.0	0.1	0.7	0.3	0.0	0.0	0.0	0.0	0.3	0.8	0.9	S	1.3	0.7	3.6	0.6	24	
2	0.2	0.3	0.5	0.6	3.2	3.4	2.5	4.1	2.3	4.1	6.7	7.2	4.2	3.0	4.1	2.3	2.9	2.2	2.0	1.4	S	0.8	0.7	0.9	7.2	2.6	24
3	1.2	0.9	0.7	0.6	0.8	1.4	1.7	2.8	2.9	1.9	1.4	1.4	1.1	0.8	0.2	0.0	0.0	0.0	S	0.3	0.0	0.0	0.0	0.0	2.9	0.9	24
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.1	1.9	0.3	0.8	1.4	1.5	2.9	0.6	1.0	1.0	S	1.0	0.7	0.7	0.9	0.7	2.9	0.7	24
5	0.9	1.1	2.1	1.9	1.6	0.9	0.7	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.8	3.5	0.6	S	0.9	0.7	0.3	0.3	0.4	0.8	3.5	0.8	24
6	0.3	0.3	0.2	0.3	0.3	0.1	0.3	0.6	1.4	1.7	0.6	1.2	0.8	1.1	1.2	1.4	S	1.2	0.5	0.7	1.4	1.8	2.2	1.4	2.2	0.9	24
7	0.8	0.6	0.4	0.3	0.6	4.2	7.1	7.0	3.4	1.9	4.2	3.0	1.4	1.1	0.6	S	1.5	1.8	1.4	1.0	0.8	0.5	0.1	0.2	7.1	1.9	24
8	0.5	1.9	3.2	2.5	2.2	3.4	3.6	3.6	2.9	2.5	3.7	4.0	4.5	2.7	S	0.5	0.4	0.5	0.0	0.2	0.0	0.5	0.6	0.6	4.5	1.9	24
9	0.5	0.3	0.7	0.8	0.3	0.9	1.1	2.2	1.2	2.1	1.9	0.7	0.8	S	1.2	0.9	0.8	0.8	1.0	1.0	0.7	1.6	2.9	2.6	2.9	1.2	24
10	1.1	0.9	3.4	4.2	1.8	2.0	2.1	4.2	3.8	2.8	2.3	0.9	S	1.0	0.3	0.1	0.4	0.3	0.1	0.4	0.8	0.7	0.6	0.7	4.2	1.5	24
11	0.9	1.1	1.5	2.6	3.3	3.5	3.7	5.3	5.9	5.2	2.6	S	2.5	0.4	0.2	0.2	0.0	0.5	0.1	0.0	2.5	1.9	0.0	0.0	5.9	1.9	24
12	0.1	0.0	0.0	0.0	0.1	0.0	0.5	0.3	0.0	0.2	S	0.5	0.5	0.0	0.5	2.4	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	2.4	0.2	24
13	0.0	0.3	0.3	0.3	0.4	0.1	0.1	0.4	0.1	S	0.6	0.6	1.3	1.2	4.7	1.8	3.7	1.1	1.5	2.1	1.4	1.0	0.7	0.4	4.7	1.0	24
14	0.3	0.8	0.6	0.7	0.6	0.8	1.3	4.2	S	0.5	3.7	5.7	4.5	3.4	2.6	4.7	0.3	0.1	0.1	0.4	0.3	0.3	0.5	0.3	5.7	1.6	24
15	3.2	3.3	5.8	8.7	16.4	12.6	5.5	S	7.4	6.5	4.5	2.1	0.7	0.3	0.2	0.3	0.5	0.3	0.5	0.0	0.7	1.6	3.3	5.7	16.4	3.9	24
16	3.2	8.9	4.6	8.8	7.4	10.2	S	1.8	1.1	1.7	0.5	0.5	0.7	0.7	0.7	0.9	0.7	15.2	4.1	0.0	0.6	1.1	7.8	15.2	3.6	24	
17	6.3	6.6	5.4	0.8	5.1	S	2.8	6.8	5.8	1.9	0.7	0.6	0.7	0.5	0.9	0.7	0.8	0.6	6.7	3.5	7.3	0.7	9.9	9.9	3.3	24	
18	1.6	0.4	8.0	0.3	S	3.2	7.0	5.9	4.2	6.4	8.9	5.6	0.9	0.7	0.3	0.4	0.7	6.8	8.2	0.7	0.6	1.5	4.5	6.8	8.9	3.6	24
19	3.8	3.9	7.9	S	8.3	7.2	7.6	4.1	0.6	2.2	2.7	1.5	0.9	0.0	1.1	1.2	1.9	0.7	1.1	0.0	0.0	1.9	2.4	8.3	2.7	24	
20	1.2	1.4	S	2.2	4.8	9.2	11.3	8.8	9.2	6.5	2.8	2.9	1.4	1.8	0.0	0.2	0.0	0.0	0.0	0.0	7.2	0.2	0.1	0.0	11.3	3.1	24
21	0.1	S	1.4	0.7	0.6	0.9	3.1	2.8	1.9	1.5	1.3	1.1	1.0	1.1	0.8	1.1	0.7	0.3	0.6	0.5	0.2	0.1	0.1	0.1	3.1	1.0	24
22	S	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.2	1.8	3.7	2.9	4.2	5.9	2.9	1.8	2.0	8.1	10.8	12.9	15.3	S	15.3	3.4	24
23	6.2	1.6	1.1	0.1	0.1	0.0	0.0	0.1	C	C	C	C	C	C	0.3	0.0	0.0	0.0	3.8	0.5	0.0	0.3	S	0.9	6.2	0.9	24
24	S	S	0.9	0.0	0.0	0.0	0.0	0.0	S	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.9	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	0.0	0.0	0.0	0.0	S	0.4	0.1	0.0	0.4	0.0	0.4	24
26	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.4	1.5	2.1	1.7	1.1	0.7	0.4	0.8	S	1.2	1.5	1.3	1.2	2.1	0.6	24
27	1.7	1.4	1.0	0.9	0.6	0.6	1.0	2.0	2.7	2.0	1.7	1.2	1.2	0.8	0.8	0.5	0.6	1.0	S	1.2	1.0	1.0	1.1	1.7	2.7	1.2	24
28	2.3	2.1	1.7	1.3	1.6	1.0	1.0	1.9	1.7	1.9	1.9	1.1	0.8	0.4	0.5	0.5	0.4	S	1.1	0.9	2.3	1.4	1.3	1.7	2.3	1.3	24
29	1.9	1.9	3.0	1.9	1.0	3.2	S	0.9	1.0	0.9	0.7	1.8	0.5	3.2	2.8	0.5	S	0.4	0.0	0.0	0.3	1.7	1.7	3.2	1.3	24	
30	2.0	4.1	3.9	6.6	8.7	12.3	12.8	9.6	7.0	1.7	0.3	0.4	0.4	0.4	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.8	3.1	24
HOURLY MAX	6.3	8.9	8.0	8.8	16.4	12.6	12.8	9.6	9.2	6.5	8.9	7.2	4.5	3.4	4.7	5.9	3.7	6.8	15.2	8.1	10.8	12.9	15.3	9.9			
HOURLY AVG	1	2	2	2	3	3	3	3	3	2	2	2	1	1	1	1	1	1	2	1	1	1	2	2			

STATUS FLAG CODES

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

OBJECTIVE LIMIT:

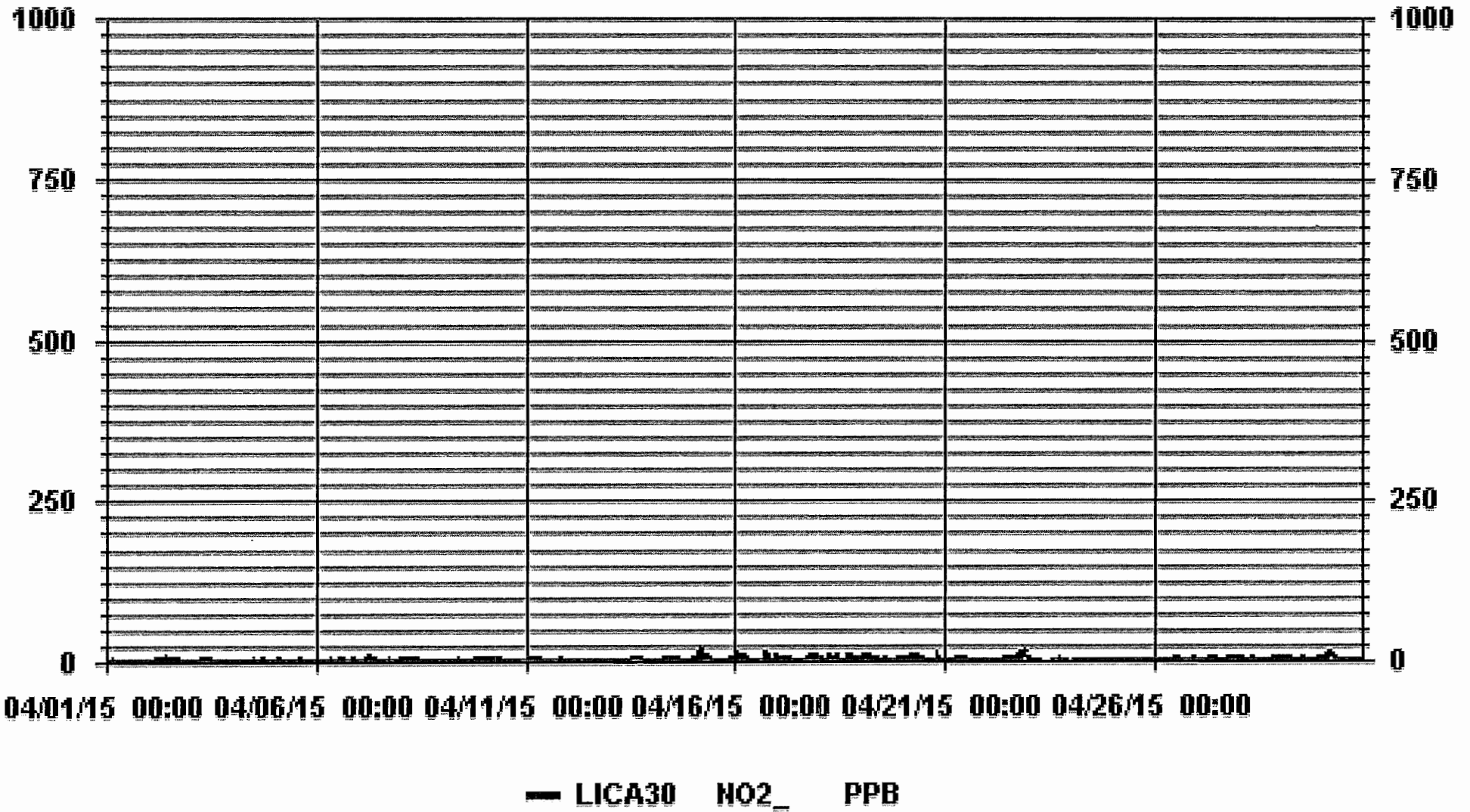
ALBERTA ENVIRONMENT: 1-HR: 159 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	550		
MAXIMUM 1-HR AVERAGE:	16.4 PPB	@ HOUR(S)	4 ON DAY(S) 15
MAXIMUM 24-HR AVERAGE:	3.9 PPB		ON DAY(S) 15
			VAR-VARIOUS
IZS CALIBRATION TIME:	35 HRS	OPERATIONAL TIME:	720 HRS
MONTHLY CALIBRATION TIME:	7 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	2.42	MONTHLY AVERAGE:	1.7 PPB

01 Hour Averages





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - APRIL 2015

JOB # 2833-2015-04-30- C

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
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	MAX.	AVG.	RDGS.	
1	1.1	3.6	1.9	2.7	7.6	4.1	1	0.4	0.5	0.4	0.5	0.8	2	1.2	0	0.2	0.3	0.2	1.1	1.4	1.3	S	2.1	0.9	7.6	1.5	24	
2	0.9	1.3	1.1	1.3	8.1	6.9	18.1	17.2	4.1	7.1	7.5	8.3	4.9	5.6	5.5	4.1	4.1	2.6	2.7	2.4	S	1.5	1.1	1.9	18.1	5.1	24	
3	1.7	1.7	1.2	1.1	1.2	2.1	2.3	4.2	4.5	2.7	2.3	2.4	1.7	1.2	0.9	0.7	0.7	0.7	0.7	S	0.9	0.5	0.3	0.3	4.5	1.6	24	
4	0.4	0.5	0.4	0.9	0.8	0.5	0.5	0.5	2.6	3.1	1.5	1.1	2.5	3.1	9	0.7	1.3	1.3	S	1.3	0.8	1	1.4	1.2	9	1.6	24	
5	1.1	1.3	2.8	2.6	2.3	1.3	1.2	0.3	0.1	0.1	0.2	0.1	0.4	0.4	2.3	6.9	1	S	2	1.1	0.6	0.6	0.9	2.9	6.9	1.4	24	
6	0.8	0.7	0.4	0.6	0.5	0.4	0.6	1.6	2.1	4.6	0.9	3	1	3	4.3	3.3	S	3.6	0.5	1	2.7	2.5	2.9	2.1	4.6	1.9	24	
7	1.1	0.9	0.6	0.5	1.9	10.9	12.1	10.3	9.6	3.3	6.7	6.3	3.8	2.3	0.9	S	1.7	1.9	1.8	1.1	1	0.6	0.4	0.5	12.1	3.5	24	
8	1.3	3.1	4.3	4.5	2.9	5.7	4.9	4.7	3.7	3.4	3.8	4.7	4.5	3.8	S	0.8	1.4	1.9	0.1	0.4	0.4	0.7	1	0.9	5.7	2.7	24	
9	0.7	0.6	1.5	1.2	0.8	4	2.3	3.3	1.5	2.6	2.7	0.9	1.2	S	2.2	1.5	1.1	1.2	1.2	1.4	1.8	2.7	5.1	4.9	5.1	2.0	24	
10	1.9	2.1	12.2	11	2.6	2.8	3.8	6.4	6.4	4.3	3.4	2.8	S	1.8	1.1	1	1.3	0.8	0.8	3.6	3.3	1.7	1.6	1.8	12.2	3.4	24	
11	2	2.1	2.8	4.1	5	6.3	5.5	6.8	7.3	6.9	6.8	S	4.3	1	0.8	0.6	0.4	2.6	0.5	0.3	11.7	13.2	0.5	0.4	13.2	4.0	24	
12	0.3	0.3	0.3	0.8	0.8	1.2	1.5	1	0.4	1.5	S	1	1	0.3	13.7	6.6	0.7	0.2	0.4	0.3	0.4	0.8	0.7	0.8	13.7	1.5	24	
13	0.8	0.7	0.8	0.9	1.1	0.8	0.6	1.2	0.8	S	1.4	9.8	13.2	3.7	17.3	6.5	9.8	4.6	3.5	3.2	1.6	1.4	1.2	1.1	17.3	3.7	24	
14	0.8	1.2	1.1	1.1	1.1	2.9	2.4	10.4	S	1	9.3	11.7	14.7	8.4	8.7	10.7	0.7	0.7	0.6	0.7	0.7	0.9	0.7	0.8	14.7	4.0	24	
15	7.4	3.9	12	17.2	22.8	22.1	9.7	S	9.7	13.2	10.4	9	1.9	2.2	2.1	2.5	1.8	2.3	0.7	1.2	2.9	6.3	11	22.8	7.6	24		
16	4.1	13.8	9.5	11.1	9.4	13.4	S	3.2	1.6	11.9	1.4	0.8	1.1	0.9	1.4	1.4	1.1	1.9	23.3	21.7	0.4	2	2.7	24.3	24.3	7.1	24	
17	21	19.2	16.3	5.8	9.6	S	4.9	8.9	16.1	3	1.3	9.7	1.1	0.9	1	0.8	1.3	1.1	17.5	8	36.2	0.9	1.1	22.3	36.2	9.0	24	
18	8.2	1.2	14.9	1.2	S	7.4	8.8	9.9	7.6	14.1	14.7	16.1	2.4	2.4	0.4	0.5	1.2	15.8	14.4	1.4	0.9	4.1	8.7	9.7	16.1	7.2	24	
19	6.9	4.9	12.1	S	9.8	9.7	9.8	10.4	0.9	4.8	5.6	3.9	3.6	0.6	1.8	1.6	5.4	4.3	3.8	0.1	0.1	0.1	3.7	3.3	12.1	4.7	24	
20	1.8	2.4	S	3.2	6.9	13.7	13.7	12.8	14.6	10.1	17.8	7.5	6.6	5.8	0.4	1.1	0.4	0.2	0.2	0.3	19.4	1.9	0.4	0.4	19.4	6.2	24	
21	0.3	S	2	1.2	1.1	3	4	3.5	2.4	1.5	1.5	1.3	0.9	1.9	1.4	11.1	2	1	1.9	1.2	0.9	0.3	0.2	0.3	11.1	2.0	24	
22	S	0.9	0.1	0	0.1	0.1	0.2	0.2	0.2	0.2	8.9	4.7	7	6.8	10.7	13.1	6.4	4.4	3.1	13.6	16.4	18.3	19.5	S	19.5	6.1	24	
23	13	4.6	2.3	0.5	0.5	0.4	0.6	0.6	C	C	C	C	C	C	C	C	2.4	1.4	3	10	4.3	1.7	6.3	S	1.5	13	3.3	24
24	S	S	S	0.3	0	0	0	S	S	0.9	0.6	0.5	0.5	0.5	0.5	0.3	0.2	0.2	0.3	0.5	0.5	S	0.7	0.4	0.9	0.4	24	
25	0.3	0.3	0.1	0.1	0	0	0.3	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	0.2	S	0.7	0.5	0.5	0.7	0.2	24	
26	0.3	0.3	0.5	0.6	0.8	0.7	0.5	0.3	0.2	0.2	0.5	2.1	2.7	4.3	2.9	2	1	0.7	1.2	S	1.6	2.2	1.8	1.7	4.3	1.3	24	
27	2.4	2	1.7	1.5	1.2	1.2	1.9	2.8	3.3	3	2.2	1.9	1.9	1.3	1.9	1	1	1.7	S	1.7	1.5	1.4	2.1	2.5	3.3	1.9	24	
28	2.8	2.8	2.3	2	2.1	1.6	1.7	3.1	2.6	2.4	2.2	1.7	1.1	0.9	0.9	1.8	1	S	1.3	1	4.2	1.8	1.5	2	4.2	1.9	24	
29	2.1	2.2	3.6	2.7	1.6	15	S	S	1.7	2.3	3.2	6.8	1.2	11.5	5.4	2	S	0.9	0.7	0.4	0.4	1.2	2.4	2.4	15	3.3	24	
30	3.5	5.8	4.9	10.7	11	15	15.2	10.4	8.6	4.2	0.9	1	1	1.4	0.4	S	1.1	1.1	1	0.9	5.4	1.5	0.8	0.8	15.2	4.6	24	
HOURLY MAX	21	19	16	17	23	22	18	17	16	14	18	16	15	12	17	13	10	16	23	22	36	18	20	24				
HOURLY AVG	3.2	3.0	4.1	3.2	3.9	5.3	4.6	5.0	4.2	4.0	4.2	4.3	3.2	2.8	3.5	3.0	1.8	2.2	3.5	2.7	4.2	2.6	2.5	3.6				

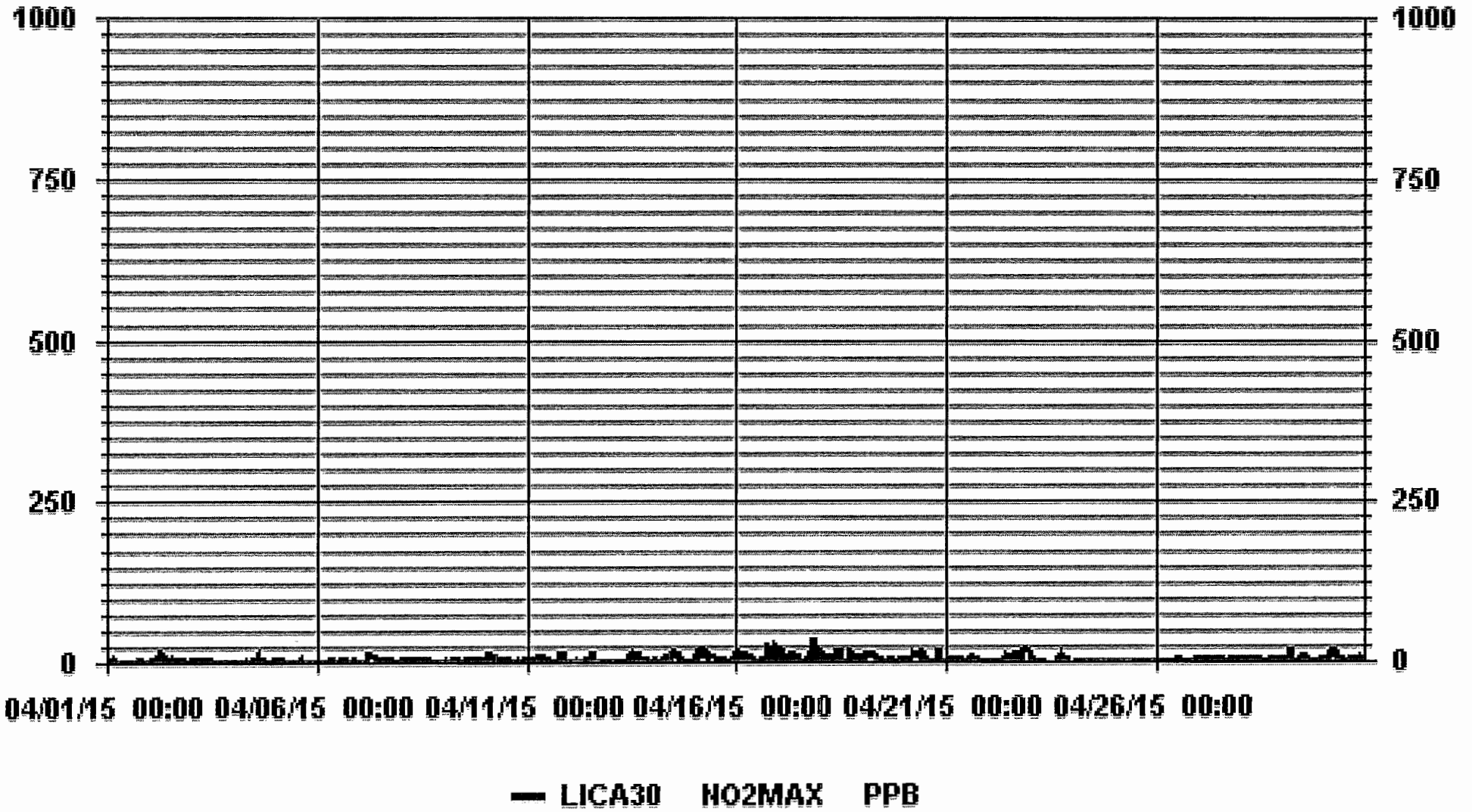
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	664
MAXIMUM INSTANTANEOUS VALUE:	36.2 PPB @ HOUR(S) 20 ON DAY(S) 17
	VAR-VARIOUS
IZS CALIBRATION TIME:	38 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	4.62
OPERATIONAL TIME:	720 HRS

01 Hour Averages



LICA30
 NO2_ / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	2.94	5.30	14.01	8.25	5.30	5.16	5.45	5.01	4.86	11.35	5.30	4.12	7.37	10.02	2.50	2.94	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.94	5.30	14.01	8.25	5.30	5.16	5.45	5.01	4.86	11.35	5.30	4.12	7.37	10.02	2.50	2.94	

Calm : .00 %

Total # Operational Hours : 678

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	20	36	95	56	36	35	37	34	33	77	36	28	50	68	17	20	678
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	20	36	95	56	36	35	37	34	33	77	36	28	50	68	17	20	

Calm : .00 %

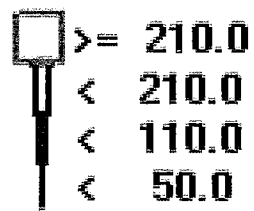
Total # Operational Hours : 678

Logger : 30 Parameter : NO2_

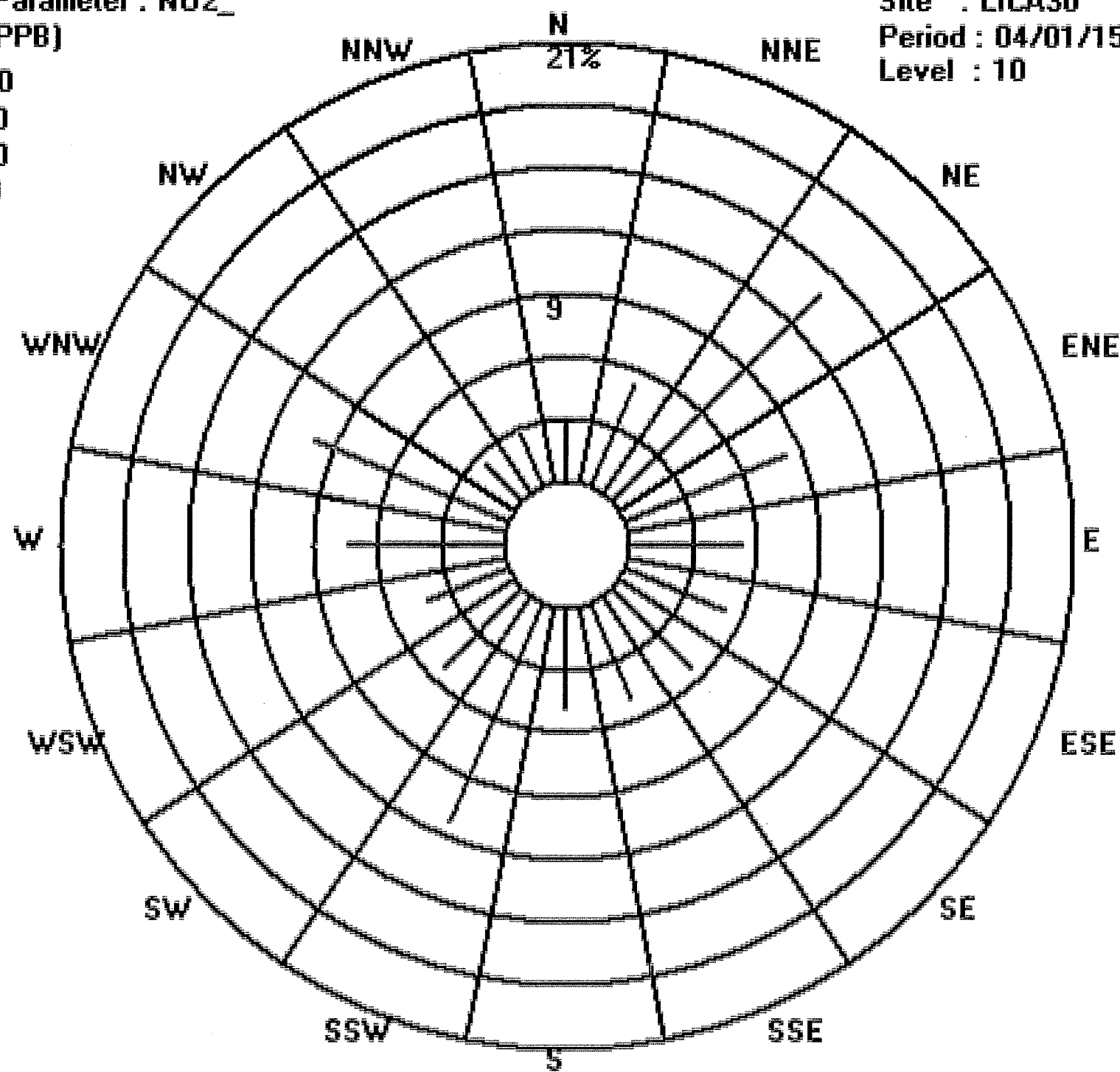
Site : LICA30

Class Limits (PPB)

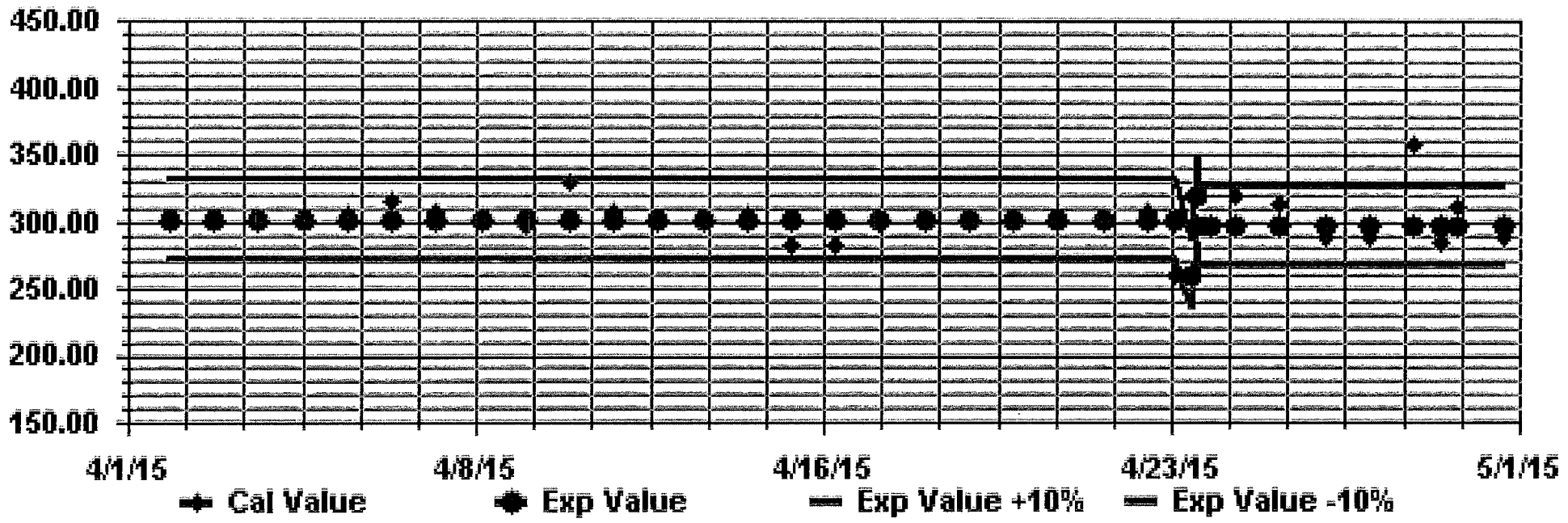
Period : 04/01/15-04/30/15



Level : 10



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



WIND SPEED

WIND SPEED (WS) hourly averages in km/hr

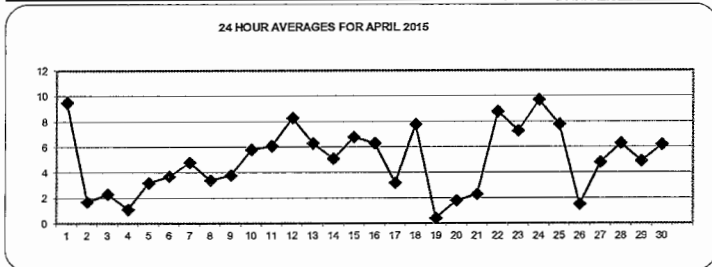
MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
1	3.1	0.9	6.3	1.7	1.5	3.5	5.2	9.1	10.5	10.9	15.0	11.7	14.1	16.2	17.3	15.0	14.4	15.5	13.5	12.6	11.0	11.2	10.1	7.4	17.3	9.9	24	
2	6.3	4.2	3.3	1.1	0.6	1.7	1.8	1.2	1.5	2.1	1.4	2.1	1.4	2.4	2.5	2.7	1.4	2.4	2.4	5.5	5.6	1.7	0.5	0.3	6.3	2.3	24	
3	1.9	0.7	1.3	1.0	0.7	1.1	0.7	1.0	3.7	3.2	4.5	5.6	1.1	5.7	9.9	11.0	7.7	6.3	5.2	3.1	2.9	1.9	1.9	1.9	1.9	11.0	3.5	24
4	3.1	3.8	1.0	0.7	1.5	1.3	1.6	2.8	0.1	4.6	5.9	3.8	2.3	2.3	3.9	5.3	5.5	7.5	5.3	2.6	0.8	1.8	1.3	0.6	7.5	2.9	24	
5	0.8	0.7	0.6	0.4	1.3	3.9	6.4	9.3	8.4	8.0	6.9	5.6	5.4	2.6	1.7	3.4	4.4	4.0	4.3	2.5	2.5	2.5	2.9	2.5	9.3	3.8	24	
6	3.2	3.6	3.5	3.1	2.7	3.0	3.2	3.8	4.3	5.7	5.3	4.8	4.5	4.4	4.4	5.1	5.6	4.0	3.2	4.6	6.6	7.5	7.5	8.0	8.0	4.7	24	
7	8.2	7.1	6.4	5.4	5.0	5.0	6.4	7.5	8.3	7.3	6.9	5.7	5.7	6.3	4.9	6.2	5.2	4.3	3.3	1.7	1.1	1.3	0.9	1.1	8.3	5.1	24	
8	0.8	2.5	2.3	0.9	2.3	1.7	4.0	4.5	3.7	6.4	7.6	8.3	8.1	7.4	11.8	10.8	8.5	7.7	2.8	2.3	2.7	2.5	3.1	3.3	11.8	4.8	24	
9	1.8	0.1	1.4	1.5	0.9	1.8	2.8	1.1	6.0	3.6	5.8	6.3	7.1	7.9	7.5	7.9	7.6	7.7	6.1	6.3	6.3	6.1	5.4	5.7	7.9	4.8	24	
10	5.3	5.0	2.5	2.4	1.0	1.3	1.0	0.9	6.9	6.7	7.8	11.3	11.1	11.2	14.2	12.1	14.2	12.5	8.4	2.1	2.4	3.7	3.1	4.8	14.2	6.3	24	
11	5.5	7.7	8.0	6.3	8.8	8.5	7.9	5.0	6.4	5.7	5.5	7.1	9.9	9.9	10.0	9.6	7.2	7.3	10.8	11.9	9.1	7.3	6.2	8.1	11.9	7.9	24	
12	8.8	7.7	8.4	5.8	5.0	4.8	5.0	7.8	10.6	10.5	10.9	13.5	13.6	13.9	13.0	6.5	9.8	8.3	8.7	6.8	6.6	5.1	6.0	6.0	13.9	8.5	24	
13	6.8	5.7	5.6	5.4	4.8	6.1	7.5	8.6	12.1	11.6	12.2	14.1	13.9	11.6	10.6	10.4	7.7	7.2	4.6	1.1	2.7	1.9	2.0	1.9	14.1	7.3	24	
14	3.1	3.7	4.1	5.1	6.2	6.1	5.8	6.1	6.5	9.9	12.3	9.6	10.1	9.8	8.0	3.0	5.0	5.8	4.0	3.1	3.5	3.3	3.8	1.4	12.3	5.8	24	
15	2.7	1.9	3.6	7.2	6.2	7.2	9.5	10.0	11.4	9.5	10.8	10.6	11.0	11.1	12.0	9.9	9.3	9.3	5.3	3.8	5.8	7.8	5.7	3.9	12.0	7.7	24	
16	2.9	6.4	3.6	5.5	4.9	5.2	3.4	8.5	9.8	9.6	7.6	7.4	9.5	10.3	8.8	6.5	9.7	9.7	9.1	7.1	7.8	7.9	7.6	5.2	10.3	7.3	24	
17	3.5	4.3	3.2	2.0	3.1	1.8	4.1	3.3	4.8	8.3	8.8	10.4	9.5	6.6	7.6	9.2	7.4	7.0	4.8	2.5	4.7	3.6	1.5	6.5	10.4	5.4	24	
18	7.8	11.0	8.7	11.2	12.1	10.4	10.5	11.8	11.8	11.9	12.3	10.4	11.6	12.1	16.0	12.8	10.0	7.3	5.5	5.1	2.1	1.6	2.7	1.2	16.0	9.1	24	
19	0.7	1.9	2.5	2.0	1.6	0.7	2.1	1.8	3.5	2.8	5.3	3.7	2.8	4.4	5.3	1.7	4.2	4.4	4.8	4.3	5.0	5.4	6.1	4.2	6.1	3.4	24	
20	3.5	6.5	2.2	1.3	3.6	4.9	2.8	3.2	5.9	9.5	7.7	7.1	9.0	9.8	13.2	14.8	11.6	11.7	7.9	4.4	5.1	8.2	4.2	3.7	14.8	6.7	24	
21	4.5	3.5	1.4	2.0	2.0	2.1	4.1	4.8	4.9	5.4	7.4	9.1	11.1	7.3	9.3	6.3	2.4	2.7	3.1	2.3	8.6	7.8	6.8	5.0	11.1	5.2	24	
22	4.5	4.6	5.3	5.5	5.0	5.6	7.2	8.0	8.1	9.7	9.4	10.0	11.1	12.4	12.0	13.2	14.4	12.6	12.5	12.0	10.4	10.5	8.9	10.5	14.4	9.3	24	
23	10.3	9.8	8.5	8.6	9.5	9.3	7.9	7.6	8.3	7.8	7.1	6.7	9.1	8.0	5.8	6.3	7.6	7.1	5.9	5.5	6.3	6.6	5.6	4.5	10.3	7.5	24	
24	6.7	7.4	6.1	8.2	11.1	12.3	13.8	13.2	10.3	12.5	16.4	14.5	13.5	13.2	11.9	13.0	10.4	8.9	5.4	3.6	4.1	5.2	6.6	6.8	16.4	9.8	24	
25	5.7	5.5	5.0	6.5	6.3	5.8	8.4	9.6	10.8	10.6	11.9	12.9	12.1	10.8	10.9	11.5	10.6	8.2	5.5	3.6	4.0	4.1	4.1	3.7	12.9	7.8	24	
26	2.3	2.1	2.5	2.8	2.4	2.4	3.7	4.8	5.4	5.8	5.9	5.3	0.5	2.8	3.8	4.9	4.7	4.4	6.5	5.4	4.5	5.3	5.2	5.1	6.5	4.1	24	
27	3.8	1.3	0.9	1.4	0.9	1.7	2.7	5.0	6.5	8.4	12.2	13.1	12.6	11.7	11.3	10.3	7.2	6.4	3.6	2.0	1.8	3.6	3.1	6.2	13.1	5.7	24	
28	6.7	5.6	1.6	1.0	1.6	1.8	2.4	1.2	5.3	7.9	11.1	9.8	12.7	12.7	12.2	13.3	14.8	9.4	7.7	7.2	7.6	8.1	8.5	5.8	14.8	7.3	24	
29	2.3	1.5	2.3	4.7	5.4	6.1	8.0	7.9	8.5	8.7	9.6	9.6	9.4	7.4	7.0	8.0	10.1	9.8	8.7	5.2	2.3	2.2	3.6	3.8	10.1	6.3	24	
30	4.0	4.9	3.4	4.0	3.6	7.1	5.4	6.5	7.4	8.7	7.6	9.5	9.3	9.6	11.7	9.7	8.4	8.7	7.7	6.4	3.3	4.9	4.8	4.5	11.7	6.7	24	
HOURLY MAX	10.3	11.0	8.7	11.2	12.1	12.3	13.8	13.2	12.1	12.5	16.4	14.5	14.1	16.2	17.3	15.0	14.8	15.5	13.5	12.6	11.0	11.2	10.1	10.5				
HOURLY AVG	4.4	4.4	3.9	3.8	4.1	4.5	5.2	5.9	7.1	7.8	8.6	8.7	8.8	8.7	9.3	8.7	8.2	7.6	6.2	4.9	4.9	5.0	4.7	4.5				

STATUS FLAG CODES

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

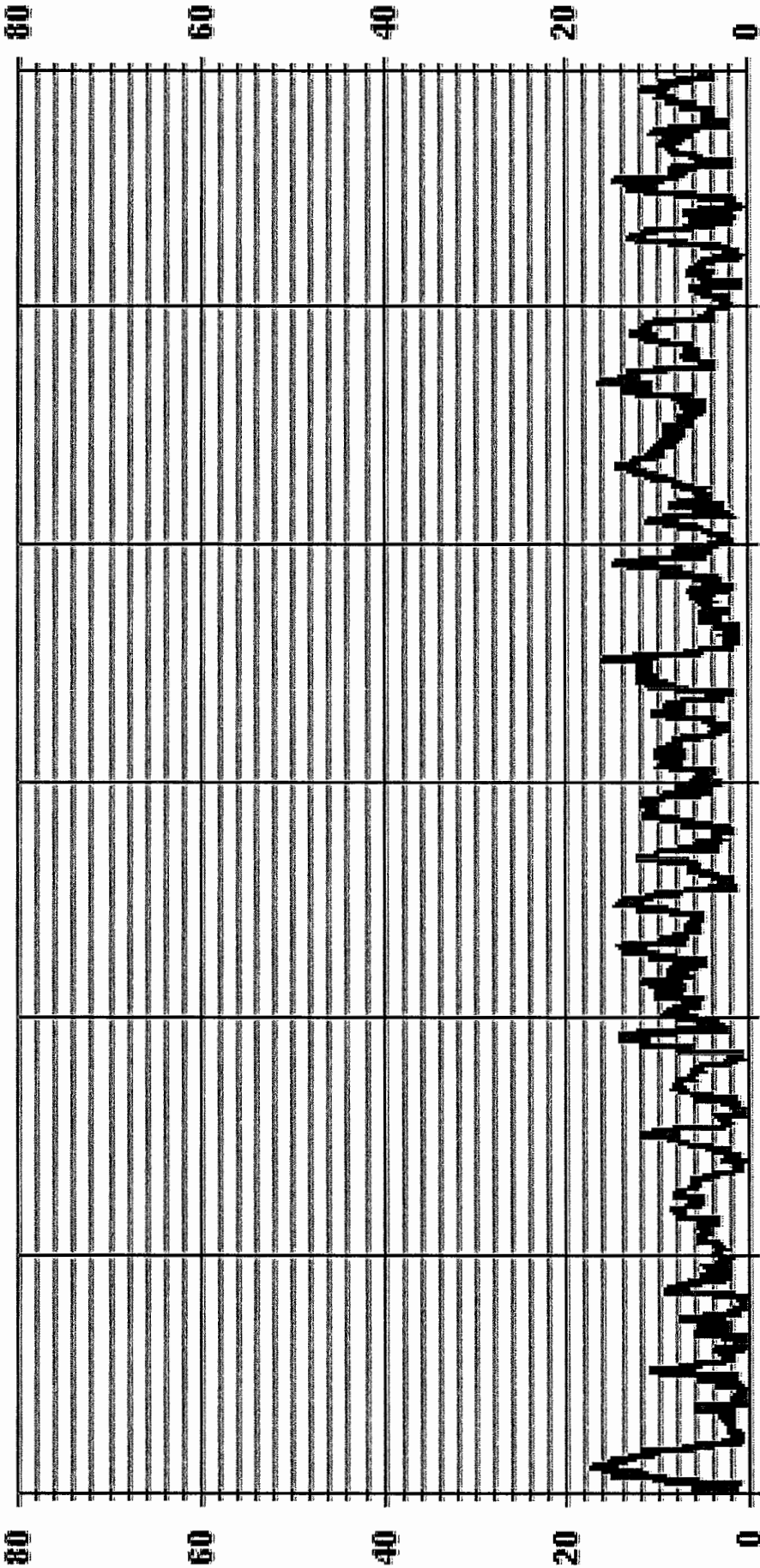
LAST CALIBRATION:	March 04, 2014
DECLINATION:	MAGNETIC DECLINATION 19 DEGREE EAST



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	720
MAXIMUM 1-HR AVERAGE:	17.3 KPH @ HOUR(S) 14 ON DAY(S) 1
MAXIMUM 24-HR AVERAGE:	9.9 KPH ON DAY(S) 1
	VAR-VARIOUS
MONTHLY CALIBRATION TIME:	0 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	3.60
MONTHLY AVERAGE:	6.2 KPH

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA30 WSP KPH



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - APRIL 2015

JOB # 2833-2015-04-30- C

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

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	DAILY MAX	24-HOUR AVG	RDGS.
1	14.2	10.2	17.2	10.2	14.2	13.3	14.2	22.5	25.3	25.6	30.6	30.0	35.9	47.1	50.1	42.0	54.7	50.6	50.1	46.0	40.3	35.4	37.7	22.7	54.7	30.8	24
2	20.8	13.5	12.7	15.5	9.1	10.8	12.0	11.3	11.1	9.6	10.4	12.4	10.0	11.3	10.9	11.6	12.0	11.1	12.4	13.7	14.8	11.6	10.7	11.3	20.8	12.1	24
3	9.4	9.4	9.8	11.8	12.7	10.7	8.7	6.7	10.3	13.1	12.9	13.5	11.8	14.0	23.6	24.5	26.0	17.5	14.2	12.1	12.4	11.6	11.3	10.9	26.0	13.3	24
4	12.2	12.9	9.2	16.6	16.6	26.9	21.0	10.3	10.7	14.2	15.9	14.4	13.1	15.3	14.2	15.5	17.5	17.0	14.4	12.5	9.6	10.5	8.5	8.9	26.9	14.1	24
5	18.4	7.6	14.2	7.8	11.6	15.1	16.2	22.1	21.2	23.0	16.4	17.9	16.6	16.1	15.1	14.0	12.3	19.4	13.1	10.9	11.8	12.9	11.8	11.8	23.0	14.9	24
6	11.9	12.2	12.7	12.4	11.1	13.3	12.2	11.9	14.2	16.6	16.8	16.4	15.5	18.8	17.9	19.0	17.7	13.3	7.8	10.9	19.7	19.1	19.2	22.5	22.5	15.1	24
7	25.6	17.7	16.6	15.9	14.4	16.4	20.8	24.3	24.1	20.1	18.1	16.6	19.0	17.9	18.6	16.4	15.0	12.4	11.6	10.8	10.5	10.7	10.0	9.4	25.6	16.4	24
8	12.6	7.8	5.4	12.0	5.2	10.1	11.8	10.4	14.4	19.0	19.0	20.7	20.3	28.2	42.4	39.3	30.2	29.7	12.4	6.9	11.8	8.7	13.8	10.7	42.4	16.8	24
9	8.5	2.6	10.2	10.5	10.7	10.2	6.3	13.8	15.6	12.7	16.7	19.9	22.0	26.2	22.9	22.5	19.9	16.8	11.5	11.8	12.2	11.1	10.2	10.2	26.2	14.5	24
10	9.8	12.6	8.0	6.9	9.4	10.0	3.3	6.4	16.6	16.1	23.3	34.5	33.6	31.9	38.2	31.2	36.7	39.1	30.4	9.6	13.9	10.9	21.4	20.9	39.1	19.8	24
11	13.7	16.6	16.6	14.8	19.9	17.2	17.0	13.1	13.4	13.8	20.1	24.0	31.2	33.2	38.7	41.1	36.1	38.3	42.0	41.1	27.5	22.1	20.3	32.8	42.0	25.2	24
12	30.4	27.3	30.6	25.0	21.2	20.1	20.3	30.8	40.5	49.2	52.5	55.8	52.1	56.4	59.1	37.8	40.7	40.0	38.5	30.6	34.1	24.3	28.5	29.7	59.1	36.5	24
13	24.7	26.7	20.3	21.8	21.2	24.9	29.1	33.0	38.7	36.6	41.6	48.4	51.0	42.0	36.7	35.8	27.3	22.3	20.1	5.6	4.1	3.0	10.4	11.1	51.0	26.5	24
14	12.4	10.8	11.3	12.2	14.8	13.3	12.4	16.8	23.6	34.3	37.6	35.6	31.9	35.2	28.6	16.7	13.3	16.6	12.4	9.8	9.8	8.7	8.5	9.3	37.6	18.2	24
15	12.2	11.5	13.8	17.5	21.6	20.5	26.2	34.3	34.8	30.4	33.2	36.9	37.4	35.4	45.7	33.4	30.6	32.3	20.5	8.0	11.1	15.6	12.9	15.5	45.7	24.6	24
16	9.1	14.2	10.7	14.8	13.7	18.3	21.8	29.9	33.9	31.2	25.1	36.9	38.5	34.7	31.9	23.1	51.1	49.6	47.9	23.9	23.4	24.9	18.6	21.6	51.1	27.0	24
17	13.7	13.7	13.1	13.7	8.3	9.1	12.2	8.5	12.7	24.3	26.5	33.9	29.1	23.6	29.5	27.9	23.8	22.0	20.5	25.3	28.2	15.5	8.9	27.7	33.9	19.7	24
18	43.1	38.5	29.7	34.3	41.6	35.1	36.5	39.4	44.9	35.4	46.2	38.7	45.9	52.5	62.4	49.0	44.6	26.4	25.6	24.0	7.6	8.6	11.4	7.6	62.4	34.5	24
19	5.0	10.7	12.6	11.1	11.3	10.7	8.3	7.4	11.6	15.1	18.2	27.1	25.3	22.5	14.6	15.9	21.2	19.0	12.6	10.2	11.8	14.2	15.9	11.8	27.1	14.3	24
20	11.5	14.4	9.1	9.6	10.3	13.1	8.9	13.3	18.3	31.0	30.1	31.5	36.3	37.8	39.3	39.3	35.4	34.5	26.9	15.0	20.5	23.6	15.0	12.2	39.3	22.4	24
21	13.5	9.9	4.4	9.6	10.0	10.0	16.1	15.9	13.1	17.0	19.6	29.1	33.9	27.5	27.3	28.8	18.5	16.1	13.1	8.9	24.5	23.2	20.6	11.9	33.9	17.6	24
22	12.0	13.3	12.6	15.5	13.7	14.8	25.4	28.2	22.5	26.0	33.4	29.9	36.9	38.5	41.2	43.8	44.9	42.3	38.6	37.8	32.8	36.5	32.4	35.4	44.9	29.5	24
23	40.2	36.5	31.9	31.7	36.3	35.2	22.7	27.5	30.0	22.6	22.3	24.5	30.0	23.8	19.0	17.5	20.5	19.7	17.9	18.1	22.7	24.0	13.8	11.6	40.2	25.0	24
24	15.9	19.2	17.2	18.6	26.9	33.0	35.2	32.4	28.0	29.3	37.7	39.6	35.0	36.7	31.7	29.9	29.3	27.7	16.4	9.3	9.3	20.5	21.0	20.8	39.6	25.9	24
25	14.2	13.5	12.4	15.5	13.5	15.7	20.1	27.1	27.7	29.8	33.5	33.0	29.5	32.6	29.1	32.6	29.7	23.8	15.9	9.8	9.6	8.7	9.6	8.9	33.5	20.7	24
26	7.5	6.3	10.0	11.3	8.3	10.9	10.2	12.0	15.9	18.6	22.3	21.5	27.0	25.2	20.4	21.2	22.5	18.1	19.0	15.0	10.4	12.0	14.8	11.3	27.0	15.5	24
27	12.0	5.2	10.0	10.7	10.8	10.4	6.9	16.4	16.1	23.1	38.0	42.6	32.3	32.3	33.2	31.7	28.8	31.4	17.9	5.4	3.6	10.4	9.1	12.6	42.6	18.8	24
28	14.6	13.3	6.7	4.1	5.9	6.2	6.3	10.7	22.0	21.1	31.0	30.1	34.3	36.0	32.1	37.1	40.8	28.8	22.5	18.8	17.2	20.1	25.5	18.1	40.8	21.0	24
29	29.7	10.7	9.3	12.4	17.5	30.2	29.9	31.5	34.1	35.6	39.3	38.2	33.0	26.2	33.2	30.6	32.4	38.8	25.6	17.3	9.3	8.0	10.0	9.1	39.3	24.7	24
30	8.9	17.7	8.5	10.7	8.9	14.8	12.8	15.3	20.1	41.3	33.9	38.0	42.0	44.7	48.2	42.0	39.9	36.4	42.4	59.1	16.4	21.0	23.4	28.2	59.1	28.1	24
HOURLY MAX	43.1	38.5	31.9	34.3	41.6	35.2	36.5	39.4	44.9	49.2	52.5	55.8	52.1	56.4	62.4	49.0	54.7	50.6	50.1	59.1	40.3	36.5	37.7	35.4			
HOURLY AVG	16.3	14.6	13.6	14.5	15.0	16.7	16.8	19.4	22.2	24.5	27.4	29.7	30.3	30.8	31.9	29.1	29.2	27.1	22.7	17.9	16.4	16.3	16.2				

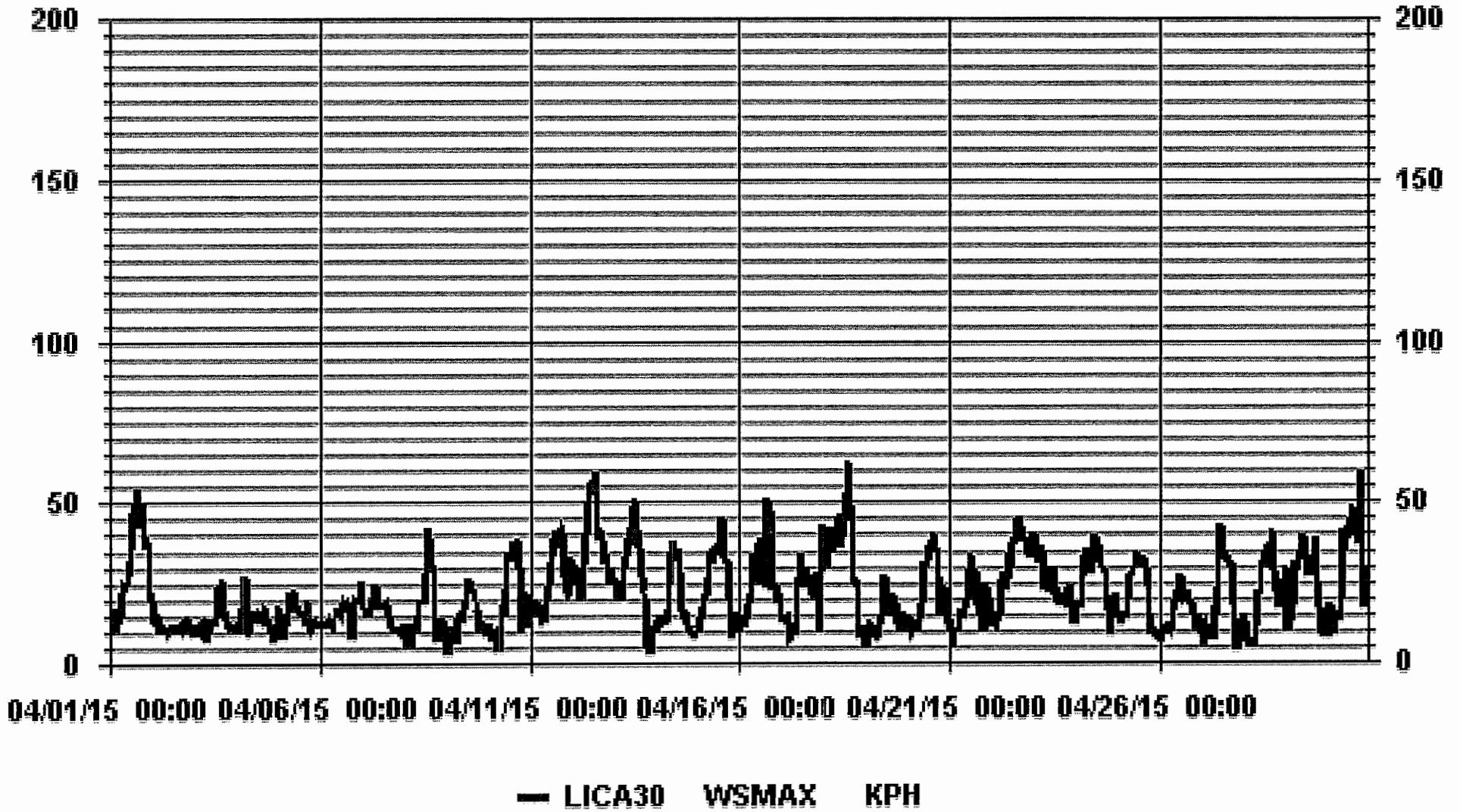
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	62.4	KPH	@ HOUR(S)	14	ON DAY(S)	18
					VAR-VARIOUS	
OPERATIONAL TIME:				720	HRS	

01 Hour Averages



LICA30
WSP / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	1.52	3.61	7.36	6.11	2.50	2.77	4.02	3.19	2.63	5.00	3.75	2.63	3.33	1.11	1.11	1.11	51.80
< 12.0	.69	.69	5.00	2.50	2.36	1.94	1.38	1.80	1.66	4.72	1.52	1.52	3.75	7.91	1.25	1.66	40.41
< 20.0	.69	1.11	1.52	.00	.69	.41	.00	.00	.69	.97	.00	.00	.27	1.11	.13	.13	7.77
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.91	5.41	13.88	8.61	5.55	5.13	5.41	5.00	5.00	10.69	5.27	4.16	7.36	10.13	2.50	2.91	

Calm : .00 %

Total # Operational Hours : 720

Distribution By Samples

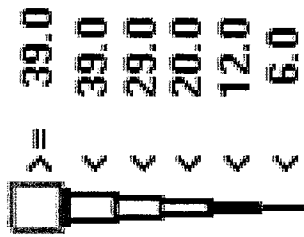
Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	11	26	53	44	18	20	29	23	19	36	27	19	24	8	8	8	373
< 12.0	5	5	36	18	17	14	10	13	12	34	11	11	27	57	9	12	291
< 20.0	5	8	11		5	3			5	7			2	8	1	1	56
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	21	39	100	62	40	37	39	36	36	77	38	30	53	73	18	21	

Calm : .00 %

Total # Operational Hours : 720

Logger : 30 Parameter : WSP

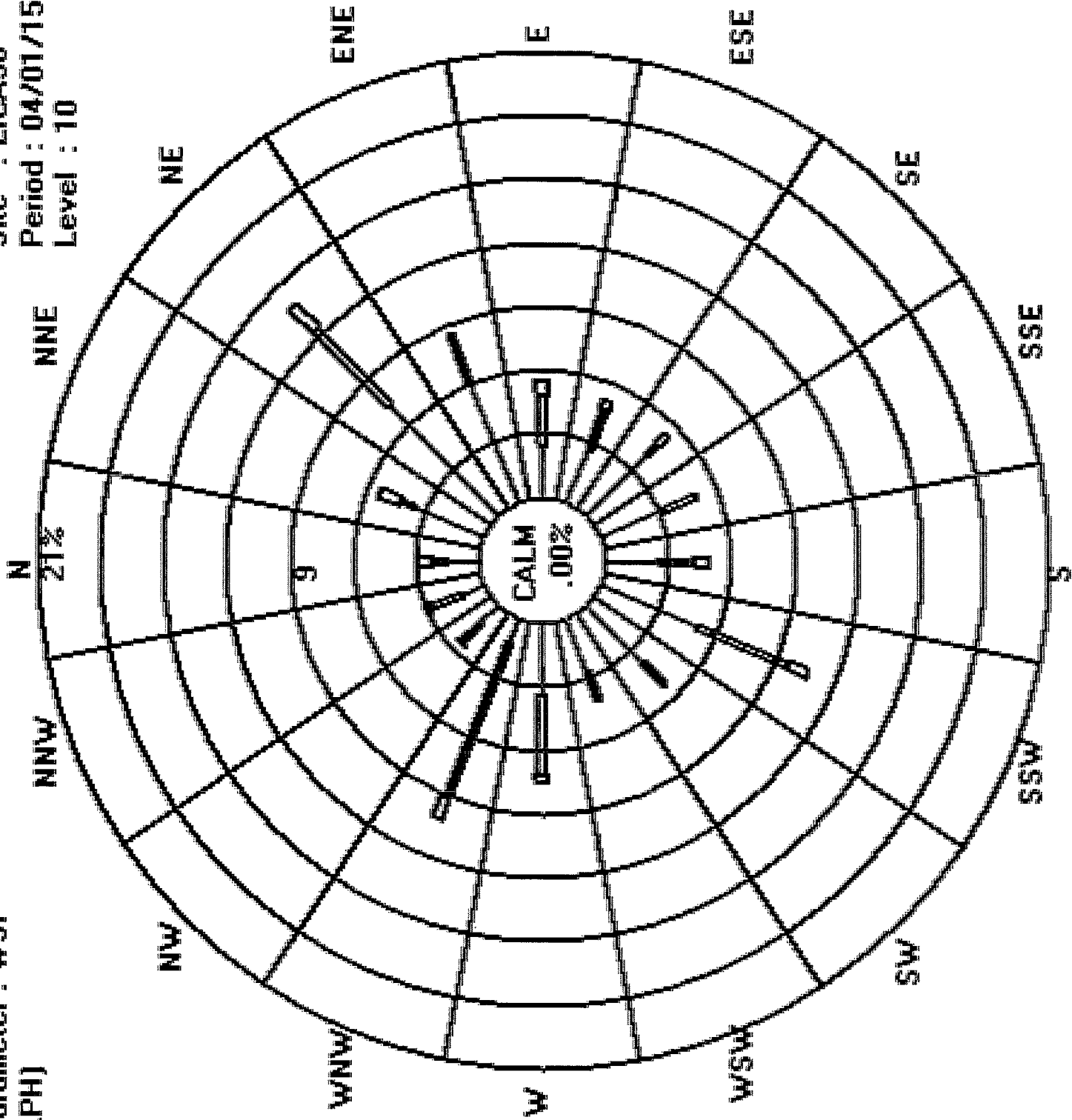
Class Limits (KPH)



Site : LICA30

Period : 04/01/15-04/30/15

Level : 10



WIND DIRECTION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - APRIL 2015

JOB # 2833-2015-04-30-C

WIND DIRECTION (WD) hourly averages

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	QUADRANT	RDGS.	
1	NNE	E	NNE	W	W	N	NNE	NE	NE	NNE	NNE	NNE	NNE	NNE	NNE	N	N	N	N	N	N	N	N	N	N	NNE	24
2	NNE	N	N	NW	WSW	NNW	NW	NW	ENE	NNE	NNE	E	SSE	E	ESE	ENE	NNE	NE	NNE	NNE	NNE	ENE	E	SW	NNE	24	
3	SSW	SE	ESE	ESE	E	ESE	E	S	SE	SSE	SSE	SSW	SSE	ENE	NE	NE	NE	ENE	E	ENE	E	ENE	ENE	ENE	ENE	ENE	24
4	ENE	ENE	NE	E	ESE	NE	NE	NNE	N	SSW	SSW	SSW	W	NW	NNW	N	NNE	NNE	NNE	NE	SE	S	SSW	NNE	NNE	24	
5	SSE	SSE	SSE	NNE	ENE	ENE	NE	NE	NE	ENE	NE	NE	NNE	N	W	NNW	NE	NNE	ESE	ENE	ENE	ENE	ENE	ENE	ENE	NE	24
6	NE	NE	ENE	ENE	NE	NE	NE	NE	E	SE	SSE	SSE	SE	SE	SE	SE	SE	ESE	SE	SE	SSE	SSE	SSE	SE	ESE	24	
7	SE	SE	SE	SE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	ESE	SE	SE	SSE	SSE	SE	ESE	ENE	ENE	NNE	NNE	SE	24	
8	WNW	SSW	SW	SSW	SSE	SSW	SSW	SSW	SW	SW	SW	SSW	SW	WSW	WNW	WNW	WNW	WNW	WSW	SW	WSW	W	ENE	ENE	WSW	24	
9	ENE	SE	E	ENE	ENE	NE	NNE	E	SSE	SSE	SSW	SSW	SW	SW	SW	SW	SSW	SSW	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	24
10	SSW	SSW	SSW	SSW	ENE	E	NE	N	SSW	SSW	S	S	S	SSW	S	S	SSW	S	SSW	S	SSW	SE	SSE	S	S	24	
11	S	SSW	SSW	SSW	SSW	SSW	SSW	SW	SSW	SW	W	WNW	WNW	WNW	W	W	W	WNW	WNW	WNW	WNW	W	W	WNW	WSW	24	
12	WNW	WNW	W	W	W	WSW	WSW	W	W	W	W	W	W	W	W	W	NW	WNW	W	W	W	WSW	WSW	WSW	W	24	
13	W	WSW	WSW	WSW	WSW	W	W	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	SE	ESE	E	ENE	WNW	24	
14	ENE	NE	NE	NE	NE	NE	NE	ENE	ENE	E	E	E	E	E	E	ESE	ENE	NNE	NE	NNE	NNE	N	NE	NE	NW	ENE	24
15	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	SSW	SSW	SSW	SSW	SSW	WNW	24
16	SSW	SSW	SW	SW	SW	SW	WSW	WNW	WNW	WNW	WNW	W	SW	SW	SW	WSW	W	NW	W	WNW	WNW	WNW	NW	NW	W	24	
17	W	W	WSW	WSW	SW	SSE	SSW	S	SSW	S	SSE	S	S	S	S	SSE	SE	SE	SE	ESE	WSW	NNW	NNE	W	W	S	24
18	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NNW	NNW	NNE	N	NNW	NW	NW	NNE	W	WSW	WSW	SW	NW	NW	24	
19	S	WSW	W	W	WSW	SW	W	NNW	NNE	NNW	NW	WNW	NNW	ENE	ESE	SSW	N	ENE	SE	SE	SSE	SSE	S	SSE	SSE	24	
20	SSW	SSW	SW	SW	SSW	SW	SW	WSW	WNW	WNW	WNW	WNW	NNW	N	NNE	NNE	NE	ENE	ENE	ENE	ESE	SE	SE	SE	NNE	24	
21	SE	SE	ESE	SE	ESE	SE	SSE	SSE	SSE	S	S	S	SSW	SSW	SSW	SSW	W	WNW	NW	NE	NE	ENE	ENE	NE	SSE	24	
22	NE	NE	NE	NE	ENE	NE	ENE	ENE	ENE	E	E	ESE	ESE	E	E	ESE	E	ESE	E	ESE	ESE	ESE	ESE	E	E	24	
23	E	E	E	ENE	ENE	E	ENE	ENE	ENE	ENE	ENE	E	ESE	ESE	ENE	ENE	E	E	E	E	E	E	E	ENE	NE	E	24
24	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	ENE	ENE	ENE	ENE	NE	NE	NE	NE	24
25	NE	NE	NE	NE	NE	NE	NE	ENE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	24
26	NE	NE	NE	NNE	NE	ENE	NE	NNE	ENE	NE	NE	ESE	SE	SSW	S	SSW	SW	S	S	S	SSE	SSE	SSE	SSW	SE	24	
27	SSW	S	E	ENE	ENE	NE	NE	SSE	S	S	SSW	S	SSW	SSW	SSW	SSW	WSW	WSW	WSW	S	SE	S	S	SSW	SSW	24	
28	SSW	SSW	SW	ENE	ESE	NE	NE	SE	SSE	SSE	S	S	SSW	SSW	SSW	S	SSE	SSE	SE	SE	SE	SE	SE	SE	S	24	
29	S	ENE	N	NNE	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	WNW	WNW	WNW	W	SW	SSW	SW	SSW	NW	24	
30	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	WSW	W	W	WSW	WSW	WSW	W	WSW	WSW	WSW	W	SW	W	W	W	WSW	24	

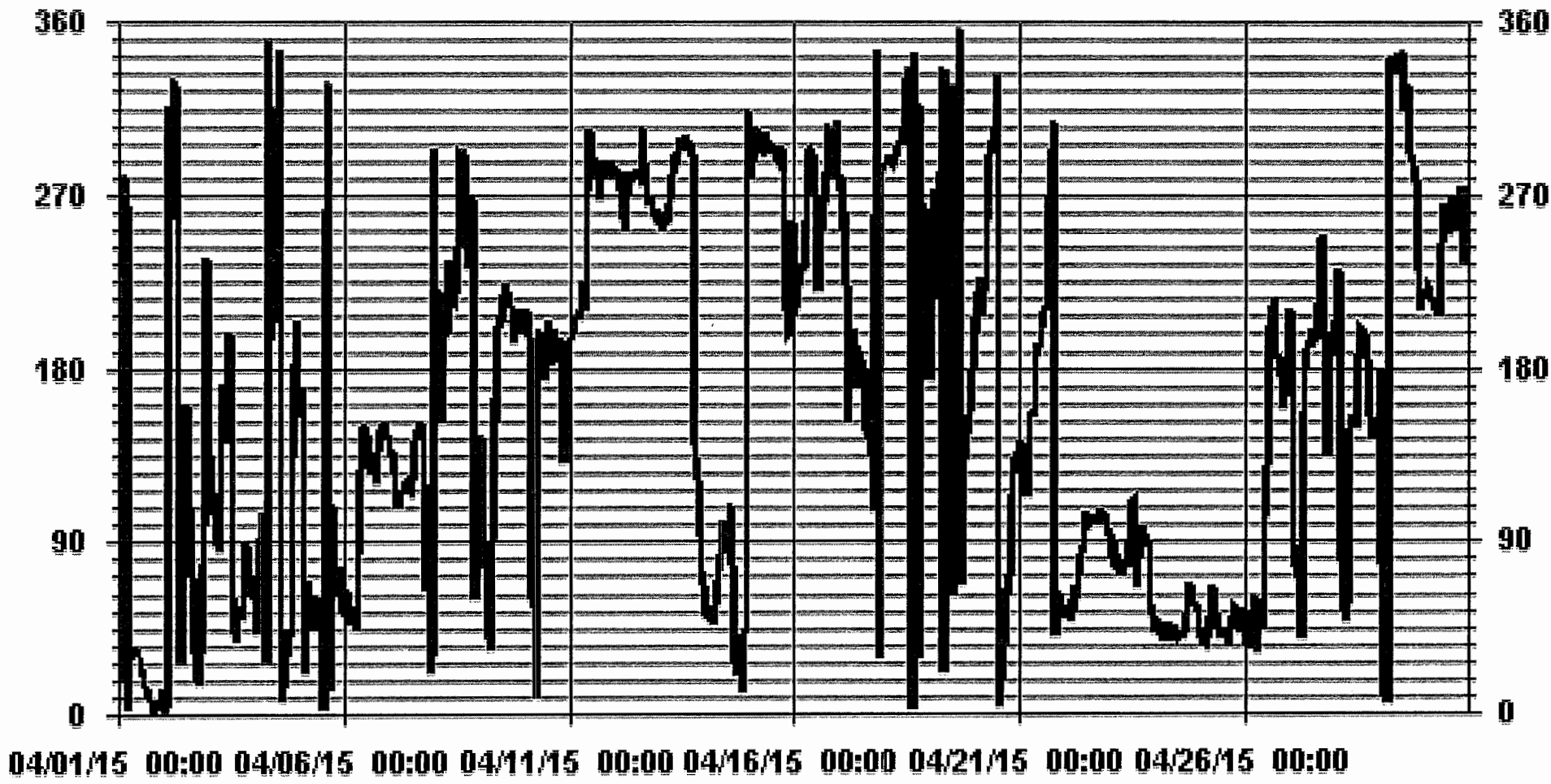
STATUS FLAG CODES

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

LAST CALIBRATION:	March 04, 2014
DECLINATION:	MAGNETIC DECLINATION 19 DEGREE EAST

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS
STANDARD DEVIATION:	98.22		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	NNW	

01 Hour Averages



— LICA30 WDR DEG

STANDARD DEVIATION WIND DIRECTION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - APRIL 2015

JOB # 2833-2015-04-30- C

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

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

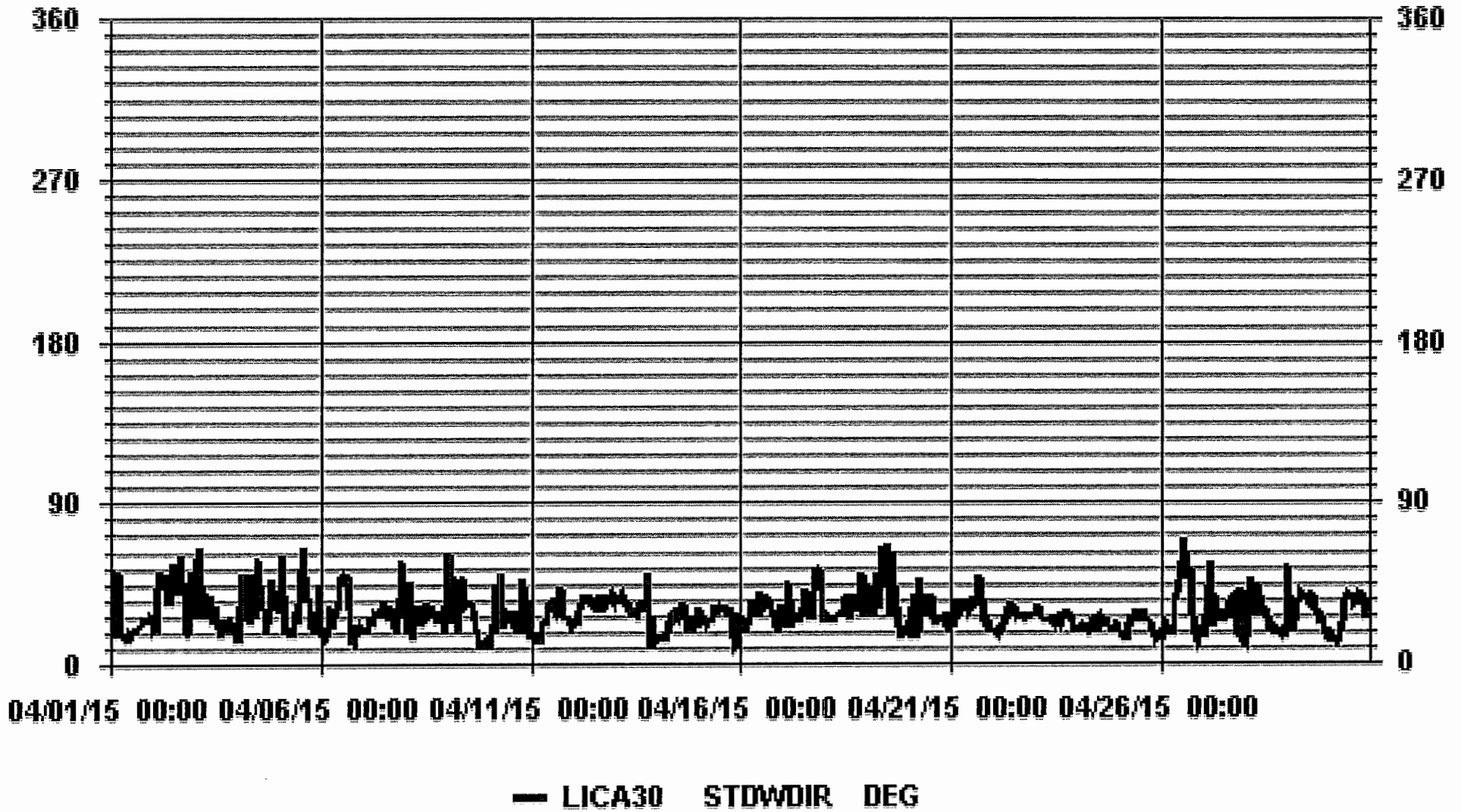
STATUS FLAG CODES

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

LAST CALIBRATION: March 04, 2014

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 720 HRS

01 Hour Averages



RELATIVE HUMIDITY



RELATIVE HUMIDITY (RH) hourly averages in %

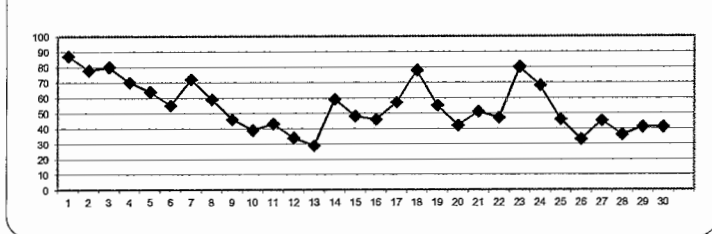
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	80	86	88	89	90	90	90	89	86	87	86	87	87	88	88	88	89	88	87	86	84	83	82	82	90	86.7	24	
2	82	84	84	85	85	84	83	80	75	68	67	70	69	73	66	71	70	76	80	81	81	84	85	85	85	85	77.8	24
3	85	87	86	86	86	86	85	81	77	72	68	71	73	78	80	78	76	79	80	81	81	84	86	85	87	80.5	24	
4	84	83	81	80	79	78	78	76	65	46	43	39	42	48	52	66	65	73	78	82	87	87	86	84	87	70.1	24	
5	83	81	81	79	79	80	77	70	59	51	50	47	49	47	42	43	49	46	57	67	71	77	76	73	83	63.9	24	
6	73	76	73	73	75	69	67	72	68	55	49	42	36	34	33	33	35	41	48	56	55	55	55	56	76	55.4	24	
7	58	60	62	63	64	66	67	70	70	72	69	71	68	70	69	72	74	77	80	86	88	87	87	86	88	72.3	24	
8	86	87	88	89	89	89	89	88	76	62	57	51	48	38	25	24	25	29	33	40	45	46	55	60	89	59.1	24	
9	66	70	74	79	81	81	77	58	41	34	31	27	26	25	24	24	23	24	27	34	39	43	44	47	81	45.8	24	
10	51	52	66	75	81	79	75	58	36	28	25	19	17	17	14	13	13	14	18	25	32	39	44	46	81	39.0	24	
11	46	46	51	54	54	55	55	49	42	38	30	25	23	23	25	30	40	44	49	52	56	54	53	46	56	43.3	24	
12	41	40	41	45	47	53	48	42	37	35	31	28	26	23	26	33	24	24	24	26	28	31	32	35	53	34.2	24	
13	36	37	39	40	42	41	37	30	28	25	22	15	12	11	11	11	11	11	15	21	31	49	54	60	60	28.7	24	
14	57	57	54	53	50	51	43	34	28	25	26	32	32	35	52	81	84	86	87	88	89	90	89	89	90	58.8	24	
15	90	90	91	90	84	81	75	61	51	43	35	27	24	23	22	22	22	22	25	31	35	34	36	42	91	48.2	24	
16	44	42	44	45	49	53	52	45	40	37	32	30	30	31	31	31	28	35	70	65	63	63	65	69	70	45.6	24	
17	76	80	81	86	88	88	84	70	61	48	40	30	25	26	30	29	29	30	33	43	67	74	80	80	88	57.4	24	
18	79	79	81	80	80	82	85	82	82	80	78	83	77	63	81	69	60	61	63	71	82	87	88	88	88	77.5	24	
19	89	90	90	89	89	90	88	72	53	42	35	34	32	36	37	28	26	33	40	46	46	43	42	42	90	54.7	24	
20	53	50	62	73	70	57	56	44	36	27	24	22	21	22	22	22	21	28	31	38	46	50	57	64	73	41.5	24	
21	64	70	80	86	84	82	76	66	61	55	48	37	28	26	25	24	24	24	28	39	39	44	48	56	86	50.6	24	
22	63	67	70	72	73	74	68	57	46	39	35	32	31	31	28	29	29	32	34	38	40	41	45	46	74	46.7	24	
23	47	49	52	54	60	65	79	84	85	84	87	89	89	89	90	90	90	90	90	90	91	91	90	90	91	79.8	24	
24	91	91	91	91	91	91	85	79	74	71	65	59	54	52	48	48	48	46	50	58	64	65	61	58	91	68.0	24	
25	62	63	66	66	70	72	68	57	52	44	41	38	34	31	29	26	27	28	31	34	38	41	45	47	72	46.3	24	
26	54	55	51	53	53	50	46	39	26	23	21	20	19	18	17	17	17	17	20	26	35	32	41	55	32.6	24		
27	50	67	72	73	75	73	64	50	49	46	37	31	29	26	25	20	19	20	24	32	44	46	52	45	75	44.5	24	
28	43	46	66	76	77	76	61	43	26	25	22	18	18	17	18	17	18	21	25	28	31	34	38	77	35.9	24		
29	43	50	60	62	60	55	48	44	39	36	31	31	33	34	34	30	30	34	37	45	42	43	62	41.2	24			
30	46	47	50	55	63	61	54	47	39	29	27	28	29	28	21	22	24	25	30	45	56	52	48	53	63	40.8	24	
HOURLY MAX	91	91	91	91	91	91	90	89	86	87	87	89	89	89	90	90	90	90	90	90	91	91	90	90				
HOURLY AVG	64.1	66.1	69.2	71.4	72.3	71.7	68.7	61.2	53.6	47.6	43.7	41.1	39.4	38.8	38.8	39.9	39.6	41.7	46.2	51.3	55.9	58.3	59.8	61.2				

STATUS FLAG CODES

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

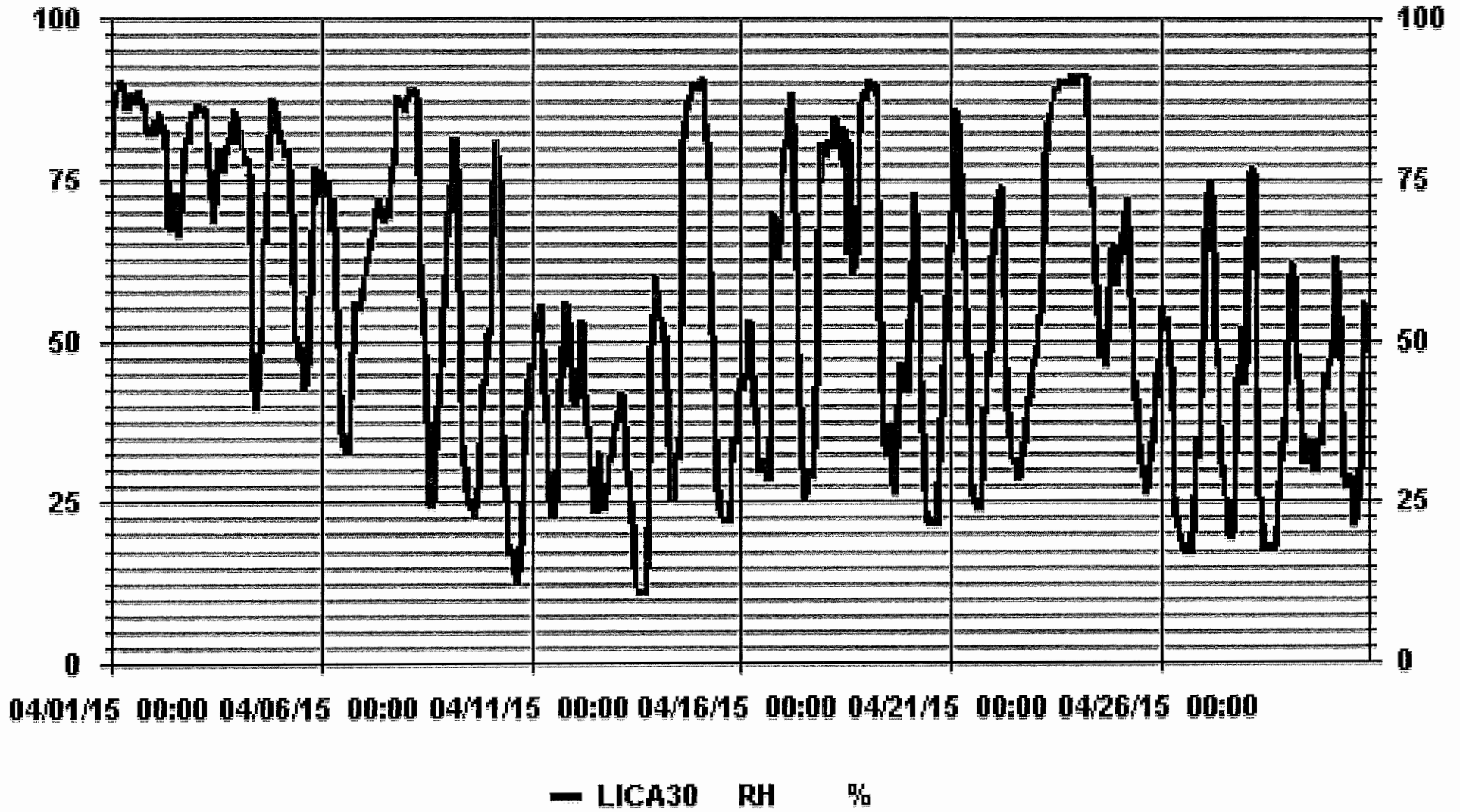
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	91	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	86.7	%			ON DAY(S)	1
					VAR-VARIOUS	
					OPERATIONAL TIME:	720 HRS
					AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	23.01				MONTHLY AVERAGE:	54 %

01 Hour Averages



BAROMETRIC PRESSURE

BAROMETRIC PRESSURE (BP) hourly averages in millibar

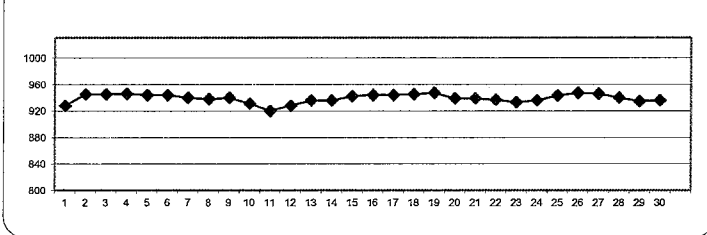
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	922	923	922	922	922	922	923	923	923	923	924	924	925	927	929	930	932	934	935	933	937	938	939	940	940	940	928	24
2	941	941	942	942	943	944	944	944	944	944	945	945	945	945	946	946	946	946	945	946	947	947	947	947	947	947	945	24
3	946	946	946	946	946	945	945	946	945	946	945	945	945	945	945	945	945	945	945	945	946	946	946	946	946	946	945	24
4	946	946	946	946	946	946	946	946	946	946	946	947	947	947	946	946	946	946	945	945	945	945	944	944	947	946	24	
5	944	944	944	944	944	944	944	945	944	944	945	945	945	945	945	945	944	944	944	944	944	944	944	944	944	945	24	
6	944	944	944	944	944	944	944	944	944	944	945	945	945	945	944	944	943	943	942	943	942	943	942	942	942	945	24	
7	942	942	941	941	941	941	941	941	941	941	940	940	940	940	939	939	939	939	938	938	938	938	938	938	938	942	24	
8	938	938	938	938	937	937	938	938	938	938	939	939	939	939	938	938	939	939	939	939	939	938	939	939	939	939	938	24
9	939	939	939	939	940	940	940	941	942	942	942	942	942	941	940	939	940	939	938	938	938	938	937	937	942	940	24	
10	937	937	936	936	935	935	934	935	935	935	934	934	933	932	931	930	929	928	927	926	925	924	923	922	937	931	24	
11	921	921	920	920	920	919	919	919	919	919	919	919	919	918	918	919	919	920	920	921	922	922	922	923	923	920	24	
12	923	924	924	924	926	926	927	928	928	928	928	928	928	928	929	929	929	929	929	930	930	931	931	932	932	928	24	
13	932	932	933	933	934	934	935	936	937	937	938	938	938	937	938	938	938	937	937	937	936	936	936	936	938	936	24	
14	936	936	936	935	935	935	936	936	936	936	935	935	935	935	936	936	937	937	937	938	937	938	939	939	939	936	24	
15	939	939	939	939	940	941	941	942	943	944	944	944	944	944	944	944	944	944	943	943	943	943	943	943	944	942	24	
16	943	943	944	944	944	944	945	945	946	945	945	945	944	943	942	942	941	942	942	942	943	944	945	946	946	944	24	
17	946	946	947	947	947	947	947	948	948	948	947	946	946	945	944	942	942	940	940	940	940	939	940	940	948	944	24	
18	940	940	940	940	940	941	942	942	942	943	944	945	945	946	947	947	948	949	949	950	949	949	949	949	950	945	24	
19	949	949	949	949	949	949	950	950	950	950	950	949	949	948	947	946	946	945	945	944	943	943	943	942	950	947	24	
20	941	941	940	939	939	938	939	939	939	939	938	938	938	938	938	938	939	939	939	939	939	939	939	939	941	939	24	
21	939	940	939	939	939	939	940	940	941	941	940	940	940	940	939	939	938	938	937	937	938	938	938	941	939	24		
22	937	937	937	937	937	937	937	938	938	938	938	938	938	938	938	938	937	937	936	936	936	935	935	935	938	937	24	
23	934	934	934	933	933	932	932	932	932	932	932	932	932	933	933	933	933	933	933	933	933	933	933	934	933	24		
24	933	933	933	933	934	934	934	935	935	936	936	936	937	937	937	937	937	937	937	938	938	938	939	939	939	936	24	
25	939	940	940	940	941	941	942	942	943	943	943	944	944	944	944	944	944	945	945	945	945	945	945	945	945	943	24	
26	945	945	945	946	946	946	947	947	947	948	948	948	948	948	948	948	948	947	947	946	947	947	947	947	948	947	24	
27	947	945	946	946	946	946	947	948	948	948	948	947	947	946	946	945	945	945	945	944	944	944	944	944	948	946	24	
28	944	944	944	943	943	943	943	944	944	944	943	942	941	940	940	939	938	938	937	936	935	935	934	934	944	940	24	
29	933	933	933	933	933	934	934	934	934	935	935	935	935	935	935	936	936	936	936	936	935	935	935	936	935	935	24	
30	935	935	935	935	936	936	936	937	937	937	937	937	937	936	936	936	935	935	935	935	935	935	935	936	937	936	24	
HOURLY MAX	949	949	949	949	949	949	950	950	950	950	950	949	949	948	948	948	948	949	949	950	949	949	949	949	949			
HOURLY AVG	939	939	939	938	939	939	939	940	940	940	940	940	940	939	939	939	939	939	939	939	939	939	939	939	939			

STATUS FLAG CODES

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

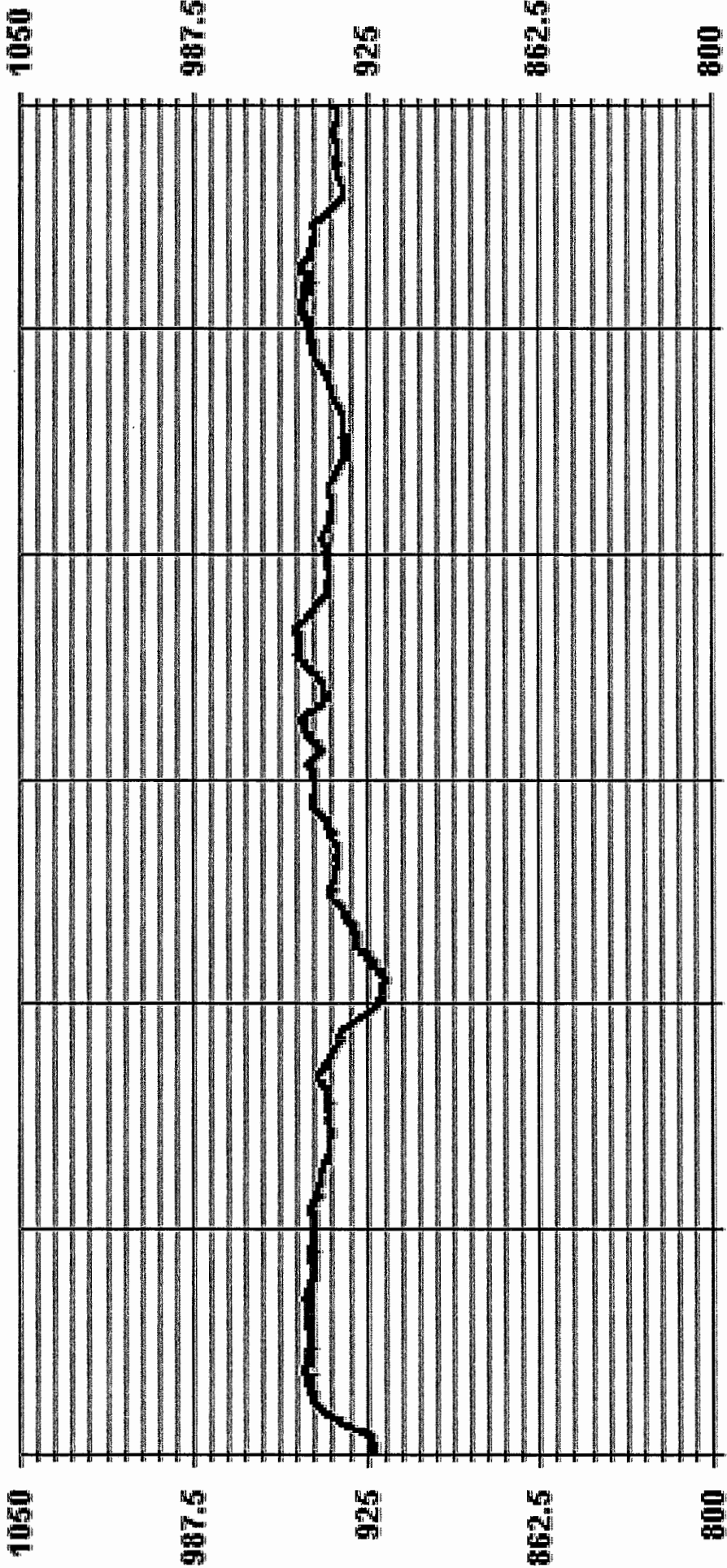
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	950 MB	@ HOUR(S)	VAR	ON DAY(S)	18 , 19
MAXIMUM 24-HR AVERAGE:	947 MB			ON DAY(S)	19 , 26
				VAR-VARIOUS	
				OPERATIONAL TIME:	720 HRS
				AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	6.78			MONTHLY AVERAGE:	939 MB

01 Hour Averages



— LICA30 BP MB

AMBIENT TEMPERATURE

AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

MST

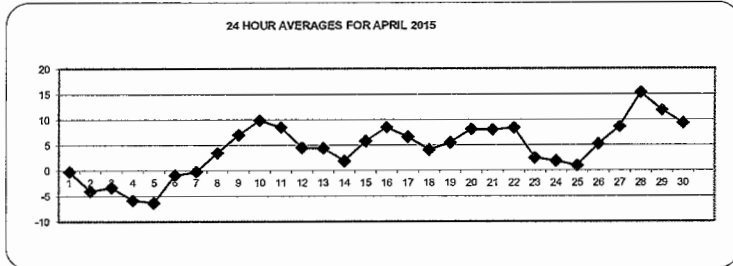
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	00:00	MAX	AVG.	RDGS.
DAY 1	3.4	3.0	1.8	0.4	0.3	0.3	0.3	0.3	0.4	0.5	0.6	0.9	0.9	0.5	0.1	0.1	0.2	0.2	-0.6	-2.0	-3.0	-3.8	-4.6	-5.4	3.4	-0.2	24
2	-6.0	-7.0	-7.8	-8.9	-8.6	-7.3	-6.6	-5.5	-4.2	-3.2	-1.5	-1.6	-0.4	-1.0	0.7	-0.9	-0.6	-2.0	-2.4	-3.1	-3.7	-4.9	-4.9	-4.9	0.7	-4.0	24
3	-5.5	-6.4	-6.2	-6.0	-5.6	-5.3	-4.3	-2.6	-1.2	0.6	1.9	1.7	1.8	0.6	-1.1	-2.1	-2.0	-2.4	-3.2	-3.6	-3.9	-6.0	-8.4	-10.2	1.9	-3.3	24
4	-11.5	-12.0	-13.6	-14.7	-15.7	-16.4	-15.4	-10.1	-3.5	0.9	2.1	3.6	3.4	2.3	2.6	0.5	0.7	-1.3	-2.5	-4.3	-6.4	-7.9	-9.6	-11.2	3.6	-5.8	24
5	-12.1	-13.3	-14.4	-15.3	-15.5	-14.7	-13.7	-11.5	-8.1	-5.4	-4.5	-1.6	0.6	2.0	4.5	3.1	1.3	1.1	-1.6	-4.2	-6.0	-7.7	-7.6	-7.0	4.5	-6.3	24
6	-7.8	-9.7	-10.0	-10.1	-10.6	-9.2	-8.2	-6.7	-3.4	0.5	2.1	5.3	7.1	7.8	8.2	7.7	7.0	4.7	2.9	0.6	0.8	0.5	0.2	-0.4	8.2	-0.9	24
7	-0.8	-1.1	-1.3	-1.4	-1.7	-1.8	-1.5	-0.9	0.9	0.9	2.1	1.7	2.8	2.2	2.1	1.9	2.0	1.0	-0.2	-2.0	-2.5	-2.1	-2.3	-2.1	2.8	-0.2	24
8	-2.1	-1.7	-2.5	-2.6	-3.9	-3.8	-2.6	-1.8	2.0	4.9	6.5	8.2	9.6	11.4	12.2	11.9	11.5	10.3	8.0	4.6	2.5	1.8	-0.1	-1.4	12.2	3.5	24
9	-2.4	-3.4	-3.9	-4.6	-5.3	-5.4	-3.9	2.3	7.4	10.3	11.7	13.4	14.5	15.4	16.2	16.5	16.6	15.9	13.9	11.0	9.2	8.1	7.5	6.6	16.6	7.0	24
10	5.4	4.9	1.2	-1.3	-2.5	-2.8	-1.4	4.3	9.9	12.9	15.1	17.5	18.4	19.1	19.4	19.5	18.5	17.8	15.6	11.8	11.3	9.3	7.7	6.8	19.5	9.9	24
11	6.9	6.7	5.3	4.0	3.7	3.1	3.3	5.9	8.4	10.6	14.3	16.4	16.9	16.7	15.0	14.0	11.7	10.6	9.3	6.8	5.1	3.7	2.4	3.2	16.9	8.5	24
12	2.9	2.0	1.6	0.6	0.1	-0.7	1.1	3.8	5.8	6.9	7.9	8.4	8.2	9.2	7.1	6.2	7.1	6.9	6.4	5.1	4.2	2.8	2.4	1.9	9.2	4.5	24
13	1.8	1.4	0.7	0.3	-0.4	-0.1	1.6	4.5	6.1	7.6	9.1	9.8	10.3	10.9	11.1	11.0	11.0	10.4	7.9	3.1	-0.5	-3.0	-4.0	-4.8	11.1	4.4	24
14	-4.9	-5.0	-4.2	-3.3	-2.9	-3.1	-0.4	2.5	5.2	7.2	7.8	6.9	7.3	7.2	6.0	3.7	3.6	3.4	3.1	2.4	1.4	0.8	1.0	0.0	7.8	1.9	24
15	-0.4	-1.2	-1.3	-0.5	-0.2	-0.3	0.7	3.6	5.6	7.8	9.2	10.7	11.3	11.5	11.8	12.3	12.3	11.8	9.9	6.4	4.7	5.4	4.7	3.4	12.3	5.8	24
16	2.2	3.4	3.8	3.3	2.5	2.2	4.1	8.2	10.4	11.3	12.7	13.6	14.6	14.0	14.2	14.9	16.0	13.5	8.4	7.9	6.8	6.1	5.0	4.1	16.0	8.5	24
17	1.8	0.6	0.1	-1.6	-1.9	-2.7	-0.4	3.8	7.2	10.0	11.2	11.4	11.2	11.8	12.3	12.7	12.7	12.3	11.2	10.1	8.1	6.4	4.5	4.7	12.7	6.6	24
18	4.7	4.0	3.5	4.2	3.9	3.3	2.8	3.2	3.6	4.2	4.7	3.9	5.9	7.7	4.5	6.6	7.9	7.6	6.9	5.0	1.9	0.4	-0.2	-0.7	7.9	4.1	24
19	-2.1	-2.2	-2.0	-2.3	-3.2	-3.5	-0.9	4.2	8.0	10.5	11.8	10.3	11.6	9.8	10.3	12.4	11.9	10.8	8.5	5.8	5.3	5.7	6.0	5.2	12.4	5.5	24
20	1.5	2.3	-0.4	-2.8	-2.8	0.3	1.8	6.1	10.6	14.0	16.0	17.1	17.3	17.2	16.4	15.4	14.8	12.7	10.8	7.8	6.2	5.8	4.1	2.6	17.3	8.1	24
21	3.1	1.6	-1.3	-3.0	-3.6	-2.4	1.0	4.0	5.6	7.3	9.4	12.5	14.7	16.5	17.2	18.0	18.0	17.5	16.0	11.3	9.9	8.1	7.0	4.5	18.0	8.0	24
22	2.8	1.7	1.0	0.1	-0.8	-1.2	0.3	3.3	6.7	9.4	12.0	13.9	14.9	15.2	16.5	16.2	15.6	14.3	13.0	10.9	10.1	9.4	8.2	7.3	16.5	8.4	24
23	6.8	6.1	5.2	4.0	2.8	1.7	0.6	0.4	0.4	1.0	0.7	0.8	1.0	1.5	2.1	2.6	3.5	3.4	3.1	2.9	2.7	2.5	2.4	2.0	6.8	2.5	24
24	2.3	2.3	2.2	2.1	1.8	0.3	-0.6	-1.0	-0.6	-0.2	1.1	3.5	4.6	4.8	5.7	4.9	4.6	4.6	3.8	1.9	0.3	-0.7	-0.8	-1.5	5.7	1.9	24
25	-2.5	-2.8	-3.7	-4.1	-4.8	-4.7	-3.1	-0.7	0.2	2.3	3.4	4.0	4.3	5.3	6.0	6.2	5.3	5.0	4.2	3.1	1.8	0.3	-0.8	-0.4	6.2	1.0	24
26	-2.1	-3.3	-2.4	-1.8	-1.8	-1.3	-0.1	2.0	5.5	7.1	8.4	9.6	10.9	11.4	12.2	12.5	12.4	12.1	10.7	7.7	4.0	4.1	4.1	2.1	12.5	5.2	24
27	1.4	-2.4	-3.6	-4.3	-4.9	-4.2	0.0	7.0	7.9	9.9	13.1	15.1	16.2	17.6	18.3	19.2	19.4	18.6	16.7	13.1	9.8	7.7	6.3	8.4	19.4	8.6	24
28	8.9	8.2	3.7	0.9	-0.2	-0.3	4.9	12.2	17.2	18.8	21.2	23.0	23.0	23.9	23.5	23.4	23.7	23.1	22.0	19.8	18.0	17.0	16.1	14.5	23.9	15.3	24
29	12.9	11.0	7.8	8.0	9.4	10.3	10.7	11.2	12.3	12.9	14.2	15.1	15.4	16.6	17.8	17.1	15.4	14.4	12.3	10.6	8.5	6.3	6.8	6.1	17.8	11.8	24
30	5.9	4.7	3.3	1.9	0.3	1.9	4.7	8.0	11.1	13.8	15.2	14.4	14.8	15.0	16.3	15.7	14.8	14.5	12.4	9.9	6.9	6.8	6.1	5.1	16.3	9.3	24
HOURLY MAX	12.9	11.0	7.8	8.0	9.4	10.3	10.7	12.2	17.2	18.8	21.2	23.0	23.0	23.9	23.5	23.4	23.7	23.1	22.0	19.8	18.0	17.0	16.1	14.5			
HOURLY AVG	0.5	-0.3	-1.2	-2.0	-2.4	-2.3	-0.8	2.0	4.6	6.5	8.0	9.0	9.8	10.1	10.3	10.1	9.9	9.1	7.6	5.3	3.8	2.8	2.0	1.3			

STATUS FLAG CODES

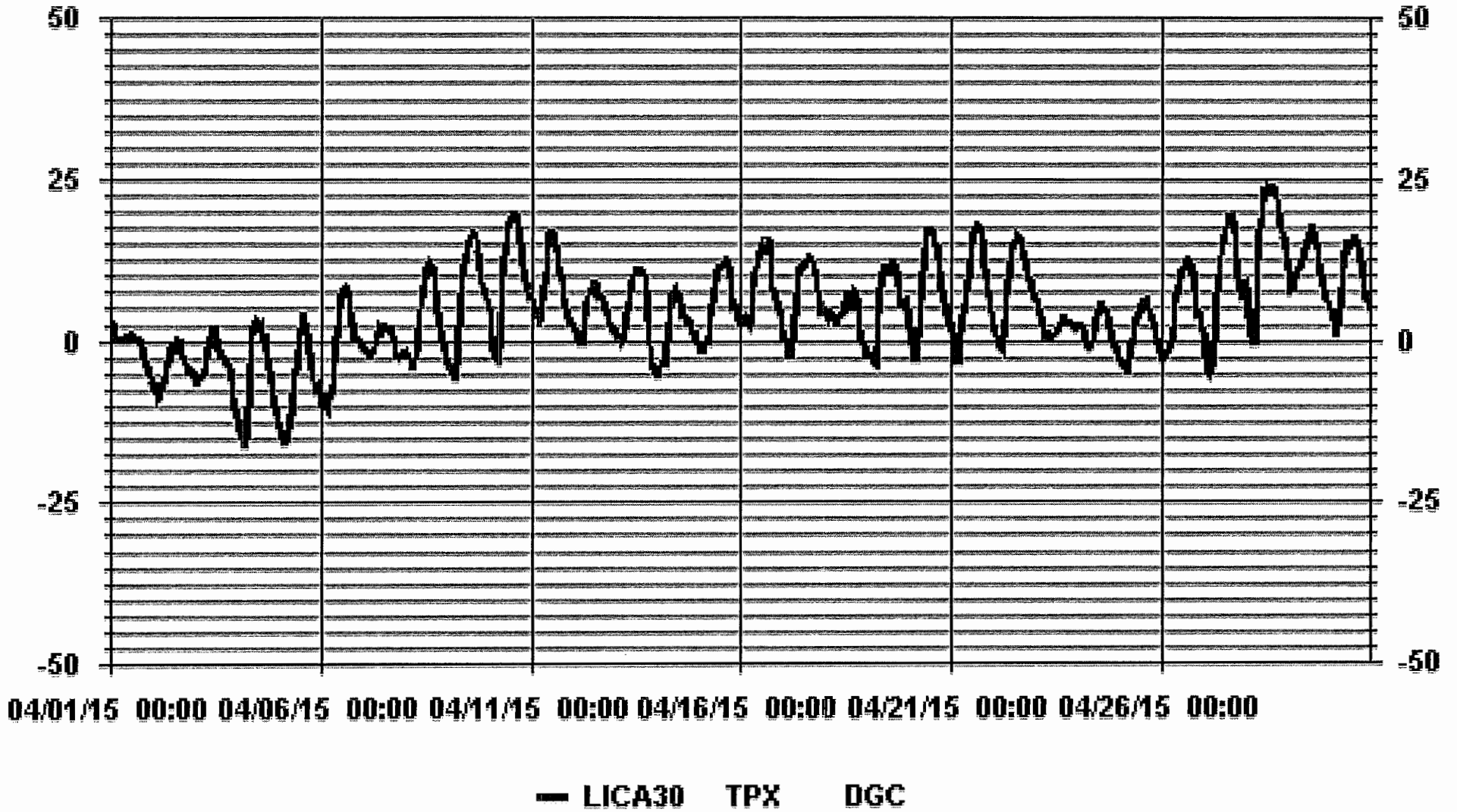
C	CALIBRATION	Q	QUALITY ASSURANCE
M	MAINTENANCE	R	RECOVERY
S	DAILY ZERO/SPAN CHECK	X	MACHINE MALFUNCTION
P	POWER FAILURE	O	OPERATOR ERROR
G	OUTFOR REPAIR	K	COLLECTION ERROR

MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-16.4 °C	@ HOUR(S)	5	ON DAY(S)	4
MAXIMUM 1-HR AVERAGE:	23.9 °C	@ HOUR(S)	13	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	15.3 °C			ON DAY(S)	28
				VAR-VARIOUS	
OPERATIONAL TIME:				720	HRS
AMD OPERATION UPTIME:				100.0	%
STANDARD DEVIATION:	7.37	MONTHLY AVERAGE:	4.3	°C	



01 Hour Averages



PRECIPITATION

PRECIPITATION hourly averages (mm)

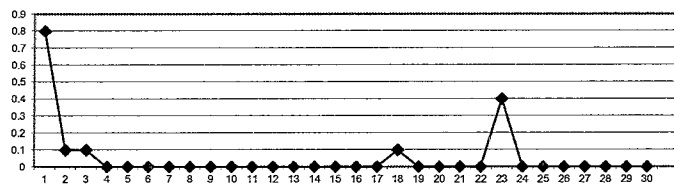
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.	
HOUR END	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MAX.	AVG.		
DAY 1	0.0	2.1	2.2	3.6	4.6	3.3	0.1	0.1	0.0	0.3	0.1	0.3	0.3	1.3	0.5	0.6	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.6	0.8	24	
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.1	24
3	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.5	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.1	24
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	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	0.1	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	0.1	0.0	24
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	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	0.1	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	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	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	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	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	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	24
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	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	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	24
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.3	0.1	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.1	24
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.2	0.5	2.3	2.1	0.9	0.0	0.7	1.5	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.4	24
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	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	0.0	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	0.0	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	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	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	2.1	2.2	3.6	4.6	3.3	2.3	2.1	0.9	0.3	0.7	1.5	0.6	1.3	0.6	0.6	0.7	0.1	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	24
HOURLY AVG	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24

STATUS FLAG CODES

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

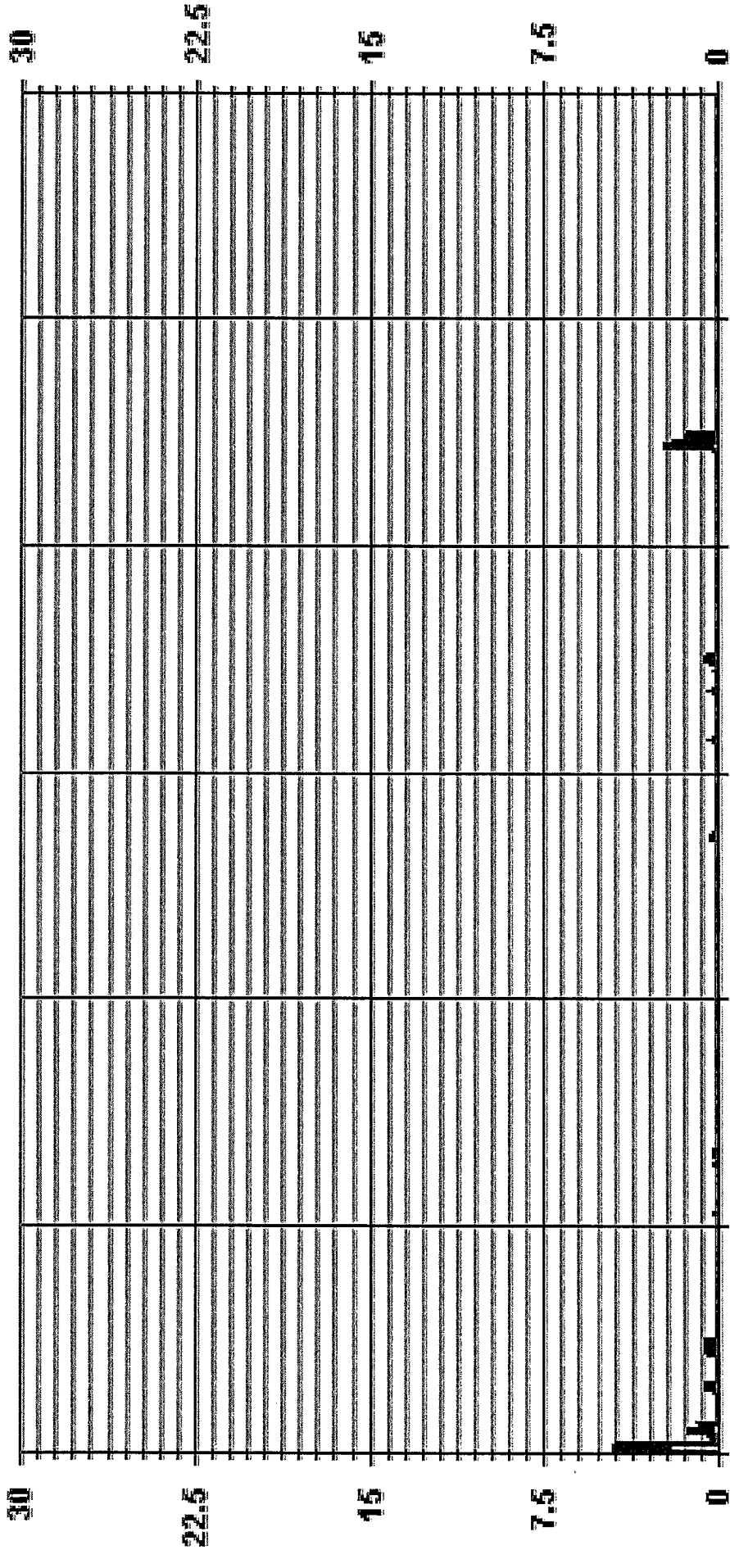
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	4.6	MM	@ HOUR(S)	4	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	0.8	MM			ON DAY(S)	1
MONTHLY TOTAL	35.4	MM			VAR-VARIOUS	
OPERATIONAL TIME:					720	HRS
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	0.32		MONTHLY AVERAGE:		0.0	MM

01 Hour Averages



— LICA30 PRECIP MM

APPENDIX II
ANALYZER CALIBRATION RESULTS

SULPHUR DIOXIDE

Maxxam
API 100E SO2 Analyzer Calibration

Date: 23-Apr-15

Company: LICA

Station Name/Location: Maskwa

Performed by: Alex Yakupov

Application H₂S/TRS/SO₂: SO2

Start/End Time (mst): 8:13 / 12:31

Calibration Purpose: Monthly Calibration

Converter Make & Model: NA

Converter Serial #: NA

Cal Gas Expiry Date: 12-Aug-17

Analyzer:

Serial Number: 508

Last Calibration Date: 11-Mar-15

Previous Cal High Point C.F.: 0.998

Range ppb: 1000

As Found C.F.: 0.987

New C.F.: 1.007

As found:

SLOPE: 1.007

OFFSET: 120.4

HVPS: 495

RCELL TEMP: 50.0

BOX TEMP: 29.4

PMT TEMP: 7.7

IZS TEMP: 45.0

TEST: NA

STABIL: 0.1

PRES: 24.2

SAMP FL: 580

PMT: 111.1

NORM PMT: 125.5

UV LAMP: 2984.1

LAMP RATIO: 92.9

STR. LGT: 60.6

DRK PMT: 11.8

DRK LMP: -1.7

Internal Span: 262.1

As left:

SLOPE: 0.996

OFFSET: 124.9

HVPS: 495

RCELL TEMP: 50.0

BOX TEMP: 29.8

PMT TEMP: 7.7

IZS TEMP: 45.0

TEST: NA

STABIL: 0.1

PRES: 24.2

SAMP FL: 581

PMT: 106.5

NORM PMT: 125.5

UV LAMP: 2980.8

LAMP RATIO: 92.9

STR. LGT: 62.2

DRK PMT: 12.3

DRK LMP: -1.8

Internal Span: 262.7

Callibrator:

Flow Meter ID's: NA

Make & Model: EnviroNics 6100

Serial #: 4760

Cal Gas Cylinder I.D. #: LL42475

Cal Gas Conc. (ppm): 50.3

Callibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	4995	0	4995
high	4916	78	4994
mid	4957	38	4995
low	4975	19	4994

Calibration:

Point	Callibrator Flow Rates (cc/min)			Calculated Concentration (ppb)	Indicated Concentration (ppb)	Correction Factors
	Diluent	Cal Gas	Total			
as found zero	4994	0.0	4994	0	2.0	NA
adjusted zero	4994	0.0	4994	0	0.0	NA
as found high	4915	80.20	4995	807.6	818.0	0.987
adjusted high	4915	80.20	4995	807.6	808.0	1.000
mid	4956	39.06	4995	393.3	390.0	1.009
low	4976	19.53	4996	196.6	194.0	1.014
calibrator zero	4994	0.00	4994	0	0.0	NA

Average C.F.= 1.007

Linear Regression/Calibration Results:

Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>0.999</u>	> or = 0.995	PASS
b (Intercept as % of full scale)=	<u>0.18%</u>	0.85-1.15	PASS
% change in C.F. from last cal	<u>1.07%</u>	± 3% F.S.	PASS
		± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

run converter efficiency test immediately following zero adjust

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

Zero corrected analyzer response: NA

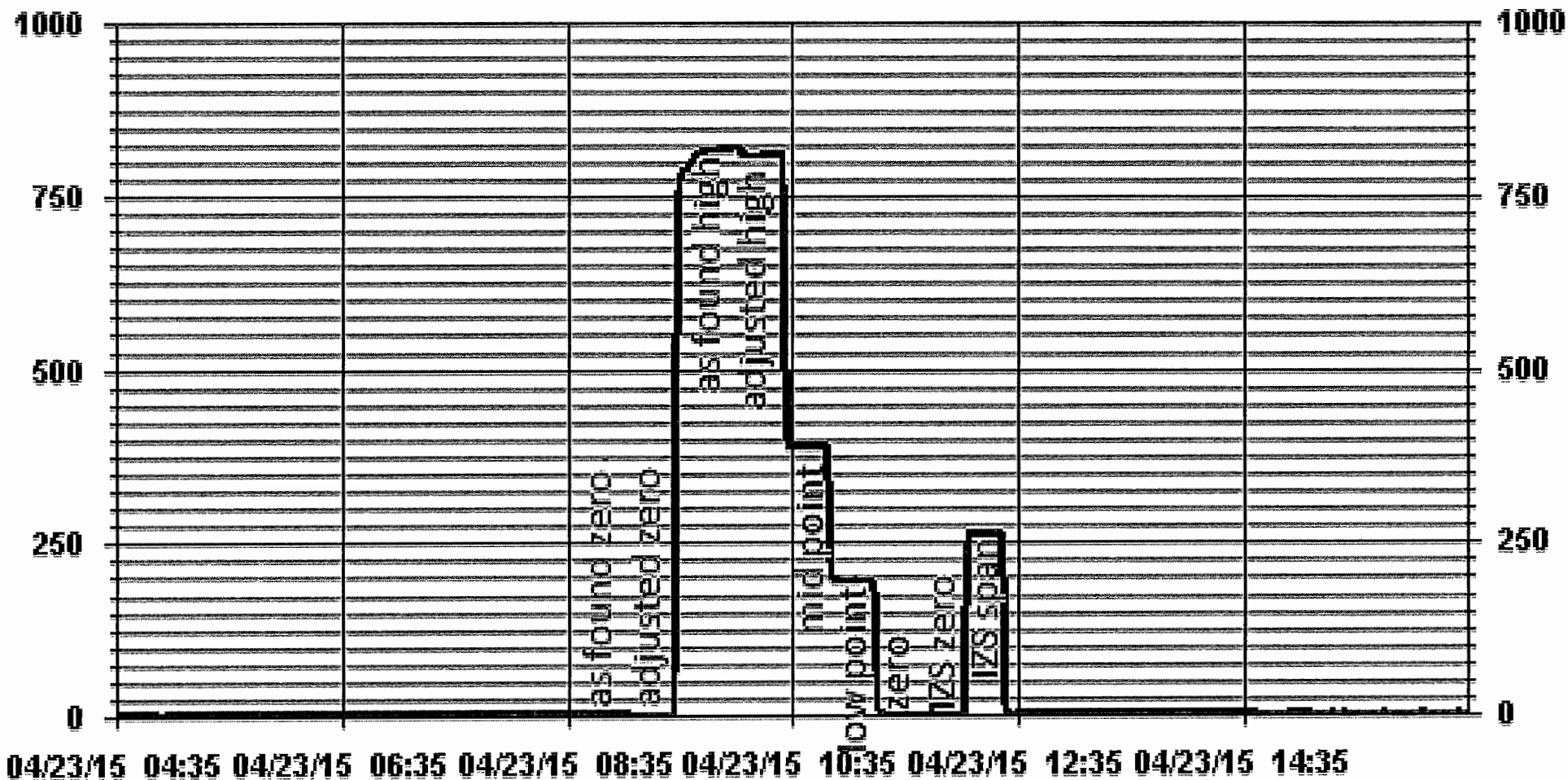
Comments:

Sample filter changed.

