



Lakeland Industry & Community Association

MAY 2021

Monthly Ambient Air Quality Monitoring Report

LICA-202105

Operation and Maintenance:

Bureau Veritas Canada

Data Validation and Report:

Lakeland Industry & Community Association

June 15, 2021

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June 15, 2021

Alberta Environment and Parks (AEP)

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RE: LICA – May 2021 Monthly Ambient Air Quality Monitoring Report

Enclosed is the May 2021 Monthly Ambient Air Quality Monitoring Report for the continuous ambient air quality monitoring stations of the Lakeland Industry & Community Association (LICA) regional air quality monitoring network.

The representative of the Person Responsible for this monitoring program is

LICA Airshed

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This report has been reviewed by Michael Bisaga of the LICA Airshed.

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LIST OF ACRONYMS

AAAQOs	Alberta Ambient Air Quality Objectives
AEP	Alberta Environment and Parks
AMD	Air Monitoring Directive
AT	Ambient Temperature
BP	Barometric Pressure
CH ₄	Methane
EPEA	Environmental Protection and Enhancement Act
H ₂ S	Hydrogen Sulphide
kph	kilometers per hour
LICA	Lakeland Industry & Community Association
mb	millibar
mm	millimeter
NMHC	Non-Methane Hydrocarbons
NO	Nitric Oxide
NO ₂	Nitrogen Dioxide
NO _x	Oxide of Nitrogen
PAC	Polycyclic Aromatic Compounds
ppb	parts per billion
ppm	parts per million
RH	Relative Humidity
SO ₂	Sulphur Dioxide
ST	Station Temperature
STDWD	Standard Deviation Wind Direction
THC	Total Hydrocarbons
TRS	Total Reduced Sulphur
VWD	Vector Wind Direction
VWS	Vector Wind Speed
WD	Wind Direction
WS	Wind Speed
°C	Degrees Celsius

NETWORK STATION SUMMARY

Listing of Continuous Monitoring Stations and Integrated Sampling Stations

Station Name		Cold Lake South	Tamarack	St. Lina
Station ID		1174	1248	1250
Coordinates		54.41402,	54.604935,	54.215961,
		-110.23316	-110.452637	-111.503304
Continuous Monitoring Parameter	SO2	√	√	√
	TRS	√		
	H2S		√	√
	THC	√	√	√
	CH4	√	√	√
	NMHC	√	√	√
	NOX	√	√	√
	NO	√	√	√
	NO2	√	√	√
	O3	√		√
	PM2.5	√		√
	TPX	√	√	√
	RH	√	√	√
	BP		√	√
	PRECIPITATION		√	√
	WS	√	√	√
	WD	√	√	√
	STDWD	√	√	√
Integrated Sampling	VOCs	√		
	PAHs	√		
	Partisol	√		
	Passive	√		
	NMHC Canister			
	PAC			√

List of Contractors performing air monitoring activities

Sampling Program	Monitoring Activities Conducted By	Sample Analysis Conducted By	Data/Report Prepared By	Electronic Submission Conducted By
Continuous Monitoring Station	Bureau Veritas Canada	Bureau Veritas Canada	LICA / Bureau Veritas Canada	LICA
Intermittent (VOCs/PAHs)	Bureau Veritas Canada	InnoTech Alberta Inc	InnoTech Alberta Inc	LICA
Partisol	Bureau Veritas Canada	InnoTech Alberta Inc	InnoTech Alberta Inc	LICA
Passive	Bureau Veritas Canada	Bureau Veritas Canada	Bureau Veritas Canada	LICA
PAC	Bureau Veritas Canada	ECCC	AEP	Not Applicable

Monitoring Notes during the Month of May 2021

Cold Lake South

- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable.
- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement.
- **PM2.5:** A monthly audit was attempted on May 7 hour 16 but failed due to an operator error. Two hours of downtime were recorded due to this event.

Tamarack (formerly Maskwa)

- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable, except PM2.5. Hourly data for PM2.5 collected on May 11 hour 6 exceeded the AAAQG. Ref #: 378831. The cause of the exceedance cannot be determined. There were several potential local sources of particulate matter, including nearby construction, roadwork, and smoke carried into the region from distant wildfires; the combined effect of low windspeeds and short-lived elevated concentrations make source attribution difficult. LICA will closely monitor particulate matter data from the Tamarack AQMS for repeated exceedances under similar meteorological conditions. LICA has collected less than 1 year of ambient particulate matter monitoring data at this location. As more data are collected, LICA will better understand the diurnal, seasonal, and spatial patterns of all pollutants.
- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement.

- **O3:** The analyzer failed the repeat zero check on May 9 as the zero results exceeded the acceptance limit. An as-found points check was completed to confirm the analyzer's functionality on May 12. The results passed the check requirements. However, the daily zero-span results continued to trend outside the limits. The zero-span pump was repaired to correct the drift issue following a successful zero-span check on May 17. Five hours of downtime were recorded due to additional quality checks and maintenance.

St. Lina Station

- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable.
- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement.
- **All parameters:** One hour of downtime was recorded on May 7 hour 10 due to a power failure.
- **THC/CH4/NMHC:**
 - Frequent poor sample injections started to be recorded on May 1. A multi-point calibration was performed on May 1 to correct the issue. Bad injections continued being recorded after the calibration. On May 10, the faulty Thermo 55i analyzer, s/n: 1180930025, was removed, and the Thermo 55i analyzer, s/n: 1236656107, was installed. The channels were put offline overnight for the column conditioning. Twenty-six hours of downtime were recorded due to this event. One-minute data that were recorded below 1.7 ppm were discarded as these data were invalid and likely affected by injection issues. Ten hours of data were invalidated as less than 75% of valid data in an hour was collected this month.
 - The span gas cylinder was replaced following a repeat zero-span check on May 26. One hour of downtime was recorded.
- **PM2.5:** The Sharp 5030i unit, s/n: CM17091001, failed on May 6 hour 9. It was replaced with a BV-supplied Sharp 5030i unit, s/n: CM17461021, on May 7. Twenty-four hours of downtime were recorded due to this event.
- **NOx/NO/NO2:** The analyzer failed both the scheduled and the repeat zero-span check on May 20. A shut-down calibration which was attempted on May 22 failed due to the faulty sample pump. The sample pump was replaced, and a successful post-repair calibration was completed on May 22. A review of diagnostic data shows that the pump failed during hour 15 on May 20. Data collected between May 20 hour 15 and May 22 hour 11 were invalidated. Fifty hours of downtime were recorded due to this event.
- **RH:** Three hours of data were invalidated as values were recorded above the full scale (100%).

Integrated Sampling

All the integrated sampling analytical results are included in the May 2021 Integrated Sampling Report.

- **VOCs Sampling System:**
 - The VOC sampler is programmed to collect a 24-hour sample of air every sixth day as per the North American Pollution Surveillance schedule (NAPS).
 - Five samples were collected this month: on May 4, 10, 16, 22 and 28.
- **PAHs Sampling System:**
 - The PAH sampler is programmed to collect a 24-hour sample of air every sixth day as per the North American Pollution Surveillance schedule (NAPS).
 - Five samples were collected this month: on May 4, 10, 16, 22 and 28.

- **Partisol Sampling System:**
 - The Partisol sampler is programmed to collect a 24-hour sample of air every sixth day as per the North American Pollution Surveillance schedule (NAPS).
 - Five samples were collected this month: on May 4, 10, 16, 22 and 28.
- **Passive Sampling System:**
 - The passive sample filters were installed at the stations between April 28 and April 30, and were removed between May 28 and May 31.
 - A total of 9 duplicate samples were collected: 2 for H₂S, 3 for SO₂, 2 for NO₂ and 2 for O₃.
- **PAC Sampling System:**
 - The PAC sampling program began in May 2019, and is designed to collect a 2-month integrated sample.
 - The PAC sampling program is temporary paused as the EC laboratory is currently closed.

Revisions to Alberta's Ambient Air Quality Data Warehouse

No revisions to historical data previously submitted to the Alberta's Ambient Air Quality Data Warehouse were made this month.

Deviations from Authorized Monitoring Methods

No deviations from authorized monitoring methods were recorded this month.

Disclaimer

Baseline correction were performed on the 1-minute data. 5-minute and hourly data were calculated based on the post-baseline correction 1-minute data set. Data verification/validation were then performed on the 5-minute and hourly data. Hourly data that are included in this report are the post-validation hourly data set.

Equipment calibration / maintenance records were provided by Bureau Veritas Canada.

Certification

This report was prepared and submitted by Lily Lin in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).



Lily Lin, Data & Reporting Specialist, LICA Airshed

This report was reviewed by Mike Bisaga in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).

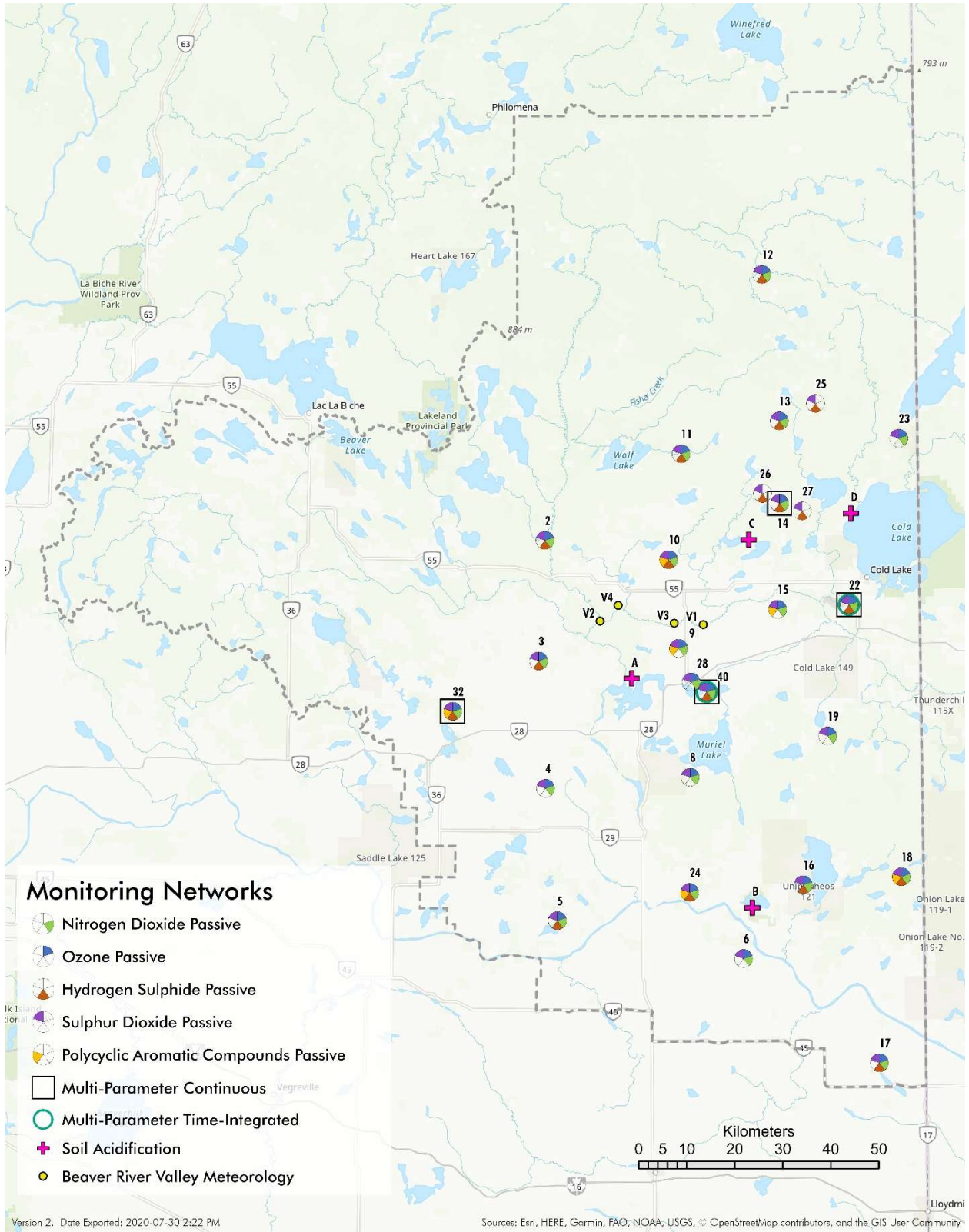
I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization and reporting requirements. I also certify that at the time of this report's submission, all air data have been electronically uploaded to Alberta's Ambient Air Quality Data Warehouse as required by the AMD, with the exception of electronic submission for the results of intermittent samples, Partisol samples and passive samples. Electronic submission for the intermittent sample, Partisol sample and passive sample results will be performed during the preparation of the May 2021 integrated sampling report. Uploading of VOC data from the canister sampling program was not required at the time of completing this report.



Michael Bisaga, Monitoring Programs Manager, LICA Airshed

June 15, 2021

Map of LICA Continuous Monitoring Network



CONTINUOUS NETWORK EQUIPMENT AND MONITORING RESULTS SUMMARY

Cold Lake South Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	Calibration Date
Sulphur Dioxide (SO2)	Thermo / 43i-TLE	1180260018	May 14, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Total Reduced Sulphur (TRS)	Thermo / 450i	812728560	May 14, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH4/NMHC)	Thermo / 55i	1180030034	May 13, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NOx/NO/NO2)	Thermo / 42i	1505664393	May 14, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Ozone (O3)	Thermo / 49i	700419951	May 13, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Particulate Matter 2.5 (PM2.5)	Teledyne T640	575	May 27, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			

Parameter	Make / Model	Serial Number	System Check Date
Relative Humidity (RH)	Rotronic HC2A-S3	20404750	April 20, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Barometric Pressure (BP)	Met One / Part 092	Y23368	April 20, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Ambient Temperature (AT)	Rotronic HC2A-S3	20404750	April 20, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Station Temperature (ST)	BV-supplied	n/a	n/a
<ul style="list-style-type: none"> No issues were identified this month. 			
Wind Speed (WS) / Wind Direction (WD)/ Stand Deviation Wind Direction (STDWD)	RM Young 05305AQ	177354	April 20, 2021
<ul style="list-style-type: none"> Wind direction data contained in this report represents where the wind is coming from. An installation calibration was performed on April 20, 2021. No issues were identified this month. 			

Monitored Data Summary for Cold Lake South Station

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	May 2 at hour 8	8.6	N	0.3	May 3	100.0	94.9
TRS (ppb)	-	-	-	-	-	-	0.2	0	2	May 30 at hour 6	3.4	WSW	0.8	May 8	100.0	94.9
NOx (ppb)	-	-	-	-	-	-	2.2	0	16	May 22 at hour 5	1.1	NNE	3.8	May 12	100.0	94.7
NO (ppb)	-	-	-	-	-	-	0.2	0	8	May 22 at hour 5	1.1	NNE	0.9	May 12	100.0	94.7
NO2 (ppb)	159	-	-	0	-	-	1.9	0	11	May 4 at hour 5	1.3	NE	2.9	May 12	100.0	94.7
O3 (ppb)	76	-	-	0	-	-	33.2	2.0	55.5	May 9 at hour 18	4.2	SW	42.2	May 26	100.0	94.9
THC (ppm)	-	-	-	-	-	-	1.91	1.83	2.21	May 22 at hour 4	2.6	SE	1.98	May 14	100.0	95.0
CH4 (ppm)	-	-	-	-	-	-	1.91	1.83	2.17	May 22 at hour 4	2.6	SE	1.97	May 14	100.0	95.0
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.07	May 12 at hour 5	0.2	ENE	0.02	May 12	100.0	95.0
PM2.5 (µg/m3)	80	29	-	0	0	-	4.4	0	22	May 6 at hour 17	13.2	E	7.7	May 6	99.7	99.6
RH (%)	-	-	-	-	-	-	54.2	13	100	May 18 at hour 3	8.3	NE	97.4	May 18	100.0	100.0
BP (millibar)	-	-	-	-	-	-	952	934	964	May 22 at hour 6	3.2	E	962	May 21	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	9.7	-8.3	24.4	May 30 at hour 18	11.1	SW	16.6	May 31	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.1	19.2	24.3	May 29 at hour 5	9	W	23.3	May 28	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.5	0.0	23.2	May 28 at hour 10	23.2	SW	13.7	May 27	100.0	100.0
WDV (sector)	-	-	-	-	-	-	51 (NE)	-	-	-	-	-	-	-	100.0	100.0

1- Date/ Time given is the first minimum and maximum value that was recorded

Alberta Ambient Air Quality Objectives (AAAOs) Exceedances

The measured ambient air quality was within the AAAQOs for all monitored parameters.

Tamarack Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	Calibration Date
Sulphur Dioxide (SO₂)	Thermo / 43i-TLE	1180930031	May 4, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Hydrogen Sulphide (H₂S)	Thermo / 450i	CM17360005	May 4, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NO_x/NO/NO₂)	Thermo / 42i	1180930028	May 4, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Ozone (O₃)	Thermo / 49iQ	1202068570	May 5, 2021
<ul style="list-style-type: none"> The analyzer failed the repeat zero check on May 9 as the zero results exceeded the acceptance limit. An as-found points check was completed to confirm the analyzer's functionality on May 12. The results passed the check requirements. However, the daily zero-span results continued to trend outside the limits. The zero-span pump was repaired to correct the drift issue following a successful zero-span check on May 17. Five hours of downtime were recorded due to additional quality checks and maintenance. 			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH₄/NMHC)	Thermo / 55i	1314057759	May 5, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Particulate Matter 2.5 (PM_{2.5})	Thermo / Sharp 5030	CM 2209	May 5, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			

Parameter	Make / Model	Serial Number	System Check Date
Relative Humidity (RH)	Rotronic / HC2A-S3	20433166	April 13, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Ambient Temperature (AT)	Rotronic / HC2A-S3	20433166	April 13, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Barometric Pressure (BP)	Met One / Part 090D	F4997	February 2, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Station Temperature (ST)	BV-supplied	n/a	n/a
<ul style="list-style-type: none"> No issues were identified this month. 			
Precipitation (PRECIP)	Met One / Part 387	F4481	February 2, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Wind Speed (WS) / Wind Direction (WD)/ Stand Deviation Wind Direction (STDWD)	RM Young / 05305VK	161465	February 2, 2021
<ul style="list-style-type: none"> Wind direction data contained in this report represents where the wind is coming from. The last wind system calibration was completed on September 10, 2020. No issues were identified this month. 			

Monitored Data Summary for Tamarack Site

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.7	0	15	May 8 at hour 4	8	E	5.0	May 8	100.0	94.9
H2S (ppb)	10	3	-	0	0	-	0.0	0	1	May 1 at hour 3	0.7	NE	0.2	May 31	100.0	94.9
NOx (ppb)	-	-	-	-	-	-	2.2	0	18	May 10 at hour 6	2.3	W	5.7	May 8	100.0	94.7
NO (ppb)	-	-	-	-	-	-	0.3	0	7	May 29 at hour 7	9.5	WNW	1.1	May 29	100.0	94.7
NO2 (ppb)	159	-	-	0	-	-	1.9	0	14	May 7 at hour 0	8.1	E	4.9	May 8	100.0	94.7
O3 (ppb)	76	-	-	0	-	-	34.6	7.4	57.2	May 9 at hour 18	5.1	SW	43.0	May 10	99.3	94.2
THC (ppm)	-	-	-	-	-	-	1.89	1.82	2.38	May 9 at hour 3	0.5	SW	1.95	May 9	100.0	94.9
CH4 (ppm)	-	-	-	-	-	-	1.89	1.82	2.35	May 15 at hour 4	0.4	SSE	1.93	May 9	100.0	94.9
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.21	May 9 at hour 3	0.5	SW	0.01	May 9	100.0	94.9
PM2.5 (µg/m3)	80	29	-	1	0	-	3.5	0	105	May 11 at hour 6	3.2	SW	12.8	May 10	100.0	99.9
RH (%)	-	-	-	-	-	-	54.8	15	99	May 12 at hour 3	0.9	E	95.6	May 18	100.0	100.0
BP (millibar)	-	-	-	-	-	-	939	921	950	May 21 at hour 8	3.9	NNE	949	May 21	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	9.0	-8.3	23.9	May 30 at hour 17	8.1	SW	16.1	May 31	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	21.9	20.2	22.9	May 5 at hour 12	5.9	W	22.4	May 5	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	40.4	0.0	3.3	May 18 at hour 5	7.3	N	21.5	May 18	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	0.9	0.0	20.2	May 24 at hour 12	20.2	NNE	12.3	May 27	100.0	100.0
WDV (sector)	-	-	-	-	-	-	67 (ENE)	-	-	-	-	-	-	-	100.0	100.0

1- Date/ Time given is the first minimum and maximum value that was recorded

* Data represents the total (sum) for the indicated time frame

Alberta Ambient Air Quality Objectives (AAAQOs) Exceedances

The following exceedances of AAAQOs were observed at the Tamarack Site.

Date	Time (MST)	Parameter	Average Period	AAAQOs	Concentration	Wind speed	Wind Direction	Reference #
May 11	6	PM2.5	1-Hour	80 µg/m3	105 µg/m3	3.2 km/hr	216° (SW)	378831

The possible source of the exceedance of the PM2.5 on May 11 is unknown. As the exceedance was only recorded for an hour, it was difficult to pin point where the sources were. There were constructions and wood burning around the station. It was a local event as only the Tamarack station recorded an exceedance in the LICA monitoring network on May 11.

St. Lina Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	Calibration Date
Sulphur Dioxide (SO₂)	Thermo / 43i-TLE	1180930030	May 11, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Hydrogen Sulphide (H₂S)	Thermo / 450i	CM18010058	May 11, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NO_x/NO/NO₂)	Thermo / 42i	1180930029	May 22, 2021
<ul style="list-style-type: none"> A successful monthly calibration was completed on May 11. The analyzer failed both the scheduled and the repeat zero-span check on May 20. A shut-down calibration which was attempted on May 22 failed due to the faulty sample pump. The sample pump was replaced, and a successful post-repair calibration was completed on May 22. A review of diagnostic data shows that the pump failed during hour 15 on May 20. Data collected between May 20 hour 15 and May 22 hour 11 were invalidated. Fifty hours of downtime were recorded due to this event. 			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH₄/NMHC)	Thermo / 55i	1180930025 / 1236656107	May 11, 2021
<ul style="list-style-type: none"> Frequent poor sample injections started to be recorded on May 1. A multi-point calibration was performed on May 1 to correct the issue. Bad injections continued being recorded after the calibration. On May 10, the faulty Thermo 55i analyzer, s/n: 1180930025, was removed, and the Thermo 55i analyzer, s/n: 1236656107, was installed. The channels were put offline overnight for the column conditioning. Twenty-six hours of downtime were recorded due to this event. One-minute data that were recorded below 1.7 ppm were discarded as these data were invalid and likely affected by injection issues. Ten hours of data were invalidated as less than 75% of valid data in an hour was collected this month. 			
Ozone (O₃)	Thermo / 49i	1002240371	May 10, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			

Parameter	Make / Model	Serial Number	Calibration Date
Particulate Matter 2.5 (PM2.5)	Thermo / Sharp 5030i	CM17091001 / CM17461021	May 7, 2021
<ul style="list-style-type: none"> The Sharp 5030i unit, s/n: CM17091001, failed on May 6 hour 9. It was replaced with a BV-supplied Sharp 5030i unit, s/n: CM17461021, on May 7. Twenty-four hours of downtime were recorded due to this event. 			
Parameter	Make / Model	Serial Number	System Check Date
Relative Humidity (RH)	Vaisala Oyj. Finland / HMP155	R2640785	December 23, 2020
<ul style="list-style-type: none"> Three hours of data were invalidated as values were recorded above the full scale (100%).. 			
Ambient Temperature (AT)	Vaisala Oyj. Finland / HMP155	R2640785	December 23, 2020
<ul style="list-style-type: none"> No issues were identified this month. 			
Barometric Pressure (BP)	Met One / Part 090D	F4998	December 23, 2020
<ul style="list-style-type: none"> No issues were identified this month. 			
Station Temperature (ST)	BV-supplied	n/a	n/a
<ul style="list-style-type: none"> No issues were identified this month. 			
Precipitation (PRECIP)	Met One / Part 387D	A23775	January 28, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Wind Speed (WS) / Wind Direction (WD)/ Stand Deviation Wind Direction (STDWD)	RM Young / 05305VK	161466	March 16, 2021
<ul style="list-style-type: none"> Wind direction data contained in this report represents where the wind is coming from. The annual wind system calibration was completed on March 16, 2021. No issues were identified this month. 			

Monitored Data Summary for St. Lina Site

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	May 3 at hour 23	14.6	ESE	0.1	May 10	99.9	95.0
H2S (ppb)	10	3	-	0	0	-	0.0	0	1	May 15 at hour 2	7.8	SSW	0.3	May 15	99.9	94.9
NOx (ppb)	-	-	-	-	-	-	1.2	0	8	May 24 at hour 5	6	NE	2.7	May 13	93.1	88.3
NO (ppb)	-	-	-	-	-	-	0.0	0	1	May 4 at hour 8	8.4	ESE	0.1	May 24	93.1	88.3
NO2 (ppb)	159	-	-	0	-	-	1.2	0	8	May 24 at hour 5	6	NE	2.6	May 13	93.1	88.3
O3 (ppb)	76	-	-	0	-	-	38.5	15.1	56.8	May 9 at hour 16	10.8	SSW	49.2	May 9	99.9	94.9
THC (ppm)	-	-	-	-	-	-	1.90	1.81	2.27	May 21 at hour 5	4	ESE	1.96	May 20	94.9	90.2
CH4 (ppm)	-	-	-	-	-	-	1.90	1.81	2.27	May 21 at hour 5	4	ESE	1.96	May 20	94.9	90.2
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	May 1 at hour 0	10.5	NW	0.00	May 2	94.9	90.2
PM2.5 (µg/m3)	80	29	-	0	0	-	4.1	0	12	May 19 at hour 19	8.8	ENE	6.0	May 14	96.8	96.1
RH (%)	-	-	-	-	-	-	54.6	19	100	May 2 at hour 6	7.2	WNW	98.8	May 18	99.5	99.5
BP (millibar)	-	-	-	-	-	-	920	903	930	May 21 at hour 5	4	ESE	929	May 21	99.9	99.9
Ext. Temp. (°C)	-	-	-	-	-	-	10.0	-4.4	23.8	May 30 at hour 17	19.1	WSW	17.2	May 31	99.9	99.9
Stn. Temp. (°C)	-	-	-	-	-	-	23.0	21.1	25.1	May 17 at hour 8	3	NE	24.5	May 16	99.9	99.9
Precipitation (mm)*	-	-	-	-	-	-	57.8	0.0	6.1	May 28 at hour 19	14	NW	24.4	May 18	99.9	99.9
WSV (km/hr)	-	-	-	-	-	-	1.0	0.4	37.6	May 28 at hour 9	37.6	WSW	21.3	May 7	99.9	99.9
WDV (sector)	-	-	-	-	-	-	150 (SSE)	-	-	-	-	-	-	-	99.9	99.9

1- Date/ Time given is the first minimum and maximum value that was recorded

* Data represents the total (sum) for the indicated time frame

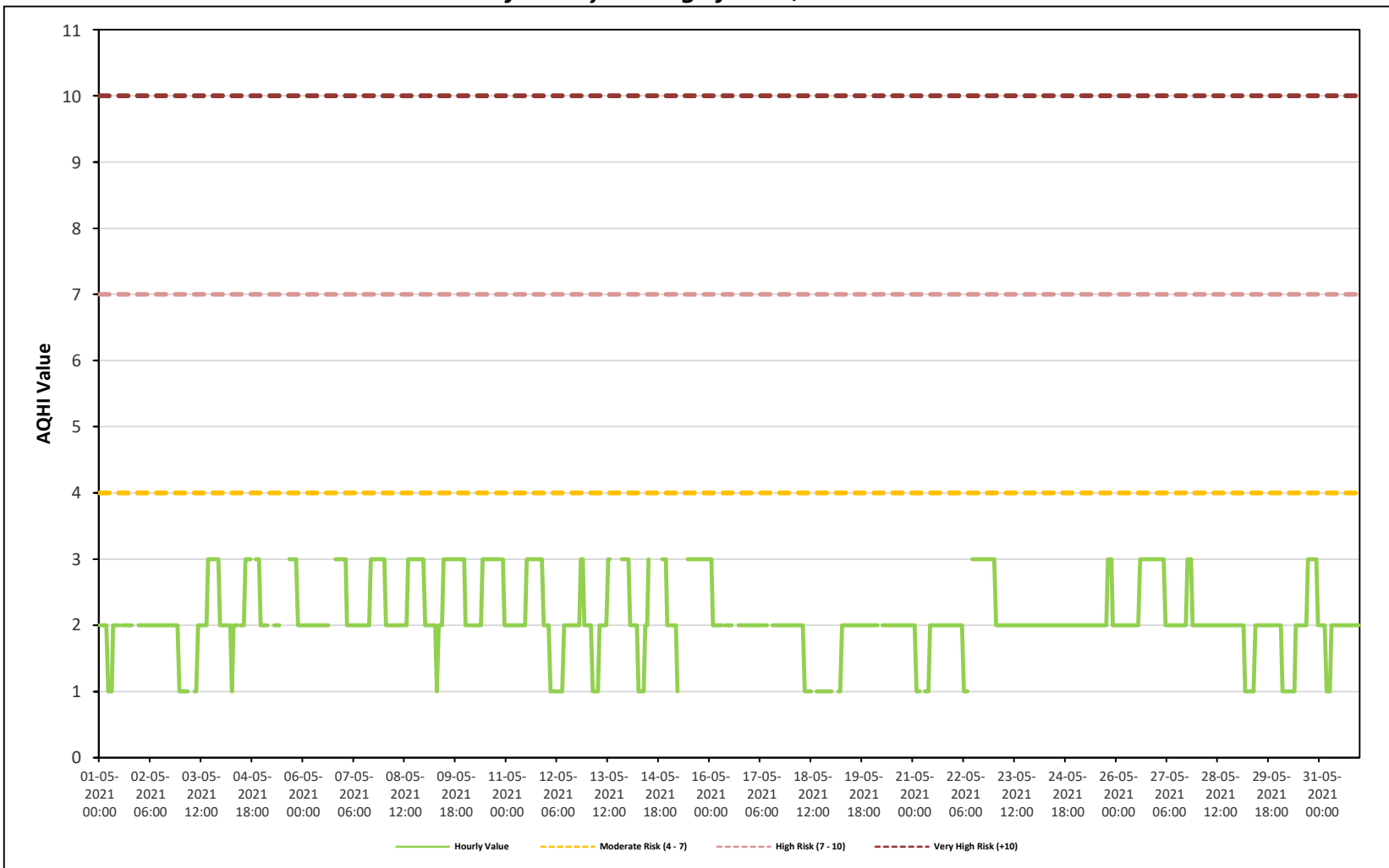
Alberta Ambient Air Quality Objectives (AAAQOs) Exceedances

The measured ambient air quality was within the AAAQOs for all monitored parameters.

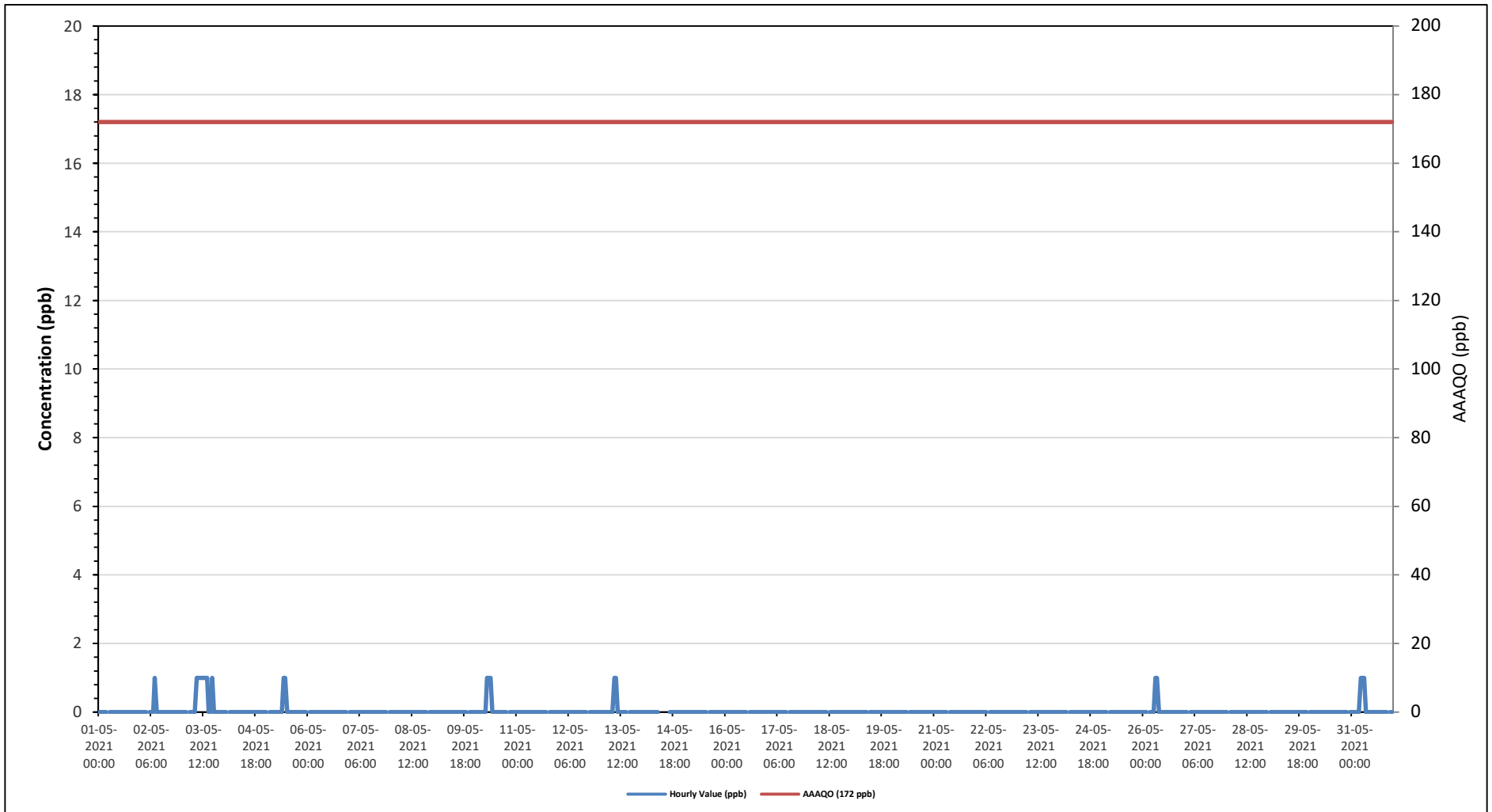
TABLES AND CHARTS

COLD LAKE SOUTH STATION

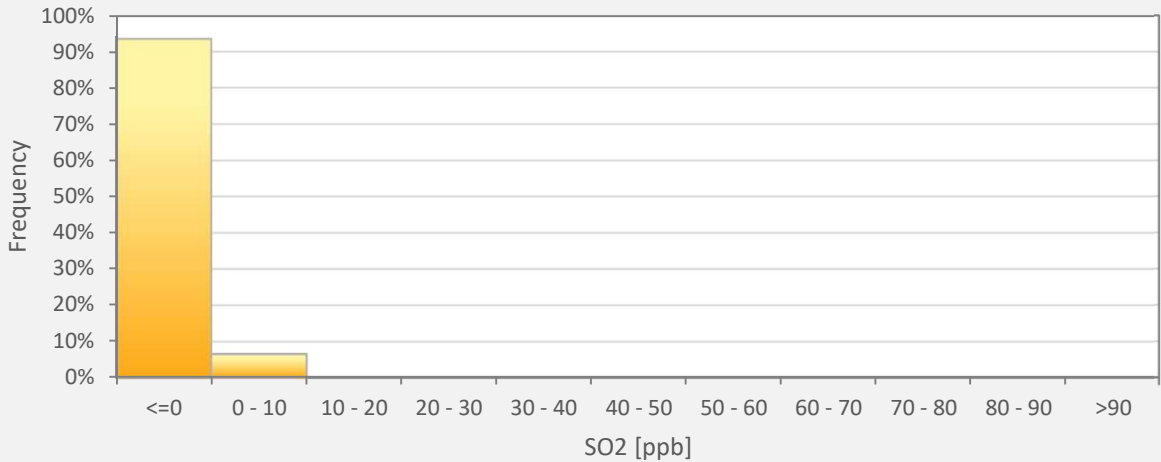
Timeseries Chart of Hourly Average for AQHI - Cold Lake South Station



Timeseries Chart of Hourly Average for SO₂ - Cold Lake South Station



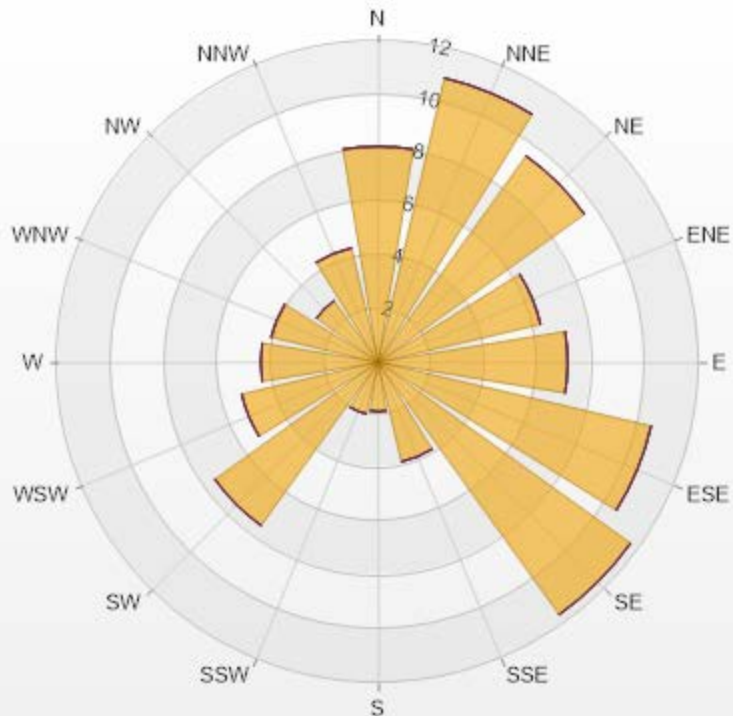
SO2[ppb] Histogram: Cold Lake South Monthly: 05-2021 1 Hr.



Classes	SO2
<=0	93.48%
0 - 10	6.52%
10 - 20	0.00%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-SO2[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	8.07	0	0	0	0	8.07
NNE	10.91	0	0	0	0	10.91
NE	9.49	0	0	0	0	9.49
ENE	6.23	0	0	0	0	6.23
E	7.08	0	0	0	0	7.08
ESE	10.48	0	0	0	0	10.48
SE	11.61	0	0	0	0	11.61
SSE	3.82	0	0	0	0	3.82
S	1.84	0	0	0	0	1.84
SSW	1.98	0	0	0	0	1.98
SW	7.51	0	0	0	0	7.51
WSW	5.24	0	0	0	0	5.24
W	4.39	0	0	0	0	4.39
WNW	4.11	0	0	0	0	4.11
NW	2.83	0	0	0	0	2.83
NNW	4.39	0	0	0	0	4.39
Summary	100	0	0	0	0	100



LICA-202105

% Icon Classes (ppb)

100 0-10

0 10-50

0 50-100

0 100-172

0 >172.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - May 2021

Summary of Hourly Averages

TOTAL REDUCED SULPHUR (TRS) in ppb

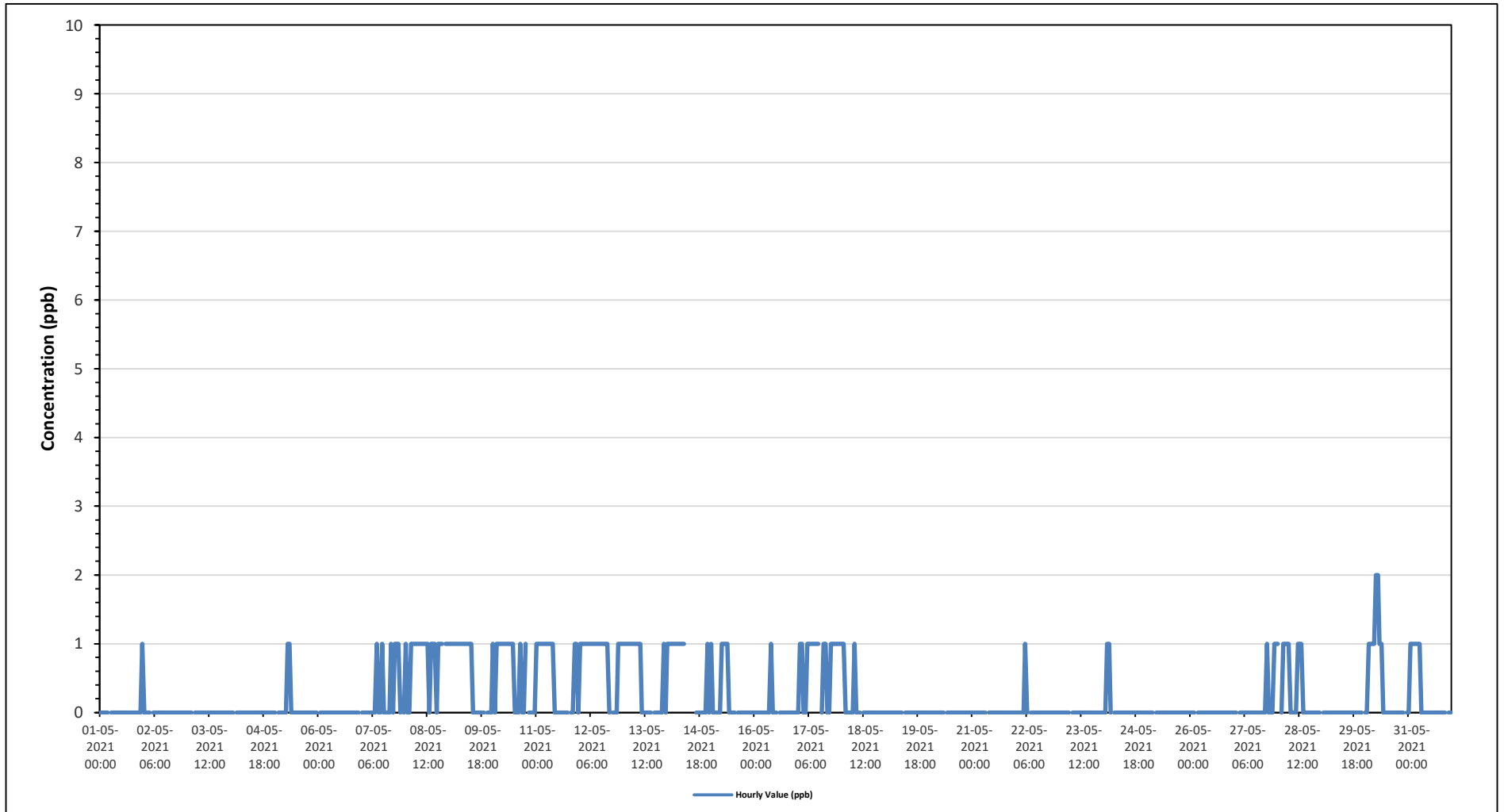
Maximum Hourly Value:	2 ppb on May 30 at hour 6	Hours in Service:	744
Maximum Daily Value:	0.8 ppb on May 8	Hours of Data:	706
Minimum Hourly Value:	0 ppb on May 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0 ppb on May 2	Hours of Calibration:	38
Monthly Average:	0.2 ppb	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
May 1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.0	
May 2	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
May 3	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
May 4	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
May 5	0	S	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
May 6	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.0	
May 7	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	1	1	1	0	S	0	0	1	0.3	
May 8	1	0	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	S	1	1	0	1	0.8	0.8	
May 9	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0.6	
May 10	1	0	1	1	1	1	1	1	1	1	1	0	0	0	1	0	0	1	S	0	0	0	0	0	0	1	0.6	
May 11	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	S	0	0	1	1	0	0	1	0.5	
May 12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	S	0	0	0	0	1	1	1	0	1	0.8	
May 13	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	S	0	0	0	0	0	1	1	0	1	0.5	
May 14	1	1	1	1	1	1	1	1	1	1	C	C	C	C	C	S	0	0	0	0	0	0	1	0	0	1	0.6	
May 15	1	0	0	0	0	0	1	1	1	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.2	
May 16	0	0	0	0	0	0	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
May 17	0	1	1	0	0	1	1	1	1	1	1	S	S	0	1	1	0	0	1	1	1	1	1	1	0	1	0.7	
May 18	1	1	0	0	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	
May 19	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
May 20	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
May 21	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
May 22	0	0	0	0	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
May 23	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
May 24	0	0	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	
May 25	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
May 26	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
May 27	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0.1	
May 28	1	S	0	1	1	1	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	
May 29	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.0	
May 30	0	0	1	1	1	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.4	
May 31	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0.3	
Diurnal Maximum	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Diurnal Average	0.34	0.28	0.34	0.38	0.34	0.41	0.43	0.43	0.40	0.37	0.17	0.24	0.14	0.07	0.10	0.13	0.07	0.00	0.17	0.10	0.10	0.10	0.10	0.10	0.24	0.17		

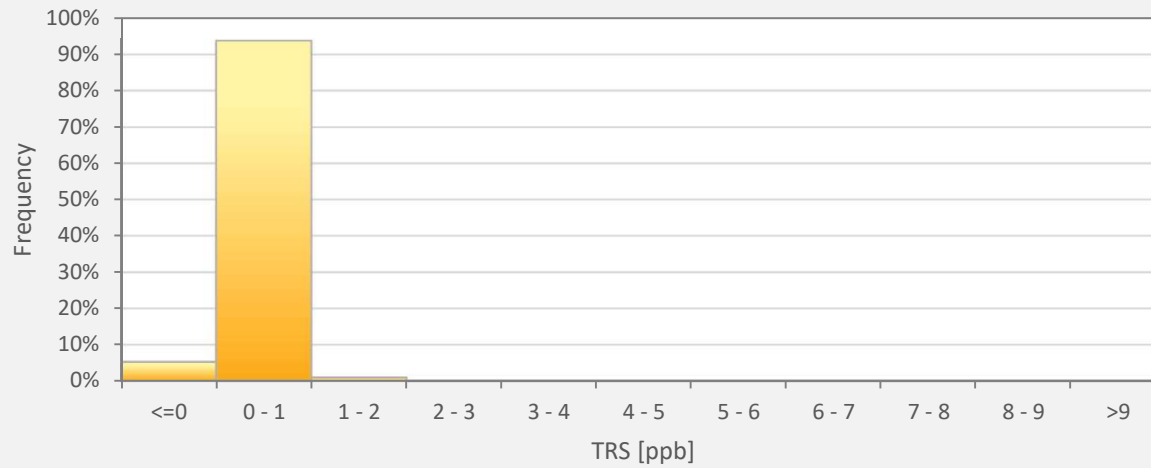
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction/Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for TRS - Cold Lake South Station



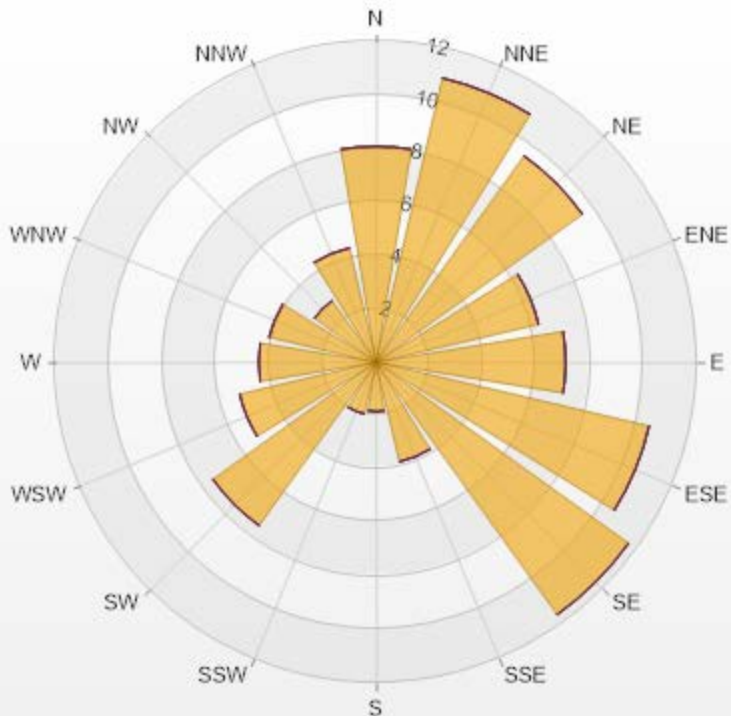
TRS[ppb] Histogram: Cold Lake South Monthly: 05-2021 1 Hr.



