July 4, 2007

**Lakeland Industry & Community Association**
Box8237
5006-50 Avenue
Bonnyville, Alberta
T9N 2J5

**ATTENTION: Mr. Mike Bisaga**

**REFERENCE: Ambient Air Monitoring Report For May 2007**

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Maxxam Analytics Inc. is pleased to submit this report of data collected at the Ambient Air Monitoring Station located at the Lakeland Industry & Community Assoc. Cold Lake site for the month of May 2007.

Included is a summary of the monthly continuous and hourly average reports, equipment calibration reports, as well as a brief description of the calibration procedure. The passive network data are also included in this report.

During the month of May 2007 the following proceedings were noted:

**Cold Lake South Site**

- All analyzers and wind systems were all above 90% uptime objective with the exception of the $NO_x$, NO, $NO_2$ parameters were at 87.1% uptime for the month.
- All data was within Provincial objectives for the month.
- All data was corrected using daily zero calibration data. Furthermore the PM 2.5 data was corrected using Alberta Environment correction standards.
- After the power failure on May 5$^{th}$ the analyzer did not automatically re-light, a technician was sent out to re-light the analyzer, thus one hour of data was invalidated. It was agreed to with the LICA Program Manager to invalidate all data after zero correction, which falls below the historical background average of 1.5 ppm. As a result 0 hours of data was invalidated.
- The PM 2.5 was unstable for 1 hour during the month the data was subsequently invalidated.
- There were two power failures during the month; each power failure was for one-hour in duration. The power failures occurred on May 5$^{th}$ and 11$^{th}$. The data was subsequently invalidated during these periods.
- The $NO_x$ analyzer was found to have a break in the exhaust line on May 14$^{th}$, which caused daily spans to decline. The problem was repaired on site and the analyzer re-calibrated. As a result of this situation the data was invalidated back to the last valid span, which occurred on May 11$^{th}$. On May 15$^{th}$ the technician was sent out to the trailer as the daily spans declined overnight, the investigation revealed that the pump for the analyzer required new diaphragms, this problem was repaired onsite. As a result of this situation the data was invalidated back to the last valid span. As the data was invalidated during

the time of a power failure the analyzer only experienced one hour of power failures on May 5th.

- The PM 2.5 flows were within specifications but the measured flows were drifting away from the indicated values. The flows were adjusted such that measured flows and indicated flows were reading similar.
- The Ozone analyzer in the early hours of May 6th detected an hourly average alarm. The technician investigated the situation and with the analysis of one-minute data the situation was determined to be characteristic of a power failure rather than that of a reading. The data was flagged appropriately and invalidated. Also during the month there were high maximum one-minute readings on three occasions. These readings were investigated and again were determined to be characteristic of a power spike and not an actual reading. The data was not invalidated but is noted here in the report.

**Passive Network**

A summary of the passive monitoring are reported as follows:

- Monitoring period averages for $O_3$ ranged from 26.8 – 37.3 ppb.
- Monitoring period averages for $SO_2$ ranged from 0.1 – 0.8 ppb.
- Monitoring period averages for $NO_2$ ranged from 0.1 – 3.4 ppb.
- Monitoring period averages for $H_2S$ ranged from 0.03 – 0.14 ppb.
- Site #10 shelter was replaced.

Please feel free to contact either of Craig Snider at (403) 219-3689 or Darren Morissette (403)-219-3661, should you have any questions concerning this report.

Sincerely,
Maxxam Analytics Inc.

Prepared by: _____ Reviewed by: _____

Darren Morissette, CEPIT
Senior Technologist

Craig Snider, CET
Ambient Manager

**Lakeland Industry & Community Association**
Cold Lake Monitoring Site
Ambient Air Monitoring
Data Report
For
May 2007

Prepared By:

**MAXXAM ANALYTICS INC.**

# Lakeland Industry & Community Assoc.
# COLD LAKE
## AMBIENT AIR MONITORING STATION

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# CALIBRATION PROCEDURE

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

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

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

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

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

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
# MONTHLY CONTINUOUS DATA SUMMARY
# COLD LAKE

## Continuous Ambient Monitoring – May 2007

| LAKELAND INDUSTRY & COMMUNITY ASSOCIATION COLD LAKE SITE | | | | | | MAXIMUM VALUES | | | | | OPERATIONAL TIME (PERCENT) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1-HOUR | | | 24-HOUR | | |
| PARAMETER | OBJECTIVES | | EXCEEDENCES | | MONTHLY AVERAGE | READING | DAY | HOUR | READING | DAY | |
| | 1-HR | 24-HR | 1-HR | 24-HR | | | | | | | |
| $SO_2$ (PPB) | 172 | 57 | 0 | 0 | 0.01 | 1 | 14,17,23 | VARIOUS | 0.1 | 14,17,23 | 99.7 |
| TRS (PPB) | - | - | - | - | 0.01 | 1 | 17,27,28 | VARIOUS | 0.1 | 17,27 | 99.7 |
| $NO_2$ (PPB) | 212 | 106 | 0 | 0 | 1.65 | 36 | 17 | 8 | 4 | 17 | 87.1 |
| NO (PPB) | - | - | - | - | 0.33 | 37 | 28 | 10 | 2.3 | 15 | 87.1 |
| NOx (PPB) | - | - | - | - | 2.17 | 51 | 17,28 | 8,10 | 5.2 | 17 | 87.1 |
| $O_3$ (PPB) | 82 | - | 0 | - | 32.39 | 60 | 16 | 17,18 | 49.8 | 16 | 99.6 |
| THC (PPM) | - | - | - | - | 1.82 | 3.4 | 23 | 4 | 2.1 | 22 | 99.7 |
| PM 2.5 ($UG/M^3$) | - | 30 | - | 0 | 3.40 | 20.6 | 17 | 8 | 9.2 | 17 | 99.6 |
| TEMPERATURE (DEG C) | - | - | - | - | 10.62 | 24.7 | 16 | 17 | 17.5 | 16 | 99.7 |
| RELATIVE HUMIDITY (%) | - | - | - | - | 62.21 | 98.3 | 2 | 23 | 88.1 | 28 | 99.7 |
| VECTOR WS (KPH) | - | - | - | - | 6.9 | 25.2 | 5 | 11 | 13.6 | 5 | 99.7 |
| VECTOR WD (DEGREES) | - | - | - | - | ENE | - | - | - | - | - | 99.7 |

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
## Passive Ambient Monitoring Network – May 2007

| LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK | | | |
|---|---|---|---|
| NETWORK MAXIMUM (PPB) | | | NETWORK AVERAGE (PPB) |
| PARAMETER | STATION | READING | READING |
| $NO_2$ | 25 | 3.4 | 1.1 |
| $SO_2$ | 13,24 | 0.8 | 0.3 |
| $H_2S$ | 16,24 | 0.14 | 0.09 |
| $O_3$ | 7 | 37.3 | 31.6 |

# GENERAL MONTHLY SUMMARY – COLD LAKE

## Equipment Operation

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

## AQM STATION – LICA – COLD LAKE

### SO2

- Analyzer make / model TECO 43A

No operational issues during the month. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information. There were two hours of power failures during the month; the data was subsequently invalidated.

### TRS

- Analyzer make / model TECO 43A
  CD NOVA CDN 101 $H_2S$ Converter

No operational issues during the month. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information. There were two hours of power failures during the month; the data was subsequently invalidated.

### THC

- Analyzer make / model TECO 51C-LT

No operational issues during the month. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information. It was agreed to with the LICA Program Manager to invalidate all data, after zero correction, which falls below the historical background average of 1.5 ppm. As a result 0 hours of data was invalidated and the uptime was at 99.7%. It is noted that since the detector was rebuilt, no data has fallen below the historical background average. There were two hours of power failures during the month; the data was subsequently invalidated. During one of the power failures the analyzer did not re-light and therefore the data for one-hour was invalidated. Testing of alarms was completed during the month, a portion of data was temporarily flagged, the data and database have since had the flags removed.

**NOx**

- Analyzer make / model TECO 42

On May 12th the daily spans began to drop off, the situation was monitored. The technician investigated the decline in spans on May 14th. The analyzer was found to have a cut in the exhaust line. The problem was fixed but the pump vacuum was still low, the technician rebuilt the pump and re-calibrated the analyzer. As a result data was invalidated back to the last valid span, which was May 11th. On May 15th the technician responded to a low daily span, an investigation revealed the pump that was rebuilt the night before, required diaphragms to be rebuilt also, the parts were ordered and the pump was replaced temporarily with a Maxxam owned pump and the analyzer was re-calibrated. As a result data was invalidated back to the last valid span, and in this case was May 11th. The parameters for this analyzer were below the 90% uptime target for the month. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information. There was one hour of power failures during the month; the data was subsequently invalidated.

**$O_3$**

- Analyzer make / model TECO 49

In the early hours of May 6th an hourly average alarm was detected. An investigation by the technician found the analyzer to be operating properly and no alarms with the analyzer. Further examination of the minute data showed that the data was characteristic of a power spike and not that of a reading, the data for one-hour was invalidated. During the month it is noted that 3 high Ozone Maximums were recorded. The readings were checked out and determined to be associated with a power spike, the three hours of data was not invalidated but is noted here within the report. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information. There were two hours of power failures during the month; the data was subsequently invalidated.

**PM 2.5**

- Analyzer make / model TEOM 1400A

No operational issues observed during the month. During the monthly audit of the equipment the technician adjusted the flows in order that the measured flows and indicated flows were similar. Also the Bypass inline filter was changed as well as the two inline filters for the MFC. The sample inlet was checked and cleaned. Data for the month was corrected using Alberta Environment standards. There were two hours of power failures and one hour of instability during the month; the data was subsequently invalidated.

**Wind Speed & Direction**

- System make / model MET ONE 50.5

No operational issues observed during the month. The wind system is reported as vector wind speed and vector wind direction. There were two hours of power failures during the month; the data was subsequently invalidated.



**Relative Humidity**

- System make / model Rotronic Hygroclip-S3

No operational issues observed during the month. There were two hours of power failures during the month; the data was subsequently invalidated.

**Temperature**

- System make / model Rotronic Hygroclip-S3

No operational issues observed during the month. There were two hours of power failures during the month; the data was subsequently invalidated.

**Datalogger**

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

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

**Air Quality Index (AQI)**

The AQI data was adjusted to reflect regular monthly calibrations, maintenance, downtime and daily calibrations. Due to the downtime of the $NO_x$ analyzer the AQI was affected during the period May 11$^{th}$ – 15$^{th}$.

**Trailer**

General comments from technician during monthly calibration:

- Sample manifold cleaned during regular visit.

**Passive Network**

- Site #10 shelter was replaced.

# LICA - COLD LAKE SITE

# MONTHLY SUMMARIES, GRAPHS & WIND ROSES

# AIR QUALITY INDEX

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MAY 2007

## AIR QUALITY INDEX (AQI)

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOUR END | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 | MAX. |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 8 | 6 | 8 | 8 | 8 | 8 | 8 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 23 | 22 | 22 | 23 | 23 | 23 |
| | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | - | - | - | - | - | - | - | - | - | - | - | O3 | O3 | O3 | O3 | O3 | O3 |
| 2 | 23 | 22 | 20 | 20 | 21 | 20 | 19 | 19 | NA | NA | NA | 17 | 17 | 16 | 16 | NA | 16 | 14 | 14 | 14 | 14 | 14 | 14 | 15 | 23 |
| | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | - | - | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 3 | 15 | 14 | 13 | 12 | NA | 11 | 11 | 10 | 10 | 12 | 16 | 16 | 17 | 16 | NA | 14 | 14 | 14 | 14 | 13 | 12 | 12 | 12 | 12 | 17 |
| | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 4 | 12 | 12 | 12 | 11 | 10 | 10 | 11 | 12 | 14 | 16 | 16 | 17 | 17 | NA | 15 | 14 | 12 | 11 | 11 | 13 | 15 | 16 | 18 | 19 | 19 |
| | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 5 | 19 | 19 | 19 | 19 | 19 | 18 | 17 | 18 | 19 | 20 | 20 | NA | NA | 22 | 23 | 24 | 25 | 26 | 27 | 23 | 24 | 24 | 23 | 21 | 27 |
| | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 6 | 21 | NA | 13 | 8 | 7 | 5 | 11 | 19 | 22 | 23 | NA | NA | 25 | 26 | 28 | 29 | 31 | 32 | 32 | 31 | 30 | 26 | 25 | 22 | 32 |
| | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 7 | 22 | 25 | 23 | 24 | 23 | 23 | 23 | 24 | 24 | 24 | NA | 28 | 29 | 29 | 28 | 26 | 25 | 23 | 22 | 20 | 16 | 10 | 9 | 9 | 29 |
| | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 8 | 8 | 7 | 8 | 9 | 10 | 11 | 11 | 13 | 18 | NA | 21 | 20 | 18 | 20 | 21 | 24 | 22 | 22 | 22 | 21 | 22 | 20 | 20 | 19 | 24 |
| | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 9 | 17 | 16 | 15 | 14 | 16 | 17 | 17 | 16 | NA | 15 | 14 | 15 | 16 | 15 | 15 | 16 | 17 | 18 | 17 | 14 | 7 | 7 | 12 | 10 | 18 |
| | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 10 | 9 | 5 | 3 | 2 | 3 | 7 | 6 | NA | 13 | 16 | 18 | 19 | 20 | 21 | 21 | 21 | 21 | 20 | 20 | 18 | 17 | 17 | 15 | 15 | 21 |
| | O3 | O3 | O3 | O3 | PM2 | PM2 | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 11 | 18 | 18 | 17 | 16 | 14 | 13 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 18 |
| | O3 | O3 | O3 | O3 | O3 | O3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | O3 |
| 12 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 13 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 15 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 22 | 24 | 25 | 28 | 28 | 28 | 28 | 25 | 20 | 22 | 22 | 22 | 28 |
| | - | - | - | - | - | - | - | - | - | - | - | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 16 | 21 | 20 | 20 | 20 | 20 | 20 | 21 | NA | 23 | 24 | 28 | 30 | 31 | 30 | 31 | 33 | 33 | 33 | 33 | 31 | 28 | 27 | 25 | 23 | 33 |
| | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 17 | 19 | 14 | 11 | 10 | 13 | 13 | NA | 17 | 20 | 23 | 27 | 27 | 26 | 26 | 28 | 27 | 28 | 27 | 26 | 27 | 22 | 15 | 13 | 13 | 28 |
| | O3 | O3 | O3 | PM2 | PM2 | PM2 | - | PM2 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 18 | 13 | 12 | 13 | 14 | 14 | NA | 13 | 13 | 13 | 14 | 14 | 14 | 13 | 12 | 11 | 10 | 10 | 10 | 11 | 12 | 11 | 11 | 11 | 11 | 14 |
| | O3 | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 19 | 11 | 13 | 12 | 14 | NA | 17 | 15 | 15 | 15 | 15 | 16 | 16 | 16 | 15 | 14 | 15 | 16 | 15 | 13 | 12 | 12 | 12 | 11 | 11 | 17 |
| | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 20 | 11 | 10 | 9 | NA | 8 | 9 | 9 | 9 | 8 | 9 | 13 | 16 | 16 | 17 | 18 | 18 | 18 | 18 | 18 | 17 | 14 | 7 | 7 | 9 | 18 |
| | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | PM2 | O3 | O3 |
| 21 | 9 | 6 | NA | 3 | 4 | 7 | 7 | 6 | 7 | 8 | 13 | 16 | 18 | 18 | 18 | 17 | 17 | 15 | 15 | 13 | 12 | 9 | 6 | 4 | 18 |
| | O3 | O3 | - | PM2 | PM2 | PM2 | PM2 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 22 | 4 | NA | 2 | 1 | 3 | 6 | 6 | 10 | 12 | 13 | 15 | 17 | 17 | 18 | 19 | 20 | 20 | 20 | 20 | 19 | 15 | 11 | 10 | 9 | 20 |
| | O3 | - | PM2 | PM2 | PM2 | PM2 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 23 | NA | 5 | 4 | 5 | 10 | 10 | 11 | 11 | 12 | 12 | 14 | 16 | 16 | 17 | 17 | 17 | 17 | 17 | 16 | 17 | 16 | 14 | 15 | NA | 17 |
| | - | O3 | O3 | PM2 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | O3 |
| 24 | 14 | 12 | 11 | 7 | 5 | 7 | 11 | 13 | 13 | 15 | 16 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 17 | 11 | 9 | NA | 16 | 18 |
| | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | O3 | O3 |
| 25 | 16 | 15 | 14 | 11 | 7 | 11 | 12 | 13 | 15 | 19 | 20 | 22 | 23 | 23 | 21 | 21 | 21 | 23 | 23 | 21 | 19 | NA | 15 | 14 | 23 |
| | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 |
| 26 | 10 | 6 | 4 | 5 | 11 | 13 | 13 | 16 | 19 | 21 | 22 | 23 | 24 | 24 | 25 | 25 | 26 | 27 | 28 | 23 | NA | 14 | 15 | 14 | 28 |
| | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 |
| 27 | 13 | 10 | 7 | 4 | 6 | 8 | 13 | 16 | 16 | 19 | 22 | 25 | 24 | 22 | 23 | 24 | 24 | 20 | 16 | NA | 20 | 19 | 21 | 21 | 25 |
| | O3 | O3 | O3 | O3 | PM2 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 | O3 |
| 28 | 18 | 14 | 15 | 13 | 9 | 8 | 11 | 12 | 13 | 13 | 12 | 11 | NA | NA | 15 | 14 | 13 | 12 | NA | 11 | 11 | 12 | 11 | 11 | 18 |
| | O3 | O3 | O3 | O3 | O3 | PM2 | O3 | O3 | O3 | O3 | O3 | O3 | - | - | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 |
| 29 | 10 | 9 | 9 | 9 | 9 | 10 | 11 | 12 | 12 | 12 | 13 | 13 | 13 | 13 | 13 | 14 | 15 | NA | 14 | 14 | 11 | 6 | 3 | 5 | 15 |
| | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 30 | 2 | 1 | 1 | 1 | 3 | 10 | 6 | 9 | 12 | 15 | 18 | 19 | 18 | 20 | 21 | 22 | NA | 24 | 25 | 25 | 20 | 12 | 9 | 12 | 25 |
| | O3 | O3 | PM2 | PM2 | PM2 | PM2 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| 31 | 14 | 10 | 11 | 11 | 8 | 10 | 10 | 12 | 17 | 19 | 21 | 23 | 25 | 25 | 25 | NA | 26 | 28 | 28 | 25 | 15 | 10 | 9 | 7 | 28 |
| | O3 | O3 | O3 | O3 | O3 | PM2 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | - | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 |
| PEAK | 23 | 25 | 23 | 24 | 23 | 23 | 23 | 24 | 24 | 24 | 28 | 30 | 31 | 30 | 31 | 33 | 33 | 33 | 33 | 31 | 30 | 27 | 25 | 23 | |
| | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | O3 | |

**STATUS FLAG CODES**

| | |
|---|---|
| NA | - NOT APPLICABLE |

**AQI SUMMARY**

| AQI CLASS | O3 | PM 2.5 | NO2 | SO2 | FREQ |
|---|---|---|---|---|---|
| **VERY POOR (101 - 255)** | 0 hrs 0.00% | 0 hrs 0.00% | 0 hrs 0.00% | 0 hrs 0.00% | 0 hrs 0.00% |
| **POOR (51 - 100)** | 0 hrs 0.00% | 0 hrs 0.00% | 0 hrs 0.00% | 0 hrs 0.00% | 0 hrs 0.00% |
| **FAIR (26 - 50)** | 48 hrs 6.45% | 0 hrs 0.00% | 0 hrs 0.00% | 0 hrs 0.00% | 48 hrs 6.45% |
| **GOOD (1 - 25)** | 524 hrs 70.43% | 23 hrs 3.09% | 0 hrs 0.00% | 0 hrs 0.00% | 547 hrs 73.52% |
| **OVERALL** | 572 hrs 76.88% | 23 hrs 3.09% | 0 hrs 0.00% | 0 hrs 0.00% | 677 hrs 79.97% |
| **UNAVAILABLE** | - | - | - | - | 149 hrs 20.03% |

**MOUNTAIN STANDARD TIME**

Maxxam Analytics Inc

# $SO_2$

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MAY 2007

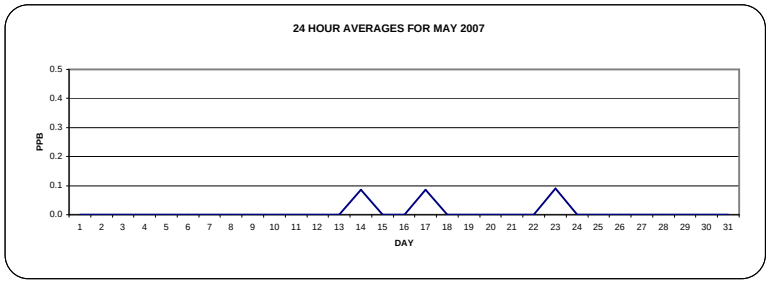
**SULPHUR DIOXIDE ($SO_2$)** hourly averages in ppb

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | 24-HOUR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOUR END | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 | MAX. | AVG. | RDGS. |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **C** | **C** | **C** | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 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 | **P** | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 23 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 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 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 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 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | **P** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 23 |
| 12 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 13 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 14 | 0 | 0 | 0 | **IZS** | 0 | 0 | **1** | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **0.1** | 24 |
| 15 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 17 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | **1** | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **0.1** | 24 |
| 18 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 19 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 20 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 21 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 22 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 23 | **IZS** | 0 | 0 | 0 | 0 | 0 | **1** | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 1 | **0.1** | 24 |
| 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 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 | **IZS** | 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 | **IZS** | 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 | **IZS** | 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 | **IZS** | 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 | **IZS** | 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 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| HOURLY MAX | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| HOURLY AVG | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 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**

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

**OBJECTIVE LIMIT:** **ALBERTA ENVIRONMENT:** 1-HR 172 PPB 24-HR 57 PPB



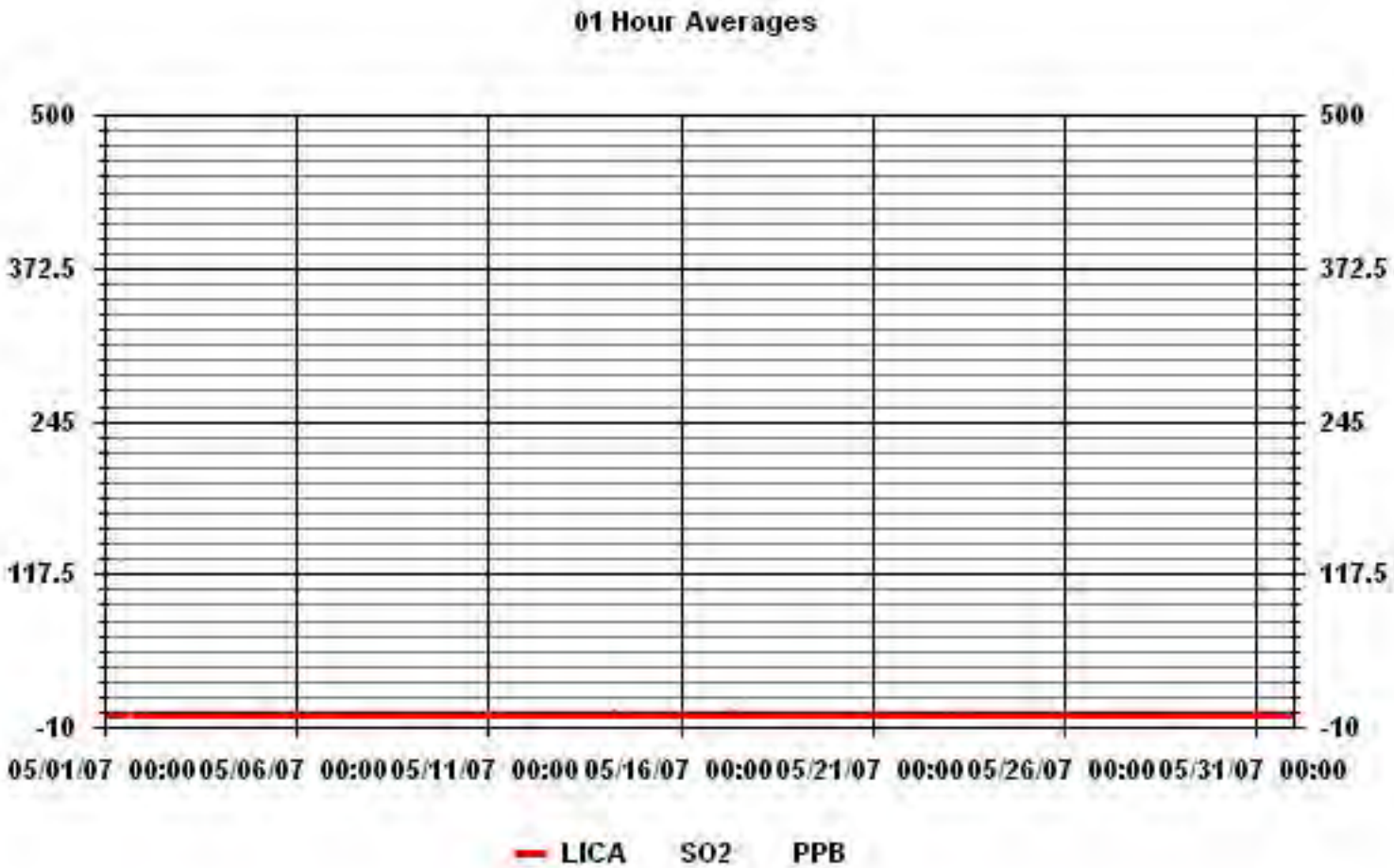

**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| NUMBER OF 1-HR EXCEEDENCES: | 0 | | | | | |
| NUMBER OF 24-HR EXCEEDENCES: | 0 | | | | | |
| NUMBER OF NON-ZERO READINGS: | 6 | | | | | |
| MAXIMUM 1-HR AVERAGE: | 1 | PPB | @ HOUR(S) | VARIOUS | ON DAY(S) | 14,17,23 |
| MAXIMUM 24-HR AVERAGE: | 0.1 | PPB | | | ON DAY(S) | 14,17,23 |

| | | | | | |
|---|---|---|---|---|---|
| IZS CALIBRATION TIME: | 32 | HRS | OPERATIONAL TIME: | 742 | HRS |
| MONTHLY CALIBRATION TIME: | 3 | HRS | AMD OPERATION UPTIME: | 99.7 | % |
| STANDARD DEVIATION: | 0.09 | | MONTHLY AVERAGE: | 0.01 | PPB |

Maxxam Analytics Inc

**MOUNTAIN STANDARD TIME**


01 Hour Averages
500
372.5
245
117.5
-10
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA SO2 PPB

LICA
SO2 / WD Joint Frequency Distribution (Percent)

May 2007

Distribution By % Of Samples

Logger Id : 01
Site Name : LICA
Parameter : SO2
Units : PPB

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

| Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < 20 | 3.67 | 6.93 | 11.59 | 3.39 | 6.22 | 9.33 | 12.44 | 5.51 | 4.24 | 4.66 | 5.23 | 7.07 | 5.79 | 4.95 | 5.09 | 3.81 | 100.00 |
| < 60 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 110 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 170 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 340 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 340 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 3.67 | 6.93 | 11.59 | 3.39 | 6.22 | 9.33 | 12.44 | 5.51 | 4.24 | 4.66 | 5.23 | 7.07 | 5.79 | 4.95 | 5.09 | 3.81 | |

Calm : .00 %

Total # Operational Hours : 707

Distribution By Samples

Direction

| Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < 20 | 26 | 49 | 82 | 24 | 44 | 66 | 88 | 39 | 30 | 33 | 37 | 50 | 41 | 35 | 36 | 27 | 707 |
| < 60 | | | | | | | | | | | | | | | | | |
| < 110 | | | | | | | | | | | | | | | | | |
| < 170 | | | | | | | | | | | | | | | | | |
| < 340 | | | | | | | | | | | | | | | | | |
| >= 340 | | | | | | | | | | | | | | | | | |
| Totals | 26 | 49 | 82 | 24 | 44 | 66 | 88 | 39 | 30 | 33 | 37 | 50 | 41 | 35 | 36 | 27 | |

Calm : .00 %

Total # Operational Hours : 707

Logger : 01 Parameter : SO2

Class Limits (PPB)

>= 340

< 340

< 170

< 110

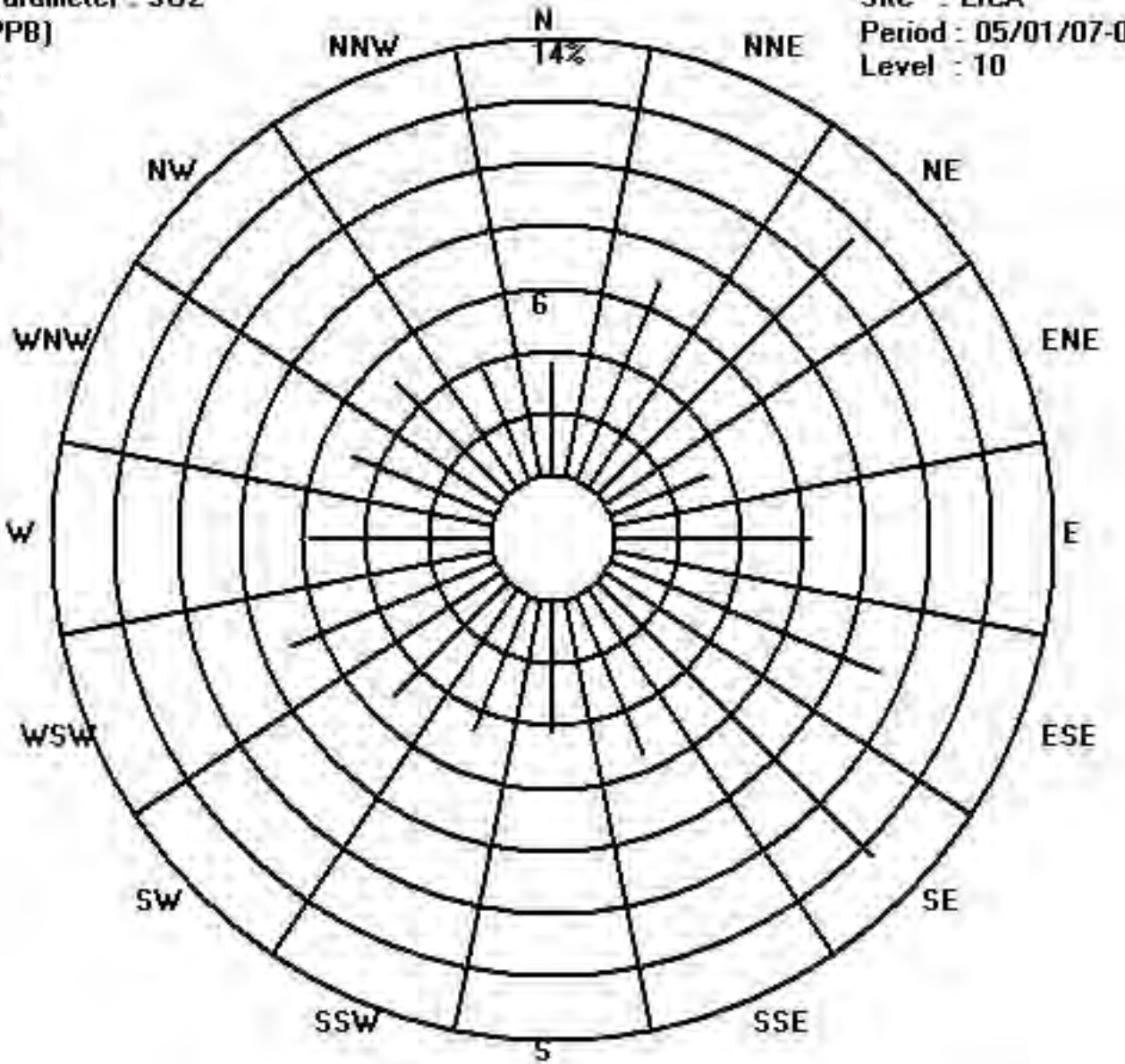
< 60

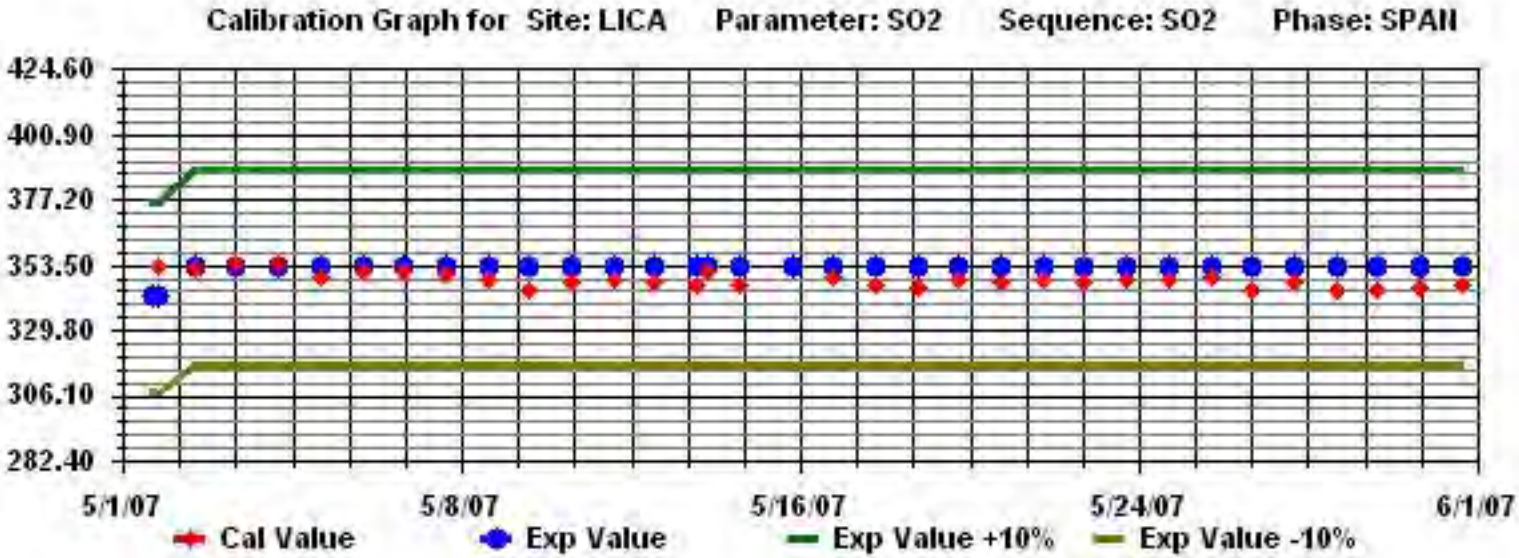
< 20

Site : LICA

Period : 05/01/07-05/31/07

Level : 10




Calibration Graph for Site: LICA Parameter: SO2 Sequence: SO2 Phase: SPAN
424.60
400.90
377.20
353.50
329.80
306.10
282.40
5/1/07
5/8/07
5/16/07
5/24/07
6/1/07
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MAY 2007

**SULPHUR DIOXIDE MAX** instantaneous maximum in ppb

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

**STATUS FLAG CODES**

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

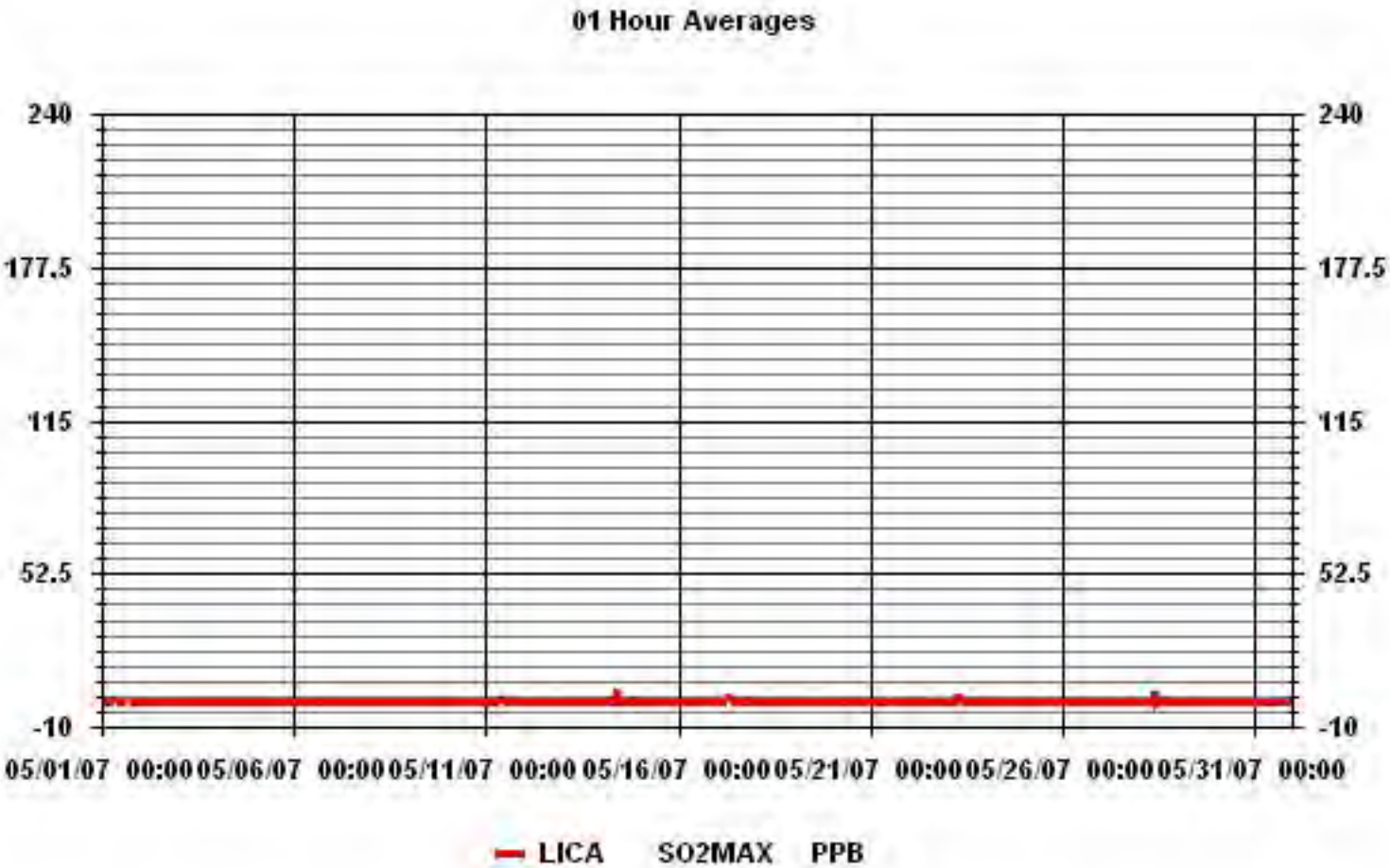
**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| NUMBER OF NON-ZERO READINGS: | 30 | | | | | |
| MAXIMUM INSTANTANEOUS VALUE: | 5 | PPB | @ HOUR(S) | 10 | ON DAY(S) | 14 |

| | | | | | |
|---|---|---|---|---|---|
| IZS CALIBRATION TIME: | 32 | HRS | OPERATIONAL TIME: | 742 | HRS |
| MONTHLY CALIBRATION TIME: | 3 | HRS | | | |
| STANDARD DEVIATION: | 0.35 | | | | |

**MOUNTAIN STANDARD TIME**

Maxxam Analytics Inc


01 Hour Averages
240
177.5
115
52.5
-10
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA SO2MAX PPB

# TRS

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MAY 2007

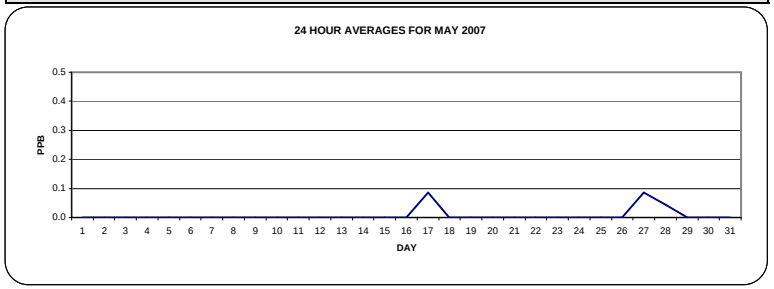
**TOTAL REDUCED SULPHUR (TRS)** hourly averages in ppb

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

**STATUS FLAG CODES**

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

**OBJECTIVE LIMIT:** **ALBERTA ENVIRONMENT:** 1-HR 172 PPB 24-HR 57 PPB



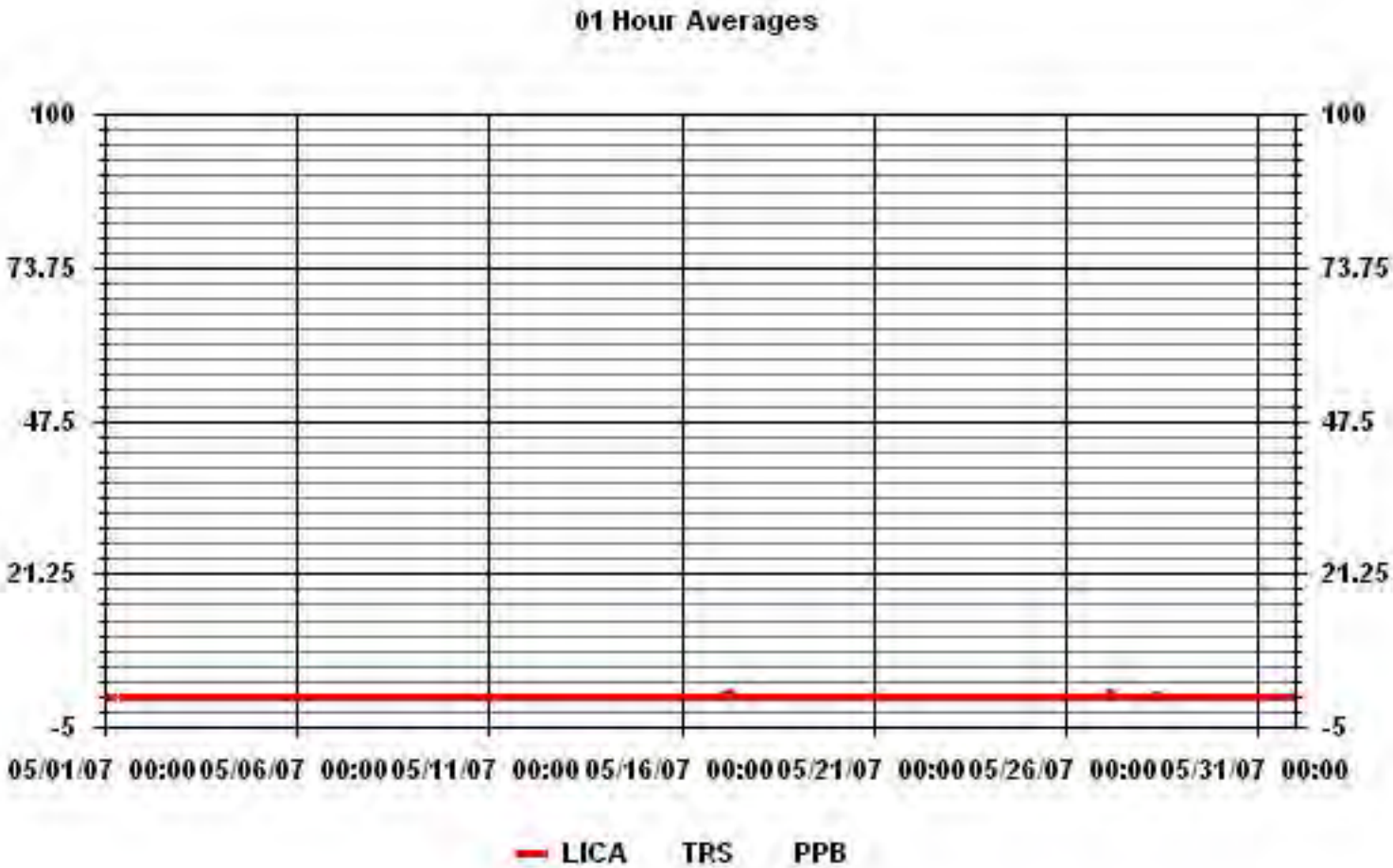

**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| NUMBER OF 1-HR EXCEEDENCES: | 0 | | | | | |
| NUMBER OF 24-HR EXCEEDENCES: | 0 | | | | | |
| NUMBER OF NON-ZERO READINGS: | 5 | | | | | |
| MAXIMUM 1-HR AVERAGE: | 1 | PPB | @ HOUR(S) | VARIOUS | ON DAY(S) | 17,27,28 |
| MAXIMUM 24-HR AVERAGE: | 0.1 | PPB | | | ON DAY(S) | 17,27 |

| | | | | | |
|---|---|---|---|---|---|
| IZS CALIBRATION TIME: | 33 | HRS | OPERATIONAL TIME: | 742 | HRS |
| MONTHLY CALIBRATION TIME: | 4 | HRS | AMD OPERATION UPTIME: | 99.7 | % |
| STANDARD DEVIATION: | 0.08 | | MONTHLY AVERAGE: | 0.01 | PPB |

Maxxam Analytics Inc

**MOUNTAIN STANDARD TIME**


01 Hour Averages
100
73.75
47.5
21.25
-5
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA TRS PPB

LICA
TRS / WD Joint Frequency Distribution (Percent)

May 2007

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

| Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < 3 | 3.68 | 6.95 | 11.63 | 3.40 | 6.09 | 9.07 | 12.62 | 5.81 | 4.25 | 4.68 | 4.96 | 7.09 | 5.81 | 4.96 | 5.10 | 3.82 | 100.00 |
| < 10 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 50 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 50 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 3.68 | 6.95 | 11.63 | 3.40 | 6.09 | 9.07 | 12.62 | 5.81 | 4.25 | 4.68 | 4.96 | 7.09 | 5.81 | 4.96 | 5.10 | 3.82 | |

Calm : .00 %

Total # Operational Hours : 705

Distribution By Samples

Direction

| Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < 3 | 26 | 49 | 82 | 24 | 43 | 64 | 89 | 41 | 30 | 33 | 35 | 50 | 41 | 35 | 36 | 27 | 705 |
| < 10 | | | | | | | | | | | | | | | | | |
| < 50 | | | | | | | | | | | | | | | | | |
| >= 50 | | | | | | | | | | | | | | | | | |
| Totals | 26 | 49 | 82 | 24 | 43 | 64 | 89 | 41 | 30 | 33 | 35 | 50 | 41 | 35 | 36 | 27 | |

Calm : .00 %

Total # Operational Hours : 705

Logger : 01 Parameter : TRS

Class Limits (PPB)

>= 50

< 50

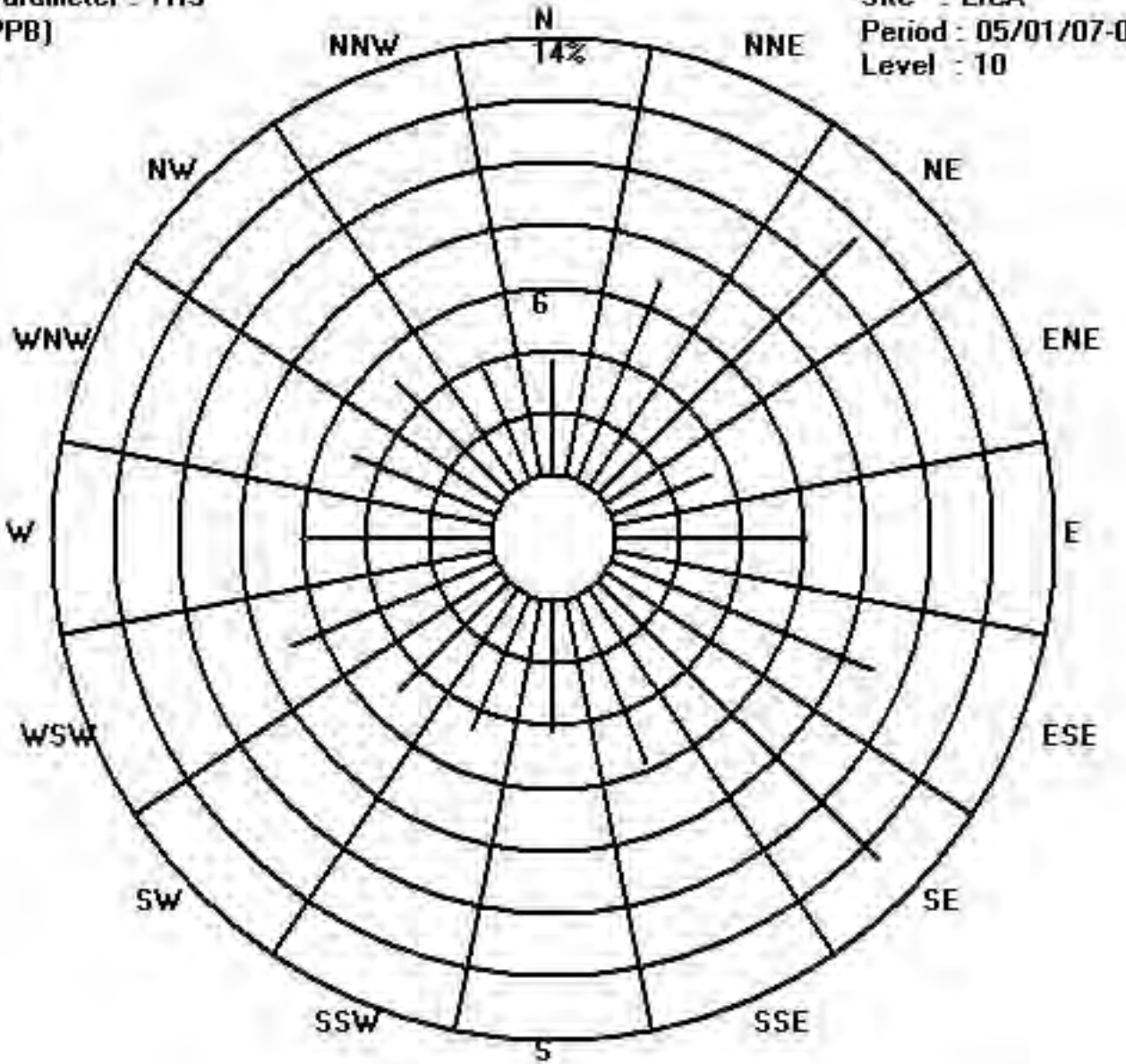
< 10

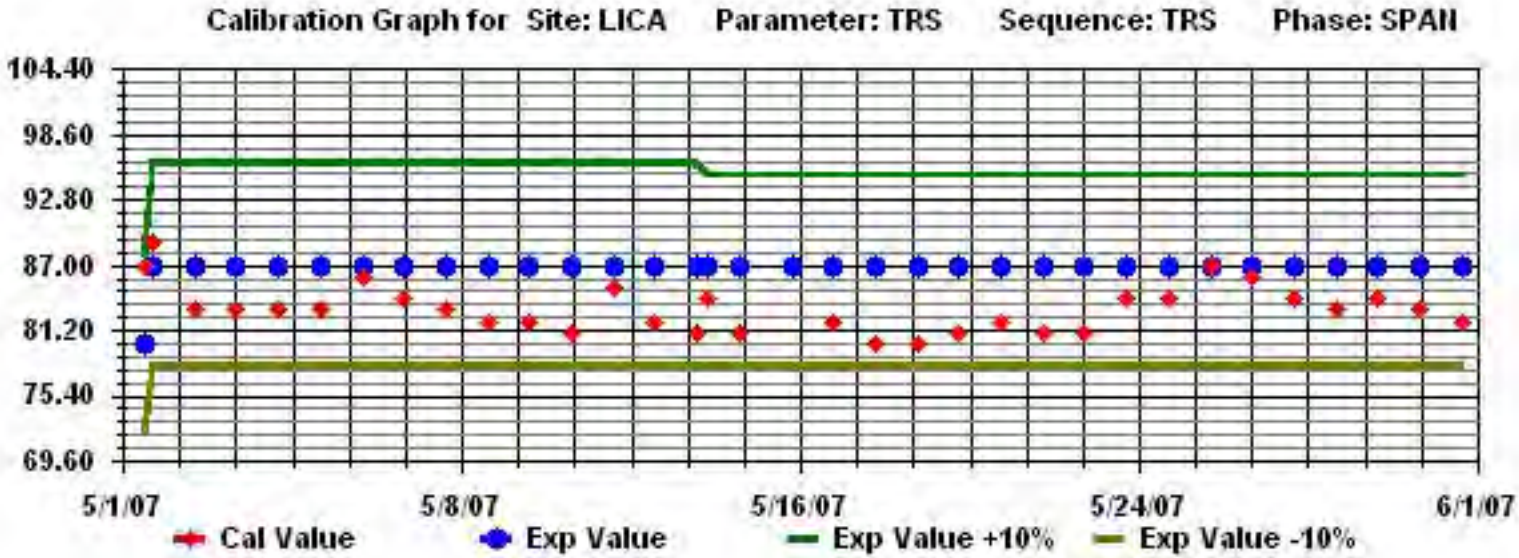
< 3

Site : LICA

Period : 05/01/07-05/31/07

Level : 10




Calibration Graph for Site: LICA Parameter: TRS Sequence: TRS Phase: SPAN
104.40
98.60
92.80
87.00
81.20
75.40
69.60
5/1/07
5/8/07
5/16/07
5/24/07
6/1/07
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MAY 2007

**TOTAL REDUCED SULPHUR MAX** instantaneous maximum in ppb

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY 24-HOUR | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOUR END | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 | MAX. | AVG. | RDGS. |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **C** | **C** | **C** | **C** | **IZS** | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **P** | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 23 |
| 6 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1.0 | 24 |
| 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 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 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 9 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 11 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | **P** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 23 |
| 12 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 13 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 14 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1.1 | 24 |
| 15 | 1 | 1 | **IZS** | 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 |
| 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 17 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 18 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 19 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 20 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 21 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 22 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 23 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1.0 | 24 |
| 24 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1.0 | 24 |
| 25 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1.0 | 24 |
| 26 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 27 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 28 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **5** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 5 | 1.2 | 24 |
| 29 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 30 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| 31 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 24 |
| HOURLY MAX | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 5 | 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 | 1.2 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | | |

**STATUS FLAG CODES**

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

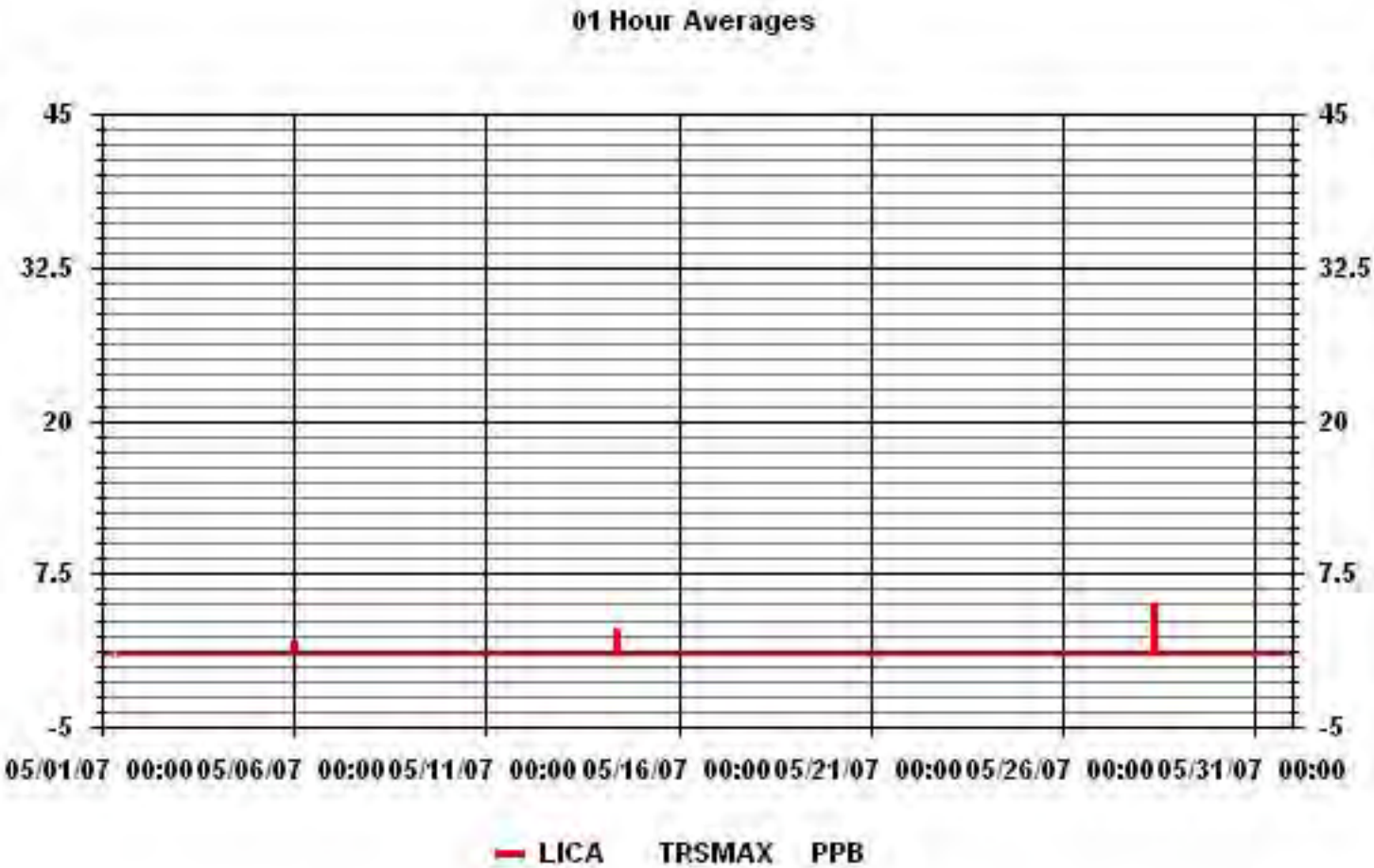
**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| NUMBER OF NON-ZERO READINGS: | 705 | | | | | |
| MAXIMUM INSTANTANEOUS VALUE: | 5 | PPB | @ HOUR(S) | 10 | ON DAY(S) | 28 |

| | | | | | |
|---|---|---|---|---|---|
| IZS CALIBRATION TIME: | 33 | HRS | OPERATIONAL TIME: | 742 | HRS |
| MONTHLY CALIBRATION TIME: | 4 | HRS | | | |
| STANDARD DEVIATION: | 0.17 | | | | |

**MOUNTAIN STANDARD TIME**

Maxxam Analytics Inc


01 Hour Averages
45
32.5
20
7.5
-5
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA TRSMAX PPB

# THC

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

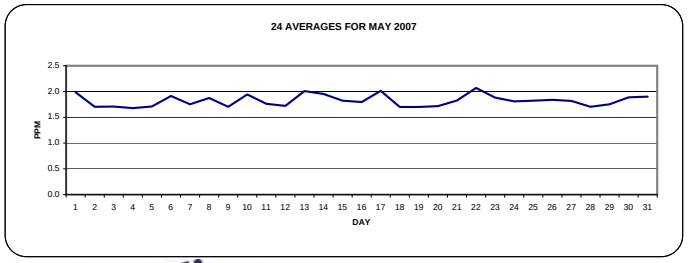
MAY 2007

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

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | 24-HOUR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOUR END | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 | MAX. | AVG. | RDGS. |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 2.9 | 2.4 | 2.2 | 2.2 | 2.2 | 2.3 | 2.4 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | **C** | **C** | **C** | **C** | **IZS** | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 2.9 | 2.0 | 24 |
| 2 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.7 | 24 |
| 3 | 1.7 | 1.7 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.7 | 24 |
| 4 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.6 | 1.6 | 1.6 | **IZS** | 1.6 | 1.6 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 24 |
| 5 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | **P** | **N** | **C** | **C** | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 1.7 | 23 |
| 6 | 1.8 | 1.9 | 2.9 | 2.2 | 2.3 | 2.4 | 2.5 | 2.1 | 1.8 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.9 | 2.9 | 1.9 | 24 |
| 7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 2 | 2 | 2.2 | 2.2 | 1.8 | 24 |
| 8 | 2.3 | 2.8 | 2.2 | 2.7 | 2.3 | 2.2 | 2 | 1.9 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.7 | 1.7 | 1.6 | 1.6 | 1.6 | 2.8 | 1.9 | 24 |
| 9 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.9 | 1.7 | 24 |
| 10 | 2.1 | 2.4 | 2.2 | 2.5 | 2.2 | 2.2 | 2.2 | **IZS** | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 2.5 | 1.9 | 24 |
| 11 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | **IZS** | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | **C** | **P** | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.9 | 1.7 | 1.7 | 1.9 | 1.8 | 23 |
| 12 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.9 | 1.9 | 1.7 | 24 |
| 13 | 2.9 | 2.9 | 2.1 | 2.8 | **IZS** | 2.3 | 1.9 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.9 | 2.3 | 2.3 | 2.6 | 2.9 | 2.0 | 24 |
| 14 | 2.1 | 2.5 | 2.9 | **IZS** | 2.2 | 2.5 | 2.5 | 1.9 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 2.3 | 1.8 | 1.8 | 1.8 | 2.9 | 2.0 | 24 |
| 15 | 1.8 | 1.8 | **IZS** | 2.6 | 2 | 1.8 | 1.5 | 1.8 | 1.8 | 1.8 | 1.7 | 1.8 | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 2 | 1.8 | 1.8 | 1.9 | 2.6 | 1.8 | 24 |
| 16 | 2 | 2.1 | 2 | 1.9 | 1.9 | 1.9 | 1.8 | **IZS** | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 2.1 | 1.8 | 24 |
| 17 | 2.5 | 3 | 2.8 | 2.4 | 3.1 | 2.8 | **IZS** | 2.3 | 1.9 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 3.1 | 2.0 | 24 |
| 18 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 24 |
| 19 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 24 |
| 20 | 1.7 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.9 | 1.8 | 1.9 | 1.7 | 24 |
| 21 | 1.7 | 1.8 | **IZS** | 2.2 | 2 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 2.5 | 2.8 | 2.8 | 1.8 | 24 |
| 22 | 2.6 | **IZS** | 2.7 | 3 | 2.9 | 3.1 | 2 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 2.1 | 2.5 | 2.5 | 2.1 | 3.1 | **2.1** | 24 |
| 23 | **IZS** | 2.7 | 2.7 | **3.4** | 2 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 3.4 | 1.9 | 24 |
| 24 | 1.7 | 1.7 | 1.7 | 2.4 | 2.2 | 1.9 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 2.5 | 2 | **IZS** | 1.7 | 2.5 | 1.8 | 24 |
| 25 | 1.7 | 1.7 | 1.8 | 1.8 | 1.9 | 2 | 2 | 2 | 2 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | **IZS** | 1.8 | 1.9 | 2.0 | 1.8 | 24 |
| 26 | 1.9 | 1.9 | 2.1 | 2.2 | 2 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | **IZS** | 1.8 | 1.9 | 1.9 | 2.2 | 1.8 | 24 |
| 27 | 2.3 | 1.9 | 2 | 1.9 | 2 | 2 | 2 | 2 | 1.9 | 1.9 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 1.6 | 1.7 | 1.6 | 1.6 | 2.3 | 1.8 | 24 |
| 28 | 1.7 | 1.7 | 1.6 | 1.6 | 1.7 | 1.8 | 1.8 | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.7 | 24 |
| 29 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 2.1 | 2.1 | 2.1 | 2.1 | 1.8 | 24 |
| 30 | 2.3 | 2.2 | 2.2 | 2.4 | 2.3 | 2.1 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 1.9 | 2 | 2.4 | 1.9 | 24 |
| 31 | 2.2 | 2.4 | 2.2 | 2.1 | 2.1 | 2.1 | 2.1 | 1.9 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 2 | 1.8 | 1.8 | 2.1 | 2.4 | 1.9 | 24 |
| HOURLY MAX | 2.9 | 3.0 | 2.9 | 3.4 | 3.1 | 3.1 | 2.5 | 2.3 | 2.0 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 2.5 | 2.5 | 2.5 | 2.8 | | | |
| HOURLY AVG | 2.0 | 2.0 | 2.0 | 2.1 | 2.0 | 2.0 | 1.9 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 1.9 | | | |