API 100E SO2 Analyzer Calibration

Calculated (ppb)	Indicated (ppb)
0	0
194	194
390	390
808	808

01 Minute Averages



— LICA30 SO2_ PPB

HYDROGEN SULPHIDE

Maxxam
API 101E H2S Analyzer Calibration

Date: 23-Apr-15

Company: LICA

Station Name/Location: Maskwa

Performed by: Alex Yakupov

Application H₂S/TRS/SO₂: H2S

Start/End Time (mst): 11:44 / 15:41

Calibration Purpose: Monthly

Converter Make & Model: Internal

Converter Serial #: NA

Cal Gas Expiry Date: 15-Jul-17

Analyzer:

Serial Number: 511

Last Calibration Date: 11-Mar-15

Previous Cal High Point C.F.: 1.000

Range ppb: 100

As Found C.F.: 1.002

New C.F.: 1.005

As found:

SLOPE: 0.845

OFFSET: 48.3

HVPS: 616

RCELL TEMP: 50.0

BOX TEMP: 31.1

PMT TEMP: 7.9

IZS TEMP: 45.0

TEST: 314.5

STABIL: 0.1

PRES: 28.7

SAMP FL: 646

PMT: 76.6

NORM PMT: 49.8

UV LAMP: 2747.9

LAMP RATIO: 88.3

STR. LGT: 20.4

DRK PMT: 32.4

DRK LMP: 5.6

Internal Span: 49.23

As left:

SLOPE: 0.848

OFFSET: 48.8

HVPS: 616

RCELL TEMP: 50.0

BOX TEMP: 31.7

PMT TEMP: 7.9

IZS TEMP: 45.0

TEST: 315.6

STABIL: 0.1

PRES: 28.7

SAMP FL: 645

PMT: 77.0

NORM PMT: 48.6

UV LAMP: 2747.3

LAMP RATIO: 88.3

STR. LGT: 20.7

DRK PMT: 32.9

DRK LMP: 5.5

Internal Span: 49.05

Calibrator:

Flow Meter ID's: NA

Make & Model: API

Serial #: 830

Cal Gas Cylinder I.D. #: LL36837

Cal Gas Conc. (ppm): 10.0

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	4959	39	4998
mid	4979	19	4998
low	4990	11	5001

Calibration:

Point	Calibrator Flow Rates (cc/min)			Calculated Concentration: (ppb)	Indicated Concentration: (ppb)	Correction Factors:
	Diluent	Cal Gas	Total			
as found zero	5000	0.0	5000	0	0.8	NA
adjusted zero	5000	0.0	5000	0	0.0	NA
as found high	4957	39.00	4996	78.1	77.9	1.002
adjusted high	4957	39.00	4996	78.1	78.1	1.000
mid	4979	19.00	4998	38.0	38.0	1.000
low	4989	11.00	5000	22.0	21.7	1.014
calibrator zero	5000	0.00	5000	0	0.0	NA
Average C.F. =						1.005

Linear Regression/Calibration Results:

Correlation Coefficient = <u>1.000</u>	LIMITS > or = 0.995	Pass/Fail ? PASS
Slope = <u>0.998</u>	0.85-1.15	PASS
b (Intercept as % of full scale) = <u>0.13%</u>	± 3% F.S.	PASS
% change in C.F. from last cal = <u>-0.21%</u>	± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

run converter efficiency test immediately following zero adjust

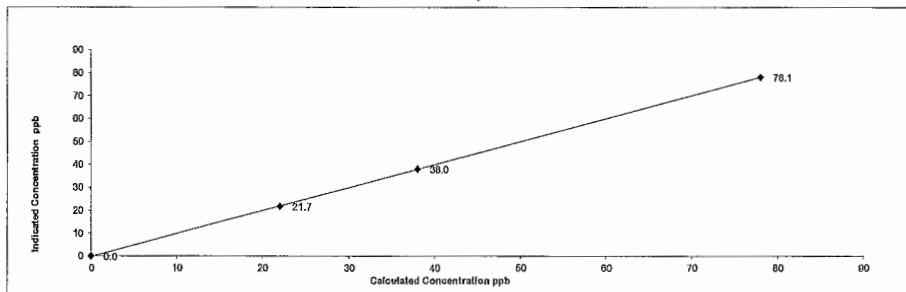
SO₂ High Point gas concentration: NA Time gas run (mst): NA

Zero corrected analyzer response: NA

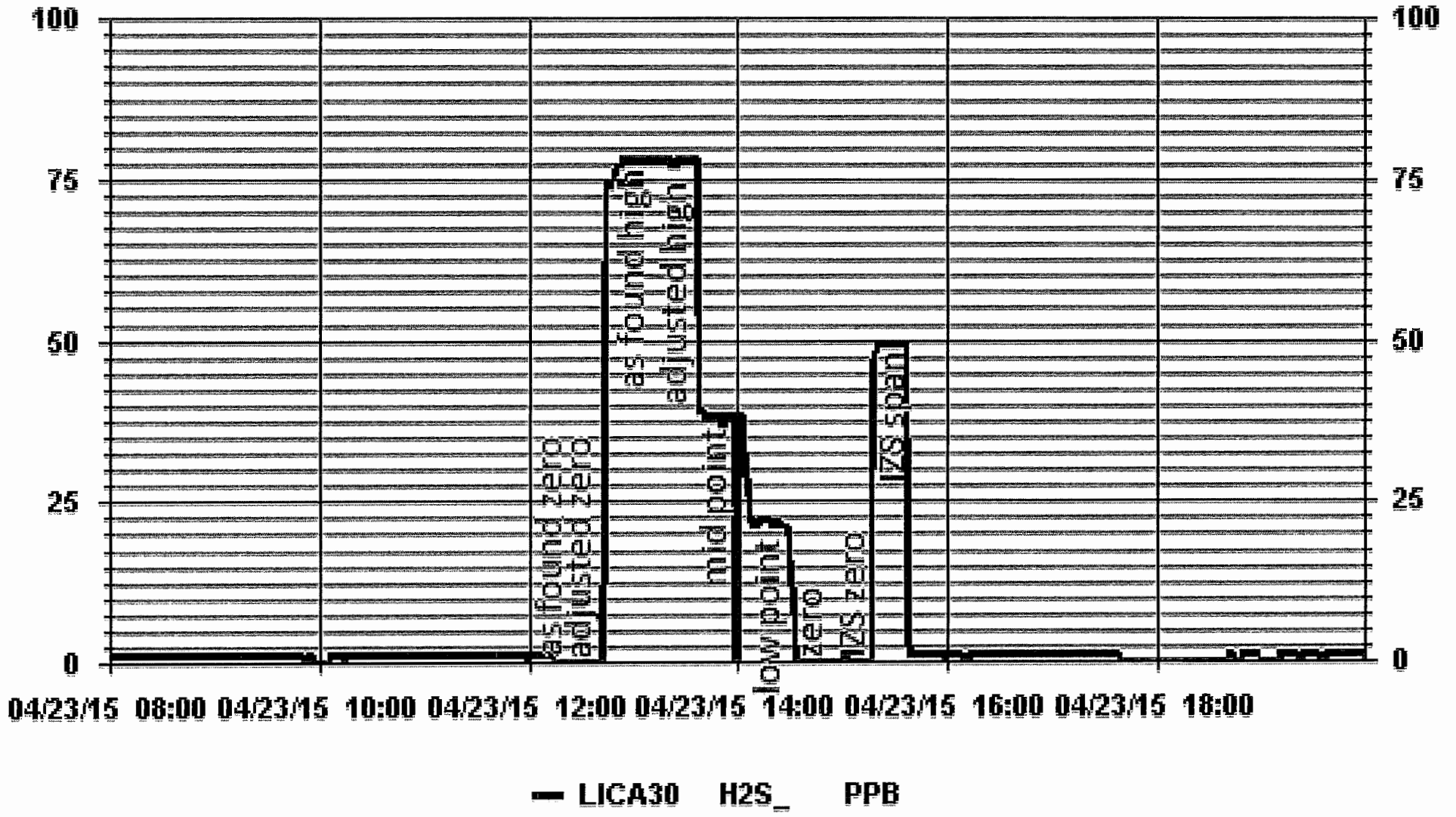
Comments:

Incorrect calibration gas was input for low point check after completing the mid point check. Reset the setting and started the low point calibration. Filter changed

API 101E H2S Analyzer Calibration



01 Minute Averages



TOTAL HYDROCARBON

Maxam Thermo 51C THC Analyzer Calibration

Date: 23-Apr-15 Start Time (mst): 8:13
 Company: LICA End Time (mst): 12:29
 Station Name/Location: Maskwa Calibration Purpose: Monthly Calibration
 Performed by: Alex Yakupov Cal Gas Expiry Date: 12-Aug-17

Analyzer:
 Serial Number: 436609738 Range ppm: 50
 Last Calibration Date: 11-Mar-15 As Found C.F.: 1.003
 Previous Cal High Point C.F.: 1.000 New C.F.: 1.003

	As found:	As left:
H ₂ cylinder (psi):	<u>450</u>	<u>450</u>
H ₂ cylinder reg set (psi):	<u>25</u>	<u>25</u>
Span Cylinder (psi):	<u>900</u>	<u>900</u>
Span Cylinder Reg Set (psi):	<u>25</u>	<u>25</u>
Zero Air Gen Pressure:	<u>35</u>	<u>35</u>
measurement alarms:	<u>None</u>	<u>None</u>
service alarms:	<u>None</u>	<u>None</u>
FID status:	cnt: <u>844</u>	cnt: <u>866</u>
	rng: <u>1</u>	rng: <u>1</u>
	try: <u>5</u>	try: <u>5</u>
	flm: <u>178.8</u>	flm: <u>178.3</u>
	det: <u>125.5</u>	det: <u>125.2</u>
Oven Readings:	Flame: <u>178</u>	Flame: <u>178</u>
	Filter: <u>125</u>	Filter: <u>125</u>
	Base: <u>125</u>	Base: <u>125</u>
	Pump: <u>07.51</u>	Pump: <u>07.49</u>
Voltages:	+5 <u>4.9</u>	+5 <u>4.9</u>
	+15 <u>14.8</u>	+15 <u>14.8</u>
	-15 <u>-15.0</u>	-15 <u>-15.0</u>
	Internal Span: <u>33.3</u>	Internal Span: <u>33.09</u>

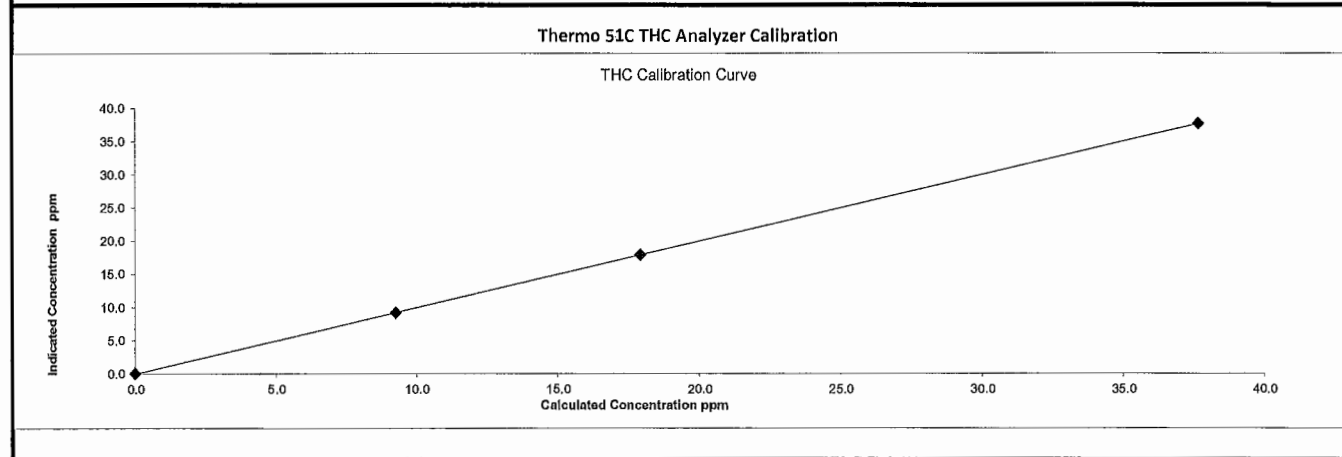
Calibrator:	Flow Meter ID's: <u>NA</u>	Calibrator Flow Targets:			
	Make & Model: <u>API 700</u>	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
	Serial #: <u>830</u>	zero	<u>2000</u>	<u>0</u>	<u>2000</u>
	Cal Gas Cylinder I.D. #: <u>LL33674</u>	high	<u>1935</u>	<u>65</u>	<u>2000</u>
	CH ₄ /C ₃ H ₈ Cylinder Conc. (ppm): <u>601.4</u> <u>202.0</u>	mid	<u>1969</u>	<u>31</u>	<u>2000</u>
	CH ₄ as propane/total CH ₄ equivalents (ppm): <u>555.5</u> <u>1156.9</u>	low	<u>1984</u>	<u>16</u>	<u>2000</u>

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppm)	(ppm)	
as found zero	2000	0.00	2000	0	-0.02	NA
adjusted zero	2000	0.00	2000	0	0.00	NA
as found high	1931	65.00	1996	37.67	37.57	1.003
adjusted high	1931	65.00	1996	37.67	37.67	1.000
mid	1969	31.00	2000	17.93	17.92	1.001
low	1983	16.00	1999	9.26	9.19	1.008
calibrator zero	2000	0.00	2000	0	0.01	NA
Average C.F.=						1.003

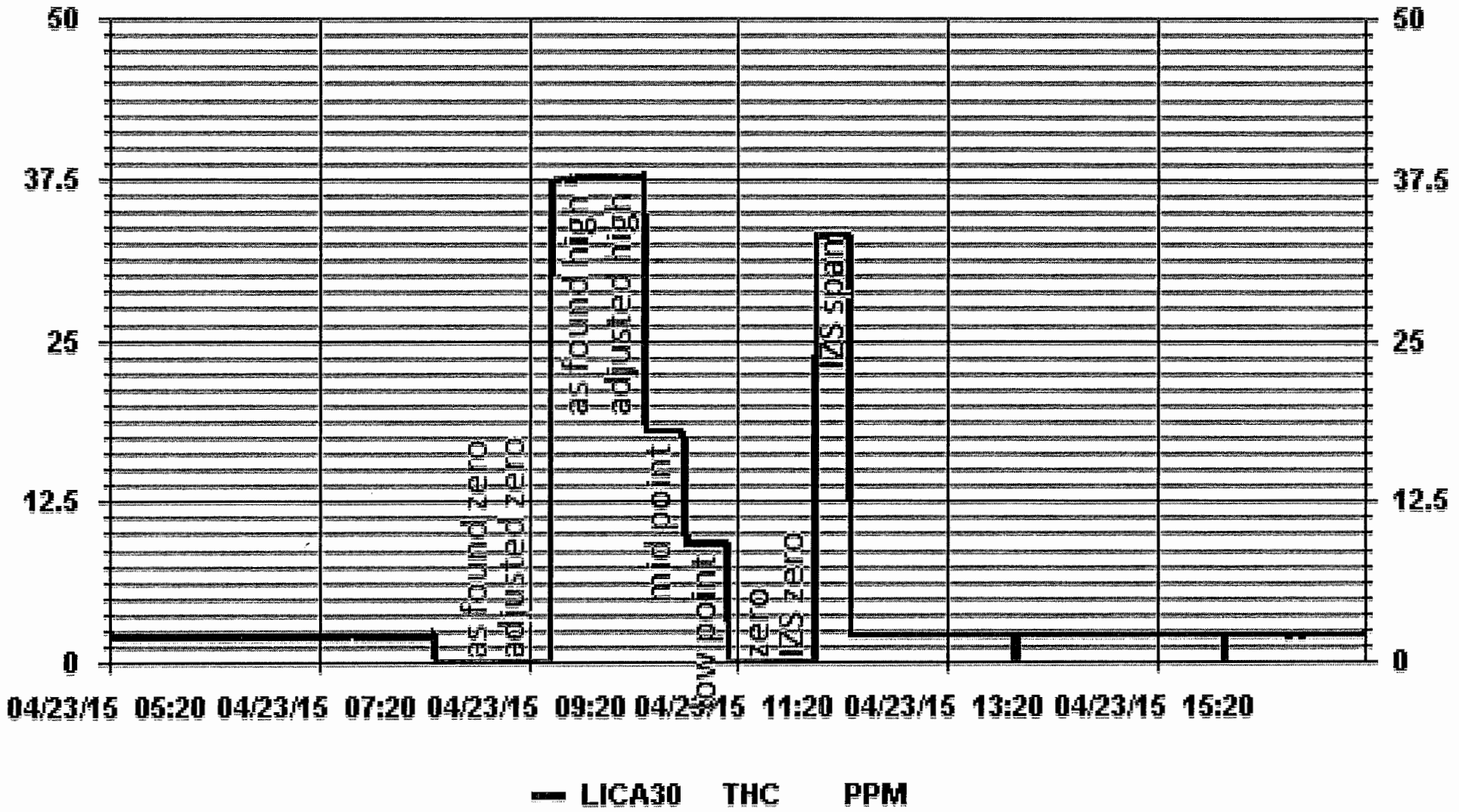
Linear Regression/Calibration Results:

Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>1.001</u>	> or = 0.995	PASS
b (Intercept as % of full scale)=	<u>-0.064%</u>	0.85-1.15	PASS
% change in C.F. from last cal	<u>-0.28%</u>	± 3% F.S.	PASS
		± 15%	PASS

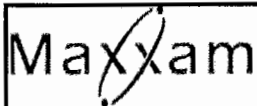
Comments:
 Sample filter changed.



01 Minute Averages



NITROGEN DIOXIDE



API 200E NOx Analyzer Calibration

Date: 23-Apr-15
 Company: LICA
 Station Name/Location: Maskwa
 Performed by: Alex Yakupov

Start Time (mst): 8:13
 End Time (mst): 14:38
 Calibration Purpose: Monthly Calibration
 Cal Gas Expiry Date: 12-Aug-17

Analyzer Serial Number: 593
 Last Calibration Date: 11-Mar-15
 Range ppb: 1000

Correction Factors:
 As found C.F. Previous Cal High Point C.F.:
 NO= 1.033 NO= 1.001
 NOx= 1.022 NOx= 1.001
 NO₂= 1.004 NO₂= 1.005

As found:
 NOx SLOPE: 0.946
 NOx OFFS: -0.3
 NO SLOPE: 0.946
 NO OFFS: -1.7
 TEST: 126.7
 SAMP FLW: 474
 OZONE FL: 77
 PMT: 10.3
 NORM PMT: -1.6
 AZERO: 7.5
 HVPS: 634
 RCELL TEMP: 50.1
 BOX TEMP: 31.7
 PMT TEMP: 6.8
 IZS TEMP: 50.1
 MOLY TEMP: 314.1
 RCEL: 6.9
 SAMP: 27.0
 Internal Span: 307.3/5.11/301.9

As left:
 NOx SLOPE: 0.969
 NOx OFFS: 2.4
 NO SLOPE: 0.975
 NO OFFS: -0.9
 TEST: 126.7
 SAMP FLW: 474
 OZONE FL: 77
 PMT: 9.4
 NORM PMT: -0.6
 AZERO: 7.7
 HVPS: 634
 RCELL TEMP: 50.1
 BOX TEMP: 32.3
 PMT TEMP: 6.8
 IZS TEMP: 50.0
 MOLY TEMP: 313.9
 RCEL: 6.9
 SAMP: 26.7
 Internal Span: 302.7/4.8/297.4

Calibrator Flow Targets:

Make & Model: Envirotronics 6100
 Serial #: 4760
 Cal Gas Cylinder I.D. #: LL42475
 NO Cylinder Conc. (ppm): 48.5
 NOx Cylinder Conc. (ppm): 48.5

point	diluent (cc/min)	cal gas (cc/min)	O ₃ setting (v or ppb)	total (cc/min)
zero	4995	0	0	4995
high	4916	78	430.00	4994
mid	4957	38	240.00	4995
low	4975	19	80.00	4994

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	4994	0.0	4994	0	0	0.0	1.0	NA	NA
adjusted zero	4994	0.0	4994	0	0	0.0	0.0	NA	NA
as found high	4915	80.20	4995	778.7	778.7	754	762	1.033	1.022
adjusted high	4915	80.20	4995	778.7	778.7	779	779	1.000	1.000
mid	4956	39.06	4995	379.3	379.3	379	379	1.001	1.001
low	4976	19.53	4996	189.6	189.6	189	189	1.003	1.003
calibrator zero	4994	0.00	4994	0	0	0.0	-1.0	NA	NA
Average C.F.=								1.001	1.001

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ increase	NO ₂ C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4915	80.2	4995	0.0	783.0	781.0	-2.0	0.0	0.0	
as found NO ₂	4915	80.21	4995	430.0	279.0	779.0	500.0	504.0	502.0	1.004
adjusted NO ₂	4915	80.21	4995	430.0	279.0	779.0	500.0	504.0	502.0	1.004
gpt mid	4915	80.21	4995	240.0	502.0	781.0	278.0	281.0	280.0	1.004
gpt low	4915	80.21	4995	80.0	694.0	781.0	87.0	89.0	89.0	1.000
Average NO ₂ C.F.=										1.003

Linear Regression/Calibration Results:

	NO	NOx	NO ₂	LIMITS
Correlation Coefficient =	1.000	1.000	1.000	> or = 0.995
Slope =	1.001	1.001	0.996	0.85-1.15
b (Intercept as % of full scale)=	-0.03%	-0.03%	0.02%	± 3% F.S.
% change in C.F. from last cal=	-3.18%	-2.09%	0.10%	+/-15%
NO2 converter efficiency			99.7%	>85%

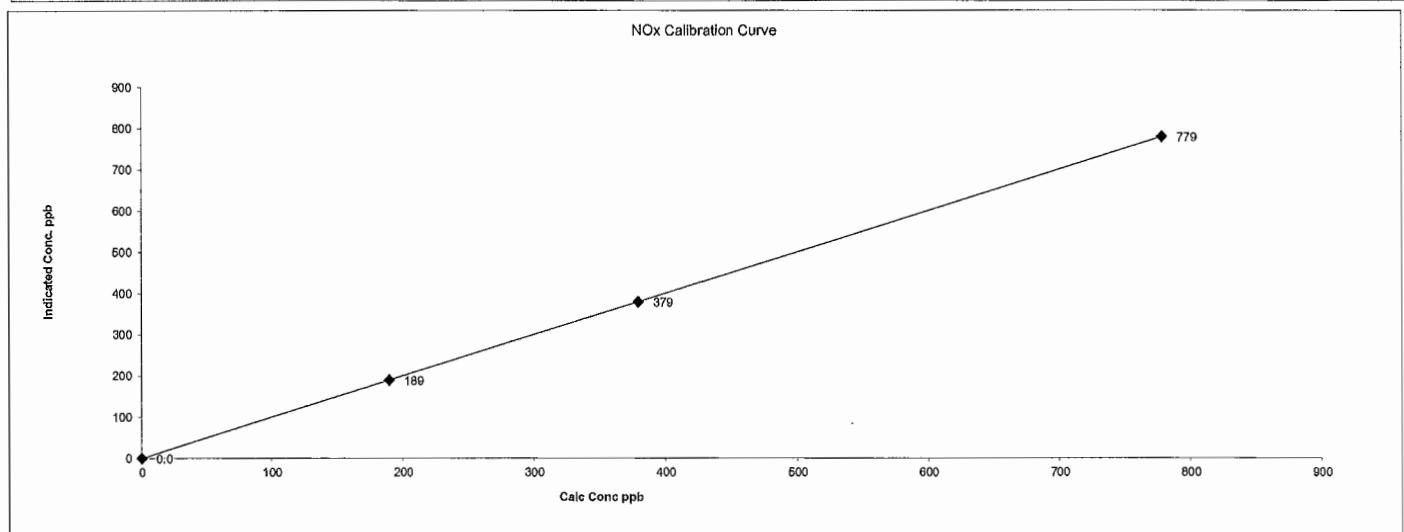
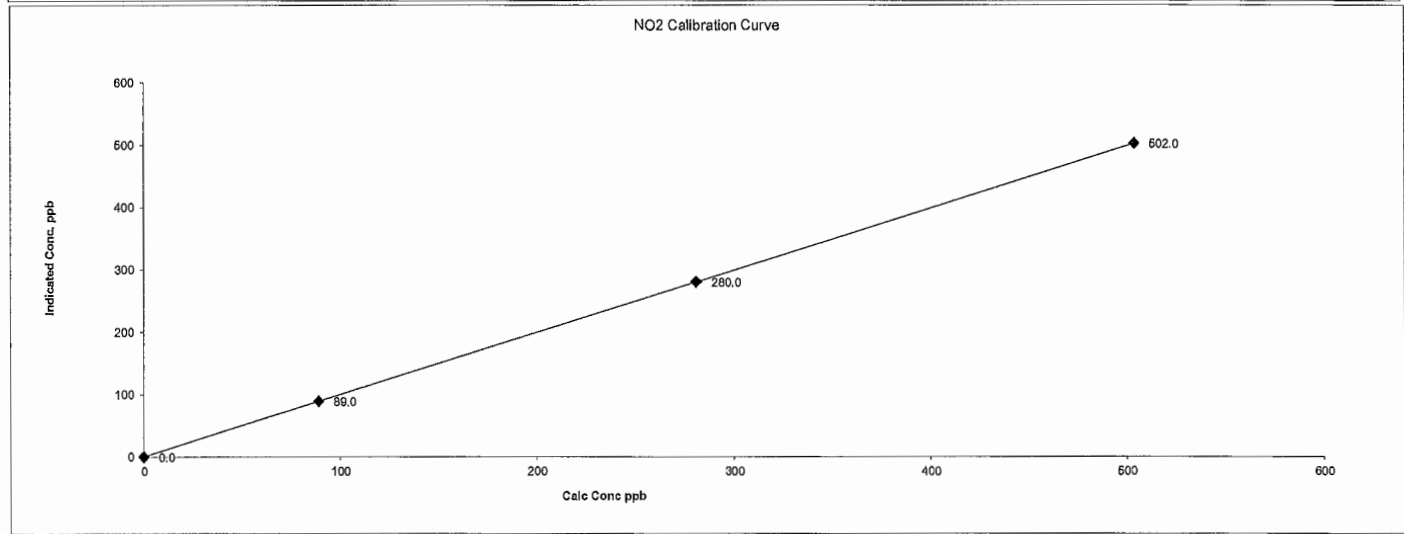
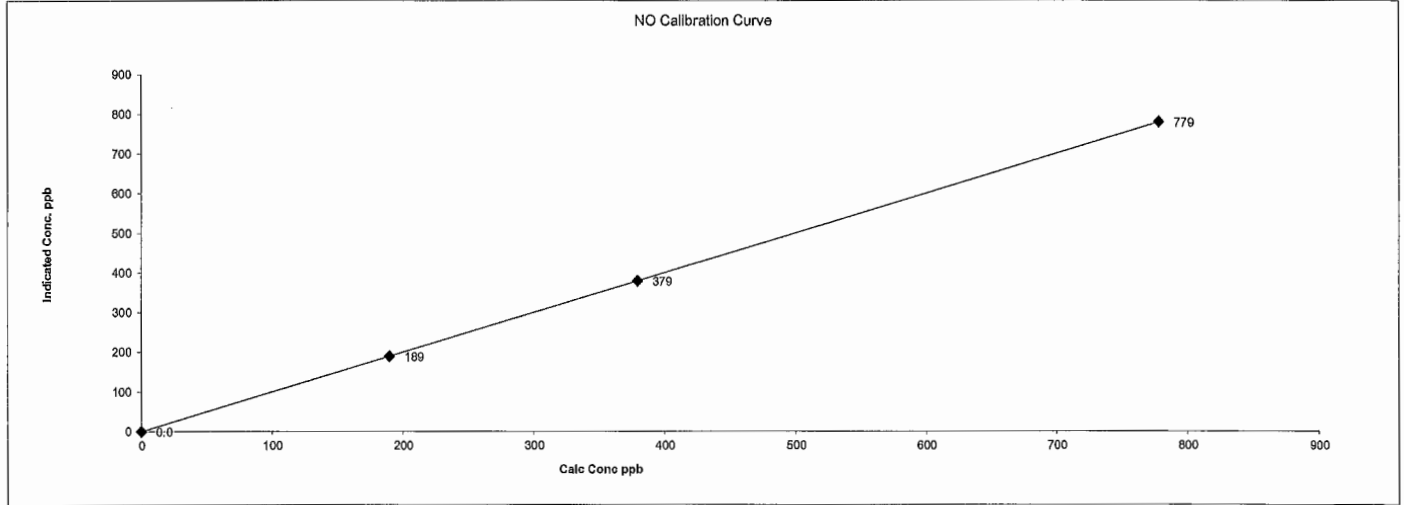
Comments:

Sample filter changed.
 No NO2 adjustment made. Values copied from as found NO2 for calculation only.

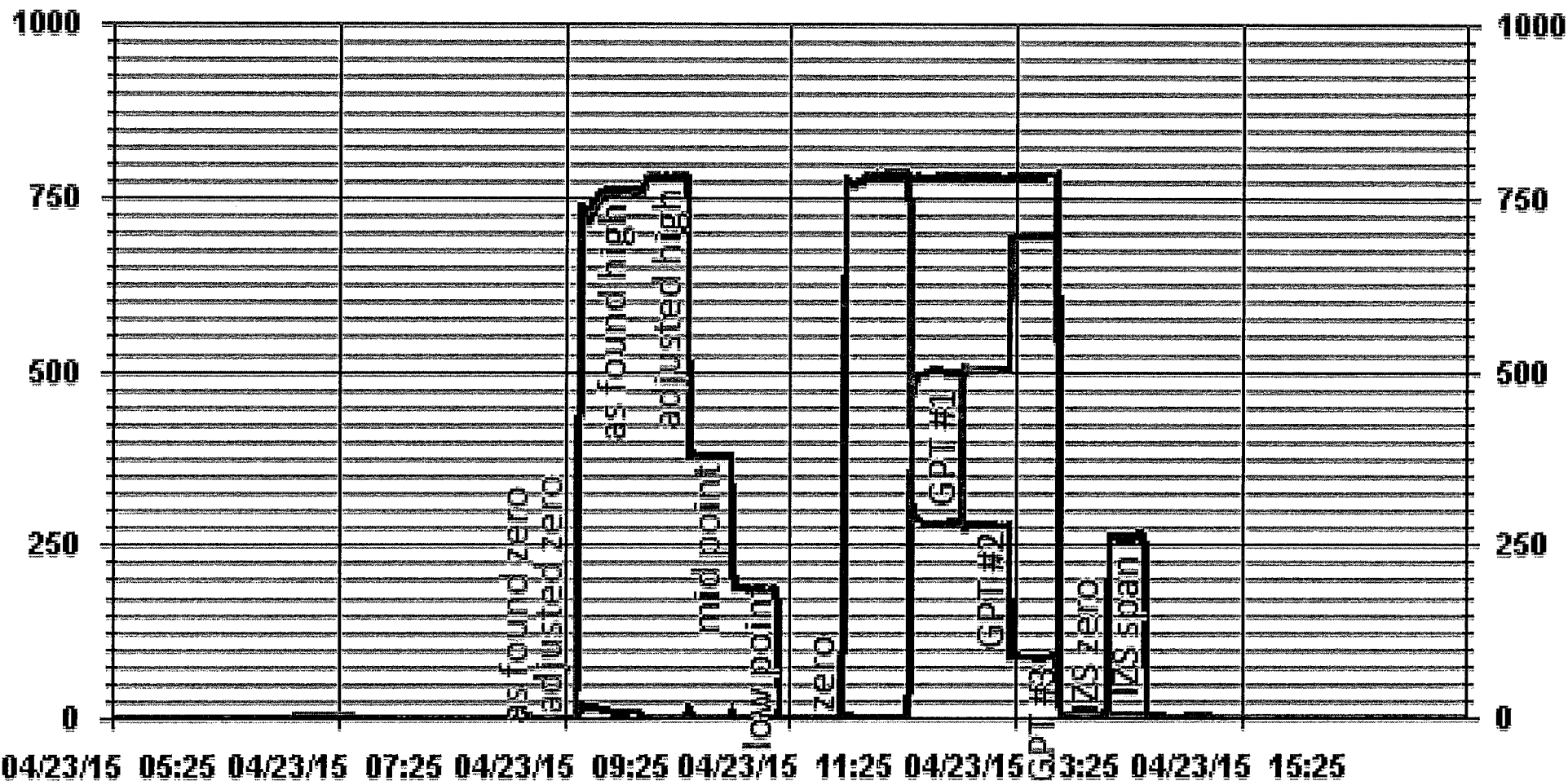
Date: 23-Apr-15
Company: LICA
Station Name/Location: Maskwa
Performed by: Alex Yakupov

Start Time (mst): 8:13
End Time (mst): 14:38
Calibration Purpose: Monthly Calibration
Cal Gas Expiry Date: 12-Aug-17

API 200E NOx Analyzer Calibration



01 Minute Averages



— LICA30 NOX_ PPB — LICA30 NO_ PPB — LICA30 NO2_ PPB

WIND SYSTEM

Met One Instruments
Sonic Sensor Test Data
50.5-6100

Model: 50.5H Tech: Dan Fusch Date: 3/4/2014
 Serial # H10703 Customer: Maxxam Analytics
 P.O. No.: 35-54786 Sensor Output Voltage: 1 vdc
 Sales Order Number: 101530 As Found: _____ As Left: X

Test 1: Actual Wind Tunnel Speed 2.22 m/s

WD Setting (Degree)	WD Output Voltage	WD Indication	WD Error +/- 3 deg	WS Output Voltage	WS Indication	WS Error +/- .20 m/s
30	0.087	31.3	1.3	0.044	2.20	-0.02
60	0.172	61.9	1.9	0.043	2.15	-0.07
120	0.337	121.3	1.3	0.045	2.25	0.03
150	0.418	150.5	0.5	0.045	2.25	0.03
210	0.586	211.0	1.0	0.044	2.20	-0.02
240	0.670	241.2	1.2	0.045	2.25	0.03
300	0.837	301.3	1.3	0.045	2.25	0.03
330	0.922	331.9	1.9	0.045	2.25	0.03

Test 2: Actual Wind Tunnel Speed 11.19 m/s

WD Setting (Degree)	WD Output Voltage	WD Indication	WD Error +/- 3 deg	WS Output Voltage	WS Indication	WS Error +/- .24 m/s
30	0.085	30.6	0.6	0.224	11.20	0.01
60	0.169	60.8	0.8	0.225	11.25	0.06
120	0.334	120.2	0.2	0.226	11.30	0.11
150	0.422	151.9	1.9	0.225	11.25	0.06
210	0.586	211.0	1.0	0.223	11.15	-0.04
240	0.672	241.9	1.9	0.225	11.25	0.06
300	0.837	301.3	1.3	0.228	11.40	0.21
330	0.922	331.9	1.9	0.227	11.35	0.16

CALIBRATORS

Company: Maxxam

Operator: Limin Li

Calibrator:		Flow Measurement Device:	
Make/Model	<u>API 700</u>	Make/Model	<u>N/A</u>
Serial Number	<u>830</u>	Serial Number	<u>N/A</u>
Last Verification Date	<u>Oct 2013</u>	Temperature (°C)	<u>N/A</u>
SO ₂ Cylinder Conc.	<u>50.3</u>	Barometric Pressure	<u>N/A</u>
SO ₂ Cylinder S/N	<u>LL42475</u>		

Flow Measurements

Pt. No. 1 79.5 Pt. No. 2 39.8 Pt. No. 3 19.9

Calibrator Flow (sccm)	Calculated Concentration (ppm)	Indicated Concentration (ppm)	% Difference	
			vs Audit Gas	% Diff. Limit
Zero Air	0.000	0.000		
4918	0.800	0.798	0%	± 10%
4960	0.400	0.398	-1%	± 10%
4977	0.200	0.200	0%	± 10%
Absolute Average Percent Difference			0%	± 10%

LINEAR REGRESSION ANALYSIS
y=mx+b (where x=calculated concentration, y=indicated concentration)

SO ₂		LIMITS	
Correlation=	1.0000	≥	0.995
m (Slope)=	0.9971		0.90-1.10
b (Intercept % of FS)=	0.0000	±	3% F.S.

AENV Standards		SO ₂ Analyzer	
Audit Calibrator		Make/Model	<u>Teco 43C</u>
Make/Model	<u>R&R MFC 201</u>	Serial/AMU Number	<u>AMU 1623</u>
Serial/AMU Number	<u>AMU 1690</u>	Last Calibration Date	<u>Dec 15/14</u>
		Full Scale (ppm)	<u>1.0</u>

COMMENTS: H2S gas was slow to move through the calibrator. Check for contamination inside calibrator. SO2 moves through quickly.

Auditor: Al Clark Date: December 16, 2014

Operator Signature: _____ Location: McIntyre Center Edmonton

Company Maxxam Operator: Limin Li

Calibrator:		Flow Measurement Device:	
Make/Model	<u>Envtronics 6100</u>	Make/Model	<u>N/A</u>
Serial Number	<u>4760</u>	Serial Number	<u>N/A</u>
Last Verification Date	<u>December 2013</u>	Temperature (°C)	<u>N/A</u>
NO Cylinder S/N	<u>LL42475</u>	Barometric Pressure	<u>N/A</u>
NO/NOX Concentration	<u>48.5/48.5</u>		

Dilution Flow (sccm)			
Pt. #1	<u>5000</u>	Pt. #2	<u>5000</u>
Pt. #3	<u>5000</u>		
Gas Flow (sccm)			
Pt. #1	<u>80</u>	Pt. #2	<u>40</u>
Pt. #3	<u>20</u>	Gas flows not available from display.	

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
4980	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
4993	0.0	0.799	0.799	0.840	-0.001	0.839	5%	5%
4994	0.0	0.399	0.399	0.420	-0.001	0.419	5%	5%
4991	0.0	0.200	0.200	0.211	0.000	0.211	5%	5%
Absolute Average Percent Difference							5%	5%

LINEAR REGRESSION ANALYSIS *y=mx+b (where x=calculated concentration, y=indicated concentration)*

NO		LIMITS		NO _x	
Correlation=	1.0000	≥ 0.990		Correlation=	1.0000
m (Slope)=	1.0511	0.90-1.10		m (Slope)=	1.0496
b (Intercept % of FS)=	0.0400	± 3% F.S.		b (Intercept % of FS)=	0.0400


Flow	O ₃ Conc	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
4993	0.000	0.000	0.823	-0.001	0.822	NO ₂	% Diff. Limit
4993	0.480	0.530	0.293	0.530	0.823	0	± 10%
4993	0.240	0.269	0.554	0.269	0.823	0	± 10%
4993	0.090	0.096	0.727	0.097	0.824	0	± 10%
Absolute Average Percent Difference						0	± 10%

LINEAR REGRESSION ANALYSIS *y=mx+b (where x=calculated concentration, y=indicated concentration)*

NO ₂		LIMITS	
Correlation=	1.0000	≥ 0.995	
m (Slope)=	1.0006	0.90-1.10	
b (Intercept % of FS)=	-0.0132	± 3% F.S.	

AENV Standards Audit Calibrator		NO _x Analyzer	
Make/Model	<u>Teco 1461</u>	Make/Model	<u>Teco 42i</u>
Serial/AMU Number	<u>AMU 1809</u>	Serial/AMU Number	<u>AMU 1868</u>
		Last Calibration Date	<u>December 15, 2014</u>
		Full Scale (ppm)	<u>1.0</u>

COMMENTS: _____

Auditor: Al Clark
Operator Signature: 

Date: December 17, 2014
Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2014-257CGA

Company: Maxxam Operator's Name: Limin Li
Cylinder #: LL42475 Concentration PPM: 50.3 Tolerance(%): 1 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: December 15, 2014
Gas Type: SO2 Conc. 98.57
Cylinder Number: CAL016720

Flow Measurement Device:

Make/Model: Bios DC2
Serial Number: AMU 1659
Temp. °C: 22.5 C
B.P.: 701 mmhg

Reference Analyzer:

Make/Model: Teco 43C Serial/AMU Number: 1623
Instrument Settings: Zero: 7.7 Span: 1.018 Range: 1.0
Last Calibration: Date: Dec15/14 C.F.: 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.000	0.01019	98.157	49.3
5114	52.1	0.502	0.01019	98.157	49.3
5093	22.3	0.214	0.00438	228.386	48.9
5073	10.9	0.105	0.00215	465.413	48.9
Average Cylinder Concentration:					49.0

Previous Stated Concentration PPM: 50.3

Percent variance from Stated: 2.6

Meets Manufacturer Tolerance. Use manufacturers stated concentration COMMENTS: _____
 <=5% Outside Manufacturer Tolerance. Use manufacturers concentration _____
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder _____

Auditor: Al Clark
Operator Signature: *Al Clark*

Date: December 16, 2014
Location: McIntyre Center Edmonton



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2014-251CGA

Company: Maxxam Operator's Name: Limin Li
Cylinder #: LL36837 Concentration PPM: 10.0 Tolerance(%): 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: December 15, 2014
Gas Type: H2S Conc. 20.43
Cylinder Number: CAL015106

Flow Measurement Device:

Make/Model: Bios DC2
Serial Number: AMU 1659
Temp. °C: 23.0 C
B.P.: 702 mmhg

Reference Analyzer:

Make/Model: Teco 45C Serial/AMU Number: 1624
Instrument Settings: Zero: 6.4 Span: 1.160 Range: 0.1
Last Calibration: Date: Dec15/14 C.F.: 1.000 Done By: Al Clark

Calibrator Flows (scm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.0000	0.0000	132.442	10.0
5099	38.5	0.0754	0.00755	132.442	10.0
5092	18.0	0.0349	0.00353	282.889	9.9
5066	9.2	0.0178	0.00182	550.652	9.8
Average Cylinder Concentration:					9.9

Previous Stated Concentration PPM: 10.0

Percent variance from Stated: 1.1

Meets Manufacturer Tolerance. Use manufacturers stated concentration COMMENTS: _____
 <=5% Outside Manufacturer Tolerance. Use manufacturers concentration
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder

Auditor: Al Clark
Operator Signature: *Al Clark*

Date: December 16, 2014
Location: McIntyre Center Edmonton



Praxair Canada, Inc.
 9901 64th Street
 Calgary, AB T2B 2K9
 Tel: 780-445-0775
 Fax: 780-445-5302

03/27/2014

MAXXAM ANALYTICALS INC/INA
 8372, 49TH ST
 EDMONTON, AB T6B 2L7

Work Order No: 20248656
 Customer Reference No:

Product Lot/Batch No: Z582-4 065 02
 Product Part No: NI-ME600P2P-AQ

CERTIFICATE OF ANALYSIS
 Primary Standard

Component	Requested Concentration	Certified Concentration	Analytical Precision	Analytical Accuracy
Methane	800.00ppm	801.40ppm	U	±1% rel
Propane	800.00ppm	802.20ppm	U	±1% rel
Nitrogen	80.00%	80.00%		

Analytical Instruments: Mettler Toledo Analytical Balance-102113 USA
 Hewlett-Packard (Agilent)-8460 GC-FID

Cylinder Size: AG
 Cylinder Pressure (PSI): 2200 psig
 Cylinder Volume: 22.0 m3
 Valve Output Connection: CGA-330
 Cylinder No(s): U031874

Filling Method: Gravimetric
 Date of Fill: 03/26/2014
 Expiration Date: 03/26/2017

Analyst: Todd Hryciw

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Item	Description	Item	Description
1	See Certificate and Certificate Analysis Report	1	See Certificate and Certificate Analysis Report
2	See Certificate and Certificate Analysis Report	2	See Certificate and Certificate Analysis Report
3	See Certificate and Certificate Analysis Report	3	See Certificate and Certificate Analysis Report
4	See Certificate and Certificate Analysis Report	4	See Certificate and Certificate Analysis Report
5	See Certificate and Certificate Analysis Report	5	See Certificate and Certificate Analysis Report
6	See Certificate and Certificate Analysis Report	6	See Certificate and Certificate Analysis Report
7	See Certificate and Certificate Analysis Report	7	See Certificate and Certificate Analysis Report
8	See Certificate and Certificate Analysis Report	8	See Certificate and Certificate Analysis Report

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Calibration Gas Audit

NO Cylinder Gas

File No. 2014-252CGA

Company: Maxxam Operators name: Limin Li
Cylinder #: LL42475 Conc (PPM) 48.5/48.5 Tolerance (%) 1 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model Teco 146i
Serial Number AMU 1809
Last Verification Date December 15, 2014
Gas Type NO Conc. 48.79
Cylinder Number CAL017892

Flow Measurement Device:

Make/Model Bios DC2
Serial Number AMU 1659
Temp. °C 23.0 C
B.P. 702 mmhg

Reference Analyzer:

Make/Model Teco 42i Serial/AMU Number: 1868
Instrument Settings Zero: 4.3 Span: 1.017 Range: 1.0
Last Calibration: Date: Dec15/14 C.F. 1.000 Done By: Al Clark

Calibrator Flows (scm)		Indicated Conc. (ppm)		Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration	
Dilution	Gas	NO	NOX			NO	NOX
5000	0.0	0.000	0.000	0.01662	60.181	50.0	50.1
4983	82.8	0.830	0.832	0.01662	60.181	50.0	50.1
4998	40.9	0.414	0.415	0.00818	122.200	50.6	50.7
4981	20.3	0.206	0.206	0.00408	245.369	50.5	50.5
Average Cylinder Concentration:						50.4	50.4

<u>NO</u>	<u>NOx</u>
Previous Stated Concentration PPM: <u>48.5</u>	<u>48.5</u>
Percent variance from Stated: <u>3.8</u>	<u>4.0</u>

Cylinder gas tolerances based on NO only

Meets Manufacturer Tolerance. Use manufacturers stated concentration COMMENTS: _____
 <=5% Outside Manufacturer Tolerance. Use manufacturers concentration Contains 50.3 ppm of SO2.
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder

Auditor: Al Clark Date: December 16, 2014
Operator Signature: [Signature] Location: McIntyre Center Edmonton

APPENDIX III
CHAIN OF CUSTODY



Maxxam Analytics - Air Services Group

Project Chain of Custody

Client: <u>Lakeland Industry & Community Association</u>	Project #: <u>2833-2015-04-30-C</u>
Site: <u>Maskwa Site</u>	Contact: <u>Mike Bisaga</u>

QA Check Complete	<u><i>Wachm</i></u>	Date	<u>01-May-2015</u>
QA Check Review	<u><i>Wachm</i></u>	Date	<u>04-May-2015</u>
Report Complete	<u><i>Wachm</i></u>	Date	<u>04-May-2015</u>
Report Reviewed	<u><i>[Signature]</i></u>	Date	<u>12-May-15</u>
Report Shipped	<u></u>	Date	<u></u>

Notes



maxxam.ca

MAXXAM ANALYTICS
#1 2080 39 Ave. NE, Calgary
AB T2E 6P7

Toll Free 800-386-7247
Fax 403-219-3673

AMBIENT AIR MONITORING MONTHLY DATA REPORT
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
ST. LINA SITE

JOB #:2833-2015-04-31- C

APRIL 2015

Prepared for:

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
BOX 8237, 5107W - 50 STREET
BONNYVILLE, ALBERTA
T9N 2J5

Attention: MIKE BISAGA

DATE: **May 8, 2015**

Prepared by:

Wunmi Adekanmbi, M.Sc.

Project Manager Assistant, Source Testing, Maxxam Analytics

Reviewed by:

Lily Lin, B.Sc.

Senior Project Manager, Air Services, Maxxam Analytics

SUMMARY

In APRIL 2015, the Air Services Group of Maxxam Analytics conducted an ambient air monitoring program on the St. Lina Site at Lakeland Industry & Community Association, near Bonnyville, Alberta. Sampling was carried out to determine the concentrations of non-compliance parameters as requested by the project coordinator.

All data collected this month were within the objectives outlined in the AMD1989 and AMD2006.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

All Gas Parameters: Hourly maximum data collected on April 26 at hour 4 was invalidated as the analyzers were recovering from a small power outage.

THC: 23 hours of data were discarded due to the flaming out of the analyzer.

PM2.5: 4 hours of data were invalidated as the data were below -3 ug/m^3 this month.

The summary of results is presented on the following pages.

Any deviations or modifications made to the sampling or analytical methods are outlined in Section 1.0 Discussion. On this basis, Maxxam is issuing this completed report to Lakeland Industry & Community Association, St. Lina Site.

Should you have any questions concerning the results or if we can be of further assistance, please contact us at 403-219-3677 or toll-free at 1-800-386-7247.

Monthly Continuous Data Summary

Lakeland Industry & Community Association						MAXIMUM VALUES							OPERATIONAL TIME (%)
St. Lina Site						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO2 (PPB)	172	48	0	0	0	2	11	VAR	VAR	VAR	0.6	11	100.0
H2S (PPB)	10	3	0	0	0	1	VAR	VAR	VAR	VAR	0.3	22	100.0
THC (PPM)	-	-	-	-	2.0	3.3	5	9	9.7	NE	2.2	5, 6	96.3
NO2 (PPB)	159	-	0	-	1.2	9.7	5	9	9.7	NE	3.1	26	99.4
NO (PPB)	-	-	-	-	0.1	6.6	5	9	9.7	NE	0.5	5	99.4
NOX (PPB)	-	-	-	-	1.3	16.3	5	9	9.7	NE	3.3	26	99.4
O3 (PPB)	82	-	0	-	39	54	VAR	VAR	VAR	VAR	46.9	28	99.4
PM2.5 (UG/M3)	-	30	-	0	6.7	64.0	14	15	8.2	E	10.0	10	99.3
RELATIVE HUMIDITY (%)	-	-	-	-	50.1	90	VAR	VAR	VAR	VAR	83.1	1	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	928	939	18, 19	VAR	VAR	VAR	936	19	100.0
AMBIENT TEMPERATURE (DEG C)	-	-	-	-	5.6	23.7	28	16	18.2	S	16.6	28	100.0
PRECIPITATION (MM)	-	-	-	-	0.0	3.7	14	14	7.2	SSE	0.4	14	100.0
VECTOR WS (KPH)	-	-	-	-	12.4	31.4	30	16	-	WSW	20.5	12	100.0
VECTOR WD (DEG)	-	-	-	-	WSW	-	-	-	-	-	-	-	100.0

NA-NOT AVAILABLE VAR-VARIOUS

Exceedence Summary Report

SO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

SO₂ 24- Hour Exceedences

No Exceedences Recorded During the Month

H₂S 1- Hour Exceedences

No Exceedences Recorded During the Month

H₂S 24- Hour Exceedences

No Exceedences Recorded During the Month

NO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

PM_{2.5} 24- Hour Exceedences

No Exceedences Recorded During the Month

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1.0 Discussion

This monthly report consists of data for parameters SO₂, H₂S, THC, NO_x, NO, NO₂, O₃, PM_{2.5}, WS, WD, RH, BP, Precipitation and Temperature.

Sample filters for all continuous air monitors are changed before the calibration is started. The sample manifold is cleaned during the site visit on a monthly basis.

Control checks, consisting of zero and span of the analyzer are conducted on a daily basis on all continuous air monitors. In place of the air sample, zero air (from scrubbed air or gas cylinder) is used for zero checks and a known concentration of the pollutant being analyzed is used for span checks. These checks are controlled by automatic timers and valves. The total zero span cycle is completed within an hour, the commencement of the zero span cycle is at the beginning of the hour.

Multipoint calibration is done a minimum of once a month for each continuous air monitor. In addition calibration is required under the following conditions: 1) within three days after the initial start-up and stabilization of a newly installed instrument, 2) prior to shut-down or moving of an instrument which has been working to specification, and 3) when major repair has been done on the instrument.

The AMD requires each instrument and accompanying data recording system is to be operational 90% of the time (minimum), on a monthly basis.

All sampling, analysis, and QA/QC for this project was performed by Maxxam Analytics and complies with the Alberta Air Monitoring Directive.

Hourly/minute data have been reviewed based on daily zero/span results and multi-points calibration results. Data may be considered as invalid if a zero-corrected span check in excess of +/- 10% of the span concentration (established by the previous multi-point calibration) is encountered and/or significant differences in the calibration factor (greater than 15%).

Hourly data is corrected using daily zero information.

SULPHUR DIOXIDE (SO₂)

The analyzer was working well throughout the month. The routine monthly calibration was performed on April 13. Hourly maximum data collected on April 26 at hour 4 was invalidated as the analyzer was recovering from a small power outage.

HYDROGEN SULPHIDE (H₂S)

The analyzer was working well throughout the month. The routine monthly calibration was performed on April 14. Hourly maximum data collected on April 26 at hour 4 was invalidated as the analyzer was recovering from a small power outage.

TOTAL HYDROCARBONS (THC)

The routine monthly calibration was performed on April 13. The analyzer flamed out on April 21. It was found that the pressure switch of the Zero Air Generator had failed to re-connect with the compressor-pump circuit. Troubleshooting was performed on April 22. The switch was disconnected, cleaned and re-connected. After the Zero Air Generator was reassembled, the switch was tested during six cycles and functionality was restored. 23 hours of data collected between April 21 hour 11 to April 22 hour 9 were discarded due to this event. A small power outage occurred on April 26 at hour 4. The analyzer started reading low after the power outage. It was discovered that the pressure valve of the Zero Air Generator had remained open after the power outage. Troubleshooting was performed on April 27. The valve was closed and functionality was restored. Data collected on April 26 at hour 4 to hour 5 and hourly maximum data collected at hour 4 to hour 6 were invalidated as the analyzer was recovering from the small power outage.

NITROGEN DIOXIDE (NO₂)

The analyzer was working well throughout the month. The routine monthly calibration was performed on April 13. A GPT calibration was performed on April 14 to obtain points for Ozone calibration. Hourly maximum data collected on April 26 at hour 4 was invalidated as the analyzer was recovering from a small power outage.

OZONE (O₃)

The analyzer was working well throughout the month. The routine monthly calibration was performed on April 15. After the calibration, Maxxam Field Technicians performed a check on the calibrator. This check did not affect the analyzer's functionality. The IZS check was initiated after the calibrator check. The analyzer was put into Maintenance mode on April 13 at hour 14 during SO₂ calibration, as both analyzers are on the same relay. Hourly maximum data collected on April 26 at hour 4 was invalidated as the analyzer was recovering from a small power outage.

PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM_{2.5})

Two Teom audits were performed this month: one was completed on April 10, and the other audit was performed on April 27. Both the inlet filter and the FDMS filter were replaced during the audits. A fan for the dryer's compartment was installed on April 27. Data collected on April 26 at hour 4 was invalidated as the unit was recovering from the small power outage.

Data was corrected using Alberta air quality guideline. If the data was between 0 to -3 ug/m³, the data was corrected to 0 ug/m³. If the data was below -3ug/m³, the data was invalidated. 4 hours of data were invalidated as the data were below -3 ug/m³ this month.

WIND SPEED (WS), WIND DIRECTION (WD) and STANDARD DEVIATION WIND DIRECTION (STDWD)

The wind system is reported as vector wind speed and vector wind direction. The wind direction data included in this report represents where the wind was coming from.

The wind system was working well throughout the month. Hourly maximum data collected on April 26 at hour 4 was invalidated as the analyzer was recovering from a small power outage.

RELATIVE HUMIDITY (RH)

The humidity sensor was working well throughout the month.

BAROMETRIC PRESSURE (BP)

The pressure sensor was working well throughout the month.

PRECIPITATION

Both the rain gauge system and heating system were working well throughout the month. A rain guage screen was installed on April 10.

AMBIENT TEMPERATURE (TPX)

The temperature sensor was working well throughout the month.

2.0 Project Personnel

Mike Bisaga was the contact for Lakeland Industry & Community Association, and the Maxxam field sampling team consisted of Alexander Yakupov and Christopher Wesson.

3.0 Plant Monthly Required AMD Summary

All data collected this month were within the objectives outlined in the AMD1989 and AMD2006.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

4.0 Calculations and Results

All calculations and reporting of results follow the method described in the Air Monitoring Directive, 1989, and 2006 Amendments to the Air Monitoring Directive, 1989 (AMD 2006).

5.0 Methods and Procedures

The following methods and procedures were used to complete the test program:

- Maxxam AIR SOP-00209: Ambient H₂S Monitoring
- Maxxam AIR SOP-00211: Ambient SO₂ Monitoring
- Maxxam AIR SOP-00212: Ambient O₃ Monitoring
- Maxxam AIR SOP-00213: Ambient NO/NO₂/NO_x Monitoring
- Maxxam AIR SOP-00214: Ambient Hydrocarbon (THC) Monitoring
- Maxxam AIR SOP-00215: Teom Operation
- Maxxam AIR SOP-00242: Precipitation Collector Installation /Maintenance

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

- Sulphur Dioxide - API 100E UV Fluorescent Analyzer
- Hydrogen Sulphide - API 101E UV Fluorescent Analyzer
- Total Hydrocarbons - Thermo 51C FID Analyzer
- Oxides of Nitrogen - API 200E Chemiluminescent Analyzer
- Ozone - Thermo 49i Photometric Analyzer
- Particulate Matter (PM_{2.5}) - R&P 1405F Teom Unit
- Wind System - Met One Unit
- Relative Humidity - Met One Unit
- Barometric Pressure - Met One Unit
- Ambient Temperature - Met One Unit
- Precipitation - Met One Unit
- Datalogger - ESC 8832

APPENDIX I
CONTINUOUS MONITORING DATA RESULTS

SULPHUR DIOXIDE



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	0:00	MAX.	AVG.		
DAY 1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
DAY 2	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
DAY 3	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
DAY 4	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
DAY 5	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
DAY 6	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
DAY 7	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.0	24
DAY 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0	24
DAY 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	24
DAY 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0	24
DAY 11	1	2	2	2	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	2	0.6	24
DAY 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0	24
DAY 13	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0	0	S	0	0	0	0.0	24
DAY 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0	24
DAY 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	S	0	0	0	0	0.0	24
DAY 16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	S	0	0	0	0	0	1	0.1	24
DAY 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0	24
DAY 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0	24
DAY 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0	24
DAY 20	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0.1	24
DAY 21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0	24
DAY 22	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
DAY 23	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
DAY 24	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
DAY 25	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
DAY 26	0	0	0	0	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
DAY 27	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.0	24	
DAY 28	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
DAY 29	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
DAY 30	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	1	2	2	2	1	1	1	1	1	1	1	0	0	0	0	1	1	0	0	0	0	0	1	0	0			
HOURLY AVG	0.0	0.1	0.1	0.1	0.1	0.0	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	0.0	0.0	0.0			

STATUS FLAG CODES

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

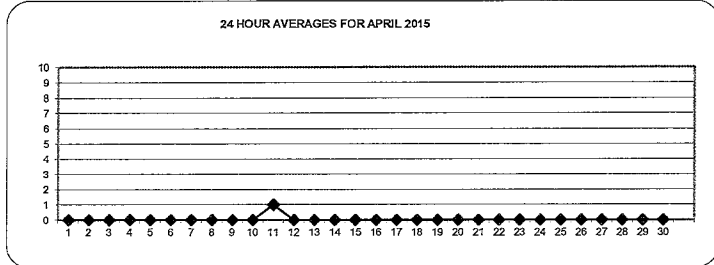
OBJECTIVE LIMIT:

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

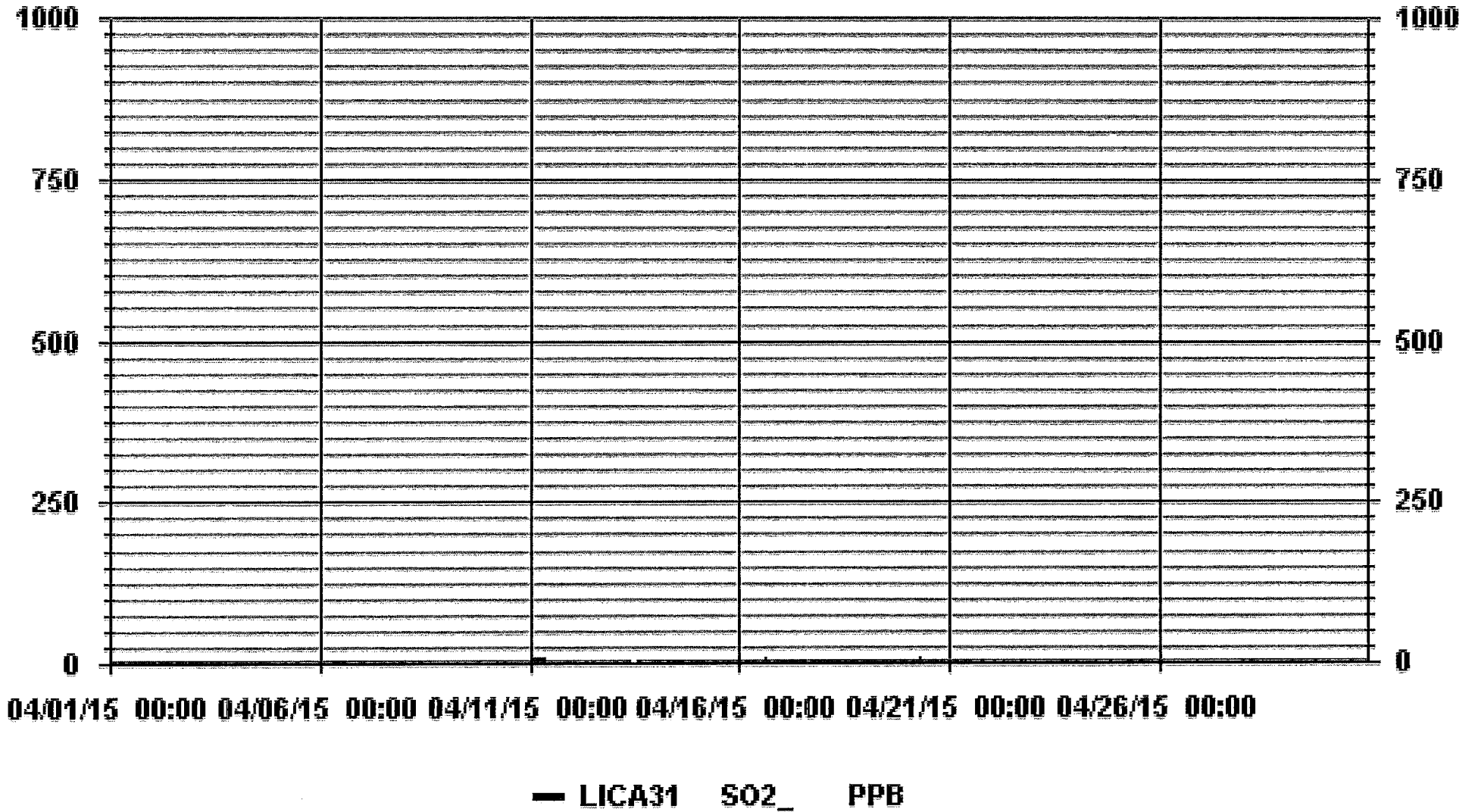
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	17
MAXIMUM 1-HR AVERAGE:	2 PPB @ HOUR(S) VAR ON DAY(S) 11
MAXIMUM 24-HR AVERAGE:	0.6 PPB VAR-VARIOUS ON DAY(S) 11
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	5 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.19
MONTHLY AVERAGE:	0 PPB

24 HOUR AVERAGES FOR APRIL 2015



01 Hour Averages





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - APRIL 2015

JOB # 2833-2015-04-31- C

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX	24-HOUR AVG.	RDGS.	
1	0	0	0	1	0	0	S	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0.3	24	
2	0	0	0	0	0	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	24	
3	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
4	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
5	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
6	0	S	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	1.0	24
7	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.0	24
8	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	S	0	1	0.2	24
9	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0	0	0	1	1	1	S	1	1	1	1	0.4	24
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1.0	24
11	2	3	3	3	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	S	0	0	0	0	3	1.4	24	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	0	1	0.2	24	
13	1	1	1	1	1	0	0	1	1	0	C	C	C	C	C	1	1	0	0	1	0	0	S	0	1	0.6	24	
14	1	1	1	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	0	1	S	0	0	1	0.7	24	
15	0	0	0	0	0	0	0	0	0	0	S	0	0	0	S	S	0	0	0	S	0	0	0	1	1	0.1	24	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	2	2	0	S	0	0	0	0	0	3	0.4	24	
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	S	1	1	0	0	1	1	0.2	24	
18	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0.1	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0	0	1	0.0	24	
20	0	0	0	1	1	1	1	2	2	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	2	1.0	24	
21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1.0	24
22	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
23	1	1	1	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	1	0.5	24	
24	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
25	0	0	0	0	0	0	0	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
26	0	0	0	1	R	2	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	23	
27	0	0	0	0	0	0	0	0	S	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	1	0.2	24	
28	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0.2	24	
29	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
30	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	2	3	3	3	2	2	2	2	2	2	2	1	1	1	1	3	2	2	1	1	1	1	1	1	1			
HOURLY AVG	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.6	0.6	0.5	0.5	0.4	0.3	0.4	0.4	0.5	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4				

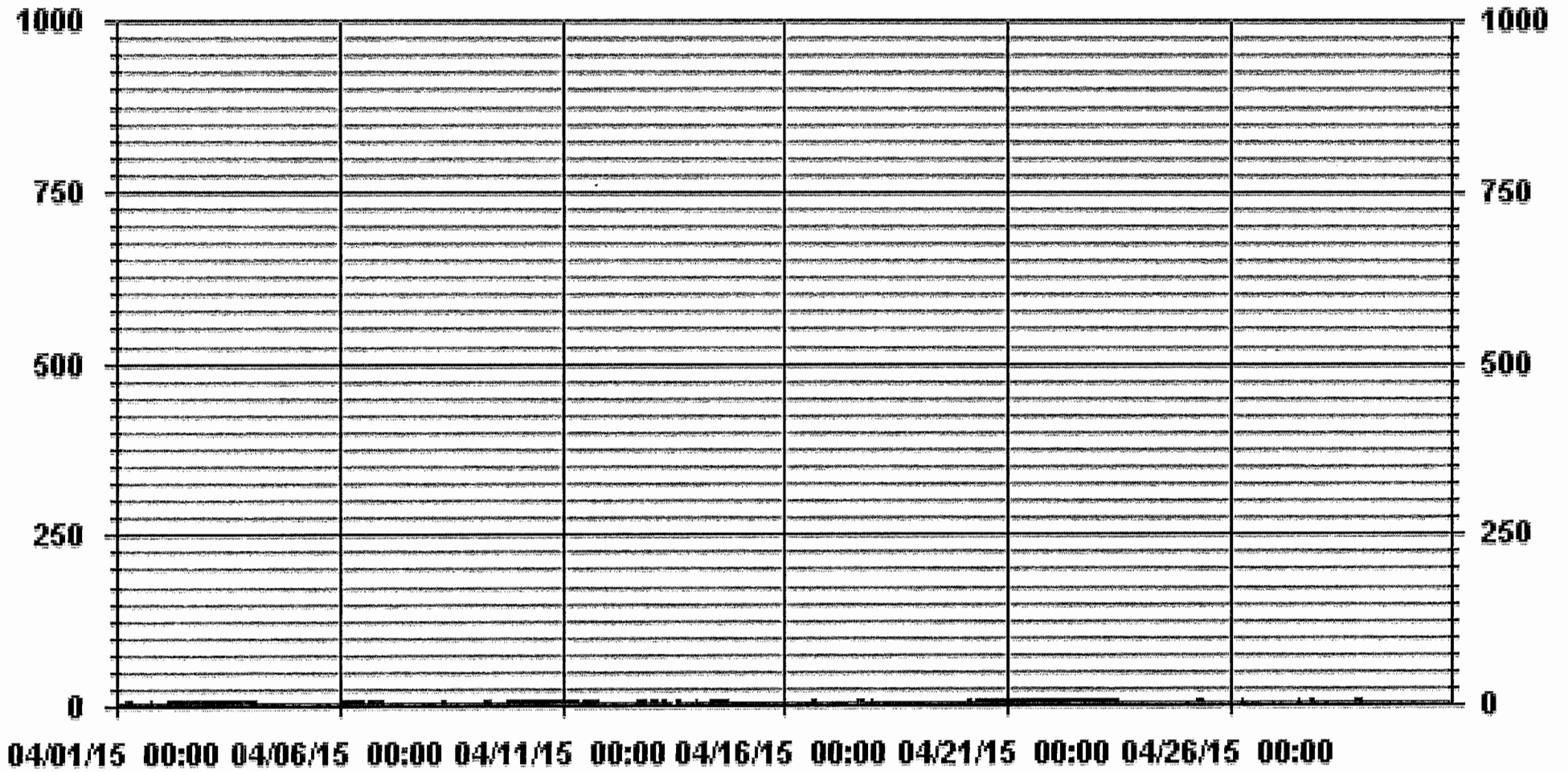
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	265
MAXIMUM INSTANTANEOUS VALUE:	3 PPB @ HOUR(S) VAR, 15 ON DAY(S) 11, 15
	VAR-VARIOUS
IZS CALIBRATION TIME:	34 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	0.57
OPERATIONAL TIME:	719 HRS

01 Hour Averages



— LICA31 SO2MAX PPB

LICA31
SO2_ / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	2.19	2.48	9.66	8.19	4.97	3.66	3.66	6.58	10.39	6.44	5.12	11.12	7.32	8.49	6.14	3.51	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.19	2.48	9.66	8.19	4.97	3.66	3.66	6.58	10.39	6.44	5.12	11.12	7.32	8.49	6.14	3.51	

Calm : .00 %

Total # Operational Hours : 683

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	15	17	66	56	34	25	25	45	71	44	35	76	50	58	42	24	683
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	15	17	66	56	34	25	25	45	71	44	35	76	50	58	42	24	

Calm : .00 %

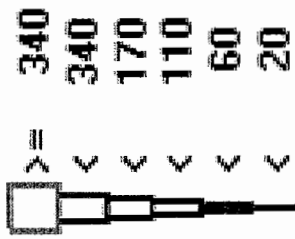
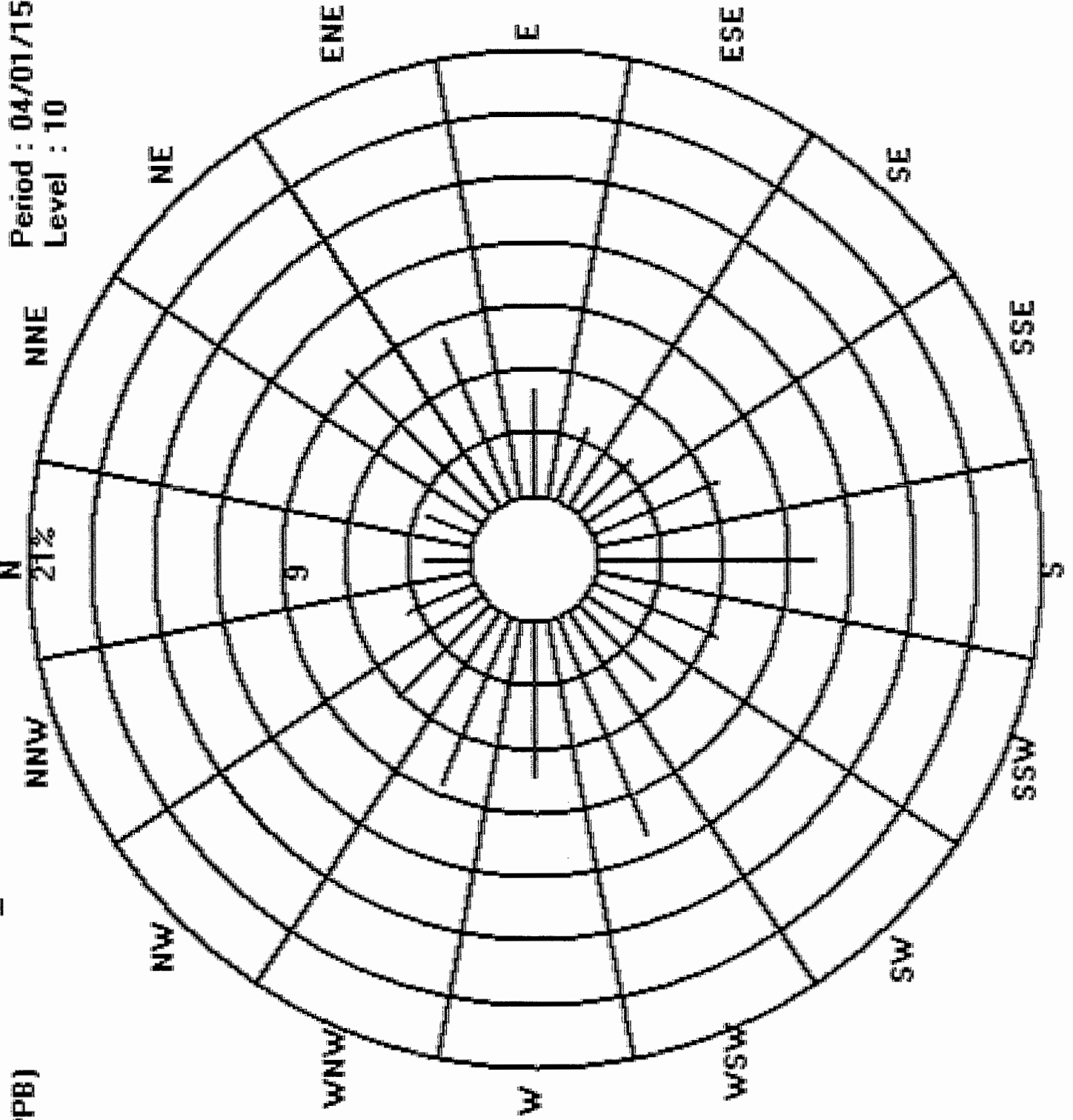
Total # Operational Hours : 683

Logger : 31 Parameter : SO2_

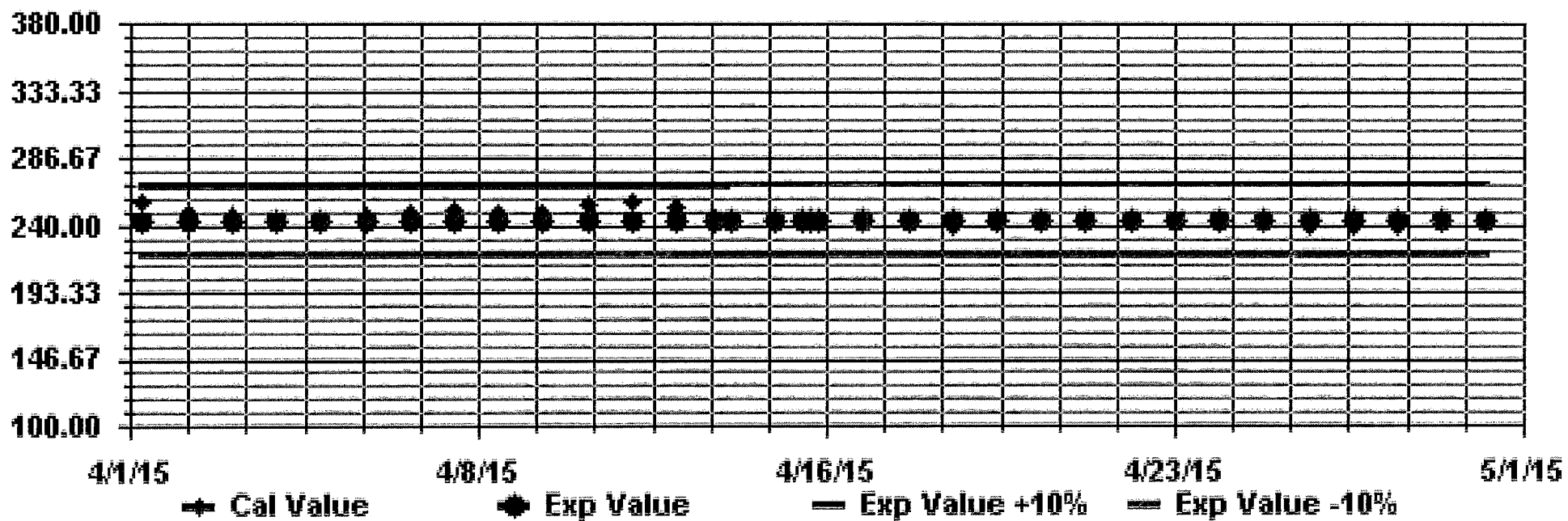
Site : LICA31

Period : 04/01/15-04/30/15

Level : 10



Calibration Graph for Site: LICA31 Parameter: SO2_ Sequence: SO2 Phase: SPAN



HYDROGEN SULPHIDE



HYDROGEN SULPHIDE (H2S) 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	0:00	DAILY MAX	24-HOUR AVG.	RDGS.
1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
2	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
3	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
4	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
5	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
6	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
7	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.0	24
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	S	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	S	0	0	0	0.0	24
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	S	0	0	0	0	1	0.2	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.0	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0	24
14	0	0	0	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0	0	0	S	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	S	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	S	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	S	0	0	0	0	0	0	0.0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	0	0	0	0	0	0	0	0	0	0.0	24
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0	24
22	0	1	0	0	0	1	1	1	1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
23	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	1	0	0	0	1	0.1	24
24	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
25	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
26	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
27	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
28	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
29	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
30	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	0	1	0	0	0	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0		
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0		

STATUS FLAG CODES

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

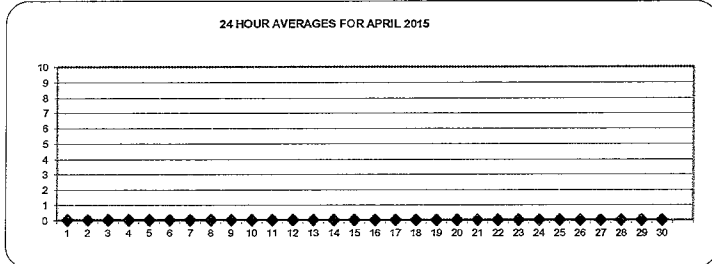
OBJECTIVE LIMIT:

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

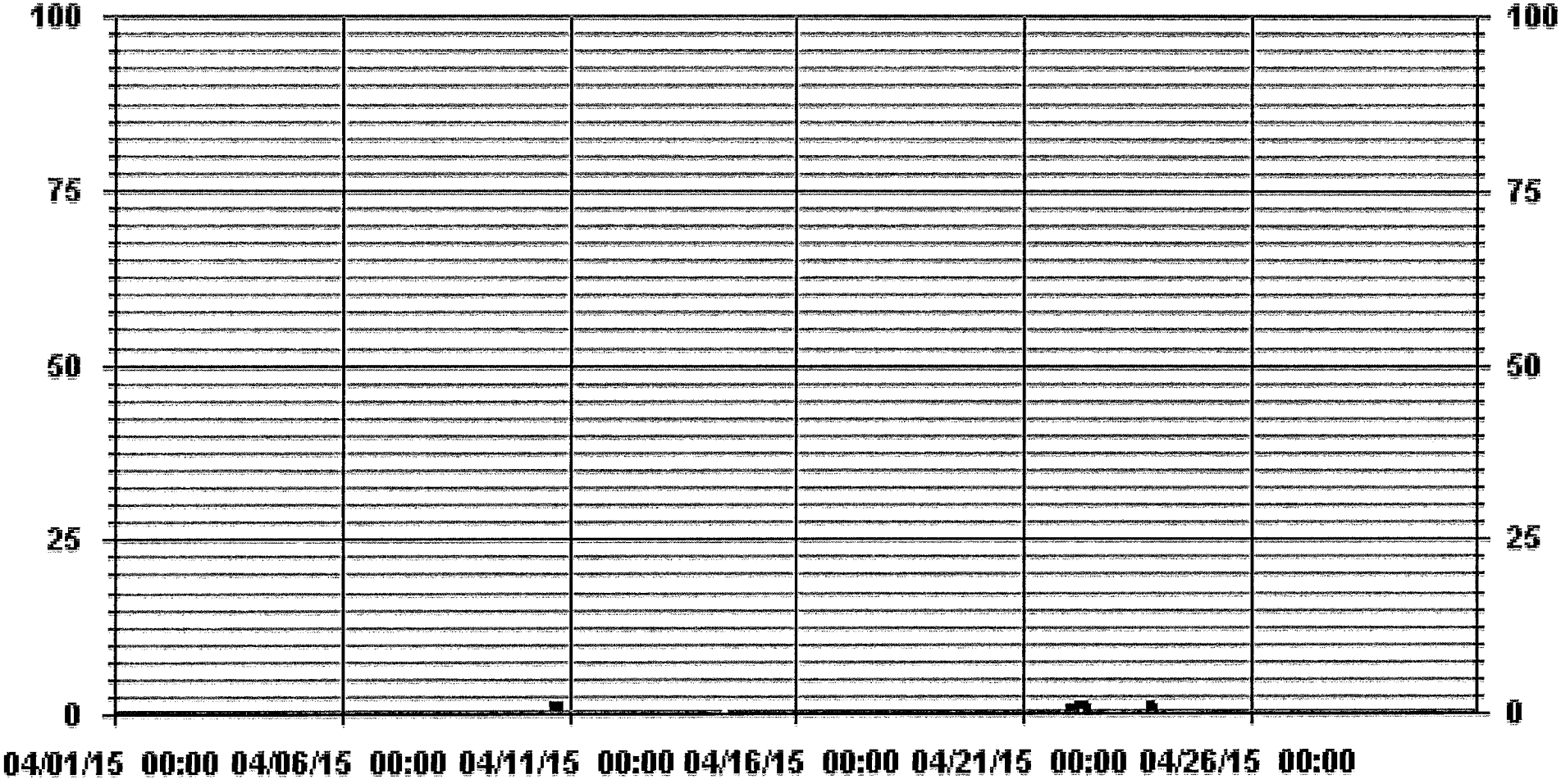
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	12		
MAXIMUM 1-HR AVERAGE:	1 PPB @ HOUR(S) VAR ON DAY(S) VAR		
MAXIMUM 24-HR AVERAGE:	0.3 PPB VAR- VARIOUS ON DAY(S) 22		
IZS CALIBRATION TIME:	31 HRS	OPERATIONAL TIME:	720 HRS
MONTHLY CALIBRATION TIME:	5 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.13	MONTHLY AVERAGE:	0 PPB

24 HOUR AVERAGES FOR APRIL 2015



01 Hour Averages



— LICA31 H2S_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - APRIL 2015

JOB # 2833-2015-04-31- C

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST

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

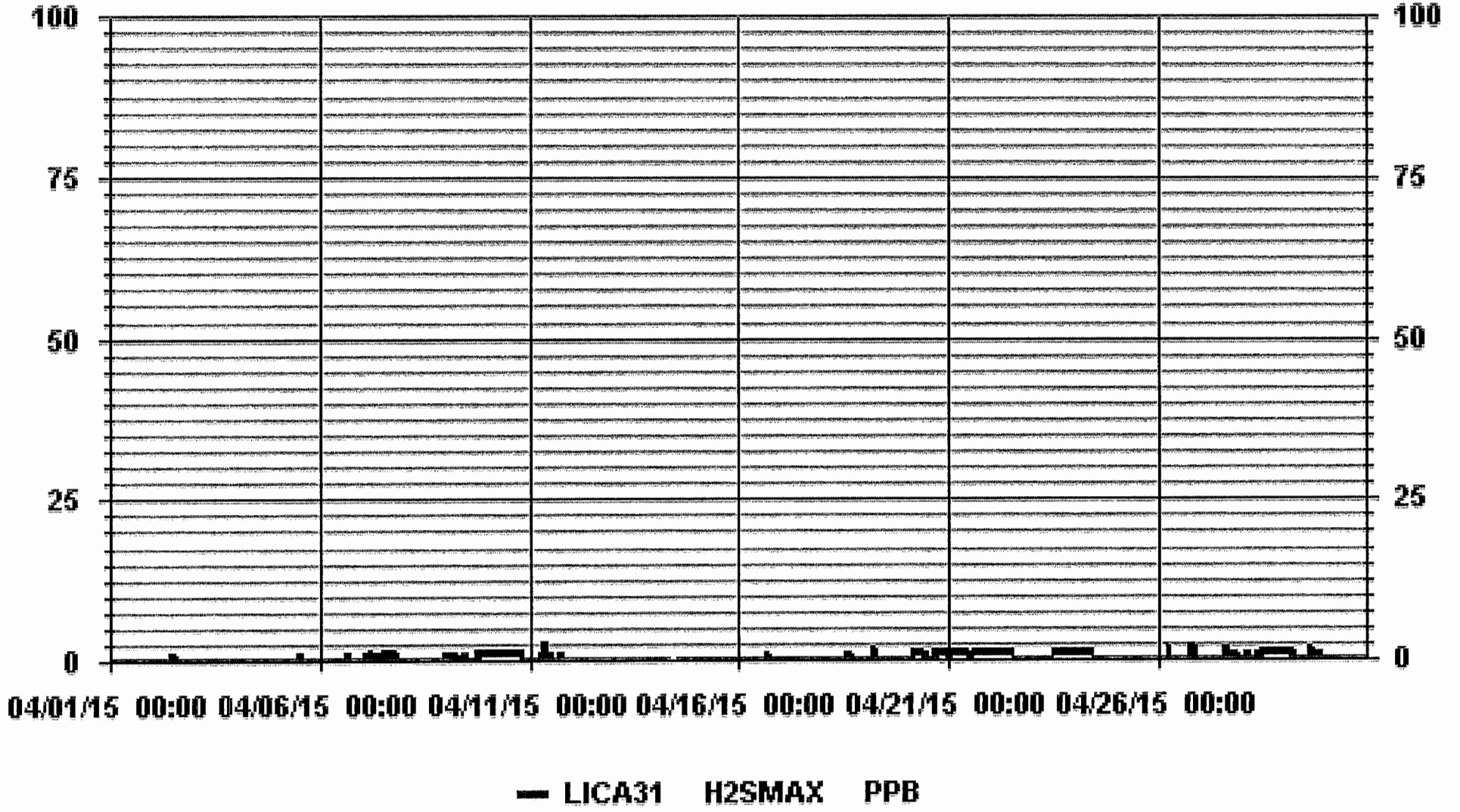
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	143
MAXIMUM INSTANTANEOUS VALUE:	3 PPB @ HOUR(S) 9 ON DAY(S) 11
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	6 HRS
OPERATIONAL TIME:	719 HRS
STANDARD DEVIATION:	0.45

01 Hour Averages



LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3	2.19	2.48	9.64	8.18	4.82	3.50	3.36	6.43	10.38	6.43	5.11	11.40	7.89	8.47	6.14	3.50	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.19	2.48	9.64	8.18	4.82	3.50	3.36	6.43	10.38	6.43	5.11	11.40	7.89	8.47	6.14	3.50	

Calm : .00 %

Total # Operational Hours : 684

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3	15	17	66	56	33	24	23	44	71	44	35	78	54	58	42	24	684
< 10																	
< 50																	
>= 50																	
Totals	15	17	66	56	33	24	23	44	71	44	35	78	54	58	42	24	





Calm : .00 %

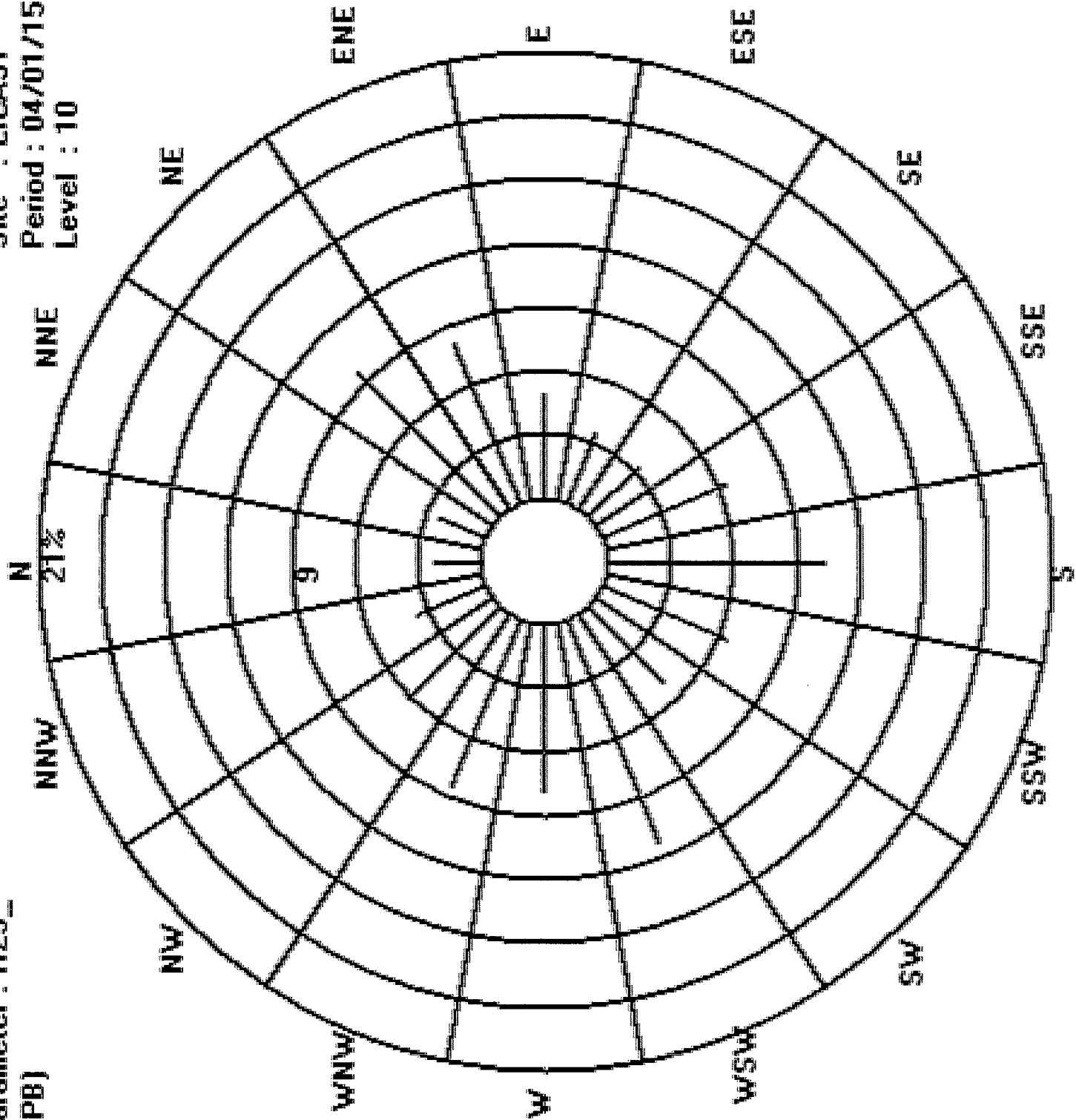
Total # Operational Hours : 684

Site : LICA31
Period : 04/01/15-04/30/15
Level : 10

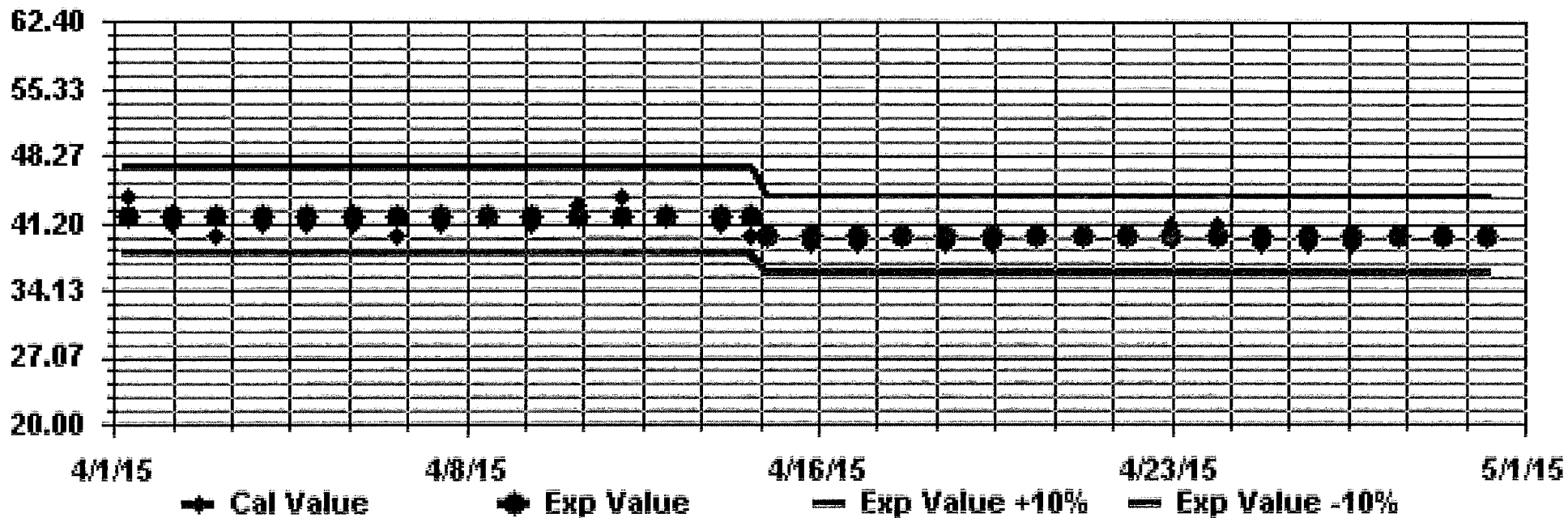
Logger : 31 Parameter : H2S_

Class Limits (PPB)

-  >= 50
-  < 50
-  < 10
-  < 3



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



TOTAL HYDROCARBON



TOTAL HYDROCARBONS (THC) hourly averages in ppm

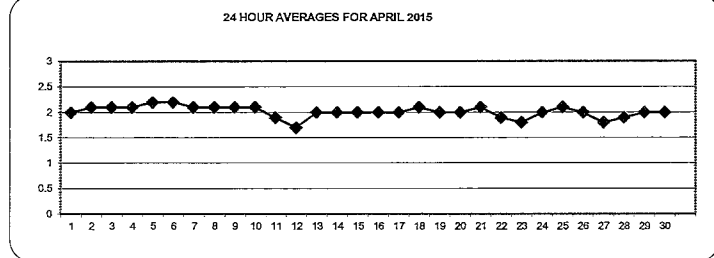
MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX	24-HOUR AVG.	RDGS.	
1	1.8	1.8	1.9	1.8	1.8	1.8	S	1.9	1.9	2.0	2.0	1.9	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.0	2.4	
2	2.2	2.2	2.2	2.2	2.2	S	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1	24
3	2.1	2.1	2.1	2.1	S	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24
4	2.1	2.2	2.1	S	2.1	2.2	2.4	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.1	24
5	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.3	3.3	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.1	2.1	3.3	2.2	2.4	
6	2.2	S	2.1	2.1	2.1	2.2	2.1	2.2	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.4	2.2	24
7	S	2.4	2.4	2.3	2.4	2.4	2.3	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.1	S	2.4	2.1	24
8	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	S	2.1	2.2	2.1	24
9	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.1	2.0	S	2.2	2.2	2.2	2.1	24
10	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	S	2.0	1.9	2.0	2.2	2.1	24
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	S	1.5	1.5	1.5	1.6	2.0	1.9	2.4	
12	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	S	2.0	2.0	2.0	2.0	2.0	2.0	1.7	2.4
13	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	C	C	C	C	C	2.0	2.0	2.0	2.0	2.0	2.1	S	2.1	2.1	2.1	2.0	2.4	
14	2.0	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	S	2.4	2.2	2.4	2.0	2.4		
15	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.1	2.1	2.0	2.0	2.1	S	1.9	2.0	2.1	2.0	2.1	2.0	2.4
16	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	1.9	1.9	S	1.9	1.9	1.9	1.9	2.0	2.1	2.0	2.4
17	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	S	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.4	
18	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.4	
19	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	S	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.4	
20	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	S	2.0	1.9	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.4	
21	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2.1	2.1	11
22	X	X	X	X	X	X	X	X	X	X	Y	Y	2.2	S	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.7	1.8	2.2	1.9	12	
23	1.7	1.7	1.8	1.7	1.8	1.7	1.7	1.7	1.6	1.6	1.6	1.6	S	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.0	2.1	1.8	2.4	
24	2.1	2.0	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	S	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.4
25	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	S	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.1	2.2	2.1	2.4	
26	2.2	2.4	2.5	2.5	2.4	R	R	S	1.5	S	1.7	1.8	1.8	1.9	1.8	2.1	2.2	2.0	2.0	1.9	2.0	1.9	S	1.6	2.5	2.0	2.2	
27	1.5	1.7	1.7	1.6	1.5	1.7	1.6	1.9	S	S	2.2	1.9	S	S	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	1.8	24
28	1.9	1.9	1.9	1.9	1.9	1.9	1.9	S	2.0	2.1	2.2	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	2.2	1.9	24
29	1.8	1.8	1.8	1.8	1.9	1.9	S	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.4
30	2.0	2.0	2.0	2.0	2.0	S	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.4	
HOURLY MAX	2.2	2.4	2.5	2.5	2.4	2.4	2.4	2.4	2.4	3.3	2.4	2.2	2.2	2.2	2.2	2.1	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.3			
HOURLY AVG	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0			

STATUS FLAG CODES

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

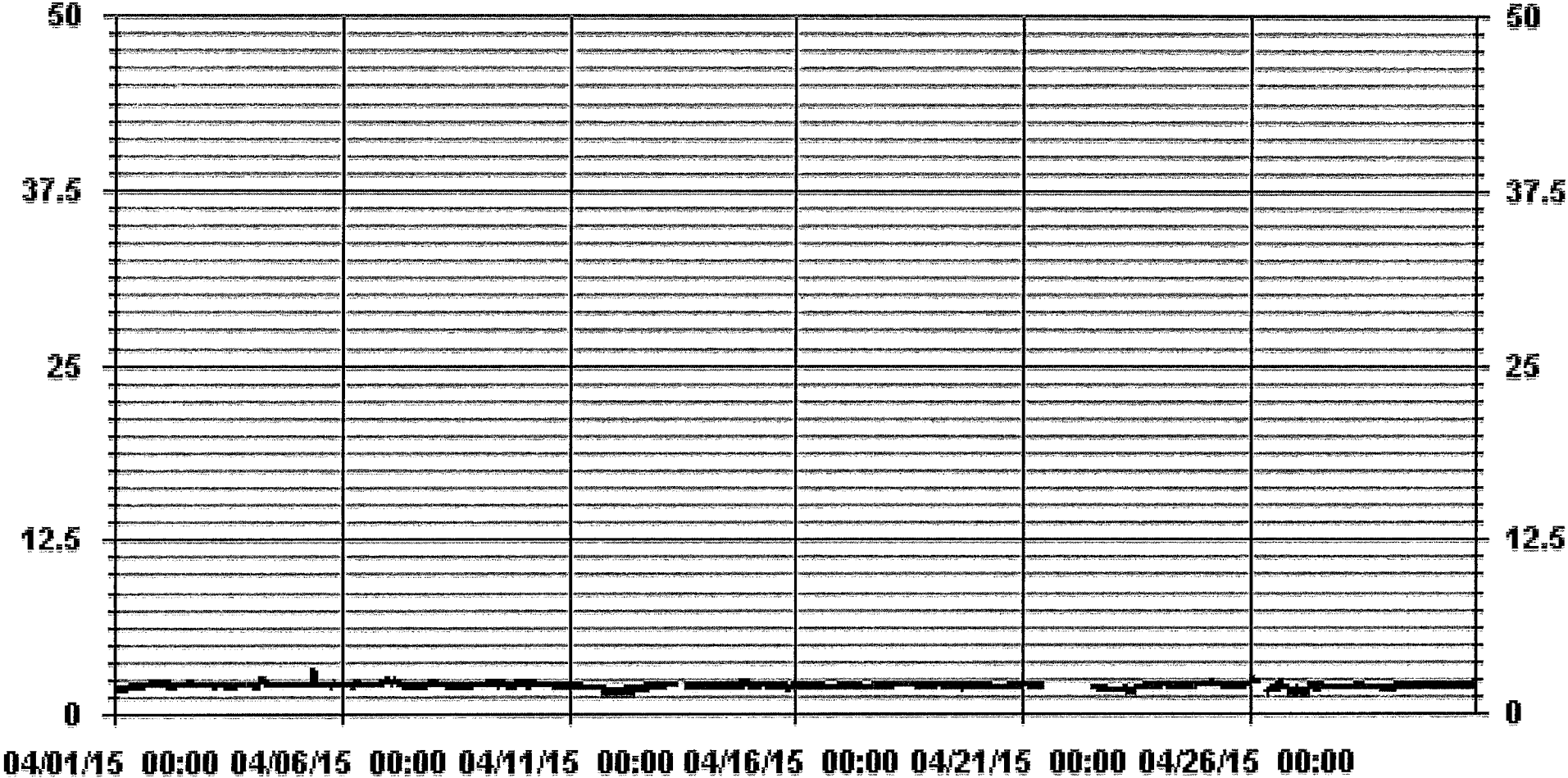
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	653		
MAXIMUM 1-HR AVERAGE:	3.3 PPM	@ HOUR(S)	9
MAXIMUM 24-HR AVERAGE:	2.2 PPM	ON DAY(S)	5
		VAR-VARIOUS	5, 6
IZS CALIBRATION TIME:	35 HRS	OPERATIONAL TIME:	693 HRS
MONTHLY CALIBRATION TIME:	5 HRS	AMD OPERATION UPTIME:	96.3 %
STANDARD DEVIATION:	0.16	MONTHLY AVERAGE:	2.0 PPM

01 Hour Averages



— LICA31 THC PPM



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - APRIL 2015

JOB # 2833-2015-04-31- C

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.																						
HOURLY END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX	AVG.																							
DAY																																																	
1	1.9	1.9	1.9	1.9	1.9	1.9	S	1.9	1.9	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.0	24																					
2	2.2	2.2	2.2	2.2	2.3	S	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.3	2.3	2.4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	24																					
3	2.3	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.2	2.3	2.1	24																					
4	2.5	2.9	2.1	S	2.2	2.3	2.5	2.5	2.4	2.2	2.2	2.2	2.2	2.1	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.4	2.2	2.8	2.9	2.3	24																						
5	2.4	2.3	S	2.2	2.1	2.2	2.1	2.2	3.4	4.1	2.8	2.4	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.5	2.8	2.5	2.5	2.4	4.1	2.5	24																						
6	2.6	S	2.4	2.3	2.5	2.5	2.4	2.4	2.4	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.7	2.7	2.3	24																						
7	S	2.5	2.5	2.4	2.8	2.7	2.6	2.4	2.2	2.1	2.2	2.1	2.1	2.2	2.1	2.1	2.0	2.0	2.3	3.2	2.5	2.2	2.2	S	3.2	2.3	24																						
8	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	S	2.2	2.2	2.1	24																						
9	2.1	2.1	2.5	2.1	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	S	2.2	2.2	2.5	2.2	24																						
10	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.6	S	2.1	2.0	2.0	2.6	2.2	24																						
11	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.2	2.0	2.0	1.9	1.9	1.9	1.9	S	1.6	1.6	1.6	1.6	1.6	2.2	1.9	24																					
12	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	S	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.7	24																					
13	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	C	C	C	C	C	2.0	2.0	2.0	2.0	2.0	2.1	2.3	S	2.3	2.3	2.1	24																						
14	2.2	2.4	2.3	2.4	2.3	2.4	2.3	2.2	2.2	2.1	2.1	2.0	2.0	2.1	2.1	2.3	2.2	2.0	2.7	2.1	2.1	S	2.5	2.3	2.7	2.2	24																						
15	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.0	2.0	2.0	2.1	2.1	24																						
16	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	S	2.0	1.9	2.0	2.0	2.1	2.0	24																						
17	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	S	2.2	2.0	2.0	2.0	2.0	2.0	2.2	2.0	24																						
18	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	S	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24																					
19	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.0	S	S	2.0	2.5	2.0	2.2	2.1	2.1	2.0	2.5	2.1	24																						
20	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	S	2.0	2.0	2.2	2.3	2.6	2.5	2.1	2.6	2.1	24																						
21	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2.1	2.1	11																					
22	X	X	X	X	X	X	X	X	X	X	Y	Y	2.3	S	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.9	2.3	1.9	12																						
23	1.9	2.0	1.9	2.0	2.1	2.1	2.0	1.9	1.9	1.8	1.6	1.6	S	2.0	2.0	2.0	2.0	2.0	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.0	24																						
24	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.2	S	2.0	2.1	2.1	2.0	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24																						
25	2.2	2.2	2.1	2.2	2.3	2.3	2.2	2.2	2.2	2.2	S	2.1	2.2	2.2	2.0	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.3	2.2	24																					
26	2.4	2.5	2.5	2.5	R	R	R	S	1.6	S	1.8	2.2	2.2	2.2	1.9	2.2	2.3	2.3	2.1	2.1	2.1	S	1.8	2.5	2.2	2.1	24																						
27	1.8	1.9	1.8	1.9	1.6	1.9	1.7	S	S	S	S	2.0	S	S	2.0	2.0	2.3	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.3	1.9	24																						
28	2.0	2.0	2.0	2.0	2.0	2.0	2.0	S	2.1	2.2	2.2	2.2	2.1	2.0	2.0	2.0	1.9	1.9	1.9	2.0	2.0	2.0	1.9	1.9	2.2	2.0	24																						
29	1.9	1.8	1.9	1.9	1.9	1.9	S	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.1	2.0	24																						
30	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	24																						
HOURLY MAX	2.6	2.9	2.5	2.5	2.8	2.7	2.6	2.5	3.4	4.1	2.8	2.4	2.3	2.2	2.3	2.3	2.3	2.4	2.7	3.2	2.8	2.6	2.5	2.8																									
HOURLY AVG	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1																									

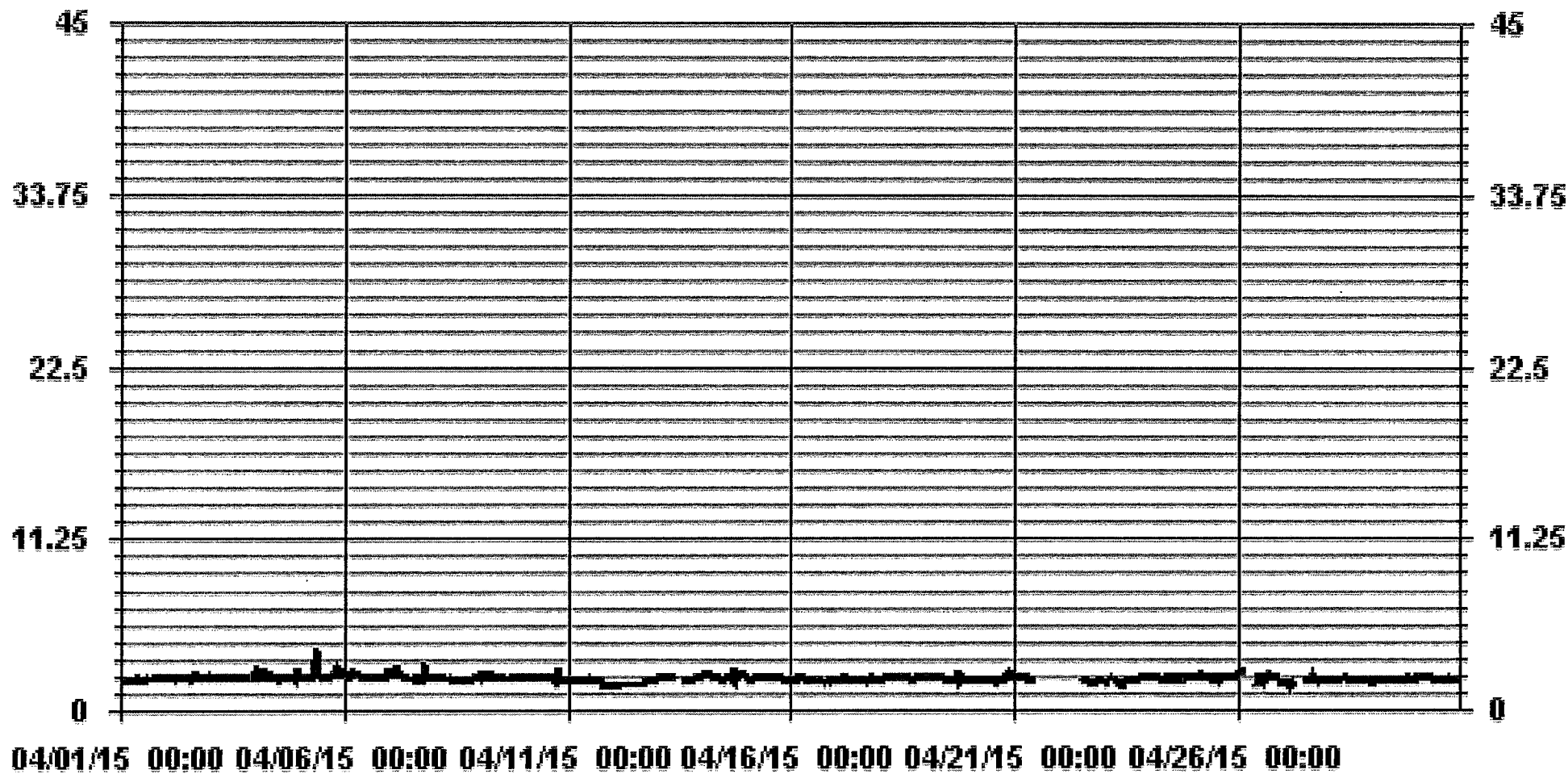
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	650
MAXIMUM INSTANTANEOUS VALUE:	4.1 PPM @ HOUR(S) 9 ON DAY(S) 5
	VAR-VARIOUS
IZS CALIBRATION TIME:	37 HRS
MONTHLY CALIBRATION TIME:	5 HRS
OPERATIONAL TIME:	692 HRS
STANDARD DEVIATION:	0.21

01 Hour Averages



— LICA31 THCMAX PPM

LICA31
 THC / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	2.29	2.45	9.64	6.73	4.59	3.52	3.82	6.73	10.26	6.27	5.05	11.63	7.81	8.88	6.43	3.67	99.84
< 10.0	.00	.00	.15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.29	2.45	9.80	6.73	4.59	3.52	3.82	6.73	10.26	6.27	5.05	11.63	7.81	8.88	6.43	3.67	

Calm : .00 %

Total # Operational Hours : 653

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	15	16	63	44	30	23	25	44	67	41	33	76	51	58	42	24	652
< 10.0			1														1
< 50.0																	
>= 50.0																	
Totals	15	16	64	44	30	23	25	44	67	41	33	76	51	58	42	24	

Calm : .00 %

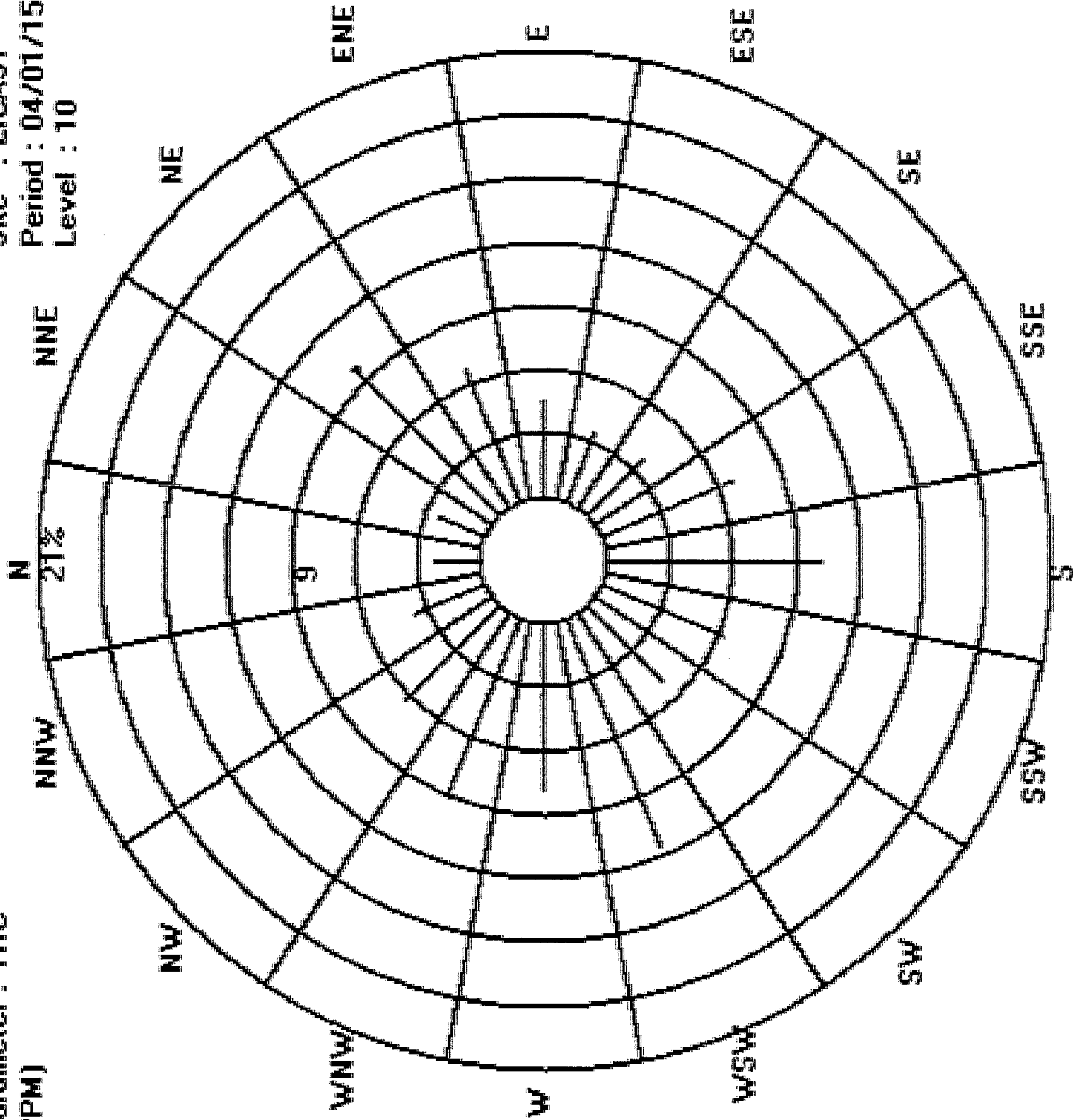
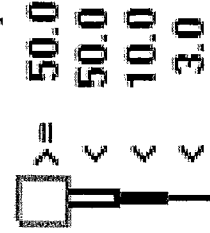
Total # Operational Hours : 653

Logger : 31 Parameter : THC

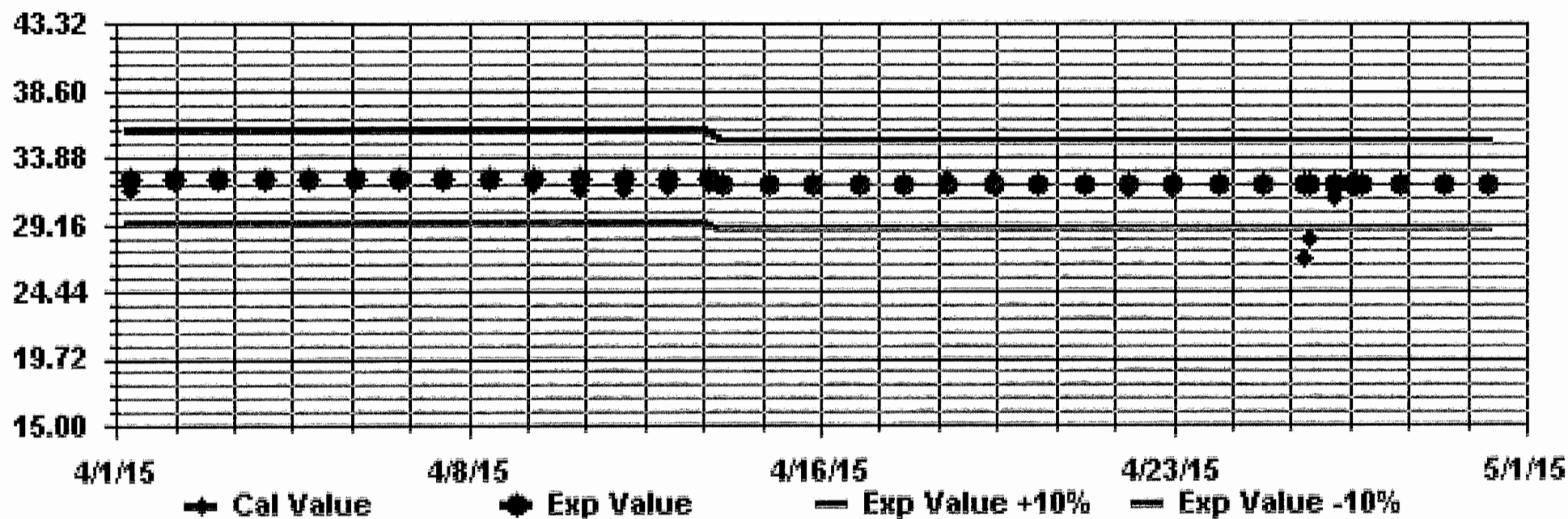
Site : LICA31

Class Limits (PPM)

Period : 04/01/15-04/30/15



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



OXIDES OF NITROGEN



OXIDES OF NITROGEN (NOx) hourly averages in ppb

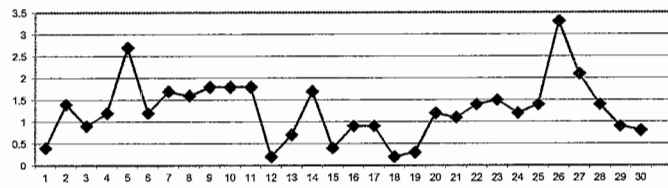
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX	AVG.		
DAY																												
1	0.3	0.2	0.2	0.3	0.2	0.2	S	0.5	0.1	1.4	0.3	0	0	0	0.3	0.1	0.3	1	1.1	0.8	0.6	0.9	0.8	1.4	0.4	24		
2	0.6	0.8	0.7	1.2	0.9	S	2.1	3.3	1.9	1.6	1.2	1.4	1.3	1	1.4	2.1	4.2	2.7	0.6	0.6	0.6	0.8	0.8	0.4	4.2	1.4	24	
3	0.5	0.5	0.6	0.5	S	0.8	0.7	1.3	1	1.1	1.1	0.8	0.7	0.7	0.4	0.3	0.3	1.1	1.7	2.2	1.6	1.1	1.1	1.2	2.2	0.9	24	
4	1	1	1.2	S	1.5	1.8	4.5	4.1	2	0.8	0.8	0.8	0.7	0.6	0.4	0.4	0.4	0.4	0.3	0.1	1	1.4	1.6	1.9	4.5	1.2	24	
5	1.5	1.4	S	1.5	1.1	1.3	1.2	0.8	2.9	16.3	6.1	3.6	2.6	2.2	2.2	2	2.1	2.6	2	1.9	1.9	0.8	1.4	16.3	2.7	24		
6	1.4	S	1.3	0.9	0.9	1.1	2.1	3.2	2.5	1.7	1	0.6	0.5	0.4	0.6	0.6	0.3	0.5	0.6	0.7	1.2	1.1	2.5	3.2	1.2	24		
7	S	3.7	3.3	2.8	2.7	2.5	1.9	1.8	2.1	2	1.7	1.5	1.1	1.3	1.1	0.9	1	0.7	1.2	1	1.1	1.1	1.8	S	3.7	1.7	24	
8	2.5	2.5	2.8	2.6	2.8	2.2	2.3	3.1	3.3	3.7	2.6	1.3	0.8	0.4	0.3	0.1	0.3	0.1	0.4	1	0.2	1	S	1.3	3.7	1.6	24	
9	1.6	1.4	1.6	1.7	1.3	1.2	2.6	4.1	4.8	3.3	2	1.4	1.5	1.9	1.7	1.1	0.7	0.5	0.4	1.2	1.6	S	2	2.3	4.8	1.8	24	
10	2.5	1.8	2	2.2	2.4	2	2	3.5	2.9	3.6	2.2	1.8	1.6	1.3	1	1.2	0.9	0.9	1.2	1.4	S	0.7	0.6	1.3	3.6	1.8	24	
11	2.4	2.8	3.2	2.5	2.6	2.6	2.5	4	3.7	2.2	1.7	0.9	S	2.7	1.4	0.2	0.6	0.3	0.1	S	0.1	0.1	0.1	0.1	0.1	5	1.8	24
12	0	0.2	0.1	0	0.4	0.4	0.5	0.6	0.3	0.1	0	0	0	0	0	0	0	0	0	S	0.8	0.5	0.4	0.4	0.7	0.8	0.2	24
13	0.6	0.7	0.7	0.8	0.5	0.8	0.9	0.9	0.4	0.3	C	C	C	C	C	C	C	C	C	0.8	0.6	0.3	0.9	S	1.6	1.6	0.7	24
14	1.1	1	0.8	1	1.1	0.9	1.4	1.9	1.9	1.4	1	1.1	Y	Y	Y	Y	Y	0.7	0.8	1.4	2.6	S	7.7	3.7	7.7	1.7	20	
15	1.1	0.9	0.9	0.7	0.9	0.4	0.5	0.2	0.2	0.2	0.1	0.1	0	0.1	0.1	0.1	0.1	0.2	0.4	0.3	S	0.6	0.9	0.9	1.1	0.4	24	
16	0.9	0.9	0.6	0.9	1.1	1.1	1.7	1.4	0.6	0.3	0.3	0.4	0.2	0.7	0.6	2.3	2.8	1.1	0.2	S	0.4	0.5	0.4	0.5	2.8	0.9	24	
17	0.5	0.4	1.1	0.8	0.8	1.2	1.2	1.5	1.5	1	0.5	0.4	0.4	0.5	0.4	0.5	0.7	1.1	S	1.2	1.2	1.1	1.2	1.2	1.5	0.9	24	
18	1	0.5	0.4	0.2	0.4	0.1	0.2	0.2	0.2	0	0.1	0.3	0.1	0	0	0.1	0.2	S	0.2	0.1	0.4	0	0	0	1	0.2	24	
19	0	0	0.3	0.3	0.5	0.9	1.2	0.8	0	0	0	0	0	0	0	0	S	0.5	0.1	0.2	0.1	0.3	0.7	0.8	1.2	0.3	24	
20	0.8	0.9	1.1	1.1	1.3	1.9	2.4	3.9	3.6	2.9	1.5	0.2	0.3	0.3	0.4	S	0.8	0.4	0.9	0.6	0.5	0.7	0.6	0.6	3.9	1.2	24	
21	1.4	0.9	1	1.1	1.4	1.5	2.3	2	1.3	0.8	0.5	0.6	0.9	0.8	S	0.6	0.5	0.6	0.6	0.5	0.8	1.3	1.9	1	2.3	1.1	24	
22	0.8	0.8	1.1	1.6	1.7	1.7	1.7	2.1	2	1.5	1.6	2.1	1.5	S	1.2	1.2	1	1.1	1.4	1.5	1.3	1	1.3	1.3	2.1	1.4	24	
23	1.1	1.3	1.7	1.8	1.8	1.5	1.4	1.2	1.4	1.5	1.2	1.1	S	1	1.5	1.1	1.1	0.8	0.9	2.1	2.1	1.9	2	1.9	2.1	1.5	24	
24	2	2	2.3	3.3	2.8	2.1	1.8	2.2	1.7	1.6	1.4	S	1	0.3	0	0	0.2	0.2	0.7	0.6	0.2	0.2	0.8	3.3	1.2	24		
25	2.2	1.5	2	2	3	4.2	3.4	1.1	0	0	S	0.6	0.8	0.7	0.8	0.9	0.9	0.7	1	0.7	0.7	1	1.6	2.3	4.2	1.4	24	
26	4.2	6.7	7.8	8.5	8.1	9	10.3	5.7	2	S	1.6	1.1	0.7	0.4	0.5	0.6	0.5	0.6	0.5	1.1	1.6	2.3	1.2	10.3	3.3	24		
27	1.6	1.2	1.3	1.3	1.4	2.4	4.6	3.8	S	2.2	2	1.7	1.1	1.4	1.4	1.7	1.4	1.3	1.4	1.5	3	4.6	2.7	2.2	4.6	2.1	24	
28	1.6	1.6	1.6	1.7	1	1.1	1.9	S	2.2	2.2	2.3	1.8	1.1	0.9	0.8	0.9	0.5	0.8	0.9	1	1.2	1.6	2	1	2.3	1.4	24	
29	0.8	0.3	0.3	0.4	0.4	0.8	S	1.2	1.1	0.9	1	0.7	1	0.7	0.6	0.6	0.7	0.8	0.6	0.9	2.3	1.5	1.2	1.3	2.3	0.9	24	
30	1.4	1.3	1.4	1.6	1.7	S	1.7	1.9	1.5	0.8	0.5	0.3	0.3	0.4	0.6	0.2	0.2	0.2	0.4	0.4	0.2	0.2	0.1	0.1	1.9	0.8	24	
HOURLY MAX	4.2	6.7	7.8	8.5	8.1	9	10.3	5.7	4.8	16.3	6.1	3.6	5	2.7	2.2	2.3	4.2	2.7	2.6	2.2	3	4.6	7.7	3.7				
HOURLY AVG	1.3	1.4	1.5	1.6	1.6	1.7	2.1	2.1	1.7	1.9	1.3	1.0	1.0	0.8	0.7	0.7	0.8	0.7	0.8	0.9	1.0	1.0	1.4	1.3				