Classes	TRS
<=0	5.24%
0 - 1	93.77%
1 - 2	0.99%
2 - 3	0.00%
3 - 4	0.00%
4 - 5	0.00%
5 - 6	0.00%
6 - 7	0.00%
7 - 8	0.00%
8 - 9	0.00%
>9	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-TRS[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	8.07	0	0	0	0	8.07
NNE	10.91	0	0	0	0	10.91
NE	9.49	0	0	0	0	9.49
ENE	6.23	0	0	0	0	6.23
E	7.08	0	0	0	0	7.08
ESE	10.48	0	0	0	0	10.48
SE	11.61	0	0	0	0	11.61
SSE	3.82	0	0	0	0	3.82
S	1.84	0	0	0	0	1.84
SSW	1.98	0	0	0	0	1.98
SW	7.51	0	0	0	0	7.51
WSW	5.24	0	0	0	0	5.24
W	4.39	0	0	0	0	4.39
WNW	4.11	0	0	0	0	4.11
NW	2.83	0	0	0	0	2.83
NNW	4.39	0	0	0	0	4.39
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100 0-2

0 2-5

0 5-10

0 10-50

0 >50.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - May 2021

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

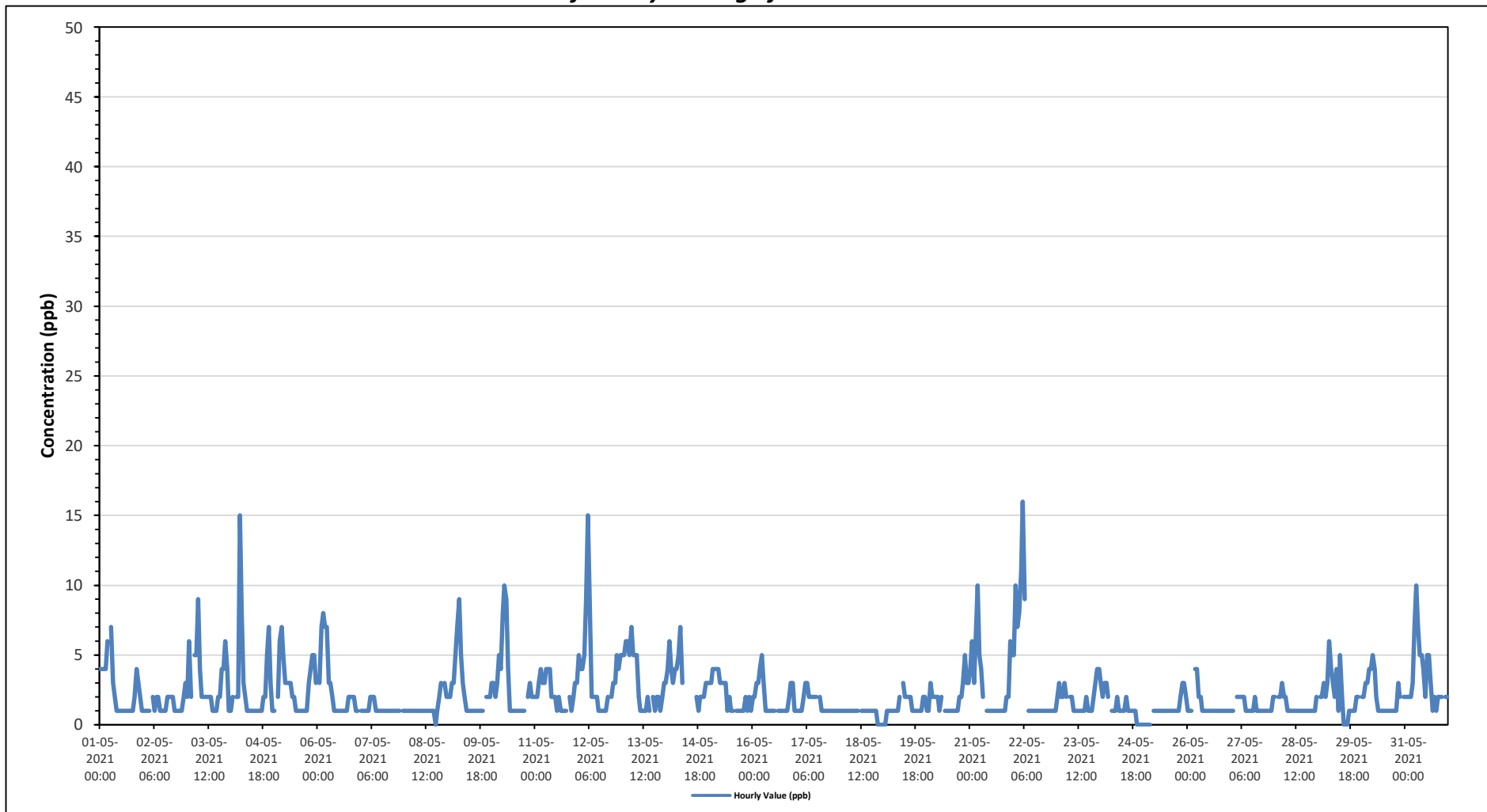
Maximum Hourly Value:	16 ppb on May 22 at hour 5	Hours in Service:	744
Maximum Daily Value:	3.8 ppb on May 12	Hours of Data:	705
Minimum Hourly Value:	0 ppb on May 8 at hour 17	Hours of Missing Data:	0
Minimum Daily Value:	0.9 ppb on May 18	Hours of Calibration:	39
Monthly Average:	2.2 ppb	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
May 1	4	4	4	4	6	S	7	3	2	1	1	1	1	1	1	1	1	1	2	4	3	2	1	1	7	2.4		
May 2	1	1	1	1	S	2	1	2	2	1	1	1	1	2	2	2	1	1	1	1	1	2	3	1	3	1.4		
May 3	2	6	2	S	5	9	4	2	2	2	2	2	2	2	1	1	2	2	4	4	6	4	1	1	9	3.1		
May 4	1	2	S	2	2	15	8	3	2	1	1	1	1	1	1	1	1	2	2	5	7	3	1	1	15	2.8		
May 5	1	S	2	6	7	5	3	3	3	3	2	2	1	1	1	1	1	1	3	4	5	5	3	1	7	2.8		
May 6	S	3	7	8	7	7	3	3	2	1	1	1	1	1	1	1	2	2	2	2	1	1	S	1	8	2.6		
May 7	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	2	1.1		
May 8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	2	3	S	3	2	0	3	1.2	
May 9	2	2	3	3	5	7	9	5	3	2	1	1	1	1	1	1	1	1	1	1	S	2	2	2	1	9	2.5	
May 10	3	3	2	3	5	4	8	10	9	4	1	1	1	1	1	1	1	1	1	S	2	3	2	2	1	10	3.0	
May 11	2	2	3	4	3	3	4	4	4	2	2	2	1	2	1	1	1	S	2	1	2	3	3	3	1	4	2.3	
May 12	5	4	4	5	9	15	9	2	2	2	2	1	1	1	1	1	2	S	2	3	3	5	4	5	1	15	3.8	
May 13	5	5	6	6	5	7	5	5	5	2	1	1	1	2	1	1	S	2	1	2	2	1	2	3	1	7	3.1	
May 14	3	4	6	4	3	4	4	5	7	3	C	C	C	C	C	C	C	2	1	2	2	2	3	3	1	7	-	
May 15	3	3	4	4	4	4	3	3	3	3	1	2	1	1	S	1	1	1	1	1	2	1	2	1	1	4	2.2	
May 16	2	2	3	3	4	5	3	1	1	1	1	1	1	S	1	1	1	1	1	1	2	3	3	1	1	5	1.9	
May 17	1	1	1	1	2	3	3	2	2	2	2	2	S	2	1	1	1	1	1	1	1	1	1	1	1	1	3	1.5
May 18	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	0	0	0	0	1	0.9	
May 19	0	0	1	1	1	1	1	1	1	2	S	3	2	2	2	2	1	1	1	1	1	1	2	2	0	3	1.3	
May 20	1	1	3	2	2	2	2	1	2	S	1	1	1	1	1	1	1	1	1	2	2	3	5	3	1	5	1.8	
May 21	4	6	3	6	10	5	4	2	S	1	1	1	1	1	1	1	1	1	1	1	2	2	6	5	1	10	2.9	
May 22	5	10	7	8	11	16	9	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	3.6	
May 23	2	3	2	2	3	2	S	2	2	1	1	1	1	1	1	1	2	1	1	1	2	3	4	4	1	4	1.9	
May 24	3	2	3	3	2	S	1	1	1	2	1	1	1	1	2	1	1	1	1	1	1	0	0	0	0	3	1.3	
May 25	0	0	0	0	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	3	2	0	3	1.1	
May 26	1	1	1	S	4	4	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.3	
May 27	1	1	S	2	2	2	2	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	1	2	1.3	
May 28	2	S	2	2	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.3	
May 29	S	2	2	3	2	3	6	4	3	2	4	1	5	2	0	0	0	1	1	1	1	2	2	S	0	6	2.1	
May 30	2	2	3	3	4	4	5	4	2	1	1	1	1	1	1	1	1	1	1	1	3	2	S	2	1	5	2.0	
May 31	2	2	2	2	3	7	10	7	5	4	2	5	5	3	1	2	1	2	2	2	2	S	2	2	1	10	3.4	
Diurnal Maximum	5	10	7	8	11	16	10	10	9	5	4	3	5	5	3	2	2	2	2	4	5	7	6	5				
Diurnal Average	2.1	2.6	2.8	3.1	4.0	4.8	4.3	2.9	2.4	1.7	1.4	1.3	1.3	1.4	1.2	1.0	1.1	1.1	1.2	1.5	2.0	2.3	2.3	2.0				

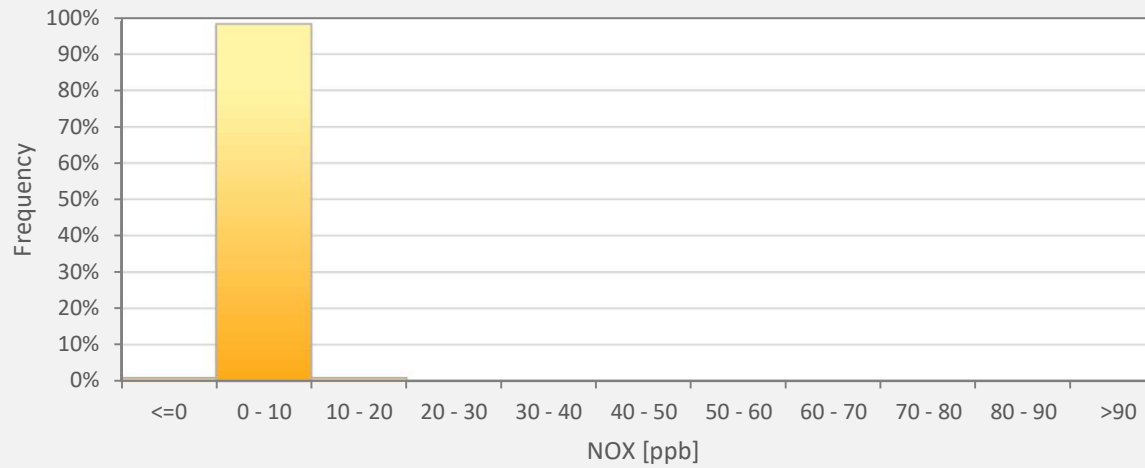
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction/Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NOx - Cold Lake South Station



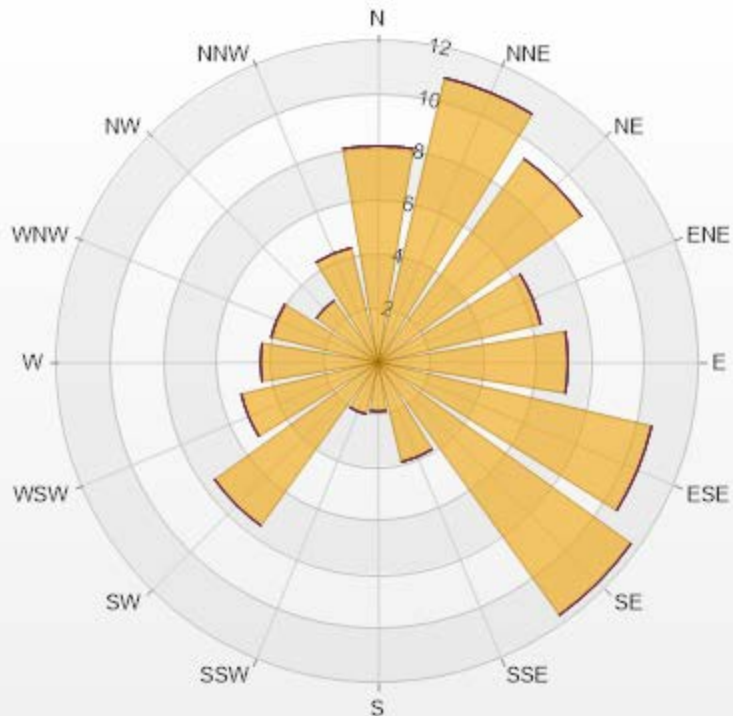
NOX[ppb] Histogram: Cold Lake South Monthly: 05-2021 1 Hr.



Classes	NOX
<=0	0.85%
0 - 10	98.30%
10 - 20	0.85%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-NOX[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	8.09	0	0	0	0	8.09
NNE	10.92	0	0	0	0	10.92
NE	9.36	0	0	0	0	9.36
ENE	6.24	0	0	0	0	6.24
E	7.09	0	0	0	0	7.09
ESE	10.5	0	0	0	0	10.5
SE	11.63	0	0	0	0	11.63
SSE	3.83	0	0	0	0	3.83
S	1.84	0	0	0	0	1.84
SSW	1.99	0	0	0	0	1.99
SW	7.52	0	0	0	0	7.52
WSW	5.25	0	0	0	0	5.25
W	4.4	0	0	0	0	4.4
WNW	4.11	0	0	0	0	4.11
NW	2.84	0	0	0	0	2.84
NNW	4.4	0	0	0	0	4.4
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100  0-30

0  30-50

0  50-76

0  76-159

0  >159.0



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Cold Lake South Station - May 2021

Summary of Hourly Averages

NITRIC OXIDE (NO) in ppb

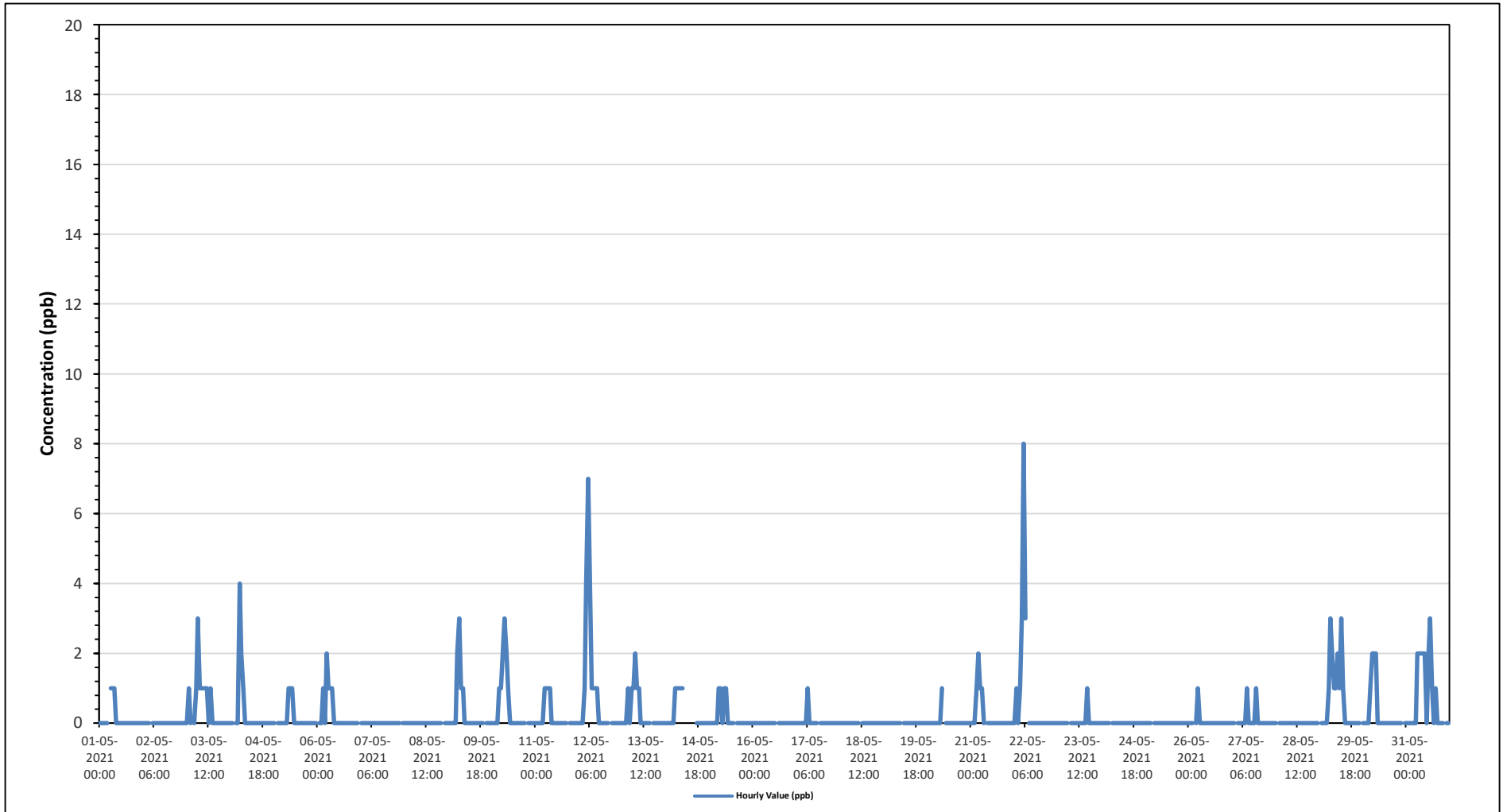
Maximum Hourly Value:	8 ppb on May 22 at hour 5	Hours in Service:	744
Maximum Daily Value:	0.9 ppb on May 12	Hours of Data:	705
Minimum Hourly Value:	0 ppb on May 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0 ppb on May 2	Hours of Calibration:	39
Monthly Average:	0.2 ppb	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23								
May 1	0	0	0	0	0	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
May 2	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
May 3	0	1	0	S	0	1	3	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.5	
May 4	0	0	S	0	0	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.3	
May 5	0	S	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1		
May 6	S	0	0	1	0	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3		
May 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	
May 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0	
May 9	0	0	0	0	0	2	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	3	0.3	
May 10	0	0	0	0	1	1	2	3	2	1	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	3	0.4	
May 11	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	1	0.2		
May 12	0	0	0	1	4	7	4	1	1	1	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	7	0.9		
May 13	0	0	0	1	0	1	1	2	1	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	2	0.3		
May 14	0	0	0	0	0	1	1	1	1	1	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	1	-		
May 15	0	0	0	0	0	1	1	0	1	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2		
May 16	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
May 17	0	0	0	0	0	0	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0		
May 18	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
May 19	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
May 20	0	0	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0		
May 21	0	0	0	1	2	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2		
May 22	0	1	0	1	3	B	3	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	B	0.7		
May 23	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0		
May 24	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
May 25	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
May 26	0	0	0	S	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0		
May 27	0	0	S	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1		
May 28	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
May 29	S	0	0	0	0	1	3	2	1	1	2	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.7		
May 30	0	0	0	0	1	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	2	0.3		
May 31	0	0	0	0	0	2	2	2	2	2	2	3	1	0	1	0	0	0	0	0	0	S	0	0	0	0	0	3	0.7			
Diurnal Maximum	0	1	0	1	4	8	4	3	2	2	2	1	3	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Diurnal Average	0.0	0.1	0.0	0.2	0.4	1.2	1.1	0.6	0.6	0.3	0.2	0.1	0.2	0.2	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		

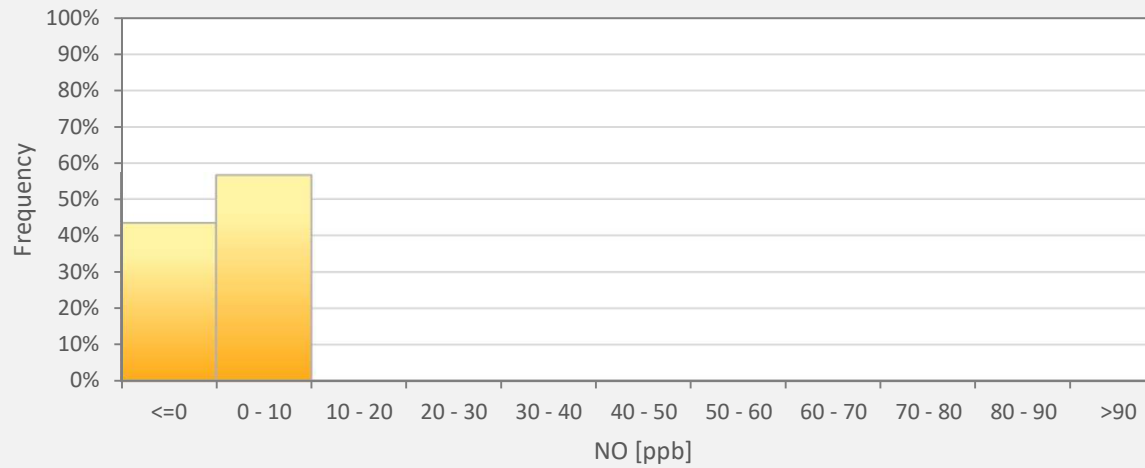
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction/Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NO - Cold Lake South Station



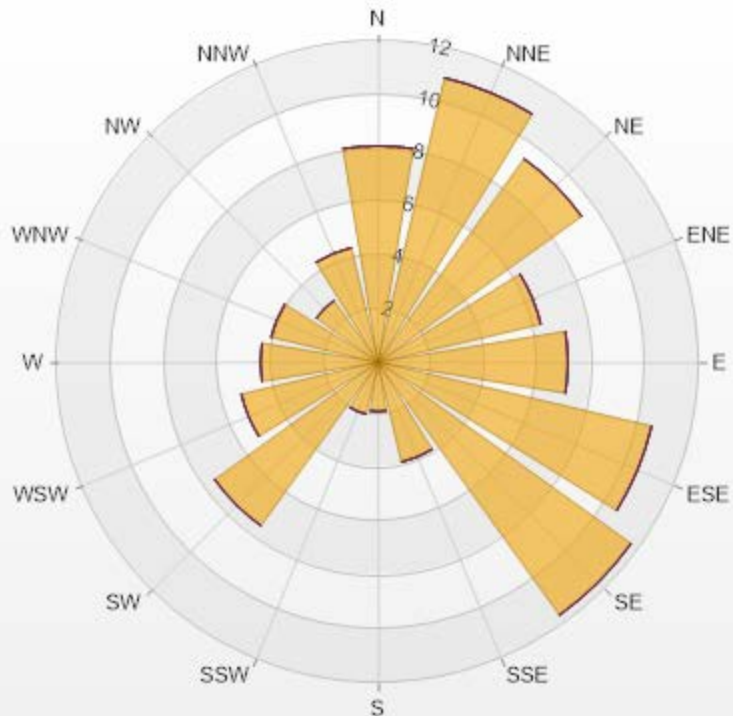
NO[ppb] Histogram: Cold Lake South Monthly: 05-2021 1 Hr.



Classes	NO
<=0	43.40%
0 - 10	56.60%
10 - 20	0.00%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-NO[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	8.09	0	0	0	0	8.09
NNE	10.92	0	0	0	0	10.92
NE	9.36	0	0	0	0	9.36
ENE	6.24	0	0	0	0	6.24
E	7.09	0	0	0	0	7.09
ESE	10.5	0	0	0	0	10.5
SE	11.63	0	0	0	0	11.63
SSE	3.83	0	0	0	0	3.83
S	1.84	0	0	0	0	1.84
SSW	1.99	0	0	0	0	1.99
SW	7.52	0	0	0	0	7.52
WSW	5.25	0	0	0	0	5.25
W	4.4	0	0	0	0	4.4
WNW	4.11	0	0	0	0	4.11
NW	2.84	0	0	0	0	2.84
NNW	4.4	0	0	0	0	4.4
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100

0-30

0

30-50

0

50-76

0

76-159

0

>159.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - May 2021

Summary of Hourly Averages

NITROGEN DIOXIDE (NO₂) in ppb

Alberta Ambient Air Quality Objectives (AAQO): 1-Hour 159 ppb

Number of 1-Hour Exceedences: 0

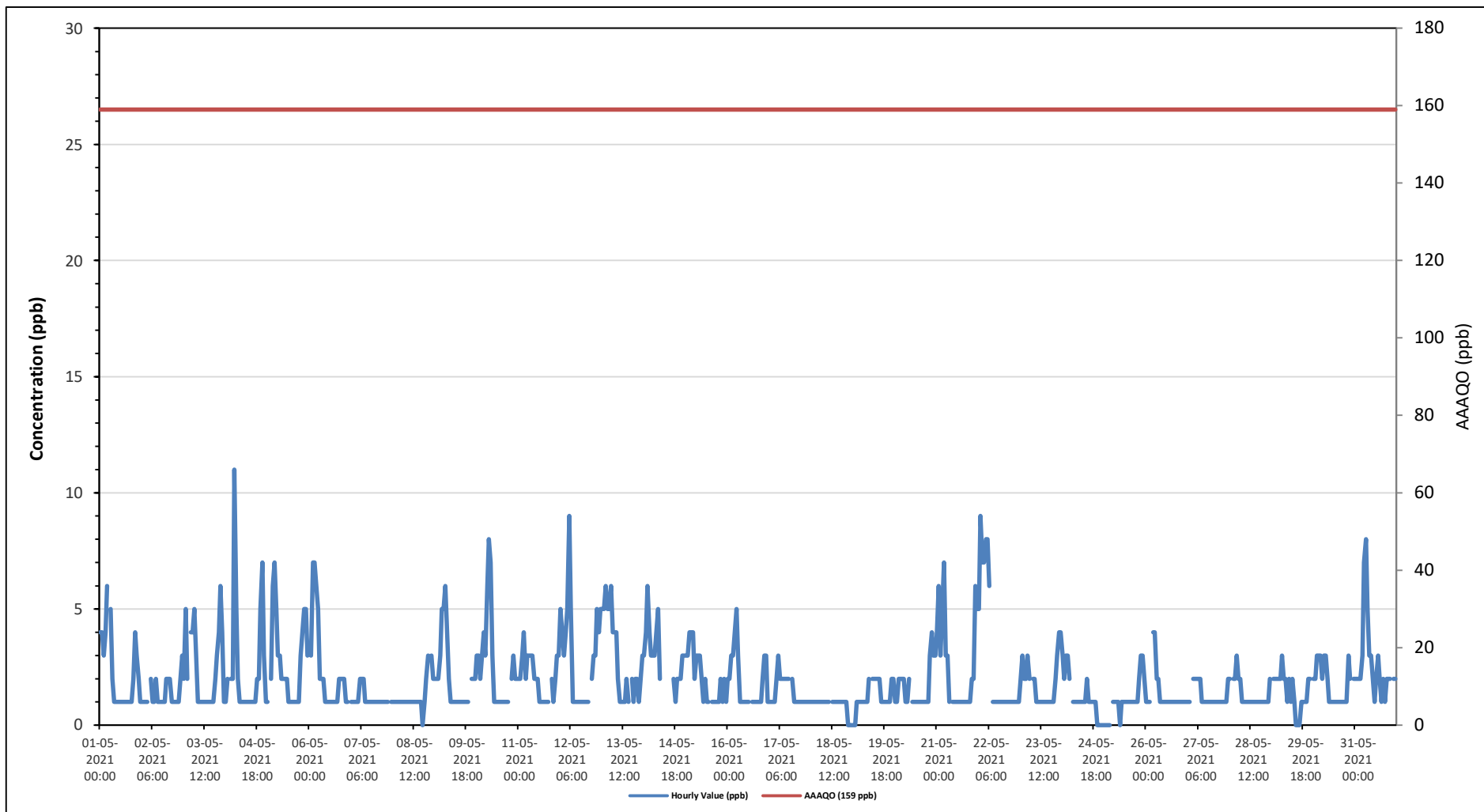
Maximum Hourly Value:	11 ppb on May 4 at hour 5	Hours in Service:	744
Maximum Daily Value:	2.9 ppb on May 12	Hours of Data:	705
Minimum Hourly Value:	0 ppb on May 8 at hour 17	Hours of Missing Data:	0
Minimum Daily Value:	0.9 ppb on May 18	Hours of Calibration:	39
Monthly Average:	1.9 ppb	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	4	4	3	4	6	S	5	2	1	1	1	1	1	1	1	1	1	1	1	2	4	3	2	1	1	6	2.2
May 2	1	1	1	1	S	2	1	1	2	1	1	1	1	1	2	2	2	1	1	1	1	1	2	3	1	3	1.3
May 3	2	5	2	S	4	4	5	3	1	1	1	1	1	1	1	1	1	1	2	3	4	6	4	1	1	6	2.4
May 4	1	2	S	2	2	11	5	2	1	1	1	1	1	1	1	1	1	2	2	5	7	3	1	1	11	2.4	
May 5	1	S	2	6	7	5	3	3	2	2	2	2	1	1	1	1	1	1	3	4	5	5	3	1	7	2.7	
May 6	S	3	7	7	6	5	2	2	2	1	1	1	1	1	1	1	2	2	2	2	1	1	S	1	7	2.4	
May 7	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	2	1.1	
May 8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	2	3	S	3	2	0	3	1.2	
May 9	2	2	2	3	5	5	6	4	2	1	1	1	1	1	1	1	1	1	1	S	2	2	2	1	6	2.1	
May 10	3	3	2	3	4	3	6	8	7	3	1	1	1	1	1	1	1	1	S	2	3	2	2	1	8	2.6	
May 11	2	2	3	4	2	3	3	3	3	2	2	2	1	1	1	1	1	S	2	1	2	3	3	1	4	2.1	
May 12	5	4	3	4	5	9	5	1	1	1	1	1	1	1	1	1	S	2	3	3	5	4	5	1	9	2.9	
May 13	5	5	6	5	5	6	4	4	4	2	1	1	1	2	1	S	2	1	2	2	1	2	3	1	6	2.9	
May 14	3	4	6	4	3	3	3	4	5	2	C	C	C	C	C	C	C	2	1	2	2	2	3	3	1	6	-
May 15	3	3	4	4	4	2	3	3	3	2	1	2	1	1	S	1	1	1	1	1	2	1	2	1	4	2.0	
May 16	2	2	3	3	4	5	3	1	1	1	1	1	1	S	1	1	1	1	1	1	2	3	3	1	5	1.9	
May 17	1	1	1	1	2	3	2	2	2	2	2	S	2	1	1	1	1	1	1	1	1	1	1	1	1	3	1.4
May 18	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	0	0	0	0	1	0.9
May 19	0	0	1	1	1	1	1	1	1	2	S	2	2	2	2	2	1	1	1	1	1	1	2	2	0	2	1.3
May 20	1	1	2	2	2	2	1	1	2	S	1	1	1	1	1	1	1	1	1	1	1	3	4	3	1	4	1.6
May 21	4	6	3	5	7	3	3	1	S	1	1	1	1	1	1	1	1	1	1	1	2	2	6	5	1	7	2.5
May 22	5	9	7	7	8	8	6	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	2.9
May 23	2	3	2	2	3	2	S	2	2	1	1	1	1	1	1	1	1	1	1	1	2	3	4	4	1	4	1.8
May 24	3	2	3	3	2	S	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	0	0	0	0	3	1.2
May 25	0	0	0	0	S	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	2	3	3	2	0	3	1.0
May 26	1	1	1	S	4	4	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.3
May 27	1	1	S	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1.3
May 28	2	S	2	2	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.3
May 29	S	2	2	2	2	2	3	2	2	1	2	1	2	1	0	0	0	1	1	1	1	2	2	S	0	3	1.5
May 30	2	2	3	3	3	2	3	3	2	1	1	1	1	1	1	1	1	1	1	1	3	2	S	2	1	3	1.8
May 31	2	2	2	2	3	7	8	5	3	3	2	1	2	3	2	1	2	1	2	2	2	S	2	2	1	8	2.7
Diurnal Maximum	5	9	7	7	8	11	8	8	7	3	2	2	2	3	2	2	2	2	2	3	5	7	6	5			
Diurnal Average	2.1	2.5	2.6	2.9	3.5	3.7	3.1	2.3	1.9	1.3	1.2	1.2	1.1	1.1	1.1	1.0	1.0	1.1	1.2	1.5	2.0	2.2	2.3	2.0			

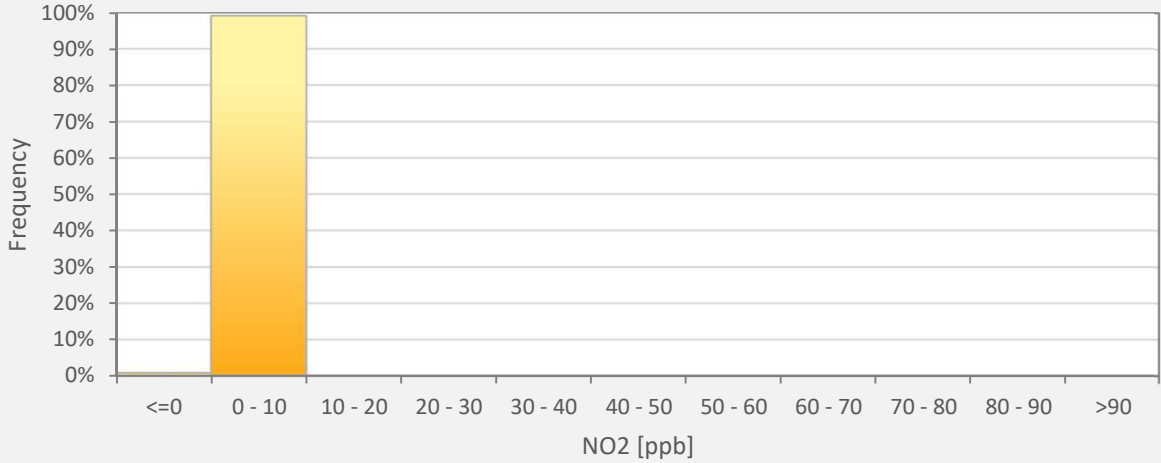
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NO2 - Cold Lake South Station



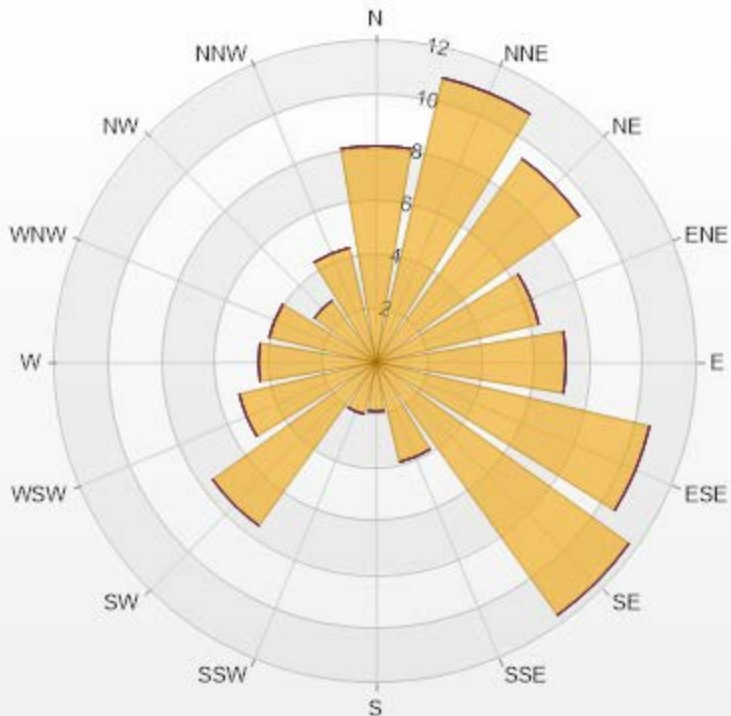
NO2[ppb] Histogram: Cold Lake South Monthly: 05-2021 1 Hr.