**STATUS FLAG CODES**

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



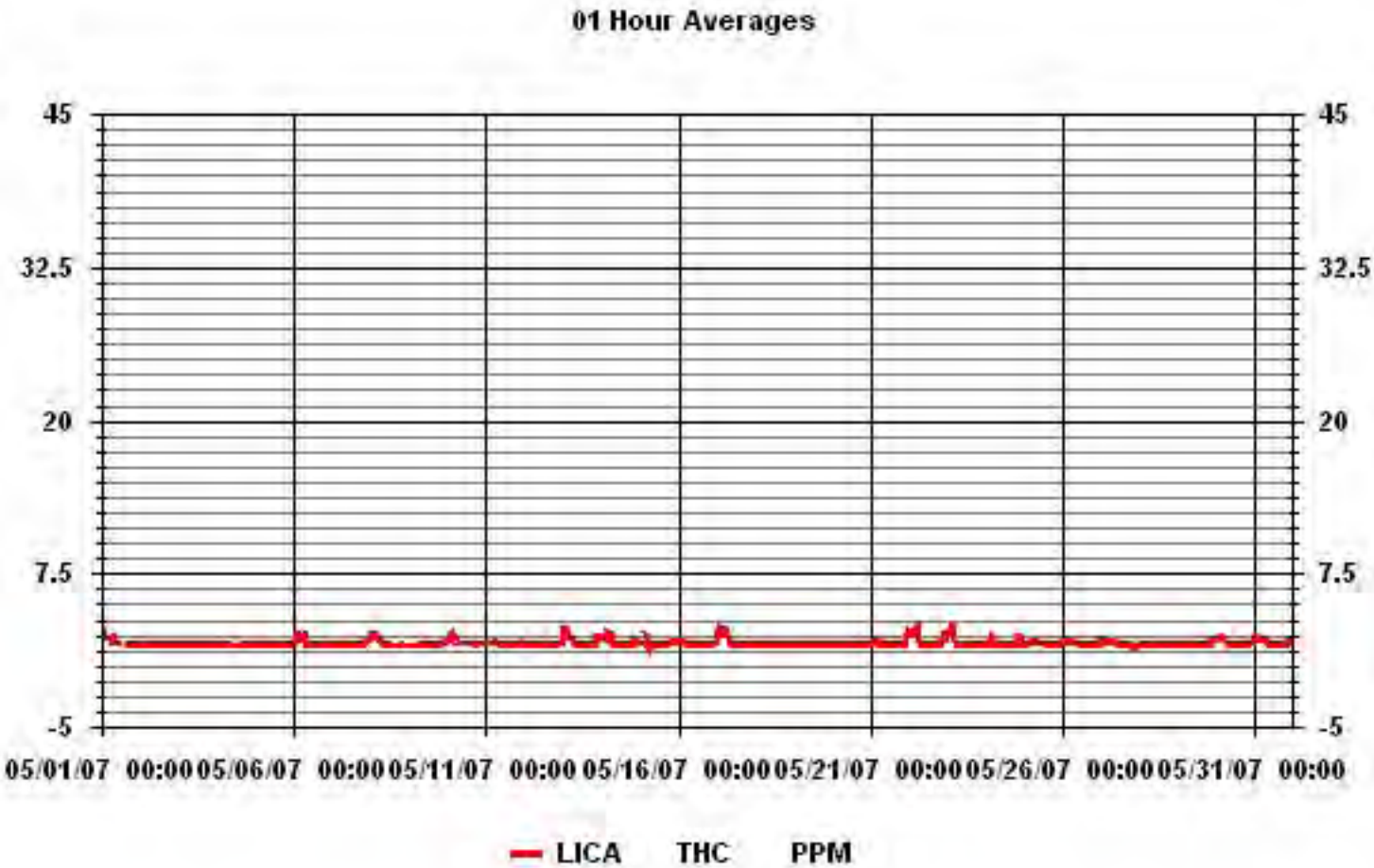

**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| NUMBER OF NON-ZERO READINGS: | 703 | | | | | |
| MAXIMUM 1-HR AVERAGE: | 3.4 | PPM | @ HOUR(S) | 4 | ON DAY(S) | 23 |
| MAXIMUM 24-HR AVERAGE: | 2.1 | PPM | | | ON DAY(S) | 22 |

| | | | | | |
|---|---|---|---|---|---|
| IZS CALIBRATION TIME: | 31 | HRS | OPERATIONAL TIME: | 742 | HRS |
| MONTHLY CALIBRATION TIME: | 7 | HRS | AMD OPERATION UPTIME: | 99.7 | % |
| STANDARD DEVIATION: | 0.26 | | MONTHLY AVERAGE: | 1.82 | PPM |

**MOUNTAIN STANDARD TIME**

Maxxam Analytics Inc


01 Hour Averages
45
32.5
20
7.5
-5
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA THC PPM

LICA
THC / WD Joint Frequency Distribution (Percent)

May 2007

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

| Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < 3.0 | 3.69 | 6.97 | 11.66 | 3.41 | 6.25 | 9.38 | 12.51 | 5.26 | 4.26 | 4.69 | 4.83 | 6.54 | 5.83 | 4.97 | 5.12 | 3.84 | 99.28 |
| < 10.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .28 | .42 | .00 | .00 | .00 | .00 | .71 |
| < 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 | 3.69 | 6.97 | 11.66 | 3.41 | 6.25 | 9.38 | 12.51 | 5.26 | 4.26 | 4.69 | 5.12 | 6.97 | 5.83 | 4.97 | 5.12 | 3.84 | |

Calm : .00 %

Total # Operational Hours : 703

Distribution By Samples

Direction

| Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < 3.0 | 26 | 49 | 82 | 24 | 44 | 66 | 88 | 37 | 30 | 33 | 34 | 46 | 41 | 35 | 36 | 27 | 698 |
| < 10.0 | | | | | | | | | | | 2 | 3 | | | | | 5 |
| < 50.0 | | | | | | | | | | | | | | | | | |
| >= 50.0 | | | | | | | | | | | | | | | | | |
| Totals | 26 | 49 | 82 | 24 | 44 | 66 | 88 | 37 | 30 | 33 | 36 | 49 | 41 | 35 | 36 | 27 | |

Calm : .00 %

Total # Operational Hours : 703

Logger : 01 Parameter : THC

Class Limits (PPM)

>= 50.0

< 50.0

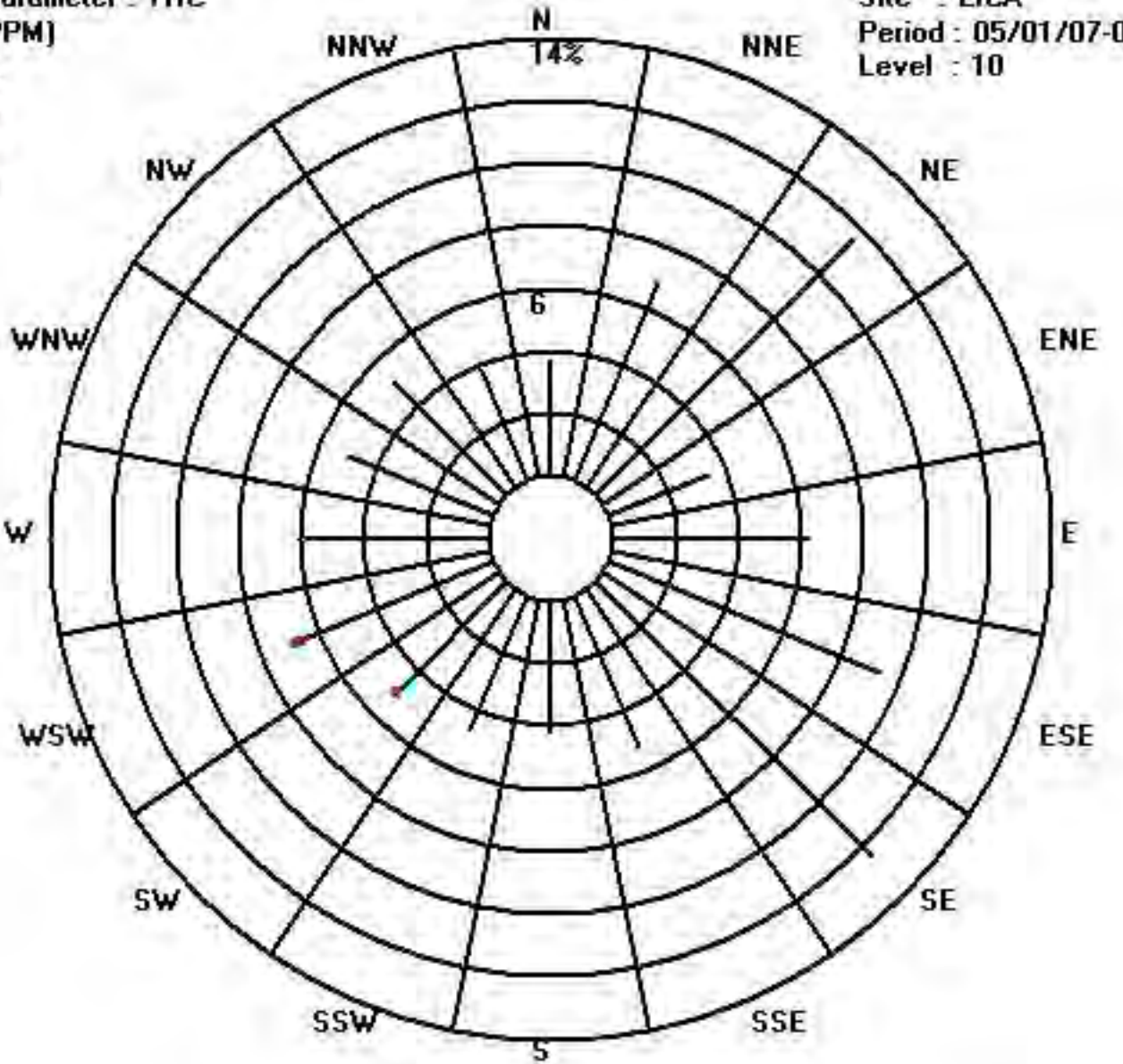
< 10.0

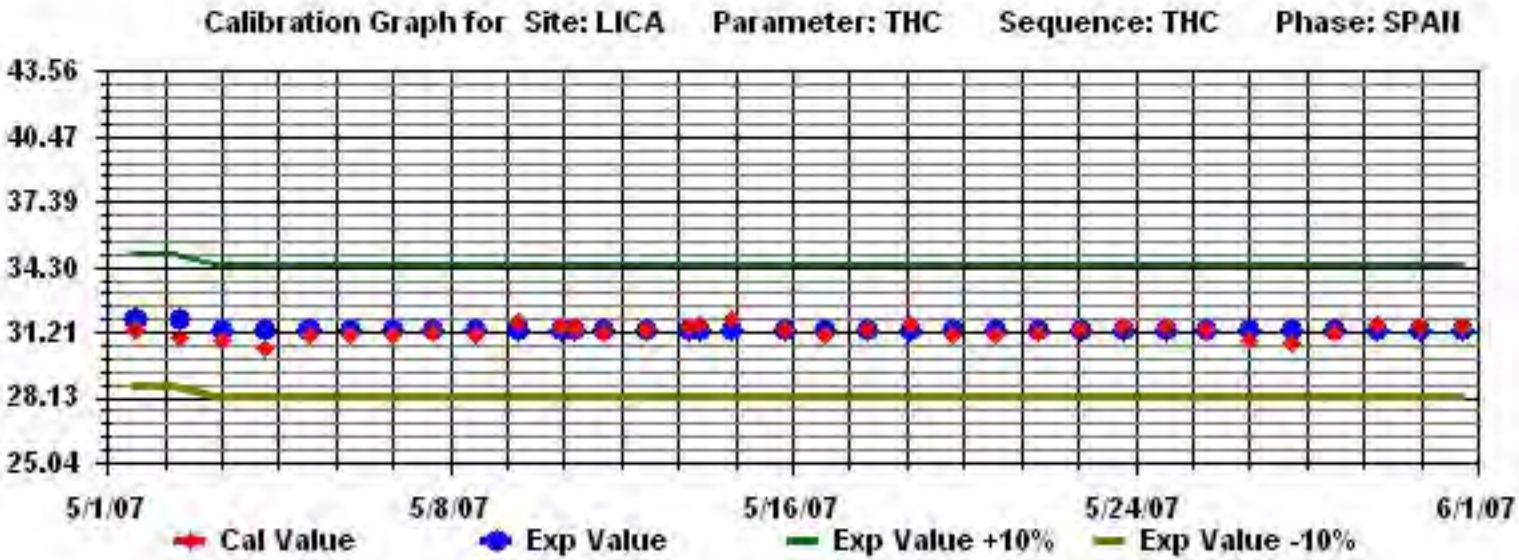
< 3.0

Site : LICA

Period : 05/01/07-05/31/07

Level : 10




Calibration Graph for Site: LICA Parameter: THC Sequence: THC Phase: SPAII
43.56
40.47
37.39
34.30
31.21
28.13
25.04
5/1/07
5/8/07
5/16/07
5/24/07
6/1/07
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MAY 2007

**TOTAL HYDROCARBONS MAX** instantaneous maximum in ppm

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | 24-HOUR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOUR END | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 | MAX. | AVG. | RDGS. |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 5.8 | 2.7 | 2.4 | 2.4 | 2.3 | 3.2 | 2.8 | 2.4 | 1.9 | 1.9 | 1.8 | 1.8 | **C** | **C** | **C** | **C** | **IZS** | 1.8 | 1.7 | 2 | 1.8 | 1.8 | 1.7 | 1.7 | 5.8 | 2.3 | 24 |
| 2 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.7 | 2.1 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | **IZS** | 1.7 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 1.8 | 1.8 | 2.1 | 1.8 | 24 |
| 3 | 1.8 | 1.8 | 1.8 | 1.9 | 1.8 | 1.8 | 2 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 2 | 1.8 | 24 |
| 4 | 1.7 | 1.7 | 1.7 | 1.7 | 1.9 | 2.4 | 2.1 | 2.1 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 2.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 2.8 | 1.8 | 24 |
| 5 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | **P** | **N** | **C** | **C** | 1.7 | 1.7 | 1.7 | 1.8 | 1.9 | 1.7 | 1.7 | 1.8 | 2.9 | 2.9 | 1.8 | 23 |
| 6 | 1.9 | 2.1 | 4.9 | 2.9 | 3.7 | 2.7 | 2.7 | 2.5 | 1.9 | 1.8 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 1.9 | 1.9 | 3.7 | 3.2 | 4.9 | 2.3 | 24 |
| 7 | 2.1 | 1.8 | 1.8 | 1.7 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 2.3 | 2.6 | 3 | 3.5 | 3.5 | 1.9 | 24 |
| 8 | 3.7 | 5.5 | 3 | 4.9 | 2.7 | 2.5 | 2.1 | 2 | 1.8 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 | 5.5 | 2.3 | 24 |
| 9 | 1.7 | 1.6 | 1.6 | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.9 | 1.9 | 1.9 | 2.6 | 2.6 | 2.6 | 1.8 | 24 |
| 10 | 3.2 | 4.4 | 4.3 | 4.8 | 2.8 | 2.4 | 2.5 | **IZS** | 2 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 2.1 | 2 | 1.9 | 1.9 | 1.9 | 4.8 | 2.4 | 24 |
| 11 | 1.8 | 1.8 | 1.8 | 1.8 | 2 | 2 | **IZS** | 1.9 | 1.8 | 1.9 | 1.8 | 1.8 | **C** | **P** | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 2.1 | 3.2 | 1.8 | 1.7 | 3.2 | 1.9 | 23 |
| 12 | 1.7 | 1.8 | 1.7 | 1.7 | 2.1 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 2.7 | 2.8 | 2.8 | 1.8 | 24 |
| 13 | 4.8 | **6.9** | 3.1 | 4 | **IZS** | 2.8 | 2 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 2.6 | 5.6 | 4.5 | 5.9 | 6.9 | 2.8 | 24 |
| 14 | 2.4 | 3.5 | 5.4 | **IZS** | 2.6 | 2.8 | 2.8 | 1.9 | 1.8 | 2.1 | 2.4 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 3.8 | 2.8 | 1.9 | 1.9 | 5.4 | 2.4 | 24 |
| 15 | 1.8 | 1.9 | **IZS** | 3.9 | 2.5 | 2 | 1.8 | 1.8 | 1.9 | 1.8 | 1.8 | 1.8 | 1.9 | 1.8 | 2.2 | 1.8 | 1.8 | 1.8 | 1.9 | 2.2 | 2.9 | 1.9 | 1.8 | 1.9 | 3.9 | 2.0 | 24 |
| 16 | 2.8 | 2.6 | 2.1 | 1.9 | 2 | 1.9 | 1.8 | **IZS** | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 2.5 | 1.8 | 1.7 | 1.7 | 1.9 | 1.9 | 2 | 2.8 | 1.9 | 24 |
| 17 | 4.3 | 4.7 | 4.3 | 3.3 | 3.9 | 3.1 | **IZS** | 2.9 | 2.2 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 4.7 | 2.4 | 24 |
| 18 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 1.8 | 2.1 | 1.7 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.8 | 1.8 | 1.7 | 1.8 | 1.8 | 1.8 | 1.7 | 2.1 | 1.8 | 24 |
| 19 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 1.7 | 1.8 | 1.8 | 1.9 | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 | 1.9 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.9 | 1.7 | 24 |
| 20 | 1.7 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 1.7 | 1.7 | 2.2 | 1.7 | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 2.4 | 2 | 2.4 | 1.8 | 24 |
| 21 | 1.7 | 3.6 | **IZS** | 3 | 3.8 | 1.9 | 1.8 | 1.7 | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 2.5 | 3.9 | 3.9 | 3.9 | 2.2 | 24 |
| 22 | 4.1 | **IZS** | 5.2 | 5.5 | 4.3 | 4 | 3.3 | 1.8 | 1.7 | 1.8 | 1.8 | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 3.8 | 3.5 | 4.8 | 2.5 | 5.5 | 2.8 | 24 |
| 23 | **IZS** | 3.5 | 5.4 | 5.2 | 4.7 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 5.4 | 2.3 | 24 |
| 24 | 1.7 | 1.8 | 1.8 | 3.6 | 2.9 | 2.5 | 1.7 | 1.9 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 3.6 | 3.1 | **IZS** | 1.7 | 3.6 | 2.1 | 24 |
| 25 | 1.8 | 1.8 | 2.4 | 2.1 | 2 | 2 | 2.1 | 2.1 | 2 | 2 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | **IZS** | 1.9 | 1.9 | 2.4 | 1.9 | 24 |
| 26 | 2 | 2 | 3.4 | 3.7 | 2.3 | 2.6 | 2 | 2.1 | 1.9 | 1.8 | 1.8 | 1.9 | 1.8 | 1.7 | 1.8 | 1.7 | 1.8 | 1.7 | 1.8 | 3.1 | **IZS** | 1.9 | 2 | 2.1 | 3.7 | 2.1 | 24 |
| 27 | 3.3 | 2.2 | 2.2 | 2 | 2 | 2.1 | 2.1 | 2 | 2 | 1.9 | 1.8 | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | 1.8 | **IZS** | 1.7 | 1.8 | 1.6 | 1.6 | 3.3 | 1.9 | 24 |
| 28 | 1.7 | 1.7 | 1.7 | 1.7 | 1.9 | 1.8 | 1.8 | 1.7 | 1.7 | 3.6 | 2.6 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | **IZS** | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 3.6 | 1.8 | 24 |
| 29 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | **IZS** | 1.7 | 1.7 | 1.8 | 3 | 3.6 | 3.6 | 3.6 | 1.9 | 24 |
| 30 | 3.5 | 2.8 | 2.4 | 2.7 | 2.9 | 2.2 | 2.1 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.8 | **IZS** | 1.8 | 1.8 | 1.9 | 1.8 | 2.1 | 2 | 2.2 | 3.5 | 2.1 | 24 |
| 31 | 2.9 | 2.9 | 2.4 | 2.1 | 2.2 | 2.4 | 2.1 | 2 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | **IZS** | 1.9 | 1.9 | 2 | 2 | 3.4 | 2.2 | 2.2 | 3.1 | 3.4 | 2.2 | 24 |
| HOURLY MAX | 6 | 7 | 5 | 6 | 5 | 4 | 3 | 3 | 2 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 6 | 5 | 6 | | | |
| HOURLY AVG | 2.5 | 2.6 | 2.7 | 2.7 | 2.5 | 2.2 | 2.0 | 1.9 | 1.8 | 1.9 | 1.8 | 1.8 | 1.8 | 1.7 | 1.8 | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 2.1 | 2.2 | 2.3 | 2.3 | | | |

**STATUS FLAG CODES**

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

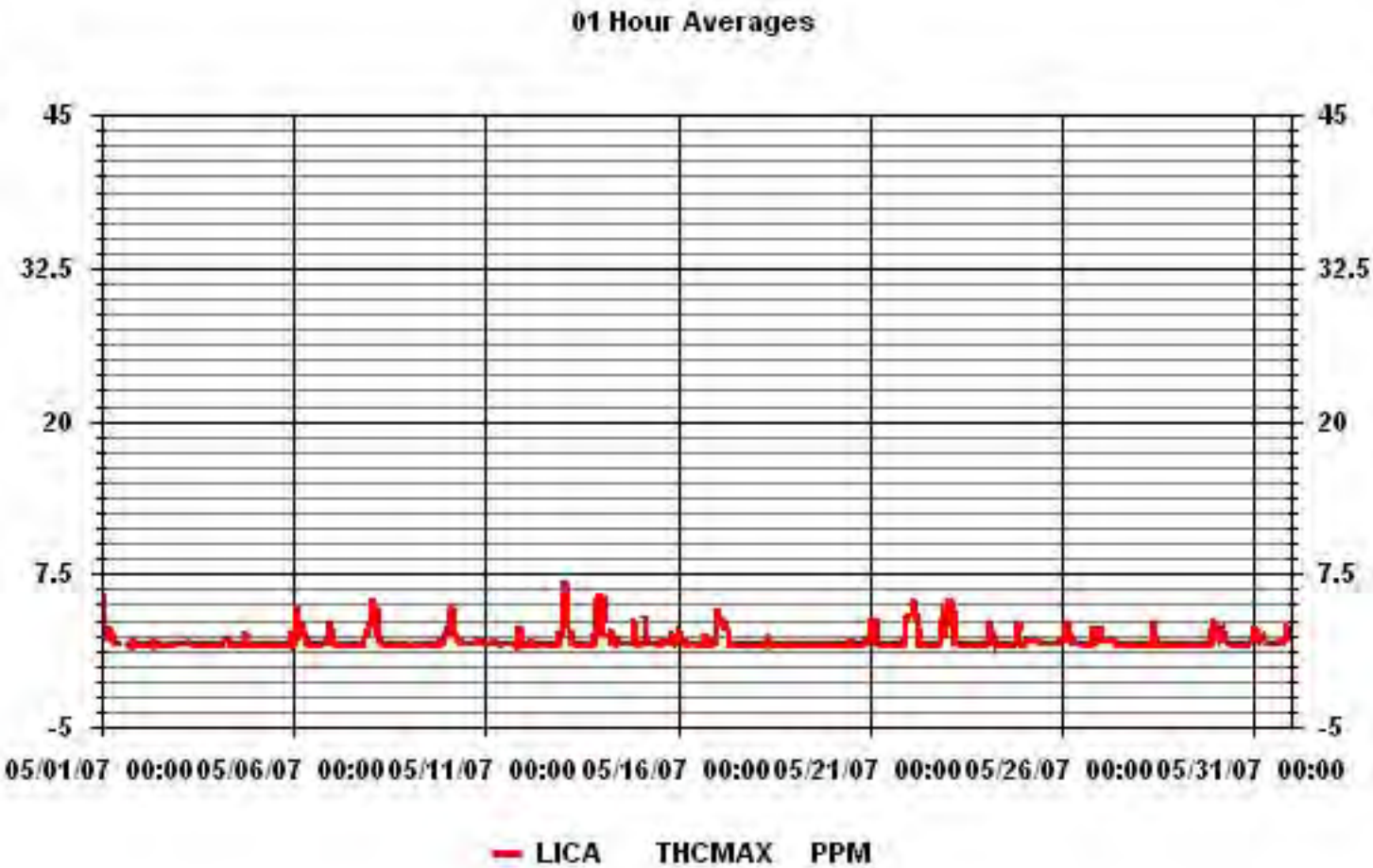
**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| NUMBER OF NON-ZERO READINGS: | 703 | | | | | |
| MAXIMUM INSTANTANEOUS VALUE: | 6.9 | PPM | @ HOUR(S) | 2 | ON DAY(S) | 13 |

| | | | | | |
|---|---|---|---|---|---|
| IZS CALIBRATION TIME: | 31 | HRS | OPERATIONAL TIME: | 742 | HRS |
| MONTHLY CALIBRATION TIME: | 7 | HRS | | | |
| STANDARD DEVIATION: | 0.73 | | | | |

**MOUNTAIN STANDARD TIME**

Maxxam Analytics Inc


01 Hour Averages
45
32.5
20
7.5
-5
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA THCMAX PPM

# PARTICULATE MATTER 2.5

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MAY 2007

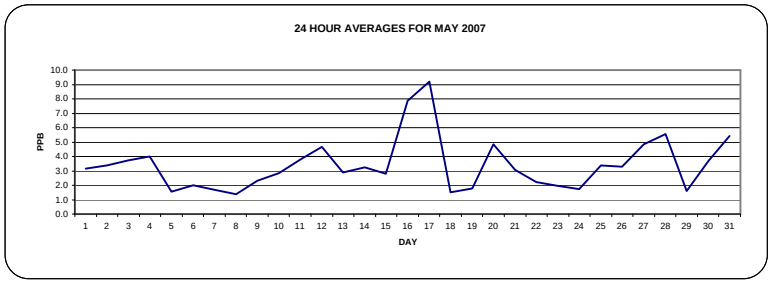
**PARTICULATE MATTER 2.5 (PM2.5)** hourly averages in ug/m$^3$

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | 24-HOUR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOUR END | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 | MAX. | AVG. | RDGS. |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 3.8 | 0 | 1.2 | 2.6 | 0.9 | 7.3 | 3.8 | **C** | **C** | **C** | **C** | **C** | **C** | 1.9 | 3.4 | 2.9 | 2.3 | 3.7 | 3.2 | 3 | 2.8 | 4.4 | 5.4 | 4.1 | 7.3 | 3.2 | 24 |
| 2 | 2 | 1.9 | 2 | 2.5 | 1.4 | 1.9 | 2.1 | 2 | **C** | **C** | **C** | 5.6 | 5.6 | 4.7 | 5.8 | 4.8 | 5.4 | 4.7 | 3.9 | 3.5 | 3.4 | 1.6 | 2.8 | 3 | 5.8 | 3.4 | 24 |
| 3 | 3.5 | 2.9 | 4.3 | 5 | **D** | 4.2 | 5.3 | 4.9 | 4.7 | 6.9 | 4.4 | 4 | 4.6 | 3.8 | 3.8 | 2.8 | 3.2 | 2.2 | 1.5 | 1.7 | 4.6 | 3.1 | 3.4 | 1.2 | 6.9 | 3.7 | 23 |
| 4 | 1.6 | 3.7 | 4.6 | 4.2 | 5.3 | 8 | 5.3 | 4.8 | 6.4 | 4.5 | 8.7 | 8.8 | 8 | 7.1 | 6.5 | 5.5 | 0 | 0 | 0.3 | 0.6 | 0.7 | 1.3 | 0.4 | 0.1 | 8.8 | 4.0 | 24 |
| 5 | 1 | 0.1 | 0.2 | 0.5 | 2 | 1.7 | 1.4 | 2.3 | 3 | 3.4 | 2 | **P** | 1.2 | 1 | 0.1 | 0 | 0.6 | 1.4 | 2.1 | 3.8 | 2.2 | 1.6 | 1.1 | 3 | 3.8 | 1.6 | 23 |
| 6 | 1.1 | 0 | 0.8 | 0 | 0.8 | 4.8 | 4.7 | 1.4 | 0 | 0.1 | **C** | **C** | 0 | 0.9 | 0 | 0.9 | 1.4 | 1.4 | 2.2 | 2.1 | 4.9 | 6 | 4.5 | 5.7 | 6.0 | 2.0 | 24 |
| 7 | 5.2 | 0.8 | 3.5 | 1.3 | 1.1 | 1.4 | 0 | 1 | 0.4 | 0 | 0 | 0 | 0.1 | 1.7 | 2.2 | 1.3 | 1.7 | 1.8 | 1.1 | 0.6 | 2 | 5.8 | 3.8 | 3.4 | 5.8 | 1.7 | 24 |
| 8 | 3.6 | 3.8 | 4.3 | 3 | 3.6 | 1.9 | 2.6 | 2.6 | 0.6 | 0.9 | 1.4 | 0 | 0 | 0.2 | 0 | 0 | 0.6 | 0 | 0 | 0 | 3.3 | 0.1 | 0 | 1 | 4.3 | 1.4 | 24 |
| 9 | 0 | 1 | 0.8 | 1.9 | 1.9 | 5.2 | 1.1 | 0.9 | 2 | 2.7 | 3.7 | 3.3 | 2.4 | 1.8 | 3.1 | 2.4 | 2.7 | 1.6 | 2.3 | 2.7 | 3.9 | 2.8 | 3.1 | 2.6 | 5.2 | 2.3 | 24 |
| 10 | 2.9 | 2.4 | 2.2 | 2.3 | 3.2 | 8.3 | 6.2 | 2.4 | 2.4 | 0.9 | 2.5 | 0 | 0 | 0 | 0.5 | 1.4 | 3.9 | 3.2 | 2.6 | 4.9 | 4.9 | 3.9 | 3.5 | 4.1 | 8.3 | 2.9 | 24 |
| 11 | 4.1 | 2.2 | 2.5 | 2.3 | 1.7 | 3.5 | 2.4 | 3.5 | 3.8 | 3.9 | 2.9 | 3.7 | 3.1 | **P** | 3.2 | 4 | 5.3 | 4.8 | 7.1 | 4.5 | 4.6 | 4.9 | 4.2 | 5.1 | 7.1 | 3.8 | 23 |
| 12 | 5.9 | 5.5 | 5.7 | 4.4 | 4.6 | 5.3 | 4.1 | 4.1 | 5.1 | 4.9 | 5.9 | 4.6 | 5.7 | 8.4 | 9.8 | 3.7 | 4.5 | 3.6 | 3.2 | 0.3 | 2.1 | 2.7 | 2.4 | 5 | 9.8 | 4.6 | 24 |
| 13 | 4.9 | 2.4 | 4.2 | 3 | 3.7 | 2.7 | 3.5 | 1.8 | 0.6 | 0 | 0 | 0 | 0 | 2.1 | 1.3 | 1.4 | 2.4 | 2.3 | 2.2 | 3.6 | 6.4 | 6.3 | 7 | 7.6 | 7.6 | 2.9 | 24 |
| 14 | 6 | 4.3 | 3.3 | 4.8 | 5.7 | 6.8 | 4.5 | 2.2 | 0 | 1.2 | 2 | 1.8 | 0.3 | 1.6 | 1.7 | 1.5 | 1.6 | 2.3 | 0.8 | 2.5 | 5.8 | 6.6 | 4.8 | 5.5 | 6.8 | 3.2 | 24 |
| 15 | 4.4 | 0.5 | 1.3 | 0.4 | 0.9 | 2.9 | 1.5 | 0.5 | 1.2 | 1.7 | 1.7 | 1.2 | 4.1 | 1.4 | 3.9 | 1.1 | 3.2 | 6.1 | 5 | 4.7 | 5.5 | 4.8 | 4.3 | 4.5 | 6.1 | 2.8 | 24 |
| 16 | 4.1 | 3.8 | 5.4 | 4.9 | 3.6 | 3.1 | 3.2 | 4 | 4.3 | 10.7 | 9 | 10.1 | 9.3 | 10.9 | 10.3 | 7.8 | 9.3 | 9 | 8.9 | 10.3 | 11.2 | 11.5 | 11.6 | 12 | 12.0 | 7.8 | 24 |
| 17 | 12.9 | 12.9 | 12.9 | 12.1 | 15.5 | 15.9 | 14.9 | **20.6** | 17.7 | 8.7 | 5.3 | 5.1 | 5.6 | 6.1 | 5.3 | 6.7 | 4.4 | 5.7 | 4.3 | 3.9 | 10.2 | 7.6 | 3 | 3.4 | 20.6 | **9.2** | 24 |
| 18 | 2.1 | 1.4 | 1.2 | 1.2 | 1.3 | 0 | 0.4 | 0.9 | 1.9 | 1.9 | 1.7 | 1.4 | 1.2 | 1.8 | 2.8 | 1.6 | 1.1 | 1.9 | 1.6 | 1.4 | 2.3 | 2 | 1.1 | 1.6 | 2.8 | 1.5 | 24 |
| 19 | 0.2 | 0.4 | 0 | 2.1 | 5.1 | 0.5 | 1.2 | 1.5 | 2.4 | 0.9 | 1 | 2.5 | 1.4 | 2.4 | 1 | 1.7 | 2 | 3.1 | 2.5 | 2.2 | 3.3 | 2.4 | 2.1 | 1.2 | 5.1 | 1.8 | 24 |
| 20 | 2 | 3 | 2.9 | 3.1 | 3.1 | 3.7 | 4.8 | 5 | 5.8 | 5.6 | 3.6 | 4 | 4.3 | 4.8 | 3.7 | 5 | 5.1 | 4.3 | 4.9 | 5.5 | 7.7 | 8.2 | 8.5 | 8 | 8.5 | 4.9 | 24 |
| 21 | 3.8 | 3.7 | 1.6 | 3.1 | 4.7 | 8.5 | 8 | 4.1 | 3 | 4.3 | 2.2 | 1.1 | 0 | 0.9 | 1 | 1.5 | 2.5 | 3.8 | 2 | 2.7 | 2.3 | 2.7 | 3 | 2.9 | 8.5 | 3.1 | 24 |
| 22 | 2.8 | 2.6 | 2.2 | 1.5 | 3.2 | 7.2 | 6.9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.9 | 1.2 | 1.2 | 2 | 2.8 | 5.4 | 3.1 | 6 | 3.6 | 7.2 | 2.2 | 24 |
| 23 | 2.6 | 2.5 | 3.1 | 6.5 | 6.7 | 0 | 0 | 0.1 | 0 | 0.1 | 1.2 | 0.3 | 0.6 | 0.6 | 0.1 | 2.8 | 0.9 | 4.6 | 4.6 | 1.3 | 3.2 | 2.4 | 0.3 | 2.1 | 6.7 | 1.9 | 24 |
| 24 | 1.6 | 1.1 | 1.1 | 0.6 | 1.8 | 7.4 | 0.7 | 1.5 | 0.9 | 0 | 0.4 | 0 | 1.4 | 0.9 | 0.3 | 1 | 1 | 1.2 | 0.9 | 3.7 | 7.3 | 4.5 | 1.2 | 1.3 | 7.4 | 1.7 | 24 |
| 25 | 2.4 | 2.1 | 3.3 | 2.3 | 3.9 | 5.1 | 3.9 | 4.1 | 4.3 | 0.6 | 3.9 | 2.2 | 1.8 | 4.9 | 10.7 | 4.6 | 2.4 | 0.2 | 2.2 | 3.1 | 2.9 | 3.3 | 3.2 | 3.4 | 10.7 | 3.4 | 24 |
| 26 | 3 | 2 | 2.1 | 3.3 | 5.8 | 7.9 | 2.6 | 2 | 0.4 | 0 | 2.5 | 2.6 | 0.1 | 0.5 | 1.2 | 1.4 | 1.4 | 1 | 2.3 | 5.5 | 11.1 | 10.5 | 5.5 | 4.3 | 11.1 | 3.3 | 24 |
| 27 | 4.6 | 4.1 | 5 | 4.8 | 6.9 | 7.5 | 6.3 | 4.1 | 6.6 | 4.5 | 0.4 | 0 | 2.8 | 5.6 | 2.3 | 2.6 | 4.4 | 19.2 | 5.6 | 2.6 | 5.3 | 7.7 | 0.8 | 3 | 19.2 | 4.9 | 24 |
| 28 | 5.5 | 7.7 | 5 | 3.6 | 6.4 | 9.9 | 7.5 | 6.8 | 6.8 | 14.3 | 5 | 4.7 | **C** | **C** | 5.4 | 5.2 | 7.4 | 8 | 5.9 | 1.5 | 2.4 | 1.6 | 0.5 | 1.1 | 14.3 | 5.6 | 24 |
| 29 | 0 | 0 | 0.4 | 1.2 | 1.4 | 0.4 | 1.6 | 1 | 0.8 | 0.8 | 1.5 | 1.1 | 2 | 2.5 | 2.2 | 2.5 | 3.1 | 2.7 | 3.1 | 2.5 | 2.1 | 0.3 | 2.2 | 3.1 | 3.1 | 1.6 | 24 |
| 30 | 0.5 | 0.3 | 0.8 | 1 | 3.5 | 11.7 | 3.5 | 2 | 3.2 | 2.8 | 3.6 | 5.5 | 4.6 | 3.1 | 2.4 | 2.7 | 4.8 | 3.1 | 4 | 5 | 5.6 | 4.7 | 3.9 | 6.2 | 11.7 | 3.7 | 24 |
| 31 | 5.4 | 5.7 | 8.5 | 8 | 8.7 | 12.2 | 8.4 | 8.7 | 4.1 | 2.8 | 1.7 | 0 | 1.6 | 2.5 | 5.1 | 3.7 | 3.5 | 3.6 | 2.8 | 7 | 10.3 | 6 | 4.7 | 5.5 | 12.2 | 5.4 | 24 |
| HOURLY MAX | 13 | 13 | 13 | 12 | 16 | 16 | 15 | 21 | 18 | 14 | 9 | 10 | 9 | 11 | 11 | 8 | 9 | 19 | 9 | 10 | 11 | 12 | 12 | 12 | | | |
| HOURLY AVG | 3.3 | 2.7 | 3.1 | 3.1 | 3.9 | 5.4 | 3.9 | 3.4 | 3.2 | 3.1 | 2.8 | 2.6 | 2.5 | 2.9 | 3.2 | 2.8 | 3.0 | 3.6 | 3.1 | 3.2 | 4.8 | 4.3 | 3.5 | 3.8 | | | |

**STATUS FLAG CODES**

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

**OBJECTIVE LIMIT:** **ALBERTA ENVIRONMENT:** 1-HR - PPB 24-HR 30 PPB



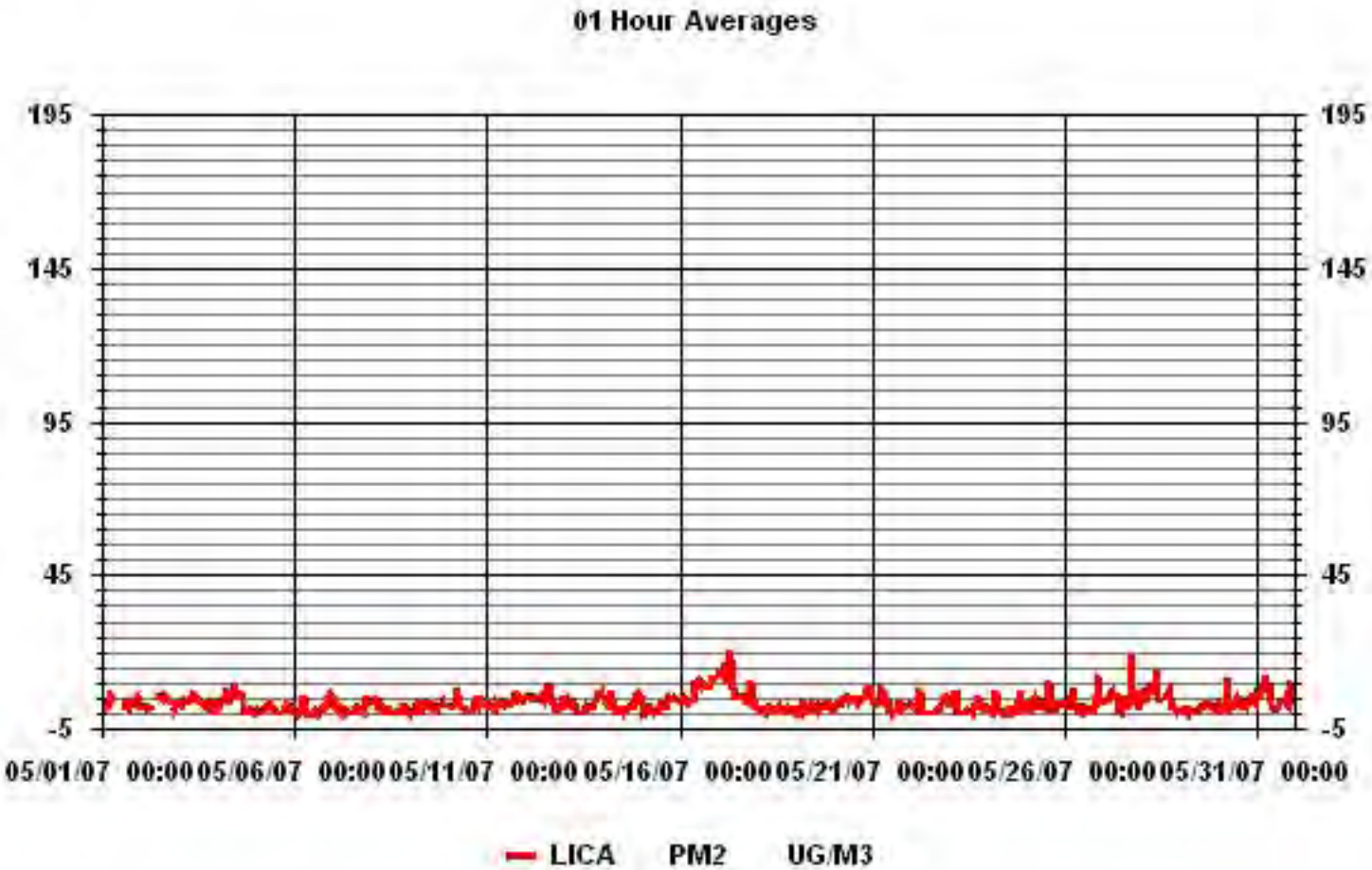

**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| NUMBER OF 1-HR EXCEEDENCES: | - | | | | | |
| NUMBER OF 24-HR EXCEEDENCES: | 0 | | PROPOSED GUIDELINE | | | |
| NUMBER OF NON-ZERO READINGS: | 679 | | | | | |
| MAXIMUM 1-HR AVERAGE: | 20.6 | UG/M$^3$ | @ HOUR(S) | 8 | ON DAY(S) | 17 |
| MAXIMUM 24-HR AVERAGE: | 9.2 | UG/M$^3$ | | | ON DAY(S) | 17 |

| | | | | | |
|---|---|---|---|---|---|
| IZS CALIBRATION TIME: | 0 | HRS | OPERATIONAL TIME: | 741 | HRS |
| MONTHLY CALIBRATION TIME: | 13 | HRS | AMD OPERATION UPTIME: | 99.6 | % |
| STANDARD DEVIATION: | 2.87 | | MONTHLY AVERAGE: | 3.40 | UG/M$^3$ |

Maxxam Analytics Inc

**MOUNTAIN STANDARD TIME**


01 Hour Averages
195
145
95
45
-5
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA PM2 UG/M3

LICA
PM2 / WD Joint Frequency Distribution (Percent)

May 2007

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

| | Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < | 30.0 | 3.70 | 6.86 | 11.40 | 3.29 | 6.18 | 9.06 | 12.77 | 5.63 | 4.39 | 4.67 | 5.21 | 7.55 | 5.76 | 4.67 | 4.94 | 3.84 | 100.00 |
| < | 60.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < | 80.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < | 120.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < | 240.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= | 240.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| | Totals | 3.70 | 6.86 | 11.40 | 3.29 | 6.18 | 9.06 | 12.77 | 5.63 | 4.39 | 4.67 | 5.21 | 7.55 | 5.76 | 4.67 | 4.94 | 3.84 | |

Calm : .00 %

Total # Operational Hours : 728

Distribution By Samples

Direction

| | Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < | 30.0 | 27 | 50 | 83 | 24 | 45 | 66 | 93 | 41 | 32 | 34 | 38 | 55 | 42 | 34 | 36 | 28 | 728 |
| < | 60.0 | | | | | | | | | | | | | | | | | |
| < | 80.0 | | | | | | | | | | | | | | | | | |
| < | 120.0 | | | | | | | | | | | | | | | | | |
| < | 240.0 | | | | | | | | | | | | | | | | | |
| >= | 240.0 | | | | | | | | | | | | | | | | | |
| | Totals | 27 | 50 | 83 | 24 | 45 | 66 | 93 | 41 | 32 | 34 | 38 | 55 | 42 | 34 | 36 | 28 | |

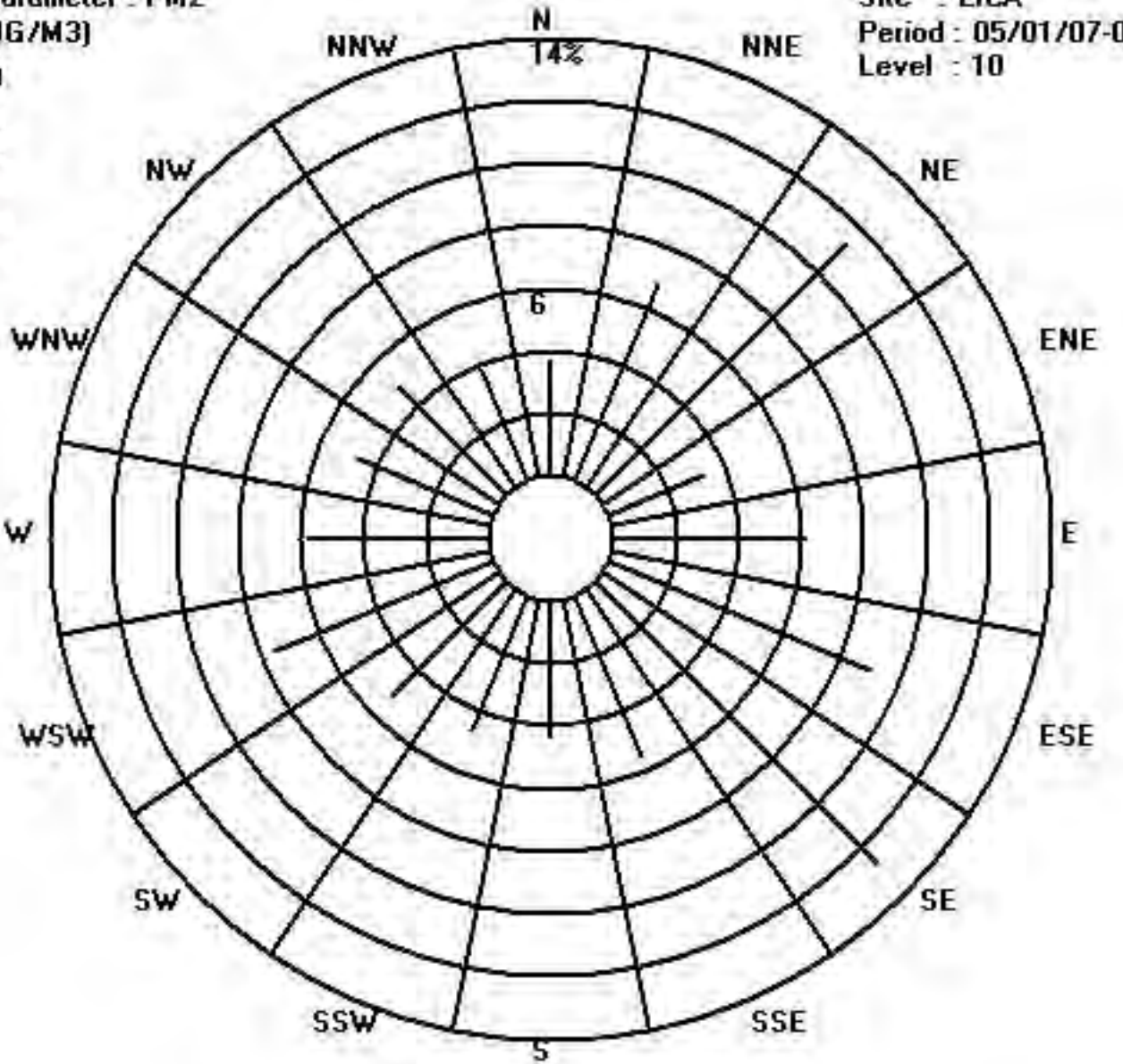
Calm : .00 %

Total # Operational Hours : 728

Logger : 01 Parameter : PM2
Class Limits (UG/M3)

>= 240.0
< 240.0
< 120.0
< 80.0
< 60.0
< 30.0

Site : LICA
Period : 05/01/07-05/31/07
Level : 10



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MAY 2007

**PARTICULATE MATTER 2.5 MAX** instantaneous maximum in ug/r$^3$

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | 24-HOUR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOUR END | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 | MAX. | AVG. | RDGS. |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 10.2 | 4 | 6.3 | 7.2 | 6.1 | 12 | 13.6 | **C** | **C** | **C** | **C** | **C** | **C** | 5.6 | 5.7 | 6 | 5.2 | 6.7 | 4.8 | 5 | 4.8 | 5.8 | 8 | 7.9 | 13.6 | 6.9 | 24 |
| 2 | 4.8 | 3.6 | 5.2 | 4.7 | 4.2 | 4.5 | 5.1 | 7.2 | **C** | **C** | **C** | 8.7 | 7.6 | 6.7 | 8.8 | 7.8 | 7.3 | 7 | 7.3 | 6.7 | 6.9 | 6 | 5.6 | 5.6 | 8.8 | 6.3 | 24 |
| 3 | 6.3 | 7.1 | 10.6 | 9.6 | **D** | 8.4 | 10.5 | 8.3 | 7.9 | 9.3 | 7.9 | 5.5 | 6.9 | 6.1 | 5.7 | 4.7 | 6.3 | 5.5 | 4.2 | 4.8 | 8.2 | 7.6 | 6.3 | 4 | 10.6 | 7.0 | 23 |
| 4 | 5.5 | 8.5 | 8.9 | 10.3 | 11.3 | 10.1 | 9.8 | 7.3 | 10.5 | 12.1 | 12.6 | 15.4 | 9.8 | 8.5 | 10.2 | 9.8 | 0.9 | 2.9 | 5 | 2.4 | 2.9 | 3 | 1.6 | 1.7 | 15.4 | 7.5 | 24 |
| 5 | 2.6 | 2.4 | 2.4 | 2.7 | 4.3 | 4.3 | 5.6 | 4.7 | 5.1 | 5.5 | 4 | **P** | 4.2 | 3.5 | 1.4 | 2.2 | 2.9 | 3.2 | 3.6 | 6.1 | 5.6 | 4.7 | 3.5 | 10 | 10 | 4.1 | 23 |
| 6 | 7.5 | 0 | 2.5 | 2.4 | 3.5 | 7.7 | 8.4 | 3.4 | 2 | 4.2 | **C** | **C** | 2.5 | 3.7 | 2.4 | 5.1 | 4.7 | 4.6 | 4.7 | 4.8 | 7.4 | 8.6 | 8.5 | 11.4 | 11.4 | 5.0 | 24 |
| 7 | 10.6 | 3.1 | 6.2 | 4.5 | 4 | 3.3 | 2.2 | 3.1 | 3.3 | 0.9 | 3.6 | 1.4 | 3.5 | 5.3 | 4.9 | 3.5 | 3.5 | 4.2 | 5.2 | 2.4 | 5.3 | 12.8 | 9.2 | 6.1 | 12.8 | 4.7 | 24 |
| 8 | 6.6 | 6.3 | 8.9 | 4.9 | 6.4 | 4.5 | 8 | 5.6 | 2.5 | 4.1 | 3.1 | 3.7 | 2.2 | 2 | 1.8 | 0.7 | 3.8 | 1.7 | 1 | 2.9 | 6.6 | 6.2 | 4.7 | 5 | 8.9 | 4.3 | 24 |
| 9 | 3.9 | 5 | 8.5 | 5 | 4.2 | 12.4 | 5.4 | 4.6 | 5.3 | 5.8 | 7.3 | 7.4 | 5.1 | 5.1 | 5.6 | 5.5 | 4.8 | 3.8 | 4.1 | 5.1 | 7.3 | 6.1 | 7.7 | 5.8 | 12.4 | 5.9 | 24 |
| 10 | 5.4 | 4.9 | 5.4 | 5.1 | 6.6 | 14.7 | 11.8 | 4.2 | 4.2 | 2.3 | 5.1 | 2.3 | 1.5 | 1.8 | 3.6 | 3.9 | 5.5 | 4.7 | 4.5 | 7.7 | 6.3 | 5.7 | 5.2 | 5.7 | 14.7 | 5.3 | 24 |
| 11 | 6.2 | 6.4 | 6.3 | 6.2 | 6.6 | 7.1 | 5 | 5.6 | 5.7 | 5.3 | 4.7 | 6.3 | 5.4 | **P** | 6.2 | 6.4 | 8.3 | 7.1 | 11.7 | 8 | 8.4 | 7.3 | 5.7 | 7.1 | 11.7 | 6.7 | 23 |
| 12 | 8.5 | 9.7 | 8.7 | 5.9 | 7 | 7.5 | 6.9 | 6 | 7.1 | 8.9 | 8.9 | 7.1 | 9.5 | 11.5 | 15.1 | 8.7 | 9.2 | 9.1 | 6.7 | 3.7 | 5.2 | 5.5 | 5.6 | 9.6 | 15.1 | 8.0 | 24 |
| 13 | 8.3 | 8.5 | 7.9 | 6.7 | 6.8 | 7.4 | 5.3 | 3.7 | 3.6 | 2.4 | 3.7 | 2.3 | 1.6 | **5** | 4.3 | 3.9 | 4.6 | 5.7 | 5.4 | 5.7 | 12.1 | 9.6 | 13.7 | 9.7 | 13.7 | 6.2 | 24 |
| 14 | 7.9 | 8.6 | 6.7 | 8.6 | 9.2 | 9.1 | 6.8 | 3.6 | -1.7 | 6.1 | 7.2 | 5.7 | 2.5 | 5 | 4.8 | 5.1 | 4 | 5.6 | 3.4 | 4.3 | 14.3 | 11.2 | 6.2 | 9 | 14.3 | 6.4 | 24 |
| 15 | 9.8 | 3.8 | 5 | 3.4 | 4.6 | 7.4 | 5.2 | 4.1 | 4.2 | 5.5 | 3.7 | 4.4 | 14.9 | 6.7 | 7.4 | 4.5 | 5.9 | 15.7 | 11.6 | 6.9 | 8.1 | 7.1 | 6.2 | 6.4 | 15.7 | 6.8 | 24 |
| 16 | 6.8 | 5.3 | 7.4 | 6.9 | 4.7 | 4.4 | 5.1 | 5.9 | 7.3 | 15.4 | 11.7 | 12.7 | 12.9 | 13.8 | 12.9 | 9.6 | 11.6 | 11.5 | 11.2 | 12.5 | 12.9 | 13.4 | 14.1 | 17.3 | 17.3 | 10.3 | 24 |
| 17 | 19.4 | 17.1 | 16.9 | 15.8 | 18.1 | 18.3 | 16.8 | 43 | 42.8 | 19.6 | 8.7 | 8.1 | 9.2 | 11.2 | 9.6 | 8.9 | 7.7 | 8.3 | 7.4 | 8.5 | 19.3 | 11.1 | 5.6 | 6.2 | 43 | 14.9 | 24 |
| 18 | 4.7 | 3.4 | 4.2 | 3 | 4.4 | 5.3 | 5.1 | 5.3 | 5.1 | 4.6 | 6.2 | 3.9 | 4.2 | 5.2 | 6.3 | 3.8 | 3.1 | 3.9 | 4 | 4.6 | 6 | 5.7 | 5.3 | 5.3 | 6.3 | 4.7 | 24 |
| 19 | 2.6 | 4.9 | 2.5 | 7.4 | 9.1 | 4.5 | 4.1 | 5.1 | 6.4 | 6.6 | 6.1 | 8.7 | 7.8 | 7.9 | 3.9 | 7.4 | 5.1 | 7.8 | 5.2 | 5.9 | 6.3 | 6.6 | 5.6 | 5.6 | 9.1 | 6.0 | 24 |
| 20 | 5.1 | 6.2 | 7.3 | 6.7 | 6.4 | 7.5 | 8.3 | 7.9 | 8.3 | 7.4 | 5.8 | 7.9 | 8.3 | 7.5 | 6.2 | 8.4 | 8.3 | 8.2 | 6.8 | 8 | 10.6 | 11.9 | 10.6 | 12.2 | 12.2 | 8.0 | 24 |
| 21 | 5.2 | 5.3 | 7.4 | 7.3 | 10.7 | 11.8 | 9.6 | 6.9 | 4.7 | 6.1 | 5.2 | 3.9 | 3.1 | 7.6 | 3.4 | 4.3 | 8.5 | 9.2 | 3.9 | 4.4 | 4.5 | 4.7 | 4.7 | 4.1 | 11.8 | 6.1 | 24 |
| 22 | 5.6 | 4.6 | 6.2 | 4.9 | 6.6 | 11.3 | 10.6 | 3.6 | 3.6 | 0.3 | 1.4 | 1.4 | 1.4 | 1.5 | 2.2 | 4.6 | 3.6 | 3.2 | 2.9 | 4.7 | 10.9 | 5.1 | 10.6 | 6.2 | 11.3 | 4.9 | 24 |
| 23 | 6.1 | 7.2 | 6.9 | 10 | 11.6 | 5.8 | 2.8 | 2.4 | 2.3 | 2.9 | 3.9 | 2.9 | 2.9 | 2.6 | 4.5 | 6.8 | 4.6 | 9.8 | 9 | 5.8 | 5.2 | 4.6 | 2.6 | 4.2 | 11.6 | 5.3 | 24 |
| 24 | 3.1 | 2.7 | 3.5 | 4.4 | 5.5 | 14.4 | 11.8 | 3.2 | 3.7 | 2.9 | 4 | 1.3 | 4.4 | 3.1 | 1.9 | 4.2 | 2.9 | 3.6 | 3 | 8.8 | 10.3 | 7.2 | 6.4 | 3.5 | 14.4 | 5.0 | 24 |
| 25 | 4 | 3.7 | 5.5 | 4 | 8.4 | 6.9 | 6.4 | 6.4 | 7.3 | 4 | 8.2 | 5.4 | 6.9 | 11.7 | 28.2 | 9.7 | 9 | 3.6 | 5.7 | 4.8 | 4.5 | 5 | 4.6 | 4.8 | 28.2 | 7.0 | 24 |
| 26 | 4.5 | 4.6 | 7.3 | 7.6 | 10.5 | 11.3 | 6.2 | 4.5 | 3 | 2.3 | 7 | 5.7 | 4.1 | 4.6 | 3.6 | 4.5 | 3.2 | 4.5 | 5.8 | 10.7 | 14.9 | 16.9 | 9.3 | 6.3 | 16.9 | 6.8 | 24 |
| 27 | 8.2 | 5.8 | 6.8 | 6.7 | 8.6 | 9.5 | 8.4 | 7 | 9.5 | 9 | 6.9 | 4.2 | 11.6 | 13.5 | 6.7 | 7.7 | 10 | 37.2 | 19 | 19.6 | 8.7 | 17.4 | 3.5 | 4.5 | 37.2 | 10.4 | 24 |
| 28 | 7.2 | 10.3 | 9.1 | 5.8 | 9.7 | 12.1 | 9.5 | 9 | 11.1 | **48.6** | 12.7 | 6.8 | **C** | **C** | 8.2 | 7.5 | 11.8 | 10.7 | 10.8 | 4.1 | 4 | 4.3 | 2.9 | 2.6 | 48.6 | 9.9 | 24 |
| 29 | 0.8 | 1.7 | 1.8 | 2.5 | 3.4 | 1.8 | 3.4 | 2.5 | 4.5 | 2.5 | 3.2 | 2.5 | 5.2 | 5.1 | 4.5 | 5.3 | 6.2 | 5.2 | 4.6 | 3.8 | 4.1 | 3.2 | 4.6 | 6.4 | 6.4 | 3.7 | 24 |
| 30 | 3.7 | 5.1 | 3.9 | 5.3 | 9 | 21.6 | 16 | 6.7 | 5.4 | 7.8 | 7.6 | 8.5 | 8.2 | 7.3 | 6.1 | 7.7 | 7.9 | 7.8 | 6.4 | 7.2 | 8.3 | 6.7 | 6.3 | 7.9 | 21.6 | 7.9 | 24 |
| 31 | 7.9 | 10.1 | 10.2 | 9.6 | 15.6 | 17.7 | 11.3 | 11.6 | 7.3 | 8.6 | 9.1 | 2.2 | 6.2 | 9.2 | 9.5 | 7.1 | 7.6 | 8.6 | 6.7 | 10.1 | 14.5 | 9.6 | 7.1 | 9.1 | 17.7 | 9.4 | 24 |
| HOURLY MAX | 19 | 17 | 17 | 16 | 18 | 22 | 17 | 43 | 43 | 49 | 13 | 15 | 15 | 14 | 28 | 10 | 12 | 37 | 19 | 20 | 19 | 17 | 14 | 17 | | | |
| HOURLY AVG | 6.4 | 5.8 | 6.7 | 6.3 | 7.6 | 9.2 | 7.9 | 6.7 | 6.6 | 7.6 | 6.4 | 5.6 | 6.0 | 6.5 | 6.6 | 6.0 | 6.1 | 7.4 | 6.3 | 6.5 | 8.2 | 7.8 | 6.5 | 6.8 | | | |