STATUS FLAG CODES

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

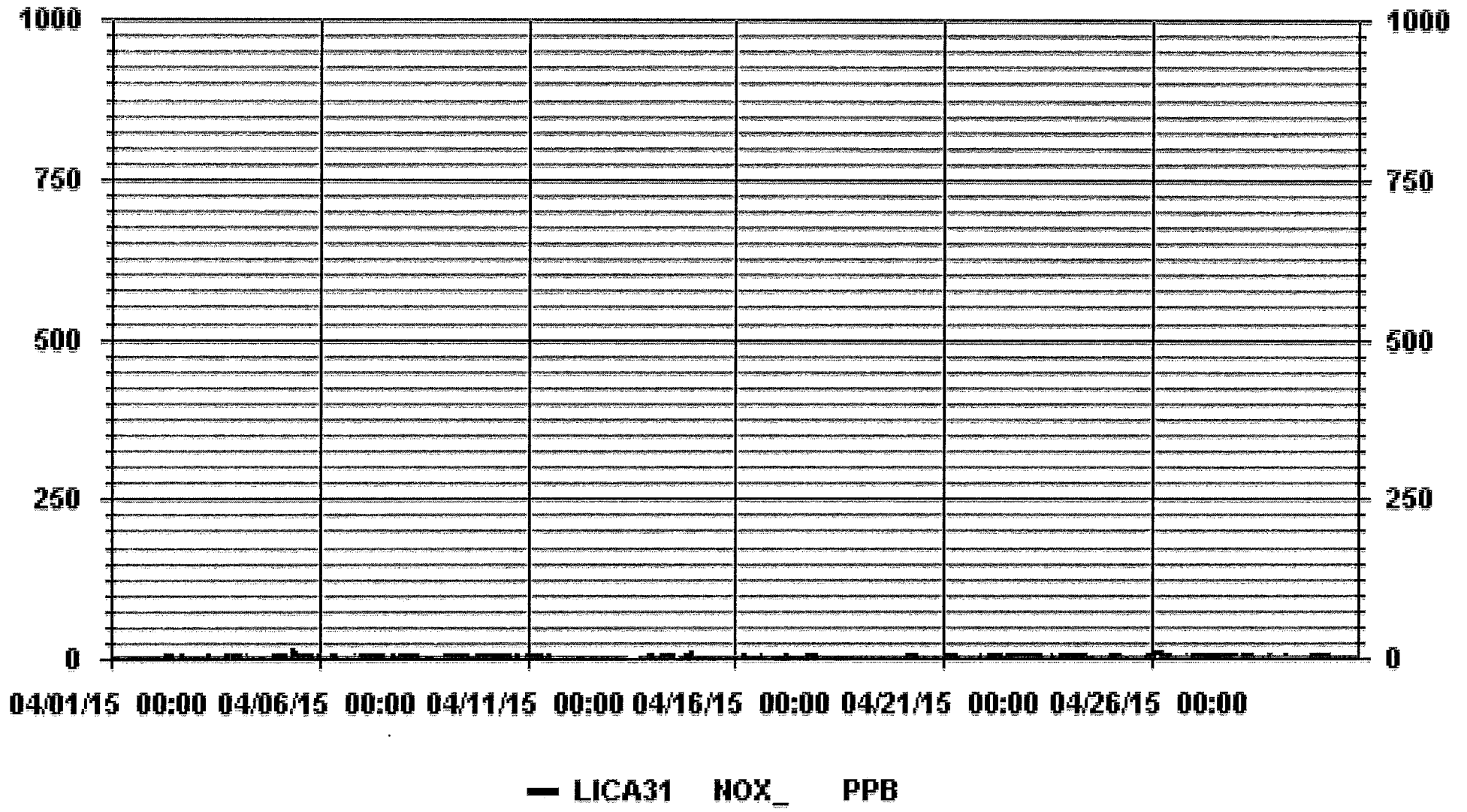
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	641					
MAXIMUM 1-HR AVERAGE:	16.3	PPB	@ HOUR(S)	9	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	3.3	PPB			ON DAY(S)	26
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	716	HRS	
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	99.4	%	
STANDARD DEVIATION:	1.32		MONTHLY AVERAGE:	1.3	PPB	

01 Hour Averages





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - APRIL 2015

JOB # 2833-2015-04-31- C

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX	24-HOUR AVG.	RDGS.
1	1.2	0.8	0.7	0.9	0.8	S	9.3	1.7	2.4	1.9	0.6	0.3	0.3	1.2	1.6	0.8	0.9	1.7	1.9	1.3	1.3	1.6	1.7	9.3	1.6	24	
2	1.5	1.4	1.2	2.0	1.4	S	3.0	9.9	6.1	3.4	2.0	2.4	2.4	1.8	2.7	3.8	5.2	5.4	1.2	1.3	1.6	4.9	5.2	1.1	9.9	3.1	24
3	1.1	1.1	1.6	1.2	S	1.5	1.2	3.7	2.4	2.0	1.9	1.6	1.6	1.3	1.1	1.0	1.2	2.4	2.7	3.0	2.5	1.7	1.7	3.7	1.8	24	
4	1.7	1.7	2.0	S	2.1	3.2	5.5	5.5	2.8	1.6	1.4	1.2	1.4	1.4	1.0	0.9	1.2	1.3	1.0	0.7	2.2	2.3	2.5	5.5	2.0	24	
5	2.3	2.0	S	1.9	1.6	1.9	2.1	1.3	13.0	24.4	9.7	5.1	4.0	3.2	2.9	2.7	2.6	2.7	3.5	2.8	2.6	3.5	1.3	2.1	24.4	4.3	24
6	1.9	S	1.9	1.6	1.3	1.6	2.1	2.9	4.0	3.5	2.6	1.8	1.2	1.1	1.1	1.4	1.2	0.9	1.2	1.3	1.3	1.8	1.9	3.5	4.0	1.9	24
7	S	4.1	4.2	3.7	3.5	3.1	2.5	2.4	2.6	2.7	2.4	2.2	1.9	1.9	1.7	1.6	2.1	1.3	2.0	1.9	1.8	1.9	2.5	S	4.2	2.5	24
8	3.4	3.2	3.5	3.2	3.8	3.4	3.7	6.3	4.0	5.1	3.4	2.1	1.7	1.5	0.7	0.7	1.5	0.8	2.0	4.2	0.8	3.6	S	2.1	6.3	2.8	24
9	2.1	2.1	2.4	2.9	2.0	2.0	5.3	8.1	27.8	4.0	3.4	2.3	2.3	14.7	3.2	3.0	9.5	2.3	1.3	3.4	5.6	S	2.6	3.0	27.8	5.0	24
10	2.9	2.6	2.5	3.2	3.2	2.6	2.8	5.0	4.5	38.7	3.9	2.5	4.2	2.5	2.4	4.4	1.5	1.7	2.3	2.5	S	1.2	1.2	2.1	38.7	4.4	24
11	3.2	3.5	4.0	3.4	3.6	3.2	3.9	41.3	5.4	3.0	3.1	2.7	49.9	20.1	3.3	0.9	1.3	1.0	1.1	S	0.8	0.8	0.7	0.6	49.9	7.0	24
12	0.6	1.1	0.8	0.6	0.9	1.1	1.1	1.3	0.8	0.8	0.5	0.7	0.8	0.2	0.4	0.5	0.4	0.4	S	2.4	1.0	1.1	1.0	1.3	2.4	0.9	24
13	1.3	1.4	1.3	1.4	1.3	1.4	1.6	2.4	1.3	1.0	C	C	C	C	C	C	C	C	4.8	1.7	1.2	1.7	S	2.3	4.8	1.7	24
14	2.2	1.7	1.4	1.7	1.7	1.5	2.4	2.8	2.6	2.0	1.8	1.7	1.7	Y	Y	Y	Y	1.3	1.4	2.4	4.1	S	9.2	5.7	9.2	2.6	20
15	2.2	1.5	1.4	1.2	1.5	1.1	12.2	1.9	2.1	1.4	1.1	1.0	1.3	1.1	0.9	1.3	0.9	1.2	1.1	0.7	S	1.7	2.8	1.4	12.2	1.9	24
16	1.5	1.5	1.3	1.7	1.7	1.5	3.9	2.2	1.2	1.1	1.2	1.4	0.8	4.0	1.3	3.8	4.2	2.9	0.9	S	1.2	1.2	1.0	1.2	4.2	1.9	24
17	1.2	1.2	1.8	1.5	1.5	3.8	2.0	2.9	2.7	1.7	1.2	1.0	0.9	1.1	0.9	1.1	1.5	2.3	S	2.1	1.9	1.6	1.9	1.7	3.8	1.7	24
18	1.6	1.1	0.9	0.8	1.0	0.6	1.3	0.7	0.8	0.5	0.8	2.0	0.8	0.5	0.7	0.8	0.8	S	0.7	0.8	2.8	0.4	0.6	0.6	2.8	0.9	24
19	0.5	0.5	1.1	1.0	1.2	2.1	2.2	1.3	0.8	0.5	0.4	0.3	0.5	0.8	1.0	0.6	S	2.3	0.8	1.1	0.7	0.9	1.4	1.3	2.3	1.0	24
20	1.3	1.6	1.8	1.6	1.8	3.1	3.6	19.7	5.2	60.9	25.1	1.2	1.7	2.1	5.3	S	2.7	0.9	1.7	1.3	1.1	1.4	1.4	1.7	60.9	6.4	24
21	1.9	1.7	1.7	1.9	3.5	2.4	3.5	2.9	2.8	1.3	1.0	1.0	20.7	2.3	S	1.1	1.4	1.2	1.1	1.1	1.6	1.7	3.2	2.1	20.7	2.7	24
22	1.3	1.3	1.9	2.1	2.3	2.1	2.4	2.8	3.0	2.2	3.0	3.0	2.4	S	1.9	1.7	1.7	1.8	1.9	2.2	1.9	1.6	1.9	1.9	3.0	2.1	24
23	1.7	1.9	2.4	2.3	2.4	2.1	2.3	1.9	2.1	2.4	2.1	1.8	S	2.6	4.7	1.8	2.0	1.3	1.5	2.7	2.7	2.4	2.8	2.5	4.7	2.3	24
24	2.5	2.5	3.9	4.3	3.6	3.1	3.0	3.2	2.3	2.5	2.3	S	1.7	1.1	0.2	0.3	0.7	0.9	1.2	1.3	1.1	0.7	0.8	3.8	4.3	2.0	24
25	3.8	2.8	2.5	2.7	4.1	4.8	4.6	2.7	0.5	0.3	S	1.2	1.3	1.4	1.4	1.4	1.5	1.2	1.6	1.2	1.3	1.8	2.1	3.9	4.8	2.2	24
26	5.8	8.0	8.6	9.1	R	11.0	11.0	9.4	3.5	S	2.3	2.6	2.0	2.0	1.0	1.3	1.2	1.0	1.3	1.0	2.0	19.9	23.6	1.9	23.6	5.9	23
27	2.2	1.9	2.0	1.9	2.0	3.8	6.8	5.7	S	3.1	3.0	3.1	1.8	5.1	2.2	3.6	2.3	12.9	4.4	4.5	5.6	10.3	5.5	5.4	12.9	4.3	24
28	2.5	2.5	2.3	4.2	1.5	2.0	3.0	S	2.9	2.9	2.9	2.4	1.9	1.6	2.6	2.4	1.2	2.1	4.0	2.7	1.9	2.2	4.7	1.6	4.7	2.5	24
29	2.1	1.0	1.0	1.0	1.1	1.8	S	2.2	2.2	2.0	2.0	1.9	2.3	1.7	1.4	1.1	2.1	2.2	1.1	2.1	6.4	2.5	1.9	2.0	6.4	2.0	24
30	2.2	1.8	2.0	2.3	2.3	S	2.9	3.4	15.9	2.0	1.4	1.1	2.0	7.7	4.7	1.1	0.9	1.3	1.4	2.0	0.6	0.9	0.9	0.6	15.9	2.7	24
HOURLY MAX	5.8	8.0	8.6	9.1	4.1	11.0	12.2	41.3	27.8	60.9	25.1	5.1	49.9	20.1	5.3	4.4	9.5	12.9	4.8	4.5	6.4	19.9	23.6	5.7			
HOURLY AVG	2.1	2.1	2.2	2.3	2.1	2.6	3.6	5.7	4.4	6.2	3.1	1.9	4.1	3.2	1.9	1.7	2.0	2.1	1.8	2.0	2.1	2.8	3.1	2.2			

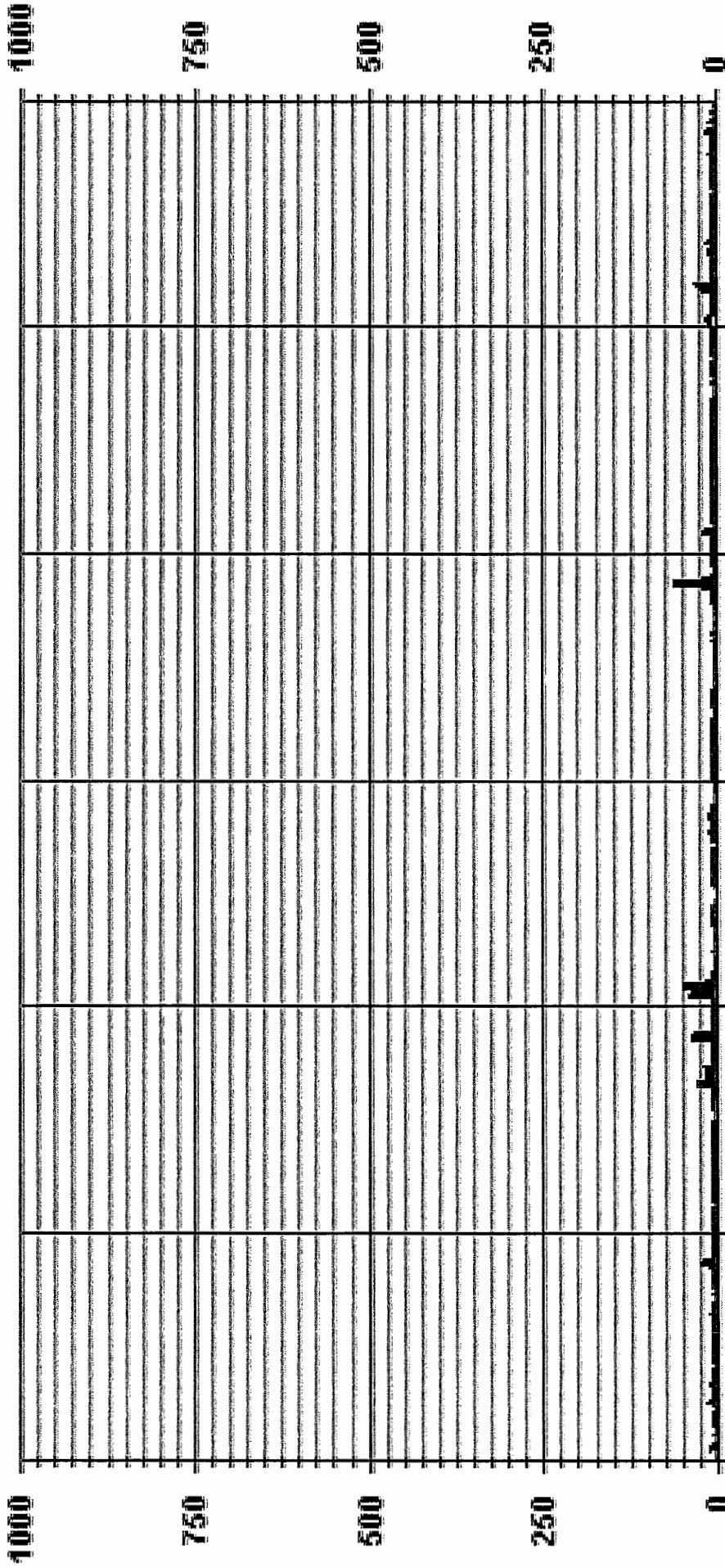
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	676
MAXIMUM INSTANTANEOUS VALUE:	60.9 PPB @ HOUR(S) 9 ON DAY(S) 20
VAR-VARIOUS	
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	8 HRS
STANDARD DEVIATION:	4.56
OPERATIONAL TIME:	715 HRS

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA31 NOXMAX PPB

LICA31
 NOX_ / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	2.21	2.51	9.74	8.12	4.87	3.69	3.69	6.35	10.48	6.49	5.16	11.22	7.09	8.56	6.20	3.54	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.21	2.51	9.74	8.12	4.87	3.69	3.69	6.35	10.48	6.49	5.16	11.22	7.09	8.56	6.20	3.54	

Calm : .00 %

Total # Operational Hours : 677

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	15	17	66	55	33	25	25	43	71	44	35	76	48	58	42	24	677
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	15	17	66	55	33	25	25	43	71	44	35	76	48	58	42	24	

Calm : .00 %

Total # Operational Hours : 677

Logger : 31 Parameter : NOX_

Site : LICA31

Class Limits (PPB)

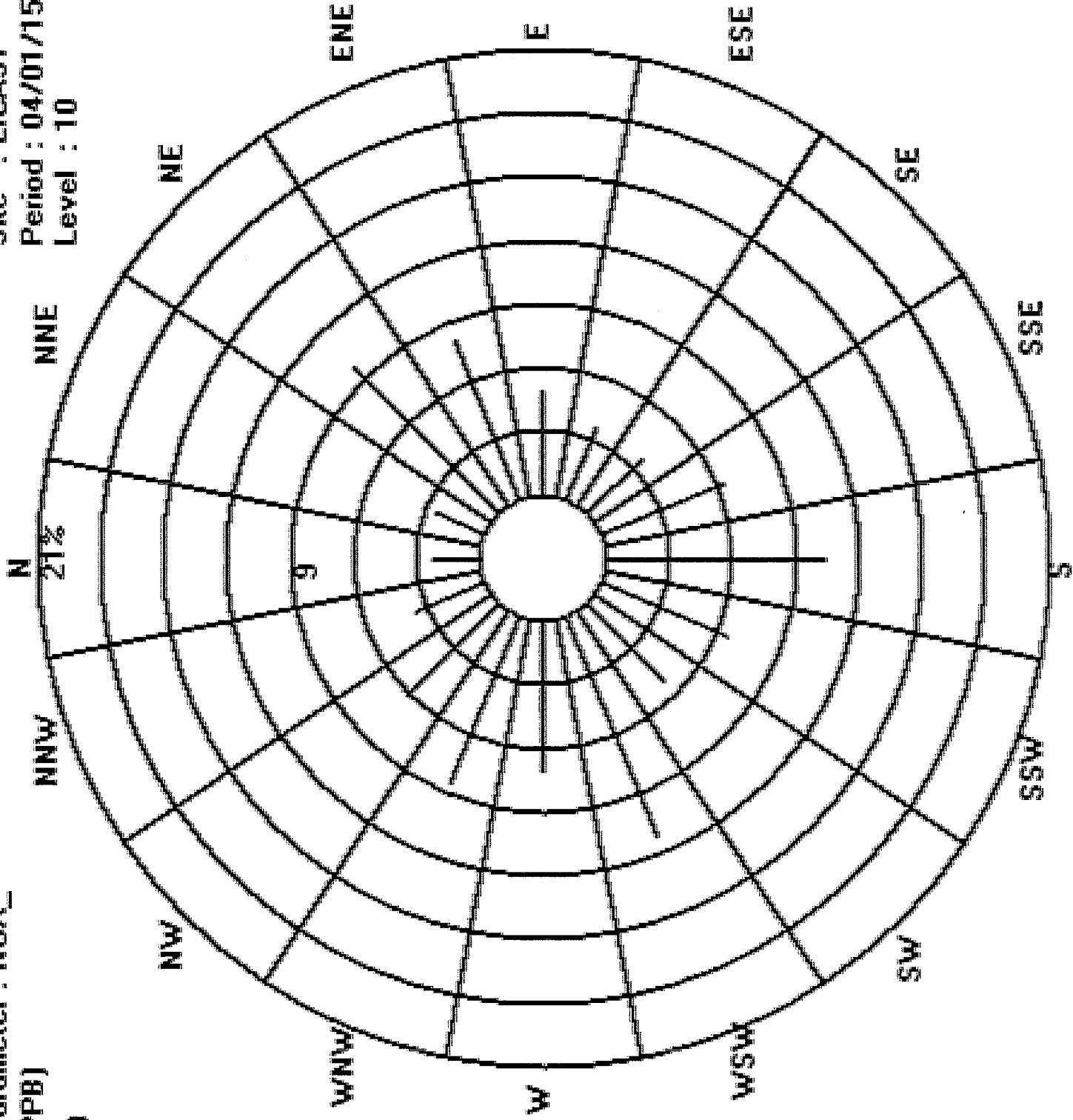
Period : 04/01/15-04/30/15

>= 210.0

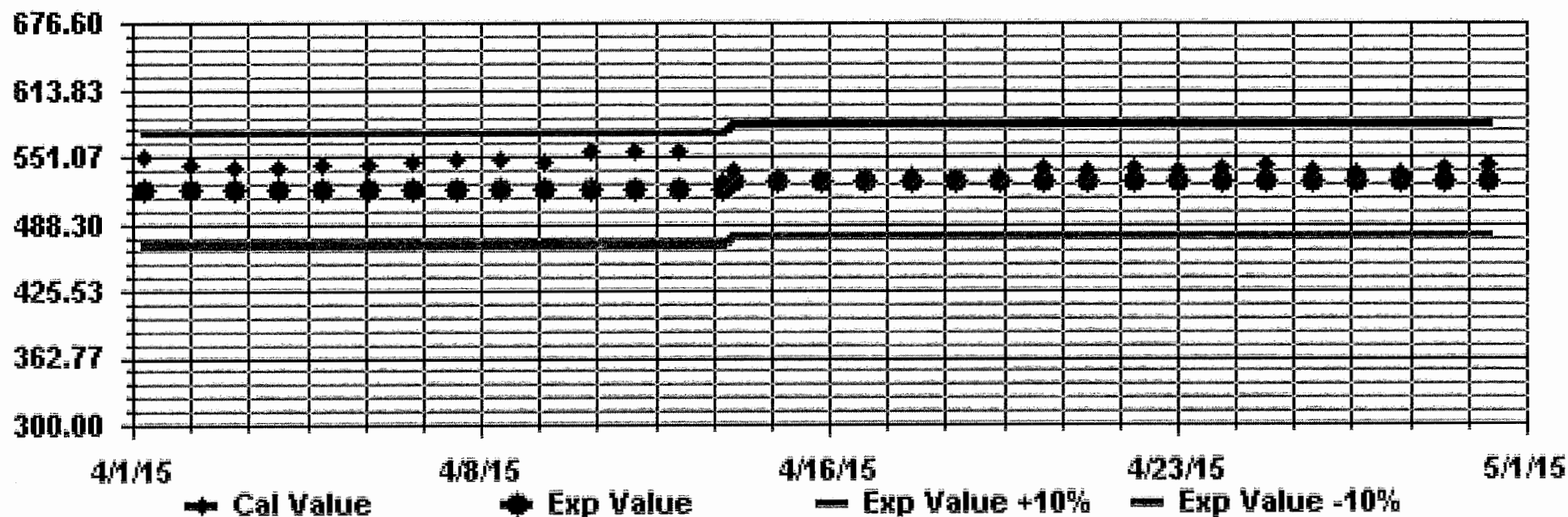
< 210.0

< 110.0

< 50.0



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



NITRIC OXIDES



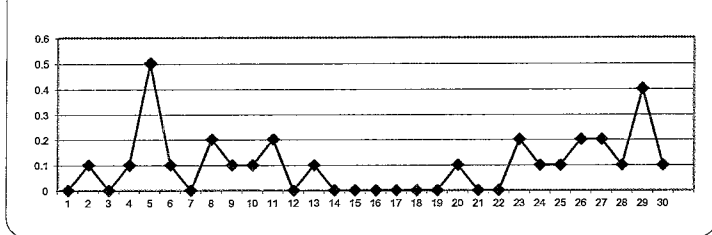
NITRIC OXIDE (NO) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1		0	0	0	0	0	S	0.2	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.0	24	
2		0	0	0	0	0	S	0.3	0.7	0.4	0.2	0.3	0.3	0.1	0	0	0.3	0.5	0.1	0	0	0	0	0	0	0.7	0.1	24	
3		0	0	0	0	S	0	0	0.1	0.1	0.1	0.2	0	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0.2	0.0	24	
4		0	0	0	S	0	0	0.3	0.8	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.8	0.1	24	
5		0	0	S	0.1	0	0	0	0	0.4	6.6	2	1.1	0.4	0.3	0.4	0.3	0.2	0	0	0	0	0	0	0	6.6	0.5	24	
6		0	S	0	0	0	0	0	0.1	0.6	0.5	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.1	24	
7		S	0	0	0	0	0	0	0	0.1	0.2	0	0.2	0	0.1	0	0	0	0	0	0	0	0	0	S	0.2	0.0	24	
8		0	0	0	0	0	0	0.1	0.8	0.7	1.1	0.6	0.1	0	0	0	0	0	0	0	0.1	0	0	S	0	1.1	0.2	24	
9		0	0	0	0	0	0	0	0.5	1.5	0.5	0.1	0	0	0.2	0.1	0	0	0	0	0	0	S	0	0	1.5	0.1	24	
10		0.1	0	0	0	0	0	0.1	0.3	0.5	0.8	0.2	0.2	0.2	0.2	0	0.1	0	0	0	0	S	0	0	0	0.8	0.1	24	
11		0	0	0	0	0	0	0.1	0.9	0.5	0	0.2	0	2.2	0.9	0.3	0	0	0	0	S	0	0	0	0	2.2	0.2	24	
12		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.3	0.2	0	0.1	0.3	0.0	24	
13		0	0.1	0.1	0.1	0	0	0.2	0.3	0.1	0	C	C	C	C	C	C	C	C	0	0	0	0	S	0	0.3	0.1	24	
14		0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	Y	Y	Y	Y	0	0	0	S	0.2	0.1	0.2	0.0	20	
15		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.1	0	0.1	0.0	24	
16		0	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0.4	0.2	0	0	S	0.1	0.1	0	0	0.4	0.0	24	
17		0.1	0	0	0	0.1	0	0	0.2	0.1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.2	0.0	24	
18		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0	0.0	24
19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.2	0	0.1	0	0	0	0	0	0.2	0.0	24	
20		0	0	0	0	0	0	0.1	0.9	0.7	0.7	0.5	0	0	0.1	0.1	S	0.1	0	0	0	0	0	0	0	0.9	0.1	24	
21		0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	S	0.1	0	0.1	0	0	0	0	0	0	0.2	0.0	24	
22		0	0	0	0	0	0	0	0.1	0.2	0	0.1	0.2	0	S	0.1	0.1	0	0	0	0	0	0	0	0	0.2	0.0	24	
23		0	0	0	0	0	0	0	0	0	0	0	0	S	0.4	0.6	0.6	0.5	0.3	0.3	0.3	0.3	0.2	0.3	0.1	0.6	0.2	24	
24		0.1	0.3	0.1	0.2	0.2	0.1	0.1	0.3	0.3	0.4	0.3	S	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.1	24	
25		0	0	0	0	0	0	0	0	0	0	S	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.3	0.1	0.1	0.3	0.1	24	
26		0.2	0.1	0.1	0.1	0.3	0.5	1.9	1.3	0.6	S	0.3	0.2	0	0	0	0	0	0	0	0	0	0	0.1	0	1.9	0.2	24	
27		0	0	0	0	0	0	0.2	0.1	S	0.5	0.4	0.3	0.1	0.3	0.4	0.4	0.2	0.4	0.4	0.4	0.4	0	0	0.1	0	0.5	0.2	24
28		0	0	0	0.1	0.1	0.1	0.3	S	0.4	0.5	0.4	0.2	0.1	0	0	0.1	0.1	0.1	0	0	0	0	0.1	0	0.5	0.1	24	
29		0	0	0	0	0	0.2	S	0.8	0.7	0.5	0.7	0.4	0.6	0.6	0.4	0.4	0.4	0.5	0.4	0.3	0.4	0.3	0.3	0.5	0.8	0.4	24	
30		0.4	0.3	0.4	0.6	0.4	S	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.1	24	
HOURLY MAX		0.4	0.3	0.4	0.6	0.4	0.5	1.9	1.3	1.5	6.6	2	1.1	2.2	0.9	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.5				
HOURLY AVG		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0				

STATUS FLAG CODES

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

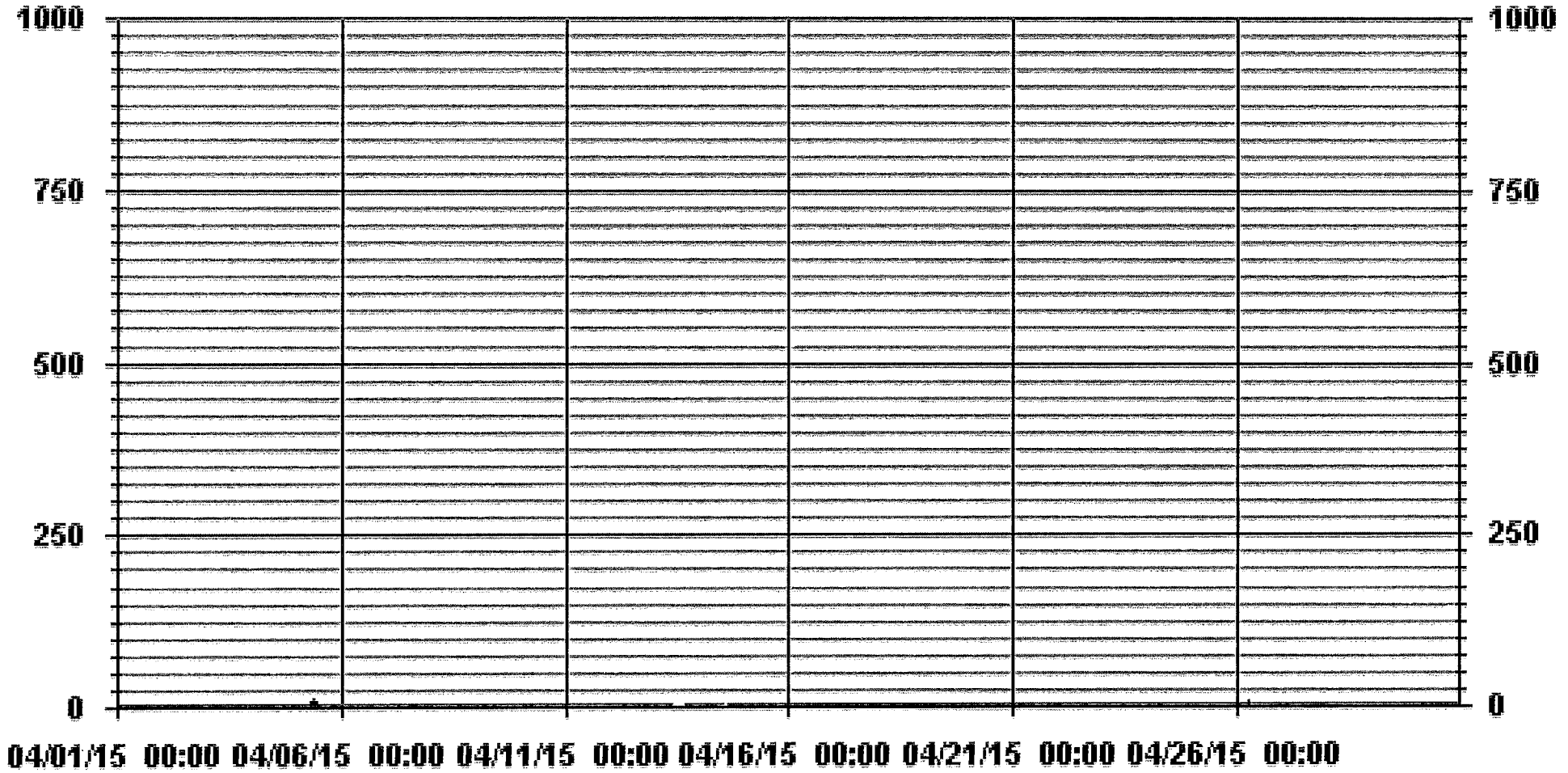
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	210		
MAXIMUM 1-HR AVERAGE:	6.6	PPB @ HOUR(S)	9 ON DAY(S) 5
MAXIMUM 24-HR AVERAGE:	0.5	PPB	ON DAY(S) 5
			VAR-VARIOUS
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME: 716 HRS
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME: 99.4 %
STANDARD DEVIATION:	0.34		MONTHLY AVERAGE: 0.1 PPB

01 Hour Averages



— LICA31 NO_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - APRIL 2015

JOB # 2833-2015-04-31- C

NITRIC OXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	MAX	AVG.	
DAY	1	0.5	0.4	0.4	0.5	0.4	0.3	S	8.3	0.6	0.7	0.6	0.2	0.0	0.0	0.4	0.5	0.3	0.1	0.3	0.2	0.1	0.1	0.4	0.3	8.3	0.7	24
2	0.1	0.2	0.2	0.3	0.3	S	0.8	2.9	1.8	1.0	1.0	1.0	0.8	0.5	0.8	0.9	1.1	0.7	0.2	0.3	0.2	1.5	1.6	0.4	2.9	0.8	24	
3	0.5	0.5	0.3	0.4	S	0.6	0.5	1.1	0.8	0.9	0.8	0.5	0.9	0.5	0.6	0.5	0.6	0.6	0.3	0.5	0.5	0.5	0.4	0.3	1.1	0.6	24	
4	0.6	0.6	0.6	S	0.4	0.5	1.0	1.6	1.0	0.7	0.5	0.4	0.4	0.4	0.2	0.2	0.4	0.4	0.4	0.4	0.3	0.2	0.2	0.5	1.6	0.5	24	
5	0.4	0.5	S	0.6	0.5	0.7	0.5	0.5	4.0	11.0	3.7	2.0	1.5	1.1	1.1	0.8	0.9	0.5	0.5	0.3	0.4	0.5	0.4	0.8	11.0	1.4	24	
6	0.4	S	0.3	0.3	0.3	0.5	0.8	0.6	1.5	1.2	0.9	0.6	0.4	0.2	0.3	0.4	0.4	0.1	0.2	0.3	0.4	0.5	0.2	0.4	1.5	0.5	24	
7	S	0.6	0.5	0.4	0.3	0.4	0.5	0.5	0.8	0.7	0.5	0.5	0.5	0.8	0.7	0.5	0.7	0.4	0.5	0.5	0.5	0.3	0.3	S	0.8	0.5	24	
8	0.5	0.5	0.5	0.6	0.5	0.6	1.0	3.2	1.6	2.1	1.1	0.7	0.7	0.7	0.5	0.3	0.8	0.3	0.5	0.8	0.3	1.4	S	0.4	3.2	0.9	24	
9	0.2	0.3	0.2	0.1	0.3	0.1	1.3	2.3	23.2	1.1	0.9	0.5	0.8	8.7	0.9	1.3	3.9	1.1	0.4	1.1	0.5	S	0.6	0.6	23.2	2.2	24	
10	0.6	0.5	0.3	0.4	0.5	0.6	0.7	0.8	1.3	20.3	1.0	0.8	1.6	0.9	0.9	1.9	0.6	0.6	0.5	0.3	S	0.4	0.2	0.4	20.3	1.6	24	
11	0.4	0.4	0.4	0.3	0.8	0.7	1.2	23.9	1.8	0.6	1.5	1.0	36.2	19.8	1.4	0.4	0.6	0.4	0.4	S	0.4	0.5	0.5	0.3	36.2	4.1	24	
12	0.2	0.6	0.4	0.3	0.3	0.3	0.4	0.7	0.4	0.4	0.4	0.6	0.4	0.3	0.3	0.4	0.4	0.4	S	1.2	0.8	0.7	0.6	0.8	1.2	0.5	24	
13	0.5	0.7	0.7	0.7	0.7	0.6	1.1	1.3	0.7	0.7	C	C	C	C	C	C	C	C	C	0.2	0.0	0.0	0.0	S	0.7	1.3	0.6	24
14	0.4	0.4	0.4	0.4	0.2	0.1	0.2	0.6	0.6	0.6	0.4	0.4	0.3	Y	Y	Y	Y	0.6	0.3	0.3	0.2	S	0.7	0.7	0.4	20		
15	0.4	0.6	0.5	0.3	0.4	0.4	10.7	0.9	1.4	1.1	0.6	0.3	0.8	0.7	0.6	0.6	0.5	0.5	0.8	0.6	S	0.8	1.2	0.4	10.7	1.1	24	
16	0.4	0.6	0.4	0.4	0.4	0.3	0.8	0.7	0.5	0.5	0.6	1.4	0.5	0.6	0.7	2.1	4.9	0.3	0.4	S	0.8	0.5	0.6	0.5	4.9	0.8	24	
17	0.8	0.5	0.5	0.6	0.7	1.4	0.6	0.9	0.9	0.6	0.6	0.6	0.4	0.4	0.4	0.4	0.3	0.5	S	0.5	0.2	0.2	0.2	0.2	1.4	0.5	24	
18	0.4	0.4	0.3	0.2	0.4	0.3	0.3	0.3	0.1	0.0	0.6	0.6	0.4	0.1	0.1	0.2	0.3	S	0.5	0.4	0.9	0.1	0.4	0.1	0.9	0.3	24	
19	0.1	0.1	0.4	0.1	0.1	0.1	0.5	0.2	0.2	0.3	0.2	0.0	0.0	0.3	0.3	0.0	S	0.8	0.4	0.7	0.4	0.5	0.6	0.4	0.8	0.3	24	
20	0.5	0.6	0.4	0.3	0.4	0.6	0.9	8.6	1.6	16.0	15.9	1.2	0.6	0.9	3.2	S	1.0	0.3	0.3	0.2	0.5	0.4	0.3	16.0	2.4	24		
21	0.3	0.3	0.2	0.3	0.3	0.2	0.5	0.8	0.7	0.5	0.2	0.4	3.9	0.9	S	0.7	0.7	0.7	0.4	0.5	0.2	0.6	0.4	0.3	3.9	0.6	24	
22	0.4	0.4	0.3	0.4	0.7	0.5	0.5	0.6	0.8	0.5	0.7	0.8	0.6	S	0.7	0.7	0.6	0.7	0.6	0.6	0.4	0.5	0.7	0.6	0.8	0.6	24	
23	0.4	0.4	0.3	0.3	0.5	0.6	0.6	0.3	0.5	0.6	0.5	0.8	S	1.5	2.6	1.1	1.3	0.8	0.8	0.9	0.9	0.8	0.8	0.5	2.6	0.8	24	
24	0.8	0.8	0.6	0.8	0.8	0.7	0.6	1.0	0.9	1.0	1.0	S	0.4	0.4	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.1	0.0	1.0	0.4	24
25	0.0	0.0	0.0	0.0	0.0	0.1	0.6	0.3	0.1	0.1	S	0.8	0.8	0.7	0.7	0.8	0.8	0.7	0.5	0.7	0.7	0.9	0.7	0.6	0.9	0.5	24	
26	0.9	0.6	0.6	0.6	R	1.7	2.6	2.6	1.1	S	0.8	1.0	0.6	0.9	0.5	0.7	0.4	0.4	0.6	0.4	0.4	8.4	7.9	0.7	8.4	1.6	23	
27	0.6	0.4	0.3	0.4	0.6	0.5	1.0	0.8	S	1.2	0.9	1.5	0.7	1.3	1.1	1.6	1.1	8.7	2.0	2.1	0.5	0.5	0.6	0.5	8.7	1.3	24	
28	0.6	0.6	0.5	0.8	0.6	0.7	1.1	S	0.9	1.0	1.0	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.5	0.5	0.4	0.5	1.0	0.7	1.1	0.7	24	
29	0.7	0.6	0.5	0.5	0.5	1.2	S	1.6	1.4	2.1	2.1	1.3	1.4	1.2	1.0	0.9	1.6	1.3	1.0	0.9	1.2	1.0	0.9	1.2	2.1	1.1	24	
30	1.2	0.9	1.0	1.2	0.9	S	0.6	0.9	11.2	0.6	0.5	0.3	0.3	0.1	1.3	0.5	0.3	0.1	0.3	1.0	0.0	0.3	0.4	0.0	11.2	1.0	24	
HOURLY MAX		1.2	0.9	1.0	1.2	0.9	1.7	10.7	23.9	23.2	20.3	15.9	2.0	36.2	19.8	3.2	2.1	4.9	8.7	2.0	2.1	1.2	8.4	7.9	1.2			
HOURLY AVG		0.5	0.5	0.4	0.4	0.5	0.5	1.1	2.4	2.2	2.3	1.4	0.7	2.0	1.7	0.8	0.7	0.9	0.8	0.5	0.6	0.4	0.8	0.8	0.5			

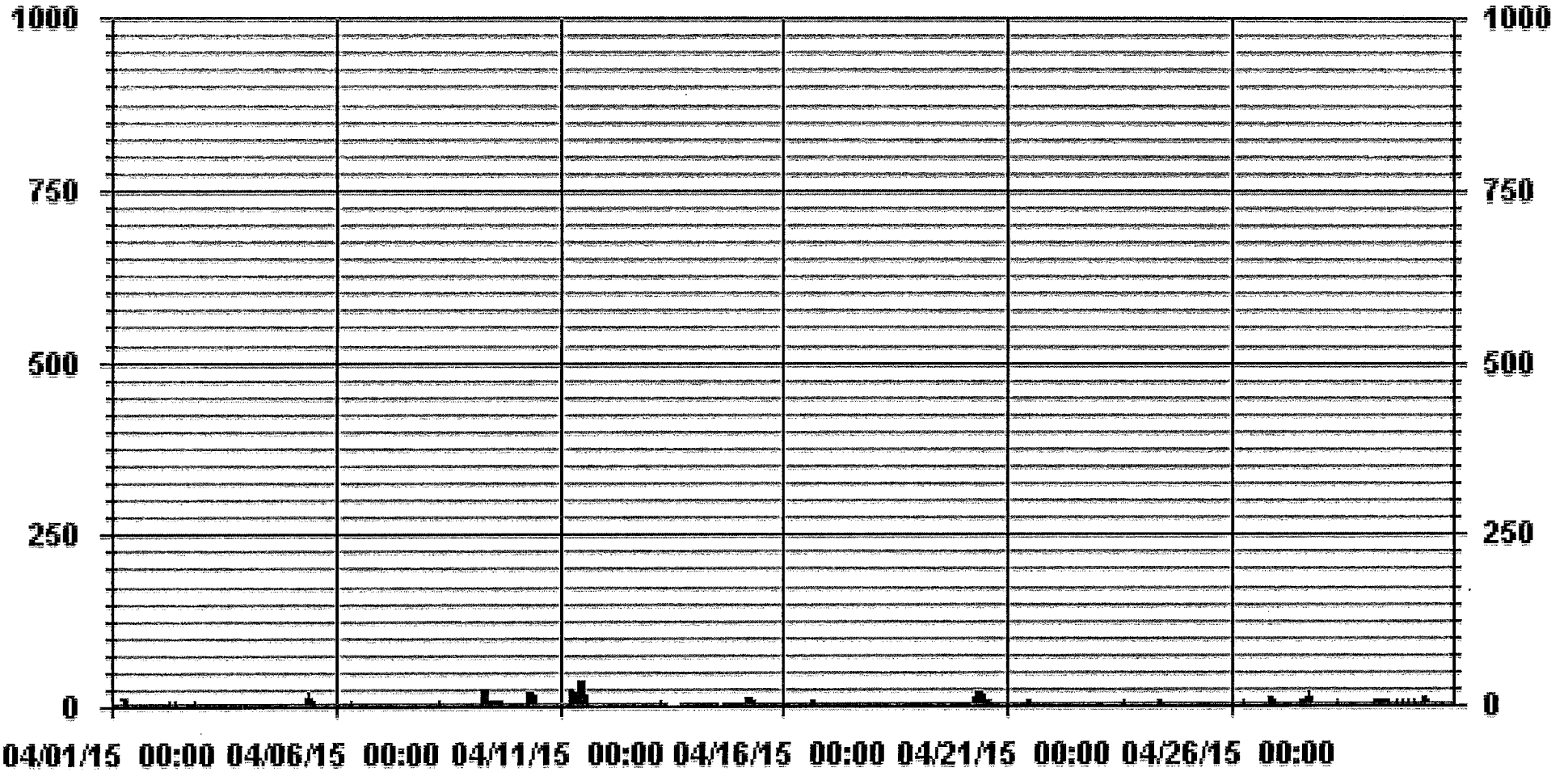
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	653
MAXIMUM INSTANTANEOUS VALUE:	36.2 PPB @ HOUR(S) 12 ON DAY(S) 11
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	8 HRS
STANDARD DEVIATION:	2.53
OPERATIONAL TIME:	715 HRS

01 Hour Averages



— LICA31 NOMAX PPB

LICA31
 NO_ / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	2.21	2.51	9.74	8.12	4.87	3.69	3.69	6.35	10.48	6.49	5.16	11.22	7.09	8.56	6.20	3.54	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.21	2.51	9.74	8.12	4.87	3.69	3.69	6.35	10.48	6.49	5.16	11.22	7.09	8.56	6.20	3.54	

Calm : .00 %

Total # Operational Hours : 677

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	15	17	66	55	33	25	25	43	71	44	35	76	48	58	42	24	677
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	15	17	66	55	33	25	25	43	71	44	35	76	48	58	42	24	

Calm : .00 %

Total # Operational Hours : 677





Logger : 31 Parameter : NO_

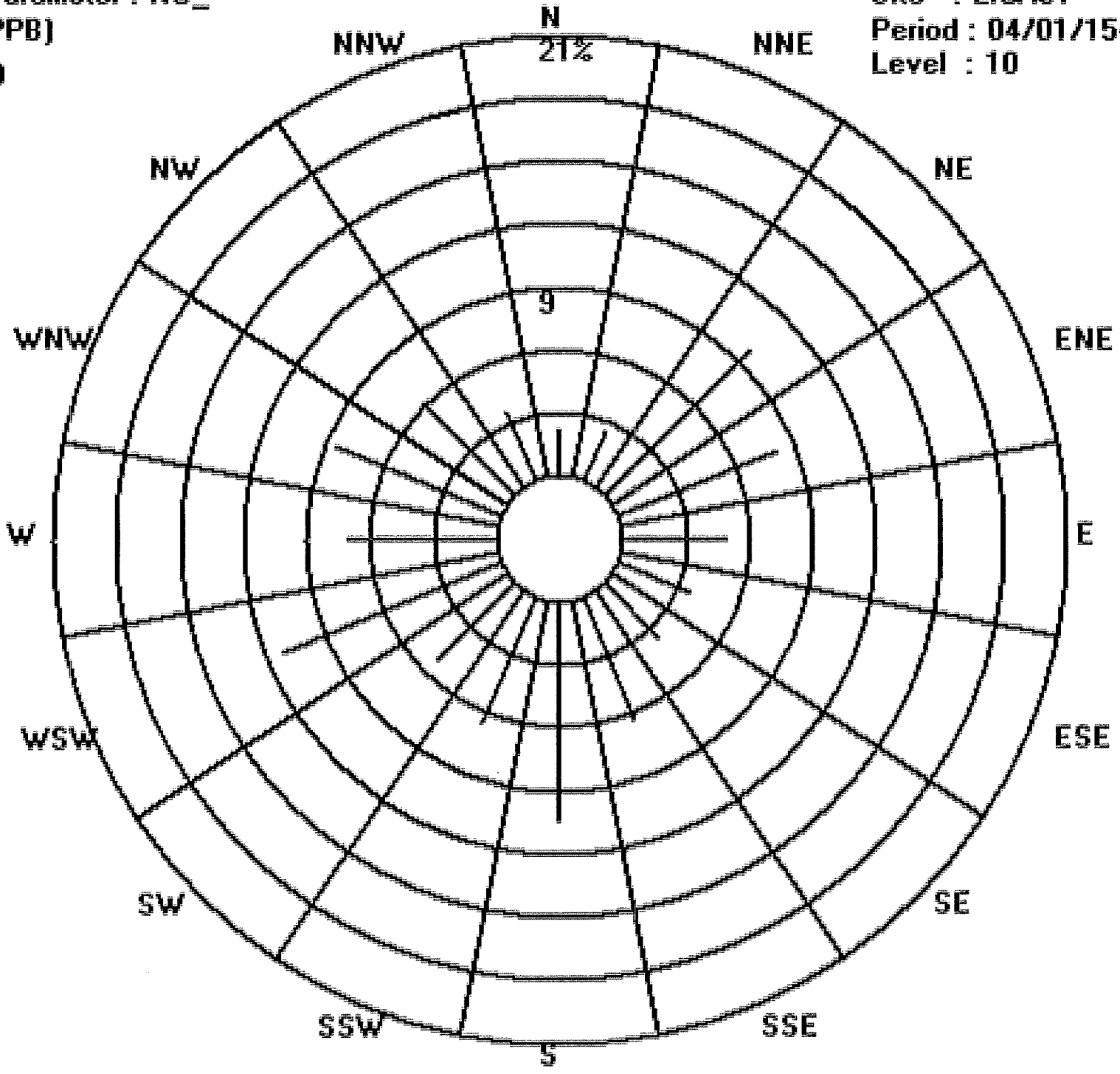
Site : LICA31

Class Limits (PPB)

Period : 04/01/15-04/30/15

Level : 10

-  >= 210.0
-  < 210.0
-  < 110.0
-  < 50.0



NITROGEN DIOXIDE



NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX	AVG.		
DAY																												
1	0.3	0.2	0.2	0.3	0.2	0.2	S	0.3	0.1	1.3	0.3	0.0	0.0	0.0	0.0	0.3	0.1	0.3	1.0	1.1	0.8	0.6	0.9	0.8	1.3	0.4	24	
2	0.6	0.8	0.7	1.2	0.9	S	1.8	2.6	1.5	1.4	0.9	1.1	1.2	1.0	1.4	1.8	3.7	2.6	0.6	0.6	0.6	0.8	0.8	0.4	3.7	1.3	24	
3	0.5	0.5	0.6	0.5	S	0.8	0.7	1.2	0.9	1.0	0.9	0.8	0.6	0.7	0.3	0.3	1.1	1.7	2.2	1.6	1.1	1.1	1.2	1.2	2.2	0.9	24	
4	1.0	1.0	1.2	S	1.5	1.8	4.2	3.3	1.6	0.7	0.8	0.8	0.7	0.6	0.4	0.4	0.4	0.4	0.3	0.1	1.0	1.4	1.6	1.9	4.2	1.2	24	
5	1.5	1.4	S	1.4	1.1	1.3	1.2	0.8	2.5	9.7	4.1	2.5	2.2	1.9	1.8	1.9	1.8	2.1	2.6	2.0	1.9	1.9	0.8	1.4	9.7	2.2	24	
6	1.4	S	1.3	0.9	0.9	0.9	1.1	2.0	2.6	2.0	1.4	1.0	0.6	0.5	0.4	0.6	0.6	0.3	0.5	0.6	0.7	1.2	1.1	2.5	2.6	1.1	24	
7	S	3.7	3.3	2.8	2.7	2.5	1.9	1.8	2.0	1.8	1.7	1.3	1.1	1.2	1.1	0.9	1.0	0.7	1.2	1.0	1.1	1.1	1.8	S	3.7	1.7	24	
8	2.5	2.5	2.8	2.6	2.8	2.2	2.2	2.3	2.6	2.6	2.0	1.2	0.8	0.4	0.3	0.1	0.3	0.1	0.4	0.9	0.2	1.0	S	1.3	2.8	1.5	24	
9	1.6	1.4	1.6	1.7	1.3	1.2	2.6	3.6	3.3	2.8	1.9	1.4	1.5	1.7	1.6	1.1	0.7	0.5	0.4	1.2	1.6	S	2.0	2.3	3.6	1.7	24	
10	2.4	1.8	2.0	2.2	2.4	2.0	1.9	3.2	2.4	2.8	2.0	1.6	1.4	1.1	1.0	1.1	0.9	0.9	1.2	1.4	S	0.7	0.6	1.3	3.2	1.7	24	
11	2.4	2.8	3.2	2.5	2.6	2.6	2.4	3.1	3.2	2.2	1.5	0.9	2.8	1.8	1.1	0.2	0.6	0.3	0.1	S	0.1	0.1	0.1	0.1	3.2	1.6	24	
12	0.0	0.2	0.1	0.0	0.4	0.4	0.5	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.5	0.3	0.4	0.4	0.6	0.6	0.2	24
13	0.6	0.6	0.6	0.7	0.5	0.8	0.7	0.6	0.3	0.3	C	C	C	C	C	C	C	S	0.8	0.6	0.3	0.9	S	1.6	1.6	0.7	24	
14	1.1	1.0	0.8	1.0	1.1	0.9	1.4	1.9	1.8	1.4	1.0	1.0	1.1	Y	Y	Y	Y	0.7	0.8	1.4	2.6	S	7.5	3.6	7.5	1.7	20	
15	1.1	0.9	0.9	0.7	0.9	0.4	0.5	0.2	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.4	0.3	S	0.6	0.8	0.9	1.1	0.4	24	
16	0.9	0.9	0.6	0.9	1.1	1.1	1.6	1.3	0.6	0.3	0.3	0.4	0.2	0.7	0.6	1.9	2.6	1.1	0.2	S	0.3	0.4	0.4	0.5	2.6	0.8	24	
17	0.4	0.4	1.1	0.8	0.7	1.2	1.2	1.3	1.4	1.0	0.5	0.4	0.4	0.5	0.4	0.5	0.7	1.1	S	1.2	1.2	1.1	1.2	1.2	1.4	0.9	24	
18	1.0	0.5	0.4	0.2	0.4	0.1	0.2	0.2	0.2	0.0	0.1	0.3	0.1	0.0	0.0	0.1	0.2	S	0.2	0.1	0.4	0.0	0.0	0.0	1.0	0.2	24	
19	0.0	0.0	0.3	0.3	0.5	0.9	1.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.3	0.1	0.1	0.1	0.3	0.7	0.8	0.8	1.2	0.3	24	
20	0.8	0.9	1.1	1.1	1.3	1.9	2.3	3.0	2.9	2.2	1.0	0.2	0.3	0.2	0.3	S	0.7	0.4	0.9	0.6	0.5	0.7	0.6	0.6	3.0	1.1	24	
21	1.4	0.9	1.0	1.1	1.4	1.5	2.3	1.8	1.3	0.8	0.5	0.6	0.9	0.8	S	0.5	0.5	0.5	0.6	0.5	0.8	1.3	1.9	1.0	2.3	1.0	24	
22	0.8	0.8	1.1	1.6	1.7	1.7	1.7	2.0	1.8	1.5	1.5	1.9	1.5	S	1.1	1.1	1.0	1.1	1.4	1.5	1.3	1.0	1.3	1.3	2.0	1.4	24	
23	1.1	1.3	1.7	1.8	1.8	1.5	1.4	1.2	1.4	1.5	1.2	1.1	S	0.6	0.9	0.5	0.6	0.5	0.6	1.8	1.8	1.7	1.7	1.8	1.8	1.3	24	
24	1.9	1.7	2.2	3.1	2.6	2.0	1.7	1.9	1.4	1.2	1.1	S	1.0	0.3	0.0	0.0	0.2	0.2	0.7	0.6	0.2	0.2	0.8	3.1	1.1	24		
25	2.2	1.5	2.0	2.0	3.0	4.2	3.4	1.1	0.0	0.0	S	0.4	0.6	0.6	0.6	0.7	0.7	0.6	0.9	0.5	0.6	0.7	1.5	2.2	4.2	1.3	24	
26	4.0	6.6	7.7	8.4	7.8	8.5	8.4	4.4	1.4	S	1.3	1.4	1.1	0.7	0.4	0.5	0.6	0.5	0.6	0.5	1.1	1.6	2.2	1.2	8.5	3.1	24	
27	1.6	1.2	1.3	1.3	1.4	2.4	4.4	3.7	S	1.7	1.6	1.4	1.0	1.1	1.0	1.3	1.2	0.9	1.0	1.1	3.0	4.6	2.6	2.2	4.6	1.9	24	
28	1.6	1.6	1.6	1.6	0.9	1.0	1.6	S	1.8	1.7	1.9	1.6	1.0	0.9	0.8	0.8	0.4	0.7	0.9	1.0	1.2	1.6	1.9	1.0	1.9	1.3	24	
29	0.8	0.3	0.3	0.4	0.4	0.6	S	0.4	0.4	0.4	0.3	0.3	0.4	0.1	0.2	0.2	0.3	0.3	0.2	0.6	1.9	1.2	0.9	0.8	1.9	0.5	24	
30	1.0	1.0	1.0	1.0	1.3	S	1.7	1.9	1.4	0.8	0.5	0.3	0.3	0.4	0.6	0.2	0.2	0.2	0.4	0.4	0.2	0.2	0.1	0.1	1.9	0.7	24	
HOURLY MAX	4.0	6.6	7.7	8.4	7.8	8.5	8.4	4.4	3.3	9.7	4.1	2.5	2.8	1.9	1.8	1.9	3.7	2.6	2.6	2.2	3.0	4.6	7.5	3.6				
HOURLY AVG	1	1	1	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				

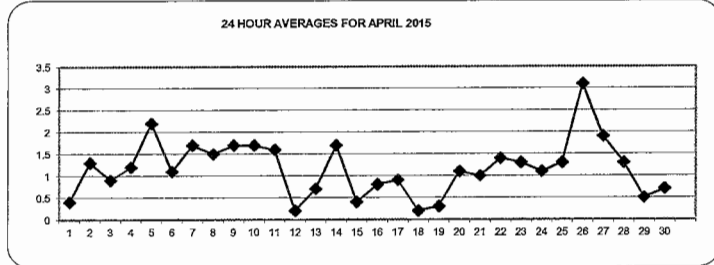
STATUS FLAG CODES

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

OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

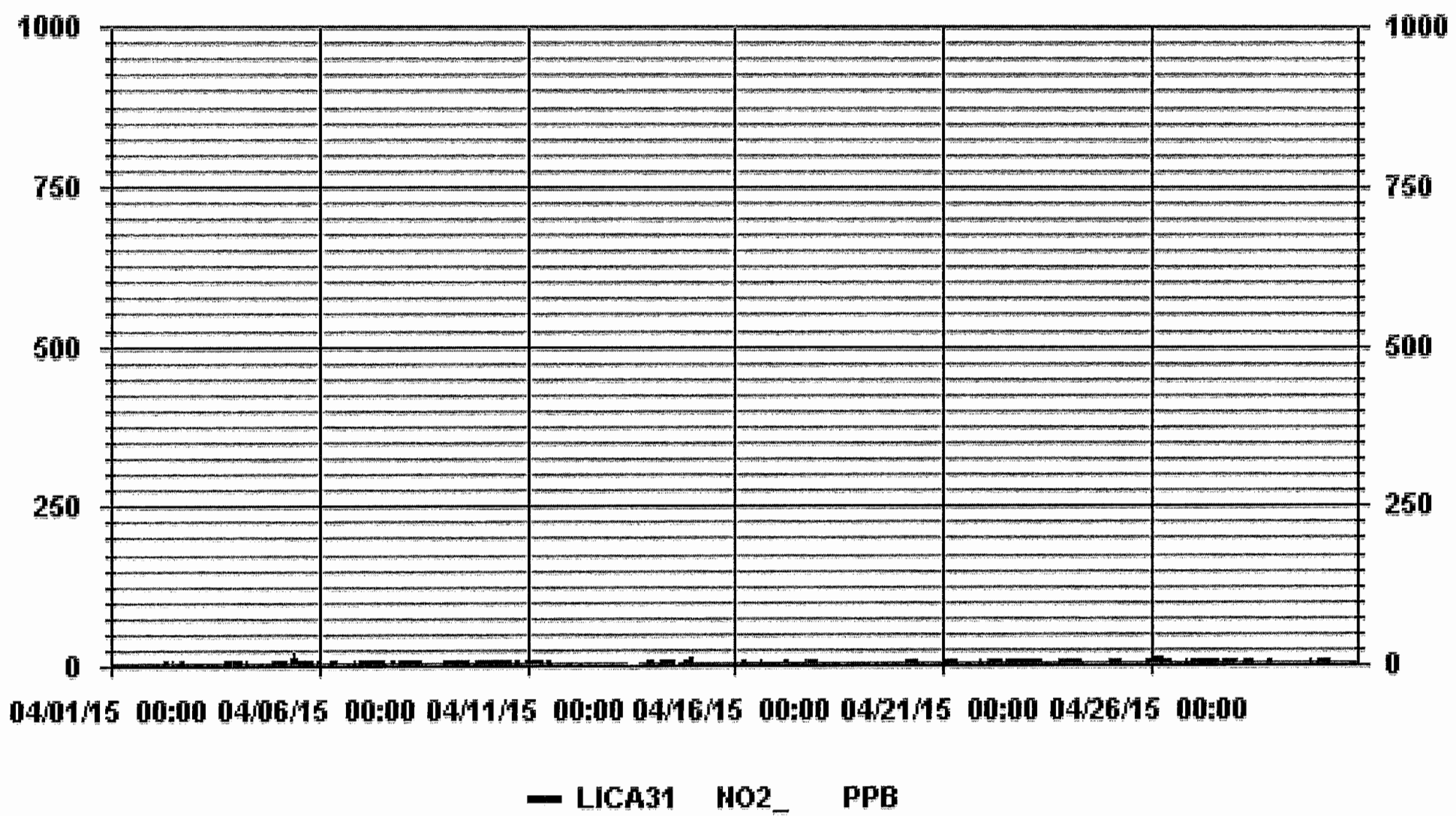
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	641
MAXIMUM 1-HR AVERAGE:	9.7 PPB @ HOUR(S) 9 ON DAY(S) 5
MAXIMUM 24-HR AVERAGE:	3.1 PPB ON DAY(S) 26 VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	716 HRS
AMD OPERATION UPTIME:	99.4 %
STANDARD DEVIATION:	1.13
MONTHLY AVERAGE:	1.2 PPB

01 Hour Averages





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - APRIL 2015

JOB # 2833-2015-04-31- C

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
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	MAX	AVG	RDGS.		
DAY																													
1		0.7	0.7	0.6	0.7	0.7	0.7	S	1.5	1.4	2.2	2.0	0.8	0.6	0.5	0.7	1.2	0.9	1.2	1.7	1.9	1.4	1.4	1.4	1.4	2.2	1.1	24	
2		1.5	1.3	1.2	1.7	1.2	S	2.3	7.3	4.4	2.6	1.2	2.0	1.7	1.7	2.3	3.2	4.7	5.0	1.4	1.4	1.4	3.6	3.5	1.2	7.3	2.5	24	
3		1.2	1.2	1.6	1.3	S	1.2	1.2	2.6	1.8	1.4	1.3	1.1	1.1	1.1	0.7	0.9	0.8	2.2	2.6	2.7	2.2	1.6	1.7	1.8	2.7	1.5	24	
4		1.5	1.5	2.0	S	2.3	3.1	5.0	4.8	2.3	1.3	1.3	1.3	1.5	1.4	1.3	1.2	1.3	1.4	1.2	1.0	2.3	2.6	2.4	2.7	5.0	2.0	24	
5		2.6	2.1	S	2.2	1.8	1.8	2.2	1.6	9.0	13.7	6.1	3.5	2.9	3.1	2.4	2.6	2.4	2.7	3.5	2.9	3.0	3.8	1.7	2.2	13.7	3.5	24	
6		2.2	S	2.1	1.9	1.6	1.3	1.5	2.6	2.9	2.6	1.9	1.5	1.2	1.2	1.2	1.2	1.1	1.2	1.2	1.5	1.4	1.8	2.1	3.7	3.7	1.8	24	
7		S	3.9	4.2	3.5	3.7	3.1	2.5	2.0	2.2	2.4	2.2	1.6	1.5	1.4	1.4	1.4	1.6	1.4	1.6	1.7	1.5	1.6	2.5	S	4.2	2.2	24	
8		2.9	3.0	3.2	3.2	3.2	2.9	2.7	3.4	2.9	3.2	2.4	1.5	1.2	1.0	0.6	0.7	0.7	0.7	1.5	3.8	0.9	2.2	S	2.0	3.8	2.2	24	
9		2.1	1.8	2.4	2.7	2.1	2.0	3.8	5.5	13.7	2.9	2.4	1.7	2.0	6.1	2.6	1.9	7.9	1.2	1.0	2.7	5.0	S	2.3	2.8	13.7	3.4	24	
10		2.6	2.3	2.4	2.8	2.9	2.4	2.5	4.2	3.3	18.8	2.9	1.9	2.4	1.9	1.6	2.8	1.4	1.3	1.9	2.4	S	1.3	1.4	2.2	18.8	3.0	24	
11		3.2	3.6	4.0	3.7	3.2	3.2	3.1	19.8	3.9	2.8	2.3	1.9	22.7	5.7	2.5	1.2	1.2	1.3	1.0	S	0.9	1.0	1.0	0.9	22.7	4.1	24	
12		1.0	1.0	1.0	1.0	1.3	1.5	1.3	1.4	1.0	1.0	0.7	0.7	1.0	0.7	0.7	0.7	0.7	0.7	S	1.0	0.6	0.7	0.8	0.9	1.5	0.9	24	
13		0.9	0.9	0.9	0.9	0.9	1.2	1.0	1.3	0.7	0.7	C	C	C	C	C	C	C	C	4.8	2.1	1.5	2.0	S	1.9	4.8	1.4	24	
14		2.0	1.5	1.3	1.7	1.7	1.5	2.4	2.4	2.2	1.8	1.5	1.4	1.7	Y	Y	Y	Y	1.2	1.5	2.2	3.8	S	9.0	5.2	9.0	2.4	20	
15		2.1	1.3	1.4	1.3	1.4	1.0	6.3	1.3	0.9	0.7	1.0	1.1	1.0	0.8	0.8	1.0	0.8	1.1	0.8	0.9	S	0.9	1.8	1.3	6.3	1.3	24	
16		1.3	1.1	1.2	1.4	1.4	1.7	3.0	1.6	0.9	0.8	0.8	0.8	0.5	3.6	1.0	3.0	3.7	2.4	0.5	S	0.7	0.8	0.7	1.1	3.7	1.5	24	
17		0.8	1.0	1.5	1.2	1.1	2.6	1.8	2.0	1.8	1.5	0.8	0.7	0.9	0.7	1.0	0.9	1.4	1.7	S	2.3	1.9	2.1	2.2	1.9	2.6	1.5	24	
18		1.8	1.4	1.0	1.1	1.0	1.0	1.2	0.9	1.0	1.0	0.7	1.4	0.8	1.0	0.8	1.0	0.7	S	0.6	0.7	2.2	0.6	0.6	0.6	2.2	1.0	24	
19		0.7	0.9	1.0	1.3	1.3	2.4	1.7	1.6	0.7	0.4	0.6	0.5	0.6	0.7	0.9	0.6	S	1.8	0.8	0.6	0.9	1.0	1.3	1.3	2.4	1.0	24	
20		1.3	1.6	1.6	1.9	1.9	2.8	2.8	12.5	3.9	44.7	11.4	0.9	1.4	1.2	3.7	S	2.0	1.0	1.9	1.4	1.3	1.4	1.6	1.8	44.7	4.6	24	
21		2.1	1.9	1.9	2.1	3.5	2.3	3.1	2.6	2.2	1.3	1.2	1.2	16.8	1.7	S	1.0	1.1	1.0	1.3	1.2	1.8	1.9	3.1	2.1	16.8	2.5	24	
22		1.5	1.6	2.0	2.3	2.2	2.2	2.2	2.5	2.2	2.2	2.5	2.4	2.0	S	1.4	1.5	1.5	1.6	1.5	1.8	1.7	1.5	1.7	1.8	2.5	1.9	24	
23		1.6	1.8	2.3	2.2	2.2	1.7	2.0	1.7	1.9	2.0	1.7	1.5	S	0.8	2.1	0.8	1.0	0.9	1.2	2.2	2.3	2.1	2.2	2.2	2.3	1.8	24	
24		2.2	2.1	3.5	3.9	3.3	2.6	2.6	2.9	1.8	1.9	1.6	S	1.6	1.2	0.8	0.6	1.1	0.9	1.2	1.6	1.5	1.2	1.5	3.9	3.9	2.0	24	
25		4.1	2.9	2.9	3.0	4.5	5.2	4.5	2.5	1.0	0.6	S	0.7	0.9	1.2	1.3	1.0	1.1	1.0	1.3	1.0	1.0	1.4	1.9	3.6	5.2	2.1	24	
26		5.7	7.8	8.2	9.0	R	9.8	9.5	7.4	2.5	S	1.9	2.0	1.6	1.5	1.1	1.3	1.3	1.4	1.1	1.3	2.1	11.2	16.0	2.0	16.0	4.8	23	
27		2.4	1.8	2.0	2.0	2.5	3.9	6.1	5.6	S	2.3	2.2	1.8	1.3	4.1	1.5	2.4	1.8	8.8	2.4	3.2	5.6	10.2	5.4	5.3	10.2	3.7	24	
28		2.4	2.0	2.2	4.0	1.4	1.5	2.3	S	2.2	2.0	2.3	1.8	1.5	1.3	1.9	1.8	0.9	1.5	3.6	2.4	2.0	2.0	4.0	1.2	4.0	2.1	24	
29		1.7	0.9	0.9	0.9	0.9	1.3	S	0.9	1.1	1.3	1.0	1.0	1.1	0.5	0.6	0.5	1.0	1.1	0.5	1.5	5.4	1.5	1.1	1.4	5.4	1.2	24	
30		1.5	1.3	1.3	1.7	1.6	S	2.3	2.7	5.8	1.8	1.2	1.2	1.6	7.7	3.8	0.8	0.9	1.4	1.4	1.3	1.1	1.1	0.8	0.8	7.7	2.0	24	
HOURLY MAX		5.7	7.8	8.2	9.0	4.5	9.8	9.5	19.8	13.7	44.7	11.4	3.5	22.7	7.7	3.8	3.2	7.9	8.8	4.8	3.8	5.6	11.2	16.0	5.3				
HOURLY AVG		2.0	1.9	2.1	2.3	2.0	2.4	3.0	3.8	2.8	4.2	2.1	1.4	2.7	2.0	1.5	1.4	1.7	1.8	1.6	1.8	2.1	2.3	2.7	2.1				

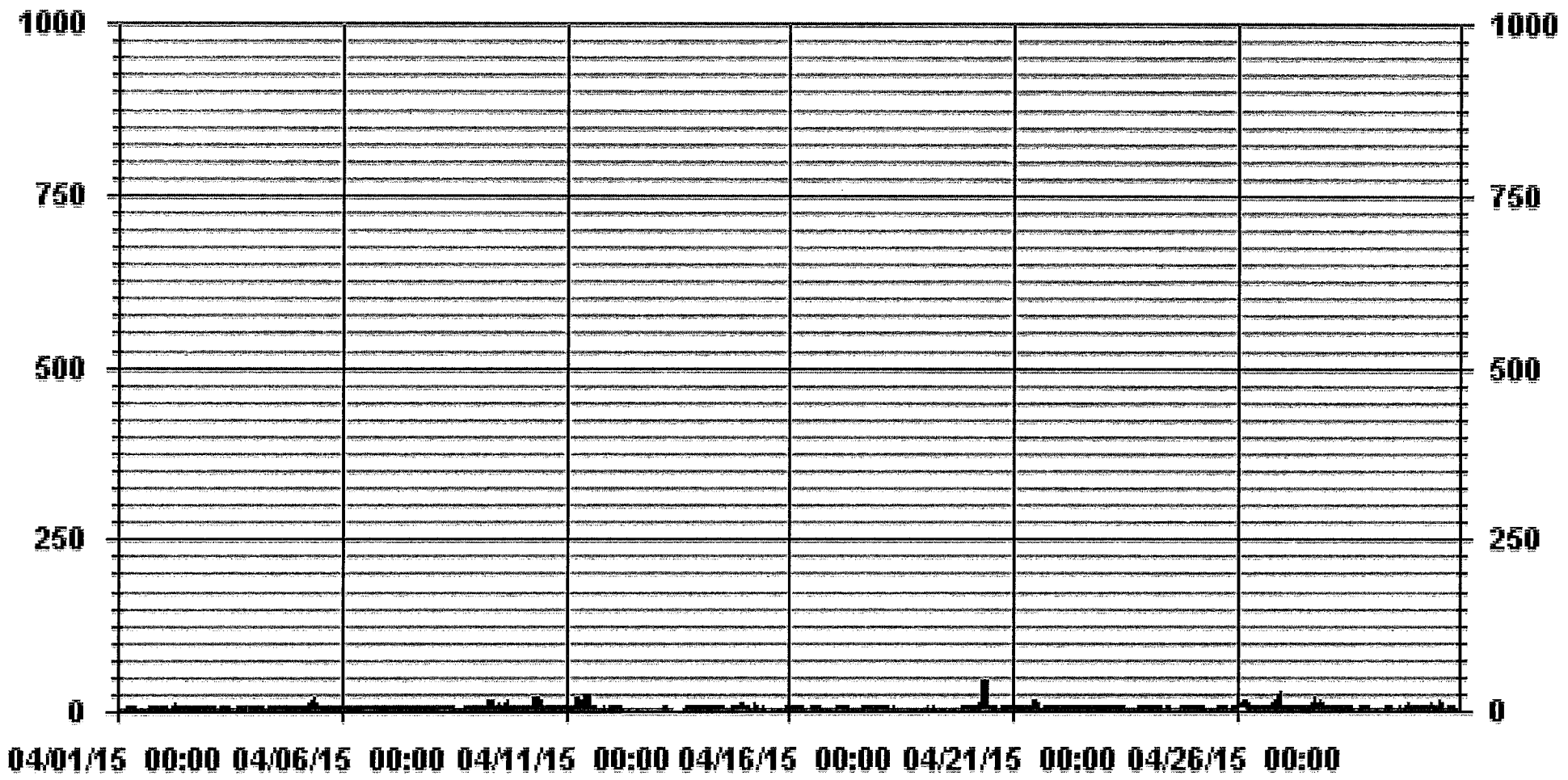
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	676					
MAXIMUM INSTANTANEOUS VALUE:	44.7	PPB	@ HOUR(S)	9	ON DAY(S)	20
				VAR-VARIOUS		
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	715	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	2.75					

01 Hour Averages



— LICA31 NO2MAX PPB

LICA31
 NO2_ / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	2.21	2.51	9.74	8.12	4.87	3.69	3.69	6.35	10.48	6.49	5.16	11.22	7.09	8.56	6.20	3.54	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.21	2.51	9.74	8.12	4.87	3.69	3.69	6.35	10.48	6.49	5.16	11.22	7.09	8.56	6.20	3.54	

Calm : .00 %

Total # Operational Hours : 677

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	15	17	66	55	33	25	25	43	71	44	35	76	48	58	42	24	677
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	15	17	66	55	33	25	25	43	71	44	35	76	48	58	42	24	

Calm : .00 %





Total # Operational Hours : 677

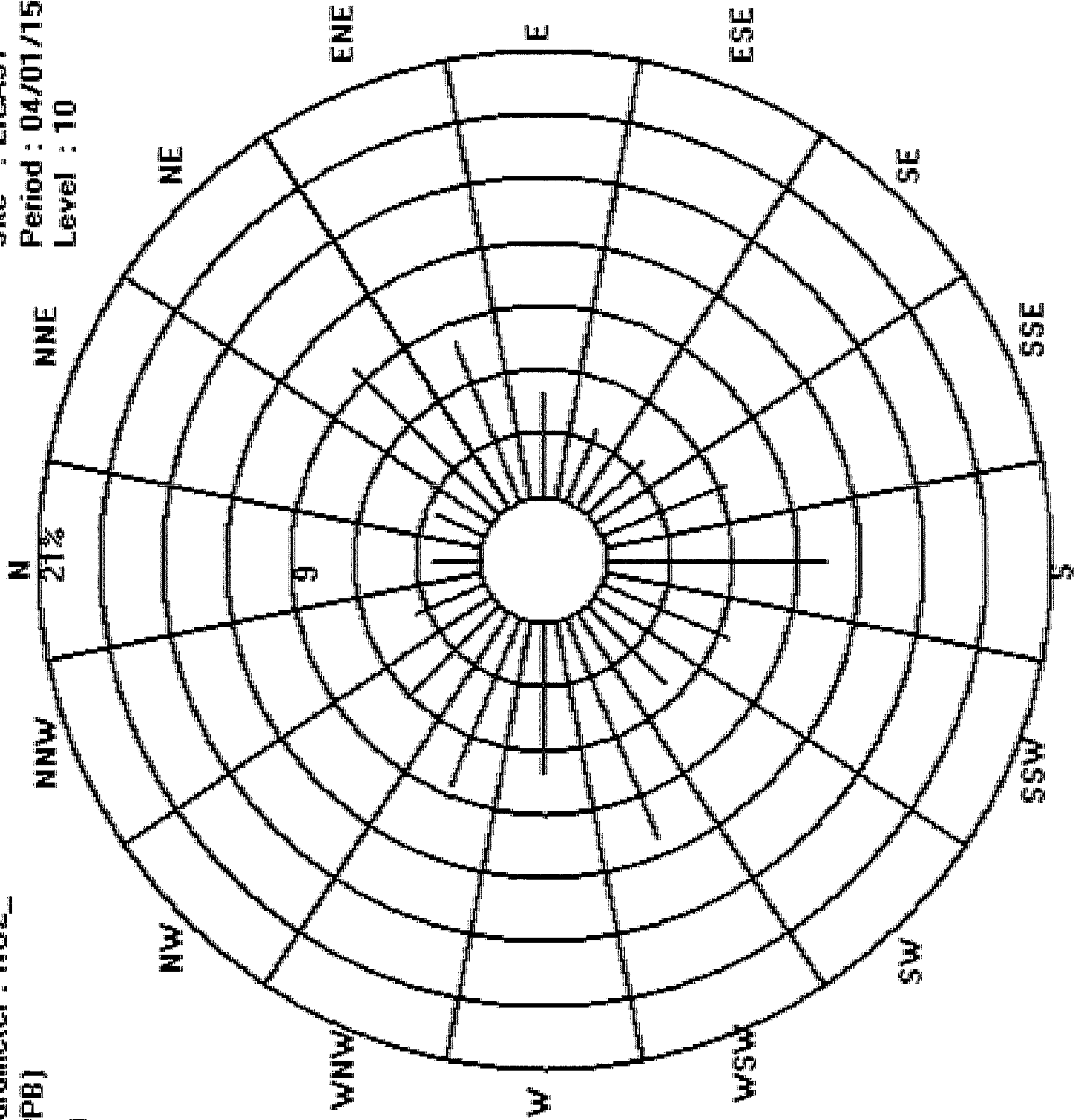
Logger : 31 Parameter : NO2_

Site : LICA31

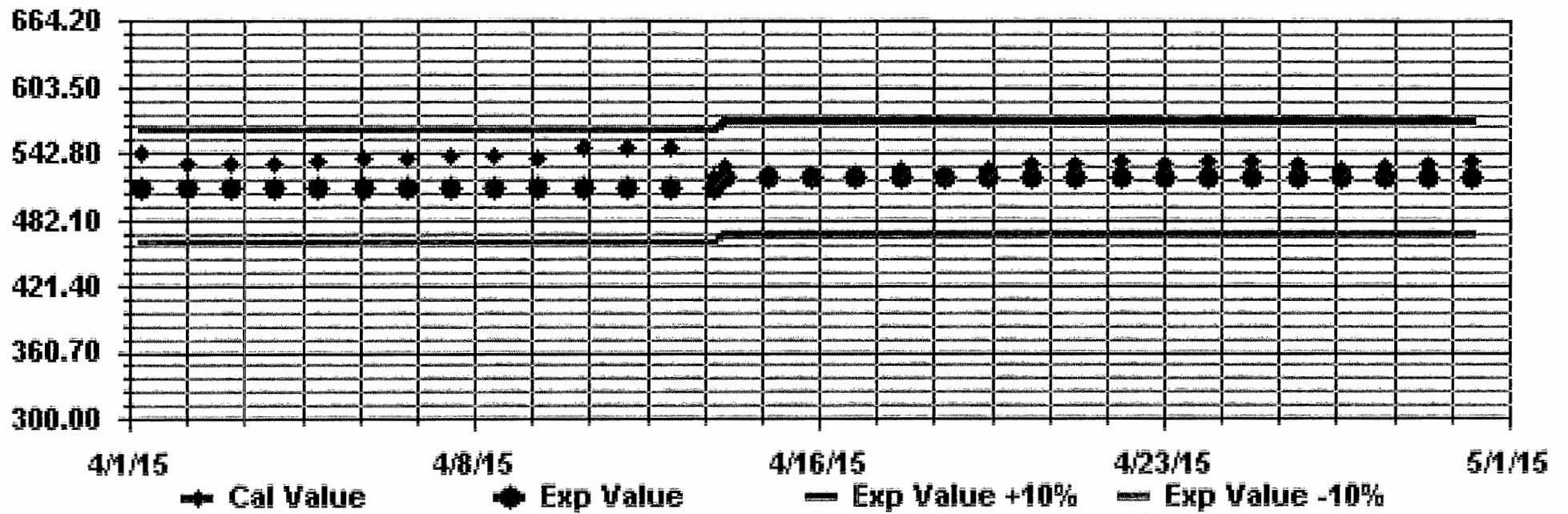
Class Limits (PPB)

Period : 04/01/15-04/30/15

-  >= 210.0
-  < 210.0
-  < 110.0
-  < 50.0



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



OZONE



OZONE (O3) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY 1	34	33	32	33	32	31	S	29	28	29	32	34	34	34	33	36	36	37	39	41	42	41	40	42	42	34.5	24	
2	39	38	39	37	36	S	36	33	36	38	40	38	37	36	35	34	34	36	39	38	37	35	33	34	40	36.4	24	
3	34	31	31	32	S	33	33	32	30	30	33	36	38	36	38	37	35	30	29	29	33	36	36	35	38	33.3	24	
4	36	35	34	S	30	29	24	27	33	39	40	42	43	43	44	44	45	44	42	37	34	34	33	45	37.2	24		
5	32	34	S	34	34	31	32	31	28	21	31	36	39	39	40	39	39	38	38	38	37	36	38	36	40	34.8	24	
6	34	S	35	36	36	35	33	32	31	34	36	40	42	43	44	44	44	44	43	42	41	39	38	33	44	38.2	24	
7	S	29	29	30	28	27	28	30	32	34	35	36	37	37	37	36	35	34	34	33	32	31	27	S	37	32.3	24	
8	24	24	24	24	24	25	25	24	24	27	32	39	44	47	48	46	45	45	44	45	46	44	S	43	48	35.3	24	
9	41	42	40	41	42	39	35	32	31	34	41	45	46	46	48	49	47	47	46	45	44	S	43	41	49	42.0	24	
10	39	39	39	40	40	40	40	39	42	42	45	47	50	52	53	53	54	53	52	52	S	47	43	40	54	45.3	24	
11	39	37	36	34	31	29	28	28	33	41	44	48	48	48	50	50	46	47	48	S	45	44	43	43	50	40.9	24	
12	42	41	40	40	37	37	36	38	41	43	44	44	44	45	44	44	45	45	S	44	44	43	41	39	45	41.8	24	
13	39	39	39	39	40	40	39	41	43	45	45	46	47	47	S	49	49	50	49	49	47	45	S	42	50	44.0	24	
14	42	43	42	41	41	41	39	38	37	40	43	44	43	40	38	40	39	38	35	35	30	S	21	23	44	38.0	24	
15	28	31	33	35	37	39	40	C	C	C	Y	Y	Y	Y	S	49	50	51	50	S	46	46	45	51	41.4	20		
16	44	42	40	39	38	36	34	35	40	44	45	45	47	50	51	49	48	47	44	S	47	47	45	43	51	43.5	24	
17	42	41	40	39	32	28	26	27	32	38	45	48	48	48	47	47	46	S	40	38	39	38	37	48	39.7	24		
18	36	36	36	36	36	37	37	38	39	41	41	40	42	43	43	43	42	S	42	41	41	42	39	40	43	39.6	24	
19	40	38	37	36	36	37	37	37	38	40	42	44	44	45	45	48	S	48	47	47	46	46	44	43	48	42.0	24	
20	41	40	38	38	36	34	33	35	39	43	47	49	49	49	49	S	49	48	48	45	44	43	39	37	49	42.3	24	
21	35	34	32	32	32	31	29	31	35	38	42	44	46	47	S	49	49	49	50	48	46	46	42	40	50	40.3	24	
22	41	40	38	36	34	33	32	33	35	37	40	42	46	S	50	51	51	50	49	50	48	48	46	44	51	42.3	24	
23	45	42	40	37	34	33	31	30	28	26	23	26	S	29	29	30	33	33	30	24	24	22	21	21	45	30.0	24	
24	22	24	23	21	20	23	23	25	26	27	28	S	30	32	34	34	34	33	33	33	33	32	31	30	34	28.3	24	
25	28	28	28	28	26	24	26	29	33	36	S	38	38	39	39	40	40	41	41	41	41	40	40	38	36	41	34.7	24
26	32	27	25	24	24	25	27	33	39	S	40	41	43	44	46	47	47	47	46	43	43	42	42	47	38.0	24		
27	40	40	40	39	37	35	31	31	S	33	37	40	44	47	49	52	53	53	53	52	49	47	44	42	53	43.0	24	
28	42	43	44	45	45	45	42	S	40	43	45	49	52	53	52	51	51	52	51	50	49	46	44	44	53	46.9	24	
29	39	43	44	46	47	47	S	45	44	50	54	52	51	51	50	49	50	50	46	44	42	42	43	42	54	46.6	24	
30	39	37	35	34	32	S	30	31	38	41	43	47	49	49	50	49	50	50	50	50	52	53	54	53	54	44.2	24	
HOURLY MAX	45	43	44	46	47	47	42	45	44	50	54	52	52	53	53	53	54	53	53	52	52	53	54	53				
HOURLY AVG	36.9	36.2	35.6	35.4	34.4	33.7	32.4	32.6	34.8	36.9	39.8	42.1	43.6	43.5	44.0	44.2	44.3	44.3	43.6	42.6	41.3	41.4	39.1	38.7				

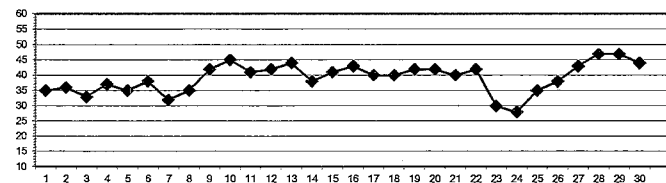
STATUS FLAG CODES

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

OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR: 82 PPB

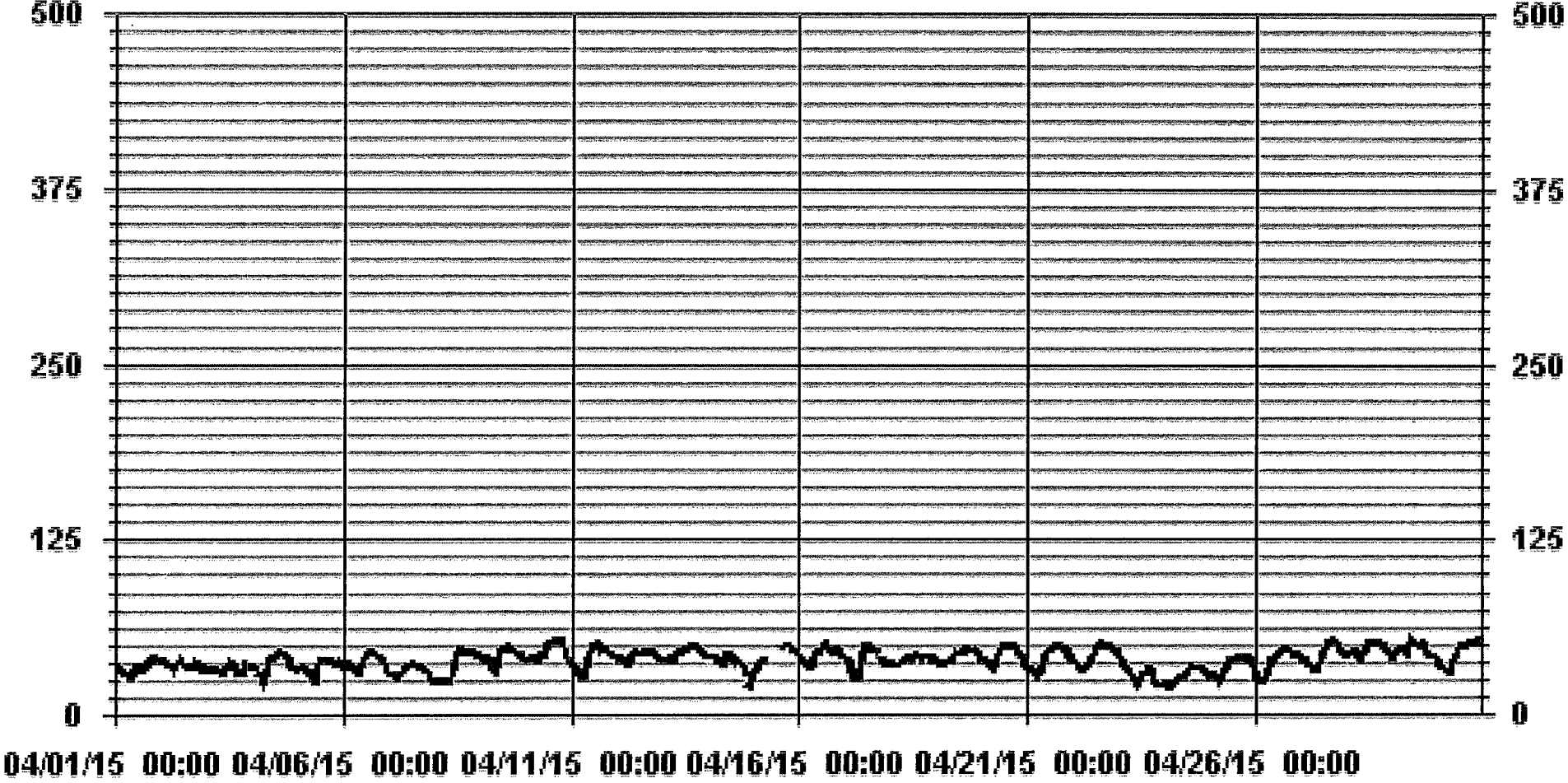
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	679				
MAXIMUM 1-HR AVERAGE:	54	PPB	@ HOUR(S)	VAR	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	46.9	PPB			ON DAY(S)
					VAR-VARIOUS
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	716	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.4	%
STANDARD DEVIATION:	7.33		MONTHLY AVERAGE:	39	PPB

01 Hour Averages



— LICA31 03_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - APRIL 2015

JOB # 2833-2015-04-31- C

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	35	35	34	34	34	32	S	31	29	31	34	35	34	35	35	35	37	37	38	41	42	42	42	40	42	35.7	24	
2	39	39	39	39	37	S	40	36	39	41	40	39	38	37	37	36	34	39	40	39	37	38	34	36	41	38.0	24	
3	36	33	33	34	S	34	34	34	32	32	35	38	39	40	40	38	37	34	31	31	35	37	37	37	40	35.3	24	
4	37	36	35	S	31	30	26	31	37	41	42	43	44	44	45	45	46	46	44	41	35	35	34	46	38.8	24		
5	33	35	S	36	35	33	34	34	32	28	33	39	40	40	41	40	39	39	39	38	38	39	38	41	36.7	24		
6	36	S	36	37	37	36	34	33	33	35	39	42	43	44	45	45	44	43	43	42	40	39	37	45	39.5	24		
7	S	31	32	32	32	28	29	31	34	36	36	37	38	38	37	36	36	35	34	33	32	30	S	38	33.9	24		
8	25	25	25	26	25	27	26	25	25	32	37	41	47	48	49	48	46	46	45	46	47	46	S	45	49	37.0	24	
9	42	42	42	43	42	41	37	35	34	37	46	47	47	48	49	50	48	48	47	46	45	S	44	42	50	43.6	24	
10	40	40	40	41	41	41	41	40	43	44	47	49	52	54	55	55	54	53	53	S	49	46	41	55	46.7	24		
11	40	38	37	36	32	30	30	30	40	42	48	51	50	50	52	52	47	49	49	S	46	45	44	43	52	42.7	24	
12	43	41	41	41	38	37	37	41	42	44	45	45	45	45	45	46	46	S	45	45	44	42	40	46	42.7	24		
13	39	39	40	40	40	40	40	42	44	46	46	46	47	48	S	50	50	51	50	50	49	46	S	44	51	44.9	24	
14	43	43	43	42	41	41	41	39	39	42	45	45	44	43	41	41	41	39	39	37	35	S	26	26	45	39.8	24	
15	31	32	35	36	39	40	41	C	C	C	C	Y	Y	Y	Y	S	50	51	51	51	S	47	46	45	51	42.5	20	
16	45	44	42	40	39	37	36	38	43	46	47	46	49	51	52	52	49	49	45	S	48	48	47	44	52	45.1	24	
17	43	42	41	41	36	30	27	31	36	42	48	48	49	49	48	48	48	47	S	43	39	40	38	38	49	41.4	24	
18	37	37	37	37	37	37	38	38	40	42	41	41	43	44	45	44	43	S	43	43	43	42	41	41	45	40.6	24	
19	41	40	38	38	38	38	38	38	40	43	43	45	45	46	47	50	S	49	49	48	47	47	45	44	50	43.3	24	
20	42	41	39	39	38	36	33	37	41	46	49	50	50	51	51	S	50	49	49	47	45	44	41	38	51	43.7	24	
21	36	35	33	33	33	32	31	33	38	40	44	46	47	48	S	50	50	50	50	50	50	47	47	45	41	50	41.7	24
22	42	41	40	37	36	34	33	34	37	39	41	44	48	S	52	52	53	51	50	51	49	48	48	45	53	43.7	24	
23	47	44	41	39	36	34	33	31	30	28	25	27	S	30	30	32	35	35	32	27	29	24	22	23	47	31.9	24	
24	24	25	25	24	22	25	25	29	27	29	30	S	32	34	35	35	34	34	34	34	34	34	31	31	35	29.9	24	
25	29	29	29	29	28	25	30	32	35	36	S	39	39	40	40	41	41	42	42	42	40	40	39	38	42	35.9	24	
26	34	29	26	25	R	26	30	38	40	S	40	42	44	45	47	48	48	48	48	47	46	44	43	43	48	40.0	23	
27	41	41	41	41	38	36	33	32	S	35	40	45	47	48	52	53	54	54	54	53	53	50	48	43	54	44.9	24	
28	44	44	46	46	46	46	44	S	41	45	48	50	54	54	53	52	52	53	52	52	50	48	45	48	54	48.4	24	
29	41	44	46	47	48	48	S	46	46	54	56	54	54	54	51	51	54	51	49	46	43	44	44	43	56	48.4	24	
30	41	38	36	35	33	S	31	35	41	43	45	49	50	50	51	50	51	51	51	51	54	53	55	55	54	55	45.7	24
HOURLY MAX	47	44	46	47	48	48	44	46	46	54	56	54	54	54	55	55	55	54	54	54	53	55	55	54	55	54		
HOURLY AVG	38.1	37.3	37.0	36.8	36.1	34.8	34.0	34.8	37.1	39.3	41.8	43.7	45.0	44.9	45.4	45.5	45.5	45.6	44.8	44.1	42.9	42.6	40.6	40.1				

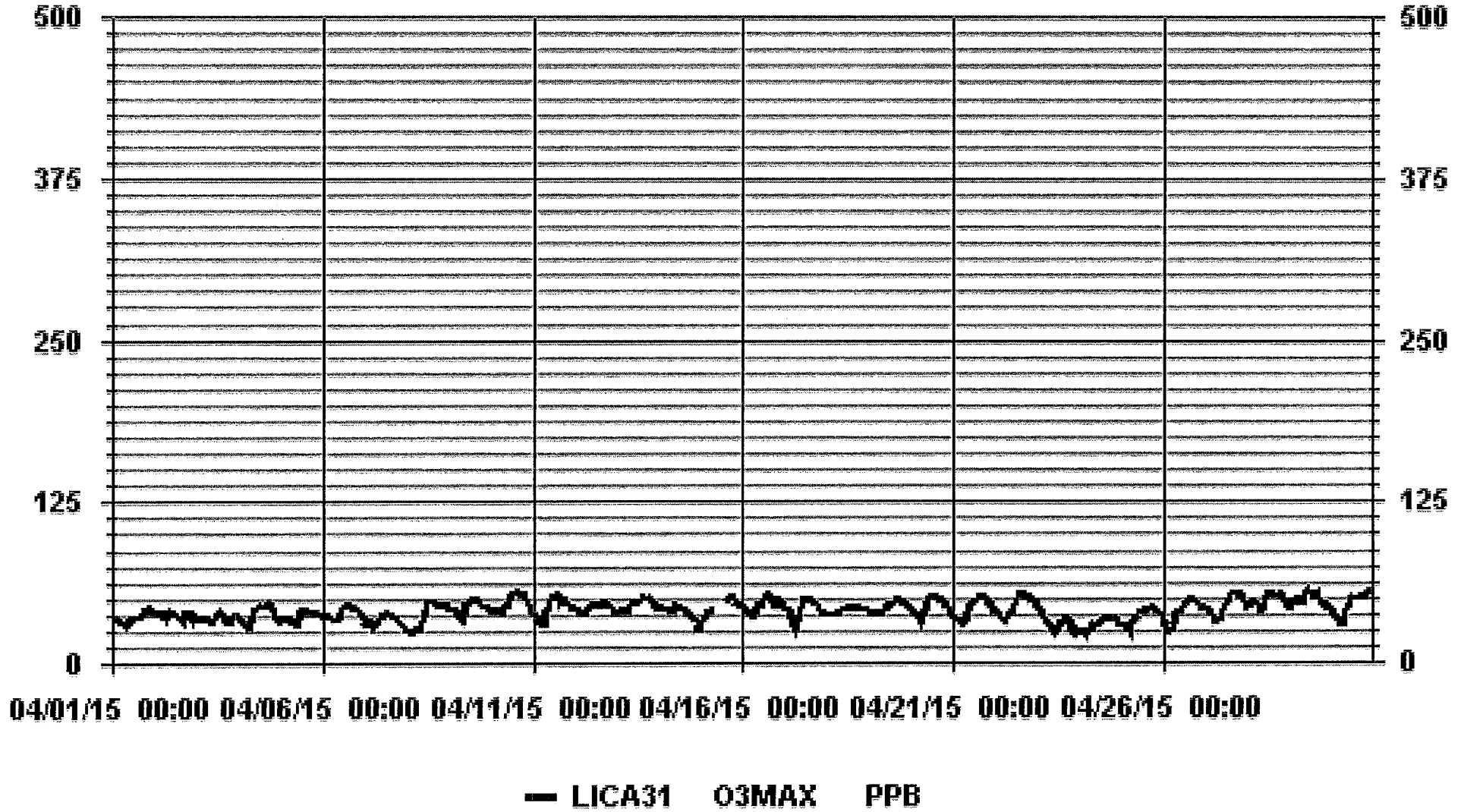
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	678
MAXIMUM INSTANTANEOUS VALUE:	56 PPB @ HOUR(S) 10 ON DAY(S) 29
	VAR-VARIOUS
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	7.15
OPERATIONAL TIME:	715 HRS

01 Hour Averages



LICA31
 O3_ / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50	2.20	2.50	9.72	8.24	4.86	2.94	3.68	6.48	8.83	5.89	4.56	9.42	6.77	7.21	5.44	3.53	92.34
< 110	.00	.00	.00	.00	.14	.73	.00	.14	1.62	.58	.58	1.91	.73	.44	.73	.00	7.65
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.20	2.50	9.72	8.24	5.00	3.68	3.68	6.62	10.45	6.48	5.15	11.34	7.51	7.65	6.18	3.53	

Calm : .00 %

Total # Operational Hours : 679

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50	15	17	66	56	33	20	25	44	60	40	31	64	46	49	37	24	627
< 110					1	5		1	11	4	4	13	5	3	5		52
< 210																	
>= 210																	
Totals	15	17	66	56	34	25	25	45	71	44	35	77	51	52	42	24	

Calm : .00 %





Total # Operational Hours : 679

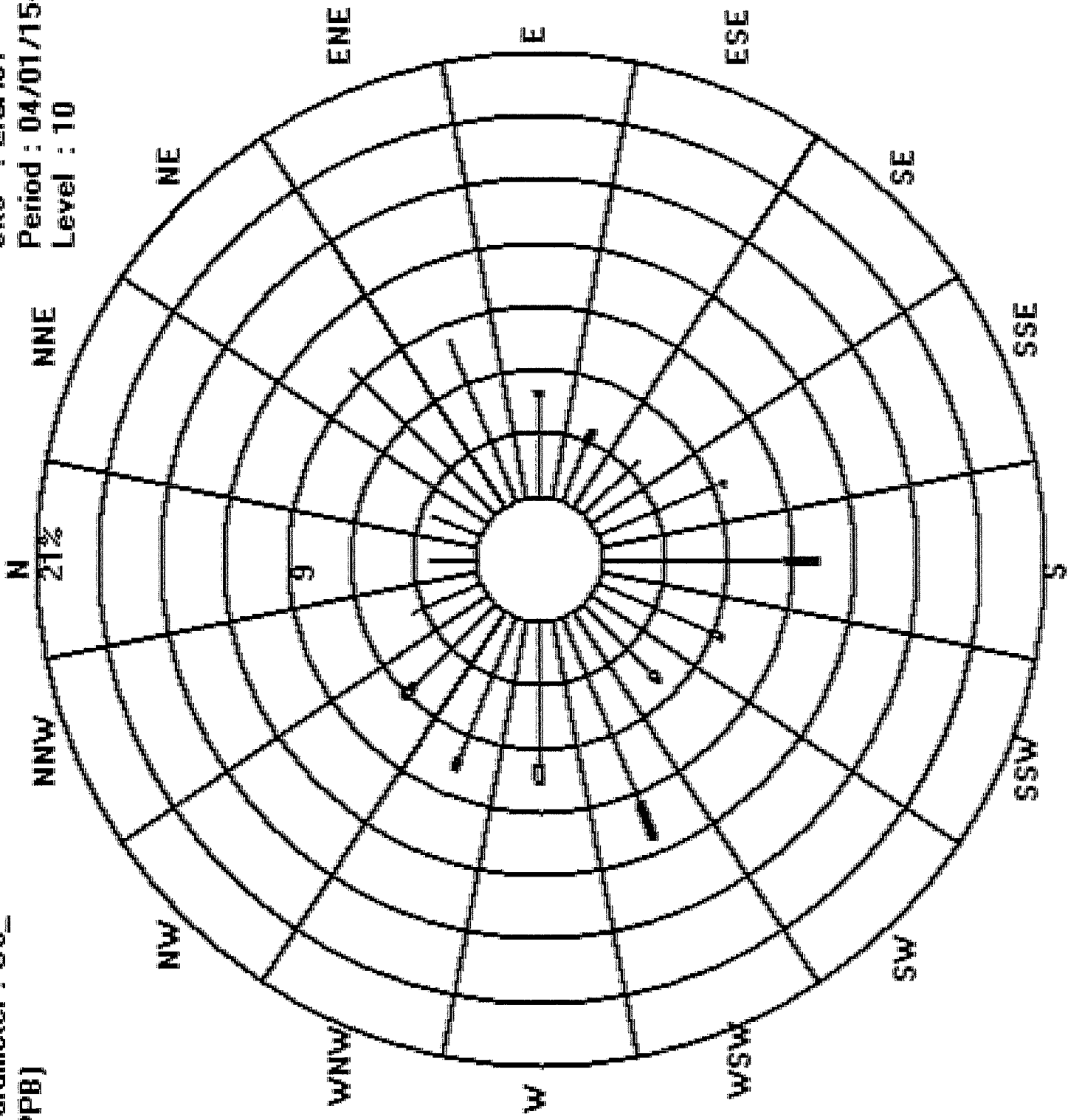
Logger : 31 Parameter : O3_

Site : LICA31

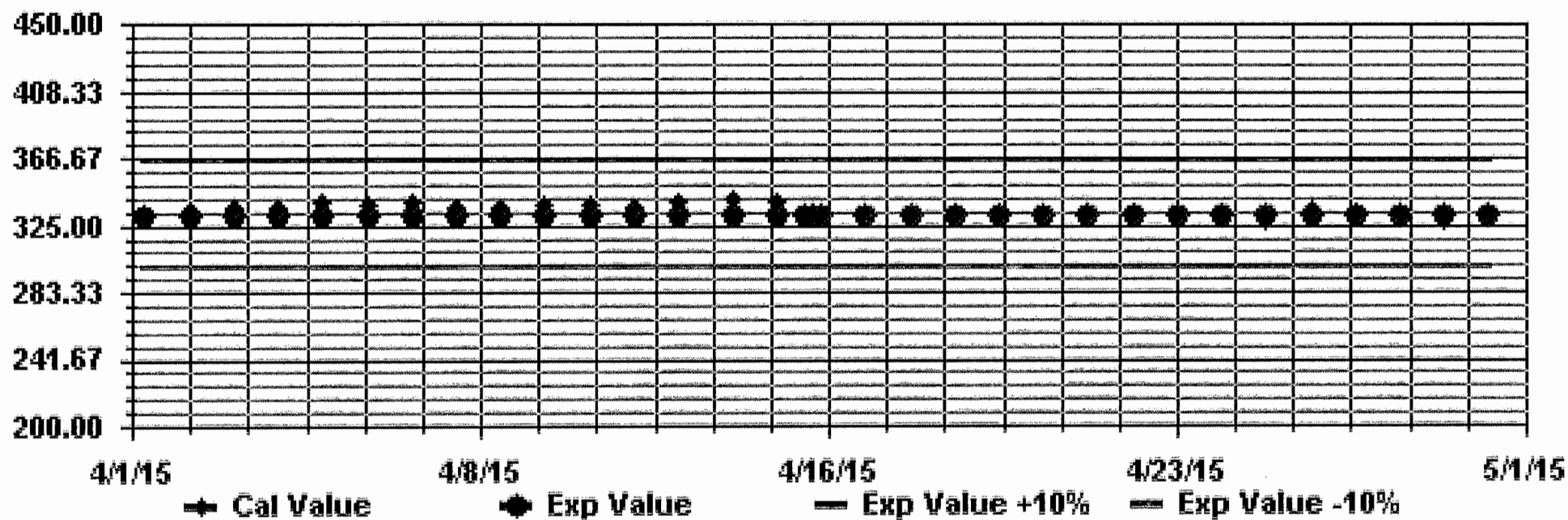
Class Limits (PPB)

Period : 04/01/15-04/30/15

-  >= 210
-  < 210
-  < 110
-  < 50



Calibration Graph for Site: LICA31 Parameter: O3_ Sequence: 03 Phase: SPAN



PARTICULATE MATTER 2.5

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

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOURLY START	HOURLY END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																												
1		0.0	9.0	6.0	3.0	7.0	9.0	4.0	12.0	6.0	6.0	7.0	6.0	6.0	7.0	8.0	6.0	3.0	17.0	4.0	10.0	8.0	6.0	15.0	5.0	17.0	7.1	24
2		2.0	5.0	9.0	6.0	8.0	13.0	9.0	11.0	8.0	7.0	8.0	7.0	12.0	10.0	8.0	8.0	9.0	0.0	0.0	9.0	5.0	6.0	7.0	5.0	13.0	7.2	24
3		4.0	4.0	5.0	11.0	9.0	7.0	6.0	6.0	7.0	3.0	4.0	11.0	2.0	7.0	8.0	7.0	3.0	6.0	7.0	13.0	11.0	3.0	5.0	8.0	13.0	6.5	24
4		11.0	7.0	13.0	9.0	9.0	15.0	12.0	7.0	14.0	8.0	11.0	11.0	9.0	4.0	1.0	6.0	9.0	8.0	4.0	6.0	2.0	10.0	14.0	8.0	15.0	8.7	24
5		7.0	8.0	10.0	9.0	9.0	9.0	6.0	8.0	13.0	11.0	11.0	5.0	4.0	8.0	8.0	3.0	1.0	7.0	12.0	12.0	9.0	5.0	8.0	7.0	13.0	7.9	24
6		10.0	5.0	9.0	6.0	4.0	8.0	12.0	5.0	5.0	5.0	2.0	5.0	8.0	8.0	6.0	4.0	4.0	5.0	2.0	6.0	10.0	5.0	13.0	8.0	13.0	6.5	24
7		15.0	7.0	7.0	9.0	7.0	12.0	12.0	6.0	3.0	6.0	6.0	7.0	10.0	9.0	2.0	8.0	6.0	1.0	6.0	10.0	8.0	13.0	14.0	11.0	15.0	8.1	24
8		11.0	9.0	13.0	13.0	10.0	8.0	12.0	11.0	11.0	13.0	10.0	5.0	3.0	2.0	8.0	3.0	0.0	4.0	5.0	4.0	11.0	4.0	6.0	9.0	13.0	7.7	24
9		10.0	12.0	5.0	4.0	6.0	10.0	16.0	8.0	4.0	8.0	9.0	7.0	9.0	7.0	6.0	9.0	4.0	7.0	0.0	5.0	8.0	11.0	9.0	9.0	16.0	7.6	24
10		9.0	12.0	10.0	11.0	13.0	14.0	13.0	11.0	16.0	13.0	9.0	9.0	8.0	8.0	C	0.0	6.0	8.0	10.0	13.0	8.0	11.0	11.0	16.0	10.0	24	
11		10.0	14.0	11.0	11.0	11.0	13.0	8.0	8.0	7.0	7.0	5.0	11.0	4.0	8.0	3.0	6.0	8.0	4.0	7.0	5.0	5.0	2.0	5.0	1.0	14.0	7.3	24
12		0.0	2.0	5.0	7.0	6.0	3.0	6.0	1.0	3.0	1.0	0.0	6.0	7.0	0.0	5.0	8.0	8.0	3.0	5.0	7.0	7.0	10.0	1.0	7.0	10.0	4.5	24
13		1.0	1.0	9.0	3.0	12.0	7.0	3.0	3.0	2.0	0.0	X	3.0	1.0	2.0	8.0	3.0	1.0	10.0	5.0	5.0	7.0	5.0	8.0	11.0	12.0	4.8	23
14		12.0	5.0	9.0	14.0	12.0	6.0	6.0	3.0	8.0	X	5.0	6.0	64.0	4.0	2.0	7.0	7.0	10.0	8.0	5.0	11.0	6.0	12.0	4.0	64.0	9.8	23
15		9.0	10.0	4.0	4.0	2.0	6.0	4.0	3.0	2.0	4.0	4.0	7.0	3.0	3.0	3.0	7.0	6.0	9.0	1.0	6.0	5.0	11.0	5.0	9.0	11.0	5.3	24
16		9.0	6.0	7.0	10.0	11.0	6.0	9.0	3.0	6.0	9.0	7.0	8.0	7.0	0.0	1.0	8.0	6.0	6.0	6.0	8.0	2.0	2.0	7.0	4.0	11.0	6.2	24
17		2.0	0.0	6.0	3.0	3.0	6.0	5.0	7.0	7.0	6.0	7.0	5.0	3.0	4.0	7.0	0.0	1.0	2.0	3.0	8.0	5.0	4.0	8.0	6.0	8.0	4.5	24
18		8.0	8.0	6.0	7.0	7.0	5.0	7.0	4.0	3.0	9.0	5.0	6.0	7.0	5.0	10.0	6.0	2.0	5.0	4.0	2.0	1.0	3.0	8.0	12.0	12.0	5.8	24
19		6.0	11.0	10.0	5.0	8.0	7.0	3.0	4.0	7.0	7.0	7.0	5.0	5.0	5.0	3.0	7.0	5.0	9.0	7.0	5.0	8.0	2.0	10.0	10.0	11.0	6.5	24
20		9.0	9.0	11.0	6.0	10.0	7.0	14.0	4.0	7.0	9.0	3.0	X	6.0	6.0	0.0	1.0	2.0	9.0	9.0	10.0	10.0	2.0	10.0	7.0	14.0	7.0	23
21		13.0	14.0	7.0	8.0	10.0	2.0	15.0	19.0	8.0	9.0	10.0	9.0	5.0	3.0	4.0	5.0	2.0	4.0	6.0	8.0	10.0	8.0	6.0	8.0	19.0	8.0	24
22		8.0	11.0	11.0	10.0	11.0	11.0	10.0	7.0	10.0	9.0	12.0	6.0	2.0	7.0	5.0	9.0	4.0	8.0	5.0	5.0	8.0	8.0	4.0	8.0	12.0	7.9	24
23		10.0	11.0	19.0	22.0	16.0	15.0	5.0	12.0	12.0	9.0	8.0	8.0	3.0	4.0	4.0	5.0	7.0	4.0	4.0	11.0	9.0	7.0	10.0	18.0	22.0	9.7	24
24		13.0	14.0	13.0	7.0	12.0	9.0	11.0	14.0	8.0	7.0	8.0	9.0	10.0	9.0	5.0	10.0	6.0	7.0	9.0	6.0	6.0	5.0	8.0	13.0	14.0	9.1	24
25		6.0	15.0	2.0	7.0	3.0	0.0	5.0	4.0	6.0	7.0	6.0	9.0	6.0	4.0	5.0	7.0	4.0	5.0	7.0	6.0	7.0	8.0	6.0	4.0	15.0	5.8	24
26		8.0	10.0	3.0	6.0	R	0.0	2.0	6.0	8.0	14.0	7.0	7.0	8.0	3.0	5.0	4.0	6.0	4.0	7.0	5.0	3.0	10.0	5.0	12.0	14.0	6.2	23
27		8.0	11.0	10.0	10.0	11.0	6.0	9.0	4.0	5.0	C	C	0.0	0.0	4.0	4.0	7.0	2.0	0.0	4.0	1.0	0.0	0.0	6.0	5.0	11.0	4.9	24
28		7.0	8.0	3.0	6.0	1.0	6.0	3.0	1.0	5.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	4.0	0.0	1.0	7.0	5.0	3.0	0.0	0.0	8.0	2.8	24
29		8.0	5.0	6.0	1.0	5.0	4.0	7.0	7.0	1.0	0.0	7.0	0.0	0.0	X	0.0	2.0	1.0	3.0	0.0	3.0	3.0	2.0	1.0	4.0	8.0	3.0	23
30		2.0	3.0	5.0	8.0	10.0	6.0	0.0	7.0	3.0	1.0	0.0	5.0	0.0	0.0	1.0	2.0	2.0	4.0	2.0	1.0	2.0	7.0	3.0	1.0	10.0	3.1	24
HOURLY MAX		15.0	15.0	19.0	22.0	16.0	15.0	16.0	19.0	16.0	14.0	12.0	11.0	64.0	10.0	10.0	10.0	9.0	17.0	12.0	13.0	13.0	13.0	15.0	18.0			
HOURLY AVG		7.6	8.2	8.1	7.9	8.4	7.7	7.8	6.9	6.8	6.8	6.4	6.3	7.1	4.9	4.6	5.5	4.1	5.6	4.9	6.6	6.6	5.9	7.5	7.5			

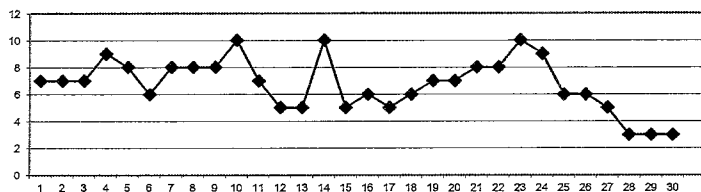
STATUS FLAG CODES

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

OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 24-HR: 30 ug/m3

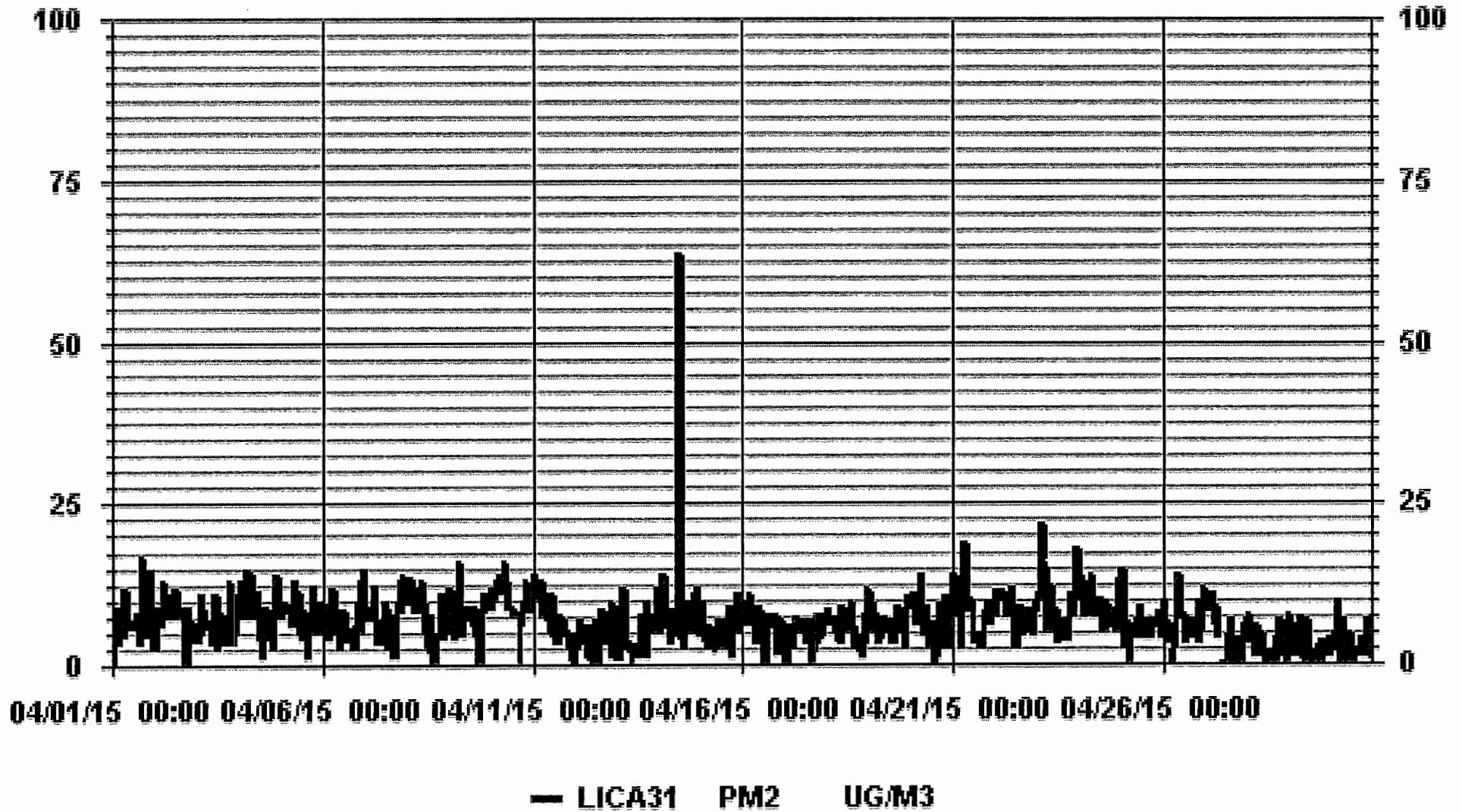
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	676		
MAXIMUM 1-HR AVERAGE:	64.0 ug/m3 @ HOUR(S)	15	ON DAY(S) 14
MAXIMUM 24-HR AVERAGE:	10.0 ug/m3		ON DAY(S) 10
			VAR-VARIOUS
MONTHLY CALIBRATION TIME:	3 HRS	OPERATIONAL TIME:	715 HRS
		AMD OPERATION UPTIME:	99.3 %
STANDARD DEVIATION:	4.26	MONTHLY AVERAGE:	6.7 ug/m3

01 Hour Averages



LICA31
 PM2 / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	2.52	2.24	9.69	8.00	4.77	3.79	3.65	6.32	10.25	6.32	5.05	11.65	7.44	8.42	6.17	3.51	99.85
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 80	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
< 120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.52	2.24	9.69	8.00	4.77	3.79	3.79	6.32	10.25	6.32	5.05	11.65	7.44	8.42	6.17	3.51	

Calm : .00 %

Total # Operational Hours : 712

Distribution By Samples

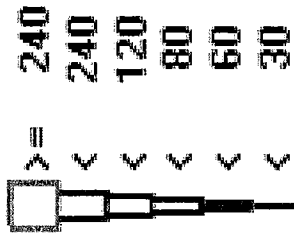
Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	18	16	69	57	34	27	26	45	73	45	36	83	53	60	44	25	711
< 60																	
< 80							1										1
< 120																	
< 240																	
>= 240																	
Totals	18	16	69	57	34	27	27	45	73	45	36	83	53	60	44	25	

Calm : .00 %

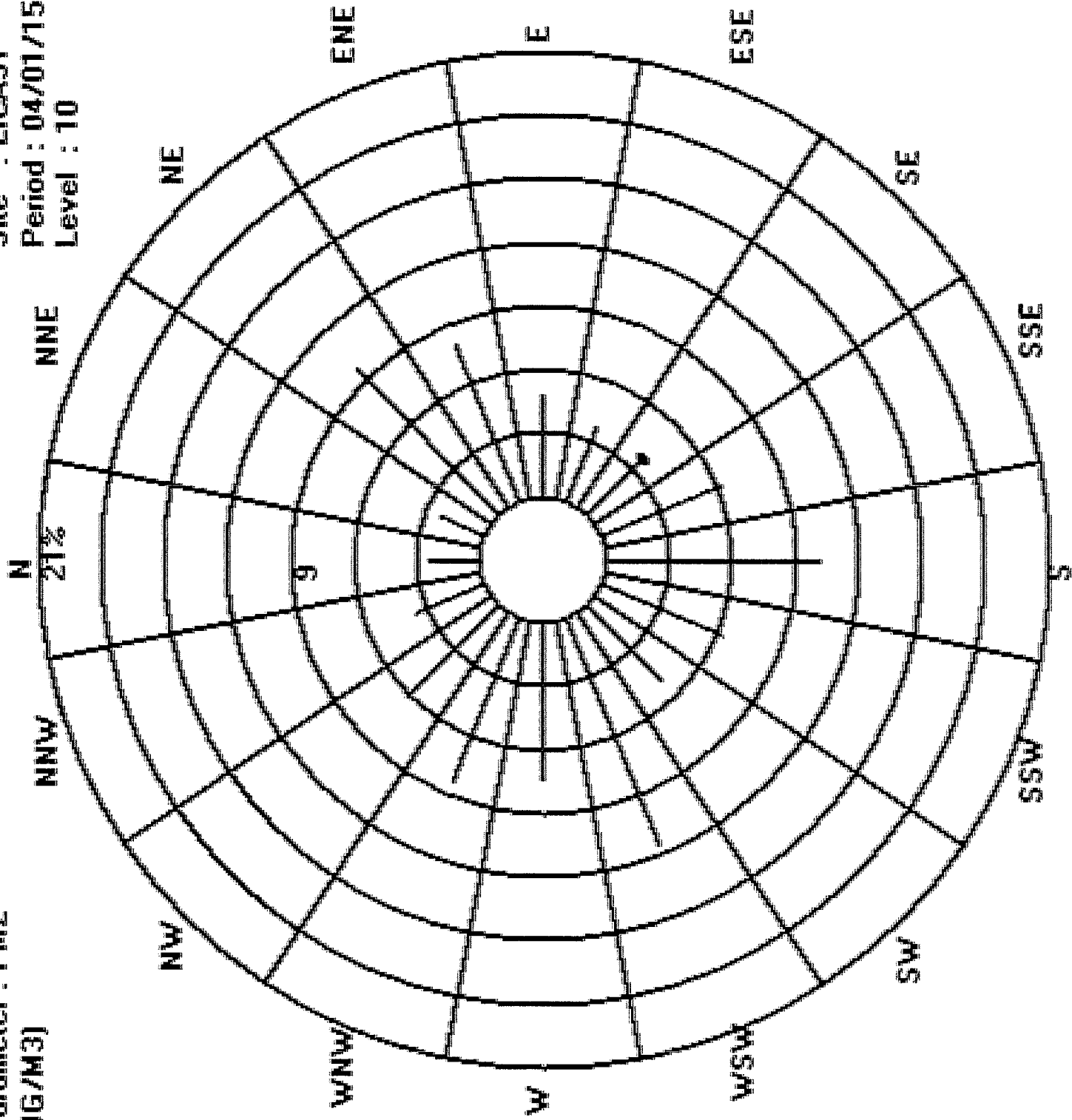
Total # Operational Hours : 712

Logger : 31 Parameter : PM2

Class Limits (UG/M3)