Classes	NO2
<=0	0.85%
0 - 10	99.01%
10 - 20	0.14%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-NO2[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	8.09	0	0	0	0	8.09
NNE	10.92	0	0	0	0	10.92
NE	9.36	0	0	0	0	9.36
ENE	6.24	0	0	0	0	6.24
E	7.09	0	0	0	0	7.09
ESE	10.5	0	0	0	0	10.5
SE	11.63	0	0	0	0	11.63
SSE	3.83	0	0	0	0	3.83
S	1.84	0	0	0	0	1.84
SSW	1.99	0	0	0	0	1.99
SW	7.52	0	0	0	0	7.52
WSW	5.25	0	0	0	0	5.25
W	4.4	0	0	0	0	4.4
WNW	4.11	0	0	0	0	4.11
NW	2.84	0	0	0	0	2.84
NNW	4.4	0	0	0	0	4.4
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)	100	0-30	0	30-50	0	50-76	0	76-159	0	>159.0
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LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - May 2021

Summary of Hourly Averages

OZONE (O₃) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb

Number of 1-Hour Exceedences: 0

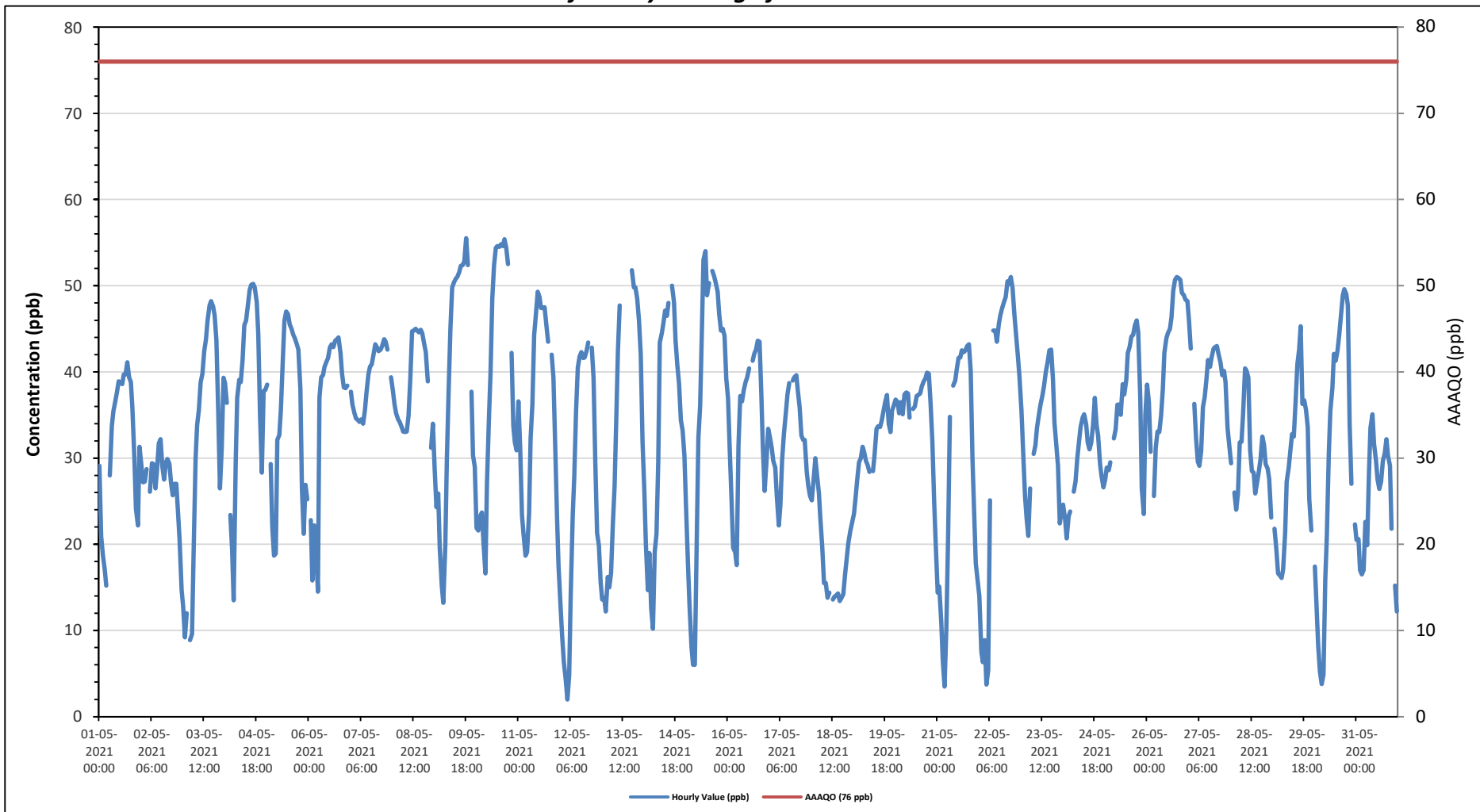
Maximum Hourly Value:	55.5 ppb on May 9 at hour 18	Hours in Service:	744
Maximum Daily Value:	42.2 ppb on May 26	Hours of Data:	706
Minimum Hourly Value:	2.0 ppb on May 12 at hour 4	Hours of Missing Data:	0
Minimum Daily Value:	18.9 ppb on May 18	Hours of Calibration:	38
Monthly Average:	33.2 ppb	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	29.1	20.9	18.7	17.1	15.2	S	28	33.7	35.4	36.5	37.6	38.9	38.7	38.6	39.7	39.7	41.1	39.4	38.8	35.8	29.9	24.1	22.2	31.3	15.2	41.1	31.8
May 2	29.3	27.2	27.3	28.7	S	26.1	29.4	29.3	26.5	28.6	31.7	32.2	29	27.5	29.5	29.9	29.3	27.2	25.7	27	27	23.6	20.5	14.7	14.7	32.2	27.3
May 3	12.8	9.2	12	S	8.9	9.6	18.7	29.9	33.8	35.6	38.8	39.8	42.4	43.8	45.9	47.7	48.2	47.6	46.6	43.7	35.7	26.5	31.1	39.3	8.9	48.2	32.5
May 4	38.7	36.4	S	23.4	19.3	13.5	29.4	37	39.1	38.8	41.3	45.4	46	47.7	49.5	50.1	50.2	49.8	48.1	44.4	34.9	28.3	37.8	37.9	13.5	50.2	38.6
May 5	38.5	S	29.3	22.1	18.7	18.9	32.1	32.7	35.6	41.6	45.9	47	46.7	45.5	45	44.3	43.9	43.2	42.6	38	26.5	21.2	26.9	25.2	18.7	47.0	35.3
May 6	S	22.8	15.8	22.2	19.8	14.5	37	39.4	39.6	40.6	41.2	41.6	42.8	43.2	42.9	43.6	43.8	44	42.2	39.8	38.2	38.1	38.4	S	14.5	44.0	36.0
May 7	37.7	36.2	35.2	34.6	34.4	34.2	34.5	34	35.5	37.8	39.7	40.6	40.9	42	43.2	42.8	42.4	42.6	43	43.8	43.5	42.6	S	39.4	34.0	43.8	39.2
May 8	37.9	36.2	35.2	34.5	34.2	33.6	33.1	33	33.1	34.9	39.2	44.7	44.8	45	44.8	44.6	44.9	44.5	43.2	42.3	38.9	S	31.2	34	31.2	45.0	38.6
May 9	28.7	24.3	25.9	19.6	15.2	13.2	20	29.8	37.8	45	49.8	50.4	50.8	51	51.6	52.3	52.4	52.9	55.5	52.4	S	37.7	30.3	29	13.2	55.5	38.1
May 10	21.9	21.6	23.2	23.7	20.4	16.6	27	34.8	39.8	48.5	52.4	54.4	54.6	54.8	54.6	55.4	54.4	52.5	S	42.2	33.7	31.8	30.9	16.6	55.4	39.3	
May 11	36.6	31.1	23.4	21.2	18.7	19.1	23.6	32.3	36.2	44.3	46.7	49.3	48.7	47.4	47.4	47.5	45.2	43.5	S	42	39.3	33.3	23.3	17.5	17.5	49.3	35.5
May 12	12.8	9.5	6.3	4.4	2	4.8	14.1	23.4	27.8	35.4	40.5	41.8	42.3	41.6	41.7	42.5	43.4	S	42.8	39.3	29.4	21.3	19.9	15.6	2.0	43.4	26.2
May 13	13.6	13.8	12.2	16.2	15	16.7	22.3	26.8	35.1	42.4	47.7	C	C	C	C	C	S	51.8	49.8	49.8	48.5	46	42	31.9	12.2	51.8	32.3
May 14	26.3	20.1	14.7	19	12.6	10.2	19.1	21.2	29.7	43.4	44.5	45.6	47.1	46.5	48	S	50	48.1	43.7	40.8	38.6	34.4	33.2	30.3	10.2	50.0	33.4
May 15	24.7	17.7	13	8.1	6	6	19.4	32.3	36.1	45	53	54	48.9	50.3	S	51.7	51.1	50.4	49.3	46.7	44.8	45	44.2	39.2	6.0	54.0	36.4
May 16	36.9	31.5	24.9	19.6	19.1	17.6	31.4	37.2	36.6	37.9	38.8	39.3	40.4	S	41.3	42.1	42.6	43.6	43.5	37.5	31.3	26.2	29.4	33.4	17.6	43.6	34.0
May 17	32.4	31.2	29.7	28.9	25.6	22.2	24.5	29.8	32.8	35	37.4	38.7	S	39	39.4	39.6	37.8	35.9	32.6	32.1	32.1	28.4	26.8	25.6	22.2	39.6	32.1
May 18	25.1	27.5	30	28.2	25.9	22.8	19.7	15.5	15.5	13.8	14.4	S	13.6	13.9	14.1	14.3	13.4	13.8	14.2	16.5	18.5	20.2	21.6	22.4	13.4	30.0	18.9
May 19	23.5	25.3	27.5	29.5	30	31.3	30.7	29.7	29.2	28.4	S	28.5	30.3	33.4	33.7	33.6	34.3	35.4	36.5	37.3	34	33	35.5	36.2	23.5	37.3	31.6
May 20	36.8	36.5	35.2	36.5	35.1	37.4	37.6	37.5	34.7	S	35.7	36	37.2	37.3	37.5	38.3	38.9	39.2	39.9	39.8	36.3	31.9	25	20.2	20.2	39.9	35.7
May 21	14.4	15.1	11	6.5	3.5	10.2	21	34.8	S	38.4	39	40.3	41.6	41.7	42.5	42.3	42.5	43	43.2	40.1	29.9	23.3	17.8	15.6	3.5	43.2	28.6
May 22	14	7.5	6.3	8.9	3.7	5.4	25.1	S	44.8	44.8	43.5	45.6	46.6	47.4	48.1	48.7	50.5	50.2	51	49.7	46.7	44.2	41.8	39.5	3.7	51.0	35.4
May 23	35.5	31.2	25.6	23.1	21	26.5	S	30.5	31.5	33.5	35.1	36.2	37.3	38.4	40	41.1	42.5	42.6	39.2	34.1	31.6	29.1	22.4	23.8	21.0	42.6	32.7
May 24	24.6	22.9	20.7	23.3	23.8	S	26.1	27.3	30	32	33.6	34.7	35.1	33.9	31.8	31	31.8	33.8	37	33.8	32.6	29.2	27.8	26.6	20.7	37.0	29.7
May 25	27.5	28.9	28.6	29.5	S	32.3	33.3	36.2	36.2	35	38.6	37.4	39.1	42.2	42.9	44.1	44.3	45.4	46	44.6	37.1	26.5	23.5	35	23.5	46.0	36.3
May 26	38.5	36.5	30.7	S	25.6	31.2	33.1	33	34.9	38	42.2	43.9	44.5	45	46.3	49.4	50.7	51	50.9	50.7	49.2	48.9	48.4	48.2	25.6	51.0	42.2
May 27	46	42.7	S	36.3	32.3	29.6	29.1	30.8	35.9	37.1	39.2	41.4	40.6	41.7	42.7	42.9	43	42	41.1	39.6	40.1	38.8	33.5	31.7	29.1	46.0	38.2
May 28	29.4	S	26	24	25.9	31.8	31.9	35	40.4	40.1	39.3	30.9	28.5	28.3	25.9	27.1	28.4	29.9	32.5	31.5	29.3	28.8	27.6	23.1	23.1	40.4	30.2
May 29	S	21.8	19.5	16.6	16.4	16.1	17.1	21.4	27.3	28.9	30.7	32.8	32.5	36.5	40.9	42.6	45.3	36.3	36.7	35.6	33.6	25.2	21.6	S	16.1	45.3	28.9
May 30	17.4	13.3	8.3	5.2	3.8	4.9	15.9	20.8	30.6	35.5	38.1	42.1	41.3	42.4	44.3	46.6	48.9	49.6	49	47.7	34	27	S	22.3	3.8	49.6	30.0
May 31	20.5	20.6	17	16.5	17	22.6	19.9	28.1	33.5	35.1	31.7	29.7	27.5	26.4	27.3	29.7	30.5	32.2	30.3	29.1	21.8	S	15.2	12.2	12.2	35.1	25.0
Diurnal Maximum	46	43	35	37	35	37	38	39	45	49	53	54	55	55	55	55	55	54	56	52	49	49	48	48			
Daiurnal Average	28.0	24.8	21.8	21.6	18.9	20.0	26.1	30.6	33.8	37.1	39.6	40.8	40.0	40.4	40.8	41.5	42.2	42.1	41.6	39.5	35.2	31.5	29.3	28.7			

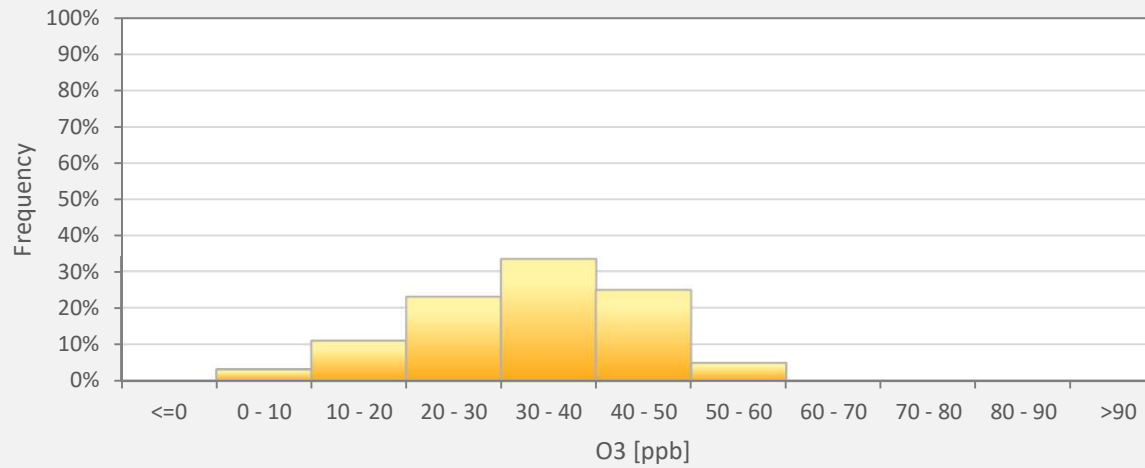
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for O3 - Cold Lake South Station



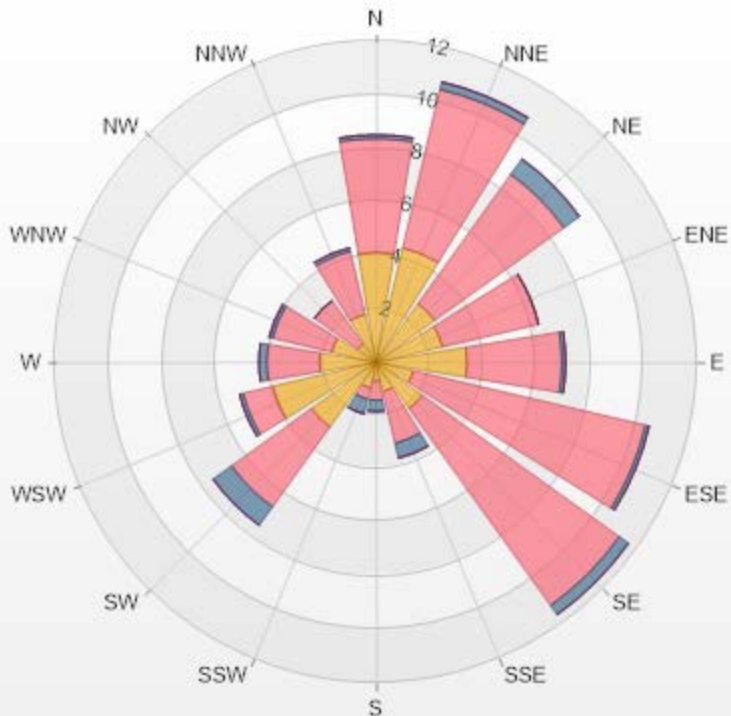
O3[ppb] Histogram: Cold Lake South Monthly: 05-2021 1 Hr.



Classes	O3
<=0	0.00%
0 - 10	3.12%
10 - 20	10.91%
20 - 30	22.95%
30 - 40	33.29%
40 - 50	24.79%
50 - 60	4.96%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-O3[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	4.11	4.25	0.14	0	0	8.5
NNE	4.39	6.09	0.28	0	0	10.76
NE	2.69	5.95	0.71	0	0	9.35
ENE	2.55	3.68	0	0	0	6.23
E	3.4	3.54	0.14	0	0	7.08
ESE	1.42	8.92	0.14	0	0	10.48
SE	2.12	9.07	0.42	0	0	11.61
SSE	1.13	1.98	0.57	0	0	3.68
S	0.71	0.71	0.42	0	0	1.84
SSW	0.99	0.42	0.57	0	0	1.98
SW	2.97	3.68	0.85	0	0	7.5
WSW	3.97	1.13	0.14	0	0	5.24
W	2.12	1.98	0.28	0	0	4.38
WNW	1.7	2.27	0.14	0	0	4.11
NW	0.85	1.98	0	0	0	2.83
NNW	1.84	2.41	0.14	0	0	4.39
Summary	36.96	58.06	4.94	0	0	100



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% Icon Classes (ppb)

37 0-30

58 30-50

5 50-76

0 76-159

0 >159.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - May 2021

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

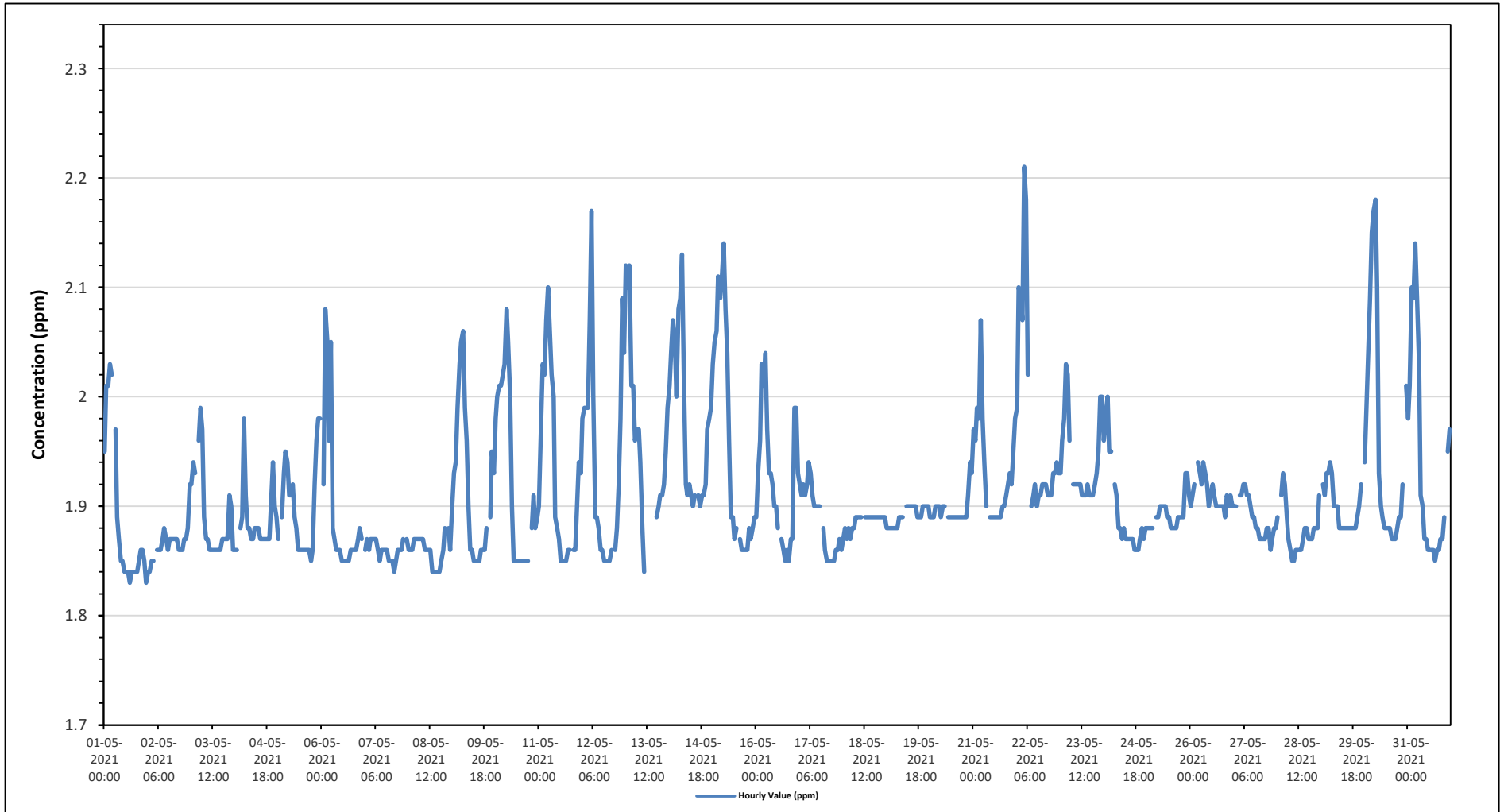
Maximum Hourly Value:	2.21 ppm on May 22 at hour 4	Hours in Service:	744
Maximum Daily Value:	1.98 ppm on May 14	Hours of Data:	707
Minimum Hourly Value:	1.83 ppm on May 1 at hour 14	Hours of Missing Data:	0
Minimum Daily Value:	1.86 ppm on May 8	Hours of Calibration:	37
Monthly Average:	1.91 ppm	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	1.95	2.01	2.01	2.03	2.02	S	1.97	1.89	1.87	1.85	1.85	1.84	1.84	1.84	1.83	1.84	1.84	1.84	1.84	1.85	1.86	1.86	1.85	1.83	1.83	2.03	1.89
May 2	1.84	1.84	1.85	1.85	S	1.86	1.86	1.86	1.87	1.88	1.87	1.86	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.87	1.87	1.87	1.88	1.92	1.84	1.87
May 3	1.92	1.94	1.93	S	1.96	1.99	1.97	1.89	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.87	1.87	1.87	1.87	1.91	1.90	1.86	1.86	1.99
May 4	1.86	1.86	S	1.88	1.89	1.98	1.91	1.88	1.88	1.87	1.87	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.90	1.94	1.90	1.89	1.86	1.98
May 5	1.87	S	1.89	1.93	1.95	1.94	1.91	1.92	1.89	1.88	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.85	1.86	1.86	1.92	1.96	1.98	1.98	1.85	1.98
May 6	S	1.92	2.08	2.05	1.96	2.05	1.88	1.87	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.84	1.85	1.86	1.86	1.87	1.88	1.87	S	1.85	2.08
May 7	1.86	1.87	1.86	1.87	1.87	1.87	1.87	1.86	1.85	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.84	1.85	1.86	1.86	1.86	1.86	1.87	S	1.87	1.84	1.87
May 8	1.86	1.86	1.86	1.87	1.87	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.84	1.84	1.84	1.84	1.84	1.84	1.85	1.86	1.88	S	1.88	1.86	1.84	1.88
May 9	1.90	1.93	1.94	1.99	2.03	2.05	2.06	1.99	1.96	1.90	1.86	1.86	1.85	1.85	1.85	1.85	1.86	1.86	1.86	1.86	1.88	S	1.89	1.95	1.93	1.85	2.06
May 10	1.98	2.00	2.01	2.01	2.02	2.03	2.08	2.05	2.00	1.90	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	S	1.88	1.91	1.88	1.85	2.08
May 11	1.90	1.97	2.03	2.02	2.07	2.10	2.06	2.02	2.00	1.89	1.88	1.87	1.85	1.85	1.85	1.85	1.86	1.86	S	1.86	1.86	1.90	1.94	1.93	1.85	2.10	
May 12	1.98	1.99	1.99	1.99	2.07	2.17	2.00	1.89	1.89	1.88	1.86	1.86	1.85	1.85	1.85	1.85	1.86	S	1.86	1.88	1.92	1.98	2.09	2.04	1.85	2.17	
May 13	2.12	2.10	2.12	2.01	2.01	1.96	1.97	1.97	1.94	1.88	1.84	C	C	C	C	1.92	S	1.89	1.90	1.91	1.91	1.91	1.92	1.95	1.99	1.84	2.12
May 14	2.01	2.04	2.07	2.05	2.00	2.08	2.09	2.13	2.02	1.92	1.91	1.92	1.91	1.90	1.91	S	1.91	1.90	1.91	1.91	1.91	1.92	1.97	1.98	1.99	1.90	2.13
May 15	2.03	2.05	2.06	2.11	2.09	2.11	2.14	2.08	2.04	1.96	1.89	1.89	1.87	1.88	S	1.87	1.86	1.86	1.86	1.86	1.86	1.88	1.87	1.88	1.89	1.86	2.14
May 16	1.89	1.93	1.96	2.03	2.01	2.04	1.97	1.93	1.93	1.92	1.90	1.90	1.88	S	1.87	1.86	1.85	1.86	1.85	1.85	1.87	1.87	1.99	1.99	1.93	1.85	2.04
May 17	1.92	1.91	1.92	1.91	1.92	1.94	1.93	1.91	1.90	1.90	1.90	1.90	S	1.88	1.86	1.85	1.85	1.85	1.85	1.85	1.86	1.86	1.87	1.86	1.86	1.85	1.94
May 18	1.87	1.88	1.87	1.88	1.87	1.88	1.88	1.89	1.89	1.89	1.89	S	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.87	1.89
May 19	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.89	1.89	S	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.89	1.90	1.90	1.90	1.90	1.88	1.90
May 20	1.89	1.89	1.89	1.90	1.90	1.90	1.89	1.90	1.90	S	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.91	1.94	1.93	1.89
May 21	1.97	1.96	1.99	1.98	2.07	1.98	1.94	1.90	S	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.91	1.92	1.93	1.92	1.95	1.98	1.89	2.07	
May 22	1.99	2.10	2.09	2.07	2.21	2.18	2.02	S	1.90	1.91	1.92	1.90	1.91	1.91	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.93	1.93	1.94	1.93	1.90	2.21
May 23	1.93	1.96	1.98	2.03	2.02	1.96	S	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.92	1.91	1.91	1.91	1.92	1.93	1.95	2.00	2.00	1.91	2.03	
May 24	1.96	1.98	2.00	1.95	1.95	S	1.92	1.91	1.88	1.88	1.87	1.88	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.87	1.88	1.87	1.88	1.86	2.00	
May 25	1.88	1.88	1.88	1.88	S	1.89	1.89	1.90	1.90	1.90	1.90	1.89	1.89	1.88	1.88	1.88	1.88	1.88	1.89	1.89	1.89	1.93	1.93	1.91	1.88	1.93	
May 26	1.90	1.91	1.92	S	1.94	1.93	1.92	1.94	1.93	1.92	1.90	1.91	1.92	1.91	1.90	1.90	1.90	1.90	1.90	1.89	1.91	1.90	1.91	1.90	1.89	1.94	1.91
May 27	1.90	1.90	S	1.91	1.91	1.92	1.92	1.91	1.91	1.90	1.89	1.89	1.88	1.88	1.87	1.87	1.87	1.87	1.88	1.88	1.86	1.87	1.88	1.88	1.86	1.92	1.89
May 28	1.89	S	1.91	1.93	1.92	1.89	1.87	1.86	1.85	1.85	1.86	1.86	1.86	1.86	1.87	1.88	1.88	1.87	1.87	1.87	1.88	1.88	1.88	1.91	1.85	1.93	
May 29	S	1.92	1.91	1.93	1.93	1.94	1.93	1.90	1.90	1.90	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.90	1.92	S	1.88	1.94	
May 30	1.94	1.99	2.04	2.09	2.15	2.17	2.18	2.10	1.93	1.90	1.89	1.88	1.88	1.88	1.88	1.87	1.87	1.87	1.88	1.89	1.89	1.92	S	2.01	1.87	2.18	
May 31	1.98	2.01	2.10	2.09	2.14	2.09	2.03	1.91	1.90	1.87	1.86	1.86	1.86	1.86	1.85	1.86	1.86	1.86	1.87	1.87	1.89	S	1.95	1.97	1.85	2.14	
Diurnal Maximum	2.12	2.10	2.12	2.11	2.21	2.18	2.18	2.13	2.04	1.96	1.92	1.92	1.92	1.91	1.92	1.92	1.92	1.92	1.91	1.91	1.92	1.93	1.99	2.09	2.04		
Diurnal Average	1.93	1.95	1.97	1.97	1.99	1.99	1.96	1.93	1.91	1.89	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.88	1.89	1.91	1.92	1.92		

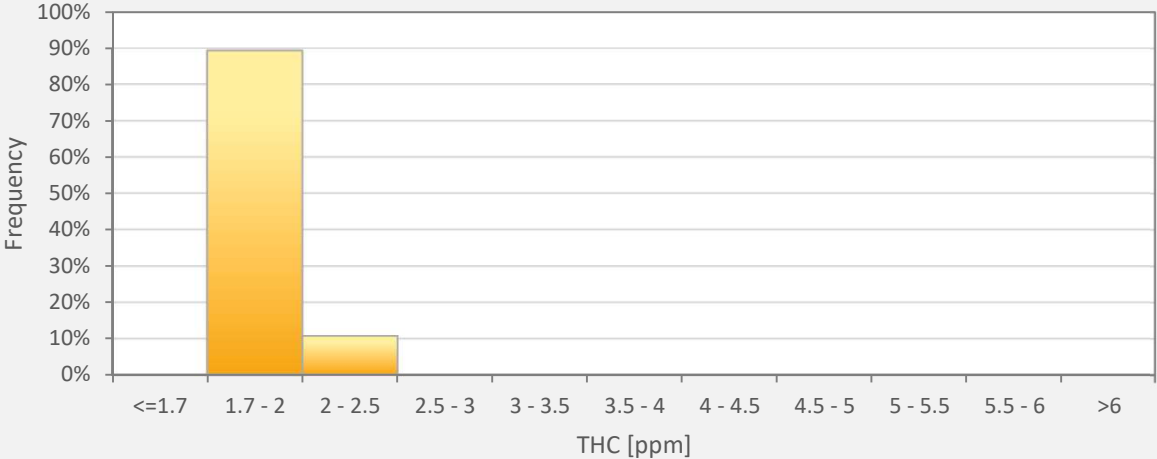
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction/Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for THC - Cold Lake South Station



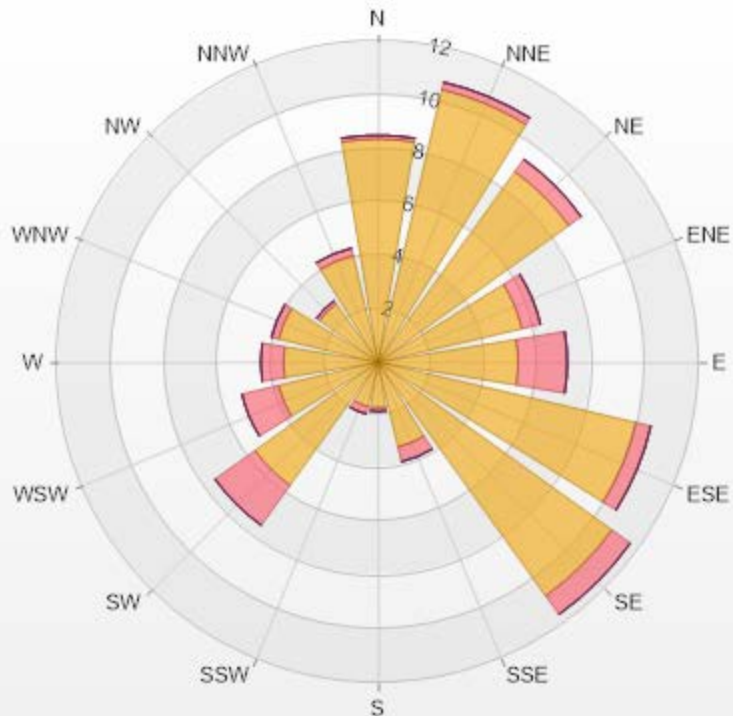
THC55[ppm] Histogram: Cold Lake South Monthly: 05-2021 1 Hr.



Classes	THC55
<=1.7	0.00%
1.7 - 2	89.25%
2 - 2.5	10.75%
2.5 - 3	0.00%
3 - 3.5	0.00%
3.5 - 4	0.00%
4 - 4.5	0.00%
4.5 - 5	0.00%
5 - 5.5	0.00%
5.5 - 6	0.00%
>6	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-THC55[ppm] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	8.35	0.14	0	0	0	8.49
NNE	10.47	0.28	0	0	0	10.75
NE	8.77	0.57	0	0	0	9.34
ENE	5.52	0.71	0	0	0	6.23
E	5.23	1.84	0	0	0	7.07
ESE	9.9	0.57	0	0	0	10.47
SE	10.75	0.85	0	0	0	11.6
SSE	3.25	0.57	0	0	0	3.82
S	1.7	0.14	0	0	0	1.84
SSW	1.7	0.28	0	0	0	1.98
SW	5.66	1.84	0	0	0	7.5
WSW	3.82	1.41	0	0	0	5.23
W	3.54	0.85	0	0	0	4.39
WNW	3.82	0.28	0	0	0	4.1
NW	2.69	0.14	0	0	0	2.83
NNW	4.1	0.28	0	0	0	4.38
Summary	89.27	10.75	0	0	0	100



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% Icon Classes (ppm)

89

0-2

11

2-5

0

5-10

0

10-40

0

>40.0



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Cold Lake South Station - May 2021
Summary of Hourly Averages

METHANE (CH4) in ppm

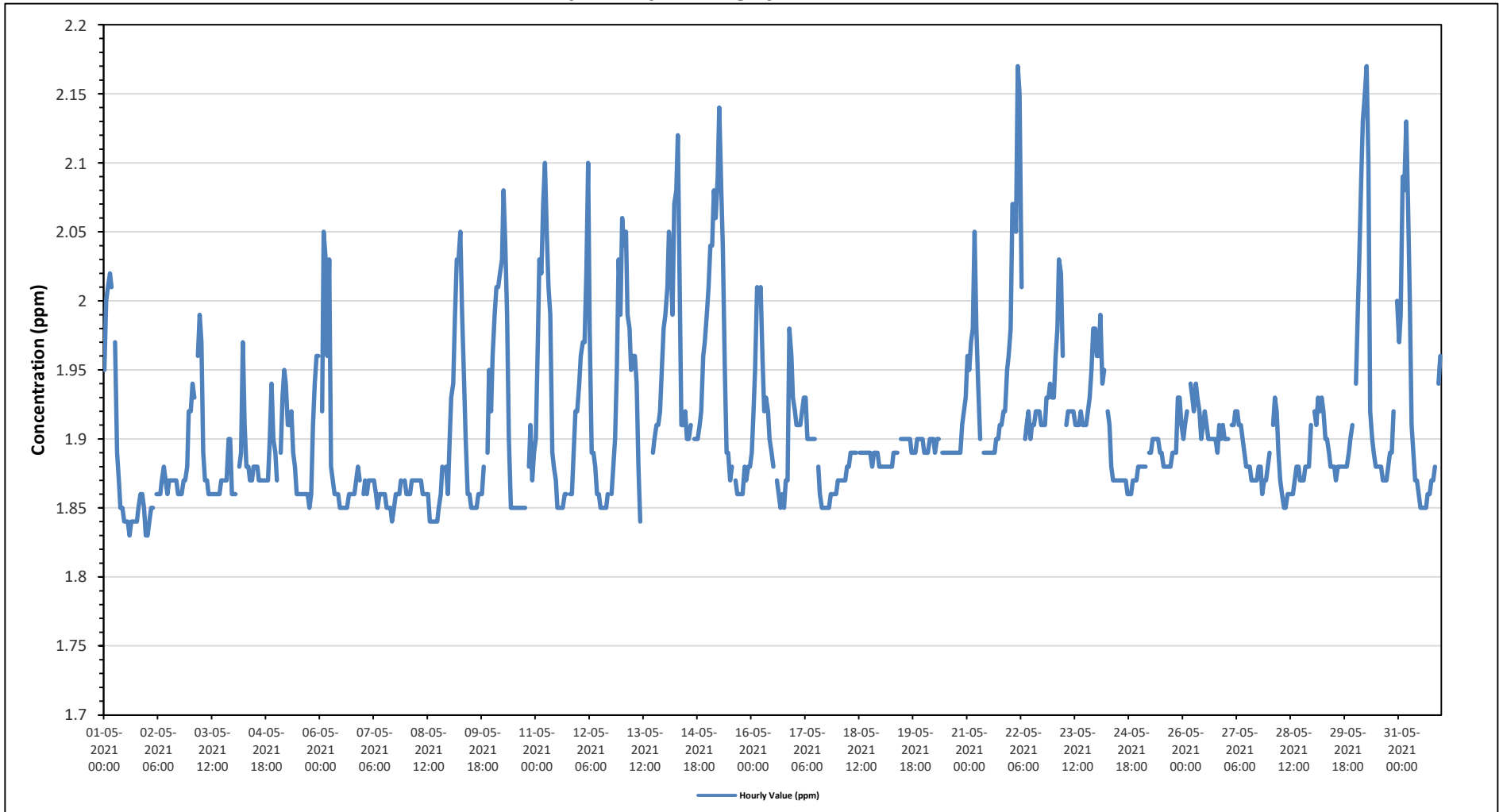
Maximum Hourly Value:	2.17 ppm on May 22 at hour 4	Hours in Service:	744
Maximum Daily Value:	1.97 ppm on May 14	Hours of Data:	707
Minimum Hourly Value:	1.83 ppm on May 1 at hour 34	Hours of Missing Data:	0
Minimum Daily Value:	1.86 ppm on May 8	Hours of Calibration:	37
Monthly Average:	1.91 ppm	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23		
May 1	1.95	2.00	2.01	2.02	2.01	S	1.97	1.89	1.87	1.85	1.85	1.84	1.84	1.84	1.83	1.84	1.84	1.84	1.84	1.85	1.86	1.86	1.85	1.83	1.83	2.02	1.89		
May 2	1.83	1.84	1.85	1.85	S	1.86	1.86	1.86	1.87	1.88	1.87	1.86	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.87	1.87	1.87	1.88	1.92	1.83	1.92	1.87	
May 3	1.92	1.94	1.93	S	1.96	1.99	1.97	1.89	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.87	1.87	1.87	1.87	1.90	1.90	1.86	1.86	1.99	1.89
May 4	1.86	1.86	S	1.88	1.89	1.97	1.91	1.88	1.88	1.87	1.87	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.90	1.94	1.90	1.89	1.86	1.97	1.89	
May 5	1.87	S	1.89	1.93	1.95	1.94	1.91	1.91	1.92	1.89	1.88	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.85	1.86	1.91	1.94	1.96	1.96	1.85	1.96	1.90
May 6	S	1.92	2.05	2.03	1.96	2.03	1.88	1.87	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.84	1.85	1.86	1.86	1.87	1.88	1.87	S	1.85	2.05	1.89
May 7	1.86	1.87	1.86	1.87	1.87	1.87	1.87	1.86	1.85	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.84	1.85	1.86	1.86	1.86	1.87	S	1.87	1.84	1.87	1.86	1.86
May 8	1.86	1.86	1.86	1.87	1.87	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.84	1.84	1.84	1.84	1.84	1.84	1.85	1.86	1.88	S	1.88	1.86	1.84	1.88	1.88	1.86
May 9	1.90	1.93	1.94	1.99	2.03	2.03	2.05	1.99	1.94	1.90	1.86	1.86	1.85	1.85	1.85	1.85	1.86	1.86	1.86	1.86	1.88	S	1.89	1.95	1.92	1.85	2.05	1.91	1.91
May 10	1.96	1.99	2.01	2.01	2.02	2.03	2.08	2.04	1.99	1.90	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	S	1.88	1.91	1.87	1.85	2.08	1.92	1.89
May 11	1.90	1.97	2.03	2.02	2.07	2.10	2.05	2.01	1.99	1.89	1.88	1.87	1.85	1.85	1.85	1.85	1.86	1.86	S	1.86	1.86	1.89	1.92	1.92	1.85	2.10	1.93	1.93	1.89
May 12	1.94	1.96	1.97	1.97	2.02	2.10	1.98	1.89	1.89	1.88	1.86	1.86	1.85	1.85	1.85	1.85	1.86	S	1.86	1.88	1.90	1.95	2.03	1.99	1.85	2.10	1.92	1.92	1.89
May 13	2.06	2.04	2.05	1.99	1.98	1.95	1.96	1.96	1.94	1.88	1.84	C	C	C	C	1.92	S	1.89	1.90	1.91	1.91	1.92	1.95	1.98	1.84	2.06	1.95	1.95	1.89
May 14	1.99	2.01	2.05	2.03	1.99	2.07	2.08	2.12	2.00	1.91	1.91	C	C	1.90	1.91	S	1.90	1.90	1.90	1.91	1.91	1.92	1.96	1.97	1.99	1.90	2.12	1.97	1.91
May 15	2.01	2.04	2.04	2.08	2.06	2.09	2.14	2.08	2.04	1.95	1.89	1.89	1.87	1.88	S	1.87	1.86	1.86	1.86	1.86	1.86	1.88	1.87	1.88	1.88	1.86	2.14	1.95	1.91
May 16	1.89	1.92	1.95	2.01	2.00	2.01	1.96	1.92	1.93	1.92	1.90	1.89	1.88	S	1.87	1.86	1.85	1.86	1.85	1.85	1.87	1.87	1.98	1.96	1.93	1.85	2.01	1.92	1.89
May 17	1.92	1.91	1.91	1.91	1.92	1.93	1.93	1.90	1.90	1.90	1.90	S	1.88	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.86	1.86	1.86	1.86	1.85	1.93	1.89	1.88
May 18	1.87	1.87	1.87	1.87	1.87	1.88	1.88	1.89	1.89	1.89	1.89	S	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.88	1.87	1.89	1.88
May 19	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.89	1.89	S	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.90	1.90	1.90	1.88	1.90	1.89	1.88
May 20	1.89	1.89	1.89	1.90	1.90	1.90	1.89	1.90	1.90	S	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.91	1.92	1.93	1.89	1.90
May 21	1.96	1.95	1.97	1.98	2.05	1.98	1.94	1.90	S	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.91	1.91	1.92	1.92	1.95	1.96	1.89	2.05	1.93	1.93	1.89
May 22	1.98	2.07	2.07	2.05	2.17	2.15	2.01	S	1.90	1.91	1.92	1.90	1.91	1.91	1.91	1.92	1.92	1.92	1.91	1.91	1.91	1.92	1.93	1.95	1.98	1.91	2.03	1.94	1.94
May 23	1.93	1.96	1.98	2.03	2.02	1.96	S	1.91	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.92	1.91	1.91	1.91	1.92	1.91	1.92	1.93	1.95	1.98	1.98	1.91	2.03	1.94
May 24	1.96	1.96	1.99	1.94	1.95	S	1.92	1.91	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.87	1.87	1.88	1.86	1.99	1.89	1.88
May 25	1.88	1.88	1.88	1.88	S	1.89	1.89	1.90	1.90	1.90	1.90	1.89	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.89	1.93	1.93	1.91	1.88	1.93	1.89	1.88
May 26	1.90	1.91	1.92	S	1.94	1.93	1.92	1.94	1.93	1.92	1.90	1.91	1.92	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.91	1.90	1.91	1.90	1.89	1.94	1.91	1.91
May 27	1.90	1.90	S	1.91	1.91	1.92	1.92	1.91	1.91	1.90	1.89	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.88	1.88	1.86	1.87	1.87	1.88	1.86	1.92	1.89	1.88
May 28	1.89	S	1.91	1.93	1.92	1.89	1.87	1.86	1.85	1.85	1.86	1.86	1.86	1.86	1.87	1.88	1.88	1.88	1.87	1.88	1.87	1.87	1.88	1.88	1.88	1.85	1.93	1.88	1.88
May 29	S	1.92	1.91	1.93	1.92	1.93	1.92	1.90	1.90	1.89	1.88	1.88	1.88	1.87	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.90	1.91	S	1.87	1.93	1.90
May 30	1.94	1.99	2.03	2.09	2.13	2.15	2.17	2.10	1.92	1.90	1.89	1.88	1.88	1.88	1.88	1.87	1.87	1.87	1.88	1.89	1.89	1.92	S	2.00	1.87	2.17	1.96	1.96	1.89
May 31	1.97	1.99	2.09	2.08	2.13	2.07	2.00	1.91	1.89	1.87	1.87	1.86	1.85	1.85	1.85	1.85	1.86	1.86	1.86	1.87	1.87	1.88	S	1.94	1.96	1.85	2.13	1.93	1.89
Diurnal Maximum	2.06	2.07	2.09	2.09	2.17	2.15	2.17	2.12	2.04	1.95	1.92	1.92	1.92	1.91	1.92	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.92	1.93	1.98	2.03	2.00	2.00	1.91
Diurnal Average	1.92	1.94	1.96	1.96	1.98	1.98	1.96	1.93	1.91	1.89	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.88	1.89	1.91	1.91	1.92	1.92	1.92	1.92

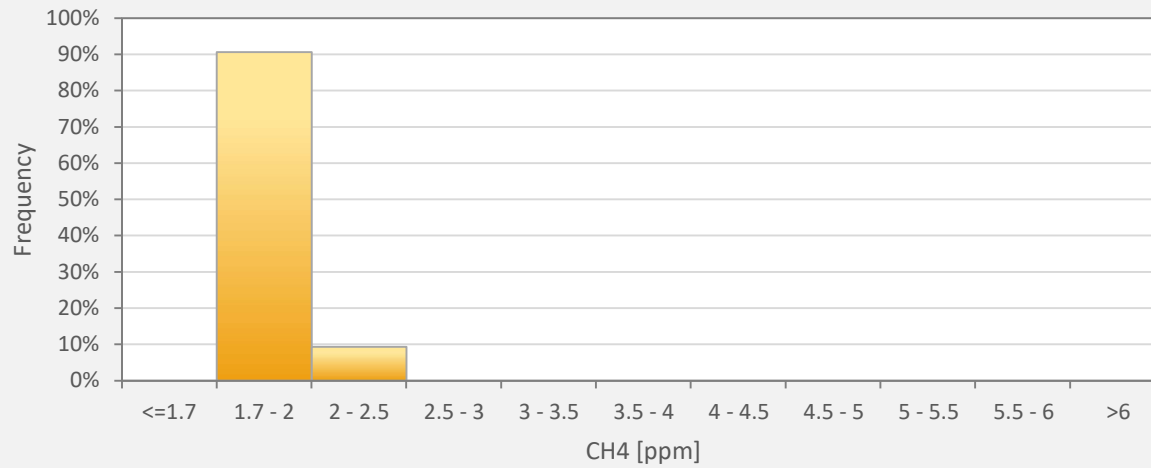
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction/Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for CH4 - Cold Lake South Station



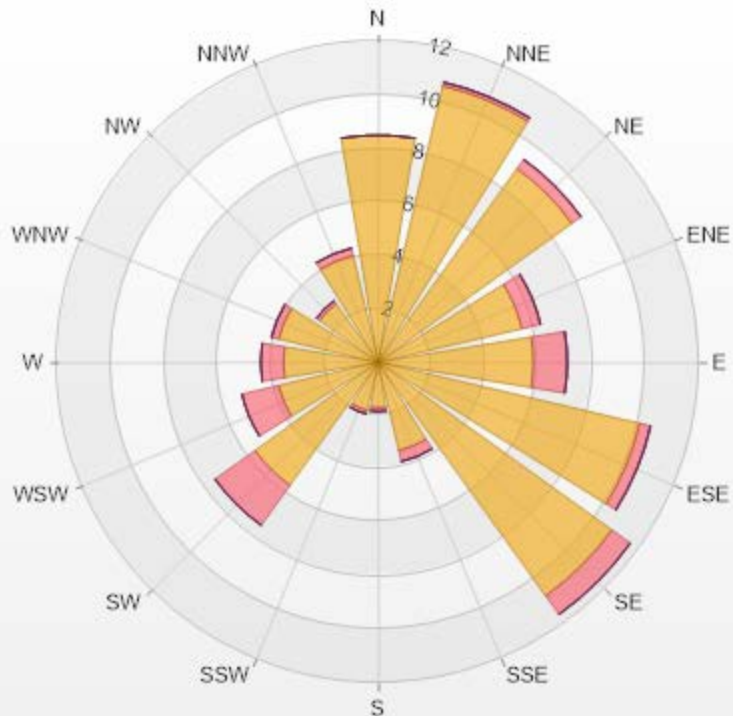
CH4[ppm] Histogram: Cold Lake South Monthly: 05-2021 1 Hr.