**STATUS FLAG CODES**

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

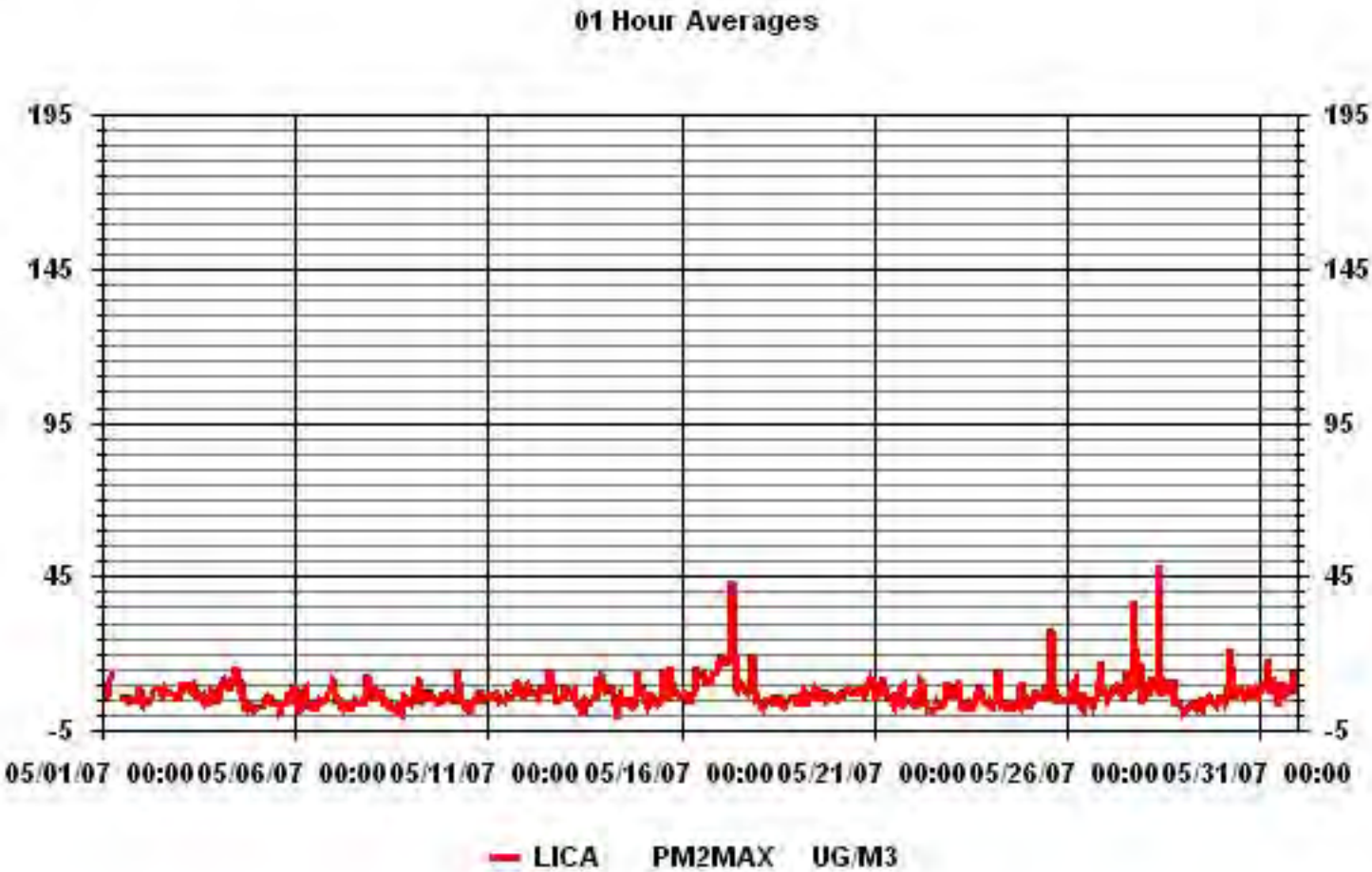
**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| NUMBER OF NON-ZERO READINGS: | 726 | | | | | |
| MAXIMUM INSTANTANEOUS VALUE: | 48.6 | UG/M$^3$ | @ HOUR(S) | 10 | ON DAY(S) | 28 |

| | | | | | |
|---|---|---|---|---|---|
| IZS CALIBRATION TIME: | 0 | HRS | OPERATIONAL TIME: | 741 | HRS |
| MONTHLY CALIBRATION TIME: | 13 | HRS | | | |
| STANDARD DEVIATION: | 4.40 | | | | |

**MOUNTAIN STANDARD TIME**

Maxxam Analytics Inc


01 Hour Averages
195
145
95
45
-5
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA PM2MAX UG/M3

# $NO_2$

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MAY 2007

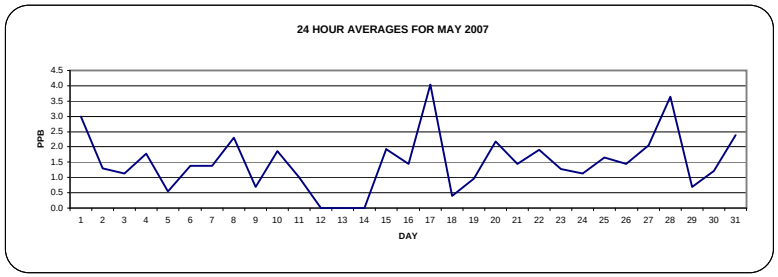
**NITROGEN DIOXIDE** hourly averages in ppb

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | 24-HOUR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOUR END | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 | MAX. | AVG. | RDGS. |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 5 | 4 | 4 | 4 | 5 | 7 | 9 | **C** | **C** | **C** | **C** | **C** | **C** | **C** | **C** | **IZS** | 1 | 1 | 0 | 0 | 2 | 1 | 1 | 1 | 9 | 3.0 | 24 |
| 2 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | **IZS** | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 3 | 1.3 | 24 |
| 3 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 2 | 1 | 2 | 1 | 1 | 1 | **IZS** | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 1.1 | 24 |
| 4 | 0 | 0 | 0 | 1 | 2 | 4 | 4 | 3 | 4 | 2 | 3 | 2 | 2 | **IZS** | 2 | 3 | 1 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 4 | 1.8 | 24 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | **P** | **IZS** | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 1 | 1 | 1 | 3 | 0.5 | 23 |
| 6 | 1 | 2 | 1 | 2 | 1 | 3 | 7 | 3 | 1 | 1 | 0 | **IZS** | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 2 | 1 | 3 | 7 | 1.4 | 24 |
| 7 | 2 | 1 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8 | 6 | 5 | 8 | 1.4 | 24 |
| 8 | 4 | 5 | 7 | 5 | 6 | 4 | 5 | 5 | 2 | **IZS** | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 3 | 1 | 1 | 0 | 0 | 7 | 2.3 | 24 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 6 | 1 | 1 | 6 | 0.7 | 24 |
| 10 | 0 | 1 | 3 | 4 | 7 | 9 | 4 | **IZS** | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 2 | 2 | 9 | 1.9 | 24 |
| 11 | 1 | 0 | 0 | 1 | 2 | 2 | **IZS** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | 2 | 1.0 | 7 |
| 12 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 13 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 14 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 15 | **N** | **N** | **N** | **N** | **N** | **N** | **C** | **C** | **C** | **C** | **C** | **IZS** | 2 | 0 | 9 | 0 | 1 | 1 | 1 | 1 | 4 | 2 | 1 | 1 | 9 | 1.9 | 18 |
| 16 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | **IZS** | 0 | 4 | 1 | 1 | 1 | 1 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 5 | 1.4 | 24 |
| 17 | 3 | 4 | 4 | 5 | 5 | 7 | **IZS** | **36** | 19 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 36 | **4.0** | 24 |
| 18 | 0 | 0 | 0 | 0 | 0 | **IZS** | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0.4 | 24 |
| 19 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 1.0 | 24 |
| 20 | 1 | 1 | 2 | **IZS** | 2 | 1 | 1 | 1 | 3 | 3 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 2 | 3 | 4 | 7 | 8 | 4 | 8 | 2.2 | 24 |
| 21 | 2 | 2 | **IZS** | 2 | 3 | 4 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 2 | 4 | 1.4 | 24 |
| 22 | 2 | **IZS** | 4 | 4 | 3 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 5 | 4 | 8 | 8 | 1.9 | 24 |
| 23 | **IZS** | 6 | 4 | 3 | 3 | 2 | 3 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | **IZS** | 6 | 1.3 | 24 |
| 24 | 1 | 0 | 1 | 1 | 1 | 3 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 6 | **IZS** | 1 | 6 | 1.1 | 24 |
| 25 | 0 | 1 | 1 | 1 | 4 | 3 | 4 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | **IZS** | 2 | 2 | 4 | 1.7 | 24 |
| 26 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | **IZS** | 5 | 4 | 2 | 5 | 1.4 | 24 |
| 27 | 3 | 1 | 3 | 4 | 5 | 4 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | **IZS** | 2 | 2 | 3 | 1 | 5 | 2.0 | 24 |
| 28 | 2 | 4 | 1 | 1 | 2 | 5 | 4 | 3 | 2 | 34 | 5 | 3 | 4 | 3 | 3 | 3 | 3 | 1 | **IZS** | 1 | 0 | 0 | 0 | 0 | 34 | 3.7 | 24 |
| 29 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | **IZS** | 1 | 1 | 2 | 3 | 3 | 1 | 3 | 0.7 | 24 |
| 30 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | **IZS** | 1 | 1 | 1 | 2 | 5 | 3 | 2 | 5 | 1.2 | 24 |
| 31 | 2 | 3 | 2 | 2 | 4 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 2 | 6 | 8 | 6 | 4 | 8 | 2.4 | 24 |
| HOURLY MAX | 5 | 6 | 7 | 5 | 7 | 9 | 9 | 36 | 19 | 34 | 5 | 3 | 4 | 3 | 9 | 3 | 3 | 2 | 3 | 3 | 6 | 8 | 8 | 8 | | | |
| HOURLY AVG | 1.3 | 1.5 | 1.7 | 1.7 | 2.3 | 2.9 | 2.5 | 3.2 | 2.0 | 2.5 | 1.0 | 0.7 | 0.7 | 0.6 | 1.1 | 0.8 | 0.8 | 0.8 | 1.1 | 1.5 | 2.2 | 2.8 | 2.1 | 1.8 | | | |

**STATUS FLAG CODES**

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

**OBJECTIVE LIMIT:** **ALBERTA ENVIRONMENT:** 1-HR 212 PPB 24-HR 106 PPB



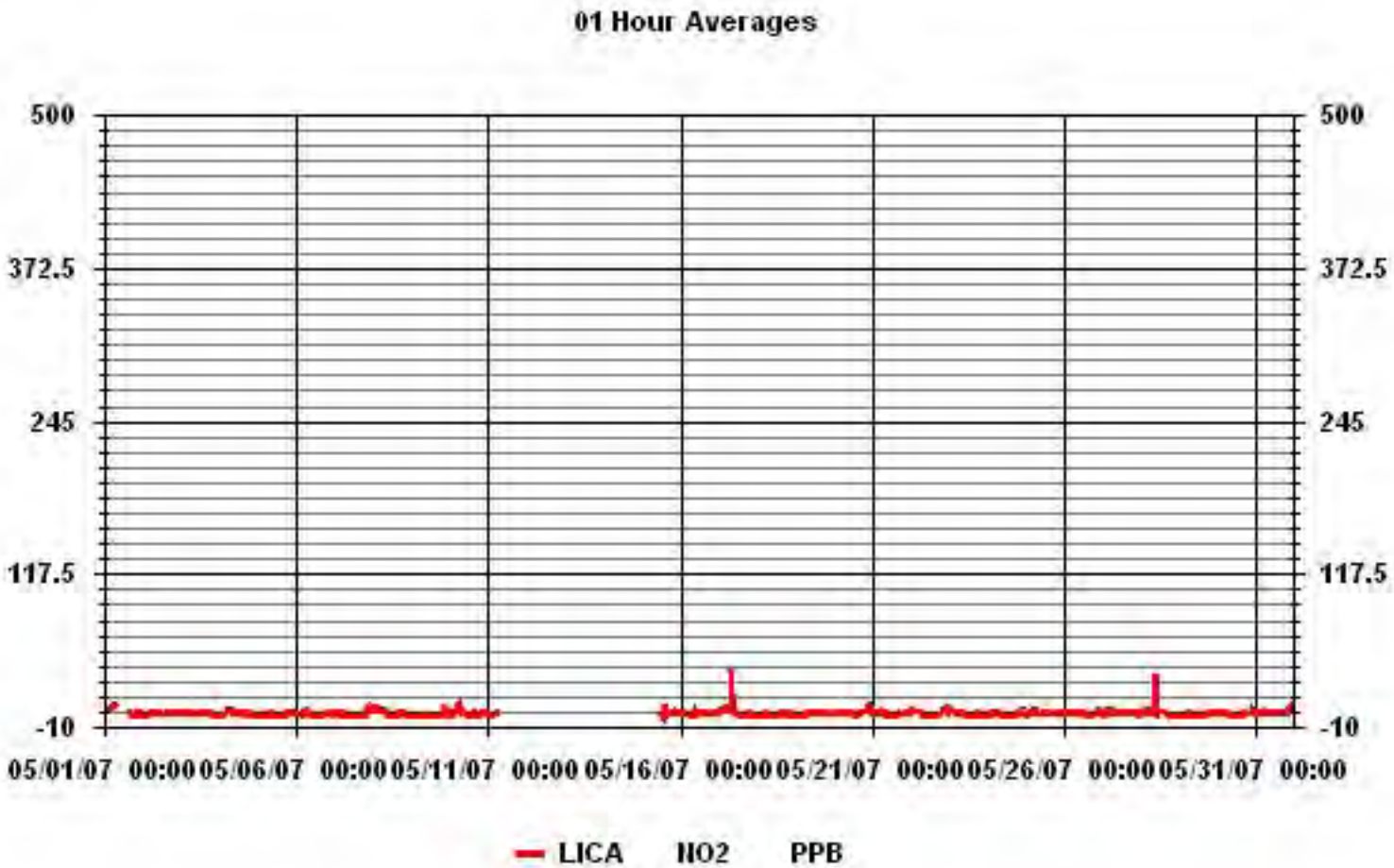

**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| NUMBER OF 1-HR EXCEEDENCES: | 0 | | | | | |
| NUMBER OF 24-HR EXCEEDENCES: | 0 | | | | | |
| NUMBER OF NON-ZERO READINGS: | 434 | | | | | |
| MAXIMUM 1-HR AVERAGE: | 36 | PPB | @ HOUR(S) | 8 | ON DAY(S) | 17 |
| MAXIMUM 24-HR AVERAGE: | 4.0 | PPB | | | ON DAY(S) | 17 |

| | | | | | |
|---|---|---|---|---|---|
| IZS CALIBRATION TIME: | 29 | HRS | OPERATIONAL TIME: | 648 | HRS |
| MONTHLY CALIBRATION TIME: | 13 | HRS | AMD OPERATION UPTIME: | 87.1 | % |
| STANDARD DEVIATION: | 2.63 | | MONTHLY AVERAGE: | 1.65 | PPB |

Maxxam Analytics Inc

**MOUNTAIN STANDARD TIME**


01 Hour Averages
500
372.5
245
117.5
-10
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA NO2 PPB

LICA
NO2 / WD Joint Frequency Distribution (Percent)

May 2007

Distribution By % Of Samples

Logger Id : 01
Site Name : LICA
Parameter : NO2
Units : PPB

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

| Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < 50 | 4.29 | 7.42 | 12.54 | 3.63 | 6.27 | 8.74 | 13.53 | 5.44 | 4.78 | 4.62 | 4.95 | 6.43 | 5.94 | 3.46 | 3.79 | 4.12 | 100.00 |
| < 110 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 210 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 210 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 4.29 | 7.42 | 12.54 | 3.63 | 6.27 | 8.74 | 13.53 | 5.44 | 4.78 | 4.62 | 4.95 | 6.43 | 5.94 | 3.46 | 3.79 | 4.12 | |

Calm : .00 %

Total # Operational Hours : 606

Distribution By Samples

Direction

| Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < 50 | 26 | 45 | 76 | 22 | 38 | 53 | 82 | 33 | 29 | 28 | 30 | 39 | 36 | 21 | 23 | 25 | 606 |
| < 110 | | | | | | | | | | | | | | | | | |
| < 210 | | | | | | | | | | | | | | | | | |
| >= 210 | | | | | | | | | | | | | | | | | |
| Totals | 26 | 45 | 76 | 22 | 38 | 53 | 82 | 33 | 29 | 28 | 30 | 39 | 36 | 21 | 23 | 25 | |

Calm : .00 %

Total # Operational Hours : 606

Logger : 01 Parameter : NO2

Class Limits (PPB)

>= 210

< 210

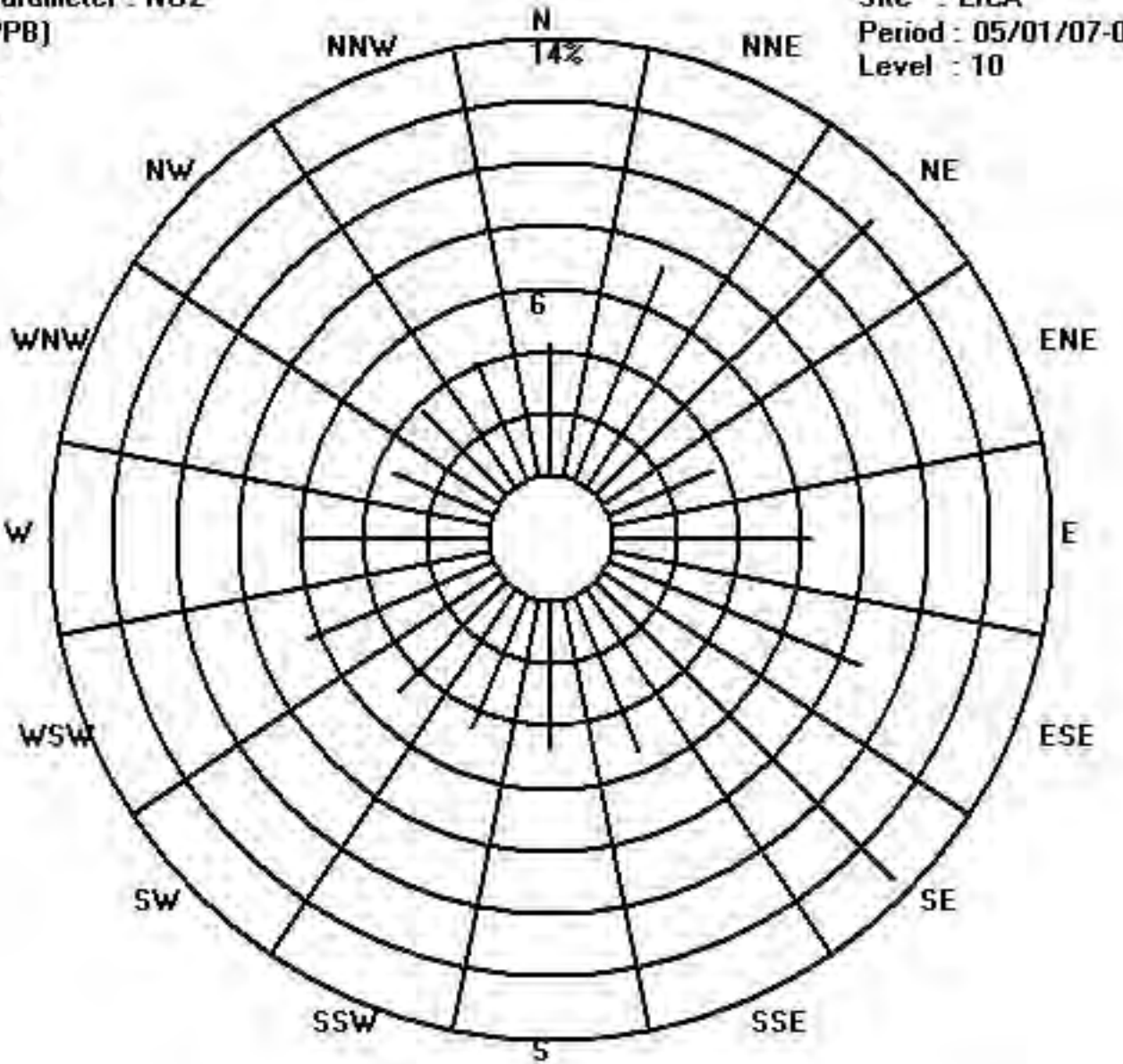
< 110

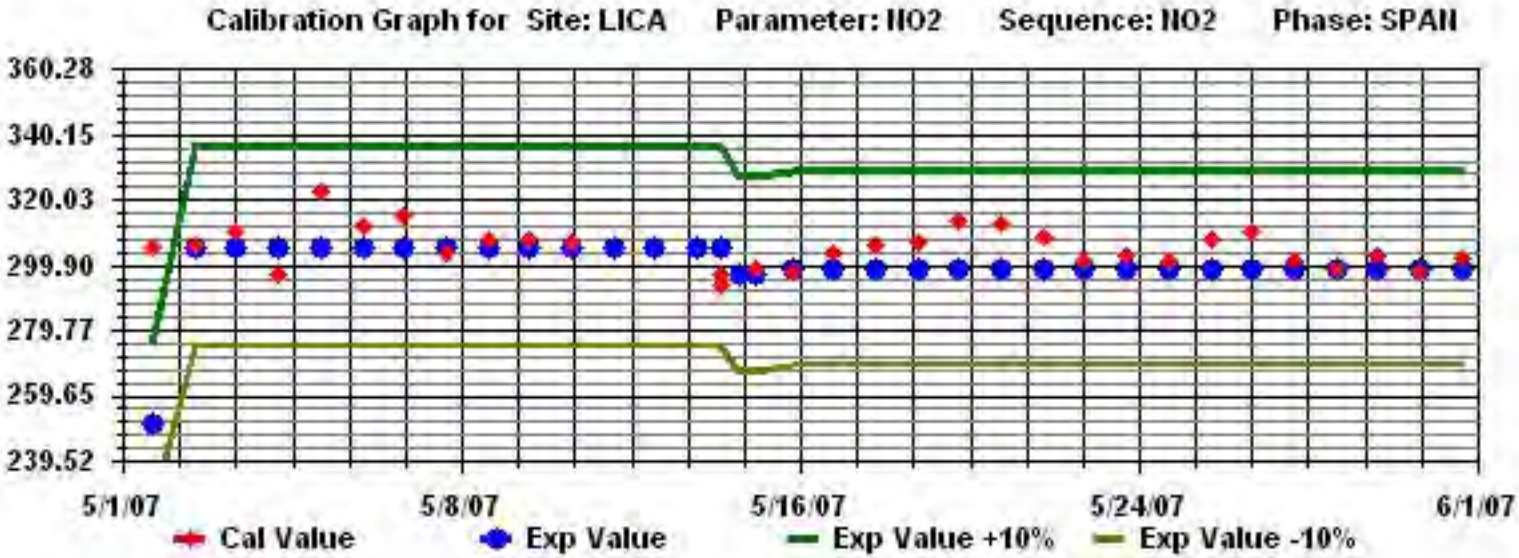
< 50

Site : LICA

Period : 05/01/07-05/31/07

Level : 10




Calibration Graph for Site: LICA Parameter: NO2 Sequence: NO2 Phase: SPAN
360.28
340.15
320.03
299.90
279.77
259.65
239.52
5/1/07
5/8/07
5/16/07
5/24/07
6/1/07
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MAY 2007

**NITROGEN DIOXIDE MAX** instantaneous maximum in pp

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | 24-HOUR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOUR END | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 | MAX. | AVG. | RDGS. |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 10 | 5 | 5 | 6 | 7 | 29 | 14 | **C** | **C** | **C** | **C** | **C** | **C** | **C** | **C** | **IZS** | 5 | 9 | 1 | 2 | 7 | 4 | 2 | 2 | 29 | 7.2 | 24 |
| 2 | 1 | 1 | 1 | 2 | 2 | 16 | 3 | 6 | 25 | 20 | 5 | 3 | 3 | 2 | 4 | **IZS** | 12 | 3 | 7 | 4 | 3 | 1 | 2 | 1 | 25 | 5.5 | 24 |
| 3 | 1 | 2 | 3 | 5 | 3 | 4 | 9 | 10 | 4 | 4 | 20 | 3 | 5 | 2 | **IZS** | 82 | 7 | 6 | 1 | 1 | 1 | 0 | 1 | 1 | 82 | 7.6 | 24 |
| 4 | 0 | 3 | 1 | 2 | 6 | 6 | 5 | 6 | 69 | 4 | 22 | 4 | 2 | **IZS** | 7 | 18 | 6 | 2 | 5 | 3 | 2 | 19 | 1 | 2 | 69 | 8.5 | 24 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | **P** | **IZS** | 1 | 2 | 1 | 1 | 1 | 11 | 5 | 5 | 5 | 3 | 4 | 11 | 2.0 | 23 |
| 6 | 4 | 12 | 4 | 5 | 4 | 5 | 10 | 7 | 2 | 1 | 1 | **IZS** | 5 | 0 | 1 | 4 | 2 | 1 | 4 | 1 | 2 | 7 | 1 | 9 | 12 | 4.0 | 24 |
| 7 | 9 | 4 | 5 | 1 | 3 | 2 | 2 | 1 | 1 | 0 | **IZS** | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 16 | 13 | 8 | 11 | 16 | 3.6 | 24 |
| 8 | 7 | 8 | 11 | 9 | 10 | 8 | 9 | 8 | 4 | **IZS** | 2 | 1 | 1 | 0 | 4 | 1 | 9 | 2 | 9 | 16 | 4 | 2 | 1 | 1 | 16 | 5.5 | 24 |
| 9 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 1 | **IZS** | 3 | 3 | 6 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 5 | 18 | 18 | 4 | 2 | 18 | 3.2 | 24 |
| 10 | 1 | 2 | 5 | 5 | 27 | 21 | 9 | **IZS** | 5 | 2 | 1 | 1 | 1 | 3 | 1 | 12 | 5 | 3 | 1 | 4 | 5 | 2 | 3 | 3 | 27 | 5.3 | 24 |
| 11 | 2 | 1 | 1 | 1 | 7 | 7 | **IZS** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | 7 | 3.2 | 7 |
| 12 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 13 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 14 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 15 | **N** | **N** | **N** | **N** | **N** | **N** | **C** | **C** | **C** | **C** | **C** | **C** | **IZS** | 18 | 231 | 1 | 5 | 14 | 2 | 4 | 8 | 5 | 1 | 2 | 231 | 26.5 | 18 |
| 16 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | **IZS** | 12 | 48 | 33 | 2 | 5 | 51 | 62 | 3 | 1 | 1 | 1 | 8 | 2 | 3 | 3 | 4 | 62 | 10.9 | 24 |
| 17 | 6 | 12 | 6 | 9 | 10 | 9 | **IZS** | 345 | **500** | 147 | 2 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 5 | 0 | 4 | 1 | 500 | 46.5 | 24 |
| 18 | 0 | 0 | 0 | 0 | 1 | **IZS** | 20 | 7 | 4 | 1 | 2 | 6 | 1 | 1 | 3 | 2 | 5 | 2 | 4 | 2 | 4 | 2 | 1 | 0 | 20 | 3.0 | 24 |
| 19 | 0 | 0 | 0 | 0 | **IZS** | 1 | 3 | 33 | 2 | 1 | 11 | 8 | 7 | 4 | 3 | 2 | 2 | 3 | 3 | 4 | 5 | 4 | 3 | 4 | 33 | 4.5 | 24 |
| 20 | 2 | 7 | 4 | **IZS** | 3 | 3 | 1 | 3 | 4 | 3 | 2 | 1 | 3 | 1 | 1 | 2 | 5 | 3 | 3 | 5 | 15 | 12 | 10 | 8 | 15 | 4.4 | 24 |
| 21 | 2 | 3 | **IZS** | 5 | 6 | 7 | 4 | 2 | 1 | 1 | 2 | 1 | 6 | 5 | 1 | 1 | 1 | 5 | 2 | 8 | 5 | 6 | 6 | 4 | 8 | 3.7 | 24 |
| 22 | 3 | **IZS** | 5 | 4 | 7 | 5 | 5 | 7 | 7 | 2 | 3 | 1 | 7 | 2 | 2 | 1 | 2 | 2 | 8 | 13 | 11 | 8 | 7 | 11 | 13 | 5.3 | 24 |
| 23 | **IZS** | 9 | 5 | 4 | 4 | 3 | 3 | 4 | 5 | 4 | 2 | 3 | 1 | 0 | 1 | 1 | 4 | 2 | 1 | 7 | 0 | 0 | 1 | **IZS** | 9 | 2.9 | 24 |
| 24 | 4 | 3 | 5 | 3 | 5 | 7 | 4 | 22 | 6 | 5 | 12 | 5 | 3 | 12 | 1 | 2 | 1 | 1 | 11 | 11 | 9 | 9 | **IZS** | 2 | 22 | 6.2 | 24 |
| 25 | 0 | 2 | 2 | 3 | 11 | 8 | 7 | 3 | 3 | 1 | 8 | 2 | 1 | 2 | 13 | 8 | 6 | 2 | 2 | 6 | 7 | **IZS** | 4 | 4 | 13 | 4.6 | 24 |
| 26 | 6 | 4 | 4 | 2 | 2 | 1 | 2 | 3 | 3 | 5 | 5 | 3 | 7 | 4 | 4 | 3 | 1 | 0 | 7 | 5 | **IZS** | 8 | 16 | 3 | 16 | 4.3 | 24 |
| 27 | 8 | 3 | 4 | 6 | 6 | 5 | 3 | 2 | 5 | 2 | 2 | 3 | 6 | 7 | 1 | 2 | 2 | 6 | 6 | **IZS** | 5 | 2 | 13 | 1 | 13 | 4.3 | 24 |
| 28 | 3 | 5 | 2 | 2 | 4 | 12 | 5 | 4 | 4 | **500** | 89 | 5 | 5 | 4 | 3 | 4 | 3 | 2 | **IZS** | 1 | 0 | 0 | 0 | 0 | 500 | 28.6 | 24 |
| 29 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 3 | 12 | 16 | 5 | 5 | 4 | 40 | 1 | 6 | 4 | **IZS** | 3 | 7 | 4 | 4 | 6 | 2 | 40 | 5.6 | 24 |
| 30 | 3 | 2 | 2 | 2 | 6 | 3 | 5 | 2 | 1 | 2 | 1 | 13 | 1 | 4 | 5 | 5 | **IZS** | 2 | 2 | 1 | 10 | 20 | 5 | 5 | 20 | 4.4 | 24 |
| 31 | 3 | 4 | 3 | 3 | 17 | 3 | 2 | 7 | 2 | 1 | 4 | 4 | 2 | 9 | 2 | **IZS** | 4 | 2 | 1 | 6 | 12 | 23 | 10 | 8 | 23 | 5.7 | 24 |
| HOURLY MAX | 10 | 12 | 11 | 9 | 27 | 29 | 20 | 345 | 500 | 500 | 89 | 13 | 7 | 51 | 231 | 82 | 12 | 14 | 11 | 16 | 18 | 23 | 16 | 11 | | | |
| HOURLY AVG | 3.0 | 3.6 | 3.1 | 3.1 | 5.9 | 6.7 | 5.2 | 21.2 | 28.4 | 32.3 | 9.9 | 3.6 | 3.5 | 7.0 | 14.2 | 6.8 | 3.7 | 3.0 | 3.8 | 5.1 | 6.3 | 6.8 | 4.5 | 3.7 | | | |

**STATUS FLAG CODES**

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

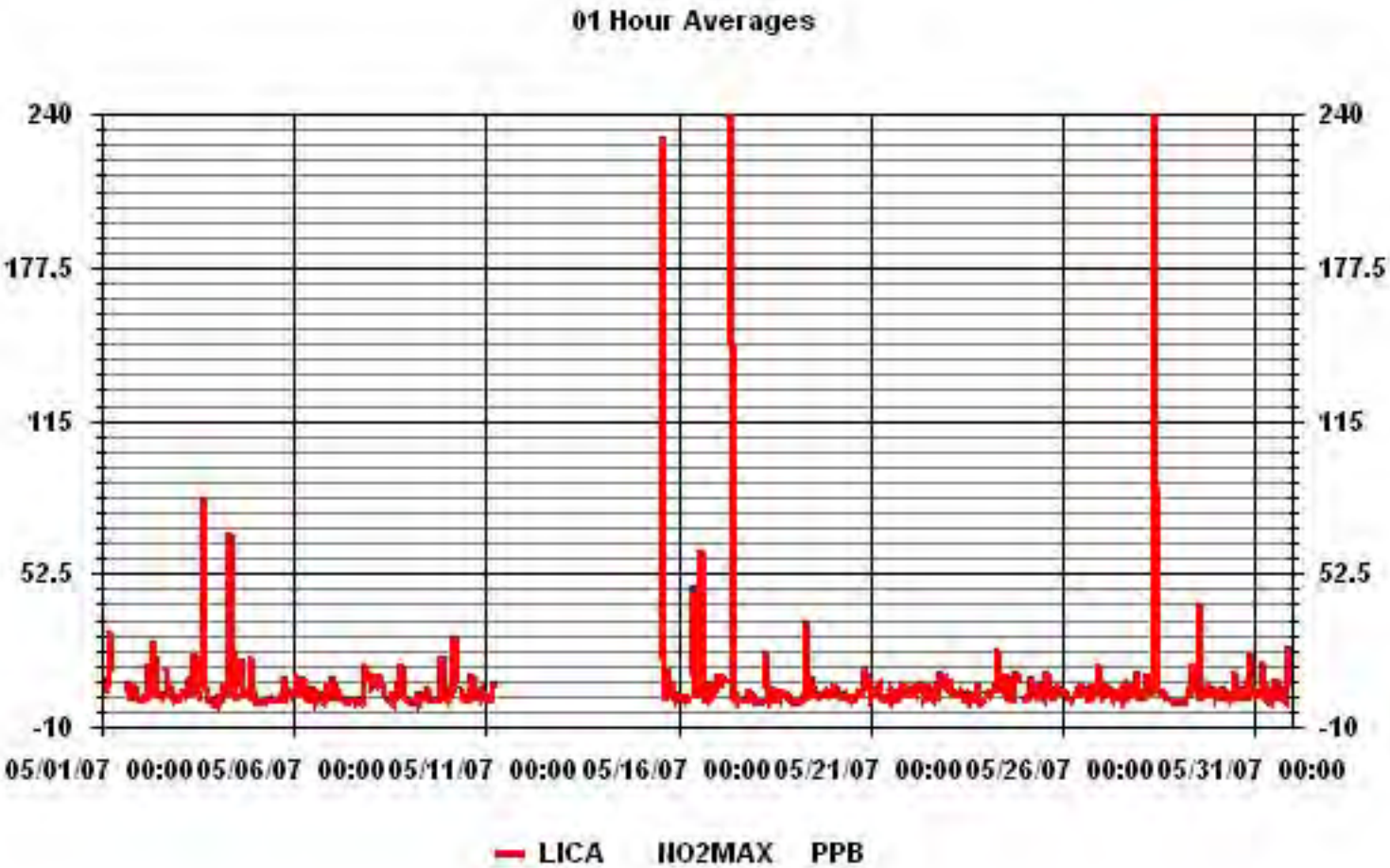
**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| NUMBER OF NON-ZERO READINGS: | 562 | | | | | |
| MAXIMUM INSTANTANEOUS VALUE: | 500 | PPB | @ HOUR(S) | 9,10 | ON DAY(S) | 17,28 |

| | | | | | |
|---|---|---|---|---|---|
| IZS CALIBRATION TIME: | 29 | HRS | OPERATIONAL TIME: | 648 | HRS |
| MONTHLY CALIBRATION TIME: | 14 | HRS | | | |
| STANDARD DEVIATION: | 34.26 | | | | |

**MOUNTAIN STANDARD TIME**

Maxxam Analytics Inc


01 Hour Averages
240
177.5
115
52.5
-10
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA NO2MAX PPB

# NO

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

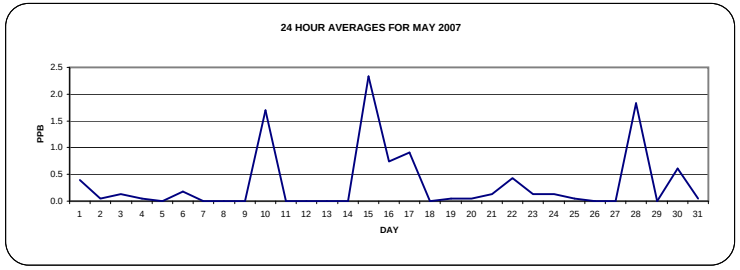
MAY 2007

**NITRIC OXIDE** hourly averages in ppb

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | 24-HOUR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOUR END | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 | MAX. | AVG. | RDGS. |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | **C** | **C** | **C** | **C** | **C** | **C** | **C** | **C** | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0.4 | 24 |
| 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.0 | 24 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 | 24 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.0 | 24 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **P** | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 23 |
| 6 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0.2 | 24 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 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 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 10 | 0 | 0 | 0 | 0 | 9 | 25 | 4 | **IZS** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 1.7 | 24 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | 0 | 0.0 | 7 |
| 12 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 13 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 14 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 15 | **N** | **N** | **N** | **N** | **N** | **N** | **C** | **C** | **C** | **C** | **C** | **IZS** | 9 | 3 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | **2.3** | 18 |
| 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 1 | 6 | 6 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0.7 | 24 |
| 17 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 17 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0.9 | 24 |
| 18 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 19 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.0 | 24 |
| 20 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.0 | 24 |
| 21 | 0 | 0 | **IZS** | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0.1 | 24 |
| 22 | 0 | **IZS** | 0 | 0 | 3 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0.4 | 24 |
| 23 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 1 | 0.1 | 24 |
| 24 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 1 | 0.1 | 24 |
| 25 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 1 | 0.0 | 24 |
| 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **37** | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 37 | 1.8 | 24 |
| 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 24 |
| 30 | 0 | 0 | 1 | 1 | 2 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0.6 | 24 |
| 31 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.0 | 24 |
| HOURLY MAX | 0 | 0 | 1 | 1 | 9 | 25 | 4 | 17 | 4 | 37 | 6 | 0 | 9 | 3 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| HOURLY AVG | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 1.7 | 0.6 | 1.0 | 0.3 | 1.9 | 0.5 | 0.0 | 0.4 | 0.2 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |

**STATUS FLAG CODES**

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



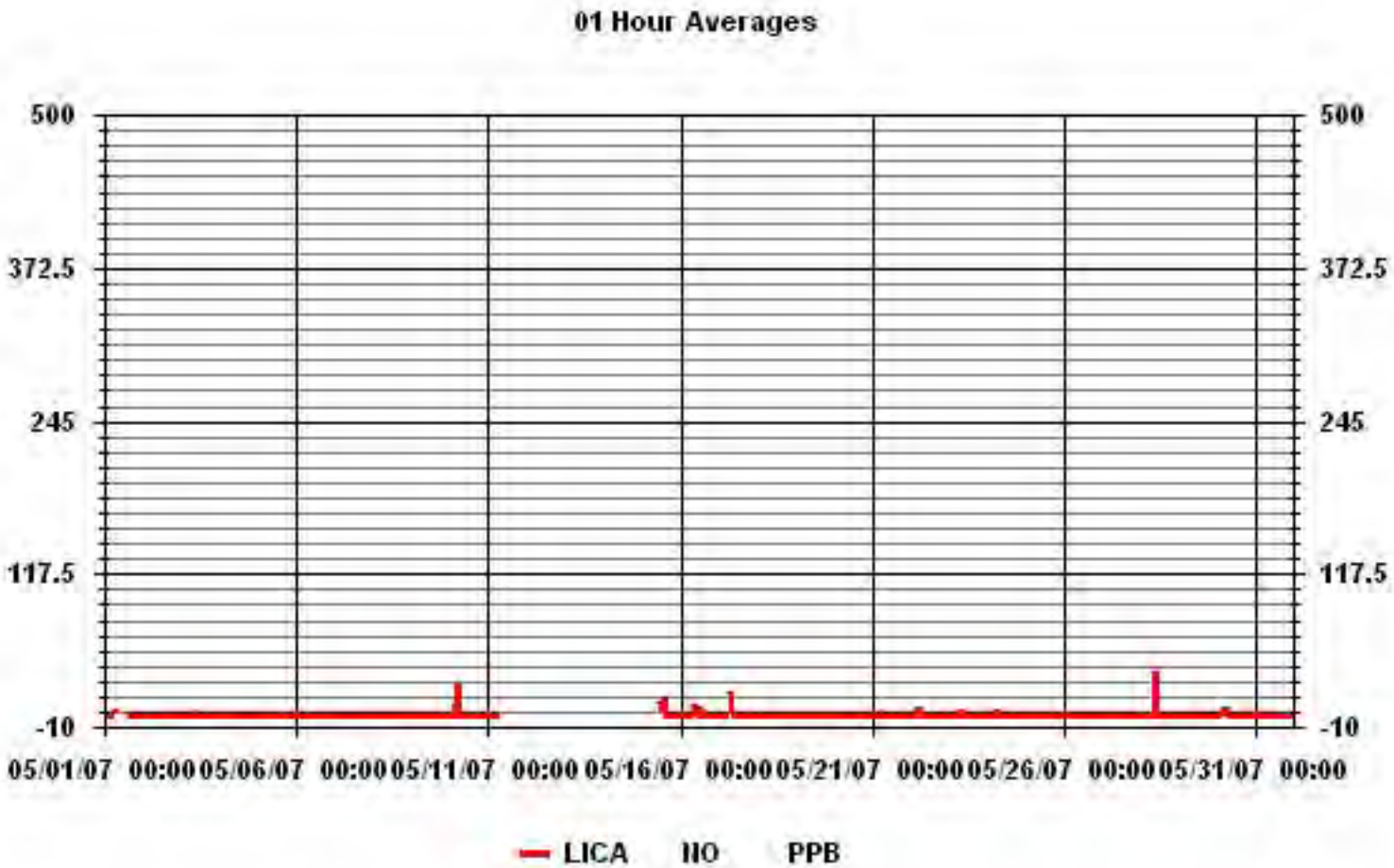

**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| NUMBER OF NON-ZERO READINGS: | 46 | | | | | |
| MAXIMUM 1-HR AVERAGE: | 37 | PPB | @ HOUR(S) | 10 | ON DAY(S) | 28 |
| MAXIMUM 24-HR AVERAGE: | 2.3 | PPB | | | ON DAY(S) | 15 |

| | | | | | |
|---|---|---|---|---|---|
| IZS CALIBRATION TIME: | 29 | HRS | OPERATIONAL TIME: | 648 | HRS |
| MONTHLY CALIBRATION TIME: | 13 | HRS | AMD OPERATION UPTIME: | 87.1 | % |
| STANDARD DEVIATION: | 2.20 | | MONTHLY AVERAGE: | 0.33 | PPB |

**MOUNTAIN STANDARD TIME**

Maxxam Analytics Inc


01 Hour Averages
500
372.5
245
117.5
-10
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA NO PPB

LICA
NO / WD Joint Frequency Distribution (Percent)

May 2007

Distribution By % Of Samples

Logger Id : 01
Site Name : LICA
Parameter : NO
Units : PPB

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

| Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < 50 | 4.29 | 7.42 | 12.54 | 3.63 | 6.27 | 8.74 | 13.53 | 5.44 | 4.78 | 4.62 | 4.95 | 6.43 | 5.94 | 3.46 | 3.79 | 4.12 | 100.00 |
| < 110 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 210 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 210 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 4.29 | 7.42 | 12.54 | 3.63 | 6.27 | 8.74 | 13.53 | 5.44 | 4.78 | 4.62 | 4.95 | 6.43 | 5.94 | 3.46 | 3.79 | 4.12 | |

Calm : .00 %

Total # Operational Hours : 606

Distribution By Samples

Direction

| Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < 50 | 26 | 45 | 76 | 22 | 38 | 53 | 82 | 33 | 29 | 28 | 30 | 39 | 36 | 21 | 23 | 25 | 606 |
| < 110 | | | | | | | | | | | | | | | | | |
| < 210 | | | | | | | | | | | | | | | | | |
| >= 210 | | | | | | | | | | | | | | | | | |
| Totals | 26 | 45 | 76 | 22 | 38 | 53 | 82 | 33 | 29 | 28 | 30 | 39 | 36 | 21 | 23 | 25 | |

Calm : .00 %

Total # Operational Hours : 606

Logger : 01 Parameter : NO

Class Limits (PPB)

>= 210

< 210

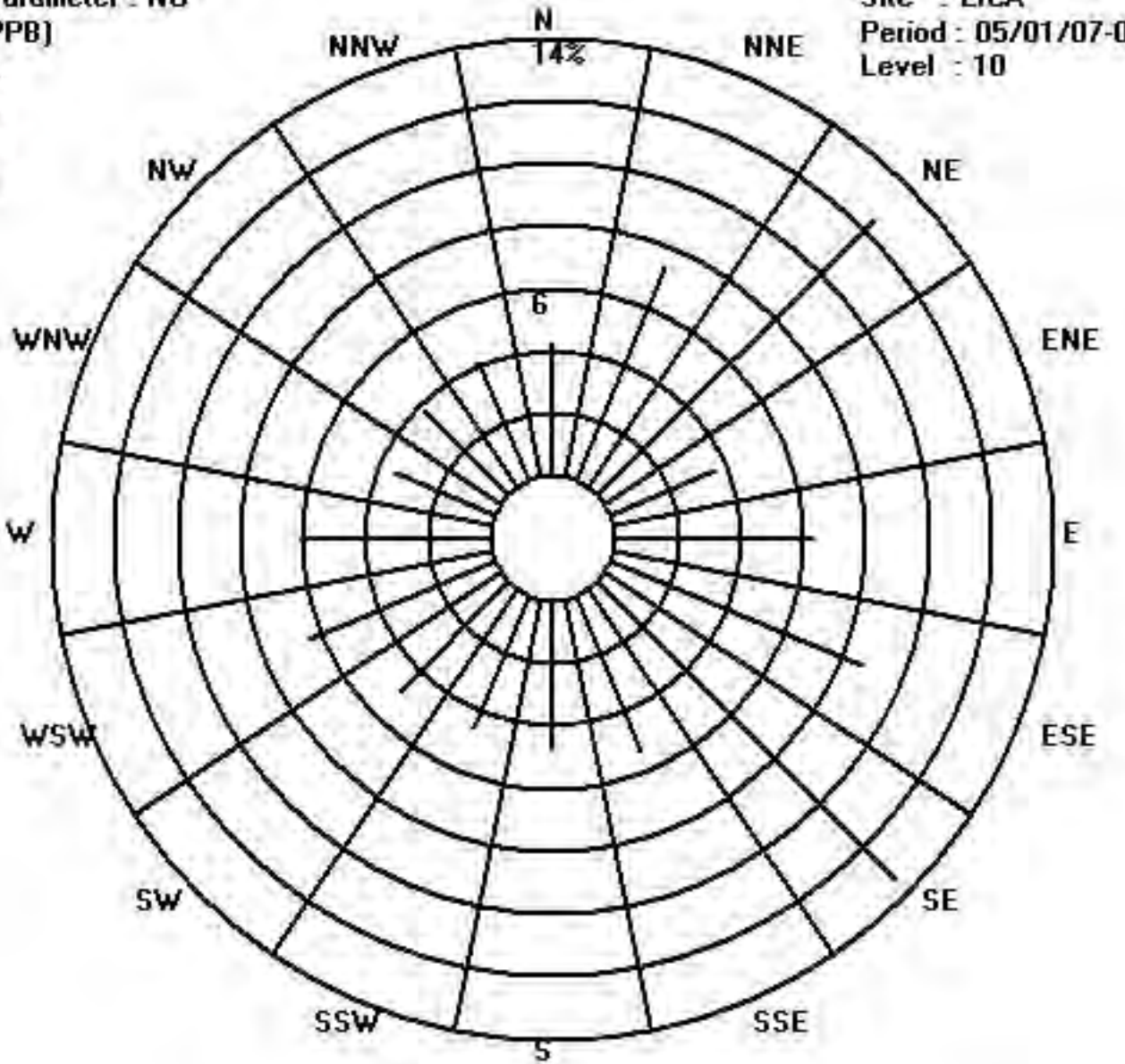
< 110

< 50

Site : LICA

Period : 05/01/07-05/31/07

Level : 10



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MARCH 2007

**NITRIC OXIDE MAX** instantaneous maximum in pp

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | 24-HOUR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOUR END | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 | MAX. | AVG. | RDGS. |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 2 | 0 | 0 | 0 | 0 | 23 | 7 | **C** | **C** | **C** | **C** | **C** | **C** | **C** | **C** | **IZS** | 3 | 1 | 0 | 17 | 1 | 0 | 0 | 0 | 23 | 3.6 | 24 |
| 2 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 19 | 4 | 3 | 1 | 2 | 1 | 3 | 4 | **IZS** | 2 | 0 | 2 | 2 | 4 | 1 | 0 | 1 | 19 | 3.0 | 24 |
| 3 | 0 | 1 | 0 | 0 | 1 | 2 | 7 | 7 | 6 | 23 | 63 | 3 | 2 | 2 | **IZS** | 12 | 4 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 63 | 6.0 | 24 |
| 4 | 0 | 1 | 0 | 0 | 7 | 4 | 3 | 6 | 22 | 3 | 17 | 3 | 3 | **IZS** | 4 | 5 | 3 | 1 | 3 | 4 | 0 | 13 | 0 | 0 | 22 | 4.4 | 24 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **P** | **IZS** | 0 | 7 | 1 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 7 | 0.5 | 23 |
| 6 | 0 | 298 | 0 | 0 | 0 | 2 | 3 | 2 | 0 | 0 | 0 | **IZS** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 298 | 13.3 | 24 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0.1 | 24 |
| 8 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 1 | 0 | **IZS** | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 2 | 5 | 1 | 0 | 0 | 0 | 5 | 0.8 | 24 |
| 9 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 6 | **IZS** | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 6 | 0 | 0 | 10 | 1.4 | 24 |
| 10 | 0 | 0 | 0 | 1 | 46 | 75 | 27 | **IZS** | 6 | 1 | 0 | 0 | 0 | 0 | 1 | 6 | 2 | 0 | 3 | 2 | 2 | 0 | 0 | 0 | 75 | 7.5 | 24 |
| 11 | 0 | 0 | 0 | 0 | 10 | 8 | **IZS** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | 10 | 3.0 | 7 |
| 12 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 13 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 14 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 15 | **N** | **N** | **N** | **N** | **N** | **N** | **C** | **C** | **C** | **C** | **C** | **C** | **IZS** | 142 | 489 | 0 | 7 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 489 | 58.5 | 18 |
| 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 42 | 72 | 213 | 6 | 4 | 90 | 39 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 213 | 20.3 | 24 |
| 17 | 0 | 0 | 0 | 2 | 1 | 2 | **IZS** | 190 | 60 | 14 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 1 | 0 | 190 | 12.0 | 24 |
| 18 | 0 | 0 | 0 | 0 | 0 | **IZS** | 1 | 8 | 4 | 4 | 8 | 2 | 4 | 10 | 7 | 1 | 6 | 1 | 2 | 3 | 2 | 0 | 0 | 0 | 10 | 2.7 | 24 |
| 19 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 33 | 5 | 0 | 4 | 5 | 6 | 6 | 7 | 3 | 0 | 1 | 1 | 2 | 2 | 0 | 1 | 0 | 33 | 3.3 | 24 |
| 20 | 1 | 12 | 1 | **IZS** | 0 | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 7 | 1 | 2 | 0 | 12 | 1.4 | 24 |
| 21 | 0 | 2 | **IZS** | 4 | 5 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 2 | 5 | 1.1 | 24 |
| 22 | 2 | **IZS** | 2 | 3 | 14 | 17 | 5 | 2 | 17 | 9 | 2 | 1 | 15 | 0 | 1 | 2 | 2 | 0 | 2 | 8 | 2 | 0 | 0 | 1 | 17 | 4.7 | 24 |
| 23 | **IZS** | 4 | 1 | 1 | 0 | 0 | 0 | 6 | 8 | 5 | 1 | 9 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 5 | **IZS** | 9 | 2.1 | 24 |
| 24 | 1 | 0 | 0 | 1 | 2 | 3 | 6 | 17 | 9 | 1 | 8 | 6 | 4 | 15 | 2 | 2 | 4 | 8 | 12 | 14 | 0 | 0 | **IZS** | 0 | 17 | 5.0 | 24 |
| 25 | 0 | 0 | 0 | 0 | 5 | 1 | 2 | 2 | 3 | 0 | 3 | 0 | 0 | 0 | 11 | 5 | 10 | 1 | 0 | 0 | 3 | **IZS** | 0 | 0 | 11 | 2.0 | 24 |
| 26 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 8 | 3 | 6 | 1 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 7 | 0 | 8 | 1.7 | 24 |
| 27 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 | 8 | 1 | 1 | 3 | 7 | 1 | 0 | 14 | 0 | 0 | **IZS** | 0 | 0 | 2 | 0 | 14 | 1.9 | 24 |
| 28 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | **500** | 79 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 4 | 500 | 25.4 | 24 |
| 29 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 6 | 1 | 2 | 2 | 19 | 7 | 0 | 2 | 5 | **IZS** | 4 | 2 | 1 | 0 | 3 | 0 | 19 | 3.0 | 24 |
| 30 | 1 | 2 | 3 | 3 | 7 | 13 | 9 | 2 | 1 | 0 | 0 | 7 | 1 | 5 | 4 | 3 | **IZS** | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 13 | 3.0 | 24 |
| 31 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 33 | 0 | **IZS** | 2 | 0 | 0 | 0 | 0 | 13 | 0 | 1 | 33 | 3.0 | 24 |
| HOURLY MAX | 2 | 298 | 3 | 4 | 46 | 75 | 27 | 190 | 60 | 500 | 213 | 9 | 19 | 142 | 489 | 12 | 14 | 8 | 12 | 17 | 10 | 13 | 7 | 4 | | | |
| HOURLY AVG | 0.3 | 12.4 | 0.3 | 0.7 | 4.5 | 7.1 | 2.9 | 13.9 | 8.6 | 27.1 | 17.0 | 2.1 | 3.0 | 13.0 | 23.2 | 1.9 | 2.7 | 0.7 | 1.3 | 2.6 | 1.7 | 1.8 | 0.8 | 0.3 | | | |

**STATUS FLAG CODES**

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

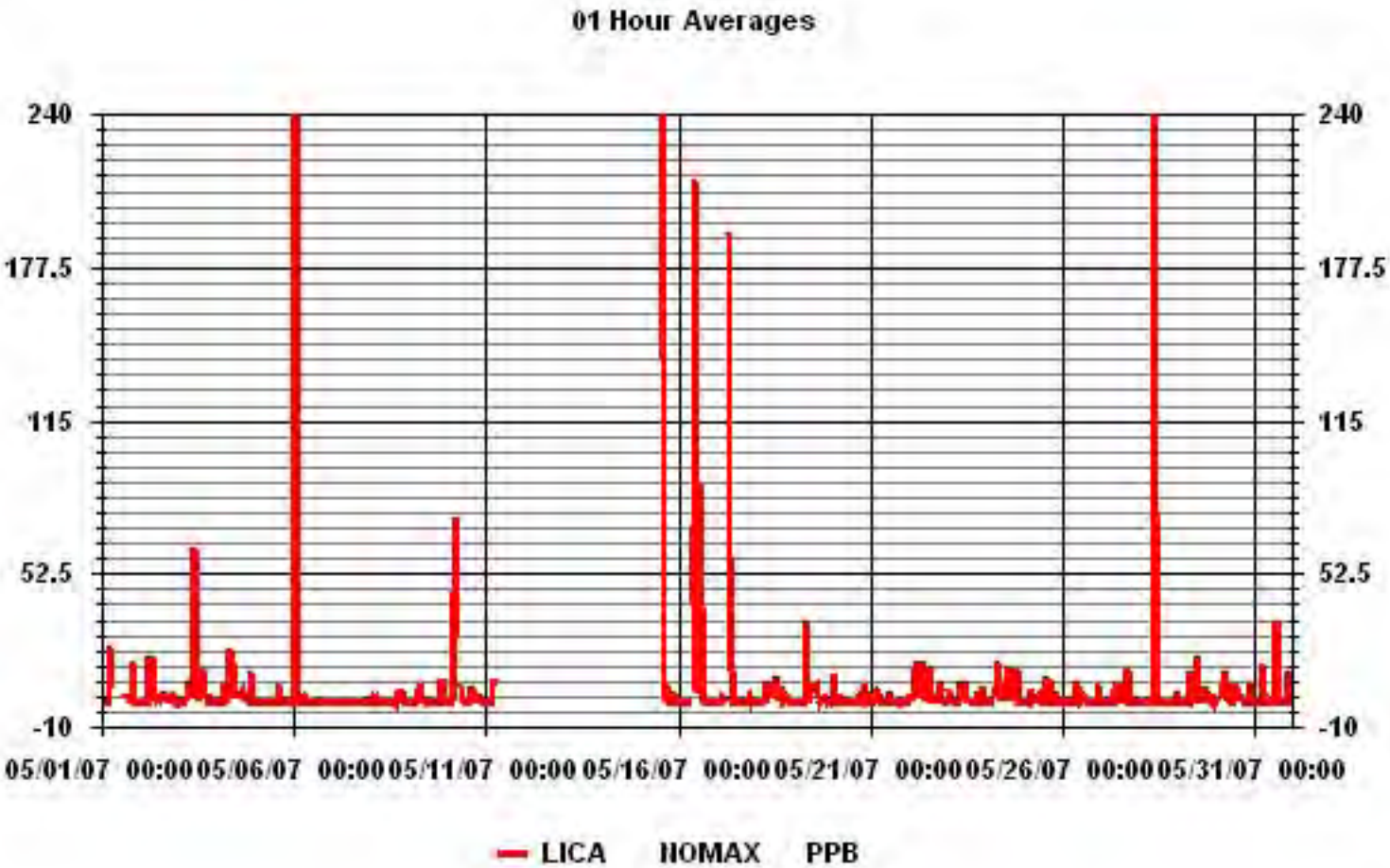
**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| NUMBER OF NON-ZERO READINGS: | 296 | | | | | |
| MAXIMUM INSTANTANEOUS VALUE: | 500 | PPB | @ HOUR(S) | 10 | ON DAY(S) | 28 |

| | | | | | |
|---|---|---|---|---|---|
| IZS CALIBRATION TIME: | 29 | HRS | OPERATIONAL TIME: | 648 | HRS |
| MONTHLY CALIBRATION TIME: | 14 | HRS | | | |
| STANDARD DEVIATION: | 34.22 | | | | |