Site : LICA31
Period : 04/01/15-04/30/15
Level : 10



WIND SPEED



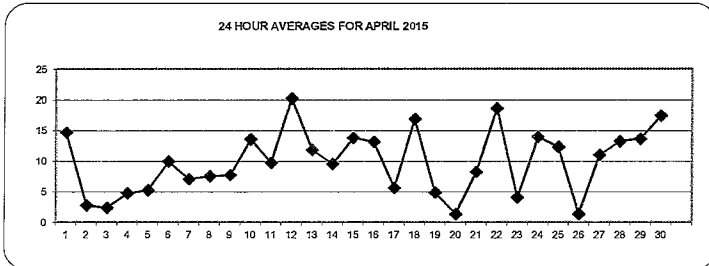
WIND SPEED (WS) hourly averages in km/hr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.
HOURLY START	HOURLY END	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MAX	AVG.	
DAY																												
1		17.7	17.1	18.3	18.2	17.4	17.3	15.4	9.7	6.2	18.1	17.8	17.5	21.4	23.6	25.0	26.2	26.8	26.0	24.4	21.7	20.2	18.8	15.2	12.4	26.8	18.9	24
2		10.6	6.9	6.8	6.3	6.8	4.7	2.6	2.1	4.3	5.0	6.6	3.6	4.3	3.7	10.0	8.0	8.5	8.0	7.2	4.9	6.2	2.3	1.0	3.4	10.6	5.6	24
3		1.3	4.6	7.1	5.9	8.1	4.6	1.8	5.5	9.2	9.2	8.4	8.9	10.9	9.7	14.6	12.3	10.6	11.0	9.6	9.5	13.1	11.3	8.9	9.3	14.6	8.6	24
4		6.4	5.7	5.4	6.0	6.9	7.0	6.1	4.0	4.5	3.5	3.1	5.7	1.7	3.7	4.2	3.3	3.2	8.3	9.4	8.8	7.7	7.4	6.9	5.4	9.4	5.6	24
5		4.9	7.7	7.5	6.3	7.5	5.5	4.5	3.3	5.0	9.7	8.9	6.3	4.7	4.8	5.1	6.0	4.9	6.7	9.5	8.2	8.6	9.6	9.3	9.1	9.7	6.8	24
6		9.3	10.7	12.1	12.7	12.4	10.5	9.8	11.3	10.9	8.7	8.8	13.4	14.0	12.9	15.4	14.1	15.1	14.9	12.0	11.2	12.1	11.4	10.4	10.7	15.4	11.9	24
7		10.2	9.5	10.4	9.2	9.6	9.7	10.0	10.4	12.0	11.9	9.8	8.7	9.0	6.4	5.7	7.0	7.3	4.6	1.8	4.0	5.5	6.4	8.1	8.0	12.0	8.1	24
8		6.3	7.2	6.8	7.6	9.4	10.7	10.6	11.5	11.4	11.9	10.2	12.4	14.4	14.5	15.2	11.9	10.3	10.2	7.3	5.9	6.2	7.1	7.5	6.6	15.2	9.7	24
9		7.1	6.6	4.3	1.8	4.3	5.9	6.5	5.5	6.1	6.5	8.0	10.2	14.1	13.2	10.0	9.2	10.8	12.8	9.5	8.1	8.1	9.5	10.6	10.1	14.1	8.3	24
10		11.4	12.2	12.4	12.5	11.8	11.5	10.7	11.2	13.8	13.4	14.0	16.1	20.5	20.0	21.7	20.8	21.8	22.3	12.0	4.8	6.0	9.2	10.4	10.4	22.3	13.8	24
11		11.2	8.2	10.3	10.7	9.3	9.6	11.1	9.9	8.1	6.7	8.5	9.3	12.3	14.4	11.3	13.0	18.9	22.7	22.0	14.9	11.3	11.2	12.1	10.3	22.7	12.0	24
12		11.8	12.6	13.6	13.0	13.9	14.5	18.0	18.1	24.4	23.9	26.5	29.5	30.9	29.1	21.3	21.1	23.4	23.8	21.0	22.1	21.3	20.0	18.0	19.0	30.9	20.5	24
13		21.4	23.5	24.2	24.2	19.0	18.9	18.7	17.5	17.2	20.7	21.9	20.3	22.0	18.7	19.4	16.4	12.1	8.6	3.6	5.7	10.3	13.8	15.0	15.8	24.2	17.0	24
14		16.4	16.7	15.8	15.7	13.8	12.1	13.8	14.1	16.8	17.3	23.7	19.5	15.9	8.5	7.2	8.2	8.8	7.8	5.7	7.4	6.6	6.5	4.6	7.5	23.7	12.1	24
15		10.6	14.6	16.2	14.6	14.2	13.3	14.0	13.9	17.7	17.5	18.6	18.0	16.7	17.2	15.5	16.3	17.3	18.4	14.2	12.7	12.7	13.8	10.9	9.4	18.6	14.9	24
16		9.2	12.2	11.9	13.7	11.6	7.4	5.7	8.8	9.0	9.9	13.0	19.3	23.2	25.6	25.9	27.2	25.8	20.1	19.4	15.4	14.1	12.2	11.8	12.7	27.2	15.2	24
17		11.3	8.0	8.9	8.5	9.5	7.7	7.4	6.6	8.8	13.7	17.5	18.6	16.2	13.8	14.0	13.2	12.5	5.9	12.9	9.1	6.1	7.6	10.5	9.9	18.6	10.8	24
18		10.4	12.6	16.1	19.6	21.4	22.3	21.2	18.7	19.9	23.7	26.7	25.4	24.4	24.6	24.5	25.8	22.0	20.7	15.8	11.5	5.8	7.2	3.6	1.3	26.7	17.7	24
19		6.1	7.5	12.5	12.6	11.6	11.3	9.0	5.0	5.5	7.8	9.1	7.8	8.7	8.7	5.7	13.6	9.9	4.8	2.1	6.7	7.6	9.0	9.7	8.6	13.6	8.4	24
20		8.4	7.8	7.7	9.9	9.5	9.4	9.4	8.3	5.3	9.3	10.1	12.9	8.7	13.1	14.2	12.9	13.4	11.4	15.2	18.1	17.5	14.3	13.2	13.3	18.1	11.4	24
21		14.1	13.8	12.6	14.0	14.1	13.6	12.0	10.9	11.0	11.3	13.7	13.3	10.8	10.0	8.7	6.9	6.7	5.4	4.4	8.0	10.0	10.7	11.9	16.3	16.3	11.0	24
22		16.9	14.4	13.4	12.6	12.8	14.5	17.7	17.3	17.8	18.0	16.9	17.2	21.6	22.0	22.7	21.9	25.2	26.3	26.8	25.2	24.4	24.6	23.6	19.6	26.8	19.7	24
23		15.1	18.4	20.3	19.1	15.8	10.8	11.6	10.5	9.9	8.3	13.2	16.4	13.2	6.6	4.9	7.0	10.9	7.3	4.4	10.4	12.2	7.4	7.6	9.9	20.3	11.3	24
24		11.2	10.7	10.3	11.4	13.2	12.6	13.7	14.1	17.3	18.7	16.4	15.0	16.0	17.5	18.7	15.1	14.6	15.2	15.4	12.6	12.9	11.5	9.8	12.1	18.7	14.0	24
25		15.2	13.2	13.1	15.1	13.8	14.0	14.8	15.6	19.2	22.3	17.6	16.1	11.1	11.2	11.3	11.2	10.8	10.4	9.9	7.6	5.0	5.2	7.3	8.8	22.3	12.5	24
26		7.5	7.1	7.1	6.9	7.3	7.1	6.3	6.0	4.7	5.6	3.0	3.4	2.7	5.8	4.9	3.7	3.4	2.6	4.8	8.3	8.5	10.1	9.2	9.3	10.1	6.1	24
27		10.2	8.7	13.8	12.8	13.3	14.1	13.5	13.5	13.6	14.8	18.8	19.2	17.3	17.1	15.1	17.6	14.9	14.7	12.2	4.8	7.9	9.6	10.4	11.1	19.2	13.3	24
28		11.6	12.1	10.7	12.2	13.0	14.1	13.4	11.9	10.5	11.9	12.7	13.9	18.1	18.5	20.9	21.4	18.2	15.2	12.2	9.8	12.9	12.4	11.1	9.1	21.4	13.7	24
29		16.0	18.0	16.9	15.5	16.9	18.9	18.0	20.0	20.4	22.3	19.6	18.3	19.2	17.3	17.7	18.4	15.8	12.0	8.3	10.1	8.3	13.3	12.5	9.0	22.3	15.9	24
30		11.2	12.5	12.6	13.2	12.5	10.8	9.3	12.7	16.7	19.1	17.5	21.0	28.9	25.0	26.4	25.1	31.4	29.9	25.4	22.3	13.6	15.7	7.2	8.0	31.4	17.8	24
HOURLY MAX		21.4	23.5	24.2	24.2	21.4	22.3	21.2	20.0	24.4	23.9	26.7	29.5	30.9	29.1	26.4	27.2	31.4	29.9	26.8	25.2	24.4	24.6	23.6	19.6			
HOURLY AVG		11.0	11.4	12.0	12.1	12.0	11.5	11.2	10.9	11.9	13.4	14.0	14.6	15.1	14.6	14.6	14.5	14.5	13.6	11.9	11.0	10.8	11.0	10.3	10.2			

STATUS FLAG CODES

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

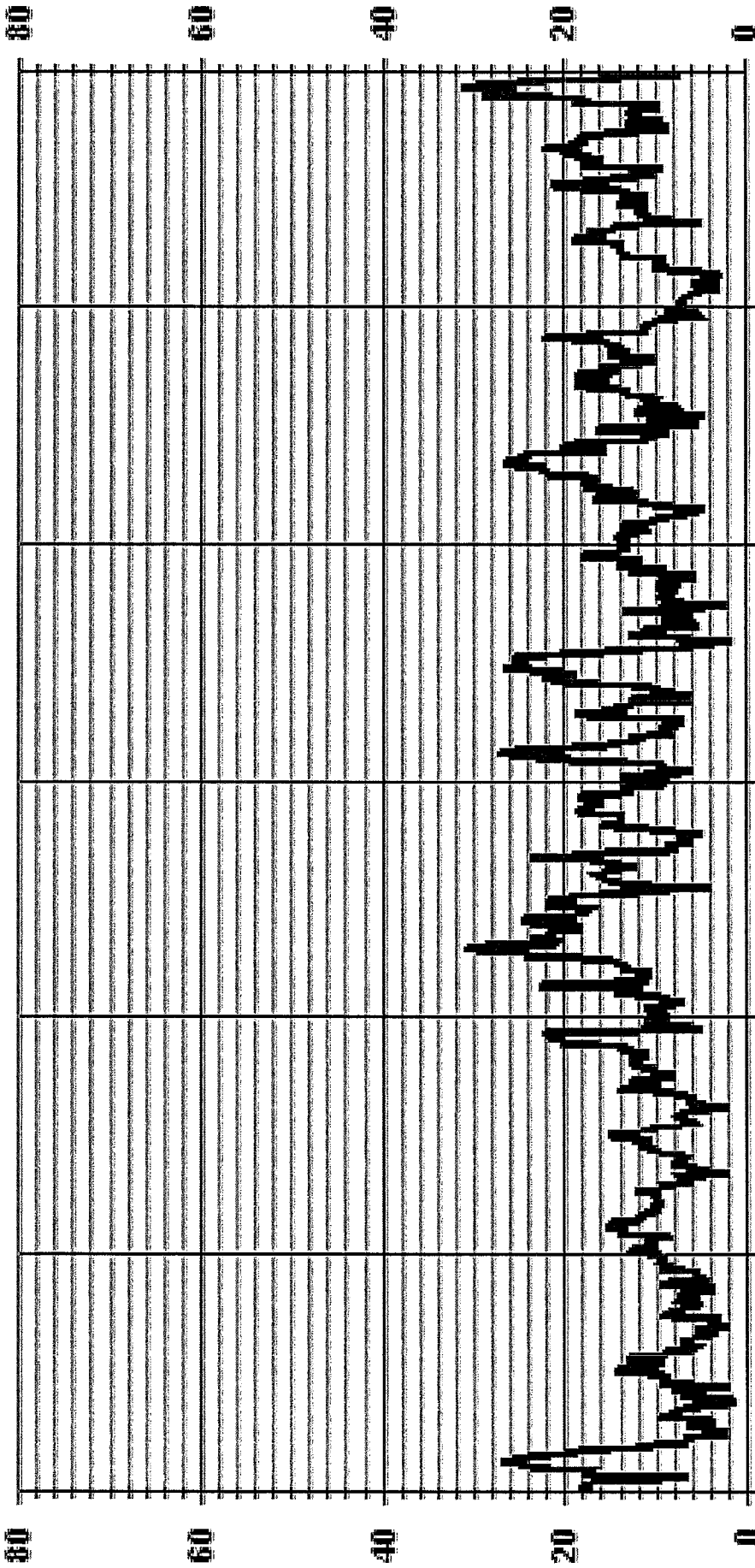
LAST CALIBRATION: August 28, 2014
DECLINATION: MAGNETIC DECLINATION 19 DEGREE EAST



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	720		
MAXIMUM 1-HR AVERAGE:	31.4 KPH	@ HOUR(S)	16 ON DAY(S)
MAXIMUM 24-HR AVERAGE:	20.5 KPH		30 ON DAY(S)
			VAR-VARIOUS
MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	720 HRS
STANDARD DEVIATION:	5.81	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	12.4 KPH

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA31 WSP KPH



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - APRIL 2015

JOB # 2833-2015-04-31- C

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	40.9	41.3	42.0	49.4	36.7	37.8	37.0	19.2	24.4	39.6	42.2	44.6	60.8	68.2	67.9	62.4	83.7	58.5	66.2	56.3	45.9	43.7	36.7	32.5	83.7	47.4	24
2	27.0	16.8	12.4	12.4	15.2	14.5	15.2	11.5	13.9	14.2	17.0	12.6	10.7	12.9	26.8	22.0	21.3	22.8	17.9	13.4	14.2	9.3	8.6	12.4	27.0	15.6	24
3	11.3	10.7	10.0	12.2	14.4	12.1	12.8	12.6	22.4	22.4	18.6	25.5	28.2	30.8	35.0	31.3	28.5	30.4	20.5	22.0	24.2	23.4	20.3	22.1	35.0	20.9	24
4	15.0	13.3	9.5	9.1	10.4	10.9	10.9	31.5	10.0	12.9	16.8	17.7	17.5	21.2	15.3	16.0	13.4	24.7	23.6	16.3	18.5	15.9	12.2	14.0	31.5	15.7	24
5	12.9	12.8	12.0	14.4	14.6	15.0	13.7	13.0	15.0	18.1	17.2	16.2	14.4	15.8	16.1	16.4	13.6	14.2	19.3	13.9	15.0	18.6	17.5	17.5	19.3	15.3	24
6	18.4	24.9	26.9	26.9	28.0	21.4	19.0	21.8	22.5	19.9	23.2	36.3	36.1	35.7	34.4	36.3	32.4	31.9	29.5	21.8	23.8	22.0	20.1	19.0	36.3	26.3	24
7	18.8	17.3	20.5	19.9	17.9	19.0	19.4	18.5	25.1	24.2	20.9	17.9	20.1	16.6	13.0	15.1	13.3	12.9	10.2	12.8	9.4	10.9	14.9	14.9	25.1	16.8	24
8	16.4	15.0	13.3	14.2	21.1	22.2	19.8	19.4	18.1	19.5	21.5	28.7	43.1	40.3	43.0	30.0	26.9	24.5	16.0	12.9	13.5	9.4	9.5	7.9	43.1	21.1	24
9	9.0	8.5	8.3	5.1	6.5	8.0	8.5	11.6	12.7	15.4	20.0	27.2	29.8	28.1	27.7	25.0	26.3	24.2	21.1	13.6	12.5	16.4	18.6	15.5	29.8	16.7	24
10	18.0	20.8	23.7	24.1	25.2	18.4	17.3	25.6	31.5	34.2	37.7	36.4	45.6	48.2	46.7	52.6	44.5	49.5	33.1	8.8	12.0	18.7	16.7	19.7	52.6	29.5	24
11	20.3	15.5	16.7	17.7	12.0	13.3	16.4	16.0	13.4	16.6	19.5	25.2	45.1	45.8	40.7	62.8	54.1	52.3	50.1	36.1	24.0	23.8	25.6	21.0	62.8	28.5	24
12	20.1	26.2	39.8	24.9	22.3	30.8	43.3	47.2	58.6	57.3	67.6	77.4	72.0	87.1	55.5	56.6	68.0	62.5	55.5	50.9	45.9	50.1	34.5	39.4	87.1	49.7	24
13	45.1	38.3	48.5	51.6	45.0	38.4	43.3	46.3	49.2	54.6	56.2	56.5	55.7	45.1	52.9	45.2	30.0	20.6	14.7	11.1	18.1	24.1	29.6	31.5	56.5	39.7	24
14	29.1	32.8	34.3	36.5	27.3	20.5	35.0	32.1	42.3	48.1	59.3	44.2	38.9	28.2	30.6	16.8	15.3	16.2	15.1	16.2	12.6	15.1	13.3	11.6	59.3	28.0	24
15	22.3	29.7	36.8	30.8	34.3	30.1	27.3	32.8	41.3	39.4	44.0	41.6	43.6	47.9	53.0	45.1	47.2	49.7	43.3	22.1	20.5	22.3	17.5	13.8	53.0	34.9	24
16	13.3	19.5	20.1	23.0	23.2	15.1	9.6	16.0	19.6	22.6	29.2	38.1	56.3	50.4	58.5	57.4	65.4	58.0	56.9	41.3	50.9	28.0	26.4	27.3	65.4	34.4	24
17	26.0	15.7	15.0	15.1	12.4	12.4	12.6	12.9	19.3	32.9	39.2	49.7	40.5	37.1	32.7	26.9	38.1	25.0	52.5	51.0	14.2	15.5	26.2	23.8	52.5	26.9	24
18	26.7	29.1	36.9	51.2	48.5	52.4	49.2	46.3	47.0	55.3	59.7	71.3	58.0	63.2	61.5	58.8	66.1	45.0	39.4	32.6	15.0	11.8	15.1	10.0	71.3	43.8	24
19	11.8	15.5	24.2	22.3	19.4	21.6	18.6	11.8	15.8	19.7	26.7	26.2	26.3	35.7	35.3	45.3	27.7	18.2	10.5	10.5	10.3	12.9	13.1	13.8	45.3	20.6	24
20	12.9	11.4	14.7	15.5	15.5	15.1	12.0	13.1	14.5	23.0	26.1	41.9	35.5	37.0	39.7	38.3	37.0	32.0	38.6	47.7	43.1	44.4	27.4	28.5	47.7	27.7	24
21	32.0	30.4	24.9	29.1	27.7	28.2	25.8	20.6	26.9	31.4	33.6	32.3	30.9	29.2	34.1	30.8	21.7	17.4	11.9	11.4	14.5	18.3	31.2	31.1	34.1	26.1	24
22	33.1	26.1	20.8	19.9	20.8	26.5	40.3	45.1	42.3	44.7	46.0	36.4	52.0	46.5	47.6	50.2	57.8	55.0	55.9	56.7	57.2	55.9	53.1	46.3	57.8	43.2	24
23	49.1	49.3	53.2	50.0	39.0	29.3	27.3	19.9	22.1	25.2	29.6	30.0	26.7	15.5	15.8	23.0	29.2	21.9	16.4	22.3	23.6	15.1	17.8	23.4	53.2	28.1	24
24	23.4	22.1	23.6	28.2	27.3	26.2	33.4	31.7	38.2	40.0	38.9	29.3	30.0	37.0	39.4	32.8	33.9	30.4	34.4	25.2	24.7	26.7	17.5	28.7	40.0	30.1	24
25	29.6	28.7	29.1	29.1	28.7	27.6	35.4	34.8	49.0	50.3	41.2	39.0	30.5	27.8	29.6	27.6	25.8	26.8	21.2	16.9	11.1	9.2	12.1	15.1	50.3	28.2	24
26	14.3	12.7	12.7	11.9		11.0	11.0	12.8	13.4	18.4	19.3	17.8	16.9	25.6	23.0	21.0	18.9	14.5	15.6	15.3	18.6	19.9	16.2	15.1	25.6	16.3	23
27	15.1	16.4	23.2	20.6	22.3	26.0	29.3	30.6	29.1	34.1	40.8	42.6	39.1	38.4	45.6	50.2	40.0	30.7	25.5	11.2	13.2	17.8	15.4	17.1	50.2	28.1	24
28	18.5	19.5	18.4	17.1	19.1	27.1	28.3	28.8	26.8	23.2	35.4	35.4	44.4	44.1	46.7	48.3	44.6	39.1	33.9	18.0	23.7	28.6	27.2	61.6	61.6	31.6	24
29	33.8	37.0	42.3	35.9	38.5	40.5	40.5	48.4	51.0	51.5	44.5	41.4	42.9	38.8	54.5	46.7	40.1	30.9	29.0	19.1	15.6	25.9	25.0	20.2	54.5	37.3	24
30	18.4	17.3	18.4	20.6	18.2	14.9	15.8	27.6	32.4	48.6	40.4	45.4	59.8	53.5	62.0	65.5	69.4	54.8	59.6	59.3	42.0	50.1	13.6	11.6	69.4	38.3	24
HOURLY MAX	49.1	49.3	53.2	51.6	48.5	52.4	49.2	48.4	58.6	57.3	67.6	77.4	72.0	87.1	67.9	65.5	83.7	62.5	66.2	59.3	57.2	55.9	53.1	61.6			
HOURLY AVG	22.8	22.5	24.4	24.6	23.8	22.9	24.3	25.3	28.3	31.9	34.4	36.2	38.4	38.4	39.5	38.5	37.8	33.2	31.2	25.6	22.9	23.5	21.1	22.2			

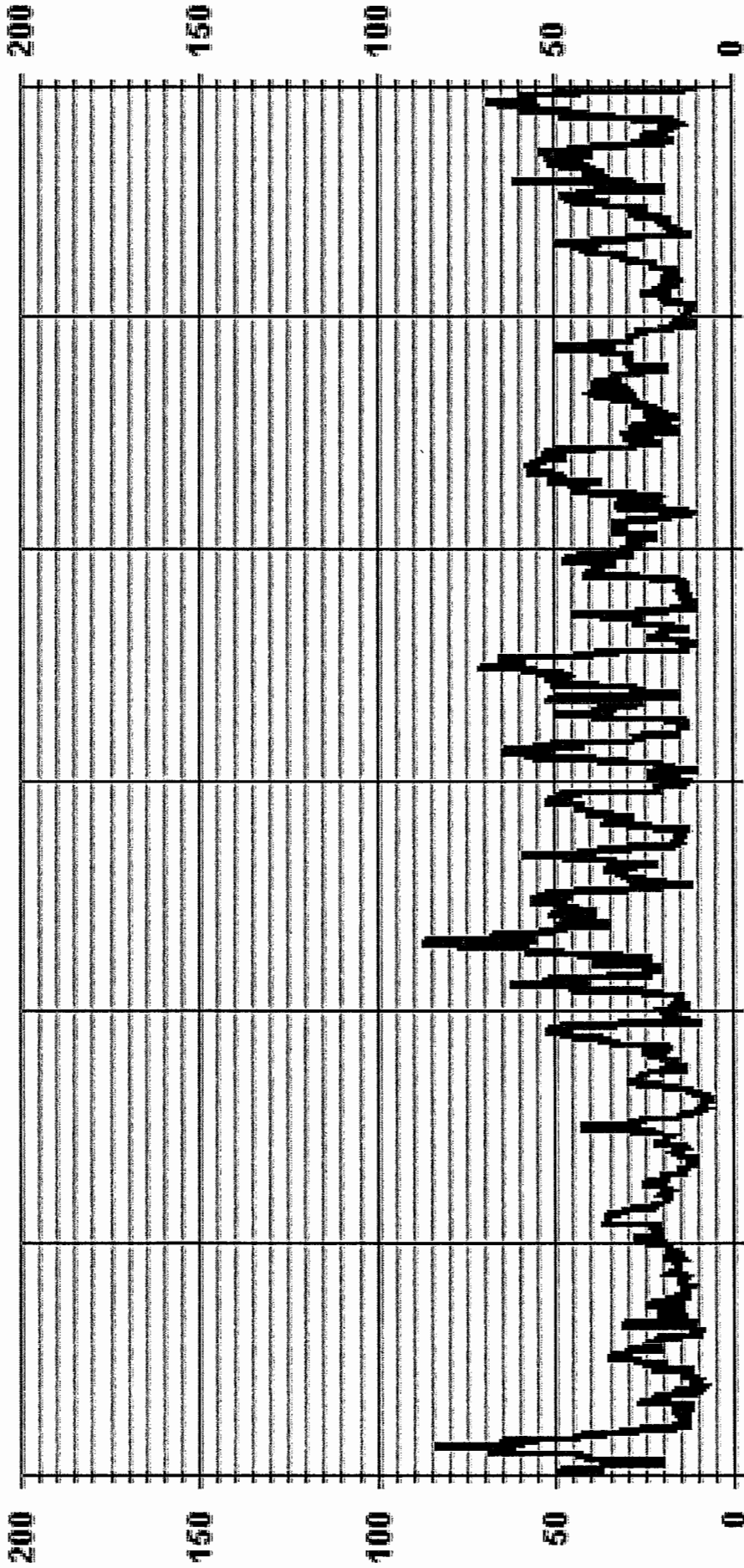
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	87.1	KPH	@ HOUR(S)	13	ON DAY(S)	12
					VAR-VARIOUS	
OPERATIONAL TIME:				719	HRS	

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA31 WSMAX KPH

LICA31
WSP / WDR Joint Frequency Distribution (Percent)

April 2015

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	.69	.27	1.11	1.38	.41	.55	.97	.55	1.25	1.11	.41	.41	.27	1.11	.69	.55	11.80
< 12.0	1.25	1.80	4.16	3.05	1.94	1.52	1.52	2.63	4.72	4.44	2.63	3.19	2.08	2.50	2.22	.55	40.27
< 20.0	.27	.27	4.30	3.33	1.80	.55	1.25	3.05	3.88	.27	1.66	5.00	3.61	3.88	1.52	1.38	36.11
< 29.0	.27	.00	.00	.13	.69	1.11	.00	.00	.69	.41	.27	2.36	1.52	.83	1.80	.97	11.11
< 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	2.50	2.36	9.58	7.91	4.86	3.75	3.75	6.25	10.55	6.25	5.00	11.52	7.63	8.33	6.25	3.47	

Calm : .00 %

Total # Operational Hours : 720

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	5	2	8	10	3	4	7	4	9	8	3	3	2	8	5	4	85
< 12.0	9	13	30	22	14	11	11	19	34	32	19	23	15	18	16	4	290
< 20.0	2	2	31	24	13	4	9	22	28	2	12	36	26	28	11	10	260
< 29.0	2			1	5	8			5	3	2	17	11	6	13	7	80
< 39.0												4	1				5
>= 39.0																	
Totals	18	17	69	57	35	27	27	45	76	45	36	83	55	60	45	25	

Calm : .00 %

Total # Operational Hours : 720

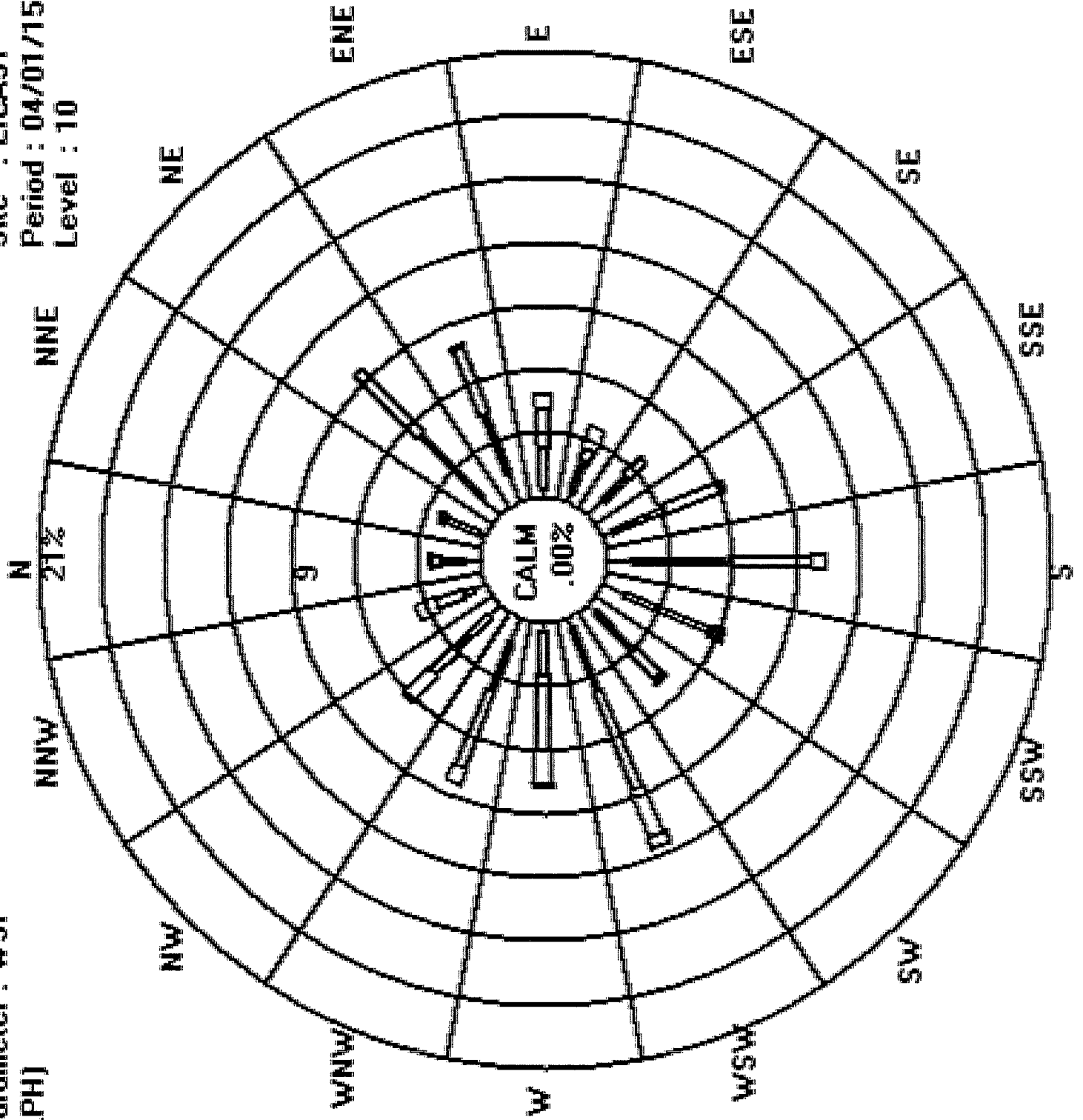
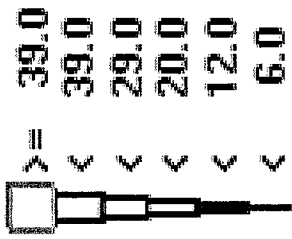
Logger : 31 Parameter : WSP

Site : LICA31

Period : 04/01/15-04/30/15

Level : 10

Class Limits (KPH)



WIND DIRECTION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - APRIL 2015

JOB # 2833-2015-04-31- C

WIND DIRECTION (WD) hourly averages

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	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	QUADRANT	RDGS.			
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					
1	WNW	W	WSW	W	W	WSW	WSW	WSW	NW	NNE	NNE	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	NW	24		
2	N	NW	NW	WNW	NW	N	N	SSE	SSE	S	S	S	SE	ENE	NE	NNE	N	N	NNW	NNW	NW	WNW	WSW	W	NNW	NNW	24		
3	WNW	SSW	SSW	S	SSW	SSW	SE	S	SSW	WSW	WSW	WSW	WNW	NNW	NNW	NNW	NNW	NNE	NE	NE	NE	NE	NE	ENE	ENE	NNW	NNW	24	
4	ENE	ENE	NE	NE	NE	NE	NE	ENE	E	E	E	ESE	SE	ENE	NNW	N	N	NNE	NNE	NE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	24	
5	ESE	SE	SE	SSE	SSE	S	S	NNE	NE	NE	ENE	ENE	ENE	ENE	NE	NE	NE	ENE	ENE	ENE	ENE	E	ENE	ENE	E	ENE	ENE	24	
6	E	E	ENE	ENE	ENE	ENE	E	ESE	SE	SSE	S	S	S	SSE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	E	SE	ENE	24	
7	ESE	ESE	ESE	ESE	E	E	E	E	E	ESE	ESE	ESE	ESE	SE	SE	S	SSW	S	SE	ENE	ESE	SE	SSE	SSE	ESE	ESE	ENE	24	
8	S	S	S	S	S	S	SSW	SSW	SW	WSW	W	WSW	W	W	W	W	WNW	W	NW	NNW	W	SW	WSW	SW	WSW	WSW	WSW	24	
9	SW	SW	SSW	SW	SSW	SSW	S	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	WSW	WSW	SW	SW	SSW	S	S	S	S	S	SSW	SSW	24	
10	S	S	S	S	S	SSE	SSE	S	S	S	S	S	S	S	S	S	SSW	SSW	SSW	S	SE	SSE	SSE	S	S	S	S	24	
11	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	WNW	NW	NW	W	W	WNW	WSW	WNW	WNW	WNW	WNW	WNW	W	WSW	W	W	W	W	24	
12	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	WSW	W	W	W	W	W	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	24
13	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	W	W	W	WSW	WSW	W	W	WNW	NE	ENE	ENE	ENE	E	ENE	E	WSW	WSW	24	
14	E	E	E	E	ENE	ENE	ENE	ENE	E	ESE	ESE	SE	SSE	SSE	E	ENE	NE	NE	NE	N	N	NW	WSW	E	ENE	ENE	ENE	24	
15	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	W	W	WSW	WSW	SW	SW	SW	WSW	W	WSW	W	WSW	WSW	24	
16	SW	WSW	WSW	WSW	WSW	SW	SSW	SW	W	W	SW	SW	SW	SW	WSW	WSW	WSW	WSW	NW	NW	WNW	W	WNW	WNW	WNW	WSW	WSW	24	
17	WNW	WNW	WNW	WSW	SW	SSW	SSW	SSW	S	S	SSE	SSE	SSE	SSE	SE	SE	S	S	WSW	NW	NW	WNW	WNW	WNW	SSW	SSW	SSW	24	
18	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNE	WNW	W	NNW	NW	NW	NW	24	
19	W	W	WNW	WNW	NW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	ENE	SE	SE	SSE	SSE	S	WNW	WNW	WNW	WNW	24	
20	S	SSW	SSW	SSW	SSW	SSW	SW	WNW	WNW	WNW	W	NW	NW	NNW	NW	NNW	N	NE	ENE	ENE	ENE	ENE	ESE	SE	NW	NW	24		
21	SSE	S	S	SSE	SSE	SSE	SSE	SSE	S	S	S	S	S	SSW	S	S	SSW	SSE	ESE	E	ENE	E	ENE	ENE	ENE	SSE	SSE	24	
22	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	E	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	E	E	E	E	E	E	E	E	24	
23	ESE	E	E	ENE	ENE	E	ENE	ENE	ENE	SSE	SSW	SW	WSW	W	W	WSW	SW	SW	WSW	NE	NE	NNE	NE	NNE	E	ENE	ENE	24	
24	NNE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	24	
25	NE	NE	NE	NE	NE	NE	NE	ENE	ENE	ENE	NE	NE	NNE	NE	NNE	NE	NE	ENE	ENE	ENE	NE	NE	NE	NE	NE	NE	NE	24	
26	NNE	NNE	NE	NE	NNE	NNE	NE	ENE	N	N	NW	NNE	SW	WSW	WNW	SSE	SSE	SE	ESE	S	SSW	S	S	S	S	ENE	ENE	24	
27	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S	S	S	SW	SW	WSW	WSW	WSW	SW	WSW	SW	SSE	S	S	S	S	S	S	S	24	
28	S	S	S	SSE	SSE	SSE	SSE	S	SSE	SE	SSE	SSE	SSE	S	S	S	S	S	SE	SSE	SSE	S	SW	SW	S	S	S	24	
29	NW	NW	NNW	NNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	W	W	WSW	SSW	S	SW	WSW	WSW	WNW	WNW	WNW	24	
30	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WNW	WSW	SW	WSW	WSW	24	

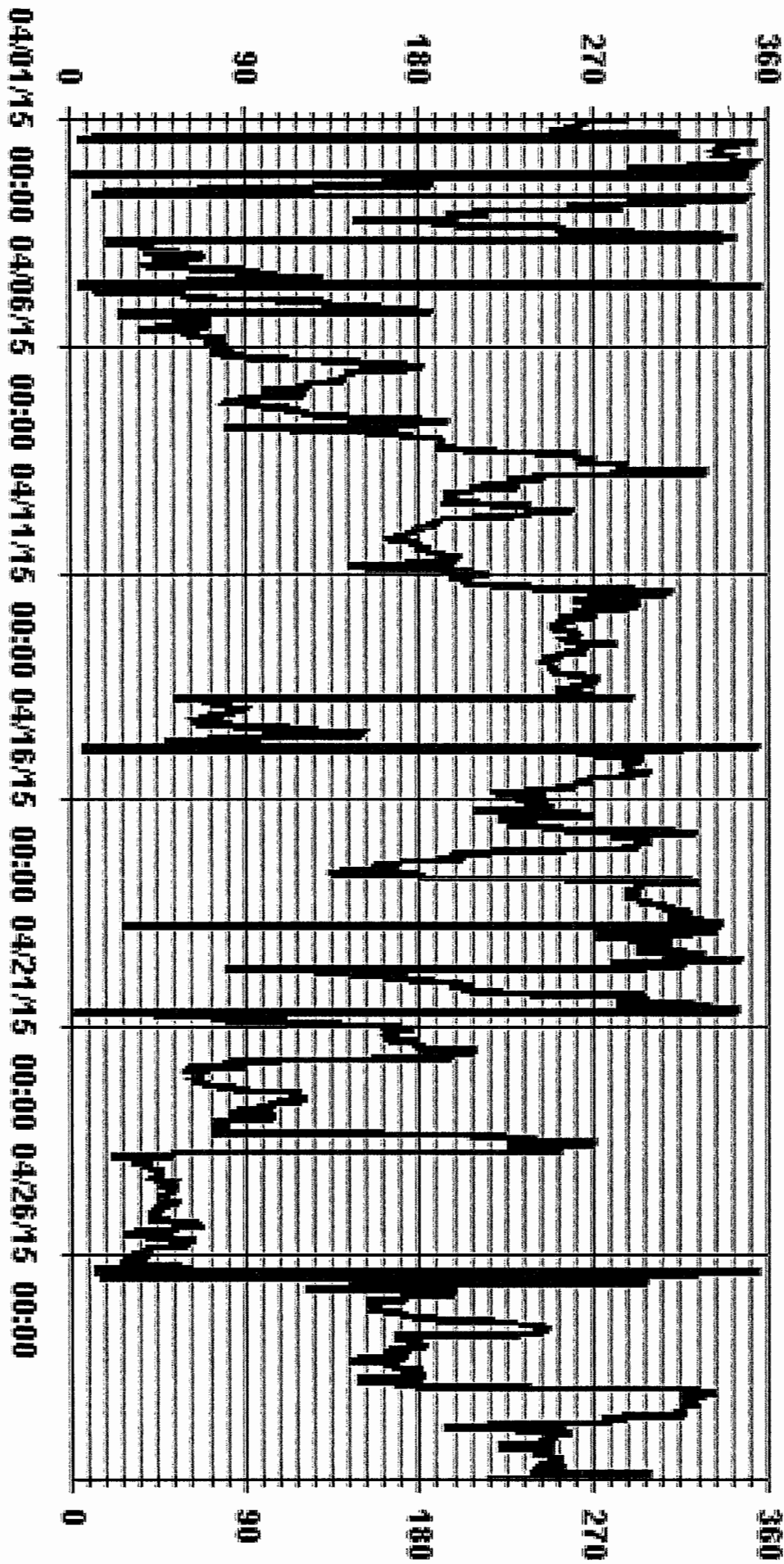
STATUS FLAG CODES

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

LAST CALIBRATION:	August 28, 2014
DECLINATION:	MAGNETIC DECLINATION 19 DEGREE EAST

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	720 HRS
STANDARD DEVIATION:	95.09	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	WSW

01 Hour Averages



— LICA31 WDR DEG

STANDARD DEVIATION WIND DIRECTION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - APRIL 2015

JOB # 2833-2015-04-31- C

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																									
1		15	13	12	13	12	11	10	9	16	13	13	14	15	16	15	18	14	14	14	14	18	14	14	14
2		14	11	8	10	12	11	26	20	21	22	21	32	23	27	14	17	14	16	18	16	11	13	38	26
3		58	18	6	12	10	33	40	25	12	18	22	27	24	23	17	19	17	21	14	13	13	12	12	14
4		11	8	6	7	5	5	8	17	25	43	55	38	63	52	38	61	38	20	16	9	10	10	9	9
5		10	6	6	14	7	10	35	19	19	14	16	26	33	41	37	23	23	12	11	9	8	10	10	11
6		10	10	11	10	9	9	11	13	15	20	24	21	23	22	20	18	16	14	13	12	11	11	11	9
7		10	10	10	12	10	10	10	12	13	15	17	16	18	21	21	19	13	16	19	9	8	7	9	9
8		7	9	8	8	8	9	9	8	8	11	19	19	21	28	19	27	21	19	12	9	8	8	4	4
9		2	4	17	20	8	5	4	7	11	15	24	25	17	22	28	26	26	14	8	5	5	5	6	6
10		6	7	7	8	9	8	9	12	13	14	17	17	17	18	15	15	11	11	24	18	8	8	9	9
11		9	6	5	7	3	5	5	6	12	19	20	21	17	24	29	31	17	16	16	15	12	9	13	13
12		7	11	10	9	7	7	8	13	15	17	17	14	16	16	17	16	18	15	15	11	9	10	7	7
13		8	8	9	8	9	10	11	15	18	17	18	20	19	22	22	22	26	20	25	7	6	7	8	8
14		8	9	8	7	8	8	10	10	11	14	15	16	16	19	20	11	11	11	16	11	10	15	18	9
15		10	12	13	12	14	13	14	14	17	18	16	19	23	20	23	21	21	15	10	6	5	6	6	9
16		7	5	7	8	9	8	11	10	21	22	14	13	13	15	15	13	13	16	15	15	17	14	13	13
17		13	12	10	9	4	7	7	9	12	14	16	16	16	17	16	16	19	26	19	30	14	13	12	13
18		13	15	16	15	16	15	15	16	16	15	15	15	15	15	17	14	16	15	20	14	15	8	16	20
19		12	13	11	12	9	12	12	18	21	22	28	34	38	30	40	22	20	35	21	7	5	5	4	7
20		7	5	6	6	6	6	3	11	23	24	24	23	42	26	23	21	19	18	14	11	10	9	12	12
21		10	9	8	8	8	9	10	13	16	23	19	20	30	28	32	33	36	29	12	7	5	7	12	9
22		9	9	8	7	8	9	9	11	12	13	15	18	16	17	17	16	15	13	12	12	11	11	11	11
23		16	11	11	13	12	11	12	13	15	25	13	11	13	25	36	39	18	23	32	12	12	11	13	12
24		12	12	13	12	11	12	12	12	11	12	13	12	12	12	13	13	14	13	12	11	10	10	10	10
25		10	11	12	11	11	10	11	13	14	15	16	18	24	19	20	21	16	16	13	10	9	7	6	7
26		9	10	9	8	6	7	10	17	39	48	56	54	63	51	48	58	34	52	33	10	15	10	8	7
27		7	8	8	9	8	9	10	12	14	15	16	19	16	16	29	18	19	17	11	14	6	7	5	7
28		6	7	7	5	6	8	10	12	15	18	18	20	18	18	15	15	17	15	12	10	10	10	10	20
29		12	14	14	13	13	13	14	14	15	15	16	18	18	18	19	21	23	19	12	8	9	9	12	9
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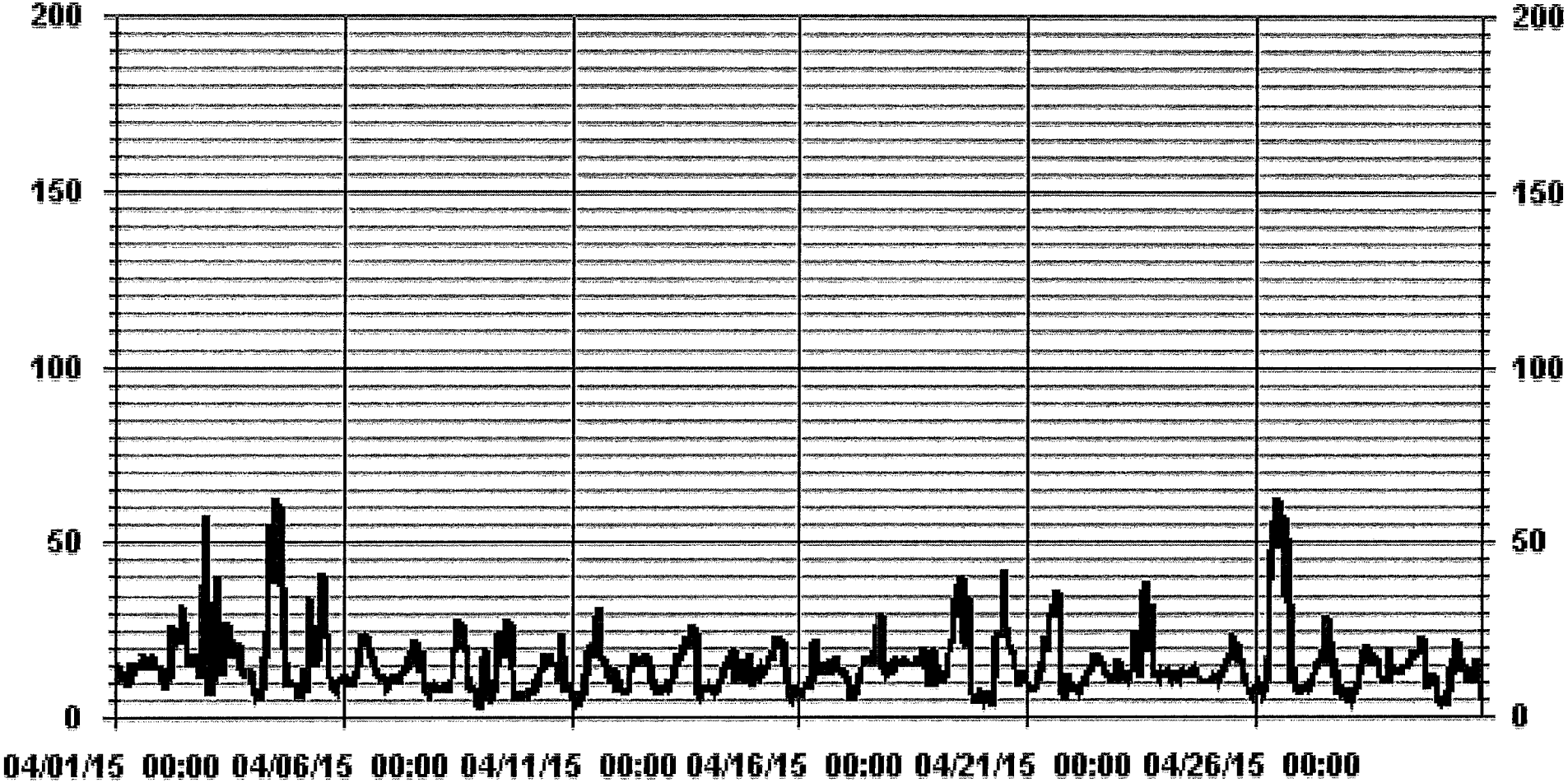
STATUS FLAG CODES

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

LAST CALIBRATION: August 28, 2014

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 720 HRS

01 Hour Averages



— LICA31 STDWDIR DEG

RELATIVE HUMIDITY



RELATIVE HUMIDITY (RH) hourly averages in %

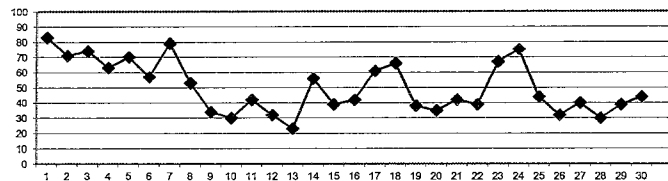
MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX	24-HOUR AVG.	RDGS.
1	89	88	88	87	88	89	89	89	89	88	88	88	88	89	88	87	85	79	73	66	63	63	66	89	83.1	24	
2	67	69	69	72	74	70	67	66	60	52	51	62	72	77	81	76	77	76	76	77	78	79	80	80	81	71.2	24
3	79	81	82	81	81	80	80	80	81	77	67	59	61	71	64	64	64	74	79	80	78	75	74	75	82	74.5	24
4	75	77	80	81	84	85	82	74	68	56	49	43	42	41	43	41	43	49	56	68	78	80	83	85	63.3	24	
5	85	85	83	80	79	80	79	74	74	76	71	61	58	59	57	57	56	57	61	67	69	69	66	66	85	69.5	24
6	68	72	75	76	81	85	84	76	65	54	47	41	38	38	37	37	38	40	43	46	50	55	57	62	85	56.9	24
7	63	66	68	74	82	85	86	85	82	78	78	76	73	77	74	75	80	81	80	83	85	85	87	88	88	78.8	24
8	88	88	88	88	87	87	85	80	77	65	51	39	27	21	19	21	24	25	29	31	32	37	36	40	88	52.7	24
9	42	42	45	46	44	48	51	48	45	36	28	23	23	22	20	20	20	21	25	30	33	35	38	41	51	34.4	24
10	45	47	47	46	46	48	45	38	33	28	24	20	17	15	13	13	12	14	18	21	26	31	37	43	48	30.3	24
11	41	43	45	50	57	62	60	54	44	34	28	24	25	32	35	34	47	47	50	44	42	43	37	33	62	42.1	24
12	35	38	42	46	51	53	50	42	37	31	27	26	23	20	21	20	18	20	23	25	27	33	36	53	31.8	24	
13	38	37	39	41	42	43	39	32	26	19	14	12	10	10	10	9	8	9	11	15	19	21	23	26	43	23.0	24
14	27	27	29	31	34	36	37	38	37	28	26	34	45	58	78	82	85	87	88	88	89	89	90	90	90	56.3	24
15	90	84	69	64	59	55	49	43	37	33	28	26	24	22	21	20	17	19	21	25	29	31	32	35	90	38.9	24
16	37	40	43	44	47	50	47	43	37	34	34	35	32	27	23	20	23	33	52	56	56	61	65	69	69	42.0	24
17	74	79	81	82	87	86	83	78	71	59	38	30	28	28	29	29	30	32	45	73	77	78	79	80	87	60.7	24
18	82	82	76	74	75	75	75	79	74	67	65	68	62	51	44	42	48	45	43	68	71	74	74	74	82	66.2	24
19	73	72	66	65	65	61	55	48	42	35	28	23	21	20	19	16	18	20	23	25	27	29	32	35	73	38.3	24
20	40	43	47	48	52	55	53	43	32	27	23	19	18	18	20	20	21	22	25	33	37	41	45	51	55	34.7	24
21	55	61	66	68	70	71	68	61	50	39	31	26	24	22	22	21	21	22	25	30	34	35	41	47	71	42.1	24
22	48	51	55	60	64	66	63	55	46	41	33	29	26	25	24	24	22	24	28	29	31	31	34	38	66	39.5	24
23	35	40	42	55	64	68	73	75	79	77	79	76	69	66	64	56	53	53	59	78	83	88	89	90	90	67.1	24
24	90	90	90	89	89	90	90	90	89	86	83	78	72	66	62	57	53	53	54	54	56	59	64	66	90	75.3	24
25	66	64	63	65	67	67	64	60	50	42	36	34	32	32	30	29	28	28	29	31	34	34	36	39	67	44.2	24
26	41	44	45	46	47	47	40	32	25	23	21	20	19	18	17	16	18	18	20	24	37	46	50	54	54	32.0	24
27	58	61	61	61	64	64	62	59	55	47	40	34	26	21	19	18	19	19	22	25	28	31	37	40	64	40.5	24
28	41	42	41	41	41	40	40	41	36	29	26	23	20	19	17	18	18	18	21	25	29	31	33	34	42	30.2	24
29	48	48	48	46	46	44	45	40	37	38	40	36	40	35	28	22	21	20	26	33	41	46	47	51	51	38.6	24
30	57	60	61	63	65	64	57	50	39	33	31	29	26	25	24	27	29	32	34	35	38	53	61	67	67	44.2	24
HOURLY MAX	90	90	90	89	89	90	90	90	90	89	88	88	88	88	89	88	87	87	88	88	89	89	89	90			
HOURLY AVG	59.2	60.7	61.1	62.3	64.4	65.1	63.3	59.1	53.9	47.8	42.9	40.0	38.2	37.7	36.9	35.9	36.7	37.8	41.1	45.9	48.9	51.8	54.0	56.6			

STATUS FLAG CODES

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

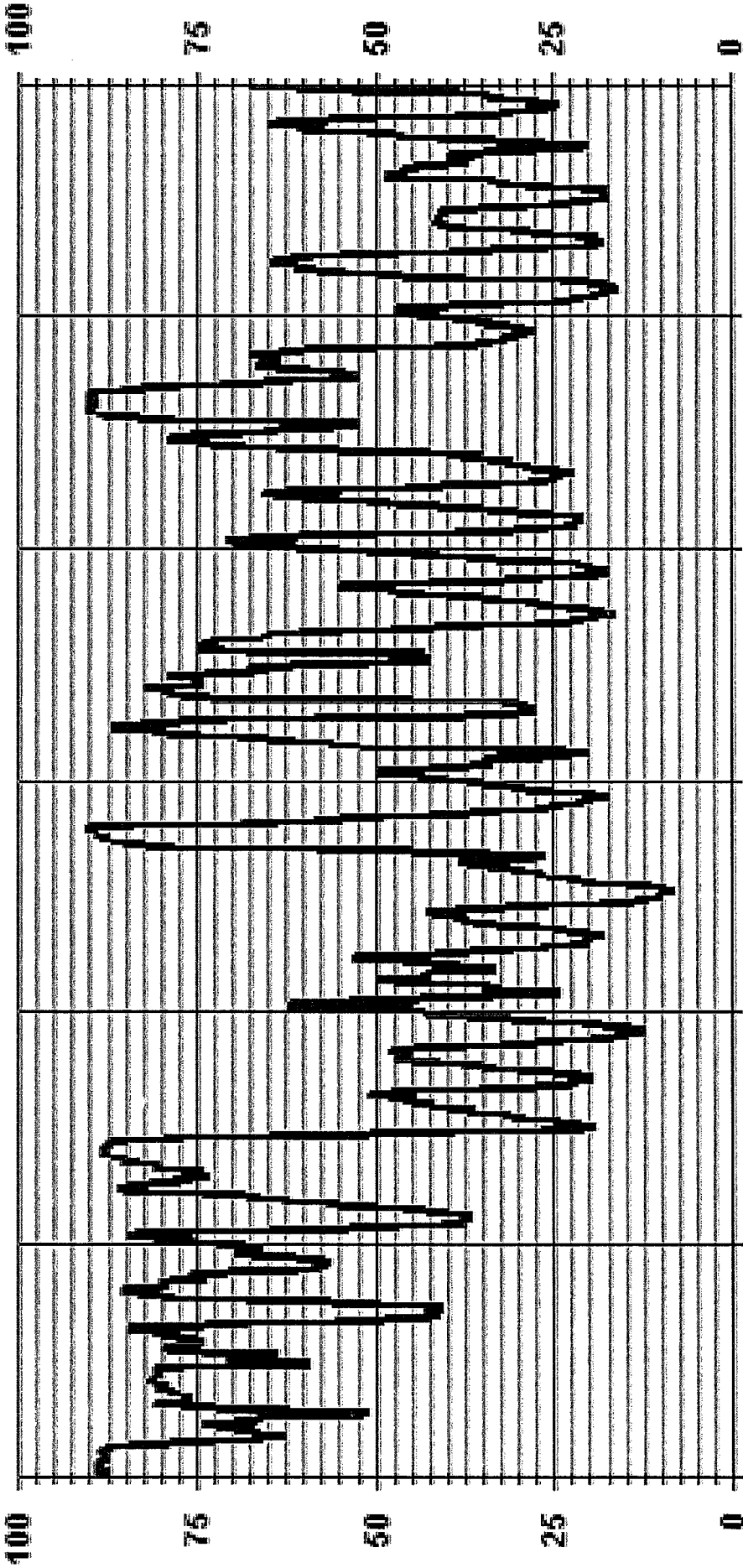
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	90	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	83.1	%			ON DAY(S)	1
					VAR-VARIOUS	
OPERATIONAL TIME:					720	HRS
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	22.56				MONTHLY AVERAGE:	50 %

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA31 RH %FS

BAROMETRIC PRESSURE



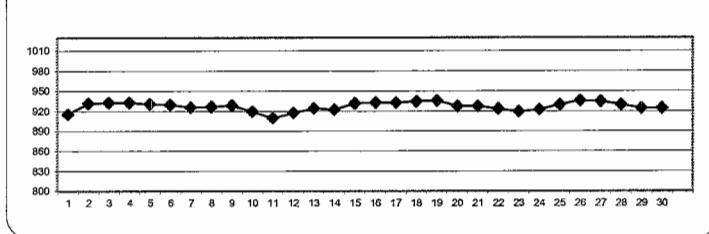
BAROMETRIC PRESSURE (BP) hourly averages in millibar

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	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	MAX	AVG.	RDGS.	
1	911	911	911	911	911	910	910	910	910	910	911	912	914	915	917	919	920	922	924	925	926	927	927	928	928	928	916	24	
2	928	929	929	929	930	930	930	930	931	931	932	932	932	932	932	933	933	933	933	933	934	934	934	934	934	934	934	932	24
3	934	933	933	933	932	932	932	932	932	932	933	933	933	933	933	933	933	933	932	932	933	933	932	933	933	933	934	933	24
4	932	932	932	932	932	932	932	932	932	933	934	934	934	934	935	934	934	933	933	933	933	932	932	932	931	931	935	933	24
5	931	931	931	931	930	930	930	931	931	932	932	932	932	932	932	932	932	931	931	931	931	930	930	931	931	931	932	931	24
6	931	930	930	930	929	929	929	930	930	931	932	932	932	932	932	931	931	930	930	930	929	929	929	929	929	929	932	930	24
7	928	928	927	927	927	927	927	927	927	927	927	927	926	926	926	926	926	926	926	925	925	925	925	925	925	928	926	24	
8	925	925	924	924	924	924	924	925	925	926	927	928	928	929	929	929	929	929	929	929	928	928	928	928	928	928	929	927	24
9	928	928	928	928	928	928	928	929	930	931	931	932	932	932	932	931	931	931	931	930	929	928	928	927	927	926	932	929	24
10	926	925	925	924	924	923	923	923	923	923	923	923	923	922	921	921	920	919	918	917	915	914	913	912	911	926	920	24	
11	910	910	909	909	908	907	907	908	908	908	909	909	909	909	909	910	910	911	911	911	911	911	912	912	912	912	910	24	
12	913	913	914	915	915	915	916	917	917	918	918	918	918	918	918	918	919	919	919	919	920	920	921	921	921	921	921	918	24
13	921	922	922	923	923	924	925	925	926	927	927	927	927	927	927	927	927	927	927	927	925	924	924	923	923	927	925	24	
14	923	923	922	922	921	921	921	921	921	921	922	922	922	922	923	923	924	924	925	925	925	926	926	926	927	927	923	24	
15	927	927	928	929	929	930	931	932	933	933	933	933	933	933	934	934	934	934	934	933	933	933	932	932	933	934	932	24	
16	932	933	933	933	933	933	934	934	935	935	935	935	934	934	933	932	932	931	931	932	933	933	933	933	934	934	935	933	24
17	935	935	935	935	935	935	935	935	935	935	935	934	934	933	932	931	930	929	929	929	929	929	929	929	929	930	935	933	24
18	930	930	930	930	931	932	932	933	933	933	934	935	936	937	938	938	939	939	938	938	938	938	938	938	938	938	939	935	24
19	938	937	937	937	937	937	938	938	939	939	939	938	938	938	938	937	937	936	935	934	933	932	931	931	930	939	936	24	
20	930	929	928	928	927	926	926	927	928	928	928	928	928	928	928	928	928	928	929	929	928	927	927	927	927	930	928	24	
21	927	927	927	927	927	926	927	927	928	929	929	930	929	929	929	929	929	929	929	928	927	926	926	926	926	930	928	24	
22	925	925	925	924	924	923	923	924	925	925	926	926	926	926	926	925	925	925	924	923	923	922	922	921	921	926	924	24	
23	922	921	920	920	919	919	919	919	919	919	920	920	920	921	921	922	922	922	922	921	921	921	921	921	920	922	920	24	
24	920	921	921	921	921	921	921	921	922	922	923	923	923	924	924	924	924	924	925	925	925	925	925	926	926	926	923	24	
25	926	926	927	926	927	927	928	929	929	930	931	931	932	932	932	932	932	932	932	932	933	932	933	933	932	933	930	24	
26	933	933	933	933	933	933	934	935	936	937	937	937	937	938	938	938	938	938	937	936	935	935	935	934	938	936	24		
27	934	934	934	934	934	934	934	934	935	936	936	937	937	937	937	937	936	936	936	935	935	935	934	934	937	935	24		
28	933	933	933	932	932	932	932	932	932	932	932	932	932	932	931	930	930	929	928	927	926	925	925	924	924	933	930	24	
29	924	923	923	923	924	924	924	925	925	925	925	926	926	926	927	927	927	927	926	926	925	925	925	925	925	927	925	24	
30	925	924	924	924	925	924	925	926	926	927	927	927	927	926	926	926	925	925	925	925	925	925	926	925	925	927	925	24	
HOURLY MAX	938	937	937	937	937	937	938	938	939	939	939	938	938	938	938	938	938	939	939	939	939	938	938	938	938	938	938	938	24
HOURLY AVG	927	927	927	926	926	926	927	927	927	927	928	928	928	928	929	928	929	928	928	928	928	928	927	928	927	927	925	24	

STATUS FLAG CODES

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

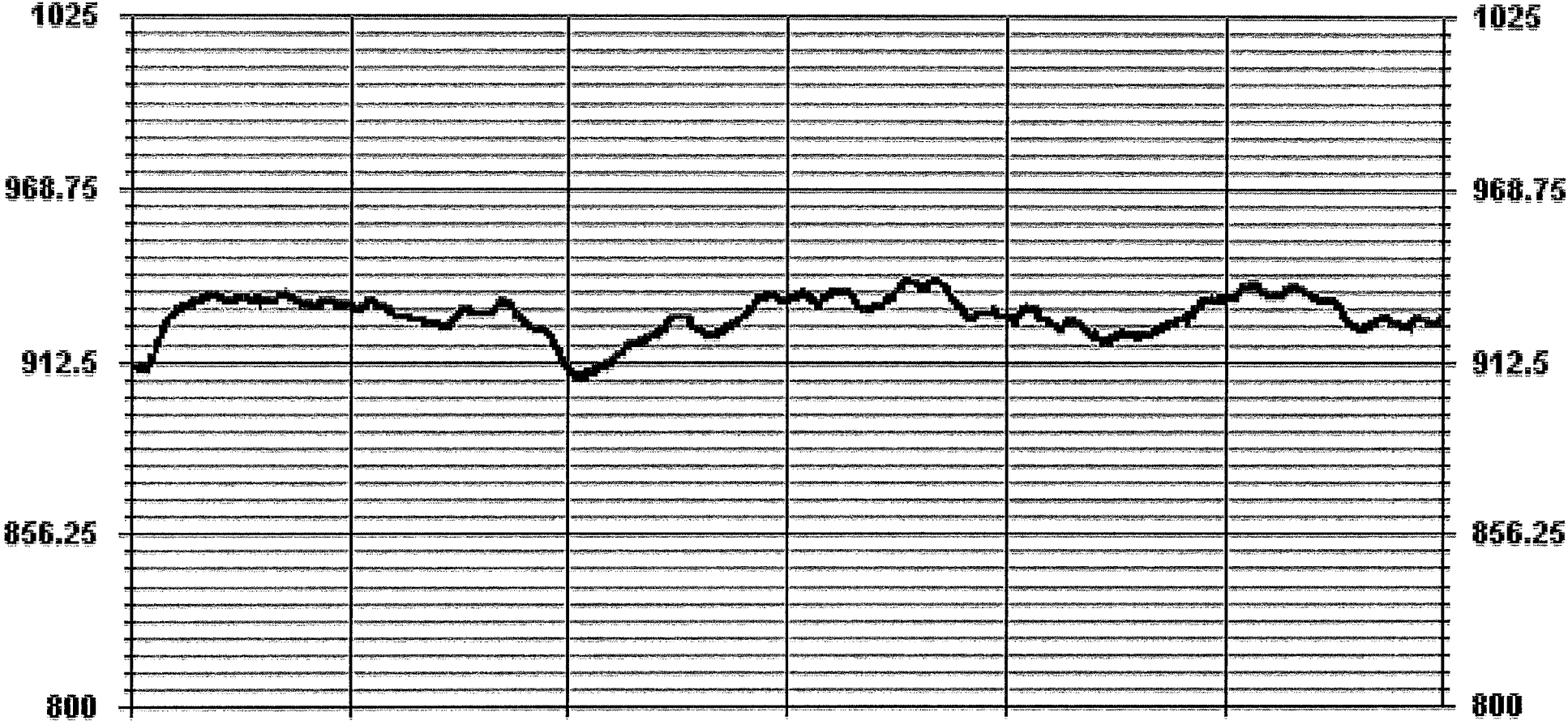
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	939	MB	@ HOUR(S)	VAR	ON DAY(S)	18 , 19
MAXIMUM 24-HR AVERAGE:	936	MB			ON DAY(S)	19 , 26
					VAR-VARIOUS	
				OPERATIONAL TIME:	720	HRS
				AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	6.60			MONTHLY AVERAGE:	928	MB

01 Hour Averages



— LICA31 BP MB

AMBIENT TEMPERATURE



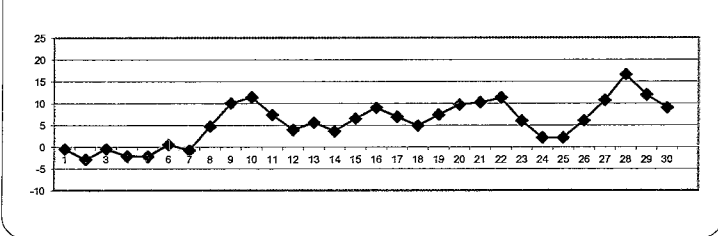
AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX	AVG.	RDGS.	
DAY	1	0.5	0.8	0.9	1.1	0.7	0.4	0.2	0.4	0.5	0.2	0.2	0.5	0.2	0.0	-0.1	-0.4	-0.3	-0.7	-1.4	-1.8	-2.4	-3.0	-3.8	-4.6	1.1	-0.5	24
2	-5.1	-5.7	-6.2	-6.4	-6.5	-6.6	-6.0	-4.2	-2.5	-0.7	0.1	0.5	0.2	0.0	-0.6	0.0	-0.9	-1.3	-1.7	-2.5	-3.2	-3.2	-3.1	-3.0	0.5	-2.9	24	
3	-3.0	-3.2	-3.3	-3.2	-3.2	-3.0	-2.8	-2.3	-1.6	0.5	3.1	4.9	3.7	3.5	3.4	3.5	2.5	1.2	-0.4	-1.3	-2.0	-2.5	-2.7	-3.0	4.9	-0.5	24	
4	-3.8	-4.7	-5.6	-6.4	-7.0	-7.4	-6.4	-3.4	-1.4	0.3	0.7	1.3	1.7	2.7	2.2	2.5	2.1	1.4	-0.1	-1.9	-2.9	-3.8	-4.5	-5.0	2.7	-2.1	24	
5	-5.3	-5.4	-5.3	-5.0	-5.0	-5.0	-4.5	-2.9	-2.3	-2.3	-1.6	0.3	0.5	0.7	1.4	1.2	1.1	0.3	-0.9	-2.3	-2.8	-2.8	-2.6	-2.6	1.4	-2.2	24	
6	-2.9	-3.2	-3.6	-4.5	-5.2	-5.8	-5.3	-3.2	-0.5	1.7	3.3	4.6	5.3	5.3	5.2	5.1	4.8	4.2	3.4	2.3	1.2	0.4	-0.3	-0.9	5.3	0.5	24	
7	-1.0	-1.2	-1.4	-1.6	-2.3	-2.4	-2.2	-1.4	-0.6	-0.2	-0.1	0.1	0.6	0.7	0.8	1.0	0.6	0.4	0.2	-0.9	-1.3	-1.6	-2.1	-2.5	1.0	-0.8	24	
8	-2.9	-3.1	-3.2	-3.2	-3.4	-3.4	-2.8	-1.1	1.2	4.2	7.5	10.1	11.4	12.5	12.3	12.5	11.6	11.3	9.9	8.0	7.3	6.0	5.6	4.7	12.5	4.7	24	
9	4.1	4.0	3.3	2.6	3.2	2.9	2.7	5.2	7.1	11.0	13.3	14.9	15.6	16.2	16.9	17.7	17.3	16.4	14.7	12.6	11.2	10.0	8.8	7.6	17.7	10.0	24	
10	6.6	5.9	5.6	5.4	4.8	4.0	4.7	6.8	9.2	12.2	14.3	16.2	17.6	18.2	18.4	18.2	18.1	17.1	15.6	13.9	13.1	11.8	9.6	7.2	18.4	11.4	24	
11	6.6	5.4	4.9	3.5	2.1	1.1	2.1	4.2	7.5	10.7	13.7	15.1	14.1	12.3	13.1	13.0	10.6	9.1	6.4	5.2	4.9	4.6	4.2	3.0	15.1	7.4	24	
12	1.7	1.0	0.4	0.1	-1.0	-1.2	0.5	3.2	4.8	6.0	6.8	6.9	7.6	7.8	7.3	7.1	7.4	7.2	6.4	4.9	3.9	3.1	1.7	1.0	7.8	3.9	24	
13	0.5	0.5	0.4	0.3	0.0	-0.1	1.4	3.9	5.9	7.2	8.5	9.3	9.7	10.4	11.0	11.1	11.4	10.6	9.4	6.9	5.1	4.3	3.5	2.7	11.4	5.6	24	
14	2.4	2.4	2.1	1.3	0.6	0.7	1.3	2.2	3.6	8.2	9.7	10.4	9.1	6.8	4.4	4.2	4.0	3.6	3.6	2.8	2.2	1.5	0.2	-0.6	10.4	3.6	24	
15	-0.3	0.3	1.0	1.1	1.0	0.7	2.1	4.0	5.8	7.3	8.5	9.4	10.4	10.9	11.7	12.1	12.4	11.9	11.1	9.2	7.6	6.6	6.1	5.3	12.4	6.5	24	
16	4.8	4.7	5.1	5.1	4.2	3.7	5.6	7.8	10.6	11.6	11.9	12.1	13.4	15.3	15.8	16.8	15.6	13.8	10.0	8.6	7.3	5.4	4.1	3.4	16.8	9.0	24	
17	2.7	2.0	1.8	1.3	-0.4	0.0	0.9	3.0	5.0	7.5	10.0	11.1	11.9	12.3	12.8	13.5	13.9	13.8	12.2	7.6	6.5	6.0	5.3	4.6	13.9	6.9	24	
18	3.7	3.3	3.7	3.7	3.0	2.8	2.9	2.7	3.4	4.5	5.2	5.0	6.6	8.3	9.5	9.7	8.7	8.5	7.7	4.4	3.2	2.8	2.2	2.0	9.7	4.9	24	
19	1.9	1.1	1.1	1.1	0.5	1.0	3.0	6.4	9.3	10.6	11.3	11.4	11.8	11.8	12.0	13.5	12.6	12.0	10.2	8.8	7.5	6.7	5.9	5.2	13.5	7.4	24	
20	4.1	3.1	2.3	1.9	1.2	0.5	1.9	6.1	11.3	13.9	15.4	16.2	17.6	18.0	17.2	17.7	16.3	16.2	13.7	10.3	8.4	7.0	6.1	5.3	18.0	9.7	24	
21	4.4	3.3	2.2	1.7	1.2	1.0	2.2	4.7	7.8	10.7	12.9	14.9	16.3	17.8	18.0	18.6	18.8	17.6	16.1	13.8	12.2	11.5	9.5	7.1	18.8	10.2	24	
22	6.4	5.6	4.3	2.9	2.0	1.6	3.1	5.9	9.4	11.5	14.7	17.1	18.6	18.9	18.9	18.1	18.3	17.2	15.3	14.0	12.9	12.2	11.4	10.1	18.9	11.3	24	
23	10.1	8.7	8.2	6.6	5.4	4.5	3.0	2.9	3.2	4.6	4.5	5.0	6.4	7.1	7.7	9.6	9.5	8.8	7.4	5.7	4.5	3.6	3.3	2.9	10.1	6.0	24	
24	2.5	2.2	2.2	2.1	2.0	2.0	2.1	1.9	1.0	0.2	0.4	0.6	1.6	3.1	3.7	4.0	4.5	4.7	4.0	2.6	1.7	1.1	0.4	0.0	4.7	2.1	24	
25	-0.4	-1.0	-1.5	-2.1	-2.8	-3.1	-2.1	-0.2	1.6	3.0	4.9	4.7	5.6	5.6	6.2	5.9	5.6	5.1	4.5	3.6	2.9	2.3	1.3	1.1	6.2	2.1	24	
26	0.8	0.4	0.2	-0.1	-0.8	-1.0	1.9	4.5	6.3	7.8	8.8	9.9	10.5	11.3	11.8	12.3	12.0	11.3	10.4	8.7	6.9	5.3	4.1	3.0	12.3	6.1	24	
27	1.8	1.6	2.2	2.8	2.2	2.1	3.3	5.1	6.9	9.8	12.5	15.1	16.9	17.6	18.6	18.6	18.8	18.4	17.3	15.6	14.4	13.5	11.4	10.3	18.8	10.7	24	
28	9.7	9.2	9.0	8.5	8.6	9.0	9.9	11.1	13.9	17.6	19.3	20.5	22.3	22.4	23.0	23.3	23.7	23.3	22.5	20.6	19.3	17.9	16.9	16.6	23.7	16.6	24	
29	13.9	12.8	12.0	11.3	10.2	9.9	9.6	10.5	11.5	12.5	12.3	14.1	14.2	14.8	14.2	14.2	14.6	13.4	12.5	11.6	10.4	9.2	8.7	7.5	14.8	11.9	24	
30	5.9	4.8	4.0	3.3	2.5	2.7	5.1	7.7	10.8	12.6	13.5	13.8	13.8	14.2	14.7	13.8	13.1	12.3	11.8	11.0	9.4	7.2	5.0	3.8	14.7	9.0	24	
HOURLY MAX		13.9	12.8	12.0	11.3	10.2	9.9	9.9	11.1	13.9	17.6	19.3	20.5	22.3	22.4	23.0	23.3	23.7	23.3	22.5	20.6	19.3	17.9	16.9	16.6			
HOURLY AVG		2.3	1.9	1.6	1.2	0.6	0.4	1.2	3.1	5.0	6.8	8.2	9.2	9.8	10.2	10.4	10.6	10.3	9.6	8.4	6.7	5.6	4.8	3.9	3.1			

STATUS FLAG CODES

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

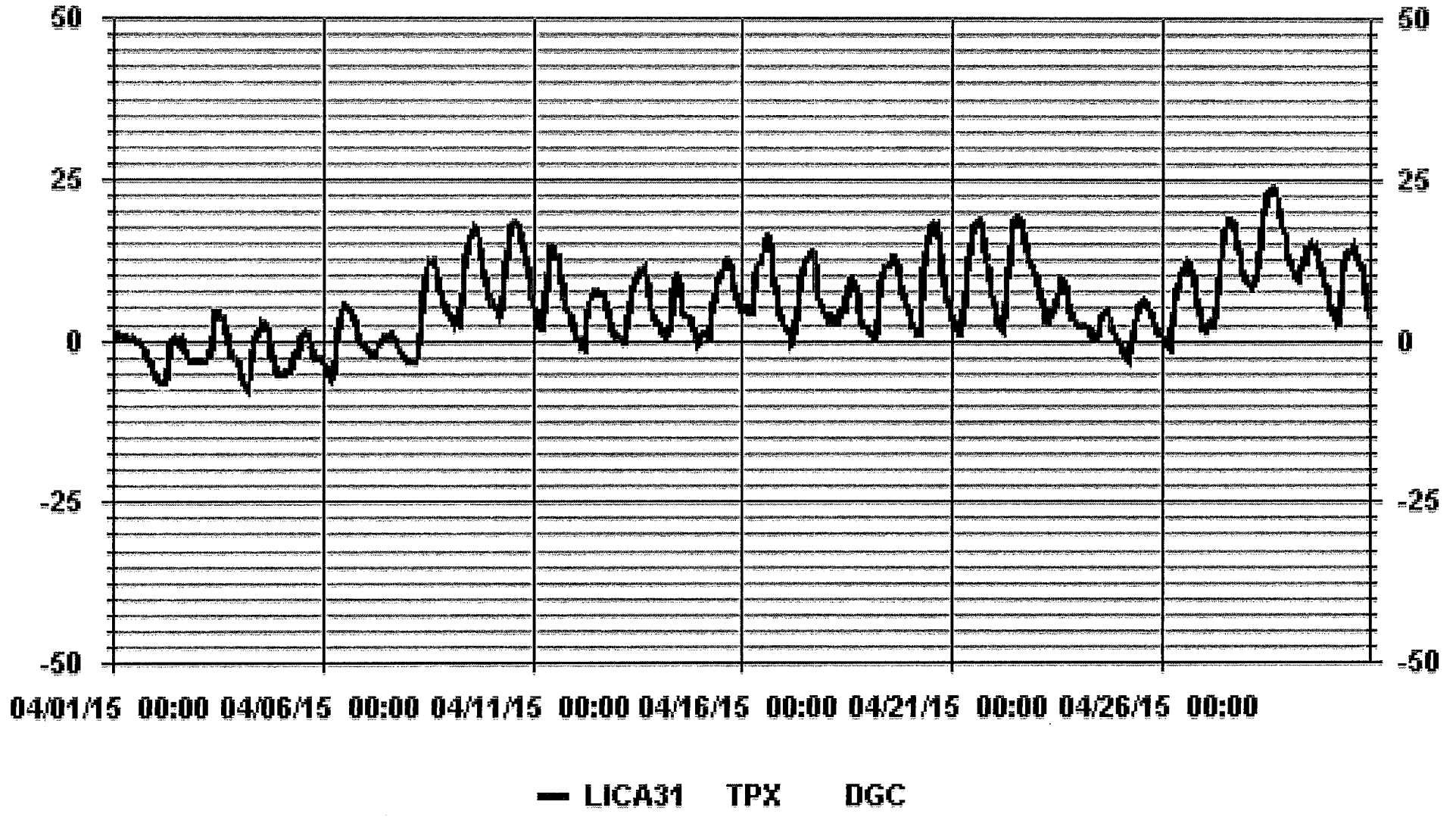
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-7.4 °C	@ HOUR(S)	5	ON DAY(S)	4
MAXIMUM 1-HR AVERAGE:	23.7 °C	@ HOUR(S)	16	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	16.6 °C			ON DAY(S)	28
				VAR-VARIOUS	
OPERATIONAL TIME:			720	HRS	
AMD OPERATION UPTIME:			100.0	%	
STANDARD DEVIATION:	6.40	MONTHLY AVERAGE:	5.6	°C	

01 Hour Averages



PRECIPITATION



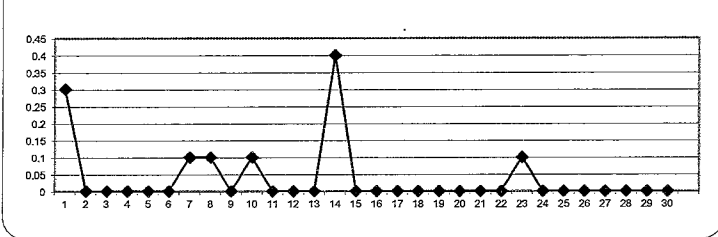
PRECIPITATION hourly averages (mm)

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	24-HOUR		
DAY	HOURLY MAX	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MAX.	AVG.	RDGS.	
1	0.4	0.6	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.7	0.7	0.8	0.7	1.0	1.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.3	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	0.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	24	
3	0.0	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	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	24	
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	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	0.0	0.0	0.0	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	0.1	0.1	0.3	0.1	0.0	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	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	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.1	24	
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.5	0.5	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.1	24
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	3.7	2.3	0.7	0.0	0.3	0.0	0.0	0.0	0.0	0.0	3.7	0.4	24
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.0	0.4	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.5	0.0	0.0	0.9	0.1	24
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	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	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	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	0.0	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	0.4	0.6	0.2	0.1	0.1	0.1	0.1	0.3	0.2	0.1	0.7	0.7	0.8	1.5	3.7	2.3	0.7	0.0	0.4	0.2	0.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	24
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24

STATUS FLAG CODES

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

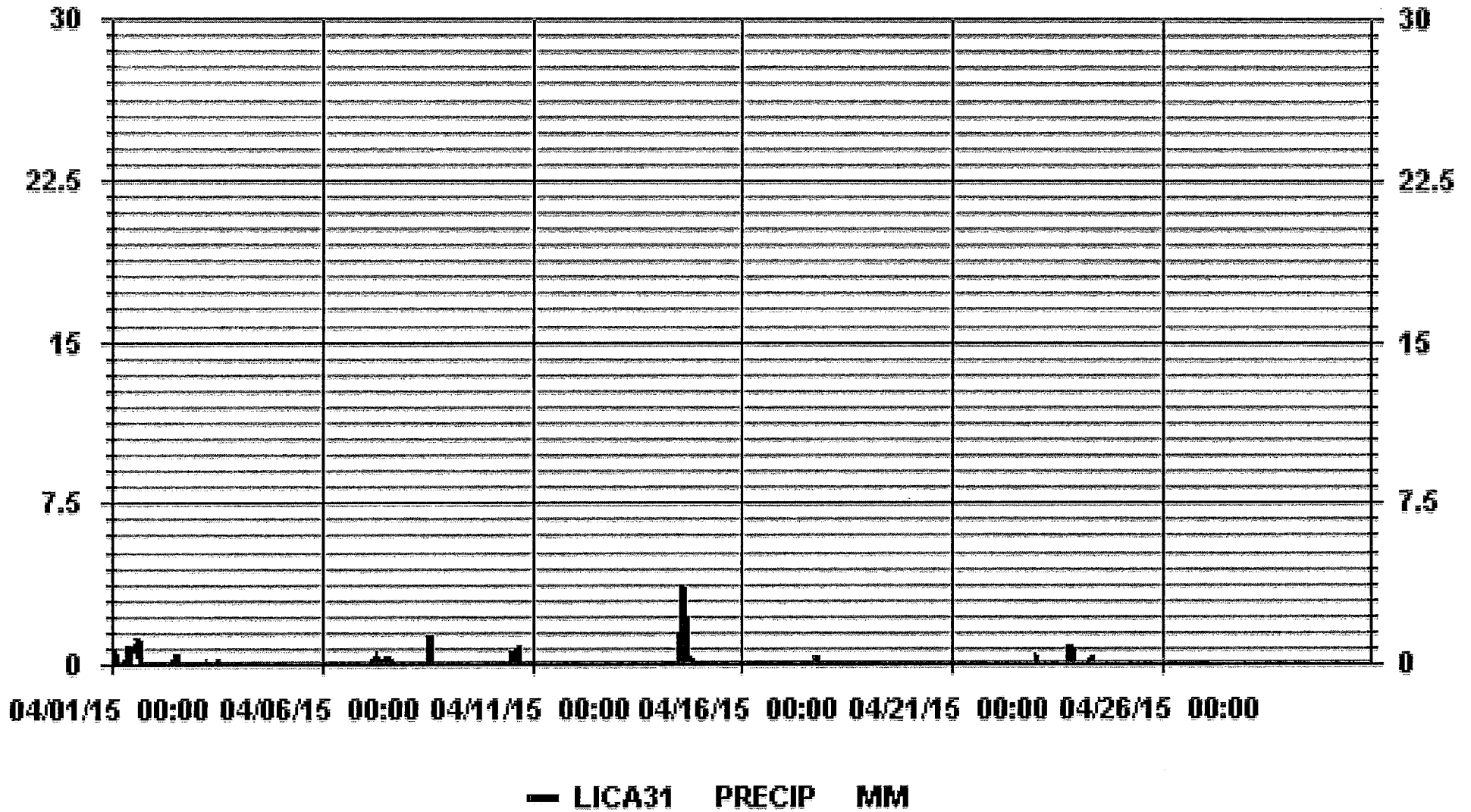
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	3.7	MM	@ HOUR(S)	14	ON DAY(S)	14
MAXIMUM 24-HR AVERAGE:	0.4	MM			ON DAY(S)	14
MONTHLY TOTAL	23.7	MM			VAR-VARIOUS	
OPERATIONAL TIME:					720	HRS
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	0.21		MONTHLY AVERAGE:		0.0	MM

01 Hour Averages



APPENDIX II
ANALYZER CALIBRATION RESULTS

SULPHUR DIOXIDE

API 100E SO2 Analyzer Calibration

Date: 13-Apr-15

Company: LICA

Station Name/Location: St.Lina

Performed by: Alex Yakupov

Application H₂S/TRS/SO₂: SO2

Start/End Time (mst): 10:30 / 14:58

Calibration Purpose: Monthly Calibration

Converter Make & Model: NA

Converter Serial #: NA

Cal Gas Expiry Date: 12-Aug-17

Analyzer: 468

Serial Number: 16-Mar-15

Last Calibration Date: 0.999

Previous Cal High Point C.F.:

Range ppb: 1000

As Found C.F.: 0.991

New C.F.: 1.002

As found:

SLOPE: 0.958

OFFSET: 57.7

HVPS: 533

RCELL TEMP: 50.0

BOX TEMP: 29.5

PMT TEMP: 7.8

IZS TEMP: 40.0

TEST: NA

STABIL: 0.1

PRES: 24.0

SAMP FL: 575

PMT: 60.1

NORM PMT: 62.6

UV LAMP: 2128.9

LAMP RATIO: 86.1

STR. LGT: 27.7

DRK PMT: 17.7

DRK LMP: 3.6

Internal Span: 242.9

As left:

SLOPE: 0.950

OFFSET: 62.3

HVPS: 533

RCELL TEMP: 50.0

BOX TEMP: 29.0

PMT TEMP: 7.8

IZS TEMP: 40.0

TEST: NA

STABIL: 0.2

PRES: 24.0

SAMP FL: 575

PMT: 62.8

NORM PMT: 62.9

UV LAMP: 2126.7

LAMP RATIO: 86.1

STR. LGT: 29.6

DRK PMT: 17.9

DRK LMP: 3.6

Internal Span: 243.7

Calibrator:

Flow Meter ID's: NA

Make & Model: Envirotronics 6100

Serial #: 4760

Cal Gas Cylinder I.D. #: LL42475

Cal Gas Conc. (ppm): 50.3

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	4995	0	4995
high	4916	78	4994
mid	4957	38	4995
low	4975	19	4994

Calibrator Flow Rates (cc/min)

Point	Diluent	Cal Gas	Total
as found zero	4994	0.0	4994
adjusted zero	4994	0.0	4994
as found high	4934	61.71	4996
adjusted high	4934	61.71	4996
mid	4963	30.84	4993
low	4979	15.43	4995
calibrator zero	4994	0.00	4994

Calculated Concentration: (ppb)

Indicated Concentration: (ppb)

Correction Factors:

Point	Calculated (ppb)	Indicated (ppb)	Correction Factor
as found zero	0	2.0	NA
adjusted zero	0	0.0	NA
as found high	621.3	627.0	0.991
adjusted high	621.3	621.0	1.001
mid	310.7	310.0	1.002
low	155.4	155.0	1.003
calibrator zero	0	0.0	NA

Average C.F. = 1.002

Linear Regression/Calibration Results:

Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>1.000</u>	> or = 0.995	PASS
b (Intercept as % of full scale) =	<u>0.02%</u>	0.85-1.15	PASS
% change in C.F. from last cal	<u>0.80%</u>	± 3% F.S.	PASS
		± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

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

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

Zero corrected analyzer response: NA

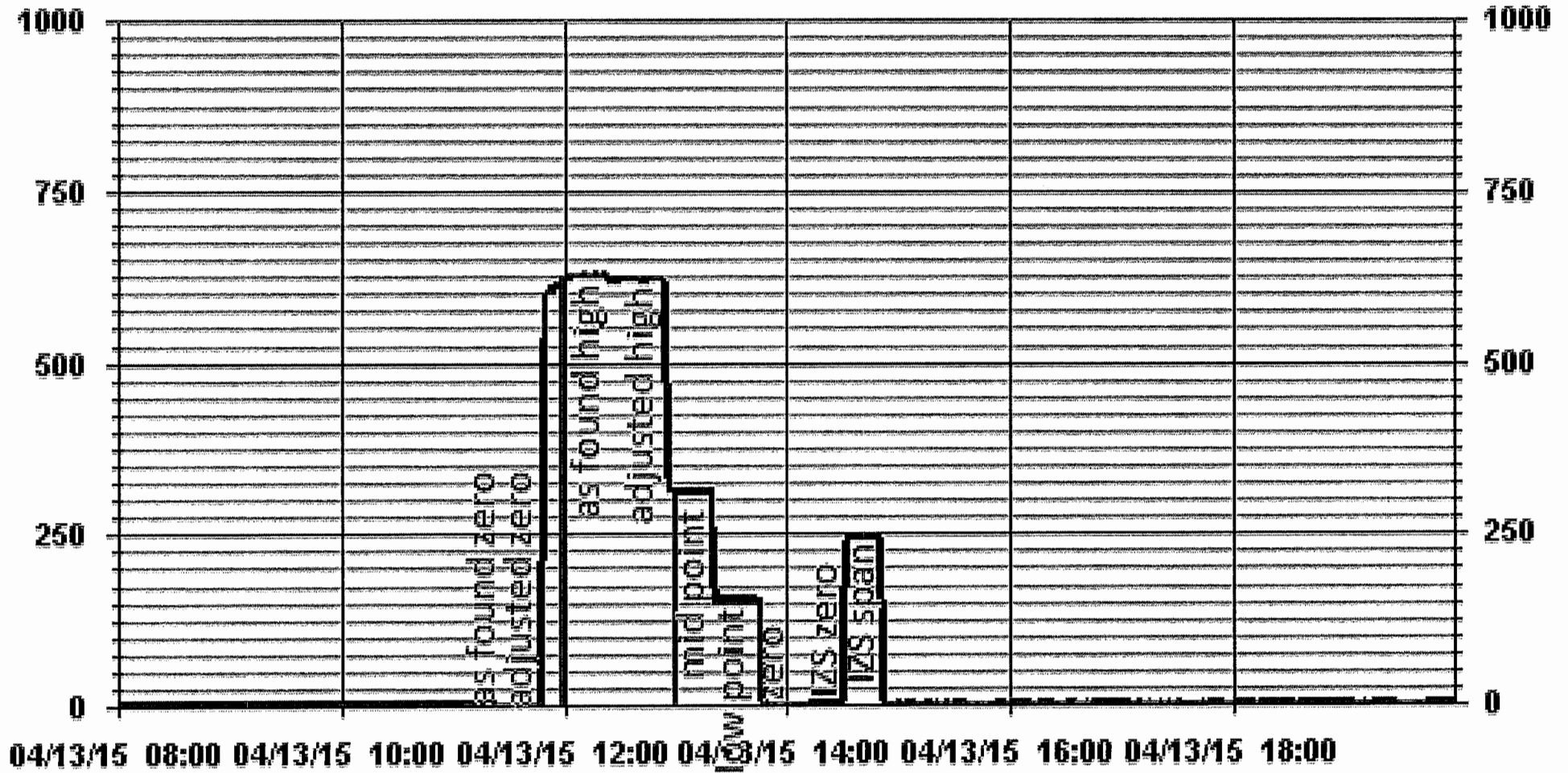
Comments:

Sample filter changed.

API 100E SO2 Analyzer Calibration

Calculated (ppb)	Indicated (ppb)
0	0
155	155
310	310
621	621

01 Minute Averages



— LICA31 SO2_ PPB

HYDROGEN SULPHIDE

API 101E H2S Analyzer Calibration

Date: 14-Apr-15

Company: LICA

Station Name/Location: St.Lina

Performed by: Alex Yakupov

Application H₂S/TRS/SO₂: H2S

Start/End Time (mst): 9:44 / 14:05

Calibration Purpose: Monthly Calibration

Converter Make & Model: Internal

Converter Serial #: NA

Cal Gas Expiry Date: 25-Dec-15

Analyzer:

Serial Number: 722

Last Calibration Date: 17-Mar-15

Previous Cal High Point C.F.: 1.000

Range ppb: 100

As Found C.F.: 0.973

New C.F.: 1.001

As found:

SLOPE: 1.059

OFFSET: 60.0

HVPS: 607

RCELL TEMP: 50.0

BOX TEMP: 31.0

PMT TEMP: 8.2

IZS TEMP: 45.0

TEST: 3147.0

STABIL: 0.2

PRES: 24.7

SAMP FL: 590

PMT: 70.2

NORM PMT: 60.2

UV LAMP: 2417.5

LAMP RATIO: 96.5

STR. LGT: 31.7

DRK PMT: 24.8

DRK LMP: 3.3

Internal Span: 42.3

As left:

SLOPE: 1.023

OFFSET: 60.1

HVPS: 607

RCELL TEMP: 50.0

BOX TEMP: 31.3

PMT TEMP: 8.2

IZS TEMP: 45.0

TEST: 3150.9

STABIL: 0.2

PRES: 24.7

SAMP FL: 590

PMT: 77.3

NORM PMT: 67.1

UV LAMP: 2417.8

LAMP RATIO: 96.5

STR. LGT: 30.7

DRK PMT: 24.9

DRK LMP: 3.2

Internal Span: 39.8

Calibrator:

Flow Meter ID's: NA

Make & Model: API 700

Serial #: 831

Cal Gas Cylinder I.D. #: BLM005049

Cal Gas Conc. (ppm): 10.1

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	4959	39	4998
mid	4980	19	4999
low	4990	11	5001

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4999	0.0	4999	0	0.3	NA
adjusted zero	4999	0.0	4999	0	0.1	NA
as found high	4959	38.60	4998	78.0	80.3	0.973
adjusted high	4959	38.60	4998	78.0	78.0	1.001
mid	4980	18.80	4999	38.0	38.2	0.997
low	4989	10.90	5000	22.0	22.0	1.005
calibrator zero	4999	0.00	4999	0	0.3	NA
Average C.F.=						1.001

Linear Regression/Calibration Results:

Correlation Coefficient = <u>1.000</u>	LIMITS	Pass/Fail ?
Slope = <u>1.001</u>	> or = 0.995	PASS
b (Intercept as % of full scale) = <u>-0.10%</u>	0.85-1.15	PASS
% change in C.F. from last cal = <u>2.73%</u>	± 3% F.S.	PASS
	± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

run converter efficiency test immediately following zero adjust

SO₂ High Point gas concentration: 78 ppb Time gas run (mst): 10:44 - 10:49

Zero corrected analyzer response: 1.1

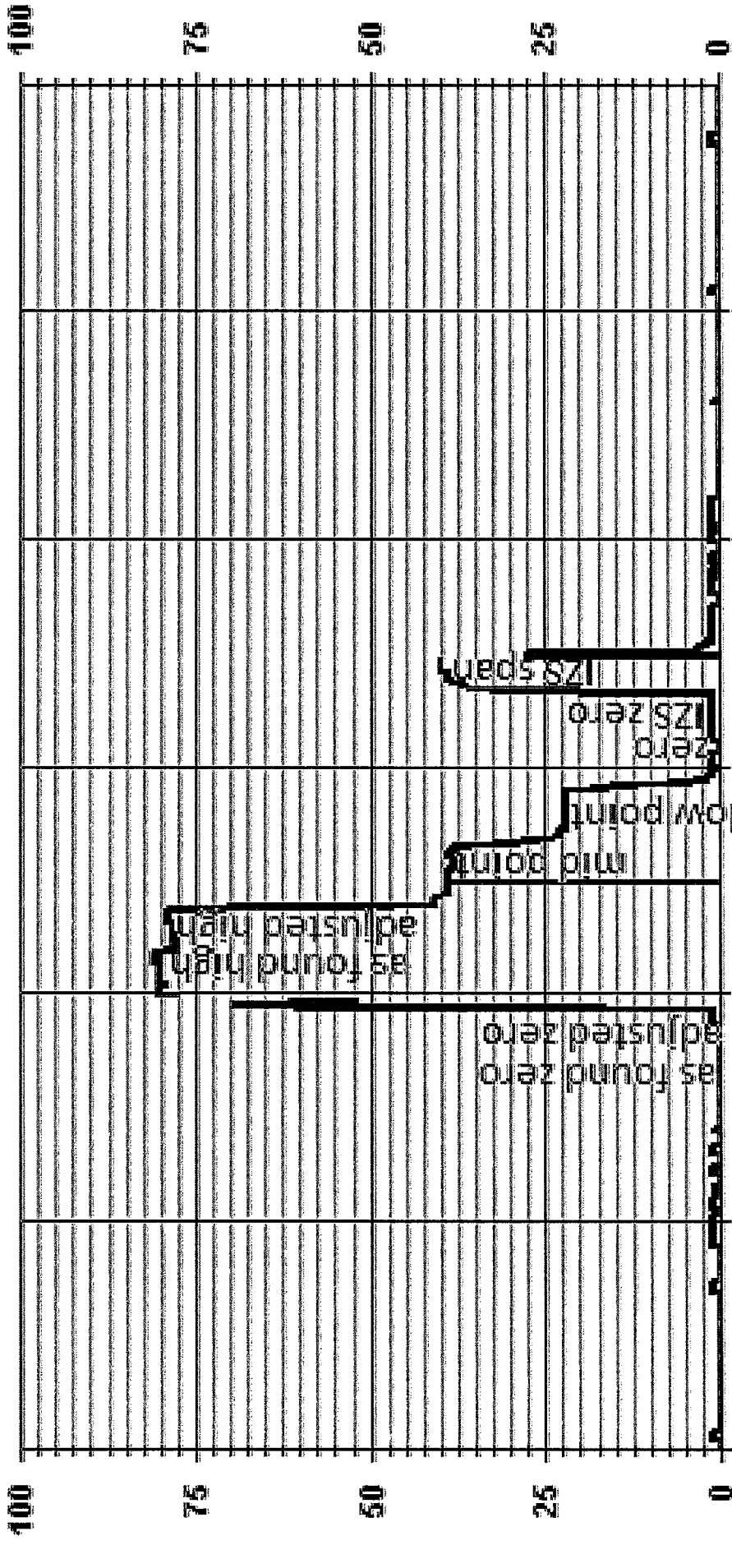
Comments:

Sample filter changed.

API 101E H2S Analyzer Calibration

Calculated Concentration (ppb)	Indicated Concentration (ppb)
0	0.1
22.0	22.0
38.2	38.2
78.0	78.0

01 Minute Averages



04/14/15 07:00 04/14/15 09:00 04/14/15 11:00 04/14/15 13:00 04/14/15 15:00 04/14/15 17:00

— LICA31 H2S_ PPB

TOTAL HYDROCARBON

Maxxam Thermo 51C THC Analyzer Calibration

Date: 13-Apr-15
 Company: LICA
 Station Name/Location: St. Lina
 Performed by: Alex Yakupov

Start Time (mst): 10:30
 End Time (mst): 14:50
 Calibration Purpose: Monthly Calibration
 Cal Gas Expiry Date: 12-Aug-17

Analyzer: _____
 Serial Number: 436609739 Range ppm: 50
 Last Calibration Date: 16-Mar-15 As Found C.F.: 0.996
 Previous Cal High Point C.F.: 1.001 New C.F.: 1.003

	As found:	As left:
H ₂ cylinder (psi):	<u>1200</u>	<u>1200</u>
H ₂ cylinder reg set (psi):	<u>32</u>	<u>32</u>
Span Cylinder (psi):	<u>900</u>	<u>900</u>
Span Cylinder Reg Set (psi):	<u>45</u>	<u>45</u>
Zero Air Gen Pressure:	<u>42</u>	<u>42</u>
measurement alarms:	<u>None</u>	<u>None</u>
service alarms:	<u>None</u>	<u>None</u>
FID status:	cnt: <u>2108</u>	cnt: <u>2127</u>
	rng: <u>1</u>	rng: <u>1</u>
	try: <u>1</u>	try: <u>1</u>
	flm: <u>205.5</u>	flm: <u>205.3</u>
	det: <u>125.7</u>	det: <u>125.6</u>
Oven Readings:	Flame: <u>205</u>	Flame: <u>205</u>
	Filter: <u>125</u>	Filter: <u>125</u>
	Base: <u>125</u>	Base: <u>125</u>
	Pump: <u>6.81</u>	Pump: <u>6.81</u>
Voltages:	+5 <u>4.9</u>	+5 <u>4.9</u>
	+15 <u>14.9</u>	+15 <u>14.9</u>
	-15 <u>-15.0</u>	-15 <u>-15.0</u>
	Internal Span: <u>32.43</u>	Internal Span: <u>31.89</u>

Calibrator: _____
 Flow Meter ID's: NA
 Make & Model: API 700
 Serial #: 830
 Cal Gas Cylinder I.D. #: LL33674
 CH₄/C₃H₈ Cylinder Conc. (ppm): 601.4 202.0
 CH₄ as propane/total CH₄ equivalents (ppm): 555.5 1156.9

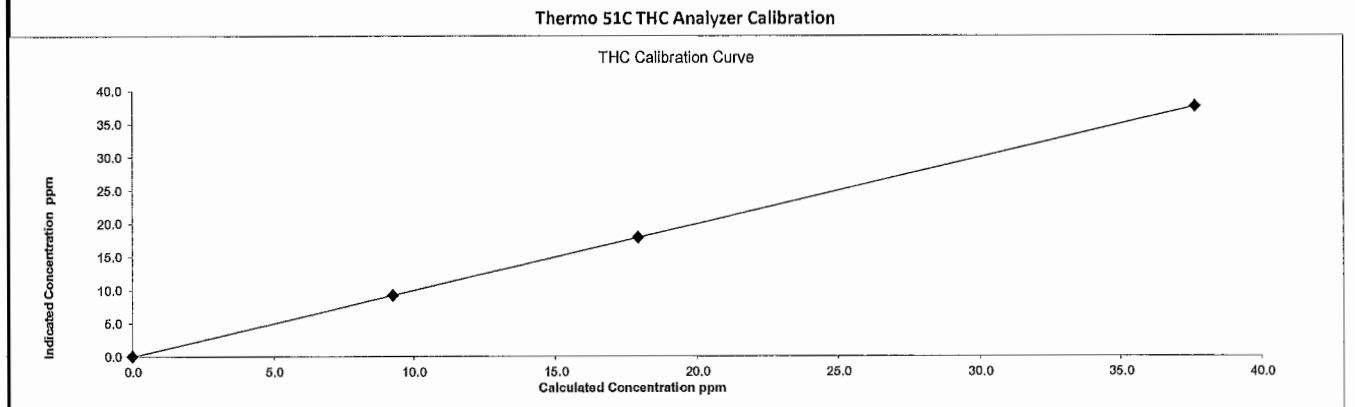
Calibrator Flow Targets:			
point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	2000	0	2000
high	1935	65	2000
mid	1969	31	2000
low	1984	16	2000

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppm)	(ppm)	
as found zero	1999	0.00	1999	0	-0.20	NA
adjusted zero	1999	0.00	1999	0	0.00	NA
as found high	1933	65.00	1998	37.64	37.80	0.996
adjusted high	1933	65.00	1998	37.64	37.60	1.001
mid	1969	31.00	2000	17.93	17.90	1.002
low	1983	16.00	1999	9.26	9.20	1.007
calibrator zero	1999	0.00	1999	0	0.00	NA
Average C.F. =						1.003

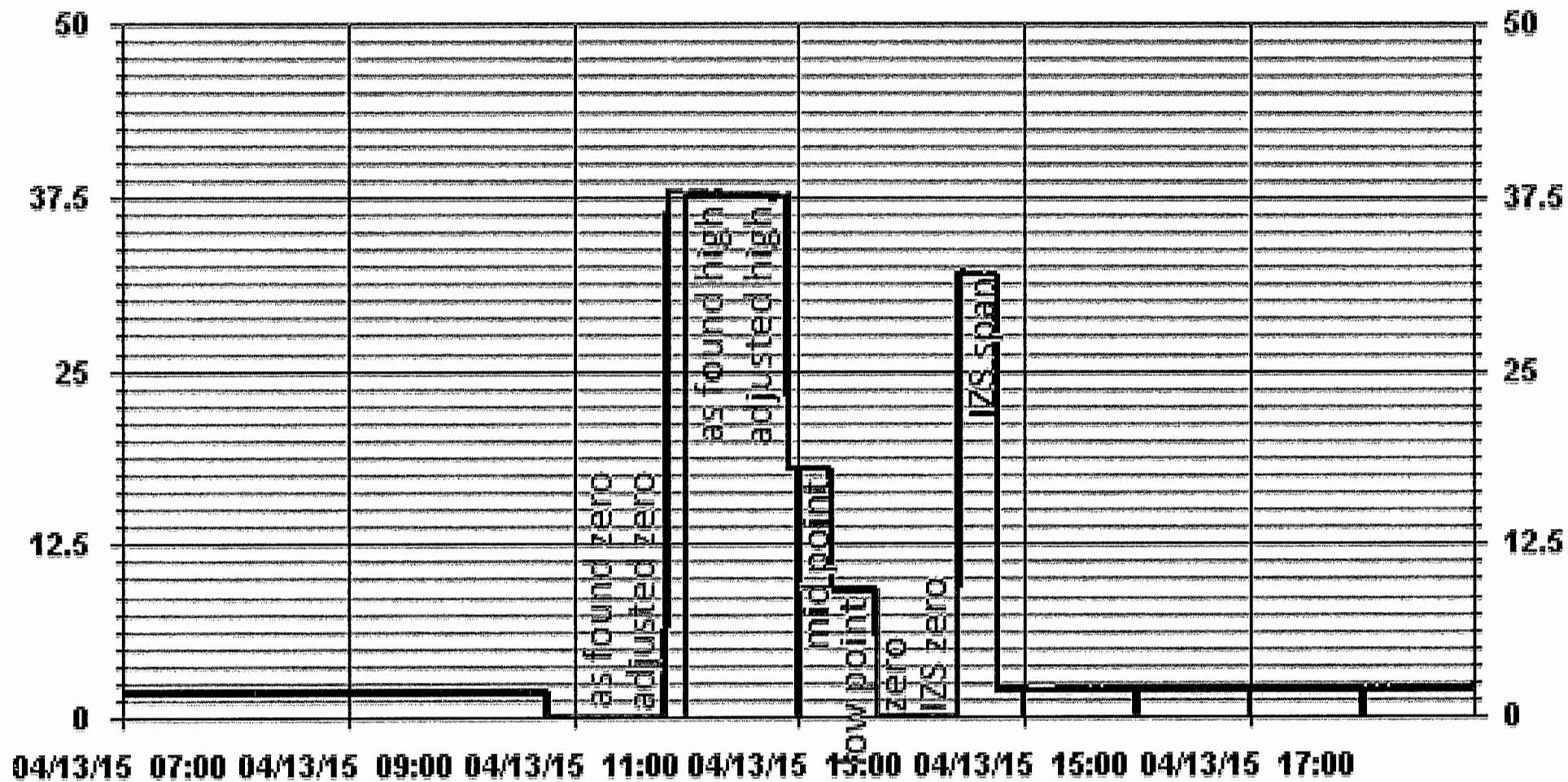
Linear Regression/Calibration Results:

Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>0.999</u>	> or = 0.995	PASS
b (Intercept as % of full scale) =	<u>-0.044%</u>	0.85-1.15	PASS
% change in C.F. from last cal	<u>0.53%</u>	± 3% F.S.	PASS
		± 15%	PASS

Comments:
 Sample filter changed.



01 Minute Averages



— LICA31 THC PPM

NITROGEN DIOXIDE



API 200E NOx Analyzer Calibration

Date: 13-Apr-15
 Company: LICA
 Station Name/Location: St. Lina
 Performed by: Alex Yakupov

Start Time (mst): 10:30
 End Time (mst): 17:16
 Calibration Purpose: Monthly Calibration
 Cal Gas Expiry Date: 12-Aug-17

Analyzer Serial Number: 594		Correction Factors:	
Last Calibration Date: 16-Mar-15	As found C.F. NO= 0.973	Previous Cal High Point C.F.: NO= 0.998	
Range ppb: 1000	NOx= 0.971	NOx= 0.998	
	NO ₂ = 1.000	NO ₂ = 1.000	
As found:		As left:	
NOx SLOPE: 0.913	NOx SLOPE: 0.890	NOx OFFS: 0.4	NOx OFFS: 1.9
NO SLOPE: 0.912	NO SLOPE: 0.888	NO OFFS: -1.5	NO OFFS: -0.8
NO OFFS: -1.5	NO OFFS: -0.8	TEST: NA	TEST: NA
TEST: NA	TEST: NA	SAMP FLW: 452	SAMP FLW: 452
SAMP FLW: 452	SAMP FLW: 452	OZONE FL: 78	OZONE FL: 78
OZONE FL: 78	OZONE FL: 78	PMT: 24.5	PMT: 23.1
PMT: 24.5	PMT: 23.1	NORM PMT: -1.1	NORM PMT: 3.8
NORM PMT: -1.1	NORM PMT: 3.8	AZERO: 16.3	AZERO: 16.7
AZERO: 16.3	AZERO: 16.7	HVPS: 771	HVPS: 771
HVPS: 771	HVPS: 771	RCELL TEMP: 50.1	RCELL TEMP: 50.1
RCELL TEMP: 50.1	RCELL TEMP: 50.1	BOX TEMP: 29.8	BOX TEMP: 29.9
BOX TEMP: 29.8	BOX TEMP: 29.9	PMT TEMP: 6.7	PMT TEMP: 6.7
PMT TEMP: 6.7	PMT TEMP: 6.7	IZS TEMP: 45.2	IZS TEMP: 45.0
IZS TEMP: 45.2	IZS TEMP: 45.0	MOLY TEMP: 314.9	MOLY TEMP: 315.4
MOLY TEMP: 314.9	MOLY TEMP: 315.4	RCEL: 5.9	RCEL: 5.9
RCEL: 5.9	RCEL: 5.9	SAMP: 26.3	SAMP: 36.3
SAMP: 26.3	SAMP: 36.3	Internal Span: 519.9/7.5/512.3	Internal Span: 527.8/7.8/519.8
Internal Span: 519.9/7.5/512.3	Internal Span: 527.8/7.8/519.8		

Calibrator Flow Targets:

Make & Model:	EnviroNics 6100	point	diluent (cc/min)	cal gas (cc/min)	O ₃ setting (v or ppb)	total (cc/min)
Serial #:	4760	zero	4995	0	0	4995
Cal Gas Cylinder I.D. #:	LL42475	high	4916	78	320.00	4994
NO Cylinder Conc. (ppm):	48.5	mid	4957	38	160.00	4995
NOx Cylinder Conc. (ppm):	48.5	low	4975	19	75.00	4994

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	4994	0.0	4994	0	0	0.0	1.0	NA	NA
adjusted zero	4994	0.0	4994	0	0	0.0	0.0	NA	NA
as found high	4934	61.71	4996	599.1	599.1	616	617	0.973	0.971
adjusted high	4934	61.71	4996	599.1	599.1	599	600	1.000	0.999
mid	4963	30.84	4993	299.5	299.5	299	300	1.002	0.998
low	4979	15.43	4995	149.8	149.8	150	150	0.999	0.999
calibrator zero	4994	0.00	4994	0	0	0.0	0.0	NA	NA
Average C.F.=								1.000	0.999

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ Increase	NO ₂ C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4935	61.71	4997	0.0	600.0	601.0	0.0	0.0	0.0	
as found NO ₂	4935	61.71	4997	320.0	220.0	600.0	380.0	380.0	380.0	1.000
adjusted NO ₂	4935	61.71	4997	320.0	220.0	600.0	380.0	380.0	380.0	1.000
gpt mid	4935	61.71	4997	160.0	410.0	600.0	190.0	190.0	190.0	1.000
gpt low	4935	61.71	4997	75.0	515.0	601.0	85.0	85.0	85.0	1.000
Average NO ₂ C.F.=										1.000

Linear Regression/Calibration Results:

	NO	NOx	NO ₂	LIMITS
Correlation Coefficient =	1.000	1.000	1.000	> or = 0.995
Slope =	1.000	1.002	1.000	0.85-1.15
b (Intercept as % of full scale)=	0.00%	0.00%	0.00%	± 3% F.S.
% change in C.F. from last cal=	2.55%	2.71%	0.00%	+/-15%
NO ₂ converter efficiency			100.0%	>85%

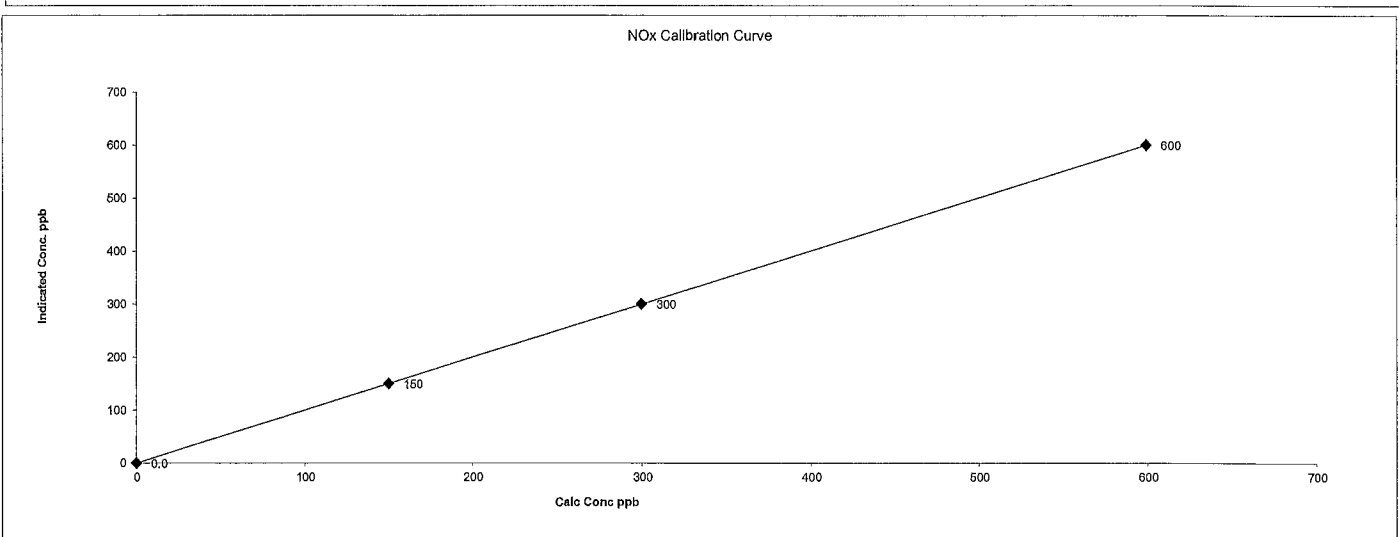
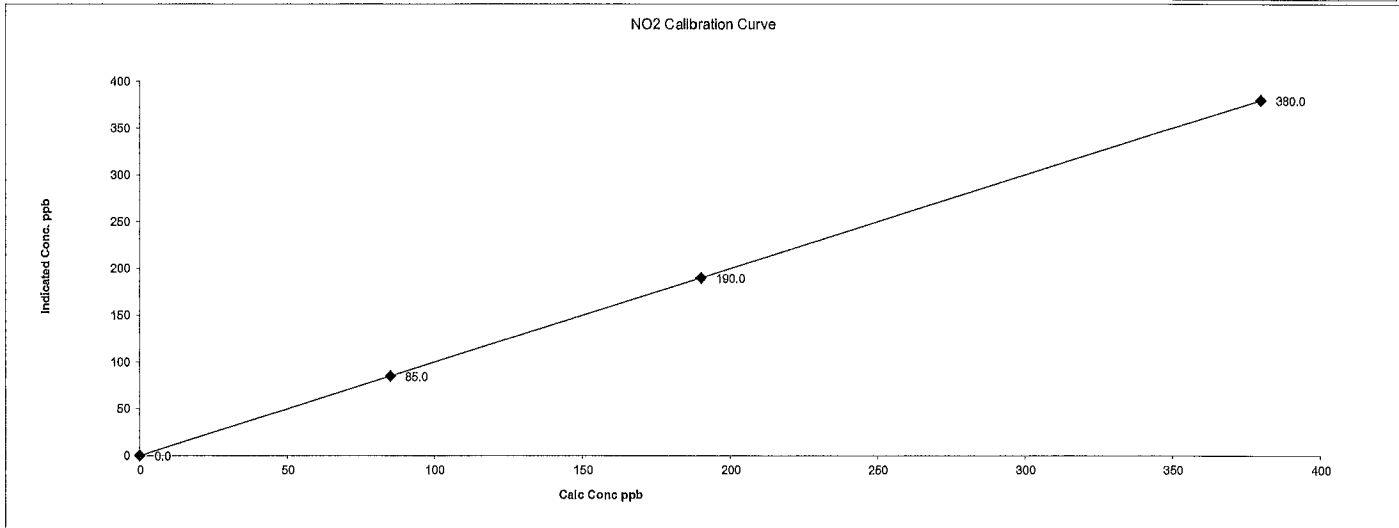
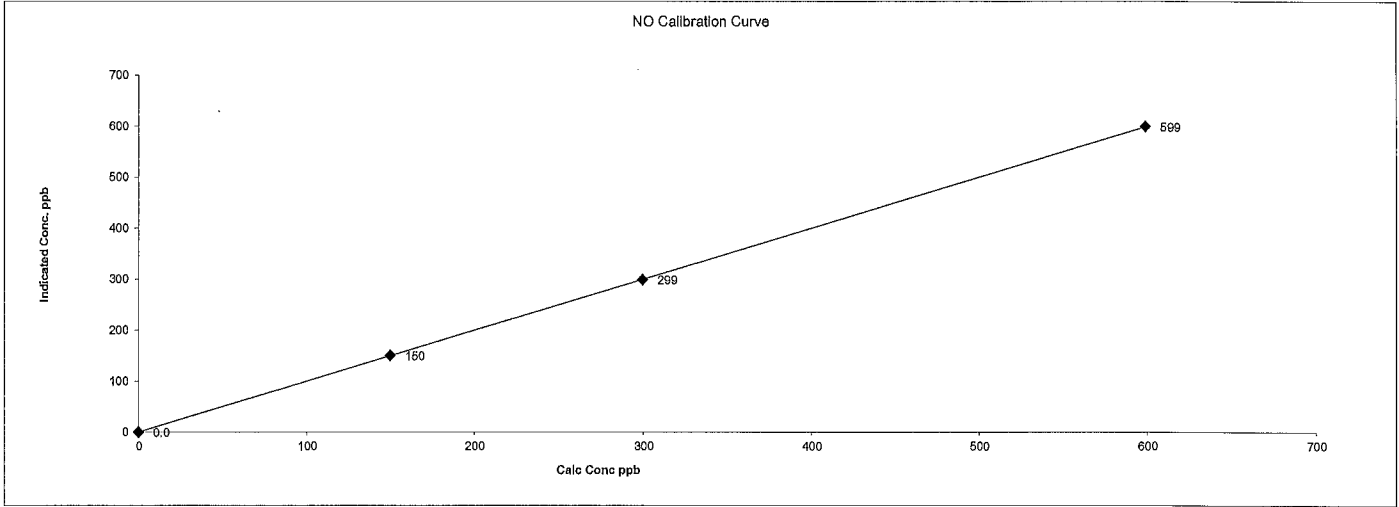
Comments:

Sample filter changed. No adjustments made for NO₂. Data copied for calculation purposes only. 15:27 - the mid point was increased from 150 to 160 ppb to meet 30-40% GPT requirement.