Classes	CH4
<=1.7	0.00%
1.7 - 2	90.66%
2 - 2.5	9.34%
2.5 - 3	0.00%
3 - 3.5	0.00%
3.5 - 4	0.00%
4 - 4.5	0.00%
4.5 - 5	0.00%
5 - 5.5	0.00%
5.5 - 6	0.00%
>6	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-CH4[ppm] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	8.49	0	0	0	0	8.49
NNE	10.61	0.14	0	0	0	10.75
NE	8.91	0.42	0	0	0	9.33
ENE	5.52	0.71	0	0	0	6.23
E	5.8	1.27	0	0	0	7.07
ESE	10.04	0.42	0	0	0	10.46
SE	10.75	0.85	0	0	0	11.6
SSE	3.39	0.42	0	0	0	3.81
S	1.7	0.14	0	0	0	1.84
SSW	1.84	0.14	0	0	0	1.98
SW	5.66	1.84	0	0	0	7.5
WSW	3.82	1.41	0	0	0	5.23
W	3.54	0.85	0	0	0	4.39
WNW	3.82	0.28	0	0	0	4.1
NW	2.69	0.14	0	0	0	2.83
NNW	4.1	0.28	0	0	0	4.38
Summary	90.68	9.31	0	0	0	100



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% Icon Classes (ppm)

91 0-2

9 2-5

0 5-10

0 10-20

0 >20.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - May 2021

Summary of Hourly Averages

NON-METHANE HYDROCARBONS (NMHC) in ppm

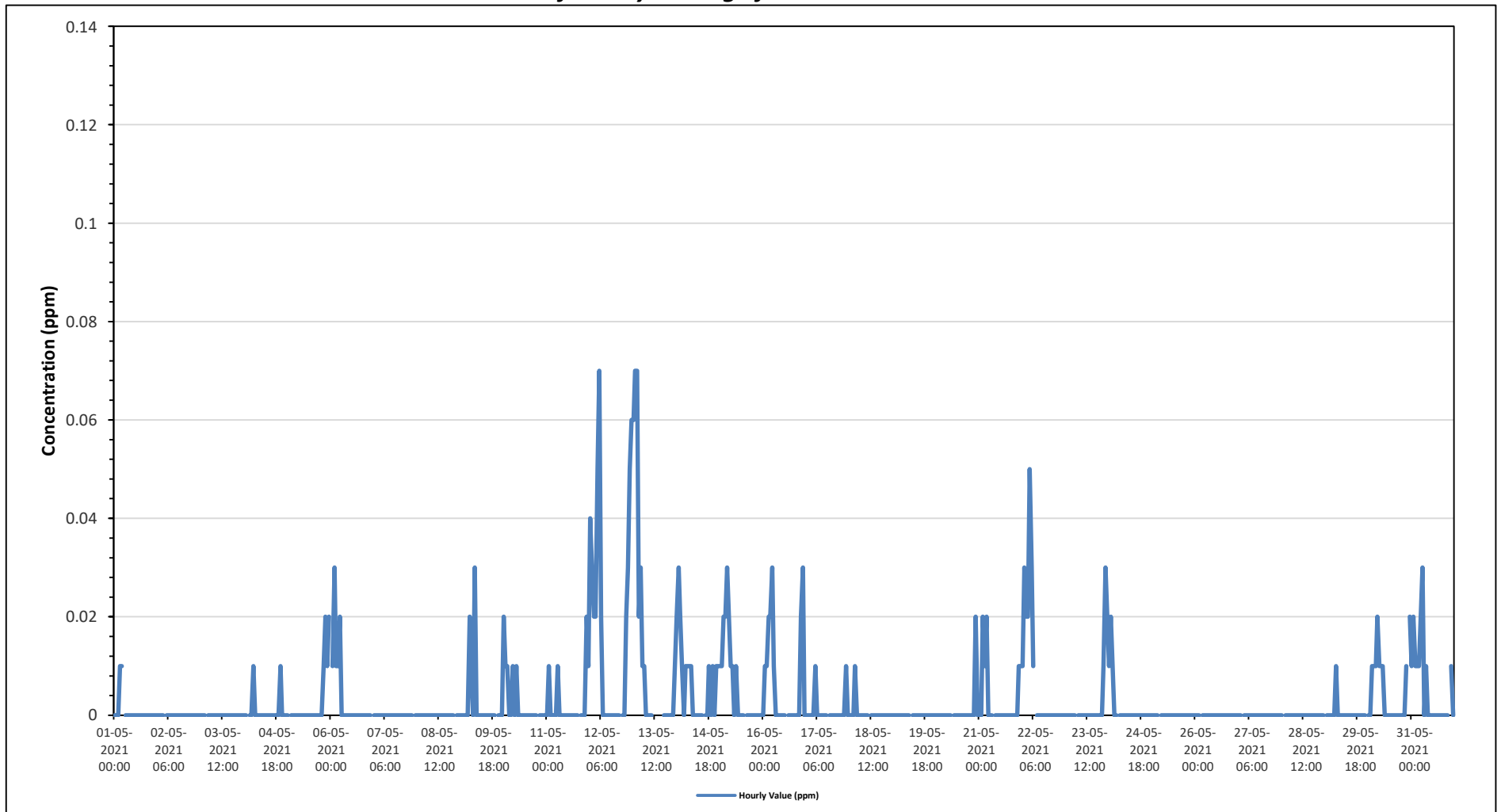
Maximum Hourly Value:	0.07 ppm on May 12 at hour 5	Hours in Service:	744
Maximum Daily Value:	0.02 ppm on May 12	Hours of Data:	707
Minimum Hourly Value:	0.00 ppm on May 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.00 ppm on May 2	Hours of Calibration:	37
Monthly Average:	0.00 ppm	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
May 1	0.00	0.00	0.00	0.01	0.01	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
May 2	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May 3	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May 4	0.00	0.00	S	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00
May 5	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.01	0.02	0.00	0.02	0.00	
May 6	S	0.01	0.03	0.01	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.03	0.00	
May 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	
May 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	
May 9	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.03	0.00	
May 10	0.02	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.02	0.00	
May 11	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.02	0.01	0.02	0.00	0.00	
May 12	0.04	0.03	0.02	0.02	0.05	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.02	0.03	0.05	0.06	0.00	0.07	0.02	
May 13	0.06	0.07	0.07	0.02	0.03	0.01	0.01	0.00	0.00	0.00	C	C	C	C	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	
May 14	0.02	0.03	0.02	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.00	0.03	0.01	
May 15	0.01	0.01	0.02	0.02	0.03	0.02	0.01	0.01	0.00	0.01	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	
May 16	0.00	0.01	0.01	0.02	0.02	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.00	0.00	0.03	0.01	
May 17	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	
May 18	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	
May 19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.00	
May 21	0.00	0.00	0.02	0.01	0.02	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	
May 22	0.01	0.03	0.02	0.02	0.05	0.03	0.01	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.01	
May 23	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.02	0.00	0.03	0.00	0.00	
May 24	0.01	0.02	0.01	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	
May 25	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 26	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 27	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 28	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 29	S	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.01	0.00	
May 30	0.00	0.00	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	S	0.02	0.00	0.02	0.00	0.00	
May 31	0.01	0.02	0.01	0.01	0.01	0.02	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.01	0.00	0.00	0.03	0.00	0.01	
Diurnal Maximum	0.06	0.07	0.07	0.02	0.05	0.07	0.03	0.01	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.03	0.05	0.06	0.00	0.07	
Diurnal Average	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.01	

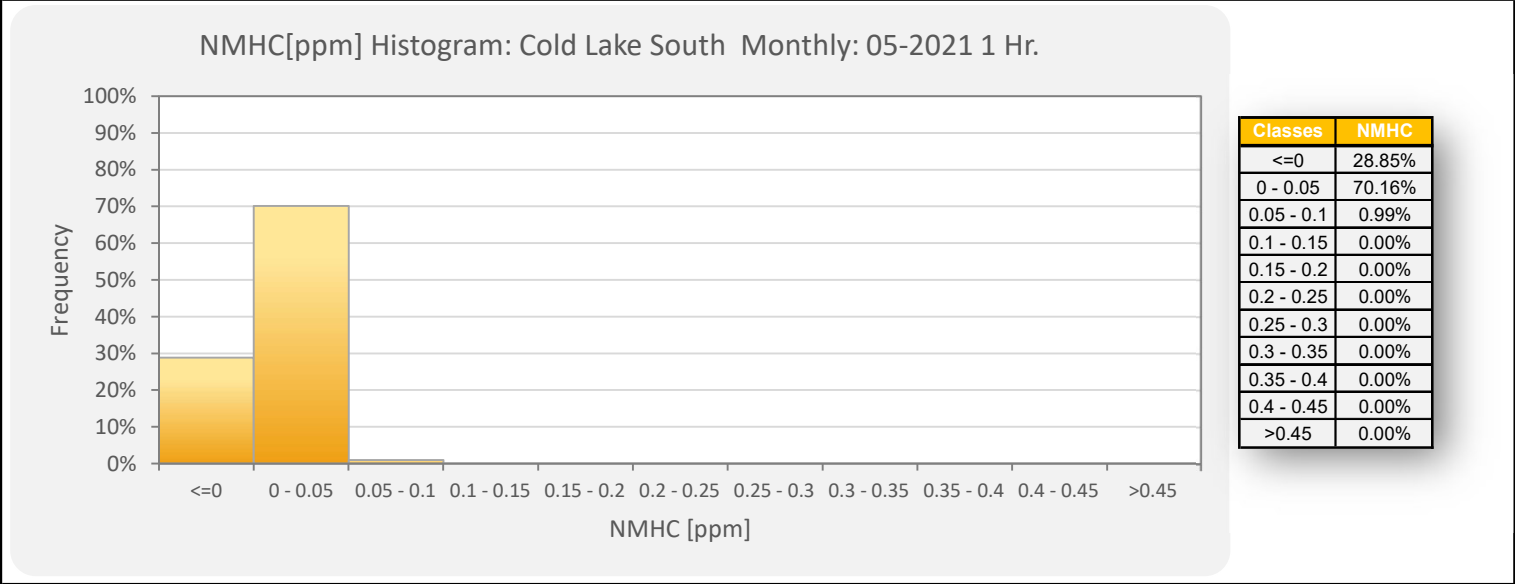
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction/Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NMHC - Cold Lake South Station

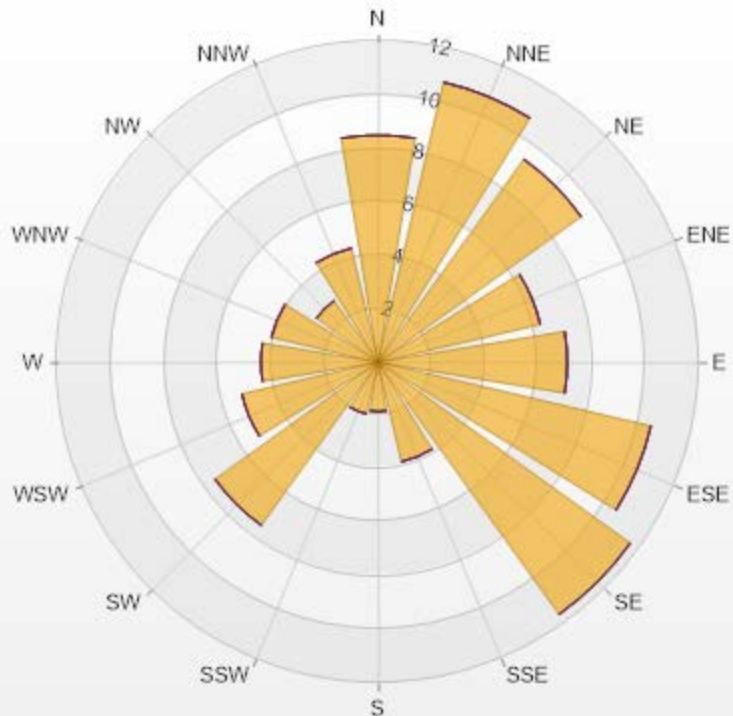


NMHC[ppm] Histogram: Cold Lake South Monthly: 05-2021 1 Hr.



Wind: Cold Lake South Poll.: Cold Lake South-NMHC[ppm] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	8.49	0	0	0	0	8.49
NNE	10.75	0	0	0	0	10.75
NE	9.34	0	0	0	0	9.34
ENE	6.22	0	0	0	0	6.22
E	7.07	0	0	0	0	7.07
ESE	10.47	0	0	0	0	10.47
SE	11.6	0	0	0	0	11.6
SSE	3.82	0	0	0	0	3.82
S	1.84	0	0	0	0	1.84
SSW	1.98	0	0	0	0	1.98
SW	7.5	0	0	0	0	7.5
WSW	5.23	0	0	0	0	5.23
W	4.38	0	0	0	0	4.38
WNW	4.1	0	0	0	0	4.1
NW	2.83	0	0	0	0	2.83
NNW	4.38	0	0	0	0	4.38
Summary	100	0	0	0	0	100




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% Icon Classes (ppm)

100  0-0.1

0  0.1-0.3

0  0.3-0.9

0  0.9-2

0  >2.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - May 2021

Summary of Hourly Averages

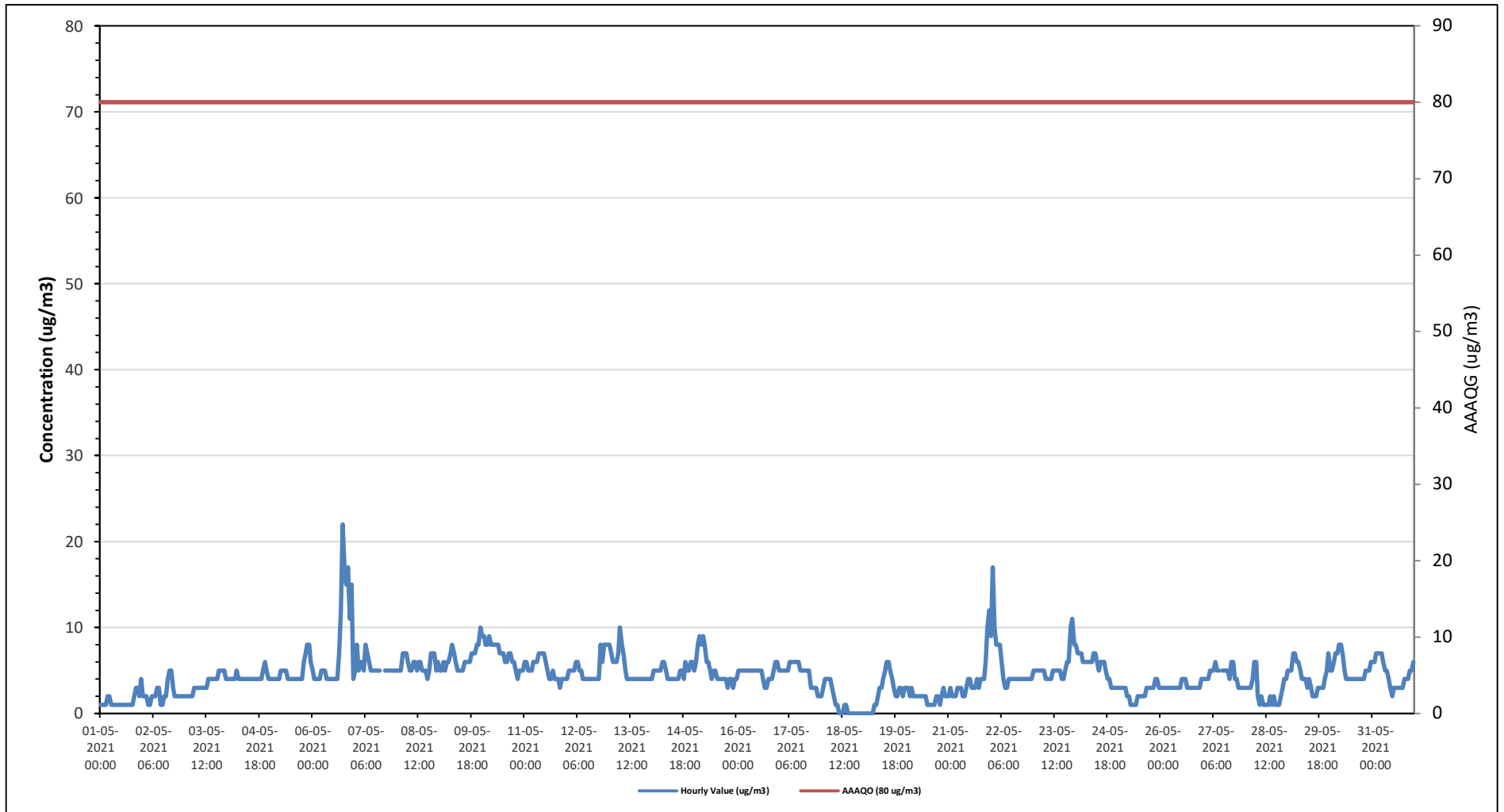
PARTICULATE MATTER 2.5 (PM_{2.5}) in µg/m³

Alberta Ambient Air Quality Guidelines (AAAQG): 1-Hour 80 µg/m ³ , Alberta Ambient Air Quality Objectives (AAAQO): 24-Hour 29 µg/m ³																											
Number of 1-Hour Exceedences: 0					Number of 24-Hour Exceedences: 0																						
Maximum Hourly Value: 22 µg/m ³ on May 6 at hour 17					Hours in Service: 744																						
Maximum Daily Value: 7.7 µg/m ³ on May 6					Hours of Data: 741																						
Minimum Hourly Value: 0 µg/m ³ on May 18 at hour 10					Hours of Missing Data: 2																						
Minimum Daily Value: 1 µg/m ³ on May 18					Hours of Calibration: 1																						
Monthly Average: 4.4 µg/m ³					Operational Uptime: 99.7																						
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	3	3	2	4	1	4	1.5	
May 2	2	2	2	1	1	2	2	2	3	3	1	1	2	2	4	5	5	3	2	2	2	2	2	1	5	2.3	
May 3	2	2	2	2	2	3	3	3	3	3	3	3	3	4	4	4	4	4	5	5	5	5	4	2	5	3.4	
May 4	4	4	4	4	4	5	4	4	4	4	4	4	4	4	4	4	4	4	4	5	6	5	4	4	6	4.2	
May 5	4	4	4	4	4	4	5	5	5	5	4	4	4	4	4	4	4	4	6	7	8	8	6	4	8	4.8	
May 6	5	4	4	4	4	5	5	5	4	4	4	4	4	4	4	7	12	22	17	15	17	11	15	4	22	7.7	
May 7	5	8	5	6	6	5	8	7	6	5	5	5	5	5	5	NRM	NRM	5	5	5	5	5	5	5	8	5.5	
May 8	5	5	5	7	7	7	6	5	5	6	6	5	6	6	5	5	4	5	7	7	7	5	6	4	7	5.7	
May 9	5	5	6	5	6	6	7	8	7	6	5	5	5	6	6	6	6	7	7	7	8	8	10	5	10	6.3	
May 10	9	9	8	8	9	8	8	8	8	7	7	7	6	6	7	7	6	6	5	4	5	5	5	4	9	6.9	
May 11	6	6	5	5	5	6	6	6	7	7	7	7	6	5	4	4	5	4	4	3	4	4	4	3	7	5.2	
May 12	4	5	5	5	5	6	6	5	5	4	4	4	4	4	4	4	4	4	8	6	8	8	8	4	8	5.2	
May 13	8	7	6	6	6	7	10	8	7	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	10	5.3	
May 14	4	5	5	5	5	5	6	6	5	4	4	4	4	4	4	4	5	5	4	6	5	5	6	4	6	4.8	
May 15	5	6	8	9	8	9	8	6	6	5	4	5	5	4	4	4	4	4	3	4	4	3	4	3	9	5.3	
May 16	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	3	3	4	4	4	5	6	6	6	4.7	
May 17	5	5	5	5	5	5	6	6	6	6	6	6	5	5	5	5	5	5	3	3	3	2	2	2	6	4.7	
May 18	2	3	4	4	4	4	3	2	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	4	1.3	
May 19	0	0	0	0	0	0	1	1	2	3	3	4	5	6	6	5	4	3	2	2	3	3	2	3	6	2.4	
May 20	3	3	2	3	2	2	2	2	2	2	2	2	1	1	1	1	1	2	2	1	2	3	2	2	3	1.9	
May 21	2	3	2	2	2	3	3	3	2	2	3	4	4	3	3	3	4	3	4	4	4	6	10	12	2	3.8	
May 22	9	17	10	8	8	8	6	4	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	17	5.5
May 23	5	5	5	5	5	5	5	4	4	4	4	5	5	5	5	4	4	4	5	6	6	10	11	8	4	5.4	
May 24	8	7	7	7	6	6	6	6	6	6	7	7	6	5	6	6	6	5	4	4	3	3	3	3	8	5.5	
May 25	3	3	3	3	3	2	2	1	1	1	1	2	2	2	2	2	3	3	3	3	4	4	3	1	4	2.5	
May 26	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	3	3	3	3	3	3	3	3	3	4	3.2	
May 27	4	4	4	4	5	5	5	6	5	5	C	5	5	5	5	4	6	6	4	4	3	3	3	3	6	4.5	
May 28	3	3	3	3	4	6	6	2	1	2	1	1	1	1	2	1	2	1	1	2	3	4	4	1	6	2.4	
May 29	5	5	5	7	7	6	6	5	4	4	4	3	4	4	2	2	2	3	3	3	3	4	5	7	7	4.3	
May 30	5	5	6	7	7	8	8	7	5	4	4	4	4	4	4	4	4	4	4	5	5	5	6	4	8	5.1	
May 31	6	6	7	7	7	7	6	5	5	4	3	2	3	3	3	3	3	3	4	4	4	5	5	6	7	4.6	
Diurnal Maximum	9	17	10	9	9	9	10	8	8	8	7	7	7	6	6	7	12	22	17	15	17	11	15	12			
Daiurnal Average	4.4	4.8	4.5	4.7	4.7	5.0	5.1	4.5	4.2	4.0	3.8	3.9	3.9	3.8	3.9	3.8	4.1	4.3	4.0	4.3	4.4	4.8	5.0	4.8			
C	Monthly Calibration					S	Daily Zero-Span Check					Q	Quality Assurance					P	Power Failure								
K	Collection Error					N	No Data (Machine Not in Service)					Y	Routine Maintenance														
X	InValid Data (Equipment Malfunction/Recovery)					NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																				

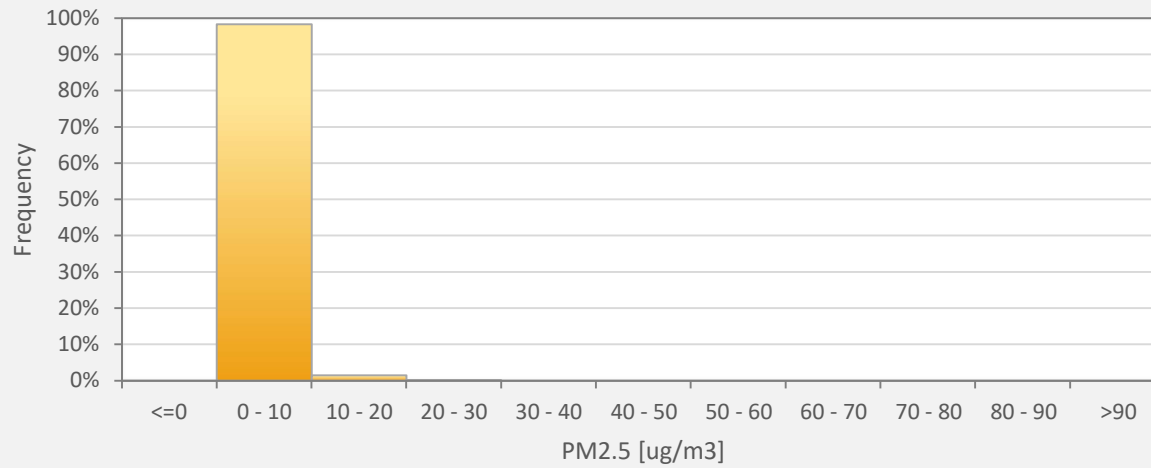
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.

Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for PM2.5 - Cold Lake South Station



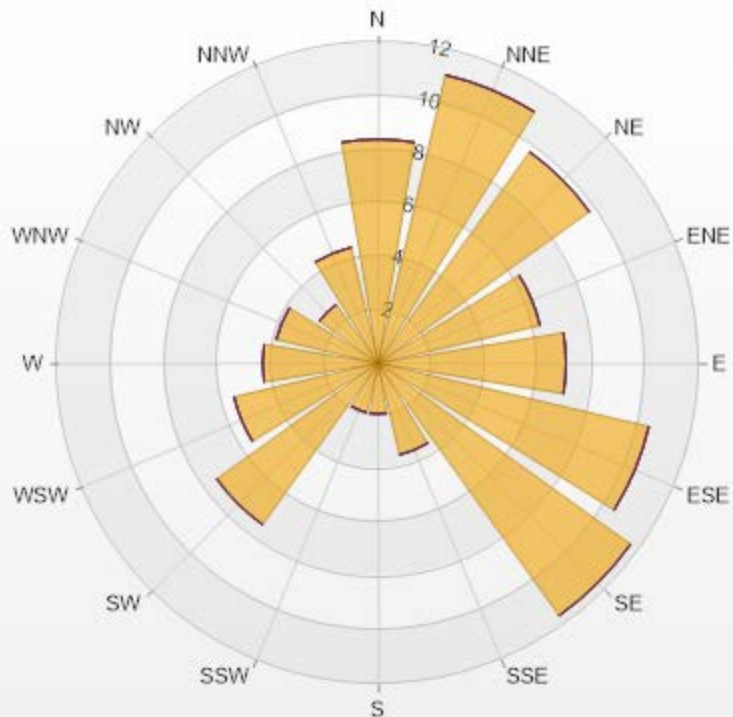
PM2.5[ug/m3(L)] Histogram: Cold Lake South Monthly: 05-2021 1 Hr.



Classes	PM2.5
<=0	0.00%
0 - 10	98.38%
10 - 20	1.48%
20 - 30	0.13%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-PM2.5[ug/m3(L)] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 99.60% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	8.37	0	0	0	0	8.37
NNE	11.07	0	0	0	0	11.07
NE	9.72	0	0	0	0	9.72
ENE	6.21	0	0	0	0	6.21
E	7.02	0	0	0	0	7.02
ESE	10.39	0	0	0	0	10.39
SE	11.61	0	0	0	0	11.61
SSE	3.51	0	0	0	0	3.51
S	1.89	0	0	0	0	1.89
SSW	1.89	0	0	0	0	1.89
SW	7.42	0	0	0	0	7.42
WSW	5.53	0	0	0	0	5.53
W	4.32	0	0	0	0	4.32
WNW	3.91	0	0	0	0	3.91
NW	2.7	0	0	0	0	2.7
NNW	4.45	0	0	0	0	4.45
Summary	100	0	0	0	0	100



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% Icon Classes (ug/m3(L))

100 0-50

0 50-80

0 80-120

0 120-240

0 >240.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - May 2021

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

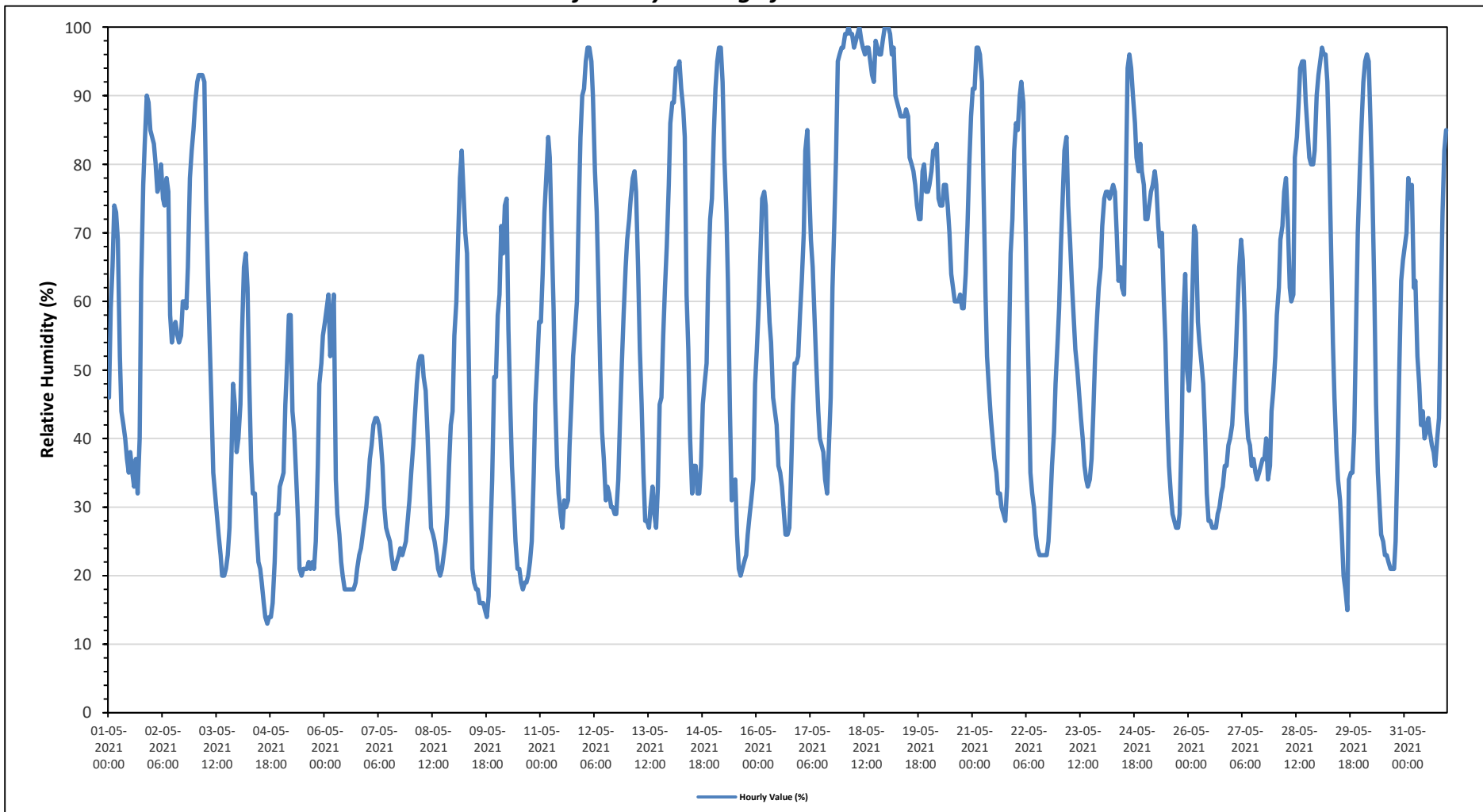
Maximum Hourly Value:	100 %	on May 18 at hour 3	Hours in Service:	744
Maximum Daily Value:	97.4 %	on May 18	Hours of Data:	744
Minimum Hourly Value:	13 %	on May 4 at hour 16	Hours of Missing Data:	0
Minimum Daily Value:	30.3 %	on May 7	Hours of Calibration:	0
Monthly Average:	54.2 %		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	46	59	65	74	73	69	52	44	42	40	37	35	38	35	33	37	32	40	63	77	83	90	89	85	32	90	55.8
May 2	84	83	80	76	77	80	75	74	78	76	58	54	56	57	55	54	55	60	60	59	65	78	82	85	54	85	69.2
May 3	89	92	93	93	93	92	75	64	54	45	35	32	29	26	23	20	20	21	23	27	38	48	45	38	20	93	50.6
May 4	40	45	55	65	67	62	48	37	32	32	27	22	21	19	16	14	13	14	14	16	22	29	29	33	13	67	32.2
May 5	34	35	45	51	58	58	44	41	35	28	21	20	21	21	21	22	21	22	21	25	36	48	51	55	20	58	34.8
May 6	57	59	61	52	58	61	34	29	26	22	20	18	18	18	18	18	19	21	23	24	26	28	30	18	61	31.6	
May 7	33	37	39	42	43	43	42	40	36	30	27	26	25	23	21	21	22	23	24	23	24	25	28	31	21	43	30.3
May 8	35	39	43	48	51	52	52	49	47	41	34	27	26	25	23	21	20	21	23	25	29	36	42	44	20	52	35.5
May 9	55	60	68	78	82	76	70	67	51	31	19	18	18	16	16	16	15	14	17	27	34	49	49	14	82	40.3	
May 10	58	61	71	67	74	75	56	44	36	30	25	21	21	19	18	19	19	20	22	25	35	45	51	57	18	75	40.4
May 11	57	64	73	78	84	81	69	59	46	36	32	29	27	31	30	31	39	46	52	56	60	73	84	90	27	90	55.3
May 12	91	95	97	97	95	90	79	73	62	50	41	37	31	33	32	30	30	29	29	34	43	51	58	65	29	97	57.2
May 13	69	72	75	78	79	76	65	53	45	35	28	27	30	33	29	27	33	45	46	55	62	68	77	27	79	51.5	
May 14	86	89	89	94	94	95	91	88	84	61	53	40	32	36	36	32	32	36	45	48	51	63	72	75	32	95	63.4
May 15	84	91	95	97	97	92	81	73	63	44	31	32	34	26	21	20	21	22	23	26	29	31	34	48	20	97	50.6
May 16	53	59	68	75	76	74	64	57	54	46	44	42	36	35	33	29	26	26	27	35	45	51	51	52	26	76	48.3
May 17	58	63	70	82	85	78	69	65	58	51	44	40	39	38	34	32	38	46	62	71	81	95	96	97	32	97	62.2
May 18	97	99	99	100	99	99	97	98	99	100	98	97	96	97	97	95	93	92	98	97	96	96	98	100	92	100	97.4
May 19	100	100	99	96	97	90	89	88	87	87	87	88	87	81	80	79	77	74	72	72	79	80	76	76	72	100	85.0
May 20	77	79	82	82	83	75	74	74	77	77	74	70	64	62	60	60	60	61	59	59	64	71	80	87	59	87	71.3
May 21	91	91	97	97	96	92	77	61	52	47	43	40	37	35	32	32	30	29	28	33	52	67	72	82	28	97	58.9
May 22	86	85	90	92	89	75	61	49	35	32	30	26	24	23	23	23	23	23	25	30	36	41	48	54	23	92	46.8
May 23	59	68	76	82	84	74	69	63	58	53	50	47	43	40	36	34	33	34	37	44	52	58	62	65	33	84	55.0
May 24	71	75	76	76	75	76	77	76	70	63	65	62	61	77	94	96	94	90	86	81	79	83	79	77	61	96	77.5
May 25	72	72	74	76	77	79	77	71	68	70	61	54	43	36	32	29	28	27	27	29	41	58	64	50	27	79	54.8
May 26	47	52	61	71	70	57	54	51	48	41	32	28	28	27	27	27	29	30	32	33	36	36	39	40	27	71	41.5
May 27	42	46	52	58	65	69	66	58	44	40	39	36	37	35	34	35	36	37	37	40	34	36	44	47	34	69	44.5
May 28	52	58	62	69	71	76	78	72	62	60	61	81	84	89	94	95	89	85	81	80	80	82	90	52	95	76.9	
May 29	93	95	97	96	96	82	69	54	46	38	34	31	26	20	18	15	34	35	35	41	58	70	79	15	97	56.4	
May 30	86	92	95	96	95	85	77	62	45	35	30	26	25	23	23	22	21	21	21	25	38	51	63	66	21	96	51.0
May 31	68	70	78	75	77	62	63	52	48	42	44	40	41	43	41	39	38	36	40	43	59	73	82	85	36	85	55.8
Diurnal Maximum	100	100	99	100	99	99	97	98	99	100	98	97	96	97	97	96	95	92	98	97	96	96	98	100			
Diurnal Average	66.8	70.5	75.0	77.8	79.4	76.0	68.0	61.3	54.7	48.1	42.9	40.4	38.7	38.2	37.3	36.4	36.2	37.7	40.3	43.1	49.5	57.2	61.8	64.8			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for RH - Cold Lake South Station





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - May 2021

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

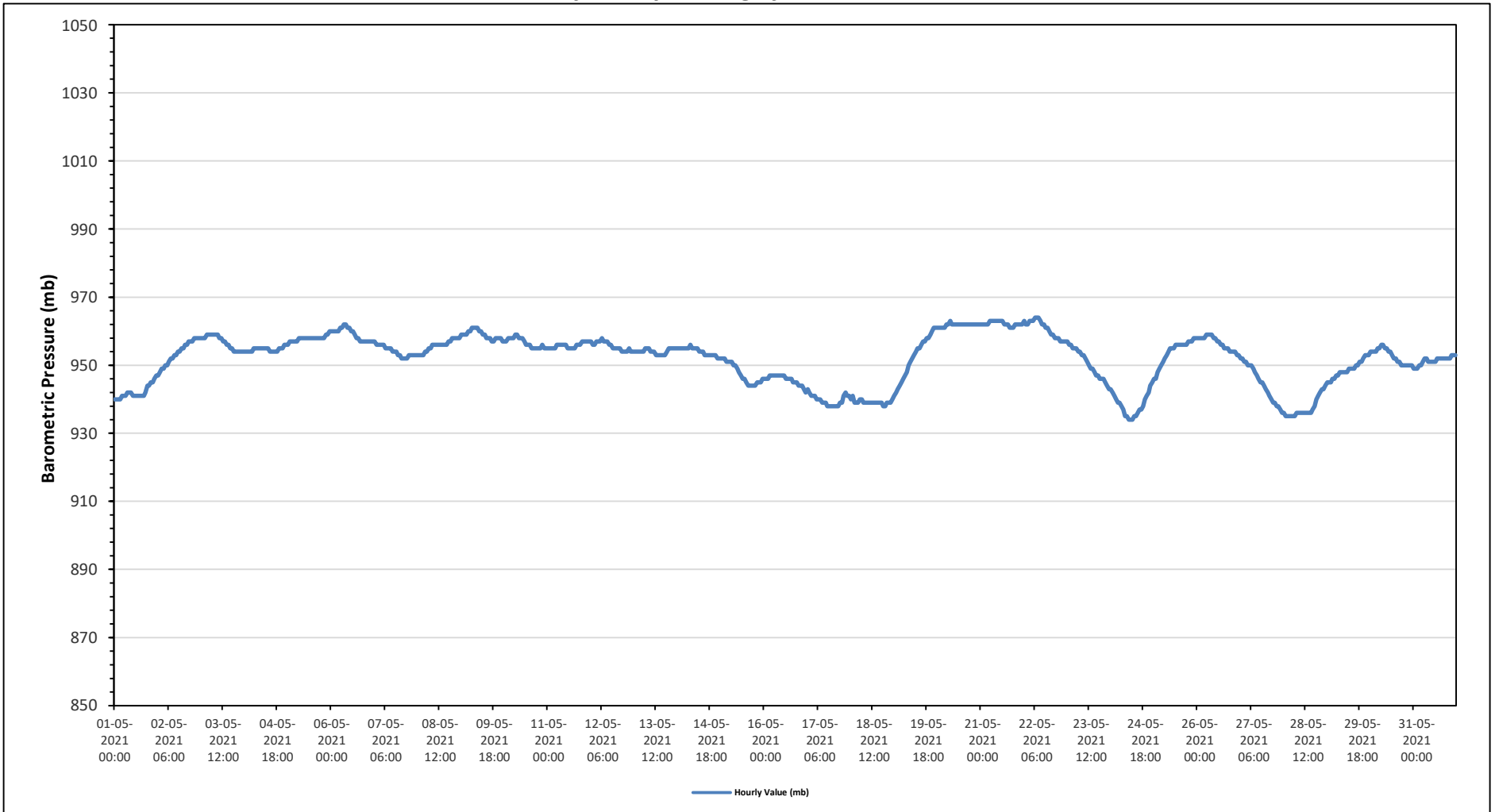
Maximum Hourly Value:	964 mb on May 22 at hour 6	Hours in Service:	744
Maximum Daily Value:	962 mb on May 21	Hours of Data:	744
Minimum Hourly Value:	934 mb on May 24 at hour 10	Hours of Missing Data:	0
Minimum Daily Value:	937 mb on May 28	Hours of Calibration:	0
Monthly Average:	952 mb	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
May 1	940	940	940	940	941	941	941	942	942	942	941	941	941	941	941	941	941	942	944	944	945	946	947	940	947	942
May 2	947	948	949	949	950	950	951	952	952	953	953	954	954	955	955	956	956	957	957	958	958	958	958	947	958	954
May 3	958	958	958	959	959	959	959	959	959	959	959	958	958	957	957	956	956	955	955	954	954	954	954	954	954	957
May 4	954	954	954	954	954	955	955	955	955	955	955	955	955	955	954	954	954	954	954	955	955	956	956	954	956	955
May 5	956	957	957	957	957	957	958	958	958	958	958	958	958	958	958	958	958	958	958	958	958	959	959	960	956	958
May 6	960	960	960	960	960	961	961	962	962	961	961	960	960	959	958	958	957	957	957	957	957	957	957	957	957	959
May 7	957	956	956	956	956	956	955	955	955	955	954	954	954	953	953	952	952	952	952	953	953	953	953	952	957	954
May 8	953	953	953	953	954	954	955	955	956	956	956	956	956	956	956	956	956	957	957	958	958	958	958	953	958	956
May 9	959	959	959	959	960	960	961	961	961	961	960	960	959	959	958	958	958	957	957	958	958	958	958	957	961	959
May 10	957	957	958	958	958	958	959	959	958	958	958	957	956	956	956	955	955	955	955	955	955	956	955	955	959	957
May 11	955	955	955	955	955	956	956	956	956	956	956	955	955	955	955	955	956	956	956	957	957	957	957	955	957	956
May 12	957	956	956	957	957	957	958	957	957	957	956	956	955	955	955	955	955	954	954	954	955	954	954	954	958	956
May 13	954	954	954	954	954	954	955	955	955	954	954	953	953	953	953	953	953	954	954	955	955	955	955	953	955	954
May 14	955	955	955	955	955	955	955	956	955	955	955	955	955	954	954	954	953	953	953	953	953	952	952	952	956	954
May 15	952	952	952	951	951	951	951	950	950	949	948	947	946	946	945	944	944	944	944	944	945	945	945	944	952	948
May 16	946	946	946	947	947	947	947	947	947	947	947	946	946	946	946	945	945	945	945	944	944	944	943	942	947	946
May 17	943	942	941	941	941	940	940	940	939	939	939	938	938	938	938	938	938	939	939	941	942	941	941	938	943	940
May 18	940	941	939	939	939	940	940	939	939	939	939	939	939	939	939	939	939	939	938	938	939	939	940	938	941	939
May 19	941	942	943	944	945	946	947	948	950	951	952	953	954	955	955	956	957	957	958	958	959	960	961	941	961	952
May 20	961	961	961	961	961	962	962	962	962	962	962	962	962	962	962	962	962	962	962	962	962	962	962	961	963	962
May 21	962	962	962	962	962	963	963	963	963	963	963	963	963	963	962	962	961	961	961	962	962	962	962	961	963	962
May 22	963	962	962	963	963	963	964	964	964	963	962	962	961	961	960	959	959	958	958	958	957	957	957	957	964	961
May 23	957	956	956	955	955	955	954	954	953	953	952	951	950	949	949	948	947	947	946	946	946	945	944	943	943	950
May 24	943	942	941	940	939	939	938	937	935	935	934	934	934	935	935	936	937	937	938	940	941	942	944	945	945	938
May 25	946	946	948	949	950	951	952	953	954	955	955	955	956	956	956	956	956	956	957	957	957	958	958	946	958	954
May 26	958	958	958	958	958	959	959	959	959	958	958	957	957	956	956	955	955	955	954	954	954	953	953	953	959	956
May 27	952	952	951	951	950	950	950	949	948	947	946	945	945	944	943	942	941	940	939	939	938	937	936	936	945	945
May 28	936	935	935	935	935	935	935	936	936	936	936	936	936	936	936	936	937	938	940	941	942	943	943	944	935	937
May 29	945	945	945	946	946	947	947	948	948	948	948	948	949	949	949	949	950	950	951	951	952	953	953	945	953	949
May 30	954	954	954	954	955	955	956	956	955	955	954	954	953	952	952	951	951	950	950	950	950	950	950	950	950	953
May 31	949	949	949	950	950	951	952	952	951	951	951	951	951	952	952	952	952	952	952	952	952	953	953	949	953	951
Diurnal Maximum	963	962	962	963	963	964	964	964	964	963	963	963	963	962	962	962	962	962	962	962	962	962	962	962	962	962
Diurnal Average	952	952	952	952	952	952	953	953	953	953	952	952	952	952	952	951	951	951	951	952	952	952	952	952	952	952

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRIM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for BP - Cold Lake South Station