**MOUNTAIN STANDARD TIME**

Maxxam Analytics Inc


01 Hour Averages
240
177.5
115
52.5
-10
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA NOMAX PPB

# $NO_X$

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

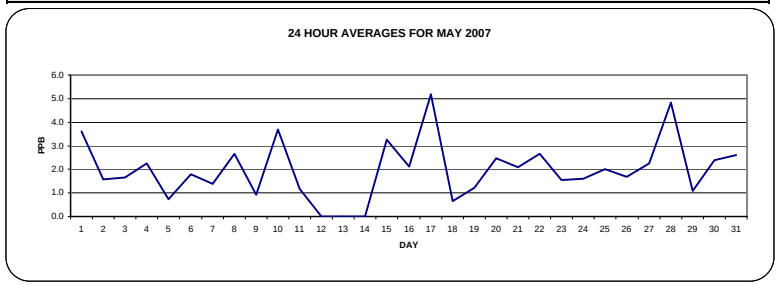
MAY 2007

**OXIDES OF NITROGEN** hourly averages in ppb

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | 24-HOUR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOUR END | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 | MAX. | AVG. | RDGS. |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 5 | 4 | 4 | 4 | 5 | 9 | 14 | **C** | **C** | **C** | **C** | **C** | **C** | **C** | **C** | **IZS** | 1 | 1 | 0 | 1 | 2 | 2 | 1 | 1 | 14 | 3.6 | 24 |
| 2 | 0 | 0 | 0 | 1 | 1 | 4 | 2 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | **IZS** | 3 | 2 | 3 | 2 | 1 | 1 | 1 | 1 | 4 | 1.6 | 24 |
| 3 | 1 | 1 | 1 | 1 | 2 | 3 | 3 | 4 | 3 | 3 | 3 | 2 | 1 | 1 | **IZS** | 3 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 4 | 1.7 | 24 |
| 4 | 0 | 1 | 1 | 1 | 3 | 4 | 4 | 3 | 5 | 3 | 4 | 3 | 2 | **IZS** | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 0 | 5 | 2.3 | 24 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | **P** | **IZS** | 1 | 1 | 0 | 0 | 1 | 1 | 3 | 2 | 1 | 1 | 1 | 3 | 0.7 | 23 |
| 6 | 2 | 2 | 1 | 2 | 2 | 4 | 10 | 4 | 2 | 1 | 0 | **IZS** | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 2 | 1 | 3 | 10 | 1.8 | 24 |
| 7 | 2 | 1 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | **IZS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8 | 6 | 5 | 8 | 1.4 | 24 |
| 8 | 4 | 5 | 7 | 5 | 7 | 4 | 6 | 6 | 3 | **IZS** | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 3 | 2 | 1 | 0 | 0 | 7 | 2.7 | 24 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | **IZS** | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 7 | 7 | 1 | 1 | 7 | 0.9 | 24 |
| 10 | 0 | 1 | 3 | 4 | 17 | 35 | 9 | **IZS** | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 2 | 2 | 35 | 3.7 | 24 |
| 11 | 1 | 0 | 0 | 1 | 2 | 3 | **IZS** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | 3 | 1.2 | 7 |
| 12 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 13 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 14 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 15 | **N** | **N** | **N** | **N** | **N** | **N** | **C** | **C** | **C** | **C** | **C** | **IZS** | 7 | 2 | 17 | 1 | 1 | 1 | 1 | 1 | 4 | 2 | 1 | 1 | 17 | 3.3 | 18 |
| 16 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | **IZS** | 2 | 10 | 3 | 1 | 1 | 5 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 10 | 2.1 | 24 |
| 17 | 3 | 4 | 4 | 5 | 6 | 8 | **IZS** | **51** | 24 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 51 | **5.2** | 24 |
| 18 | 0 | 0 | 0 | 0 | 0 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 2 | 0.7 | 24 |
| 19 | 0 | 0 | 0 | 0 | **IZS** | 1 | 0 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 3 | 1.2 | 24 |
| 20 | 1 | 2 | 3 | **IZS** | 2 | 1 | 1 | 1 | 4 | 4 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 2 | 3 | 5 | 7 | 8 | 4 | 8 | 2.5 | 24 |
| 21 | 2 | 2 | **IZS** | 3 | 5 | 6 | 3 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 6 | 2.1 | 24 |
| 22 | 2 | **IZS** | 4 | 5 | 6 | 9 | 5 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 4 | 5 | 4 | 8 | 9 | 2.7 | 24 |
| 23 | **IZS** | 6 | 4 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | **IZS** | 6 | 1.5 | 24 |
| 24 | 1 | 0 | 1 | 2 | 2 | 5 | 3 | 3 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 6 | **IZS** | 1 | 6 | 1.6 | 24 |
| 25 | 0 | 1 | 1 | 1 | 5 | 4 | 5 | 3 | 3 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 3 | 1 | 1 | 1 | 2 | **IZS** | 3 | 2 | 5 | 2.0 | 24 |
| 26 | 3 | 3 | 3 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 2 | **IZS** | 5 | 4 | 2 | 5 | 1.7 | 24 |
| 27 | 3 | 2 | 3 | 4 | 6 | 4 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | **IZS** | 2 | 2 | 3 | 1 | 6 | 2.3 | 24 |
| 28 | 2 | 4 | 1 | 1 | 2 | 6 | 4 | 3 | 3 | **51** | 10 | 4 | 5 | 3 | 3 | 4 | 3 | 1 | **IZS** | 1 | 0 | 0 | 0 | 0 | 51 | 4.8 | 24 |
| 29 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 2 | 3 | 4 | 1 | 4 | 1.1 | 24 |
| 30 | 2 | 2 | 2 | 3 | 4 | 10 | 6 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 3 | 5 | 3 | 2 | 10 | 2.4 | 24 |
| 31 | 2 | 3 | 2 | 2 | 5 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **IZS** | 1 | 1 | 1 | 2 | 6 | 9 | 6 | 4 | 9 | 2.6 | 24 |
| HOURLY MAX | 5 | 6 | 7 | 5 | 17 | 35 | 14 | 51 | 24 | 51 | 10 | 4 | 7 | 5 | 17 | 4 | 3 | 3 | 3 | 3 | 7 | 9 | 8 | 8 | | | |
| HOURLY AVG | 1.4 | 1.7 | 1.8 | 1.9 | 3.4 | 5.0 | 3.6 | 4.4 | 3.0 | 4.0 | 1.7 | 1.0 | 1.1 | 1.0 | 1.8 | 1.1 | 1.0 | 1.0 | 1.2 | 1.6 | 2.4 | 3.0 | 2.2 | 1.8 | | | |

**STATUS FLAG CODES**

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



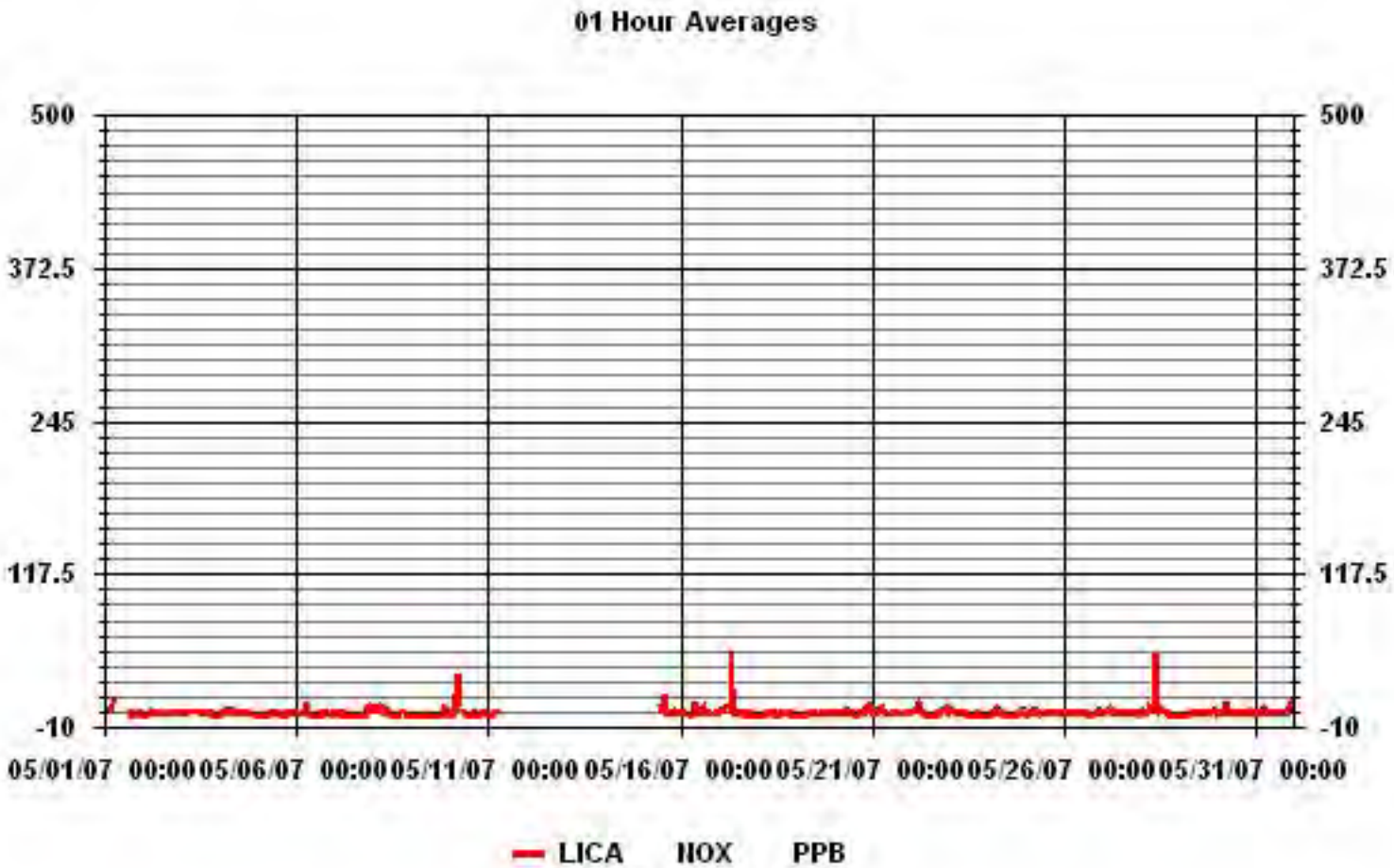

**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| NUMBER OF NON-ZERO READINGS: | 488 | | | | | |
| MAXIMUM 1-HR AVERAGE: | 51 | PPB | @ HOUR(S) | 8,10 | ON DAY(S) | 17,28 |
| MAXIMUM 24-HR AVERAGE: | 5.2 | PPB | | | ON DAY(S) | 17 |

| | | | | | |
|---|---|---|---|---|---|
| IZS CALIBRATION TIME: | 29 | HRS | OPERATIONAL TIME: | 648 | HRS |
| MONTHLY CALIBRATION TIME: | 13 | HRS | AMD OPERATION UPTIME: | 87.1 | % |
| STANDARD DEVIATION: | 3.86 | | MONTHLY AVERAGE: | 2.17 | PPB |

**MOUNTAIN STANDARD TIME**

Maxxam Analytics Inc


01 Hour Averages
500
372.5
245
117.5
-10
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA NOX PPB

LICA
NOX / WD Joint Frequency Distribution (Percent)

May 2007

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

| Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < 50 | 4.29 | 7.42 | 12.54 | 3.63 | 6.27 | 8.74 | 13.53 | 5.44 | 4.78 | 4.62 | 4.78 | 6.43 | 5.94 | 3.46 | 3.63 | 4.12 | 99.66 |
| < 110 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .16 | .00 | .00 | .00 | .16 | .00 | .33 |
| < 210 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 210 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 4.29 | 7.42 | 12.54 | 3.63 | 6.27 | 8.74 | 13.53 | 5.44 | 4.78 | 4.62 | 4.95 | 6.43 | 5.94 | 3.46 | 3.79 | 4.12 | |

Calm : .00 %

Total # Operational Hours : 606

Distribution By Samples

Direction

| Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < 50 | 26 | 45 | 76 | 22 | 38 | 53 | 82 | 33 | 29 | 28 | 29 | 39 | 36 | 21 | 22 | 25 | 604 |
| < 110 | | | | | | | | | | | 1 | | | | 1 | | 2 |
| < 210 | | | | | | | | | | | | | | | | | |
| >= 210 | | | | | | | | | | | | | | | | | |
| Totals | 26 | 45 | 76 | 22 | 38 | 53 | 82 | 33 | 29 | 28 | 30 | 39 | 36 | 21 | 23 | 25 | |

Calm : .00 %

Total # Operational Hours : 606

Logger : 01 Parameter : NOX

Class Limits (PPB)

>= 210

< 210

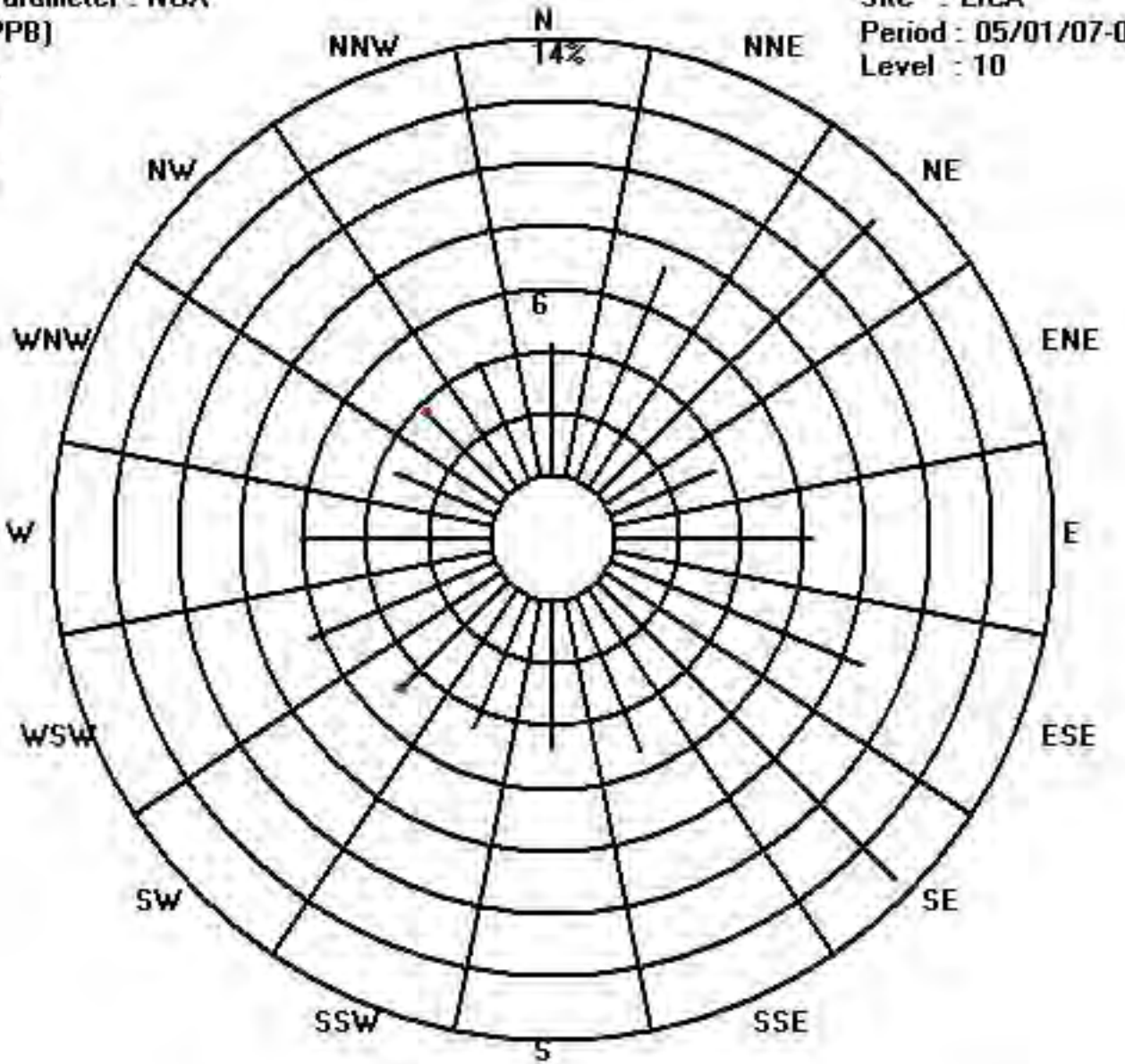
< 110

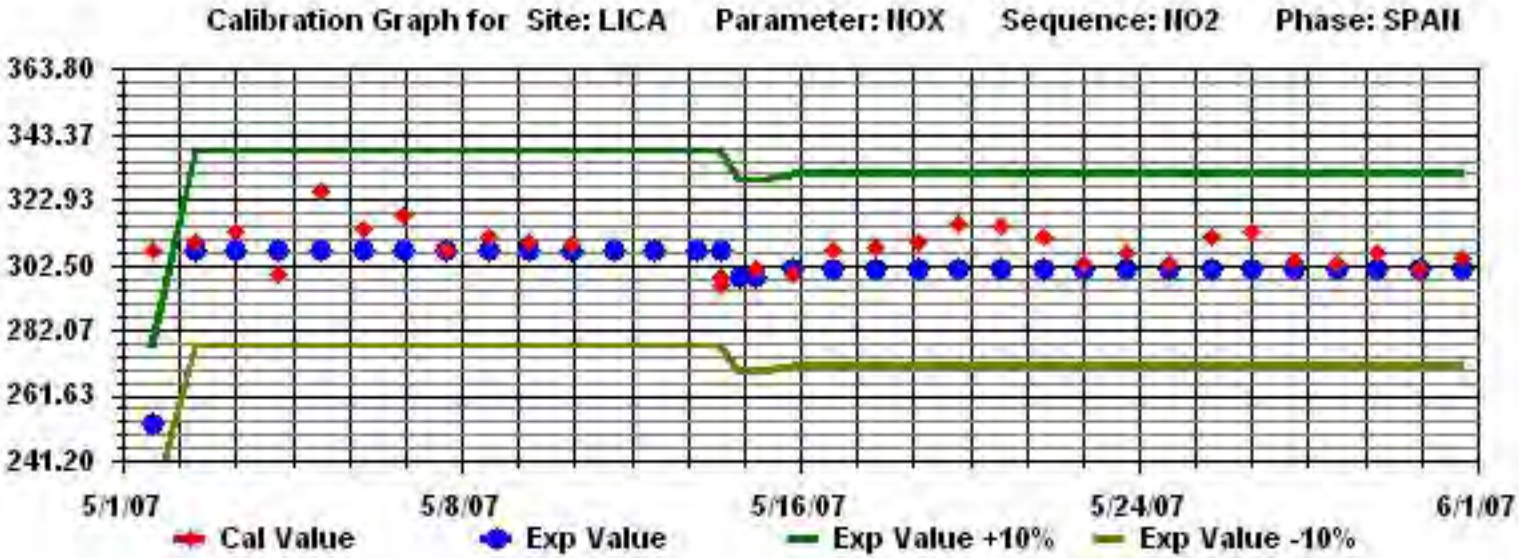
< 50

Site : LICA

Period : 05/01/07-05/31/07

Level : 10




Calibration Graph for Site: LICA Parameter: NOX Sequence: NO2 Phase: SPAN
363.80
343.37
322.93
302.50
282.07
261.63
241.20
5/1/07
5/8/07
5/16/07
5/24/07
6/1/07
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MAY 2007

**OXIDES OF NITROGEN MAX** instantaneous maximum in pp

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | 24-HOUR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOUR END | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 | MAX. | AVG. | RDGS. |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 13 | 5 | 5 | 6 | 7 | 52 | 22 | **C** | **C** | **C** | **C** | **C** | **C** | **C** | **C** | **IZS** | 6 | 10 | 1 | 3 | 8 | 4 | 2 | 3 | 52 | 9.8 | 24 |
| 2 | 1 | 1 | 1 | 3 | 3 | 31 | 3 | 9 | 29 | 21 | 7 | 5 | 4 | 5 | 9 | **IZS** | 15 | 4 | 9 | 5 | 7 | 2 | 3 | 2 | 31 | 7.8 | 24 |
| 3 | 1 | 3 | 3 | 6 | 5 | 6 | 16 | 17 | 7 | 10 | 60 | 5 | 7 | 4 | **IZS** | 94 | 12 | 9 | 2 | 1 | 2 | 1 | 1 | 1 | 94 | 11.9 | 24 |
| 4 | 1 | 4 | 2 | 3 | 13 | 12 | 6 | 11 | 92 | 7 | 23 | 6 | 4 | **IZS** | 9 | 23 | 7 | 3 | 6 | 4 | 2 | 33 | 1 | 2 | 92 | 11.9 | 24 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 1 | **P** | **IZS** | 2 | 6 | 2 | 1 | 1 | 13 | 5 | 5 | 5 | 4 | 4 | 13 | 2.5 | 23 |
| 6 | 4 | 15 | 5 | 5 | 4 | 7 | 14 | 9 | 2 | 2 | 2 | **IZS** | 6 | 1 | 1 | 6 | 2 | 2 | 5 | 1 | 2 | 7 | 2 | 9 | 15 | 4.9 | 24 |
| 7 | 9 | 4 | 5 | 1 | 3 | 2 | 3 | 1 | 1 | 0 | **IZS** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 16 | 16 | 8 | 11 | 16 | 3.8 | 24 |
| 8 | 8 | 10 | 12 | 10 | 11 | 8 | 10 | 9 | 4 | **IZS** | 2 | 1 | 1 | 1 | 6 | 2 | 13 | 3 | 10 | 20 | 4 | 2 | 1 | 1 | 20 | 6.5 | 24 |
| 9 | 1 | 0 | 0 | 0 | 2 | 5 | 0 | 5 | **IZS** | 5 | 4 | 7 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 5 | 24 | 25 | 4 | 2 | 25 | 4.3 | 24 |
| 10 | 1 | 2 | 5 | 6 | 73 | 93 | 35 | **IZS** | 8 | 3 | 2 | 1 | 1 | 3 | 2 | 15 | 8 | 3 | 1 | 5 | 7 | 2 | 3 | 3 | 93 | 12.3 | 24 |
| 11 | 3 | 1 | 2 | 1 | 16 | 14 | **IZS** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | 16 | 6.2 | 7 |
| 12 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 13 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 14 | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **N** | **NA** | **NA** | 0 |
| 15 | **N** | **N** | **N** | **N** | **N** | **N** | **C** | **C** | **C** | **C** | **C** | **C** | **IZS** | 58 | 310 | 1 | 10 | 15 | 2 | 4 | 9 | 10 | 2 | 2 | 310 | 38.5 | 18 |
| 16 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | **IZS** | 27 | 71 | 35 | 8 | 8 | 64 | 63 | 4 | 1 | 2 | 1 | 9 | 2 | 3 | 3 | 4 | 71 | 13.8 | 24 |
| 17 | 6 | 14 | 6 | 11 | 11 | 11 | **IZS** | 374 | **500** | 161 | 3 | 2 | 5 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 7 | 1 | 4 | 2 | 500 | 49.0 | 24 |
| 18 | 0 | 0 | 0 | 0 | 1 | **IZS** | 20 | 14 | 8 | 3 | 8 | 9 | 2 | 3 | 5 | 3 | 10 | 3 | 7 | 4 | 6 | 2 | 1 | 1 | 20 | 4.8 | 24 |
| 19 | 0 | 0 | 0 | 1 | **IZS** | 1 | 4 | 49 | 4 | 2 | 15 | 8 | 14 | 11 | 4 | 5 | 2 | 5 | 5 | 6 | 7 | 4 | 5 | 4 | 49 | 6.8 | 24 |
| 20 | 3 | 19 | 6 | **IZS** | 4 | 5 | 2 | 3 | 6 | 4 | 3 | 2 | 4 | 1 | 2 | 3 | 6 | 3 | 4 | 5 | 21 | 14 | 11 | 9 | 21 | 6.1 | 24 |
| 21 | 2 | 5 | **IZS** | 10 | 11 | 11 | 6 | 2 | 1 | 2 | 3 | 1 | 8 | 5 | 1 | 1 | 1 | 6 | 3 | 9 | 6 | 8 | 7 | 6 | 11 | 5.0 | 24 |
| 22 | 5 | **IZS** | 7 | 7 | 20 | 21 | 11 | 8 | 10 | 7 | 3 | 2 | 10 | 3 | 3 | 1 | 2 | 3 | 10 | 22 | 11 | 8 | 8 | 11 | 22 | 8.4 | 24 |
| 23 | **IZS** | 13 | 7 | 5 | 5 | 3 | 4 | 10 | 12 | 9 | 3 | 8 | 2 | 1 | 1 | 1 | 5 | 3 | 2 | 9 | 0 | 1 | 7 | **IZS** | 13 | 5.0 | 24 |
| 24 | 5 | 3 | 6 | 4 | 7 | 10 | 8 | 26 | 15 | 5 | 21 | 9 | 7 | 14 | 2 | 5 | 2 | 3 | 18 | 26 | 9 | 10 | **IZS** | 2 | 26 | 9.4 | 24 |
| 25 | 1 | 2 | 2 | 3 | 16 | 9 | 9 | 5 | 4 | 2 | 12 | 2 | 2 | 3 | 24 | 13 | 9 | 4 | 2 | 7 | 11 | **IZS** | 5 | 4 | 24 | 6.6 | 24 |
| 26 | 9 | 4 | 6 | 3 | 3 | 2 | 3 | 5 | 7 | 8 | 10 | 4 | 8 | 5 | 6 | 3 | 2 | 1 | 7 | 5 | **IZS** | 8 | 23 | 3 | 23 | 5.9 | 24 |
| 27 | 8 | 4 | 4 | 6 | 8 | 7 | 3 | 3 | 8 | 7 | 4 | 5 | 8 | 7 | 2 | 3 | 9 | 6 | 7 | **IZS** | 6 | 2 | 15 | 2 | 15 | 5.8 | 24 |
| 28 | 3 | 5 | 2 | 2 | 5 | 14 | 6 | 5 | 4 | **500** | 102 | 5 | 6 | 4 | 3 | 4 | 3 | 2 | **IZS** | 1 | 0 | 0 | 0 | 4 | 500 | 29.6 | 24 |
| 29 | 0 | 0 | 0 | 0 | 1 | 3 | 7 | 14 | 19 | 18 | 8 | 5 | 19 | 44 | 2 | 7 | 5 | **IZS** | 7 | 9 | 5 | 5 | 10 | 3 | 44 | 8.3 | 24 |
| 30 | 4 | 4 | 5 | 5 | 13 | 16 | 14 | 4 | 3 | 3 | 1 | 17 | 2 | 4 | 5 | 8 | **IZS** | 2 | 3 | 1 | 11 | 28 | 6 | 5 | 28 | 7.1 | 24 |
| 31 | 3 | 4 | 3 | 3 | 33 | 3 | 3 | 8 | 3 | 2 | 4 | 6 | 3 | 20 | 2 | **IZS** | 6 | 2 | 2 | 7 | 12 | 36 | 11 | 9 | 36 | 8.0 | 24 |
| HOURLY MAX | 13 | 19 | 12 | 11 | 73 | 93 | 35 | 374 | 500 | 500 | 102 | 17 | 19 | 64 | 310 | 94 | 15 | 15 | 18 | 26 | 24 | 36 | 23 | 11 | | | |
| HOURLY AVG | 3.6 | 4.8 | 3.7 | 3.9 | 10.7 | 13.4 | 8.4 | 25.7 | 32.3 | 35.6 | 14.0 | 5.2 | 5.6 | 10.7 | 18.8 | 8.6 | 5.4 | 3.8 | 5.0 | 6.8 | 7.7 | 9.1 | 5.7 | 4.2 | | | |

**STATUS FLAG CODES**

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

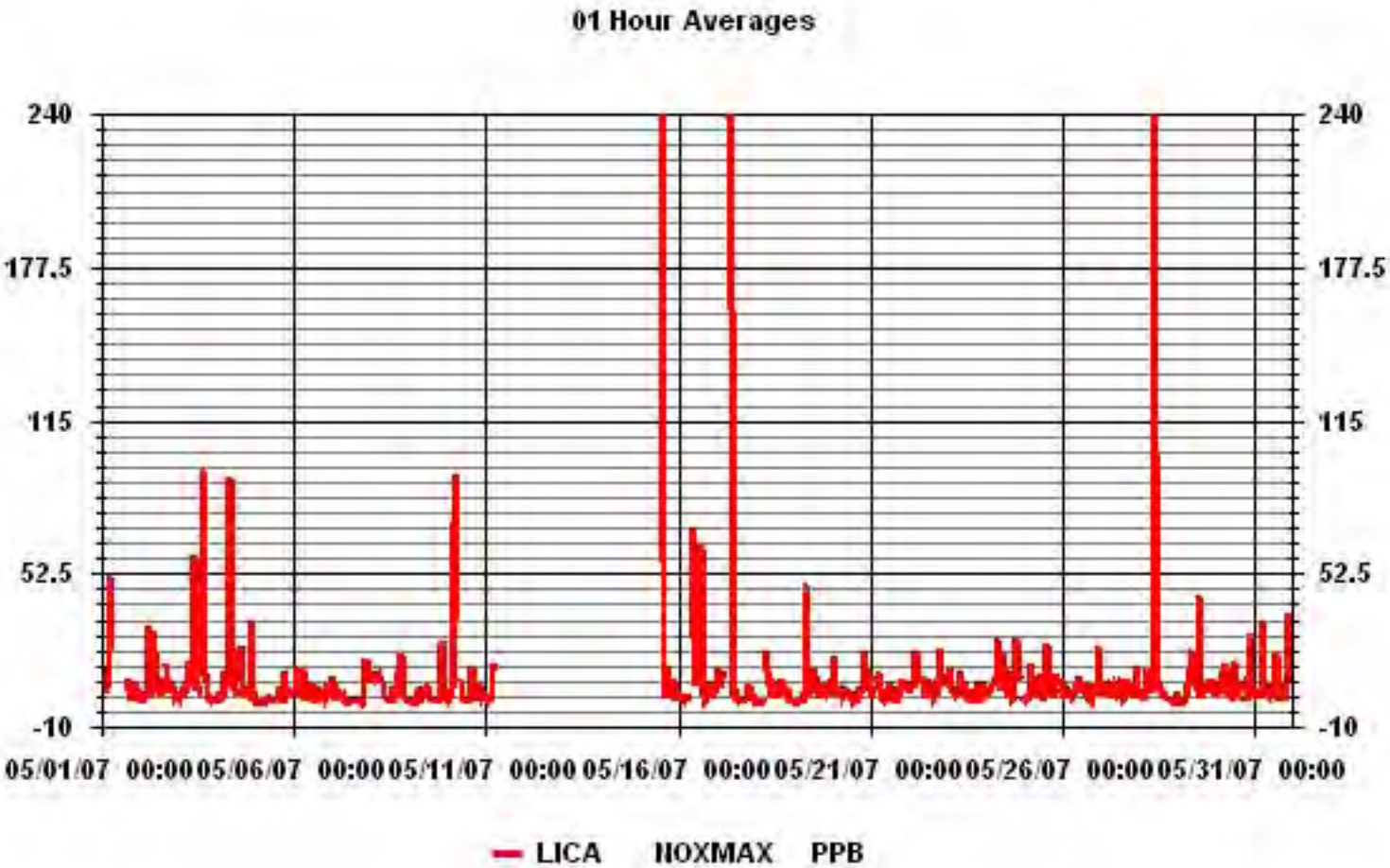
**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| NUMBER OF NON-ZERO READINGS: | 577 | | | | | |
| MAXIMUM INSTANTANEOUS VALUE: | 500 | PPB | @ HOUR(S) | 9,10 | ON DAY(S) | 17,28 |

| | | | | | |
|---|---|---|---|---|---|
| IZS CALIBRATION TIME: | 29 | HRS | OPERATIONAL TIME: | 648 | HRS |
| MONTHLY CALIBRATION TIME: | 14 | HRS | | | |
| STANDARD DEVIATION: | 36.53 | | | | |

**MOUNTAIN STANDARD TIME**

Maxxam Analytics Inc


01 Hour Averages
240
177.5
115
52.5
-10
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA NOXMAX PPB

# $O_3$

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MAY 2007

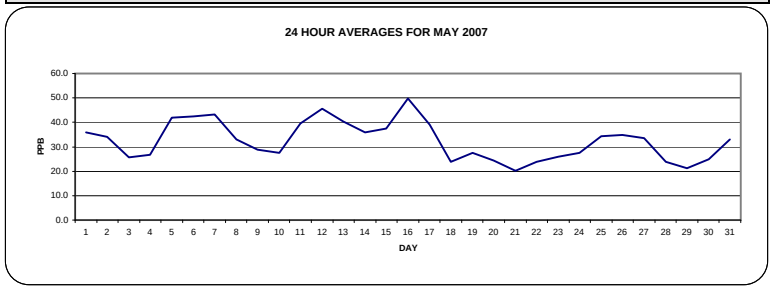
**OZONE ($O_3$)** hourly averages in ppb

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | 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 | 15 | 12 | 15 | 15 | 16 | 15 | 16 | 36 | 43 | 47 | 49 | 50 | 53 | 54 | 55 | **C** | **C** | **C** | **IZS** | 46 | 44 | 44 | 45 | 46 | 55 | 35.8 | 24 |
| 2 | 45 | 43 | 39 | 39 | 41 | 40 | 38 | 37 | 36 | 36 | 34 | 33 | 33 | 32 | 31 | **IZS** | 31 | 28 | 27 | 28 | 28 | 27 | 27 | 29 | 45 | 34.0 | 24 |
| 3 | 30 | 28 | 26 | 24 | 23 | 22 | 21 | 20 | 19 | 23 | 31 | 32 | 33 | 31 | **IZS** | 28 | 27 | 28 | 27 | 25 | 24 | 23 | 23 | 23 | 33 | 25.7 | 24 |
| 4 | 23 | 23 | 23 | 22 | 20 | 19 | 22 | 24 | 27 | 32 | 32 | 33 | 33 | **IZS** | 30 | 28 | 23 | 21 | 22 | 25 | 29 | 31 | 35 | 38 | 38 | 26.7 | 24 |
| 5 | 37 | 38 | 37 | 38 | 37 | 36 | 34 | 35 | 37 | 39 | 40 | **P** | **IZS** | 44 | 45 | 47 | 50 | 51 | 52 | 46 | 47 | 47 | 45 | 42 | 52 | 42.0 | 23 |
| 6 | 42 | **N** | 26 | 15 | 14 | 9 | 22 | 37 | 44 | 46 | **IZS** | **IZS** | 49 | 51 | 54 | 55 | 57 | 58 | 58 | 57 | 56 | 51 | 49 | 43 | 58 | 42.5 | 23 |
| 7 | 43 | 49 | 45 | 48 | 46 | 46 | 45 | 47 | 47 | 47 | **IZS** | 53 | 55 | 55 | 53 | 51 | 49 | 45 | 44 | 40 | 31 | 20 | 18 | 17 | 55 | 43.2 | 24 |
| 8 | 16 | 13 | 15 | 17 | 19 | 22 | 21 | 26 | 36 | **IZS** | 41 | 39 | 36 | 39 | 41 | 47 | 43 | 44 | 44 | 42 | 44 | 40 | 40 | 37 | 47 | 33.1 | 24 |
| 9 | 34 | 31 | 29 | 28 | 32 | 34 | 34 | 31 | **IZS** | 29 | 28 | 30 | 31 | 30 | 30 | 32 | 33 | 35 | 34 | 28 | 14 | 14 | 24 | 20 | 35 | 28.9 | 24 |
| 10 | 17 | 10 | 6 | 4 | 2 | 2 | 12 | **IZS** | 25 | 32 | 35 | 38 | 40 | 42 | 42 | 41 | 42 | 40 | 40 | 35 | 34 | 34 | 30 | 29 | 42 | 27.5 | 24 |
| 11 | 35 | 35 | 34 | 31 | 27 | 26 | **IZS** | 25 | 26 | 32 | 40 | 46 | 46 | **P** | 48 | 50 | 47 | 46 | 41 | 49 | 52 | 43 | 47 | 47 | 52 | 39.7 | 23 |
| 12 | 45 | 40 | 40 | 44 | 36 | **IZS** | 39 | 35 | 32 | 32 | 36 | 41 | 47 | 50 | 49 | 54 | 56 | 55 | 56 | 57 | 57 | 53 | 53 | 43 | 57 | 45.7 | 24 |
| 13 | 31 | 25 | 25 | 21 | **IZS** | 26 | 35 | 41 | 44 | 47 | 49 | 50 | 51 | 51 | 52 | 53 | 53 | 53 | 52 | 50 | 40 | 30 | 27 | 24 | 53 | 40.4 | 24 |
| 14 | 17 | 16 | 18 | **IZS** | 12 | 12 | 22 | 35 | 43 | 48 | 49 | 48 | 48 | 49 | 40 | 49 | 49 | 49 | 47 | 46 | 36 | 35 | 31 | 25 | 49 | 35.8 | 24 |
| 15 | 26 | 20 | **IZS** | 14 | 9 | 18 | 30 | 29 | 31 | 32 | 36 | 39 | 43 | 47 | 50 | 54 | 53 | 54 | 54 | 50 | 40 | 44 | 43 | 43 | 54 | 37.3 | 24 |
| 16 | 41 | 40 | 39 | 39 | 39 | 39 | 41 | **IZS** | 45 | 48 | 53 | 56 | 57 | 56 | 57 | 59 | **60** | **60** | 59 | 57 | 54 | 52 | 49 | 45 | 60 | **49.8** | 24 |
| 17 | 37 | 28 | 22 | 17 | 15 | 18 | **IZS** | 33 | 39 | 46 | 52 | 52 | 51 | 51 | 53 | 52 | 53 | 52 | 51 | 52 | 44 | 29 | 25 | 25 | 53 | 39.0 | 24 |
| 18 | 25 | 23 | 25 | 27 | 27 | **IZS** | 26 | 25 | 25 | 27 | 28 | 27 | 26 | 24 | 21 | 20 | 19 | 20 | 22 | 23 | 22 | 22 | 22 | 22 | 28 | 23.8 | 24 |
| 19 | 22 | 25 | 24 | 27 | **IZS** | 34 | 30 | 29 | 29 | 30 | 31 | 32 | 32 | 30 | 28 | 30 | 32 | 29 | 26 | 24 | 24 | 24 | 22 | 21 | 34 | 27.6 | 24 |
| 20 | 21 | 19 | 17 | **IZS** | 16 | 17 | 18 | 18 | 15 | 17 | 26 | 32 | 32 | 34 | 35 | 35 | 36 | 36 | 35 | 34 | 28 | 14 | 6 | 17 | 36 | 24.3 | 24 |
| 21 | 17 | 12 | **IZS** | 4 | 2 | 5 | 10 | 11 | 14 | 15 | 26 | 32 | 35 | 35 | 35 | 34 | 33 | 30 | 29 | 26 | 23 | 17 | 11 | 8 | 35 | 20.2 | 24 |
| 22 | 8 | **IZS** | 3 | 2 | 1 | 3 | 12 | 19 | 23 | 26 | 29 | 33 | 34 | 36 | 38 | 39 | 39 | 39 | 39 | 38 | 30 | 22 | 19 | 18 | 39 | 23.9 | 24 |
| 23 | **IZS** | 9 | 8 | 8 | 20 | 20 | 21 | 21 | 23 | 24 | 27 | 32 | 32 | 33 | 34 | 34 | 34 | 33 | 32 | 33 | 32 | 28 | 30 | **IZS** | 34 | 25.8 | 24 |
| 24 | 28 | 24 | 21 | 13 | 9 | 14 | 22 | 25 | 26 | 30 | 32 | 35 | 35 | 35 | 35 | 35 | 36 | 36 | 36 | 34 | 22 | 17 | **IZS** | 31 | 36 | 27.4 | 24 |
| 25 | 31 | 29 | 28 | 22 | 13 | 22 | 24 | 26 | 29 | 38 | 40 | 43 | 46 | 45 | 41 | 41 | 42 | 46 | 46 | 42 | 38 | **IZS** | 30 | 28 | 46 | 34.3 | 24 |
| 26 | 20 | 12 | 8 | 9 | 21 | 26 | 26 | 31 | 37 | 42 | 43 | 45 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 45 | **IZS** | 27 | 30 | 28 | 53 | 34.8 | 24 |
| 27 | 26 | 20 | 13 | 8 | 5 | 16 | 25 | 31 | 32 | 38 | 44 | 49 | 48 | 44 | 45 | 48 | 47 | 39 | 32 | **IZS** | 39 | 37 | 42 | 41 | 49 | 33.4 | 24 |
| 28 | 35 | 28 | 29 | 26 | 17 | 15 | 21 | 24 | 25 | 25 | 23 | 22 | 19 | 21 | 29 | 28 | 26 | 24 | **IZS** | 21 | 22 | 23 | 22 | 21 | 35 | 23.7 | 24 |
| 29 | 20 | 18 | 18 | 17 | 17 | 19 | 22 | 24 | 24 | 24 | 25 | 25 | 25 | 25 | 26 | 27 | 29 | **IZS** | 27 | 27 | 22 | 11 | 6 | 9 | 29 | 21.2 | 24 |
| 30 | 3 | 2 | 0 | 0 | 0 | 1 | 11 | 18 | 24 | 30 | 35 | 37 | 36 | 39 | 42 | 43 | **IZS** | 48 | 49 | 49 | 40 | 24 | 18 | 23 | 49 | 24.9 | 24 |
| 31 | 28 | 19 | 21 | 21 | 16 | 19 | 19 | 24 | 33 | 38 | 41 | 46 | 49 | 50 | 50 | **IZS** | 51 | 53 | 53 | 49 | 30 | 20 | 18 | 14 | 53 | 33.1 | 24 |
| HOURLY MAX | 45 | 49 | 45 | 48 | 46 | 46 | 45 | 47 | 47 | 48 | 53 | 56 | 57 | 56 | 57 | 59 | 60 | 60 | 59 | 57 | 57 | 53 | 53 | 47 | | | |
| HOURLY AVG | 27.3 | 23.8 | 22.6 | 20.7 | 19.0 | 20.5 | 24.8 | 28.2 | 31.1 | 34.0 | 36.4 | 39.0 | 40.1 | 40.7 | 41.3 | 41.6 | 41.4 | 41.5 | 40.9 | 39.3 | 34.9 | 30.1 | 29.6 | 28.6 | | | |

**STATUS FLAG CODES**

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

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

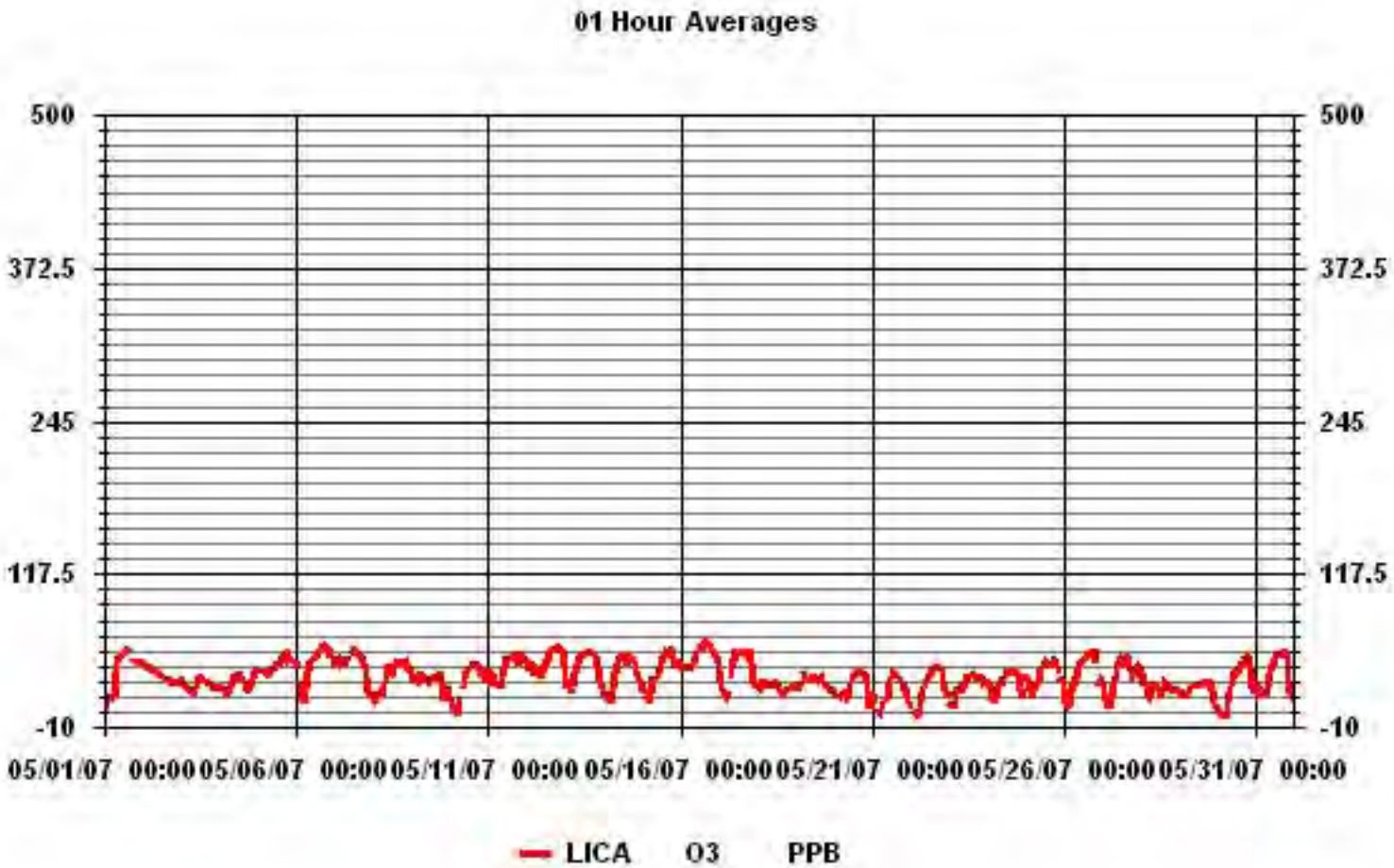



**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| NUMBER OF 1-HR EXCEEDENCES: | 0 | | | | | |
| NUMBER OF NON-ZERO READINGS: | 702 | | | | | |
| MAXIMUM 1-HR AVERAGE: | 60 | PPB | @ HOUR(S) | 17,18 | ON DAY(S) | 16 |
| MAXIMUM 24-HR AVERAGE: | 49.8 | PPB | | | ON DAY(S) | 16 |

| | | | | | |
|---|---|---|---|---|---|
| IZS CALIBRATION TIME: | 33 | HRS | OPERATIONAL TIME: | 741 | HRS |
| MONTHLY CALIBRATION TIME: | 3 | HRS | AMD OPERATION UPTIME: | 99.6 | % |
| STANDARD DEVIATION: | 13.07 | | MONTHLY AVERAGE: | 32.39 | PPB |

**MOUNTAIN STANDARD TIME**


01 Hour Averages
500
372.5
245
117.5
-10
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA O3 PPB

LICA
O3 / WD Joint Frequency Distribution (Percent)

May 2007

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

| Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < 50 | 3.68 | 6.95 | 11.48 | 3.40 | 6.09 | 9.21 | 12.19 | 4.39 | 2.69 | 3.54 | 4.39 | 5.67 | 4.53 | 2.69 | 4.25 | 3.68 | 88.93 |
| < 110 | .00 | .00 | .14 | .00 | .14 | .00 | .28 | 1.13 | 1.56 | 1.13 | .85 | 1.27 | 1.27 | 2.26 | .85 | .14 | 11.06 |
| < 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 | 3.68 | 6.95 | 11.63 | 3.40 | 6.24 | 9.21 | 12.48 | 5.53 | 4.25 | 4.68 | 5.24 | 6.95 | 5.81 | 4.96 | 5.10 | 3.82 | |

Calm : .00 %

Total # Operational Hours : 705

Distribution By Samples

Direction

| Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < 50 | 26 | 49 | 81 | 24 | 43 | 65 | 86 | 31 | 19 | 25 | 31 | 40 | 32 | 19 | 30 | 26 | 627 |
| < 110 | | | 1 | | 1 | | 2 | 8 | 11 | 8 | 6 | 9 | 9 | 16 | 6 | 1 | 78 |
| < 210 | | | | | | | | | | | | | | | | | |
| >= 210 | | | | | | | | | | | | | | | | | |
| Totals | 26 | 49 | 82 | 24 | 44 | 65 | 88 | 39 | 30 | 33 | 37 | 49 | 41 | 35 | 36 | 27 | |

Calm : .00 %

Total # Operational Hours : 705

Logger : 01 Parameter : 03

Class Limits (PPB)

>= 210

< 210

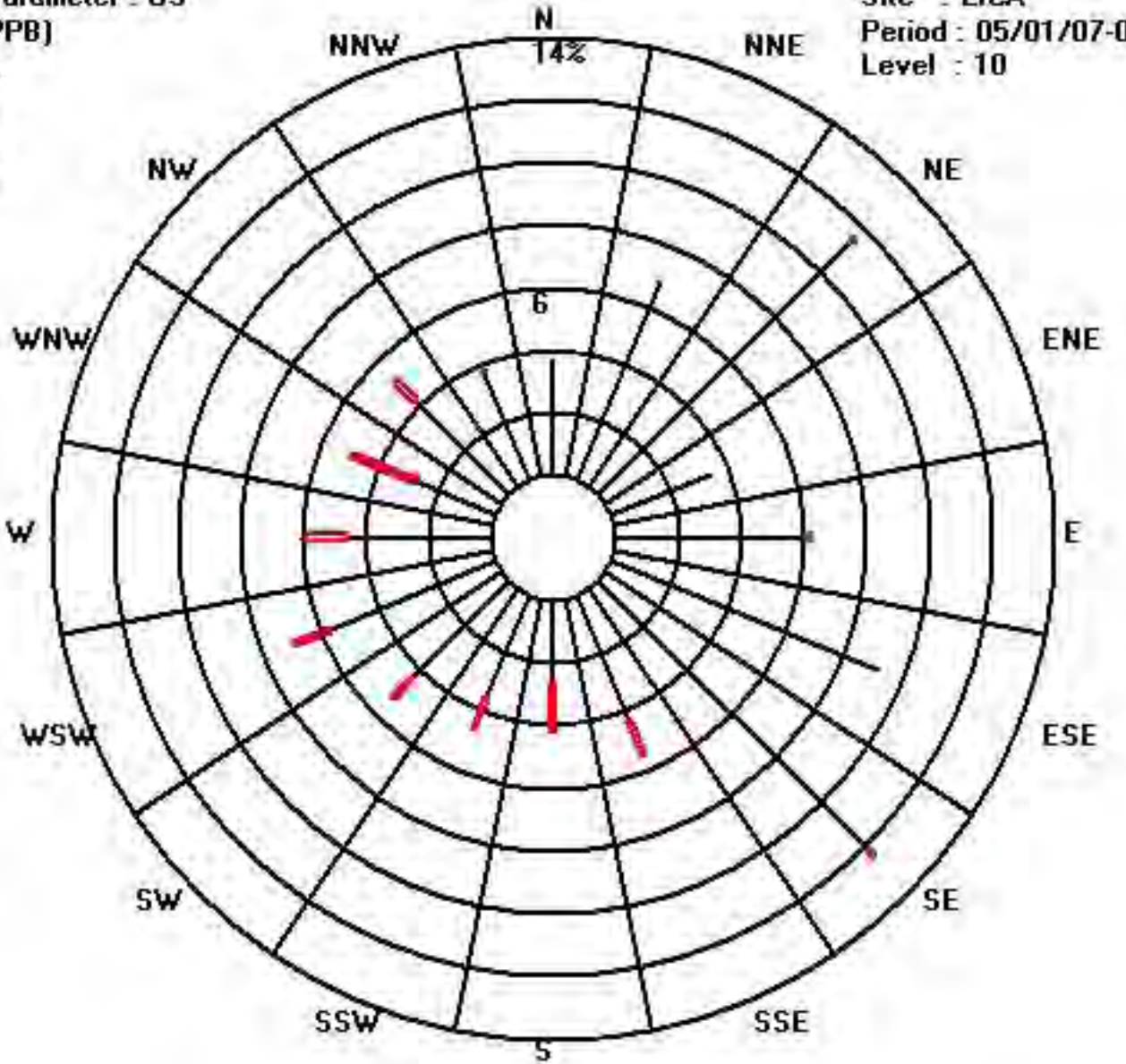
< 110

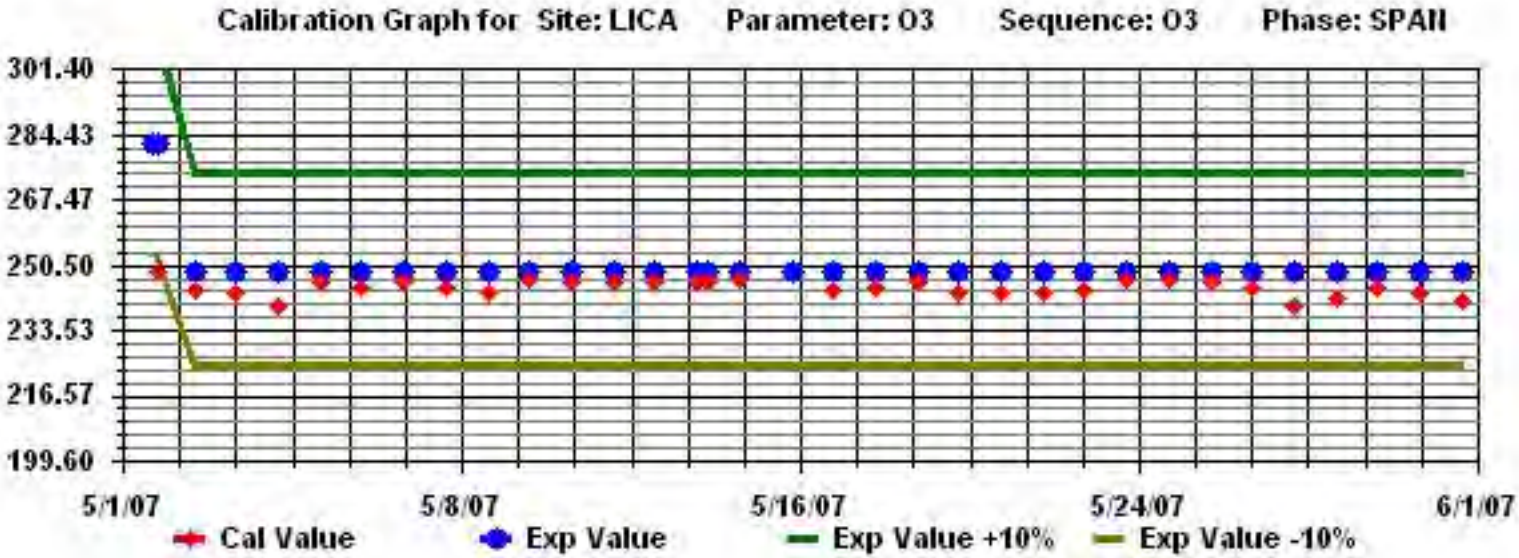
< 50

Site : LICA

Period : 05/01/07-05/31/07

Level : 10




Calibration Graph for Site: LICA Parameter: O3 Sequence: O3 Phase: SPAN
301.40
284.43
267.47
250.50
233.53
216.57
199.60
5/1/07
5/8/07
5/16/07
5/24/07
6/1/07
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MAY 2007

**OZONE MAX** instantaneous maximum in pp

| 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 | 21 | 16 | 22 | 23 | 23 | 21 | 27 | 41 | 48 | 49 | 52 | 54 | 55 | 56 | **C** | **C** | **C** | **C** | **IZS** | 48 | 47 | 47 | 47 | 47 | 56 | 39.2 | 24 |
| 2 | 47 | 46 | 42 | 42 | 43 | 43 | 41 | 40 | 39 | 38 | 38 | 36 | 35 | 35 | 34 | **IZS** | 33 | 33 | 30 | 30 | 29 | 28 | 29 | 31 | 47 | 36.6 | 24 |
| 3 | 32 | 30 | 29 | 27 | 24 | 23 | 23 | 22 | 21 | 31 | 33 | 34 | 34 | 34 | **IZS** | 29 | 29 | 29 | 29 | 26 | 25 | 25 | 24 | 24 | 34 | 27.7 | 24 |
| 4 | 24 | 24 | 24 | 23 | 23 | 27 | 27 | 26 | 33 | 34 | 34 | 34 | 34 | **IZS** | 31 | 31 | 25 | **500** | 499 | 27 | 32 | 33 | 38 | 39 | 500 | 70.5 | 24 |
| 5 | 39 | 39 | 38 | 39 | 38 | 37 | 36 | 37 | 39 | 41 | 41 | **P** | **IZS** | 46 | 47 | 50 | 51 | 53 | 54 | 50 | 52 | 50 | 49 | 46 | 54 | 44.2 | 23 |
| 6 | 299 | **N** | 37 | 23 | 25 | 12 | 31 | 43 | 46 | 50 | **IZS** | **IZS** | 51 | 53 | 55 | 56 | 59 | 59 | 59 | 59 | 56 | 55 | 53 | 50 | 299 | 58.6 | 23 |
| 7 | 52 | 53 | 47 | 49 | 48 | 47 | 47 | 48 | 48 | 49 | **IZS** | 56 | 58 | 58 | 56 | 54 | 52 | 49 | 47 | 43 | 39 | 28 | 25 | 24 | 58 | 46.8 | 24 |
| 8 | 24 | 18 | 23 | 27 | 24 | 27 | 27 | 35 | 40 | **IZS** | 44 | 42 | 39 | 41 | 45 | 50 | 48 | 46 | 46 | 45 | 46 | 42 | 41 | 41 | 50 | 37.4 | 24 |
| 9 | 36 | 35 | 32 | 30 | 34 | 35 | 35 | 34 | **IZS** | 31 | 30 | 32 | 33 | 32 | 33 | 34 | 36 | 36 | 36 | 34 | 24 | 24 | 30 | 29 | 36 | 32.4 | 24 |
| 10 | 26 | 13 | 7 | 7 | 4 | 6 | 17 | **IZS** | 28 | 36 | 37 | 41 | 41 | 43 | 43 | 43 | 45 | 42 | 42 | 38 | 36 | 36 | 34 | 35 | 45 | 30.4 | 24 |
| 11 | 37 | 37 | 36 | 34 | 30 | 27 | **IZS** | 28 | 29 | 41 | 46 | 49 | 49 | **P** | 52 | 52 | 53 | 50 | 47 | 55 | 56 | 53 | 50 | 50 | 56 | 43.7 | 23 |
| 12 | 49 | 45 | 47 | 48 | 39 | **IZS** | 41 | 39 | 34 | 34 | 40 | 45 | 49 | 53 | 53 | 60 | 59 | 57 | 57 | 58 | 59 | 56 | 55 | 48 | 60 | 48.9 | 24 |
| 13 | 41 | 33 | 31 | 27 | **IZS** | 35 | 39 | 46 | 47 | 50 | 52 | 53 | 54 | 54 | 55 | 56 | 56 | 56 | 54 | 55 | 48 | 40 | 36 | 30 | 56 | 45.6 | 24 |
| 14 | 27 | 21 | 23 | **IZS** | 17 | 17 | 28 | 39 | 49 | 54 | 63 | 51 | 51 | 51 | **IZS** | 52 | 51 | 51 | 48 | 47 | 45 | 41 | 36 | 32 | 63 | 40.6 | 24 |
| 15 | 31 | 27 | **IZS** | 17 | 13 | 30 | 31 | 31 | 33 | 35 | 40 | 43 | 46 | 51 | 73 | 56 | 55 | 56 | 56 | 54 | 46 | 46 | 45 | 44 | 73 | 41.7 | 24 |
| 16 | 43 | 41 | 41 | 41 | 40 | 41 | 42 | **IZS** | 48 | 51 | 55 | 57 | 59 | 59 | 60 | 61 | 61 | 62 | 60 | 58 | 56 | 55 | 52 | 48 | 62 | 51.8 | 24 |
| 17 | 45 | 37 | 31 | 22 | 19 | 28 | **IZS** | 46 | 49 | 51 | 54 | 53 | 54 | 53 | 55 | 54 | 55 | 53 | 52 | 54 | 53 | 35 | 27 | 27 | 55 | 43.8 | 24 |
| 18 | 27 | 25 | 27 | 29 | 28 | **IZS** | 27 | 26 | 28 | 29 | 29 | 29 | 28 | 26 | 25 | 22 | 21 | 22 | 23 | 24 | 24 | 23 | 23 | 23 | 29 | 25.6 | 24 |
| 19 | 25 | 26 | 27 | 31 | **IZS** | 37 | 33 | 31 | 32 | 33 | 35 | 34 | 36 | 33 | 32 | 34 | 35 | 33 | 29 | 27 | 26 | 26 | 25 | 25 | 37 | 30.7 | 24 |
| 20 | 23 | 22 | 19 | **IZS** | 18 | 19 | 20 | 19 | 17 | 19 | 35 | 35 | 36 | 37 | 37 | 38 | 38 | 38 | 38 | 37 | 33 | 22 | 10 | 23 | 38 | 27.5 | 24 |
| 21 | 20 | 16 | **IZS** | 7 | 3 | 7 | 13 | 13 | 16 | 17 | 32 | 35 | 38 | 38 | 37 | 37 | 35 | 32 | 31 | 29 | 26 | 22 | 16 | 11 | 38 | 23.1 | 24 |
| 22 | 12 | **IZS** | 4 | 3 | 2 | 5 | 16 | 23 | 25 | 28 | 32 | 36 | 36 | 38 | 40 | 40 | 41 | 41 | 40 | 41 | 37 | 29 | 25 | 23 | 41 | 26.8 | 24 |
| 23 | **IZS** | 12 | 12 | 17 | 25 | 23 | 23 | 25 | 27 | 28 | 32 | 36 | 35 | 36 | 38 | 39 | 38 | 37 | 36 | 36 | 35 | 31 | 33 | **IZS** | 39 | 29.7 | 24 |
| 24 | 29 | 28 | 24 | 17 | 14 | 21 | 26 | 28 | 30 | 33 | 35 | 37 | 37 | 37 | 38 | 37 | 38 | 38 | 38 | 38 | 28 | 21 | **IZS** | 33 | 38 | 30.7 | 24 |
| 25 | 32 | 31 | 30 | 27 | 21 | 25 | 27 | 28 | 36 | 46 | 43 | 47 | 47 | 46 | 46 | 46 | 45 | 48 | 49 | 45 | 42 | **IZS** | 35 | 33 | 49 | 38.0 | 24 |
| 26 | 25 | 22 | 14 | 21 | 27 | 28 | 28 | 37 | 42 | 45 | 46 | 47 | 49 | 50 | 51 | 52 | 52 | 54 | 54 | 53 | **IZS** | 36 | 37 | 38 | 54 | 39.5 | 24 |
| 27 | 34 | 33 | 21 | 11 | 9 | 26 | 30 | 34 | 36 | 42 | 50 | 52 | 52 | 46 | 49 | 52 | 50 | 49 | 45 | **IZS** | 42 | 43 | 46 | 45 | 52 | 39.0 | 24 |
| 28 | 41 | 32 | 31 | 30 | 25 | 19 | 27 | 26 | 27 | 72 | 38 | 25 | 21 | 29 | 30 | 30 | 28 | 25 | **IZS** | 23 | 24 | 26 | 24 | 22 | 72 | 29.3 | 24 |
| 29 | 21 | 19 | 19 | 18 | 20 | 23 | 24 | 25 | 25 | 25 | 26 | 27 | 27 | 27 | 29 | 31 | 32 | **IZS** | 30 | 30 | 29 | 18 | 12 | 13 | 32 | 23.9 | 24 |
| 30 | 8 | 6 | 4 | 2 | 2 | 4 | 18 | 23 | 30 | 35 | 40 | 41 | 39 | 42 | 45 | 47 | **IZS** | 50 | 51 | 51 | 49 | 31 | 28 | 33 | 51 | 29.5 | 24 |
| 31 | 34 | 26 | 25 | 23 | 22 | 20 | 22 | 30 | 37 | 40 | 45 | 50 | 51 | 53 | 52 | **IZS** | 54 | 55 | 56 | 55 | 46 | 27 | 26 | 23 | 56 | 37.9 | 24 |
| HOURLY MAX | 299 | 53 | 47 | 49 | 48 | 47 | 47 | 48 | 49 | 72 | 63 | 57 | 59 | 59 | 73 | 61 | 61 | 500 | 499 | 59 | 59 | 56 | 55 | 50 | | | |
| HOURLY AVG | 40.1 | 28.0 | 26.4 | 24.7 | 22.8 | 24.6 | 28.5 | 31.8 | 34.6 | 38.9 | 40.6 | 41.8 | 42.5 | 43.3 | 44.3 | 44.4 | 44.0 | 60.5 | 59.9 | 42.3 | 39.7 | 35.0 | 33.7 | 33.0 | | | |