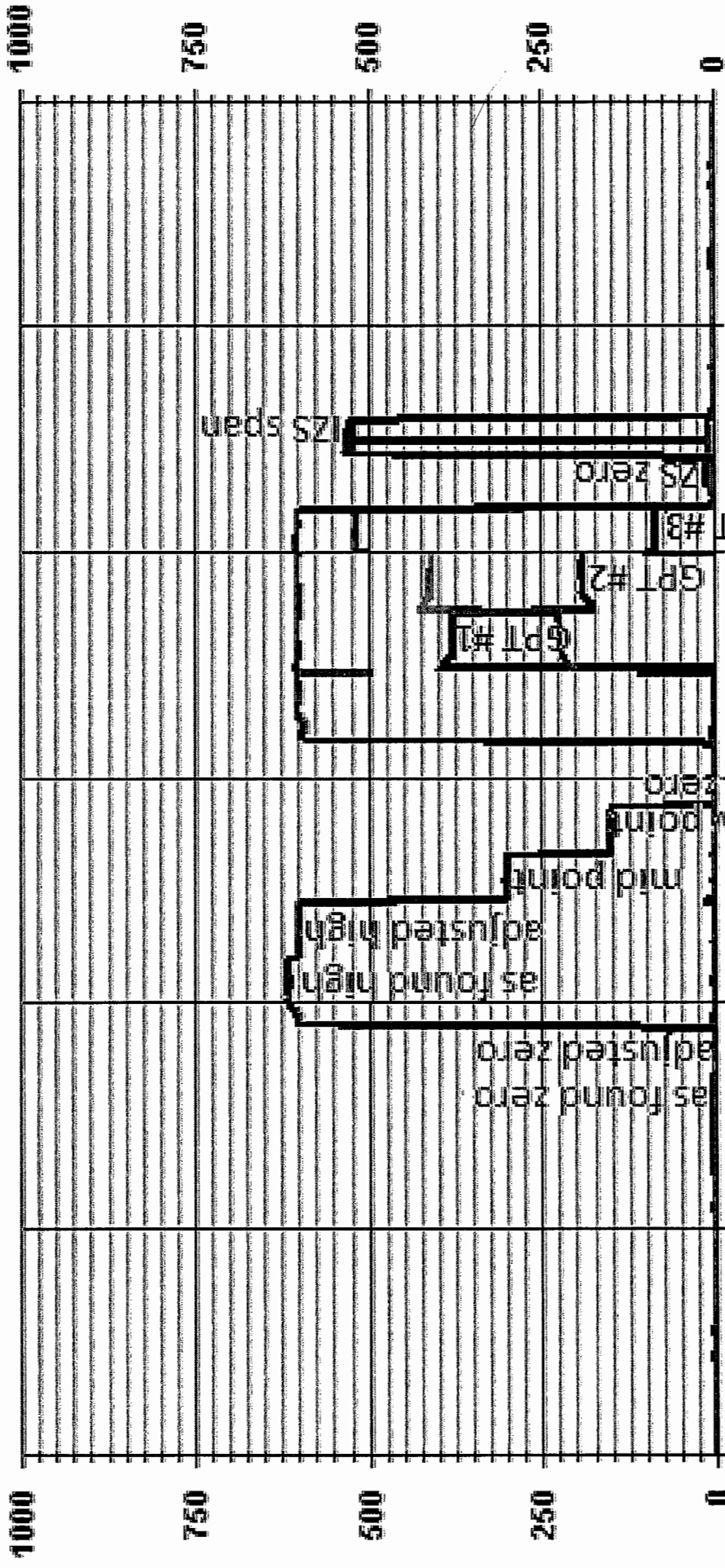
Date: 13-Apr-15
Company: LICA
Station Name/Location: St.Lina
Performed by: Alex Yakupov

Start Time (mst): 10:30
End Time (mst): 17:16
Calibration Purpose: Monthly Calibration
Cal Gas Expiry Date: 12-Aug-17

API 200E NOx Analyzer Calibration



01 Minute Averages



04/13/15 08:00 04/13/15 10:00 04/13/15 12:00 04/13/15 14:00 04/13/15 16:00 04/13/15 18:00

— LICA31 NOX_ PPB — LICA31 NO_ PPB — LICA31 NO2_ PPB

OZONE

Maxxam Thermo 49i O₃ Analyzer Calibration

<p>Date: <u>15-Apr-15</u></p> <p>Company: <u>LICA</u></p> <p>Station Name/Location: <u>St.Lina</u></p> <p>Performed by: <u>Chris Wesson</u></p>	<p>Start Time (mst): <u>7:36</u></p> <p>End Time (mst): <u>10:52*</u></p> <p>Calibration Purpose: <u>Monthly Calibration</u></p> <p>G.P.T. Date: <u>14-Apr-15</u></p>
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<p>Analyzer: Serial Number: <u>1002240371</u></p> <p>Last Calibration Date: <u>17-Mar-15</u></p> <p>Previous Cal High Point C.F.: <u>1.000</u></p>	<p>Range ppm: <u>500</u></p> <p>As Found C.F.: <u>0.995</u></p> <p>New C.F.: <u>0.994</u></p>
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<p style="text-align: center;">As found:</p> <p>O₃ Bkg: <u>-0.1</u></p> <p>O₃ Coef: <u>0.977</u></p> <p>Motherboard: 3.3 <u>3.3</u></p> <p>15.0 <u>14.8</u></p> <p>24.0 <u>23.7</u></p> <p>-3.3 <u>-3.2</u></p> <p>Interface Board: 3.3 <u>3.2</u></p> <p>5.0 <u>4.9</u></p> <p>15.0 <u>14.7</u></p> <p>-15.0 <u>-15.0</u></p> <p>Photo Lamp: 9.4</p> <p>24.0 <u>23.4</u></p> <p>O₃ Lamp: 8.3</p> <p>Bench: 29.5</p> <p>Bench Lamp: 53.6</p> <p>O₃ Lamp: 67.8</p> <p>Pressure: 680.6</p> <p>Cell A lpm: 0.728</p> <p>Cell B lpm: 0.723</p> <p>O₃ ppb: -3.6</p> <p>Cell A ppb: -5.8</p> <p>Cell B ppb: -1.3</p> <p>Cell A Int: 61679</p> <p>Cell B Int: 73122</p> <p>Internal Span: 332.1</p>	<p style="text-align: center;">As left:</p> <p>O₃ Bkg: <u>-0.2</u></p> <p>O₃ Coef: <u>0.969</u></p> <p>3.3 <u>3.3</u></p> <p>15.0 <u>14.8</u></p> <p>24.0 <u>23.7</u></p> <p>-3.3 <u>-3.2</u></p> <p>3.3 <u>3.2</u></p> <p>5.0 <u>4.9</u></p> <p>15.0 <u>14.7</u></p> <p>-15.0 <u>-15.0</u></p> <p>Photo Lamp: 9.4</p> <p>24.0 <u>23.4</u></p> <p>O₃ Lamp: 8.3</p> <p>Bench: 29.2</p> <p>Bench Lamp: 53.6</p> <p>O₃ Lamp: 67.8</p> <p>Pressure: 679.7</p> <p>Cell A lpm: 0.727</p> <p>Cell B lpm: 0.721</p> <p>O₃ ppb: 0.5</p> <p>Cell A ppb: 1.3</p> <p>Cell B ppb: -0.2</p> <p>Cell A Int: 61684</p> <p>Cell B Int: 73128</p> <p>Internal Span: 332.1</p>
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<p>Calibrator: Make & Model: <u>Sabro 2010</u></p> <p>Serial #: <u>11900613</u></p> <p>NOx Gas Cylinder I.D. #: <u>BLM005214</u></p> <p>NOx Cylinder Conc. (ppm): <u>50.1</u></p>	<p style="text-align: center;">Calibrator Flow Targets:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>point</th> <th>total flow (cc/min)</th> <th>O₃ setting (v or ppb)</th> </tr> </thead> <tbody> <tr> <td>zero</td> <td>5000</td> <td>0</td> </tr> <tr> <td>high</td> <td>5000</td> <td>380</td> </tr> <tr> <td>mid</td> <td>5000</td> <td>180</td> </tr> <tr> <td>low</td> <td>5000</td> <td>85</td> </tr> </tbody> </table>	point	total flow (cc/min)	O ₃ setting (v or ppb)	zero	5000	0	high	5000	380	mid	5000	180	low	5000	85
point	total flow (cc/min)	O ₃ setting (v or ppb)														
zero	5000	0														
high	5000	380														
mid	5000	180														
low	5000	85														

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5013	0.0	5013	0.0	-1.5	NA
adjusted zero	5013	0.0	5013	0.0	0.0	NA
as found high	5013	0.00	5013	376.0	378.0	0.995
adjusted high	5013	0.00	5013	376.0	376.0	1.000
mid	5013	0.00	5013	186.0	185.0	1.005
low	5013	0.00	5013	88.0	90.0	0.978
calibrator zero	502	0.00	502	0.0	0.0	NA
Average C.F.=						0.994

copy and paste flows and NO decrease from NOx cal ln to calculated concentration

Linear Regression/Calibration Results:

Correlation Coefficient = <u>1.000</u>	LIMITS	Pass/Fail ?
Slope = <u>0.998</u>	> or = 0.995	PASS
b (Intercept as % of full scale) = <u>0.122%</u>	0.85-1.15	PASS
% change in C.F. from last cal = <u>1%</u>	± 3% F.S.	PASS
	± 15%	PASS

Comments:

Monthly calibration & filter change. No issues.

* = Analyzer used to calibrate Sabro photometer (from 10:53-14:51). IZS triggered after this process

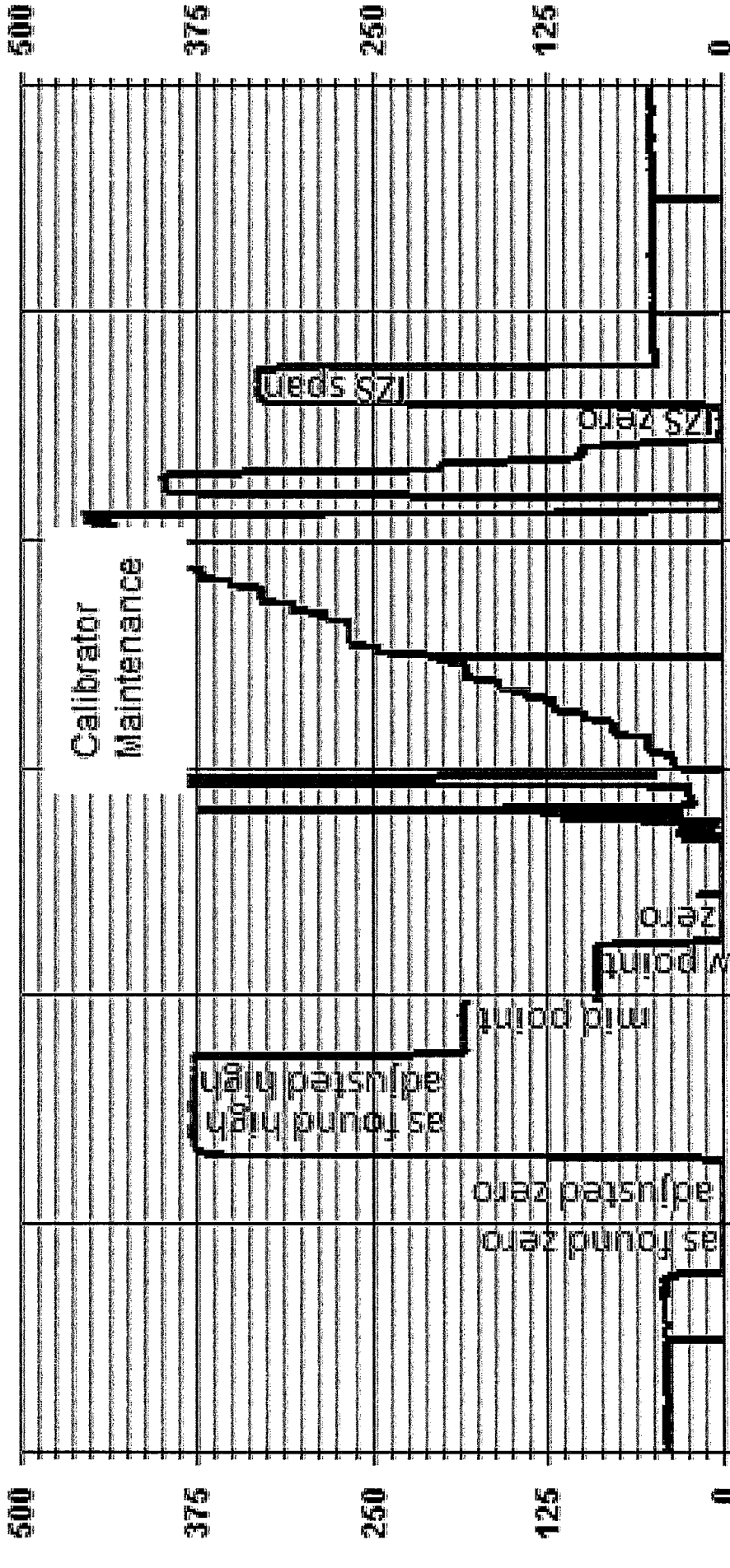
Thermo 49i O₃ Analyzer Calibration

O₃ Calibration Curve

The graph displays a linear relationship between the calculated concentration (x-axis) and the indicated concentration (y-axis) for the O₃ analyzer. The data points are as follows:

Calc Conc ppb	Indicated Conc. ppb
0.0	0.0
100.0	100.0
185.0	185.0
378.0	378.0

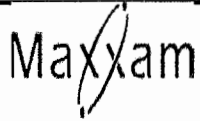
01 Minute Averages



04/15/15 06:00 04/15/15 08:00 04/15/15 10:00 04/15/15 12:00 04/15/15 14:00 04/15/15 16:00

— LICA31 03_ PPB

PARTICULATE MATTER



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: 10-Apr-15
 Company: LICA
 Station Name/Location: St Lina
 Previous Audit Date: 20-Mar-15

Parameter: PM 2.5
 Performed by: Alex Yakupov
 Start/End Time (mst): 15:30 / 16:38
 Calibration Purpose: 1st Audit

1400A Information and Status:

Serial Number:	<u>1405A208301003</u>	As Found Filter Loading %:	<u>29.20</u>
Ko Factor:	<u>13125.0</u>	As Left Filter Loading %:	<u>28.18</u>
Ambient Temperature °C:	<u>19.48</u>	As Found Noise:	<u>0.007</u>
Ambient Pressure atm:	<u>0.905</u>	As Left Noise:	<u>0.000</u>
Main Flow Reading lpm:	<u>3.00</u>	Pump Vacuum:	<u>0.35</u>
Aux Flow Reading lpm:	<u>13.67</u>	Warnings:	<u>None</u>

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	<u>Dwyer</u>	<u>Fisher</u>	<u>Fisher</u>
Model:	<u>475 Mark III</u>	<u>FB61291</u>	<u>FB61291</u>
Serial Number:	<u>NA</u>	<u>130168457</u>	<u>130168457</u>
Calibration Date:	<u>NA</u>	<u>18-Mar-15</u>	<u>18-Mar-15</u>

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.00	-0.15	0.00	-0.15
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.00	-0.65	0.00	-0.65
	limit	0.60	0.60	0.60	0.60

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

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.00	-0.15	0.00	-0.15
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.00	-0.65	0.00	-0.65
	limit	0.60	0.60	0.60	0.60

As found temperature and pressure:

tolerance +/- 2.0°C	tolerance +/- 0.01 atm
1405F temperature °C: <u>19.5</u>	1405F pressure atm: <u>0.905</u>
reference temperature °C: <u>19.0</u>	reference pressure: <u>0.908</u>
difference °C: <u>-0.5</u>	difference: <u>-0.003</u>

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

tolerance +/- 2.0°C	tolerance +/- 0.01 atm
1405F temperature °C: <u>19.0</u>	1405F pressure atm: <u>0.908</u>
reference temperature °C: <u>19.0</u>	reference pressure: <u>0.908</u>
difference °C: <u>0.0</u>	difference: <u>0.000</u>

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>13.67</u>
reference main flow lpm: <u>3.11</u>	reference total/aux flow lpm: <u>14.09</u>
difference lpm: <u>0.11</u>	difference lpm: <u>0.42</u>

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

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>13.67</u>
reference main flow lpm: <u>3.07</u>	reference total/aux flow lpm: <u>14.04</u>
difference lpm: <u>0.07</u>	difference lpm: <u>0.37</u>

Ko Audit:

Last Ko audit date: 20-Mar-15
 1405F Ko factor: 13125.0
 Measured Ko factor: 13213.2000
 % difference: 0.67

Comments:



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: 27-Apr-15
 Company: LICA
 Station Name/Location: St Lina
 Previous Audit Date: 10-Apr-15

Parameter: PM 2.5
 Performed by: Alex Yakupov
 Start/End Time (mst): 10:15 - 11:09
 Calibration Purpose: 2nd Audit

1400A Information and Status:

Serial Number: <u>1405A208301003</u>	As Found Filter Loading %: <u>30.02</u>
Ko Factor: <u>13125.0</u>	As Left Filter Loading %: <u>18.79</u>
Ambient Temperature °C: <u>14.20</u>	As Found Noise: <u>0.006</u>
Ambient Pressure atm: <u>0.925</u>	As Left Noise: <u>0.000</u>
Main Flow Reading lpm: <u>3.00</u>	Pump Vacuum: <u>0.37</u>
Aux Flow Reading lpm: <u>13.67</u>	Warnings: <u>None</u>

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	Dwyer	Fisher	Fisher
Model:	475 Mark III	FB61291	FB61291
Serial Number:	NA	130168457	130168457
Calibration Date:	NA	18-Mar-15	18-Mar-15

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.00	-0.15	0.00	-0.15
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.00	-0.66	0.00	-0.66
	limit	0.60	0.60	0.60	0.60

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

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.00	-0.15	0.00	-0.15
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.00	-0.66	0.00	-0.66
	limit	0.60	0.60	0.60	0.60

As found temperature and pressure:

tolerance +/- 2.0°C	tolerance +/- 0.01 atm
1405F temperature °C: <u>14.2</u>	1405F pressure atm: <u>0.924</u>
reference temperature °C: <u>16.3</u>	reference pressure: <u>0.925</u>
difference °C: <u>2.1</u>	difference: <u>-0.001</u>

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

tolerance +/- 2.0°C	tolerance +/- 0.01 atm
1405F temperature °C: <u>16.3</u>	1405F pressure atm: <u>0.925</u>
reference temperature °C: <u>16.3</u>	reference pressure: <u>0.925</u>
difference °C: <u>0.0</u>	difference: <u>0.000</u>

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>16.67</u>
reference main flow lpm: <u>3.01</u>	reference total/aux flow lpm: <u>16.70</u>
difference lpm: <u>0.01</u>	difference lpm: <u>0.03</u>

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

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>16.67</u>
reference main flow lpm: <u>3.01</u>	reference total/aux flow lpm: <u>16.69</u>
difference lpm: <u>0.01</u>	difference lpm: <u>0.02</u>

K_o Audit:

Last K_o audit date: 20-Mar-15
 1405F K_o factor: 13125.0
 Measured K_o factor: 13213.2000
 % difference: 0.67

Comments:

External filter part # 10-002387-0100 has been changed and particulate filter has been changed. 09:31 - 10:15 - a fan/cooler of the Dryer's compartment of the FDMS has been replaced for a new one.

WIND SYSTEM

Met One Instruments

3206 Main St., Suite 106
Regional Service Center
Rowlett, TX. 75088

Wind Tunnel Calibration Data Sheet

50.5-6100

NIST Cup Model No. 170.41
NIST Sensor Model No. 50.1B

Serial No. 3309
Serial No. 1263

Average wind speed this test in mps 11.19

WD Setting Degrees	WD Output Volts	WD Reading Degrees	WD Error +/- 3 Deg	WS Standard mps	WS Output Volts	WS Reading mps	WS Error +/- 0.24 MPS
30.0	0.092	29.6	-0.4	11.21	0.224	11.19	-0.02
60.0	0.184	59.0	-1.0	11.17	0.227	11.33	0.16
120.0	0.331	119.1	-0.9	11.08	0.221	11.06	-0.02
150.0	0.420	151.3	1.3	11.29	0.222	11.11	-0.18
210.0	0.582	209.4	0.6	11.25	0.223	11.16	-0.09
240.0	0.645	239.4	-0.6	11.18	0.226	11.32	0.14
300.0	0.835	300.5	0.5	11.16	0.224	11.18	0.02
330.0	0.917	330.0	0.0	11.18	0.223	11.15	-0.03

Average wind speed this test in mps 2.21

WD Setting Degrees	WD Output Volts	WD Reading Degrees	WD Error +/- 3 Deg	WS Standard mps	WS Output Volts	WS Reading mps	WS Error +/- 0.20 MPS
30.0	0.041	28.3	-0.7	2.18	0.012	2.08	-0.10
60.0	0.183	58.5	-1.5	2.20	0.013	2.14	-0.06
120.0	0.332	119.6	-0.4	2.21	0.042	2.08	-0.13
150.0	0.417	150.3	0.3	2.22	0.042	2.07	-0.15
210.0	0.584	210.1	0.1	2.20	0.042	2.12	-0.08
240.0	0.669	239.8	-0.2	2.23	0.042	2.10	-0.13
300.0	0.835	300.6	0.6	2.22	0.043	2.18	0.04
330.0	0.917	330.0	0.0	2.21	0.013	2.17	-0.04

Instrument Test Condition As Found As Left

Sensor Model No. 50.5H
Sensor Output (Wind) 0V - 1.0V
Customer Maxxim Analytics
Device ID No. 15-66587
Calibrated by David Miller

Sensor Serial No. H12635
Sensor Output Range 0 - 50 MPS
Sales Order No. 104570
Calibration Date 08/28/2014

QC Inspection Dylan Dawson

CALIBRATORS

Company Maxxam Operator: Limin Li

Calibrator:		Flow Measurement Device:	
Make/Model	<u>Envionics 6100</u>	Make/Model	<u>N/A</u>
Serial Number	<u>4760</u>	Serial Number	<u>N/A</u>
Last Verification Date	<u>December 2013</u>	Temperature (°C)	<u>N/A</u>
NO Cylinder S/N	<u>LL42475</u>	Barometric Pressure	<u>N/A</u>
NO/NOX Concentration	<u>48.5/48.5</u>		

Dilution Flow (scm)			
Pt. #1	<u>5000</u>	Pt. #2	<u>5000</u>
Pt. #3	<u>5000</u>		
Gas Flow (scm)			
Pt. #1	<u>80</u>	Pt. #2	<u>40</u>
Pt. #3	<u>20</u>	Gas flows not available from display.	

Calibrator Flow (scm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
4980	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
4993	0.0	0.799	0.799	0.840	-0.001	0.839	5%	5%
4994	0.0	0.399	0.399	0.420	-0.001	0.419	5%	5%
4991	0.0	0.200	0.200	0.211	0.000	0.211	5%	5%
Absolute Average Percent Difference							5%	5%

LINEAR REGRESSION ANALYSIS $y=mx+b$ (where x=calculated concentration, y=Indicated concentration)

NO		LIMITS		NOx	
Correlation=	1.0000	≥ 0.990		Correlation=	1.0000
m (Slope)=	1.0511	0.90-1.10		m (Slope)=	1.0496
b (Intercept % of FS)=	0.0400	± 3% F.S.		b (Intercept % of FS)=	0.0400

Flow	O ₃ Conc	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
4993	0.000	0.000	0.823	-0.001	0.822	NO ₂	% Diff. Limit
4993	0.480	0.530	0.293	0.530	0.823	0	± 10%
4993	0.240	0.269	0.554	0.269	0.823	0	± 10%
4993	0.090	0.096	0.727	0.097	0.824	0	± 10%
Absolute Average Percent Difference						0	± 10%

LINEAR REGRESSION ANALYSIS $y=mx+b$ (where x=calculated concentration, y=Indicated concentration)

NO ₂		LIMITS	
Correlation=	1.0000	≥ 0.995	
m (Slope)=	1.0006	0.90-1.10	
b (Intercept % of FS)=	-0.0132	± 3% F.S.	

AENV Standards		NO _x Analyzer	
Audit Calibrator		Make/Model	<u>Teco 42i</u>
Make/Model	<u>Teco 146i</u>	Serial/AMU Number	<u>AMU 1868</u>
Serial/AMU Number	<u>AMU 1809</u>	Last Calibration Date	<u>December 15, 2014</u>
		Full Scale (ppm)	<u>1.0</u>

COMMENTS: _____

Auditor: Al Clark
Operator Signature: [Signature]

Date: December 17, 2014
Location: McIntyre Center Edmonton

Company: Maxxam Operator: Limin Li

Calibrator:		Flow Measurement Device:	
Make/Model	<u>API 700</u>	Make/Model	<u>N/A</u>
Serial Number	<u>831</u>	Serial Number	<u>N/A</u>
Last Verification Date	<u>April 2014</u>	Temperature (°C)	<u>N/A</u>
H ₂ S Cylinder Conc.	<u>10.2</u>	Barometric Pressure	<u>N/A</u>
H ₂ S Cylinder S/N	<u>BLM003757</u>		

Flow Measurements

Pt. No. 1 39.2 Pt. No. 2 19.6 Pt. No. 3 9.8

Calibrator Flow (sccm)	Calculated Concentration (ppm)	Indicated Concentration (ppm)	% Difference	
			vs Audit Gas	% Diff. Limit
Zero Air	0.0000	0.0000		
4999	0.0800	0.0790	-1%	± 10%
4994	0.0400	0.0398	0%	± 10%
4994	0.0200	0.0194	-3%	± 10%
Absolute Average Percent Difference			2%	± 10%

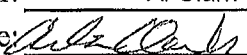
LINEAR REGRESSION ANALYSIS
y=mx+b (where x=calculated concentration, y=indicated concentration)

<u>H₂S</u>		<u>LIMITS</u>
Correlation=	1.0000	≥ 0.995
m (Slope)=	0.9894	0.90-1.10
b (Intercept % of FS)=	-0.0800	± 3% F.S.

<u>AENV Standards</u>		<u>H₂S Analyzer</u>	
Audit Calibrator		Make/Model	<u>Teco 450i</u>
Make/Model	<u>R&R MFC 201</u>	Serial/AMU Number	<u>AMU 1980</u>
Serial/AMU Number	<u>AMU 1690</u>	Last Calibration Date	<u>April 2, 2015</u>
		Full Scale (ppm)	<u>0.1</u>

COMMENTS: MFC's recalibrated. Second run.

Auditor: Al Clark Date: April 2, 2015

Operator Signature:  Location: McIntyre Center Edmonton

Company Maxxam Operator: Limin Li

Calibrator:		Flow Measurement Device:	
Make/Model	<u>Sabio 2010D</u>	Make/Model	<u>N/A</u>
Serial Number	<u>11900613</u>	Serial Number	<u>N/A</u>
Last Verification Date	<u>NEW</u>	Temperature (°C)	<u>N/A</u>
NO Cylinder S/N	<u>BLM003914</u>	Barometric Pressure	<u>N/A</u>
NO/NOx Concentration	<u>50.8/50.8</u>		

Dilution Flow (sccm)		
Pt. #1	<u>5000</u>	Pt. #3 <u>5000</u>
Pt. #2	<u>5000</u>	
Gas Flow (sccm)		
Pt. #1	<u>80</u>	Pt. #3 <u>20</u>
Pt. #2	<u>40</u>	

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
5013	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
5015	78.9	0.800	0.800	0.842	-0.016	0.826	5%	3%
5013	39.6	0.400	0.400	0.426	-0.008	0.418	6%	4%
5014	19.8	0.200	0.200	0.217	-0.004	0.213	8%	6%
Absolute Average Percent Difference							7%	5%

LINEAR REGRESSION ANALYSIS $y=mx+b$ (where x=calculated concentration, y=Indicated concentration)

NO		LIMITS		NO _x	
Correlation=	1.0000	≥ 0.990		Correlation=	1.0000
m (Slope)=	1.0504	0.90-1.10		m (Slope)=	1.0304
b (Intercept % of FS)=	0.3600	± 3% F.S.		b (Intercept % of FS)=	0.3600

Flow	O ₃ Conc	NO Decrease	NO	NO ₂	NOx	% Diff. Vs Audit gas	
5015	0.000	0.000	0.843	-0.017	0.826	NO ₂	% Diff. Limit
5015	0.520	0.527	0.316	0.485	0.802	-5%	± 10%
5015	0.280	0.286	0.557	0.262	0.819	-2%	± 10%
5015	0.100	0.104	0.739	0.089	0.827	2%	± 10%
Absolute Average Percent Difference						2%	± 10%

LINEAR REGRESSION ANALYSIS $y=mx+b$ (where x=calculated concentration, y=Indicated concentration)

NO ₂		LIMITS	
Correlation=	0.9998	≥ 0.995	
m (Slope)=	0.9495	0.90-1.10	
b (Intercept % of FS)=	-1.2915	± 3% F.S.	

AENV Standards Audit Calibrator		NO _x Analyzer	
Make/Model	<u>Teco 146i</u>	Make/Model	<u>Teco 42i</u>
Serial/AMU Number	<u>AMU 1809</u>	Serial/AMU Number	<u>AMU 1868</u>
		Last Calibration Date	<u>April 1, 2015</u>
		Full Scale (ppm)	<u>1.0</u>

COMMENTS: Cylinder contains 49.7 ppm SO₂.

Auditor: Al Clark
Operator Signature: *Al Clark*

Date: April 1, 2015
Location: McIntyre Center Edmonton

Company: Maxxam

Operator: Limin Li

Calibrator:
 Make/Model API 700
 Serial Number 830
 Last Verification Date Oct 2013
 SO₂ Cylinder Conc. 50.3
 SO₂ Cylinder S/N LL42475

Flow Measurement Device:
 Make/Model N/A
 Serial Number N/A
 Temperature (°C) N/A
 Barometric Pressure N/A

Flow Measurements
 Pt. No. 1 79.5 Pt. No. 2 39.8 Pt. No. 3 19.9

Calibrator Flow (scm)	Calculated Concentration (ppm)	Indicated Concentration (ppm)	% Difference	
			vs Audit Gas	% Diff. Limit
Zero Air	0.000	0.000		
4918	0.800	0.798	0%	± 10%
4960	0.400	0.398	-1%	± 10%
4977	0.200	0.200	0%	± 10%
Absolute Average Percent Difference			0%	± 10%

LINEAR REGRESSION ANALYSIS
 $y=mx+b$ (where x=calculated concentration, y=indicated concentration)

SO ₂	LIMITS
Correlation= 1.0000	≥ 0.995
m (Slope)= 0.9971	0.90-1.10
b (Intercept % of FS)= 0.0000	± 3% F.S.

AENV Standards	SO ₂ Analyzer
Audit Calibrator	Make/Model <u>Teco 43C</u>
Make/Model <u>R&R MFC 201</u>	Serial/AMU Number <u>AMU 1623</u>
Serial/AMU Number <u>AMU 1690</u>	Last Calibration Date <u>Dec 15/14</u>
	Full Scale (ppm) <u>1.0</u>

COMMENTS: H2S gas was slow to move through the calibrator. Check for contamination inside calibrator. SO2 moves through quickly.

Auditor: Al Clark Date: December 16, 2014
 Operator Signature: _____ Location: McIntyre Center Edmonton

Company Maxxam Operator: Limin Li

Calibrator:		Flow Measurement Device:	
Make/Model	<u>Sabio 2010D</u>	Make/Model	<u>N/A</u>
Serial Number	<u>11900613</u>	Serial Number	<u>N/A</u>
Last Verification Date	<u>NEW</u>	Temperature (°C)	<u>N/A</u>
NO Cylinder S/N	<u>BLM003914</u>	Barometric Pressure	<u>N/A</u>
NO/NOX Concentration	<u>50.8/50.8</u>		

Dilution Flow (sccm)			
Pt. #1	<u>5000</u>	Pt. #2	<u>5000</u>
		Pt. #3	<u>5000</u>
Gas Flow (sccm)			
Pt. #1	<u>80</u>	Pt. #2	<u>40</u>
		Pt. #3	<u>20</u>

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
5013	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
5015	78.9	0.800	0.800	0.842	-0.016	0.826	5%	3%
5013	39.6	0.400	0.400	0.426	-0.008	0.418	6%	4%
5014	19.8	0.200	0.200	0.217	-0.004	0.213	8%	6%
Absolute Average Percent Difference							7%	5%

LINEAR REGRESSION ANALYSIS $y=mx+b$ (where x=calculated concentration, y=indicated concentration)

NO		LIMITS		NOx	
Correlation=	1.0000	≥ 0.990		Correlation=	1.0000
m (Slope)=	1.0504	0.90-1.10		m (Slope)=	1.0304
b (Intercept % of FS)=	0.3600	± 3% F.S.		b (Intercept % of FS)=	0.3600

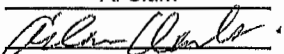
Flow	O ₂ Conc	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
5015	0.000	0.000	0.843	-0.017	0.826	NO ₂	% Diff. Limit
5015	0.520	0.527	0.316	0.485	0.802	-5%	± 10%
5015	0.280	0.286	0.557	0.262	0.819	-2%	± 10%
5015	0.100	0.104	0.739	0.089	0.827	2%	± 10%
Absolute Average Percent Difference						2%	± 10%

LINEAR REGRESSION ANALYSIS $y=mx+b$ (where x=calculated concentration, y=indicated concentration)

NO ₂		LIMITS	
Correlation=	0.9998	≥ 0.995	
m (Slope)=	0.9495	0.90-1.10	
b (Intercept % of FS)=	-1.2915	± 3% F.S.	

AENV Standards Audit Calibrator		NO _x Analyzer	
Make/Model	<u>Teco 146i</u>	Make/Model	<u>Teco 42i</u>
Serial/AMU Number	<u>AMU 1809</u>	Serial/AMU Number	<u>AMU 1868</u>
		Last Calibration Date	<u>April 1, 2015</u>
		Full Scale (ppm)	<u>1.0</u>

COMMENTS: Cylinder contains 49.7 ppm SO₂.

Auditor: Al Clark
Operator Signature: 

Date: April 1, 2015
Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2014-257CGA

Company: Maxxam Operator's Name: Limin Li
Cylinder #: LL42475 Concentration PPM: 50.3 Tolerance(%) 1 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: December 15, 2014
Gas Type: SO2 Conc. 98.57
Cylinder Number: CAL016720

Flow Measurement Device:

Make/Model: Bios DC2
Serial Number: AMU 1659
Temp. °C: 22.5 C
B.P. 701 mmhg

Reference Analyzer:

Make/Model: Teco 43C Serial/AMU Number: 1623
Instrument Settings: Zero: 7.7 Span: 1.018 Range: 1.0
Last Calibration: Date: Dec15/14 C.F. 1.000 Done By: Al Clark

Calibrator Flows (scem)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.000	0.01019	98.157	49.3
5114	52.1	0.502	0.01019	98.157	49.3
5093	22.3	0.214	0.00438	228.386	48.9
5073	10.9	0.105	0.00215	465.413	48.9
Average Cylinder Concentration:					49.0

Previous Stated Concentration PPM: 50.3

Percent variance from Stated: 2.6

Meets Manufacturer Tolerance. Use manufacturers stated concentration COMMENTS: _____
 <=5% Outside Manufacturer Tolerance. Use manufacturers concentration _____
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder _____

Auditor: Al Clark
Operator Signature: *Al Clark*

Date: December 16, 2014
Location: McIntyre Center Edmonton



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2013-324CGA

Company: Maxxam Operator's Name: Chris Wesson
 Cylinder #: BLM005049 Concentration PPM: 10.1 Tolerance(%) 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
 Serial Number: AMU 1690
 Last Verification Date: February 21, 2013
 Gas Type: H2S Conc. 20.02
 Cylinder Number: D249556

Flow Measurement Device:

Make/Model: Bios DC2
 Serial Number: AMU 1659
 Temp. °C: 21.0 C
 B.P. 696 mmhg

Reference Analyzer:

Make/Model: Teco 45C Serial/AMU Number: 1624
 Instrument Settings: Zero: 7.5 Span: 1.023 Range: 0.1
 Last Calibration: Date: Feb 21/13 C.F. 1.000 Done By: Al Clark

Calibrator Flows (secm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.0000	0.00749	284.190	10.1
5103	38.2	0.0768	0.00749	133.586	10.3
5087	17.9	0.0355	0.00352	284.190	10.1
5064	9.2	0.0182	0.00182	550.435	10.0
Average Cylinder Concentration:					10.1

Previous Stated Concentration PPM: 10.1

Percent variance from Stated: 0.2

Meets Manufacturer Tolerance. Use manufacturers stated concentration COMMENTS: _____
 < =5% Outside Manufacturer Tolerance. Use manufacturers concentration
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder

Auditor: Al Clark
 Operator Signature: *Chris Wesson*

Date: February 21, 2013
 Location: McIntyre Center Edmonton



Calibration Gas Audit

NO Cylinder Gas

File No. 2014-252CGA

Company: Maxxam **Operators name:** Limln LI
Cylinder #: LL42475 **Conc (PPM)** 48.5/48.5 **Tolerance (%)** 1 **Certified By:** Air Liquide

Reference Calibrator and Gas:

Make/Model Teco 146I
 Serial Number AMU 1809
 Last Verification Date December 15, 2014
 Gas Type NO Conc. 48.79
 Cylinder Number CAL017892

Flow Measurement Device:

Make/Model Blos DC2
 Serial Number AMU 1659
 Temp. °C 23.0 C
 B.P. 702 mmhg

Reference Analyzer:

Make/Model Teco 42i Serial/AMU Number: 1868
 Instrument Settings Zero: 4.3 Span: 1.017 Range: 1.0
 Last Calibration: Date: Dec15/14 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Conc. (ppm)		Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration	
Dilution	Gas	NO	NOX			NO	NOX
5000	0.0	0.000	0.000	0.01662	60.181	50.0	50.1
4983	82.8	0.830	0.832	0.01662	60.181	50.0	50.1
4998	40.9	0.414	0.415	0.00818	122.200	50.6	50.7
4981	20.3	0.206	0.206	0.00408	245.369	50.5	50.5
Average Cylinder Concentration:						50.4	50.4

<u>NO</u>	<u>NOx</u>
Previous Stated Concentration PPM: <u>48.5</u>	<u>48.5</u>
Percent variance from Stated: <u>3.8</u>	<u>4.0</u>

Cylinder gas tolerances based on NO only

- Meets Manufacturer Tolerance. Use manufacturers stated concentration **COMMENTS:** _____
- <=5% Outside Manufacturer Tolerance. Use manufacturers concentration Contains 50.3 ppm of SO2.
- > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder

Auditor: Al Clark Date: December 16, 2014
 Operator Signature: *Al Clark* Location: McIntyre Center Edmonton



Calibration Gas Audit

NO Cylinder Gas

File No. 2015-337CGA

Company: Maxxam **Operators name:** Limin Li
Cylinder #: BLM006214 **Conc (PPM)** 50.1/50.1 **Tolerance (%)** 2 **Certified By:** Air Liquide

Reference Calibrator and Gas:

Make/Model Teco 146i
 Serial Number AMU 1809
 Last Verification Date March 31, 2015
 Gas Type NO Conc. 48.79
 Cylinder Number CAL018024

Flow Measurement Device:

Make/Model Bios DC2
 Serial Number AMU 1669
 Temp. °C 22.5 C
 B.P. 690 mmhg

Reference Analyzer:

Make/Model Teco 42i Serial/AMU Number: 1868
 Instrument Settings Zero: 4.2 Span: 1.008 Range: 1.0
 Last Calibration: Date: Mar 31/15 C.F. 1.000 Done By: Al Clark

Callibrator Flows (sccm)		Indicated Conc. (ppm)		Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration	
Dilution	Gas	NO	NOX			NO	NOX
5000	0.0	0.000	0.000	0.01660	60.242	50.4	49.1
4976	82.6	0.836	0.815	0.01660	60.242	50.4	49.1
4993	41.0	0.417	0.406	0.00821	121.780	50.8	49.4
4977	20.2	0.207	0.201	0.00406	246.386	51.0	49.5
Average Cylinder Concentration:						50.7	49.4

<u>NO</u>	<u>NOx</u>
Previous Stated Concentration PPM: <u>50.1</u>	Previous Stated Concentration PPM: <u>50.1</u>
Percent variance from Stated: <u>1.2</u>	Percent variance from Stated: <u>1.5</u>

Cylinder gas tolerances based on NO only

Meets Manufacturer Tolerance. Use manufacturers stated concentration **COMMENTS:** _____
 <=5% Outside Manufacturer Tolerance. Use manufacturers concentration Contains 49.6 ppm SO2 in cylinder
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder

Auditor: Al Clark Date: March 31, 2015
 Operator Signature: *[Signature]* Location: McIntyre Center Edmonton



Praxair Canada, Inc.
2511 64th Street
Edmonton, AB T5B 2V8
Tel: 780-443-0775
Fax: 780-443-8302

03/27/2014

MAXXAM ANALYTICALS INC/NA
9272 49TH ST
EDMONTON/AB T5B 2L7

Work Order No. 20248656
Customer Reference No.

Product Lot/Serial No. Z592 4 085 02
Product Part No. NI ME600P2P-AQ

CERTIFICATE OF ANALYSIS

Primary Standard

Component	Requested Concentration	Certified Concentration	Analytical Certificate	Analytical Accuracy
Methane	601.00ppm	601.40ppm	U	±1% rel
Propane	201.00ppm	202.00ppm	U	±1% rel
Nitrogen	Balance	Balance		

Analytical Instruments:

Mettler Toledo Analytical Balance-102gx-USA--				
Hewlett-Packard (Agilent)-8890--GC-FID				
Cylinder Style	AQ	Filling Method	Gravimetric	
Cylinder Pressure (QTOP)	2200 psig	Date of Fill	03/26/2014	
Cylinder Volume	61.9 ml	Expiration Date	03/29/2017	
Valve Outlet Connection	CGA-310			
Cylinder No(s)	LL33874			

Analyst: Todd Hryciw

This gas cylinder was analyzed and certified by Praxair Canada, Inc. A certificate of analysis is provided to you as evidence of product quality. Praxair Canada, Inc. is not responsible for the accuracy of the analysis if the gas cylinder is not used in accordance with the instructions provided on the certificate of analysis and the safety data sheet. Praxair Canada, Inc. is not responsible for the accuracy of the analysis if the gas cylinder is not used in accordance with the instructions provided on the certificate of analysis and the safety data sheet.

- | | | | |
|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| 1. Gas cylinder was analyzed with the following: | 2. Gas cylinder was analyzed with the following: | 3. Gas cylinder was analyzed with the following: | 4. Gas cylinder was analyzed with the following: |
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This certificate of analysis has been prepared in accordance with the instructions provided on the certificate of analysis and the safety data sheet. Praxair Canada, Inc. is not responsible for the accuracy of the analysis if the gas cylinder is not used in accordance with the instructions provided on the certificate of analysis and the safety data sheet. Praxair Canada, Inc. is not responsible for the accuracy of the analysis if the gas cylinder is not used in accordance with the instructions provided on the certificate of analysis and the safety data sheet.

APPENDIX III
CHAIN OF CUSTODY



Maxxam Analytics - Air Services Group

Project Chain of Custody

Client: <u>Lakeland Industry & Community Association</u>	Project #: <u>2833-2015-04-31- C</u>
Site: <u>St. Lina Site</u>	Contact: <u>Mike Bisaga</u>

QA Check Complete	<u>msdlnh</u>	Date	<u>6 - May - 15</u>
QA Check Review	<u>msdlnh</u>	Date	<u>6 - May - 15</u>
Report Complete	<u>msdlnh</u>	Date	<u>8 - May - 15</u>
Report Reviewed	<u>E. Tangang</u>	Date	<u>12 - May - 15</u>
Report Shipped	_____	Date	_____

Notes



maxxam.ca

MAXXAM ANALYTICS
#1 2080 39 Ave. NE, Calgary
AB T2E 6P7

Toll Free 800-386-7247
Fax 403-219-3673

**AMBIENT AIR MONITORING MONTHLY DATA REPORT
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
ELK POINT AIRPORT SITE**

JOB #:2833-2015-04-35- C

APRIL 2015


Prepared for:

**LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
BOX 8237, 5107W - 50 STREET
BONNYVILLE, ALBERTA
T9N 2J5**

Attention: MIKE BISAGA

DATE: **May 29, 2015**

Prepared by:



Wunmi Adekanmbi, M.Sc.
Project Manager Assistant, Source Testing, Maxxam Analytics

Reviewed by:



Lily Lin, B.Sc.
Senior Project Manager, Air Services, Maxxam Analytics

SUMMARY

In APRIL 2015, the Air Services Group of Maxxam Analytics conducted an ambient air monitoring program on the Elk Point Airport Site at Lakeland Industry & Community Association, near Bonnyville, Alberta. Sampling was carried out to determine the concentrations of non-compliance parameters as requested by the project coordinator.

All data collected this month were within the objectives outlined in the AMD1989 and AMD2006.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

All Parameters: Hourly maximum data collected on April 3 at hour 15 were invalidated as the analyzers were recovering from a small power outage.

THC: Hourly and hourly maximum data collected on April 3 at hour 15 were invalidated as the analyzer was recovering from a small power outage.

Ozone: 19 hours of data were invalidated due to the sample valve getting stuck.

The summary of results is presented on the following pages.

Any deviations or modifications made to the sampling or analytical methods are outlined in Section 1.0 Discussion. On this basis, Maxxam is issuing this completed report to Lakeland Industry & Community Association, Elk Point Airport Site.

Should you have any questions concerning the results or if we can be of further assistance, please contact us at 403-219-3677 or toll-free at 1-800-386-7247.

Monthly Continuous Data Summary

Lakeland Industry & Community Association Elk Point Airport Site						MAXIMUM VALUES							OPERATIONAL TIME (%)
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	1-HOUR			24-HOUR		
	1-HR	24-HR	1-HR	24-HR				HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
SO2 (PPB)	172	48	0	0	0	1	VAR	VAR	VAR	VAR	0.2	20	100.0
H2S (PPB)	10	3	0	0	0	1	VAR	VAR	VAR	VAR	0.4	8	100.0
THC (PPM)	-	-	-	-	2.4	6.4	8	23	6	W	3.6	9	99.9
CH4 (PPM)	-	-	-	-	2.4	6.4	8	23	6	W	3.6	9	99.9
NMHC (PPM)	-	-	-	-	0.00	0.10	VAR	VAR	VAR	VAR	0.02	8	99.9
NO2 (PPB)	159	-	0	-	5.4	26	8	23	6	W	16.4	8	100.0
NO (PPB)	-	-	-	-	1.0	59.1	9	6	0.1	SE	12.8	9	100.0
NOX (PPB)	-	-	-	-	6.5	79	8, 9	23, 6	6 0.1	W SE	26.8	9	100.0
O3 (PPB)	82	-	0	-	31	55	27, 29	17, 13	13.5 23.9	WSW NW	43.4	29	97.4
PM2.5 (UG/M3)	-	30	-	0	3.3	22.0	23	2	26.6	ESE	6.5	23	99.2
VECTOR WS (KPH)	-	-	-	-	13.6	42.5	12	13	-	W	26.1	1	100.0
VECTOR WD (DEG)	-	-	-	-	W	-	-	-	-	-	-	-	100.0

NA-NOT AVAILABLE VAR-VARIOUS

Volatilic Organics (VOCs) Data Summary

Sample Collected Date	Maximum reading (PPB)	Volatile Organic Compound
APRIL 6,, 2015	<4.0	n - Dodecane
APRIL 12,, 2015	<4.0	n - Dodecane
APRIL 18,, 2015	4.1	Acetone
APRIL 24,, 2015	3.8	Acetone
APRIL 30,, 2015	2.2	Acetone

Note: NA

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

Sample Collected Date	Maximum reading (ug)	Semi-Volatile Organic
APRIL 6,, 2015	0.15	2 - Methylnaphthalene
APRIL 12,, 2015	0.04	2 - Methylnaphthalene and Phenanthrene
APRIL 18,, 2015	0.20	Benzo(c)phenanthrene
APRIL 24,, 2015	0.23	Phenanthrene
APRIL 30,, 2015	0.07	Naphthalene

Note: NA

Exceedence Summary Report

SO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

SO₂ 24- Hour Exceedences

No Exceedences Recorded During the Month

H₂S 1- Hour Exceedences

No Exceedences Recorded During the Month

H₂S 24- Hour Exceedences

No Exceedences Recorded During the Month

NO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

PM_{2.5} 24- Hour Exceedences

No Exceedences Recorded During the Month

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1.0 Discussion

This monthly report consists of data for parameters SO₂, H₂S, THC, CH₄, NMHC, NO_x, NO, NO₂, O₃, PM_{2.5}, WS and WD. It also includes results for non-continuous parameters VOC and PAH.

Sample filters for all continuous air monitors are changed before the calibration is started. The sample manifold is cleaned during the site visit on a monthly basis.

Control checks, consisting of zero and span of the analyzer are conducted on a daily basis on all continuous air monitors. In place of the air sample, zero air (from scrubbed air or gas cylinder) is used for zero checks and a known concentration of the pollutant being analyzed is used for span checks. These checks are controlled by automatic timers and valves. The total zero span cycle is completed within an hour, the commencement of the zero span cycle is at the beginning of the hour.

Multipoint calibration is done a minimum of once a month for each continuous air monitor. In addition calibration is required under the following conditions: 1) within three days after the initial start-up and stabilization of a newly installed instrument, 2) prior to shut-down or moving of an instrument which has been working to specification, and 3) when major repair has been done on the instrument.

The AMD requires each instrument and accompanying data recording system to be operational 90% of the time (minimum), on a monthly basis.

All sampling, analysis, and QA/QC for this project was performed by Maxxam Analytics and complies with the Alberta Air Monitoring Directive.

Hourly/minute data have been reviewed based on daily zero/span results and multi-points calibration results. Data may be considered as invalid if a zero-corrected span check in excess of +/- 10% of the span concentration (established by the previous multi-point calibration) is encountered and/or significant differences in the calibration factor (greater than 15%).

Hourly data is corrected using daily zero information.

Trailer inspection was performed on April 9.

SULPHUR DIOXIDE (SO₂)

The analyzer was working well throughout the month.

The routine monthly calibration was performed on April 8. Hourly maximum data collected on April 3 at hour 15 was invalidated as the analyzer was recovering from a small power outage.

HYDROGEN SULPHIDE (H₂S)

The analyzer was working well throughout the month.

The routine monthly calibration was performed on April 8. Hourly maximum data collected on April 3 at hour 15 was invalidated as the analyzer was recovering from a small power outage.

TOTAL HYDROCARBONS (THC), METHANE (CH₄), and NON-METHANE HYDROCARBONS (NMHC)

The analyzer was working well throughout the month.

The routine monthly calibration was performed on April 8. Hourly and hourly maximum data collected on April 3 at hour 15 were invalidated as the analyzer was recovering from a small power outage.

NITROGEN DIOXIDE (NO₂)

The analyzer was working well throughout the month.

The routine monthly calibration was performed on April 8. The analyzer was recalibrated on April 20 to ensure its functionality. The calibration result passed the AQM calibration requirements. Hourly maximum data collected on April 3 at hour 15 was invalidated as the analyzer was recovering from a small power outage.

OZONE (O₃)

The sample valve did not close properly after the daily calibration on April 8. The valve was reset during the routine monthly calibration on April 9. This issue repeated itself after the daily calibration on April 9. Data collected from April 8 hour 23 to April 9 hour 7 and from April 9 hour 22 to April 10 hour 7 are not valid as a result of this event. Hourly maximum data collected on April 3 at hour 15 was invalidated as the analyzer was recovering from a small power outage.

PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM_{2.5})

The first monthly Teom audit was performed on April 9. The flow rates were adjusted on April 10 and the second audit was completed on April 28. Data was corrected using Alberta air quality guideline. If the data was between 0 to -3 ug/m³, the data was corrected to 0 ug/m³. If the data was below -3ug/m³, the data was invalidated. 5 hours of data were invalidated as the data were below -3 ug/m³ this month.

WIND SPEED (WS), WIND DIRECTION (WD) and STANDARD DEVIATION WIND DIRECTION (STDWD)

The wind system is reported as vector wind speed and vector wind direction. The wind direction data included in this report represents where the wind was coming from.

The wind system was working well throughout the month.

VOC SAMPLES

The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the VOCs were reported as ppb in 2 decimal places.

Samples were collected on April 6, 12, 18, 24 and 30. They were sent to the lab for analysis. Results are included in this report.

PAH SAMPLES

The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the PAHs were reported as μg in 2 decimal places.

Samples were collected on April 6, 12, 18, 24 and 30. They were sent to the lab for analysis. Results are included in this report.

NMHC CANISTER SAMPLES

No canister event was recorded this month.

2.0 Project Personnel

Mike Bisaga was the contact for Lakeland Industry & Community Association, and the Maxxam field sampling personnel was Alexander Yakupov.

3.0 Plant Monthly Required AMD Summary

All data collected this month were within the objectives outlined in the AMD1989 and AMD2006.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

4.0 Calculations and Results

All calculations and reporting of results follow the method described in the Air Monitoring Directive, 1989, and 2006 Amendments to the Air Monitoring Directive, 1989 (AMD 2006).

5.0 Methods and Procedures

The following methods and procedures were used to complete the test program:

- Maxxam AIR SOP-00001 - Methane, Non-Methane Hydrocarbon Analyzer Monitoring
- Maxxam AIR SOP-00208: RM Young Monitor Calibration
- Maxxam AIR SOP-00209: Ambient H₂S Monitoring
- Maxxam AIR SOP-00211: Ambient SO₂ Monitoring
- Maxxam AIR SOP-00212: Ambient O₃ Monitoring
- Maxxam AIR SOP-00213: Ambient NO/NO₂/NO_x Monitoring
- Maxxam AIR SOP-00214: Ambient Hydrocarbon (THC) Monitoring
- Maxxam AIR SOP-00215: Teom Operation
- Maxxam AIR SOP-00225: The Collection of VOCs in Ambient Air Using Canister and Xontech

There were no deviations from the prescribed methods.

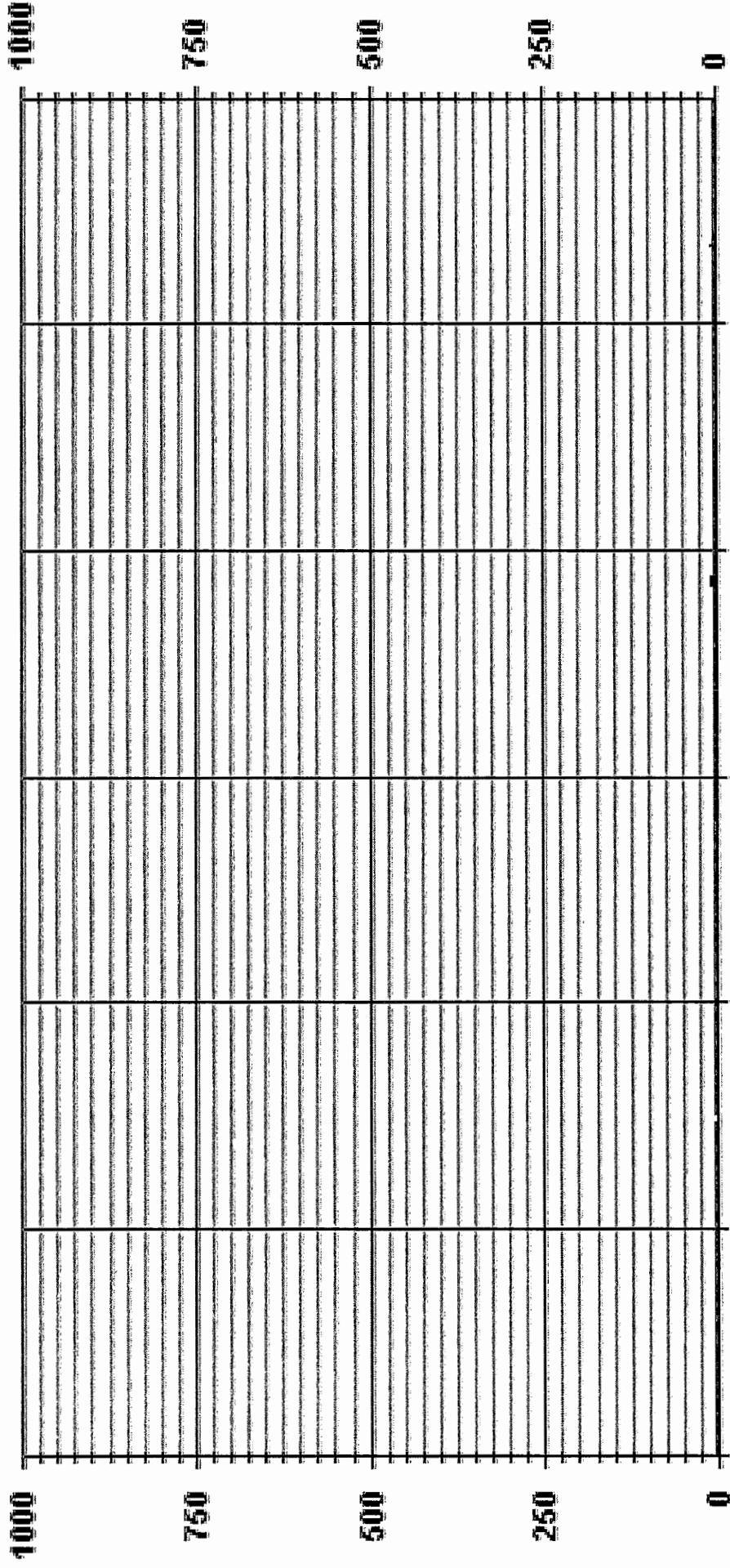
The following instruments were used to perform the test program:

- Sulphur Dioxide - API 100E UV Fluorescent Analyzer
- Hydrogen Sulphide - Thermo 450i UV Fluorescent Analyzer
- Methane, Non-Methane Hydrocarbon - Thermo 55i FID Analyzer
- Oxides of Nitrogen - API 200E Chemiluminescent Analyzer
- Ozone - Thermo 49i Photometric Analyzer
- Particulate Matter (PM_{2.5}) - R&P 1405F Teom Unit
- Wind System - RM Young Unit
- Datalogger - ESC 8832

APPENDIX I
CONTINUOUS MONITORING DATA RESULTS

SULPHUR DIOXIDE

01 Hour Averages



— LICA35 SO2_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Elk Point Airport Site - APRIL 2015

JOB # 2833-2015-04-35- C

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

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

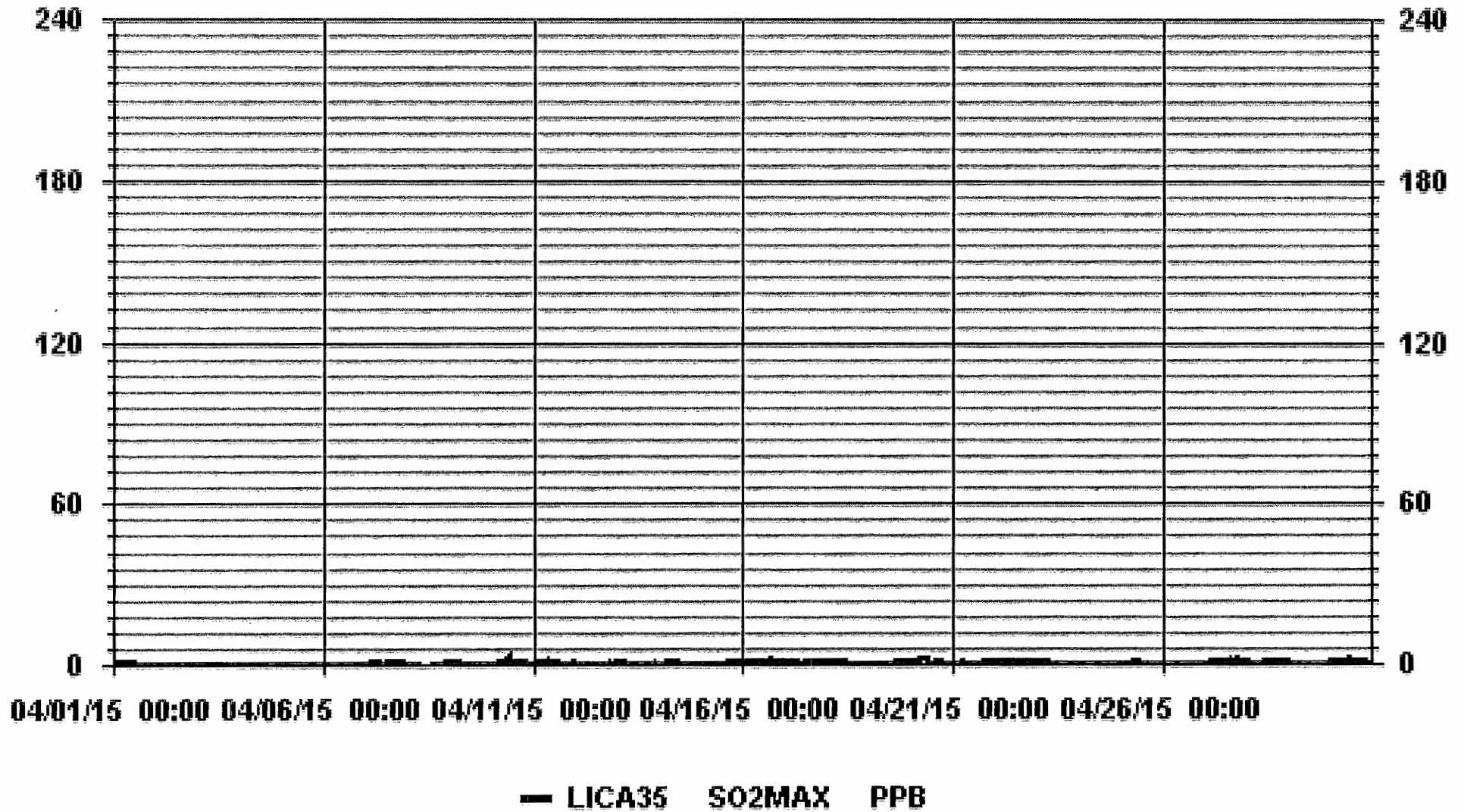
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	258
MAXIMUM INSTANTANEOUS VALUE:	3 PPB @ HOUR(S) 10 ON DAY(S) 10
	VAR-VARIOUS
1/25 CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	0.54
OPERATIONAL TIME:	719 HRS

01 Hour Averages



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

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

		Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 20	2.34	3.37	3.66	4.83	8.06	13.92	5.42	2.93	3.66	2.19	3.51	8.35	12.75	11.29	8.79	4.83	100.00	
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Totals	2.34	3.37	3.66	4.83	8.06	13.92	5.42	2.93	3.66	2.19	3.51	8.35	12.75	11.29	8.79	4.83		

Calm : .00 %

Total # Operational Hours : 682

Distribution By Samples

		Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 20	16	23	25	33	55	95	37	20	25	15	24	57	87	77	60	33	682	
< 60																		
< 110																		
< 170																		
< 340																		
>= 340																		
Totals	16	23	25	33	55	95	37	20	25	15	24	57	87	77	60	33		

Calm : .00 %

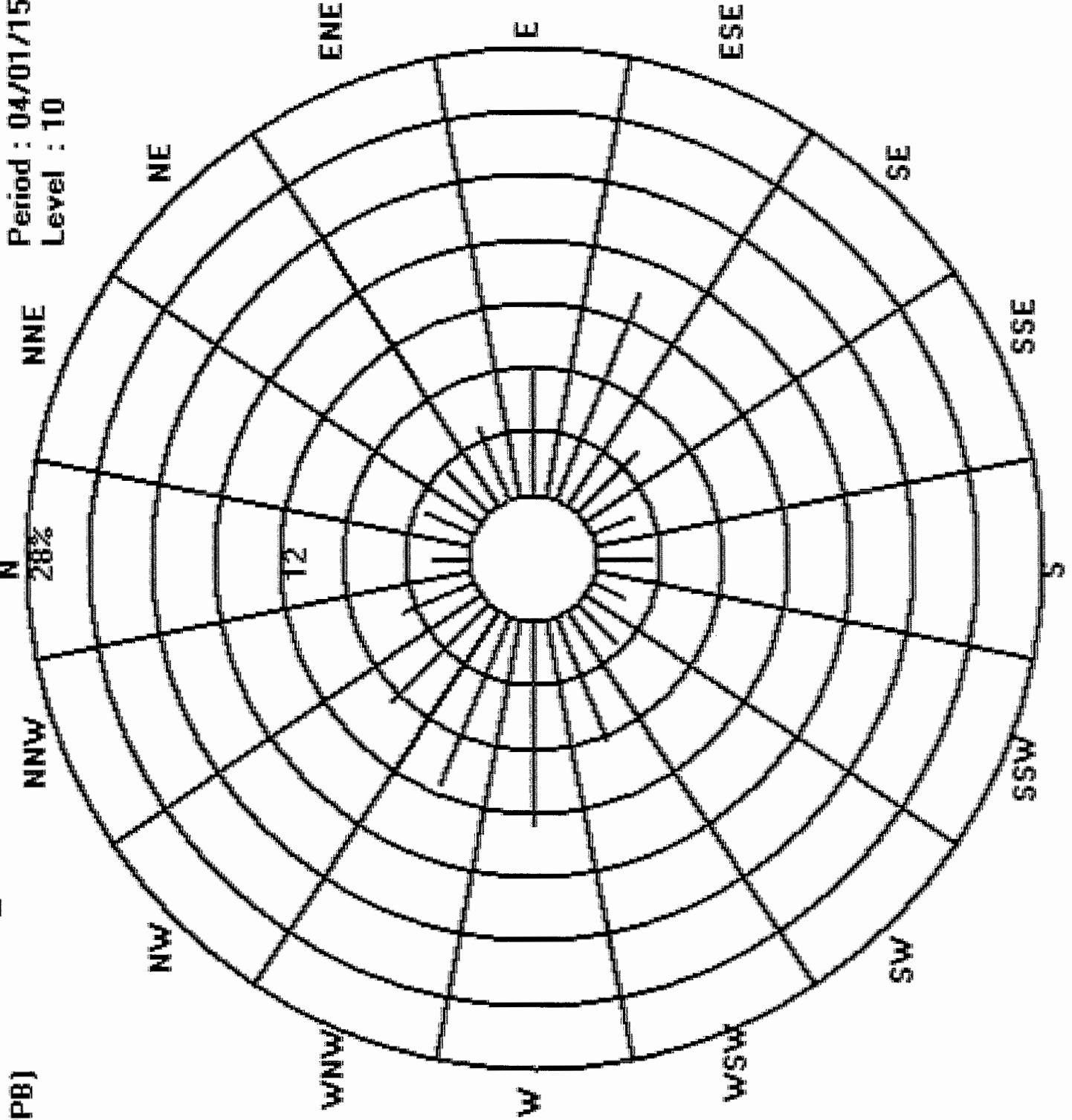
Total # Operational Hours : 682

Logger : 35 Parameter : SO2_

Site : LICA-ELK

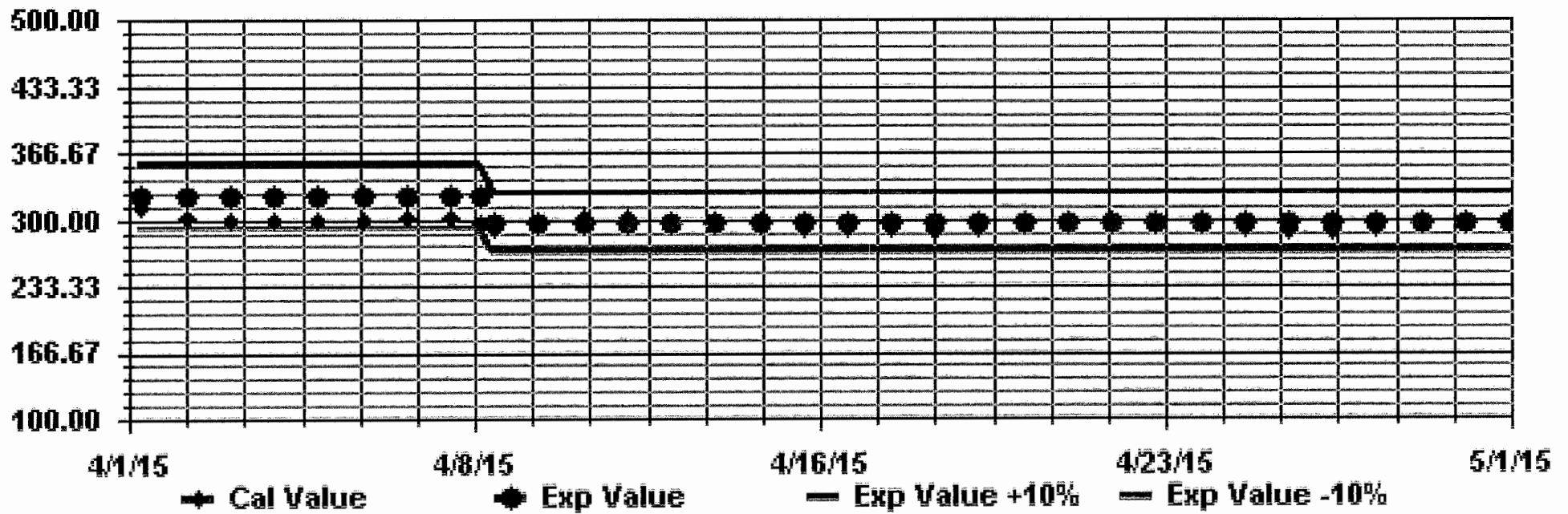
Period : 04/01/15-04/30/15

Level : 10



Class Limits (PPB)
>= 340
< 340
< 170
< 110
< 60
< 20

Calibration Graph for Site: LICA35 Parameter: SO2_ Sequence: SO2 Phase: SPAN



HYDROGEN SULPHIDE



HYDROGEN SULPHIDE (H2S) hourly averages in ppb

MST

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

STATUS FLAG CODES

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

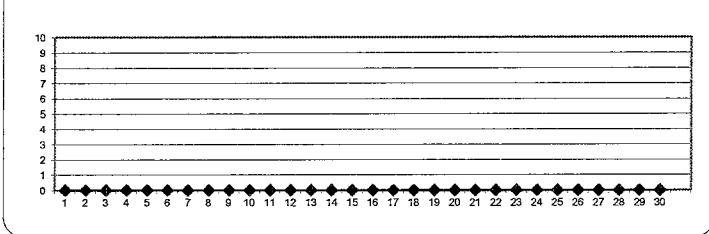
OBJECTIVE LIMIT:

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

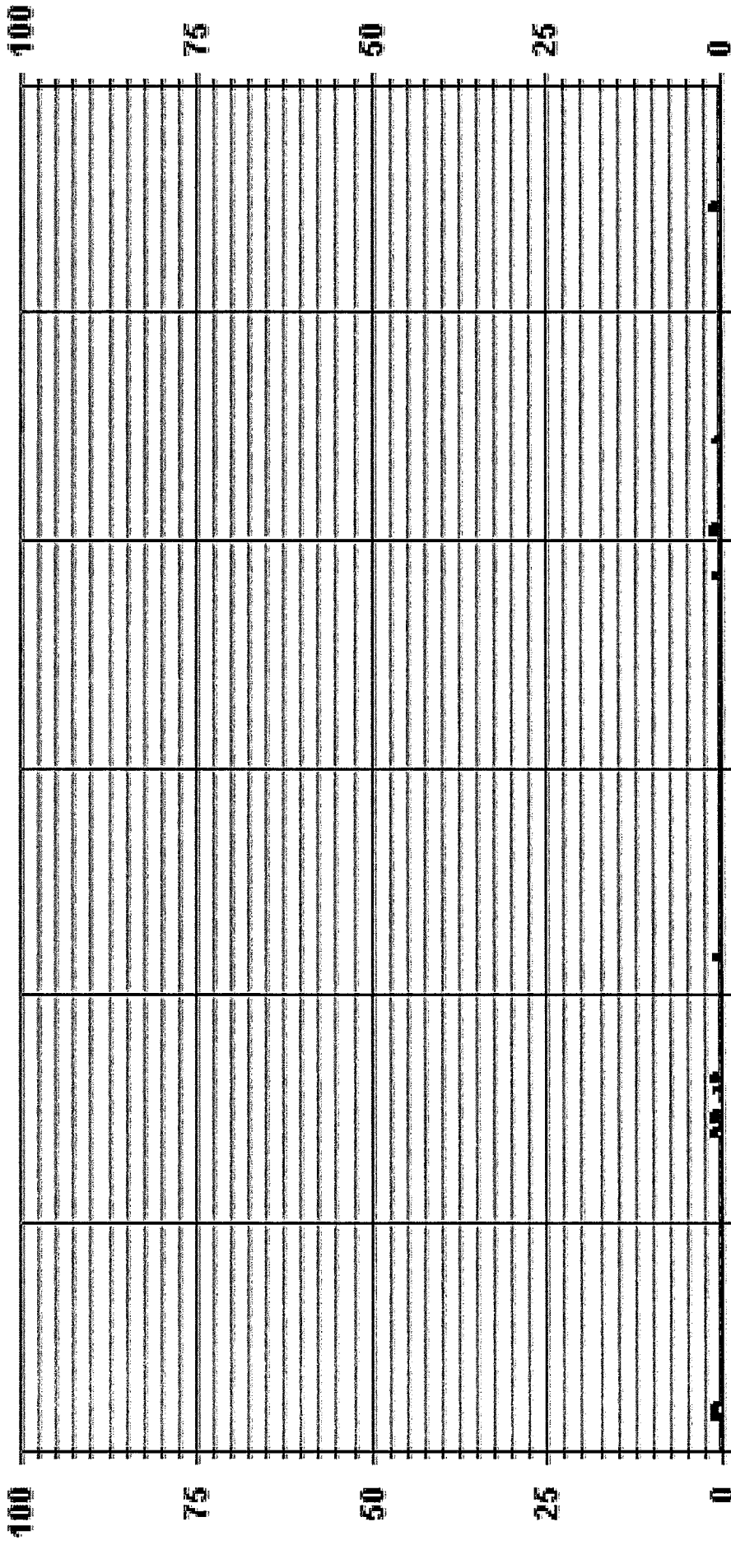
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	26
MAXIMUM 1-HR AVERAGE:	1 PPB @ HOUR(S) VAR ON DAY(S)
MAXIMUM 24-HR AVERAGE:	0.4 PPB VAR ON DAY(S) VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	5 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.19
MONTHLY AVERAGE:	0 PPB

24 HOUR AVERAGES FOR APRIL 2015



01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA35 H2S_ PPB



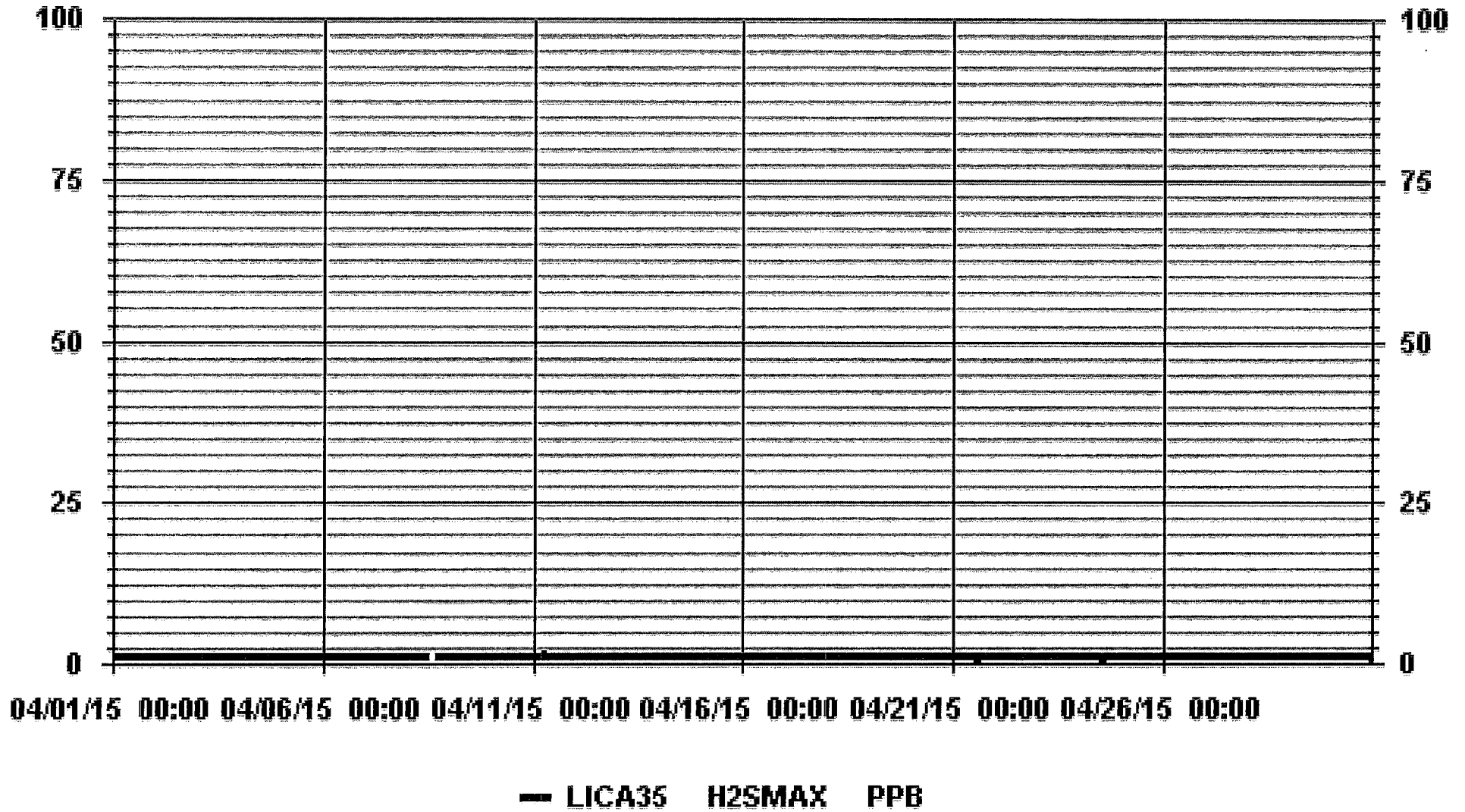
HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

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	RDGS.		
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	MAX.	AVG.			
1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
2	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
3	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	R	1	1	1	1	1	1	1	1	1	1.0	23		
4	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
5	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
6	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
7	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
8	1	1	1	1	1	1	1	1	1	1	1	1	1	C	C	C	C	C	C	1	1	1	1	S	1	1.0	24		
9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1.0	24		
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1.0	24		
11	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	2	1.0	24		
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1.0	24		
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1.0	24		
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1.0	24		
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1.0	24		
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1.0	24		
17	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
18	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
19	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
20	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
21	1	1	1	1	1	1	1	1	1	S	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1.0	24		
22	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
23	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
24	1	1	1	1	1	1	S	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0.9	24		
25	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
26	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
27	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
28	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
29	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
30	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1.0	24		
HOURLY MAX	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
HOURLY AVG	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0			

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

MONTHLY SUMMARY			
NUMBER OF NON-ZERO READINGS:	679		
MAXIMUM INSTANTANEOUS VALUE:	2 PPB	@ HOUR(S)	7 ON DAY(S) 11
			VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS	OPERATIONAL TIME:	719 HRS
MONTHLY CALIBRATION TIME:	5 HRS		
STANDARD DEVIATION:	0.08		

01 Hour Averages



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

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

		Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 3	2.34	3.36	3.66	4.97	8.05	13.90	5.41	2.92	3.66	2.19	3.51	8.63	12.44	11.27	8.78	4.83	100.00	
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Totals	2.34	3.36	3.66	4.97	8.05	13.90	5.41	2.92	3.66	2.19	3.51	8.63	12.44	11.27	8.78	4.83		

Calm : .00 %

Total # Operational Hours : 683

Distribution By Samples

		Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 3	16	23	25	34	55	95	37	20	25	15	24	59	85	77	60	33	683	
< 10																		
< 50																		
>= 50																		
Totals	16	23	25	34	55	95	37	20	25	15	24	59	85	77	60	33		

Calm : .00 %

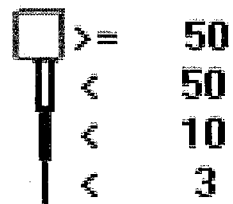
Total # Operational Hours : 683

Logger : 35 Parameter : H2S_

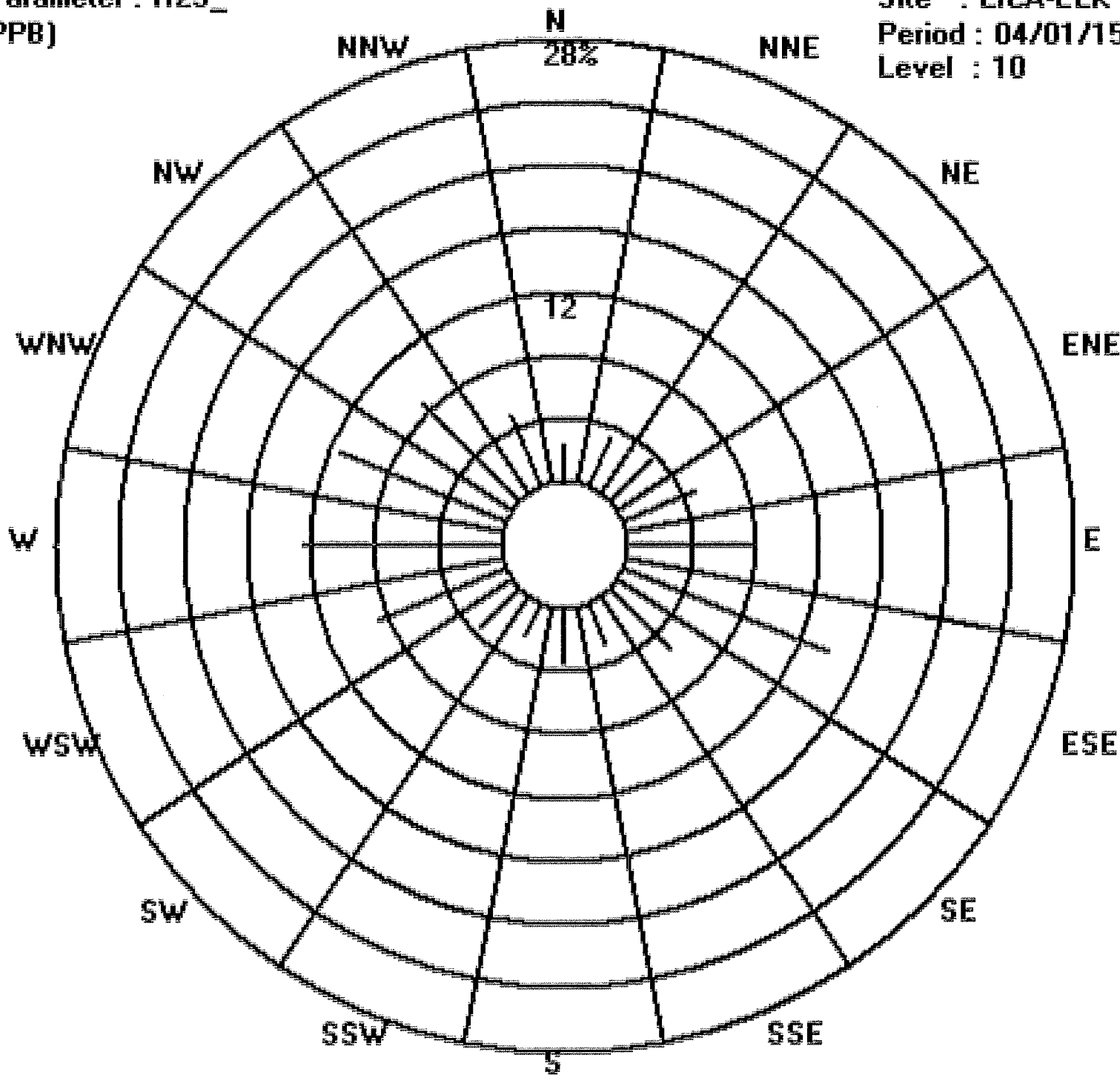
Site : LICA-ELK

Class Limits (PPB)

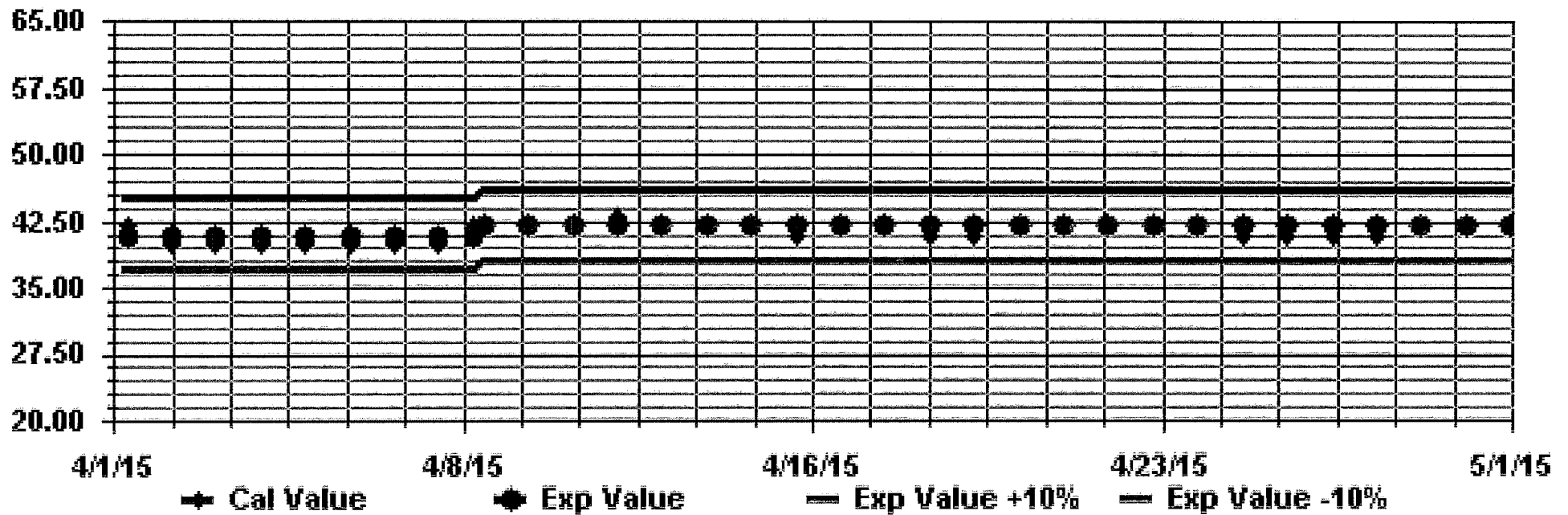
Period : 04/01/15-04/30/15



Level : 10



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



TOTAL HYDROCARBON



TOTAL HYDROCARBONS (THC) hourly averages in ppm

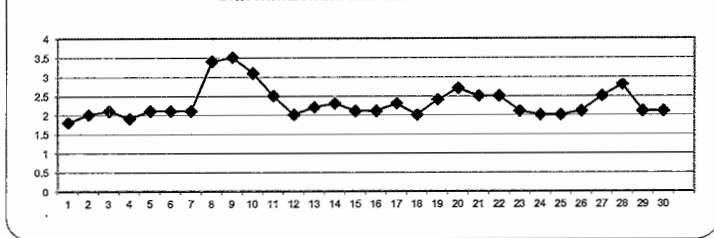
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	1.9	1.9	1.9	1.9	1.9	1.9	S	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	24
2	1.9	1.9	1.9	2.0	2.1	S	2.1	2.3	2.1	2.1	2.1	2.0	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	2.0	2.1	2.6	2.6	2.0	24	
3	2.5	2.6	2.5	2.3	S	2.4	2.4	2.3	2.3	2.3	2.0	2.0	1.9	1.9	R	1.8	1.9	1.9	2.0	1.9	2.0	1.9	1.9	1.9	1.9	2.1	23	
4	1.9	1.9	2.0	S	2.0	2.1	2.1	2.2	2.2	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	2.0	2.0	2.2	2.0	24	
5	2.1	2.1	S	2.3	2.3	2.5	2.9	2.6	2.9	2.8	2.2	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.9	2.2	2.1	24	
6	2.0	S	2.1	2.0	2.1	2.3	2.3	2.2	2.2	2.2	2.1	2.0	2.0	2.0	1.9	2.0	1.9	2.0	2.0	2.1	2.4	2.5	2.3	2.3	2.5	2.1	24	
7	S	2.4	2.4	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.9	3.3	S	3.3	2.2	24	
8	3.2	3.5	3.1	3.3	3.6	3.7	3.9	4.4	4.7	C	C	C	C	C	C	2.0	2.0	2.1	2.8	2.6	3.6	5.5	S	6.4	6.4	3.5	24	
9	4.4	4.0	4.2	5.1	5.3	5.2	5.2	5.6	6.1	4.5	3.6	2.9	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.4	S	3.2	4.1	6.1	3.6	24	
10	5.5	5.5	4.5	4.9	4.6	4.2	4.3	3.9	3.4	3.0	2.3	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.3	2.2	S	2.4	2.2	2.1	5.5	3.1	24	
11	2.1	2.3	2.5	2.7	3.0	3.5	4.6	4.0	4.0	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	S	2.0	2.3	2.4	2.1	4.6	2.5	24	
12	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	S	2.0	2.0	2.1	2.1	2.1	2.3	24	
13	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	S	2.2	2.2	2.8	2.8	3.2	3.5	3.5	2.2	24	
14	3.4	3.2	3.3	3.0	3.1	2.8	2.5	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.0	S	2.0	2.0	2.0	2.0	2.0	2.1	2.5	3.4	2.4	24	
15	2.4	2.4	2.3	2.1	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	S	2.0	2.0	2.1	2.5	2.4	2.3	2.7	2.5	2.7	2.2	24	
16	2.1	2.4	2.4	2.2	2.2	2.3	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	S	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.4	2.4	2.1	24	
17	2.4	2.3	2.2	2.3	3.1	2.4	2.5	2.9	3.1	2.6	2.1	2.1	2.0	S	2.0	2.1	2.1	2.2	2.1	2.1	2.0	2.1	2.2	2.2	3.1	2.3	24	
18	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	S	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.6	2.6	2.1	24	
19	2.4	2.4	2.4	2.4	2.6	3.0	3.0	2.6	2.3	2.1	2.0	S	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.7	3.1	3.5	3.0	3.5	2.4	24	
20	3.1	3.5	3.7	4.1	4.2	5.1	5.6	3.3	2.3	2.2	S	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.3	2.4	5.6	2.8	24	
21	2.4	2.5	2.6	2.7	2.8	3.0	3.0	2.7	2.6	S	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.8	4.0	2.9	2.7	2.7	4.0	2.5	24	
22	2.8	2.7	2.9	3.7	3.7	3.6	3.3	3.1	S	2.3	2.4	2.3	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	3.7	2.5	24	
23	2.1	2.1	2.1	2.2	2.2	2.3	2.3	S	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.4	2.5	2.1	24	
24	2.7	2.4	2.4	2.2	2.0	2.1	S	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.0	2.7	2.1	24	
25	2.0	2.0	2.1	2.0	2.0	S	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.2	2.2	2.2	2.0	24	
26	2.3	2.2	2.2	2.2	S	2.3	2.3	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.6	2.5	2.4	2.4	2.6	2.6	2.2	24	
27	2.7	3.3	3.9	S	3.6	3.8	3.4	3.1	2.8	2.4	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.1	2.3	2.4	2.5	3.9	2.6	24	
28	2.6	3.3	S	4.8	4.4	4.2	4.3	4.0	3.4	2.4	2.1	2.2	2.1	2.1	2.1	2.0	2.1	2.3	2.5	2.5	2.4	2.6	2.5	4.8	4.8	2.8	24	
29	2.7	S	3.2	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.5	2.5	2.2	2.1	3.2	2.2	24	
30	S	2.4	2.2	2.2	2.2	2.5	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.3	S	2.5	2.1	24	
HOURLY MAX	5.5	5.5	4.5	5.1	5.3	5.2	5.6	5.6	6.1	4.5	3.6	2.9	2.2	2.1	2.1	2.1	2.1	2.2	2.8	2.8	4.0	5.5	3.5	6.4				
HOURLY AVG	2.6	2.6	2.6	2.7	2.8	2.8	2.9	2.7	2.6	2.3	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.3	2.4	2.4	2.6				

STATUS FLAG CODES

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

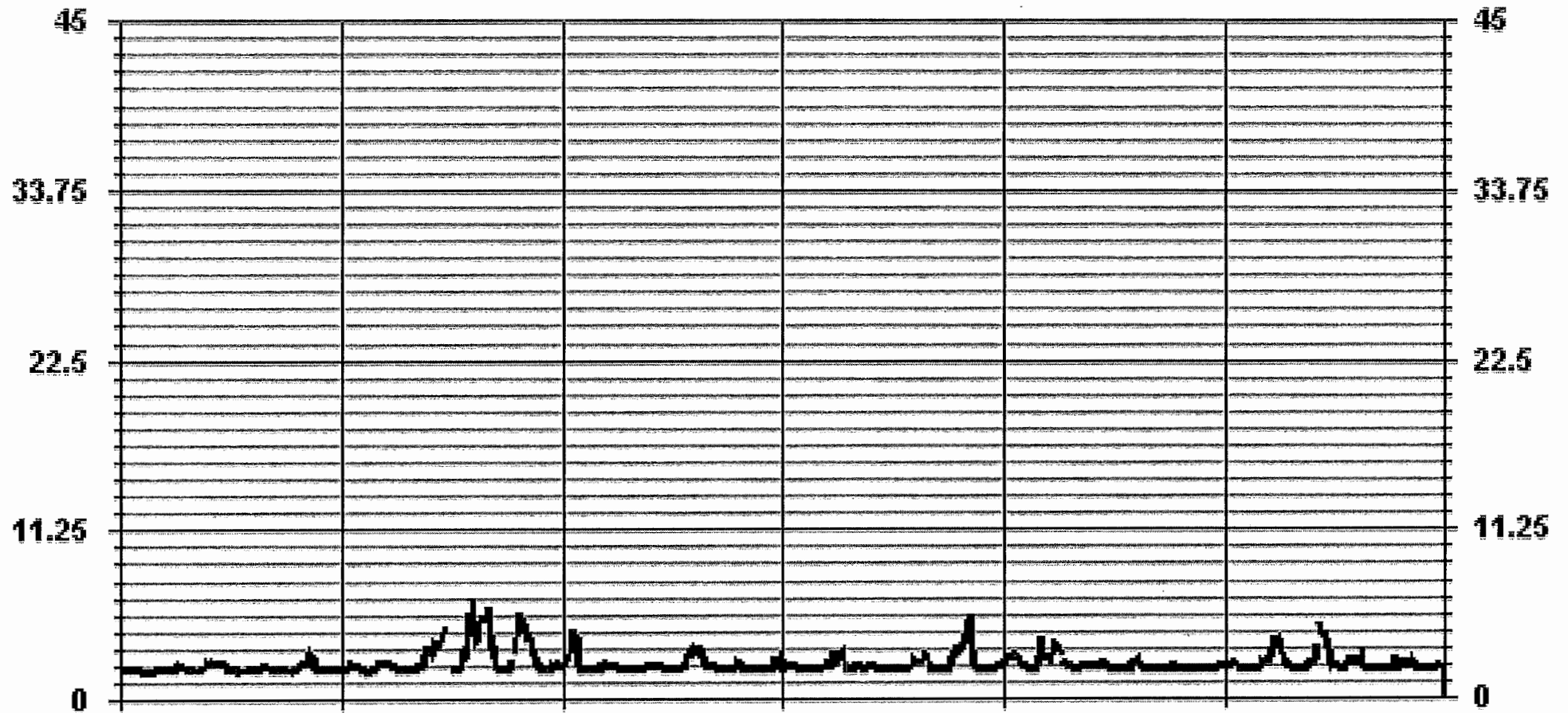
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	682		
MAXIMUM 1-HR AVERAGE:	6.4 PPM	@ HOUR(S)	23 ON DAY(S) 8
MAXIMUM 24-HR AVERAGE:	3.6 PPM		ON DAY(S) 9
			VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS	OPERATIONAL TIME:	719 HRS
MONTHLY CALIBRATION TIME:	5 HRS	AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	0.69	MONTHLY AVERAGE:	2.4 PPM

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA35 THC55 PPM



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Elk Point Airport Site - APRIL 2015

JOB # 2833-2015-04-35- C

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST	HOUR START		HOUR END																								DAILY MAX	24-HOUR AVG	RDGS.
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	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				
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00					
1	2.0	1.9	2.0	2.0	2.0	1.9	S	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	24	
2	1.9	1.9	2.0	2.2	2.2	S	2.3	2.5	2.2	2.2	2.2	2.3	2.1	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.1	2.4	2.9	2.9	2.1	2.1	24	
3	2.6	2.7	2.7	2.6	S	2.5	2.6	2.6	2.4	2.5	2.2	2.0	2.0	2.3	1.9	R	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.7	2.3	23		
4	2.0	2.0	2.0	S	2.1	2.3	2.2	2.3	2.3	2.3	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.3	2.1	24	
5	2.2	2.2	S	2.6	2.8	2.8	3.3	2.7	3.2	3.1	2.4	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.2	3.3	2.3	24	
6	2.2	S	2.2	2.2	2.2	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.2	2.2	2.5	3.4	S	3.4	2.3	24	
7	S	2.5	2.5	2.4	2.3	2.3	2.3	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.5	2.4	S	2.7	2.4	2.2	6.3	3.4	24
8	3.7	3.9	3.4	3.6	4.0	4.0	4.1	4.9	C	C	C	C	C	C	C	2.1	2.1	2.2	3.2	2.9	6.1	7.8	S	7.6	7.8	4.1	24		
9	5.6	5.3	4.9	5.6	5.6	5.5	5.6	6.3	6.7	6.1	4.2	3.6	2.4	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.5	S	3.8	5.3	6.7	4.1	24		
10	5.8	6.3	5.0	5.1	4.9	4.6	4.6	4.3	3.7	3.3	2.6	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.5	2.4	S	2.7	2.4	2.2	6.3	3.4	24	
11	2.2	2.6	2.8	2.9	3.3	4.8	5.0	5.2	4.6	3.4	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	S	2.2	2.9	2.8	2.3	5.2	2.9	24		
12	2.5	2.4	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.2	2.2	2.2	2.5	2.2	24	
13	2.2	2.2	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.6	2.6	2.9	3.2	3.4	4.0	4.0	24	
14	3.8	3.5	3.5	3.2	3.4	3.5	2.6	2.5	2.3	2.2	2.2	2.3	2.2	2.3	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.8	3.8	2.6	24	
15	2.7	2.5	2.4	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.2	2.9	2.6	2.4	3.6	2.8	3.6	2.3	24		
16	2.3	2.9	2.7	2.3	2.6	2.6	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.6	2.9	2.3	24	
17	2.5	2.4	2.3	2.7	4.4	2.6	2.7	3.5	3.4	3.2	2.3	2.2	2.1	S	2.1	2.2	2.2	2.3	2.3	2.2	2.1	2.2	2.4	2.4	4.4	2.5	24		
18	2.2	2.1	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.9	2.9	2.2	24	
19	2.7	2.5	2.5	3.0	3.1	3.3	3.3	3.0	2.5	2.2	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	3.2	3.6	3.8	3.2	3.8	2.6	24	
20	3.2	3.9	4.0	4.4	4.4	6.1	6.1	5.0	2.5	2.3	S	2.1	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	3.0	2.9	6.1	3.1	24
21	2.8	2.7	2.8	3.1	3.0	3.2	3.2	2.8	2.8	S	2.4	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.3	5.6	8.0	3.2	2.8	3.0	8.0	3.0	24	
22	3.0	2.9	4.1	3.9	3.9	4.2	3.6	3.3	S	2.4	2.5	2.4	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	4.2	2.7	2.4	24	
23	2.2	2.2	2.2	2.3	2.2	2.6	2.4	S	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.4	2.3	2.7	3.2	3.2	2.3	24	
24	3.2	2.6	2.7	2.4	2.2	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	3.2	2.2	2.4	24	
25	2.1	2.1	2.1	2.1	2.1	S	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.5	2.4	2.5	2.1	24	
26	2.4	2.3	2.4	2.3	S	2.7	2.4	2.3	2.1	2.1	2.1	2.1	2.1	2.8	2.1	2.1	2.1	2.1	2.1	2.1	2.5	3.2	2.6	2.6	2.6	3.2	2.4	24	
27	3.1	3.8	4.2	S	3.7	4.4	3.5	3.2	3.1	2.8	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.2	2.5	2.5	2.6	4.4	2.8	24	
28	2.9	3.9	S	5.5	4.7	4.6	4.7	4.3	4.1	2.9	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.3	2.5	2.7	2.7	2.7	2.6	5.5	3.1	24		
29	3.0	S	3.8	2.8	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.3	2.4	2.9	2.9	2.3	2.3	3.8	2.3	24		
30	S	2.7	2.3	2.4	2.4	2.8	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.5	S	2.8	2.2	24		
HOURLY MAX	5.8	6.3	5.0	5.6	5.6	6.1	6.1	6.3	6.7	6.1	4.2	3.6	2.4	2.8	2.2	2.2	2.2	2.3	3.2	5.6	8.0	7.8	3.8	7.6					
HOURLY AVG	2.8	2.9	2.9	2.9	3.0	3.1	3.1	3.0	2.7	2.5	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.7	2.7	2.6	2.8					

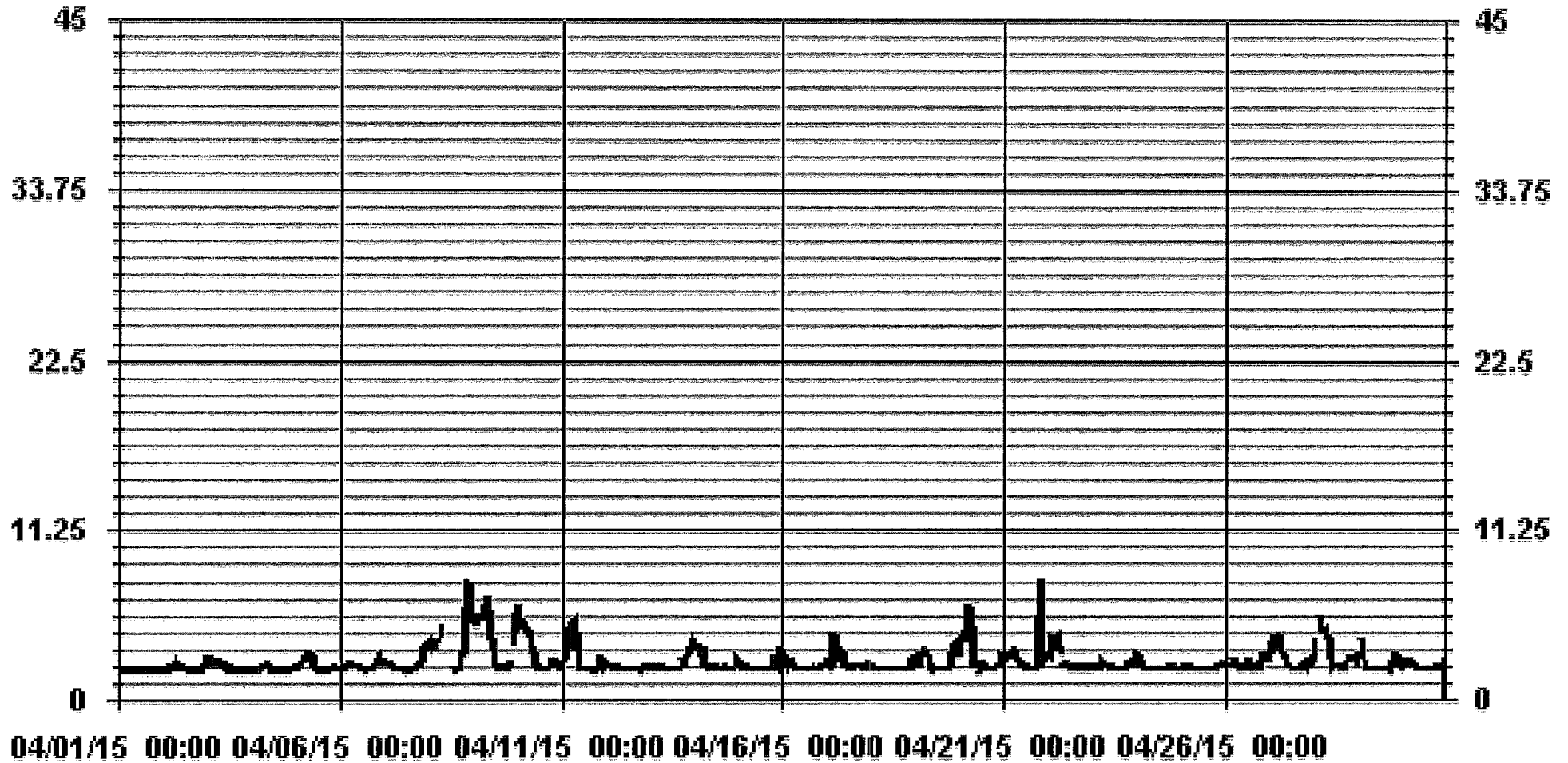
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	680
MAXIMUM INSTANTANEOUS VALUE:	8.0 PPM @ HOUR(S) 20 ON DAY(S) 21
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	0.88
OPERATIONAL TIME:	719 HRS

01 Hour Averages



— LICA35 THC55MAX PPM

LICA35
 THC55 / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	2.19	3.07	3.51	4.25	4.83	9.67	4.83	2.63	3.51	1.90	3.51	7.77	12.17	10.70	8.21	4.69	87.53
< 10.0	.00	.29	.14	.58	3.22	4.25	.58	.29	.14	.29	.00	.58	.58	.73	.58	.14	12.46
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.19	3.37	3.66	4.83	8.06	13.92	5.42	2.93	3.66	2.19	3.51	8.35	12.75	11.43	8.79	4.83	

Calm : .00 %

Total # Operational Hours : 682

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	15	21	24	29	33	66	33	18	24	13	24	53	83	73	56	32	597
< 10.0		2	1	4	22	29	4	2	1	2		4	4	5	4	1	85
< 50.0																	
>= 50.0																	
Totals	15	23	25	33	55	95	37	20	25	15	24	57	87	78	60	33	

Calm : .00 %

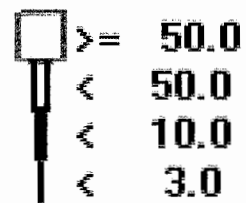
Total # Operational Hours : 682

Logger : 35 Parameter : THC55

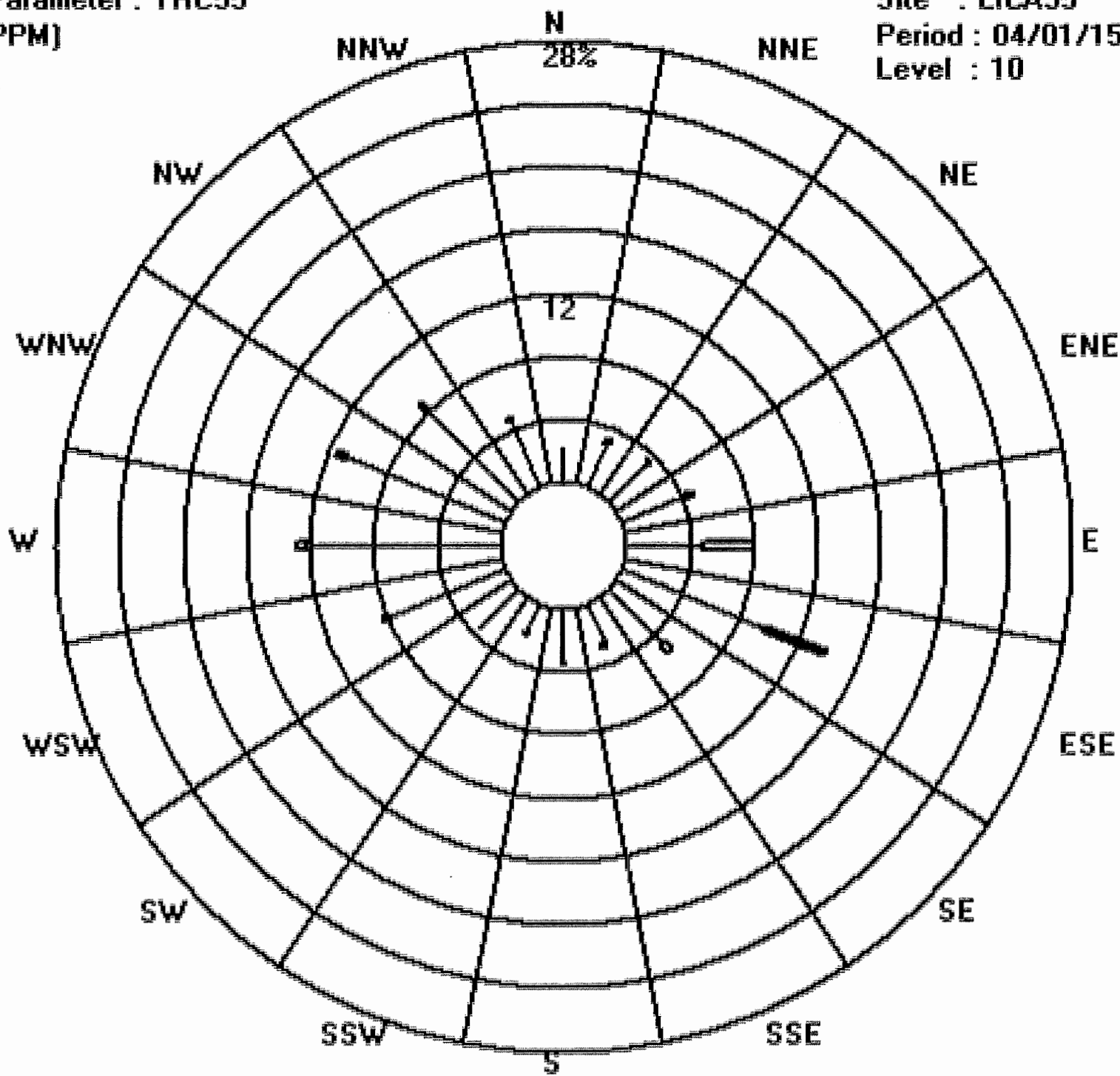
Site : LICA35

Class Limits (PPM)

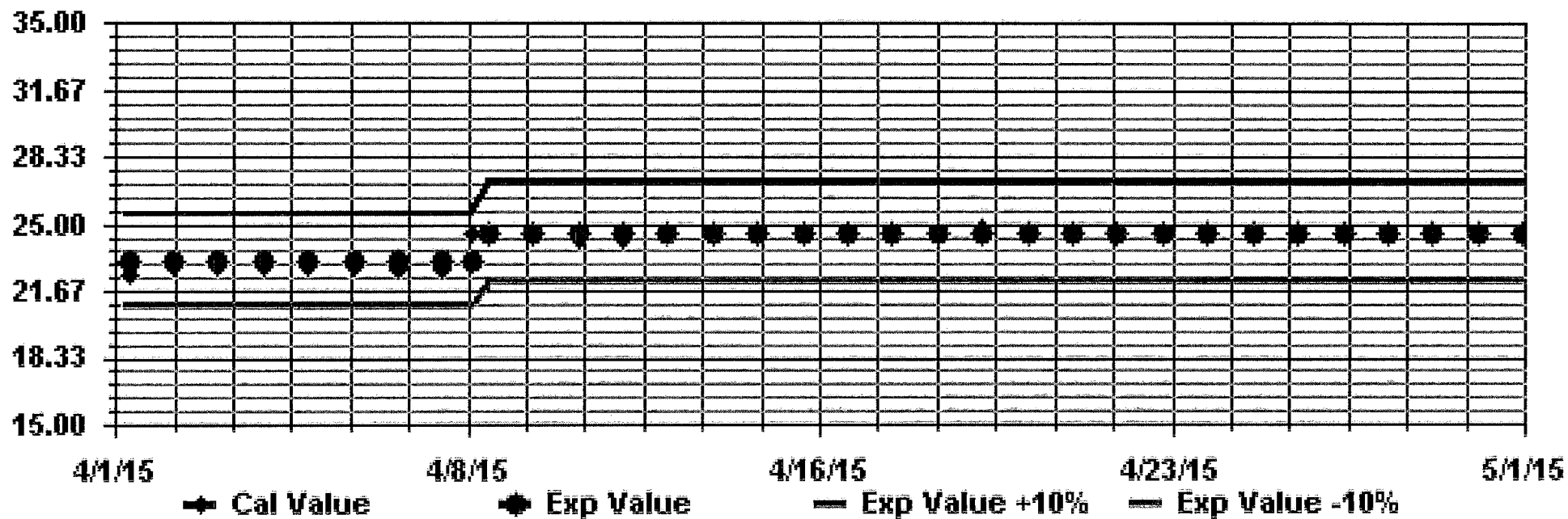
Period : 04/01/15-04/30/15



Level : 10

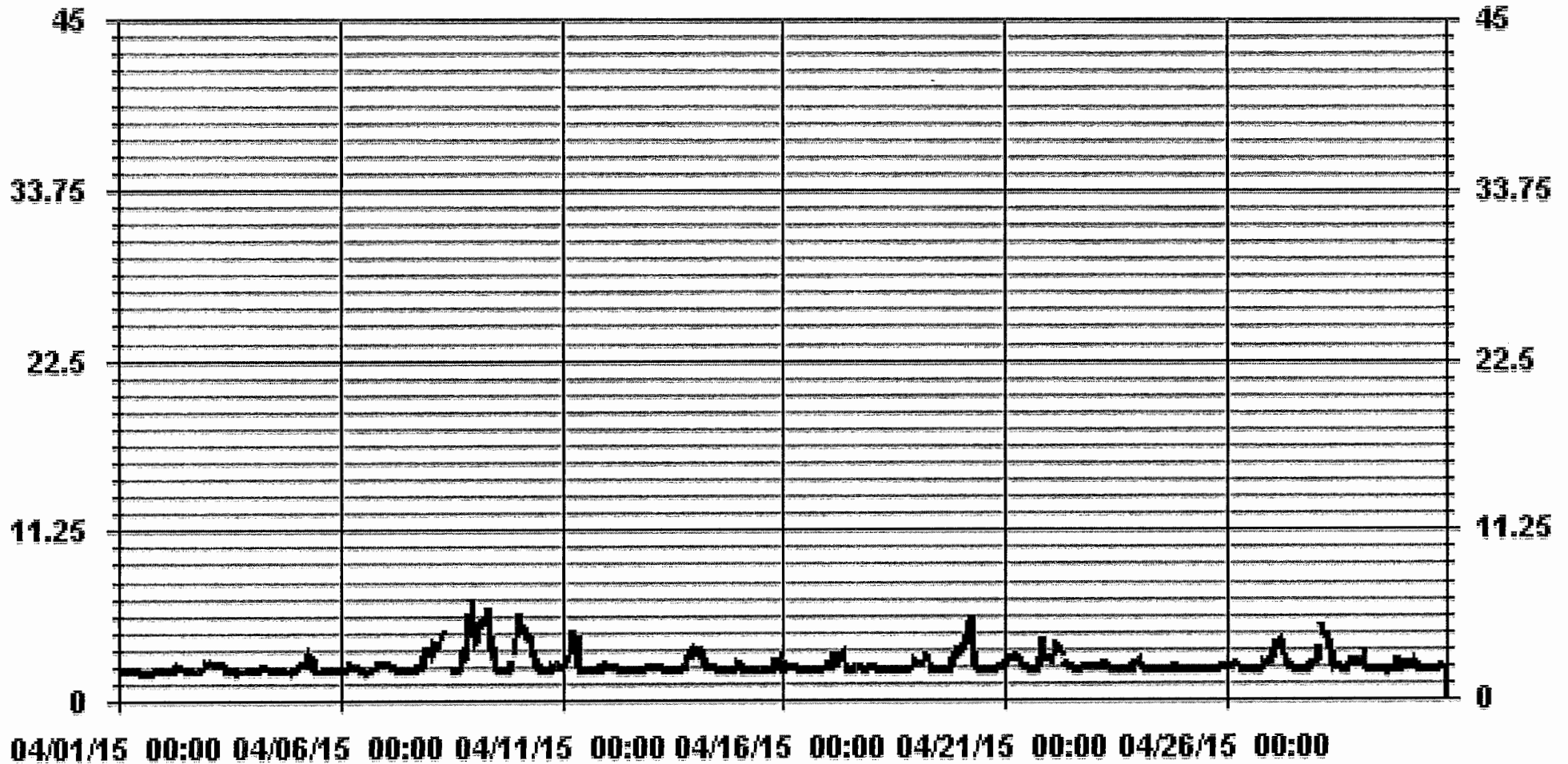


Calibration Graph for Site: LICA35 Parameter: THC55 Sequence: THC55 Phase: SPAN



METHANE

01 Hour Averages



— LICA35 METHANE PPM



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Elk Point Airport Site - APRIL 2015

JOB # 2833-2015-04-35- C

METHANE MAX instantaneous maximum in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY	24-HOUR	
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	1	2.0	1.9	2.0	2.0	2.0	1.9	S	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	24	
2	2	1.9	1.9	2.0	2.2	2.2	S	2.3	2.5	2.2	2.2	2.2	2.3	2.1	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.1	2.4	2.9	2.9	2.1	24	
3	3	2.6	2.7	2.7	2.6	S	2.5	2.6	2.6	2.4	2.5	2.3	2.0	2.0	1.9	1.9	R	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.7	2.2	23	
4	4	2.0	2.0	2.0	S	2.1	2.3	2.3	2.3	2.3	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.3	2.1	24	
5	5	2.2	2.2	S	2.6	2.8	2.8	3.1	2.7	3.2	3.1	2.4	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	3.2	2.3	24	
6	6	2.2	S	2.2	2.2	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.3	2.7	2.9	2.4	2.4	2.9	2.3	24	
7	7	S	2.5	2.5	2.4	2.4	2.3	2.3	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.3	2.2	2.3	2.5	3.4	3.4	S	3.4	2.3	24	
8	8	3.7	3.7	3.4	3.5	3.9	3.8	4.0	4.7	C	C	C	C	C	C	C	2.1	2.1	2.3	3.2	2.9	6.1	7.8	S	7.5	7.8	4.0	24	
9	9	5.5	5.3	4.8	5.5	5.5	5.3	5.4	6.3	6.5	6.0	4.2	3.6	2.4	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.5	S	3.6	5.3	6.5	4.0	24	
10	10	5.7	6.3	4.9	5.1	4.9	4.5	4.4	4.3	3.7	3.2	2.6	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.5	2.4	S	2.7	2.4	2.2	6.3	3.3	24	
11	11	2.2	2.6	2.7	2.9	3.3	4.8	5.0	5.3	4.6	3.4	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	S	2.2	2.9	2.9	2.3	5.3	2.8	24	
12	12	2.4	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.2	2.2	2.2	2.2	2.4	2.2	24	
13	13	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.6	2.6	3.0	3.2	3.4	4.0	4.0	2.4	24	
14	14	3.8	3.5	3.5	3.2	3.4	3.5	2.6	2.5	2.3	2.2	2.2	2.3	2.2	2.1	2.2	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.8	3.8	2.6	24
15	15	2.7	2.5	2.4	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.2	2.9	2.6	2.4	3.6	2.8	3.6	2.3	24	
16	16	2.3	2.9	2.7	2.3	2.6	2.6	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.6	2.9	2.3	24
17	17	2.5	2.4	2.3	2.7	4.4	2.6	2.7	3.5	3.4	3.2	2.3	2.2	2.1	S	2.1	2.2	2.2	2.3	2.3	2.2	2.1	2.2	2.4	2.4	4.4	2.6	24	
18	18	2.2	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.7	2.8	2.2	24	
19	19	2.7	2.5	2.4	3.0	3.1	3.3	3.3	3.0	2.5	2.2	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	3.2	3.6	3.8	3.2	3.8	2.6	24	
20	20	3.2	3.9	3.9	4.4	4.4	5.9	6.0	5.0	2.5	2.3	S	2.1	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.3	3.0	2.9	6.0	3.1	24	
21	21	2.8	2.7	2.8	3.1	3.0	3.2	3.2	2.8	2.8	S	2.4	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	5.6	8.0	3.2	2.8	2.9	8.0	3.0	24	
22	22	3.0	2.8	4.0	3.9	3.9	4.2	3.6	3.3	S	2.4	2.5	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	4.2	4.2	2.7	24	
23	23	2.2	2.2	2.2	2.3	2.2	2.6	2.4	S	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.7	3.2	3.2	2.3	24	
24	24	3.2	2.6	2.7	2.4	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	3.2	2.2	24	
25	25	2.1	2.1	2.1	2.1	2.1	S	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.5	2.4	2.5	2.1	24	
26	26	2.4	2.3	2.4	2.3	S	2.7	2.4	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.5	3.1	2.6	2.6	2.5	3.1	2.3	24	
27	27	3.1	3.8	4.2	S	3.7	4.4	3.5	3.2	3.1	2.7	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.2	2.5	2.5	2.6	4.4	2.8	24	
28	28	2.9	3.9	S	5.4	4.7	4.6	4.7	4.3	4.0	2.9	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.3	2.5	2.7	2.7	2.7	2.6	5.4	3.1	24		
29	29	2.9	S	3.8	2.8	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.3	2.4	2.9	2.9	2.3	2.3	3.8	2.3	24		
30	30	S	2.7	2.3	2.4	2.4	2.8	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.5	S	2.8	2.2	24		
HOURLY MAX		5.7	6.3	4.9	5.5	5.5	5.9	6.0	6.3	6.5	6.0	4.2	3.6	2.4	2.3	2.2	2.2	2.2	2.3	3.2	5.6	8.0	7.8	3.8	7.5				
HOURLY AVG		2.8	2.9	2.9	2.9	3.0	3.1	3.1	3.0	2.7	2.5	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.7	2.7	2.6	2.8				

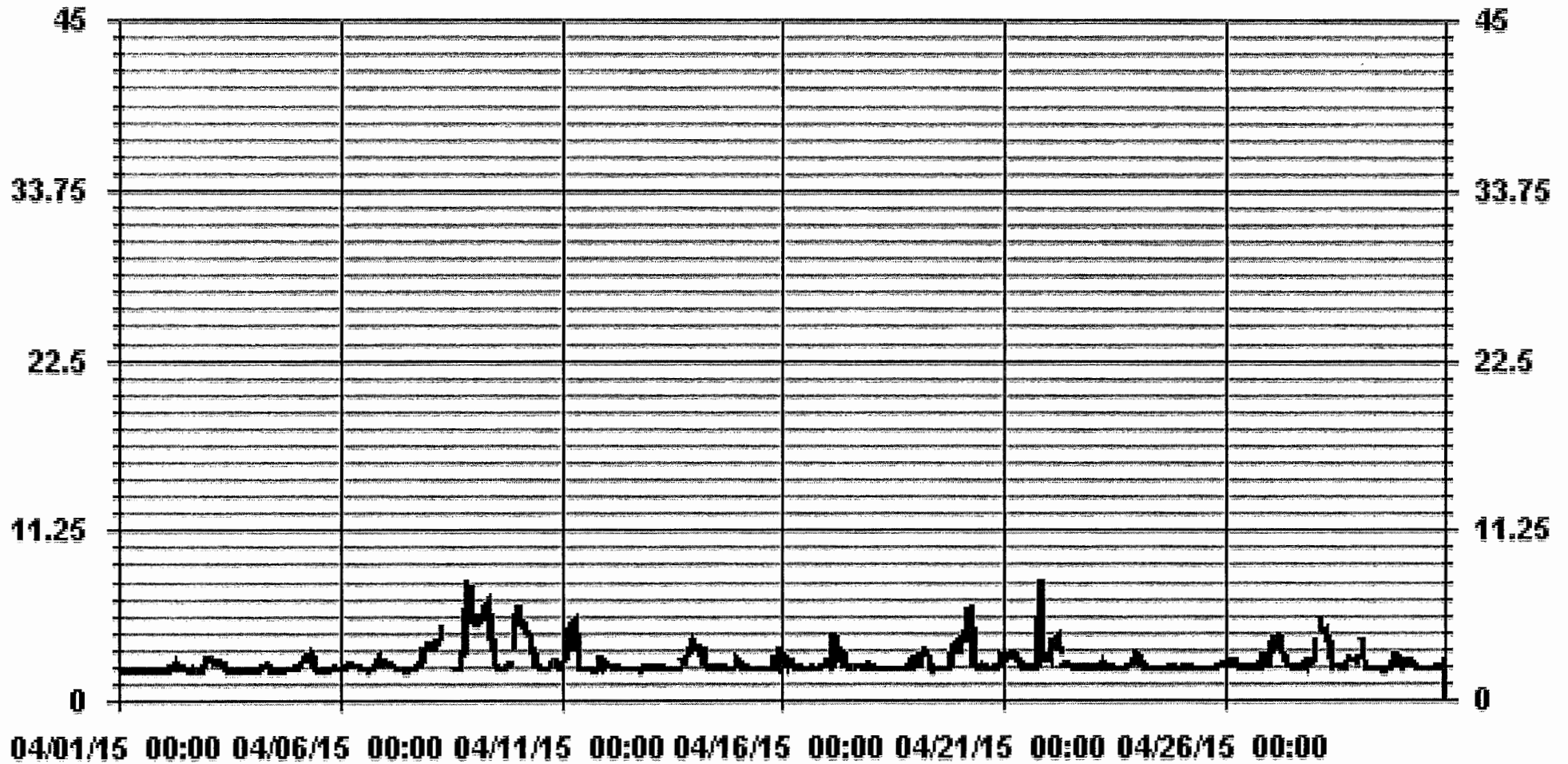
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	680
MAXIMUM INSTANTANEOUS VALUE:	8.0 PPM @ HOUR(S) 20 ON DAY(S) 21
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	0.87
OPERATIONAL TIME:	719 HRS