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - May 2021

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

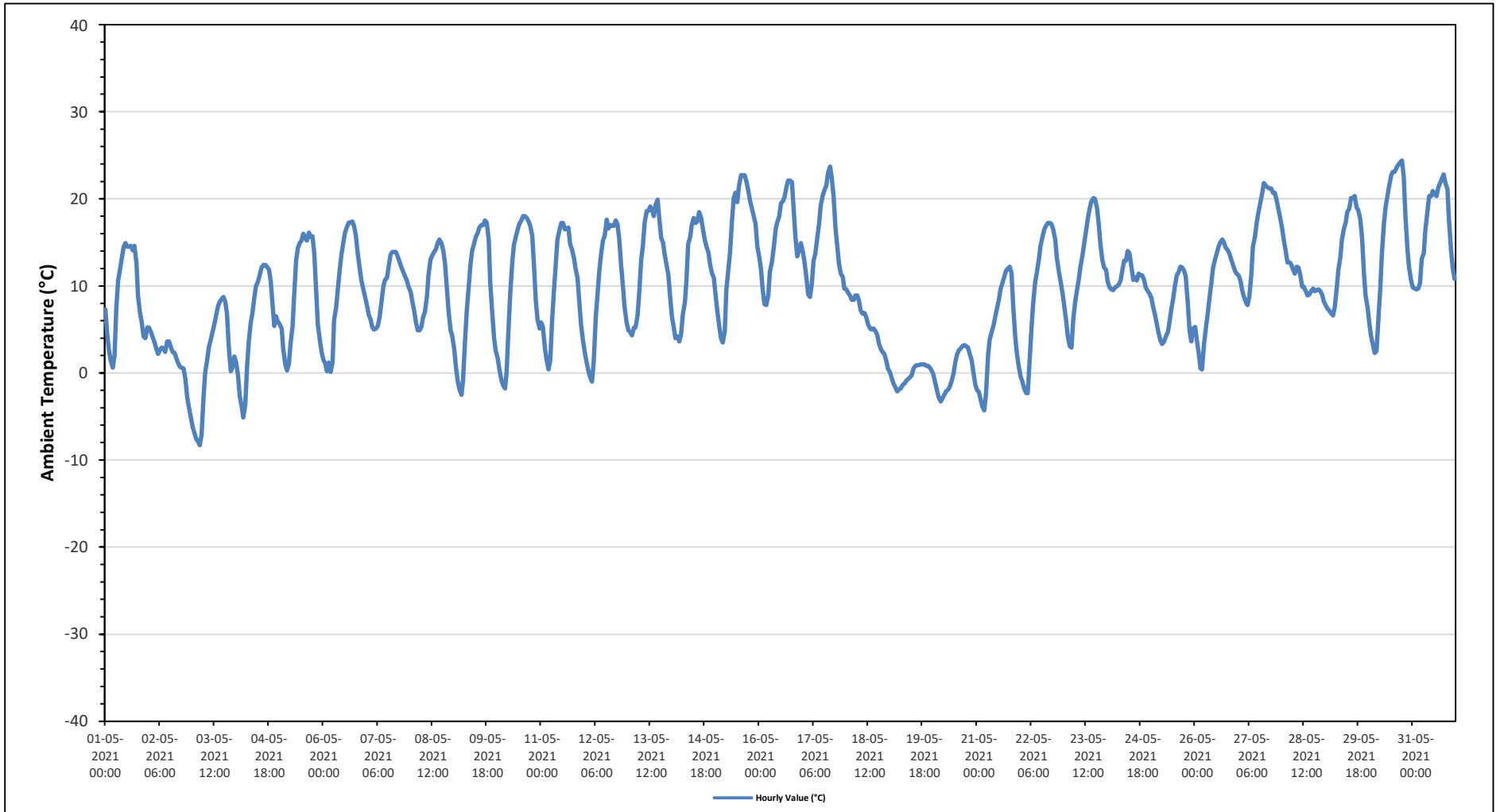
Maximum Hourly Value:	24.4 °C	on May 30 at hour 18	Hours in Service:	744
Maximum Daily Value:	16.6 °C	on May 31	Hours of Data:	744
Minimum Hourly Value:	-8.3 °C	on May 3 at hour 4	Hours of Missing Data:	0
Minimum Daily Value:	-0.2 °C	on May 19	Hours of Calibration:	0
Monthly Average:	9.7 °C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	7.3	4.5	2.6	1.4	0.6	2	7.5	10.6	12	13.1	14.5	14.9	14.5	14.5	14.6	14.1	14.6	12.7	8.9	6.9	5.8	4.2	4	5.2	0.6	14.9	8.8
May 2	5.2	4.7	4.1	3.6	2.8	2.2	2.6	2.9	2.8	2.4	3.6	3.6	3	2.4	2.3	1.8	1.2	0.7	0.6	0.5	-0.6	-2.9	-3.9	-5.1	-5.1	5.2	1.7
May 3	-6.2	-6.9	-7.6	-7.9	-8.3	-7.1	-2.7	0	1.5	3	3.8	4.7	5.7	6.6	7.7	8.2	8.5	8.7	8.2	6.8	3	0.2	0.6	1.9	-8.3	8.7	1.4
May 4	1.2	-0.2	-2.6	-3.9	-5.1	-3.6	0.8	3.7	5.7	6.9	8.8	10	10.5	11.3	12.1	12.4	12.4	12.2	11.9	10.5	7.9	5.4	6.5	5.9	-5.1	12.4	5.9
May 5	5.6	5.1	2.8	1	0.3	1	3.4	5.4	8.9	13	14.4	14.9	15.2	16	15.5	15.2	16.1	15.6	15.7	13.8	9.2	5.6	3.8	2.4	0.3	16.1	9.2
May 6	1.5	1.1	0.2	1.2	0.1	1.2	6.1	7.5	9.7	11.8	13.6	15.1	16.1	16.8	17.3	17.3	17.4	16.8	15.7	13.7	12	10.7	9.6	8.7	0.1	17.4	10.1
May 7	7.8	6.7	6.1	5.3	5	5.1	5.4	6.4	8.1	10	10.7	10.9	12.3	13.6	13.9	13.9	13.9	13.4	12.7	12.2	11.6	11.1	10.6	9.9	5.0	13.9	9.9
May 8	9.3	8.3	7.1	5.8	4.9	4.9	5.3	6.4	7	8.8	11.2	13	13.5	13.9	14.2	15	15.3	14.9	14.1	12.6	9.9	7.1	4.9	4.3	4.3	15.3	9.7
May 9	2.8	0.7	-0.9	-1.9	-2.5	-0.8	3.8	7.3	9.8	12.4	14.1	14.8	15.6	16.1	16.7	17	17	17.5	17.3	15.3	10.3	6.8	4	2.6	-2.5	17.5	9.0
May 10	1.7	0.4	-0.7	-1.4	-1.8	0	5.2	9.4	12.9	14.7	15.7	16.5	17.1	17.5	18	18	17.8	17.4	16.9	15.8	12.3	8.3	6.1	5.1	-1.8	18.0	10.1
May 11	5.8	5.3	2.8	1.6	0.4	1.5	6	9.3	12.7	15.3	16.4	17.2	17.2	16.5	16.6	16.7	14.8	14.1	13.2	11.9	10.9	7.8	5.5	3.6	0.4	17.2	10.1
May 12	2.3	1.2	0.2	-0.5	-1	1.5	6.5	8.8	11.8	13.7	15.2	15.8	17.6	16.6	17	16.9	16.9	17.5	17.1	15.4	12.5	9.8	7.6	5.8	-1.0	17.6	10.3
May 13	4.9	4.7	4.3	5.2	5.2	6.6	9.4	12.9	14.6	17.3	18.6	18.6	19.1	18.7	18	19.3	19.9	17.9	15.5	15	13.7	12.4	11.3	8.8	4.3	19.9	13.0
May 14	6.5	5.1	4	4.2	3.6	4.4	6.7	8.1	10.5	14.8	15.6	17	17.8	17.2	17.4	18.5	17.8	16.7	15.3	14.5	13.8	12.5	11.5	10.9	3.6	18.5	11.9
May 15	9.2	7	5.4	4	3.5	4.8	9.5	11.9	14	17.4	20.1	20.7	19.6	21.5	22.7	22.7	22.7	22	21	19.8	18.8	18.1	17.1	14.5	3.5	22.7	15.3
May 16	13.4	12	9.6	7.9	7.8	8.9	11.6	12.7	14.3	16.5	17.3	18	19.5	19.7	20.2	21.3	22.1	22.1	21.9	19.1	15.5	13.4	14.1	14.9	7.8	22.1	15.6
May 17	13.9	12.8	10.9	9	8.7	10.2	12.9	13.7	15.4	17.2	19.2	20.4	21	21.5	23	23.7	22.5	20.2	16.7	14.6	12.5	11.4	11	9.7	8.7	23.7	15.5
May 18	9.6	9.2	8.9	8.4	8.4	8.9	8.9	8.2	7.2	6.8	6.9	6.4	5.6	5.1	5	5.1	4.8	4.4	3.4	2.7	2.4	2.2	1.4	0.5	0.5	9.6	5.9
May 19	0.1	-0.6	-1.2	-1.6	-2.1	-1.9	-1.8	-1.4	-1.2	-0.9	-0.7	-0.5	-0.3	0.5	0.8	0.9	0.9	1	1	1	0.8	0.8	0.6	0.3	-2.1	1.0	-0.2
May 20	-0.2	-1.1	-2.1	-2.8	-3.3	-2.9	-2.5	-2.1	-1.9	-1.6	-0.9	-0.1	1.2	2.1	2.6	2.8	3.1	3.2	3.1	2.9	2.2	1.4	0.1	-1.4	-3.3	3.2	0.1
May 21	-2	-2.2	-3.1	-3.9	-4.3	-2.3	2	3.8	4.7	5.4	6.4	7.4	8.5	9.6	10.4	11.1	11.7	12	12.2	11.5	7.6	4.1	2.3	0.7	-4.3	12.2	4.7
May 22	-0.4	-1	-1.8	-2.3	-2.3	1.3	5.3	7.9	10.4	11.6	13.1	14.6	15.6	16.5	16.9	17.2	17.2	17.1	16.5	15.3	13.3	11.7	10.5	9.3	-2.3	17.2	9.7
May 23	7.8	6	4.3	3.1	2.9	6.2	8.1	9.4	10.6	12.2	13.5	14.7	16.3	17.7	18.8	19.7	20.1	20	19	17.1	14.7	13	12.1	11.8	2.9	20.1	12.5
May 24	10.5	9.8	9.6	9.5	9.8	10	10.1	10.6	11.8	12.9	14	13.7	12.3	10.7	11	10.6	11.4	11.2	11.2	10.6	9.8	9.4	9.1	9.1	9.1	14.0	10.9
May 25	8.6	7.6	6.7	5.7	4.6	3.7	3.3	3.6	4.2	4.7	5.8	7.4	8.6	10.1	11.2	11.6	12.2	12.1	11.7	11.1	8.1	4.9	3.6	5.1	3.3	12.2	7.3
May 26	5.3	3.9	2.3	0.5	0.4	3.3	5.1	6.7	8.5	10.4	12	13	13.7	14.5	15	15.3	15	14.4	14.1	13.8	13	12.4	11.7	11.4	0.4	15.3	9.8
May 27	11.2	10.6	9.5	8.7	8.1	7.8	8.8	11.3	14.5	15.6	17.2	18.5	19.5	20.7	21.8	21.5	21.3	21.2	21.2	20.7	20.7	19.9	18.7	17.9	7.8	21.8	16.1
May 28	16.6	15.2	14	12.7	12.7	12.5	11.9	11.4	12.2	12.1	11.3	9.9	9.9	9.4	8.9	9	9.4	9.7	9.4	9.5	9.6	9.4	9	8.2	8.2	16.6	11.0
May 29	7.8	7.4	7.1	6.9	6.6	7.6	9.5	11.8	13.3	15.3	16.6	17.3	18.5	18.9	20.1	20.1	20.3	19	18.7	17.7	15.6	11.3	8.9	7.5	6.6	20.3	13.5
May 30	5.7	4.3	3.2	2.3	2.5	6	9.8	13.6	17.1	19.1	20.3	21.5	22.7	23.1	23.1	23.6	23.9	24.2	24.4	22.6	17.9	14.1	12.1	10.6	2.3	24.4	15.3
May 31	9.8	9.7	9.6	9.7	10.3	13.1	13.8	16.4	18.5	20.3	20.3	20.9	20.5	20.3	21.3	21.8	22.3	22.8	21.8	21.1	17.5	14.1	12	10.8	9.6	22.8	16.6
Diurnal Maximum	16.6	15.2	14.0	12.7	12.7	13.1	13.8	16.4	18.5	20.3	20.3	21.5	22.7	23.1	23.1	23.7	23.9	24.2	24.4	22.6	20.7	19.9	18.7	17.9			
Diurnal Average	5.9	4.9	3.7	3.0	2.5	3.7	6.2	8.0	9.7	11.4	12.5	13.3	13.8	14.2	14.6	14.9	15.0	14.6	13.9	12.8	10.7	8.7	7.6	6.8			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for AT - Cold Lake South Station





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - May 2021 Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

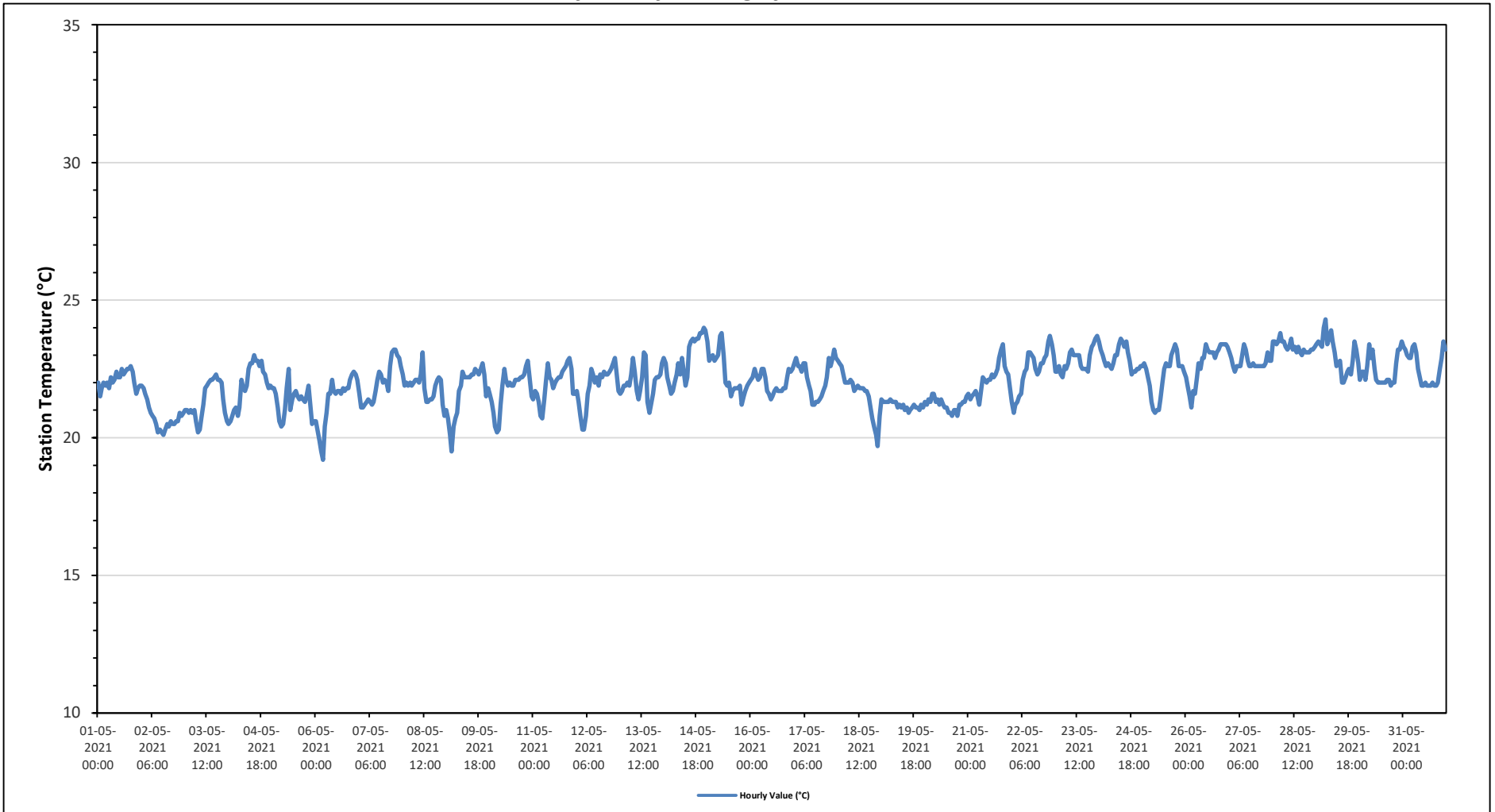
Maximum Hourly Value:	24.3 °C	on May 29 at hour 5	Hours in Service:	744
Maximum Daily Value:	23.3 °C	on May 28	Hours of Data:	744
Minimum Hourly Value:	19.2 °C	on May 6 at hour 4	Hours of Missing Data:	0
Minimum Daily Value:	20.8 °C	on May 2	Hours of Calibration:	0
Monthly Average:	22.1 °C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
May 1	22.0	21.5	21.8	22.0	21.9	22.0	21.8	22.2	22.0	22.1	22.4	22.2	22.5	22.3	22.4	22.5	22.5	22.6	22.4	22.0	21.6	21.8	21.9	21.5	22.6	22.1		
May 2	21.9	21.8	21.6	21.4	21.1	20.9	20.8	20.7	20.5	20.2	20.3	20.2	20.1	20.3	20.5	20.4	20.6	20.5	20.5	20.6	20.9	20.8	20.9	20.1	21.9	20.8		
May 3	21.0	21.0	20.9	21.0	20.9	21.0	20.6	20.2	20.3	20.7	21.2	21.8	21.9	22.0	22.1	22.1	22.2	22.3	22.1	22.1	22.0	21.4	20.9	20.6	20.2	22.3	21.3	
May 4	20.5	20.6	20.8	21.0	21.1	20.8	21.1	22.1	21.8	21.7	21.9	22.5	22.7	22.7	23.0	22.8	22.8	22.6	22.8	22.4	22.3	22.0	21.8	21.9	20.5	23.0	21.9	
May 5	21.8	21.8	21.6	21.1	20.6	20.4	20.5	21.0	21.8	22.5	21.0	21.4	21.6	21.7	21.5	21.4	21.5	21.4	21.3	21.5	21.9	21.2	20.5	20.6	20.4	22.5	21.3	
May 6	20.6	20.3	19.9	19.5	19.2	20.4	20.9	21.6	21.6	22.1	21.7	21.6	21.7	21.7	21.6	21.8	21.7	21.8	21.8	22.1	22.3	22.4	22.3	22.1	19.2	22.5	21.4	
May 7	21.6	21.1	21.1	21.2	21.3	21.4	21.3	21.2	21.3	21.7	22.1	22.4	22.3	22.0	22.1	22.0	21.7	22.6	23.1	23.2	23.2	23.0	22.9	22.6	21.1	23.2	22.0	
May 8	22.3	21.9	22.0	21.9	22.0	21.9	22.0	22.1	22.1	22.0	22.3	23.1	21.8	21.3	21.3	21.4	21.5	21.9	22.1	22.2	22.1	21.2	20.8	20.8	23.1	21.9	21.9	
May 9	21.0	20.7	20.1	19.5	20.4	20.7	20.9	21.7	21.9	22.4	22.2	22.2	22.2	22.2	22.3	22.5	22.4	22.3	22.5	22.7	22.3	21.5	21.8	19.5	22.7	21.7		
May 10	21.6	21.3	20.9	20.4	20.2	20.3	21.2	21.9	22.5	22.1	21.9	22.0	21.9	22.1	22.1	22.1	22.2	22.2	22.3	22.6	22.8	22.2	21.5	20.2	22.8	21.8		
May 11	21.4	21.7	21.6	21.3	20.8	20.7	21.4	22.0	22.7	22.2	22.1	21.8	22.0	22.1	22.2	22.2	22.4	22.5	22.6	22.8	22.9	22.5	21.6	21.6	20.7	22.9	22.0	
May 12	21.7	21.3	20.8	20.3	20.3	20.8	21.6	21.9	22.5	22.3	22.0	22.2	21.9	22.3	22.2	22.4	22.3	22.3	22.4	22.5	22.7	22.9	22.4	21.7	20.3	22.9	21.9	
May 13	21.6	21.7	21.9	21.9	22.0	21.9	22.3	22.9	22.4	21.7	21.4	21.7	22.2	23.1	23.0	21.3	20.9	21.2	21.6	22.1	22.2	22.2	22.3	22.7	20.9	23.1	22.0	
May 14	22.9	22.7	22.2	21.9	21.6	21.7	22.0	22.3	22.7	22.3	22.9	22.4	21.9	22.2	23.3	23.5	23.6	23.5	23.6	23.6	23.8	23.8	24.0	23.9	21.6	24.0	22.8	
May 15	23.5	22.8	22.9	23.0	22.8	22.9	23.0	23.7	23.8	23.0	22.0	21.9	22.0	21.5	21.7	21.8	21.8	21.8	21.9	21.2	21.5	21.7	21.9	22.0	21.2	23.8	22.3	
May 16	22.1	22.2	22.5	22.3	22.1	22.2	22.5	22.5	22.2	21.7	21.6	21.4	21.5	21.7	21.8	21.7	21.7	21.7	21.8	21.8	22.2	22.5	22.4	22.5	21.4	22.5	22.0	
May 17	22.7	22.9	22.6	22.6	22.4	22.7	22.7	22.2	21.9	21.7	21.2	21.2	21.3	21.3	21.4	21.5	21.7	21.9	22.2	22.9	22.6	22.9	23.2	22.9	21.2	23.2	22.2	
May 18	22.8	22.7	22.6	22.3	22.0	22.0	22.0	22.1	22.0	21.7	21.8	21.9	21.8	21.8	21.8	21.7	21.7	21.5	21.1	20.7	20.4	20.1	19.7	20.8	19.7	22.8	21.6	
May 19	21.4	21.3	21.3	21.3	21.3	21.4	21.3	21.3	21.3	21.1	21.2	21.1	21.2	21.0	21.1	20.9	21.0	21.1	21.2	21.1	21.1	21.0	21.2	21.1	20.9	21.4	21.2	
May 20	21.3	21.2	21.4	21.3	21.6	21.6	21.3	21.4	21.2	21.4	21.2	21.1	21.1	20.9	20.9	20.8	21.0	21.0	20.8	21.2	21.2	21.3	21.3	21.5	20.8	21.6	21.2	
May 21	21.6	21.4	21.5	21.6	21.7	21.5	21.2	21.7	22.2	22.1	22.0	22.1	22.1	22.3	22.2	22.3	22.5	22.9	23.2	23.4	22.6	22.4	22.3	21.8	21.2	23.4	22.1	
May 22	21.3	20.9	21.2	21.3	21.5	21.6	22.1	22.4	22.5	23.1	23.1	23.0	22.9	22.5	22.3	22.4	22.7	22.7	22.9	23.0	23.5	23.7	23.4	23.0	20.9	23.7	22.5	
May 23	22.4	22.4	22.6	22.3	22.2	22.6	22.5	22.7	23.1	23.2	23.0	23.0	23.0	23.0	22.6	22.5	22.5	22.5	22.4	23.0	23.3	23.4	23.6	23.7	22.2	23.7	22.8	
May 24	23.5	23.2	23.0	22.8	22.6	22.7	22.6	22.5	22.7	23.0	23.0	23.4	23.6	23.5	23.3	23.5	23.1	22.8	22.3	22.4	22.4	22.5	22.5	22.6	22.3	23.6	22.9	
May 25	22.6	22.7	22.5	22.2	21.9	21.3	21.0	20.9	21.0	21.0	21.4	22.0	22.5	22.7	22.6	22.6	23.0	23.2	23.4	23.2	22.6	22.6	22.4	20.9	23.4	22.2		
May 26	22.2	21.9	21.5	21.1	21.7	21.6	22.2	22.7	22.5	22.9	22.9	23.4	23.2	23.1	23.1	23.1	22.9	23.1	23.2	23.4	23.4	23.4	23.4	23.3	21.1	23.4	22.7	
May 27	23.1	22.9	22.6	22.4	22.6	22.6	23.0	23.4	23.2	22.8	22.6	22.6	22.7	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.7	23.1	22.8	22.4	23.4	22.8	22.8	
May 28	23.5	23.5	23.4	23.5	23.8	23.5	23.5	23.3	23.2	23.3	23.6	23.2	23.3	23.1	23.3	23.1	23.0	23.2	23.1	23.1	23.1	23.1	23.2	23.2	23.0	23.8	23.3	
May 29	23.4	23.5	23.4	23.3	24.0	24.3	23.4	23.6	23.9	23.5	23.1	22.6	22.7	22.8	22.0	22.2	22.4	22.5	22.3	22.8	23.5	23.2	22.7	22.0	24.3	23.0		
May 30	22.1	22.4	22.4	22.1	22.6	23.4	22.9	23.2	22.5	22.1	22.0	22.0	22.0	22.0	22.0	22.1	21.9	22.0	22.0	22.7	23.2	23.2	23.5	21.9	23.5	22.4		
May 31	23.3	23.2	23.0	22.9	22.9	23.3	23.4	23.1	22.5	22.2	21.9	21.9	22.0	21.9	21.9	22.0	21.9	21.9	22.0	21.9	22.0	22.5	22.9	23.5	23.2	21.9	23.5	22.6
Diurnal Maximum	23.5	23.5	23.4	23.5	24.0	24.3	23.5	23.7	23.9	23.5	23.6	23.4	23.6	23.5	23.3	23.5	23.6	23.5	23.6	23.6	23.8	23.8	24.0	23.9				
Diurnal Average	22.1	22.0	21.9	21.7	21.7	21.8	21.9	22.1	22.2	22.1	22.0	22.1	22.1	22.1	22.1	22.1	22.1	22.1	22.2	22.2	22.3	22.4	22.2	22.2				

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for ST - Cold Lake South Station





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - May 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

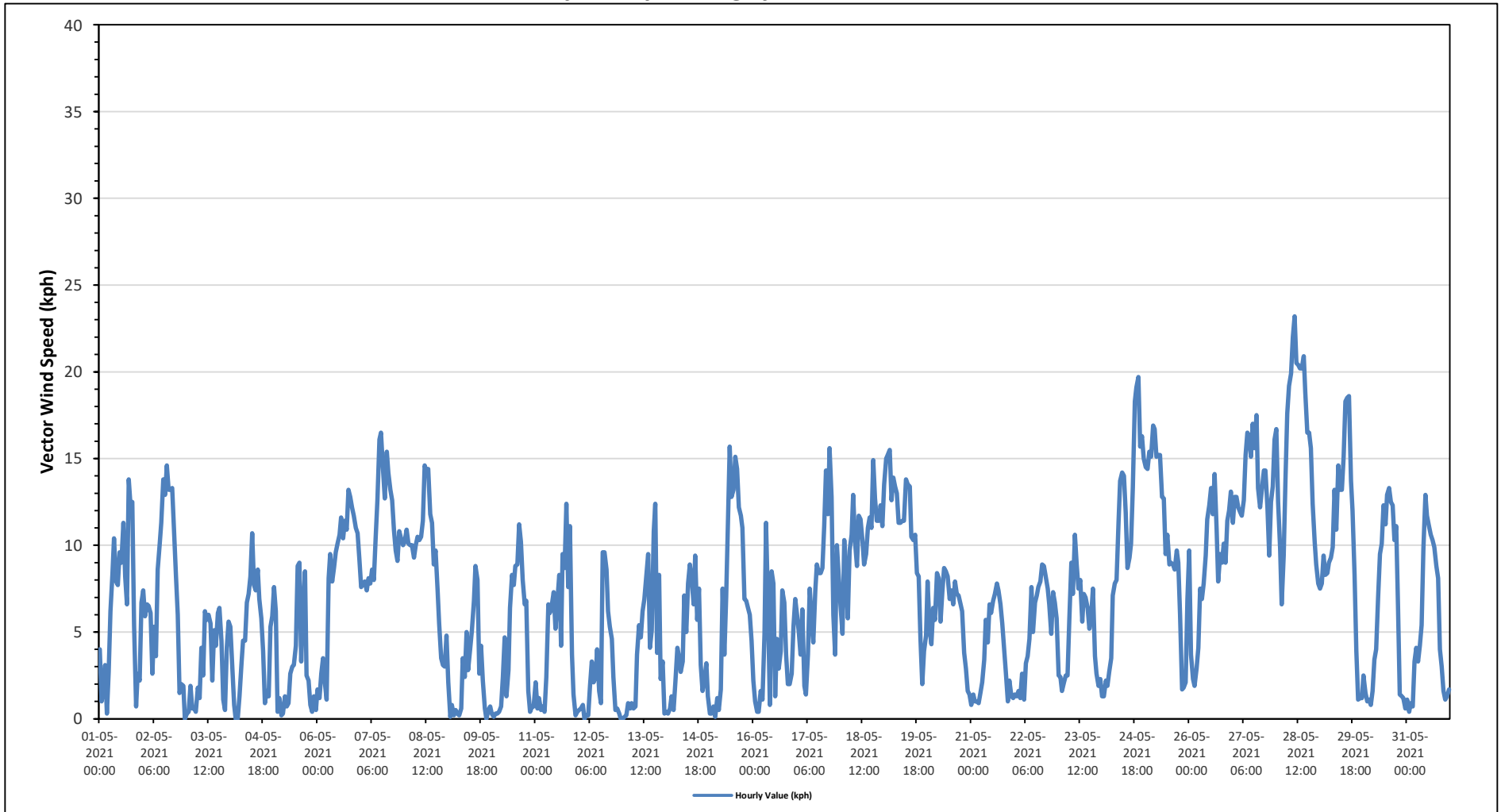
Maximum Hourly Value:	23.2 kph	on May 28 at hour 10	Hours in Service:	744
Maximum Daily Value:	13.7 kph	on May 27	Hours of Data:	744
Minimum Hourly Value:	0.0 kph	on May 2 at hour 23	Hours of Missing Data:	0
Minimum Daily Value:	1.0 kph	on May 5	Hours of Calibration:	0
Monthly Average:	1.5 kph		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
May 1	4.0	1.0	1.6	3.1	0.3	2.7	6.2	8.4	10.4	7.9	7.7	9.6	9.0	11.3	8.2	6.6	13.8	12.3	12.5	5.4	0.7	2.6	2.2	6.7	0.3	13.8	4.8	
May 2	7.4	5.9	6.6	6.5	6.1	2.6	5.3	3.6	8.6	10.1	11.3	13.8	12.9	14.6	13.2	13.2	13.3	10.6	8.2	6.0	1.5	2.0	1.9	0.0	0.0	14.6	7.3	
May 3	0.3	0.4	1.9	0.6	0.6	0.4	1.8	1.2	4.1	2.5	6.2	5.7	6.0	5.5	2.2	5.1	4.2	6.1	6.4	4.5	1.1	0.5	4.1	5.6	0.3	6.4	2.2	
May 4	5.3	3.2	0.8	0.0	0.0	1.3	3.2	4.5	4.5	6.7	7.2	8.2	10.7	7.7	7.4	8.6	6.9	5.8	3.9	0.9	1.6	1.3	5.3	5.9	0.0	10.7	3.7	
May 5	7.6	6.2	0.4	1.2	0.2	0.3	1.3	0.7	0.9	2.6	3.0	3.1	4.2	8.8	9.0	3.3	6.3	8.5	2.5	2.2	0.8	0.4	1.3	0.5	0.2	9.0	1.0	
May 6	1.7	1.2	2.6	3.5	2.1	1.1	8.1	9.5	7.9	8.7	9.6	10.1	10.6	11.6	10.4	11.4	10.9	13.2	12.8	12.2	11.7	11.0	10.7	9.2	1.1	13.2	8.2	
May 7	7.6	7.8	7.9	7.4	8.1	7.8	8.6	8.0	10.4	12.6	16.1	16.5	14.4	12.7	15.4	14.2	13.2	12.6	10.9	9.7	9.1	10.8	10.4	10.0	7.4	16.5	10.8	
May 8	10.2	10.9	10.1	10.0	10.0	9.3	10.0	10.5	10.3	10.5	11.4	14.6	14.2	14.4	11.8	11.3	8.9	9.7	7.4	5.5	3.5	3.1	3.0	4.8	3.0	14.6	9.3	
May 9	2.1	0.1	0.8	0.2	0.5	0.3	0.2	0.6	3.5	2.4	5.0	2.8	4.0	5.1	6.8	8.8	8.0	2.6	4.2	2.2	0.6	0.0	0.5	0.7	0.0	8.8	1.2	
May 10	0.3	0.1	0.3	0.3	0.4	0.7	2.4	4.7	1.3	2.8	6.4	8.3	7.7	8.8	8.9	11.2	10.2	8.0	6.6	6.8	1.6	0.4	0.7	0.7	0.1	11.2	3.7	
May 11	2.1	0.6	1.2	0.5	0.7	0.4	2.4	6.6	6.1	6.6	7.3	5.2	6.7	8.3	4.2	9.5	8.7	12.4	7.6	11.1	3.7	1.4	0.2	0.4	0.2	12.4	2.5	
May 12	0.5	0.6	0.8	0.0	0.2	0.2	1.9	3.3	2.1	2.4	4.0	1.6	0.9	9.6	9.6	8.6	6.2	5.3	4.6	2.4	0.5	0.6	0.3	0.0	0.0	9.6	2.1	
May 13	0.0	0.1	0.2	0.9	0.6	0.9	0.6	0.7	3.7	5.4	4.7	6.2	6.9	8.3	9.5	4.1	5.1	10.8	12.4	3.8	8.3	2.3	3.3	0.3	0.0	12.4	2.5	
May 14	0.4	0.3	0.6	1.3	0.5	2.1	4.1	3.6	2.7	3.3	7.1	5.0	7.8	8.9	8.1	6.6	9.4	5.7	7.5	3.1	1.6	2.2	3.2	1.3	0.3	9.4	2.9	
May 15	0.3	0.3	0.7	0.1	1.2	0.5	1.7	7.5	3.7	7.0	11.3	15.7	12.8	13.2	15.1	14.4	12.2	11.7	11.0	6.9	6.8	6.4	6.0	4.5	0.1	15.7	5.9	
May 16	2.2	1.0	0.4	0.4	1.6	1.1	4.9	11.3	6.4	0.8	8.5	7.8	1.3	4.6	2.9	3.9	7.4	6.7	3.7	2.0	2.0	2.6	5.3	6.9	0.4	11.3	1.1	
May 17	6.0	5.0	3.7	6.3	1.9	1.4	3.7	7.5	5.9	4.4	7.4	8.9	8.4	8.4	8.7	11.1	14.3	11.8	15.6	12.8	6.0	3.7	10.0	8.0	1.4	15.6	7.3	
May 18	6.6	4.9	10.3	8.3	5.8	9.7	10.6	12.9	10.1	8.8	11.7	11.5	10.2	8.9	9.5	11.0	11.6	11.0	14.9	12.7	11.4	11.4	12.3	11.1	4.9	14.9	9.9	
May 19	13.5	15.0	15.2	15.5	12.6	13.9	13.4	13.0	11.3	11.3	11.4	11.4	13.8	13.5	13.4	10.5	10.3	10.6	8.4	8.2	4.6	2.0	3.9	4.8	2.0	15.5	10.0	
May 20	7.9	5.1	4.3	6.4	5.7	8.4	8.1	5.6	7.3	8.7	8.5	8.2	6.9	7.4	6.6	7.9	7.2	7.1	6.6	6.2	3.8	2.9	1.6	1.4	1.4	8.7	5.9	
May 21	0.8	1.4	1.0	1.0	0.9	1.5	2.1	3.4	5.7	4.4	6.6	6.1	6.8	7.2	7.8	7.4	6.6	5.5	4.1	2.7	1.0	2.2	1.3	1.2	0.8	7.8	3.0	
May 22	1.4	1.3	1.6	1.2	2.6	1.1	3.2	3.6	4.6	7.6	5.0	6.7	7.1	7.6	7.9	8.9	8.8	8.2	7.5	6.6	4.9	7.3	6.7	5.8	1.1	8.9	4.9	
May 23	2.5	2.4	1.6	2.1	2.5	2.5	5.7	9.0	7.2	10.6	8.9	7.5	8.0	5.6	7.2	7.0	6.4	5.2	5.9	7.5	3.6	2.6	1.9	2.3	1.6	10.6	4.6	
May 24	1.3	1.3	2.2	1.9	2.7	3.5	7.1	7.8	8.0	11.4	13.7	14.2	14.0	11.9	8.7	9.3	10.1	13.3	18.3	19.1	19.7	15.7	16.3	15.0	1.3	19.7	10.0	
May 25	14.5	14.4	15.4	15.1	16.9	16.7	15.1	15.2	15.2	12.8	12.7	9.5	10.6	8.9	9.0	8.9	8.6	9.7	9.0	6.0	1.7	1.8	2.1	6.9	1.7	16.9	9.4	
May 26	9.7	3.7	2.3	1.9	2.9	4.1	7.5	6.9	7.8	9.4	11.5	12.3	13.3	11.8	14.1	10.9	7.9	9.5	9.0	10.1	9.0	11.4	12.0	13.1	1.9	14.1	8.7	
May 27	11.3	12.8	12.8	12.2	11.9	11.7	12.6	15.2	16.5	16.3	15.1	17.0	15.6	17.5	13.3	12.2	13.2	14.3	14.3	12.2	9.4	12.5	13.4	16.1	9.4	17.5	13.7	
May 28	16.7	12.5	9.8	6.6	9.4	13.8	17.6	19.2	19.9	22.0	23.2	20.5	20.4	20.2	20.2	20.9	18.8	16.5	16.5	15.6	12.4	10.2	8.9	7.8	6.6	23.2	12.1	
May 29	7.5	7.8	9.4	8.3	8.4	9.0	9.3	9.9	13.2	10.9	14.6	13.2	13.2	15.1	18.3	18.5	18.6	13.7	12.0	8.3	3.9	1.1	1.2	1.2	1.1	18.6	9.1	
May 30	2.5	1.5	1.0	1.1	0.8	1.6	3.4	4.0	7.1	9.5	10.1	12.3	11.2	12.9	13.3	12.5	12.3	10.3	11.1	6.5	1.4	1.3	1.2	0.6	0.6	13.3	5.9	
May 31	1.1	0.4	0.9	0.7	3.3	4.1	3.3	4.2	5.4	9.8	12.9	11.7	11.1	10.6	10.3	9.9	8.8	8.1	4.0	3.0	1.6	1.1	1.3	1.7	0.4	12.9	4.3	
Diurnal Maximum	17	15	15	16	17	17	18	19	20	22	23	21	20	20	20	21	19	17	18	19	20	16	16	16	16			
Diurnal Average	5.0	4.2	4.1	4.0	3.9	4.3	6.0	7.2	7.5	8.1	9.7	9.8	9.7	10.4	10.0	9.9	9.9	9.6	9.0	7.2	4.8	4.3	4.9	5.0				

C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction/Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

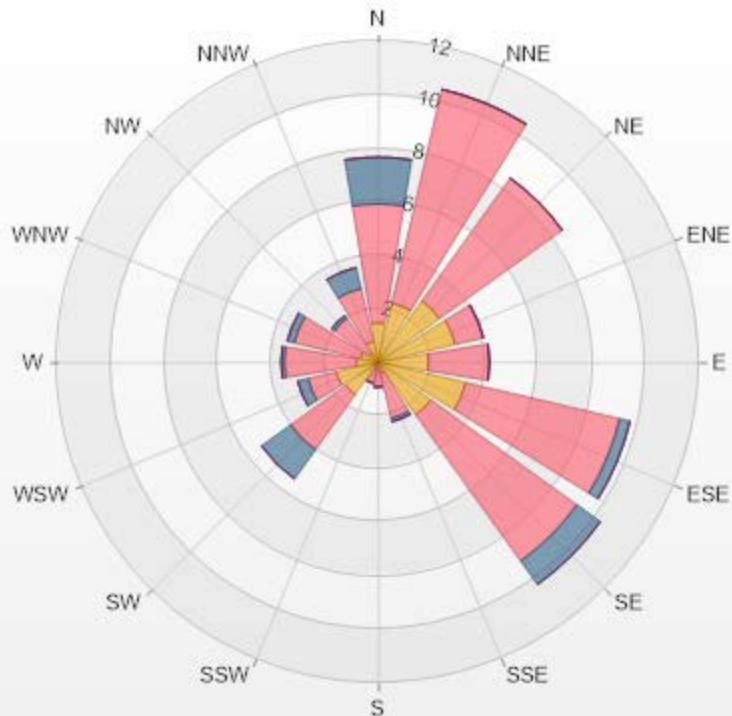
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for VWS - Cold Lake South Station



Wind: Cold Lake South Monitor: WDS [kph] Monthly: 05-2021 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 19.89% Valid Data: 100.00%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	1.48	4.44	1.75	0	0	7.67
NNE	2.28	8.2	0	0	0	10.48
NE	2.82	5.65	0	0	0	8.47
ENE	2.96	1.08	0	0	0	4.04
E	1.88	2.28	0	0	0	4.16
ESE	3.36	5.91	0.4	0	0	9.67
SE	2.42	6.72	1.08	0	0	10.22
SSE	0.4	1.75	0.13	0	0	2.28
S	0.27	0.67	0	0	0	0.94
SSW	0	0.81	0	0	0	0.81
SW	1.48	2.55	1.34	0	0	5.37
WSW	1.61	1.08	0.4	0	0	3.09
W	0.81	2.69	0.13	0	0	3.63
WNW	0.67	2.55	0.27	0	0	3.49
NW	0.4	1.61	0.13	0	0	2.14
NNW	0.81	2.02	0.81	0	0	3.64
Summary	23.65	50.01	6.44	0	0	80.1



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% Icon Classes (kph)

24  1.8-6.0

50  6.0-15.0

6  15.0-29.0

0  29.0-39.0

0  >39.0



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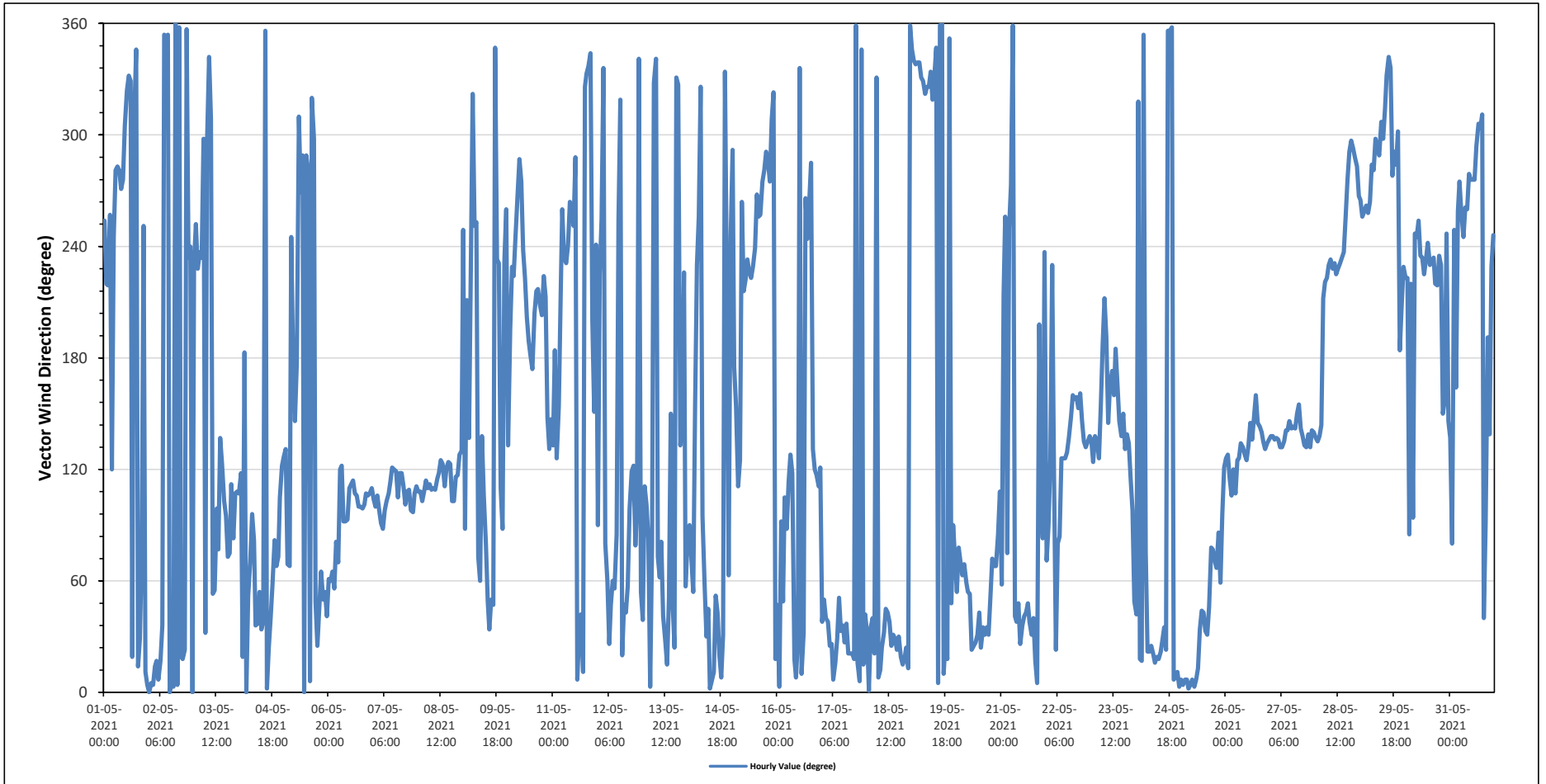
Cold Lake South Station - May 2021