**STATUS FLAG CODES**

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

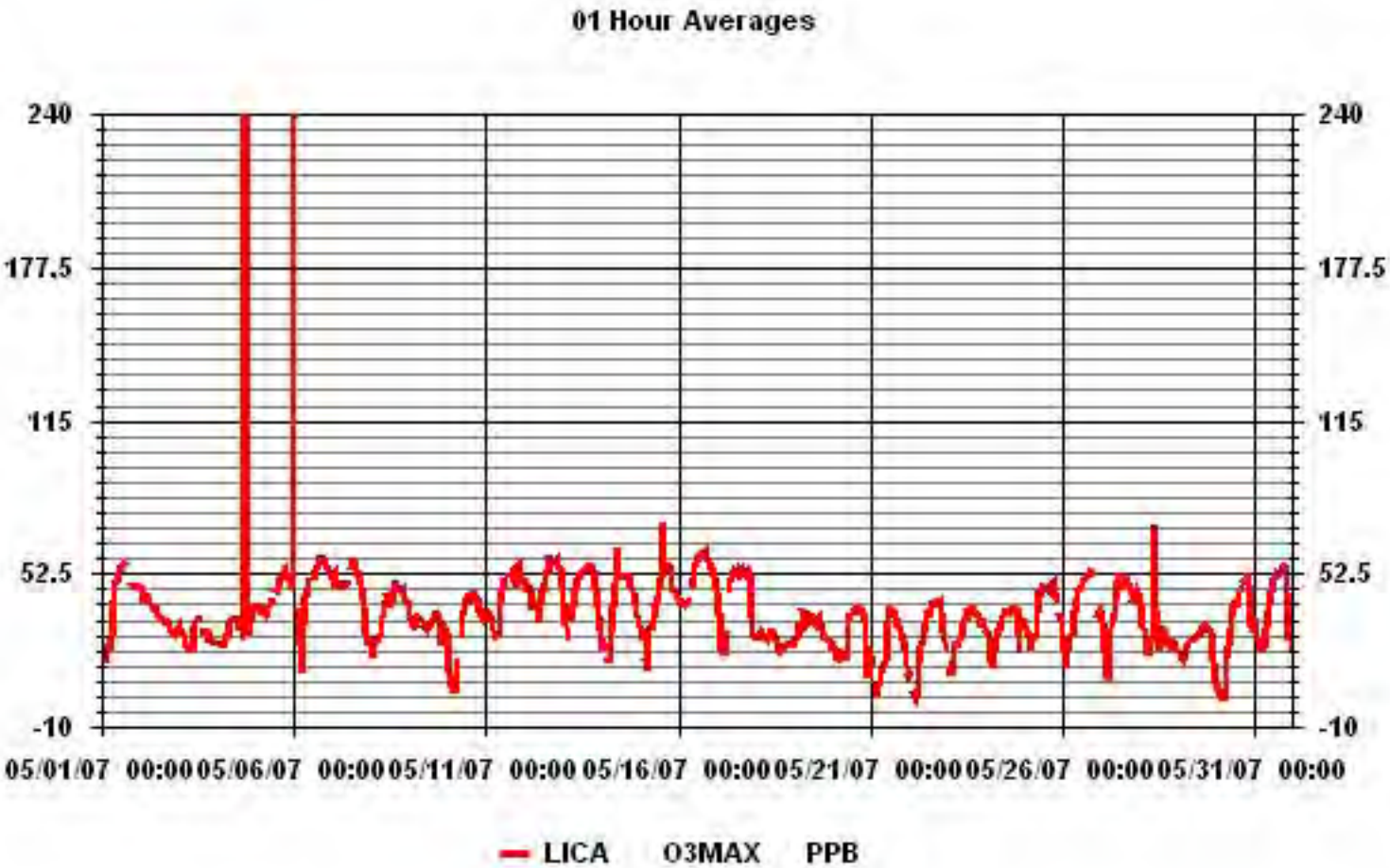
**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| NUMBER OF NON-ZERO READINGS: | 703 | | | | | |
| MAXIMUM INSTANTANEOUS VALUE: | 500 | PPB | @ HOUR(S) | 18 | ON DAY(S) | 4 |

| | | | | | |
|---|---|---|---|---|---|
| IZS CALIBRATION TIME: | 34 | HRS | OPERATIONAL TIME: | 741 | HRS |
| MONTHLY CALIBRATION TIME: | 4 | HRS | | | |
| STANDARD DEVIATION: | 29.50 | | | | |

**MOUNTAIN STANDARD TIME**

Maxxam Analytics Inc


01 Hour Averages
240
177.5
115
52.5
-10
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA O3MAX PPB

# VECTOR WIND SPEED

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MAY 2007

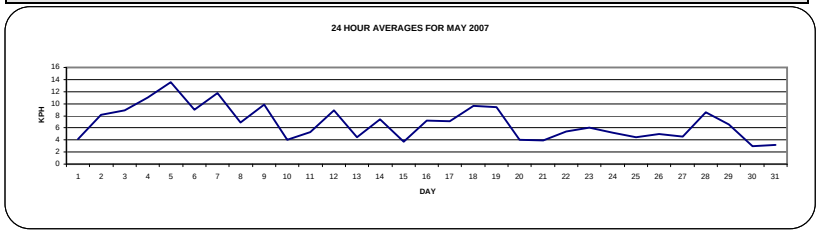
**VECTOR WIND SPEED (WS)** hourly averages (km/hr)

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | 24-HOUR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOUR END | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 | MAX. | AVG. | RDGS. |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0.6 | 0.4 | 0.2 | 0.1 | 0.6 | 0.4 | 0.4 | 1.9 | 1.6 | 2.6 | 7.1 | 4.2 | 6.2 | 6 | 8.1 | 8.7 | 8.7 | 7.7 | 6.9 | 6.9 | 3.9 | 6.8 | 10.8 | 11 | 11 | 4.1 | 24 |
| 2 | 12 | 9.4 | 8.3 | 7 | 8.9 | 11.4 | 10.5 | 13.1 | 11.8 | 10.4 | 12 | 11.1 | 9.5 | 8.8 | 7.9 | 8.5 | 7.4 | 7.3 | 6.9 | 7.1 | 7.9 | 7.1 | 5.5 | 5.9 | 13.1 | 8.2 | 24 |
| 3 | 4.3 | 4.2 | 4.4 | 5.1 | 5.1 | 6 | 6.4 | 7.1 | 7.1 | 6.1 | 8.5 | 8.2 | 13.5 | 11.8 | 12.6 | 11.9 | 10.5 | 11.5 | 13.6 | 13.2 | 11.5 | 12.7 | 12.7 | 12.1 | 13.6 | 8.9 | 24 |
| 4 | 9.4 | 8.6 | 6.9 | 4.2 | 3.8 | 4.2 | 4.6 | 5.2 | 6.8 | 8.6 | 12.5 | 14.5 | 15.9 | 18.6 | 19 | 15 | 19.3 | 22.2 | 20.5 | 21.4 | 22 | 17.4 | 19.7 | 20.6 | 22.2 | 11 | 24 |
| 5 | 18.7 | 19.2 | 18.4 | 11.9 | 9.6 | 9.5 | 12.1 | 13.5 | 17.5 | 22.3 | **25.2** | **P** | 24.5 | 21.2 | 18.6 | 17.3 | 11.9 | 9.2 | 7.3 | 1.8 | 5.5 | 6.7 | 5.7 | 4.5 | 25.2 | **13.6** | 23 |
| 6 | 3 | 1 | 0.8 | 0.6 | 1 | 0.2 | 3.3 | 8.3 | 10.4 | 12.6 | 16 | 14.5 | 16.4 | 16.2 | 17.2 | 18.6 | 17.1 | 17.3 | 12.5 | 9.3 | 9.2 | 6.7 | 3.4 | 1.1 | 18.6 | 9.0 | 24 |
| 7 | 9.7 | 9 | 7.7 | 8.5 | 9.8 | 12.3 | 14.7 | 16.2 | 17.7 | 16.9 | 17.1 | 17.5 | 17.9 | 18.2 | 19.2 | 14.6 | 13.6 | 15 | 14 | 8.2 | 2.4 | 0.7 | 0.2 | 0.8 | 19.2 | 11.7 | 24 |
| 8 | 1 | 0.7 | 2.9 | 2.5 | 4.3 | 4.7 | 5.6 | 6.8 | 7.5 | 10 | 10.4 | 11.1 | 10.7 | 10 | 11.3 | 8.8 | 4.7 | 6 | 6.4 | 5.5 | 7.1 | 8.9 | 9.6 | 8.9 | 11.3 | 6.9 | 24 |
| 9 | 9.8 | 7.1 | 9.5 | 13.4 | 13.9 | 11.5 | 19.5 | 16.8 | 17.1 | 11.4 | 8.7 | 10.4 | 9.4 | 13.3 | 13.2 | 14.2 | 11.8 | 8.8 | 6.1 | 2.5 | 1.4 | 2.6 | 3.3 | 1.4 | 19.5 | 9.9 | 24 |
| 10 | 1.2 | 0.5 | 1.1 | 0.8 | 1.2 | 0.8 | 1 | 2.5 | 2.1 | 3.4 | 4.5 | 4.7 | 4.9 | 7.7 | 8.9 | 9.4 | 6.6 | 7.8 | 9 | 4.5 | 3.1 | 3.4 | 2.2 | 4.2 | 9.4 | 4.0 | 24 |
| 11 | 5.9 | 6.5 | 7.3 | 6.2 | 4.4 | 6.1 | 6.9 | 4.7 | 4.8 | 5.6 | 6 | 7.8 | 7.8 | **P** | 4.6 | 3.4 | 5.6 | 4.7 | 4 | 4.4 | 2.6 | 1.7 | 4.3 | 6.7 | 7.8 | 5.3 | 23 |
| 12 | 5.6 | 4 | 4.7 | 4 | 4.1 | 5.2 | 7.6 | 8.7 | 7.3 | 6.6 | 4.5 | 4.2 | 6 | 11.8 | 15.2 | 21.8 | 19.4 | 19.7 | 14.5 | 13.9 | 11.5 | 5.3 | 4.7 | 4 | 21.8 | 8.9 | 24 |
| 13 | 1.8 | 1.7 | 3.1 | 3.5 | 3.2 | 3.6 | 3.7 | 3.1 | 4.4 | 6.7 | 8.8 | 11.4 | 9.5 | 9.4 | 7 | 6.9 | 4.9 | 5.1 | 4.9 | 3.2 | 0.4 | 0.1 | 0.5 | 1.1 | 11.4 | 4.5 | 24 |
| 14 | 0.2 | 0.7 | 1.4 | 0.8 | 0.6 | 1.4 | 3.4 | 2.7 | 8 | 14.9 | 15.9 | 14.9 | 15.4 | 14.9 | 13.2 | 14.5 | 14.4 | 14.2 | 11.1 | 7.2 | 2.6 | 3.5 | 1.7 | 0.7 | 15.9 | 7.4 | 24 |
| 15 | 1.5 | 0.9 | 0.1 | 0.7 | 1 | 3.2 | 8.9 | 6.7 | 6.9 | 6.1 | 4.7 | 4.6 | 1.8 | 2.4 | 3.9 | 2.4 | 2.4 | 5 | 4.5 | 4 | 4.2 | 5.4 | 3.9 | 3.9 | 8.9 | 3.7 | 24 |
| 16 | 2.4 | 1.6 | 1.6 | 3.4 | 2.1 | 3.8 | 5.8 | 6.7 | 9.4 | 10.6 | 11.3 | 10 | 12.5 | 11.8 | 13 | 12.6 | 12.4 | 10.4 | 8.3 | 4.4 | 3.7 | 7.7 | 3.8 | 2.5 | 13.0 | 7.2 | 24 |
| 17 | 1.7 | 2 | 0.7 | 1 | 1.1 | 3 | 4.3 | 3.6 | 4 | 2.3 | 8.5 | 7.2 | 11.7 | 11.3 | 10.4 | 10.3 | 10.8 | 8.5 | 9.8 | 8.2 | 9.2 | 14.2 | 15.5 | 11.3 | 15.5 | 7.1 | 24 |
| 18 | 8.2 | 9.1 | 9.5 | 10.7 | 9.5 | 11.2 | 10.3 | 10.5 | 10.9 | 10.4 | 11.5 | 11.1 | 11.9 | 10.2 | 6.2 | 8.1 | 9.2 | 9.7 | 10.2 | 8.9 | 7.3 | 7.7 | 8.7 | 9.5 | 11.9 | 9.6 | 24 |
| 19 | 12.2 | 12 | 9.4 | 10.6 | 9.2 | 10.9 | 13.1 | 10.8 | 10.7 | 11.9 | 12.8 | 11.5 | 11.2 | 10.4 | 6.6 | 8.8 | 9.9 | 7.1 | 6.7 | 7.4 | 5.2 | 6.4 | 5.8 | 5.5 | 13.1 | 9.4 | 24 |
| 20 | 6.1 | 4.3 | 2.4 | 2.3 | 2 | 1.8 | 1.8 | 2.3 | 5.2 | 6.6 | 5.7 | 6.7 | 5.9 | 5.4 | 6.1 | 2.3 | 5.7 | 6.2 | 4.5 | 3.7 | 3.4 | 1.2 | 0.6 | 3.8 | 6.7 | 4.0 | 24 |
| 21 | 5.1 | 0.9 | 2 | 0.5 | 0.6 | 1.3 | 2.4 | 3.5 | 3.3 | 2.3 | 5.6 | 5.9 | 5.5 | 9.5 | 8.3 | 7.5 | 9.3 | 6.4 | 5.2 | 2.8 | 2 | 0.7 | 1.3 | 1.3 | 9.5 | 3.9 | 24 |
| 22 | 1 | 2 | 1.3 | 0.9 | 0.5 | 0.7 | 4 | 6.5 | 9.3 | 9.6 | 9.3 | 8.6 | 8.7 | 10 | 9.5 | 9.2 | 9.5 | 8.9 | 7.8 | 6.1 | 1.1 | 0.6 | 2.3 | 3 | 10.0 | 5.4 | 24 |
| 23 | 0.2 | 1.1 | 1.5 | 3.2 | 5.8 | 9 | 11.1 | 8.5 | 6.4 | 4.6 | 3.1 | 3.5 | 5.7 | 8.4 | 7 | 7.4 | 5.6 | 10.4 | 11 | 6.2 | 6.1 | 5.7 | 7.6 | 7 | 11.1 | 6.1 | 24 |
| 24 | 4 | 2.5 | 1.3 | 0.4 | 0.4 | 2.5 | 5 | 3.5 | 5.7 | 8.6 | 9.1 | 11.5 | 10 | 9.3 | 8.3 | 7.9 | 6.7 | 5.8 | 5.3 | 2.9 | 0.9 | 0.5 | 6.1 | 6.3 | 11.5 | 5.2 | 24 |
| 25 | 6.4 | 5.2 | 3.2 | 1.9 | 1.1 | 3.1 | 4 | 2.5 | 3.9 | 3.7 | 2.3 | 3.2 | 8.4 | 7.6 | 4.7 | 5.7 | 5.9 | 7.8 | 8.1 | 5.8 | 3.5 | 2.6 | 3.2 | 2 | 8.4 | 4.4 | 24 |
| 26 | 3.1 | 0.9 | 0.9 | 3.1 | 4.3 | 3 | 3.1 | 3.8 | 5.3 | 8.3 | 9.2 | 9.8 | 8.6 | 8.2 | 8 | 6.9 | 6.7 | 6.5 | 4.6 | 2.1 | 2.2 | 3.6 | 4.9 | 2.5 | 9.8 | 5.0 | 24 |
| 27 | 2.2 | 0.3 | 0.4 | 0.8 | 1.2 | 2.5 | 2.3 | 3.7 | 5.4 | 4 | 6.3 | 9.8 | 10.9 | 10.6 | 8.1 | 4.2 | 5.4 | 5.3 | 1 | 5.6 | 5.8 | 3.6 | 4.9 | 5.3 | 10.9 | 4.6 | 24 |
| 28 | 6.6 | 5.1 | 3.7 | 2.2 | 2.4 | 2 | 4 | 4.2 | 5.9 | 8.1 | 11.5 | 10.7 | 9.9 | 9 | 10.7 | 10.7 | 13.6 | 14.1 | 13.4 | 12.9 | 13.3 | 11.3 | 10.4 | 10.3 | 14.1 | 8.6 | 24 |
| 29 | 7.8 | 5.5 | 5.6 | 5.8 | 5.9 | 6 | 7.2 | 8.7 | 9 | 9.9 | 10.3 | 10.4 | 9.4 | 8.6 | 7.1 | 5.8 | 4.2 | 5.6 | 8.1 | 7.8 | 3.4 | 0.4 | 1.8 | 2.7 | 10.4 | 6.5 | 24 |
| 30 | 0.2 | 0.2 | 0.4 | 0.3 | 0.4 | 0.5 | 3.5 | 4.1 | 1.6 | 2.8 | 5.2 | 4.8 | 5.2 | 3.9 | 4.3 | 6.2 | 5 | 5.4 | 5.6 | 4.4 | 1.8 | 1.3 | 0.6 | 3.3 | 6.2 | 3.0 | 24 |
| 31 | 1.4 | 0.7 | 1.4 | 1.9 | 1.8 | 1.6 | 2.5 | 3.9 | 4.4 | 7.3 | 3.9 | 5.9 | 5 | 5.3 | 4.5 | 4.7 | 4.6 | 4 | 3.4 | 2.8 | 1.5 | 1.2 | 0.7 | 0.7 | 7.3 | 3.1 | 24 |
| HOURLY MAX | 18.7 | 19.2 | 18.4 | 13.4 | 13.9 | 12.3 | 19.5 | 16.8 | 17.7 | 22.3 | 25.2 | 17.5 | 24.5 | 21.2 | 19.2 | 21.8 | 19.4 | 22.2 | 20.5 | 21.4 | 22.0 | 17.4 | 19.7 | 20.6 | | | |
| HOURLY AVG | 4.9 | 4.1 | 3.9 | 3.8 | 3.9 | 4.6 | 6.2 | 6.6 | 7.5 | 8.2 | 9.3 | 9.0 | 10.0 | 10.3 | 9.8 | 9.5 | 9.1 | 9.1 | 8.2 | 6.6 | 5.3 | 5.1 | 5.4 | 5.3 | | | |

**STATUS FLAG CODES**

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

LAST CALIBRATION: NA




**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| MAXIMUM 1-HR AVERAGE: | 25.2 | KPH | @ HOUR(S) | 11 | ON DAY(S) | 5 |
| MAXIMUM 24-HR AVERAGE: | 13.6 | KPH | | | ON DAY(S) | 5 |

| | | | | | |
|---|---|---|---|---|---|
| CALMS (≤ 0 KPH) | 1.61 | % | OPERATIONAL TIME: | 742 | HRS |
| MONTHLY CALIBRATION TIME: | 0 | HRS | AMD OPERATION UPTIME: | 99.7 | % |
| STANDARD DEVIATION: | 4.78 | | MONTHLY AVERAGE: | 6.90 | KPH |

**MOUNTAIN STANDARD TIME**

Maxxam Analytics Inc

LICA
WS / WD Joint Frequency Distribution (Percent)

May 2007

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

| | Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < | 6.0 | 1.61 | 1.61 | 3.63 | 1.75 | 3.36 | 3.90 | 7.27 | 3.36 | 3.09 | 2.69 | 3.90 | 4.04 | 1.88 | 1.21 | 1.61 | 2.29 | 47.30 |
| < | 12.0 | 1.61 | 4.31 | 6.87 | 1.48 | 1.88 | 4.71 | 3.50 | 2.02 | .80 | 1.21 | .67 | 1.61 | 1.88 | 2.56 | 2.02 | .67 | 37.87 |
| < | 20.0 | .26 | .67 | .80 | .13 | 1.07 | .53 | .94 | .00 | .26 | .53 | .40 | 1.61 | 1.61 | .80 | 1.34 | .80 | 11.85 |
| < | 29.0 | .00 | .00 | .00 | .00 | .00 | .00 | .67 | .00 | .00 | .00 | .40 | .13 | .00 | .13 | .00 | .00 | 1.34 |
| < | 39.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= | 39.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| | Totals | 3.50 | 6.60 | 11.32 | 3.36 | 6.33 | 9.16 | 12.39 | 5.39 | 4.17 | 4.44 | 5.39 | 7.41 | 5.39 | 4.71 | 4.98 | 3.77 | |

Calm : 1.61 %

Total # Operational Hours : 742

Distribution By Samples

Direction

| | Limit | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < | 6.0 | 12 | 12 | 27 | 13 | 25 | 29 | 54 | 25 | 23 | 20 | 29 | 30 | 14 | 9 | 12 | 17 | 351 |
| < | 12.0 | 12 | 32 | 51 | 11 | 14 | 35 | 26 | 15 | 6 | 9 | 5 | 12 | 14 | 19 | 15 | 5 | 281 |
| < | 20.0 | 2 | 5 | 6 | 1 | 8 | 4 | 7 | | 2 | 4 | 3 | 12 | 12 | 6 | 10 | 6 | 88 |
| < | 29.0 | | | | | | | 5 | | | | 3 | 1 | | 1 | | | 10 |
| < | 39.0 | | | | | | | | | | | | | | | | | |
| >= | 39.0 | | | | | | | | | | | | | | | | | |
| | Totals | 26 | 49 | 84 | 25 | 47 | 68 | 92 | 40 | 31 | 33 | 40 | 55 | 40 | 35 | 37 | 28 | |

Calm : 1.61 %

Total # Operational Hours : 742

Logger : 01 Parameter : WS

Class Limits (KPH)

>= 39.0

< 39.0

< 29.0

< 20.0

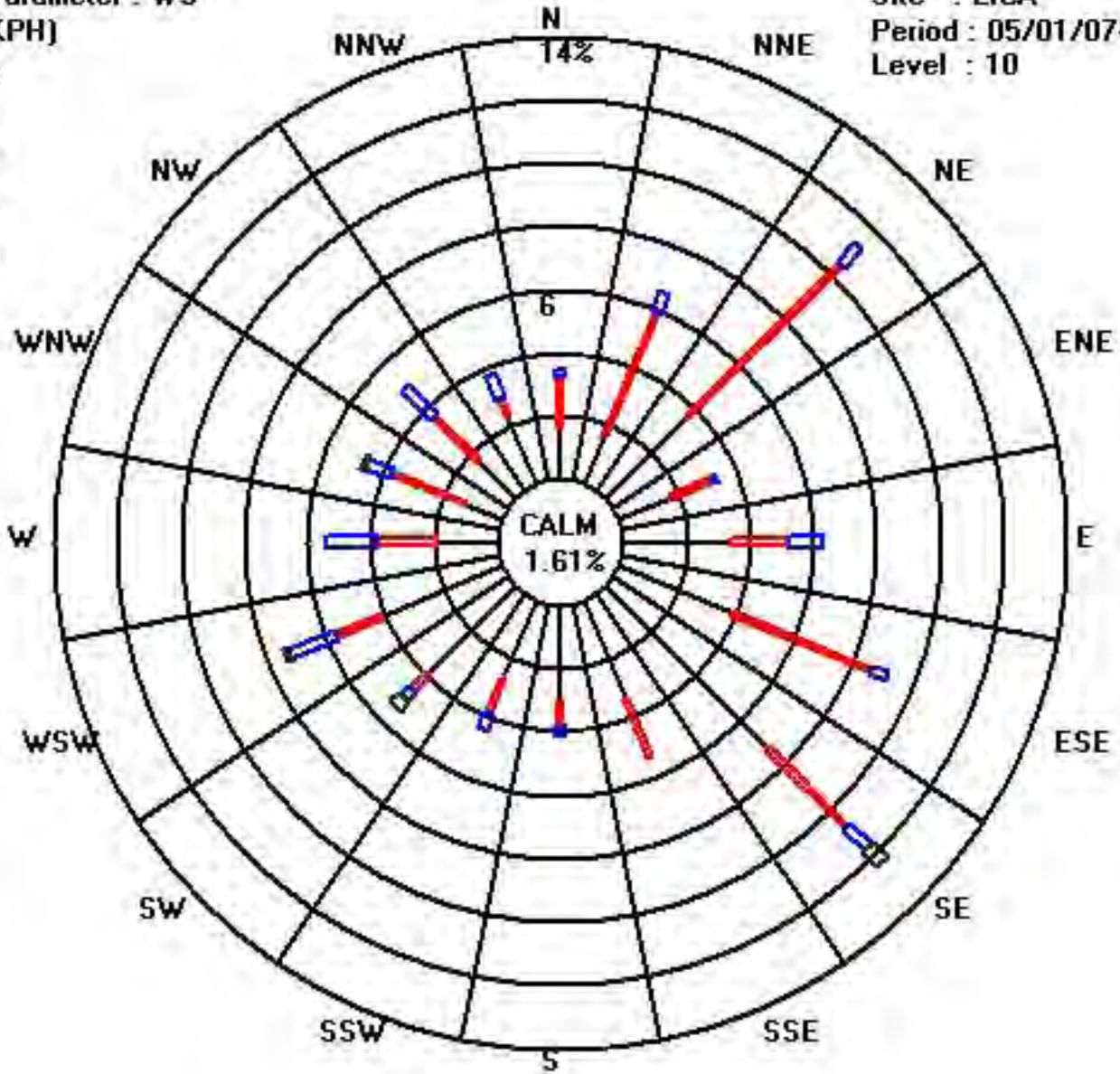
< 12.0

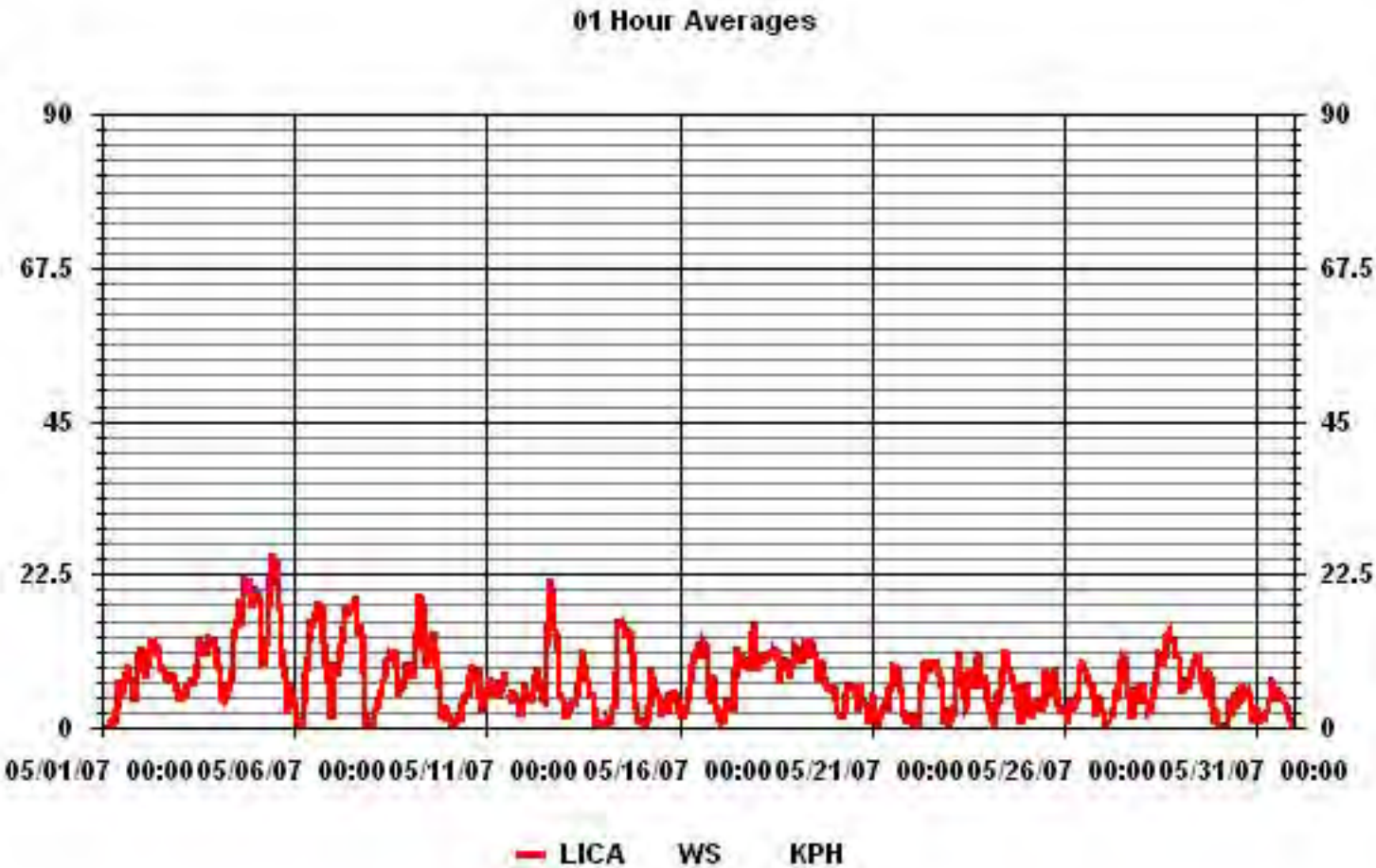
< 6.0

Site : LICA

Period : 05/01/07-05/31/07

Level : 10




01 Hour Averages
90
67.5
45
22.5
0
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA WS KPH

**LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE***

MAY 2007

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

| HOUR START<br>HOUR END<br>DAY | 0:00<br>1:00 | 1:00<br>2:00 | 2:00<br>3:00 | 3:00<br>4:00 | 4:00<br>5:00 | 5:00<br>6:00 | 6:00<br>7:00 | 7:00<br>8:00 | 8:00<br>9:00 | 9:00<br>10:00 | 10:00<br>11:00 | 11:00<br>12:00 | 12:00<br>13:00 | 13:00<br>14:00 | 14:00<br>15:00 | 15:00<br>16:00 | 16:00<br>17:00 | 17:00<br>18:00 | 18:00<br>19:00 | 19:00<br>20:00 | 20:00<br>21:00 | 21:00<br>22:00 | 22:00<br>23:00 | 23:00<br>0:00 | DAILY<br>MAX. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.2 | 1.5 | 1.5 | 2.8 | 2.4 | 2.1 | 2.3 | 4.2 | 6.3 | 9.5 | 14.1 | 15.4 | 15.6 | 14.7 | 27 | 20 | 24.8 | 14.3 | 11.2 | 10 | 6.6 | 14.9 | 15.4 | 19.5 | 27 |
| | WNW | SSE | SSE | SE | SE | SE | SSW | SW | SW | ESE | E | SSW | SW | SE | SE | ESE | SE | ESE | SE | SE | ESE | ESE | ESE | E | SE |
| 2 | 18.3 | 16.5 | 13.5 | 12.9 | 14.3 | 17.3 | 16.9 | 23 | 20.1 | 16.6 | 20.9 | 15.1 | 14.4 | 12.6 | 13.9 | 12.5 | 11.8 | 11.2 | 11.4 | 12.2 | 14.7 | 9.9 | 8.6 | 7.5 | 23 |
| | E | ENE | E | ENE | E | E | E | E | E | E | E | NE | NE | NNE | ENE | ENE | NE | NE | NE | NE | NE | NE | NE | NNE | E |
| 3 | 7.7 | 6 | 7.1 | 8.4 | 8.2 | 10 | 10.6 | 10.3 | 12 | 10 | 15.1 | 15.2 | 19.9 | 18.9 | 16.9 | 15.8 | 16.7 | 15.3 | 19 | 20.9 | 15.5 | 19.8 | 17.8 | 16.2 | 20.9 |
| | NNE | NNE | NNE | NE | NE | NE | NE | NE | NE | E | E | NE | ENE | NE | NE | NNE | NE | NNE | NE | NE | NNE | NNE | NE | NE | NE |
| 4 | 14 | 11.1 | 10 | 7.3 | 7.3 | 12.2 | 11.4 | 8.9 | 12.8 | 12.2 | 18.6 | 21.7 | 23.6 | 26.6 | 27.2 | 26.3 | 27.8 | 32.4 | 32 | **36** | 33 | 28.1 | 28.6 | 30.4 | 36 |
| | NE | NE | NE | NNE | N | E | E | NE | ENE | ENE | E | E | E | ENE | E | E | SE | SE | SE | **SE** | SE | SE | SE | SE | SE |
| 5 | 25.8 | 28 | 26.2 | 21.9 | 14.9 | 16 | 20.8 | 23.7 | 29.6 | 32.2 | 33.6 | - | 32.9 | 29.5 | 31.5 | 25.3 | 23.3 | 15.9 | 15.3 | 4 | 11.6 | 11.1 | 12.4 | 18.2 | 33.6 |
| | SE | SE | SE | SE | SE | SSE | SSW | SSW | SW | SW | SW | - | WSW | SW | SW | SW | SW | WSW | SW | SE | SE | SE | SE | WSW | SW |
| 6 | 11.3 | 9.5 | 3.1 | 2.3 | 3 | 2 | 8.7 | 13.8 | 16.1 | 19.5 | 24.8 | 22.9 | 27.3 | 25.2 | 27.3 | 28.2 | 25.7 | 26 | 19.7 | 16.8 | 18.1 | 17.1 | 9.4 | 10.3 | 28.2 |
| | - | SE | NNW | SE | SW | W | SW | SW | SW | W | SW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | SW | SW | WSW | WSW | NW | NW | WSW |
| 7 | 22.8 | 18.1 | 13.5 | 13.8 | 13.5 | 17.6 | 21.5 | 25.5 | 26.4 | 26.7 | 25.4 | 27.3 | 27.3 | 28.7 | 28.9 | 29.5 | 23.5 | 23.2 | 22.9 | 13.7 | 7 | 3 | 2.6 | 3.8 | 29.5 |
| | NW | W | WNW | WNW | WSW | WSW | W | W | WNW | W | WNW | W | WSW | WSW | WSW | WNW | W | WSW | WNW | W | WNW | SE | NW | SE | WNW |
| 8 | 4 | 7.4 | 10.2 | 5.4 | 6.5 | 8.7 | 9 | 10.9 | 11.3 | 17.3 | 16.8 | 17.8 | 16 | 17.6 | 18.7 | 15.8 | 13.5 | 10 | 10.5 | 8.1 | 12.8 | 14.7 | 13.1 | 16.3 | 18.7 |
| | SSE | NNW | WNW | WSW | SW | SSW | WSW | WSW | WSW | W | W | WSW | W | W | WNW | WNW | WSW | ENE | ENE | NE | NE | ENE | ENE | NE | WNW |
| 9 | 15.2 | 12.4 | 16.2 | 21.8 | 19.1 | 19.6 | 31.3 | 26.1 | 26.4 | 20.6 | 14.1 | 17.6 | 17.8 | 21 | 20.4 | 21.5 | 19.9 | 16.9 | 10.2 | 7.9 | 2.9 | 4.9 | 8.3 | 3.9 | 31.3 |
| | ENE | ENE | NNE | NNE | NE | NW | N | N | N | N | NNW | N | N | NW | WNW | NW | NNW | WNW | W | WSW | SSE | ESE | SE | SE | N |
| 10 | 3 | 2.8 | 3 | 2.3 | 2.7 | 2.5 | 3.4 | 7.2 | 6.4 | 10.2 | 12.8 | 11.5 | 14.7 | 15 | 15 | 15.6 | 13.1 | 12.5 | 13.8 | 8.5 | 6.1 | 7 | 3.5 | 8.6 | 15.6 |
| | SW | SW | SSW | W | ENE | ESE | E | SW | NE | SW | SE | SE | SE | SE | SE | SE | S | SE | SE | SE | SSW | SSW | ESE | SE | SE |
| 11 | 7.7 | 8.6 | 9.9 | 10.1 | 8.2 | 9.9 | 10.1 | 9.9 | 10.6 | 13.2 | 13.6 | 16.7 | 18.6 | - | 14.4 | 11.6 | 12.7 | 9 | 8.8 | 9.1 | 7.2 | 4.6 | 7.1 | 11.4 | 18.6 |
| | SE | ESE | ESE | - | SE | ESE | SE | SE | SE | SE | SE | SE | SE | - | WSW | SSW | N | NNE | NE | S | SE | ESE | E | SE | SE |
| 12 | 11 | 7.4 | 11.2 | 6.9 | 6.8 | 9.3 | 12.9 | 13.5 | 12.9 | 12.4 | 12.3 | 16.2 | 20.2 | 20.1 | 24 | 29.2 | 29.2 | 27.4 | 24 | 21.4 | 18.8 | 9.3 | 8.2 | 5.3 | 29.2 |
| | - | E | SE | ESE | E | E | SE | ESE | SE | SE | SW | SE | SSW | WSW | WNW | NW | WNW | NW | WNW | WNW | WNW | WNW | WNW | SW | NW |
| 13 | 3.7 | 3.1 | 6.2 | 5 | 4.6 | 5.2 | 7.7 | 7.7 | 11.1 | 14.5 | 17 | 23.3 | 18.3 | 18.7 | 16.2 | 15.8 | 17.4 | 24.4 | 12.1 | 6.8 | 2.7 | 2.6 | 1.9 | 2.5 | 24.4 |
| | - | SW | W | WSW | WSW | WSW | W | SSW | NW | W | NNW | WNW | WSW | WNW | NW | W | E | E | WSW | ENE | E | WSW | WSW | SW | E |
| 14 | 1.1 | 3 | 3.2 | 4.7 | 2.4 | 3.7 | 5.3 | 5.2 | 18.9 | 24.5 | 25.5 | 26 | 25.7 | 24.5 | 21.2 | 27.3 | 23.7 | 22.3 | 19.7 | 13.4 | 6.1 | 7 | 3.7 | 3.1 | 27.3 |
| | SSW | SW | SW | WNW | SW | WSW | WSW | WSW | WNW | NW | WNW | NW | NNW | WNW | WNW | NNW | NW | NW | NW | NW | NW | NE | NE | NNE | NNW |
| 15 | 4.6 | 2.9 | 2.2 | 2.9 | 3.5 | 9.8 | 14 | 11 | 11.2 | 13.1 | 9.8 | 10.7 | 9.9 | 11.6 | 13.7 | 11.4 | 7.3 | 12.6 | 11.5 | 6.6 | 6.7 | 8.4 | 5.6 | 6.7 | 14 |
| | NNE | NNE | WSW | WSW | NE | SE | ESE | SE | SE | ESE | ESE | SE | NW | E | SE | SSW | SW | WSW | SW | SE | SE | SE | SSE | SE | ESE |
| 16 | 5.9 | 5.3 | 3.4 | 6.6 | 5.9 | 8.8 | 11.1 | 19.3 | 16.6 | 21.1 | 21.2 | 21 | 20.2 | 17.9 | 22.6 | 25.4 | 23.4 | 19.3 | 14.2 | 8.2 | 11 | 13.2 | 8.7 | 13.9 | 25.4 |
| | ESE | SE | ESE | SE | SE | S | S | SE | SE | SSW | SSW | SSW | SE | SE | SSE | SSW | SW | SW | SSW | S | S | SW | SSW | NW | SSW |
| 17 | 3.5 | 7.6 | 3.9 | 4.1 | 3.8 | 5.4 | 7.1 | 6.6 | 8.8 | 11.5 | 17.6 | 17.2 | 21.3 | 20.6 | 20.1 | 18.2 | 18.9 | 12.1 | 14.5 | 13.4 | 16.9 | 20 | 22.2 | 16.8 | 22.2 |
| | S | WNW | WNW | SW | SW | WSW | WSW | SSW | WSW | NW | NNW | WNW | NW | WNW | W | NW | - | NW | NW | NNW | NE | NE | NE | NE | NE |
| 18 | 12.7 | 15 | 13.9 | 15.9 | 14.8 | 17.6 | 15.4 | 14.8 | 15.4 | 16.4 | 15.4 | 16.6 | 17.7 | 14.7 | 11.5 | 13.8 | 16 | 15.4 | 16.6 | 14.9 | 11.5 | 14.7 | 13.6 | 14.7 | 17.7 |
| | - | NNE | NNE | NNE | NNE | NE | NE | NNE | NNE | NE | NNE | NNE | NNE | NNE | ENE | SE | ESE | ESE | ESE | SE | SE | E | SE | ESE | NNE |
| 19 | 18.6 | 16.6 | 14.8 | 16 | 15.5 | 18.8 | 22.1 | 18.7 | 18.3 | 17.9 | 20.5 | 17.9 | 21.1 | 18.8 | 11.9 | 15.4 | 15.4 | 13.5 | 10.7 | 11.8 | 9 | 9.4 | 10.2 | 9 | 22.1 |
| | ESE | SE | SE | ESE | E | E | SE | ESE | ESE | E | ESE | E | ESE | ESE | SE | SE | SE | ESE | SE | E | E | E | E | E | SE |
| 20 | 10.2 | 7.8 | 5.5 | 5.1 | 4 | 3.3 | 3.2 | 7.2 | 10.8 | 11.6 | 9.5 | 13.9 | 11.6 | 13.6 | 13.2 | 13 | 10.4 | 9.8 | 8.1 | 7.9 | 7.9 | 2.6 | 3.3 | 9.2 | 13.9 |
| | - | E | NE | E | NW | N | NNW | WNW | WNW | NW | W | WNW | WNW | WSW | NW | WNW | E | NE | E | ENE | E | ENE | NE | ENE | WNW |
| 21 | 8.1 | 4.9 | 5.6 | 5.4 | 3.3 | 3.8 | 4.5 | 6.8 | 7.7 | 4.5 | 11.5 | 13.6 | 10.1 | 16.1 | 14.4 | 13 | 15.2 | 10.3 | 10.1 | 6 | 6 | 3.2 | 4 | 3.2 | 16.1 |
| | E | E | WNW | NE | SE | NE | NNE | NW | - | WNW | NNW | NNW | - | NNE | N | N | NNW | N | NNW | NNW | NE | NW | SW | WSW | NNE |
| 22 | 3.9 | 3.5 | 3.1 | 2.5 | 2.2 | 1.9 | 8.2 | 11.2 | 16.9 | 14.4 | 16.5 | 15.4 | 15.7 | 16.8 | 15 | 14.5 | 14 | 14 | 13.2 | 9.4 | 4.6 | 3.3 | 8.2 | 8.8 | 16.9 |
| | - | WSW | SW | WSW | WSW | WNW | NW | N | NNE | N | ENE | - | NE | ENE | ENE | NE | - | ENE | ENE | NE | NW | SW | WSW | WSW | NNE |
| 23 | 5.5 | 4.9 | 5.7 | 5.5 | 11.9 | 14 | 16.3 | 14.4 | 12.3 | 13.2 | 10.4 | 12.1 | 12.7 | 15.1 | 13.6 | 15.3 | 12.4 | 21.1 | 18.3 | 11.6 | 11.8 | 9.4 | 10.5 | 13.5 | 21.1 |
| | WNW | W | WSW | WSW | WNW | WNW | WNW | NW | N | NNW | NNW | NNE | ESE | N | NE | N | NNW | NW | NE | NE | - | N | N | NNE | NW |
| 24 | 6.8 | 5.6 | 4 | 3.5 | 2.2 | 7.6 | 8.6 | 7.3 | 10.9 | 13.2 | 15 | 16.7 | 15.9 | 16 | 14 | 12.1 | 10.9 | 10.5 | 10.2 | 6.7 | 2.2 | 3 | 10.3 | 9.9 | 16.7 |
| | NNE | NW | NNW | W | W | NE | NE | SE | NE | NNE | ENE | ENE | - | N | NNE | ENE | ENE | NE | E | E | SW | SE | SE | - | ENE |
| 25 | 8.4 | 8.2 | 8.4 | 6.9 | 3.1 | 7 | 10.2 | 8.3 | 9 | 8.7 | 8.4 | 8.8 | 18.6 | 16.2 | 17.1 | 12 | 11.7 | 17.4 | 15.6 | 11.3 | 8.8 | 4.6 | 6.2 | 3.8 | 18.6 |
| | SE | SE | SE | SE | NNE | ESE | SE | SE | ESE | SE | SSW | W | WSW | WSW | SW | N | - | SSW | SW | SW | - | SE | SE | SE | WSW |
| 26 | 4.8 | 2.4 | 3.2 | 7.4 | 7.1 | 5.7 | 6.7 | 8.8 | 10.7 | 17.5 | 18.3 | 21.6 | 16.9 | 20.3 | 19.9 | 16.3 | 14 | 15.8 | 9.4 | 6.9 | 4.2 | 5.8 | 6.7 | 5.1 | 21.6 |
| | SE | SE | SW | SE | SE | SE | SSW | S | S | SW | SW | SW | SW | SE | SW | SE | SSW | SE | SE | WSW | ESE | SE | SE | SE | SW |
| 27 | 5.3 | 2.5 | 2.5 | 2.7 | 3 | 4.9 | 6.1 | 9.6 | 9.2 | 9.9 | 13.1 | 20 | 19.8 | 17 | 15.5 | 12.7 | 16.9 | 17.1 | 5.8 | 14.9 | 12.7 | 13.3 | 11 | 10.2 | 20 |
| | - | W | NW | SE | ESE | SE | SE | SE | - | SE | SE | SE | SE | ESE | SE | ESE | SE | SE | W | NNW | NW | NNE | NNW | NW | SE |
| 28 | 12.3 | 7.4 | 7.5 | 4.4 | 4.9 | 3.8 | 7.7 | 7.9 | 8.5 | 13.3 | 16 | 17.8 | 14.4 | 14.3 | 15.6 | 19.2 | 18.7 | 19.4 | 18.1 | 19.8 | 21.1 | 16.5 | 17.3 | 17.5 | 21.1 |
| | WNW | NW | NW | NW | W | WNW | NW | WNW | NW | WNW | NW | WNW | WNW | NW | WNW | NW | - | NW | NW | NW | NNW | NNW | N | N | NNW |
| 29 | 11.7 | 9.2 | 9.6 | 10.7 | 11.4 | 9.8 | 11.5 | 15.6 | 12.6 | 14.7 | 17.1 | 14.6 | 17.6 | 15.8 | 12.6 | 11.7 | 10.8 | 12 | 13.3 | 11.4 | 6.4 | 3 | 5.5 | 6 | 17.6 |
| | N | NNW | NNW | NNW | NNE | NNE | NNE | NE | NE | N | NE | NE | E | E | ENE | E | E | SE | SE | ESE | - | WSW | ESE | SE | E |
| 30 | 1.8 | 1.3 | 2.2 | 2.7 | 2.2 | 1.8 | 6.3 | 8 | 8 | 9.2 | 11.4 | 12.1 | 12.2 | 12.1 | 10.8 | 13.3 | 11.3 | 13.9 | 11.5 | 10.1 | 4.6 | 3 | 1.8 | 4.6 | 13.9 |
| | E | WSW | SE | W | SE | WNW | SE | SE | SSW | WNW | ESE | SE | SE | SE | SE | ESE | SSW | SW | SSW | SW | - | SE | SE | SE | SW |
| 31 | 4.1 | 2.3 | 3.4 | 3.8 | 4.5 | 5 | 6.4 | 8.2 | 11.3 | 16 | 11.4 | 16.2 | 13.3 | 18 | 13.6 | 15.1 | 12.9 | 12.1 | 7.7 | 6.5 | 4.9 | 2.6 | 2.2 | 3.4 | 18 |
| | SE | SE | SSE | SE | ESE | SW | SSW | SE | SE | SE | SW | SW | SE | SE | SW | SW | SE | SW | S | SE | SE | NE | ESE | SE | SE |
| PEAK | 25.8 | 28.0 | 26.2 | 21.9 | 19.1 | 19.6 | 31.3 | 26.1 | 29.6 | 32.2 | 33.6 | 27.3 | 32.9 | 29.5 | 31.5 | 29.5 | 29.2 | 32.4 | 32.0 | 36.0 | 33.0 | 28.1 | 28.6 | 30.4 | |
| | SE | SE | SE | SE | NE | NW | N | N | SW | SW | SW | W | WSW | SW | SW | WNW | WNW | SE | SE | SE | SE | SE | SE | SE | |

**STATUS FLAG CODES**

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

***INSTANTANEOUS MAXIUM BASED ON ONE-MINUTE AVERAGES**

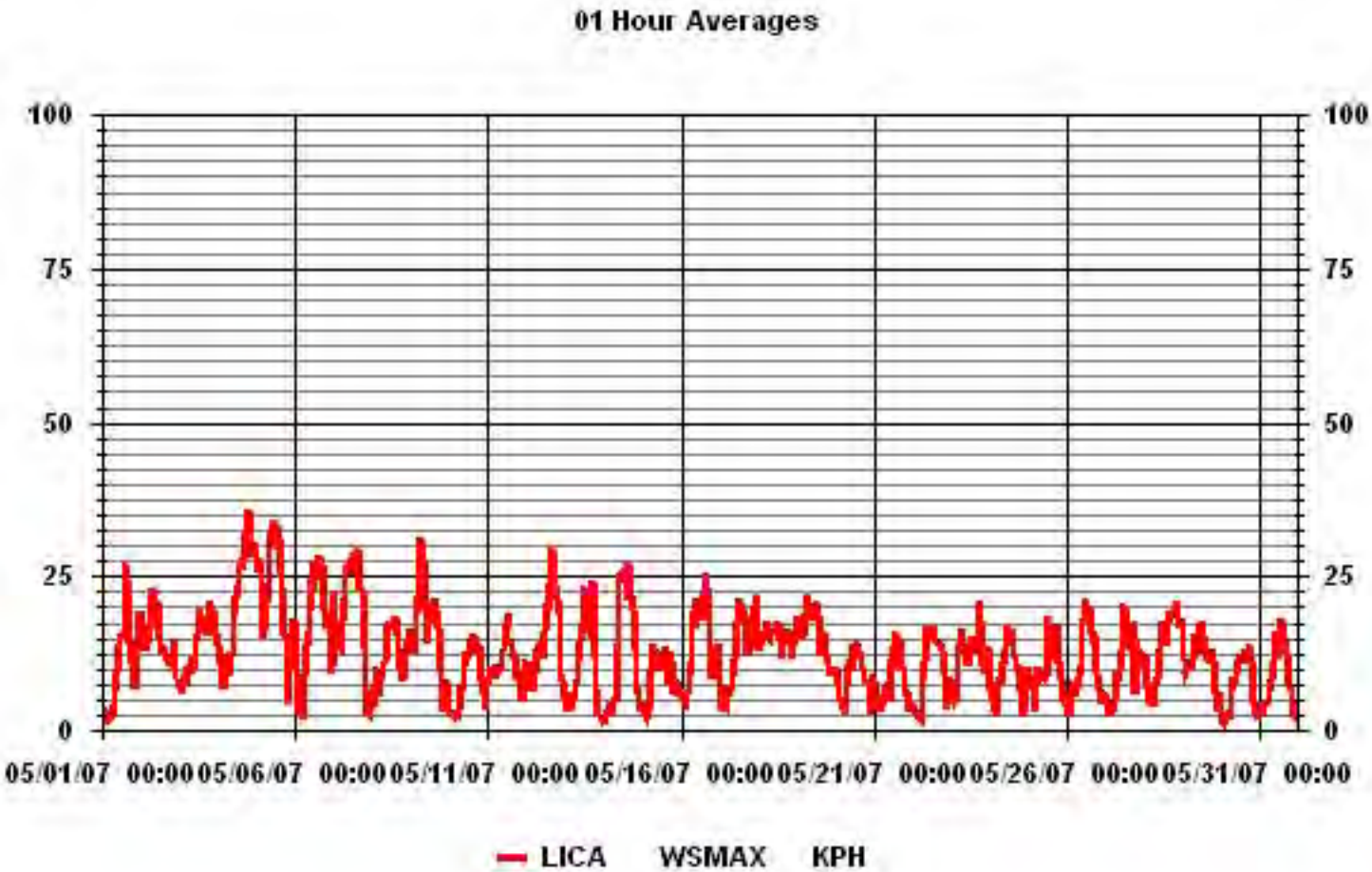
**NOTE: WIND DIRECTION CORRESPONDS TO WIND SPEED MAXIMUMS**

**MONTHLY SUMMARY**

| | | | | |
|---|---|---|---|---|
| MAXIMUM INSTANTANEOUS READING | 36 | KPH | @ HOUR(S) | 20 |
| | SE | DEG | ON DAY(S) | 4 |

Maxxam Analytics Inc

**MOUNTAIN STANDARD TIME**


01 Hour Averages
100
75
50
25
0
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA WSMAX KPH

# VECTOR
# WIND DIRECTION

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MAY 2007

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

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 24-HOUR | 24-HOUR AVG | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOUR END | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 | AVG. | QUANDRANT | RDGS. |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 251 | 115 | 148 | 149 | 132 | 137 | 204 | 235 | 225 | 111 | 105 | 79 | 151 | 157 | 157 | 136 | 138 | 155 | 151 | 137 | 118 | 116 | 112 | 108 | 132 | SE | 24 |
| 2 | 83 | 82 | 86 | 78 | 76 | 84 | 87 | 85 | 89 | 76 | 83 | 45 | 49 | 27 | 52 | 64 | 41 | 25 | 32 | 33 | 41 | 39 | 40 | 23 | 63 | ENE | 24 |
| 3 | 38 | 38 | 28 | 43 | 45 | 45 | 34 | 41 | 31 | 46 | 95 | 68 | 58 | 41 | 36 | 32 | 35 | 34 | 33 | 36 | 38 | 38 | 43 | 46 | 42 | NE | 24 |
| 4 | 40 | 48 | 45 | 32 | 41 | 53 | 50 | 16 | 63 | 70 | 86 | 84 | 80 | 81 | 83 | 105 | 129 | 130 | 134 | 135 | 134 | 129 | 135 | 135 | 103 | ESE | 24 |
| 5 | 137 | 135 | 136 | 149 | 155 | 168 | 211 | 212 | 217 | 228 | 232 | **P** | 235 | 237 | 235 | 247 | 246 | 253 | 246 | 156 | 144 | 135 | 136 | 213 | 204 | SSW | 23 |
| 6 | 322 | 118 | 229 | 154 | 237 | 265 | 234 | 227 | 245 | 244 | 244 | 251 | 246 | 242 | 251 | 243 | 238 | 245 | 232 | 214 | 221 | 270 | 311 | 260 | 242 | WSW | 24 |
| 7 | 293 | 241 | 262 | 274 | 252 | 252 | 256 | 271 | 280 | 269 | 278 | 268 | 263 | 267 | 266 | 274 | 271 | 269 | 283 | 282 | 264 | 141 | 349 | 183 | 268 | W | 24 |
| 8 | 181 | 248 | 276 | 219 | 232 | 221 | 241 | 242 | 248 | 254 | 270 | 269 | 274 | 275 | 286 | 275 | 10 | 44 | 51 | 39 | 42 | 62 | 64 | 35 | 290 | WNW | 24 |
| 9 | 55 | 32 | 20 | 28 | 32 | 13 | 1 | 16 | 3 | 350 | 329 | 0 | 352 | 331 | 329 | 321 | 313 | 296 | 270 | 228 | 131 | 112 | 140 | 149 | 356 | N | 24 |
| 10 | 218 | 235 | 277 | 279 | 89 | 77 | 136 | 255 | 31 | 242 | 156 | 184 | 161 | 134 | 143 | 131 | 151 | 126 | 135 | 135 | 193 | 201 | 120 | 123 | 148 | SE | 24 |
| 11 | 125 | 126 | 125 | 124 | 121 | 122 | 128 | 122 | 116 | 121 | 132 | 152 | 147 | **P** | 195 | 197 | 31 | 29 | 41 | 163 | 155 | 144 | 99 | 121 | 125 | SE | 23 |
| 12 | 118 | 92 | 120 | 89 | 73 | 97 | 117 | 129 | 128 | 144 | 181 | 158 | 215 | 248 | 276 | 294 | 285 | 303 | 290 | 295 | 307 | 296 | 281 | 248 | 272 | W | 24 |
| 13 | 232 | 226 | 245 | 237 | 251 | 251 | 257 | 248 | 346 | 279 | 285 | 297 | 274 | 264 | 296 | 283 | 292 | 306 | 306 | 39 | 24 | 144 | 253 | 235 | 279 | W | 24 |
| 14 | 193 | 246 | 212 | 234 | 207 | 240 | 233 | 283 | 326 | 306 | 301 | 308 | 320 | 313 | 306 | 316 | 321 | 331 | 324 | 313 | 290 | 42 | 50 | 32 | 313 | NW | 24 |
| 15 | 54 | 60 | 243 | 243 | 50 | 99 | 124 | 114 | 112 | 110 | 116 | 91 | 68 | 106 | 178 | 223 | 127 | 216 | 222 | 143 | 139 | 138 | 140 | 143 | 130 | SE | 24 |
| 16 | 149 | 168 | 140 | 141 | 165 | 157 | 171 | 159 | 151 | 172 | 190 | 173 | 173 | 173 | 183 | 200 | 201 | 204 | 203 | 179 | 169 | 209 | 201 | 243 | 181 | S | 24 |
| 17 | 194 | 243 | 269 | 171 | 223 | 243 | 240 | 235 | 241 | 321 | 315 | 298 | 316 | 291 | 285 | 292 | 290 | 296 | 320 | 345 | 20 | 30 | 38 | 36 | 320 | NW | 24 |
| 18 | 15 | 27 | 23 | 24 | 34 | 44 | 38 | 30 | 32 | 33 | 33 | 27 | 29 | 28 | 87 | 102 | 108 | 119 | 115 | 113 | 108 | 102 | 108 | 119 | 57 | ENE | 24 |
| 19 | 123 | 125 | 115 | 124 | 106 | 100 | 119 | 111 | 108 | 102 | 105 | 101 | 96 | 110 | 106 | 124 | 111 | 112 | 104 | 89 | 92 | 90 | 88 | 85 | 107 | ESE | 24 |
| 20 | 84 | 86 | 55 | 82 | 359 | 10 | 340 | 286 | 285 | 303 | 283 | 281 | 263 | 276 | 280 | 43 | 82 | 55 | 66 | 77 | 99 | 76 | 57 | 66 | 0 | N | 24 |
| 21 | 91 | 142 | 230 | 42 | 125 | 52 | 48 | 359 | 333 | 290 | 315 | 342 | 359 | 20 | 11 | 22 | 21 | 21 | 6 | 9 | 351 | 35 | 261 | 242 | 8 | N | 24 |
| 22 | 235 | 253 | 237 | 232 | 229 | 252 | 334 | 6 | 19 | 28 | 40 | 45 | 47 | 54 | 49 | 49 | 47 | 49 | 55 | 48 | 330 | 218 | 243 | 250 | 36 | NE | 24 |
| 23 | 174 | 211 | 215 | 246 | 293 | 298 | 299 | 314 | 357 | 332 | 347 | 55 | 42 | 19 | 34 | 1 | 0 | 331 | 34 | 11 | 345 | 348 | 9 | 30 | 350 | N | 24 |
| 24 | 36 | 346 | 358 | 254 | 216 | 44 | 50 | 63 | 32 | 32 | 46 | 54 | 43 | 34 | 41 | 44 | 48 | 48 | 83 | 81 | 213 | 118 | 113 | 122 | 51 | NE | 24 |
| 25 | 130 | 125 | 152 | 127 | 75 | 116 | 119 | 127 | 132 | 157 | 138 | 228 | 240 | 245 | 174 | 59 | 93 | 219 | 213 | 206 | 196 | 138 | 142 | 146 | 167 | SSE | 24 |
| 26 | 133 | 120 | 157 | 130 | 134 | 146 | 177 | 177 | 157 | 194 | 207 | 197 | 196 | 169 | 189 | 162 | 193 | 152 | 165 | 164 | 125 | 125 | 134 | 130 | 170 | SSE | 24 |
| 27 | 139 | 25 | 27 | 84 | 79 | 106 | 114 | 134 | 121 | 135 | 120 | 122 | 119 | 133 | 134 | 137 | 132 | 106 | 278 | 307 | 334 | 347 | 27 | 342 | 111 | ESE | 24 |
| 28 | 303 | 310 | 334 | 357 | 277 | 313 | 316 | 311 | 318 | 313 | 316 | 310 | 299 | 307 | 308 | 306 | 308 | 317 | 331 | 333 | 338 | 346 | 351 | 355 | 321 | NW | 24 |
| 29 | 354 | 338 | 346 | 345 | 1 | 19 | 35 | 38 | 37 | 24 | 37 | 48 | 61 | 72 | 88 | 80 | 65 | 94 | 120 | 128 | 131 | 191 | 127 | 133 | 48 | NE | 24 |
| 30 | 99 | 274 | 108 | 253 | 138 | 280 | 120 | 128 | 174 | 262 | 122 | 119 | 114 | 133 | 152 | 146 | 201 | 209 | 203 | 207 | 182 | 139 | 134 | 137 | 158 | SSE | 24 |
| 31 | 157 | 151 | 138 | 143 | 119 | 200 | 176 | 142 | 171 | 146 | 182 | 173 | 166 | 157 | 180 | 177 | 188 | 186 | 199 | 155 | 147 | 87 | 88 | 226 | 166 | SSE | 24 |
| HOURLY AVG | 354 | 346 | 358 | 357 | 359 | 313 | 340 | 359 | 357 | 350 | 347 | 342 | 359 | 331 | 329 | 321 | 321 | 331 | 331 | 345 | 351 | 348 | 351 | 355 | | | |