01 Hour Averages



— LICA35 MATHMAX PPM

LICA35
 METHANE / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	2.19	3.07	3.51	4.25	4.83	9.67	4.83	2.63	3.51	1.90	3.51	7.77	12.17	10.70	8.21	4.69	87.53
< 10.0	.00	.29	.14	.58	3.22	4.25	.58	.29	.14	.29	.00	.58	.58	.73	.58	.14	12.46
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.19	3.37	3.66	4.83	8.06	13.92	5.42	2.93	3.66	2.19	3.51	8.35	12.75	11.43	8.79	4.83	

Calm : .00 %

Total # Operational Hours : 682

Distribution By Samples

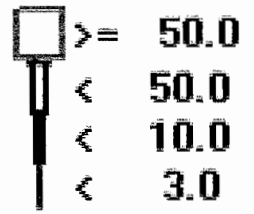
	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	15	21	24	29	33	66	33	18	24	13	24	53	83	73	56	32	597
< 10.0		2	1	4	22	29	4	2	1	2		4	4	5	4	1	85
< 50.0																	
>= 50.0																	
Totals	15	23	25	33	55	95	37	20	25	15	24	57	87	78	60	33	

Calm : .00 %

Total # Operational Hours : 682

Logger : 35 Parameter : METHANE

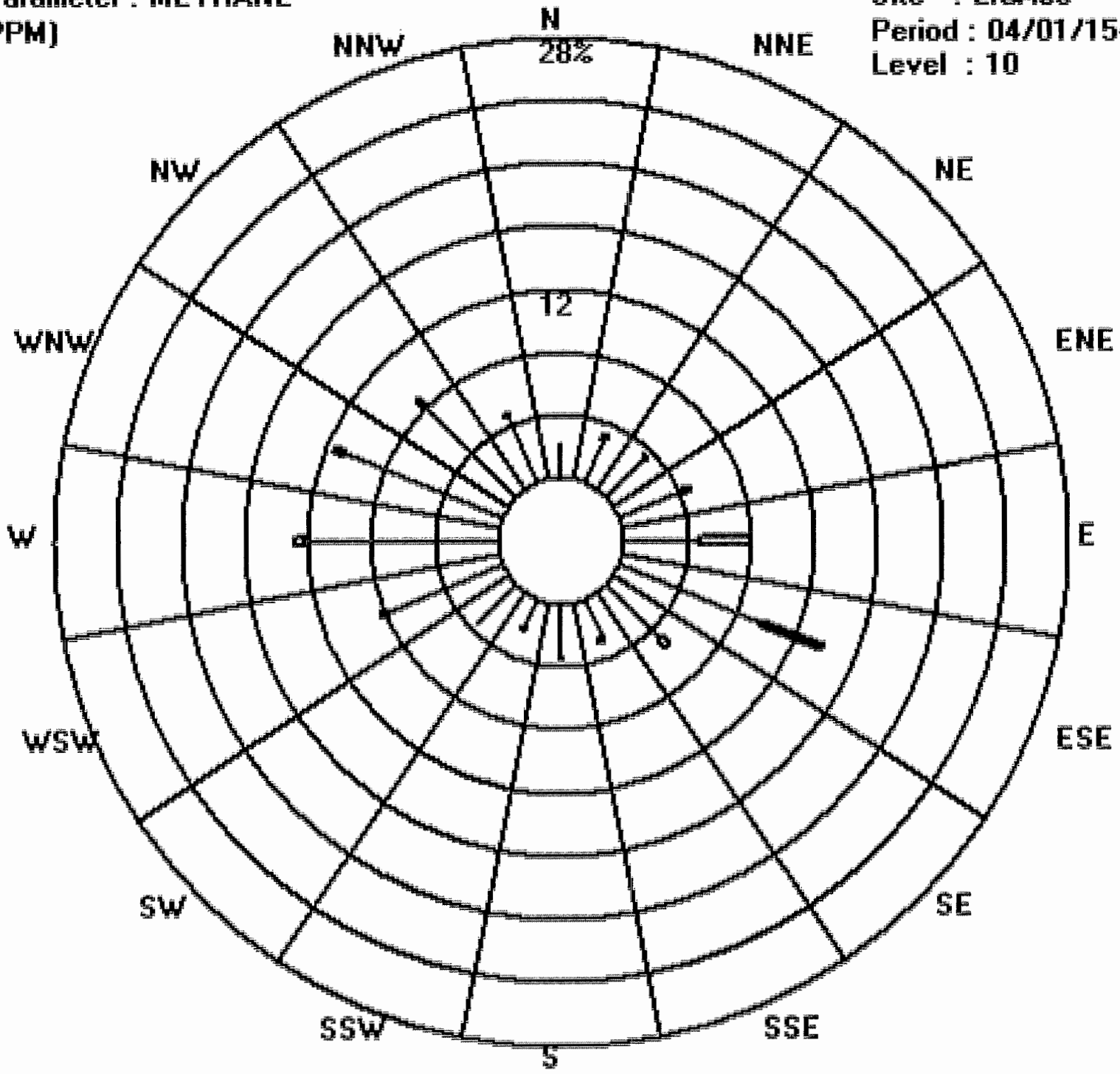
Class Limits (PPM)



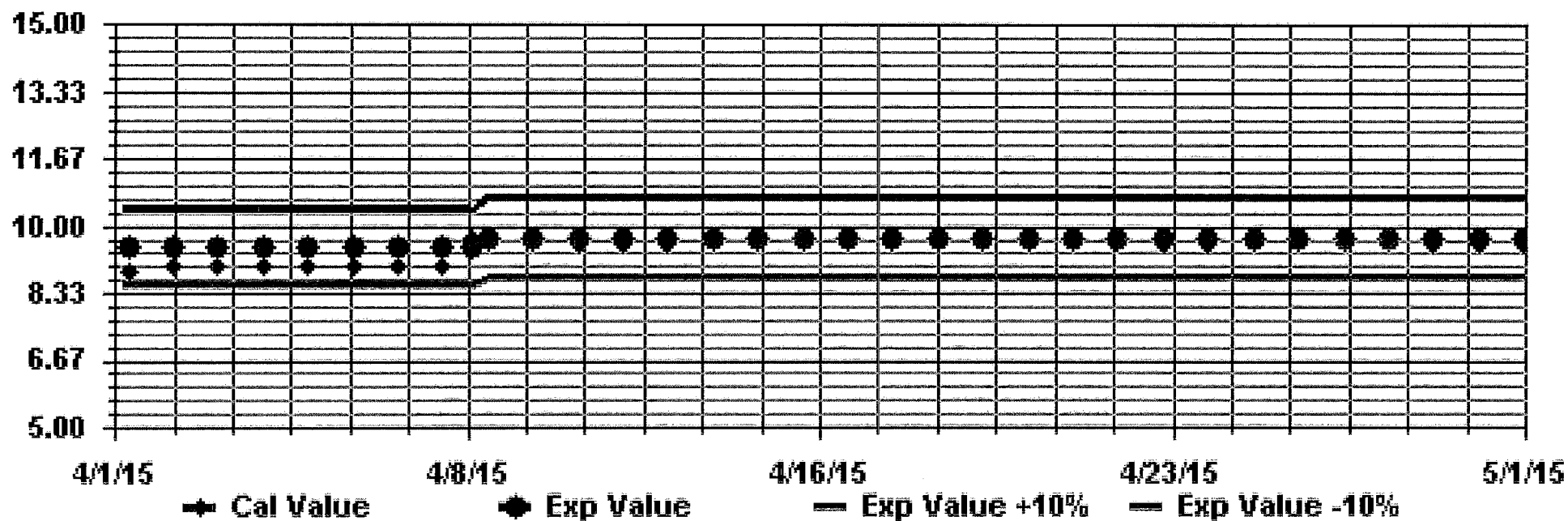
Site : LICA35

Period : 04/01/15-04/30/15

Level : 10



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



NON-METHANE HYDROCARBON



NON-METHANE HYDROCARBONS (NMHC) hourly averages in ppm

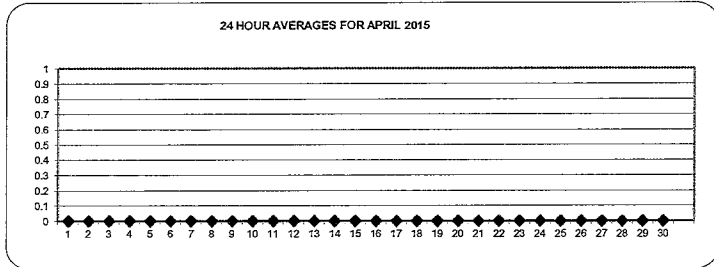
MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX	24-HOUR AVG.	RDGS.	
1	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
2	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
3	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	R	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23
4	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
5	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	24
6	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	24
7	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	24
8	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.10	0.10	C	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.10	0.02	24
9	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.10	0.01	24
10	0.00	0.00	0.00	0.00	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.10	0.01	24
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.10	0.00	24
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
24	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
25	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
26	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
27	0.00	0.00	0.10	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	24
28	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
29	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	24
30	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	24
HOURLY MAX	0.00	0.00	0.10	0.00	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HOURLY AVG	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

STATUS FLAG CODES

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

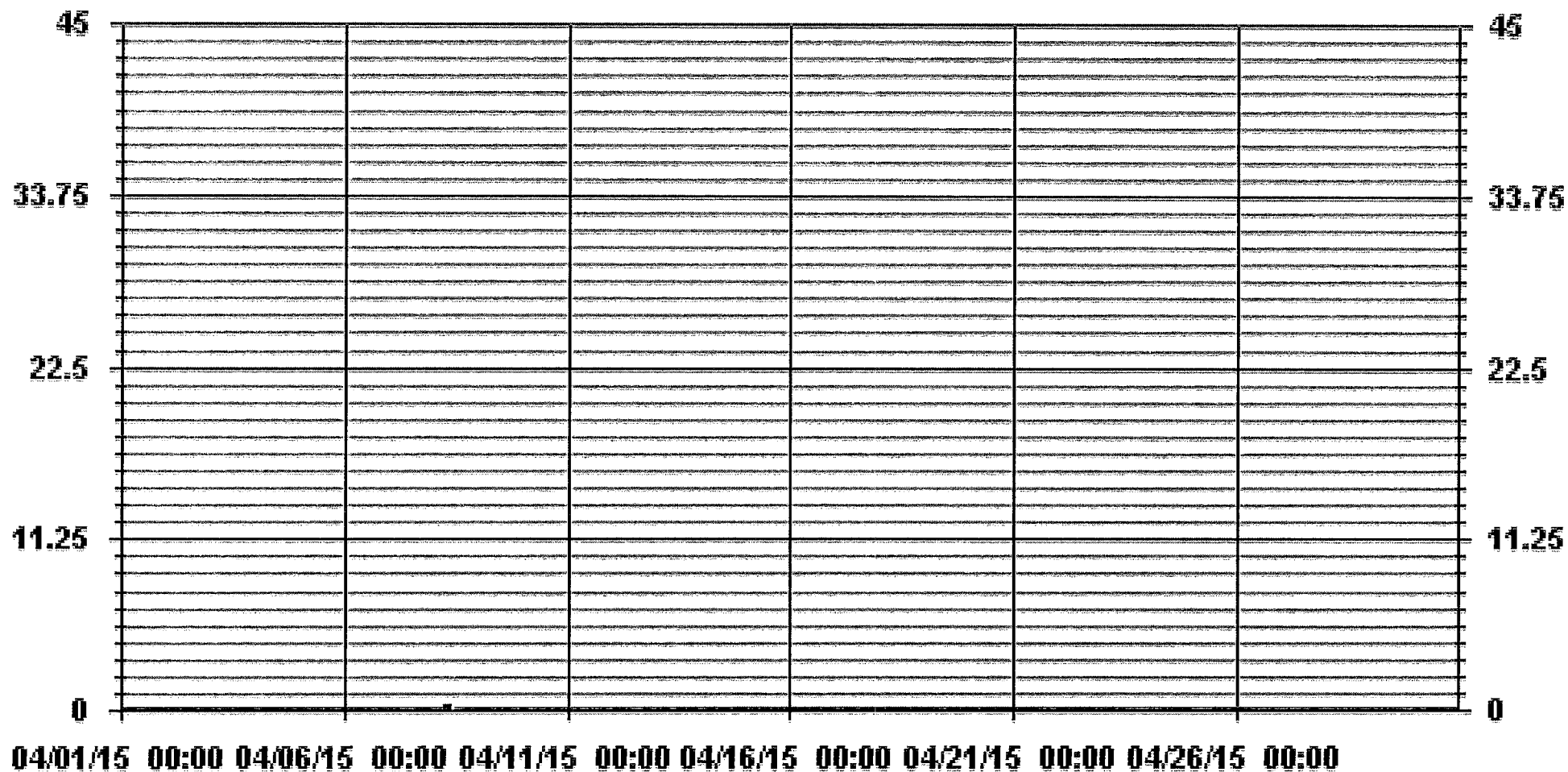
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	12
MAXIMUM 1-HR AVERAGE:	0.10 PPM @ HOUR(S) VAR ON DAY(S) VAR
MAXIMUM 24-HR AVERAGE:	0.02 PPM ON DAY(S) 8 VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS OPERATIONAL TIME: 719 HRS
MONTHLY CALIBRATION TIME:	5 HRS AMD OPERATION UPTIME: 99.9 %
STANDARD DEVIATION:	0.01 MONTHLY AVERAGE: 0.00 PPM

01 Hour Averages



— LICA35 NMHC PPM



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Elk Point Airport Site - APRIL 2015

JOB # 2833-2015-04-35- C

NON-METHANE HYDROCARBONS MAX instantaneous maximum in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	MAX.	AVG.		
DAY:																													
1		0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
2		0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.00	24
3		0.00	0.00	0.00	0.00	S	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.39	0.00	R	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.11	0.00	0.39	0.03	23	
4		0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.01	24	
5		0.00	0.00	S	0.00	0.00	0.00	0.17	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.01	24	
6		0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	24	
7		S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	S	0.13	0.01	24	
8		0.17	0.20	0.12	0.15	0.15	0.16	0.15	0.20	C	C	C	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.07	S	0.25	0.25	0.10	24	
9		0.19	0.11	0.06	0.28	0.21	0.27	0.19	0.21	0.30	0.26	0.11	0.20	0.00	0.00	0.00	0.13	0.17	0.15	0.00	0.00	S	0.14	0.18	0.30	0.14	24		
10		0.17	0.16	0.15	0.15	0.17	0.11	0.17	0.10	0.11	0.05	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	S	0.00	0.00	0.00	0.17	0.06	24		
11		0.00	0.00	0.10	0.00	0.00	0.00	0.15	0.19	0.19	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.19	0.03	24	
12		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
13		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.02	0.00	24	
14		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.01	24	
15		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
16		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
17		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
18		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.15	0.01	24	
19		0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.01	24
20		0.00	0.00	0.11	0.08	0.11	0.17	0.08	0.05	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.03	24	
21		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.16	0.00	0.00	0.15	0.16	0.02	24	
22		0.15	0.15	0.07	0.21	0.10	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03	24	
23		0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.12	0.00	0.00	0.11	0.19	0.02	24	
24		0.00	0.00	0.00	0.04	0.10	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.01	24	
25		0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
26		0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.18	0.73	0.05	24	
27		0.00	0.12	0.00	S	0.00	0.00	0.00	0.10	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.02	24	
28		0.00	0.19	S	0.06	0.06	0.14	0.10	0.15	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.04	24	
29		0.10	S	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.13	0.01	24	
30		S	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.12	0.01	24
HOURLY MAX		0.19	0.20	0.15	0.28	0.21	0.27	0.19	0.21	0.30	0.26	0.11	0.20	0.00	0.73	0.07	0.13	0.17	0.15	0.05	0.19	0.16	0.10	0.15	0.25				
HOURLY AVG		0.03	0.04	0.03	0.03	0.03	0.03	0.04	0.03	0.03	0.02	0.00	0.01	0.00	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.02	0.01	0.02	0.04				

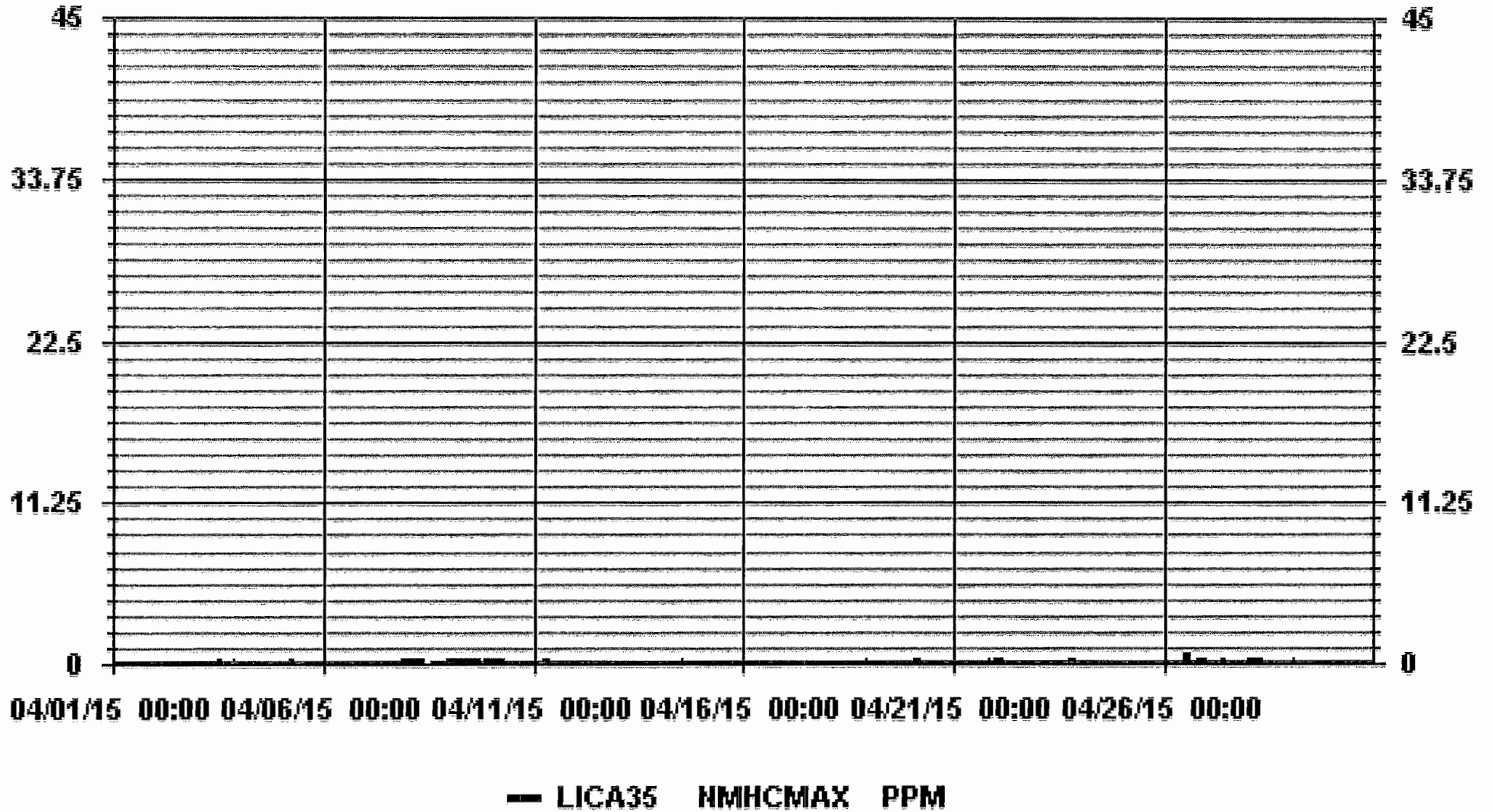
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	97		
MAXIMUM INSTANTANEOUS VALUE:	0.73 PPM @ HOUR(S) 13 ON DAY(S) 26		
	VAR-VARIOUS		
IZS CALIBRATION TIME:	32 HRS	OPERATIONAL TIME:	719 HRS
MONTHLY CALIBRATION TIME:	7 HRS		
STANDARD DEVIATION:	0.06		

01 Hour Averages



LICA35
 NMHC / WDR Joint Frequency Distribution (Percent)

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< .2	2.19	3.37	3.66	4.83	8.06	13.92	5.42	2.93	3.66	2.19	3.51	8.35	12.75	11.43	8.79	4.83	100.00
< .5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 2.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 4.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 4.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.19	3.37	3.66	4.83	8.06	13.92	5.42	2.93	3.66	2.19	3.51	8.35	12.75	11.43	8.79	4.83	

Calm : .00 %

Total # Operational Hours : 682

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< .2	15	23	25	33	55	95	37	20	25	15	24	57	87	78	60	33	682
< .5																	
< 1.0																	
< 2.0																	
< 4.0																	
>= 4.0																	
Totals	15	23	25	33	55	95	37	20	25	15	24	57	87	78	60	33	

Calm : .00 %

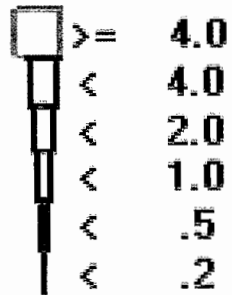
Total # Operational Hours : 682

Logger : 35 Parameter : NMHC

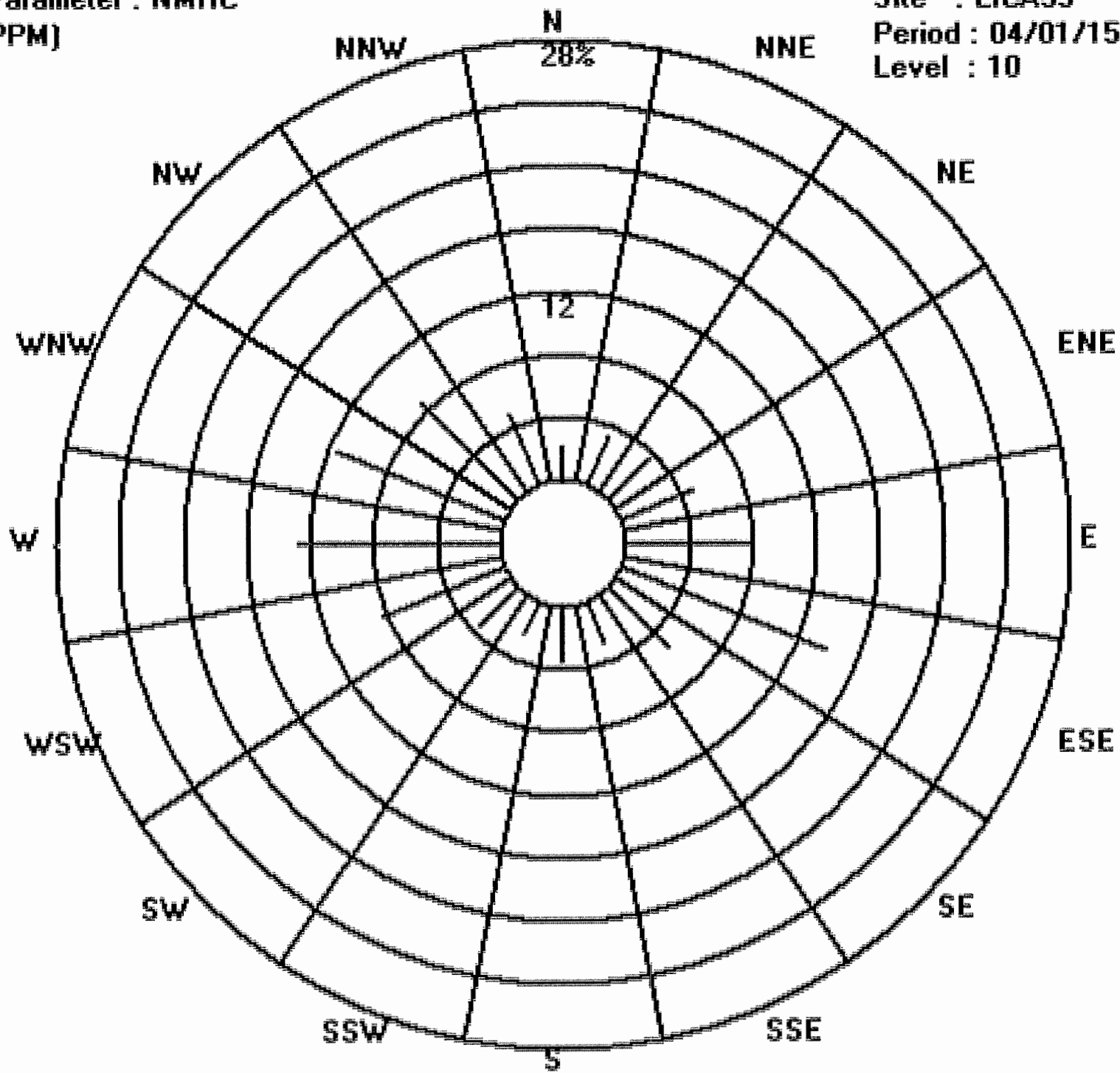
Site : LICA35

Class Limits (PPM)

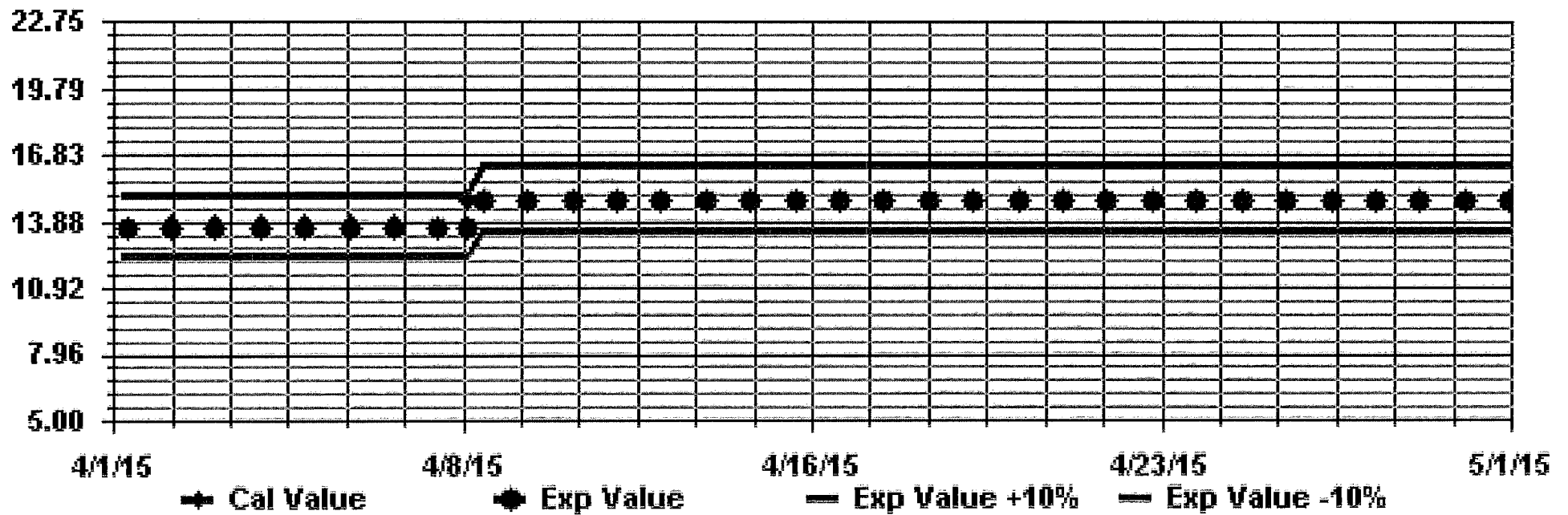
Period : 04/01/15-04/30/15



Level : 10



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



OXIDES OF NITROGEN

OXIDES OF NITROGEN (NOx) hourly averages in ppb

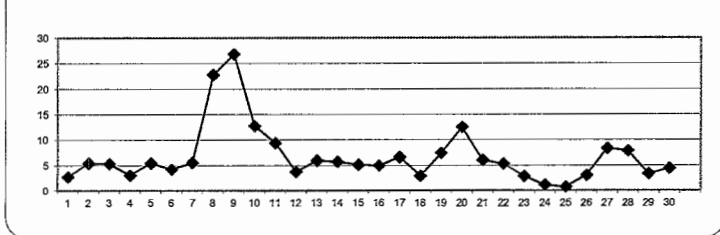
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	3.0	3.3	3.6	3.3	3.8	3.3	S	3.0	3.4	3.5	2.3	1.5	1.3	1.1	1.7	1.8	2.7	3.5	3.8	2.9	2.2	2.3	2.1	1.8	3.8	2.7	24	
2	1.9	1.8	2.1	4.6	8.0	S	8.0	15.9	7.4	8.4	9.1	5.7	3.5	3.0	3.0	3.6	3.8	3.2	2.5	2.2	2.4	3.2	5.4	15.8	15.9	5.4	24	
3	10.4	9.4	11.5	10.0	S	11.9	10.5	7.8	6.9	8.5	4.0	3.3	2.5	5.6	1.6	1.3	1.7	2.2	2.4	2.6	2.2	1.9	1.8	1.6	11.9	5.3	24	
4	1.9	2.0	2.0	S	2.4	2.2	3.4	5.5	4.9	4.5	2.3	2.0	2.2	2.5	2.7	3.0	3.0	2.4	2.1	2.8	3.0	2.7	3.8	5.5	5.5	3.0	24	
5	4.1	3.1	S	6.0	7.5	11.1	23.8	11.4	10.8	10.5	4.3	3.0	2.2	2.3	2.1	1.9	2.1	1.8	2.3	2.6	3.8	2.5	2.6	3.4	23.8	5.4	24	
6	3.2	S	2.4	2.5	2.6	4.0	9.0	5.1	4.9	4.7	3.8	3.7	3.0	2.8	2.5	2.6	2.3	3.9	4.8	10.0	7.5	4.7	4.9	10.0	10.0	4.2	24	
7	S	5.9	5.9	3.7	3.9	5.2	5.7	3.6	3.7	3.4	3.8	2.9	2.7	3.2	3.2	4.4	4.7	5.4	6.0	6.0	11.2	13.4	13.5	5	13.5	5.5	24	
8	18.9	21.9	17.1	14.0	17.9	19.4	23.6	31.0	34.1	C	C	C	C	C	C	C	C	1.6	9.9	11.5	17.8	24.8	S	79.0	79.0	22.8	24	
9	46.7	31.8	40.4	50.1	53.5	70.1	79.0	54.2	48.4	23.8	17.8	10.5	2.8	2.1	2.2	2.1	2.1	2.3	4.4	13.8	11.0	S	20.7	27.6	79.0	26.8	24	
10	26.8	30.8	31.1	26.8	25.7	34.7	20.4	14.3	12.8	8.9	4.1	3.1	4.1	3.2	3.0	2.5	2.4	4.7	9.3	5.9	S	8.6	5.3	3.4	34.7	12.7	24	
11	3.4	5.2	7.7	6.6	13.7	28.6	37.0	37.5	25.8	7.9	3.1	1.9	1.2	1.4	1.4	1.2	1.0	2.1	2.3	S	2.9	8.9	10.4	4.6	37.5	9.4	24	
12	9.4	7.7	8.0	4.3	4.8	5.1	5.4	3.6	2.2	2.0	2.0	1.5	1.4	1.5	1.4	2.1	2.0	1.9	S	3.0	3.1	3.7	4.4	4.8	9.4	3.7	24	
13	4.4	4.9	4.5	3.4	3.2	4.9	4.0	3.0	2.7	2.2	1.8	1.7	1.7	1.3	1.4	1.2	1.3	S	5.8	11.4	17.5	20.2	19.0	13.2	20.2	5.9	24	
14	12.9	10.7	9.2	8.9	12.0	15.6	8.2	5.7	3.9	3.2	3.1	4.9	3.4	3.6	2.7	2.1	S	1.7	1.7	2.1	1.7	1.7	2.9	9.3	15.6	5.7	24	
15	9.1	9.1	6.0	3.4	2.4	2.4	5.7	2.4	1.6	1.4	1.8	1.5	1.2	1.2	1.1	S	1.3	1.6	3.3	11.0	14.3	9.8	12.0	13.3	14.3	5.1	24	
16	5.8	12.0	9.7	6.6	6.9	10.0	7.6	7.1	4.4	2.0	1.4	1.5	1.2	1.4	S	1.8	2.5	2.4	2.2	1.2	1.9	4.9	7.1	11.2	12.0	4.9	24	
17	10.8	7.1	6.6	9.5	14.5	12.5	10.5	17.2	13.2	8.1	3.0	2.3	1.4	S	2.0	1.8	2.1	2.8	2.8	4.0	3.2	4.1	6.8	5.5	17.2	6.6	24	
18	4.7	5.1	4.4	3.4	2.9	2.5	2.0	1.8	2.1	2.1	1.8	1.4	S	1.5	1.3	1.8	1.3	1.2	1.4	1.7	1.6	2.9	7.2	11.2	11.2	2.9	24	
19	10.4	12.0	8.6	7.2	9.3	17.2	18.1	13.4	9.5	2.9	1.0	S	1.1	0.8	0.6	0.6	0.8	0.8	2.2	6.2	9.3	13.7	16.0	8.9	18.1	7.4	24	
20	11.9	15.5	13.2	16.4	17.2	33.5	53.0	28.0	6.4	5.6	S	C	C	C	C	C	C	0.3	0.0	0.3	0.4	1.3	6.1	3.6	53.0	12.5	24	
21	3.6	7.3	5.4	6.8	10.8	17.1	15.3	5.7	4.5	S	2.3	1.3	1.7	1.3	0.9	0.8	1.0	1.5	2.8	8.4	15.7	10.7	8.1	6.0	17.1	6.0	24	
22	4.3	4.1	10.2	13.4	24.5	15.6	8.5	7.3	S	3.2	3.2	2.6	1.9	1.6	1.7	1.9	1.7	2.1	1.9	3.1	2.2	1.9	2.0	2.1	24.5	5.3	24	
23	2.1	2.6	2.8	2.8	2.4	5.6	4.6	S	4.1	2.4	2.8	2.3	1.3	1.3	0.8	0.9	1.1	2.6	2.4	1.7	1.6	1.6	6.7	8.4	8.4	2.8	24	
24	6.5	4.4	3.3	1.6	0.7	1.0	S	1.0	0.8	0.5	0.3	0.4	0.3	0.5	0.3	0.3	0.4	0.4	1.2	0.7	0.4	0.6	0.1	0.2	6.5	1.1	24	
25	0.3	0.5	0.6	0.7	0.8	S	0.7	0.5	0.2	0.3	0.4	0.4	0.4	0.3	0.4	0.3	0.4	0.2	0.3	1.0	1.5	2.3	1.7	1.9	2.3	0.7	24	
26	2.4	3.1	8.0	4.9	S	2.8	2.1	1.1	0.5	0.2	0.0	0.1	0.0	0.2	0.2	0.2	0.4	0.6	0.9	5.3	11.7	6.2	8.6	8.8	11.7	3.0	24	
27	18.3	19.3	19.3	S	16.6	22.2	17.0	24.7	11.9	4.0	3.1	2.5	2.2	1.6	1.1	1.1	1.0	1.5	2.9	4.2	2.8	2.8	4.7	7.2	24.7	8.3	24	
28	8.9	18.4	S	15.0	14.3	15.7	17.5	14.8	10.2	3.3	2.2	2.4	2.3	2.9	4.3	3.0	2.6	4.9	6.1	5.3	5.2	8.8	5.2	5.0	18.4	7.8	24	
29	5.3	S	16.8	2.0	1.9	1.2	0.9	0.6	0.6	0.6	0.5	0.2	0.4	0.4	0.7	0.7	3.5	7.3	10.0	12.0	4.7	4.0	16.8	3.3	24			
30	S	11.5	6.2	8.0	7.4	14.1	7.4	5.8	3.7	1.6	1.0	1.6	2.0	0.9	0.9	1.2	1.9	1.9	1.7	2.4	3.9	3.2	9.1	S	14.1	4.4	24	
HOURLY MAX	46.7	31.8	40.4	50.1	53.5	70.1	79.0	54.2	48.4	23.8	17.8	10.5	4.1	5.6	4.3	4.4	4.7	5.4	9.9	13.8	17.8	24.8	20.7	79.0				
HOURLY AVG	9.0	9.7	9.5	8.8	10.4	13.9	14.6	11.5	8.5	4.6	3.1	2.5	1.8	1.8	1.7	1.7	1.8	2.1	3.2	4.7	6.0	6.5	7.0	9.7				

STATUS FLAG CODES

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

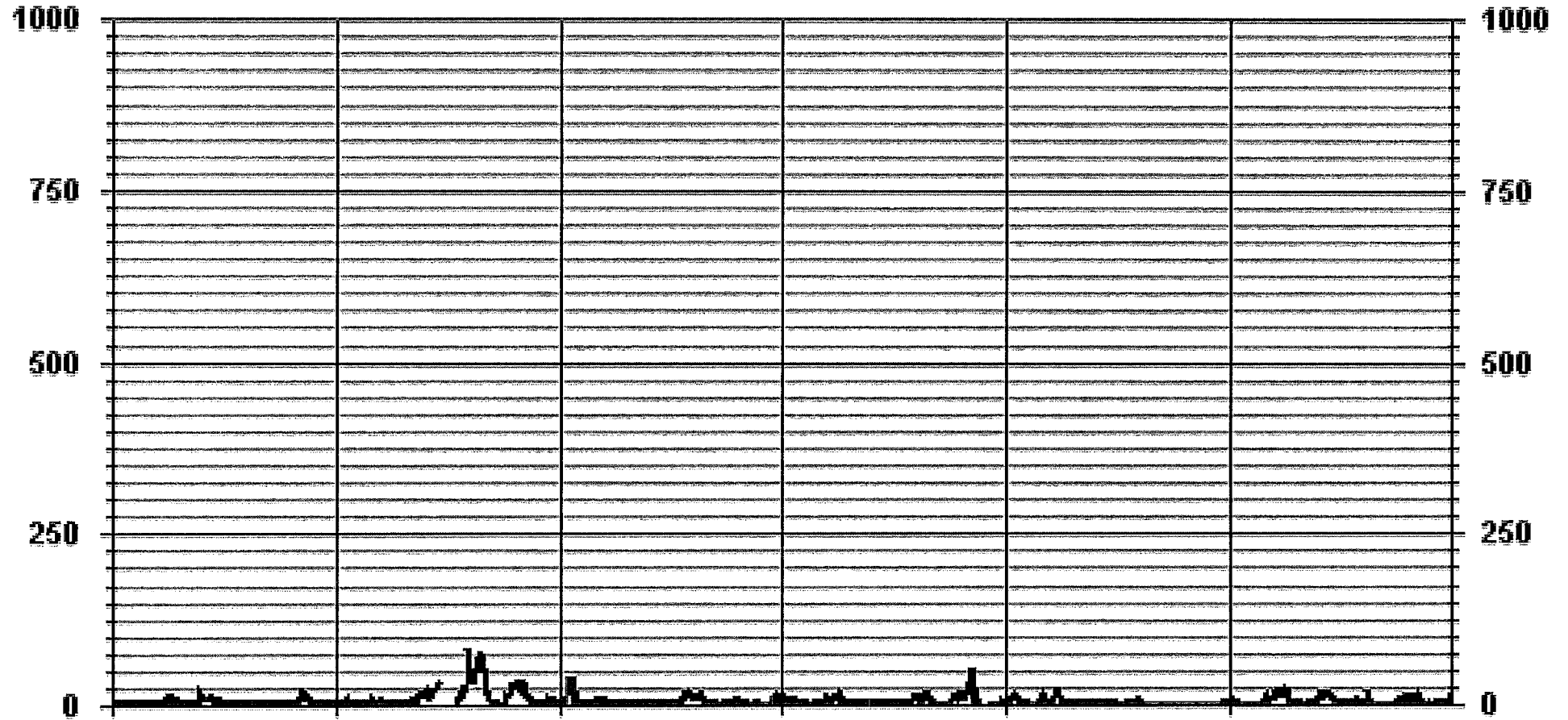
24 HOUR AVERAGES FOR APRIL 2015



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	671
MAXIMUM 1-HR AVERAGE:	79.0 PPB @ HOUR(S) 23, 6 ON DAY(S) 8, 9
MAXIMUM 24-HR AVERAGE:	26.8 PPB ON DAY(S) 9
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	14 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	8.99
MONTHLY AVERAGE:	6.5 PPB

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA35 NOX_ PPB



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		
		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.		
DAY	1	4.3	3.9	4.4	4.1	4.9	3.9	S	3.6	4.2	4.8	3.5	2.2	1.9	1.7	3.4	2.7	3.6	4.4	4.5	3.6	3.1	3.0	2.8	2.4	4.9	3.5	24	
	2	2.6	2.5	3.5	6.6	9.6	S	10.9	21.1	9.6	11.2	11.9	7.1	4.8	4.1	3.8	4.6	4.5	4.4	3.4	2.8	3.1	5.2	7.2	25.7	25.7	7.4	24	
	3	14.9	10.7	15.6	16.7	S	14.5	14.7	11.1	9.0	12.1	5.5	4.1	3.9	57.6	2.1	R	2.6	3.1	3.2	3.3	3.0	2.7	2.5	2.3	57.6	9.8	23	
	4	2.7	3.0	2.7	S	3.1	3.4	5.4	6.9	6.3	6.0	3.2	2.7	2.8	3.2	3.6	3.6	4.0	3.4	3.0	3.7	3.9	3.5	6.2	10.9	10.9	4.2	24	
	5	6.3	4.0	S	10.7	9.6	16.4	29.7	20.5	13.7	12.7	6.3	4.0	3.0	2.8	2.8	2.5	2.7	2.5	2.9	3.7	4.9	3.6	4.4	4.4	29.7	7.6	24	
	6	6.5	S	3.2	3.2	3.4	5.3	13.2	7.5	5.8	5.9	4.8	4.7	4.1	4.3	3.6	3.9	3.6	3.3	5.5	7.3	12.9	12.5	5.4	6.7	13.2	5.9	24	
	7	S	8.6	7.5	5.2	5.8	8.3	8.5	4.5	4.6	4.3	4.6	3.7	3.6	4.0	4.6	6.0	6.1	6.7	8.1	14.8	15.0	15.5	15.5	S	15.5	7.5	24	
	8	25.2	23.7	22.0	15.7	21.0	22.6	25.3	38.5	C	C	C	C	C	C	C	C	C	C	C	13.6	20.9	22.9	38.7	S	98.3	98.3	29.9	24
	9	69.5	52.1	49.8	54.7	59.7	82.7	88.5	65.3	52.1	39.6	24.2	21.7	4.5	2.9	2.9	3.1	3.1	3.1	15.9	21.2	14.3	S	30.8	35.0	88.5	34.6	24	
	10	31.5	33.1	35.6	33.5	34.0	47.3	35.1	15.9	15.2	11.8	6.8	4.7	5.8	3.9	4.0	3.7	3.8	7.8	13.2	10.0	S	12.0	12.1	4.3	47.3	16.7	24	
	11	5.0	7.4	8.9	7.7	20.8	34.0	51.5	61.5	32.9	18.5	6.9	3.3	2.3	2.8	3.1	2.2	1.9	4.6	3.4	S	5.8	25.9	26.1	7.5	61.5	15.0	24	
	12	17.8	9.7	15.8	6.0	6.6	6.5	6.3	5.3	2.8	2.7	3.0	2.1	2.2	2.2	2.2	3.0	3.0	3.2	S	3.7	3.8	5.0	5.3	5.7	17.8	5.4	24	
	13	5.8	5.6	5.5	4.3	4.5	6.8	5.5	4.1	4.1	3.0	2.8	2.6	2.3	2.0	2.1	2.6	2.1	S	12.5	20.4	24.2	26.2	26.3	20.1	26.3	8.5	24	
	14	21.5	14.1	11.3	10.3	19.4	26.7	11.8	7.5	5.5	5.0	4.3	7.1	4.1	7.1	5.8	3.7	S	2.8	2.7	3.5	2.5	2.4	5.0	12.9	26.7	8.6	24	
	15	10.8	12.0	10.8	7.3	3.2	3.3	8.9	3.5	2.3	2.7	2.8	2.9	2.2	2.0	2.0	S	2.3	2.5	5.9	20.1	20.5	14.1	18.0	17.9	20.5	7.7	24	
	16	8.3	20.4	16.5	10.1	11.2	12.7	10.7	8.7	6.0	3.2	2.2	3.3	1.8	2.2	S	3.1	3.4	3.9	3.5	1.9	3.5	7.0	12.5	17.2	20.4	7.5	24	
	17	13.6	8.9	8.9	18.9	18.8	17.4	16.6	19.6	17.4	15.3	4.2	3.9	2.4	S	3.8	3.5	3.0	5.4	5.7	7.4	5.0	6.5	10.8	9.4	19.6	9.8	24	
	18	7.7	7.3	7.4	5.8	4.1	3.8	2.7	2.4	3.5	3.2	2.9	2.1	S	2.0	1.9	2.8	2.3	2.0	2.0	2.5	2.5	4.7	15.0	15.4	15.4	4.6	24	
	19	11.8	13.4	12.9	10.4	20.8	21.2	20.7	19.1	14.8	4.3	2.1	S	1.8	1.7	1.2	1.2	1.9	1.7	9.2	9.6	12.5	18.0	19.0	10.5	21.2	10.4	24	
	20	24.1	25.5	16.7	19.4	25.8	39.5	63.9	55.1	9.3	7.4	S	C	C	C	C	C	C	1.0	0.8	1.0	1.2	7.4	17.7	7.2	63.9	19.0	24	
	21	8.0	13.1	7.4	13.1	15.3	32.3	25.2	6.6	6.2	S	3.4	3.5	3.7	3.5	2.0	1.9	2.3	3.4	8.2	15.7	24.6	15.4	9.9	8.2	32.3	10.1	24	
	22	5.0	5.8	17.7	17.8	66.9	23.6	11.9	9.1	S	5.9	5.7	4.0	3.6	2.3	3.1	3.0	2.8	3.7	3.5	9.0	4.1	2.8	2.7	3.3	66.9	9.4	24	
	23	2.8	3.3	3.8	3.8	3.2	13.4	7.1	S	7.1	3.6	4.4	3.7	2.1	2.2	2.0	1.8	2.6	7.1	3.7	3.9	2.1	3.3	18.8	11.9	18.8	5.1	24	
	24	11.4	6.3	9.2	2.7	1.4	1.7	S	1.5	1.5	1.1	1.1	1.1	1.1	1.1	1.0	0.9	0.9	2.1	2.6	2.7	1.1	1.1	0.7	0.8	11.4	2.4	24	
	25	0.9	1.4	1.2	1.2	1.7	S	2.2	1.3	0.9	1.2	1.1	0.9	1.1	1.1	1.0	0.9	1.0	0.9	0.8	2.4	2.6	5.1	2.6	2.7	5.1	1.6	24	
	26	4.0	5.3	14.5	6.5	S	6.6	3.7	2.3	1.3	1.1	0.8	0.9	0.9	1.2	0.9	0.8	1.3	1.4	2.4	12.6	49.6	8.7	14.0	14.6	49.6	6.8	24	
	27	23.1	28.3	25.9	S	25.0	33.2	25.1	66.3	81.6	6.0	4.7	4.0	4.5	2.6	2.1	2.3	2.0	3.2	6.3	9.9	4.7	5.2	6.7	16.9	81.6	16.9	24	
	28	11.2	27.6	S	18.0	18.6	27.0	19.6	16.7	14.2	6.0	3.1	3.7	4.9	4.5	9.3	4.8	5.1	9.0	11.4	9.4	6.7	17.6	8.9	7.9	27.6	11.5	24	
	29	6.4	S	31.2	8.7	8.0	2.5	1.5	1.5	1.3	1.4	1.4	1.1	1.5	0.9	1.0	1.3	3.6	2.0	11.4	12.6	16.6	18.7	7.9	5.7	31.2	6.4	24	
	30	S	19.0	8.7	14.8	11.7	21.0	10.8	7.2	6.1	3.2	2.0	4.0	4.5	1.7	1.6	2.2	2.8	3.1	2.6	3.5	7.2	6.0	13.8	S	21.0	7.2	24	
	HOURLY MAX	69.5	52.1	49.8	54.7	66.9	82.7	88.5	66.3	81.6	39.6	24.2	21.7	5.8	57.6	9.3	6.0	6.1	9.0	15.9	21.2	49.6	38.7	30.8	98.3				
	HOURLY AVG	13.0	13.4	13.5	12.0	15.6	19.2	19.2	17.0	12.1	7.3	4.6	4.0	3.0	4.7	2.8	2.8	2.9	3.6	5.9	8.4	9.8	10.3	11.3	13.8				

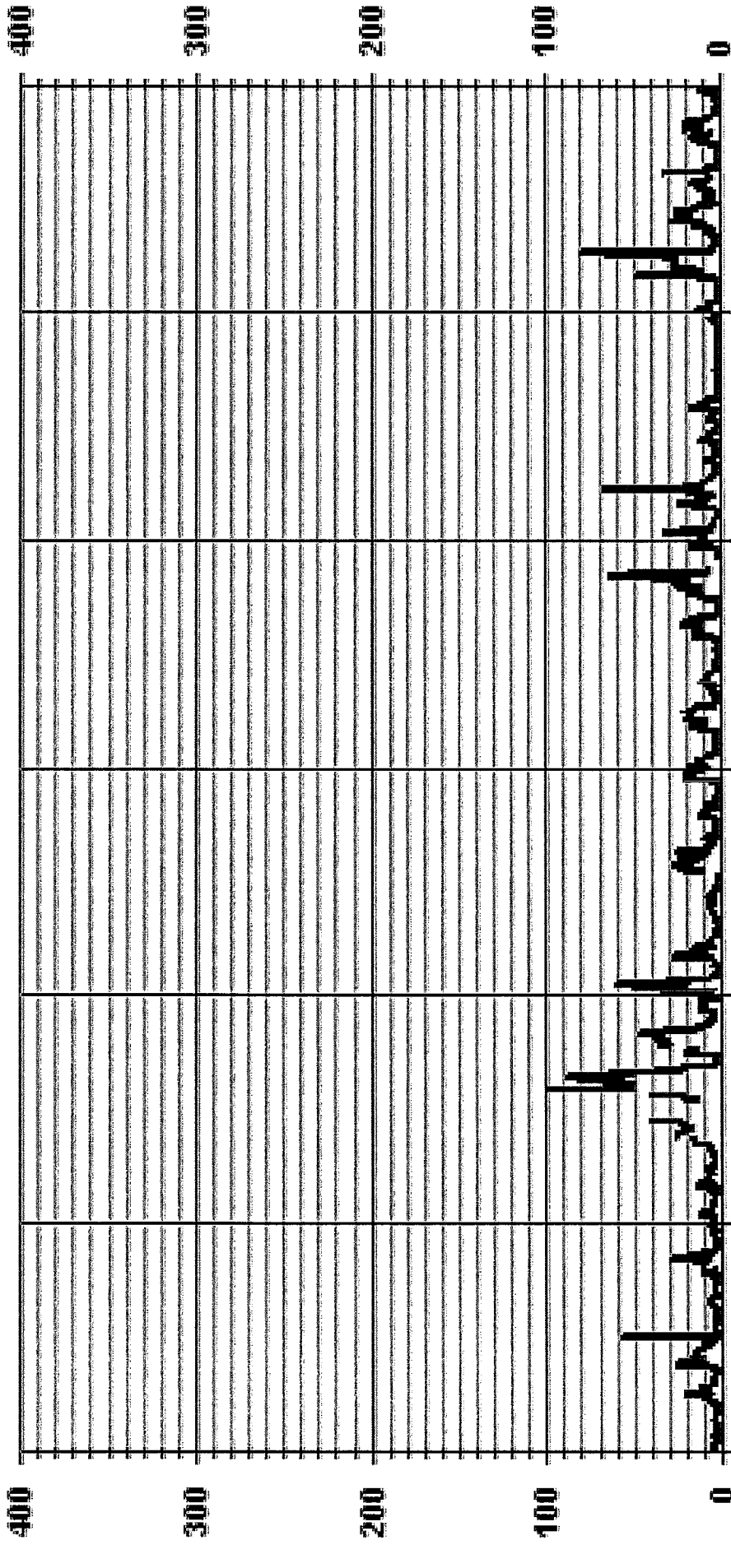
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	671
MAXIMUM INSTANTANEOUS VALUE:	98.3 PPB @ HOUR(S) 23 ON DAY(S) 8
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	16 HRS
STANDARD DEVIATION:	12.38
OPERATIONAL TIME:	719 HRS

01 Hour Averages



— LICA35 NOXMAX PPB

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

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

		Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 50.0	2.37	3.41	3.70	4.89	8.16	13.94	5.34	2.96	3.56	2.07	3.56	8.45	12.75	10.97	8.01	4.74	98.96	
< 110.0	.00	.00	.00	.00	.00	.14	.14	.00	.14	.14	.00	.00	.00	.29	.14	.00	1.03	
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Totals	2.37	3.41	3.70	4.89	8.16	14.09	5.48	2.96	3.70	2.22	3.56	8.45	12.75	11.27	8.16	4.74		

Calm : .00 %

Total # Operational Hours : 674

Distribution By Samples

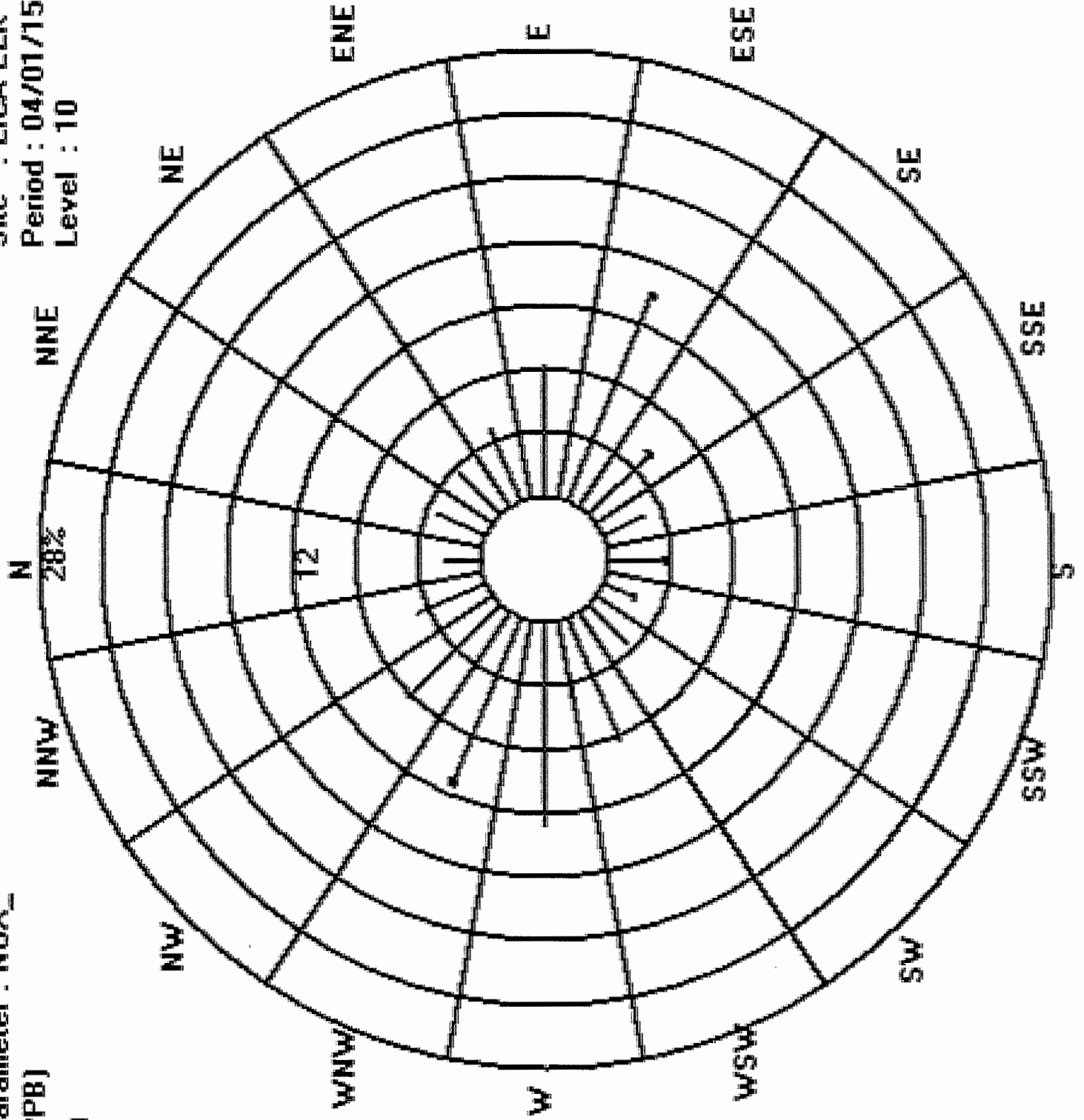
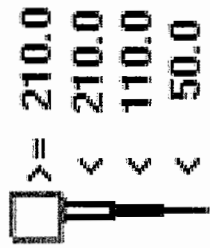
		Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 50.0	16	23	25	33	55	94	36	20	24	14	24	57	86	74	54	32	667	
< 110.0						1	1		1	1				2	1		7	
< 210.0																		
>= 210.0																		
Totals	16	23	25	33	55	95	37	20	25	15	24	57	86	76	55	32		

Calm : .00 %

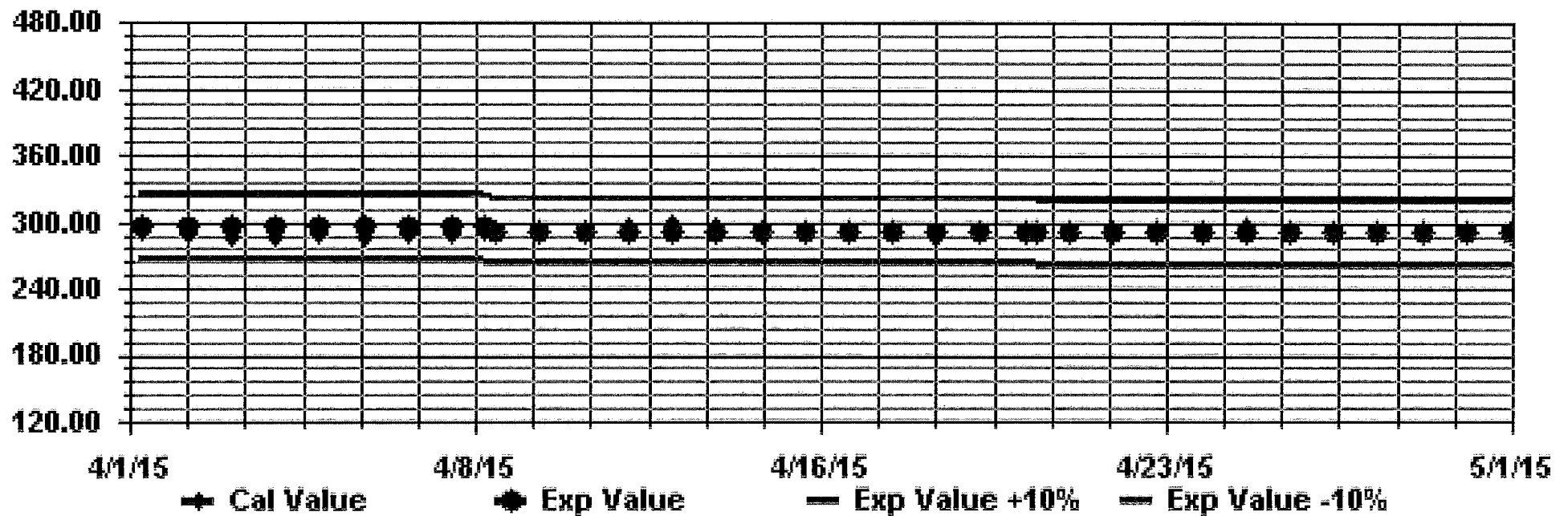
Total # Operational Hours : 674

Logger : 35 Parameter : NDX_
Class Limits (PPB)

Site : LICA-ELK
Period : 04/01/15-04/30/15
Level : 10



Calibration Graph for Site: LICA35 Parameter: NOX_ Sequence: N02 Phase: SPAN



NITRIC OXIDES



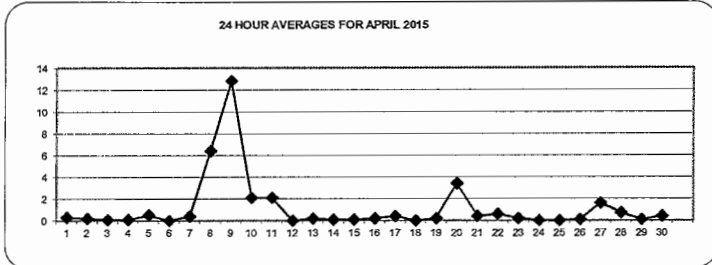
NITRIC OXIDE (NO) hourly averages in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
1	1.1	1.1	1.3	1.2	1.2	1.1	S	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.0	0.1	0.0	0.0	1.3	0.3	24	
2	0.0	0.0	0.0	0.0	0.2	S	0.4	1.7	0.5	0.3	0.4	0.2	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.7	0.2	24
3	0.2	0.2	0.0	0.2	S	0.0	0.1	0.0	0.1	0.3	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.1	24
4	0.0	0.0	0.0	S	0.2	0.1	0.0	0.1	0.3	0.1	0.1	0.0	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.1	24
5	0.0	0.0	S	0.4	0.4	1.1	7.6	0.8	0.8	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	7.6	0.5	24
6	0.0	S	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	0.0	0.0	0.0	0.0	0.1	0.0	24
7	S	0.4	0.3	0.3	0.1	0.3	0.3	0.4	0.5	0.3	0.5	0.4	0.3	0.3	0.2	0.5	0.4	0.4	0.5	0.5	0.5	0.7	0.8	S	0.8	0.4	24	
8	1.8	0.6	0.4	0.3	0.9	1.2	5.2	12.4	16.2	C	C	C	C	C	C	C	C	0.0	0.0	0.0	0.0	4.1	S	53.0	53.0	6.4	24	
9	21.4	10.1	16.1	30.1	35.8	50.5	59.1	30.9	24.0	7.2	2.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	S	1.4	3.9	59.1	12.8	24	
10	5.6	7.8	5.8	4.5	4.8	11.9	4.0	1.3	1.1	0.5	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.1	0.1	0.0	11.9	2.1	24	
11	0.0	0.0	0.1	0.0	1.4	7.9	16.3	14.9	6.1	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	16.3	2.1	24	
12	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.2	0.1	0.1	0.1	0.3	0.3	0.0	24	
13	0.1	0.2	0.1	0.0	0.1	0.2	0.0	0.1	0.1	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	S	0.1	0.4	0.4	0.6	0.9	0.2	0.9	0.2	24	
14	0.1	0.1	0.0	0.2	0.3	0.7	0.2	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	S	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	0.1	24
15	0.3	0.5	0.1	0.1	0.0	0.0	0.2	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.1	0.4	0.3	0.2	0.1	0.1	0.5	0.1	24	
16	0.0	0.1	0.1	0.2	0.2	0.0	0.3	0.3	0.2	0.0	0.0	0.1	0.0	0.1	S	0.4	0.2	0.1	0.0	0.2	0.2	0.3	0.2	0.5	0.5	0.2	24	
17	0.4	0.4	0.5	0.6	0.6	0.6	0.7	1.5	1.1	0.8	0.3	0.4	0.3	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.5	0.4	24
18	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	24
19	0.0	0.2	0.2	0.0	0.2	1.0	1.9	1.1	0.6	0.1	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	1.9	0.2	24
20	0.6	0.9	0.3	0.6	1.8	15.8	29.6	7.1	0.3	0.3	S	C	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.6	3.4	24
21	0.0	0.0	0.0	0.0	0.0	3.5	4.3	1.0	0.7	S	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.4	24
22	0.0	0.0	0.0	0.0	5.1	1.6	1.1	1.5	S	1.0	0.8	0.8	0.4	0.3	0.2	0.4	0.2	0.3	0.2	0.3	0.0	0.0	0.0	0.0	0.0	5.1	0.6	24
23	0.0	0.0	0.1	0.1	0.0	0.5	0.6	S	0.8	0.4	0.6	0.6	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.8	0.2	24
24	0.1	0.1	0.1	0.0	0.0	0.0	S	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	24
25	0.0	0.0	0.0	0.1	0.0	S	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.0	24
26	0.0	0.0	0.4	0.1	S	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.6	0.1	24	
27	0.8	1.1	0.3	S	1.8	4.6	5.6	12.7	5.6	1.2	0.8	0.6	0.4	0.3	0.0	0.1	0.0	0.0	0.1	0.1	0.2	0.0	0.1	0.2	12.7	1.6	24	
28	0.1	0.4	S	0.0	0.1	1.6	4.1	4.4	2.8	0.5	0.1	0.1	0.1	0.3	0.7	0.4	0.1	0.5	0.3	0.0	0.0	0.3	0.0	0.0	4.4	0.7	24	
29	0.0	S	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.2	0.1	24	
30	S	0.3	0.1	0.3	0.4	2.1	1.6	1.6	0.9	0.2	0.1	0.1	0.4	0.1	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.3	S	2.1	0.4	24
HOURLY MAX	21.4	10.1	16.1	30.1	35.8	50.5	59.1	30.9	24.0	7.2	2.9	1.0	0.4	0.8	0.7	0.5	0.4	0.5	0.5	0.5	0.6	4.1	1.4	53.0				
HOURLY AVG	1.2	0.9	1.0	1.4	2.0	3.8	5.1	3.2	2.2	0.5	0.3	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	2.1			

STATUS FLAG CODES

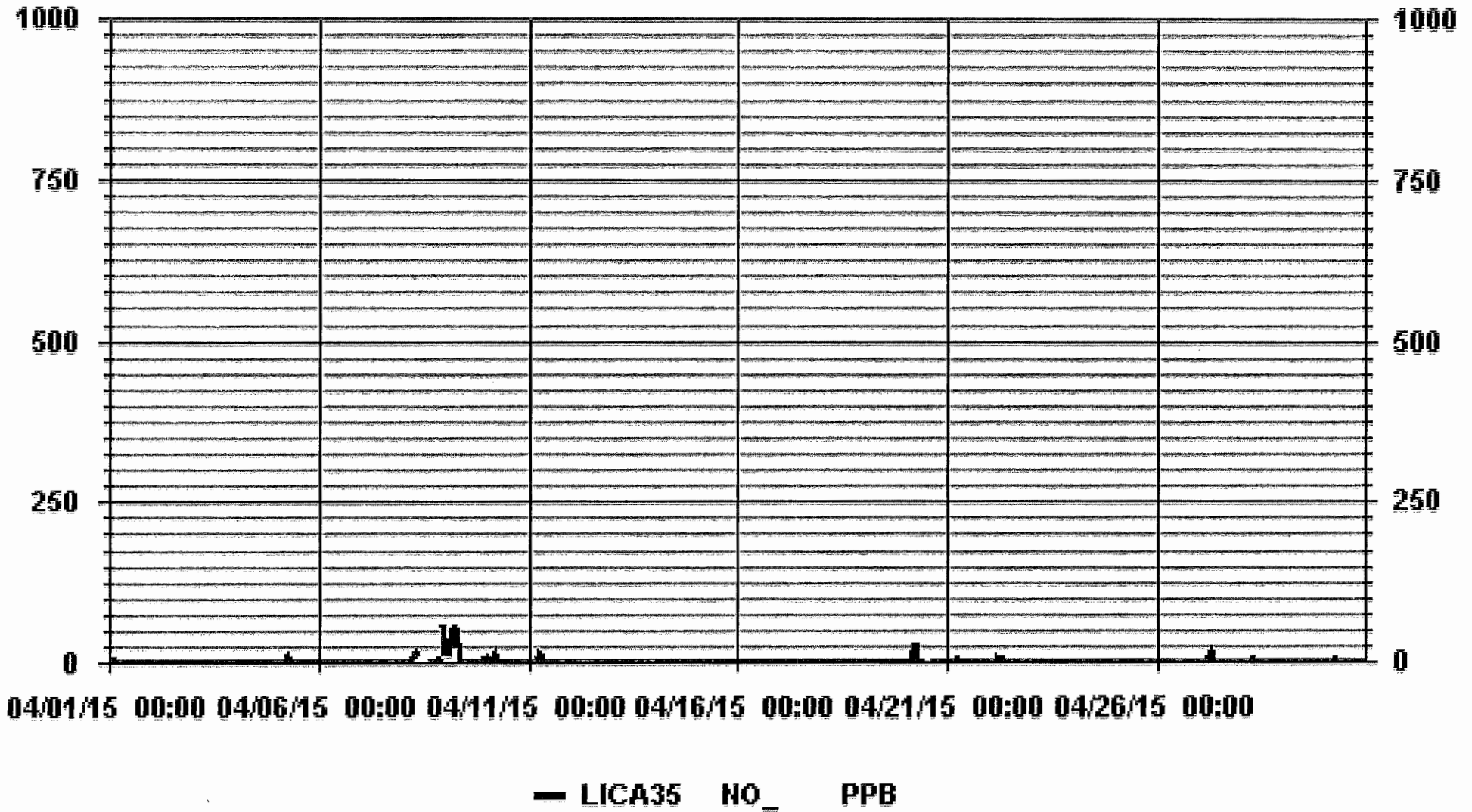
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	32S		
MAXIMUM 1-HR AVERAGE:	59.1 PPB @ HOUR(S) 6 ON DAY(S) 9		
MAXIMUM 24-HR AVERAGE:	12.8 PPB ON DAY(S) 9		
	VAR-VARIOUS		
IZS CALIBRATION TIME:	32 HRS	OPERATIONAL TIME:	720 HRS
MONTHLY CALIBRATION TIME:	14 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	4.84	MONTHLY AVERAGE:	1.0 PPB

01 Hour Averages





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	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	1.7	1.7	1.9	1.7	1.7	1.8	S	0.8	0.6	0.9	0.6	0.8	0.6	0.5	0.5	0.5	0.5	0.8	0.8	0.8	0.6	0.8	0.8	0.5	1.9	1.0	24	
2	0.7	0.5	0.6	0.8	0.8	S	1.9	3.4	1.1	1.2	1.3	1.0	0.4	0.7	0.9	0.7	0.7	0.4	0.4	0.4	0.4	0.5	0.6	1.9	3.4	0.9	24	
3	1.1	0.8	0.8	1.1	S	0.9	1.1	0.4	0.9	1.3	0.4	0.4	0.6	33.3	0.3	R	0.4	0.5	0.6	0.4	0.5	0.3	0.4	0.4	33.3	2.1	23	
4	0.5	0.4	0.5	S	0.9	0.5	0.7	0.7	0.9	0.9	0.6	0.5	0.7	0.8	0.7	0.5	0.5	0.6	0.5	0.5	0.9	0.6	0.7	0.8	0.9	0.6	24	
5	0.9	0.6	S	1.0	1.3	3.2	13.1	4.0	1.6	1.4	0.6	0.6	0.5	0.5	0.4	0.7	0.7	0.4	0.7	0.9	0.8	0.5	0.7	0.5	13.1	1.5	24	
6	0.6	S	0.5	0.4	0.5	1.3	0.5	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.4	0.4	0.3	0.4	0.3	0.5	0.7	0.5	0.5	1.3	0.6	24		
7	S	1.1	0.8	0.9	0.8	1.0	0.9	1.1	1.0	0.9	1.2	1.2	1.0	1.0	1.4	1.3	1.0	1.2	1.2	2.3	1.6	1.4	1.4	S	2.3	1.2	24	
8	8.1	1.3	1.3	1.0	1.8	3.4	7.3	18.5	C	C	C	C	C	C	C	C	C	C	0.0	0.9	1.1	12.7	S	73.5	73.5	10.1	24	
9	42.4	25.6	27.5	32.6	39.7	63.2	68.6	44.3	27.2	18.0	4.8	3.3	0.5	0.5	0.7	0.4	0.3	0.4	0.9	1.5	0.7	S	3.6	7.1	68.6	18.0	24	
10	8.8	9.9	10.3	11.5	11.3	23.3	13.2	2.2	1.8	1.3	0.4	0.5	1.0	0.5	0.6	0.5	0.7	0.4	0.7	0.4	S	1.1	0.9	0.6	23.3	4.4	24	
11	0.7	0.6	0.9	0.6	4.6	12.6	29.4	35.8	9.9	2.7	1.0	0.3	0.4	0.5	0.3	0.3	0.5	0.6	0.6	S	0.6	1.4	1.5	0.5	35.8	4.6	24	
12	0.7	0.8	1.1	0.6	0.7	0.6	0.7	0.6	0.4	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.6	0.4	S	0.9	0.9	0.7	0.8	0.9	1.1	0.6	24	
13	1.1	0.9	0.7	0.7	0.7	0.9	0.7	0.9	1.1	0.9	0.7	0.7	0.7	0.4	0.6	0.7	0.6	S	0.8	1.6	2.0	1.7	3.8	1.1	3.8	1.0	24	
14	0.9	0.9	0.7	0.8	1.7	2.3	0.9	0.8	0.6	0.6	0.6	0.6	0.6	0.6	0.4	0.4	S	0.8	0.6	0.6	0.4	0.4	0.7	0.7	2.3	0.8	24	
15	1.0	1.4	0.8	1.0	0.5	0.6	1.0	0.4	0.8	0.7	0.6	0.9	0.6	0.5	0.5	S	0.6	0.4	0.9	2.4	1.0	0.9	0.7	0.8	2.4	0.8	24	
16	0.6	0.6	0.6	0.7	0.9	0.7	1.0	1.0	0.8	0.6	0.5	1.0	0.6	0.6	S	1.1	0.8	0.6	0.5	0.8	0.9	0.9	0.9	1.4	1.4	0.8	24	
17	1.0	1.0	1.1	1.6	1.4	1.3	2.0	3.0	2.1	2.3	1.0	1.0	0.9	S	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.7	0.5	3.0	1.1	24	
18	0.5	0.5	0.8	0.8	0.9	0.4	0.5	0.5	0.5	0.8	0.8	0.6	S	0.6	0.4	0.6	0.5	0.2	0.5	0.4	0.5	0.6	0.7	0.8	0.9	0.6	24	
19	0.6	1.0	1.0	0.6	2.1	2.3	3.1	2.7	1.6	0.8	0.5	S	0.7	0.4	0.2	0.5	0.5	0.2	0.5	0.8	0.8	1.0	0.6	0.8	3.1	1.0	24	
20	4.5	4.7	1.3	1.8	7.7	20.0	37.2	28.2	1.1	1.1	S	C	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	1.7	1.0	37.2	6.5	24	
21	0.0	0.0	0.0	1.2	1.2	13.8	10.0	1.7	1.8	S	1.2	1.0	1.2	0.7	0.4	0.2	0.3	0.6	0.7	0.5	1.8	0.2	0.2	0.6	13.8	1.7	24	
22	0.3	0.2	0.9	1.9	40.6	6.2	2.0	2.6	S	2.4	2.4	1.5	1.5	0.8	0.9	1.1	1.1	1.3	1.2	1.7	0.7	0.8	0.6	0.6	40.6	3.2	24	
23	0.5	0.6	0.8	1.1	0.6	2.6	1.7	S	2.1	1.3	1.7	1.7	1.1	0.9	0.9	0.5	0.8	0.7	0.6	0.6	0.3	0.6	4.7	1.7	4.7	1.2	24	
24	1.2	0.6	1.7	0.5	0.4	0.7	S	0.7	0.7	0.7	0.4	0.6	0.6	0.6	0.5	0.5	0.7	0.6	0.8	0.6	0.6	0.4	0.4	0.5	1.7	0.7	24	
25	0.5	0.5	0.6	0.6	0.8	S	0.7	0.7	0.4	0.8	0.6	0.8	0.8	0.5	0.5	0.6	0.4	0.5	0.5	0.7	0.4	0.6	0.8	0.5	0.8	0.6	24	
26	0.7	1.1	1.4	0.9	S	1.0	0.9	0.8	0.6	0.5	0.4	0.4	0.4	0.5	0.7	0.3	0.5	0.5	0.5	1.1	18.2	0.6	1.4	2.0	18.2	1.5	24	
27	2.6	5.3	3.9	S	5.5	11.4	14.5	51.4	56.2	3.1	1.9	1.3	1.8	1.1	0.7	0.7	0.7	0.7	0.6	1.3	1.0	0.7	1.2	0.8	56.2	7.3	24	
28	0.7	3.2	S	0.5	1.3	5.9	5.3	5.4	4.3	1.7	1.0	0.9	1.2	1.0	3.1	1.1	1.2	1.5	1.2	0.9	0.3	1.9	1.3	0.3	5.9	2.0	24	
29	0.4	S	5.0	0.6	0.7	0.3	0.4	0.3	0.5	0.6	0.3	0.6	0.5	0.3	0.5	0.3	0.6	0.5	0.9	0.5	0.5	0.8	0.4	0.7	5.0	0.7	24	
30	S	1.7	1.0	1.6	1.4	6.1	2.5	2.3	1.8	1.3	0.9	1.1	1.4	0.7	0.7	1.0	0.9	0.8	0.8	0.7	0.7	0.5	1.3	S	6.1	1.4	24	
HOURLY MAX	42.4	25.6	27.5	32.6	40.6	63.2	68.6	51.4	56.2	18.0	4.8	3.3	1.8	33.3	3.1	1.3	1.2	1.5	1.2	2.4	18.2	12.7	4.7	73.5				
HOURLY AVG	3.0	2.4	2.4	2.5	4.7	6.7	8.0	7.4	4.4	1.8	1.0	0.9	0.8	1.8	0.7	0.6	0.6	0.6	0.7	0.9	1.4	1.2	1.2	3.6				

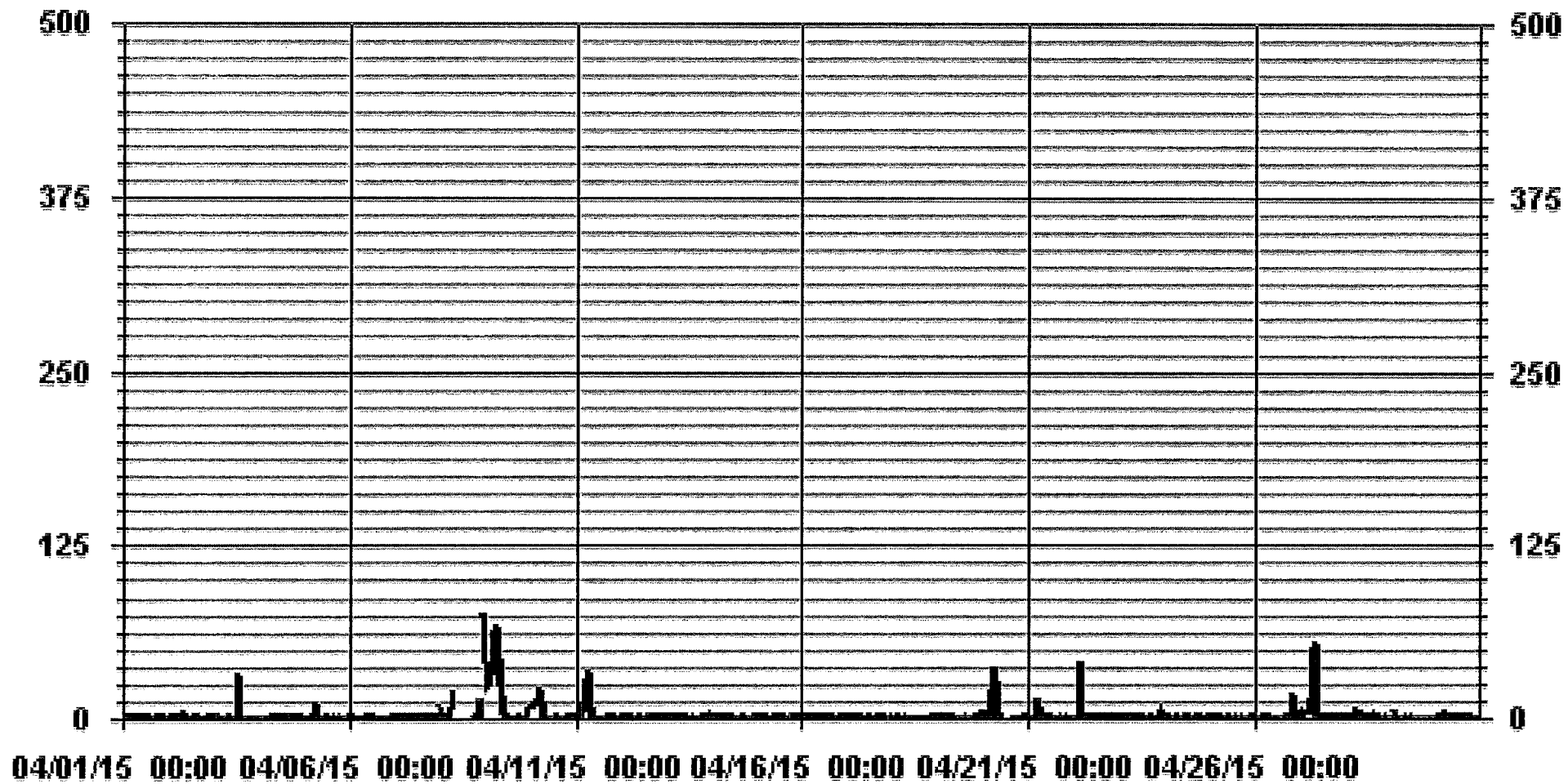
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	662
MAXIMUM INSTANTANEOUS VALUE:	73.5 PPB @ HOUR(S) 23 ON DAY(S) 8
	VAR-VARIOUS
HOURS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	16 HRS
STANDARD DEVIATION:	7.38
OPERATIONAL TIME:	719 HRS

01 Hour Averages



— LICA35 NOMAX PPB

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

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	2.37	3.41	3.70	4.89	8.16	14.09	5.34	2.96	3.70	2.07	3.56	8.45	12.75	11.12	8.16	4.74	99.55
< 110.0	.00	.00	.00	.00	.00	.00	.14	.00	.00	.14	.00	.00	.00	.14	.00	.00	.44
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.37	3.41	3.70	4.89	8.16	14.09	5.48	2.96	3.70	2.22	3.56	8.45	12.75	11.27	8.16	4.74	

Calm : .00 %

Total # Operational Hours : 674

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	16	23	25	33	55	95	36	20	25	14	24	57	86	75	55	32	671
< 110.0							1					1			1		3
< 210.0																	
>= 210.0																	
Totals	16	23	25	33	55	95	37	20	25	15	24	57	86	76	55	32	

Calm : .00 %

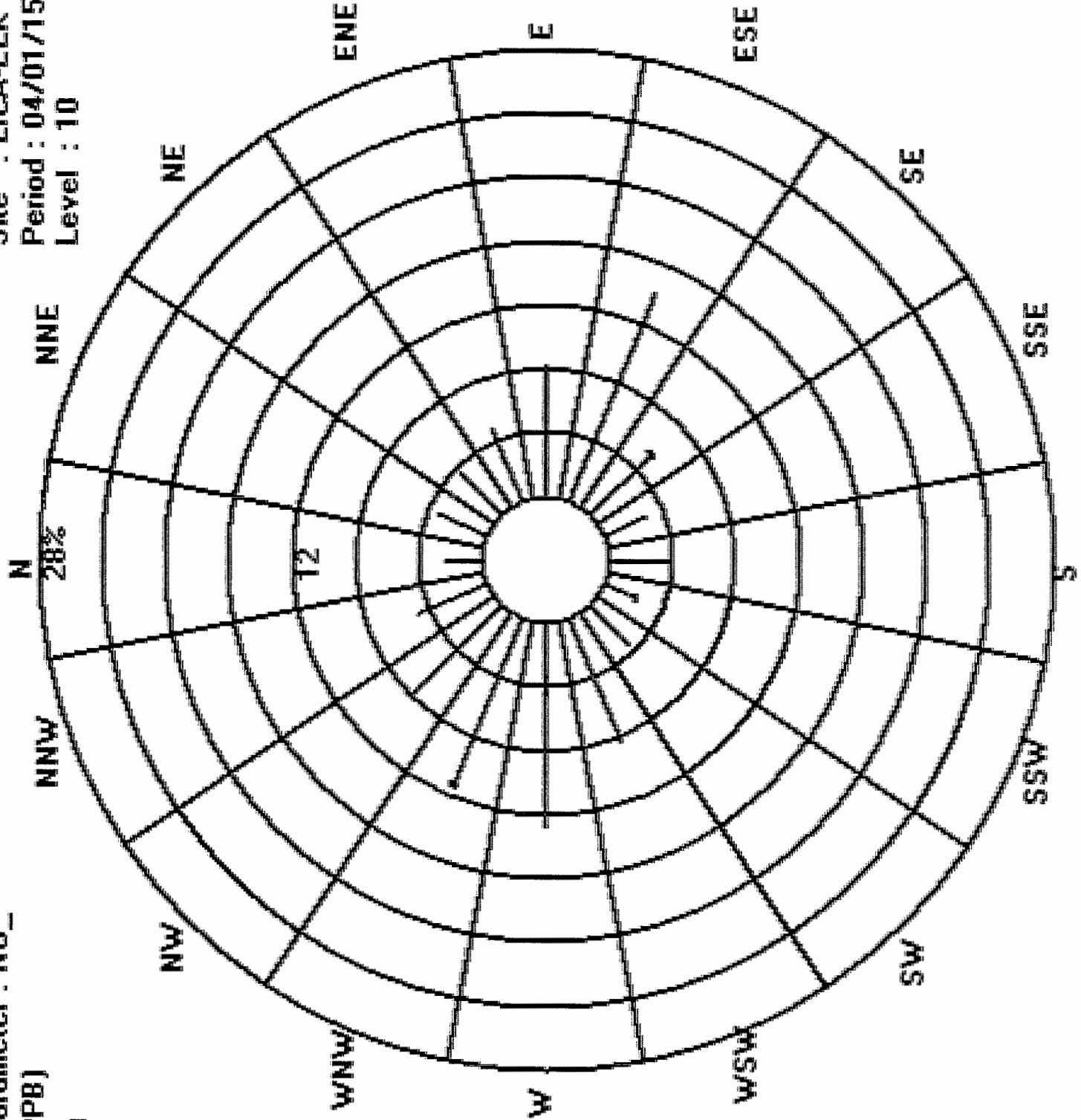
Total # Operational Hours : 674

Logger : 35 Parameter : NO_

Class Limits (PPB)

-  >= 210.0
-  < 210.0
-  < 110.0
-  < 50.0

Site : LICA-ELK
Period : 04/01/15-04/30/15
Level : 10



NITROGEN DIOXIDE

NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	1.9	2.2	2.3	2.1	2.6	2.2	S	3.0	3.4	3.3	2.3	1.4	1.3	1.1	1.7	1.8	2.7	3.4	3.6	2.7	2.2	2.2	2.1	1.8	3.6	2.3	24
2	1.9	1.8	2.1	4.6	7.8	S	7.6	14.2	6.9	8.1	8.7	5.5	3.5	3.0	2.9	3.5	3.7	3.2	2.5	2.2	2.4	3.2	5.4	15.5	15.5	5.2	24
3	10.2	9.2	11.5	9.8	S	11.9	10.4	7.8	6.8	8.2	4.0	3.3	2.5	4.8	1.6	1.3	1.7	2.2	2.4	2.6	2.2	1.9	1.8	1.6	11.9	5.2	24
4	1.9	2.0	2.0	S	2.2	2.1	3.4	5.4	4.6	4.4	2.2	2.0	2.1	2.3	2.5	3.0	3.0	2.4	2.1	2.8	3.0	2.7	3.8	5.3	5.4	2.9	24
5	4.1	3.1	S	5.6	7.1	10.0	16.2	10.6	10.0	9.8	4.3	3.0	2.2	2.3	2.1	1.9	2.1	1.8	2.2	2.4	3.8	2.5	2.6	3.4	16.2	4.9	24
6	3.2	S	2.4	2.5	2.6	4.0	9.0	5.1	4.8	4.7	3.8	3.7	3.0	2.8	2.5	2.5	2.6	2.3	3.9	4.8	10.0	7.5	4.7	4.9	10.0	4.2	24
7	S	5.5	5.6	3.4	3.8	4.9	5.4	3.2	3.2	3.1	3.3	2.5	2.4	2.9	3.0	3.9	4.3	5.0	5.5	5.5	10.7	12.7	12.7	S	12.7	5.1	24
8	17.1	21.3	16.7	13.7	17.0	18.2	18.4	18.6	17.9	C	C	C	C	C	C	C	C	1.6	9.9	11.5	17.8	20.7	S	26.0	26.0	16.4	24
9	25.3	21.7	24.3	20.0	17.7	19.6	19.9	23.3	24.4	16.6	14.9	9.5	2.8	2.1	2.2	2.1	2.1	2.3	4.4	13.7	11.0	S	19.3	23.7	25.3	14.0	24
10	21.2	23.0	25.3	22.3	20.9	22.8	16.4	13.0	11.7	8.4	4.1	3.1	4.0	3.2	3.0	2.5	2.4	4.7	9.3	5.9	S	8.5	5.2	3.4	25.3	10.6	24
11	3.4	5.2	7.6	6.6	12.3	20.7	20.7	22.6	19.7	7.3	3.0	1.9	1.2	1.4	1.4	1.2	1.0	2.1	2.3	S	2.9	8.9	10.4	4.6	22.6	7.3	24
12	9.4	7.7	7.9	4.3	4.8	5.1	5.3	3.6	2.2	2.0	2.0	1.5	1.4	1.5	1.4	2.1	2.0	1.9	S	2.8	3.0	3.6	4.3	4.5	9.4	3.7	24
13	4.3	4.7	4.4	3.4	3.1	4.7	4.0	2.9	2.6	2.0	1.8	1.6	1.6	1.3	1.4	1.2	1.3	S	5.7	11.0	17.1	19.6	18.1	13.0	19.6	5.7	24
14	12.8	10.6	9.2	8.7	11.7	14.9	8.0	5.7	3.9	3.1	3.1	4.8	3.4	3.6	2.7	2.1	S	1.6	1.7	2.1	1.7	1.7	2.9	9.2	14.9	5.6	24
15	8.8	8.6	5.9	3.3	2.4	2.4	5.5	2.4	1.4	1.3	1.8	1.5	1.2	1.2	1.1	S	1.3	1.6	3.2	10.6	14.0	9.6	11.9	13.2	14.0	5.0	24
16	5.8	11.9	9.6	6.4	6.7	10.0	7.3	6.8	4.2	2.0	1.4	1.4	1.2	1.3	S	1.4	2.3	2.3	2.2	1.0	1.7	4.6	6.9	10.7	11.9	4.7	24
17	10.4	6.7	6.1	8.9	13.9	11.9	9.8	15.7	12.1	7.3	2.7	1.9	1.1	S	2.0	1.8	2.1	2.8	2.8	4.0	3.2	4.1	6.7	5.5	15.7	6.2	24
18	4.7	5.1	4.4	3.3	2.8	2.5	2.0	1.8	2.1	2.1	1.8	1.4	S	1.5	1.3	1.8	1.3	1.2	1.4	1.7	1.6	2.9	7.2	11.1	11.1	2.9	24
19	10.4	11.8	8.4	7.2	9.1	16.2	16.2	12.3	8.9	2.8	1.0	S	1.1	0.8	0.6	0.6	0.8	0.8	2.2	6.2	9.3	13.5	15.9	8.8	16.2	7.2	24
20	11.3	14.6	12.9	15.8	15.4	17.7	23.4	20.9	6.1	5.3	S	C	C	C	C	C	C	0.3	0.0	0.3	0.4	1.3	6.1	3.6	23.4	9.1	24
21	3.6	7.3	5.4	6.8	10.8	13.6	11.0	4.7	3.8	S	1.8	1.3	1.7	1.3	0.9	0.8	1.0	1.5	2.8	8.4	15.7	10.7	8.1	6.0	15.7	5.6	24
22	4.3	4.1	10.2	13.4	19.4	14.0	7.4	5.8	S	2.2	2.4	1.8	1.5	1.3	1.5	1.5	1.5	1.8	1.7	2.8	2.2	1.9	2.0	2.1	19.4	4.6	24
23	2.1	2.6	2.7	2.7	2.4	5.1	4.0	S	3.3	2.0	2.2	1.7	1.0	1.0	0.8	0.9	1.1	2.6	2.4	1.7	1.6	1.6	6.4	8.4	8.4	2.6	24
24	6.4	4.3	3.2	1.6	0.7	1.0	S	0.9	0.8	0.5	0.3	0.4	0.3	0.5	0.3	0.3	0.4	0.4	1.1	0.7	0.4	0.6	0.1	0.2	6.4	1.1	24
25	0.3	0.5	0.6	0.6	0.8	S	0.7	0.5	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.2	0.3	1.0	1.5	2.3	1.5	1.9	2.3	0.7	24
26	2.4	3.1	7.6	4.8	S	2.7	2.0	1.0	0.5	0.2	0.0	0.1	0.0	0.2	0.2	0.2	0.4	0.6	0.9	5.3	11.1	6.2	8.6	8.8	11.1	2.9	24
27	17.5	18.2	19.0	S	14.8	17.6	11.4	12.0	6.3	2.8	2.3	1.9	1.8	1.3	1.1	1.0	1.0	1.5	2.8	4.1	2.6	2.8	4.6	7.0	19.0	6.8	24
28	8.8	18.0	S	15.0	14.2	14.1	13.4	10.4	7.4	2.8	2.1	2.3	2.2	2.6	3.6	2.6	2.5	4.4	5.8	5.3	5.2	8.5	5.2	5.0	18.0	7.0	24
29	5.3	S	15.6	2.0	1.9	1.2	0.9	0.6	0.6	0.6	0.5	0.6	0.5	0.2	0.4	0.4	0.7	0.7	3.4	7.3	10.0	12.0	4.7	4.0	15.6	3.2	24
30	S	11.2	6.1	7.7	7.0	12.0	5.8	4.2	2.8	1.4	0.9	1.5	1.6	0.8	0.9	1.0	1.8	1.8	1.6	2.3	3.9	3.2	8.8	S	12.0	4.0	24
HOURLY MAX	25.3	23.0	25.3	22.3	20.9	22.8	23.4	23.3	24.4	16.6	14.9	9.5	4.0	4.8	3.6	3.9	4.3	5.0	9.9	13.7	17.8	20.7	19.3	26.0			
HOURLY AVG	8	9	9	7	8	10	9	8	6	4	3	2	2	2	2	2	2	2	3	5	6	6	7	8			

STATUS FLAG CODES

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

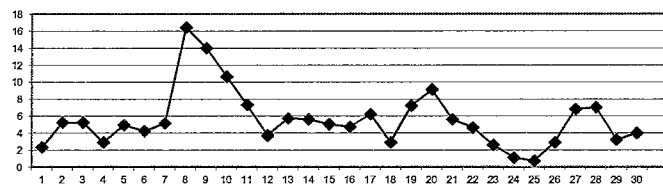
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1 HR 159 PPB

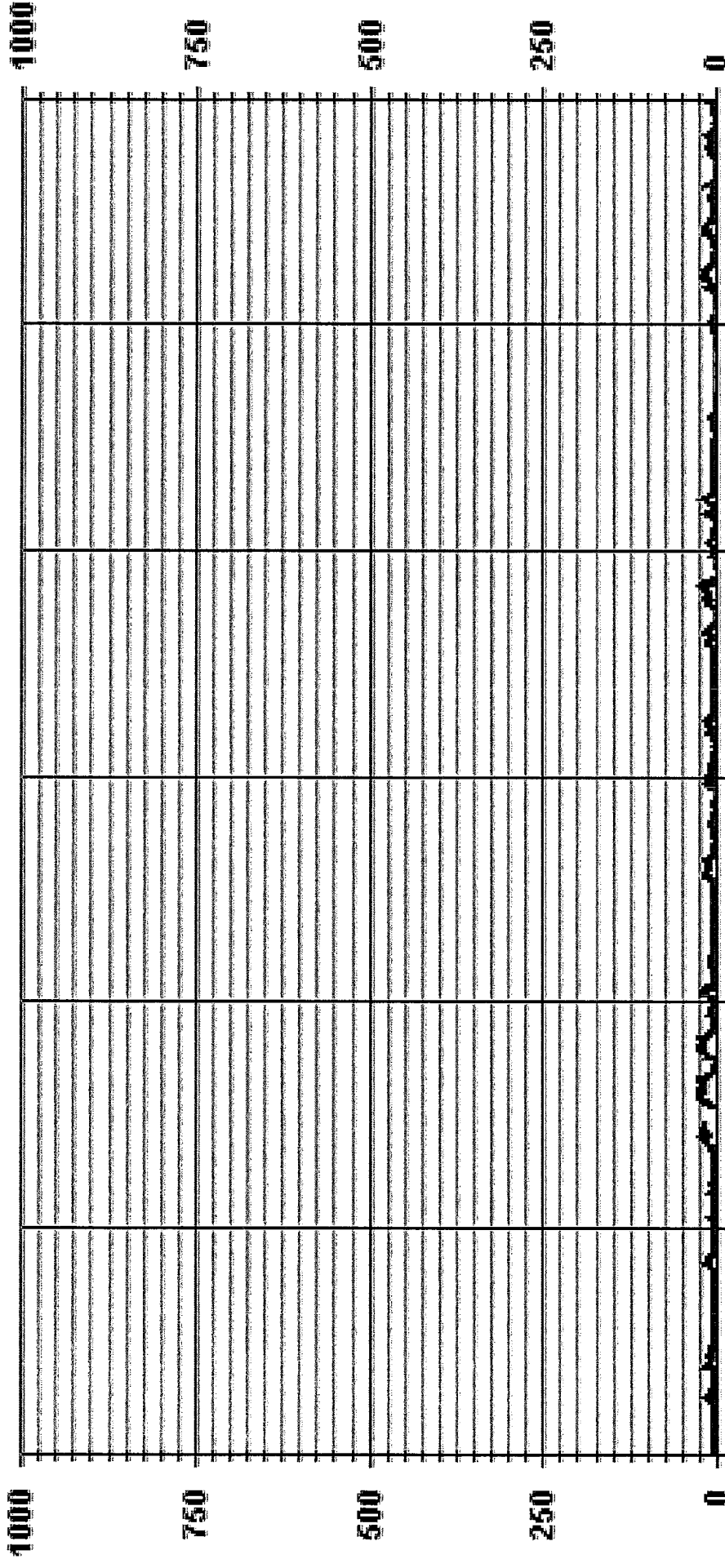
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	671					
MAXIMUM 1-HR AVERAGE:	26	PPB	@ HOUR(S)	23	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	16.4	PPB			ON DAY(S)	8
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	14	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	5.48		MONTHLY AVERAGE:	5.4	PPB	

24 HOUR AVERAGES FOR APRIL 2015



01 Hour Averages



— LICA35 NO2_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Elk Point Airport Site - APRIL 2015

JOB # 2833-2015-04-35- C

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX	24-HOUR AVG.	RDGS.	
1	3.1	2.6	3.2	2.7	3.4	2.6	S	3.6	4.4	4.3	3.4	2.3	2.1	1.9	3.3	3.0	3.6	4.4	4.4	3.7	3.2	2.9	2.9	2.6	4.4	3.2	24	
2	2.6	2.6	3.0	6.7	9.6	S	10.1	18.4	9.0	10.3	10.9	6.6	4.6	3.9	3.7	4.7	4.4	4.0	3.4	2.7	3.1	5.1	6.8	24.5	24.5	7.0	24	
3	14.9	10.5	15.4	16.0	S	14.4	14.2	10.8	8.1	10.9	5.8	4.2	3.6	27.6	2.4	R	2.9	3.0	3.2	3.4	2.9	2.9	2.6	2.4	27.6	8.3	23	
4	2.9	3.0	2.7	S	3.0	3.2	5.4	6.2	5.8	5.6	2.7	2.5	2.5	2.8	3.2	3.4	3.9	3.0	2.6	3.8	3.5	3.3	6.2	10.7	10.7	4.0	24	
5	5.7	3.7	S	10.1	9.5	13.9	18.8	17.1	12.9	12.0	6.5	4.1	2.9	3.2	3.1	2.9	2.9	2.7	3.0	3.8	5.0	3.5	4.6	4.6	18.8	6.8	24	
6	6.6	S	3.6	3.4	3.6	5.5	12.6	7.7	5.7	5.9	5.1	4.8	4.4	4.7	3.9	4.3	3.8	3.7	5.9	7.4	13.1	12.5	5.6	7.1	13.1	6.1	24	
7	S	8.4	7.3	5.3	5.8	7.9	8.5	4.3	4.5	4.3	4.5	3.8	3.4	4.0	4.2	5.7	5.9	6.4	7.8	13.7	14.4	15.2	15.2	S	15.2	7.3	24	
8	21.2	23.0	21.3	15.2	19.8	20.2	20.0	20.3	C	C	C	C	C	C	C	C	C	C	C	13.8	20.2	23.2	26.6	S	30.3	30.3	21.2	24
9	29.2	26.9	26.0	22.5	21.0	21.3	21.3	25.2	25.8	21.8	20.0	18.3	4.1	3.0	2.7	2.8	3.0	3.1	15.0	19.6	13.9	S	28.1	28.8	29.2	17.5	24	
10	24.8	26.4	27.8	24.8	23.5	24.7	22.4	14.6	14.2	11.2	6.8	4.9	5.4	4.1	4.1	4.0	3.8	7.7	13.3	10.5	S	11.5	11.6	4.3	27.8	13.3	24	
11	4.6	7.3	8.7	7.8	18.0	22.9	22.4	27.4	23.4	16.3	6.1	3.3	2.7	2.8	3.5	2.5	1.8	4.4	3.4	S	6.1	25.0	25.4	7.9	27.4	11.0	24	
12	18.0	9.5	15.1	6.2	6.6	6.6	6.3	5.1	3.0	2.8	3.2	2.4	2.3	2.4	3.0	3.0	3.5	S	3.2	3.6	4.8	5.3	5.3	18.0	5.4	24		
13	5.4	5.6	5.4	4.2	4.7	6.3	5.5	3.5	3.5	2.9	2.5	2.5	2.2	1.9	2.1	2.3	1.9	S	12.4	19.6	23.5	25.6	23.4	19.5	25.6	8.1	24	
14	21.2	14.3	11.4	10.3	18.3	25.0	11.6	7.5	5.6	4.9	4.2	6.9	4.2	6.8	5.7	3.7	S	2.5	2.4	3.4	2.5	2.8	5.1	12.9	25.0	8.4	24	
15	10.4	10.9	10.5	6.7	3.2	3.2	8.5	3.6	2.0	2.6	2.6	2.5	2.0	1.9	1.8	S	2.2	2.3	5.4	18.5	20.4	13.6	17.9	17.6	20.4	7.4	24	
16	8.2	20.6	16.8	10.1	11.1	12.8	10.6	8.7	5.8	3.1	2.1	2.9	1.9	2.0	S	2.5	3.3	3.8	3.4	1.7	3.2	6.5	12.3	16.5	20.6	7.4	24	
17	13.3	8.6	8.6	18.1	17.9	16.7	15.1	17.1	15.6	13.8	4.0	3.6	2.1	S	3.3	3.4	2.9	5.2	5.6	7.1	4.9	6.4	10.4	9.3	18.1	9.3	24	
18	7.4	7.1	7.1	5.8	3.8	4.0	2.7	2.7	3.4	3.0	2.8	1.8	S	1.9	1.8	2.7	2.5	2.3	2.4	2.5	2.4	4.8	14.6	15.3	15.3	4.6	24	
19	11.8	13.3	13.3	10.3	19.1	19.5	18.9	16.8	13.7	3.9	2.1	S	1.7	1.7	1.4	1.5	1.9	1.7	9.0	9.5	12.5	17.9	18.9	10.6	19.5	10.0	24	
20	20.0	21.1	16.6	18.2	18.4	22.3	28.0	28.6	9.2	7.3	S	C	C	C	C	C	C	1.5	1.5	1.8	2.2	8.2	16.8	6.9	28.6	13.4	24	
21	8.8	14.1	8.2	12.5	15.5	19.0	16.0	5.7	5.1	S	2.5	2.8	2.8	3.3	2.0	1.8	2.2	2.8	7.5	15.9	23.1	15.6	10.2	8.4	23.1	8.9	24	
22	5.4	6.1	17.3	18.2	31.1	18.0	10.6	7.4	S	3.7	3.7	2.8	2.1	1.7	2.4	2.3	2.5	3.1	2.6	7.4	3.8	2.3	2.4	3.1	31.1	7.0	24	
23	2.9	3.1	3.6	3.4	3.1	11.3	6.1	S	5.3	2.7	2.9	2.6	1.6	1.8	1.3	1.5	2.2	6.3	3.4	3.5	2.3	3.4	14.7	10.5	14.7	4.3	24	
24	10.5	6.0	7.9	2.7	1.5	S	1.2	1.3	0.9	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	1.7	2.1	2.0	0.7	0.9	0.5	0.6	10.5	2.0	24
25	1.0	1.0	1.1	1.1	1.3	S	1.5	1.0	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	2.4	2.8	4.8	2.4	2.8	4.8	1.4	24	
26	3.8	4.6	13.6	6.2	S	6.3	3.4	2.1	1.4	1.2	1.0	0.8	0.9	1.0	0.9	1.2	1.1	1.5	2.5	12.6	33.5	8.8	14.3	13.5	33.5	5.9	24	
27	22.5	23.6	25.0	S	20.8	21.1	16.1	35.3	27.6	4.2	3.0	2.9	3.0	1.9	1.4	1.7	1.3	2.4	5.6	8.5	4.1	4.6	5.7	16.6	35.3	11.3	24	
28	10.5	26.1	S	18.2	17.6	21.5	15.5	12.0	10.3	4.5	2.5	3.4	3.8	3.8	6.5	4.3	4.3	8.1	10.9	9.0	6.9	15.6	8.0	7.6	26.1	10.0	24	
29	6.7	S	26.6	8.4	7.2	2.3	1.2	1.2	1.2	1.2	1.0	0.9	1.1	0.6	0.7	1.1	2.9	1.9	10.7	12.4	16.2	18.1	7.7	5.2	26.6	5.9	24	
30	S	17.5	8.4	14.1	11.3	15.3	8.6	5.4	4.6	2.4	1.3	3.0	3.3	1.3	1.2	1.8	2.6	2.6	2.2	3.1	7.2	6.1	13.3	S	17.5	6.2	24	
HOURLY MAX	29.2	26.9	27.8	24.8	31.1	25.0	28.0	35.3	27.6	21.8	20.0	18.3	5.4	27.6	6.5	5.7	5.9	8.1	15.0	20.2	33.5	26.6	28.1	30.3				
HOURLY AVG	10.8	11.7	12.0	10.3	11.8	13.2	12.2	11.1	8.3	6.0	4.1	3.6	2.7	3.5	2.6	2.7	2.8	3.4	5.7	8.0	9.1	9.6	10.8	10.9				

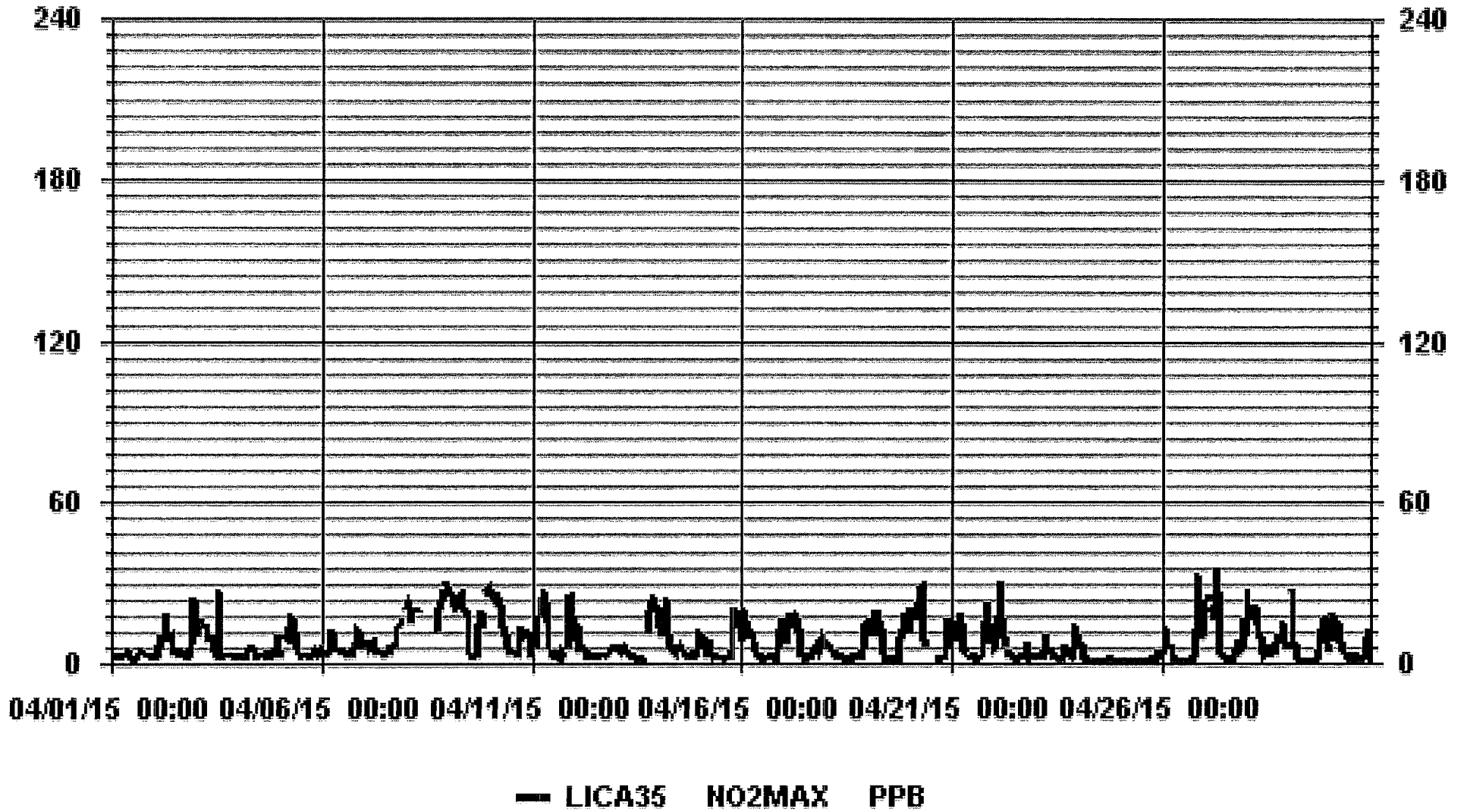
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	671
MAXIMUM INSTANTANEOUS VALUE:	35.3 PPB @ HOUR(S) 7 ON DAY(S) 27
VAR-VARIOUS	
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	16 HRS
STANDARD DEVIATION:	7.20
OPERATIONAL TIME:	719 HRS

01 Hour Averages



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

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	2.37	3.41	3.70	4.89	8.16	14.09	5.48	2.96	3.70	2.22	3.56	8.45	12.75	11.27	8.16	4.74	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.37	3.41	3.70	4.89	8.16	14.09	5.48	2.96	3.70	2.22	3.56	8.45	12.75	11.27	8.16	4.74	

Calm : .00 %

Total # Operational Hours : 674

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	16	23	25	33	55	95	37	20	25	15	24	57	86	76	55	32	674
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	16	23	25	33	55	95	37	20	25	15	24	57	86	76	55	32	

Calm : .00 %

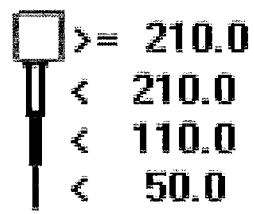
Total # Operational Hours : 674

Logger : 35 Parameter : NO2_

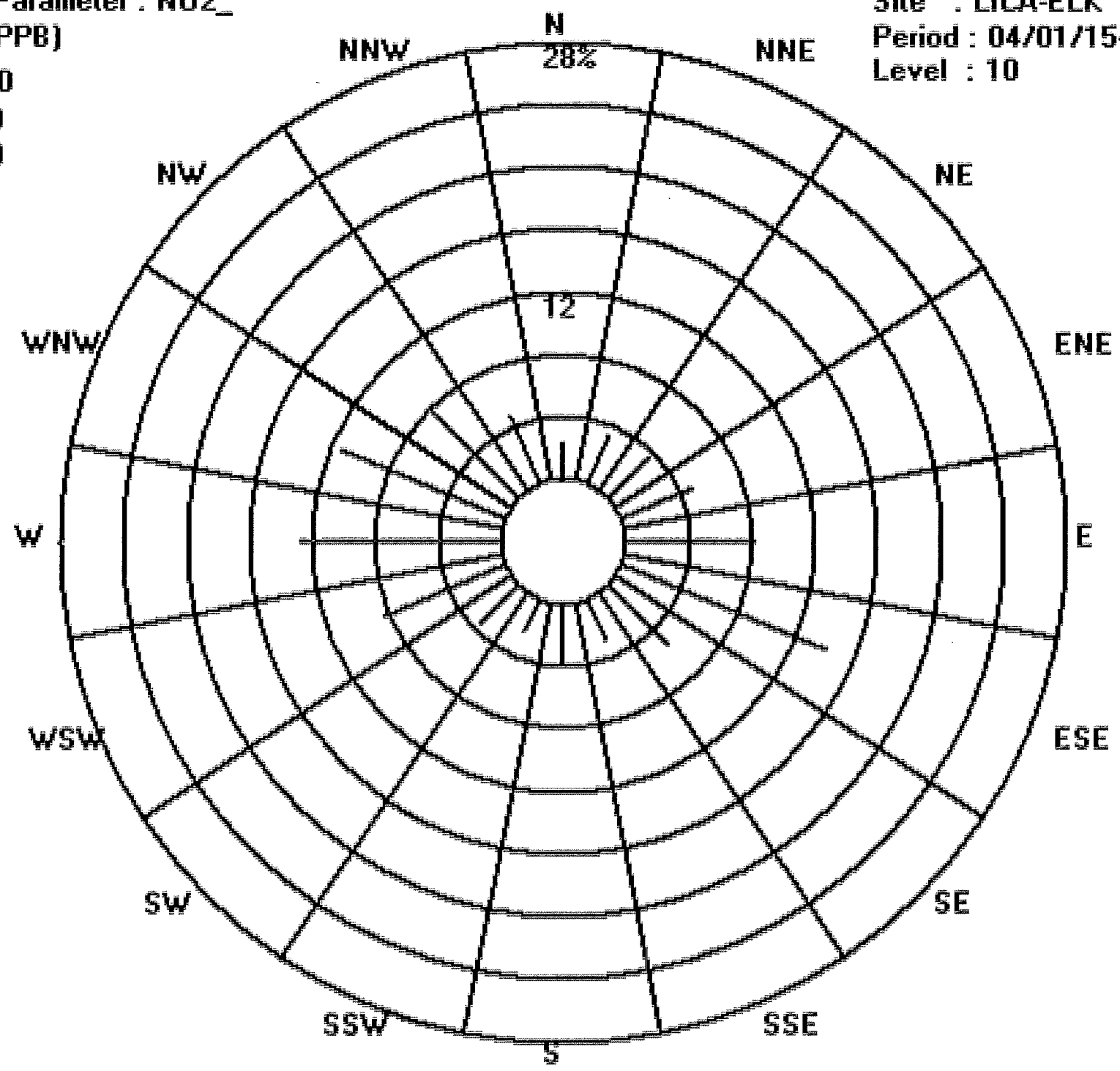
Site : LICA-ELK

Class Limits (PPB)

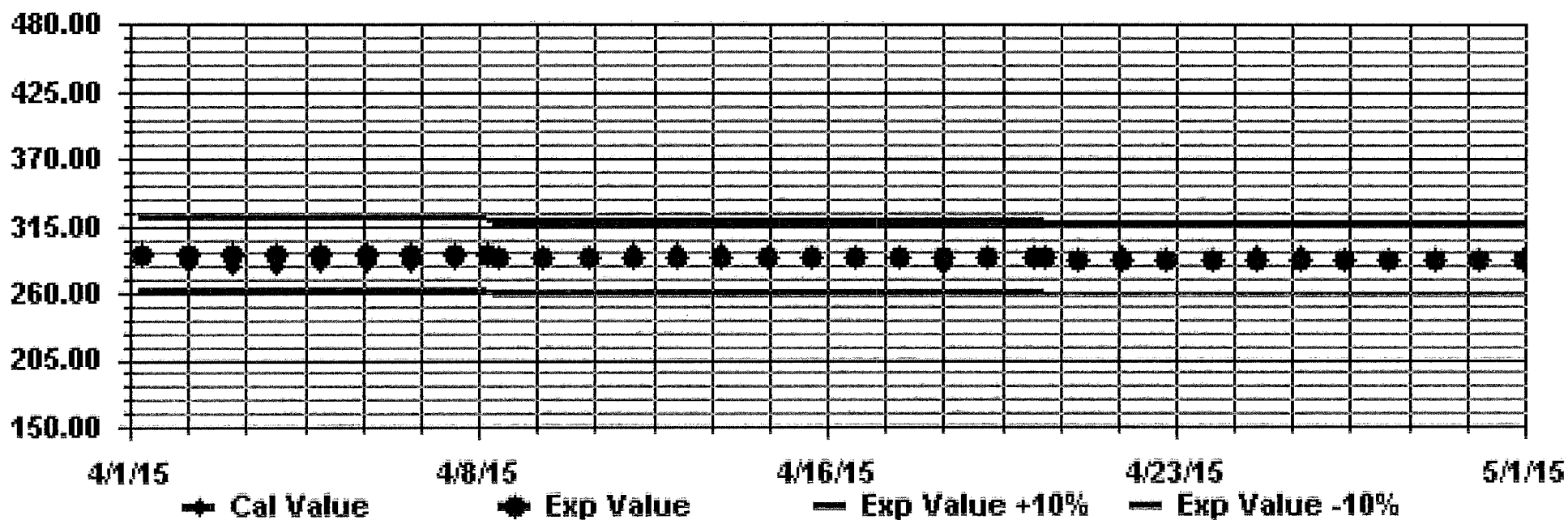
Period : 04/01/15-04/30/15



Level : 10



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



OZONE

OZONE (O3) hourly averages in ppb

MST

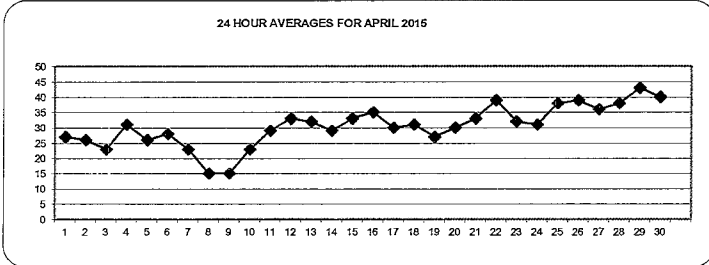
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX	AVG.		
DAY																												
1	28	25	24	25	25	26	S	24	23	22	23	26	27	29	28	27	26	28	28	28	28	29	31	31	31	31	26.6	24
2	31	30	29	22	19	S	17	13	23	22	24	28	31	32	32	30	28	29	30	30	29	25	21	13	32	25.6	24	
3	15	14	11	16	S	11	14	18	19	21	26	27	24	30	30	28	29	29	27	26	27	30	31	31	31	23.2	24	
4	30	30	28	S	29	27	24	27	29	31	35	35	36	37	37	36	36	37	36	34	33	30	25	17	37	31.3	24	
5	20	21	S	12	11	7	2	15	17	20	32	34	35	33	35	36	36	36	35	33	30	31	30	29	36	25.7	24	
6	29	S	30	28	27	24	18	24	25	25	27	29	32	35	36	36	36	36	33	30	22	23	25	25	36	28.5	24	
7	S	21	20	24	22	22	23	25	28	29	28	29	29	28	28	26	25	24	21	19	12	8	S	S	29	22.5	24	
8	6	3	7	7	3	3	3	3	3	4	9	21	32	36	36	36	37	35	25	20	14	4	S	X	37	15.8	23	
9	X	X	X	X	X	X	X	X	C	C	C	C	C	C	35	40	38	39	37	23	21	S	X	X	40	33.3	14	
10	X	X	X	X	X	X	X	X	17	23	39	43	31	34	41	42	42	38	30	36	S	31	34	33	43	34.3	16	
11	31	27	18	13	7	1	1	4	7	31	42	45	47	46	46	47	48	42	41	S	37	26	26	32	48	28.9	24	
12	25	24	24	27	27	25	28	31	34	36	37	39	39	40	39	38	38	38	S	37	36	34	32	31	40	33.0	24	
13	31	30	31	33	33	30	31	33	35	37	38	41	43	44	45	46	48	S	40	20	17	12	13	16	48	32.5	24	
14	23	23	24	25	20	20	29	33	35	36	35	32	35	34	32	35	S	35	33	31	29	31	26	15	36	29.2	24	
15	14	14	19	24	28	30	28	34	37	39	39	41	43	44	44	S	47	47	44	31	25	30	27	26	47	32.8	24	
16	31	23	23	27	24	22	27	28	33	39	40	40	45	47	S	48	48	47	46	42	38	32	31	25	48	35.0	24	
17	24	26	25	20	15	16	17	13	17	29	41	45	47	S	46	46	44	42	42	35	32	30	22	21	47	30.2	24	
18	24	25	24	26	27	28	29	29	30	32	35	35	S	37	40	38	38	37	35	36	34	30	22	19	40	30.9	24	
19	20	17	18	19	16	8	9	16	22	35	40	S	41	42	43	44	45	45	38	25	21	15	16	16	45	26.6	24	
20	9	10	10	6	3	0	1	13	30	35	S	43	50	50	50	51	51	50	49	45	42	36	30	33	51	30.3	24	
21	29	23	21	18	13	9	14	23	28	S	38	45	46	48	50	50	49	49	46	37	28	31	30	32	50	32.9	24	
22	32	32	23	19	14	18	25	30	S	37	38	42	45	48	51	50	50	50	51	48	48	48	45	44	51	38.6	24	
23	42	40	37	34	33	29	30	S	21	26	24	29	35	38	39	40	43	39	38	28	28	27	25	21	43	32.4	24	
24	22	23	24	26	25	24	S	25	26	28	29	31	33	36	37	37	37	34	33	33	33	35	35	37	37	30.6	24	
25	34	33	33	32	31	S	29	34	37	38	39	41	42	43	44	45	44	43	42	41	39	37	37	36	45	38.0	24	
26	35	34	27	31	S	29	32	37	40	41	42	43	45	46	48	49	50	49	42	33	35	31	28	50	39.0	24		
27	17	15	10	S	12	10	19	21	27	34	41	44	46	47	49	50	53	55	52	47	48	47	43	36	55	35.8	24	
28	31	19	S	18	18	19	20	24	30	41	48	50	52	53	52	53	53	50	47	44	41	34	36	35	53	37.7	24	
29	31	S	17	36	40	44	46	47	47	47	50	52	55	54	54	52	50	46	41	34	32	38	38	55	43.4	24		
30	S	26	30	26	26	21	28	30	35	42	44	44	47	50	52	53	51	53	51	51	47	45	37	S	53	40.4	24	
HOURLY MAX	42	40	37	36	40	44	46	47	47	47	48	50	52	55	54	54	53	55	52	51	48	48	45	44				
HOURLY AVG	25.5	23.4	22.6	22.8	21.1	19.3	20.9	24.2	27.0	31.4	35.0	37.6	39.6	40.8	41.3	41.8	42.1	41.0	38.8	34.2	31.2	29.5	28.7	27.6				