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:		51 (NE) degree										Hours in Service:		744													
												Hours of Data:		744													
												Hours of Missing Data:		0													
												Hours of Calibration:		0													
												Operational Uptime:		100.0													
Day	Hourly Period Starting at (MST)																							Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant	
May 1	WSW	SW	SW	WSW	ESE	WSW	W	W	W	W	W	WNW	NW	NNW	NNW	NNE	NW	NNW	NNE	NNE	ENE	WSW	NNE	N	316	NW	
May 2	N	N	N	NNE	NNE	N	NNE	NE	N	N	N	N	N	N	N	N	N	NNE	NNE	NNE	N	SW	WSW	N	4	N	
May 3	SW	WSW	SW	SW	SW	WNW	NNE	WNW	NNW	NW	NE	NE	E	ENE	SE	ESE	ESE	E	ENE	ENE	ESE	E	ESE	ESE	83	E	
May 4	ESE	ESE	NNE	S	N	NE	ENE	E	E	NE	NE	NE	NE	NE	N	N	NNE	NE	ENE	E	ENE	ENE	ESE	ESE	51	NE	
May 5	SE	SE	ENE	ENE	WSW	S	SE	S	NW	W	WNW	N	WNW	W	N	NW	WNW	NE	NNE	NE	ENE	NE	NE	NE	357	N	
May 6	ENE	ENE	ENE	NE	E	ENE	ESE	ESE	E	E	E	ESE	ESE	ESE	ESE	ESE	E	E	E	E	ESE	ESE	ESE	ESE	103	ESE	
May 7	ESE	E	ESE	E	E	E	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	E	ESE	ESE	E	E	ESE	ESE	108	ESE	
May 8	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	114	ESE	
May 9	WSW	E	SSW	SE	SW	NW	WSW	WSW	ENE	ENE	SE	ESE	E	NE	NE	NE	NE	NNW	SW	SW	ESE	E	SW	WSW	61	ENE	
May 10	SE	SSW	SW	SW	WSW	W	WNW	W	SW	SW	SSW	S	S	S	SSW	SW	SW	SSW	SSW	SW	SSW	SE	SE	SE	208	SSW	
May 11	SE	S	SE	SSE	SSW	WSW	SW	SW	WSW	W	WSW	WSW	WNW	N	NNE	NE	NNE	NW	NNW	NNW	NNW	SSW	SSE	WSW	316	NW	
May 12	E	SW	WSW	NNW	E	ENE	NNE	NE	ENE	NE	E	WSW	NW	NNE	NE	NE	ENE	E	ESE	ESE	ENE	E	NNW	NE	57	ENE	
May 13	NE	ESE	E	E	N	ENE	NNW	NNW	ENE	ENE	E	NE	NNE	NNE	NE	SSE	NE	NNE	NNW	NW	SE	SE	SW	ENE	40	NE	
May 14	E	E	ENE	NE	SSE	SW	WSW	NW	E	ENE	NNE	NE	N	N	NNE	NE	NE	NNE	N	NNE	NNW	SW	ENE	WSW	22	NNE	
May 15	WNW	S	SSE	ESE	SE	W	SW	SW	SW	SW	SW	WSW	W	WSW	WSW	W	W	WNW	WNW	W	NW	NW	NNE	260	WSW		
May 16	NE	N	E	NE	ESE	E	ESE	SE	ESE	NNE	N	NNE	NNW	N	NNE	W	WSW	WSW	WNW	SE	ESE	ESE	ESE	ESE	85	E	
May 17	NE	NE	NE	NE	NNE	NNE	N	NNE	NNE	NE	NNE	NE	NNE	NE	NNE	NNE	NNE	NNE	N	NNE	N	NNW	NNE	NE	23	NNE	
May 18	NNE	N	NE	NE	NNE	NNW	N	NNE	NNE	NNE	NE	NE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	N	22	NNE	
May 19	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	NNW	NW	NNW	NNW	N	N	N	N	NNE	NNE	N	NE	E	ENE	345	NNW	
May 20	NE	ENE	ENE	ENE	ENE	ENE	NE	NE	NNE	NNE	NNE	NNE	NE	NNE	NE	NNE	NE	NNE	NE	ENE	ENE	ENE	E	ESE	46	NE	
May 21	ENE	SSW	WSW	ENE	WSW	W	N	NE	NE	NE	NE	NE	NE	NE	NE	NE	NNE	NE	NNE	N	SSW	ESE	E	SW	37	NE	
May 22	ENE	E	SE	SW	SE	NNE	E	E	SE	SE	SE	SE	SE	SE	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SE	SE	139	SE	
May 23	SE	ESE	SE	SE	SE	SSE	S	SSW	S	SE	SSE	S	SSE	S	SSE	SE	SE	SSE	SE	SE	SE	ESE	E	NE	157	SSE	
May 24	NE	NW	NNE	NNE	N	ENE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	NNE	N	N	N	N	N	N	NNE	N	13	NNE	
May 25	N	N	N	N	N	N	N	N	N	NNE	NE	NE	NE	NNE	NNE	NE	ENE	ENE	ENE	ENE	ENE	E	ENE	E	ESE	25	NNE
May 26	SE	SE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SSE	SE	SE	SE	SE	SE	SE	SE	134	SE	
May 27	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	SE	SE	SE	SE	SE	SE	SE	SE	140	SE	
May 28	SE	SE	SE	SE	SSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	W	WNW	WNW	WNW	WNW	W	W	236	SW	
May 29	W	WSW	WSW	W	WSW	W	WNW	W	WNW	WNW	WNW	NW	WNW	NW	NNW	NNW	NNW	NNW	W	WNW	WNW	WNW	S	SSW	296	WNW	
May 30	SW	SW	E	SW	E	WSW	WSW	WSW	SW	SW	SW	SW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SSE	SSW	SE	230	SW	
May 31	SE	E	WSW	SSE	WSW	W	WSW	WSW	W	WSW	W	W	W	W	WNW	NW	WNW	NW	NE	E	S	SE	SW	WSW	280	W	
C	Monthly Calibration						S	Daily Zero-Span Check						Q	Quality Assurance												
K	Collection Error						N	No Data (Machine Not in Service)						Y	Routine Maintenance						P	Power Failure					
X	InValid Data (Machine Malfunction /Recovery)						NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																			
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																											
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																											

Timeseries Chart of Hourly Average for VWD - Cold Lake South Station





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - May 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr & WIND DIRECTION (VWD) in sector

WIND SPEED																												
Maximum Hourly Value:		23.2 kph on May 28 at hour 10														Hours in Service:		744										
Maximum Daily Value:		13.7 kph on May 27														Hours of Data:		744										
Minimum Hourly Value:		0.0 kph on May 2 at hour 23														Hours of Missing Data:		0										
Minimum Daily Value:		1.0 kph on May 5														Hours of Calibration:		0										
Monthly Average:		1.5 kph														Operational Uptime:		100										
WIND DIRECTION																												
Monthly Average:		51 (NE) degree																										
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
May 1	4.0	1.0	1.6	3.1	0.3	2.7	6.2	8.4	10.4	7.9	7.7	9.6	9.0	11.3	8.2	6.6	13.8	12.3	12.5	5.4	0.7	2.6	2.2	6.7	0.3	13.8	4.8	
	WSW	SW	SW	WSW	ESE	WSW	W	W	W	W	WNW	NW	NNW	NNW	NNE	NW	NNW	NNE	NNE	ENE	WSW	NNE	N					
May 2	7.4	5.9	6.6	6.5	6.1	2.6	5.3	3.6	8.6	10.1	11.3	13.8	12.9	14.6	13.2	13.2	13.3	10.6	8.2	6.0	1.5	2.0	1.9	0.0	0.0	14.6	7.3	
	N	N	N	NNE	NNE	N	NNE	NE	N	N	N	N	N	N	N	N	N	NNE	NNE	NNE	N	SW	WSW	N				
May 3	0.3	0.4	1.9	0.6	0.6	0.4	1.8	1.2	4.1	2.5	6.2	5.7	6.0	5.5	2.2	5.1	4.2	6.1	6.4	4.5	1.1	0.5	4.1	5.6	0.3	6.4	2.2	
	SW	WSW	SW	SW	SW	WNW	NNE	WNW	NNW	NW	NE	NE	E	ENE	SE	ESE	ESE	E	ENE	ENE	ESE	E	ESE	ESE				
May 4	5.3	3.2	0.8	0.0	0.0	1.3	3.2	4.5	4.5	6.7	7.2	8.2	10.7	7.7	7.4	8.6	6.9	5.8	3.9	0.9	1.6	1.3	5.3	5.9	0.0	10.7	3.7	
	ESE	ESE	NNE	S	N	NE	ENE	E	E	NE	NE	NE	NE	NE	N	N	NNE	NE	ENE	E	ENE	ENE	ESE	ESE				
May 5	7.6	6.2	0.4	1.2	0.2	0.3	1.3	0.7	0.9	2.6	3.0	3.1	4.2	8.8	9.0	3.3	6.3	8.5	2.5	2.2	0.8	0.4	1.3	0.5	0.2	9.0	1.0	
	SE	SE	ENE	ENE	WSW	S	SE	S	NW	W	WNW	N	WNW	W	N	NW	WNW	NE	NNE	NE	NE	NE	NE	NE				
May 6	1.7	1.2	2.6	3.5	2.1	1.1	8.1	9.5	7.9	8.7	9.6	10.1	10.6	11.6	10.4	11.4	10.9	13.2	12.8	12.2	11.7	11.0	10.7	9.2	1.1	13.2	8.2	
	ENE	ENE	ENE	NE	E	ENE	ESE	ESE	E	E	E	ESE	ESE	ESE	ESE	ESE	E	E	E	ESE	ESE	ESE	ESE	ESE				
May 7	7.6	7.8	7.9	7.4	8.1	7.8	8.6	8.0	10.4	12.6	16.1	16.5	14.4	12.7	15.4	14.2	13.2	12.6	10.9	9.7	9.1	10.8	10.4	10.0	7.4	16.5	10.8	
	ESE	E	ESE	E	E	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE				
May 8	10.2	10.9	10.1	10.0	10.0	9.3	10.0	10.5	10.3	10.5	11.4	14.6	14.2	14.4	11.8	11.3	8.9	9.7	7.4	5.5	3.5	3.1	3.0	4.8	3.0	14.6	9.3	
	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE				
May 9	2.1	0.1	0.8	0.2	0.5	0.3	0.2	0.6	3.5	2.4	5.0	2.8	4.0	5.1	6.8	8.8	8.0	2.6	4.2	2.2	0.6	0.0	0.5	0.7	0.0	8.8	1.2	
	WSW	E	SSW	SE	SW	NW	WSW	WSW	ENE	ENE	SE	ESE	E	NE	NE	NE	NNW	SW	SW	ESE	E	SW	WSW	WSW				
May 10	0.3	0.1	0.3	0.3	0.4	0.7	2.4	4.7	1.3	2.8	6.4	8.3	7.7	8.8	8.9	11.2	10.2	8.0	6.6	6.8	1.6	0.4	0.7	0.7	0.1	11.2	3.7	
	SE	SSW	SW	SW	WSW	W	WNW	W	SW	SSW	S	S	S	SSW	SW	SW	SSW	SW	SSW	SW	SSW	SE	SE	SE				
May 11	2.1	0.6	1.2	0.5	0.7	0.4	2.4	6.6	6.1	6.6	7.3	5.2	6.7	8.3	4.2	9.5	8.7	12.4	7.6	11.1	3.7	1.4	0.2	0.4	0.2	12.4	2.5	
	SE	S	SE	SSE	SSW	WSW	SW	SW	WSW	W	WSW	WSW	NNW	N	NNE	NE	NNE	NW	NNW	NNW	NNW	SSE	WSW	WSW				
May 12	0.5	0.6	0.8	0.0	0.2	0.2	1.9	3.3	2.1	2.4	4.0	1.6	0.9	9.6	9.6	8.6	6.2	5.3	4.6	2.4	0.5	0.6	0.3	0.0	0.0	9.6	2.1	
	E	SW	WSW	NNW	E	ENE	NNE	NE	ENE	NE	E	WSW	NW	NNE	NE	NE	ENE	E	ESE	ESE	ENE	E	NNW	NE				
May 13	0.0	0.1	0.2	0.9	0.6	0.9	0.6	0.7	3.7	5.4	4.7	6.2	6.9	8.3	9.5	4.1	5.1	10.8	12.4	3.8	8.3	2.3	3.3	0.3	0.0	12.4	2.5	
	NE	ESE	E	E	N	ENE	NNW	NNW	ENE	ENE	E	NE	NNE	NNE	NE	SSE	NE	NNE	NNW	NW	SE	SE	SW	ENE				
May 14	0.4	0.3	0.6	1.3	0.5	2.1	4.1	3.6	2.7	3.3	7.1	5.0	7.8	8.9	8.1	6.6	9.4	5.7	7.5	3.1	1.6	2.2	3.2	1.3	0.3	9.4	2.9	
	E	E	ENE	NE	SSE	SW	WSW	NW	E	ENE	NNE	NE	N	NNE	NE	NE	NNE	N	NNE	N	NNW	SW	ENE	WSW				
May 15	0.3	0.3	0.7	0.1	1.2	0.5	1.7	7.5	3.7	7.0	11.3	15.7	12.8	13.2	15.1	14.4	12.2	11.7	11.0	6.9	6.8	6.4	6.0	4.5	0.1	15.7	5.9	
	WNW	S	SSE	ESE	SE	W	SW	SW	SW	SW	SW	WSW	W	WSW	WSW	W	W	WNW	WNW	W	NW	NW	NNE	NNE				
May 16	2.2	1.0	0.4	0.4	1.6	1.1	4.9	11.3	6.4	0.8	8.5	7.8	1.3	4.6	2.9	3.9	7.4	6.7	3.7	2.0	2.0	2.6	5.3	6.9	0.4	11.3	1.1	
	NE	N	E	NE	ESE	E	ESE	SE	ESE	NNE	N	NNE	N	NNE	N	NNE	W	WSW	WSW	WNW	SE	ESE	ESE	ESE				
May 17	6.0	5.0	3.7	6.3	1.9	1.4	3.7	7.5	5.9	4.4	7.4	8.9	8.4	8.4	8.7	11.1	14.3	11.8	15.6	12.8	6.0	3.7	10.0	8.0	1.4	15.6	7.3	
	NE	NE	NE	NE	NNE	NNE	N	NNE	NNE	NNE	NNE	NNE	NE	NNE	NNE	NNE	NNE	NNE	NNE	N	NNE	N	NNW	NNE	NE			
May 18	6.6	4.9	10.3	8.3	5.8	9.7	10.6	12.9	10.1	8.8	11.7	11.5	10.2	8.9	9.5	11.0	11.6	11.0	14.9	12.7	11.4	11.4	12.3	11.1	4.9	14.9	9.9	
	NNE	N	NE	NE	NNE	NNW	N	NNE	NNE	NNE	NE	NE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	N				
May 19	13.5	15.0	15.2	15.5	12.6	13.9	13.4	13.0	11.3	11.3	11.4	13.8	13.5	13.4	10.5	10.3	10.6	8.4	8.2	4.6	2.0	3.9	4.8	4.8	2.0	15.5	10.0	
	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NW	NNW	NW	NNW	NNW	NNW	N	N	N	NNE	NNE	N	NE	E	ENE	ENE				
May 20	7.9	5.1	4.3	6.4	5.7	8.4	8.1	5.6	7.3	8.7	8.5	8.2	6.9	7.4	6.6	7.9	7.2	7.1	6.6	6.2	3.8	2.9	1.6	1.4	1.4	8.7	5.9	
	NE	ENE	ENE	ENE	ENE	ENE	NE	NE	NNE	NNE	NNE	NNE	NE	NNE	NE	NNE	NE	NNE	NE	ENE	ENE	ENE	E	ESE				



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - May 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr & WIND DIRECTION (VWD) in sector

WIND SPEED																																															
Maximum Hourly Value:	23.2 kph on May 28 at hour 10											Hours in Service:	744																																		
Maximum Daily Value:	13.7 kph on May 27											Hours of Data:	744																																		
Minimum Hourly Value:	0.0 kph on May 2 at hour 23											Hours of Missing Data:	0																																		
Minimum Daily Value:	1.0 kph on May 5											Hours of Calibration:	0																																		
Monthly Average:	1.5 kph											Operational Uptime:	100																																		
WIND DIRECTION																																															
Monthly Average:	51 (NE) degree																																														
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average																					
May 21	0.8	1.4	1.0	1.0	0.9	1.5	2.1	3.4	5.7	4.4	6.6	6.1	6.8	7.2	7.8	7.4	6.6	5.5	4.1	2.7	1.0	2.2	1.3	1.2	0.8	7.8	3.0																				
May 22	1.4	1.3	1.6	1.2	2.6	1.1	3.2	3.6	4.6	7.6	5.0	6.7	7.1	7.6	7.9	8.9	8.8	8.2	7.5	6.6	4.9	7.3	6.7	5.8	1.1	8.9	4.9																				
May 23	2.5	2.4	1.6	2.1	2.5	2.5	5.7	9.0	7.2	10.6	8.9	7.5	8.0	5.6	7.2	7.0	6.4	5.2	5.9	7.5	3.6	2.6	1.9	2.3	1.6	10.6	4.6																				
May 24	1.3	1.3	2.2	1.9	2.7	3.5	7.1	7.8	8.0	11.4	13.7	14.2	14.0	11.9	8.7	9.3	10.1	13.3	18.3	19.1	19.7	15.7	16.3	15.0	1.3	19.7	10.0																				
May 25	14.5	14.4	15.4	15.1	16.9	16.7	15.1	15.2	15.2	12.8	12.7	9.5	10.6	8.9	9.0	8.9	8.6	9.7	9.0	6.0	1.7	1.8	2.1	6.9	1.7	16.9	9.4																				
May 26	9.7	3.7	2.3	1.9	2.9	4.1	7.5	6.9	7.8	9.4	11.5	12.3	13.3	11.8	14.1	10.9	7.9	9.5	9.0	10.1	9.0	11.4	12.0	13.1	1.9	14.1	8.7																				
May 27	11.3	12.8	12.8	12.2	11.9	11.7	12.6	15.2	16.5	16.3	15.1	17.0	15.6	17.5	13.3	12.2	13.2	14.3	14.3	12.2	9.4	12.5	13.4	16.1	9.4	17.5	13.7																				
May 28	16.7	12.5	9.8	6.6	9.4	13.8	17.6	19.2	19.9	22.0	23.2	20.5	20.4	20.2	20.2	20.9	18.8	16.5	16.5	15.6	12.4	10.2	8.9	7.8	6.6	23.2	12.1																				
May 29	7.5	7.8	9.4	8.3	8.4	9.0	9.3	9.9	13.2	10.9	14.6	13.2	13.2	15.1	18.3	18.5	18.6	13.7	12.0	8.3	3.9	1.1	1.2	1.2	1.1	18.6	9.1																				
May 30	2.5	1.5	1.0	1.1	0.8	1.6	3.4	4.0	7.1	9.5	10.1	12.3	11.2	12.9	13.3	12.5	12.3	10.3	11.1	6.5	1.4	1.3	1.2	0.6	0.6	13.3	5.9																				
May 31	1.1	0.4	0.9	0.7	3.3	4.1	3.3	4.2	5.4	9.8	12.9	11.7	11.1	10.6	10.3	9.9	8.8	8.1	4.0	3.0	1.6	1.1	1.3	1.7	0.4	12.9	4.3																				
C	Monthly Calibration											S	Daily Zero-Span Check											Q	Quality Assurance																						
K	Collection Error											N	No Data (Machine Not in Service)											Y	Routine Maintenance											P	Power Failure										
X	Invalid Data (Equipment Malfunction/Recovery)											NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																																		
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																															
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																															



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - May 2021 Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

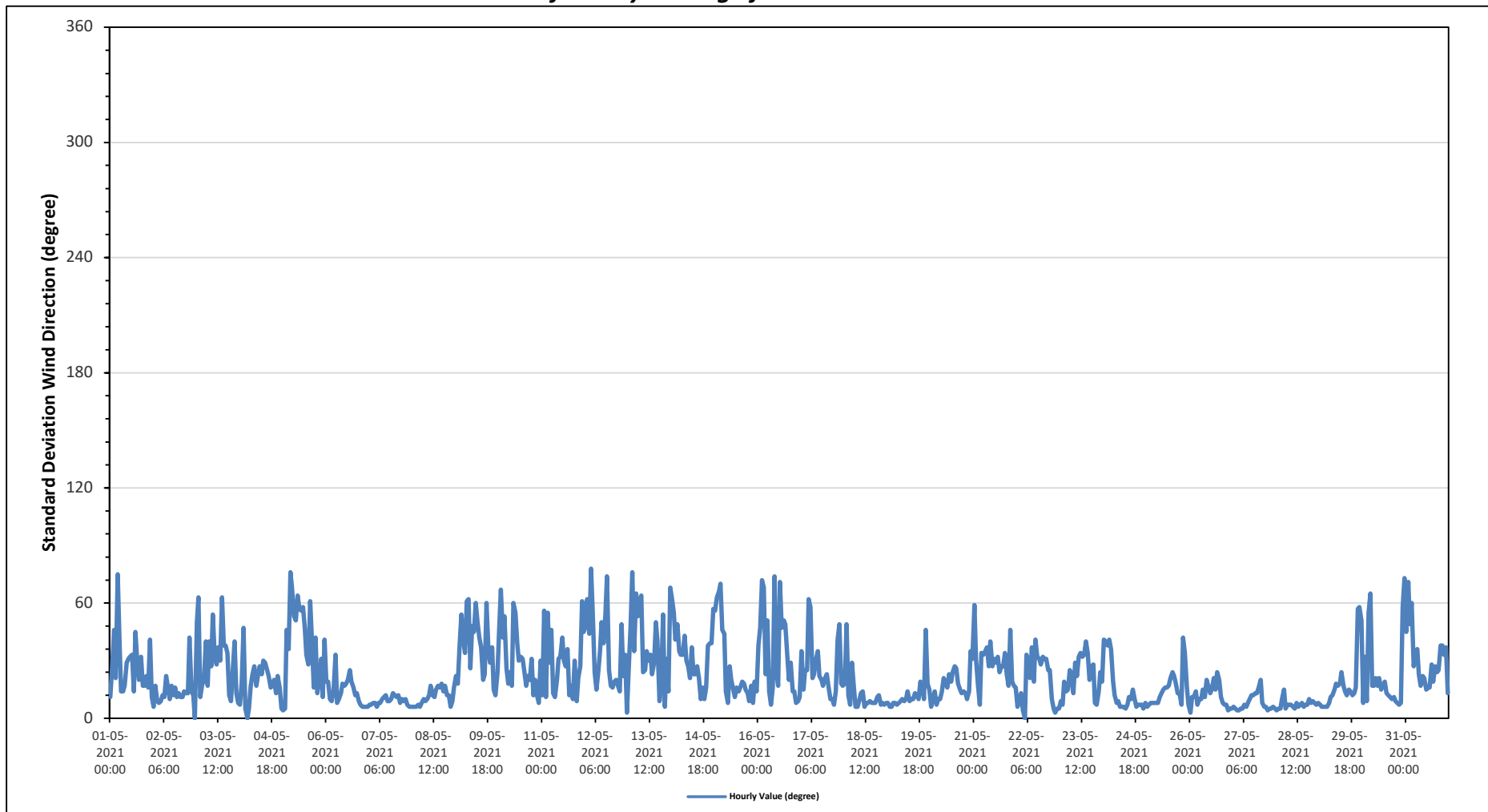
Maximum Hourly Value: 78 degree on May 12 at hour 3	Hours in Service: 744
	Hours of Data: 744
Minimum Hourly Value: 0 degree on May 2 at hour 23	Hours of Missing Data: 0
	Hours of Calibration: 0
	Operational Uptime: 100.0

Day	Hourly Period Starting at (MST)																							Daily	Daily	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum
May 1	11	26	46	21	75	40	14	14	17	29	31	32	33	14	45	28	20	32	17	17	22	16	41	11	11	75
May 2	6	17	9	8	9	12	11	22	16	10	17	12	16	11	13	11	11	14	13	13	42	14	12	0	0	42
May 3	50	63	11	18	19	40	17	40	27	54	31	28	37	30	63	38	38	34	12	9	25	40	13	8	8	63
May 4	7	19	47	5	0	5	17	23	27	17	22	27	23	30	29	25	22	16	17	20	13	22	16	5	0	47
May 5	4	5	46	36	76	68	53	51	64	57	56	58	47	33	28	61	40	16	42	13	20	31	11	41	4	76
May 6	19	19	10	9	14	33	8	10	13	18	17	18	20	25	19	16	12	13	9	7	6	6	6	6	6	33
May 7	7	7	8	8	6	8	8	10	11	12	9	9	10	13	12	11	12	8	10	9	10	7	6	6	6	13
May 8	6	6	6	7	6	8	10	9	10	12	17	12	11	15	17	16	18	14	17	12	12	6	9	16	6	18
May 9	22	18	38	54	41	34	61	62	26	48	45	60	50	42	37	20	23	60	34	29	37	15	12	24	12	62
May 10	45	67	42	53	26	18	24	17	60	55	39	30	32	31	24	17	22	20	31	12	20	12	8	30	8	67
May 11	12	56	11	55	29	46	13	11	20	31	32	42	30	27	36	12	17	10	30	9	21	27	61	45	9	61
May 12	48	62	44	78	57	24	15	24	35	50	39	54	74	25	17	16	19	20	17	14	49	22	33	3	3	78
May 13	26	47	76	35	65	53	61	64	24	25	35	30	33	23	29	50	40	9	16	54	6	31	14	68	6	76
May 14	63	55	41	49	35	33	33	43	30	27	21	37	23	23	27	21	10	16	10	16	38	39	39	57	10	63
May 15	56	63	66	70	46	44	14	8	27	20	15	11	16	14	16	19	18	15	13	9	17	8	19	14	8	70
May 16	38	47	72	68	23	51	14	7	16	74	24	17	71	47	51	49	34	20	29	14	14	8	9	11	7	74
May 17	35	15	25	25	62	58	21	23	31	35	22	20	17	21	23	17	10	10	7	14	41	49	18	17	7	62
May 18	18	49	12	7	29	17	6	6	9	13	14	6	8	8	9	8	8	8	11	12	7	8	7	8	6	49
May 19	8	6	6	8	8	7	8	9	10	9	10	14	9	10	10	13	12	10	19	16	10	46	18	15	6	46
May 20	6	10	14	7	10	10	14	21	18	16	23	19	24	27	26	18	15	13	14	13	10	14	35	31	6	35
May 21	59	31	17	7	34	33	35	37	27	40	27	31	29	32	24	27	27	34	23	17	46	19	17	16	7	59
May 22	6	10	13	4	0	33	26	21	37	19	41	32	31	28	32	31	31	25	25	10	5	3	5	5	0	41
May 23	9	7	19	14	15	25	23	13	29	22	32	34	32	33	40	34	20	27	28	8	7	14	24	19	7	40
May 24	41	40	38	41	36	19	12	8	9	6	6	6	5	7	11	10	15	10	6	7	7	7	5	8	5	41
May 25	6	7	8	8	8	8	8	11	13	15	16	16	17	21	24	22	18	13	13	7	42	34	16	7	6	42
May 26	3	11	11	14	7	10	10	15	11	20	17	13	15	21	15	24	20	11	8	7	7	4	5	5	3	24
May 27	6	5	4	4	5	5	7	6	8	10	12	12	13	13	16	20	8	6	6	4	5	5	6	5	4	20
May 28	4	5	5	10	15	5	7	7	7	6	5	8	6	7	8	6	7	7	10	8	9	8	7	8	4	15
May 29	7	6	6	6	6	8	11	12	15	18	17	18	24	17	14	12	15	14	12	13	16	57	58	51	6	58
May 30	8	32	9	55	65	17	17	21	17	21	15	17	19	13	12	11	10	11	9	8	7	8	58	73	7	73
May 31	45	71	49	60	27	33	36	23	17	22	21	15	16	16	28	19	27	24	25	38	38	33	37	13	13	71
Diurnal Minimum	3	5	4	4	0	5	6	6	7	6	5	6	5	7	8	6	7	6	6	4	5	3	5	0		
Dalurnal Maximum	63	71	76	78	76	68	61	64	64	74	56	60	74	47	63	61	40	60	42	54	49	57	61	73		

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Machine Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

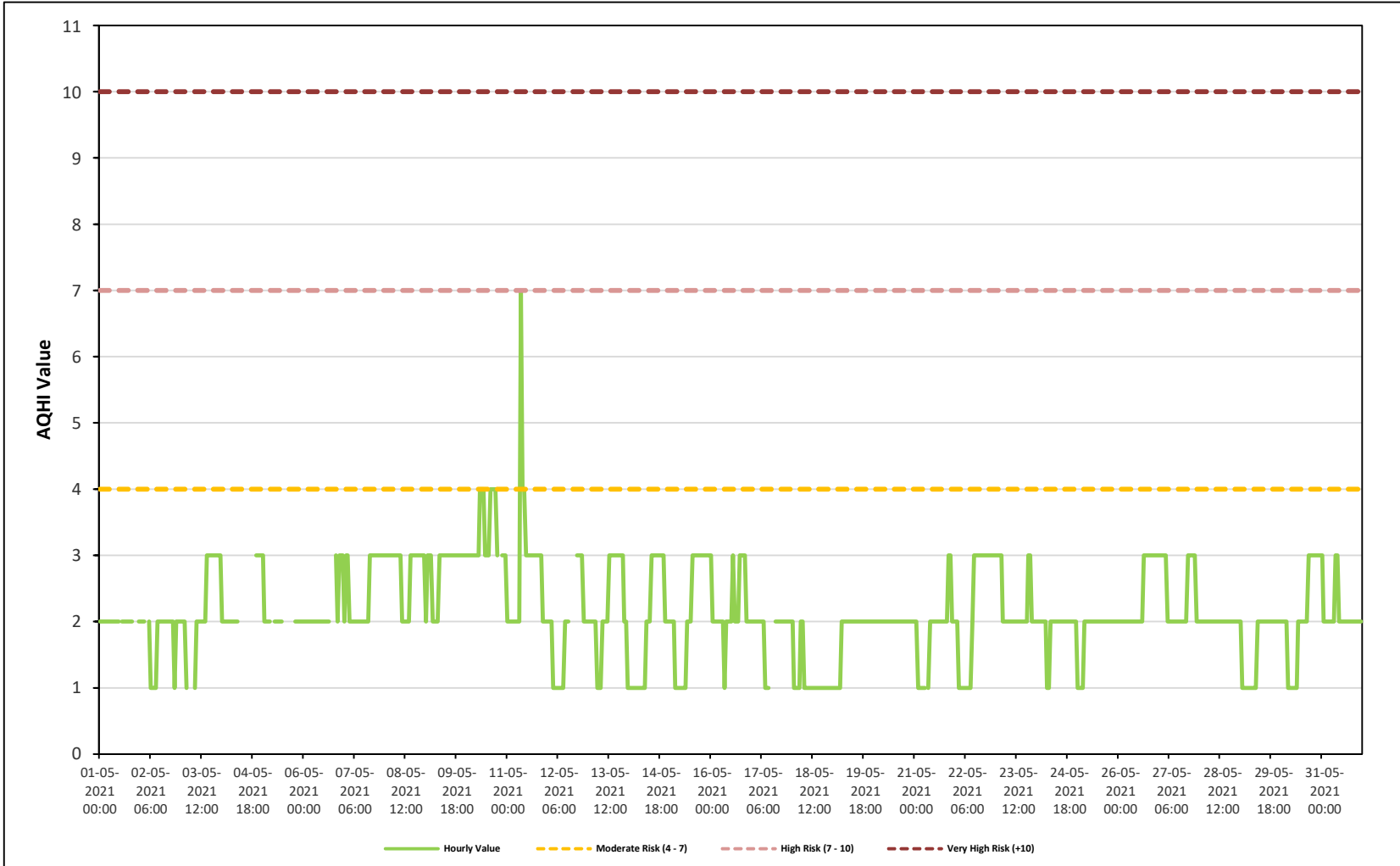
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for STDWD - Cold Lake South Station



TAMARACK STATION

Timeseries Chart of Hourly Average for AQHI - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - May 2021

Summary of Hourly Averages

SULPHUR DIOXIDE (SO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb

Number of 1-Hour Exceedences: 0 Number of 24-Hour Exceedences: 0 30-Day Exceedence: 0

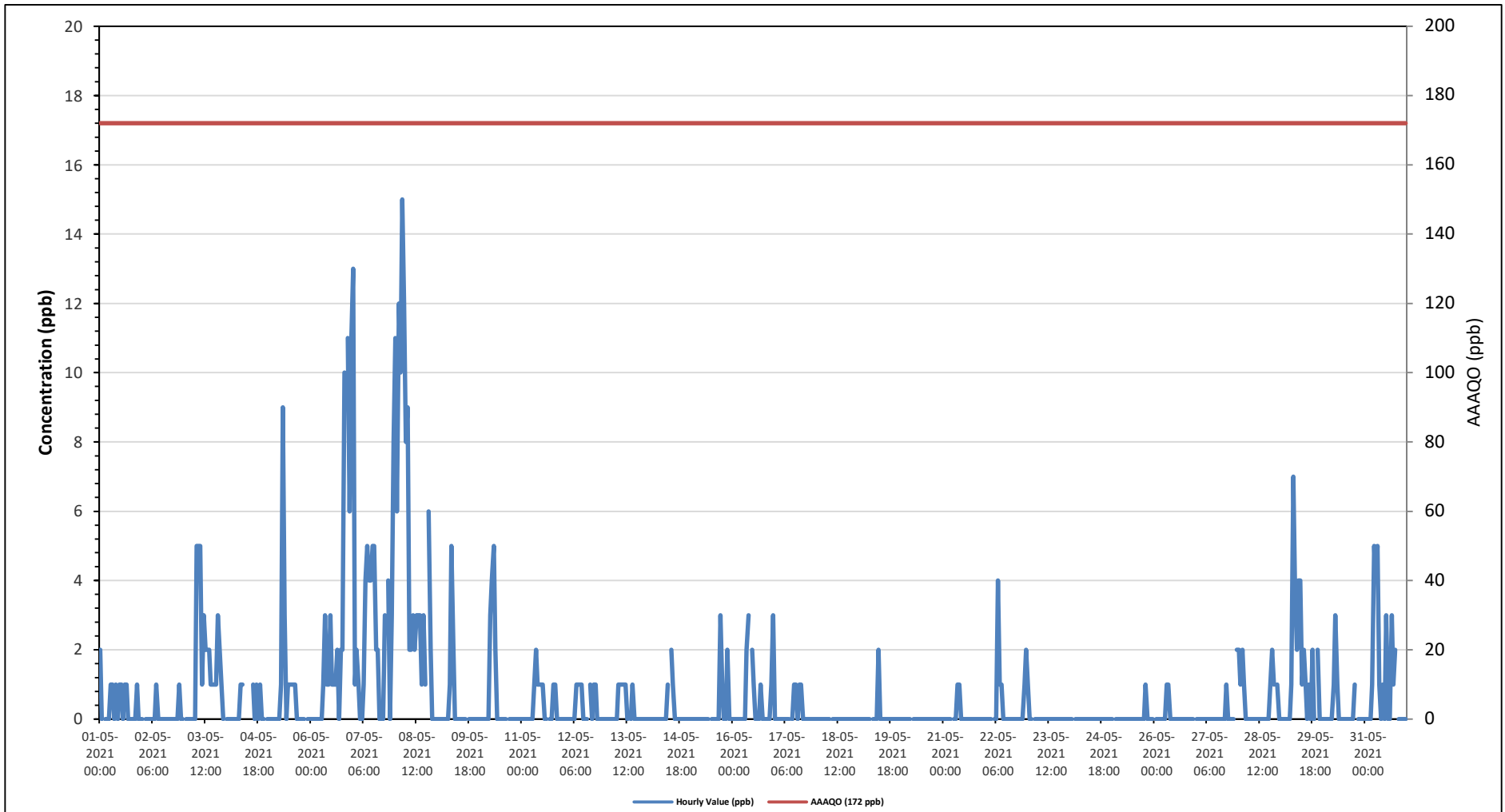
Maximum Hourly Value:	15 ppb on May 8 at hour 4	Hours in Service:	744
Maximum Daily Value:	5.0 ppb on May 8	Hours of Data:	706
Minimum Hourly Value:	0 ppb on May 1 at hour 1	Hours of Missing Data:	0
Minimum Daily Value:	0.0 ppb on May 18	Hours of Calibration:	38
Monthly Average:	0.7 ppb	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
May 1	2	0	S	0	0	0	1	1	0	1	0	1	1	0	1	1	0	0	0	0	0	1	0	0	0	2	0.4	
May 2	0	S	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0.1	
May 3	S	0	0	0	0	0	0	5	5	5	1	3	2	2	2	1	1	1	1	3	2	1	0	0	S	5	1.6	
May 4	0	0	0	0	0	0	0	0	1	1	C	C	C	C	C	1	0	1	0	1	0	0	S	0	0	1	0.3	
May 5	0	0	0	0	0	0	0	1	9	3	0	1	1	1	1	1	0	0	0	0	0	S	0	0	0	9	0.8	
May 6	0	0	0	0	0	0	0	1	3	1	1	3	1	1	1	2	0	2	2	10	S	11	6	11	0	11	2.4	
May 7	13	1	2	1	0	0	1	4	5	4	4	5	4	5	2	2	0	0	3	S	4	0	3	8	0	13	2.9	
May 8	11	6	12	10	15	12	8	9	2	2	3	2	3	3	3	1	3	1	S	6	2	0	0	0	0	15	5.0	
May 9	0	0	0	0	0	0	0	1	5	2	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	5	0.3	
May 10	0	0	0	0	0	0	3	4	5	2	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	5	0.6	
May 11	0	0	0	0	0	0	0	1	2	1	1	1	1	0	0	S	0	0	1	1	0	0	0	0	0	2	0.4	
May 12	0	0	0	0	0	0	0	1	1	1	1	0	0	0	S	1	0	1	1	0	0	0	0	0	0	1	0.3	
May 13	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	0.3	
May 14	0	0	0	0	0	0	0	0	0	0	0	0	1	S	2	1	0	0	0	0	0	0	0	0	0	2	0.2	
May 15	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	3	1	0	0	2	0	3	0.3	
May 16	0	0	0	0	0	0	0	0	2	3	S	2	1	0	0	0	1	0	0	0	0	0	0	1	3	3	0.6	
May 17	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	1	0.2	
May 18	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
May 19	0	0	0	0	0	0	0	0	S	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	
May 20	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
May 21	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
May 22	0	0	0	0	S	0	0	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	4	0.4	
May 23	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
May 24	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
May 25	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0.0	
May 26	S	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.1	
May 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	S	2	0	0.1	
May 28	2	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	2	1	0	0	2	0.5	
May 29	0	0	0	0	0	0	1	7	4	2	4	4	1	2	1	0	1	0	2	0	S	2	0	0	0	7	1.3	
May 30	0	0	0	0	0	0	1	3	1	0	0	0	0	0	0	0	0	0	1	S	0	0	0	0	0	3	0.3	
May 31	0	0	0	0	1	5	4	5	1	0	1	0	3	0	0	3	1	2	S	0	0	0	0	0	0	5	1.1	
Diurnal Maximum	13	6	12	10	15	12	8	9	9	5	4	5	3	3	3	3	3	3	3	3	10	4	11	6	11			
Daiurnal Average	1.0	0.3	0.6	0.4	0.5	0.6	0.6	1.6	1.7	1.0	0.6	0.9	0.7	0.4	0.4	0.4	0.2	0.4	0.4	0.4	0.8	0.3	0.6	0.4	0.9			

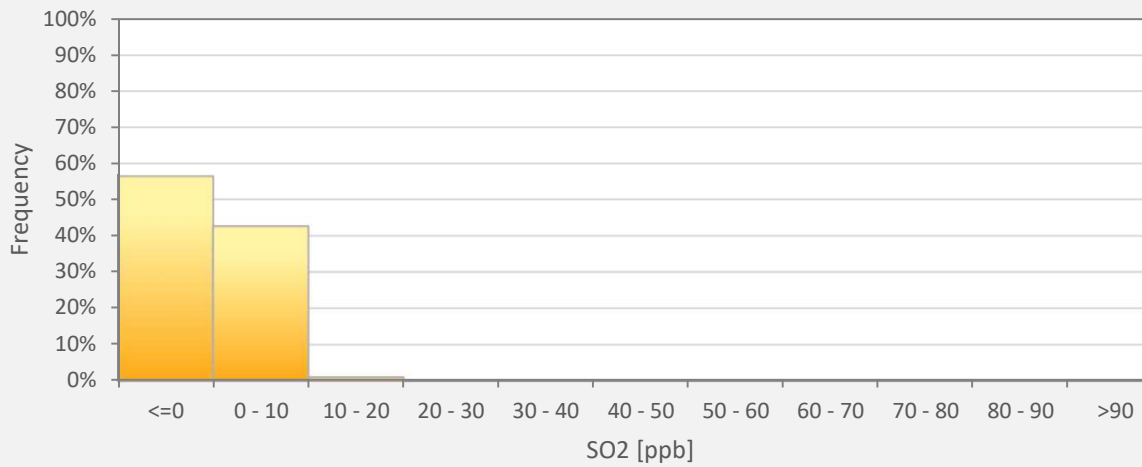
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for SO2 - Tamarack Site



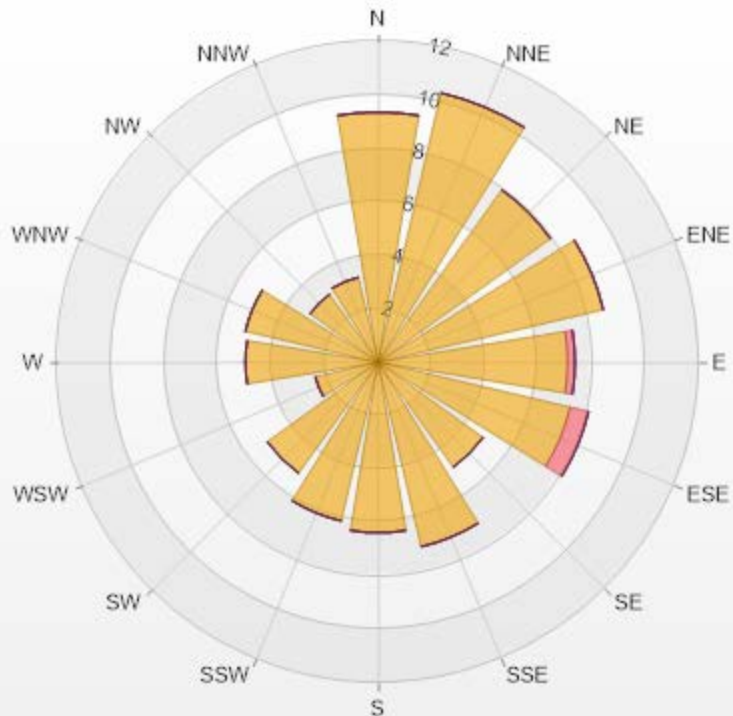
SO2[ppb] Histogram: Tamarack Monthly: 05-2021 1 Hr.



Classes	SO2
<=0	56.37%
0 - 10	42.63%
10 - 20	0.99%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Tamarack Poll.: Tamarack-SO2[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	9.35	0	0	0	0	9.35
NNE	10.34	0	0	0	0	10.34
NE	7.93	0	0	0	0	7.93
ENE	8.64	0	0	0	0	8.64
E	7.08	0.28	0	0	0	7.36
ESE	7.37	0.71	0	0	0	8.08
SE	4.82	0	0	0	0	4.82
SSE	7.08	0	0	0	0	7.08
S	6.37	0	0	0	0	6.37
SSW	6.09	0	0	0	0	6.09
SW	5.1	0	0	0	0	5.1
WSW	2.41	0	0	0	0	2.41
W	4.96	0	0	0	0	4.96
WNW	5.1	0	0	0	0	5.1
NW	3.12	0	0	0	0	3.12
NNW	3.26	0	0	0	0	3.26
Summary	99.02	0.99	0	0	0	100



LICA-202105

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% Icon Classes (ppb)

99 0-10

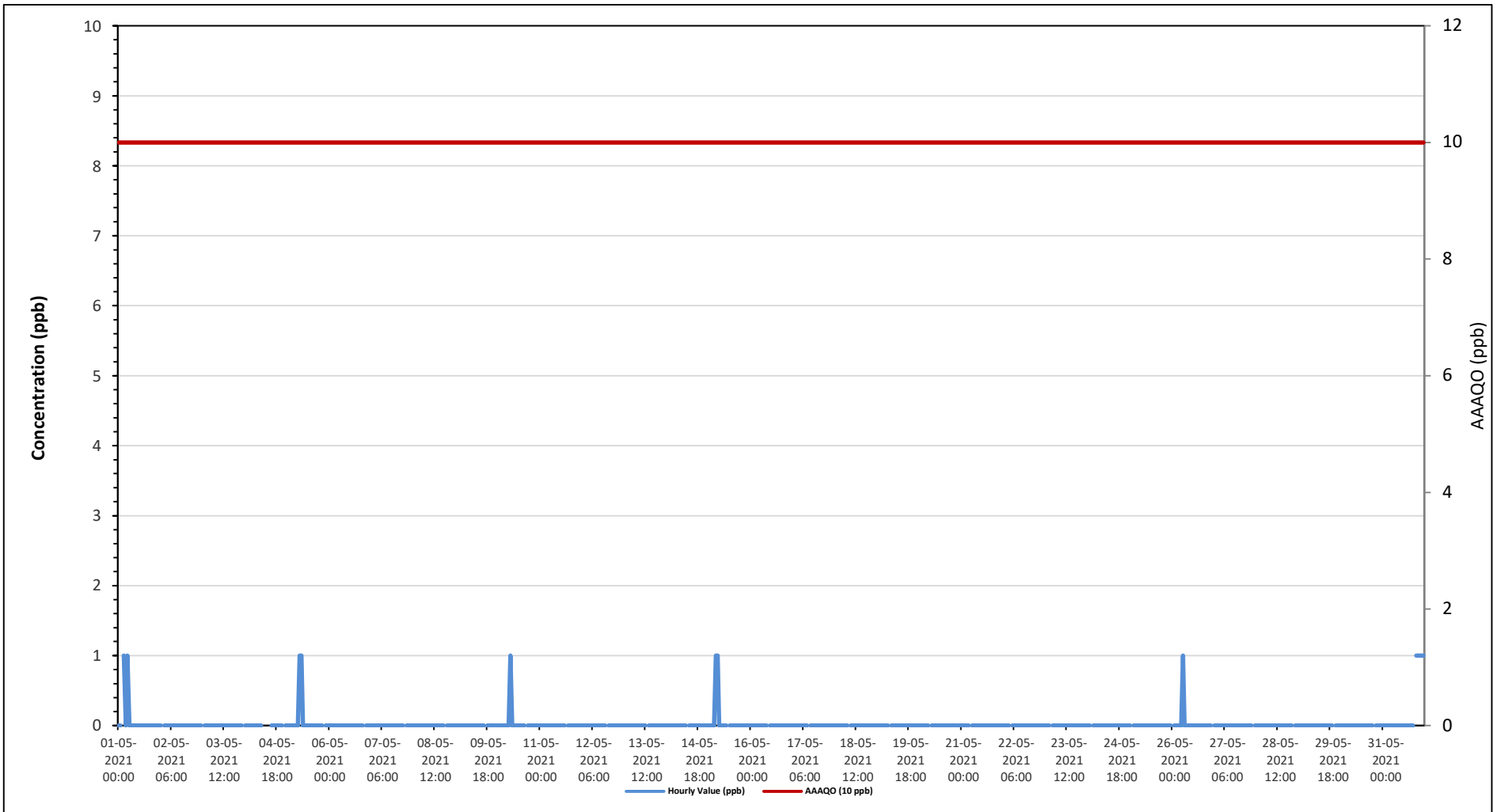
1 10-50

0 50-100

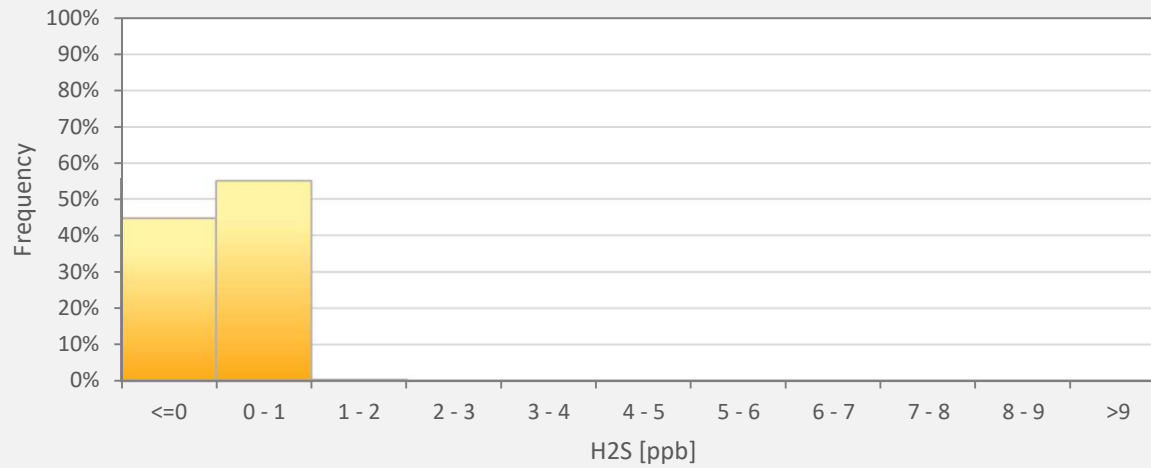
0 100-172

0 >172.0

Timeseries Chart of Hourly Average for H2S - Tamarack Site



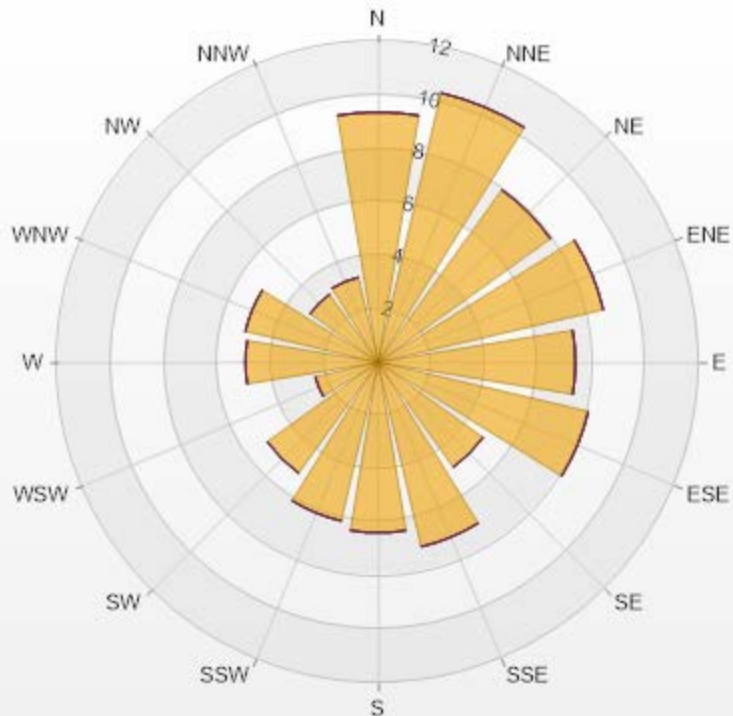
H2S[ppb] Histogram: Tamarack Monthly: 05-2021 1 Hr.