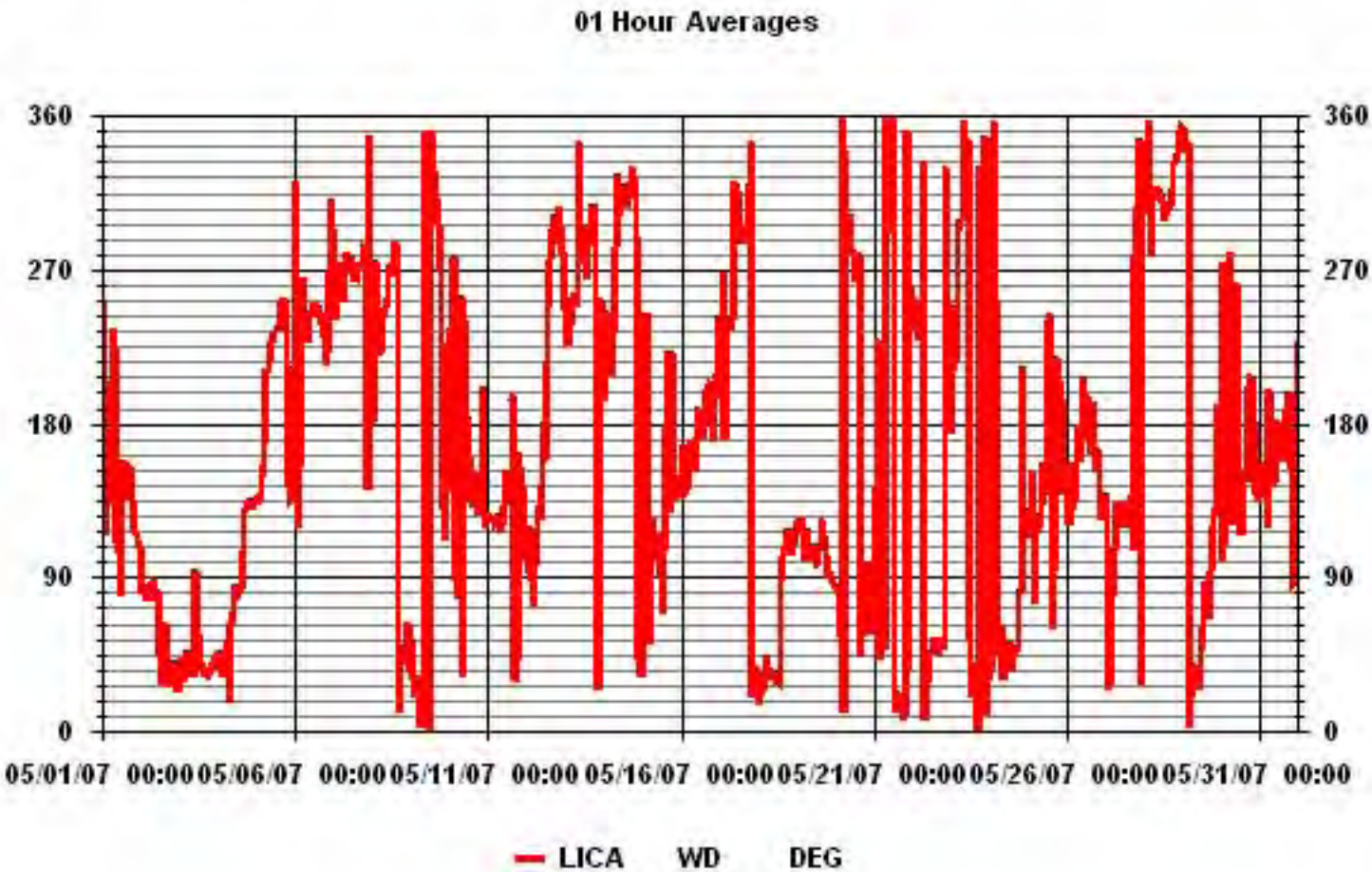
**STATUS FLAG CODES**

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

| | |
|---|---|
| LAST CALIBRATION: | NA |
| DECLINATION : | 19 DEGREES FROM MAGNETIC NORTH |

| | | | | | |
|---|---|---|---|---|---|
| MONTHLY CALIBRATION TIME: | 0 | HRS | OPERATIONAL TIME: | 742 | HRS |
| STANDARD DEVIATION | 97.93 | | AMD OPERATION UPTIME | 99.7 | % |
| | | | MONTHLY AVERAGE | 63.00 | DEG |

**MOUNTAIN STANDARD TIME**


01 Hour Averages
360
270
180
90
0
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA WD DEG

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

MAY 2007

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

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

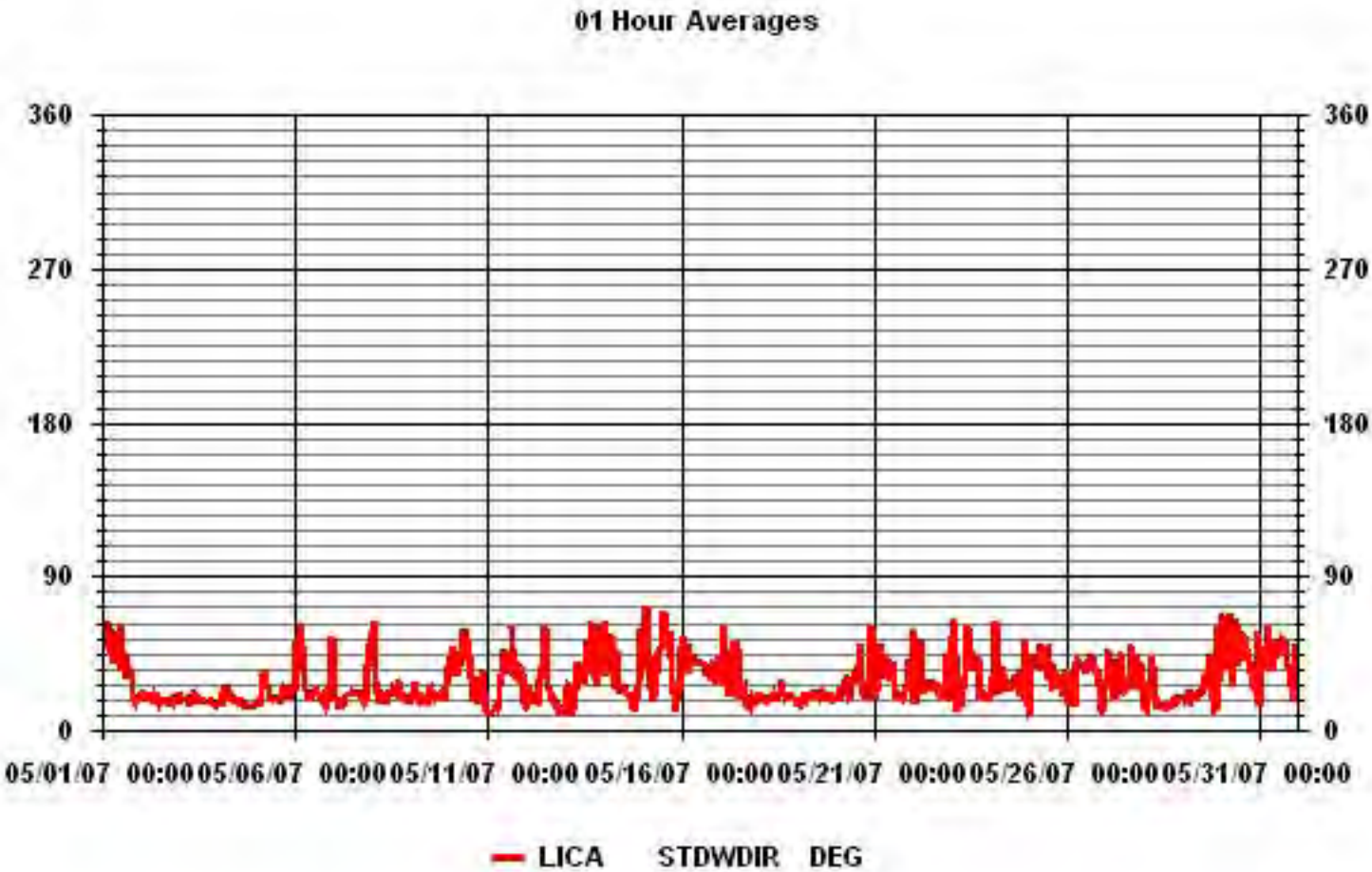
**STATUS FLAG CODES**

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

LAST CALIBRATION: NA

IZS CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 742 HRS

**MOUNTAIN STANDARD TIME**


01 Hour Averages
360
270
180
90
0
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA STDWDIR DEG

# TEMPERATURE

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

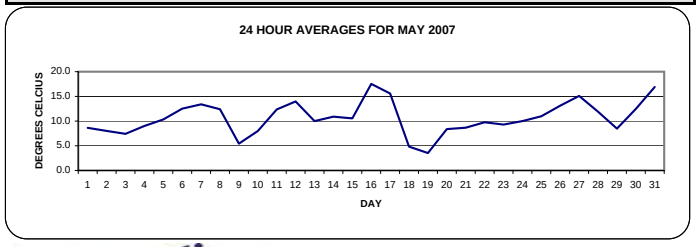
MAY 2007

**AMBIENT TEMPERATURE** hourly averages (Degrees C)

| HOUR START | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | 24-HOUR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOUR END | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 0:00 | MAX. | AVG. | RDGS. |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | -0.4 | -1 | -1.7 | -2.2 | **-2.6** | -1.1 | 3.6 | 8.8 | 12 | 13.5 | 14.5 | 15.2 | 15.6 | 15.3 | 14.6 | 14.7 | 14.2 | 12.9 | 11.5 | 10.7 | 10.4 | 10.2 | 9.7 | 8.8 | 15.6 | 8.6 | 24 |
| 2 | 8 | 7.8 | 7.3 | 7.2 | 7.5 | 7.8 | 8.2 | 8.3 | 8.7 | 9.3 | 8.9 | 8.4 | 9.2 | 9.8 | 10.1 | 9.1 | 8.3 | 8 | 7.3 | 7.4 | 7.1 | 6.4 | 6.2 | 6 | 10.1 | 8.0 | 24 |
| 3 | 6.1 | 5.9 | 5.6 | 5.2 | 5.1 | 5.1 | 5.2 | 5.6 | 6.1 | 8.4 | 10.5 | 10.9 | 11.4 | 10.5 | 8.8 | 8.8 | 8.9 | 9.2 | 8.2 | 7.3 | 6.4 | 6.1 | 6.3 | 6.3 | 11.4 | 7.4 | 24 |
| 4 | 5.7 | 5.4 | 5.3 | 4.4 | 4.4 | 6.8 | 8.3 | 8.3 | 9.6 | 10.9 | 10.1 | 11.1 | 12.2 | 12.8 | 13.1 | 12.7 | 12.4 | 11.2 | 10.4 | 9.4 | 8.1 | 7.7 | 8.1 | 7.9 | 13.1 | 9.0 | 24 |
| 5 | 7.3 | 7.2 | 7.1 | 7.3 | 6.5 | 6 | 5.6 | 6.5 | 7.8 | 8.7 | 9.2 | **P** | 12.2 | 13.5 | 13.7 | 14.6 | 15.1 | 15.5 | 14.9 | 13.8 | 12.9 | 12 | 10.4 | 9.8 | 15.5 | 10.3 | 23 |
| 6 | 9.1 | 7.6 | 4 | 1.9 | 0.6 | 2.3 | 6.2 | 9.6 | 12.5 | 14 | 15.1 | 15.8 | 16.6 | 17.5 | 18.2 | 18.7 | 18.6 | 18.6 | 18.3 | 17.1 | 16.3 | 15.5 | 13.9 | 12.4 | 18.7 | 12.5 | 24 |
| 7 | 11.7 | 11.5 | 11.1 | 10.8 | 9.5 | 9.5 | 10.3 | 11.2 | 12.3 | 13 | 14 | 14.8 | 15.5 | 16.3 | 17 | 17.4 | 17.5 | 18.2 | 17.2 | 15.9 | 13.7 | 11.9 | 10.8 | 10.3 | 18.2 | 13.4 | 24 |
| 8 | 10 | 9.7 | 9.7 | 9.7 | 10 | 9.8 | 9.9 | 10.5 | 11.4 | 12.4 | 13.1 | 14.2 | 14 | 15 | 15.8 | 16.2 | 15.5 | 15.3 | 14.3 | 13.5 | 12.8 | 12.2 | 12.3 | 10.3 | 16.2 | 12.4 | 24 |
| 9 | 10.7 | 9.5 | 7.4 | 6.6 | 5.8 | 5.9 | 4.9 | 3.4 | 1.8 | 0.7 | 1.2 | 3.4 | 4.6 | 5.7 | 6.2 | 6.5 | 7.4 | 8.6 | 9.2 | 8.3 | 4.5 | 2.8 | 3.1 | 2.1 | 10.7 | 5.4 | 24 |
| 10 | 0.4 | -0.5 | -1 | -1.4 | -1.6 | 0.7 | 4 | 6.7 | 9.2 | 10.9 | 11.8 | 13.1 | 13.4 | 13.6 | 14 | 13.3 | 13 | 13.1 | 13.3 | 12.3 | 11 | 9.4 | 7.4 | 5.7 | 14.0 | 8.0 | 24 |
| 11 | 6 | 5.8 | 5.5 | 4.9 | 4.2 | 5.4 | 7.1 | 8.9 | 10.6 | 13.3 | 15.3 | 16.3 | 16.9 | **P** | 19.3 | 19.7 | 19.3 | 19 | 18.1 | 17 | 15.6 | 12 | 12 | 11.8 | 19.7 | 12.3 | 23 |
| 12 | 11.5 | 10.3 | 9.5 | 10 | 8.7 | 9.6 | 10.6 | 11.7 | 13.4 | 15.5 | 17.4 | 19.2 | 20.6 | 21.6 | 21.5 | 19.6 | 18.5 | 17.1 | 16.2 | 14.5 | 12.8 | 10.4 | 8.9 | 6.4 | 21.6 | 14.0 | 24 |
| 13 | 3.1 | 1.3 | 0.7 | 0 | -0.2 | 2.3 | 5.9 | 9 | 11.4 | 12.8 | 13.9 | 14.6 | 15.6 | 16.5 | 16.9 | 17.1 | 17.4 | 17.3 | 16.7 | 15.9 | 12.5 | 8.6 | 6.3 | 4.3 | 17.4 | 10.0 | 24 |
| 14 | 3.4 | 3.4 | 1.7 | 0.8 | 1.7 | 4.8 | 7.9 | 13 | 13.4 | 14.7 | 15.4 | 16.1 | 16.4 | 17 | 17.7 | 17.6 | 17.2 | 17 | 16 | 14.9 | 11.1 | 8.9 | 7.2 | 4.2 | 17.7 | 10.9 | 24 |
| 15 | 3.4 | 1.7 | 0.7 | -0.5 | -0.7 | 2.4 | 4.2 | 5.8 | 8.2 | 10.6 | 13 | 14.9 | 16.6 | 17.7 | 18.3 | 18.1 | 18 | 18.7 | 18.6 | 16.5 | 12.9 | 12.3 | 11.2 | 10.4 | 18.7 | 10.5 | 24 |
| 16 | 9.5 | 8.9 | 8.7 | 9.2 | 9.3 | 10.5 | 12.8 | 14.5 | 16.7 | 18.3 | 19.4 | 20.9 | 21.9 | 22.8 | 23.4 | 24.4 | **24.7** | 24.6 | 23.7 | 21.8 | 19.7 | 19.5 | 18.5 | 16.9 | 24.7 | **17.5** | 24 |
| 17 | 13.6 | 10.6 | 8.8 | 7.1 | 6 | 8.4 | 11.9 | 15.1 | 17.6 | 19.9 | 20.9 | 21.4 | 21 | 22.1 | 22.3 | 21.9 | 20.9 | 19.6 | 18.6 | 17.5 | 15.6 | 12.3 | 11 | 9.9 | 22.3 | 15.6 | 24 |
| 18 | 8.4 | 7.3 | 6.3 | 4.8 | 4.2 | 3.8 | 3.5 | 3.7 | 4.3 | 4.4 | 4.6 | 4.8 | 5.2 | 5.8 | 5.9 | 6 | 5.8 | 5.3 | 4.7 | 4.1 | 3.6 | 3.3 | 3.1 | 3 | 8.4 | 4.8 | 24 |
| 19 | 3.1 | 2.9 | 2.8 | 2.6 | 2 | 1.1 | 0.9 | 1.5 | 2.3 | 2.8 | 3.5 | 4.2 | 4.6 | 4.4 | 4.8 | 4.8 | 4.7 | 4.6 | 4.2 | 4.1 | 4.4 | 4.8 | 4.9 | 4.7 | 4.9 | 3.5 | 24 |
| 20 | 4.3 | 4.4 | 4.4 | 4.4 | 4.4 | 4.6 | 5 | 5.6 | 6.2 | 7.2 | 8.8 | 9.7 | 10.4 | 11.5 | 12.7 | 13.5 | 13.5 | 13.6 | 13 | 13.1 | 10.7 | 7.6 | 5.8 | 6.7 | 13.6 | 8.4 | 24 |
| 21 | 6.5 | 5.9 | 4.2 | 3.3 | 3.1 | 4.3 | 6.1 | 6.8 | 7.5 | 8.8 | 11.2 | 12 | 12.8 | 12.4 | 12.5 | 12.9 | 12.8 | 11.7 | 11.1 | 10.1 | 9.4 | 8.6 | 7.1 | 6.8 | 12.9 | 8.7 | 24 |
| 22 | 6.6 | 5.4 | 4.2 | 3 | 2.4 | 3.8 | 6.2 | 8.3 | 10.3 | 11.7 | 12.3 | 13.3 | 14.2 | 15 | 15.4 | 15.6 | 15.8 | 15.7 | 15.2 | 14 | 10.2 | 6.5 | 4.1 | 4.9 | 15.8 | 9.8 | 24 |
| 23 | 3.9 | 1.9 | 1 | 2.1 | 4.9 | 5 | 4.9 | 5.7 | 7.3 | 9.4 | 11.4 | 13 | 14.5 | 15.2 | 15.6 | 15 | 15 | 14.7 | 12 | 11.2 | 10.5 | 10.3 | 9.9 | 8.5 | 15.6 | 9.3 | 24 |
| 24 | 7.3 | 5.7 | 4.2 | 2.7 | 1.8 | 4 | 7.1 | 9.3 | 10.3 | 10.9 | 11.8 | 12.4 | 13.1 | 13.5 | 14 | 14.4 | 14.5 | 14.4 | 13.6 | 13.4 | 11.6 | 10.3 | 10.3 | 9.3 | 14.5 | 10.0 | 24 |
| 25 | 8.6 | 7.3 | 6.1 | 4.7 | 4.3 | 6.4 | 8 | 10.4 | 12.5 | 14 | 14.8 | 15.1 | 16.8 | 15.9 | 11.6 | 12.7 | 14.3 | 15.6 | 14.9 | 13.7 | 11.5 | 8.8 | 8 | 7.3 | 16.8 | 11.0 | 24 |
| 26 | 5.6 | 4.2 | 2.8 | 2.2 | 4 | 6.6 | 8.8 | 11.3 | 13.9 | 15.6 | 16.7 | 17.7 | 18.6 | 19.5 | 20.2 | 20.4 | 20.4 | 20.9 | 20.5 | 18.6 | 14.1 | 11.7 | 10.8 | 9.8 | 20.9 | 13.1 | 24 |
| 27 | 9.3 | 7.2 | 6.1 | 5.6 | 5.5 | 8.7 | 11.7 | 15.1 | 16.9 | 19.3 | 21.5 | 22.5 | 22.5 | 22.5 | 22.4 | 23.2 | 23 | 18.6 | 16.9 | 14.9 | 13.6 | 12.5 | 11.7 | 10.9 | 23.2 | 15.1 | 24 |
| 28 | 11 | 11 | 11.2 | 11.1 | 10.2 | 10.8 | 11.7 | 12.4 | 12.9 | 13.5 | 12.7 | 12.1 | 12.2 | 12.7 | 12.7 | 12.8 | 13.1 | 13.3 | 13.5 | 12.7 | 11.6 | 11 | 10.1 | 9.1 | 13.5 | 11.9 | 24 |
| 29 | 8.4 | 7.5 | 7.2 | 7 | 7.1 | 6.9 | 6.8 | 6.6 | 6.5 | 6.6 | 6.8 | 7.6 | 8.5 | 9.4 | 10.5 | 11.7 | 12.9 | 13.3 | 12.9 | 11.7 | 9.7 | 6.9 | 5.4 | 5.4 | 13.3 | 8.5 | 24 |
| 30 | 3.9 | 2.7 | 1.8 | 1 | 0.8 | 3.4 | 7 | 9.3 | 11.9 | 13.5 | 15.3 | 16.7 | 17.9 | 19.1 | 20.2 | 20.7 | 21.1 | 21.2 | 20.6 | 19.5 | 16.7 | 12.9 | 11.1 | 10.7 | 21.2 | 12.5 | 24 |
| 31 | 11 | 9.1 | 9.1 | 9.1 | 8.9 | 10.8 | 12.7 | 15.3 | 17.3 | 18.5 | 19.8 | 20.8 | 21.8 | 22.7 | 23.4 | 23.6 | 23.9 | 23.9 | 23.9 | 22.6 | 18.4 | 14.8 | 12.8 | 11.3 | 23.9 | 16.9 | 24 |
| HOURLY MAX | 13.6 | 11.5 | 11.2 | 11.1 | 10.2 | 10.8 | 12.8 | 15.3 | 17.6 | 19.9 | 21.5 | 22.5 | 22.5 | 22.8 | 23.4 | 24.4 | 24.7 | 24.6 | 23.9 | 22.6 | 19.7 | 19.5 | 18.5 | 16.9 | | | |
| HOURLY AVG | 7.0 | 6.1 | 5.2 | 4.7 | 4.4 | 5.7 | 7.3 | 9.0 | 10.4 | 11.7 | 12.7 | 13.7 | 14.4 | 14.9 | 15.3 | 15.4 | 15.4 | 15.2 | 14.5 | 13.5 | 11.6 | 9.9 | 9.0 | 8.1 | | | |

**STATUS FLAG CODES**

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



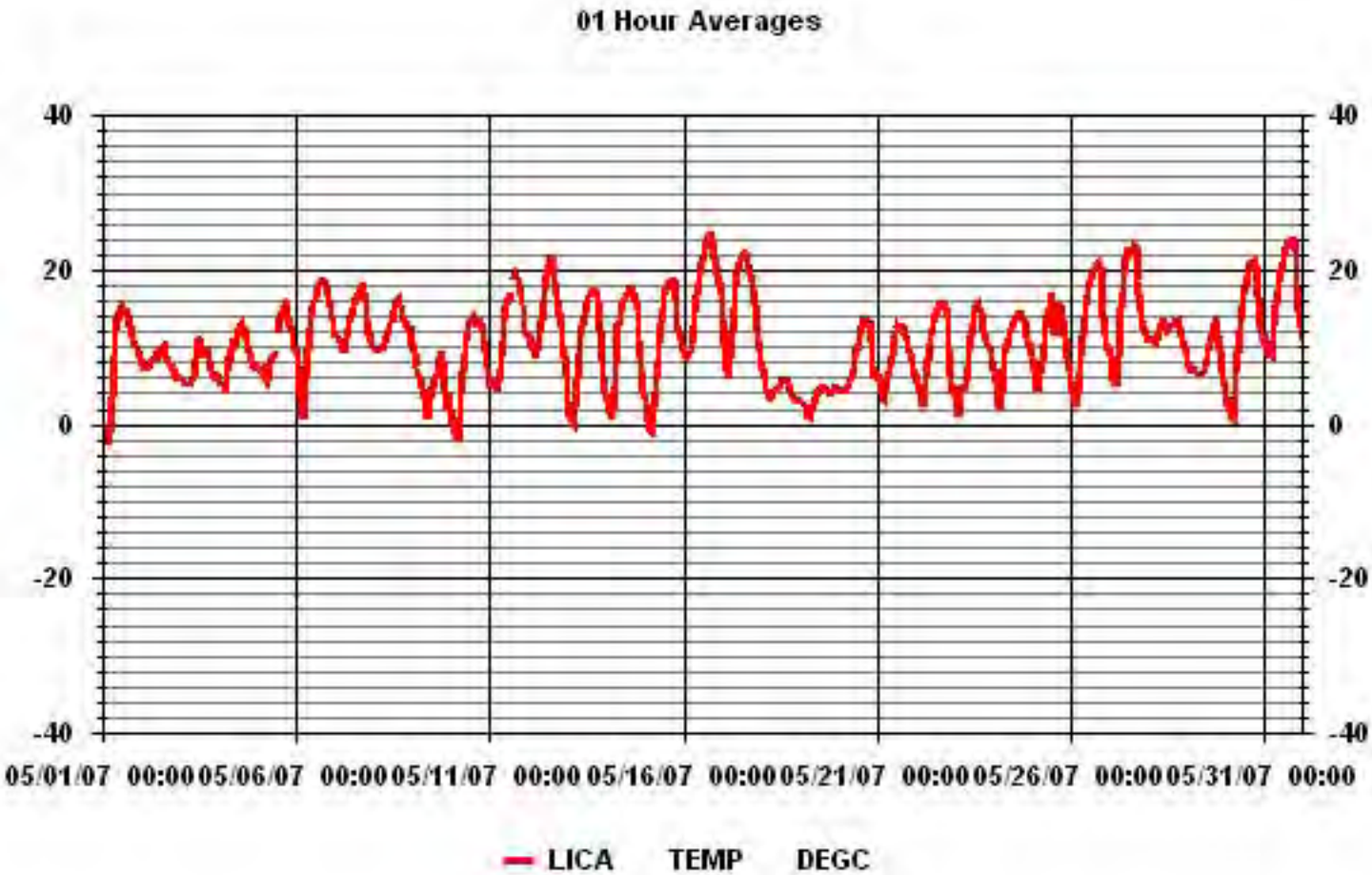

**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| MINIMUM 1-HR AVERAGE: | -2.6 | $^{o}C$ | @ HOUR(S) | 5 | ON DAY(S) | 1 |
| MAXIMUM 1-HR AVERAGE: | 24.7 | $^{o}C$ | @ HOUR(S) | 17 | ON DAY(S) | 16 |
| MAXIMUM 24-HR AVERAGE: | 17.5 | $^{o}C$ | | | ON DAY(S) | 16 |

| | | | | | |
|---|---|---|---|---|---|
| CALIBRATION TIME: | 0 | HRS | OPERATIONAL TIME: | 742 | HRS |
| | | | AMD OPERATION UPTIME: | 99.7 | % |
| STANDARD DEVIATION: | 5.59 | | MONTHLY AVERAGE: | 10.62 | $^{o}C$ |

**MOUNTAIN STANDARD TIME**

Maxxam Analytics Inc


01 Hour Averages
40
20
0
-20
-40
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA TEMP DEGC

# RELATIVE HUMIDITY

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

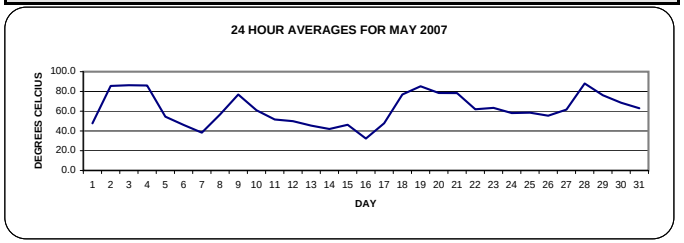
MAY 2007

**RELATIVE HUMIDITY** hourly averages (%)

| 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 | 77.5 | 75.8 | 77.3 | 80.1 | 78.3 | 72.3 | 60.2 | 38.4 | 28.9 | 24.2 | 22.0 | 21.8 | 19.6 | 21.8 | 27.1 | 28.1 | 28.4 | 37.0 | 44.3 | 48.6 | 49.7 | 53.3 | 60.0 | 70.1 | 80.1 | 47.7 | 24 |
| 2 | 80.0 | 80.8 | 84.6 | 83.2 | 80.8 | 76.9 | 75.0 | 77.3 | 77.2 | 73.9 | 79.2 | 85.5 | 81.3 | 78.2 | 76.8 | 86.6 | 93.5 | 96.8 | 97.7 | 97.7 | 98.1 | 98.0 | **98.3** | 96.7 | 98.3 | 85.6 | 24 |
| 3 | 93.6 | 92.7 | 92.8 | 93.0 | 93.0 | 93.2 | 92.6 | 90.8 | 89.5 | 84.1 | 74.8 | 71.3 | 69.1 | 74.6 | 82.6 | 82.1 | 81.3 | 78.1 | 81.0 | 85.6 | 91.7 | 95.3 | 94.1 | 94.0 | 95.3 | 86.3 | 24 |
| 4 | 95.1 | 95.8 | 95.8 | 96.6 | 97.2 | 98.0 | 94.8 | 93.0 | 90.4 | 82.7 | 93.6 | 94.5 | 93.7 | 92.8 | 90.5 | 92.4 | 82.2 | 75.7 | 69.4 | 66.8 | 66.9 | 69.3 | 68.8 | 68.7 | 98.0 | 86.0 | 24 |
| 5 | 71.1 | 72.8 | 74.4 | 72.8 | 79.4 | 82.8 | 82.4 | 75.7 | 71.4 | 65.3 | 59.4 | **P** | 42.7 | 35.9 | 33.2 | 30.3 | 27.8 | 28.0 | 30.0 | 35.7 | 37.7 | 41.6 | 48.2 | 54.5 | 82.8 | 54.5 | 23 |
| 6 | 57.0 | 66.8 | 83.4 | 86.9 | 91.2 | 82.5 | 74.7 | 59.8 | 38.8 | 32.3 | 27.5 | 28.8 | 28.1 | 27.0 | 25.6 | 24.7 | 25.2 | 24.7 | 26.3 | 29.7 | 32.0 | 37.1 | 43.7 | 52.7 | 91.2 | 46.1 | 24 |
| 7 | 56.0 | 57.3 | 57.4 | 51.9 | 53.1 | 51.0 | 44.2 | 39.3 | 35.4 | 31.1 | 26.0 | 22.4 | 20.4 | 20.6 | 21.8 | 23.0 | 24.6 | 25.3 | 27.5 | 31.0 | 38.1 | 48.1 | 55.5 | 58.5 | 58.5 | 38.3 | 24 |
| 8 | 64.1 | 70.2 | 71.9 | 73.9 | 73.5 | 76.5 | 78.0 | 73.4 | 64.1 | 56.0 | 54.7 | 49.6 | 47.7 | 44.4 | 41.7 | 37.3 | 40.9 | 41.3 | 42.8 | 45.2 | 47.7 | 51.9 | 51.9 | 61.9 | 78.0 | 56.7 | 24 |
| 9 | 62.8 | 72.0 | 82.6 | 87.5 | 88.2 | 88.6 | 86.4 | 85.3 | 88.6 | 95.8 | 95.3 | 89.8 | 84.5 | 73.5 | 64.6 | 60.8 | 57.4 | 52.3 | 50.8 | 58.1 | 77.6 | 83.0 | 77.5 | 82.1 | 95.8 | 76.9 | 24 |
| 10 | 90.4 | 93.7 | 94.9 | 94.8 | 93.8 | 85.2 | 81.8 | 73.8 | 62.9 | 53.2 | 48.9 | 42.5 | 39.6 | 37.5 | 36.6 | 37.9 | 40.2 | 39.8 | 37.5 | 43.1 | 48.0 | 53.8 | 62.3 | 70.3 | 94.9 | 60.9 | 24 |
| 11 | 70.4 | 70.0 | 69.7 | 71.0 | 71.6 | 64.6 | 58.6 | 54.3 | 52.2 | 46.7 | 42.5 | 41.4 | 40.1 | **P** | 32.5 | 31.0 | 34.2 | 35.1 | 39.2 | 39.0 | 43.8 | 58.1 | 59.1 | 62.0 | 71.6 | 51.6 | 23 |
| 12 | 66.2 | 72.0 | 77.5 | 75.8 | 82.9 | 80.2 | 75.4 | 71.0 | 65.1 | 56.1 | 49.6 | 43.1 | 36.4 | 34.8 | 37.0 | 32.4 | 27.0 | 28.5 | 27.7 | 23.1 | 23.8 | 30.2 | 34.5 | 47.4 | 82.9 | 49.9 | 24 |
| 13 | 68.0 | 71.3 | 74.9 | 82.8 | 86.4 | 71.1 | 58.5 | 50.0 | 41.7 | 32.8 | 28.8 | 25.5 | 22.7 | 22.9 | 22.2 | 21.2 | 21.1 | 21.3 | 22.3 | 23.4 | 36.0 | 50.0 | 58.8 | 75.4 | 86.4 | 45.4 | 24 |
| 14 | 78.9 | 79.8 | 83.3 | 87.6 | 83.3 | 73.0 | 54.9 | 33.1 | 31.0 | 23.0 | 21.5 | 21.5 | 20.7 | 19.2 | 18.2 | 18.8 | 18.2 | 18.2 | 19.3 | 21.4 | 34.3 | 40.4 | 47.2 | 61.2 | 87.6 | 42.0 | 24 |
| 15 | 71.4 | 77.7 | 83.4 | 89.9 | 87.4 | 73.1 | 66.4 | 61.5 | 54.4 | 46.7 | 38.9 | 32.4 | 26.5 | 22.1 | 18.7 | 17.8 | 19.9 | 20.6 | 21.7 | 26.9 | 36.7 | 34.9 | 38.9 | 41.8 | 89.9 | 46.2 | 24 |
| 16 | 44.9 | 45.7 | 44.9 | 42.3 | 41.8 | 39.0 | 33.5 | 31.5 | 28.2 | 26.9 | 27.0 | 26.8 | 24.9 | 24.7 | 24.5 | 22.5 | 22.2 | 22.6 | 23.7 | 28.2 | 32.9 | 33.8 | 38.6 | 44.4 | 45.7 | 32.3 | 24 |
| 17 | 57.9 | 71.7 | 78.8 | 82.5 | 88.3 | 78.9 | 65.3 | 52.7 | 44.4 | 35.8 | 29.6 | 28.6 | 28.5 | 26.0 | 23.7 | 25.0 | 25.3 | 27.3 | 27.6 | 27.1 | 38.2 | 58.6 | 60.5 | 63.5 | 88.3 | 47.7 | 24 |
| 18 | 75.1 | 79.0 | 78.5 | 85.7 | 86.1 | 86.6 | 83.9 | 79.8 | 76.3 | 73.4 | 70.8 | 68.6 | 66.6 | 65.5 | 69.7 | 70.7 | 70.6 | 72.4 | 74.2 | 77.2 | 80.5 | 83.4 | 84.4 | 86.5 | 86.6 | 76.9 | 24 |
| 19 | 87.5 | 86.4 | 87.1 | 86.2 | 83.3 | 76.9 | 73.7 | 72.1 | 73.4 | 75.5 | 74.5 | 73.3 | 81.4 | 84.2 | 88.2 | 90.2 | 89.7 | 91.5 | 93.3 | 94.3 | 95.2 | 95.7 | 95.8 | 96.3 | 96.3 | 85.2 | 24 |
| 20 | 96.3 | 95.3 | 96.2 | 96.9 | 97.0 | 97.3 | 96.4 | 94.0 | 93.3 | 87.5 | 76.9 | 69.2 | 65.4 | 61.9 | 56.7 | 54.6 | 54.6 | 54.5 | 55.8 | 55.5 | 68.4 | 83.0 | 89.4 | 86.2 | 97.3 | 78.4 | 24 |
| 21 | 90.4 | 93.7 | 96.1 | 96.7 | 96.7 | 98.2 | 98.0 | 94.8 | 89.7 | 85.0 | 71.0 | 62.9 | 54.4 | 55.5 | 54.3 | 52.7 | 53.6 | 64.3 | 63.6 | 70.6 | 74.6 | 80.8 | 90.2 | 91.9 | 98.2 | 78.3 | 24 |
| 22 | 93.0 | 95.6 | 96.3 | 96.3 | 95.8 | 95.1 | 89.8 | 78.9 | 67.0 | 57.7 | 49.5 | 41.7 | 37.2 | 34.3 | 32.0 | 31.3 | 30.4 | 30.2 | 30.9 | 33.4 | 49.4 | 65.9 | 81.6 | 73.6 | 96.3 | 62.0 | 24 |
| 23 | 79.0 | 88.0 | 89.7 | 93.4 | 89.4 | 84.6 | 79.2 | 74.5 | 67.9 | 60.8 | 54.6 | 46.0 | 40.5 | 37.7 | 34.8 | 37.7 | 36.5 | 43.9 | 57.6 | 60.5 | 63.2 | 66.6 | 64.1 | 71.0 | 93.4 | 63.4 | 24 |
| 24 | 77.3 | 82.7 | 88.3 | 92.1 | 93.3 | 88.8 | 73.8 | 65.7 | 59.7 | 52.7 | 46.6 | 41.1 | 40.6 | 40.1 | 38.0 | 36.8 | 35.9 | 35.8 | 36.9 | 39.4 | 57.4 | 62.9 | 54.2 | 54.8 | 93.3 | 58.1 | 24 |
| 25 | 58.0 | 63.2 | 68.3 | 76.6 | 79.4 | 70.7 | 64.4 | 58.5 | 52.8 | 42.9 | 41.5 | 40.3 | 31.2 | 35.7 | 66.9 | 65.2 | 54.7 | 42.4 | 43.2 | 50.9 | 61.4 | 74.7 | 78.2 | 82.9 | 82.9 | 58.5 | 24 |
| 26 | 89.3 | 91.5 | 93.8 | 94.7 | 92.0 | 81.5 | 74.8 | 65.2 | 51.9 | 40.5 | 38.7 | 37.7 | 33.2 | 29.9 | 28.3 | 27.6 | 27.4 | 26.4 | 26.3 | 36.0 | 55.4 | 61.5 | 60.9 | 65.6 | 94.7 | 55.4 | 24 |
| 27 | 70.0 | 80.9 | 83.9 | 85.1 | 85.0 | 75.3 | 66.4 | 53.0 | 49.3 | 42.1 | 33.3 | 27.3 | 28.4 | 35.0 | 34.5 | 30.9 | 32.5 | 63.4 | 72.0 | 74.8 | 81.9 | 91.4 | 90.2 | 92.5 | 92.5 | 61.6 | 24 |
| 28 | 94.1 | 93.9 | 91.4 | 92.2 | 96.3 | 94.6 | 90.2 | 86.5 | 85.0 | 85.0 | 85.0 | 90.9 | 94.0 | 94.3 | 91.8 | 90.1 | 87.3 | 84.5 | 82.5 | 81.1 | 82.0 | 81.2 | 79.8 | 79.6 | 96.3 | **88.1** | 24 |
| 29 | 79.9 | 81.8 | 81.5 | 81.9 | 81.3 | 80.2 | 78.7 | 77.2 | 77.7 | 77.3 | 76.1 | 73.5 | 71.5 | 69.4 | 66.5 | 63.8 | 59.5 | 58.5 | 63.7 | 69.3 | 79.2 | 91.3 | 93.3 | 94.1 | 94.1 | 76.1 | 24 |
| 30 | 94.6 | 95.6 | 95.5 | 95.2 | 96.5 | 94.9 | 85.7 | 77.2 | 68.0 | 63.8 | 59.4 | 54.8 | 51.5 | 48.0 | 43.5 | 41.8 | 41.4 | 41.4 | 44.2 | 48.3 | 61.0 | 76.8 | 83.1 | 83.1 | 96.5 | 68.6 | 24 |
| 31 | 82.0 | 89.6 | 90.4 | 92.3 | 92.1 | 86.6 | 82.2 | 74.3 | 65.2 | 58.7 | 51.8 | 41.8 | 38.1 | 37.5 | 38.6 | 37.9 | 36.1 | 36.2 | 35.5 | 41.3 | 61.8 | 74.8 | 80.8 | 86.0 | 92.3 | 63.0 | 24 |
| HOURLY MAX | 96.3 | 95.8 | 96.3 | 96.9 | 97.2 | 98.2 | 98.0 | 94.8 | 93.3 | 95.8 | 95.3 | 94.5 | 94.0 | 94.3 | 91.8 | 92.4 | 93.5 | 96.8 | 97.7 | 97.7 | 98.1 | 98.0 | 98.3 | 96.7 | | | |
| HOURLY AVG | 76.5 | 80.1 | 82.7 | 84.4 | 85.0 | 80.6 | 74.8 | 68.1 | 62.6 | 57.1 | 53.2 | 49.8 | 47.1 | 46.2 | 45.8 | 45.3 | 44.5 | 45.7 | 47.4 | 50.4 | 58.2 | 65.4 | 68.5 | 72.6 | | | |

**STATUS FLAG CODES**

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



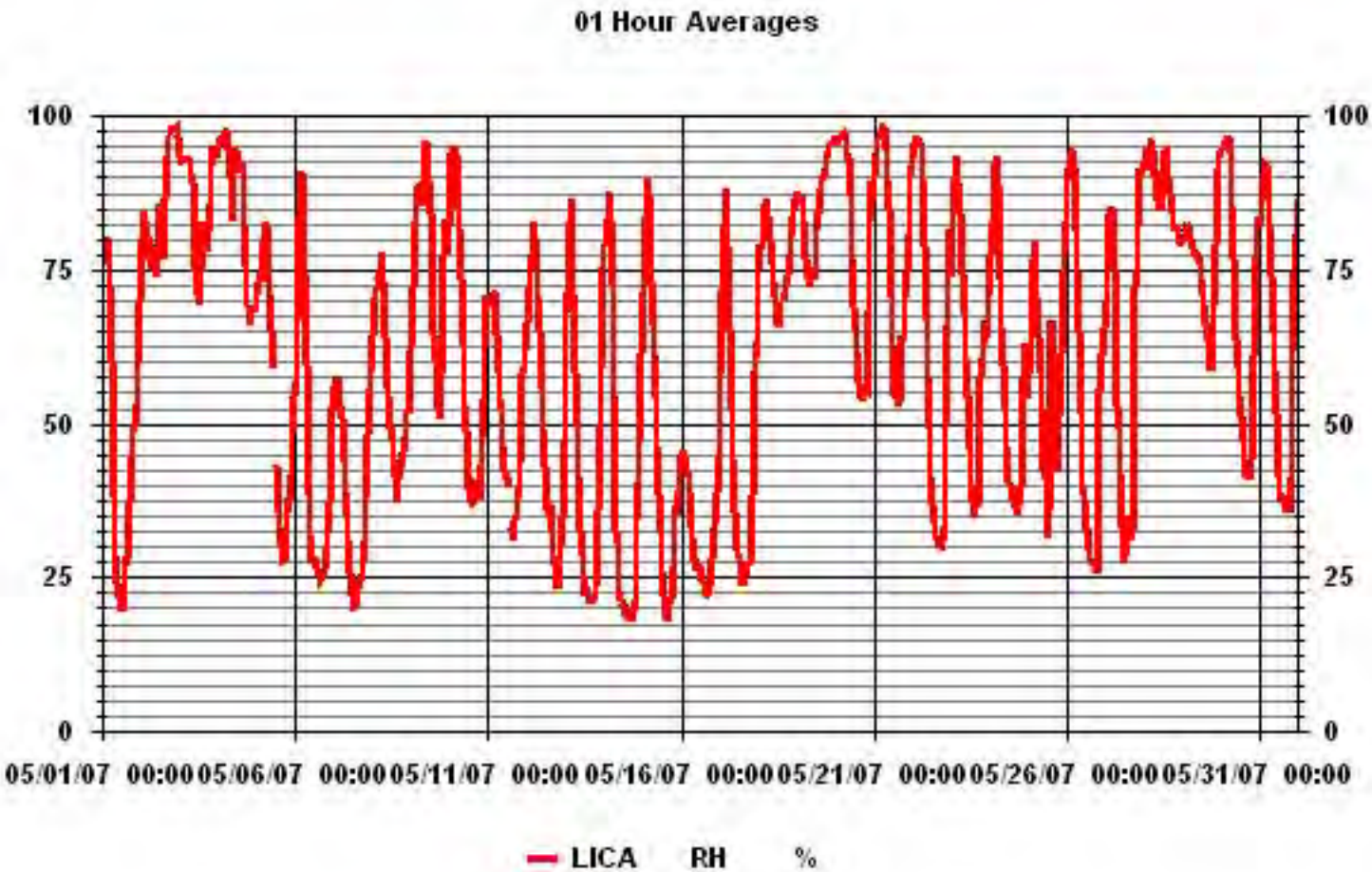

**MONTHLY SUMMARY**

| | | | | | | |
|---|---|---|---|---|---|---|
| MAXIMUM 1-HR AVERAGE: | 98.3 | % | @ HOUR(S) | 23 | ON DAY(S) | 2 |
| MAXIMUM 24-HR AVERAGE: | 88.1 | % | | | ON DAY(S) | 28 |

| | | | | | |
|---|---|---|---|---|---|
| CALIBRATION TIME: | 0 | HRS | OPERATIONAL TIME: | 742 | HRS |
| | | | AMD OPERATION UPTIME: | 99.7 | % |
| STANDARD DEVIATION: | 23.77 | | MONTHLY AVERAGE: | 62.21 | % |

**MOUNTAIN STANDARD TIME**

Maxxam Analytics Inc


01 Hour Averages
100
75
50
25
0
05/01/07 00:00
05/06/07 00:00
05/11/07 00:00
05/16/07 00:00
05/21/07 00:00
05/26/07 00:00
05/31/07 00:00
LICA RH %

# MAY 2007
# CALIBRATION REPORTS

# LICA – COLD LAKE

# $SO_2$

# $SO_2$ Calibration Report

## Station Information

| | | | |
|---|---|---|---|
| Calibration Date | May 1, 2007 | Previous Calibration | April 2, 2007 |
| Company | **Lakeland Industry & Community Association** | | |
| Plant / Location | **LICA 1 - Cold Lake South** | | |
| Start Time (MST) | 14:50 | End Time (MST) | 19:00 |
| Reason: | Monthly/Repair Calibration | | |
| Barometric Pressure | 714 mmHg | Station Temperature | 23 Deg C |
| Cal Gas | 47.6 ppm | Cal Gas Expiry date | 06/23/2007 |
| DAS Output Voltage | 0 - 10 Volts | | |

## Equipment Information

| | | | | | |
|---|---|---|---|---|---|
| Analyzer Make / Model: | TECO 43A | S/N : | 43A-4468-272 | Method: | Fluorescent |
| Converter Make / Model: | - | S/N : | - | | |
| Calibrator Make / Model: | Environics 2000 | S/N : | 1991 | Method: | Dilution |
| DAS Make / Model: | ESC 8832 | S/N : | 263 | | |
| Flow Meter: | Environics 2000 | S/N : | 1991 | | |

## Analyzer Settings

| | Before Calibration | | | | After Calibration | | | |
|---|---|---|---|---|---|---|---|---|
| Concentration Range | 0 - 500 ppb | | | | | | | |
| Sample Flow / Box Temp | 725 | ccm | OK | Deg C | 725 | ccm | OK | Deg C |
| HVPS / Lamp Setting | OK | | 843 | | OK | | 845 | |
| PMT / RxCell Temp | OK | Deg C | OK | 50 | OK | Deg C | OK | Deg C |
| Converter / IZS Temp | NA | Deg C | OK | 40 | NA | Deg C | OK | Deg C |
| Offset / Slope | 98 | | 852 | | 98 | | 852 | |

## Calibration Data

| Dilution Flow Rate | Source Gas Flow Rate | Calculated Concentration | Indicated Conc. (DAS) | Correction Factor |
|---|---|---|---|---|
| ZERO | ZERO | 0 | 0 | N/A |
| 4958 | 42 | 400 | 394 | 1.0148 |
| 4958 | 42 | 400 | 400 | 0.9996 |
| 4979 | 21 | 200 | 199 | 1.0046 |
| 4989 | 10.5 | 100 | 98 | 1.0201 |
| ZERO | ZERO | 0 | 0 | N/A |
| | | | | |
| | | | Sum of Least Squares | 1.0015 |
| | | | New Correction Factor | 0.9996 |

| | Before Calibration | After Calibration |
|---|---|---|
| Auto Zero | 0 | 0 |
| Auto Span | 347 | 353 |
| Sample Lines Connected | | **YES** |
| Percent Change from Previous Calibration | | -1.5% |

Notes: During As Found span the daily calibration program started, problem fixed immediately, repeated As Found span point.

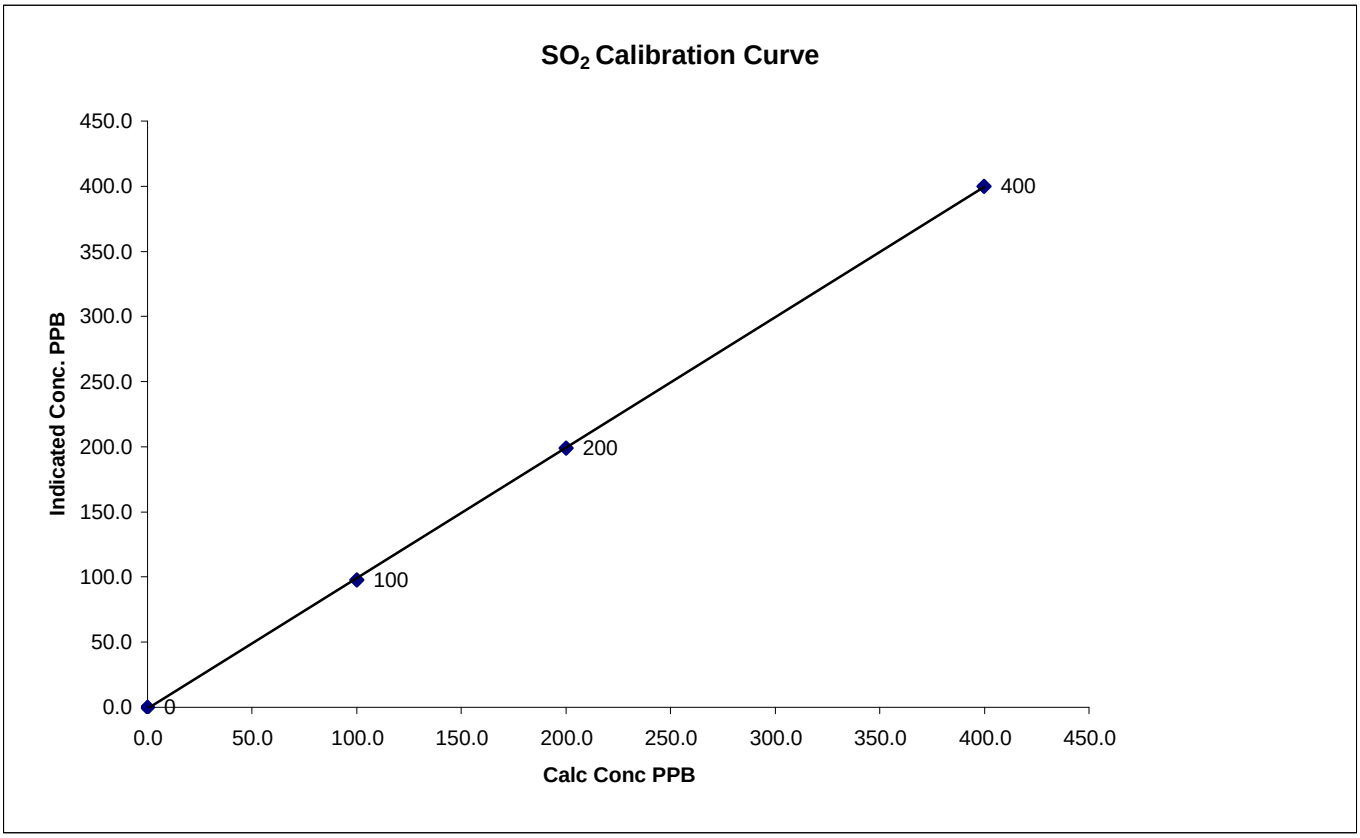
Calibration Performed by: Shea Beaton

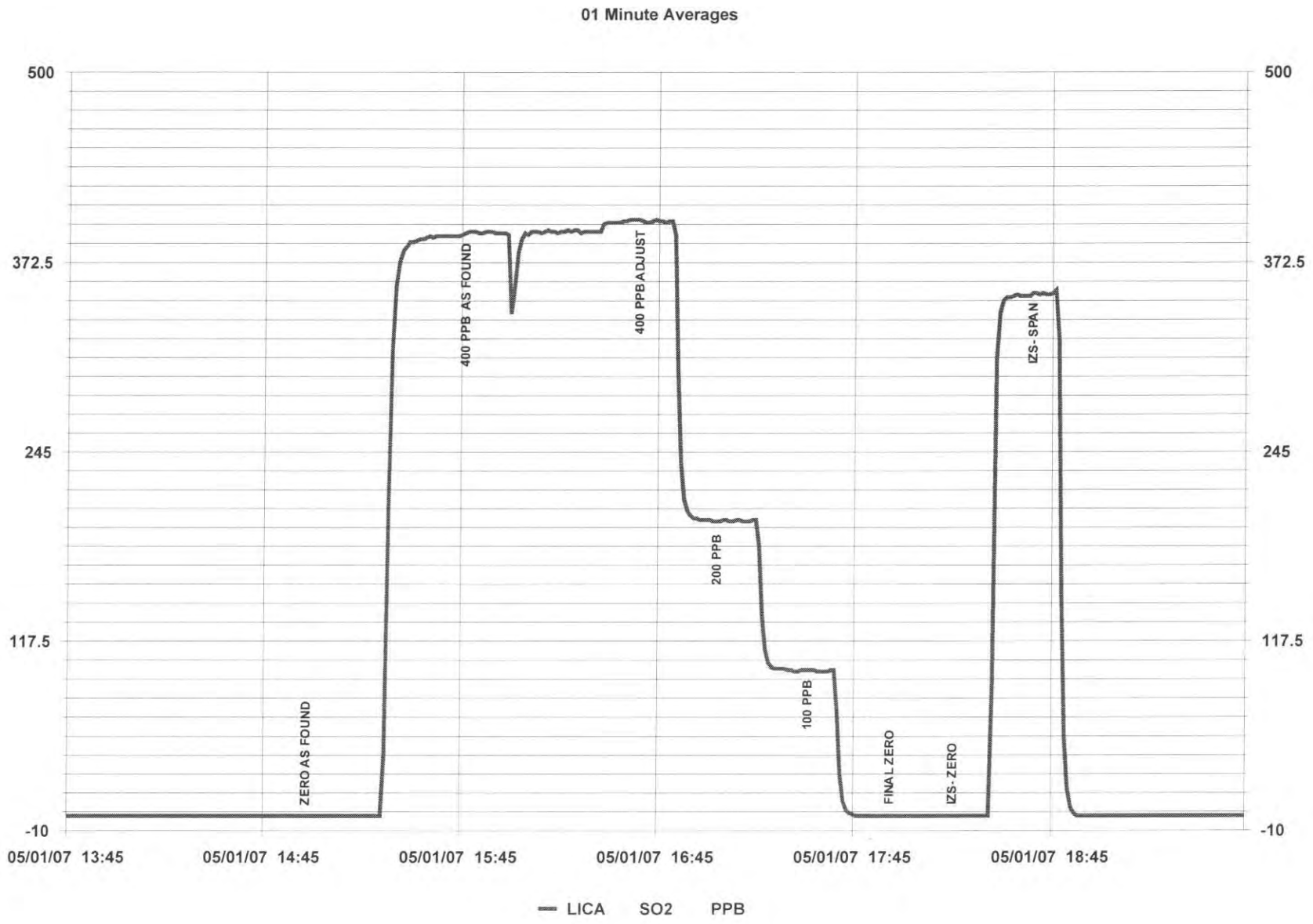
# $SO_2$ Calibration Curve

| | | | |
|---|---|---|---|
| Calibration Date | May 1, 2007 | | |
| Company | **Lakeland Industry & Community Association** | | |
| Plant / Location | **LICA 1 - Cold Lake South** | | |
| Start Time (MST) | 14:50 | End Time (MST) | 19:00 |

| Calculated Conc. ppb | Indicated Response ppb | Correction Factor |
|---|---|---|
| 0 | 0 | n/a |
| 100 | 98 | 1.0201 |
| 200 | 199 | 1.0046 |
| 400 | 400 | 0.9996 |

| | | |
|---|---|---|
| Correlation Coefficient | (≥ 0.995) | 0.999970 |
| Slope | (0.85 to 1.15) | 1.001838 |
| Intercept | (± 3% F.S.) | -1.003983 |




01 Minute Averages
500
372.5
245
117.5
-10
05/01/07 13:45
05/01/07 14:45
05/01/07 15:45
05/01/07 16:45
05/01/07 17:45
05/01/07 18:45
ZERO AS FOUND
400 PPB AS FOUND
400 PPB ADJUST
200 PPB
100 PPB
FINAL ZERO
IZS- ZERO
IZS- SPAN
LICA SO2 PPB

# TRS

# TRS Calibration Report

## Station Information

| | | | | | |
|---|---|---|---|---|---|
| Calibration Date | May 1, 2007 | | Previous Calibration | April 2, 2007 | |
| Company | **Lakeland Industry & Community Association** | | | | |
| Plant / Location | **LICA 1 - Cold Lake South** | | | | |
| Start Time (MST) | 8:15 | | End Time (MST) | 11:55 | |
| Reason: | Monthly Calibration | | | | |
| Barometric Pressure | 714 | mm Hg | Station Temperature | 24 | Deg C |
| Cal Gas | 10.2 | ppm | Cal Gas Expiry date | 09/05/2007 | |
| DAS Output Voltage | 0 - 10 | Volts | | | |

## Equipment Information

| | | | | | |
|---|---|---|---|---|---|
| Analyzer Make / Model: | TECO 43A | S/N : | 43A-35786-254 | Method: | Fluorescent |
| Converter Make / Model: | CD Nova CDN 101 | S/N : | 250 | | |
| Calibrator Make / Model: | Environics 2000 | S/N : | 1991 | Method: | Dilution |
| DAS Make / Model: | ESC 8832 | S/N : | 263 | | |
| Flow Meter: | Environics 2000 | S/N : | 1991 | | |

## Analyzer Settings

| | Before Calibration | | | | After Calibration | | | |
|---|---|---|---|---|---|---|---|---|
| Concentration Range | 0 -100 ppb | | | | | | | |
| Sample Flow / Box Temp | 400 | ccm | OK | Deg C | 400 | ccm | OK | Deg C |
| HVPS / Lamp Setting | OK | | 886 | | OK | | 886 | |
| PMT / RxCell Temp | OK | Deg C | OK | Deg C | OK | Deg C | OK | Deg C |
| Converter / IZS Temp | 850 | Deg C | OK | Deg C | 850 | Deg C | OK | Deg C |
| Offset / Slope | 820 | | 762 | | 820 | | 828 | |