STATUS FLAG CODES

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

OBJECTIVE LIMIT:

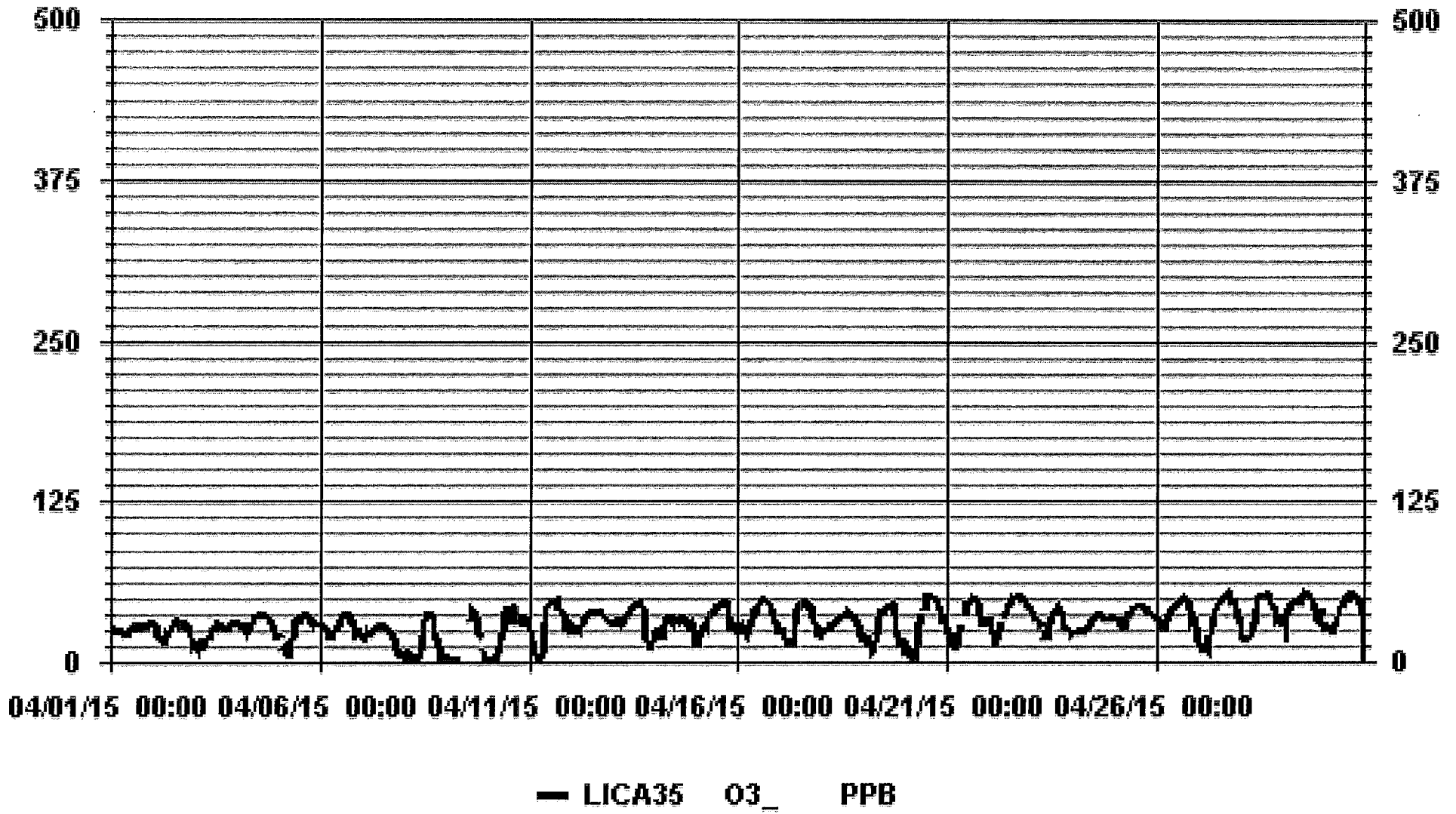
ALBERTA ENVIRONMENT: **1-HR: 82 PPB**



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	662					
MAXIMUM 1-HR AVERAGE:	55	PPB	@ HOUR(S)	17, 13	ON DAY(S)	27, 29
MAXIMUM 24-HR AVERAGE:	43.4	PPB			ON DAY(S)	29
					VAR-VARIOUS	
I2S CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	701	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	97.4	%	
STANDARD DEVIATION:	11.48		MONTHLY AVERAGE:	31	PPB	

01 Hour Averages





OZONE MAX instantaneous maximum in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX	24-HOUR AVG	RDGS.	
1	29	26	25	26	26	S	25	24	24	26	28	29	30	30	29	27	30	30	28	29	30	31	32	32	32	27.8	24	
2	31	31	30	25	20	S	19	21	26	24	27	30	31	33	33	31	30	30	31	31	30	29	23	22	33	27.7	24	
3	17	15	14	21	S	15	17	21	20	24	27	28	29	35	33	R	31	30	28	27	29	31	32	31	35	25.2	23	
4	31	31	30	S	30	29	26	29	30	34	36	37	37	37	37	37	37	40	37	35	34	32	29	20	40	32.8	24	
5	23	23	S	14	16	10	8	18	18	30	34	35	36	35	35	36	36	36	36	35	32	32	31	36	36	27.9	24	
6	31	S	31	30	28	26	23	25	25	27	28	32	34	39	39	39	37	37	35	32	26	26	26	26	39	30.5	24	
7	S	22	22	25	24	25	24	26	30	30	29	30	30	29	29	28	26	25	23	22	14	12	6	S	30	24.1	24	
8	8	4	11	10	S	5	4	4	6	5	17	28	35	38	40	38	39	39	29	24	18	11	S	X	40	19.0	23	
9	X	X	X	X	X	X	X	X	C	C	C	C	C	C	42	50	39	43	44	29	25	S	X	X	50	38.9	14	
10	X	X	X	X	X	X	X	X	20	32	44	45	43	40	43	43	43	42	35	41	S	35	38	37	45	38.7	16	
11	35	30	24	17	11	3	2	7	19	37	47	46	49	48	48	50	49	46	45	S	38	34	31	34	50	32.6	24	
12	34	26	29	29	29	27	30	34	35	37	41	42	42	43	42	40	41	41	S	38	36	36	33	32	43	35.5	24	
13	32	31	33	34	35	32	33	34	37	38	41	43	45	46	47	48	49	S	47	33	22	18	19	19	49	35.5	24	
14	28	27	27	28	24	27	32	35	36	37	37	34	36	41	34	39	S	36	35	33	32	32	29	20	41	32.1	24	
15	15	16	21	27	29	32	31	37	39	40	40	43	45	45	46	S	49	48	48	40	33	33	30	30	49	35.5	24	
16	33	29	26	30	27	25	28	30	39	43	44	47	47	48	S	50	50	50	50	48	45	42	36	34	34	50	38.5	24
17	26	28	28	26	17	20	20	16	18	40	44	48	48	S	47	47	46	44	46	45	35	38	29	23	48	33.9	24	
18	27	27	27	28	29	29	30	30	31	34	36	36	S	39	42	40	41	40	38	38	37	34	28	21	42	33.1	24	
19	21	19	22	22	20	11	14	20	30	41	41	S	44	44	44	45	46	46	45	29	24	19	18	19	46	29.7	24	
20	14	14	15	7	6	1	2	27	32	45	S	50	51	51	52	52	53	51	51	47	45	40	35	35	53	33.7	24	
21	33	28	26	22	18	15	22	25	30	S	43	47	49	50	51	50	51	51	51	43	37	35	32	36	51	36.7	24	
22	38	36	33	26	21	26	29	33	S	39	41	44	47	51	52	52	52	53	53	50	50	50	47	45	53	42.1	24	
23	44	41	39	35	35	33	33	S	24	29	26	35	37	39	41	42	49	43	40	35	29	30	29	25	49	35.3	24	
24	26	26	27	27	28	26	S	27	29	30	30	33	35	38	38	39	38	38	36	34	35	34	35	36	39	32.4	24	
25	35	35	34	33	32	S	32	37	38	39	40	43	43	45	46	47	47	45	43	42	43	39	39	39	47	39.8	24	
26	37	37	32	34	S	32	34	41	41	42	43	45	46	47	49	50	51	52	52	49	41	38	37	35	52	42.0	24	
27	29	24	16	S	16	17	23	25	30	40	44	47	47	49	51	51	55	57	56	49	49	49	46	43	57	39.7	24	
28	35	31	S	22	24	24	24	26	39	47	50	53	54	56	56	56	56	54	52	49	43	42	38	37	56	42.1	24	
29	35	S	30	41	42	50	47	48	48	48	50	51	54	56	55	56	53	52	50	50	39	41	41	39	56	46.8	24	
30	S	31	32	30	30	27	30	32	39	45	45	46	50	51	54	54	53	56	54	53	51	47	41	S	56	43.2	24	
HOURLY MAX	44	41	39	41	42	50	47	48	48	48	50	53	54	56	56	56	56	57	56	53	51	50	47	45				
HOURLY AVG	28.7	26.5	26.3	25.7	23.9	22.8	23.7	27.1	29.8	35.0	37.5	40.2	41.9	43.0	43.3	44.3	43.9	43.3	42.0	38.1	34.4	33.2	31.7	30.8				

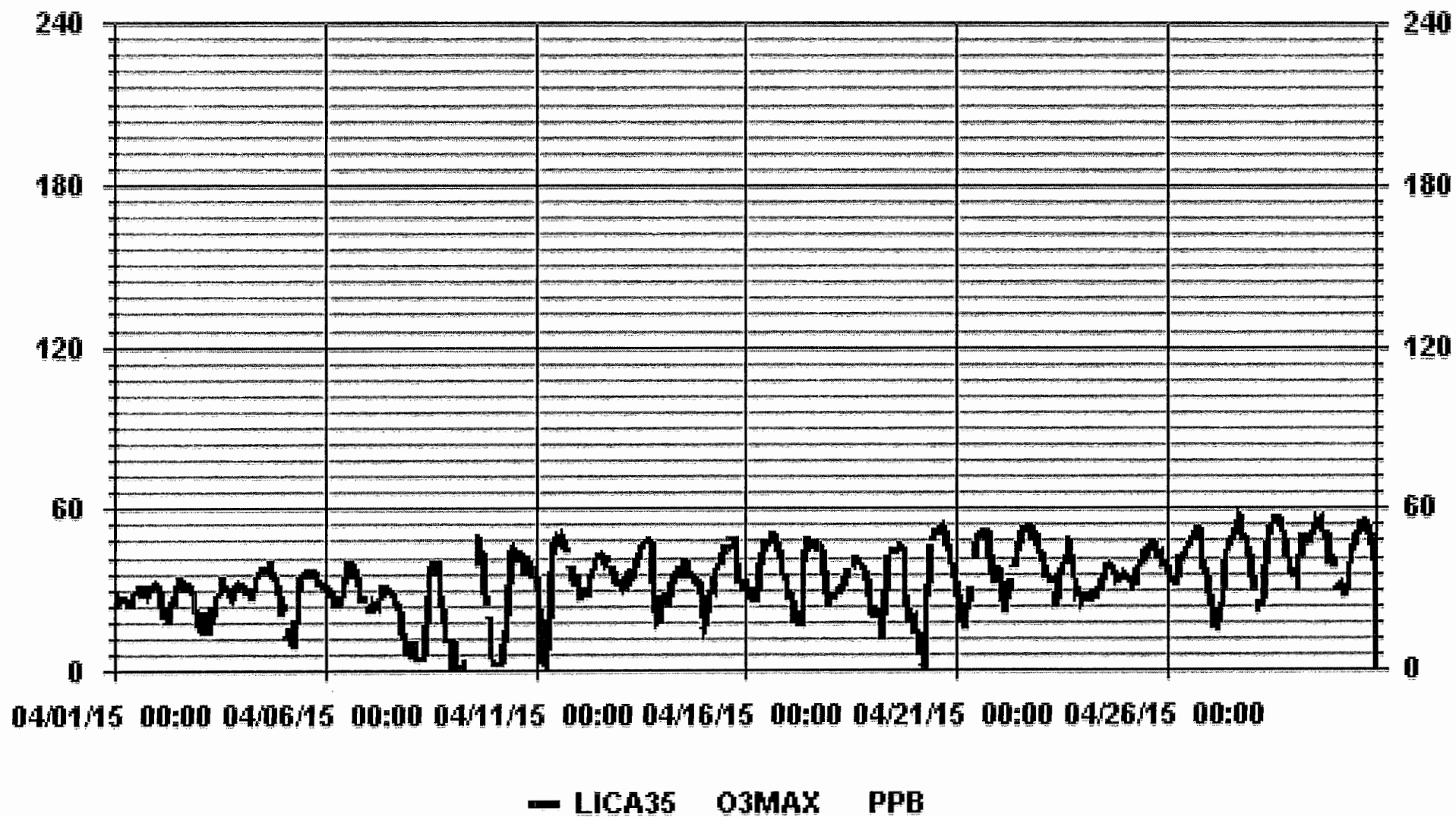
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	662
MAXIMUM INSTANTANEOUS VALUE:	57 PPB @ HOUR(S) 17 ON DAY(S) 27
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION:	11.14
OPERATIONAL TIME:	700 HRS

01 Hour Averages



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

April 2015

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA-ELK
 Parameter : O3_
 Units : PPE

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50	2.19	3.22	3.66	4.98	7.91	13.04	5.27	2.63	2.63	2.05	3.07	8.06	12.02	10.99	7.62	4.69	94.13
< 110	.14	.14	.00	.00	.00	.73	.00	.29	.87	.14	.14	.58	.73	.73	1.17	.14	5.86
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.34	3.37	3.66	4.98	7.91	13.78	5.27	2.93	3.51	2.19	3.22	8.65	12.75	11.73	8.79	4.83	

Calm : .00 %

Total # Operational Hours : 682

Distribution By Samples

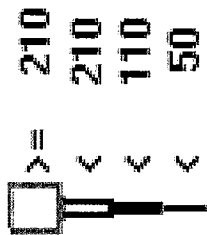
Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50	15	22	25	34	54	89	36	18	18	14	21	55	82	75	52	32	642
< 110	1	1				5		2	6	1	1	4	5	5	8	1	40
< 210																	
>= 210																	
Totals	16	23	25	34	54	94	36	20	24	15	22	59	87	80	60	33	

Calm : .00 %

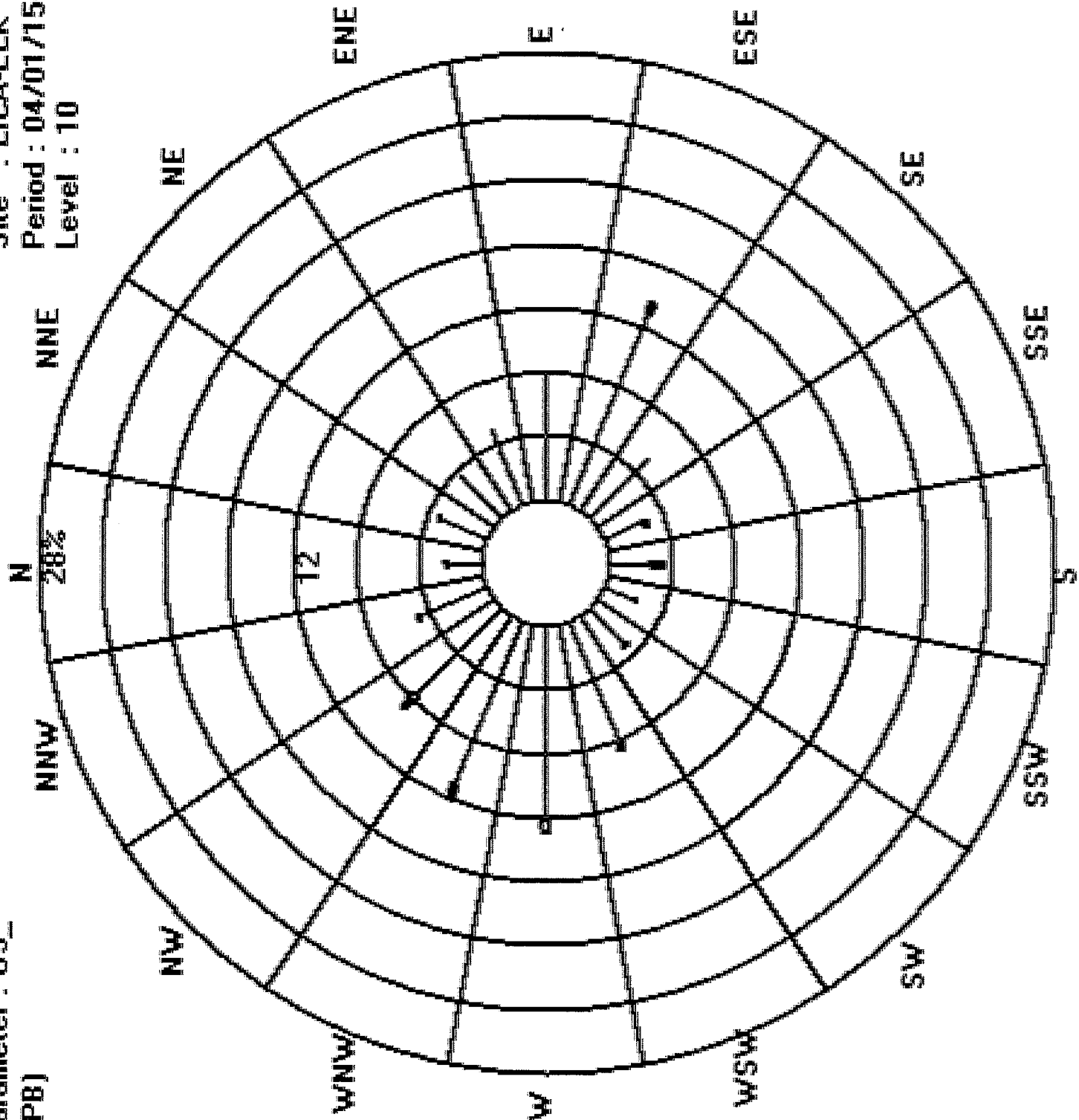
Total # Operational Hours : 682

Logger : 35 Parameter : 03_

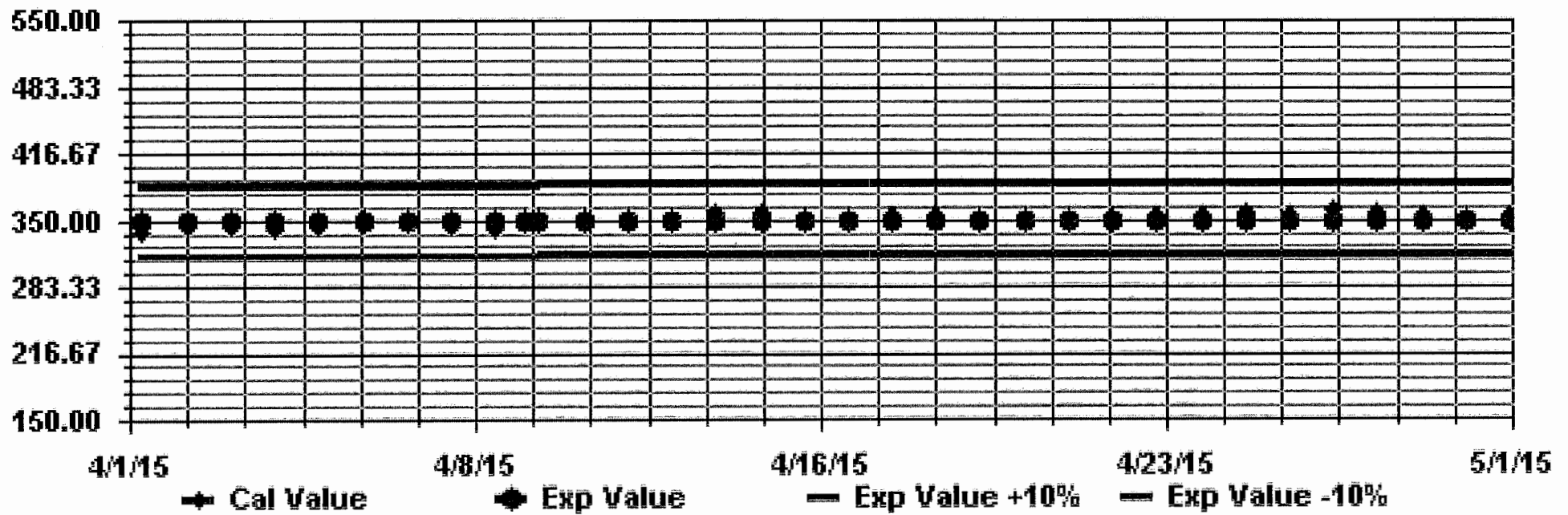
Class Limits (PPB)



Site : LICA-ELK
Period : 04/01/15-04/30/15
Level : 10



Calibration Graph for Site: LICA35 Parameter: O3_ Sequence: 03 Phase: SPAN



PARTICULATE MATTER 2.5

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

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	3	2	2	0	4	3	1	0	1	0	0	2	1	3	0	3	5	1	2	2	1	4	6	2	6	2.0	24
2	0	1	4	3	0	5	5	4	1	4	4	2	3	2	4	1	1	2	4	3	2	4	5	6	6	2.9	24
3	5	8	1	4	6	5	6	7	3	3	5	2	5	7	2	0	0	3	1	2	5	4	5	4	8	3.9	24
4	4	6	5	4	0	5	4	2	0	3	1	4	3	1	1	3	4	4	3	1	4	2	5	10	10	3.3	24
5	10	2	5	9	13	6	8	6	4	6	3	5	1	4	3	3	5	3	0	3	4	3	2	4	13	4.7	24
6	3	1	2	2	5	0	6	5	4	3	2	2	5	4	4	7	4	4	4	5	5	3	5	6	7	3.8	24
7	5	4	6	5	4	4	6	6	5	4	5	1	1	4	2	5	0	5	8	5	6	8	6	4	8	4.5	24
8	5	5	4	3	3	0	0	1	5	11	9	7	4	3	0	3	1	1	3	2	3	6	3	6	11	3.7	24
9	4	1	3	2	4	6	4	7	4	0	4	4	C	C	2	2	6	5	1	1	4	0	4	2	7	3.2	24
10	3	2	5	6	4	10	8	4	4	5	9	0	Y	0	5	8	5	6	7	3	3	8	3	2	10	4.8	23
11	2	7	2	2	7	6	12	9	11	5	3	3	2	5	3	0	6	4	0	5	2	1	3	1	12	4.2	24
12	0	3	3	0	4	0	0	3	2	3	3	0	1	0	3	0	1	0	3	0	4	0	2	0	4	1.5	24
13	1	2	1	1	0	0	2	1	4	1	3	X	2	3	1	5	0	2	3	6	2	2	4	3	6	2.1	23
14	3	1	2	5	7	3	6	2	2	2	3	2	5	3	6	6	2	5	7	4	4	0	5	0	7	3.5	24
15	8	7	3	3	1	5	2	0	2	1	3	2	0	X	1	8	0	3	6	0	3	0	1	3	8	2.7	23
16	1	4	2	3	4	4	5	3	0	1	0	2	1	2	0	3	2	2	1	0	1	4	0	2	5	2.0	24
17	0	2	3	0	2	0	0	0	1	X	0	1	1	3	0	1	3	3	4	2	3	0	5	2	5	1.6	23
18	0	2	2	0	1	3	0	1	1	0	2	0	2	1	0	2	0	1	0	3	2	7	5	0	7	1.5	24
19	2	4	1	2	0	2	5	5	2	0	3	1	0	0	4	2	2	2	3	3	4	1	3	5	5	2.3	24
20	7	2	8	4	4	4	3	4	0	6	3	4	0	4	0	3	3	0	0	2	4	1	0	3	8	2.9	24
21	3	3	3	0	3	0	3	3	2	4	3	2	3	2	1	6	5	4	3	4	5	4	10	8	10	3.5	24
22	7	3	4	4	2	5	4	6	5	3	5	4	0	2	1	7	5	2	13	6	7	7	10	4	13	4.8	24
23	10	20	22	18	11	5	8	5	3	2	7	8	7	0	2	0	1	1	2	7	4	5	2	5	22	6.5	24
24	2	9	7	4	7	4	4	5	10	3	5	6	4	3	4	6	4	3	4	3	0	2	3	3	10	4.4	24
25	1	0	0	5	2	4	2	5	4	1	4	4	2	4	2	2	4	7	0	4	1	2	2	9	9	3.0	24
26	6	2	2	6	4	0	4	4	0	6	0	2	4	1	4	2	0	6	1	2	2	1	3	6	6	2.8	24
27	8	3	3	4	7	4	5	5	1	4	7	4	4	0	7	2	2	6	5	2	5	3	4	5	8	4.2	24
28	4	2	7	3	6	4	4	7	9	4	1	C	0	5	2	7	0	1	6	3	2	7	5	5	9	4.1	24
29	4	12	3	3	0	2	0	5	X	1	0	0	0	3	1	2	2	6	0	3	5	4	0	2	12	2.5	23
30	4	2	3	4	1	0	5	2	4	0	3	2	0	2	0	X	6	3	1	2	1	4	3	2	6	2.3	23
HOURLY MAX	10	20	22	18	13	10	12	9	11	11	9	8	7	7	7	8	6	7	13	7	7	8	10	10			
HOURLY AVG	3.8	4.1	3.9	3.6	3.9	3.3	4.1	3.9	3.2	3.0	3.3	2.7	2.2	2.5	2.2	3.4	2.6	3.2	3.2	2.9	3.3	3.2	3.8	3.8			

STATUS FLAG CODES

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

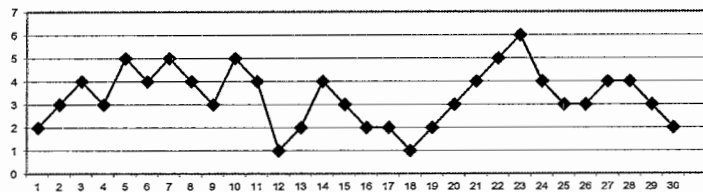
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 24-HR 30 ug/m3

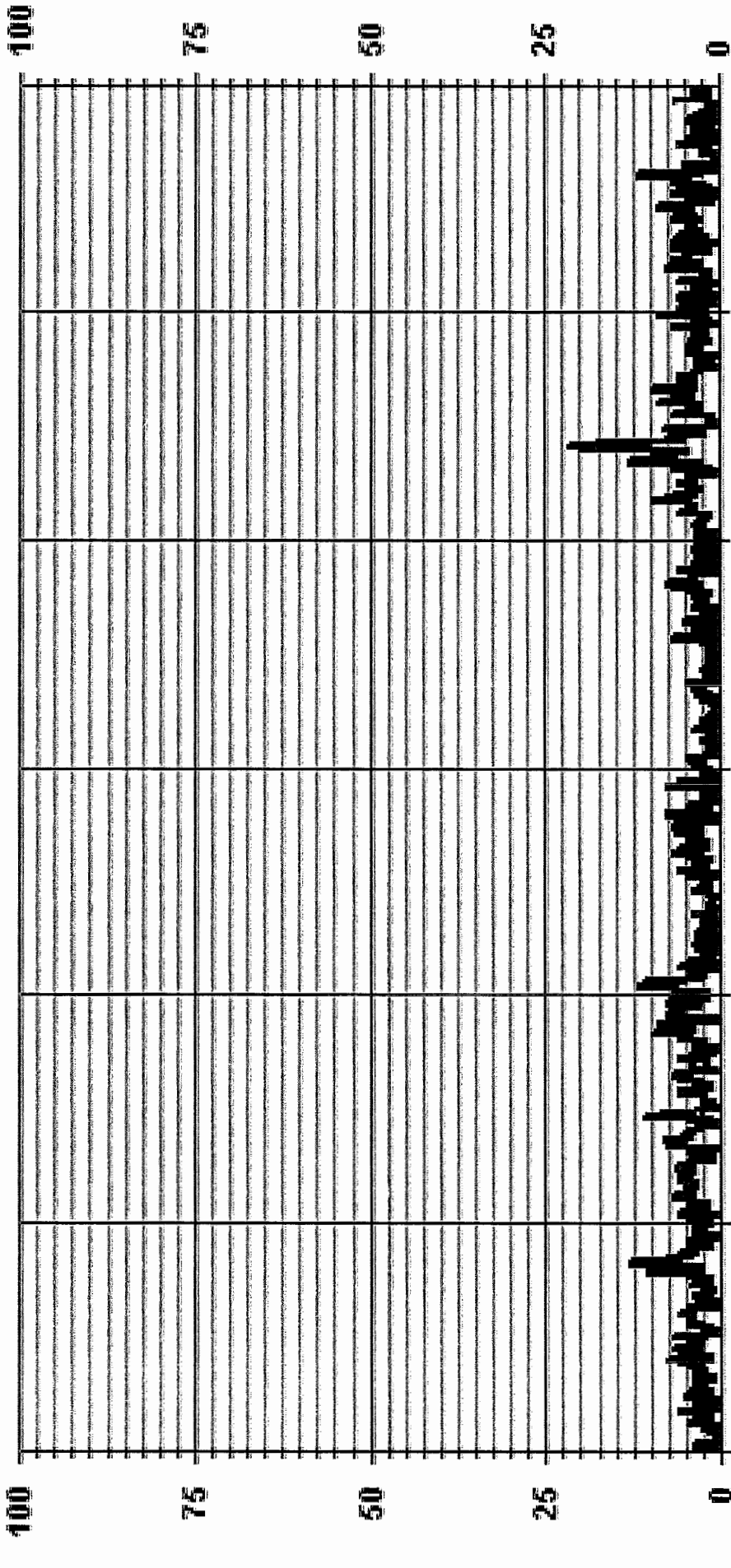
MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	608		
MAXIMUM 1-HR AVERAGE:	22.0 ug/m3 @ HOUR(S)	2	ON DAY(S) 23
MAXIMUM 24-HR AVERAGE:	6.5 ug/m3		ON DAY(S) 23
			VAR-VARIOUS
MONTHLY CALIBRATION TIME:	3 HRS	OPERATIONAL TIME:	714 HRS
		AMD OPERATION UPTIME:	99.2 %
STANDARD DEVIATION:	2.64	MONTHLY AVERAGE:	3.3 ug/m3

24 HOUR AVERAGES FOR APRIL 2015



01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA35 PM2 UG/M3

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

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	2.25	3.23	3.79	4.92	8.15	13.78	5.48	2.81	3.37	2.10	3.37	8.72	12.65	11.53	9.00	4.78	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.25	3.23	3.79	4.92	8.15	13.78	5.48	2.81	3.37	2.10	3.37	8.72	12.65	11.53	9.00	4.78	

Calm : .00 %

Total # Operational Hours : 711

Distribution By Samples

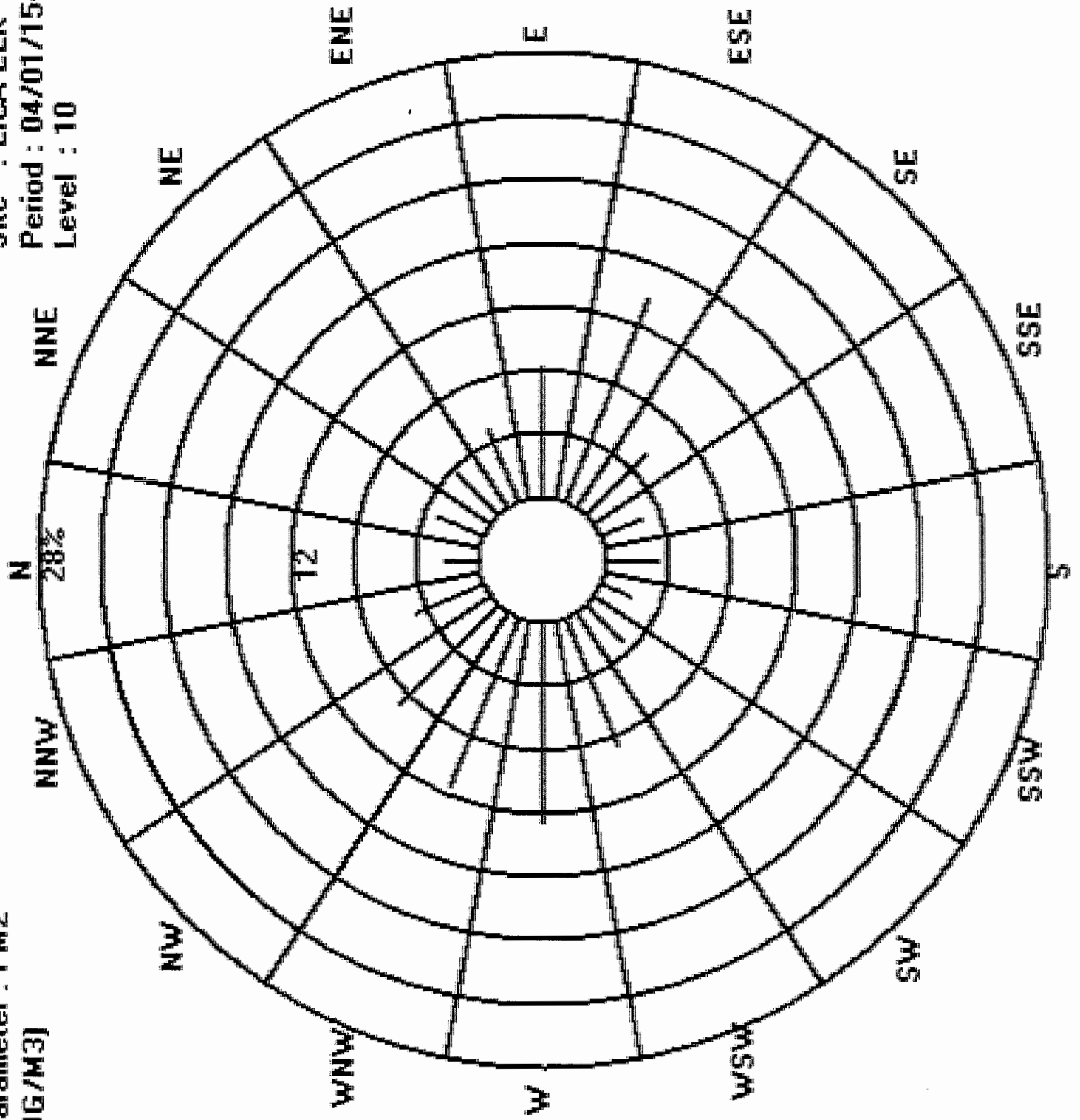
Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	16	23	27	35	58	98	39	20	24	15	24	62	90	82	64	34	711
< 60																	
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	16	23	27	35	58	98	39	20	24	15	24	62	90	82	64	34	

Calm : .00 %

Total # Operational Hours : 711

Site : LICA-ELK
Period : 04/01/15-04/30/15
Level : 10

Logger : 35 Parameter : PM2
Class Limits (UG/M3)



WIND SPEED

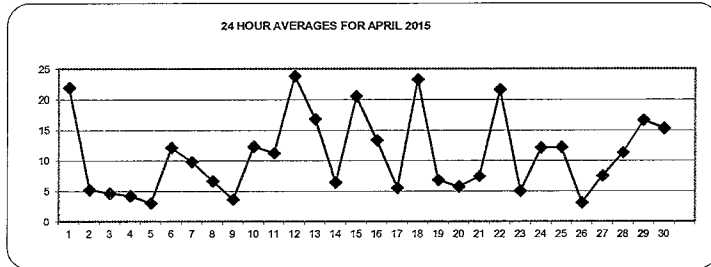
WIND SPEED (WS) hourly averages in km/hr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.
HOURLY MAX	HOURLY AVG	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MAX.	AVG.	
DAY 1		20.5	22.2	26.3	28.1	26.1	29.2	24.8	20.8	14.8	16.1	13.8	20.3	22.9	24.0	29.0	32.6	31.2	39.4	40.7	38.5	33.4	27.3	23.4	21.9	40.7	26.1	24
2		21.4	15.2	8.1	7.5	9.8	8.2	4.7	4.5	2.4	1.3	4.0	5.7	4.9	4.5	5.5	4.2	10.3	13.2	12.1	8.4	5.9	6.2	5.2	1.7	21.4	7.3	24
3		3.2	4.6	4.3	8.6	4.6	0.3	2.0	3.4	1.2	7.5	2.4	2.3	8.9	11.4	17.5	9.2	12.4	14.4	13.0	10.0	10.9	13.0	11.8	9.1	17.5	7.8	24
4		3.3	7.2	8.6	9.9	9.6	11.1	3.9	5.7	7.2	5.3	8.6	6.0	3.4	4.1	7.1	4.8	2.6	8.1	4.7	3.3	5.8	4.8	4.1	2.1	11.1	5.9	24
5		2.4	3.9	0.4	1.5	1.9	2.4	0.4	2.4	1.9	2.4	0.6	2.7	6.9	6.0	7.7	5.9	3.8	8.3	9.7	6.1	6.9	7.8	9.2	9.4	9.7	4.6	24
6		10.2	9.5	9.9	9.2	11.2	11.6	11.4	14.7	14.8	12.0	10.6	11.5	11.4	14.9	17.7	19.6	16.4	19.0	15.5	12.2	10.1	11.5	11.1	12.0	19.6	12.8	24
7		9.6	8.6	8.5	14.3	12.6	13.1	15.2	16.0	17.2	16.0	13.8	14.6	13.3	12.2	10.2	8.8	7.2	5.7	5.2	4.4	3.6	3.5	2.2	2.5	17.2	9.9	24
8		2.6	1.9	1.8	3.6	4.3	5.6	5.1	3.8	4.3	2.5	5.1	10.6	21.5	28.3	24.3	22.4	21.5	19.7	11.6	7.1	5.5	6.2	5.0	6.0	28.3	9.6	24
9		5.6	4.5	5.2	0.4	1.2	1.0	0.1	1.7	1.8	5.8	4.7	5.4	7.8	9.6	10.1	10.1	9.2	8.9	4.3	7.1	9.0	5.5	2.3	0.4	10.1	5.1	24
10		1.0	4.0	7.1	7.5	8.0	8.2	8.5	8.8	9.8	11.7	15.2	20.5	26.4	22.2	24.1	23.5	22.6	22.9	17.2	17.3	17.6	19.2	20.6	15.7	26.4	15.0	24
11		12.7	6.3	0.6	2.8	0.9	0.7	0.4	1.2	1.3	4.8	6.7	7.9	16.4	26.1	19.2	20.6	10.4	28.3	33.0	31.6	21.6	7.7	15.0	21.1	33.0	12.4	24
12		10.5	6.6	10.6	10.2	6.7	4.1	12.2	20.5	31.5	41.7	37.1	34.9	35.8	42.5	40.5	34.5	33.9	35.3	33.4	28.8	25.4	15.2	15.2	15.4	42.5	24.3	24
13		19.1	17.1	17.8	20.7	19.9	17.9	19.2	31.7	30.9	29.8	30.3	33.4	32.8	27.5	23.5	21.8	17.0	14.3	7.8	0.8	6.2	6.0	4.4	5.9	33.4	19.0	24
14		8.4	7.1	9.7	9.3	10.8	16.1	18.4	25.9	29.7	33.5	34.0	17.7	20.8	8.2	6.6	11.2	17.5	20.7	12.4	12.4	7.8	6.3	10.1	12.3	34.0	15.3	24
15		9.6	7.1	20.2	24.8	28.4	28.1	24.0	28.1	30.3	34.7	31.4	27.5	28.2	26.8	27.7	27.4	28.9	23.5	14.4	8.6	10.3	11.2	11.6	14.9	34.7	22.0	24
16		11.6	6.7	4.0	7.2	5.0	7.6	9.8	9.6	10.8	11.9	14.9	16.8	17.7	20.0	21.0	22.0	16.2	21.2	24.1	32.5	21.7	13.7	18.0	14.3	32.5	14.9	24
17		10.7	10.3	11.1	9.5	10.5	7.9	4.0	3.3	2.5	11.6	18.5	20.2	21.9	18.1	18.6	19.0	15.1	13.1	15.2	22.9	17.3	13.2	9.4	6.0	22.9	12.9	24
18		14.5	20.9	23.4	28.6	28.3	31.4	32.4	30.9	28.9	29.3	34.0	33.7	39.8	32.2	27.6	20.9	21.4	14.5	20.0	10.0	3.2	9.4	9.6	39.8	24.3	24	
19		11.0	7.9	9.3	10.2	12.0	10.9	11.2	7.8	1.2	6.6	15.4	14.1	17.2	11.4	13.2	9.9	14.5	9.1	3.5	2.4	6.4	6.3	5.3	3.4	17.2	9.2	24
20		2.3	4.3	2.9	0.4	0.6	1.2	2.4	4.8	7.9	8.5	16.3	14.8	17.4	20.7	22.4	22.2	17.5	17.4	18.7	12.2	17.0	15.8	12.8	15.4	22.4	11.5	24
21		9.3	7.2	8.6	7.9	7.7	9.3	8.5	10.6	10.4	11.8	14.1	16.6	15.3	12.7	9.7	9.8	8.1	7.6	6.8	5.8	6.9	7.1	4.2	5.1	16.6	9.2	24
22		5.9	3.0	1.7	4.3	3.3	5.8	7.9	15.0	19.2	21.9	24.9	27.5	27.7	29.6	30.2	33.4	34.7	36.3	34.0	31.4	31.6	33.0	35.1	32.0	36.3	22.1	24
23		32.4	29.7	26.6	21.7	18.2	15.9	17.3	7.4	11.4	13.5	16.2	15.4	14.6	12.1	11.5	11.1	10.2	7.2	6.6	9.8	10.8	9.8	4.6	5.1	32.4	14.1	24
24		9.9	10.1	8.9	8.0	9.7	7.6	9.1	8.9	12.4	15.2	17.3	15.4	17.0	17.2	16.9	16.7	14.4	14.2	14.7	15.0	15.3	13.3	13.5	13.3	17.3	13.1	24
25		15.1	14.0	14.3	13.7	10.7	10.6	15.1	19.1	23.9	20.5	17.4	17.1	15.0	13.6	13.3	13.8	12.7	13.5	11.6	9.2	6.6	6.1	4.2	3.6	23.9	13.1	24
26		2.6	3.5	4.9	3.2	6.2	6.3	5.2	7.0	10.1	7.5	6.2	7.9	6.9	7.3	6.6	5.2	2.8	2.8	3.2	3.3	6.8	10.2	7.8	2.4	10.2	5.7	24
27		5.1	4.8	7.5	8.3	9.4	11.2	12.4	10.4	11.6	13.6	19.8	20.7	21.5	14.4	14.9	14.7	14.2	13.5	13.3	11.2	11.7	11.8	4.1	1.8	21.5	11.7	24
28		1.1	3.4	5.5	6.8	7.2	4.8	6.2	8.7	9.7	15.0	16.0	17.7	19.9	22.3	23.1	21.6	24.2	20.5	11.9	10.9	12.5	16.7	17.5	16.6	24.2	13.3	24
29		7.3	3.5	8.3	16.7	16.6	21.0	25.1	26.4	24.3	27.6	24.6	25.3	22.3	23.9	24.9	25.2	27.5	23.9	17.2	7.6	7.3	11.4	18.0	16.7	27.6	18.9	24
30		10.9	10.0	7.5	8.1	7.3	9.4	9.2	12.5	13.0	16.0	17.8	19.7	24.5	23.6	27.4	24.2	29.0	22.7	19.3	15.9	11.7	11.2	12.5	8.4	29.0	15.5	24
HOURLY MAX		32.4	29.7	26.6	28.6	28.4	31.4	32.4	31.7	31.5	41.7	39.2	34.9	35.8	42.5	40.5	34.5	34.7	39.4	40.7	38.5	33.4	33.0	35.1	32.0			
HOURLY AVG		9.7	8.8	9.5	10.4	10.3	10.6	10.9	12.4	13.2	15.2	16.6	16.8	18.5	18.5	18.6	17.8	16.9	17.5	15.0	13.6	12.5	11.1	10.9	10.1			

STATUS FLAG CODES

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

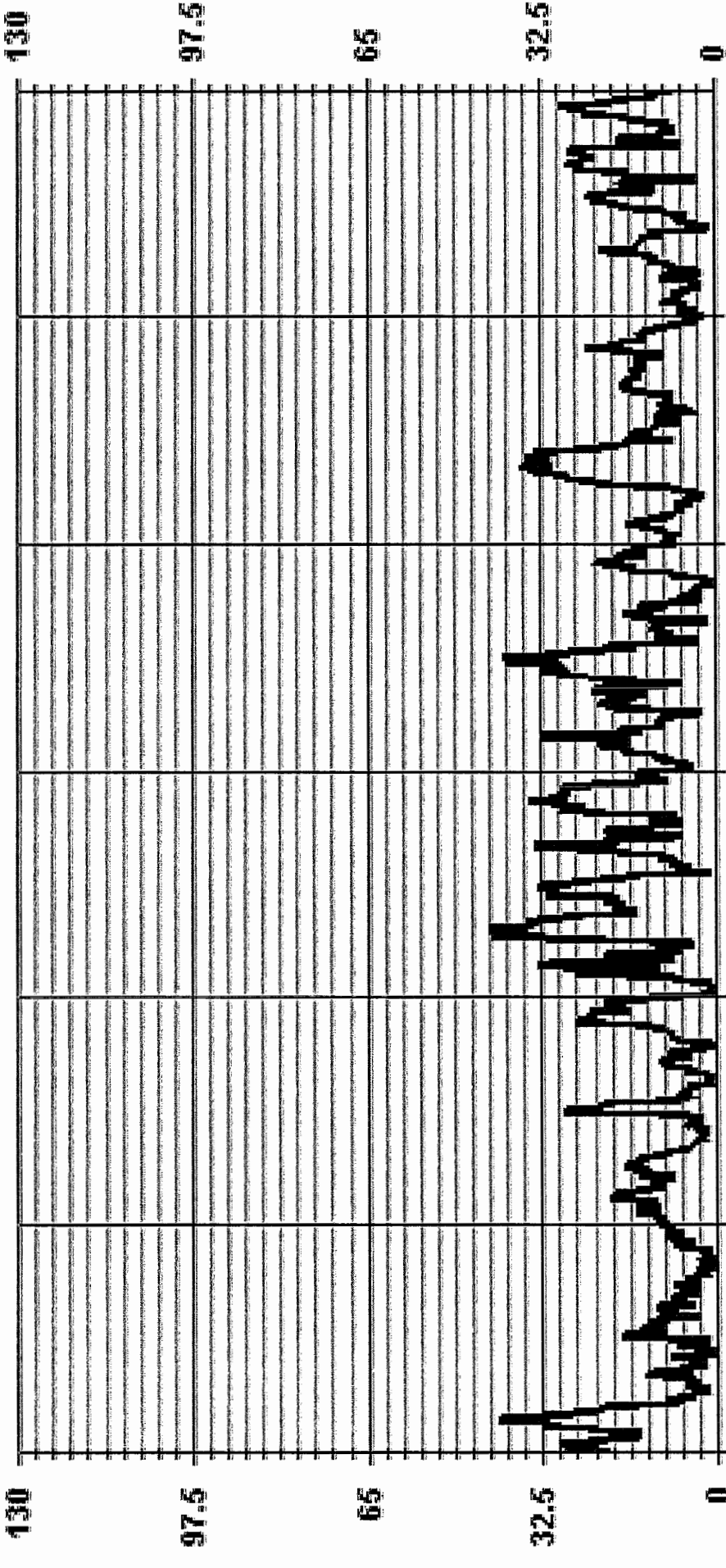
LAST CALIBRATION:	February 21, 2014
DECLINATION:	MAGNETIC DECLINATION 19 DEGREE EAST



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	720
MAXIMUM 1-HR AVERAGE:	42.5 KPH @ HOUR(S) 13 ON DAY(S) 12
MAXIMUM 24-HR AVERAGE:	26.1 KPH ON DAY(S) 1
	VAR-VARIOUS
MONTHLY CALIBRATION TIME:	0 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	9.04
MONTHLY AVERAGE:	13.6 KPH

01 Hour Averages



— LICA35 WSP KPH



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Elk Point Airport Site - APRIL 2015

JOB # 2833-2015-04-35- C

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	37.1	40.0	42.9	47.1	41.9	47.9	39.4	38.8	24.4	25.1	30.8	40.4	44.0	51.9	53.8	60.5	52.6	66.1	67.5	62.2	54.0	43.1	41.6	36.8	67.5	45.4	24	
2	34.8	24.1	17.8	12.4	11.8	12.4	8.8	6.8	8.5	9.4	11.1	15.9	14.4	14.4	15.2	22.4	20.6	21.8	20.7	15.7	9.5	8.8	7.7	5.7	34.8	14.6	24	
3	11.0	8.4	12.4	14.5	13.7	7.4	8.3	9.8	9.1	15.8	10.9	15.8	25.1	23.0	49.4	R	27.4	34.0	26.5	17.8	21.9	22.1	23.8	20.1	49.4	18.6	23	
4	11.0	12.9	16.7	15.2	15.2	15.4	11.0	14.3	15.0	16.8	19.9	17.0	16.5	20.4	20.5	20.0	15.6	20.5	11.9	10.3	18.5	19.7	13.9	4.9	20.5	15.5	24	
5	4.3	5.5	3.0	5.6	5.4	6.4	4.3	7.7	6.2	8.3	11.4	16.5	18.7	20.8	18.4	15.0	15.3	19.4	20.7	11.1	10.9	13.0	14.6	15.5	20.8	11.6	24	
6	16.2	17.1	15.8	14.7	18.6	16.2	20.8	22.4	23.3	22.9	20.9	28.3	28.5	34.4	34.7	38.4	32.4	33.0	29.9	20.2	16.2	17.1	16.6	18.8	38.4	23.2	24	
7	13.7	12.7	18.3	21.9	22.6	22.1	22.4	23.9	27.4	24.4	22.3	28.8	22.7	18.7	16.4	15.3	12.0	10.0	7.9	7.5	7.3	6.9	4.2	5.7	28.8	16.5	24	
8	6.9	5.9	4.9	7.2	8.0	8.0	8.4	6.3	9.4	8.0	17.2	32.1	39.2	46.2	42.9	43.4	41.1	35.8	18.5	13.9	9.3	9.7	10.1	9.0	46.2	18.4	24	
9	10.8	7.8	10.6	5.4	4.6	5.4	3.5	4.7	8.4	11.1	20.3	20.9	25.5	25.8	26.9	24.0	19.8	20.0	10.3	9.3	12.7	12.1	5.3	4.5	26.9	12.9	24	
10	3.7	8.1	8.7	9.4	9.8	11.1	10.4	13.9	14.9	20.8	31.4	37.1	42.3	40.1	43.9	45.4	45.2	44.4	29.7	33.5	32.4	34.2	38.4	28.0	45.4	26.5	24	
11	22.2	17.3	5.2	5.6	4.8	3.8	3.9	8.6	9.7	12.5	19.0	18.0	48.4	50.1	51.7	48.2	47.8	49.9	53.5	56.7	41.4	17.1	29.0	33.7	56.7	27.4	24	
12	23.3	14.9	22.3	22.1	19.4	13.4	26.8	39.5	54.4	64.7	64.1	59.8	68.6	67.0	67.1	67.2	65.3	61.0	66.5	52.5	41.8	31.1	29.2	28.5	68.6	44.6	24	
13	34.3	34.8	33.9	44.1	39.1	34.4	45.9	47.6	48.8	46.5	47.4	57.3	55.1	60.9	44.7	41.5	35.3	31.5	18.7	5.6	7.8	8.1	7.9	10.5	60.9	35.1	24	
14	11.5	12.3	13.1	12.7	14.9	27.4	35.1	39.6	52.2	50.0	59.4	32.4	30.6	35.1	14.8	38.1	30.0	34.0	28.8	19.8	16.0	14.7	15.7	18.9	59.4	27.4	24	
15	15.4	20.3	32.0	38.2	41.5	45.9	38.3	48.5	49.1	53.3	47.3	47.4	48.8	45.8	47.0	49.4	48.5	37.3	32.2	13.1	14.5	18.1	17.1	22.0	53.3	36.3	24	
16	24.1	17.8	14.5	17.6	11.2	15.4	18.3	17.1	19.5	23.0	28.0	32.1	41.4	40.1	44.2	39.9	31.1	41.5	48.3	70.0	37.7	23.8	26.4	21.0	70.0	29.3	24	
17	17.8	19.0	15.1	15.1	17.6	13.2	13.3	9.9	10.3	27.9	35.2	40.7	40.2	41.7	33.6	34.6	31.4	27.7	52.3	50.3	44.5	25.3	20.1	13.6	52.3	27.1	24	
18	28.9	36.8	37.4	52.0	48.3	49.4	49.3	48.0	49.9	52.2	61.8	57.2	57.1	62.8	55.5	63.7	43.0	44.8	33.3	36.7	17.7	11.5	16.9	13.4	63.7	42.8	24	
19	16.6	12.2	17.4	19.1	15.9	14.8	15.3	12.5	6.1	21.8	27.5	32.6	46.0	30.0	34.5	32.2	32.3	27.8	11.5	8.6	11.1	13.6	8.4	6.8	46.0	19.8	24	
20	5.3	6.6	6.0	7.4	2.8	4.0	4.8	13.9	16.6	24.8	28.9	36.8	33.4	42.6	43.4	42.6	35.3	32.9	36.4	24.6	30.6	26.8	22.4	23.9	43.4	23.0	24	
21	15.6	10.7	10.4	10.3	10.1	13.3	14.5	16.5	19.8	22.9	29.5	30.8	31.8	29.4	31.4	40.2	26.2	19.2	11.3	9.5	9.4	9.9	8.9	21.4	40.2	18.9	24	
22	15.7	10.6	7.6	7.4	6.1	12.0	11.0	28.0	29.8	33.7	38.5	41.1	48.4	49.2	49.8	53.8	54.3	52.6	53.3	53.5	49.5	53.7	59.5	53.5	59.5	36.4	24	
23	51.8	46.8	42.9	39.4	30.4	26.7	27.8	22.7	19.7	23.9	27.6	30.8	34.4	26.4	24.3	22.4	33.7	14.8	14.6	21.0	23.2	20.7	13.2	11.1	51.8	27.1	24	
24	19.1	16.2	16.1	14.7	16.7	18.0	19.2	19.4	23.7	29.1	30.0	29.6	31.7	31.7	30.3	34.1	27.1	25.0	22.7	24.1	25.2	23.6	24.6	23.8	34.1	24.0	24	
25	29.0	31.2	26.7	27.5	19.7	20.7	32.4	40.6	43.3	42.5	31.5	33.2	30.2	29.9	32.3	30.5	24.5	35.2	26.1	16.4	18.5	12.4	10.0	6.7	43.3	27.1	24	
26	7.7	8.8	7.9	6.7	9.0	10.3	10.5	18.2	22.8	25.3	24.8	23.8	19.7	21.2	19.1	17.2	20.7	22.9	10.6	6.1	17.5	15.7	16.4	6.5	25.3	15.4	24	
27	7.4	8.2	11.1	12.1	11.5	15.3	17.7	15.9	21.4	34.6	36.8	37.3	44.4	36.8	33.0	37.5	36.8	27.4	28.1	19.2	18.2	19.5	14.7	5.8	44.4	22.9	24	
28	4.9	6.5	10.1	9.5	11.2	8.5	12.6	14.1	24.3	26.9	27.8	33.0	35.7	41.5	37.8	38.1	44.1	38.5	24.9	19.4	20.0	24.1	25.4	26.0	44.1	23.5	24	
29	22.0	34.2	19.6	37.4	32.3	35.6	45.4	43.1	42.3	49.6	41.5	41.5	38.0	43.5	39.1	38.5	42.2	39.8	30.8	15.8	12.6	22.2	27.4	25.7	49.6	34.2	24	
30	23.9	18.1	13.3	16.2	14.4	15.1	16.1	21.5	25.2	32.4	38.4	41.7	48.9	56.7	50.5	43.1	81.5	43.8	39.6	36.1	24.3	21.7	29.6	13.6	81.5	31.9	24	
HOURLY MAX	51.8	46.8	42.9	52.0	48.3	49.4	49.3	48.5	54.4	64.7	64.1	59.8	68.6	67.0	67.1	67.2	67.2	67.2	67.5	70.0	54.0	53.7	59.5	53.5				
HOURLY AVG	18.2	17.5	17.1	19.0	17.6	18.3	19.9	22.5	24.5	28.7	31.4	33.7	37.0	37.9	36.9	37.8	35.8	33.8	29.6	25.4	22.5	20.0	20.0	17.8				

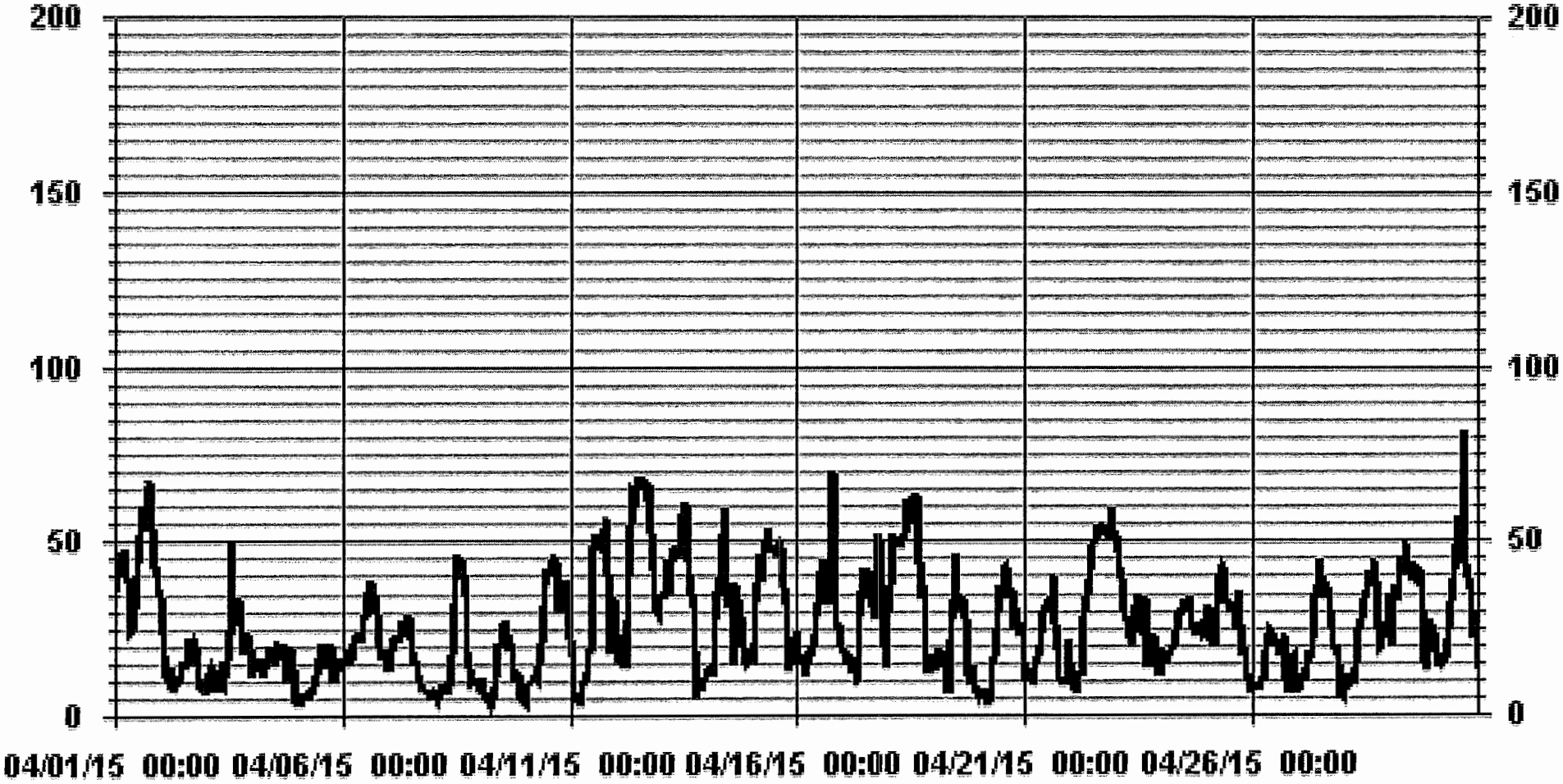
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	81.5	KPH	@ HOUR(S)	16	ON DAY(S)	30
					VAR-VARIOUS	
OPERATIONAL TIME:				719	HRS	

01 Hour Averages



— LICA35 WSMAX KPH

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

April 2015

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	.69	1.11	1.25	1.94	1.80	3.33	.97	.55	.69	.41	1.11	1.25	1.25	2.08	1.94	.83	21.25
< 12.0	.55	1.38	1.25	.55	5.13	3.75	2.08	.55	.69	.69	1.66	3.88	3.88	2.63	1.66	1.11	31.52
< 20.0	.55	.69	1.25	2.08	1.11	3.33	2.22	1.52	.69	.41	.83	2.91	2.50	1.25	1.80	.97	24.16
< 29.0	.41	.00	.00	.27	.00	1.11	.00	.41	1.38	.55	.00	.55	3.19	3.61	2.77	.83	15.13
< 39.0	.00	.00	.00	.00	.00	2.08	.13	.00	.00	.00	.00	.00	1.66	1.66	.69	.69	6.94
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.27	.27	.13	.27	.97
Totals	2.22	3.19	3.75	4.86	8.05	13.61	5.41	3.05	3.47	2.08	3.61	8.61	12.77	11.52	9.02	4.72	

Calm : .00 %

Total # Operational Hours : 720

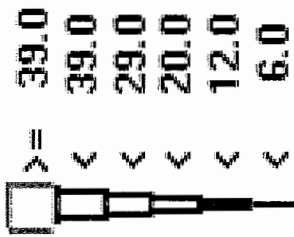
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	5	8	9	14	13	24	7	4	5	3	8	9	9	15	14	6	153
< 12.0	4	10	9	4	37	27	15	4	5	5	12	28	28	19	12	8	227
< 20.0	4	5	9	15	8	24	16	11	5	3	6	21	18	9	13	7	174
< 29.0	3			2		8		3	10	4		4	23	26	20	6	109
< 39.0						15	1						12	12	5	5	50
>= 39.0													2	2	1	2	7
Totals	16	23	27	35	58	98	39	22	25	15	26	62	92	83	65	34	

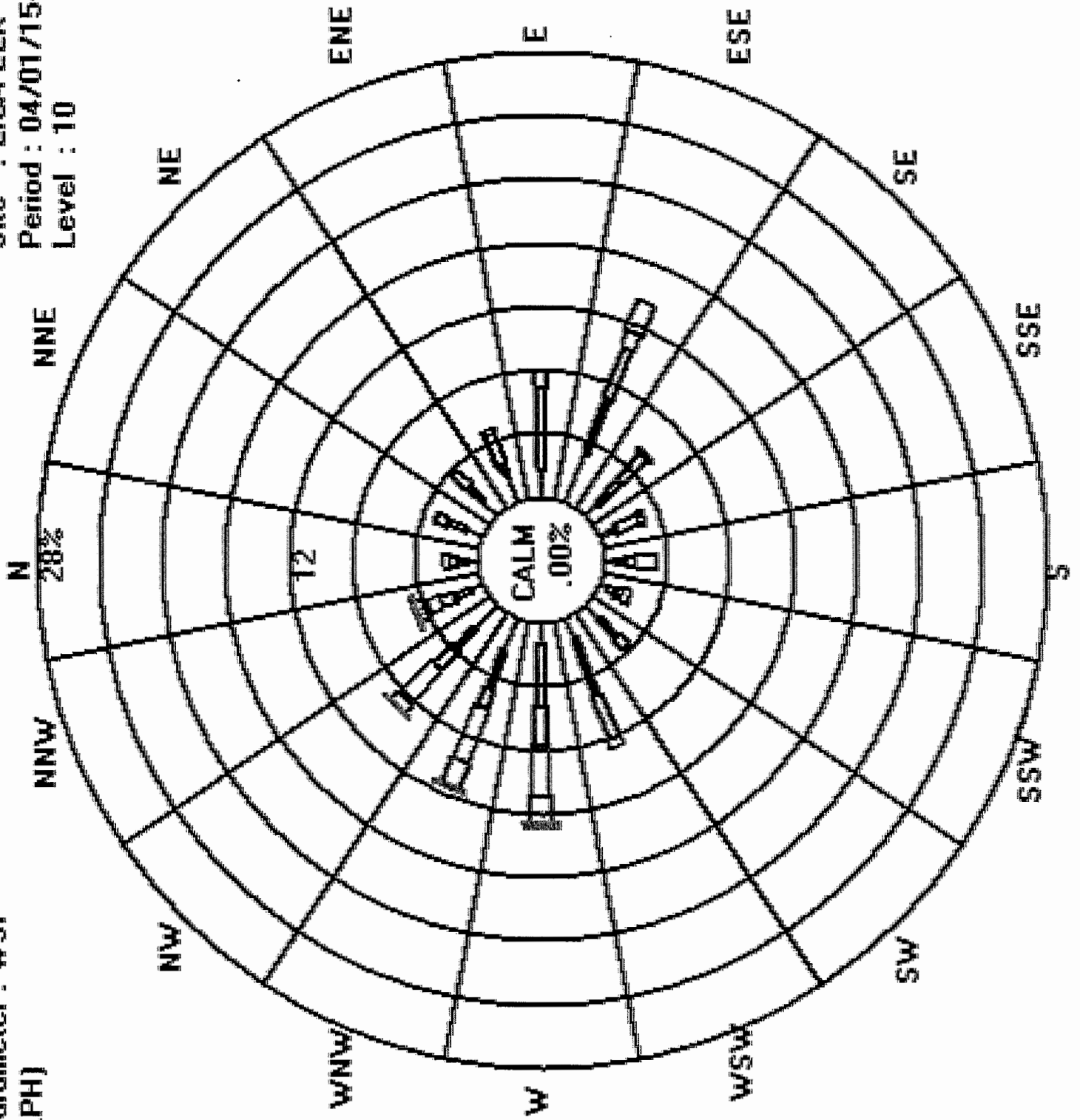
Calm : .00 %

Total # Operational Hours : 720

Logger : 35 Parameter : WSP
 Class Limits (KPH)



Site : LICA-ELK
 Period : 04/01/15-04/30/15
 Level : 10



WIND DIRECTION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Elk Point Airport Site - APRIL 2015

JOB # 2833-2015-04-35- C

WIND DIRECTION (WD) hourly averages

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR AVG	RDGS.
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	QUADRANT	RDGS.
1	WNW	W	W	W	W	W	W	W	W	W	NNW	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	24
2	NNW	NNW	NW	NW	WNW	WNW	WNW	WNW	NW	SSE	S	S	SW	SW	SSW	NW	NNE	NNW	N	NNW	NW	WNW	W	WNW	NW	24
3	WSW	W	SW	WSW	SW	W	SE	N	ESE	SSE	SW	WNW	W	WNW	NW	N	NNW	NNW	N	NNE	NNE	NNE	NNE	NNE	NNW	24
4	NE	ENE	E	E	ENE	E	E	ESE	ESE	E	SE	ESE	E	ENE	W	WNW	N	NNE	NNE	NE	NE	NNE	ENE	NE	ENE	24
5	NNW	NW	NW	W	W	W	N	NE	ENE	NE	SW	WNW	NNW	NNE	NNW	N	ENE	NNE	ENE	ENE	ENE	E	E	E	NE	24
6	E	E	E	E	E	E	ESE	ESE	ESE	ESE	SE	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	24
7	ESE	ESE	ESE	ESE	E	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	ESE	E	ESE	SE	E	ESE	24
8	SSE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ENE	WSW	WSW	W	WNW	WNW	WNW	W	W	W	W	W	WNW	WSW	W	W	24
9	W	NW	W	WNW	S	SSW	SE	ESE	E	ESE	SE	S	SW	SW	SW	W	W	WSW	SW	SSW	SW	NW	NNE	SW	24	
10	ENE	E	E	E	ESE	ESE	E	E	ESE	ESE	SSE	SSE	S	S	S	SSW	SSW	S	S	SSE	SSE	S	SSW	SSW	SSE	24
11	SW	SW	NW	ENE	ENE	WSW	SSW	ENE	NNE	WSW	W	WSW	WNW	WNW	WNW	WNW	NW	WNW	WNW	WNW	WNW	W	W	W	WNW	24
12	WNW	W	W	WSW	WSW	W	WSW	W	W	W	W	W	W	W	W	WNW	WNW	W	W	W	WSW	WSW	WSW	W	W	24
13	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	ENE	E	E	E	SE	24
14	E	E	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	E	NNW	NW	NW	NW	NW	NW	NW	NW	NNW	NW	WNW	E	24
15	W	W	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW	WNW	WNW	WNW	WNW	W	W	W	W	W	WSW	SW	SW	WSW	WNW	WNW	24
16	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	WSW	WSW	WSW	WSW	WSW	WSW	W	NW	NW	NW	W	WNW	W	W	24
17	WSW	W	W	WSW	SW	WSW	WSW	SSE	SSE	SE	SSE	SSE	SSE	SE	SE	SE	SE	SSW	WNW	WNW	NW	WNW	NW	SSW	24	
18	WNW	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NNW	NNW	NW	NNW	NNW	NNW	WNW	W	WNW	24
19	W	W	W	W	W	W	WNW	NW	WNW	NW	NW	WNW	NW	NW	NW	WNW	WNW	WNW	WNW	ESE	SSE	ESE	E	ENE	WNW	24
20	NE	ENE	ESE	NW	W	WNW	NW	WSW	W	WNW	NW	WNW	NW	NW	NW	WNW	NNE	NNE	NE	E	E	ESE	ESE	N	24	
21	ESE	ESE	E	E	E	ESE	ESE	ESE	SE	SE	SE	SSE	SSE	S	SSW	S	S	S	SE	ESE	ESE	E	ENE	NE	SE	24
22	NNE	NNE	E	ESE	ESE	ESE	E	E	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	24
23	ESE	ESE	ESE	ESE	E	ESE	ESE	SE	WSW	SW	SW	WSW	WNW	WNW	W	SW	WSW	WSW	NE	ENE	E	S	SE	SE	24	
24	SE	ESE	E	NE	NNE	NE	NE	NE	NE	NE	ENE	NE	ENE	ENE	ENE	ENE	ENE	E	E	E	E	ENE	ENE	ENE	ENE	24
25	ENE	ENE	ENE	ENE	NE	NE	NE	ENE	ENE	ENE	ENE	NE	ENE	NE	NE	NNE	NNE	N	N	N	NE	E	ENE	NNW	NE	24
26	NNE	NW	WNW	WNW	WNW	NW	NW	NNE	NE	NNE	NNW	NNW	WNW	NW	W	N	WNW	NW	ESE	S	SW	SW	NNE	NW	24	
27	ESE	ESE	E	E	ESE	ESE	ESE	SE	SSE	S	S	S	SSW	SW	WSW	WSW	WSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	S	24
28	NE	E	ENE	E	E	E	E	E	ESE	SE	SE	SSE	SSE	S	S	S	SSE	S	SSE	SE	SE	SE	ESE	ESE	SE	24
29	E	NW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	WNW	WNW	W	WSW	WSW	SW	WSW	WNW	24
30	WSW	WNW	WSW	W	W	WSW	WSW	W	WSW	WSW	WSW	WSW	WSW	W	W	W	W	W	W	WSW	WSW	WSW	W	WSW	W	24

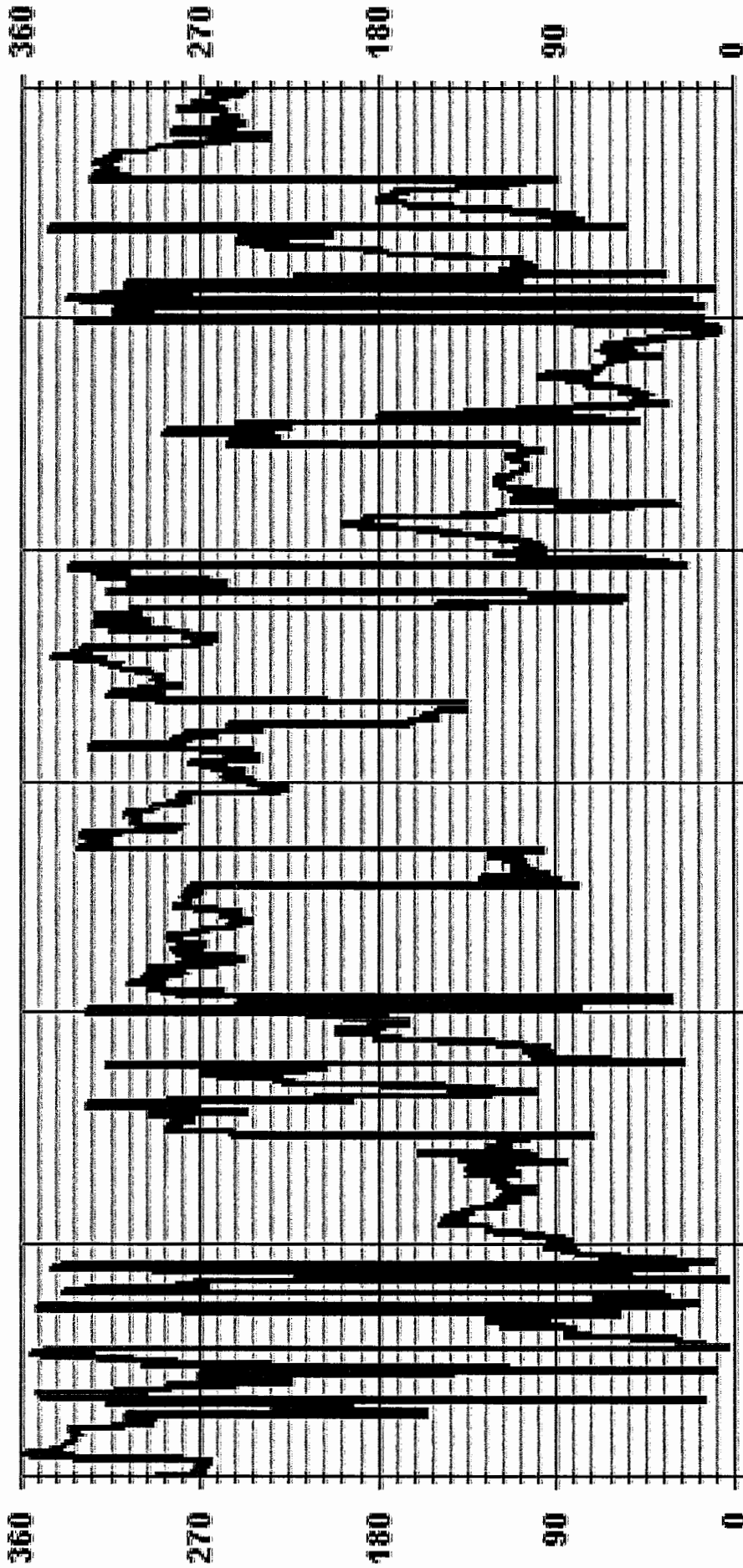
STATUS FLAG CODES

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

LAST CALIBRATION:	February 21, 2014
DECLINATION :	MAGNETIC DECLINATION 19 DEGREE EAST

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	720 HRS
STANDARD DEVIATION:	98.51	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	W

01 Hour Averages



04/01/15 00:00 04/06/15 00:00 04/11/15 00:00 04/16/15 00:00 04/21/15 00:00 04/26/15 00:00

— LICA35 WDR DEG

STANDARD DEVIATION WIND DIRECTION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Elk Point Airport Site - APRIL 2015

JOB # 2833-2015-04-35- C

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

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

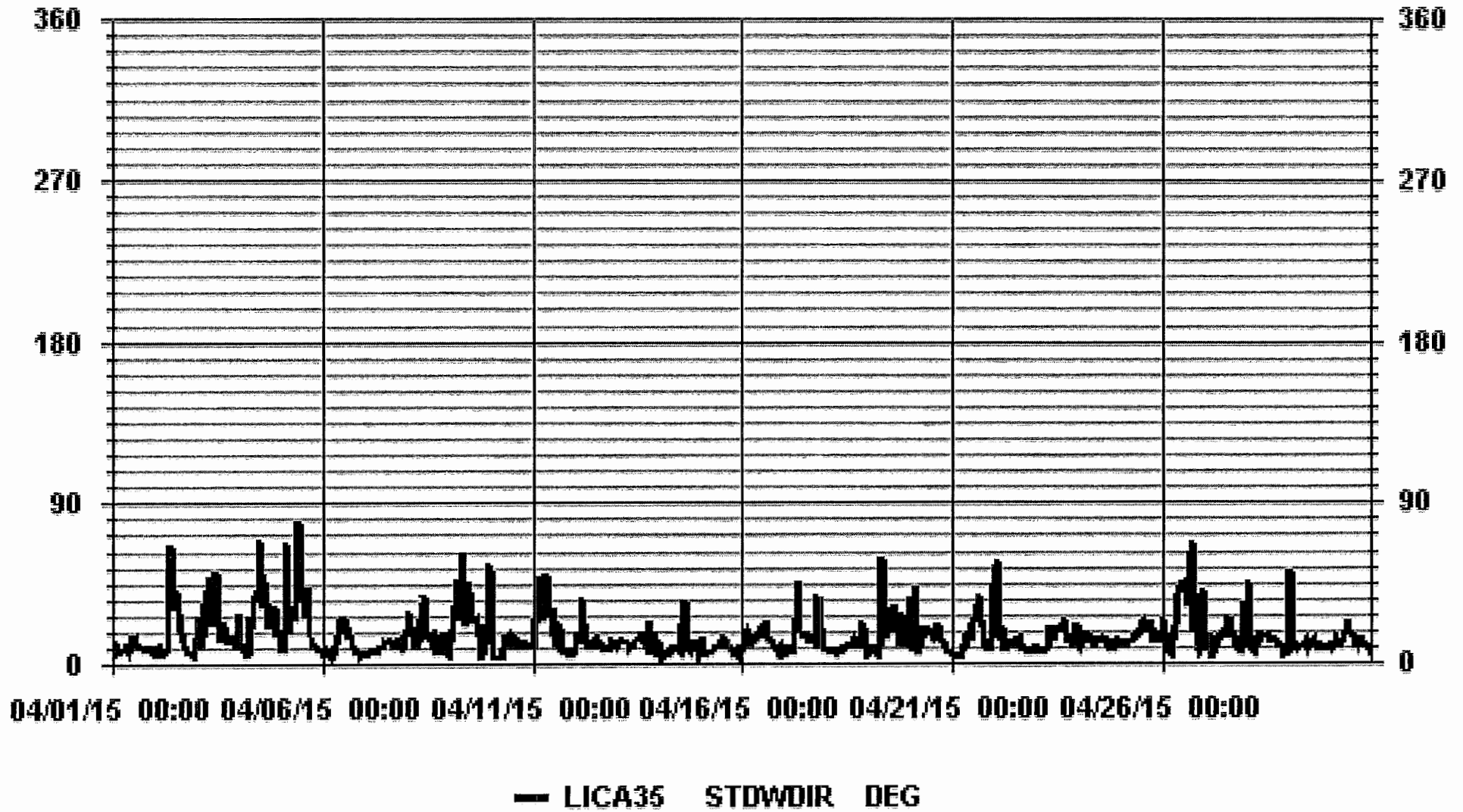
STATUS FLAG CODES

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

LAST CALIBRATION: February 21, 2014

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 720 HRS

01 Hour Averages



APPENDIX II
NON-CONTINUOUS MONITORING DATA RESULTS

VOC RESULTS

Sample ID: 15040066-003

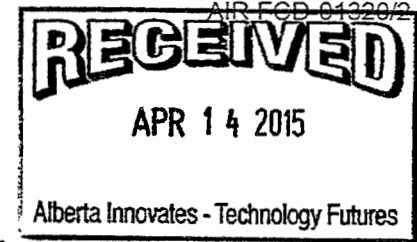
Customer ID: LICA

Cust Samp ID: LICA/VOC/EP/April 6, 2015

Priority: Normal

Maxxam

VOC Sample Collection Data Sheet



Client: LICA

Sampler S/N: 6200

Location: ELK POINT Airport

Canister ID: 2656

Station ID: LICA 35

Canister Installation Date/Time: April 3, 2015 @ 13:51

Field Sample ID: LICA/VOC/EP/April 6, 2015
A.Y. VOC

Canister Removal Date/Time: April 10, 2015 @ 13:42

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
April 6, 2015	00:00 April 6, 2015	00:00 April 7, 2015	24.0

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	4.94	24

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
28.8	19.8

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

Comments:

No plastic bag for field sampling sheets was provided.

Technician Signature:

Sample in - by Alex Yakupov

Sample out - by Alex Yakupov

Date: April 10, 2015

Volatile Organics Data Results

Date: APRIL 6, 2015
Canister ID: 2656

PARAMETERS	CONCENTRATION (PPB)
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	< 0.03
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.03
1,2-Dichloropropane	0.01
1,3,5-Trimethylbenzene	< 0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	< 0.02
1-Hexene	< 0.02
1-Pentene	< 0.01
2,2,4-Trimethylpentane	< 0.01
2,2-Dimethylbutane	0.04
2,3,4-Trimethylpentane	0.02
2,3-Dimethylbutane	0.08
2,3-Dimethylpentane	0.03
2,4-Dimethylpentane	0.03
2-Methylheptane	0.02
2-Methylhexane	< 0.01
2-Methylpentane	0.08
3-Methylheptane	< 0.02
3-Methylhexane	0.03
3-Methylpentane	0.05
Acetone	2.7
Acrolein	< 0.3
Benzene	0.15
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	0.01
Carbon disulfide	< 0.01
Carbon tetrachloride	0.12
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.02
Chloromethane	< 0.02
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	< 0.02
cis-2-Pentene	< 0.02
Cyclohexane	0.06
Cyclopentane	0.02
Dibromochloromethane	< 0.01
Ethanol	0.6
Ethyl acetate	< 0.4
Ethylbenzene	0.02
Freon-11	0.35

Volatile Organics Data Results

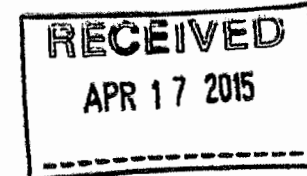
Date: APRIL 6, 2015
Canister ID: 2656

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.10
Freon-114	0.02
Freon-12	0.77
Hexachloro-1,3-butadiene	< 0.50
Isobutane	0.43
Isopentane	0.27
Isoprene	< 0.01
Isopropyl alcohol	< 0.4
Isopropylbenzene	0.02
m,p-Xylene	0.05
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	< 0.3
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.10
Methylcyclopentane	0.05
Methylene chloride	< 0.3
n-Butane	0.61
n-Decane	< 0.06
n-Dodecane	< 4
n-Heptane	0.04
n-Hexane	0.10
n-Nonane	0.01
n-Octane	0.02
n-Pentane	< 0.1
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	< 2
o-Ethyltoluene	< 0.01
o-Xylene	0.02
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.05
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	< 0.01
trans-2-Pentene	< 0.02
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02

Sample ID: 15040124-003

AIR FCD-01320/2

Customer ID: LICA
Cust Samp ID: LICA/VOC/EP/April 12, 2015



Maxxam

VOC Sample Collection Data Sheet

Client: LICA Sampler S/N: 8200
Location: Elk Point Airport Canister ID: 55626
Station ID: LICA 35 Canister Installation Date/Time: April 10, 2015 @ 13:44
Field Sample ID: LICA/VOC/EP/April 12, 2015 Canister Removal Date/Time: April 16, 2015 @ 12:01

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
April 12, 2015	00:00 April 12, 2015	00:00 April 13, 2015	24.0

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	4.94	24

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
28.8	18.0

17psi
SR

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

Comments:

~~no plastic bag for field sampling sheets was provided~~

(A.Y.)
April 16, 2015

Technician Signature:

Sample in - by Alex Yakepov
Sample out - by Alex Yakepov

Date: April 16, 2015

Volatile Organics Data Results

Date: APRIL 12, 2015
Canister ID: S5626

PARAMETERS	CONCENTRATION (PPB)
1,1,1-Trichloroethane	< 0.02
1,1,1,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	< 0.03
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.03
1,2-Dichloropropane	0.01
1,3,5-Trimethylbenzene	< 0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	< 0.02
1-Hexene	< 0.02
1-Pentene	< 0.01
2,2,4-Trimethylpentane	< 0.01
2,2-Dimethylbutane	0.02
2,3,4-Trimethylpentane	0.01
2,3-Dimethylbutane	0.06
2,3-Dimethylpentane	0.03
2,4-Dimethylpentane	0.03
2-Methylheptane	0.01
2-Methylhexane	< 0.01
2-Methylpentane	0.06
3-Methylheptane	< 0.02
3-Methylhexane	0.02
3-Methylpentane	0.04
Acetone	1.8
Acrolein	< 0.3
Benzene	0.14
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	0.01
Carbon disulfide	< 0.01
Carbon tetrachloride	0.12
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.03
Chloromethane	< 0.02
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	< 0.02
cis-2-Pentene	< 0.02
Cyclohexane	0.03
Cyclopentane	0.02
Dibromochloromethane	< 0.01
Ethanol	0.4
Ethyl acetate	< 0.4
Ethylbenzene	0.02
Freon-11	0.39

Volatile Organics Data Results

Date: APRIL 12, 2015
Canister ID: S5626

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.11
Freon-114	0.03
Freon-12	0.85
Hexachloro-1,3-butadiene	< 0.50
Isobutane	0.35
Isopentane	0.29
Isoprene	< 0.01
Isopropyl alcohol	< 0.4
Isopropylbenzene	0.01
m,p-Xylene	0.04
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	< 0.3
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.05
Methylcyclopentane	0.04
Methylene chloride	< 0.3
n-Butane	0.62
n-Decane	< 0.06
n-Dodecane	< 4.0
n-Heptane	0.03
n-Hexane	0.07
n-Nonane	0.01
n-Octane	< 0.02
n-Pentane	< 0.1
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	< 2.0
o-Ethyltoluene	< 0.01
o-Xylene	0.02
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.05
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	< 0.01
trans-2-Pentene	< 0.02
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02

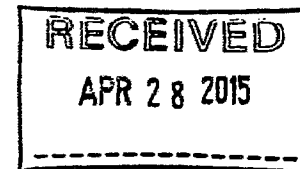
Sample ID: 15040220-003

AIR FCD-01320/2

Customer ID: LICA

Cust Samp ID: LICA/VOC/EP/April 18, 2015

Maxxam



VOC Sample Collection Data Sheet

Client: LICA Sampler S/N: 6200
 Location: Elk Point Airport Canister ID: S 5613
 Station ID: LICA 35 Canister Installation Date/Time: April 16, 2015 @ 12:04
 Field Sample ID: LICA/VOC/EP/April 18, 2015 Canister Removal Date/Time: April 22, 2015 @ 14:19

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
April 18, 2015	00:00 April 18, 2015	00:00 April 19, 2015	24.0

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	4.94	24

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
28.8	20.1

20psi
InP

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

Comments:

Technician Signature:

Sample in - by Alex Yakeyov
 Sample out - by Alex Yakeyov

Date April 22, 2015

Volatile Organics Data Results

Date: APRIL 18, 2015
Canister ID: S5613

PARAMETERS	CONCENTRATION (PPB)
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	0.21
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	0.13
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.02
1,2-Dichloropropane	< 0.01
1,3,5-Trimethylbenzene	0.05
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	0.37
1-Hexene	< 0.02
1-Pentene	< 0.01
2,2,4-Trimethylpentane	< 0.01
2,2-Dimethylbutane	0.02
2,3,4-Trimethylpentane	0.03
2,3-Dimethylbutane	< 0.02
2,3-Dimethylpentane	0.05
2,4-Dimethylpentane	< 0.01
2-Methylheptane	0.02
2-Methylhexane	< 0.01
2-Methylpentane	0.06
3-Methylheptane	0.05
3-Methylhexane	0.05
3-Methylpentane	0.05
Acetone	4.1
Acrolein	< 0.3
Benzene	0.13
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	< 0.01
Carbon disulfide	3.39
Carbon tetrachloride	0.09
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	< 0.02
Chloromethane	< 0.02
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	0.10
cis-2-Pentene	0.04
Cyclohexane	0.09
Cyclopentane	< 0.01
Dibromochloromethane	< 0.01
Ethanol	0.8
Ethyl acetate	< 0.4
Ethylbenzene	0.08
Freon-11	0.29

Volatile Organics Data Results

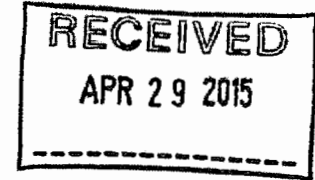
Date: APRIL 18, 2015
Canister ID: S5613

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.09
Freon-114	< 0.02
Freon-12	0.63
Hexachloro-1,3-butadiene	< 0.50
Isobutane	0.18
Isopentane	0.17
Isoprene	0.02
Isopropyl alcohol	0.5
Isopropylbenzene	< 0.01
m,p-Xylene	0.28
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	0.6
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.31
Methylcyclopentane	0.06
Methylene chloride	< 0.3
n-Butane	0.30
n-Decane	< 0.06
n-Dodecane	< 0.4
n-Heptane	< 0.01
n-Hexane	0.08
n-Nonane	< 0.01
n-Octane	< 0.02
n-Pentane	< 0.1
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	< 0.5
o-Ethyltoluene	0.08
o-Xylene	0.27
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.24
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	0.16
trans-2-Pentene	0.09
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02

Sample ID: 15040242-003

Customer ID: LICA
 Cust Samp ID: LICA/VOC/EPI/April 24, 2015

Maxxam



VOC Sample Collection Data Sheet

Client: LICA Sampler S/N: 6200
 Location: ELK POINT AIRPORT Canister ID: 17126
 Station ID: LICA 35 Canister Installation Date/Time: April 22, 2015 @ 14:21
 Field Sample ID: LICA / VOC / EPI / April 24, 2015 Canister Removal Date/Time: April 28, 2015 @ 12:04

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
April 24, 2015	00:00 April 24, 2015	00:00 April 25, 2015	24.0

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	4.94	24

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
28.2	18.3

18 psi
 SMP

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

Comments:

Technician Signature: Sample in - by Alex Yakupov
Sample out - by Alex Yakupov ✓

Date: April 28, 2015

Volatile Organics Data Results

Date: APRIL 24, 2015
Canister ID: 17126

PARAMETERS	CONCENTRATION (PPB)
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	< 0.03
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.02
1,2-Dichloropropane	< 0.01
1,3,5-Trimethylbenzene	< 0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	< 0.02
1-Hexene	< 0.02
1-Pentene	< 0.01
2,2,4-Trimethylpentane	< 0.01
2,2-Dimethylbutane	0.02
2,3,4-Trimethylpentane	0.04
2,3-Dimethylbutane	0.14
2,3-Dimethylpentane	0.13
2,4-Dimethylpentane	0.07
2-Methylheptane	0.01
2-Methylhexane	< 0.01
2-Methylpentane	0.07
3-Methylheptane	< 0.02
3-Methylhexane	< 0.02
3-Methylpentane	0.06
Acetone	3.8
Acrolein	< 0.3
Benzene	0.28
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	< 0.01
Carbon disulfide	< 0.01
Carbon tetrachloride	0.09
Chlorobenzene	< 0.02
Chloroethane	0.19
Chloroform	< 0.02
Chloromethane	0.82
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	< 0.02
cis-2-Pentene	< 0.02
Cyclohexane	0.04
Cyclopentane	< 0.01
Dibromochloromethane	< 0.01
Ethanol	0.9
Ethyl acetate	< 0.4
Ethylbenzene	0.01
Freon-11	0.29

Volatile Organics Data Results

Date: APRIL 24, 2015
Canister ID: 17126

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.09
Freon-114	0.02
Freon-12	0.64
Hexachloro-1,3-butadiene	< 0.50
Isobutane	0.33
Isopentane	0.62
Isoprene	0.01
Isopropyl alcohol	0.8
Isopropylbenzene	< 0.01
m,p-Xylene	0.03
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	0.4
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.07
Methylcyclopentane	< 0.02
Methylene chloride	< 0.3
n-Butane	1.26
n-Decane	< 0.06
n-Dodecane	< 0.4
n-Heptane	< 0.01
n-Hexane	0.06
n-Nonane	< 0.01
n-Octane	< 0.02
n-Pentane	< 0.1
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	< 0.5
o-Ethyltoluene	< 0.01
o-Xylene	0.02
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.08
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	< 0.01
trans-2-Pentene	< 0.02
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02

Sample ID: 15050025-001

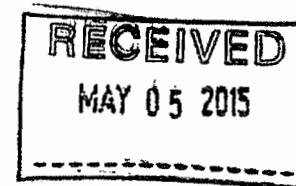
AIR FCD-01320/2

Customer ID: LICA

Cust Samp ID: LICA/VOC/EP/April 30, 2015

Maxxam

VOC Sample Collection Data Sheet



Client: LICA Sampler S/N: 6200
 Location: ELK POINT AIRPORT Canister ID: 85658
 Station ID: LICA 35 Canister Installation Date/Time: April 28, 2015 @ 12:06
 Field Sample ID: LICA/VOC/EP/April 30, 2015 Canister Removal Date/Time: May 04, 2015 @ 13:26

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
April 30, 2015	00:00 April 30, 2015	00:00 Apr May 1, 2015 A.Y.	24.0

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	4.94	24

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
28.8	18.7

18.5 psi
SR

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

Comments:

Technician Signature: Sample in - by Alex Yakupov
Sample out - by Alex Yakupov

Date: May 04, 2015

Volatile Organics Data Results

Date: APRIL 30, 2015
Canister ID: S5658

PARAMETERS	CONCENTRATION (PPB)
1,1,1-Trichloroethane	< 0.02
1,1,1,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	< 0.03
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.02
1,2-Dichloropropane	< 0.01
1,3,5-Trimethylbenzene	< 0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	< 0.02
1-Hexene	< 0.02
1-Pentene	< 0.01
2,2,4-Trimethylpentane	< 0.01
2,2-Dimethylbutane	0.02
2,3,4-Trimethylpentane	< 0.01
2,3-Dimethylbutane	< 0.02
2,3-Dimethylpentane	< 0.02
2,4-Dimethylpentane	< 0.01
2-Methylheptane	< 0.01
2-Methylhexane	< 0.01
2-Methylpentane	0.06
3-Methylheptane	< 0.02
3-Methylhexane	< 0.02
3-Methylpentane	0.03
Acetone	2.2
Acrolein	< 0.3
Benzene	0.09
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	< 0.01
Carbon disulfide	< 0.01
Carbon tetrachloride	0.09
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.02
Chloromethane	0.67
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	< 0.02
cis-2-Pentene	< 0.02
Cyclohexane	0.03
Cyclopentane	< 0.01
Dibromochloromethane	< 0.01
Ethanol	0.6
Ethyl acetate	< 0.4
Ethylbenzene	0.01
Freon-11	0.28

Volatile Organics Data Results

Date: APRIL 30, 2015
Canister ID: S5658

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.09
Freon-114	0.03
Freon-12	0.59
Hexachloro-1,3-butadiene	< 0.50
Isobutane	0.30
Isopentane	0.29
Isoprene	< 0.01
Isopropyl alcohol	0.6
Isopropylbenzene	< 0.01
m,p-Xylene	0.03
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	< 0.3
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.05
Methylcyclopentane	0.03
Methylene chloride	< 0.3
n-Butane	0.51
n-Decane	< 0.06
n-Dodecane	< 0.4
n-Heptane	< 0.01
n-Hexane	0.07
n-Nonane	< 0.01
n-Octane	< 0.02
n-Pentane	< 0.1
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	< 0.5
o-Ethyltoluene	< 0.01
o-Xylene	< 0.01
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.06
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	< 0.01
trans-2-Pentene	< 0.02
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02

PAH RESULTS

Sample ID: 15040066-004

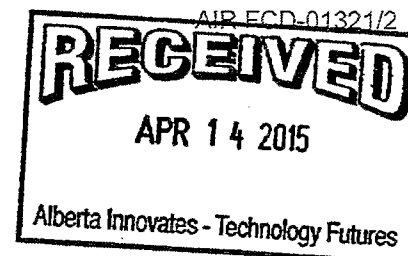
Customer ID: LICA

Cust Samp ID: LICA/PUF/EP/April 6, 2015

Priority: Normal

Maxxam

Hi-Vol PUF+ Sample Collection Data Sheet



AIR ECD-01321/2

Client: LICA
Location: ELK POINT AIRPORT
Station ID: LICA 35
Field Sample ID: LICA/PUF/EP/April 6, 2015

Puf+ S/N: TE 02
Motor S/N: 1139
Installation Date/Time: April 3, 2015 @ 13:36
Removal Date/Time: April 10, 2015 @ 13:19

Table with 4 columns: Sample Date, Start Time (MST), End Time (MST), Elapsed Time (Hours). Row 1: April 6, 2015, 00:00 April 6, 2015, 00:00 April 7, 2015, 24.0

Table with 4 columns: Date Received, Date Shipped, Puf Expiration Date, QFF Prep Date. Row 1: NA, NA, NA, NA

Set Flow Rate (slpm): 230

Date of Last Calibration: 22 - sept - 11

Table with 4 columns: Average Pressure (mmHg), Average Flow (Qstd slpm), Average Temperature (C), Volume (Vstd m^3). Row 1: 710, 229, 0.6 C, 330.20

Time set correctly prior to sampling? YES NO

Timer set correctly prior to sampling? YES NO

Sampling data saved to memory card after sampling? YES / NO

Comments: NO FORM for green tag (for the filter) was provided. NO plastic bag for field sampling sheets was provided.

Technician Signature:

Sample in - by Alex Valupov
Sample out by Alex Valupov

Date: April 10, 2015

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

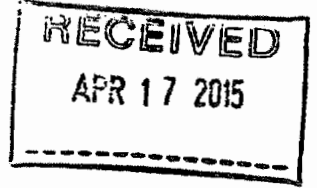
Date: APRIL 6, 2015
PUF S/N: TE02

PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.08
2-Methylnaphthalene	0.15
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	< 0.01
Acenaphthene	0.01
Acenaphthylene	< 0.01
Acridine	< 0.01
Anthracene	< 0.01
Benzo(a)anthracene	< 0.01
Benzo(a)pyrene	< 0.01
Benzo(b,j,k)fluoranthene	< 0.01
Benzo(c)phenanthrene	< 0.01
Benzo(e)pyrene	< 0.01
Benzo(ghi)perylene	< 0.01
Chrysene	< 0.01
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(ah)anthracene	< 0.01
Fluoranthene	0.01
Fluorene	0.03
Indeno(1,2,3-cd)pyrene	< 0.01
Naphthalene	0.04
Perylene	< 0.01
Phenanthrene	0.05
Pyrene	< 0.01
Retene	< 0.01

Sample ID: 15040124-004

Customer ID: LICA
Cust Samp ID: LICA/PUF/EP/April 12, 2015

AIR FCD-01321/2



Maxxam

Hi-Vol PUF+ Sample Collection Data Sheet

Client: LICA
Location: Elk Point Airport
Station ID: LICA 35
Field Sample ID: LICA#/PUF/EP/April 12, 2015

Puf+ S/N: TE-11
Motor S/N: 1139
Installation Date/Time: April 10, 2015 @ 13:23
Removal Date/Time: April 16, 2015 @ 11:54

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
April 12, 2015	00:00	00:00	24.0
	April 12, 2015	April 13, 2015	

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
NA	NA	NA	NA

Set Flow Rate (slpm): 130
Date of Last Calibration: 22-sep-11

Sampling Data			
Average Pressure (mmHg)	Average Flow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
699	229	3.8 °C	330.20

Time set correctly prior to sampling? YES / NO
Timer set correctly prior to sampling? YES / NO
Sampling data saved to memory card after sampling? YES / NO

Comments:

Technician Signature: Sample in - by Alex Yakupov
Sample out - by Alex Yakupov

Date: April 16, 2015

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: APRIL 12, 2015
PUF S/N: TE11

PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.02
2-Methylnaphthalene	0.04
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	< 0.01
Acenaphthene	< 0.01
Acenaphthylene	< 0.01
Acridine	< 0.01
Anthracene	< 0.01
Benzo(a)anthracene	< 0.01
Benzo(a)pyrene	< 0.01
Benzo(b,j,k)fluoranthene	0.01
Benzo(c)phenanthrene	< 0.01
Benzo(e)pyrene	< 0.01
Benzo(ghi)perylene	< 0.01
Chrysene	< 0.01
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(ah)anthracene	< 0.01
Fluoranthene	0.01
Fluorene	0.02
Indeno(1,2,3-cd)pyrene	< 0.01
Naphthalene	0.03
Perylene	< 0.01
Phenanthrene	0.04
Pyrene	0.01
Retene	< 0.01

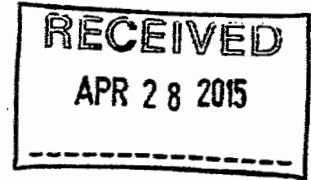
Sample ID: 1504022G-004

AIR FCD-01321/2

Customer ID: LICA

Cust Samp ID: LICA/PUF/EPI/April 18, 2015

Maxxam



Hi-Vol PUF+ Sample Collection Data Sheet

Client: LICA Puf+ S/N: P 13-01
 Location: ELK Point Airport Motor S/N: 1139
 Station ID: LICA 35 Installation Date/Time: April 16, 2015 @ 11:56
 Field Sample ID: LICA/PUF/EPI/April 18, 2015 Removal Date/Time: April 22, 2015 @ 14:06

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
April 18, 2015	00:00 April 18, 2015	00:00 April 19, 2015	24.0

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
NA	NA	NA	NA

Set Flow Rate (slpm): 230
 Date of Last Calibration: 22-SEP-11

Sampling Data			
Average Pressure (mmHg)	Average Flow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
711	229	4.7 °C	330.17

Time set correctly prior to sampling? YES / NO
 Timer set correctly prior to sampling? YES / NO
 Sampling data saved to memory card after sampling? YES / NO

Comments: NO form for green tag provided.

Technician Signature: Sample in - by Alex Yakupov

Sample set by Alex Yakupov

Date: April 22, 2015

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: APRIL 18, 2015
PUF S/N: P1301

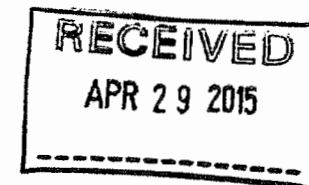
PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.03
2-Methylnaphthalene	0.05
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	< 0.01
Acenaphthene	0.01
Acenaphthylene	< 0.01
Acridine	< 0.01
Anthracene	< 0.01
Benzo(a)anthracene	< 0.01
Benzo(a)pyrene	< 0.01
Benzo(b,j,k)fluoranthene	0.02
Benzo(c)phenanthrene	0.20
Benzo(e)pyrene	< 0.01
Benzo(ghi)perylene	< 0.01
Chrysene	< 0.01
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(ah)anthracene	< 0.01
Fluoranthene	0.02
Fluorene	0.04
Indeno(1,2,3-cd)pyrene	< 0.01
Naphthalene	0.04
Perylene	< 0.01
Phenanthrene	0.06
Pyrene	0.02
Retene	0.01

Sample ID: 15040242-004

AIR FCD-01321/2

Customer ID: LICA
Cust Samp ID: LICA/PUF/EP/April 24, 2015

Maxxam



Hi-Vol PUF+ Sample Collection Data Sheet

Client: LICA
Location: Elk Point Airport
Station ID: LICA 35
Field Sample ID: LICA/PUF/EP/April 24 2015

Puf+ S/N: A 13-02
Motor S/N: 1139
Installation Date/Time: April 22, 2015 @ 14:00
Removal Date/Time: April 28, 2015 @ 11:56

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
April 24, 2015	00:00 April 24, 2015	00:00 April 25, 2015	24.0

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
NA	NA	NA	NA

Set Flow Rate (slpm): 230
Date of Last Calibration: 22 - Sep - 11

Sampling Data			
Average Pressure (mmHg)	Average Flow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
703	229	3.1 °C	330.21

Time set correctly prior to sampling? YES / NO
Timer set correctly prior to sampling? YES / NO
Sampling data saved to memory card after sampling? YES / NO

Comments: No form for green tag was provided.

Technician Signature: Sample in - by Alex Yakupov
Sample out - by Alex Yakupov

Date: April 28, 2015

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: APRIL 24, 2015
PUF S/N: A1302

PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.09
2-Methylnaphthalene	0.15
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	< 0.01
Acenaphthene	0.03
Acenaphthylene	0.09
Acridine	< 0.01
Anthracene	0.03
Benzo(a)anthracene	< 0.01
Benzo(a)pyrene	< 0.01
Benzo(b,j,k)fluoranthene	0.03
Benzo(c)phenanthrene	< 0.01
Benzo(e)pyrene	0.01
Benzo(ghi)perylene	< 0.01
Chrysene	0.01
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(ah)anthracene	< 0.01
Fluoranthene	0.07
Fluorene	0.08
Indeno(1,2,3-cd)pyrene	< 0.01
Naphthalene	0.10
Perylene	< 0.01
Phenanthrene	0.23
Pyrene	0.06
Retene	0.03

Sample ID: 15050025-002

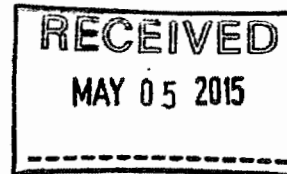
AIR FCD-01321/2

Customer ID: LICA

Cust Samp ID: LICA/PUF/EP/April 30, 2015

Maxxam

Hi-Vol PUF+ Sample Collection Data Sheet



Client: LICA
Location: ELK POINT Airport
Station ID: LICA 35
Field Sample ID: LICA/PUF/EP/APRIL 30, 2015

Puf+ S/N: 9801
Motor S/N: 1139
Installation Date/Time: April 28, 2015 @ 11:58
Removal Date/Time: May 4, 2015 @ 13:14

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
April 30, 2015	00:00 April 30, 2015	00:00 May 1, 2015	24.0

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
NA	NA	NA	NA

Set Flow Rate (slpm): 230
Date of Last Calibration: 22-SEP-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
704	229	9.5°C	330.18

Time set correctly prior to sampling? YES / NO
Timer set correctly prior to sampling? YES / NO
Sampling data saved to memory card after sampling? YES / NO

Comments:

Technician Signature: Sample in - by Alex Yakupov
Sample out - by Alex Yakupov

Date: May 4, 2015

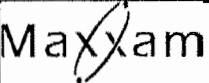
Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: APRIL 30, 2015
PUF S/N: 9801

PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.03
2-Methylnaphthalene	0.06
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	< 0.01
Acenaphthene	< 0.01
Acenaphthylene	< 0.01
Acridine	< 0.01
Anthracene	< 0.01
Benzo(a)anthracene	< 0.01
Benzo(a)pyrene	< 0.01
Benzo(b,j,k)fluoranthene	0.02
Benzo(c)phenanthrene	0.04
Benzo(e)pyrene	< 0.01
Benzo(ghi)perylene	< 0.01
Chrysene	< 0.01
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(ah)anthracene	< 0.01
Fluoranthene	0.02
Fluorene	0.03
Indeno(1,2,3-cd)pyrene	< 0.01
Naphthalene	0.07
Perylene	< 0.01
Phenanthrene	0.06
Pyrene	0.02
Retene	0.01

APPENDIX III
ANALYZER CALIBRATION RESULTS

SULPHUR DIOXIDE



API 100E SO2 Analyzer Calibration

Date: 8-Apr-15

Company: LICA

Station Name/Location: Elk Point

Performed by: Alex Yakupov

Application H₂S/TRS/SO₂: SO2

Start/End Time (mst): 8:57 / 14:49

Calibration Purpose: Monthly

Converter Make & Model: na

Converter Serial #: na

Cal Gas Expiry Date: 12-Aug-17

Analyzer:

Serial Number: 467

Last Calibration Date: 4-Mar-15

Previous Cal High Point C.F.: 0.998

Range ppb: 1000

As Found C.F.: 0.974

New C.F.: 1.004

As found:

SLOPE: 0.990

OFFSET: 116.1

HVPS: 524

RCELL TEMP: 50.0

BOX TEMP: 33.0

PMT TEMP: 8.1

IZS TEMP: 45.0

TEST: NA

STABIL: 0.1

PRES: 24.5

SAMP FL: 615

PMT: 116.4

NORM PMT: 119.1

UV LAMP: 3017.1

LAMP RATIO: 109.7

STR. LGT: 57.5

DRK PMT: 14.1

DRK LMP: 2.8

Internal Span: 323.1

As left:

SLOPE: 0.967

OFFSET: 118.8

HVPS: 524

RCELL TEMP: 50.0

BOX TEMP: 33.9

PMT TEMP: 8.1

IZS TEMP: 45.0

TEST: NA

STABIL: 0.0

PRES: 24.6

SAMP FL: 615

PMT: 119.1

NORM PMT: 119.0

UV LAMP: 3015.7

LAMP RATIO: 109.7

STR. LGT: 57.4

DRK PMT: 14.9

DRK LMP: 2.9

Internal Span: 296.7

Calibrator:

Flow Meter ID's: na

Make & Model: Envirotronics 6100

Serial #: 4760

Cal Gas Cylinder I.D. #: LL42475

Cal Gas Conc. (ppm): 50.3

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	5000	77	5077
mid	5000	33	5033
low	5000	16	5016

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4995	0.0	4995	0	2.0	NA
adjusted zero	4995	0.0	4995	0	0.0	NA
as found high	4916	77.08	4993	776.5	797.0	0.974
adjusted high	4916	77.08	4993	776.5	777.0	0.999
mid	4960	32.86	4993	331.0	330.0	1.003
low	4977	16.45	4993	165.7	164.0	1.010
calibrator zero	4995	0.00	4995	0	0.0	NA
Average C.F.=						1.004

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	Pass/Fail ?
Slope =	0.999	> or = 0.995	PASS ✓
b (Intercept as % of full scale) =	0.10%	0.85-1.15	PASS
% change in C.F. from last cal	2.37%	± 3% F.S.	PASS
		± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

run converter efficiency test immediately following zero adjust

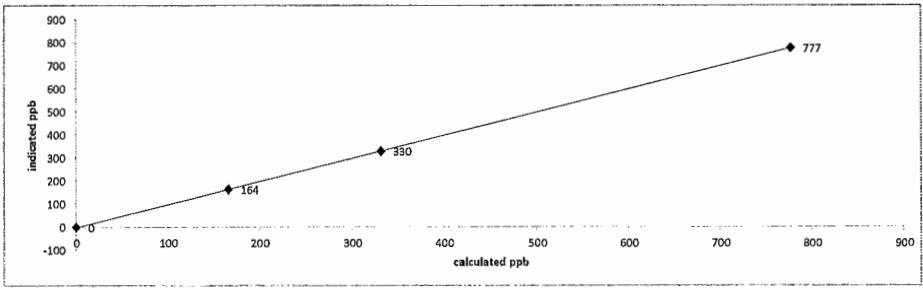
SO₂ High Point gas concentration: NA Time gas run (mst): NA

Zero corrected analyzer response: NA

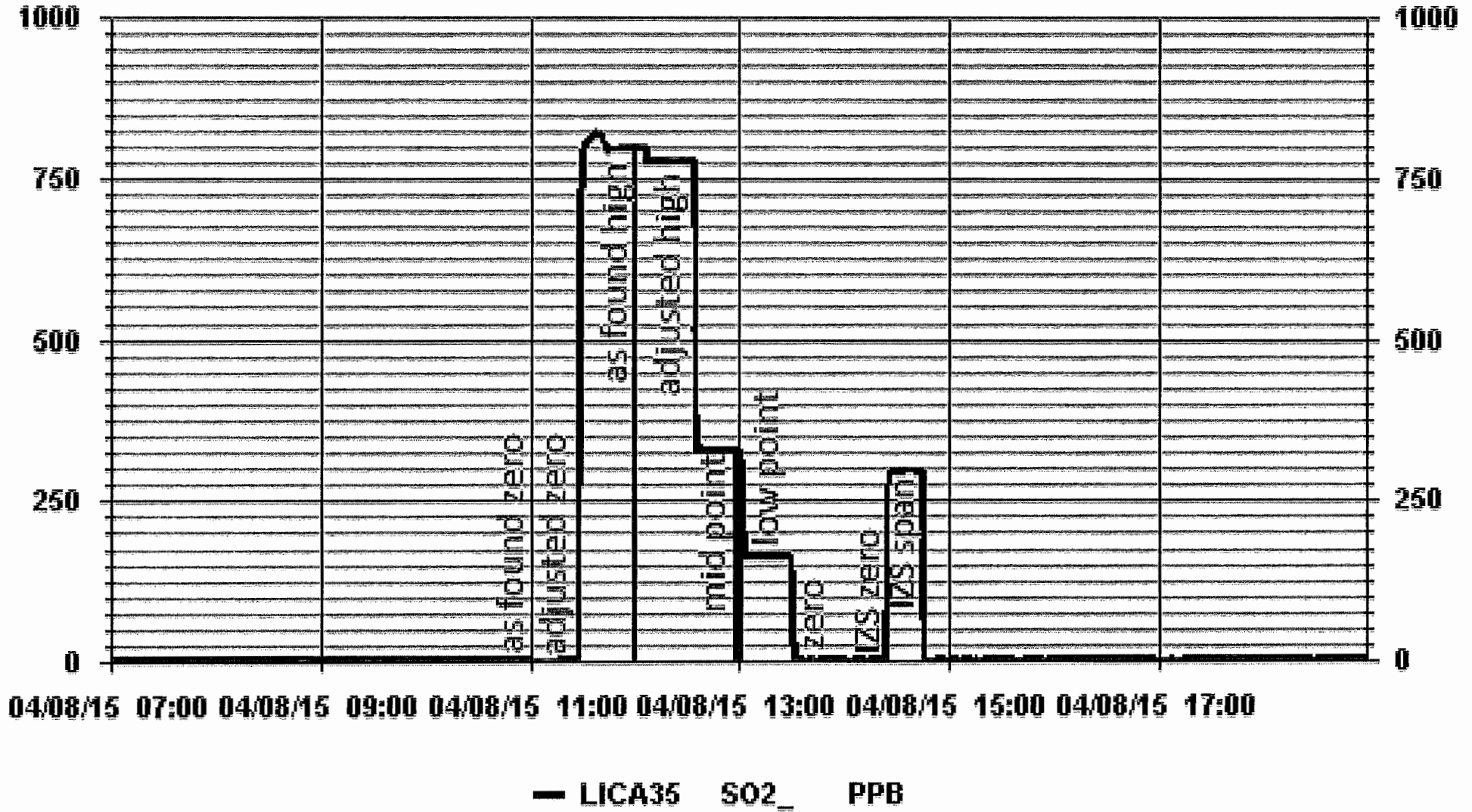
Comments:

Filter Changed 11:36 - High point cal gas cons reduced from 780 to 750 ppb on a calibrator as calculated concentration was above 800 ppb

API 100E SO2 Analyzer Calibration



01 Minute Averages



HYDROGEN SULPHIDE

Maxxam Thermo 450i H2S Analyzer Calibration

Date: 8-Apr-15
Company: LICA
Station Name/Location: Elk Point
Performed by: Alex Yakupov
Application H₂S/TRS/SO₂: H2S

Start/End Time (mst): 1:24 / 17:50
Calibration Purpose: Monthly
Converter Make & Model: internal
Converter Serial #: NA
Cal Gas Expiry Date: 25-Dec-15

Analyzer:
Serial Number: 1226154721
Last Calibration Date: 24-Mar-15
Previous Cal High Point C.F.: 0.999

Range ppb: 100
As Found C.F.: 1.025
New C.F.: 1.001

MOTHERBOARD:

As found:	As left:
BKG: 14.1	BKG: 14.7
COEF: 0.972	COEF: 1.001
3.3 3.3	3.3 3.3
5.0 5.0	5.0 5.0
15.0 15.1	15.0 15.1
24.0 24.0	24.0 24.0
-3.3 -3.2	-3.3 -3.2

INTERFACE BOARD:

PMT: -654.5	PMT: -654.5
FLASH: 927	FLASH: 927
3.3 3.3	3.3 3.3
5.0 5.0	5.0 5.0
15.0 15.1	15.0 14.9
-15.0 -15.1	-15.0 -15.1
24.0 24.1	24.0 24.1
INTERNAL: 34.1	INTERNAL: 33.8
CHAMBER: 45.0	CHAMBER: 45.2
CONVERTER TEMP: 342.2	CONVERTER TEMP: 338.0
CONVERTER SET: 340.0	CONVERTER SET: 340.0
PERM OVEN GAS: 35.0	PERM OVEN GAS: 35.0
PERM OVEN HTR: 34.27	PERM OVEN HTR: 34.26
PRESSURE: 573.1	PRESSURE: 574.9
SAMPLE FLOW: 0.884	SAMPLE FLOW: 0.885
LAMP INTENSITY: 91	LAMP INTENSITY: 91
Internal Span: 41.1	Internal Span: 41.79

Calibrator:

Flow Meter ID's: na	Calibrator Flow Targets:
Make & Model: API 700	point diluent (cc/min) cal gas (cc/min) total (cc/min)
Serial #: 830	zero 5000 0 5000
Cal Gas Cylinder I.D. #: BLM0005049	high 5000 38 5038
Cal Gas Conc. (ppm): 10.1	mid 5000 18 5018
	low 5000 10 5010

Calibration:

Point	Calibrator Flow Rates (cc/min)			Calculated Concentration (ppb)	Indicated Concentration (ppb)	Correction Factors
	Diluent	Cal Gas	Total			
as found zero	5000	0.0	5000	0	0.1	NA
adjusted zero	5000	0.0	5000	0	0.0	NA
as found high	4958	38.60	4997	78.0	76.1	1.025
adjusted high	4958	38.60	4997	78.0	78.0	1.000
mid	4978	18.80	4997	38.0	37.9	1.003
low	4987	10.90	4998	22.0	22.0	1.001
calibrator zero	5000	0.00	5000	0	0.0	NA
Average C.F.=						1.001

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	Pass/Fail ?
Slope =	1.000	> or = 0.995	PASS
b (Intercept as % of full scale) =	0.02%	0.85-1.15	PASS
% change in C.F. from last cal	-2.63%	± 3% F.S.	PASS
		± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

run converter efficiency test immediately following zero adjust

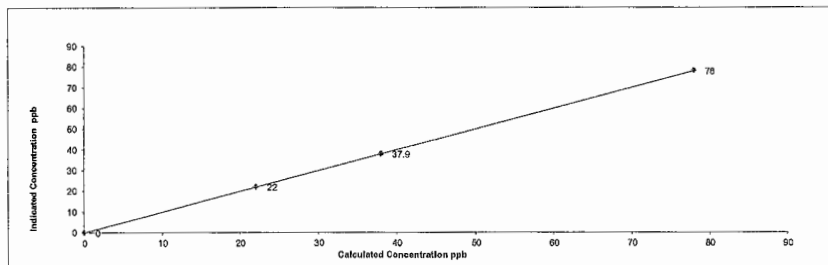
SO₂ High Point gas concentration: NA Time gas run (mst): NA

Zero corrected analyzer response: NA

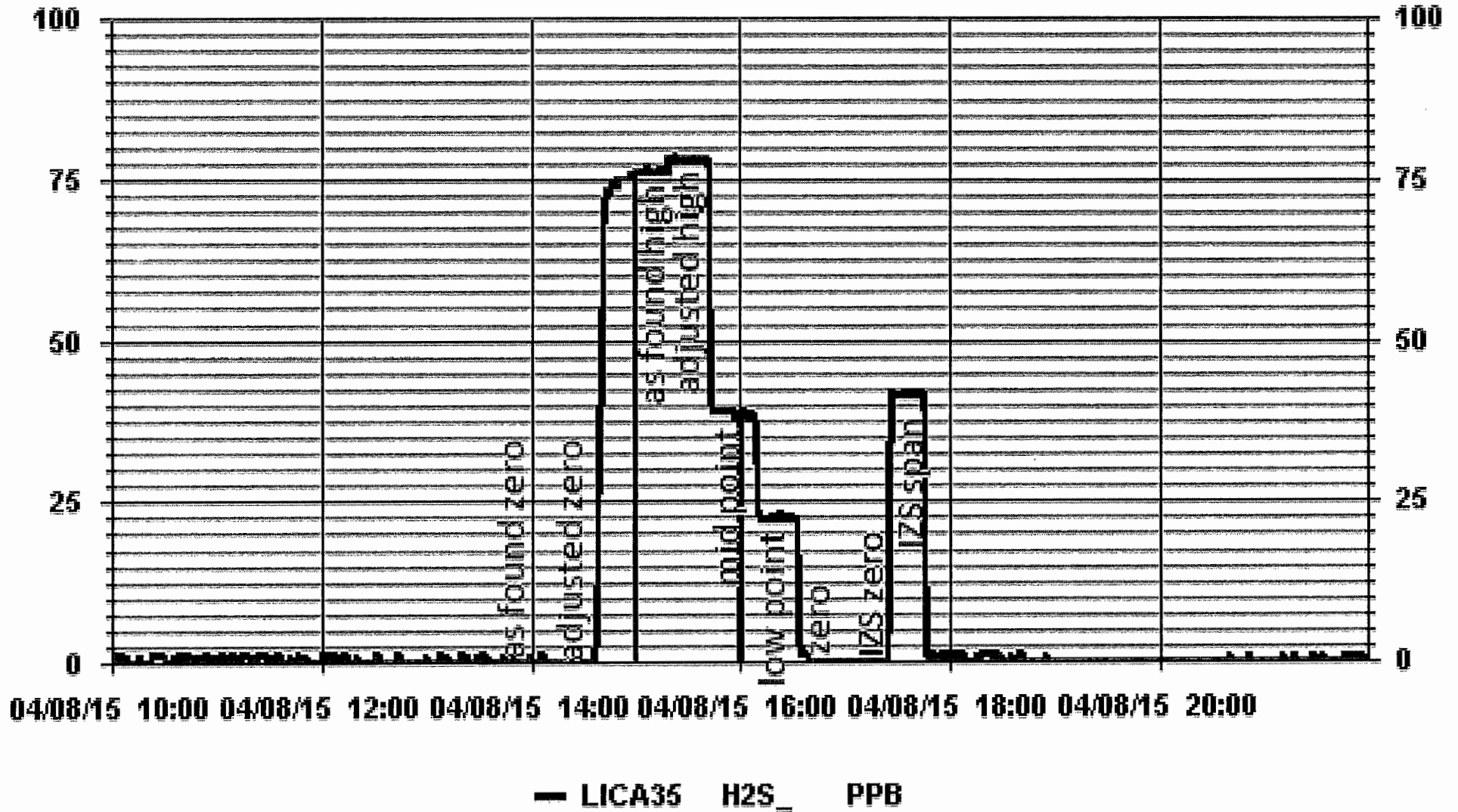
Comments:

Filter changed. No converter efficiency test performed due to time limit

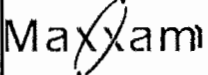
Thermo 450i H2S Analyzer Calibration



01 Minute Averages



TOTAL HYDROCARBON



Thermo 55I Methane/Non-Methane Analyzer Calibration

Date: 8-Apr-15

Company: LICA

Station Name: Elk Point

Performed by: Alex Yakupov

Start Time (mst): 8:57

End Time (mst): 14:12

Calibration Purpose: routine monthly

Cal Gas Expiry Date: 26-Mar-17

Analyzer & Diagnostics:

Serial Number: 1236656107

Last Calibration Date: 4-Mar-15

As found C.F.