Classes	H2S
<=0	44.62%
0 - 1	54.96%
1 - 2	0.42%
2 - 3	0.00%
3 - 4	0.00%
4 - 5	0.00%
5 - 6	0.00%
6 - 7	0.00%
7 - 8	0.00%
8 - 9	0.00%
>9	0.00%

Wind: Tamarack Poll.: Tamarack-H2S[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	9.35	0	0	0	0	9.35
NNE	10.34	0	0	0	0	10.34
NE	7.93	0	0	0	0	7.93
ENE	8.64	0	0	0	0	8.64
E	7.37	0	0	0	0	7.37
ESE	8.07	0	0	0	0	8.07
SE	4.82	0	0	0	0	4.82
SSE	7.08	0	0	0	0	7.08
S	6.37	0	0	0	0	6.37
SSW	6.09	0	0	0	0	6.09
SW	5.1	0	0	0	0	5.1
WSW	2.41	0	0	0	0	2.41
W	4.96	0	0	0	0	4.96
WNW	5.1	0	0	0	0	5.1
NW	3.12	0	0	0	0	3.12
NNW	3.26	0	0	0	0	3.26
Summary	100	0	0	0	0	100



LICA-202105

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% Icon Classes (ppb)

100 0-2

0 2-5

0 5-10

0 10-50

0 >50.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - May 2021
Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

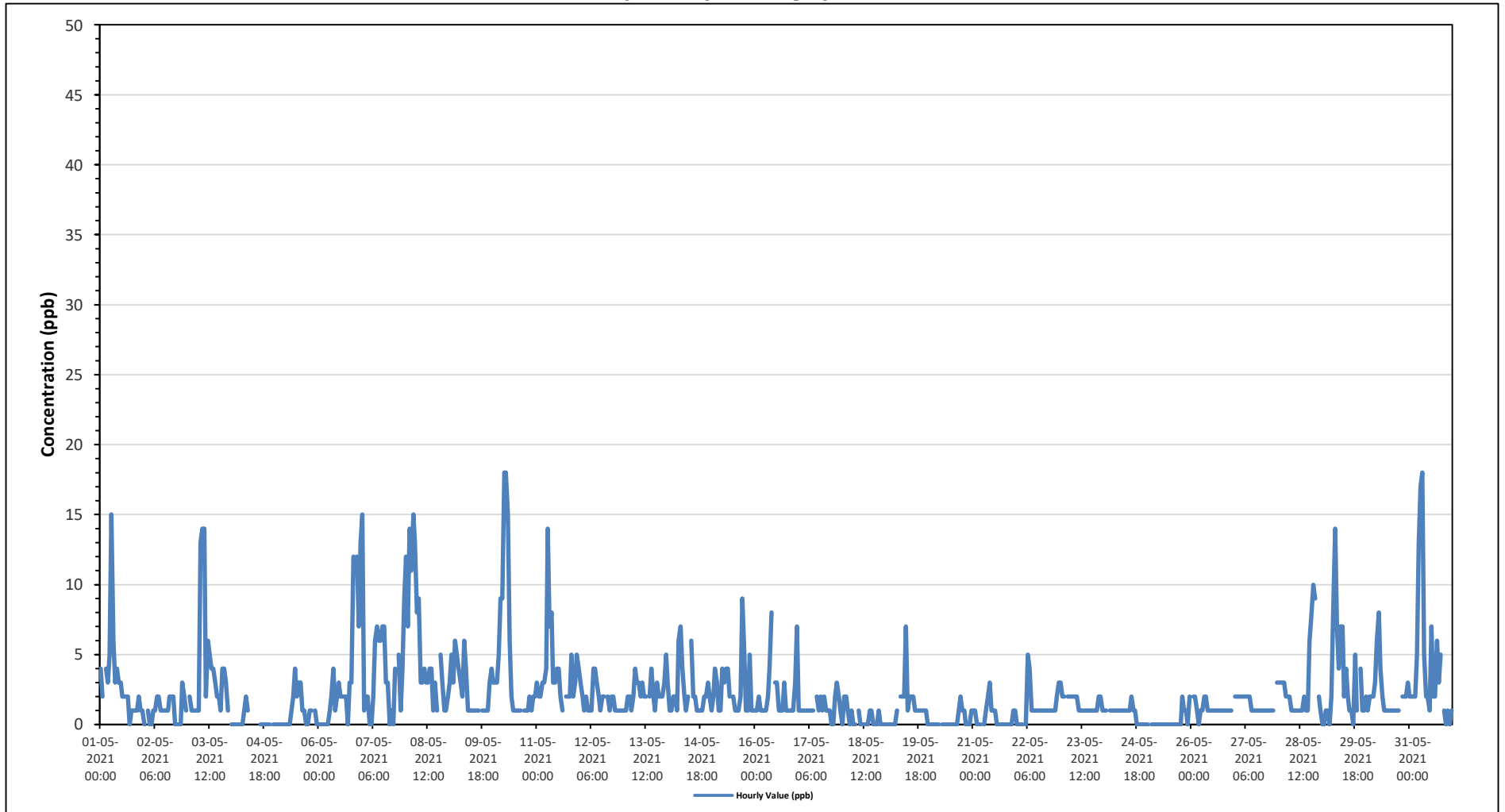
Maximum Hourly Value:	18 ppb on May 10 at hour 6	Hours in Service:	744
Maximum Daily Value:	5.7 ppb on May 8	Hours of Data:	705
Minimum Hourly Value:	0 ppb on May 1 at hour 31	Hours of Missing Data:	0
Minimum Daily Value:	0.3 ppb on May 20	Hours of Calibration:	39
Monthly Average:	2.2 ppb	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	4	2	S	4	3	5	15	6	3	4	3	3	2	2	2	2	0	1	1	1	1	1	1	0	15	3.0	
May 2	0	S	1	0	0	1	1	2	2	1	1	1	1	1	2	2	2	0	0	0	0	3	2	1	0	3	1.0
May 3	S	2	1	1	1	1	1	13	14	14	2	6	5	4	4	3	2	2	1	4	4	3	1	S	1	14	4.0
May 4	0	0	0	0	0	0	0	1	2	1	C	C	C	C	C	C	0	0	0	0	0	0	S	0	0	2	-
May 5	0	0	0	0	0	0	0	0	0	1	2	4	2	3	3	1	1	0	0	1	1	S	1	0	0	4	0.9
May 6	0	0	0	0	0	0	1	2	4	1	2	3	2	2	2	2	0	3	0	12	S	12	7	13	0	13	3.1
May 7	15	1	2	2	0	0	2	6	7	6	6	7	7	3	3	0	1	0	4	S	5	1	4	9	0	15	4.0
May 8	12	7	14	11	15	13	8	9	3	3	4	3	3	4	4	1	3	1	S	5	3	1	1	2	1	15	5.7
May 9	3	5	3	6	5	4	3	2	6	4	1	1	1	1	1	1	1	S	1	1	1	1	3	4	1	6	2.6
May 10	3	3	3	5	9	9	18	18	15	6	2	1	1	1	1	1	S	1	1	1	2	1	2	2	1	18	4.6
May 11	3	2	2	3	3	4	14	7	8	3	3	4	4	2	1	S	2	2	2	5	2	3	5	4	1	14	3.8
May 12	3	2	1	2	1	1	1	4	4	3	2	1	2	2	S	2	1	2	2	1	1	1	1	1	1	4	1.8
May 13	1	1	2	2	1	2	4	3	3	2	3	2	2	S	2	4	2	1	3	2	2	2	3	5	1	5	2.3
May 14	3	1	1	2	2	1	6	7	4	2	1	2	S	6	2	2	1	1	1	1	2	2	3	2	1	7	2.4
May 15	1	2	4	3	1	1	4	3	4	4	2	S	2	1	1	1	2	9	5	1	1	5	1	1	1	9	2.6
May 16	1	1	2	1	1	1	1	2	4	8	S	3	3	1	1	1	3	1	1	1	1	1	3	7	1	8	2.1
May 17	1	1	1	1	1	1	1	1	1	S	2	1	2	1	1	1	1	1	0	2	3	2	1	0	3	1	1.2
May 18	0	2	2	1	0	1	0	0	S	1	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	2	0.4
May 19	0	0	0	0	0	0	1	S	2	2	2	7	1	2	2	2	1	1	1	1	1	1	1	0	7	1.2	
May 20	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	2	1	1	0	0	0	1	0	2	0.3
May 21	1	1	0	0	0	S	0	1	2	3	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0	3	0.6
May 22	0	0	0	0	S	0	5	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	0	5	1.2
May 23	3	2	2	S	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	3	1.5
May 24	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	0	0	0	0	0	0	0	2	0.8
May 25	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	2	0	2	0.3
May 26	S	2	2	1	0	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	0	2	1.1
May 27	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	S	3	1	3	1.5
May 28	3	3	3	3	2	2	2	1	1	1	1	1	1	1	1	2	1	1	6	8	10	S	2	1	1	10	2.8
May 29	0	0	1	1	0	2	8	14	7	4	7	7	2	4	2	1	1	0	5	1	S	4	1	1	0	14	3.2
May 30	2	1	2	2	2	3	6	8	4	2	1	1	1	1	1	1	1	1	1	S	2	2	2	3	1	8	2.2
May 31	2	2	2	2	5	13	17	18	5	2	2	1	7	2	2	6	3	5	S	1	0	1	0	1	0	18	4.3
Diurnal Maximum	15	7	14	11	15	13	18	18	15	14	7	7	7	6	4	6	3	9	8	12	9	12	7	13			
Diurnal Average	2.2	1.6	1.8	1.9	1.9	2.4	4.2	4.6	3.8	2.8	1.9	2.2	2.0	1.7	1.6	1.4	1.2	1.5	1.6	1.9	1.6	1.9	1.8	2.4			

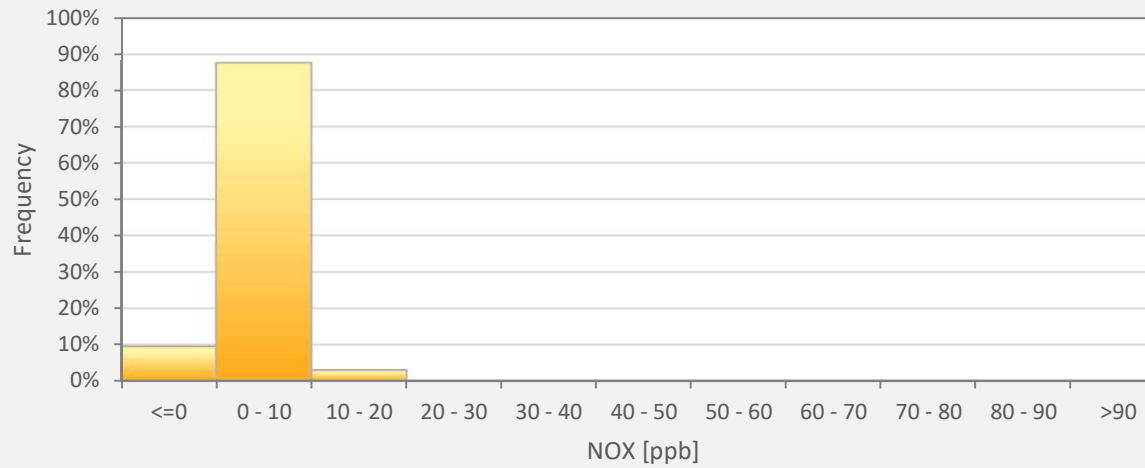
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction/Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NOx - Tamarack Site



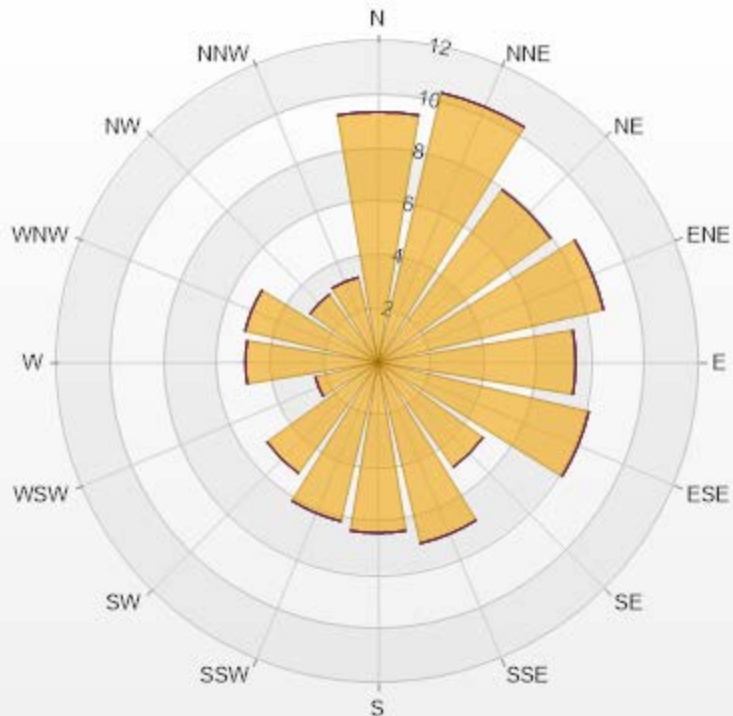
NOX[ppb] Histogram: Tamarack Monthly: 05-2021 1 Hr.



Classes	NOX
<=0	9.50%
0 - 10	87.52%
10 - 20	2.98%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Tamarack Poll.: Tamarack-NOX[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	9.36	0	0	0	0	9.36
NNE	10.35	0	0	0	0	10.35
NE	7.94	0	0	0	0	7.94
ENE	8.65	0	0	0	0	8.65
E	7.38	0	0	0	0	7.38
ESE	8.09	0	0	0	0	8.09
SE	4.82	0	0	0	0	4.82
SSE	6.95	0	0	0	0	6.95
S	6.38	0	0	0	0	6.38
SSW	6.1	0	0	0	0	6.1
SW	5.11	0	0	0	0	5.11
WSW	2.41	0	0	0	0	2.41
W	4.96	0	0	0	0	4.96
WNW	5.11	0	0	0	0	5.11
NW	3.12	0	0	0	0	3.12
NNW	3.26	0	0	0	0	3.26
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)	100	0-30	0	30-50	0	50-76	0	76-159	0	>159.0
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LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - May 2021 Summary of Hourly Averages

NITRIC OXIDE (NO) in ppb

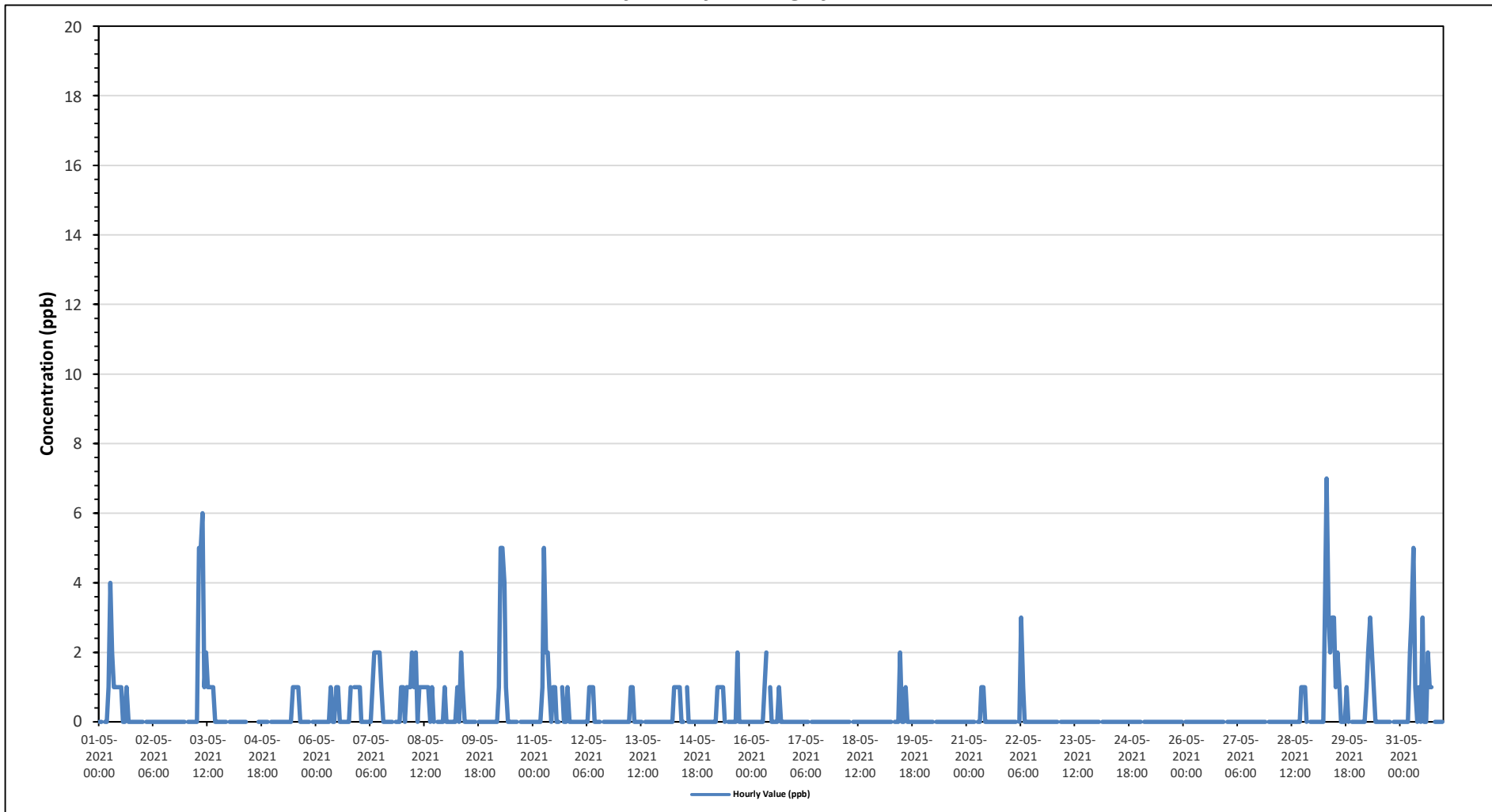
Maximum Hourly Value:	7 ppb on May 29 at hour 7	Hours in Service:	744
Maximum Daily Value:	1.1 ppb on May 29	Hours of Data:	705
Minimum Hourly Value:	0 ppb on May 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0 ppb on May 2	Hours of Calibration:	39
Monthly Average:	0.3 ppb	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average												
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23											
May 1	0	0	S	0	0	1	4	2	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.6
May 2	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
May 3	S	0	0	0	0	0	0	0	5	5	6	1	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1.0			
May 4	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-		
May 5	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2			
May 6	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	1	0.3			
May 7	1	0	0	0	0	0	0	1	2	2	2	2	2	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.5				
May 8	1	0	1	1	1	2	1	2	0	1	1	1	1	1	1	1	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0.7				
May 9	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2			
May 10	0	0	0	0	0	1	5	5	4	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0.7			
May 11	0	0	0	0	0	1	5	2	2	1	0	1	1	0	0	S	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5	0.7			
May 12	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1				
May 13	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1			
May 14	0	0	0	0	0	0	1	1	1	1	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2			
May 15	0	0	0	0	0	0	1	1	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3			
May 16	0	0	0	0	0	0	0	0	1	2	S	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2			
May 17	0	0	0	0	0	0	0	0	0	S	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0			
May 18	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0			
May 19	0	0	0	0	0	0	0	S	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1			
May 20	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0			
May 21	0	0	0	0	0	S	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1			
May 22	0	0	0	0	S	0	3	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	3	0.2			
May 23	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0			
May 24	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0			
May 25	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0			
May 26	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0			
May 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0			
May 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.1			
May 29	0	0	0	0	0	0	3	7	3	2	3	3	1	2	1	0	0	0	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	7	1.1			
May 30	0	0	0	0	0	1	2	3	2	1	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	3	0.4			
May 31	0	0	0	0	0	2	3	5	1	0	1	0	3	0	0	2	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0.8			
Diurnal Maximum	1	0	1	1	1	2	5	7	5	6	3	3	3	2	1	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Diurnal Average	0.1	0.0	0.0	0.0	0.0	0.3	1.0	1.2	0.9	0.7	0.3	0.5	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1			

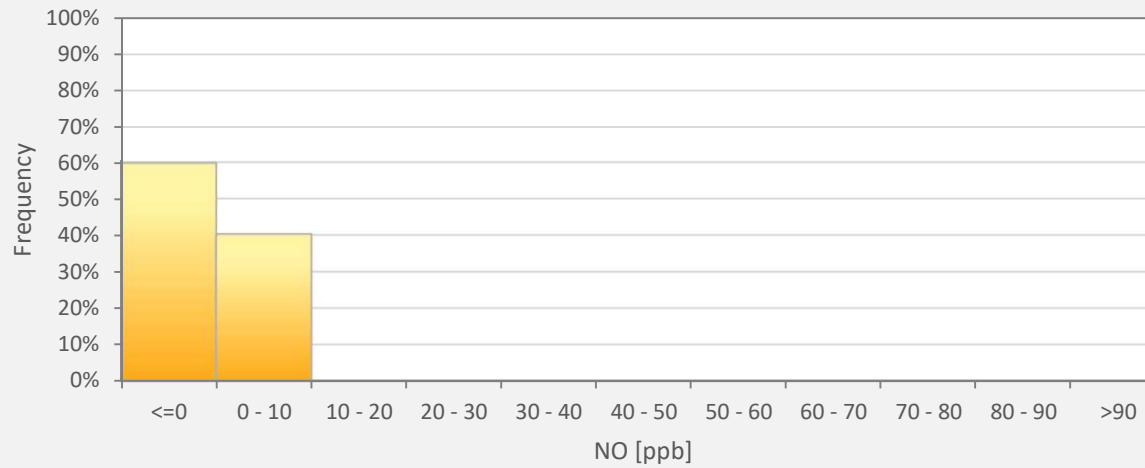
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction/Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NO - Tamarack Site



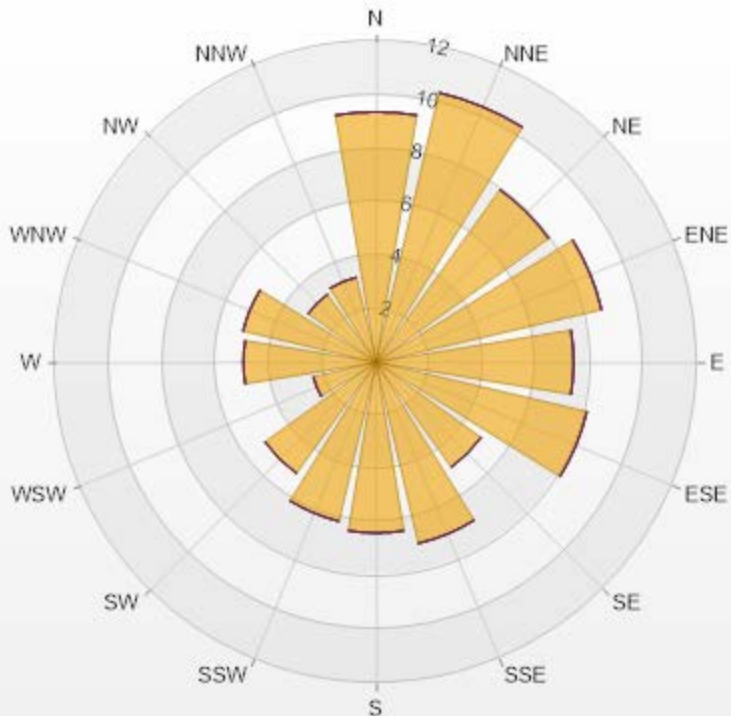
NO[ppb] Histogram: Tamarack Monthly: 05-2021 1 Hr.



Classes	NO
<=0	59.72%
0 - 10	40.28%
10 - 20	0.00%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Tamarack Poll.: Tamarack-NO[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	9.36	0	0	0	0	9.36
NNE	10.35	0	0	0	0	10.35
NE	7.94	0	0	0	0	7.94
ENE	8.65	0	0	0	0	8.65
E	7.38	0	0	0	0	7.38
ESE	8.09	0	0	0	0	8.09
SE	4.82	0	0	0	0	4.82
SSE	6.95	0	0	0	0	6.95
S	6.38	0	0	0	0	6.38
SSW	6.1	0	0	0	0	6.1
SW	5.11	0	0	0	0	5.11
WSW	2.41	0	0	0	0	2.41
W	4.96	0	0	0	0	4.96
WNW	5.11	0	0	0	0	5.11
NW	3.12	0	0	0	0	3.12
NNW	3.26	0	0	0	0	3.26
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)	100	0-30	0	30-50	0	50-76	0	76-159	0	>159.0
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LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - May 2021

Summary of Hourly Averages

NITROGEN DIOXIDE (NO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb

Number of 1-Hour Exceedences: 0

Maximum Hourly Value: 14 ppb on May 7 at hour 0

Hours in Service: 744

Maximum Daily Value: 4.9 ppb on May 8

Hours of Data: 705

Minimum Hourly Value: 0 ppb on May 1 at hour 16

Hours of Missing Data: 0

Minimum Daily Value: 0.2 ppb on May 20

Hours of Calibration: 39

Monthly Average: 1.9 ppb

Operational Uptime: 100.0

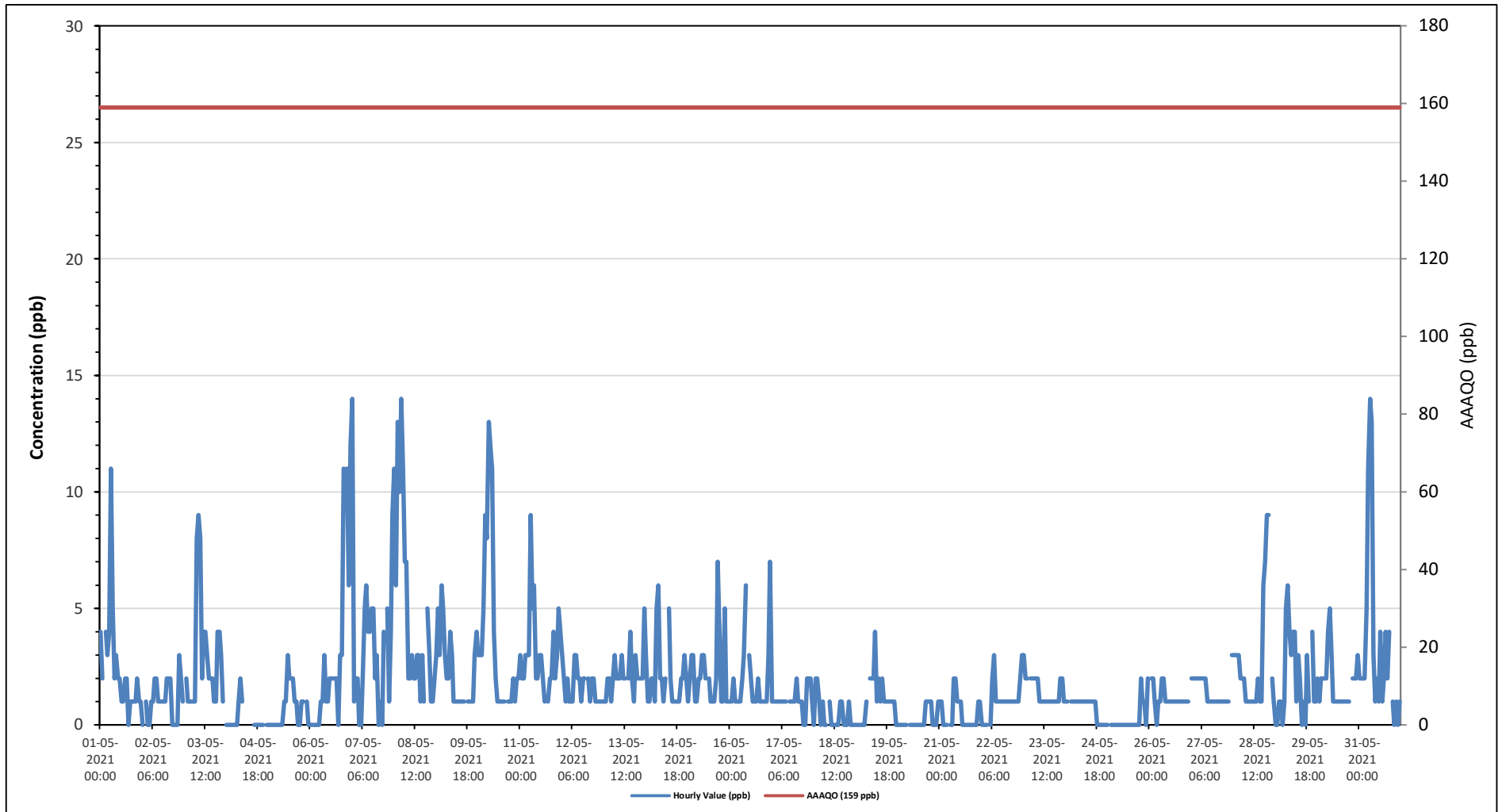
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
May 1	4	2	S	4	3	4	11	5	2	3	2	2	1	1	2	2	0	1	1	1	1	2	1	1	0	11	2.4	
May 2	0	S	1	0	0	1	1	2	2	1	1	1	1	1	2	2	2	0	0	0	0	3	2	1	0	3	1.0	
May 3	S	2	1	1	1	1	1	8	9	8	2	4	4	3	2	2	2	1	1	4	4	3	1	S	1	9	3.0	
May 4	0	0	0	0	0	0	0	1	2	1	C	C	C	C	C	C	0	0	0	0	0	0	S	0	0	2	-	
May 5	0	0	0	0	0	0	0	0	0	1	1	3	2	2	2	1	1	0	0	1	1	S	1	0	0	3	0.7	
May 6	0	0	0	0	0	1	1	3	1	1	1	2	2	2	2	0	3	3	11	S	11	S	6	12	0	12	2.7	
May 7	14	1	2	2	0	0	2	5	6	4	4	5	5	2	3	0	1	0	4	S	5	1	4	9	0	14	3.4	
May 8	11	6	13	10	14	11	7	7	2	2	3	2	2	3	3	1	3	1	S	5	3	1	1	2	1	14	4.9	
May 9	3	5	3	6	5	3	2	2	4	3	1	1	1	1	1	1	1	S	1	1	1	1	3	4	1	6	2.3	
May 10	3	3	3	5	9	8	13	12	11	4	2	1	1	1	1	S	1	1	1	1	2	1	2	2	1	13	3.8	
May 11	3	2	2	3	3	3	9	5	6	2	2	3	3	2	1	S	1	2	2	4	2	3	5	4	1	9	3.1	
May 12	3	2	1	2	1	1	1	3	3	2	2	2	2	S	2	1	2	2	1	1	1	1	1	1	1	3	1.7	
May 13	1	1	2	2	1	2	3	2	2	2	3	2	2	S	2	4	2	1	3	2	2	2	2	5	1	5	2.2	
May 14	3	1	1	2	2	1	5	6	2	2	1	2	S	5	2	1	1	1	1	1	2	2	3	2	1	6	2.1	
May 15	1	2	3	3	1	1	2	2	3	3	2	S	2	1	1	1	2	7	4	1	1	5	1	1	1	7	2.2	
May 16	1	1	2	1	1	1	1	2	3	6	S	3	2	1	1	1	2	1	1	1	1	1	3	7	1	7	1.9	
May 17	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	2	1	1	1	0	0	2	2	1	0	2	1.1	
May 18	0	2	2	1	0	1	0	0	S	1	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	2	0.4
May 19	0	0	0	0	0	0	1	S	2	2	2	4	1	2	1	2	1	1	1	1	1	1	1	0	0	4	1.0	
May 20	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	1	0.2	
May 21	1	1	0	0	0	S	0	0	2	2	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0	2	0.5	
May 22	0	0	0	0	S	0	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	0	3	1.0	
May 23	3	2	2	S	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	3	1.5	
May 24	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0.7	
May 25	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	2	0	2	0	0.3	
May 26	S	2	2	1	0	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	0	2	1.1	
May 27	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	S	3	1	3	1.5	
May 28	3	3	3	3	2	2	2	1	1	1	1	1	1	1	2	1	1	6	7	9	9	S	2	1	1	9	2.7	
May 29	0	0	1	1	0	1	5	6	4	3	4	4	1	3	2	0	1	0	3	1	S	4	1	1	0	6	2.0	
May 30	2	1	2	2	2	2	4	5	3	1	1	1	1	1	1	1	1	1	1	S	2	2	2	3	1	5	1.8	
May 31	2	2	2	2	5	11	14	13	3	1	2	1	4	1	2	4	2	4	S	1	0	1	0	1	0	14	3.4	
Diurnal Maximum	14	6	13	10	14	11	14	13	11	8	4	5	5	3	4	3	4	3	7	7	11	9	11	6	12			
Daiurnal Average	2.1	1.6	1.8	1.8	1.9	2.0	3.1	3.3	2.8	2.0	1.5	1.7	1.6	1.4	1.4	1.2	1.1	1.3	1.4	1.8	1.6	1.8	1.7	2.4				

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

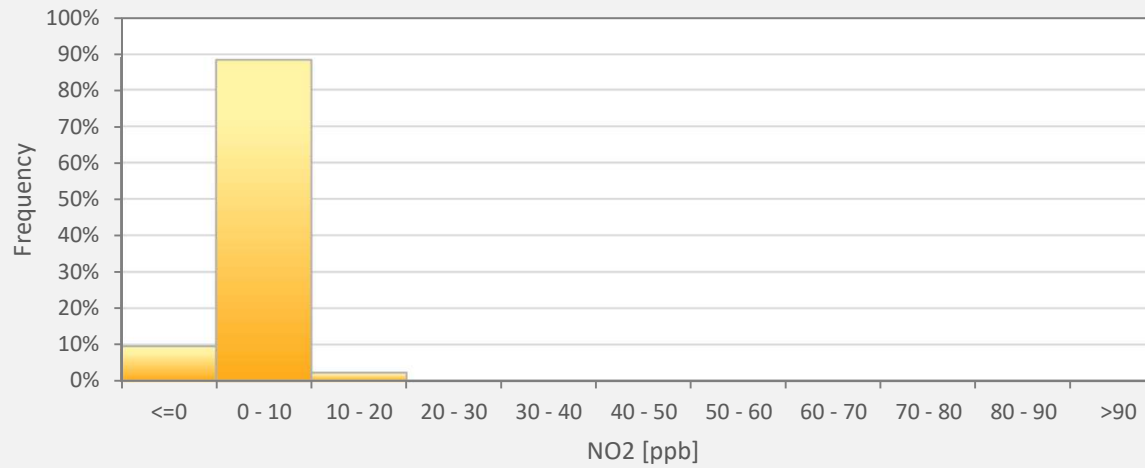
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.

Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NO2 - Tamarack Site



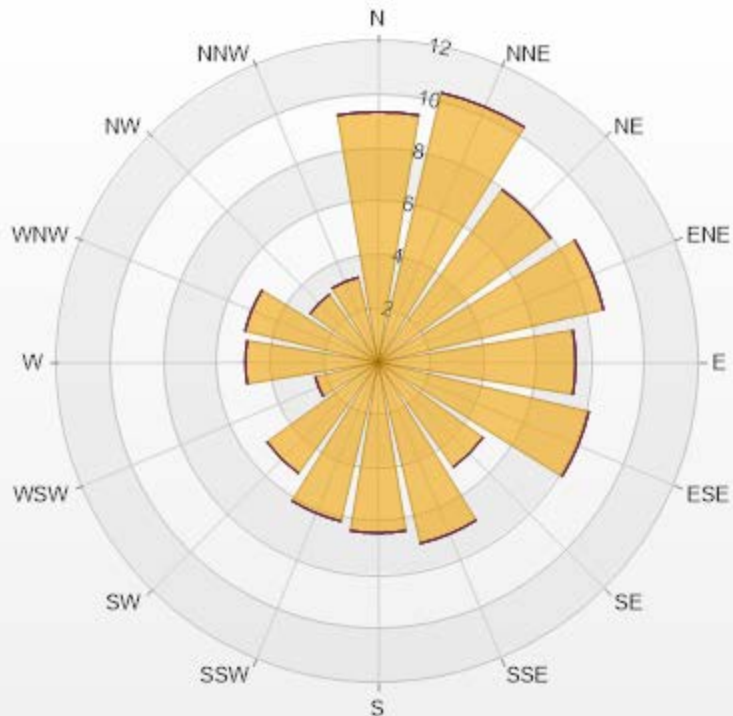
NO2[ppb] Histogram: Tamarack Monthly: 05-2021 1 Hr.