## Calibration Data

| Dilution Flow Rate | Source Gas Flow Rate | Calculated Concentration | Indicated Conc. (DAS) | Correction Factor |
|---|---|---|---|---|
| ZERO | ZERO | 0 | 0 | N/A |
| 5000 | 40 | 81 | 79 | 1.0247 |
| 5000 | 40 | 81 | 81 | 0.9994 |
| 5000 | 20 | 41 | 41 | 0.9912 |
| 5000 | 10 | 20 | 20 | 1.0180 |
| ZERO | ZERO | 0 | 0 | N/A |
| | | | | |
| | | | Sum of Least Squares | 0.9987 |
| | | | New Correction Factor | 0.9994 |

| | Before Calibration | After Calibration |
|---|---|---|
| Auto Zero | 0 | 0 |
| Auto Span | 88 | 87 |
| Sample Lines Connected | | YES |
| Percent Change from Previous Calibration | | -2.5% |

Notes: Checked pump vacuum after as found points, vacuum at pump - 12.2 inHg

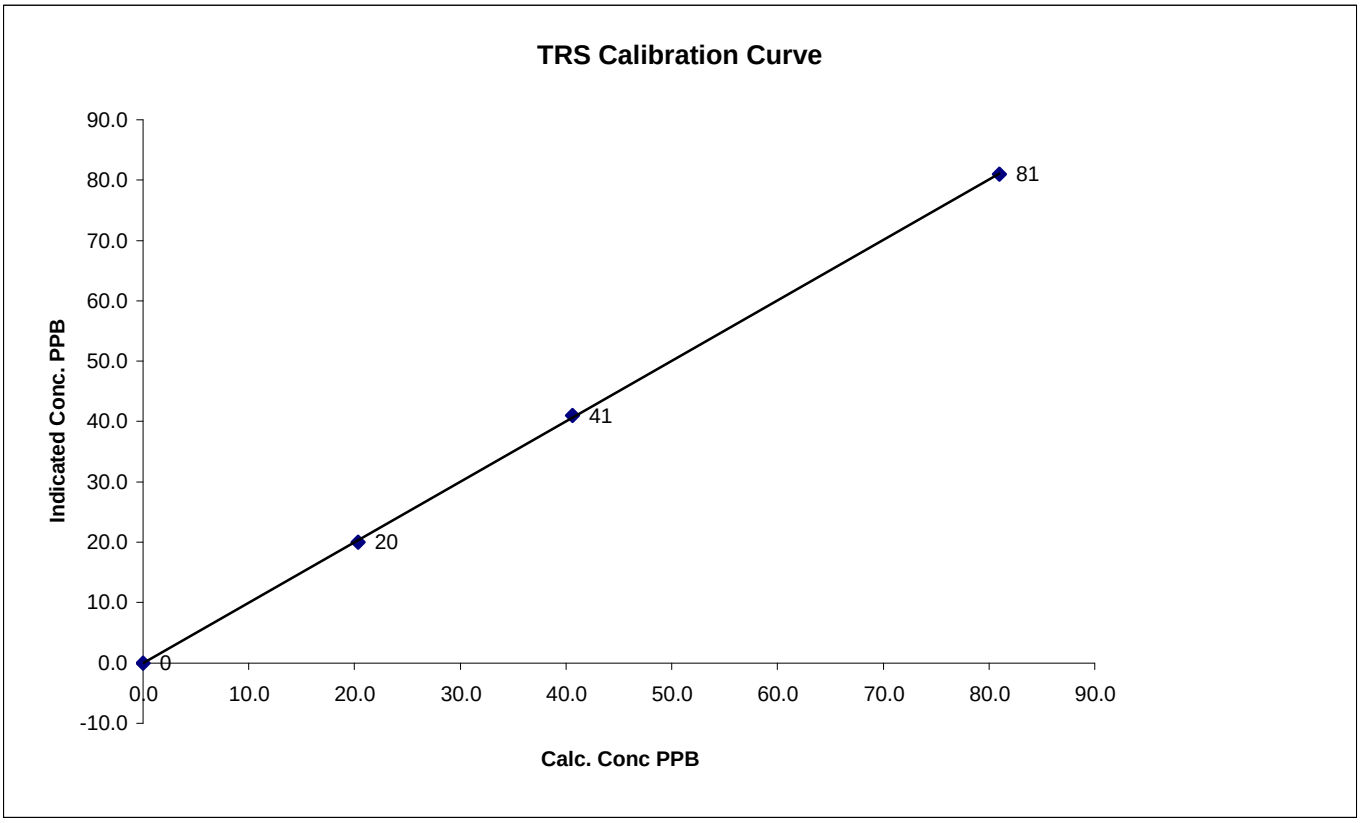
Calibration Performed by: Shea Beaton

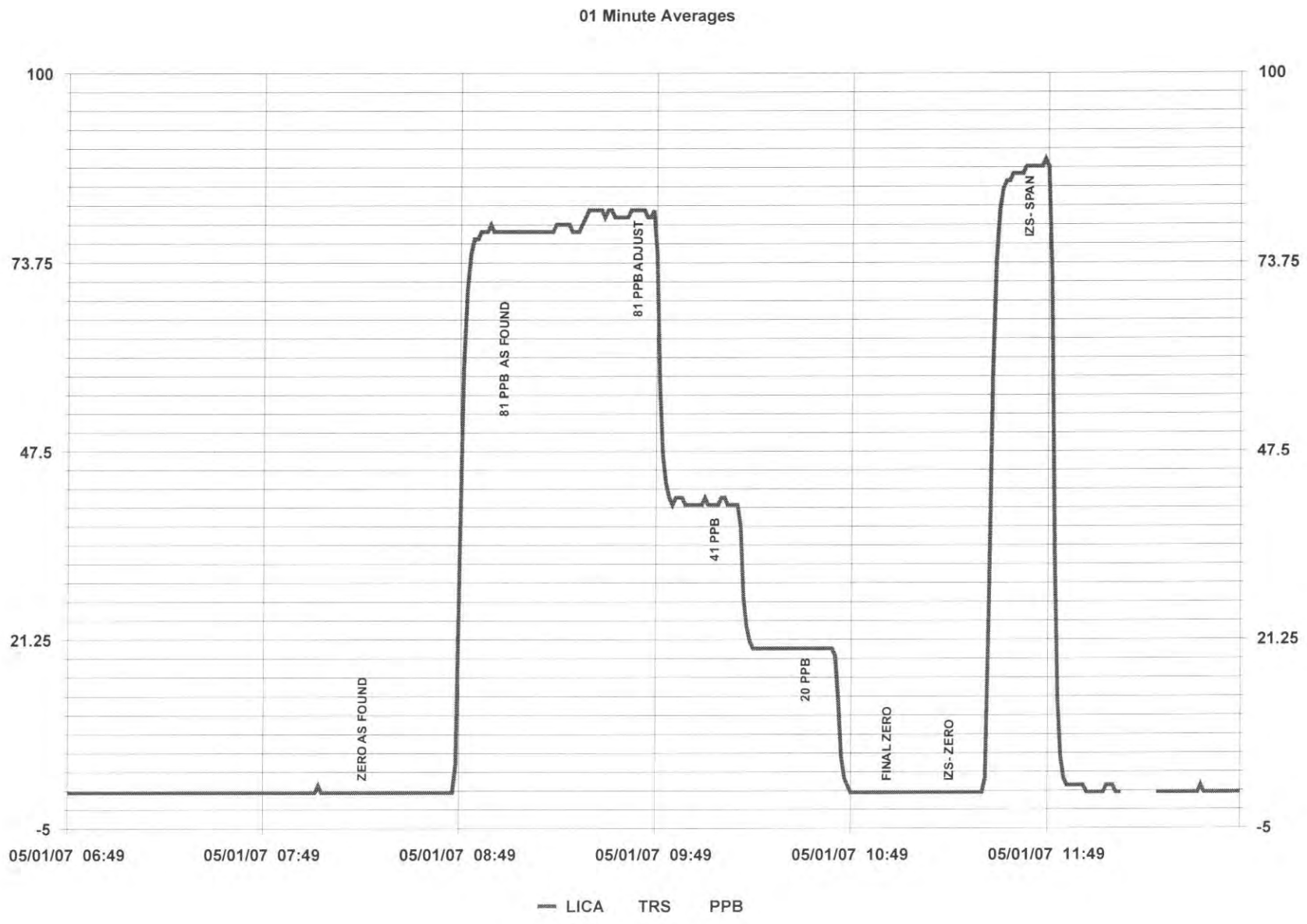
# TRS Calibration Curve

| | | | |
|---|---|---|---|
| Calibration Date | May 1, 2007 | | |
| Company | **Lakeland Industry & Community Association** | | |
| Plant / Location | **LICA 1 - Cold Lake South** | | |
| Start Time (MST) | 8:15 | End Time (MST) | 11:55 |

| Calculated Conc. ppb | Indicated Response ppb | Correction Factor |
|---|---|---|
| 0 | 0 | n/a |
| 20 | 20 | 1.0180 |
| 41 | 41 | 0.9912 |
| 81 | 81 | 0.9994 |

| | | |
|---|---|---|
| Correlation Coefficient | (≥ 0.995) | 0.999934 |
| Slope | (0.85 to 1.15) | 1.002643 |
| Intercept | (± 3% F.S.) | -0.081078 |




01 Minute Averages
100
73.75
47.5
21.25
-5
ZERO AS FOUND
81 PPB AS FOUND
81 PPB ADJUST
41 PPB
20 PPB
FINAL ZERO
IZS- ZERO
IZS- SPAN
05/01/07 06:49
05/01/07 07:49
05/01/07 08:49
05/01/07 09:49
05/01/07 10:49
05/01/07 11:49
LICA TRS PPB

# THC

# THC Calibration Report

Station Information

| | | | |
|---|---|---|---|
| Calibration Date: | May 1, 2007 | Previous Calibration | April 19, 2007 |
| Company: | **Lakeland Industry and Community Association** | | |
| Plant / Location: | **LICA1/Cold Lake** | | |
| Start Time (MST) | 12:00 | End Time (MST) | 15:35 |
| Reason: | | Monthly Calibration | |
| Barometric Pressure: | 713 mmHg | Station Temperature: | 22 Deg C |
| Calibrator: | Enivironics 2000 | S/N: | 1991 |
| Cal Gas Concentration: | 1010 | ppm | Cal Gas Expiry Date: Jan-10 |
| DAS make & Model: | ESC 8832 | S/N : | 263 |
| Output Voltage Range: | 0 - 10 VDC | | |

**Analyzer Information**

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

**Analyzer Settings**

| | Before Calibration | | After Calibration | |
|---|---|---|---|---|
| Concentration Range | 0 - 50 | ppm | 0 - 50 | ppm |
| Sample Pressure | 6.5 | psi | 6.5 | psi |
| Hydrogen Pressure | 8 | psi | 8 | psi |
| Air Pressure | 18 | psi | 18 | psi |

**Calibration Data**

| Dilution Flow | Source Gas Flow | Calculated Concentration | Indicated Concentration | Correction Factor |
|---|---|---|---|---|
| ZERO | ZERO | 0.0 | -0.1 | N/A |
| ZERO | ZERO | 0.0 | 0.0 | N/A |
| 2000 | 80.0 | 38.8 | 39.8 | 0.9760 |
| 2000 | 80.0 | 38.8 | 39.0 | 0.9961 |
| 2000 | 45.0 | 22.2 | 21.9 | 1.0148 |
| 2000 | 20.0 | 10.0 | 9.6 | 1.0417 |
| ZERO | ZERO | 0.0 | N/A | N/A |
| | | | Correction Factor: | 0.9961 |

**Percent Change**

| | |
|---|---|
| Previous Calibration Correction Factor: | 0.9978 |
| Current Correction Factor Before Span Adjust: | 0.9760 |
| Percent Change: | 2.2% |

**IZS Calibration Data**

| | Before Calibration | After Calibration |
|---|---|---|
| Auto Zero | 0.0 | 0.0 |
| Auto Span | 32.1 | 31.3 |
| Sample Lines Connected | | **YES** |

| | | |
|---|---|---|
| Notes: | Cylinder Pressures | |
| | Span | 950 psi |
| | Hydrogen | 1200 psi |
| | Zero Air | Maxxam-owned API 701 zero air supply with catalytic oxidizer |

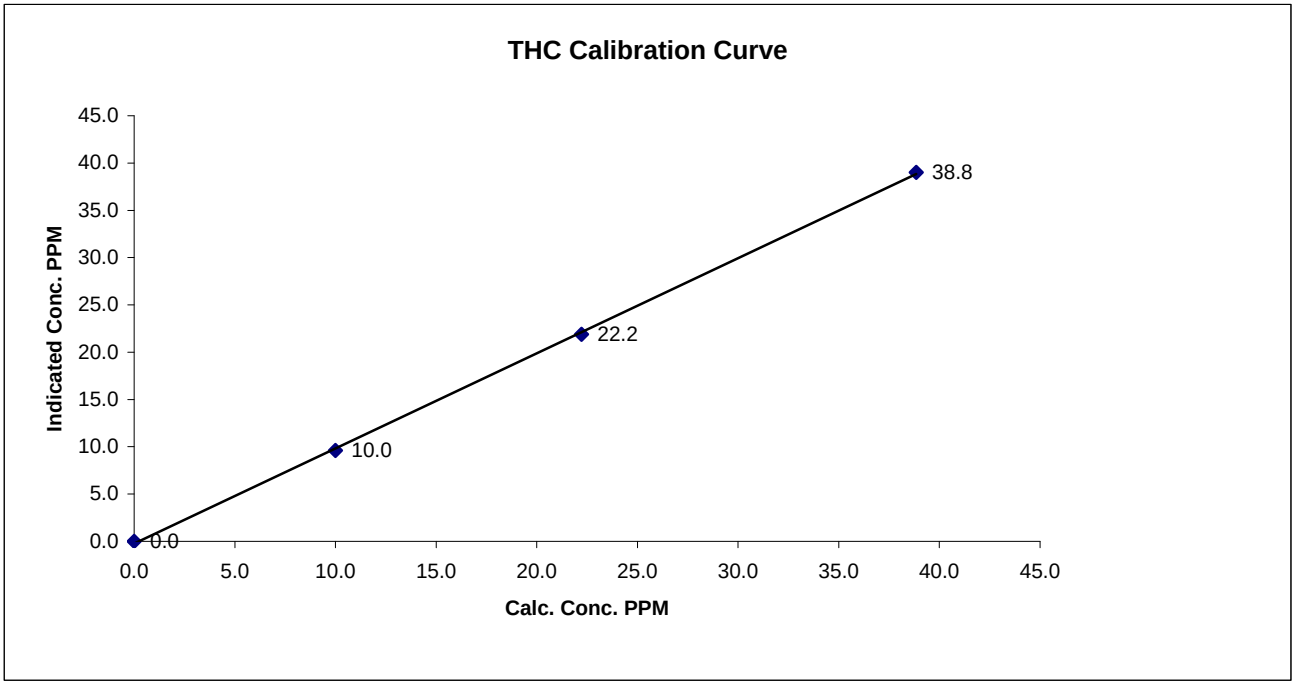
Calibration Performed by: Shea Beaton

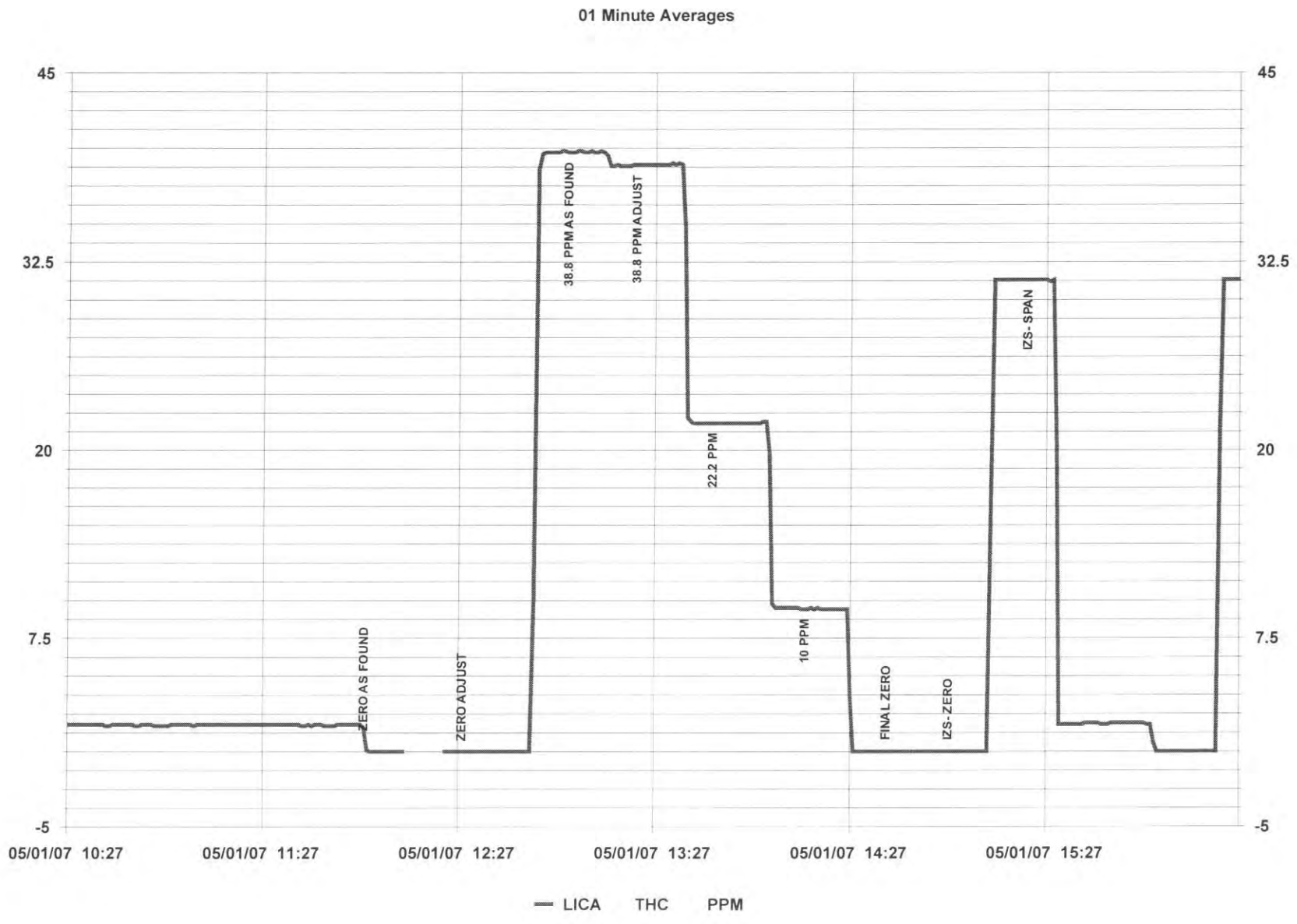
# THC Calibration Curve

| | | | | |
|---|---|---|---|---|
| Calibration Date | May 1, 2007 | | | |
| Company | **Lakeland Industry and Community Association** | | | |
| Plant / Location | **LICA1/Cold Lake** | | | |
| Start Time (MST) | 12:00 | End Time (MST) | 15:35 | |

| Calculated Conc. ppm | Indicated Response ppm | Correction Factor |
|---|---|---|
| 0.0 | 0.0 | |
| 10.0 | 9.6 | 1.0417 |
| 22.2 | 21.9 | 1.0148 |
| 38.8 | 39.0 | 0.9961 |

| | | |
|---|---|---|
| Correlation Coefficient | (≥ 0.995) | 0.999789 |
| Slope | (0.85 to 1.15) | 1.005834 |
| Intercept | (± 3% F.S.) | -0.246429 |




01 Minute Averages
45
32.5
20
7.5
-5
05/01/07 10:27
05/01/07 11:27
05/01/07 12:27
05/01/07 13:27
05/01/07 14:27
05/01/07 15:27
ZERO AS FOUND
ZERO ADJUST
38.8 PPM AS FOUND
38.8 PPM ADJUST
22.2 PPM
10 PPM
FINAL ZERO
IZS- ZERO
IZS- SPAN
LICA THC PPM

# PARTICULATE MATTER 2.5

# TEOM® Calibration

| Station | | Transfer Standard | |
|---|---|---|---|
| Date: | May 1, 2007 | Make/Model: | Bios DC-2 |
| Station Name: | LICA | Serial Number: | 1193 |
| Location: | Cold Lake - South | Cell s/n: | 2272 |
| Operator: | Maxxam Analytics | Thermometer s/n: | 14-990A |

| Sampler | | Set-up and current Sampler readings | |
|---|---|---|---|
| Make/Model | R & P Series 1400 a TEOM | F-Main Set Pt (l/min) | 3.00 |
| Unit # | AMU 1494 | F-Aux Set Pt (l/min) | 13.67 |
| Control unit s/n | 140AB213859701 | Filter Load (%) | 69 |
| Transducer s/n | 140AB213859701 | $K_o$ Factor | 11095 |
| Parameter | PM 2.5 | Temp ($^oC$) | 6.1 |
| | | Press (ATM) | 0.944 |

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

ATM = (mmHg) X (1.316 X 10 -3) or ATM = ("Hg) X (3.34207 X 10 -2)

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

## Calibration

**Zero flow**

| | Pump Off | | Pump On (Time to reach set points) | |
|---|---|---|---|---|
| F-Main (l/min) | 0.00 | | **(45-60 Sec)** | 40 |
| F-Aux (l/min) | 0.00 | | **(45-60 Sec)** | 54 |

**Temperature/Pressure**

| | | | |
|---|---|---|---|
| Measured Temp **(± 1 $^oC$)** | 5.6 | **Δ $^oC$** | -0.5 |
| Measured Press **(± 1.5% ATM)** | 0.938 | **Δ % ATM** | -0.6% |

**Flow Audit**

| | | | **Δ % from Set-pt** |
|---|---|---|---|
| Indicated Main/Aux Flow (l/min) | 3.00 / 13.65 | **(± 2%)** | 0.0% / 0.1% |
| Total Flow = Main + Aux (l/min) | 16.65 | **(± 2%)** | 0.1% |
| Measured Total Flow (l/min) | 16.35 | **(± 1.0 l/min. (5.65%))** | 1.8% |
| Measured Main Flow (l/min) | 2.91 | **(± 0.2 l/min. (6.25%))** | 3.1% |

**Leak Check**

| | | **Actual leakage = Pump On - Pump Off** |
|---|---|---|
| Main **(< 0.15 l/min)** | 0.03 | 0.03 |
| Aux **(< 0.15 l/min)** | 0.03 | 0.03 |

**$K_o$ Factor**

| | |
|---|---|
| Measured | NA |
| $K_o$ Difference **(± 2.5%)** | NA |

**Start Time:** 7:00 **Finish Time:** 10:30

**Sample Inlet Cleaned:** YES **Sample Inlet Connected:** YES

**Comments:** Fadj Main=0.960 Fadj Aux=0.945 before audit-Fadj Main=0.980 Fadj Aux=0.970 After audit After audit the flow adjusts were changed to bring measured flows closer to indicated. Total now16.72 lpm Main flow now 2.99 lpm. Changed TEOM filter, large in line bypass filter and MFC filters

**Calibrator/s:** Shea Beaton

# $NO_2$

# NOx - NO- $NO_2$ Calibration Report

## Station Information

| | | | |
|---|---|---|---|
| Calibration Date | May 1, 2007 | Previous Calibration | April 3, 2007 |
| Company | **Lakeland Ind & Comm. Assoc.** | Plant/Location | **LICA 1 - Cold Lake South** |
| Start Time (MST) | 7:20 | End Time (MST) | 15:55 |
| Reason: | | Monthly Calibration | |
| Barometric Pressure | 713 mmHg | Station Temperature | 24.0 Deg C |
| Cal Gas Concentration | NOx 52.7 ppm | NO 52.2 ppm | Cal Gas Expiry date 23/06/2008 |
| DAS Output Voltage | 0 - 5 Volts | | |

## Equipment Information

| | | | | | |
|---|---|---|---|---|---|
| Analyzer Make / Model: | TECO 42 | S/N : | 42-33684-247 | Method: | Chemiluminescent |
| Calibrator Make / Model: | API 700 | S/N: | 690 | | |
| DAS Make / Model: | ESC 8832 | S/N : | 263 | | |
| Flow Meter: | BIOS Dry Cal - DC 2 | S/N : | 1193 | | |

## Analyzer Settings

| | Before Calibration | | | | After Calibration | | | |
|---|---|---|---|---|---|---|---|---|
| Concentration Range | | | 0 - 500 | ppb | | | | |
| Sample Flow/Conv. Temp | 592 | ccm | 332 | Deg C | 596 | ccm | 333 | Deg C |
| Ozone Flow / Vacuum | OK | ccm | -24.5 | "Hg-A | OK | ccm | -25 | "Hg-A |
| HVPS | OK | | Volts | | OK | | Volts | |
| Rx/ Temp / PMT Temp | 50.5 | Deg C | -2.9 | Deg C | 50.5 | Deg C | -2.9 | Deg C |
| Box Temp / IZS Temp | 31.7 | Deg C | OK | Deg C | 33.6 | Deg C | OK | Deg C |
| Offset | 2.6 | NOx | 2.5 | NO | 3.5 | NOx | 3 | NO |
| Slope | 1.006 | NOx | 0.995 | NO | 1.005 | NOx | 1.177 | NO |

## Gas Phase Titration Calibration Data

| Dilution Air Flow Rate | Source Flow Rate | O3 Set Point | Calculated Concentration | | Indicated Concentration | | | Correction Factor | |
|---|---|---|---|---|---|---|---|---|---|
| | | | NOx | NO | NOx | NO | NO2 | NOx | NO |
| ZERO | N/A | N/A | 0 | 0 | 0 | 0 | 0 | N/A | N/A |
| ZERO | N/A | N/A | 0 | 0 | 0 | 0 | 0 | N/A | N/A |
| 4961 | 38.3 | N/A | 404 | 400 | 350 | 347 | 3 | 1.1535 | 1.1525 |
| 4961 | 38.3 | N/A | 404 | 400 | 402 | 398 | 3 | 1.0043 | 1.0048 |
| | | | | | | | | Converter Efficiency | |
| 4961 | 38.3 | 250 | 404 | N/A | 399 | 128 | 271 | 99% | |
| 4961 | 38.3 | 150 | 404 | N/A | 400 | 226 | 173 | 99% | |
| 4961 | 38.3 | 75 | 404 | N/A | 399 | 309 | 89 | 97% | |
| 4961 | 38.3 | N/A | 404 | 400 | 396 | 392 | 4 | N/A | |
| 4961 | 38.3 | N/A | 404 | 400 | 405 | 402 | 3 | 0.9969 | 0.9948 |
| | | | | | | | | Converter Efficiency | |
| 4961 | 38.3 | 250 | 404 | N/A | 404 | 82 | 323 | 101% | |
| 4961 | 38.3 | 150 | 404 | N/A | 404 | 228 | 176 | 102% | |
| 4961 | 38.3 | 75 | 404 | N/A | 403 | 313 | 90 | 102% | |
| 4961 | 38.3 | N/A | 404 | 400 | 403 | 399 | 3 | N/A | |
| | | | | | | | | Correction Factor | |
| 4976 | 23.9 | N/A | 252 | 250 | 249 | 246 | 2 | 1.0117 | 1.0143 |
| 4985 | 14.4 | N/A | 152 | 150 | 148 | 146 | 1 | 1.0256 | 1.0298 |
| ZERO | N/A | N/A | 0 | 0 | 0 | 0 | 0 | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| Linearity OK? | **Yes** | No | Sum of Least Squares | 1.0081 | 1.0095 |
| Flows Checked on-site? | Yes | **No** | New Correction Factor | 1.0043 | 1.0048 |
| | | | Average Converter Efficiency | 98% | |

| | Before Calibration | | | | After Calibration | | | |
|---|---|---|---|---|---|---|---|---|
| Auto Zero | 0 | NOx | 0 | NO2 | 0 | NOx | 0 | NO2 |
| Auto Span | 289 | NOx | 286 | NO2 | 307 | NOx | 305 | NO2 |
| Sample Lines Connected | | | | | **YES** | | | |
| Percent Change from Previous Calibration | | | | | *NOx* | -12.9% | *NO* | -12.8% |

After first GPT converter efficiency was not constant, return to high point, came in lower then expected.

Checked calibrator flows and repeated span adjustment and GPT

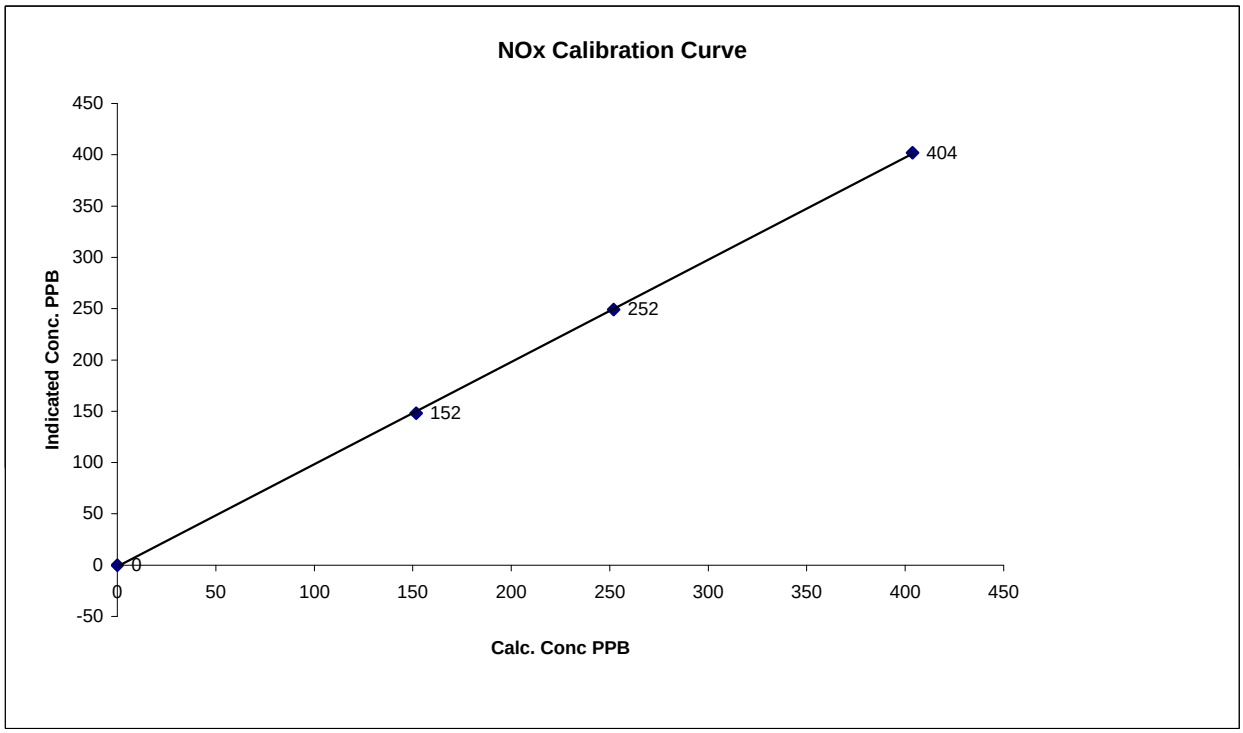
Calibration Performed by: Shea Beaton

# NOx Calibration Curve

| | | | |
|---|---|---|---|
| Calibration Date | May 1, 2007 | | |
| Company | **Lakeland Ind & Comm. Assoc.** | | |
| Plant / Location | **LICA 1 - Cold Lake South** | | |
| Start Time (MST) | 7:20 | End Time (MST) | 15:55 |

| Calculated Conc. ppb | Indicated Response ppb | Correction Factor |
|---|---|---|
| 0 | 0 | N/A |
| 152 | 148 | 1.0256 |
| 252 | 249 | 1.0117 |
| 404 | 402 | 1.0043 |

| | | |
|---|---|---|
| Correlation Coefficient | (≥ 0.995) | 0.999919 |
| Slope | (0.85 to 1.15) | 0.996455 |
| Intercept | (± 3% F.S.) | -1.395323 |

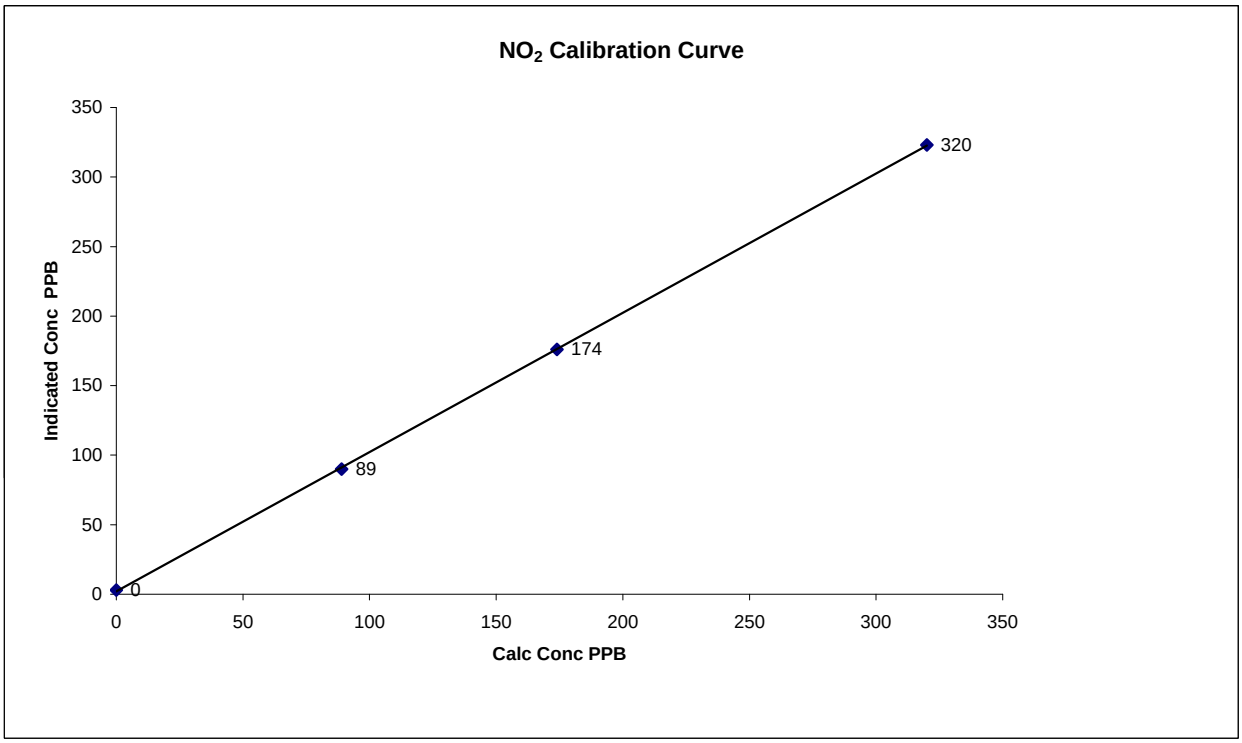


# $NO_2$ Calibration Curve

| | | | |
|---|---|---|---|
| Calibration Date | May 1, 2007 | | |
| Company | **Lakeland Ind & Comm. Assoc.** | | |
| Plant / Location | **LICA 1 - Cold Lake South** | | |
| Start Time (MST) | 7:20 | End Time (MST) | 15:55 |

| Calculated Conc. ppb | Indicated Response ppb | Correction Factor |
|---|---|---|
| 0 | 3 | N/A |
| 89 | 90 | 0.9889 |
| 174 | 176 | 0.9886 |
| 320 | 323 | 0.9907 |

| | | |
|---|---|---|
| Correlation Coefficient | **(≥ 0.995)** | 0.999953 |
| Slope | **(0.85 to 1.15)** | 1.001533 |
| Intercept | **(± 3% F.S.)** | 2.026625 |

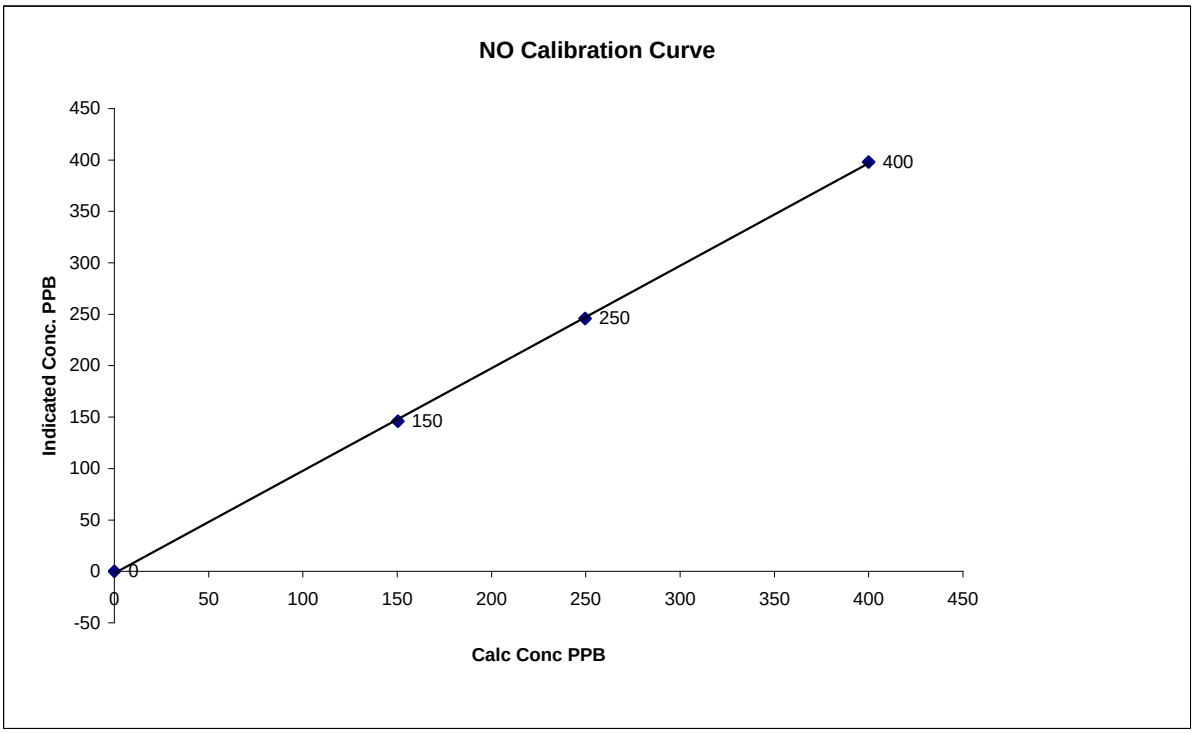


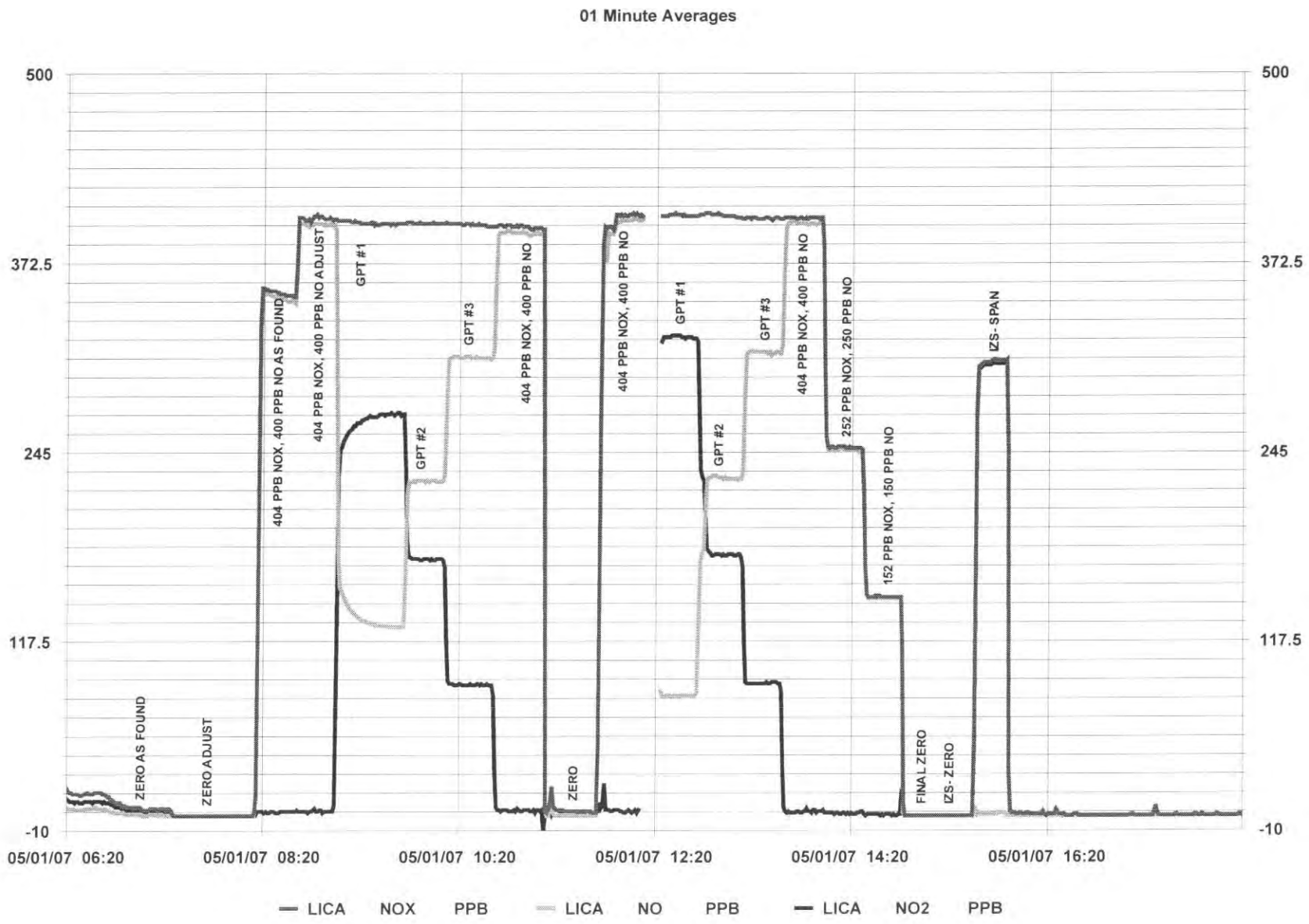
# NO Calibration Curve

| | | | |
|---|---|---|---|
| Calibration Date | May 1, 2007 | | |
| Company | **Lakeland Ind & Comm. Assoc.** | | |
| Plant / Location | **LICA 1 - Cold Lake South** | | |
| Start Time (MST) | 7:20 | End Time (MST) | 15:55 |

| Calculated Conc. ppb | Indicated Response ppb | Correction Factor |
|---|---|---|
| 0 | 0 | N/A |
| 150 | 146 | 1.0298 |
| 250 | 246 | 1.0143 |
| 400 | 398 | 1.0048 |

| | | |
|---|---|---|
| Correlation Coefficient | **(≥ 0.995)** | 0.999885 |
| Slope | **(0.85 to 1.15)** | 0.995993 |
| Intercept | **(± 3% F.S.)** | -1.644479 |




01 Minute Averages
500
372.5
245
117.5
-10
05/01/07 06:20
05/01/07 08:20
05/01/07 10:20
05/01/07 12:20
05/01/07 14:20
05/01/07 16:20
ZERO AS FOUND
ZERO ADJUST
404 PPB NOX, 400 PPB NO AS FOUND
404 PPB NOX, 400 PPB NO ADJUST
GPT #1
GPT #2
GPT #3
404 PPB NOX, 400 PPB NO
ZERO
404 PPB NOX, 400 PPB NO
GPT #1
GPT #2
GPT #3
404 PPB NOX, 400 PPB NO
252 PPB NOX, 250 PPB NO
152 PPB NOX, 150 PPB NO
FINAL ZERO
IZS- ZERO
IZS- SPAN
LICA NOX PPB
LICA NO PPB
LICA NO2 PPB

# NOx - NO- $NO_2$ Calibration Report

## Station Information

| | | | |
|---|---|---|---|
| Calibration Date | May 14, 2007 | Previous Calibration | May 1, 2007 |
| Company | **Lakeland Ind & Comm. Assoc.** | Plant/Location | **LICA 1 - Cold Lake South** |
| Start Time (MST) | 9:00 | End Time (MST) | 16:40 |
| Reason: | | Monthly Calibration | |
| Barometric Pressure | 718 mmHg | Station Temperature | 23.0 Deg C |
| Cal Gas Concentration | NOx 52.7 ppm NO 52.2 ppm | Cal Gas Expiry date | 23/06/2008 |
| DAS Output Voltage | 0 - 5 Volts | | |

## Equipment Information

| | | | | | |
|---|---|---|---|---|---|
| Analyzer Make / Model: | TECO 42 | S/N : | 42-33684-247 | Method: | Chemiluminescent |
| Calibrator Make / Model: | API 700 | S/N: | 690 | | |
| DAS Make / Model: | ESC 8832 | S/N : | 263 | | |
| Flow Meter: | BIOS Dry Cal - DC 2 | S/N : | 1193 | | |

## Analyzer Settings

| | Before Calibration | | | | After Calibration | | | |
|---|---|---|---|---|---|---|---|---|
| Concentration Range | | | 0 - 500 | ppb | | | | |
| Sample Flow/Conv. Temp | 589 | ccm | 332 | Deg C | 603 | ccm | 332 | Deg C |
| Ozone Flow / Vacuum | OK | ccm | -22 | "Hg-A | OK | ccm | -25 | "Hg-A |
| HVPS | OK | | Volts | | OK | | Volts | |
| Rx/ Temp / PMT Temp | 50.5 | Deg C | -2.9 | Deg C | 50.5 | Deg C | -2.9 | Deg C |
| Box Temp / IZS Temp | 31.7 | Deg C | OK | Deg C | 32.1 | Deg C | OK | Deg C |
| Offset | 3.5 | NOx | 3 | NO | 2.8 | NOx | 2.7 | NO |
| Slope | 1.005 | NOx | 1.177 | NO | 1.005 | NOx | 1.063 | NO |

## Gas Phase Titration Calibration Data

| Dilution Air Flow Rate | Source Flow Rate | O3 Set Point | Calculated Concentration | | Indicated Concentration | | | Correction Factor | |
|---|---|---|---|---|---|---|---|---|---|
| | | | NOx | NO | NOx | NO | NO2 | NOx | NO |
| ZERO | N/A | N/A | 0 | 0 | 0 | 0 | 0 | N/A | N/A |
| 4961 | 38.3 | N/A | 404 | 400 | 328 | 326 | 2 | 1.2309 | 1.2267 |
| ZERO | N/A | N/A | 0 | 0 | 0 | 0 | 0 | N/A | N/A |
| 4961 | 38.3 | N/A | 404 | 400 | 403 | 400 | 3 | 1.0018 | 0.9998 |
| | | | | | | | | Converter Efficiency | |
| 4961 | 38.3 | 250 | 404 | N/A | 409 | 81 | 328 | 102% | |
| 4961 | 38.3 | 150 | 404 | N/A | 406 | 203 | 203 | 102% | |
| 4961 | 38.3 | 75 | 404 | N/A | 404 | 301 | 103 | 101% | |
| 4961 | 38.3 | N/A | 404 | 400 | 402 | 398 | 3 | N/A | |
| | | | | | | | | Correction Factor | |
| 4976 | 23.9 | N/A | 252 | 250 | 247 | 245 | 2 | 1.0199 | 1.0185 |
| 4985 | 14.4 | N/A | 152 | 150 | 147 | 146 | 0 | 1.0326 | 1.0298 |
| ZERO | N/A | N/A | 0 | 0 | 0 | 0 | 0 | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| Linearity OK? | **Yes** | No | Sum of Least Squares | 1.0092 | 1.0072 |
| Flows Checked on-site? | Yes | **No** | New Correction Factor | 1.0018 | 0.9998 |
| | | | Average Converter Efficiency | 101% | |

| | Before Calibration | | | | After Calibration | | | |
|---|---|---|---|---|---|---|---|---|
| Auto Zero | 0 | NOx | 0 | NO2 | 0 | NOx | 0 | NO2 |
| Auto Span | 55 | NOx | 54 | NO2 | 299 | NOx | 297 | NO2 |
| Sample Lines Connected | | | | | **YES** | | | |
| Percent Change from Previous Calibration | | | | | *NOx* | -19.0% | *NO* | -18.9% |

Rebuilt pump after as found points. Allowed to stabilize. First 03 conc. Incorrect. Problem corrected

Span phase of daily cal configured to short. Changed and repeated span phase.

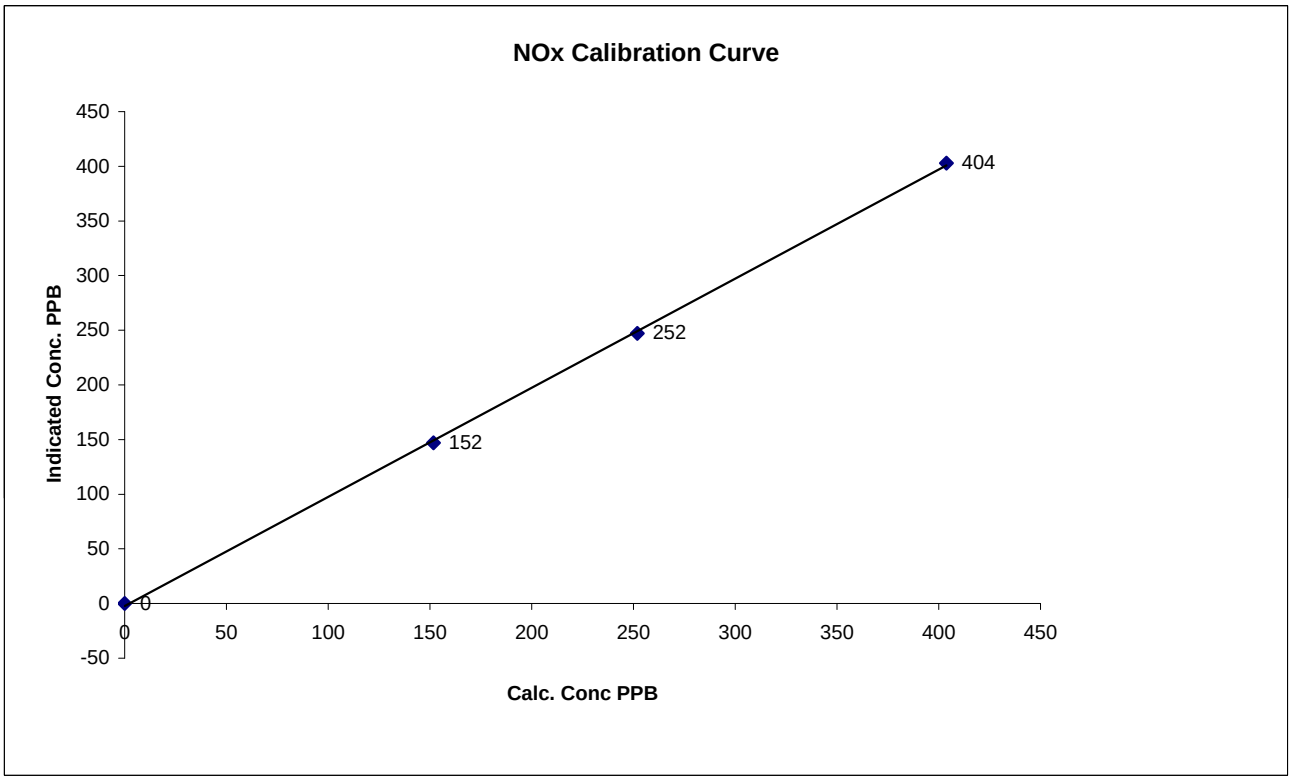
Calibration Performed by: Shea Beaton

# NOx Calibration Curve

| | | | |
|---|---|---|---|
| Calibration Date | May 14, 2007 | | |
| Company | **Lakeland Ind & Comm. Assoc.** | | |
| Plant / Location | **LICA 1 - Cold Lake South** | | |
| Start Time (MST) | 9:00 | End Time (MST) | 16:40 |

| Calculated Conc. ppb | Indicated Response ppb | Correction Factor |
|---|---|---|
| 0 | 0 | N/A |
| 152 | 147 | 1.0326 |
| 252 | 247 | 1.0199 |
| 404 | 403 | 1.0018 |

| | | |
|---|---|---|
| Correlation Coefficient | **(≥ 0.995)** | 0.999767 |
| Slope | **(0.85 to 1.15)** | 0.998210 |
| Intercept | **(± 3% F.S.)** | -2.249617 |

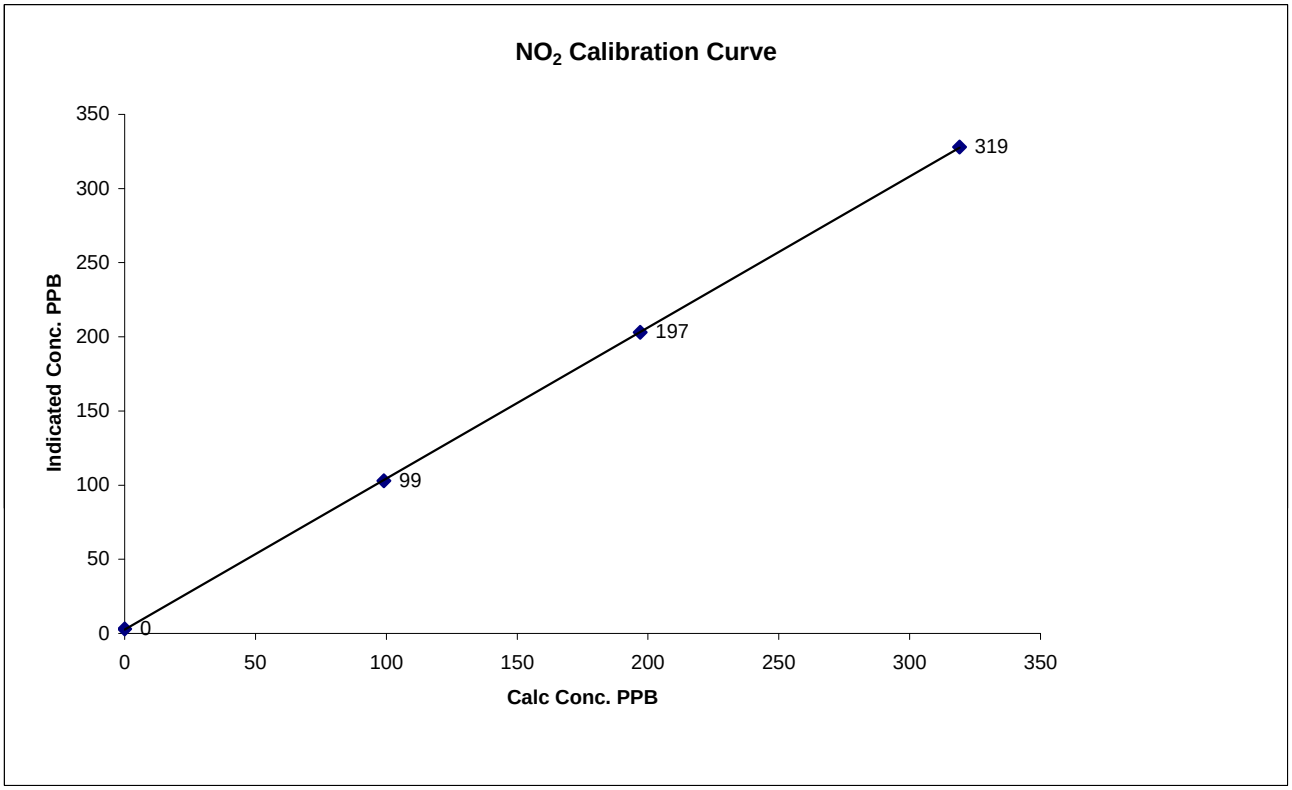


# $NO_2$ Calibration Curve

| | | | |
|---|---|---|---|
| Calibration Date | May 14, 2007 | | |
| Company | **Lakeland Ind & Comm. Assoc.** | | |
| Plant / Location | **LICA 1 - Cold Lake South** | | |
| Start Time (MST) | 9:00 | End Time (MST) | 16:40 |

| Calculated Conc. ppb | Indicated Response ppb | Correction Factor |
|---|---|---|
| 0 | 3 | N/A |
| 99 | 103 | 0.9612 |
| 197 | 203 | 0.9704 |
| 319 | 328 | 0.9726 |

| | | |
|---|---|---|
| Correlation Coefficient | **(≥ 0.995)** | 0.999989 |
| Slope | **(0.85 to 1.15)** | 1.019108 |
| Intercept | **(± 3% F.S.)** | 2.562168 |

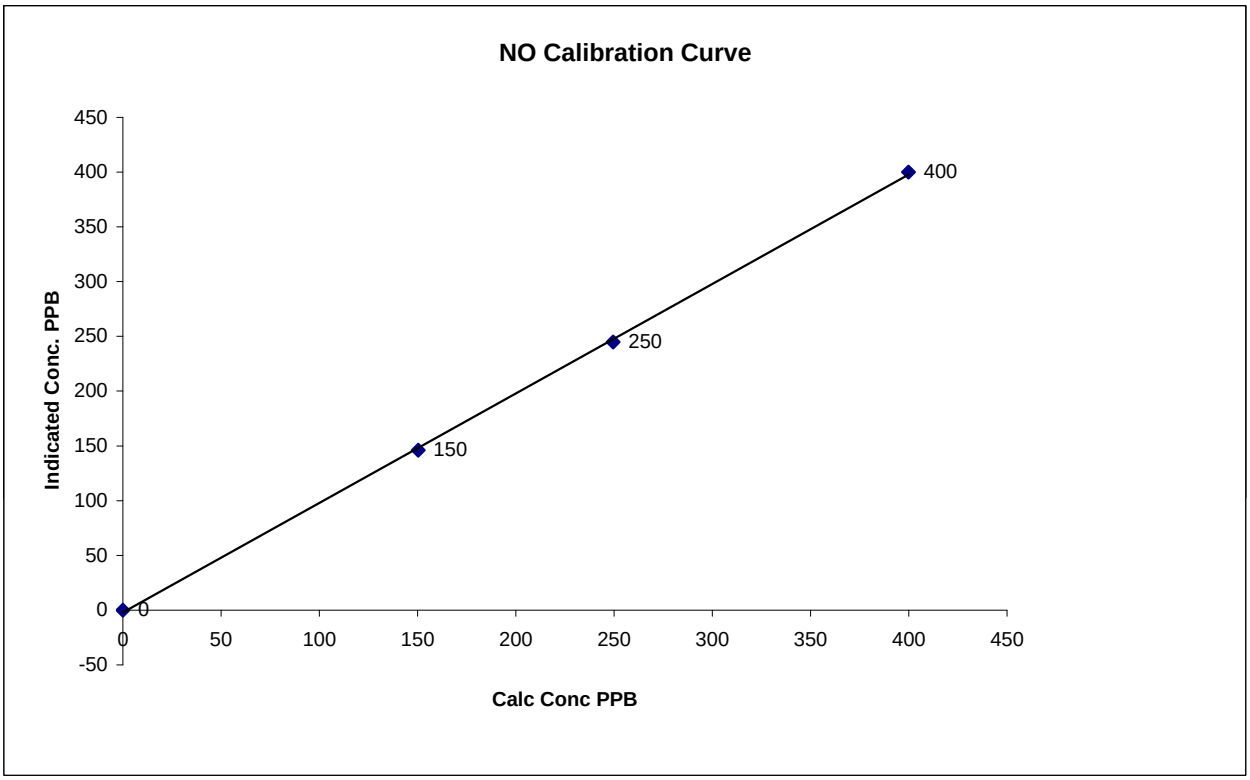


# NO Calibration Curve

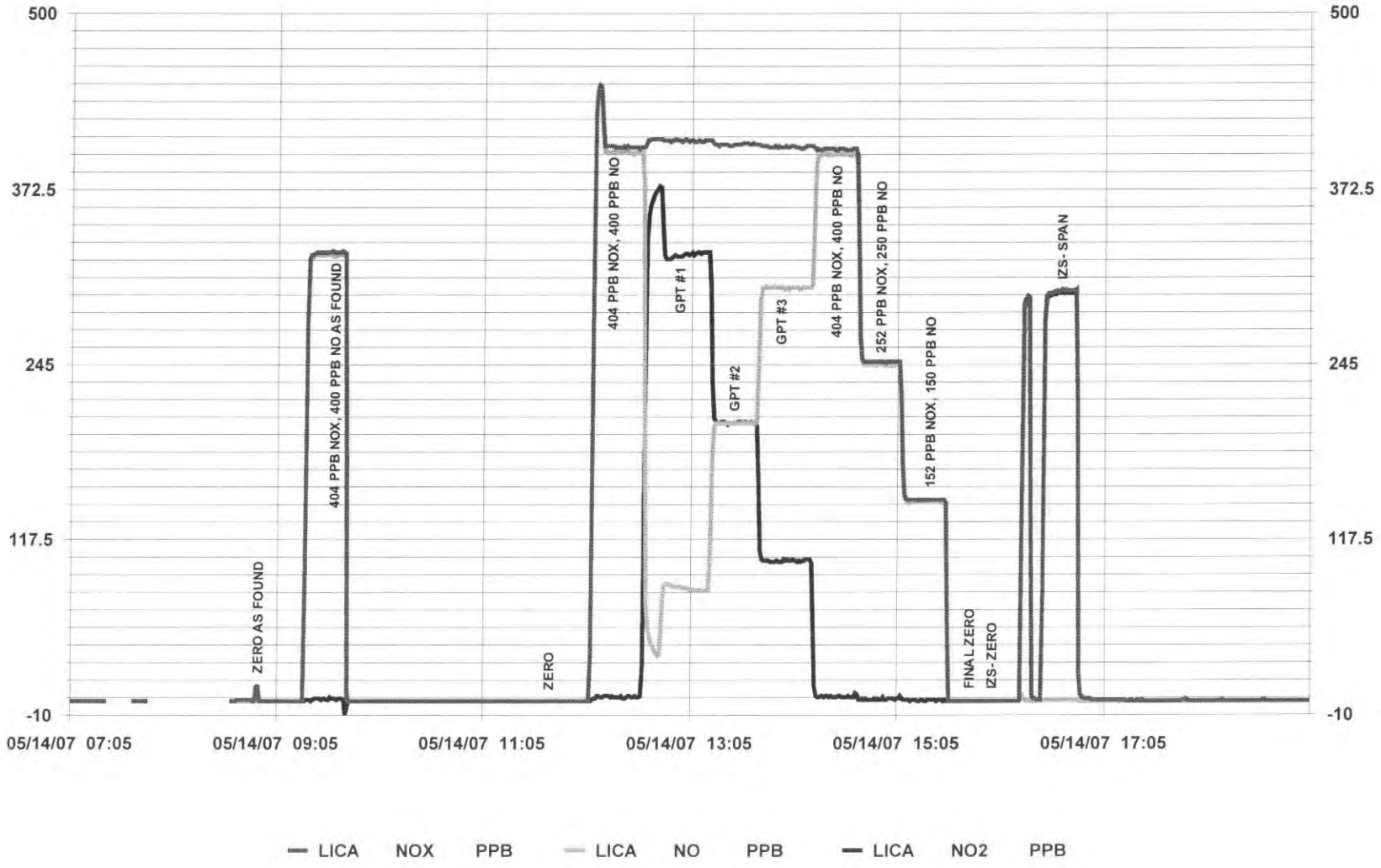
| | | | |
|---|---|---|---|
| Calibration Date | May 14, 2007 | | |
| Company | **Lakeland Ind & Comm. Assoc.** | | |
| Plant / Location | **LICA 1 - Cold Lake South** | | |
| Start Time (MST) | 9:00 | End Time (MST) | 16:40 |

| Calculated Conc. ppb | Indicated Response ppb | Correction Factor |
|---|---|---|
| 0 | 0 | N/A |
| 150 | 146 | 1.0298 |
| 250 | 245 | 1.0185 |
| 400 | 400 | 0.9998 |

| | | |
|---|---|---|
| Correlation Coefficient | (≥ 0.995) | 0.999763 |
| Slope | (0.85 to 1.15) | 1.000120 |
| Intercept | (± 3% F.S.) | -2.219769 |



01 Minute Averages



# NOx - NO- $NO_2$ Calibration Report

## Station Information

| | | | |
|---|---|---|---|
| Calibration Date | May 15, 2007 | Previous Calibration | May 14, 2007 |
| Company | **Lakeland Ind & Comm. Assoc.** | Plant/Location | **LICA 1 - Cold Lake South** |
| Start Time (MST) | 7:00 | End Time (MST) | 12:10 |
| Reason: | | Monthly/Repair Calibration | |
| Barometric Pressure | 720 mmHg | Station Temperature | 23.0 Deg C |
| Cal Gas Concentration | NOx 52.7 ppm NO 52.2 ppm | Cal Gas Expiry date | 23/06/2008 |
| DAS Output Voltage | 0 - 5 Volts | | |

## Equipment Information

| | | | | | |
|---|---|---|---|---|---|
| Analyzer Make / Model: | TECO 42 | S/N : | 42-33684-247 | Method: | Chemiluminescent |
| Calibrator Make / Model: | API 700 | S/N: | 690 | | |
| DAS Make / Model: | ESC 8832 | S/N : | 263 | | |
| Flow Meter: | BIOS Dry Cal - DC 2 | S/N : | 1193 | | |

## Analyzer Settings

| | Before Calibration | | | | After Calibration | | | |
|---|---|---|---|---|---|---|---|---|
| Concentration Range | | | 0 - 500 | ppb | | | | |
| Sample Flow/Conv. Temp | 595 | ccm | 332 | Deg C | 595 | ccm | 333 | Deg C |
| Ozone Flow / Vacuum | OK | ccm | -23 | "Hg-A | OK | ccm | -23 | "Hg-A |
| HVPS | OK | | Volts | | OK | | Volts | |
| Rx/ Temp / PMT Temp | 50.5 | Deg C | -2.9 | Deg C | 50.5 | Deg C | -2.9 | Deg C |
| Box Temp / IZS Temp | 31.6 | Deg C | OK | Deg C | 33.3 | Deg C | OK | Deg C |
| Offset | 2.8 | NOx | 2.7 | NO | 3.6 | NOx | 3.4 | NO |
| Slope | 1.005 | NOx | 1.063 | NO | 1.006 | NOx | 1.341 | NO |

## Gas Phase Titration Calibration Data

| Dilution Air Flow Rate | Source Flow Rate | O3 Set Point | Calculated Concentration | | Indicated Concentration | | | Correction Factor | |
|---|---|---|---|---|---|---|---|---|---|
| | | | NOx | NO | NOx | NO | NO2 | NOx | NO |
| ZERO | N/A | N/A | 0 | 0 | 0 | 0 | 0 | N/A | N/A |
| 4961 | 38.3 | N/A | 404 | 400 | 321 | 317 | 3 | 1.2578 | 1.2615 |
| 4961 | 38.3 | N/A | 404 | 400 | 403 | 399 | 3 | 1.0018 | 1.0023 |
| | | | | | | | | Converter Efficiency | |
| 4961 | 38.3 | 250 | 404 | N/A | 409 | 75 | 334 | 102% | |
| 4961 | 38.3 | 150 | 404 | N/A | 408 | 136 | 272 | 102% | |
| 4961 | 38.3 | 75 | 404 | N/A | 406 | 267 | 139 | 103% | |
| 4961 | 38.3 | N/A | 404 | 400 | 404 | 400 | 4 | N/A | |
| | | | | | | | | Correction Factor | |
| 4976 | 23.9 | N/A | 252 | 250 | 247 | 245 | 2 | 1.0199 | 1.0185 |
| 4985 | 14.4 | N/A | 152 | 150 | 146 | 144 | 2 | 1.0397 | 1.0441 |
| ZERO | N/A | N/A | 0 | 0 | 0 | 0 | 0 | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| Linearity OK? | **Yes** | No | Sum of Least Squares | 1.0098 | 1.0101 |
| Flows Checked on-site? | Yes | **No** | New Correction Factor | 1.0018 | 1.0023 |
| | | | Average Converter Efficiency | 102% | |

| | Before Calibration | | | | After Calibration | | | |
|---|---|---|---|---|---|---|---|---|
| Auto Zero | 0 | NOx | 0 | NO2 | 0 | NOx | 0 | NO2 |
| Auto Span | 188 | NOx | 187 | NO2 | 301 | NOx | 299 | NO2 |
| Sample Lines Connected | | | | | **YES** | | | |
| Percent Change from Previous Calibration | | | | | *NOx* | -20.3% | *NO* | -20.8% |

Last span low, checked analyzer, pump vaccum low 15inHg, pump diaphrams eroded.