CH₄= 1.072

NMHC= 1.077

THC= 1.074

Previous Cal High Point C.F.

CH₄= 1.000

NMHC= 1.001

THC= 1.001

Analyzer Range

CH₄= 20

NMHC= 20

THC= 40

Mother Board Voltages:

3.3: 3.3

5.0: 4.9

15.0: 14.9

24.0: 24.0

-3.3: -3.2

Interface Board Voltages:

3.3: 3.3

5.0: 5.0

15.0: 15.0

24.0: 23.6

-15.0: -15.1

Blas Supply: -293.2

Temperatures:

Detector Oven: 175.0

Filter: 175.0

Column Oven: 74.9

Flame: 380

Internal: 34.1

Pressures cylinder/reg.:

Carrier: 1700 | 31.1

Fuel: 1200 | 40.3

Air: 46 | 32.4

FID Status:

Status: LIT

Counts: 25776

Flame: 380.7

Det Base: 175.0

Flame and Power Stats:

Last Power On: Apr 03 2015 @ 17:05

Flameouts: 41

Det Oven at Start: 170.2

Col Oven at Start: 74.5

Calibration History>1:

Time: NA

Type: NA

Status: NA

Check/Adjust: NA

CH₄ Span Conc: NA

Calibration History cnt'd>1:

CH₄ SP Ratio: NA

CH₄ RT: NA

CH₄ PK IDX: NA

CH₄ PK HT: NA

NM Span Conc: NA

NM SP Ratio: NA

NM Peak Area: NA

Date: NA

Time: NA

CH₄ PK HT: NA

CH₄ RT: NA

CH₄ Baseline: NA

CH₄ LOD: NA

CH₄ SD: NA

CH₄ CONC: NA

NM PK HT: NA

NM Peak Area: NA

NM CONC: NA

NM Base Start: NA

NM Base End: NA

NM LOD: NA

NM Start IDX: NA

NM End IDX: NA

NM Max Slope: NA

NM Min Slope: NA

NM PT Count: NA

Previous CH₄: 9.5

Previous NMHC: 13.67

Previous THC: 23.23

New CH₄: 9.729

New NMHC: 14.89

New THC: 24.64

Run History>1:

Date: NA

Time: NA

CH₄ PK HT: NA

CH₄ RT: NA

CH₄ Baseline: NA

CH₄ LOD: NA

CH₄ SD: NA

CH₄ CONC: NA

NM PK HT: NA

NM Peak Area: NA

NM CONC: NA

NM Base Start: NA

NM Base End: NA

NM LOD: NA

NM Start IDX: NA

NM End IDX: NA

NM Max Slope: NA

NM Min Slope: NA

NM PT Count: NA

Previous CH₄: 9.5

Previous NMHC: 13.67

Previous THC: 23.23

New CH₄: 9.729

New NMHC: 14.89

New THC: 24.64

Daily Zero/Span Values:

Previous CH₄: 9.5

Previous NMHC: 13.67

Previous THC: 23.23

New CH₄: 9.729

New NMHC: 14.89

New THC: 24.64

Callibrator and Gas Information:

Make & Model: API 700

Serial #: 830

Cal Gas Cylinder I.D. #: LL33674

CH₄ Cylinder Conc.= 601.4 | 202.0 =C₃H₈ Cylinder Conc.

CH₄ as C₃H₈= 555.5 | 1156.9 =total CH₄ equivalent

Callibrator Flow Targets: (cc/min):

point	diluent	cal gas	total flow
zero	2000	0	2000
high	2000	53	2053
mid	2000	25	2025
low	2000	12	2012

Calibration Data:

Callibrator Flow Rates (cc/min)				Calculated CH ₄ (ppm)	Calculated NMHC (ppm)	Calculated THC (ppm)	Indicated CH ₄ (ppm)	Indicated NMHC (ppm)	Indicated THC (ppm)	Correction Factors:		
Point	Diluent	Cal Gas	Total Flow							CH ₄	NMHC	THC
20 min as found zero	2000	0.00	2000	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA
20 min as found high point	2000	53.00	2053	15.53	14.34	29.87	14.49	13.31	27.82	1.072	1.077	1.074
20 min adjusted high	2000	53.00	2053	15.53	14.34	29.87	15.57	14.38	29.96	0.997	0.997	0.997
20 min mid	2000	25.00	2025	7.42	6.86	14.28	7.55	6.93	14.49	0.983	0.990	0.986
20 min low	2000	12.00	2012	3.59	3.31	6.90	3.73	3.29	7.01	0.962	1.007	0.984
20 min callibrator zero	2000	0.00	2000	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA
Average C.F.=										0.981	0.998	0.989

Linear Regression/Calibration Results:

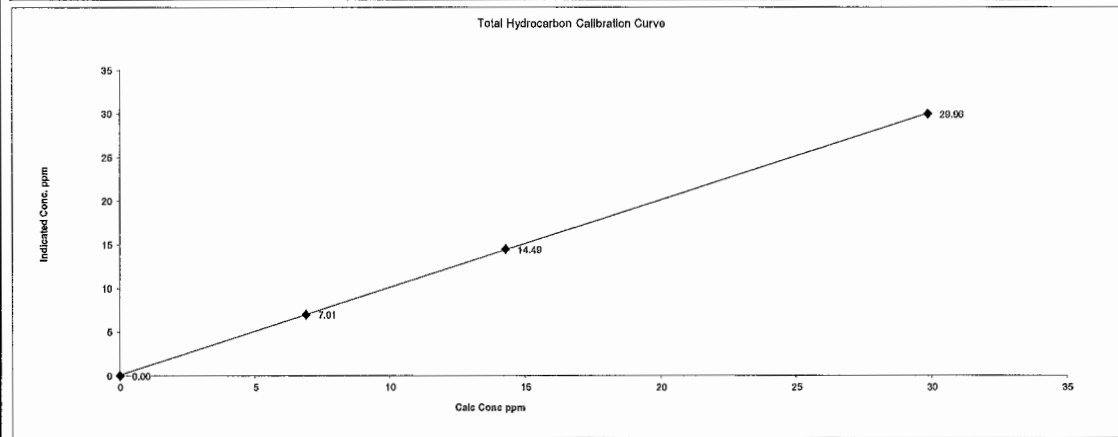
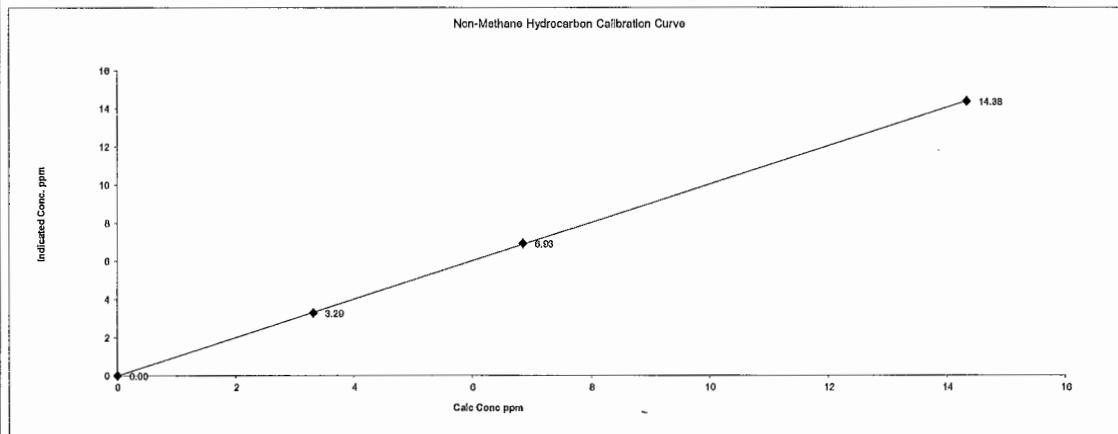
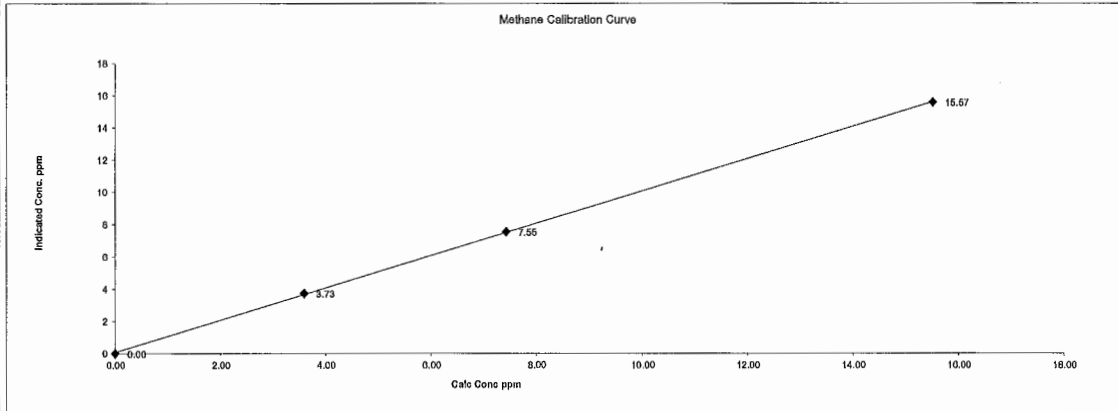
	CH ₄	NMHC	THC	LIMITS
Correlation Coefficient =	1.000	1.000	1.000	> or = 0.995
Slope =	1.000	1.004	1.003	0.85-1.15
b (Intercept as % of full scale) =	0.38%	-0.01%	0.17%	± 3% F.S.
% change in C.F. from last cal =	-6.67%	7.09%	6.76%	+/-15%

Comments:

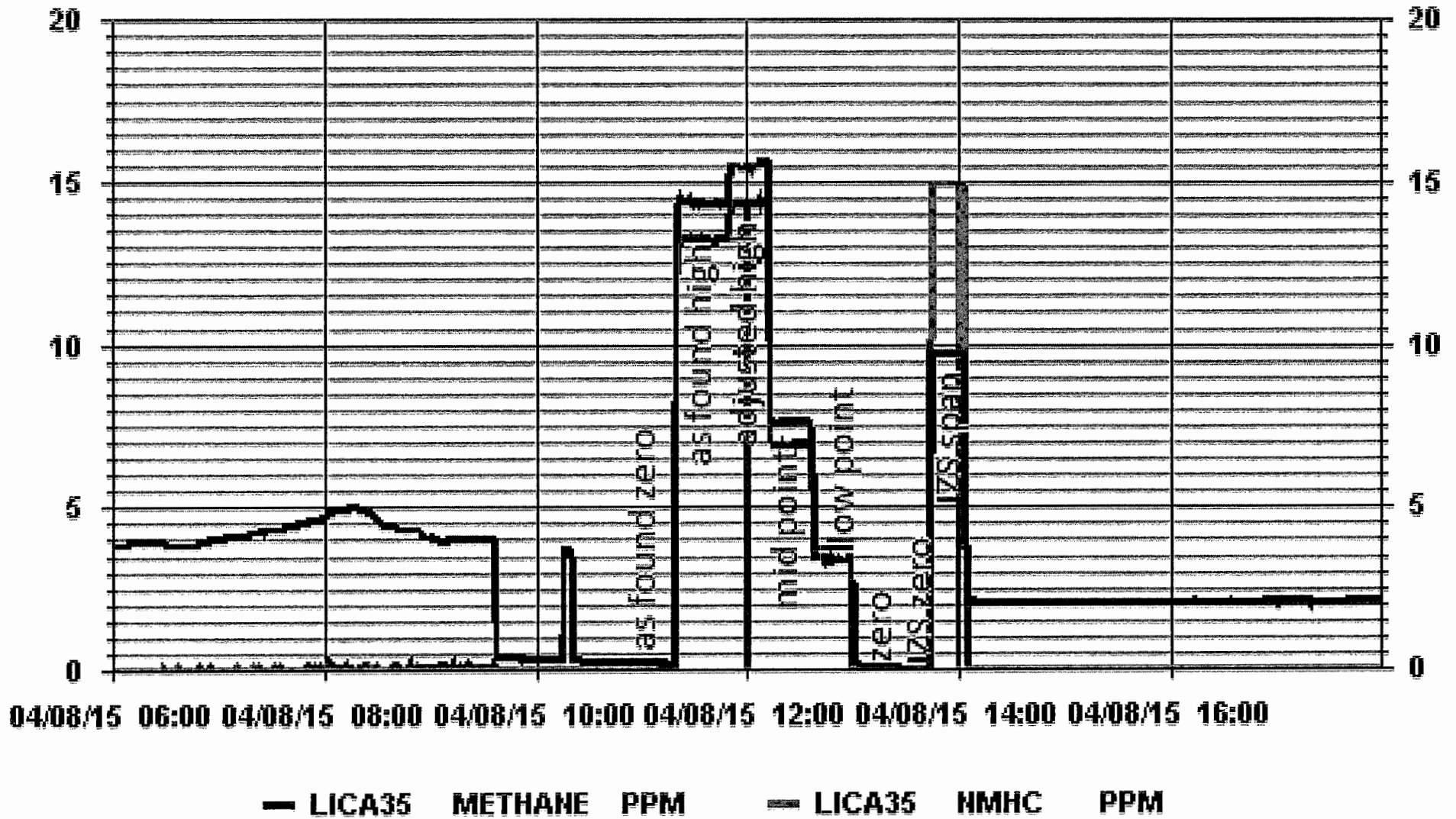
Calibration History was found with status "ZERO-Error" and all data for 5 available positions state: "01 Jan 70, 00:00", no data saved. Filter changed

Date:	8-Apr-15	Start Time (mst):	8:57
Company:	LICA	End Time (mst):	14:12
Station Name:	Elk Point	Calibration Purpose:	routine monthly
Performed by:	Alex Yakupov	Cal Gas Expiry Date:	26-Mar-17

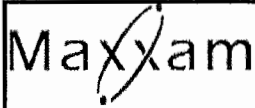
Thermo 55C Methane/Non-Methane Analyzer Calibration



01 Minute Averages



NITROGEN DIOXIDE



API 200E NOx Analyzer Calibration

Date: 8-Apr-15
 Company: LICA
 Station Name/Location: Elk Point
 Performed by: Alex Yakupov

Start Time (mst): 8:57
 End Time (mst): 17:00
 Calibration Purpose: Monthly
 Cal Gas Expiry Date: 12-Aug-17

Analyzer Serial Number: 592
 Last Calibration Date: 10-Mar-15
 Range ppb: 1000

Correction Factors:
 As found C.F. Previous Cal High Point C.F.:
 NO= 1.020 NO= 1.000
 NOx= 1.021 NOx= 0.999
 NO₂= 1.003 NO₂= 1.000

As found:
 NOx SLOPE: 0.957
 NOx OFFS: 0.6
 NO SLOPE: 0.957
 NO OFFS: -2.4
 TEST: 127.5
 SAMP FLW: 481
 OZONE FL: 74
 PMT: 16.6
 NORM PMT: 1.1
 AZERO: 18.1
 HVPS: 637
 RCELL TEMP: 50.0
 BOX TEMP: 31.5
 PMT TEMP: 6.9
 IZS TEMP: 40.1
 MOLY TEMP: 313.5
 RCEL: 6.7
 SAMP: 26.6
 Internal Span: 296/4.4/292

As left:
 NOx SLOPE: 0.977
 NOx OFFS: 2.1
 NO SLOPE: 0.977
 NO OFFS: -0.4
 TEST: 127.5
 SAMP FLW: 481
 OZONE FL: 74
 PMT: 25.1
 NORM PMT: 2.1
 AZERO: 18.4
 HVPS: 637
 RCELL TEMP: 49.9
 BOX TEMP: 32.2
 PMT TEMP: 6.9
 IZS TEMP: 40.0
 MOLY TEMP: 314.0
 RCEL: 6.6
 SAMP: 26.6
 Internal Span: 292.3/4.58/288.4

Calibrator Flow Targets:

Make & Model: EnviroNics 6100
 Serial #: 4760
 Cal Gas Cylinder I.D. #: LL42575
 NO Cylinder Conc. (ppm): 48.5
 NOx Cylinder Conc. (ppm): 48.5

point	diluent (cc/min)	cal gas (cc/min)	O ₂ setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	5000	77	310.00	5077
mid	5000	33	130.00	5033
low	5000	16	70.00	5016

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	4995	0.0	4995	0	0	1.0	1.7	NA	NA
adjusted zero	4995	0.0	4995	0	0	0.0	0.6	NA	NA
as found high	4916	77.08	4993	748.7	748.7	734	734	1.020	1.021
adjusted high	4916	77.08	4993	748.7	748.7	750	750	0.998	0.999
mid	4960	32.86	4993	319.2	319.2	319	319	1.001	1.003
low	4977	16.45	4993	159.8	159.8	159	159	1.005	1.009
calibrator zero	4995	0.00	4995	0	0	0.0	0.0	NA	NA
Average C.F.=								1.001	1.003

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ increase	NO ₂ C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4916	77.08	4993	0.0	754.0	754.0	0.0	0.0	0.6	
as found NO ₂	4916	77.08	4993	310.0	387.0	753.0	366.0	367.0	366.0	1.003
adjusted NO ₂		NA								
gpt mid	4916	77.08	4993	130.0	600.0	753.0	154.0	154.0	154.0	1.000
gpt low	4916	77.08	4993	70.0	677.0	753.0	78.0	77.0	78.0	0.987
Average NO ₂ C.F.=										0.994

Linear Regression/Calibration Results:

	NO	NOx	NO ₂
Correlation Coefficient =	1.000	1.000	1.000
Slope =	1.002	1.002	0.995
b (Intercept as % of full scale) =	-0.06%	-0.03%	0.09%
% change in C.F. from last cal =	-2.00%	-2.19%	-0.27%
NO ₂ converter efficiency			100.6%

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

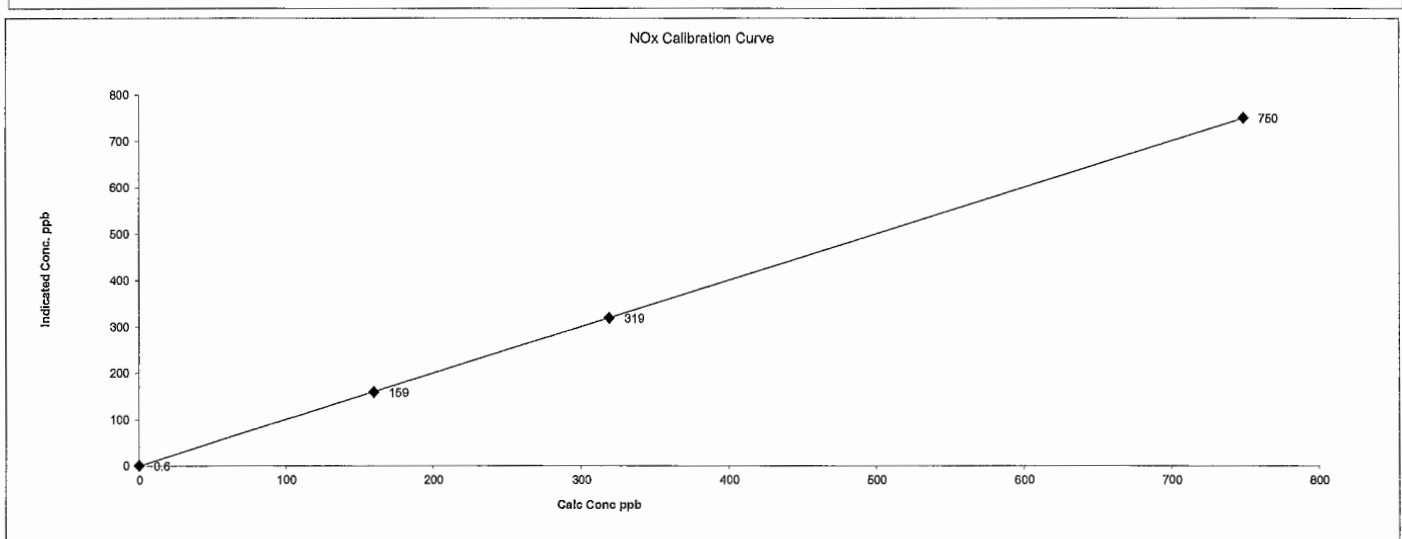
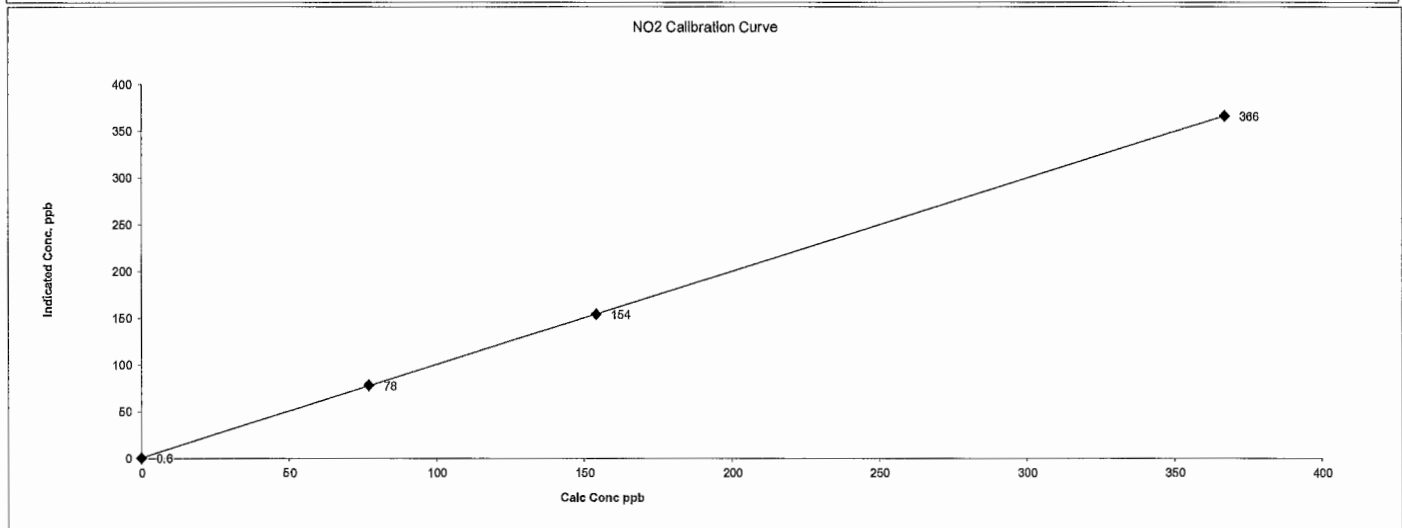
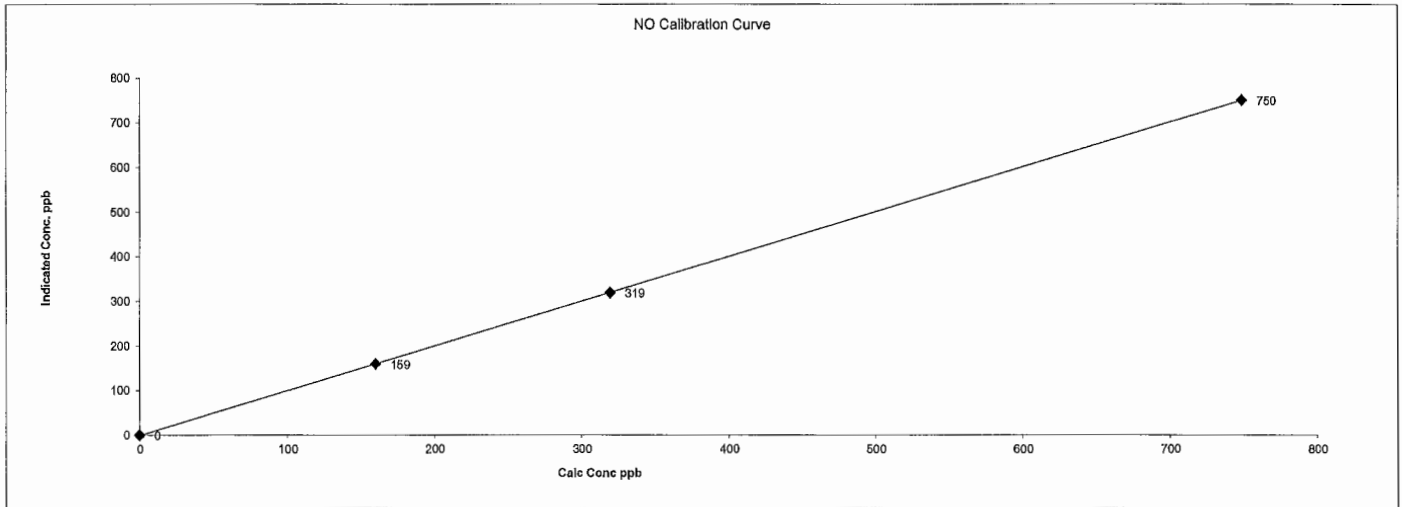
Comments:

Filter Changed. 11:36 - High point reduced from 780 to 750 ppb. No NO₂ adjustments made

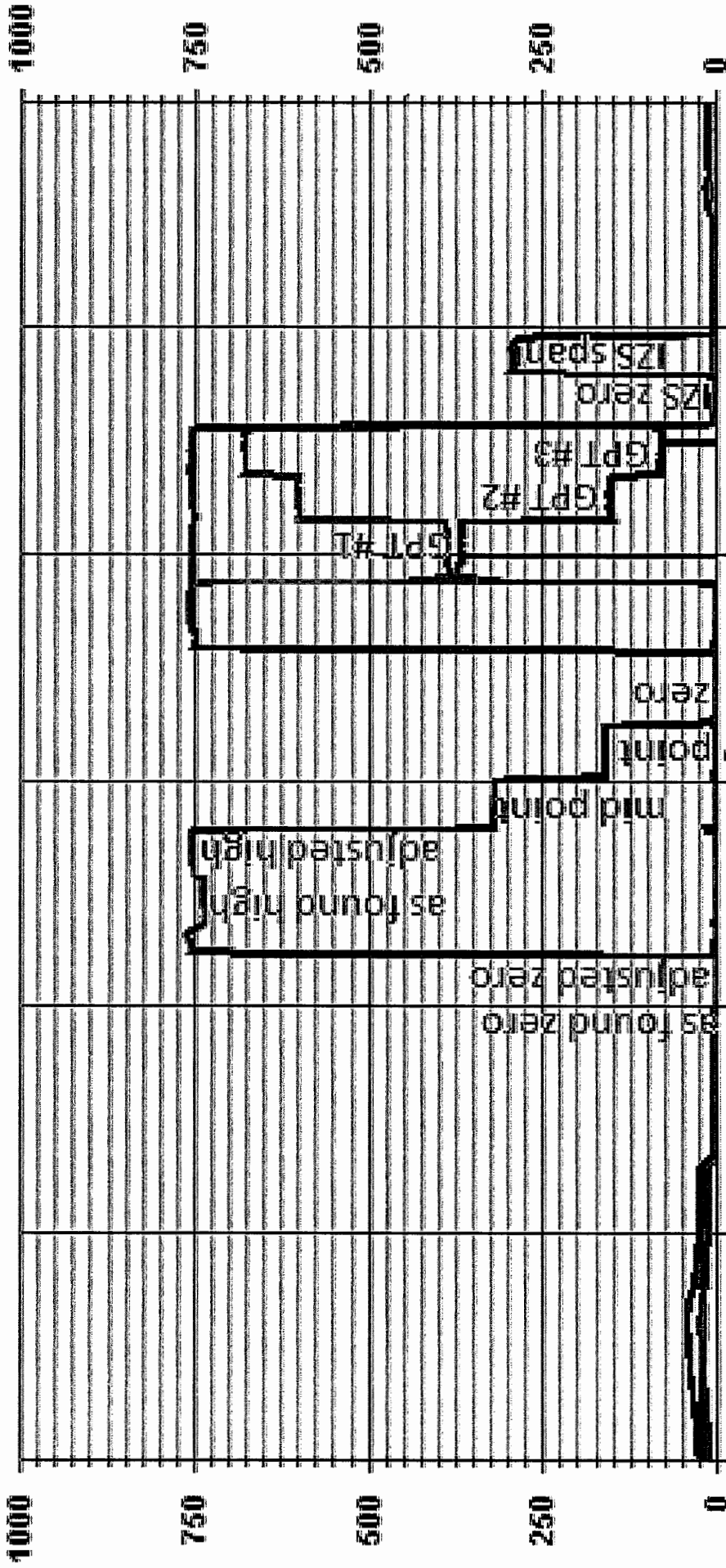
Date: 8-Apr-15
 Company: LICA
 Station Name/Location: Elk Point
 Performed by: Alex Yakupov

Start Time (mst): 8:57
 End Time (mst): 17:00
 Calibration Purpose: Monthly
 Cal Gas Expiry Date: 12-Aug-17

API 200E NOx Analyzer Calibration

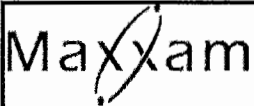


01 Minute Averages



04/08/15 07:00 04/08/15 09:00 04/08/15 11:00 04/08/15 11:30 04/08/15 12:00 04/08/15 12:30 04/08/15 13:00 04/08/15 15:00 04/08/15 15:30 04/08/15 16:00 04/08/15 16:30 04/08/15 17:00

— LICA35 NOX_ PPB — LICA35 NO_ PPB — LICA35 NO2_ PPB



API 200E NOx Analyzer Calibration

Date: 20-Apr-15
 Company: LICA
 Station Name/Location: Elk Point
 Performed by: Alex Yakupov

Start Time (mst): 10:46
 End Time (mst): 16:55
 Calibration Purpose: Monthly Re-Calibration
 Cal Gas Expiry Date: 12-Aug-17

Analyzer Serial Number: 592
 Last Calibration Date: 8-Apr-15
 Range ppb: 1000

Correction Factors:
 As found C.F. Previous Cal High Point C.F.:
 NO= 1.013 NO= 0.998
 NOx= 1.012 NOx= 0.999
 NO₂= 1.005 NO₂= 1.003

As found:
 NOx SLOPE: 0.977
 NOx OFFS: 2.1
 NO SLOPE: 0.977
 NO OFFS: -0.4
 TEST: 127.5
 SAMP FLW: 481
 OZONE FL: 74
 PMT: 17.5
 NORM PMT: 1.4
 AZERO: 17.9
 HVPS: 637
 RCELL TEMP: 50.0
 BOX TEMP: 32.5
 PMT TEMP: 6.9
 IZS TEMP: 40.1
 MOLY TEMP: 314.3
 RCEL: 6.7
 SAMP: 26.5
 Internal Span: 292.3/4.58/288.4

As left:
 NOx SLOPE: 0.990
 NOx OFFS: 4.0
 NO SLOPE: 0.990
 NO OFFS: 0.4
 TEST: 127.5
 SAMP FLW: 480
 OZONE FL: 74
 PMT: 16.5
 NORM PMT: 2.9
 AZERO: 17.6
 HVPS: 637
 RCELL TEMP: 50.0
 BOX TEMP: 31.7
 PMT TEMP: 6.9
 IZS TEMP: 40.2
 MOLY TEMP: 316.6
 RCEL: 6.6
 SAMP: 26.5
 Internal Span: 290.7/4.93/286.5

Calibrator Flow Targets:

Make & Model: Environics 6100
 Serial #: 4760
 Cal Gas Cylinder I.D. #: LL42475
 NO Cylinder Conc. (ppm): 48.5
 NOx Cylinder Conc. (ppm): 48.5

point	diluent (cc/min)	cal gas (cc/min)	O ₃ setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	5000	77	350.00	5077
mid	5000	33	175.00	5033
low	5000	16	80.00	5016

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	4994	0.0	4994	0	0	0.0	1.0	NA	NA
adjusted zero	4994	0.0	4994	0	0	0.0	0.0	NA	NA
as found high	4923	69.89	4993	678.9	678.9	670	671	1.013	1.012
adjusted high	4923	69.89	4993	678.9	678.9	679	679	1.000	1.000
mid	4961	34.94	4995	339.2	339.2	338	339	1.004	1.001
low	4980	15.43	4995	149.8	149.8	149	149	1.006	1.006
calibrator zero	4994	0.00	4994	0	0	0.0	0.0	NA	NA
Average C.F.=								1.003	1.002

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ increase	NO ₂ C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4924	69.88	4994	0.0	679.0	680.0	1.0	0.0	0.0	
as found NO ₂	4924	69.88	4994	350.0	272.0	679.0	406.0	407.0	405.0	1.005
adjusted NO ₂		NA								
gpt mid	4924	69.88	4994	175.0	473.0	678.0	205.0	206.0	204.0	1.010
gpt low	4924	69.88	4994	80.0	590.0	679.0	90.0	89.0	89.0	1.000
Average NO ₂ C.F.=										1.005

Linear Regression/Calibration Results:

	NO	NOx	NO ₂
Correlation Coefficient =	1.000	1.000	1.000
Slope =	1.000	1.001	0.994
b (Intercept as % of full scale) =	-0.06%	-0.04%	0.00%
% change in C.F. from last cal =	-1.53%	-1.28%	-0.19%
NO ₂ converter efficiency			99.5%

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

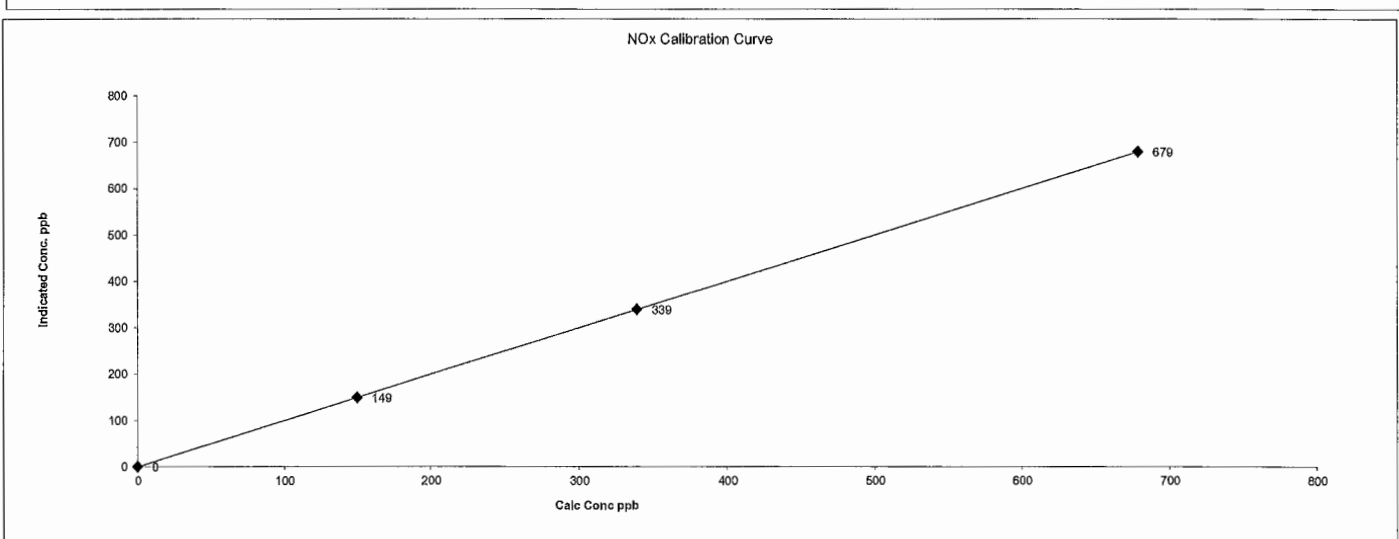
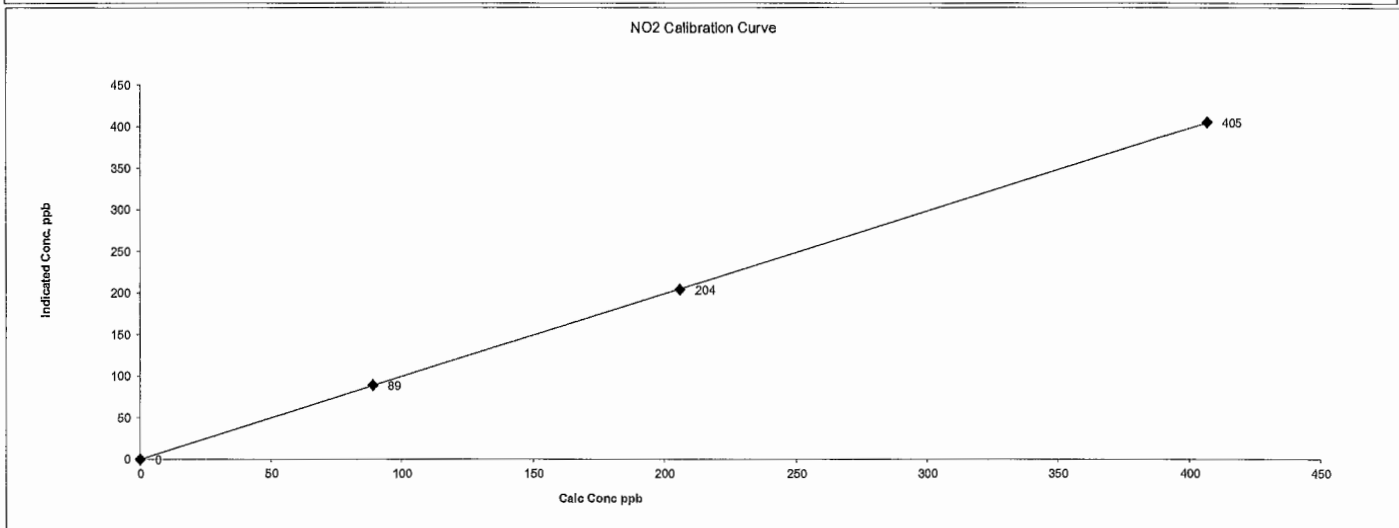
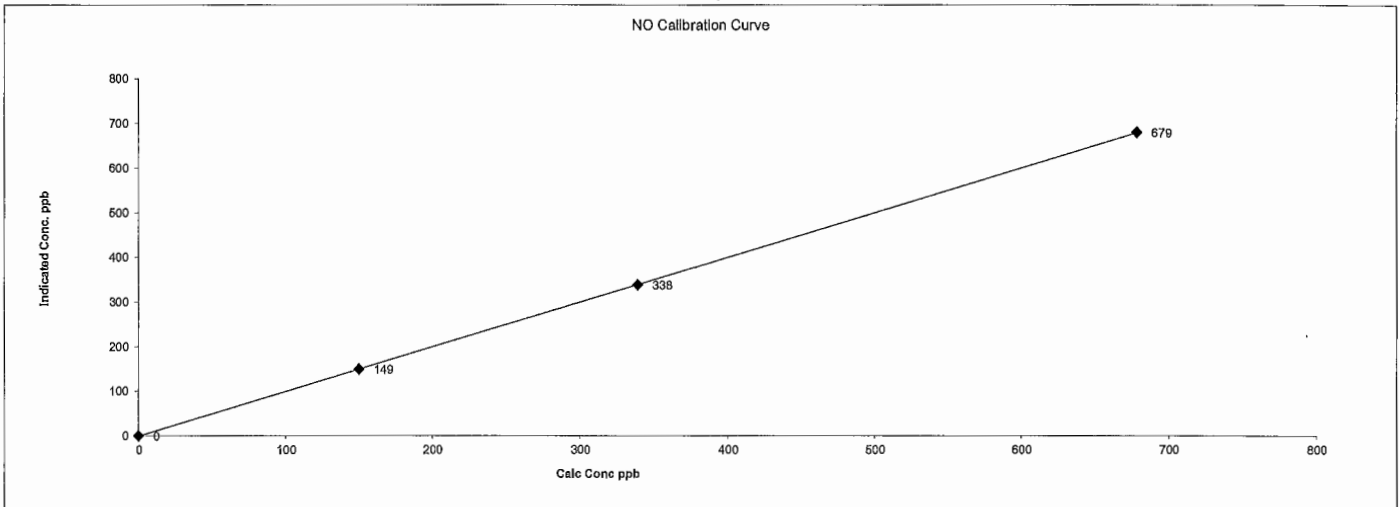
Comments:

Filter Changed. No NO₂ adjustment made

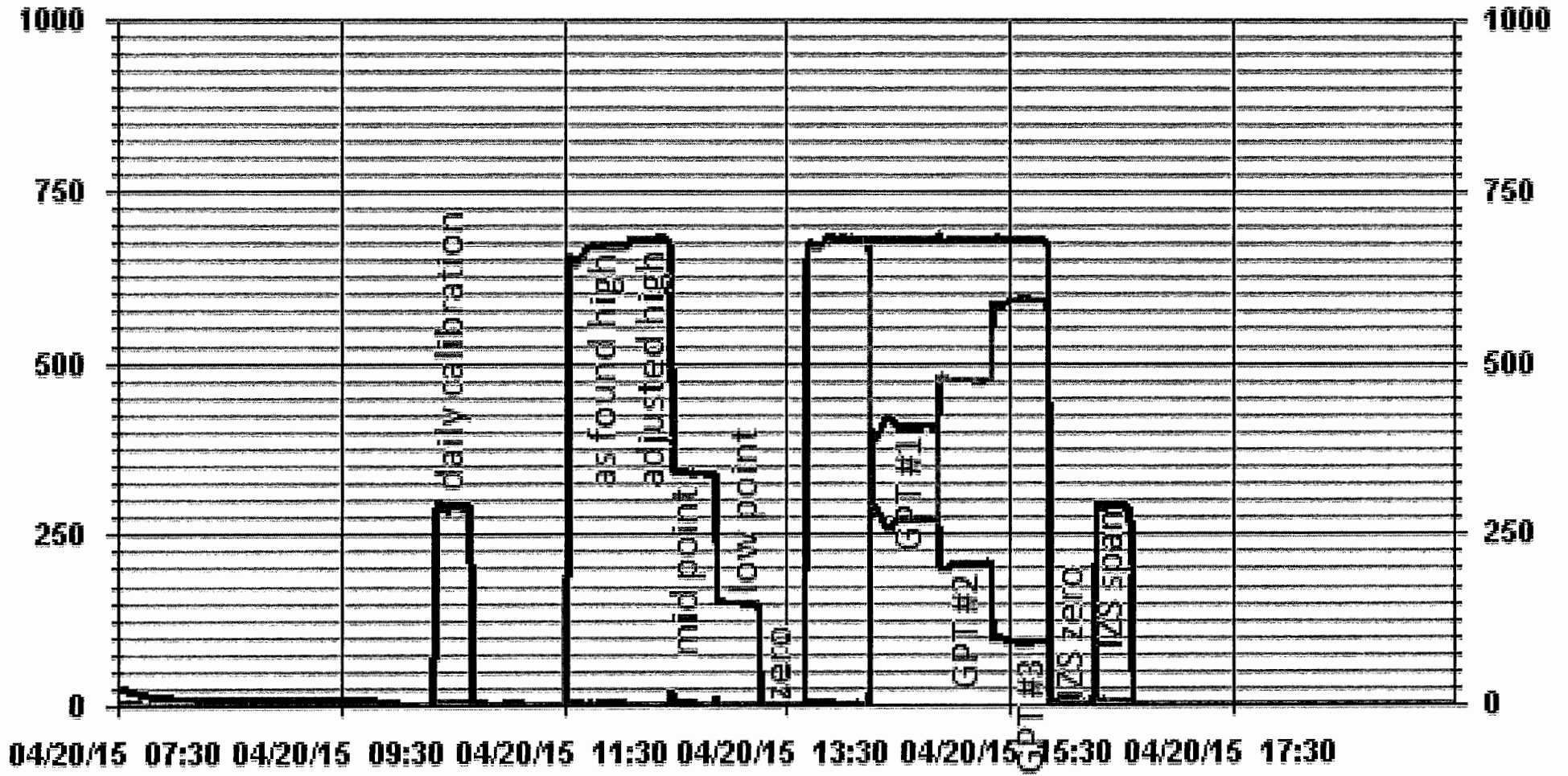
Date: 20-Apr-15
Company: LICA
Station Name/Location: Elk Point
Performed by: Alex Yakupov

Start Time (mst): 10:46
End Time (mst): 16:55
Calibration Purpose: Monthly Re-Calibration
Cal Gas Expiry Date: 12-Aug-17

API 200E NOx Analyzer Calibration



01 Minute Averages



— LICA35 NOX_ PPB — LICA35 NO_ PPB — LICA35 NO2_ PPB

OZONE

Maxxam Thermo 49i O₃ Analyzer Calibration

Date: <u>9-Apr-15</u>	Start Time (mst): <u>8:40</u>
Company: <u>LICA</u>	End Time (mst): <u>13:24</u>
Station Name/Location: <u>Elk Point</u>	Calibration Purpose: <u>Monthly</u>
Performed by: <u>Alex Yakupov</u>	G.P.T. Date: <u>8-Apr-15</u>

Analyzer: Serial Number: <u>1002240372</u>	Range ppm: <u>500</u>
Last Calibration Date: <u>24-Feb-15</u>	As Found C.F.: <u>1.034</u>
Previous Cal High Point C.F.: <u>0.999</u>	New C.F.: <u>0.989</u>

	As found:	As left:
Motherboard:	O ₃ Bkg: <u>-0.2</u>	O ₃ Bkg: <u>0.0</u>
	O ₃ Coef: <u>1.001</u>	O ₃ Coef: <u>1.035</u>
	<u>3.3</u>	<u>3.3</u>
	<u>15.0</u>	<u>15.0</u>
Interface Board:	<u>24.0</u>	<u>23.9</u>
	<u>-3.3</u>	<u>-3.2</u>
	<u>3.3</u>	<u>3.3</u>
	<u>5.0</u>	<u>5.0</u>
	<u>15.0</u>	<u>14.9</u>
	<u>-15.0</u>	<u>-15.1</u>
Photo Lamp	<u>9.8</u>	<u>9.8</u>
	<u>24.0</u>	<u>23.5</u>
O ₂ Lamp	<u>9.4</u>	<u>9.4</u>
Bench:	<u>30.1</u>	<u>31.4</u>
Bench Lamp:	<u>54.1</u>	<u>54.1</u>
O ₃ Lamp:	<u>68.2</u>	<u>68.2</u>
Pressure:	<u>700.9</u>	<u>700.6</u>
Cell A lpm:	<u>0.750</u>	<u>0.750</u>
Cell B lpm:	<u>0.760</u>	<u>0.760</u>
O ₃ ppb:	<u>0.4</u>	<u>0.4</u>
Cell A ppb:	<u>5.2</u>	<u>-1.5</u>
Cell B ppb:	<u>-4.4</u>	<u>2.4</u>
Cell A Int:	<u>48519</u>	<u>48481</u>
Cell B Int:	<u>45239</u>	<u>45185</u>
Internal Span:	<u>348</u>	<u>350.4</u>

Calibrator: Make & Model: <u>Envirotronics 6100</u> Serial #: <u>4760</u> NOx Gas Cylinder I.D. #: <u>LL42575</u> NOx Cylinder Conc. (ppm): <u>48.5</u>	Calibrator Flow Targets: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>point</th> <th>total flow (cc/min)</th> <th>O₃ setting (v or ppb)</th> </tr> </thead> <tbody> <tr> <td>zero</td> <td>5000</td> <td>0</td> </tr> <tr> <td>high</td> <td>5000</td> <td>310</td> </tr> <tr> <td>mid</td> <td>5000</td> <td>130</td> </tr> <tr> <td>low</td> <td>5000</td> <td>70</td> </tr> </tbody> </table>	point	total flow (cc/min)	O ₃ setting (v or ppb)	zero	5000	0	high	5000	310	mid	5000	130	low	5000	70
point	total flow (cc/min)	O ₃ setting (v or ppb)														
zero	5000	0														
high	5000	310														
mid	5000	130														
low	5000	70														

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4994	0.0	4994	0.0	0.3	NA
adjusted zero	4994	0.0	4994	0.0	0.0	NA
as found high	4994	310.00	5304	367.0	355.0	1.034
adjusted high	4994	310.00	5304	367.0	367.2	0.999
mid	4994	130.00	5124	154.0	154.3	0.998
low	4994	70.00	5064	77.0	79.5	0.969
calibrator zero	4994	0.00	4994	0.0	0.0	NA

*copy and paste flows and NO decrease from NOx cal in to calculated concentration** Average C.F.= 0.989

Linear Regression/Calibration Results:			
Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>0.998</u>	> or = 0.995	PASS
b (Intercept as % of full scale)=	<u>0.204%</u>	0.85-1.15	PASS
% change in C.F. from last cal	<u>-3%</u>	± 3% F.S.	PASS
		± 15%	PASS

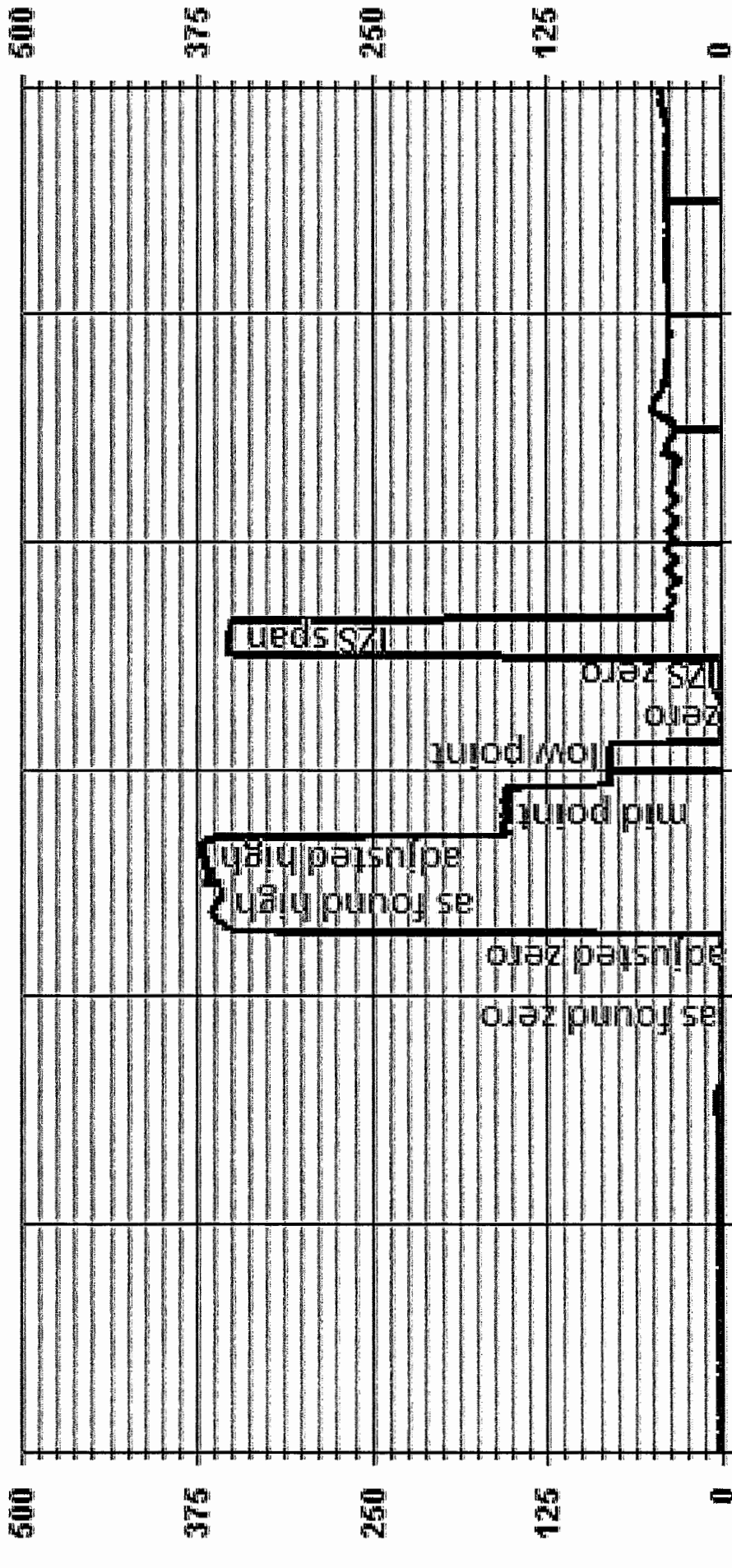
Comments:
Filter changed

Thermo 49i O₃ Analyzer Calibration

O₃ Calibration Curve

Calc Conc (ppb)	Indicated Conc (ppb)
0	0
79.5	79.5
154.3	154.3
307.2	307.2

01 Minute Averages



04/09/15 06:00 04/09/15 08:00 04/09/15 10:00 04/09/15 12:00 04/09/15 14:00 04/09/15 16:00

— LICA35 03_ PPB

PARTICULATE MATTER



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: 9-Apr-15
 Company: LICA
 Station Name/Location: Elk Point
 Previous Audit Date: 20-Mar-15

Parameter: PM 2.5
 Performed by: Alex Yakupov
 Start/End Time (mst): 12:40 / 14:04
 Calibration Purpose: 1st Audit

1400A Information and Status:

Serial Number:	<u>1405A207691003</u>	As Found Filter Loading %:	<u>23.28</u>
Ko Factor:	<u>15634</u>	As Left Filter Loading %:	<u>24.30</u>
Ambient Temperature °C:	<u>16.42</u>	As Found Noise:	<u>0.003</u>
Ambient Pressure atm:	<u>0.930</u>	As Left Noise:	<u>0.000</u>
Main Flow Reading lpm:	<u>3.00</u>	Pump Vacuum:	<u>0.39</u>
Aux Flow Reading lpm:	<u>13.67</u>	Warnings:	<u>None</u>

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	<u>Dwyer</u>	<u>Fisher</u>	<u>Fisher</u>
Model:	<u>475 Mark III</u>	<u>FB61291</u>	<u>FB61291</u>
Serial Number:	<u>NA</u>	<u>130168457</u>	<u>130168457</u>
Calibration Date:	<u>NA</u>	<u>18-Mar-15</u>	<u>18-Mar-15</u>

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.00	0.06	0.00	0.06
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.00	-0.44	0.00	-0.44
	limit	0.60	0.60	0.60	0.60

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

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.00	0.06	0.00	0.06
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.00	-0.44	0.00	-0.44
	limit	0.60	0.60	0.60	0.60

As found temperature and pressure:

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>16.4</u>	1405F pressure atm:	<u>0.930</u>
reference temperature °C:	<u>16.6</u>	reference pressure:	<u>0.930</u>
difference °C:	<u>0.2</u>	difference :	<u>0.000</u>

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

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>16.6</u>	1405F pressure atm:	<u>0.930</u>
reference temperature °C:	<u>16.6</u>	reference pressure:	<u>0.930</u>
difference °C:	<u>0.0</u>	difference :	<u>0.000</u>

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>13.67</u>
reference main flow lpm: <u>3.14</u>	reference total/aux flow lpm: <u>13.85</u>
difference lpm: <u>0.14</u>	difference lpm: <u>0.18</u>

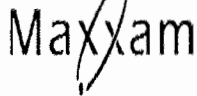
As left flows (same as above if as found adequate):

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>13.67</u>
reference main flow lpm: <u>3.14</u>	reference total/aux flow lpm: <u>13.85</u>
difference lpm: <u>0.14</u>	difference lpm: <u>0.18</u>

K_o Audit:

Last K_o audit date: 20-Mar-15
 1405F K_o factor: 15634
 Measured K_o factor: 15712.9000
 % difference: 0.50

Comments:



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: 10-Apr-15
 Company: LICA
 Station Name/Location: Elk Point
 Previous Audit Date: 9-Apr-15

Parameter: PM 2.5
 Performed by: Alex Yakupov
 Start/End Time (mst): 12:56 / 13:25
 Calibration Purpose: Flow rates adjustment

1400A Information and Status:

Serial Number:	<u>1405A207691003</u>	As Found Filter Loading %:	<u>22.87</u>
Ko Factor:	<u>15634</u>	As Left Filter Loading %:	<u>22.87</u>
Ambient Temperature °C:	<u>18.77</u>	As Found Noise:	<u>0.000</u>
Ambient Pressure atm:	<u>0.920</u>	As Left Noise:	<u>0.000</u>
Main Flow Reading lpm:	<u>3.00</u>	Pump Vacuum:	<u>0.39</u>
Aux Flow Reading lpm:	<u>13.67</u>	Warnings:	<u>None</u>

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	<u>Dwyer</u>	<u>Fisher</u>	<u>Fisher</u>
Model:	<u>475 Mark III</u>	<u>FB61291</u>	<u>FB61291</u>
Serial Number:	<u>NA</u>	<u>130168457</u>	<u>130168457</u>
Calibration Date:	<u>NA</u>	<u>18-Mar-15</u>	<u>18-Mar-15</u>

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	NA	NA	NA	NA
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	NA	NA	NA	NA
	limit	0.60	0.60	0.60	0.60

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

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	NA	NA	NA	NA
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	NA	NA	NA	NA
	limit	0.60	0.60	0.60	0.60

As found temperature and pressure:

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>18.8</u>	1405F pressure atm:	<u>0.920</u>
reference temperature °C:	<u>18.8</u>	reference pressure:	<u>0.920</u>
difference °C:	<u>0.0</u>	difference :	<u>0.000</u>

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

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>18.8</u>	1405F pressure atm:	<u>0.920</u>
reference temperature °C:	<u>18.8</u>	reference pressure:	<u>0.920</u>
difference °C:	<u>0.0</u>	difference :	<u>0.000</u>

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>13.67</u>
reference main flow lpm: <u>3.12</u>	reference total/aux flow lpm: <u>13.83</u>
difference lpm: <u>0.12</u>	difference lpm: <u>0.16</u>

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

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>13.67</u>
reference main flow lpm: <u>3.03</u>	reference total/aux flow lpm: <u>13.78</u>
difference lpm: <u>0.03</u>	difference lpm: <u>0.11</u>

K_o Audit:

Last K_o audit date: 20-Mar-15
 1405F K_o factor: 15634
 Measured K_o factor: 15712.9000
 % difference: 0.50

Comments:



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: 28-Apr-15
 Company: LICA
 Station Name/Location: Elk Point
 Previous Audit Date: 10-Apr-15

Parameter: PM 2.5
 Performed by: Alex Yakupov
 Start/End Time (mst): 11:12 - 12:04
 Calibration Purpose: Monthly Audit #2

1400A Information and Status:

Serial Number:	<u>1405A207691003</u>	As Found Filter Loading %:	<u>23.08</u>
Ko Factor:	<u>15634</u>	As Left Filter Loading %:	<u>18.38</u>
Ambient Temperature °C:	<u>21.60</u>	As Found Noise:	<u>0.002</u>
Ambient Pressure atm:	<u>0.929</u>	As Left Noise:	<u>0.000</u>
Main Flow Reading lpm:	<u>3.00</u>	Pump Vacuum:	<u>0.37</u>
Aux Flow Reading lpm:	<u>13.66</u>	Warnings:	<u>None</u>

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	<u>Dwyer</u>	<u>Fisher</u>	<u>Fisher</u>
Model:	<u>475 Mark III</u>	<u>FB61291</u>	<u>FB61291</u>
Serial Number:	<u>NA</u>	<u>130168457</u>	<u>130168457</u>
Callibration Date:	<u>NA</u>	<u>18-Mar-15</u>	<u>18-Mar-15</u>

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.00	0.06	0.00	0.06
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.00	-0.45	0.00	-0.45
	limit	0.60	0.60	0.60	0.60

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

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.00	0.06	0.00	0.06
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.00	-0.45	0.00	-0.45
	limit	0.60	0.60	0.60	0.60

As found temperature and pressure:

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>21.6</u>	1405F pressure atm:	<u>0.929</u>
reference temperature °C:	<u>22.3</u>	reference pressure:	<u>0.929</u>
difference °C:	<u>0.7</u>	difference :	<u>0.000</u>

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

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>22.3</u>	1405F pressure atm:	<u>0.929</u>
reference temperature °C:	<u>22.3</u>	reference pressure:	<u>0.929</u>
difference °C:	<u>0.0</u>	difference :	<u>0.000</u>

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm/+/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>16.66</u>
reference main flow lpm: <u>3.03</u>	reference total/aux flow lpm: <u>16.78</u>
difference lpm: <u>0.03</u>	difference lpm: <u>0.12</u>

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

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm/+/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>16.66</u>
reference main flow lpm: <u>3.03</u>	reference total/aux flow lpm: <u>16.78</u>
difference lpm: <u>0.03</u>	difference lpm: <u>0.12</u>

K_o Audit:

Last K_o audit date: 20-Mar-15
 1405F K_o factor: 15634
 Measured K_o factor: 15712.9000
 % difference: 0.50

Comments:

WIND SYSTEM



Meteorological Sensor Audit

Station Information

Company:	LICA	Performed By:	Chris Wesson/Kevin Hope
Location:	Elk Point	Reason:	Bi-annual audit
Audit Date:	21-Feb-14	Start Time (mst):	15:10
Previous Audit Date:	24-Nov-11	End Time (mst):	15:40

Wind Speed

Sensor make:	RM Young	Sensor height:	10M
Sensor model:	5103VK	Serial Number:	56589
Calibrator:	RM Young	Variable speed motor:	CA 03309
Voltage range:	0 - 1	Output signal range:	0 - 200 KPH

Wind Speed Audit Data

RPM	Wind Speed Actual	Indicated WS - CW	Indicated WS-CCW	Correction Factor
0	0.0	0.02	0.03	-
1000	17.6	17.79	17.75	0.99
2000	35.28	35.54	35.53	0.99
3000	52.92	53.29	53.31	0.99
4000	70.56	71.08	71.08	0.99
5000	88.2	88.88	88.91	0.99
6000	105.84	106.6	106.7	0.99
7000	123.48	124.4	124.5	0.99
8000	141.12	142.2	142.2	0.99
9000	158.76	160	160.1	0.99
10000	176.4	177.8	177.8	0.99
Average Correction Factor:				0.99

Wind Direction

Sensor make:	RM Young	Sensor height:	10M
Sensor model:	5103VK	Serial Number:	56589
Calibrator:	RM Young	Variable speed motor:	CA03309
Voltage range:	0 - 1	Output signal range:	0 - 360

Wind Direction Audit Data

Wind Direction	Indicated	Correction Factor
0	355.0	NA
45	43.1	1.04
90	89.5	1.01
135	135.5	1.00
180	181.2	0.99
225	226.1	1.00
270	270.1	1.00
315	312.3	1.01
360	354.7	1.01
Average Correction Factor:		1.01

Remarks:

CALIBRATORS

Company Maxxam Operator: Limin Li

Calibrator:		Flow Measurement Device:	
Make/Model	<u>EnviroNics 6100</u>	Make/Model	<u>N/A</u>
Serial Number	<u>4760</u>	Serial Number	<u>N/A</u>
Last Verification Date	<u>December 2013</u>	Temperature (°C)	<u>N/A</u>
NO Cylinder S/N	<u>LL42475</u>	Barometric Pressure	<u>N/A</u>
NO/NOX Concentration	<u>48.5/48.5</u>		

Dilution Flow (sccm)			
Pt. #1	<u>5000</u>	Pt. #2	<u>5000</u>
Pt. #3	<u>5000</u>		
Gas Flow (sccm)			
Pt. #1	<u>80</u>	Pt. #2	<u>40</u>
Pt. #3	<u>20</u>	Gas flows not available from display.	

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
4980	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
4993	0.0	0.799	0.799	0.840	-0.001	0.839	5%	5%
4994	0.0	0.399	0.399	0.420	-0.001	0.419	5%	5%
4991	0.0	0.200	0.200	0.211	0.000	0.211	5%	5%
Absolute Average Percent Difference							5%	5%

LINEAR REGRESSION ANALYSIS

$y=mx+b$ (where x=calculated concentration, y=indicated concentration)

NO		LIMITS		NOx	
Correlation=	1.0000	≥ 0.990		Correlation=	1.0000
m (Slope)=	1.0511	0.90-1.10		m (Slope)=	1.0496
b (Intercept % of FS)=	0.0400	± 3% F.S.		b (Intercept % of FS)=	0.0400

Flow	O ₃ Conc	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
4993	0.000	0.000	0.823	-0.001	0.822	NO ₂	% Diff. Limit
4993	0.480	0.530	0.293	0.530	0.823	0	± 10%
4993	0.240	0.269	0.554	0.269	0.823	0	± 10%
4993	0.090	0.096	0.727	0.097	0.824	0	± 10%
Absolute Average Percent Difference						0	± 10%

LINEAR REGRESSION ANALYSIS

$y=mx+b$ (where x=calculated concentration, y=indicated concentration)

NO ₂		LIMITS	
Correlation=	1.0000	≥ 0.995	
m (Slope)=	1.0006	0.90-1.10	
b (Intercept % of FS)=	-0.0132	± 3% F.S.	

AENV Standards Audit Calibrator		NO _x Analyzer	
Make/Model	<u>Teco 146I</u>	Make/Model	<u>Teco 42i</u>
Serial/AMU Number	<u>AMU 1809</u>	Serial/AMU Number	<u>AMU 1868</u>
		Last Calibration Date	<u>December 15, 2014</u>
		Full Scale (ppm)	<u>1.0</u>

COMMENTS:

Auditor: Al Clark
Operator Signature: [Signature]

Date: December 17, 2014
Location: McIntyre Center Edmonton

Company: Maxxam

Operator: Limin Li

Calibrator:		Flow Measurement Device:	
Make/Model	<u>API 700</u>	Make/Model	<u>N/A</u>
Serial Number	<u>830</u>	Serial Number	<u>N/A</u>
Last Verification Date	<u>Oct 2013</u>	Temperature (°C)	<u>N/A</u>
SO ₂ Cylinder Conc.	<u>50.3</u>	Barometric Pressure	<u>N/A</u>
SO ₂ Cylinder S/N	<u>LL42475</u>		

Flow Measurements

Pt. No. 1 79.5 Pt. No. 2 39.8 Pt. No. 3 19.9

Calibrator Flow (scem)	Calculated Concentration (ppm)	Indicated Concentration (ppm)	% Difference	
			vs Audit Gas	% Diff. Limit
Zero Air	0.000	0.000		
4918	0.800	0.798	0%	± 10%
4960	0.400	0.398	-1%	± 10%
4977	0.200	0.200	0%	± 10%
Absolute Average Percent Difference			0%	± 10%

LINEAR REGRESSION ANALYSIS
y=mx+b (where x=calculated concentration, y=indicated concentration)

SO ₂		LIMITS
Correlation=	1.0000	≥ 0.995
m (Slope)=	0.9971	0.90-1.10
b (Intercept % of FS)=	0.0000	± 3% F.S.

AENV Standards		SO ₂ Analyzer	
Audit Calibrator		Make/Model	<u>Teco 43C</u>
Make/Model	<u>R&R MFC 201</u>	Serial/AMU Number	<u>AMU 1623</u>
Serial/AMU Number	<u>AMU 1690</u>	Last Calibration Date	<u>Dec 15/14</u>
		Full Scale (ppm)	<u>1.0</u>

COMMENTS: H2S gas was slow to move through the calibrator. Check for contamination inside calibrator. SO2 moves through quickly.

Auditor: Al Clark Date: December 16, 2014
Operator Signature: _____ Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2014-257CGA

Company: Maxxam Operator's Name: Limin Li
Cylinder #: LL42475 Concentration PPM: 50.3 Tolerance(%) 1 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: December 15, 2014
Gas Type: SO2 Conc. 98.57
Cylinder Number: CAL016720

Flow Measurement Device:

Make/Model: Bios DC2
Serial Number: AMU 1659
Temp. °C: 22.5 C
B.P. 701 mmhg

Reference Analyzer:

Make/Model: Teco 43C Serial/AMU Number: 1623
Instrument Settings: Zero: 7.7 Span: 1.018 Range: 1.0
Last Calibration: Date: Dec15/14 C.F. 1.000 Done By: AI Clark

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.000	0.01019	98.157	49.3
5114	52.1	0.502	0.01019	98.157	49.3
5093	22.3	0.214	0.00438	228.386	48.9
5073	10.9	0.105	0.00215	465.413	48.9
Average Cylinder Concentration:					49.0

Previous Stated Concentration PPM: 50.3

Percent variance from Stated: 2.6

Meets Manufacturer Tolerance. Use manufacturers stated concentration COMMENTS: _____
 <=5% Outside Manufacturer Tolerance. Use manufacturers concentration
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder

Auditor: AI Clark
Operator Signature: *AI Clark*

Date: December 16, 2014
Location: McIntyre Center Edmonton



Calibration Gas Audit

NO Cylinder Gas

File No. 2014-262CGA

Company: Maxxam **Operators name:** Limin Li
Cylinder #: LL42475 **Conc (PPM)** 48.5/48.5 **Tolerance (%)** 1 **Certified By:** Air Liquide

Reference Calibrator and Gas:

Make/Model Teco 146i
 Serial Number AMU 1809
 Last Verification Date December 15, 2014
 Gas Type NO Conc. 48.79
 Cylinder Number CAL017892

Flow Measurement Device:

Make/Model Blos DC2
 Serial Number AMU 1659
 Temp. °C 23.0 C
 B.P. 702 mmhg

Reference Analyzer:

Make/Model Teco 42i Serial/AMU Number: 1868
 Instrument Settings Zero: 4.3 Span: 1.017 Range: 1.0
 Last Calibration: Date: Dec15/14 C.F. 1.000 Done By: Al Clark

Calibrator Flows (scem)		Indicated Conc. (ppm)		Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration	
Dilution	Gas	NO	NOX			NO	NOX
5000	0.0	0.000	0.000	0.000	0.000	0.000	0.000
4983	82.8	0.830	0.832	0.01662	60.181	50.0	50.1
4998	40.9	0.414	0.415	0.00818	122.200	50.6	50.7
4981	20.3	0.206	0.206	0.00408	245.369	50.5	50.5
Average Cylinder Concentration:						50.4	50.4

NO	NOx
Previous Stated Concentration PPM: <u>48.5</u>	<u>48.5</u>
Percent variance from Stated: <u>3.8</u>	<u>4.0</u>

Cylinder gas tolerances based on NO only

Meets Manufacturer Tolerance. Use manufacturers stated concentration **COMMENTS:** _____
 <=5% Outside Manufacturer Tolerance. Use manufacturers concentration Contains 50.3 ppm of SO2.
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder

Auditor: Al Clark Date: December 16, 2014
 Operator Signature: *Al Clark* Location: McIntyre Center Edmonton



Praxair Canada, Inc.
 3501 54th Street
 Edmonton, AB T5B 2K5
 Tel: 780-443-2775
 Fax: 780-443-5202

03/07/2014

MAXXAM ANALYTICS INC "NA"
 9372 48TH ST
 EDMONTON, AB T4B 2L7

Work Order No. 20248656
 Outgoing Reference No.

Product Lot/Batch No. Z552 4 085 02
 Product Part No. NI ME600P2P-AQ

CERTIFICATE OF ANALYSIS
Primary Standard

Component	Requested Concentration	Certified Concentration	Analytical Procedure	Analytical Accuracy
Methane	600.0ppm	601.4ppm	U	±1% rel
Propane	200.0ppm	202ppm	U	±1% rel
Nitrogen	Balance	Balance		

Analytical Instruments: Mettler Toledo Analytical Balance-102xx/USA---
 Hewlett-Packard (Agilent)-8890---GC-FID

Cylinder Style: AQ
 Filling Method: Gravimetric
 Cylinder Pressure @TOP: 2200 psig
 Date of Fill: 03/26/2014
 Cylinder Volume: 62.8 m3
 Expression Date: 03/26/2014
 Valve/Orifice Connection: CGA-310
 Cylinder No(s): LL32474

Todd Hryciw
 Todd Hryciw

The user certifies that the sample provided to Praxair Canada, Inc. is considered a certified sample if it is prepared by gravimetric, volumetric, or partial pressure techniques. The calibration standard used to certify the sample to Praxair Canada, Inc. conforms to the standards and other properties which are listed in the National Institute of Standards and Technology (NIST) Measurement Canada's Certificate of Analysis. Accuracy is guaranteed under the conditions of use.

Method	Accuracy	Precision	Stability	Linearity	Specificity	Robustness	Limit of Detection	Limit of Quantitation
1. Gravimetric	±0.1%	±0.1%	±0.1%	±0.1%	±0.1%	±0.1%	±0.1%	±0.1%
2. Volumetric	±0.1%	±0.1%	±0.1%	±0.1%	±0.1%	±0.1%	±0.1%	±0.1%
3. Partial Pressure	±0.1%	±0.1%	±0.1%	±0.1%	±0.1%	±0.1%	±0.1%	±0.1%

The user certifies that the sample provided to Praxair Canada, Inc. is considered a certified sample if it is prepared by gravimetric, volumetric, or partial pressure techniques. The calibration standard used to certify the sample to Praxair Canada, Inc. conforms to the standards and other properties which are listed in the National Institute of Standards and Technology (NIST) Measurement Canada's Certificate of Analysis. Accuracy is guaranteed under the conditions of use.



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2013-324CGA

Company: Maxxam Operator's Name: Chris Wesson
 Cylinder #: BLM005049 Concentration PPM: 10.1 Tolerance(%): 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
 Serial Number: AMU 1690
 Last Verification Date: February 21, 2013
 Gas Type: H2S Conc. 20.02
 Cylinder Number: D249556

Flow Measurement Device:

Make/Model: Bios DC2
 Serial Number: AMU 1659
 Temp. °C: 21.0 C
 B.P.: 696 mmhg

Reference Analyzer:

Make/Model: Teco 45C Serial/AMU Number: 1624
 Instrument Settings: Zero: 7.5 Span: 1.023 Range: 0.1
 Last Calibration: Date: Feb 21/13 C.F.: 1.000 Done By: Al Clark

Calibrator Flows (scem)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.0000	0.0000	0.0000	0.0000
5103	38.2	0.0768	0.00749	133.586	10.3
5087	17.9	0.0355	0.00352	284.190	10.1
5064	9.2	0.0182	0.00182	550.435	10.0
Average Cylinder Concentration:					10.1

Previous Stated Concentration PPM: 10.1

Percent variance from Stated: 0.2

Meets Manufacturer Tolerance. Use manufacturers stated concentration COMMENTS: _____
 < =5% Outside Manufacturer Tolerance. Use manufacturers concentration _____
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder _____

Auditor: Al Clark
 Operator Signature: *Al Clark*

Date: February 21, 2013
 Location: McIntyre Center Edmonton

APPENDIX IV
ANALYTICAL RESULTS

VOCs

RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040066-003 MATRIX: Ambient Air CLIENT SAMPLE ID: LICA/VOC/EP/April 6, 2015 CANISTER ID: 2656 DESCRIPTION: Elk Point Airport DATE SAMPLED: 06-Apr-15 0:00 DATE RECEIVED: 14-Apr-15 REPORT CREATED: 24-Apr-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1,1-Dichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Apr-15
1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	17-Apr-15
1,2,4-Trichlorobenzene	K, T, U	< 0.8	ppbv	0.8	AC-058	17-Apr-15
1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Apr-15
1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Apr-15
1,2-Dichloroethane	I	0.03	ppbv	0.01	AC-058	17-Apr-15
1,2-Dichloropropane	I	0.01	ppbv	0.01	AC-058	17-Apr-15
1,3,5-Trimethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1,3-Butadiene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1,3-Dichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Apr-15
1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Apr-15
1,4-Dioxane	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Apr-15
1-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1-Hexene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
1-Pentene	K, T, U	< 0.01	ppbv	0.01	AC-058	17-Apr-15
2,2,4-Trimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	17-Apr-15
2,2-Dimethylbutane	I	0.04	ppbv	0.01	AC-058	17-Apr-15
2,3,4-Trimethylpentane	I	0.02	ppbv	0.01	AC-058	17-Apr-15
2,3-Dimethylbutane	I	0.08	ppbv	0.02	AC-058	17-Apr-15
2,3-Dimethylpentane	I	0.03	ppbv	0.02	AC-058	17-Apr-15
2,4-Dimethylpentane	I	0.03	ppbv	0.01	AC-058	17-Apr-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040066-003</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/EP/April 6, 2015</p> <p>CANISTER ID: 2656</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 06-Apr-15 0:00</p> <p>DATE RECEIVED: 14-Apr-15</p> <p>REPORT CREATED: 24-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
2-Methylheptane	I	0.02	ppbv	0.01	AC-058	17-Apr-15
2-Methylhexane	K, T, U	< 0.01	ppbv	0.01	AC-058	17-Apr-15
2-Methylpentane	I	0.08	ppbv	0.01	AC-058	17-Apr-15
3-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
3-Methylhexane	I	0.03	ppbv	0.02	AC-058	17-Apr-15
3-Methylpentane	I	0.05	ppbv	0.01	AC-058	17-Apr-15
Acetone		2.7	ppbv	0.4	AC-058	17-Apr-15
Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Apr-15
Benzene	I	0.15	ppbv	0.01	AC-058	17-Apr-15
Benzyl chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Apr-15
Bromodichloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
Bromomethane	I	0.01	ppbv	0.01	AC-058	17-Apr-15
Carbon disulfide	K, T, U	< 0.01	ppbv	0.01	AC-058	17-Apr-15
Carbon tetrachloride	I	0.12	ppbv	0.01	AC-058	17-Apr-15
Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
Chloroform	I	0.02	ppbv	0.02	AC-058	17-Apr-15
Chloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
cis-1,2-Dichloroethene	K, T, U	< 0.01	ppbv	0.01	AC-058	17-Apr-15
cis-1,3-Dichloropropene	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Apr-15
cis-2-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Apr-15
Cyclohexane	I	0.06	ppbv	0.02	AC-058	17-Apr-15
Cyclopentane	I	0.02	ppbv	0.01	AC-058	17-Apr-15
Dibromochloromethane	K, T, U	< 0.01	ppbv	0.01	AC-058	17-Apr-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By:</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040066-003 MATRIX: Ambient Air CLIENT SAMPLE ID: LICA/VOC/EP/April 6, 2015 CANISTER ID: 2656 DESCRIPTION: Elk Point Airport DATE SAMPLED: 06-Apr-15 0:00 DATE RECEIVED: 14-Apr-15 REPORT CREATED: 24-Apr-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
Ethanol		0.6	ppbv	0.3	AC-058	17-Apr-15
Ethyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Apr-15
Ethylbenzene	I	0.02	ppbv	0.01	AC-058	17-Apr-15
Freon-11		0.35	ppbv	0.02	AC-058	17-Apr-15
Freon-113	I	0.10	ppbv	0.01	AC-058	17-Apr-15
Freon-114	I	0.02	ppbv	0.02	AC-058	17-Apr-15
Freon-12		0.77	ppbv	0.02	AC-058	17-Apr-15
Hexachloro-1,3-butadiene	K, T, U	< 0.50	ppbv	0.5	AC-058	17-Apr-15
Isobutane		0.43	ppbv	0.02	AC-058	17-Apr-15
Isopentane	I	0.27	ppbv	0.03	AC-058	17-Apr-15
Isoprene	K, T, U	< 0.01	ppbv	0.01	AC-058	17-Apr-15
Isopropyl alcohol	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Apr-15
Isopropylbenzene	I	0.02	ppbv	0.01	AC-058	17-Apr-15
m,p-Xylene	I	0.05	ppbv	0.03	AC-058	17-Apr-15
m-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Apr-15
m-Ethyltoluene	K, T, U	< 0.08	ppbv	0.08	AC-058	17-Apr-15
Methyl butyl ketone	K, T, U	< 0.50	ppbv	0.5	AC-058	17-Apr-15
Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Apr-15
Methyl isobutyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Apr-15
Methyl methacrylate	K, T, U	< 0.07	ppbv	0.07	AC-058	17-Apr-15
Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Apr-15
Methylcyclohexane	I	0.10	ppbv	0.01	AC-058	17-Apr-15
Methylcyclopentane	I	0.05	ppbv	0.02	AC-058	17-Apr-15
Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Apr-15
n-Butane		0.61	ppbv	0.03	AC-058	17-Apr-15
n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	17-Apr-15

Qualifiers

K Off-scale low. Actual value is known to be less than the value given
 T Value reported is less than the laboratory method detection limit
 U Compound was analyzed for but not detected
 I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

Certified By:

On behalf of: PJ Pretorius, Portfolio Manager, EAS

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040066-003 MATRIX: Ambient Air CLIENT SAMPLE ID: LICA/VOC/EP/April 6, 2015 CANISTER ID: 2656 DESCRIPTION: Elk Point Airport DATE SAMPLED: 06-Apr-15 0:00 DATE RECEIVED: 14-Apr-15 REPORT CREATED: 24-Apr-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
n-Dodecane	K, T, U	< 4 ppbv	4	AC-058	17-Apr-15
n-Heptane	I	0.04 ppbv	0.01	AC-058	17-Apr-15
n-Hexane	I	0.10 ppbv	0.01	AC-058	17-Apr-15
n-Octane	I	0.02 ppbv	0.02	AC-058	17-Apr-15
n-Pentane	K, T, U	< 0.1 ppbv	0.1	AC-058	17-Apr-15
n-Propylbenzene	K, T, U	< 0.05 ppbv	0.05	AC-058	17-Apr-15
n-Undecane	K, T, U	< 0.5 ppbv	0.5	AC-058	17-Apr-15
Naphthalene	K, T, U	< 2 ppbv	2	AC-058	17-Apr-15
n-Nonane	I	0.01 ppbv	0.01	AC-058	17-Apr-15
o-Ethyltoluene	K, T, U	< 0.01 ppbv	0.01	AC-058	17-Apr-15
o-Xylene	I	0.02 ppbv	0.01	AC-058	17-Apr-15
p-Diethylbenzene	K, T, U	< 0.04 ppbv	0.04	AC-058	17-Apr-15
p-Ethyltoluene	K, T, U	< 0.07 ppbv	0.07	AC-058	17-Apr-15
Styrene	K, T, U	< 0.04 ppbv	0.04	AC-058	17-Apr-15
Tetrachloroethylene	K, T, U	< 0.04 ppbv	0.04	AC-058	17-Apr-15
Tetrahydrofuran	K, T, U	< 0.4 ppbv	0.4	AC-058	17-Apr-15
Toluene	I	0.05 ppbv	0.01	AC-058	17-Apr-15
trans-1,2-Dichloroethylene	K, T, U	< 0.01 ppbv	0.01	AC-058	17-Apr-15
trans-1,3-Dichloropropylene	K, T, U	< 0.04 ppbv	0.04	AC-058	17-Apr-15
trans-2-Butene	K, T, U	< 0.01 ppbv	0.01	AC-058	17-Apr-15
trans-2-Pentene	K, T, U	< 0.02 ppbv	0.02	AC-058	17-Apr-15
Trichloroethylene	K, T, U	< 0.04 ppbv	0.04	AC-058	17-Apr-15
Vinyl acetate	K, T, U	< 0.4 ppbv	0.4	AC-058	17-Apr-15
Vinyl chloride	K, T, U	< 0.02 ppbv	0.02	AC-058	17-Apr-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040124-003</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/EP/April 12, 2015</p> <p>CANISTER ID: S5626</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 12-Apr-15 0:00</p> <p>DATE RECEIVED: 17-Apr-15</p> <p>REPORT CREATED: 24-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1,1-Dichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Apr-15
1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	18-Apr-15
1,2,4-Trichlorobenzene	K, T, U	< 0.8	ppbv	0.8	AC-058	18-Apr-15
1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Apr-15
1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Apr-15
1,2-Dichloroethane	I	0.03	ppbv	0.01	AC-058	18-Apr-15
1,2-Dichloropropane	I	0.01	ppbv	0.01	AC-058	18-Apr-15
1,3,5-Trimethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1,3-Butadiene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1,3-Dichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Apr-15
1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Apr-15
1,4-Dioxane	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Apr-15
1-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1-Hexene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
1-Pentene	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
2,2,4-Trimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
2,2-Dimethylbutane	I	0.02	ppbv	0.01	AC-058	18-Apr-15
2,3,4-Trimethylpentane	I	0.01	ppbv	0.01	AC-058	18-Apr-15
2,3-Dimethylbutane	I	0.06	ppbv	0.02	AC-058	18-Apr-15
2,3-Dimethylpentane	I	0.03	ppbv	0.02	AC-058	18-Apr-15
2,4-Dimethylpentane	I	0.03	ppbv	0.01	AC-058	18-Apr-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040124-003</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/EP/April 12, 2015</p> <p>CANISTER ID: S5626</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 12-Apr-15 0:00</p> <p>DATE RECEIVED: 17-Apr-15</p> <p>REPORT CREATED: 24-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
2-Methylheptane	I	0.01	ppbv	0.01	AC-058	18-Apr-15
2-Methylhexane	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
2-Methylpentane	I	0.06	ppbv	0.01	AC-058	18-Apr-15
3-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
3-Methylhexane	I	0.02	ppbv	0.02	AC-058	18-Apr-15
3-Methylpentane	I	0.04	ppbv	0.01	AC-058	18-Apr-15
Acetone		1.8	ppbv	0.4	AC-058	18-Apr-15
Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Apr-15
Benzene	I	0.14	ppbv	0.01	AC-058	18-Apr-15
Benzyl chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Apr-15
Bromodichloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
Bromomethane	I	0.01	ppbv	0.01	AC-058	18-Apr-15
Carbon disulfide	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
Carbon tetrachloride	I	0.12	ppbv	0.01	AC-058	18-Apr-15
Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
Chloroform	I	0.03	ppbv	0.02	AC-058	18-Apr-15
Chloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
cis-1,2-Dichloroethene	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
cis-1,3-Dichloropropene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Apr-15
cis-2-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
Cyclohexane	I	0.03	ppbv	0.02	AC-058	18-Apr-15
Cyclopentane	I	0.02	ppbv	0.01	AC-058	18-Apr-15
Dibromochloromethane	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15

Qualifiers

K Off-scale low. Actual value is known to be less than the value given

T Value reported is less than the laboratory method detection limit

U Compound was analyzed for but not detected

I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

Certified By: Graham Knox, Ops Manager

On behalf of: PJ Pretorius, Portfolio Manager, EAS

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

RESULTS TO:

Adewunmi Adekanmbi
LICA
4000, 19 St NE

Calgary
AB T2E 6P8

INVOICE TO:

Charmaine Code 780 812-2182
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

LABORATORY SAMPLE ID: 15040124-003

MATRIX: Ambient Air

CLIENT SAMPLE ID: LICA/VOC/EP/April 12, 2015

CANISTER ID: S5626

DESCRIPTION: Elk Point Airport

DATE SAMPLED: 12-Apr-15 0:00

DATE RECEIVED: 17-Apr-15

REPORT CREATED: 24-Apr-15

REPORT VERSION: Version 01

Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
Ethanol		0.4	ppbv	0.3	AC-058	18-Apr-15
Ethyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Apr-15
Ethylbenzene	I	0.02	ppbv	0.01	AC-058	18-Apr-15
Freon-11		0.39	ppbv	0.02	AC-058	18-Apr-15
Freon-113	I	0.11	ppbv	0.01	AC-058	18-Apr-15
Freon-114	I	0.03	ppbv	0.02	AC-058	18-Apr-15
Freon-12		0.85	ppbv	0.02	AC-058	18-Apr-15
Hexachloro-1,3-butadiene	K, T, U	< 0.50	ppbv	0.5	AC-058	18-Apr-15
Isobutane		0.35	ppbv	0.02	AC-058	18-Apr-15
Isopentane	I	0.29	ppbv	0.03	AC-058	18-Apr-15
Isoprene	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
Isopropyl alcohol	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Apr-15
Isopropylbenzene	I	0.01	ppbv	0.01	AC-058	18-Apr-15
m,p-Xylene	I	0.04	ppbv	0.03	AC-058	18-Apr-15
m-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Apr-15
m-Ethyltoluene	K, T, U	< 0.08	ppbv	0.08	AC-058	18-Apr-15
Methyl butyl ketone	K, T, U	< 0.50	ppbv	0.5	AC-058	18-Apr-15
Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Apr-15
Methyl isobutyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Apr-15
Methyl methacrylate	K, T, U	< 0.07	ppbv	0.07	AC-058	18-Apr-15
Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Apr-15
Methylcyclohexane	I	0.05	ppbv	0.01	AC-058	18-Apr-15
Methylcyclopentane	I	0.04	ppbv	0.02	AC-058	18-Apr-15
Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Apr-15
n-Butane		0.62	ppbv	0.03	AC-058	18-Apr-15
n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	18-Apr-15

Qualifiers

- K Off-scale low. Actual value is known to be less than the value given
- T Value reported is less than the laboratory method detection limit
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040124-003</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/EP/April 12, 2015</p> <p>CANISTER ID: S5626</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 12-Apr-15 0:00</p> <p>DATE RECEIVED: 17-Apr-15</p> <p>REPORT CREATED: 24-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
n-Dodecane	K, T, U	< 4.0	ppbv	0.4	AC-058	18-Apr-15
n-Heptane	I	0.03	ppbv	0.01	AC-058	18-Apr-15
n-Hexane	I	0.07	ppbv	0.01	AC-058	18-Apr-15
n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
n-Pentane	K, T, U	< 0.1	ppbv	0.1	AC-058	18-Apr-15
n-Propylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	18-Apr-15
n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	18-Apr-15
Naphthalene	K, T, U	< 2.0	ppbv	0.5	AC-058	18-Apr-15
n-Nonane	I	0.01	ppbv	0.01	AC-058	18-Apr-15
o-Ethyltoluene	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
o-Xylene	I	0.02	ppbv	0.01	AC-058	18-Apr-15
p-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Apr-15
p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	18-Apr-15
Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Apr-15
Tetrachloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Apr-15
Tetrahydrofuran	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Apr-15
Toluene	I	0.05	ppbv	0.01	AC-058	18-Apr-15
trans-1,2-Dichloroethylene	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
trans-1,3-Dichloropropylene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Apr-15
trans-2-Butene	K, T, U	< 0.01	ppbv	0.01	AC-058	18-Apr-15
trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15
Trichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Apr-15
Vinyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Apr-15
Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Apr-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040220-003</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/EP/April 18, 2015</p> <p>CANISTER ID: S5613</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 18-Apr-15 0:00</p> <p>DATE RECEIVED: 28-Apr-15</p> <p>REPORT CREATED: 12-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,1-Dichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
1,2,3-Trimethylbenzene	I	0.21	ppbv	0.05	AC-058	30-Apr-15
1,2,4-Trichlorobenzene	K, T, U	< 0.8	ppbv	0.8	AC-058	30-Apr-15
1,2,4-Trimethylbenzene	I	0.13	ppbv	0.03	AC-058	30-Apr-15
1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	30-Apr-15
1,2-Dichloroethane	I	0.02	ppbv	0.01	AC-058	30-Apr-15
1,2-Dichloropropane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
1,3,5-Trimethylbenzene	I	0.05	ppbv	0.02	AC-058	30-Apr-15
1,3-Butadiene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,3-Dichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	30-Apr-15
1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
1,4-Dioxane	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
1-Butene		0.37	ppbv	0.02	AC-058	30-Apr-15
1-Hexene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1-Pentene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
2,2,4-Trimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
2,2-Dimethylbutane	I	0.02	ppbv	0.01	AC-058	30-Apr-15
2,3,4-Trimethylpentane	I	0.03	ppbv	0.01	AC-058	30-Apr-15
2,3-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
2,3-Dimethylpentane	I	0.05	ppbv	0.02	AC-058	30-Apr-15
2,4-Dimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040220-003</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/EP/April 18, 2015</p> <p>CANISTER ID: S5613</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 18-Apr-15 0:00</p> <p>DATE RECEIVED: 28-Apr-15</p> <p>REPORT CREATED: 12-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
2-Methylheptane	I	0.02	ppbv	0.01	AC-058	30-Apr-15
2-Methylhexane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
2-Methylpentane	I	0.06	ppbv	0.01	AC-058	30-Apr-15
3-Methylheptane	I	0.05	ppbv	0.02	AC-058	30-Apr-15
3-Methylhexane	I	0.05	ppbv	0.02	AC-058	30-Apr-15
3-Methylpentane	I	0.05	ppbv	0.01	AC-058	30-Apr-15
Acetone		4.1	ppbv	0.4	AC-058	30-Apr-15
Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	30-Apr-15
Benzene	I	0.13	ppbv	0.01	AC-058	30-Apr-15
Benzyl chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Bromodichloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Bromomethane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
Carbon disulfide		3.39	ppbv	0.01	AC-058	30-Apr-15
Carbon tetrachloride	I	0.09	ppbv	0.01	AC-058	30-Apr-15
Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Chloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
cis-1,2-Dichloroethene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
cis-1,3-Dichloropropene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
cis-2-Butene	I	0.10	ppbv	0.02	AC-058	30-Apr-15
cis-2-Pentene	I	0.04	ppbv	0.02	AC-058	30-Apr-15
Cyclohexane	I	0.09	ppbv	0.02	AC-058	30-Apr-15
Cyclopentane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
Dibromochloromethane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040220-003</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/EP/April 18, 2015</p> <p>CANISTER ID: S5613</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 18-Apr-15 0:00</p> <p>DATE RECEIVED: 28-Apr-15</p> <p>REPORT CREATED: 12-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
Ethanol		0.8	ppbv	0.3	AC-058	30-Apr-15
Ethyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Ethylbenzene	I	0.08	ppbv	0.01	AC-058	30-Apr-15
Freon-11	I	0.29	ppbv	0.02	AC-058	30-Apr-15
Freon-113	I	0.09	ppbv	0.01	AC-058	30-Apr-15
Freon-114	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Freon-12		0.63	ppbv	0.02	AC-058	30-Apr-15
Hexachloro-1,3-butadiene	K, T, U	< 0.50	ppbv	0.5	AC-058	30-Apr-15
Isobutane	I	0.18	ppbv	0.02	AC-058	30-Apr-15
Isopentane	I	0.17	ppbv	0.03	AC-058	30-Apr-15
Isoprene	I	0.02	ppbv	0.01	AC-058	30-Apr-15
Isopropyl alcohol		0.5	ppbv	0.4	AC-058	30-Apr-15
Isopropylbenzene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
m,p-Xylene	I	0.28	ppbv	0.03	AC-058	30-Apr-15
m-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
m-Ethyltoluene	K, T, U	< 0.08	ppbv	0.08	AC-058	30-Apr-15
Methyl butyl ketone	K, T, U	< 0.50	ppbv	0.5	AC-058	30-Apr-15
Methyl ethyl ketone		0.6	ppbv	0.3	AC-058	30-Apr-15
Methyl isobutyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Methyl methacrylate	K, T, U	< 0.07	ppbv	0.07	AC-058	30-Apr-15
Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	30-Apr-15
Methylcyclohexane		0.31	ppbv	0.01	AC-058	30-Apr-15
Methylcyclopentane	I	0.06	ppbv	0.02	AC-058	30-Apr-15
Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	30-Apr-15
n-Butane		0.30	ppbv	0.03	AC-058	30-Apr-15
n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	30-Apr-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040220-003</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/EP/April 18, 2015</p> <p>CANISTER ID: S5613</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 18-Apr-15 0:00</p> <p>DATE RECEIVED: 28-Apr-15</p> <p>REPORT CREATED: 12-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
n-Dodecane	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
n-Heptane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
n-Hexane	I	0.08	ppbv	0.01	AC-058	30-Apr-15
n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
n-Pentane	K, T, U	< 0.1	ppbv	0.1	AC-058	30-Apr-15
n-Propylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	30-Apr-15
n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	30-Apr-15
Naphthalene	K, T, U	< 0.5	ppbv	0.5	AC-058	30-Apr-15
n-Nonane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
o-Ethyltoluene	I	0.08	ppbv	0.01	AC-058	30-Apr-15
o-Xylene	I	0.27	ppbv	0.01	AC-058	30-Apr-15
p-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	30-Apr-15
Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
Tetrachloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
Tetrahydrofuran	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Toluene	I	0.24	ppbv	0.01	AC-058	30-Apr-15
trans-1,2-Dichloroethylene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
trans-1,3-Dichloropropylene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
trans-2-Butene	I	0.16	ppbv	0.01	AC-058	30-Apr-15
trans-2-Pentene	I	0.09	ppbv	0.02	AC-058	30-Apr-15
Trichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
Vinyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca</p>
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RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040242-003 MATRIX: Ambient Air CLIENT SAMPLE ID: LICA/VOC/EP/April 24, 2015 CANISTER ID: 17126 DESCRIPTION: Elk Point Airport DATE SAMPLED: 24-Apr-15 0:00 DATE RECEIVED: 29-Apr-15 REPORT CREATED: 12-May-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,1-Dichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	30-Apr-15
1,2,4-Trichlorobenzene	K, T, U	< 0.8	ppbv	0.8	AC-058	30-Apr-15
1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	30-Apr-15
1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	30-Apr-15
1,2-Dichloroethane	I	0.02	ppbv	0.01	AC-058	30-Apr-15
1,2-Dichloropropane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
1,3,5-Trimethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,3-Butadiene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1,3-Dichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	30-Apr-15
1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
1,4-Dioxane	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
1-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1-Hexene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
1-Pentene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
2,2,4-Trimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
2,2-Dimethylbutane	I	0.02	ppbv	0.01	AC-058	30-Apr-15
2,3,4-Trimethylpentane	I	0.04	ppbv	0.01	AC-058	30-Apr-15
2,3-Dimethylbutane	I	0.14	ppbv	0.02	AC-058	30-Apr-15
2,3-Dimethylpentane	I	0.13	ppbv	0.02	AC-058	30-Apr-15
2,4-Dimethylpentane	I	0.07	ppbv	0.01	AC-058	30-Apr-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040242-003 MATRIX: Ambient Air CLIENT SAMPLE ID: LICA/VOC/EP/April 24, 2015 CANISTER ID: 17126 DESCRIPTION: Elk Point Airport DATE SAMPLED: 24-Apr-15 0:00 DATE RECEIVED: 29-Apr-15 REPORT CREATED: 12-May-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
2-Methylheptane	I	0.01	ppbv	0.01	AC-058	30-Apr-15
2-Methylhexane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
2-Methylpentane	I	0.07	ppbv	0.01	AC-058	30-Apr-15
3-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
3-Methylhexane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
3-Methylpentane	I	0.06	ppbv	0.01	AC-058	30-Apr-15
Acetone		3.8	ppbv	0.4	AC-058	30-Apr-15
Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	30-Apr-15
Benzene	I	0.28	ppbv	0.01	AC-058	30-Apr-15
Benzyl chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Bromodichloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Bromomethane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
Carbon disulfide	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
Carbon tetrachloride	I	0.09	ppbv	0.01	AC-058	30-Apr-15
Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Chloroethane	I	0.19	ppbv	0.02	AC-058	30-Apr-15
Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Chloromethane		0.82	ppbv	0.02	AC-058	30-Apr-15
cis-1,2-Dichloroethene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
cis-1,3-Dichloropropene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
cis-2-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Cyclohexane	I	0.04	ppbv	0.02	AC-058	30-Apr-15
Cyclopentane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
Dibromochloromethane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040242-003 MATRIX: Ambient Air CLIENT SAMPLE ID: LICA/VOC/EP/April 24, 2015 CANISTER ID: 17126 DESCRIPTION: Elk Point Airport DATE SAMPLED: 24-Apr-15 0:00 DATE RECEIVED: 29-Apr-15 REPORT CREATED: 12-May-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
Ethanol		0.9	ppbv	0.3	AC-058	30-Apr-15
Ethyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Ethylbenzene	I	0.01	ppbv	0.01	AC-058	30-Apr-15
Freon-11	I	0.29	ppbv	0.02	AC-058	30-Apr-15
Freon-113	I	0.09	ppbv	0.01	AC-058	30-Apr-15
Freon-114	I	0.02	ppbv	0.02	AC-058	30-Apr-15
Freon-12		0.64	ppbv	0.02	AC-058	30-Apr-15
Hexachloro-1,3-butadiene	K, T, U	< 0.50	ppbv	0.5	AC-058	30-Apr-15
Isobutane		0.33	ppbv	0.02	AC-058	30-Apr-15
Isopentane		0.62	ppbv	0.03	AC-058	30-Apr-15
Isoprene	I	0.01	ppbv	0.01	AC-058	30-Apr-15
Isopropyl alcohol		0.8	ppbv	0.4	AC-058	30-Apr-15
Isopropylbenzene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
m,p-Xylene	I	0.03	ppbv	0.03	AC-058	30-Apr-15
m-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
m-Ethyltoluene	K, T, U	< 0.08	ppbv	0.08	AC-058	30-Apr-15
Methyl butyl ketone	K, T, U	< 0.50	ppbv	0.5	AC-058	30-Apr-15
Methyl ethyl ketone		0.4	ppbv	0.3	AC-058	30-Apr-15
Methyl isobutyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Methyl methacrylate	K, T, U	< 0.07	ppbv	0.07	AC-058	30-Apr-15
Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	30-Apr-15
Methylcyclohexane	I	0.07	ppbv	0.01	AC-058	30-Apr-15
Methylcyclopentane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	30-Apr-15
n-Butane		1.26	ppbv	0.03	AC-058	30-Apr-15
n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	30-Apr-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040242-003</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/EP/April 24, 2015</p> <p>CANISTER ID: 17126</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 24-Apr-15 0:00</p> <p>DATE RECEIVED: 29-Apr-15</p> <p>REPORT CREATED: 12-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
n-Dodecane	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
n-Heptane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
n-Hexane	I	0.06	ppbv	0.01	AC-058	30-Apr-15
n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
n-Pentane	K, T, U	< 0.1	ppbv	0.1	AC-058	30-Apr-15
n-Propylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	30-Apr-15
n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	30-Apr-15
Naphthalene	K, T, U	< 0.5	ppbv	0.5	AC-058	30-Apr-15
n-Nonane	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
o-Ethyltoluene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
o-Xylene	I	0.02	ppbv	0.01	AC-058	30-Apr-15
p-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	30-Apr-15
Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
Tetrachloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
Tetrahydrofuran	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Toluene	I	0.08	ppbv	0.01	AC-058	30-Apr-15
trans-1,2-Dichloroethylene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
trans-1,3-Dichloropropylene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
trans-2-Butene	K, T, U	< 0.01	ppbv	0.01	AC-058	30-Apr-15
trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15
Trichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	30-Apr-15
Vinyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	30-Apr-15
Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	30-Apr-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmain Code 780-812-2182 5107W-50th Street Box 8237 Bonnyville AB</p>	<p>LABORATORY SAMPLE ID: 15050025-001</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/EP/April 30, 2015</p> <p>CANISTER ID: S5658</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 30-Apr-15 0:00</p> <p>DATE RECEIVED: 05-May-15</p> <p>REPORT CREATED: 20-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1,1-Dichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-May-15
1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	06-May-15
1,2,4-Trichlorobenzene	K, T, U	< 0.8	ppbv	0.8	AC-058	06-May-15
1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-May-15
1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-May-15
1,2-Dichloroethane	I	0.02	ppbv	0.01	AC-058	06-May-15
1,2-Dichloropropane	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
1,3,5-Trimethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1,3-Butadiene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1,3-Dichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	06-May-15
1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	06-May-15
1,4-Dioxane	K, T, U	< 0.4	ppbv	0.4	AC-058	06-May-15
1-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1-Hexene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
1-Pentene	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
2,2,4-Trimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
2,2-Dimethylbutane	I	0.02	ppbv	0.01	AC-058	06-May-15
2,3,4-Trimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
2,3-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-May-15
2,4-Dimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmain Code 780-812-2182 5107W-50th Street Box 8237 Bonnyville AB</p>	<p>LABORATORY SAMPLE ID: 15050025-001</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/EP/April 30, 2015</p> <p>CANISTER ID: S5658</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 30-Apr-15 0:00</p> <p>DATE RECEIVED: 05-May-15</p> <p>REPORT CREATED: 20-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
2-Methylheptane	K, T, U	< 0.01 ppbv	0.01	AC-058	06-May-15
2-Methylhexane	K, T, U	< 0.01 ppbv	0.01	AC-058	06-May-15
2-Methylpentane	I	0.06 ppbv	0.01	AC-058	06-May-15
3-Methylheptane	K, T, U	< 0.02 ppbv	0.02	AC-058	06-May-15
3-Methylhexane	K, T, U	< 0.02 ppbv	0.02	AC-058	06-May-15
3-Methylpentane	I	0.03 ppbv	0.01	AC-058	06-May-15
Acetone		2.2 ppbv	0.4	AC-058	06-May-15
Acrolein	K, T, U	< 0.3 ppbv	0.3	AC-058	06-May-15
Benzene	I	0.09 ppbv	0.01	AC-058	06-May-15
Benzyl chloride	K, T, U	< 0.4 ppbv	0.4	AC-058	06-May-15
Bromodichloromethane	K, T, U	< 0.02 ppbv	0.02	AC-058	06-May-15
Bromoform	K, T, U	< 0.02 ppbv	0.02	AC-058	06-May-15
Bromomethane	K, T, U	< 0.01 ppbv	0.01	AC-058	06-May-15
Carbon disulfide	K, T, U	< 0.01 ppbv	0.01	AC-058	06-May-15
Carbon tetrachloride	I	0.09 ppbv	0.01	AC-058	06-May-15
Chlorobenzene	K, T, U	< 0.02 ppbv	0.02	AC-058	06-May-15
Chloroethane	K, T, U	< 0.02 ppbv	0.02	AC-058	06-May-15
Chloroform	I	0.02 ppbv	0.02	AC-058	06-May-15
Chloromethane		0.67 ppbv	0.02	AC-058	06-May-15
cis-1,2-Dichloroethene	K, T, U	< 0.01 ppbv	0.01	AC-058	06-May-15
cis-1,3-Dichloropropene	K, T, U	< 0.04 ppbv	0.04	AC-058	06-May-15
cis-2-Butene	K, T, U	< 0.02 ppbv	0.02	AC-058	06-May-15
cis-2-Pentene	K, T, U	< 0.02 ppbv	0.02	AC-058	06-May-15
Cyclohexane	I	0.03 ppbv	0.02	AC-058	06-May-15
Cyclopentane	K, T, U	< 0.01 ppbv	0.01	AC-058	06-May-15
Dibromochloromethane	K, T, U	< 0.01 ppbv	0.01	AC-058	06-May-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmain Code 780-812-2182 5107W-50th Street Box 8237 Bonnyville AB	LABORATORY SAMPLE ID: 15050025-001 MATRIX: Ambient Air CLIENT SAMPLE ID: LICA/VOC/EP/April 30, 2015 CANISTER ID: S5658 DESCRIPTION: Elk Point Airport DATE SAMPLED: 30-Apr-15 0:00 DATE RECEIVED: 05-May-15 REPORT CREATED: 20-May-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
Ethanol		0.6	ppbv	0.3	AC-058	06-May-15
Ethyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	06-May-15
Ethylbenzene	I	0.01	ppbv	0.01	AC-058	06-May-15
Freon-11	I	0.28	ppbv	0.02	AC-058	06-May-15
Freon-113	I	0.09	ppbv	0.01	AC-058	06-May-15
Freon-114	I	0.03	ppbv	0.02	AC-058	06-May-15
Freon-12		0.59	ppbv	0.02	AC-058	06-May-15
Hexachloro-1,3-butadiene	K, T, U	< 0.50	ppbv	0.5	AC-058	06-May-15
Isobutane	I	0.30	ppbv	0.02	AC-058	06-May-15
Isopentane	I	0.29	ppbv	0.03	AC-058	06-May-15
Isoprene	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
Isopropyl alcohol		0.6	ppbv	0.4	AC-058	06-May-15
Isopropylbenzene	K, T, U	< 0.01	ppbv	0.01	AC-058	06-May-15
m,p-Xylene	I	0.03	ppbv	0.03	AC-058	06-May-15
m-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-May-15
m-Ethyltoluene	K, T, U	< 0.08	ppbv	0.08	AC-058	06-May-15
Methyl butyl ketone	K, T, U	< 0.50	ppbv	0.5	AC-058	06-May-15
Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	06-May-15
Methyl isobutyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	06-May-15
Methyl methacrylate	K, T, U	< 0.07	ppbv	0.07	AC-058	06-May-15
Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	06-May-15
Methylcyclohexane	I	0.05	ppbv	0.01	AC-058	06-May-15
Methylcyclopentane	I	0.03	ppbv	0.02	AC-058	06-May-15
Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	06-May-15
n-Butane		0.51	ppbv	0.03	AC-058	06-May-15
n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	06-May-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmain Code 780-812-2182 5107W-50th Street Box 8237 Bonnyville AB</p>	<p>LABORATORY SAMPLE ID: 15050025-001</p> <p>MATRIX: Ambient Air</p> <p>CLIENT SAMPLE ID: LICA/VOC/EP/April 30, 2015</p> <p>CANISTER ID: S5658</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 30-Apr-15 0:00</p> <p>DATE RECEIVED: 05-May-15</p> <p>REPORT CREATED: 20-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
n-Dodecane	K, T, U	< 0.4 ppbv	0.4	AC-058	06-May-15
n-Heptane	K, T, U	< 0.01 ppbv	0.01	AC-058	06-May-15
n-Hexane	I	0.07 ppbv	0.01	AC-058	06-May-15
n-Octane	K, T, U	< 0.02 ppbv	0.02	AC-058	06-May-15
n-Pentane	K, T, U	< 0.1 ppbv	0.1	AC-058	06-May-15
n-Propylbenzene	K, T, U	< 0.05 ppbv	0.05	AC-058	06-May-15
n-Undecane	K, T, U	< 0.5 ppbv	0.5	AC-058	06-May-15
Naphthalene	K, T, U	< 0.5 ppbv	0.5	AC-058	06-May-15
n-Nonane	K, T, U	< 0.01 ppbv	0.01	AC-058	06-May-15
o-Ethyltoluene	K, T, U	< 0.01 ppbv	0.01	AC-058	06-May-15
o-Xylene	K, T, U	< 0.01 ppbv	0.01	AC-058	06-May-15
p-Diethylbenzene	K, T, U	< 0.04 ppbv	0.04	AC-058	06-May-15
p-Ethyltoluene	K, T, U	< 0.07 ppbv	0.07	AC-058	06-May-15
Styrene	K, T, U	< 0.04 ppbv	0.04	AC-058	06-May-15
Tetrachloroethylene	K, T, U	< 0.04 ppbv	0.04	AC-058	06-May-15
Tetrahydrofuran	K, T, U	< 0.4 ppbv	0.4	AC-058	06-May-15
Toluene	I	0.06 ppbv	0.01	AC-058	06-May-15
trans-1,2-Dichloroethylene	K, T, U	< 0.01 ppbv	0.01	AC-058	06-May-15
trans-1,3-Dichloropropylene	K, T, U	< 0.04 ppbv	0.04	AC-058	06-May-15
trans-2-Butene	K, T, U	< 0.01 ppbv	0.01	AC-058	06-May-15
trans-2-Pentene	K, T, U	< 0.02 ppbv	0.02	AC-058	06-May-15
Trichloroethylene	K, T, U	< 0.04 ppbv	0.04	AC-058	06-May-15
Vinyl acetate	K, T, U	< 0.4 ppbv	0.4	AC-058	06-May-15
Vinyl chloride	K, T, U	< 0.02 ppbv	0.02	AC-058	06-May-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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PAHs

<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040066-004</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA/PUF/EP/April 6, 2015</p> <p>CANISTER ID: TE-02</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 06-Apr-15 0:00</p> <p>DATE RECEIVED: 14-Apr-15</p> <p>REPORT CREATED: 24-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
1-Methylnaphthalene		0.08 ug/Filter	0.01	NA-017	21-Apr-15
2-Methylnaphthalene		0.15 ug/Filter	0.01	NA-017	21-Apr-15
3-Methylcholanthrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Acenaphthene		0.01 ug/Filter	0.01	NA-017	21-Apr-15
Acenaphthylene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Acridine	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Benzo(a)anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Benzo(a)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Benzo(b,j,k)fluoranthene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Benzo(c)phenanthrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Benzo(e)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Benzo(ghi)perylene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Chrysene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Dibenzo(a,h)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Dibenzo(a,i)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Dibenzo(a,l)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Dibenzo(ah)anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Fluoranthene		0.01 ug/Filter	0.01	NA-017	21-Apr-15
Fluorene		0.03 ug/Filter	0.01	NA-017	21-Apr-15
Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Naphthalene		0.04 ug/Filter	0.01	NA-017	21-Apr-15
Perylene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15
Phenanthrene		0.05 ug/Filter	0.01	NA-017	21-Apr-15
Pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By:</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040066-004</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA/PUF/EP/April 6, 2015</p> <p>CANISTER ID: TE-02</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 06-Apr-15 0:00</p> <p>DATE RECEIVED: 14-Apr-15</p> <p>REPORT CREATED: 24-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
Retene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15

Qualifiers

K Off-scale low. Actual value is known to be less than the value given
T Value reported is less than the laboratory method detection limit
U Compound was analyzed for but not detected
I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

Certified By:
On behalf of: PJ Pretorius, Portfolio Manager, EAS

Inquiries: (780) 632 8455
E-mail: EAS.Results@albertainnovates.ca

RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040124-004 MATRIX: Air Filter CLIENT SAMPLE ID: LICA/PUF/EP/April 12, 2015 CANISTER ID: TE-11 DESCRIPTION: Elk Point Airport DATE SAMPLED: 12-Apr-15 0:00 DATE RECEIVED: 17-Apr-15 REPORT CREATED: 24-Apr-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
1-Methylnaphthalene		0.02	ug/Filter	0.01	NA-017	21-Apr-15
2-Methylnaphthalene		0.04	ug/Filter	0.01	NA-017	21-Apr-15
3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Acenaphthene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Acenaphthylene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Acridine	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(b,j,k)fluoranthene		0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Chrysene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Fluoranthene		0.01	ug/Filter	0.01	NA-017	21-Apr-15
Fluorene		0.02	ug/Filter	0.01	NA-017	21-Apr-15
Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Naphthalene		0.03	ug/Filter	0.01	NA-017	21-Apr-15
Perylene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	21-Apr-15
Phenanthrene		0.04	ug/Filter	0.01	NA-017	21-Apr-15
Pyrene		0.01	ug/Filter	0.01	NA-017	21-Apr-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040124-004</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA/PUF/EP/April 12, 2015</p> <p>CANISTER ID: TE-11</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 12-Apr-15 0:00</p> <p>DATE RECEIVED: 17-Apr-15</p> <p>REPORT CREATED: 24-Apr-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
Retene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	21-Apr-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040220-004</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA/PUF/EP/April 18, 2015</p> <p>CANISTER ID: P13-01</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 18-Apr-15 0:00</p> <p>DATE RECEIVED: 28-Apr-15</p> <p>REPORT CREATED: 12-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
1-Methylnaphthalene		0.03 ug/Filter	0.01	NA-017	09-May-15
2-Methylnaphthalene		0.05 ug/Filter	0.01	NA-017	09-May-15
3-Methylcholanthrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Acenaphthene		0.01 ug/Filter	0.01	NA-017	09-May-15
Acenaphthylene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Acridine	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Benzo(a)anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Benzo(a)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Benzo(b,j,k)fluoranthene		0.02 ug/Filter	0.01	NA-017	09-May-15
Benzo(c)phenanthrene		0.20 ug/Filter	0.01	NA-017	09-May-15
Benzo(e)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Benzo(ghi)perylene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Chrysene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,h)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,i)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,l)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Dibenzo(ah)anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Fluoranthene		0.02 ug/Filter	0.01	NA-017	09-May-15
Fluorene		0.04 ug/Filter	0.01	NA-017	09-May-15
Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Naphthalene		0.04 ug/Filter	0.01	NA-017	09-May-15
Perylene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	09-May-15
Phenanthrene		0.06 ug/Filter	0.01	NA-017	09-May-15
Pyrene		0.02 ug/Filter	0.01	NA-017	09-May-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040220-004</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA/PUF/EP/April 18, 2015</p> <p>CANISTER ID: P13-01</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 18-Apr-15 0:00</p> <p>DATE RECEIVED: 28-Apr-15</p> <p>REPORT CREATED: 12-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
Retene		0.01 ug/Filter	0.01	NA-017	09-May-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	LABORATORY SAMPLE ID: 15040242-004 MATRIX: Air Filter CLIENT SAMPLE ID: LICA/PUF/EP/April 24, 2015 CANISTER ID: A13-02 DESCRIPTION: Elk Point Airport DATE SAMPLED: 24-Apr-15 0:00 DATE RECEIVED: 29-Apr-15 REPORT CREATED: 12-May-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
1-Methylnaphthalene		0.09	ug/Filter	0.01	NA-017	09-May-15
2-Methylnaphthalene		0.15	ug/Filter	0.01	NA-017	09-May-15
3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Acenaphthene		0.03	ug/Filter	0.01	NA-017	09-May-15
Acenaphthylene		0.09	ug/Filter	0.01	NA-017	09-May-15
Acridine	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Anthracene		0.03	ug/Filter	0.01	NA-017	09-May-15
Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Benzo(b,j,k)fluoranthene		0.03	ug/Filter	0.01	NA-017	09-May-15
Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Benzo(e)pyrene		0.01	ug/Filter	0.01	NA-017	09-May-15
Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Chrysene		0.01	ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Fluoranthene		0.07	ug/Filter	0.01	NA-017	09-May-15
Fluorene		0.08	ug/Filter	0.01	NA-017	09-May-15
Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Naphthalene		0.10	ug/Filter	0.01	NA-017	09-May-15
Perylene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Phenanthrene		0.23	ug/Filter	0.01	NA-017	09-May-15
Pyrene		0.06	ug/Filter	0.01	NA-017	09-May-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>LABORATORY SAMPLE ID: 15040242-004</p> <p>MATRIX: Air Filter.</p> <p>CLIENT SAMPLE ID: LICA/PUF/EP/April 24, 2015</p> <p>CANISTER ID: A13-02</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 24-Apr-15 0:00</p> <p>DATE RECEIVED: 29-Apr-15</p> <p>REPORT CREATED: 12-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
Retene		0.03 ug/Filter	0.01	NA-017	09-May-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE Calgary AB T2E 6P8 INVOICE TO: Charmain Code 780-812-2182 5107W-50th Street Box 8237 Bonnyville AB	LABORATORY SAMPLE ID: 15050025-002 MATRIX: Air Filter CLIENT SAMPLE ID: LICA/PUF/EP/April 30, 2015 CANISTER ID: 9801 DESCRIPTION: Elk Point Airport DATE SAMPLED: 30-Apr-15 0:00 DATE RECEIVED: 05-May-15 REPORT CREATED: 20-May-15 REPORT VERSION: Version 01
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Parameter	Qualifier	Result	Units	MDL	Method	Analysis Date
1-Methylnaphthalene		0.03	ug/Filter	0.01	NA-017	09-May-15
2-Methylnaphthalene		0.06	ug/Filter	0.01	NA-017	09-May-15
3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Acenaphthene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Acenaphthylene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Acridine	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Benzo(b,j,k)fluoranthene		0.02	ug/Filter	0.01	NA-017	09-May-15
Benzo(c)phenanthrene		0.04	ug/Filter	0.01	NA-017	09-May-15
Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Chrysene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Fluoranthene		0.02	ug/Filter	0.01	NA-017	09-May-15
Fluorene		0.03	ug/Filter	0.01	NA-017	09-May-15
Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Naphthalene		0.07	ug/Filter	0.01	NA-017	09-May-15
Perylene	K, T, U	< 0.01	ug/Filter	0.01	NA-017	09-May-15
Phenanthrene		0.06	ug/Filter	0.01	NA-017	09-May-15
Pyrene		0.02	ug/Filter	0.01	NA-017	09-May-15

Qualifiers K Off-scale low. Actual value is known to be less than the value given T Value reported is less than the laboratory method detection limit U Compound was analyzed for but not detected I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit	Certified By: Graham Knox, Ops Manager On behalf of: PJ Pretorius, Portfolio Manager, EAS Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca
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<p>RESULTS TO: Adewunmi Adekanmbi LICA 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE TO: Charmain Code 780-812-2182 5107W-50th Street Box 8237 Bonnyville AB</p>	<p>LABORATORY SAMPLE ID: 15050025-002</p> <p>MATRIX: Air Filter</p> <p>CLIENT SAMPLE ID: LICA/PUF/EP/April 30, 2015</p> <p>CANISTER ID: 9801</p> <p>DESCRIPTION: Elk Point Airport</p> <p>DATE SAMPLED: 30-Apr-15 0:00</p> <p>DATE RECEIVED: 05-May-15</p> <p>REPORT CREATED: 20-May-15</p> <p>REPORT VERSION: Version 01</p>
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Parameter	Qualifier	Result Units	MDL	Method	Analysis Date
Retene		0.01 ug/Filter	0.01	NA-017	09-May-15

<p>Qualifiers</p> <p>K Off-scale low. Actual value is known to be less than the value given</p> <p>T Value reported is less than the laboratory method detection limit</p> <p>U Compound was analyzed for but not detected</p> <p>I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit</p>	<p>Certified By: Graham Knox, Ops Manager</p> <p>On behalf of: PJ Pretorius, Portfolio Manager, EAS</p> <p>Inquiries: (780) 632 8455</p> <p>E-mail: EAS.Results@albertainnovates.ca</p>
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APPENDIX V
CHAIN OF CUSTODY



Maxxam Analytics - Air Services Group

Project Chain of Custody

Client: <u>Lakeland Industry & Community Association</u>	Project #: <u>2833-2015-04-35- C</u>
Site: <u>Elk Point Airport Site</u>	Contact: <u>Mike Bisaga</u>

QA Check Complete mselmha Date 15 - May - 2015

QA Check Review mselmha Date 15 - May - 2015

Report Complete mselmha Date 29 - May - 2015

Report Reviewed E. Tangang Date 29 - May - 2015

Report Shipped _____ Date _____

Notes