Replaced charcoal scrubber, installed Maxxam-owned Wobble pump and ordered new rebuild kit

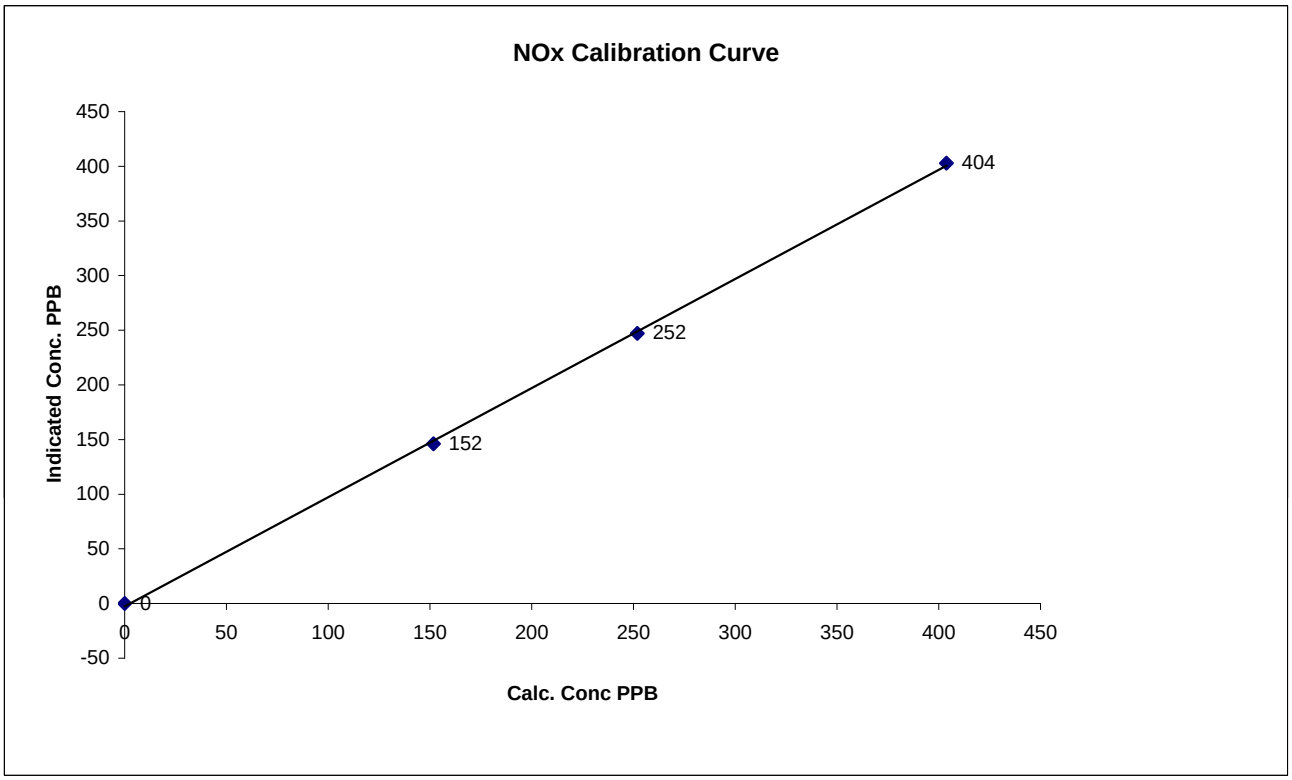
Calibration Performed by: Shea Beaton

# NOx Calibration Curve

| | | | |
|---|---|---|---|
| Calibration Date | May 15, 2007 | | |
| Company | **Lakeland Ind & Comm. Assoc.** | | |
| Plant / Location | **LICA 1 - Cold Lake South** | | |
| Start Time (MST) | 7:00 | End Time (MST) | 12:10 |

| Calculated Conc. ppb | Indicated Response ppb | Correction Factor |
|---|---|---|
| 0 | 0 | N/A |
| 152 | 146 | 1.0397 |
| 252 | 247 | 1.0199 |
| 404 | 403 | 1.0018 |

| | | |
|---|---|---|
| Correlation Coefficient | **(≥ 0.995)** | 0.999706 |
| Slope | **(0.85 to 1.15)** | 0.998789 |
| Intercept | **(± 3% F.S.)** | -2.616436 |

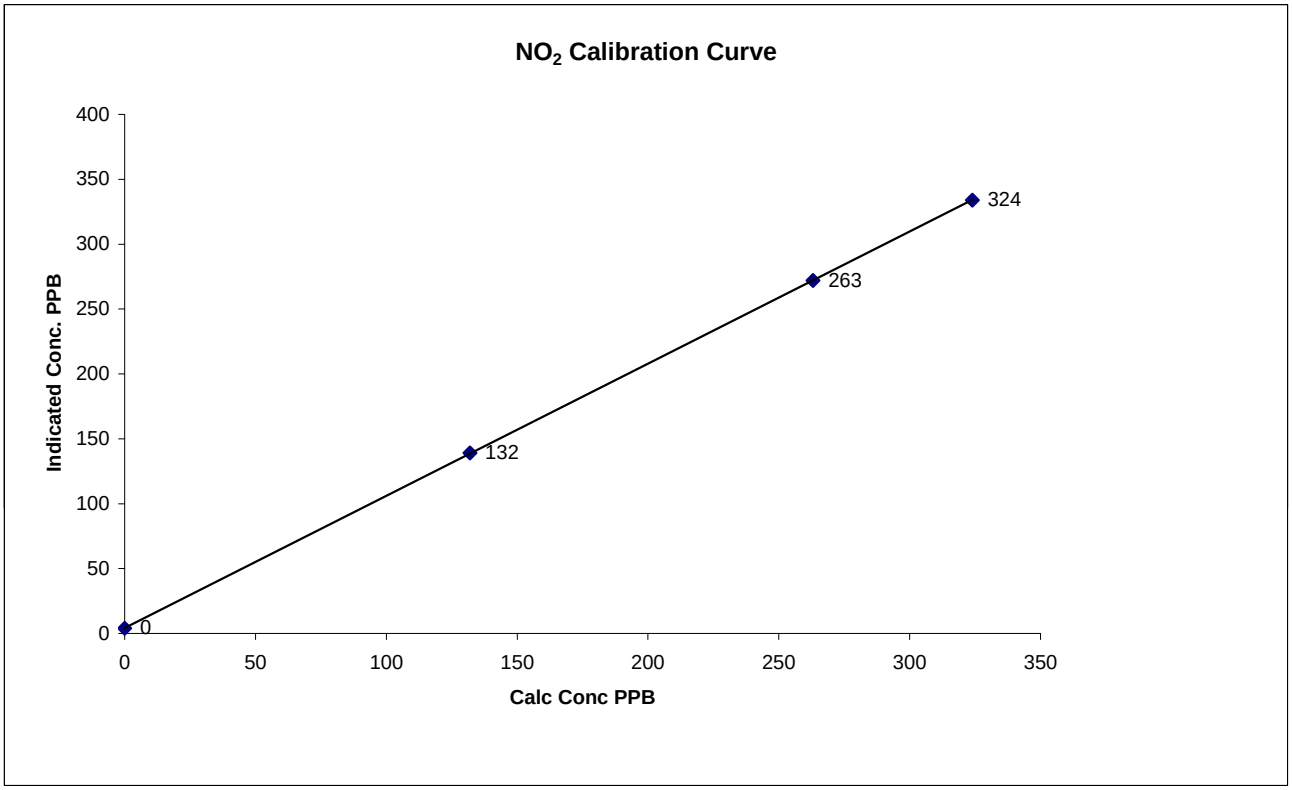


# $NO_2$ Calibration Curve

| | | | |
|---|---|---|---|
| Calibration Date | May 15, 2007 | | |
| Company | **Lakeland Ind & Comm. Assoc.** | | |
| Plant / Location | **LICA 1 - Cold Lake South** | | |
| Start Time (MST) | 7:00 | End Time (MST) | 12:10 |

| Calculated Conc. ppb | Indicated Response ppb | Correction Factor |
|---|---|---|
| 0 | 4 | N/A |
| 132 | 139 | 0.9496 |
| 263 | 272 | 0.9669 |
| 324 | 334 | 0.9701 |

| | | |
|---|---|---|
| Correlation Coefficient | **(≥ 0.995)** | 0.999997 |
| Slope | **(0.85 to 1.15)** | 1.018266 |
| Intercept | **(± 3% F.S.)** | 4.216678 |

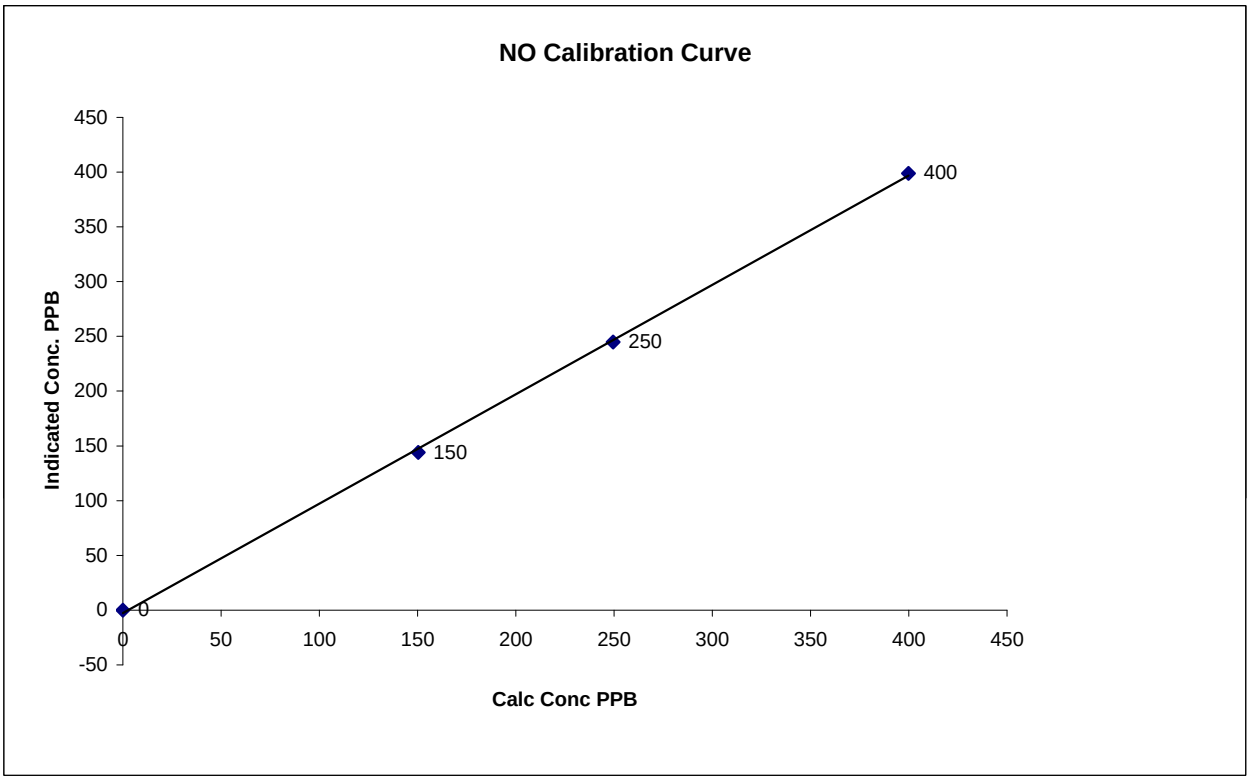


# NO Calibration Curve

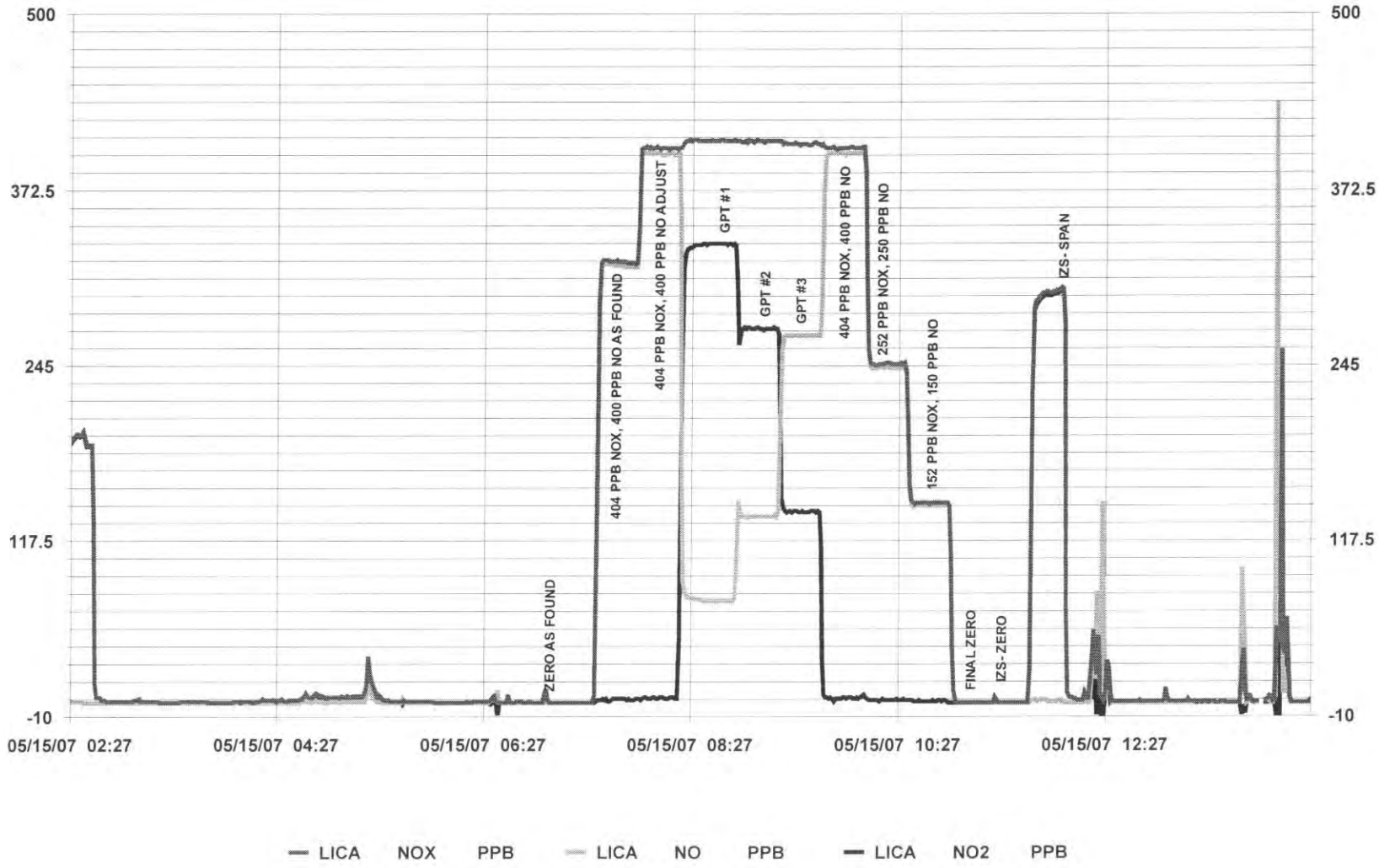
| | | | |
|---|---|---|---|
| Calibration Date | May 15, 2007 | | |
| Company | **Lakeland Ind & Comm. Assoc.** | | |
| Plant / Location | **LICA 1 - Cold Lake South** | | |
| Start Time (MST) | 7:00 | End Time (MST) | 12:10 |

| Calculated Conc. ppb | Indicated Response ppb | Correction Factor |
|---|---|---|
| 0 | 0 | N/A |
| 150 | 144 | 1.0441 |
| 250 | 245 | 1.0185 |
| 400 | 399 | 1.0023 |

| | | |
|---|---|---|
| Correlation Coefficient | **(≥ 0.995)** | 0.999683 |
| Slope | **(0.85 to 1.15)** | 0.998933 |
| Intercept | **(± 3% F.S.)** | -2.732372 |



01 Minute Averages



# OZONE

# $O_3$ Calibration Report

## Station Information

| | | | |
|---|---|---|---|
| Calibration Date | May 1, 2007 | Previous Calibration | April 3, 2007 |
| Company | **Lakeland Industry & Community Association** | | |
| Plant / Location | **LICA 1 - Cold Lake South** | | |
| Start Time (MST) | 15:20 | End Time (MST) | 18:45 |
| Reason: | | Monthly Calibration | |
| Barometric Pressure | 714 mm Hg | Station Temperature | 23 Deg C |
| DAS Output Voltage | 0 - 10 Volts | | |

## Equipment Information

| | | | | | |
|---|---|---|---|---|---|
| Analyzer Make / Model: | TECO 49 | S/N : | AOM-13892-143 | Method: | Fluorescent |
| Calibrator Make / Model: | API 700 | S/N : | 690 | Method: | Dilution |
| DAS Make / Model: | ESC 8832 | S/N : | 263 | | |
| Flow Meter: | API 700 | S/N : | 690 | | |

## Analyzer Settings

| | Before Calibration | | After Calibration | |
|---|---|---|---|---|
| Concentration Range | 0 - 500 ppb | | | |
| Box Temp | OK | | OK | |
| $O_3$ Set Level | 3.75 | | 3.75 | |
| Sample Flow A/B | 1 LPM | 1 LPM | 1 LPM | 1 LPM |
| Offset / Slope | 51 | 0.69 | 51 | 0.61 |

## Calibration Data

| Dilution Flow Rate | Ozone Set Point | Calculated Concentration | Indicated Conc. (DAS) | Correction Factor |
|---|---|---|---|---|
| ZERO | ZERO | 0 | 1 | N/A |
| 5000 | 300 | 320 | 361 | 0.8864 |
| 5000 | 300 | 320 | 321 | 0.9969 |
| 5000 | 150 | 174 | 168 | 1.0357 |
| 5000 | 75 | 89 | 83 | 1.0723 |
| ZERO | ZERO | 0 | 1 | N/A |
| | | | | |
| | | | Sum of Least Squares | N/A |
| | | | New Correction Factor | 0.9969 |

| | Before Calibration | After Calibration |
|---|---|---|
| Auto Zero | 1 | 1 |
| Auto Span | 279 | 249 |
| Sample Lines Connected | | YES |
| Percent Change from Previous Calibration | | 13.9% |

Notes: During As Found span point the daily calibration program started, problem fixed immediately and repeated As Found point

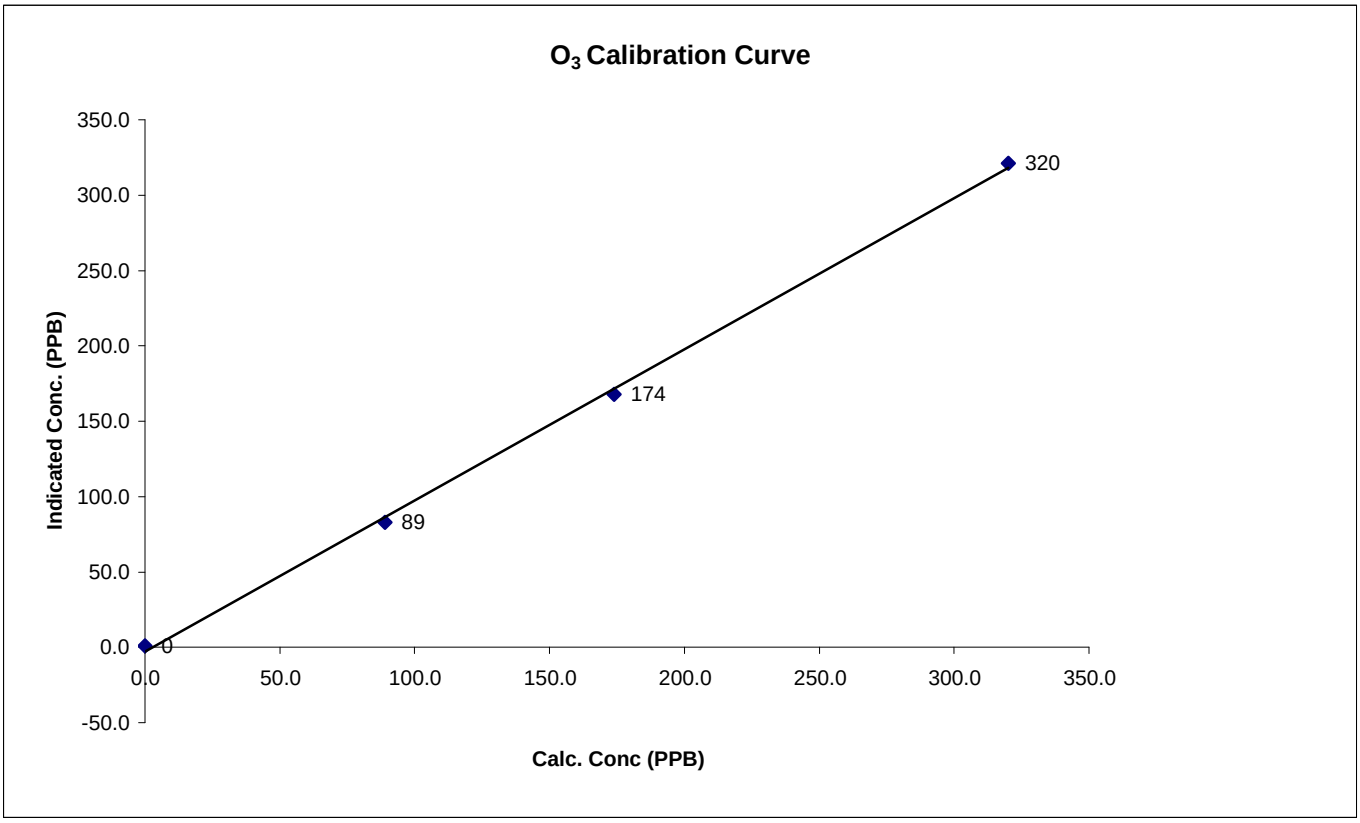
Calibration Performed by: Shea Beaton

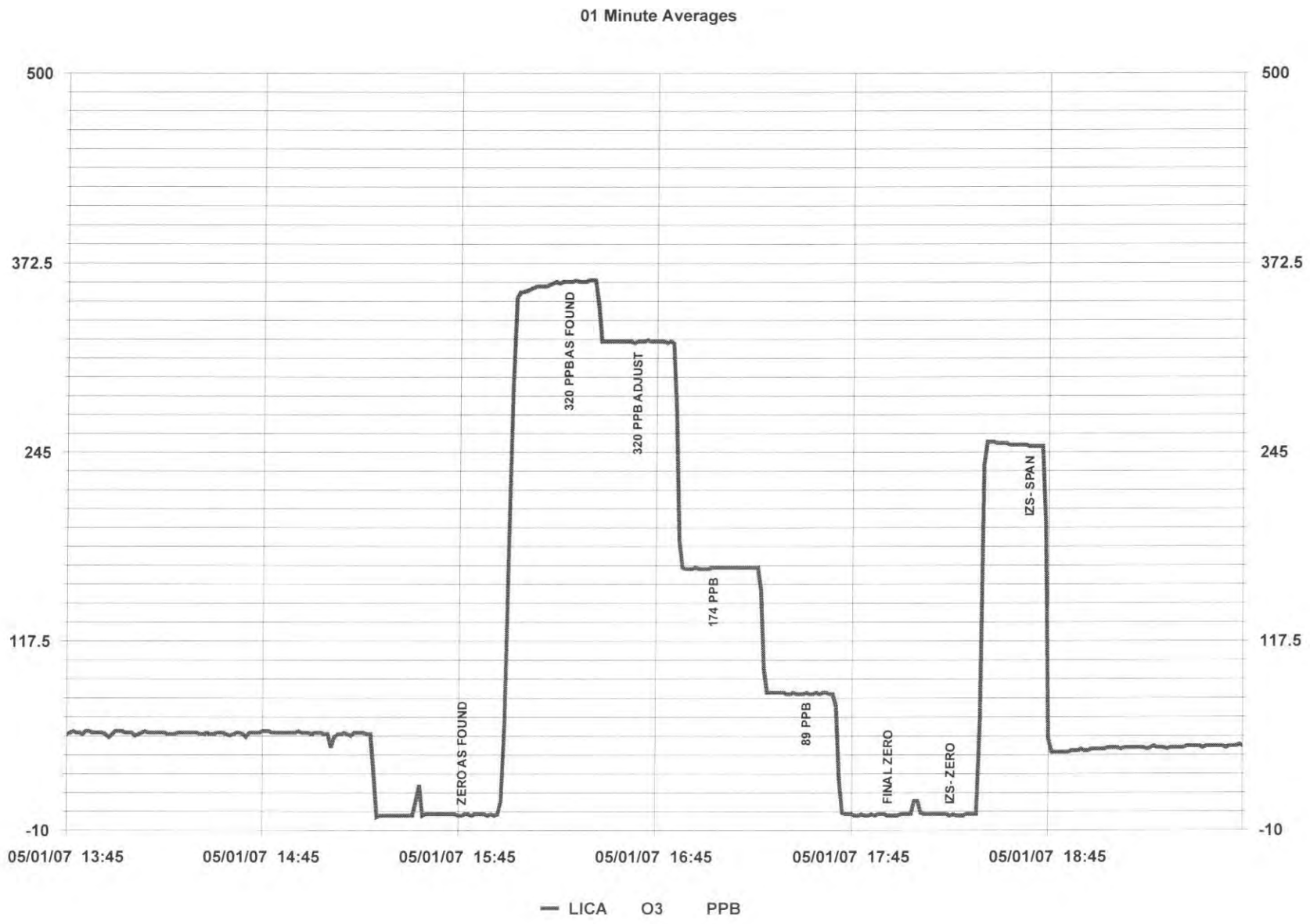
# $O_3$ Calibration Curve

| | | | |
|---|---|---|---|
| Calibration Date | May 1, 2007 | | |
| Company | **Lakeland Industry & Community Association** | | |
| Plant / Location | **LICA 1 - Cold Lake South** | | |
| Start Time (MST) | 15:20 | End Time (MST) | 18:45 |

| Calculated Conc. ppb | Indicated Response ppb | Correction Factor |
|---|---|---|
| 0 | 1 | n/a |
| 89 | 83 | 1.0723 |
| 174 | 168 | 1.0357 |
| 320 | 321 | 0.9969 |

| | | |
|---|---|---|
| Correlation Coefficient | (≥ 0.995) | 0.999139 |
| Slope | (0.85 to 1.15) | 1.003587 |
| Intercept | (± 3% F.S.) | -3.022737 |



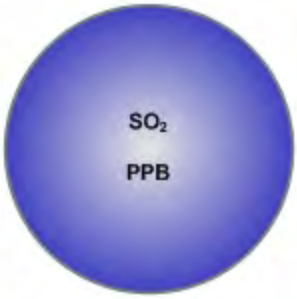

01 Minute Averages
500
372.5
245
117.5
-10
05/01/07 13:45
05/01/07 14:45
05/01/07 15:45
05/01/07 16:45
05/01/07 17:45
05/01/07 18:45
ZERO AS FOUND
320 PPB AS FOUND
320 PPB ADJUST
174 PPB
89 PPB
FINAL ZERO
IZS- ZERO
IZS- SPAN
LICA O3 PPB

# MAY 2007
# LICA
# PASSIVE BUBBLE MAPS

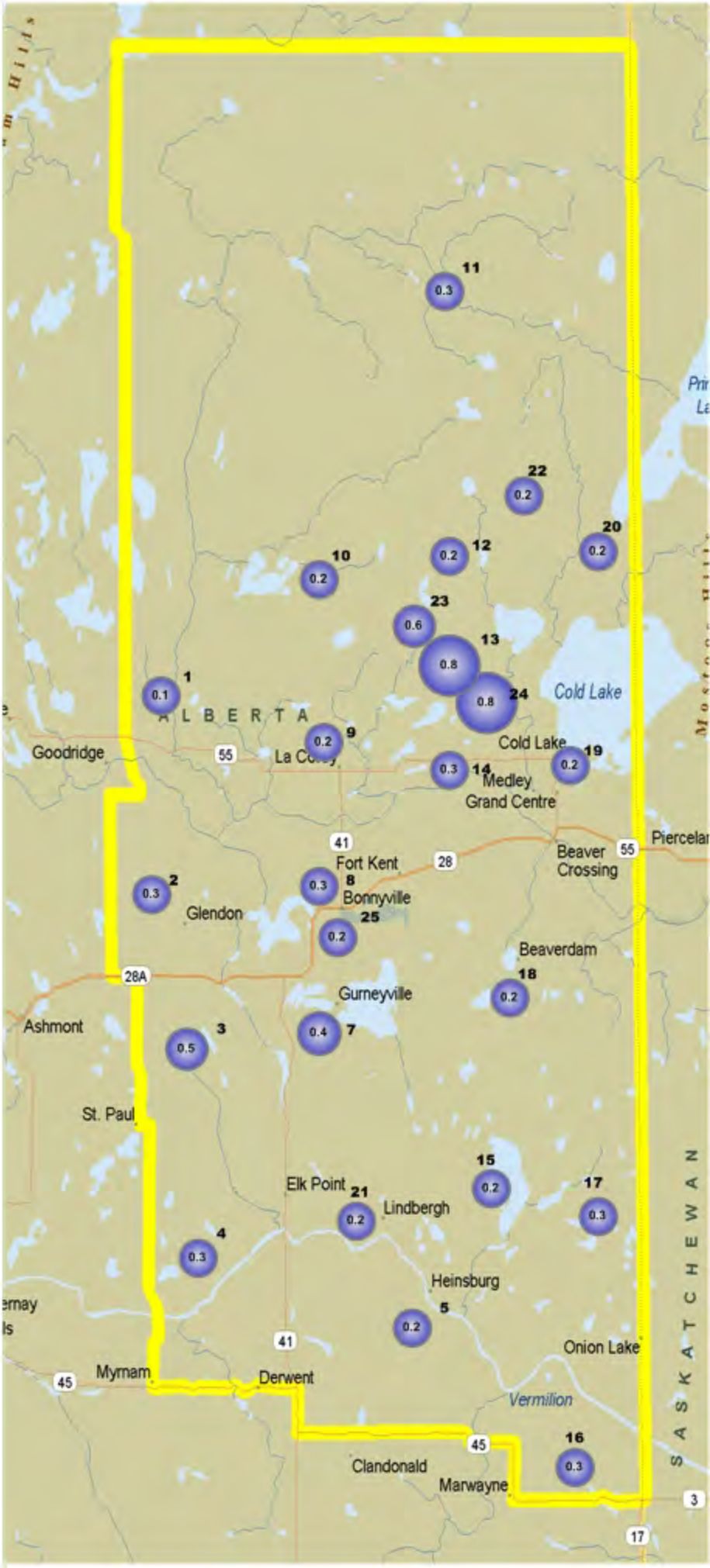
LICA
Lakeland Industry & Community Association

# PASSIVE BUBBLE MAP

## May 2007



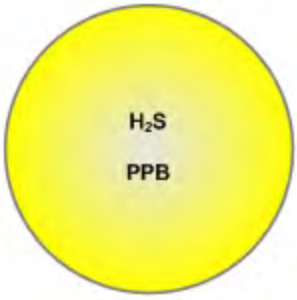

Maxxam Analytics Inc



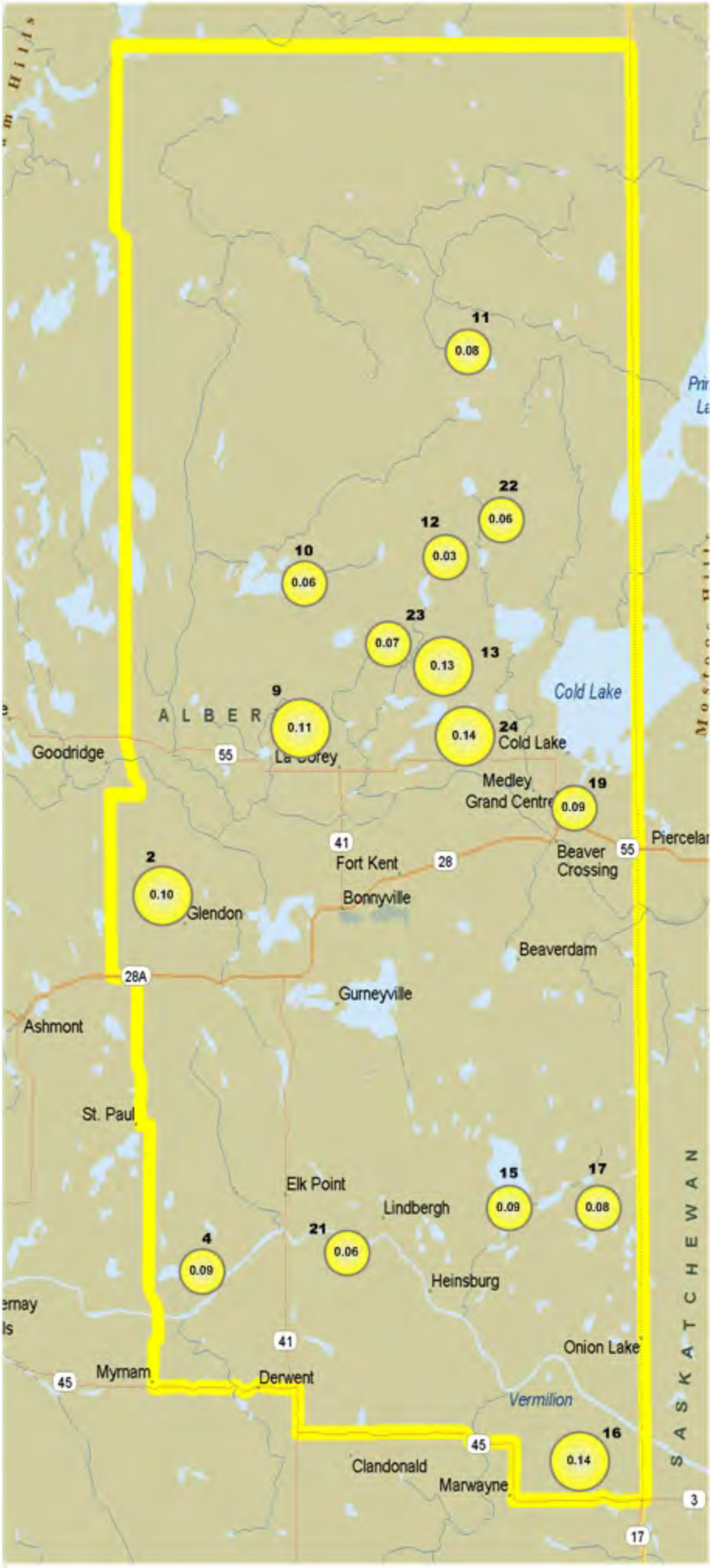
LICA
Lakeland Industry & Community Association

# PASSIVE BUBBLE MAP

## May 2007




Maxxam Analytics Inc

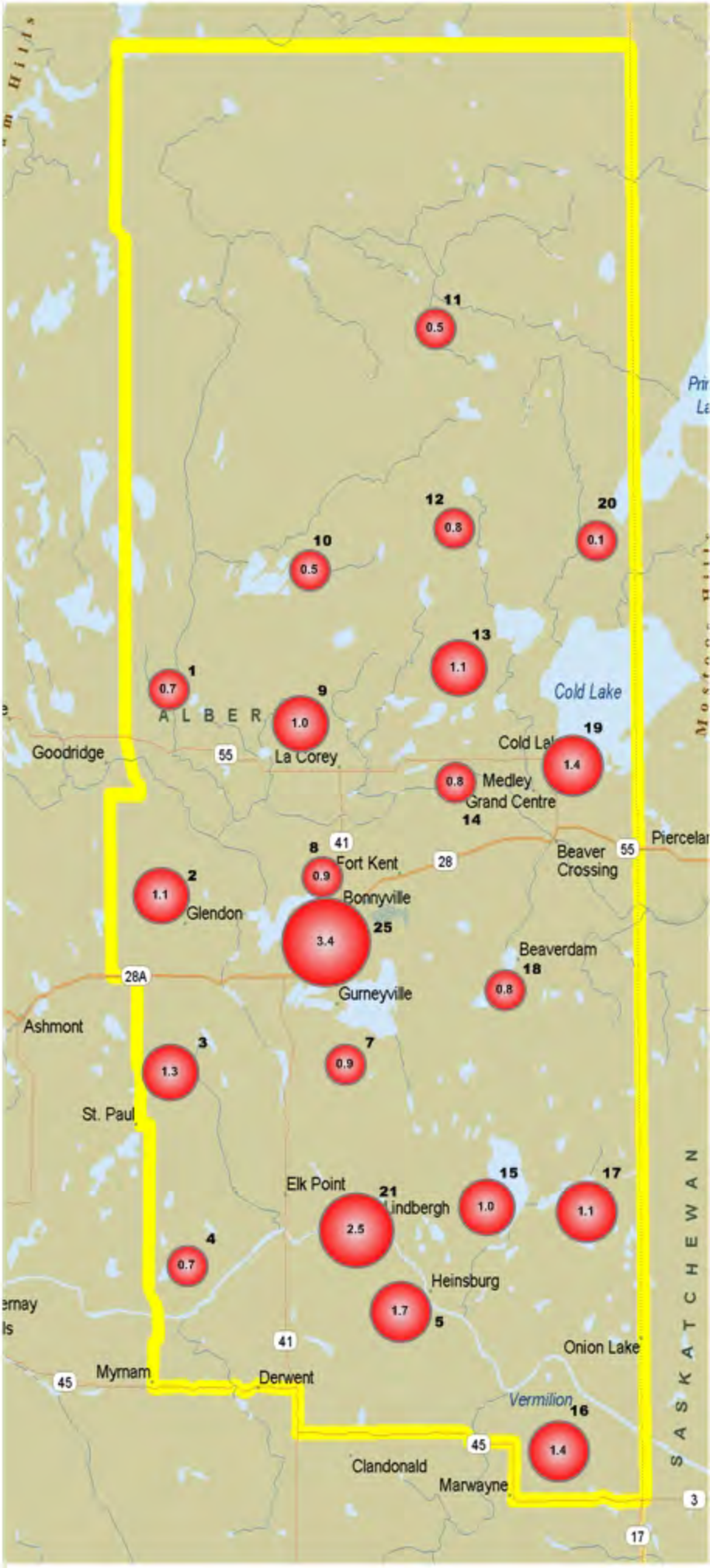


LICA
Lakeland Industry & Community Association

# PASSIVE BUBBLE MAP

## May 2007

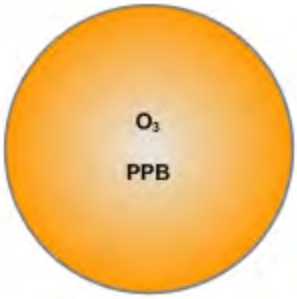

Maxxam Analytics Inc



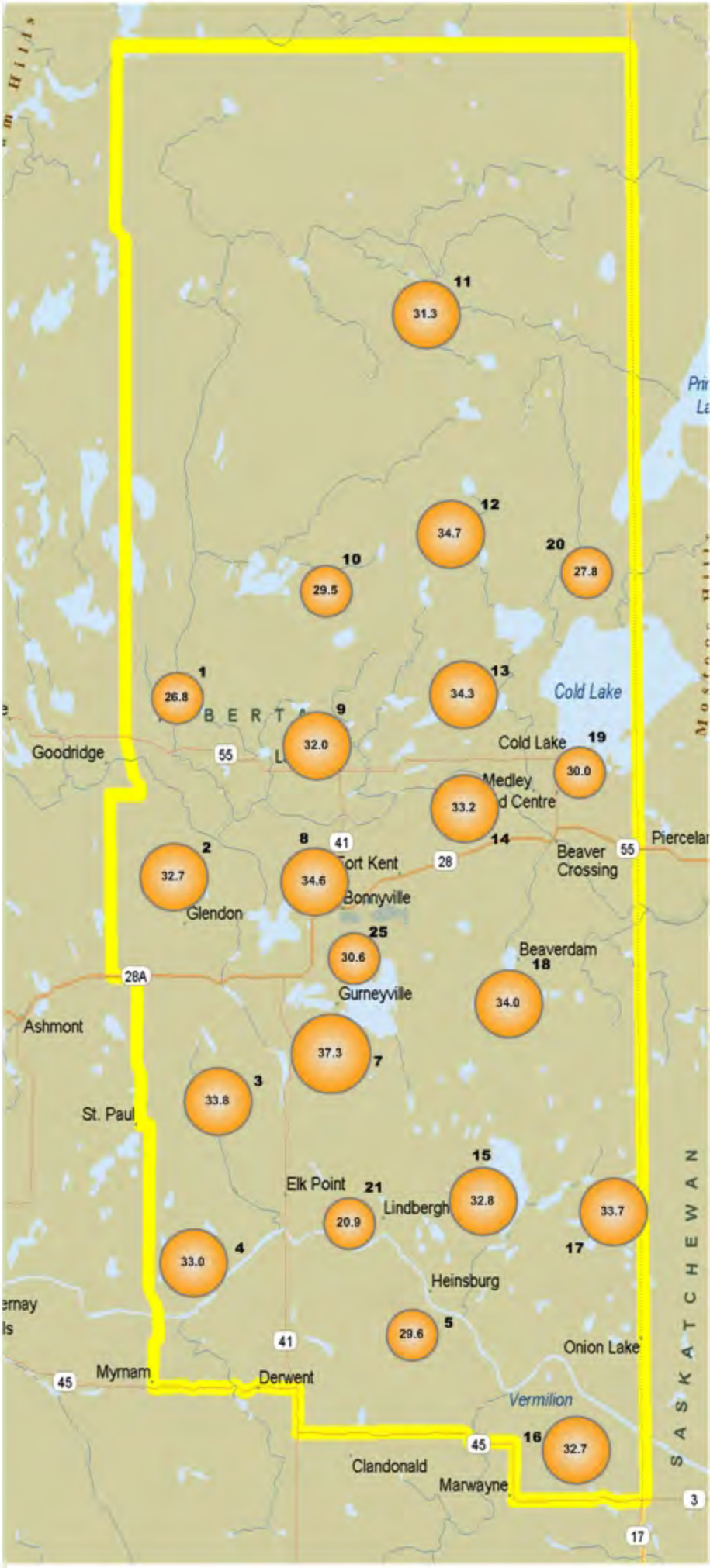
LICA
Lakeland Industry & Community Association

# PASSIVE BUBBLE MAP

May 2007




Maxxam Analytics Inc



# MAY 2007
# LICA PASSIVE NETWORK
# LAB ANALYSIS

Your Project #: MAY 2007
Site:LICA

**Attention: MICHAEL BISAGA**
LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
BONNYVILLE
PO BOX 8237
5006 - 50TH AVENUE
BONNYVILLE, AB, AB
CANADA T9N 2J5

**Report Date: 2007/06/19**

# CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: A723237**
**Received: 2007/06/04, 9:00**

Sample Matrix: Air
# Samples Received: 1

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| H2S Passive Analysis (1) | 1 | 2007/06/18 | 2007/06/19 | | EDM SOP-0320 |
| NO2 Passive Analysis (1) | 1 | 2007/06/18 | 2007/06/19 | | EDM SOP-0318 |
| O3 Passive Analysis (1) | 1 | 2007/06/18 | 2007/06/19 | | EDM SOP-0317 |
| SO2 Passive Analysis (1) | 1 | 2007/06/18 | 2007/06/19 | | EDM SOP-0319 |

Sample Matrix: Air
# Samples Received: 25

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| H2S Passive Analysis (1) | 16 | 2007/06/18 | 2007/06/19 | | EDM SOP-0320 |
| NO2 Passive Analysis (1) | 22 | 2007/06/18 | 2007/06/19 | | EDM SOP-0318 |
| O3 Passive Analysis (1) | 22 | 2007/06/18 | 2007/06/19 | | EDM SOP-0317 |
| SO2 Passive Analysis (1) | 25 | 2007/06/18 | 2007/06/19 | | EDM SOP-0319 |

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

Encryption Key

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

JODI HANSON, Project Manager, Customer Service
Email: jodi.hanson@maxxamanalytics.com
Phone# (780) 468-3500

==========
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section

Your Project #: MAY 2007
Site:LICA

**Attention: MICHAEL BISAGA**
LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
BONNYVILLE
PO BOX 8237
5006 - 50TH AVENUE
BONNYVILLE, AB, AB
CANADA T9N 2J5

**Report Date: 2007/06/19**

## CERTIFICATE OF ANALYSIS



5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CAEAL have approved this reporting process and electronic report format.

Total cover pages: 2

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Attention: MICHAEL BISAGA
Client Project #: MAY 2007
P.O. #:
Site Reference: LICA

Maxxam Job Number : PA723237
Report Date : 2007/06/19

| Sample Description | Set Number | Matrix | Date Sampled | Calculated H2S ppb | Calculated NO2 ppb | Calculated O3 ppb |
|---|---|---|---|---|---|---|
| 1 | F47658 | Air | 2007/04/26 | N/A | 0.7 | 26.8 |
| 2 | F47659 | Air | 2007/04/26 | 0.10 | 1.1 | 32.7 |
| 3 | F47660 | Air | 2007/04/27 | N/A | 1.3 | 33.8 |
| 4 | F47661 | Air | 2007/04/27 | 0.09 | 0.7 | 33.0 |
| 5 | F47662 | Air | 2007/04/27 | N/A | 1.7 | 29.6 |
| 7 | F47663 | Air | 2007/04/27 | N/A | 0.9 | 37.3 |
| 8 | F47664 | Air | 2007/04/26 | N/A | 0.9 | 34.6 |
| 9 | F47665 | Air | 2007/04/26 | 0.11 | 1.0 | 32.0 |
| 10 | F47666 | Air | 2007/04/26 | 0.05 | 0.5 | 30.5 |
| 11 | F47667 | Air | 2007/04/26 | 0.08 | 0.5 | 31.1 |
| 12 | F47668 | Air | 2007/04/26 | 0.03 | 0.8 | 34.7 |
| 13 | F47669 | Air | 2007/04/26 | 0.13 | 1.1 | 34.3 |
| 14 | F47670 | Air | 2007/04/26 | N/A | 0.8 | 33.2 |
| 15 | F47671 | Air | 2007/04/27 | 0.09 | 1.0 | 32.8 |
| 16 | F47672 | Air | 2007/04/27 | 0.14 | 1.4 | 32.7 |
| 17 | F47673 | Air | 2007/04/27 | 0.08 | 1.1 | 33.7 |
| 18 | F47674 | Air | 2007/04/27 | N/A | 0.8 | 34.0 |
| 19 | F47675 | Air | 2007/04/27 | 0.09 | 1.4 | 30.0 |
| 20 | F47676 | Air | 2007/04/26 | N/A | 0.1 | 27.8 |
| 21 | F47677 | Air | 2007/04/27 | 0.06 | 2.5 | 20.9 |
| 10A | F47679 | Air | 2007/04/26 | 0.06 | 0.4 | 28.5 |
| 11A | F47680 | Air | 2007/04/26 | 0.07 | 0.5 | 31.5 |
| 22 | F47683 | Air | 2007/04/26 | 0.06 | N/A | N/A |
| 23 | F47684 | Air | 2007/04/26 | 0.07 | N/A | N/A |
| 24 | F47685 | Air | 2007/04/26 | 0.14 | N/A | N/A |
| 25 | F47686 | Air | 2007/04/26 | N/A | 3.4 | 30.6 |

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Attention: MICHAEL BISAGA
Client Project #: MAY 2007
P.O. #:
Site Reference: LICA

Maxxam Job Number : PA723237
Report Date : 2007/06/19

| Sample Description | Set Number | Matrix | Date Sampled | Calculated SO2 ppb |
|---|---|---|---|---|
| 1 | F47658 | Air | 2007/04/26 | 0.1 |
| 2 | F47659 | Air | 2007/04/26 | 0.3 |
| 3 | F47660 | Air | 2007/04/27 | 0.5 |
| 4 | F47661 | Air | 2007/04/27 | 0.3 |
| 5 | F47662 | Air | 2007/04/27 | 0.2 |
| 7 | F47663 | Air | 2007/04/27 | 0.4 |
| 8 | F47664 | Air | 2007/04/26 | 0.3 |
| 9 | F47665 | Air | 2007/04/26 | 0.2 |
| 10 | F47666 | Air | 2007/04/26 | 0.1 |
| 11 | F47667 | Air | 2007/04/26 | 0.2 |
| 12 | F47668 | Air | 2007/04/26 | 0.2 |
| 13 | F47669 | Air | 2007/04/26 | 0.8 |
| 14 | F47670 | Air | 2007/04/26 | 0.3 |
| 15 | F47671 | Air | 2007/04/27 | 0.2 |
| 16 | F47672 | Air | 2007/04/27 | 0.3 |
| 17 | F47673 | Air | 2007/04/27 | 0.3 |
| 18 | F47674 | Air | 2007/04/27 | 0.2 |
| 19 | F47675 | Air | 2007/04/27 | 0.2 |
| 20 | F47676 | Air | 2007/04/26 | 0.2 |
| 21 | F47677 | Air | 2007/04/27 | 0.2 |
| 10A | F47679 | Air | 2007/04/26 | 0.2 |
| 11A | F47680 | Air | 2007/04/26 | 0.3 |
| 22 | F47683 | Air | 2007/04/26 | 0.2 |
| 23 | F47684 | Air | 2007/04/26 | 0.6 |
| 24 | F47685 | Air | 2007/04/26 | 0.8 |
| 25 | F47686 | Air | 2007/04/26 | 0.2 |

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Attention: MICHAEL BISAGA
Client Project #: MAY 2007
P.O. #:
Site Reference: LICA

# Quality Assurance Report

Maxxam Job Number: PA723237

| QA/QC Batch Num Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|
| 1682934 DF4 | Calibration Check | Calculated NO2 | 2007/06/19 | | 99 | % | 76 - 118 |
| | SPIKE | Calculated NO2 | 2007/06/19 | | 102 | % | N/A |
| | BLANK | Calculated NO2 | 2007/06/19 | ND, RDL=0.1 | | ppb | |
| 1682935 LM1 | Calibration Check | Calculated O3 | 2007/06/19 | | 100 | % | 91 - 107 |
| | SPIKE | Calculated O3 | 2007/06/19 | | 99 | % | N/A |
| | BLANK | Calculated O3 | 2007/06/19 | ND, RDL=0.1 | | ppb | |
| 1682940 DF4 | Calibration Check | Calculated SO2 | 2007/06/19 | | 101 | % | 95 - 105 |
| | SPIKE | Calculated SO2 | 2007/06/19 | | 103 | % | N/A |
| | BLANK | Calculated SO2 | 2007/06/19 | ND, RDL=0.1 | | ppb | |

ND = Not detected
N/A = Not Applicable

# MAY 2007
# PASSIVE FIELD DATA

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
# PASSIVE FIELD DATA

| SAMPLER | ID | START | | END | | NOTES |
|---|---|---|---|---|---|---|
| | | DATE | TIME | DATE | TIME | |
| $SO_2/NO_2/O_3$ | 1 | 04/26/07 | 9:35 | 05/29/07 | 8:55 | |
| $H_2S/SO_2/NO_2/O_3$ | 2 | 04/26/07 | 8:55 | 05/29/07 | 8:20 | |
| $SO_2/NO_2/O_3$ | 3 | 04/27/07 | 15:05 | 05/30/07 | 15:00 | |
| $H_2S/SO_2/NO_2/O_3$ | 4 | 04/27/07 | 14:00 | 05/30/07 | 14:00 | |
| $SO_2/NO_2/O_3$ | 5 | 04/27/07 | 12:35 | 05/30/07 | 12:35 | |
| $SO_2/NO_2/O_3$ | 7 | 04/27/07 | 15:55 | 05/30/07 | 15:40 | |
| $SO_2/NO_2/O_3$ | 8 | 04/26/07 | 8:20 | 05/29/07 | 7:45 | |
| $H_2S/SO_2/NO_2/O_3$ | 9 | 04/26/07 | 13:35 | 05/29/07 | 12:55 | |
| $H_2S/SO_2/NO_2/O_3$ | 10 | 04/26/07 | 10:45 | 05/29/07 | 10:00 | |
| $H_2S/SO_2/NO_2/O_3$ | 11 | 04/26/07 | 12:10 | 05/29/07 | 11:30 | |
| $H_2S/SO_2/NO_2/O_3$ | 12 | 04/26/07 | 15:20 | 05/29/07 | 14:30 | |
| $H_2S/SO_2/NO_2/O_3$ | 13 | 04/26/07 | 16:15 | 05/29/07 | 15:40 | |
| $SO_2/NO_2/O_3$ | 14 | 04/26/07 | 7:20 | 05/29/07 | 6:40 | |
| $H_2S/SO_2/NO_2/O_3$ | 15 | 04/27/07 | 11:00 | 05/30/07 | 10:50 | |
| $H_2S/SO_2/NO_2/O_3$ | 16 | 04/27/07 | 11:55 | 05/30/07 | 11:50 | |
| $H_2S/SO_2/NO_2/O_3$ | 17 | 04/27/07 | 10:15 | 05/30/07 | 10:05 | |
| $SO_2/NO_2/O_3$ | 18 | 04/27/07 | 9:20 | 05/30/07 | 9:10 | |
| $H_2S/SO_2/NO_2/O_3$ | 19 | 04/27/07 | 8:30 | 05/30/07 | 16:40 | |
| $SO_2/NO_2/O_3$ | 20 | 04/26/07 | 17:30 | 05/29/07 | 17:20 | |
| $H_2S/SO_2/NO_2/O_3$ | 21 | 04/27/07 | 13:10 | 05/30/07 | 13:10 | |
| $H_2S/SO_2$ | 22 | 04/26/07 | 15:00 | 05/29/07 | 14:15 | |
| $H_2S/SO_2$ | 23 | 04/26/07 | 16:00 | 05/29/07 | 15:25 | |
| $H_2S/SO_2$ | 24 | 04/26/07 | 16:35 | 05/29/07 | 16:15 | |
| $SO_2/NO_2/O_3$ | 25 | 04/26/07 | 8:00 | 05/29/07 | 7:20 | |
| $H_2S/SO_2/NO_2/O_3$ | 10A | 04/26/07 | 10:45 | 05/29/07 | 10:00 | |
| $H_2S/SO_2/NO_2/O_3$ | 11A | 04/26/07 | 12:10 | 05/29/07 | 11:30 | |