Classes	NO2
<=0	9.50%
0 - 10	88.23%
10 - 20	2.27%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Tamarack Poll.: Tamarack-NO2[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	9.36	0	0	0	0	9.36
NNE	10.35	0	0	0	0	10.35
NE	7.94	0	0	0	0	7.94
ENE	8.65	0	0	0	0	8.65
E	7.38	0	0	0	0	7.38
ESE	8.09	0	0	0	0	8.09
SE	4.82	0	0	0	0	4.82
SSE	6.95	0	0	0	0	6.95
S	6.38	0	0	0	0	6.38
SSW	6.1	0	0	0	0	6.1
SW	5.11	0	0	0	0	5.11
WSW	2.41	0	0	0	0	2.41
W	4.96	0	0	0	0	4.96
WNW	5.11	0	0	0	0	5.11
NW	3.12	0	0	0	0	3.12
NNW	3.26	0	0	0	0	3.26
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)	100	0-30	0	30-50	0	50-76	0	76-159	0	>159.0
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LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - May 2021 Summary of Hourly Averages

OZONE (O₃) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb

Number of 1-Hour Exceedences: 0

Maximum Hourly Value:	57.2 ppb on May 9 at hour 18	Hours in Service:	744
Maximum Daily Value:	43.0 ppb on May 10	Hours of Data:	701
Minimum Hourly Value:	7.4 ppb on May 14 at hour 1	Hours of Missing Data:	5
Minimum Daily Value:	19.2 ppb on May 18	Hours of Calibration:	38
Monthly Average:	34.6 ppb	Operational Uptime:	99.3

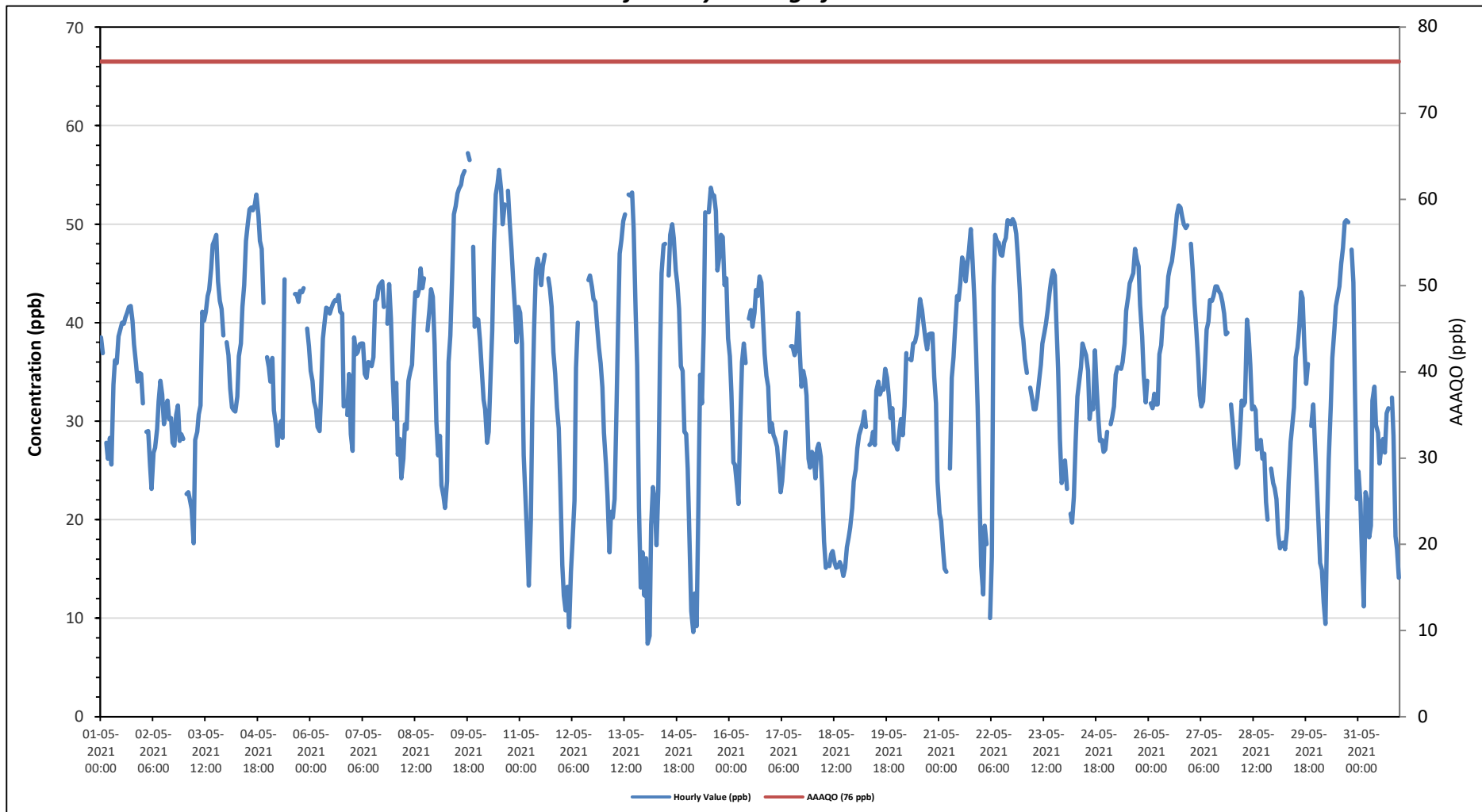
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	38.5	36.9	S	27.8	26.2	28.3	25.6	33.7	36.2	35.9	38.6	39.3	40	39.9	40.5	41	41.6	41.7	40.2	37.8	35.8	34	34.9	34.8	25.6	41.7	36.1
May 2	31.8	S	28.9	29	25.6	23.1	26.8	27.3	29.2	32	34.1	32.7	29.7	31.4	32.1	30.2	30.3	27.8	27.5	30.6	31.6	28	28.7	28.2	23.1	34.1	29.4
May 3	S	22.6	22.8	21.9	21.1	17.6	28.1	28.9	30.7	31.6	41.1	40.2	41.1	42.7	43.3	45.5	47.9	48.4	48.9	44.2	42.2	41.4	38.7	S	17.6	48.9	36.0
May 4	38	36.7	33.3	31.4	31.1	31	32.5	36.6	37.9	41.6	43.8	48.3	50	51.5	51.7	51.4	52	53	50.9	48.3	47.5	42	S	36.5	31.0	53.0	42.5
May 5	35.5	34	36.4	31.1	29.8	27.5	29.3	30	28.3	44.4	C	C	C	C	C	42.9	42.9	42.1	43.2	43.1	43.5	S	39.4	37.6	27.5	44.4	36.7
May 6	35.1	34.1	32	31.2	29.4	29	33	38.4	40.1	41.5	41.4	40.9	41.5	42	42.3	42.2	42.8	41.1	40.9	31.5	S	30.6	34.8	28.7	28.7	42.8	36.7
May 7	27	38.5	36.8	37	37.8	37.9	37.9	34.8	34.4	36	35.9	35.6	36.5	42.2	42.4	43.7	43.9	44.2	41.6	S	39.9	43.9	40.4	34.4	27.0	44.2	38.4
May 8	30.2	33.9	26.6	28.2	24.2	26.2	29.7	29.2	34.1	35	35.7	40.3	43.1	42.7	43.3	45.5	43.5	44.5	S	39.2	41.4	43.4	42.6	37.8	24.2	45.5	36.5
May 9	29.9	26.5	28.5	23.5	22.4	21.2	23.9	36	38.7	44.5	51	51.8	53.1	53.6	54	54.9	55.4	S	57.2	56.5	NRM	47.7	39.6	40.4	21.2	57.2	41.4
May 10	40.3	38.1	35.1	32.2	31.2	27.8	28.9	34.9	39.2	48.1	53	54.1	55.5	53.5	50	52	S	53.4	50.1	47.4	44.1	41.2	38	41.6	27.8	55.5	43.0
May 11	41	37.9	26.5	22.8	17.8	13.3	19.9	31.3	39.5	45.4	46.5	45.6	43.8	45.7	46.9	S	44.5	43.5	41.6	37	34.8	31.4	29.3	23.7	13.3	46.9	35.2
May 12	15.4	12.3	10.8	13.2	9.1	14.7	17.7	21.9	35.4	40	NRM	NRM	NRM	41	S	44.3	44.8	43.6	42.4	42.1	39.7	37.5	35.9	33.4	9.1	44.8	29.8
May 13	28.8	25.6	22.4	16.7	20.8	20.2	22.1	30.6	39.9	47	48.4	50.3	51	S	53	52.9	53.2	49.6	41	35.6	21.2	13.1	16.7	12.3	12.3	53.2	33.6
May 14	16.1	7.4	8.2	19.5	23.3	22	17.4	22.9	36.9	45	47.9	48	S	44.8	48.9	50	48.6	45.3	44	41.4	35.6	35.1	28.9	28.7	7.4	50.0	33.3
May 15	25.2	16.9	10.7	8.6	12.5	9.2	21.3	34.7	31.8	39	51.2	S	51.2	53.7	53	52.9	51.3	45.3	46.8	48.9	48.7	43.8	44.5	38.4	8.6	53.7	36.5
May 16	36.6	32.9	25.8	25.6	23.5	21.6	29.8	36	37.9	35.9	S	40.4	41.3	39.6	41	43.3	42.7	44.7	44.1	40.1	36.8	34.6	33.5	28.9	21.6	44.7	35.5
May 17	29.8	28.6	28.2	27.4	25.6	22.8	23.9	26.4	28.9	S	NRM	37.6	37.6	36.7	37.2	41	37.3	33.5	35.1	34.2	32.6	26.2	25.3	26.9	22.8	41.0	31.0
May 18	26.6	24.2	27.2	27.7	26.4	23.2	17.8	15.1	S	15.3	16.5	16.8	15.6	15.1	15.2	15.7	15.2	14.3	15.1	17.2	18.2	19.2	21.2	23.9	14.3	27.7	19.2
May 19	25.1	27.2	28.6	29.2	29.8	31	29.4	S	27.6	27.8	28.9	27.6	33.1	34	32.7	33.3	33.2	35.3	34.4	32.6	30.3	31.3	27.8	27.6	25.1	35.3	30.3
May 20	27.1	29	30.2	28.6	31.5	36.9	S	36.3	36.2	37.9	38	38.8	40.6	42.4	41.3	39.9	38.2	37.3	38.8	38.9	38.9	34.5	31.8	23.9	23.9	42.4	35.5
May 21	20.6	19.9	16.9	15	14.7	S	25.2	34.4	36.5	39.3	42.7	42.3	44.1	46.6	46.1	44.2	45.8	47.4	49.5	46.3	42.4	36.9	31.5	21.7	14.7	49.5	35.2
May 22	15.3	12.4	19.4	17.5	S	10	16.2	43.7	48.9	48.2	48.1	46.9	46.8	48.1	48.6	50.4	50.3	50	50.5	50.1	49	46.5	43.3	39.8	10.0	50.5	39.1
May 23	38.3	36.3	34.9	S	33.4	32.4	31.2	31.2	32.4	33.9	35.7	37.9	39	39.9	41.3	43	44.4	45.3	44.8	40.1	35.3	28.2	23.7	24.7	23.7	45.3	36.0
May 24	26	23.1	S	20.6	19.7	22.3	27.9	32.5	34	35.5	37.9	37.2	36.7	35.1	30.2	31.8	31.2	37.2	33.3	30.1	28	28.1	26.9	27.1	19.7	37.9	30.1
May 25	28.9	S	29.7	30.4	31.5	34.7	35.5	35.4	35.3	36	37.9	41.2	42.6	44	44.5	45	47.5	46.4	45.7	41.8	38.6	34.8	31.9	34.1	28.9	47.5	38.0
May 26	S	31.8	31.3	32.8	31.7	31.7	36.8	37.7	40.6	41.3	41.6	44.7	45.5	46.2	47.4	49	51	51.9	51.7	50.7	50	49.6	49.9	S	31.3	51.9	43.0
May 27	48	45.3	42	39.4	36.4	32.6	31.5	32	35.4	39.3	40.1	42.3	42.2	42.7	43.7	43.7	43.2	42.9	42.1	40.9	38.8	39	S	31.7	31.5	48.0	39.8
May 28	29.4	27.2	25.3	25.6	28.6	32.1	31.6	31.9	40.3	38.9	35.7	31.2	31.5	31.1	27.1	27.3	28.1	26.2	26.7	21.8	20	S	25.2	23.7	20.0	40.3	29.0
May 29	23.2	22.1	18.5	17.1	17.6	17.7	17	19.1	23.8	27.9	29.5	31.4	36.5	37.5	39.6	43.1	42.5	37.6	33.8	35.8	S	29.5	31.7	28	17.0	43.1	28.7
May 30	23.6	20	15.6	14.9	11.6	9.4	20.1	26.2	31.5	36.4	39.2	41.7	42.7	43.7	46	47.6	50.2	50.4	50.2	S	47.4	44.1	33.4	22.1	9.4	50.4	33.4
May 31	24.9	21.7	16.2	11.2	22.8	21.9	18.2	19.4	32.1	33.5	29.6	28.8	25.7	27.3	28.2	26.8	30.8	31.3	S	32.4	28.5	18.3	17	14.1	11.2	33.5	24.4
Diurnal Maximum	48	45	42	39	38	38	38	44	49	48	53	54	56	54	54	55	55	53	57	57	50	50	50	42			
Daiurnal Average	29.5	27.7	25.8	24.6	24.9	24.3	26.2	31.0	35.1	37.8	39.6	39.8	40.6	41.2	41.8	42.5	42.5	41.8	41.8	39.2	37.2	35.0	32.6	29.5			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

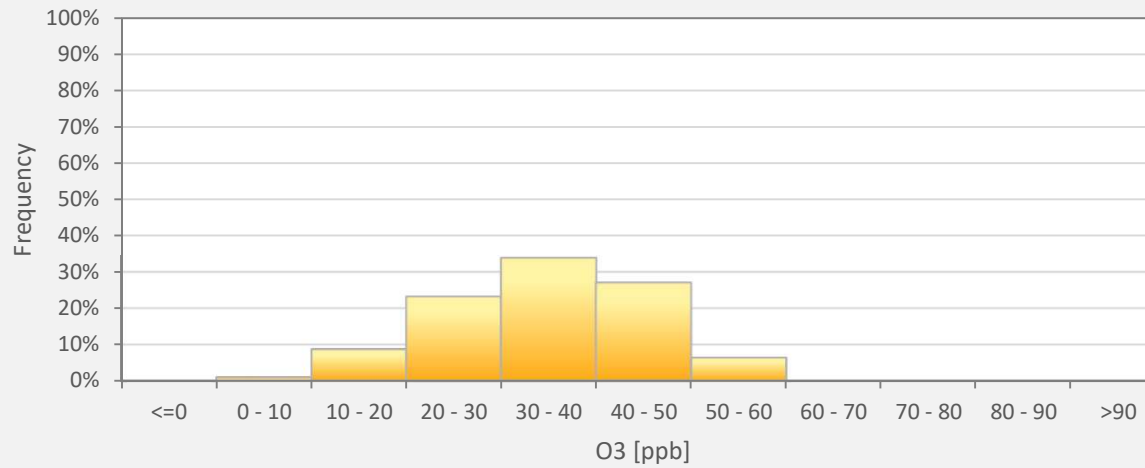
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.

Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for O3 - Tamarack Site



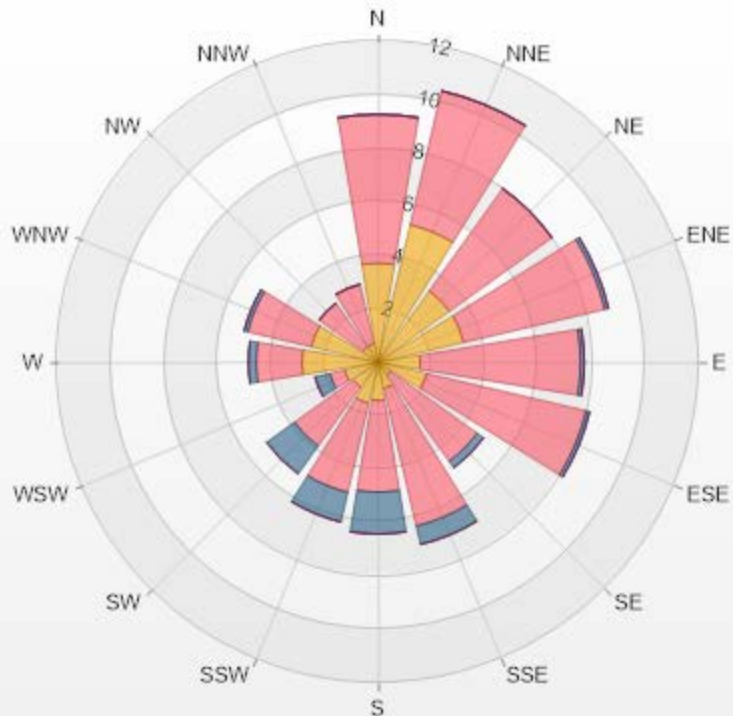
O3[ppb] Histogram: Tamarack Monthly: 05-2021 1 Hr.



Classes	O3
<=0	0.00%
0 - 10	1.00%
10 - 20	8.70%
20 - 30	23.11%
30 - 40	33.81%
40 - 50	26.96%
50 - 60	6.42%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Tamarack Poll.: Tamarack-O3[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.22% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.71	5.56	0	0	0	9.27
NNE	5.28	5.14	0	0	0	10.42
NE	3.28	4.71	0	0	0	7.99
ENE	3.28	5.42	0.14	0	0	8.84
E	1.57	5.99	0.14	0	0	7.7
ESE	1.85	6.13	0.14	0	0	8.12
SE	0.57	3.99	0.29	0	0	4.85
SSE	1	5.28	0.71	0	0	6.99
S	1.43	3.42	1.57	0	0	6.42
SSW	1.57	3.42	1.14	0	0	6.13
SW	1.14	2.71	1.28	0	0	5.13
WSW	1.28	0.57	0.57	0	0	2.42
W	2.85	1.71	0.29	0	0	4.85
WNW	2.57	2.43	0.14	0	0	5.14
NW	0.71	2	0	0	0	2.71
NNW	0.71	2.28	0	0	0	2.99
Summary	32.8	60.76	6.41	0	0	100



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% Icon Classes (ppb)	33	61	6	0	0
	0-30	30-50	50-76	76-159	>159.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - May 2021 Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

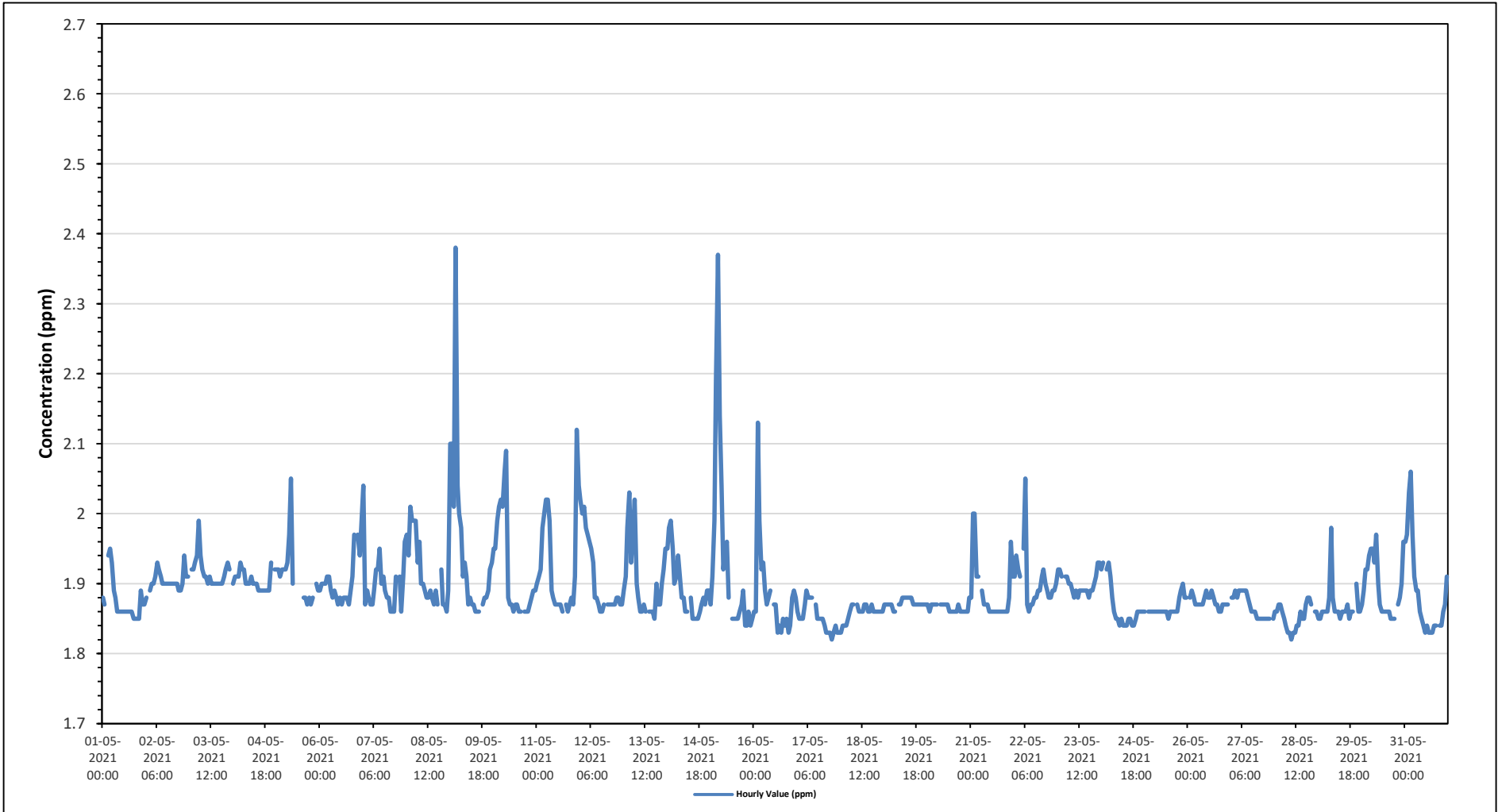
Maximum Hourly Value:	2.38 ppm on May 9 at hour 3	Hours in Service:	744
Maximum Daily Value:	1.95 ppm on May 9	Hours of Data:	706
Minimum Hourly Value:	1.82 ppm on May 17 at hour 19	Hours of Missing Data:	0
Minimum Daily Value:	1.85 ppm on May 17	Hours of Calibration:	38
Monthly Average:	1.89 ppm	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
May 1	1.88	1.87	S	1.94	1.95	1.93	1.89	1.88	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.89	1.90	1.89	1.87	1.87	1.85	1.95	1.87	
May 2	1.88	S	1.89	1.90	1.90	1.91	1.93	1.92	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.90	1.94	1.91	1.91	1.88	1.94	1.90	1.90	
May 3	S	1.92	1.92	1.93	1.94	1.99	1.94	1.92	1.91	1.91	1.90	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.91	1.92	1.93	1.92	S	1.90	1.99	1.92	
May 4	1.90	1.91	1.91	1.91	1.93	1.92	1.92	1.90	1.90	1.90	1.91	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.93	S	1.92	1.89	1.93	1.90	
May 5	1.92	1.92	1.91	1.92	1.92	1.92	1.93	1.97	2.05	1.90	C	C	C	C	C	1.88	1.88	1.87	1.88	1.87	1.88	S	1.90	1.89	1.87	2.05	1.91	
May 6	1.89	1.90	1.90	1.90	1.91	1.91	1.89	1.88	1.89	1.88	1.87	1.88	1.87	1.88	1.88	1.88	1.87	1.89	1.91	1.97	S	1.97	1.94	1.99	1.87	1.99	1.90	
May 7	2.04	1.87	1.89	1.88	1.87	1.87	1.89	1.92	1.92	1.95	1.90	1.91	1.89	1.88	1.88	1.86	1.86	1.86	1.91	S	1.91	1.86	1.91	1.96	1.86	2.04	1.90	
May 8	1.97	1.94	2.01	1.99	1.99	1.99	1.93	1.96	1.90	1.90	1.89	1.88	1.88	1.89	1.88	1.87	1.89	1.87	S	1.92	1.87	1.87	1.86	1.89	1.86	2.01	1.91	
May 9	2.10	2.10	2.01	2.38	2.04	2.00	1.98	1.91	1.93	1.91	1.87	1.88	1.87	1.87	1.86	1.86	1.86	S	1.87	1.88	1.88	1.89	1.92	1.93	1.86	2.38	1.95	
May 10	1.95	1.95	1.99	2.01	2.02	2.01	2.06	2.09	1.88	1.87	1.87	1.86	1.87	1.87	1.86	1.86	S	1.86	1.86	1.86	1.87	1.88	1.89	1.89	1.86	2.09	1.92	
May 11	1.90	1.91	1.92	1.98	2.00	2.02	2.02	1.99	1.89	1.88	1.87	1.87	1.87	1.87	1.86	S	1.87	1.86	1.87	1.88	1.87	1.91	2.12	2.04	1.86	2.12	1.92	
May 12	2.02	2.00	2.01	1.98	1.97	1.96	1.95	1.93	1.88	1.88	1.87	1.86	1.86	1.87	S	1.87	1.87	1.87	1.87	1.87	1.88	1.88	1.87	1.87	1.86	2.02	1.91	
May 13	1.89	1.91	1.98	2.03	1.93	1.97	2.02	1.90	1.88	1.86	1.86	1.87	1.86	S	1.86	1.86	1.85	1.90	1.87	1.87	1.90	1.92	1.95	1.85	2.03	1.90	1.90	
May 14	1.95	1.98	1.99	1.95	1.90	1.91	1.94	1.91	1.88	1.88	1.86	1.86	S	1.88	1.85	1.85	1.85	1.86	1.87	1.88	1.87	1.89	1.89	1.85	1.99	1.89	1.89	
May 15	1.87	1.91	1.99	2.19	2.37	2.14	2.04	1.92	1.95	1.96	1.88	S	1.85	1.85	1.85	1.85	1.86	1.87	1.89	1.84	1.84	1.86	1.84	1.85	1.84	2.37	1.93	
May 16	1.86	1.86	2.13	1.99	1.92	1.93	1.89	1.87	1.88	1.89	S	1.87	1.87	1.83	1.84	1.83	1.85	1.84	1.85	1.83	1.83	1.82	1.83	1.84	1.83	1.83	1.88	1.85
May 17	1.86	1.85	1.85	1.85	1.87	1.89	1.88	1.88	1.87	S	1.87	1.85	1.85	1.85	1.85	1.85	1.84	1.83	1.83	1.83	1.82	1.83	1.84	1.83	1.83	1.82	1.89	1.85
May 18	1.83	1.84	1.84	1.84	1.85	1.86	1.87	1.87	S	1.87	1.86	1.86	1.86	1.87	1.87	1.86	1.86	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86
May 19	1.87	1.87	1.87	1.87	1.87	1.86	1.86	S	1.87	1.87	1.88	1.88	1.88	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.86	1.88	1.87	
May 20	1.87	1.86	1.87	1.87	1.87	S	1.87	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.88	1.87	
May 21	1.88	2.00	2.00	1.91	1.91	S	1.89	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.88	1.96	1.91	1.86	2.00	1.89	
May 22	1.91	1.94	1.92	1.91	S	1.95	2.05	1.87	1.86	1.87	1.87	1.88	1.88	1.89	1.89	1.91	1.92	1.90	1.89	1.88	1.88	1.89	1.89	1.90	1.86	2.05	1.90	
May 23	1.92	1.92	1.91	S	1.91	1.91	1.90	1.90	1.89	1.88	1.89	1.88	1.89	1.89	1.89	1.89	1.89	1.88	1.89	1.89	1.90	1.91	1.93	1.93	1.88	1.93	1.90	
May 24	1.92	1.93	S	1.92	1.93	1.91	1.88	1.86	1.85	1.85	1.84	1.85	1.84	1.84	1.84	1.85	1.85	1.84	1.84	1.85	1.86	1.86	1.86	1.86	1.84	1.93	1.87	
May 25	1.86	S	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.85	1.86	1.86	1.86	1.86	1.86	1.88	1.89	1.90	1.88	1.88	1.85	1.90	1.87	
May 26	S	1.88	1.89	1.88	1.87	1.87	1.87	1.87	1.87	1.88	1.89	1.88	1.88	1.88	1.89	1.88	1.87	1.87	1.86	1.86	1.87	1.87	1.87	1.87	S	1.86	1.89	1.87
May 27	1.88	1.88	1.89	1.88	1.89	1.89	1.89	1.89	1.89	1.88	1.87	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	S	1.85	1.85	1.87	
May 28	1.86	1.86	1.87	1.87	1.86	1.85	1.84	1.83	1.83	1.82	1.83	1.83	1.84	1.84	1.86	1.85	1.85	1.87	1.88	1.88	1.87	S	1.86	1.86	1.82	1.88	1.85	
May 29	1.85	1.85	1.86	1.86	1.86	1.86	1.88	1.98	1.88	1.86	1.86	1.86	1.85	1.86	1.86	1.86	1.87	1.85	1.86	1.86	S	1.90	1.86	1.86	1.85	1.98	1.87	
May 30	1.87	1.89	1.92	1.92	1.94	1.95	1.95	1.93	1.97	1.90	1.87	1.86	1.86	1.86	1.86	1.86	1.85	1.85	1.85	S	1.87	1.88	1.90	1.96	1.85	1.97	1.89	
May 31	1.96	1.97	2.03	2.06	1.97	1.91	1.89	1.89	1.86	1.85	1.84	1.83	1.84	1.83	1.83	1.83	1.84	1.84	S	1.84	1.84	1.86	1.87	1.91	1.83	2.06	1.89	
Diurnal Maximum	2.10	2.10	2.13	2.38	2.37	2.14	2.06	2.09	2.05	1.96	1.91	1.91	1.90	1.90	1.91	1.92	1.90	1.91	1.92	1.90	1.91	1.97	1.92	2.12	2.04			
Diurnal Average	1.91	1.91	1.93	1.95	1.93	1.93	1.92	1.91	1.89	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.86	1.87	1.87	1.87	1.89	1.89	1.90			

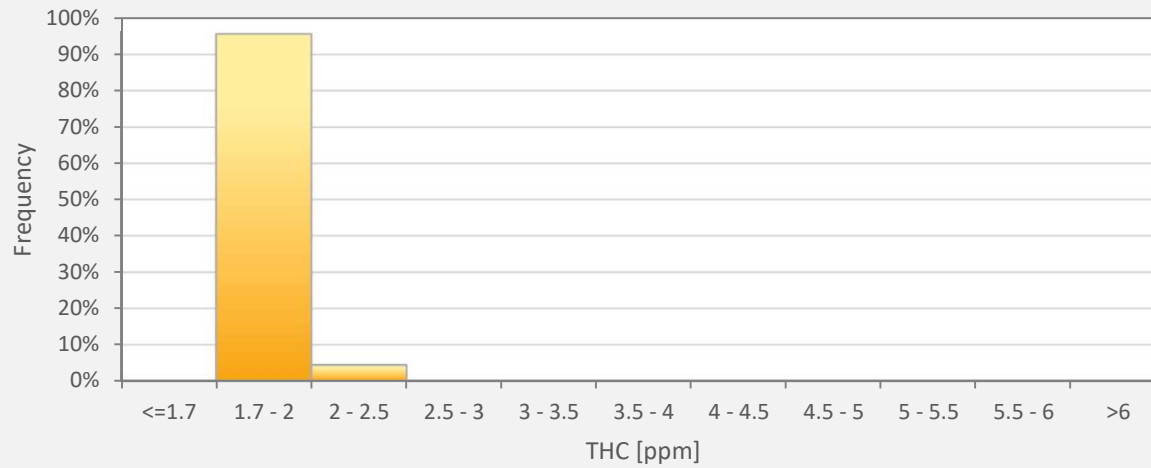
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction/Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for THC - Tamarack Site



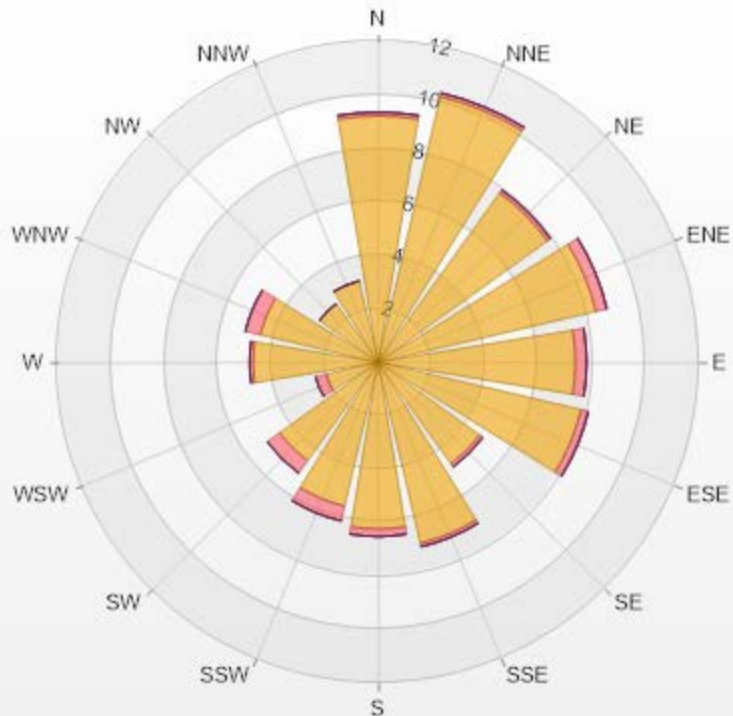
THC55[ppm] Histogram: Tamarack Monthly: 05-2021 1 Hr.



Classes	THC55
<=1.7	0.00%
1.7 - 2	95.61%
2 - 2.5	4.39%
2.5 - 3	0.00%
3 - 3.5	0.00%
3.5 - 4	0.00%
4 - 4.5	0.00%
4.5 - 5	0.00%
5 - 5.5	0.00%
5.5 - 6	0.00%
>6	0.00%

Wind: Tamarack Poll.: Tamarack-THC55[ppm] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	9.21	0.14	0	0	0	9.35
NNE	10.2	0.14	0	0	0	10.34
NE	7.79	0.14	0	0	0	7.93
ENE	8.36	0.42	0	0	0	8.78
E	7.37	0.42	0	0	0	7.79
ESE	7.79	0.28	0	0	0	8.07
SE	4.67	0.14	0	0	0	4.81
SSE	6.94	0.14	0	0	0	7.08
S	6.23	0.28	0	0	0	6.51
SSW	5.52	0.57	0	0	0	6.09
SW	4.53	0.57	0	0	0	5.1
WSW	1.98	0.42	0	0	0	2.4
W	4.67	0.14	0	0	0	4.81
WNW	4.53	0.57	0	0	0	5.1
NW	2.69	0	0	0	0	2.69
NNW	3.12	0	0	0	0	3.12
Summary	95.6	4.37	0	0	0	100



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% Icon Classes (ppm)

96 0-2

4 2-5

0 5-10

0 10-40

0 >40.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - May 2021 Summary of Hourly Averages

METHANE (CH4) in ppm

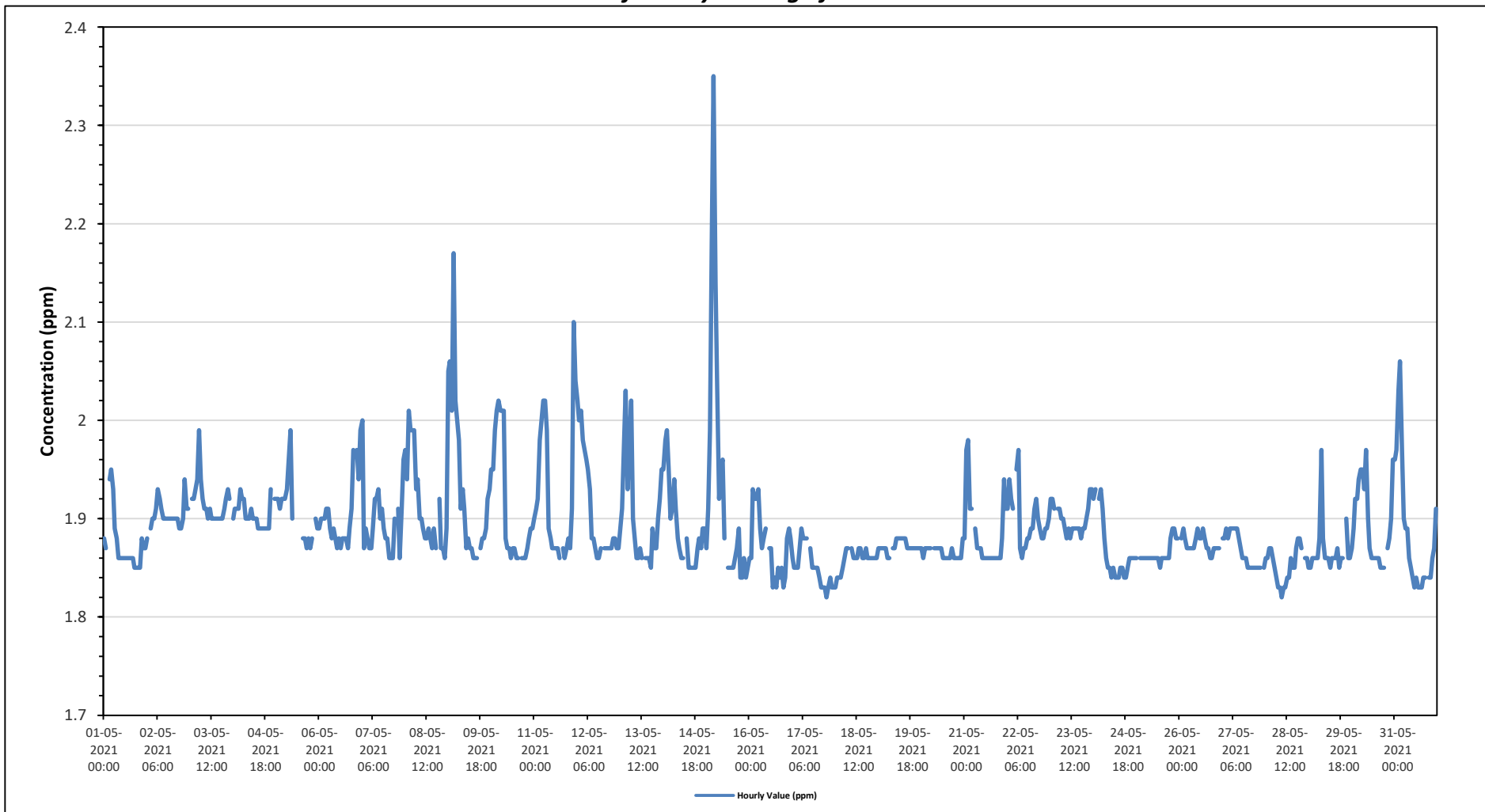
Maximum Hourly Value:	2.35 ppm on May 15 at hour 4	Hours in Service:	744
Maximum Daily Value:	1.93 ppm on May 9	Hours of Data:	706
Minimum Hourly Value:	1.82 ppm on May 17 at hour 19	Hours of Missing Data:	0
Minimum Daily Value:	1.85 ppm on May 17	Hours of Calibration:	38
Monthly Average:	1.89 ppm	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	1.88	1.87	S	1.94	1.95	1.93	1.89	1.88	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.88	1.87	1.87	1.85	1.95	1.87	
May 2	1.88	S	1.89	1.90	1.90	1.91	1.93	1.92	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.90	1.94	1.91	1.91	1.88	1.94	1.90	
May 3	S	1.92	1.92	1.93	1.94	1.99	1.94	1.92	1.91	1.91	1.90	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.91	1.92	1.93	1.92	S	1.90	1.99	1.92
May 4	1.90	1.91	1.91	1.91	1.93	1.92	1.92	1.90	1.90	1.90	1.91	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.93	S	1.92	1.89	1.93	1.90
May 5	1.92	1.92	1.91	1.92	1.92	1.92	1.93	1.96	1.99	1.90	C	C	C	C	C	1.88	1.88	1.87	1.88	1.87	1.88	S	1.90	1.89	1.87	1.99	1.91
May 6	1.89	1.90	1.90	1.90	1.91	1.91	1.89	1.88	1.89	1.88	1.87	1.88	1.87	1.88	1.88	1.88	1.87	1.89	1.91	1.97	S	1.97	1.94	1.99	1.87	1.99	1.90
May 7	2.00	1.87	1.89	1.88	1.87	1.87	1.89	1.92	1.92	1.93	1.90	1.91	1.89	1.88	1.88	1.86	1.86	1.86	1.90	S	1.91	1.86	1.91	1.96	1.86	2.00	1.90
May 8	1.97	1.94	2.01	1.99	1.99	1.99	1.93	1.94	1.90	1.90	1.89	1.88	1.88	1.89	1.88	1.87	1.89	1.87	S	1.92	1.87	1.87	1.86	1.89	1.86	2.01	1.91
May 9	2.05	2.06	2.01	2.17	2.02	2.00	1.98	1.91	1.93	1.91	1.87	1.88	1.87	1.87	1.86	1.86	1.86	S	1.87	1.88	1.88	1.89	1.92	1.93	1.86	2.17	1.93
May 10	1.95	1.95	1.99	2.01	2.02	2.01	2.01	2.01	1.88	1.87	1.87	1.86	1.87	1.87	1.86	1.86	S	1.86	1.86	1.86	1.87	1.88	1.89	1.89	1.86	2.02	1.91
May 11	1.90	1.91	1.92	1.98	2.00	2.02	2.02	1.99	1.89	1.88	1.87	1.87	1.87	1.87	1.86	S	1.87	1.86	1.87	1.88	1.87	1.91	2.10	2.04	1.86	2.10	1.92
May 12	2.02	2.00	2.01	1.98	1.97	1.96	1.95	1.93	1.88	1.88	1.87	1.86	1.86	1.87	S	1.87	1.87	1.87	1.87	1.87	1.88	1.88	1.87	1.87	1.86	2.02	1.91
May 13	1.89	1.91	1.98	2.03	1.93	1.97	2.02	1.90	1.88	1.86	1.86	1.87	1.86	S	1.86	1.86	1.85	1.89	1.87	1.87	1.90	1.92	1.95	1.85	2.03	1.90	
May 14	1.95	1.98	1.99	1.95	1.90	1.91	1.94	1.91	1.88	1.87	1.86	1.86	S	1.88	1.85	1.85	1.85	1.85	1.87	1.88	1.87	1.89	1.89	1.85	1.99	1.89	1.89
May 15	1.87	1.91	1.99	2.18	2.35	2.14	2.04	1.92	1.95	1.96	1.88	S	1.85	1.85	1.85	1.85	1.86	1.87	1.89	1.84	1.84	1.86	1.84	1.85	1.84	2.35	1.93
May 16	1.86	1.86	1.93	1.92	1.92	1.93	1.89	1.87	1.88	1.89	S	1.87	1.87	1.83	1.84	1.83	1.85	1.84	1.85	1.84	1.85	1.83	1.84	1.88	1.89	1.88	1.87
May 17	1.86	1.85	1.85	1.85	1.87	1.89	1.88	1.88	1.88	S	1.87	1.85	1.85	1.85	1.85	1.84	1.83	1.83	1.83	1.82	1.83	1.84	1.83	1.83	1.82	1.89	1.85
May 18	1.83	1.84	1.84	1.84	1.85	1.86	1.87	1.87	S	1.87	1.86	1.86	1.86	1.87	1.87	1.86	1.86	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86
May 19	1.87	1.87	1.87	1.87	1.87	1.86	1.86	S	1.87	1.87	1.88	1.88	1.88	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.86	1.88	1.87
May 20	1.87	1.86	1.87	1.87	1.87	S	1.87	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.88	1.87
May 21	1.88	1.97	1.98	1.91	1.91	S	1.89	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.88	1.94	1.91	1.86	1.98	1.88	
May 22	1.91	1.94	1.92	1.91	S	1.95	1.97	1.87	1.86	1.87	1.87	1.88	1.88	1.89	1.89	1.91	1.92	1.90	1.89	1.88	1.88	1.89	1.90	1.86	1.97	1.90	
May 23	1.92	1.92	1.91	S	1.91	1.91	1.90	1.90	1.89	1.88	1.89	1.88	1.89	1.89	1.89	1.89	1.89	1.88	1.89	1.89	1.90	1.91	1.93	1.93	1.88	1.93	1.90
May 24	1.92	1.93	S	1.92	1.93	1.91	1.88	1.86	1.85	1.85	1.84	1.84	1.84	1.84	1.84	1.85	1.85	1.84	1.84	1.85	1.86	1.86	1.86	1.86	1.84	1.93	1.87
May 25	1.86	S	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.85	1.86	1.86	1.86	1.86	1.86	1.88	1.89	1.89	1.88	1.88	1.85	1.89	1.86
May 26	S	1.88	1.89	1.88	1.87	1.87	1.87	1.87	1.87	1.88	1.89	1.88	1.88	1.89	1.88	1.87	1.87	1.86	1.86	1.87	1.87	1.87	1.87	S	1.86	1.89	1.87
May 27	1.88	1.88	1.89	1.88	1.89	1.89	1.89	1.89	1.89	1.88	1.87	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	S	1.85	1.89	1.87
May 28	1.86	1.86	1.87	1.87	1.86	1.85	1.84	1.83	1.83	1.82	1.83	1.83	1.84	1.84	1.86	1.85	1.85	1.87	1.88	1.88	1.87	S	1.86	1.86	1.82	1.88	1.85
May 29	1.85	1.85	1.86	1.86	1.86	1.86	1.88	1.97	1.88	1.86	1.86	1.86	1.85	1.86	1.86	1.86	1.87	1.85	1.86	1.86	S	1.90	1.86	1.86	1.85	1.97	1.87
May 30	1.87	1.89	1.92	1.92	1.94	1.95	1.95	1.93	1.97	1.90	1.87	1.86	1.86	1.86	1.86	1.86	1.85	1.85	1.85	S	1.87	1.88	1.90	1.96	1.85	1.97	1.89
May 31	1.96	1.97	2.03	2.06	1.97	1.90	1.89	1.89	1.86	1.85	1.84	1.83	1.84	1.83	1.83	1.84	1.84	1.84	S	1.84	1.84	1.86	1.87	1.91	1.83	2.06	1.89
Diurnal Maximum	2.05	2.06	2.03	2.18	2.35	2.14	2.04	2.01	1.99	1.96	1.91	1.91	1.90	1.90	1.91	1.92	1.90	1.91	1.92	1.90	1.91	1.97	1.92	2.10	2.04		
Diurnal Average	1.91	1.91	1.92	1.94	1.93	1.93	1.92	1.90	1.89	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.86	1.87	1.87	1.87	1.89	1.89	1.90		

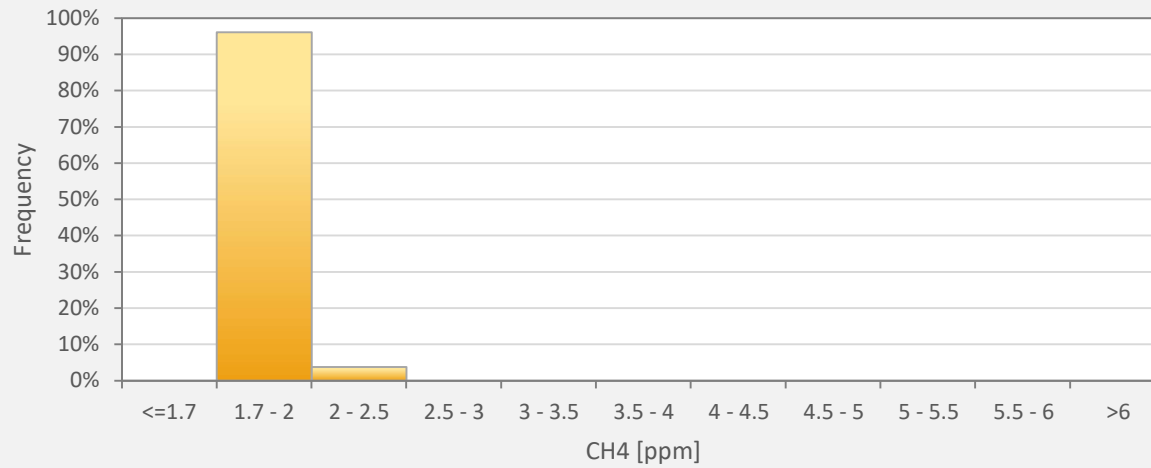
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction/Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for CH4 - Tamarack Site



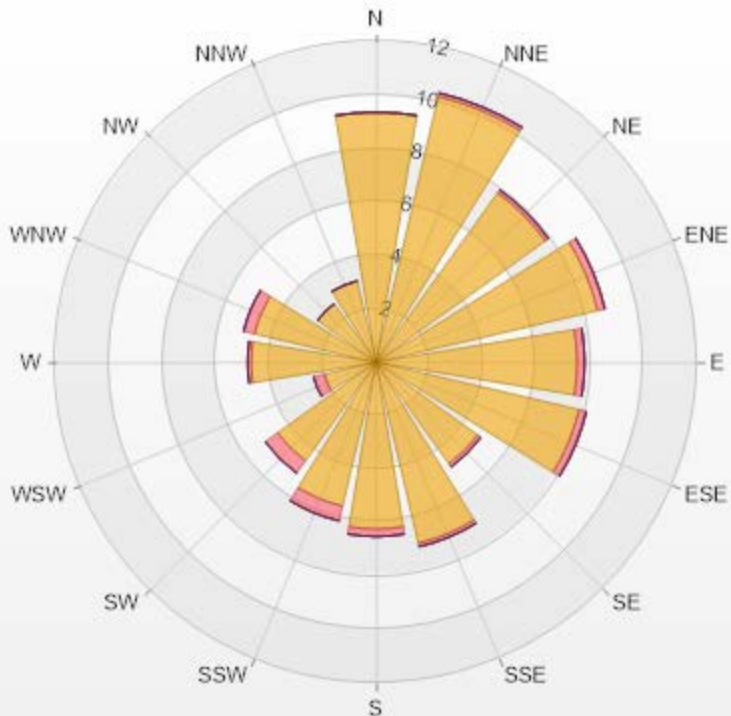
CH4[ppm] Histogram: Tamarack Monthly: 05-2021 1 Hr.



Classes	CH4
<=1.7	0.00%
1.7 - 2	96.18%
2 - 2.5	3.82%
2.5 - 3	0.00%
3 - 3.5	0.00%
3.5 - 4	0.00%
4 - 4.5	0.00%
4.5 - 5	0.00%
5 - 5.5	0.00%
5.5 - 6	0.00%
>6	0.00%

Wind: Tamarack Poll.: Tamarack-CH4[ppm] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	9.35	0	0	0	0	9.35
NNE	10.2	0.14	0	0	0	10.34
NE	7.79	0.14	0	0	0	7.93
ENE	8.5	0.28	0	0	0	8.78
E	7.51	0.28	0	0	0	7.79
ESE	7.79	0.28	0	0	0	8.07
SE	4.67	0.14	0	0	0	4.81
SSE	6.94	0.14	0	0	0	7.08
S	6.23	0.28	0	0	0	6.51
SSW	5.52	0.57	0	0	0	6.09
SW	4.53	0.57	0	0	0	5.1
WSW	1.98	0.42	0	0	0	2.4
W	4.67	0.14	0	0	0	4.81
WNW	4.67	0.42	0	0	0	5.09
NW	2.69	0	0	0	0	2.69
NNW	3.12	0	0	0	0	3.12
Summary	96.16	3.8	0	0	0	100



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% Icon Classes (ppm)

96 0-2

4 2-5

0 5-10

0 10-20

0 >20.0



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Tamarack Site - May 2021 Summary of Hourly Averages

NON-METHANE HYDROCARBONS (NMHC) in ppm

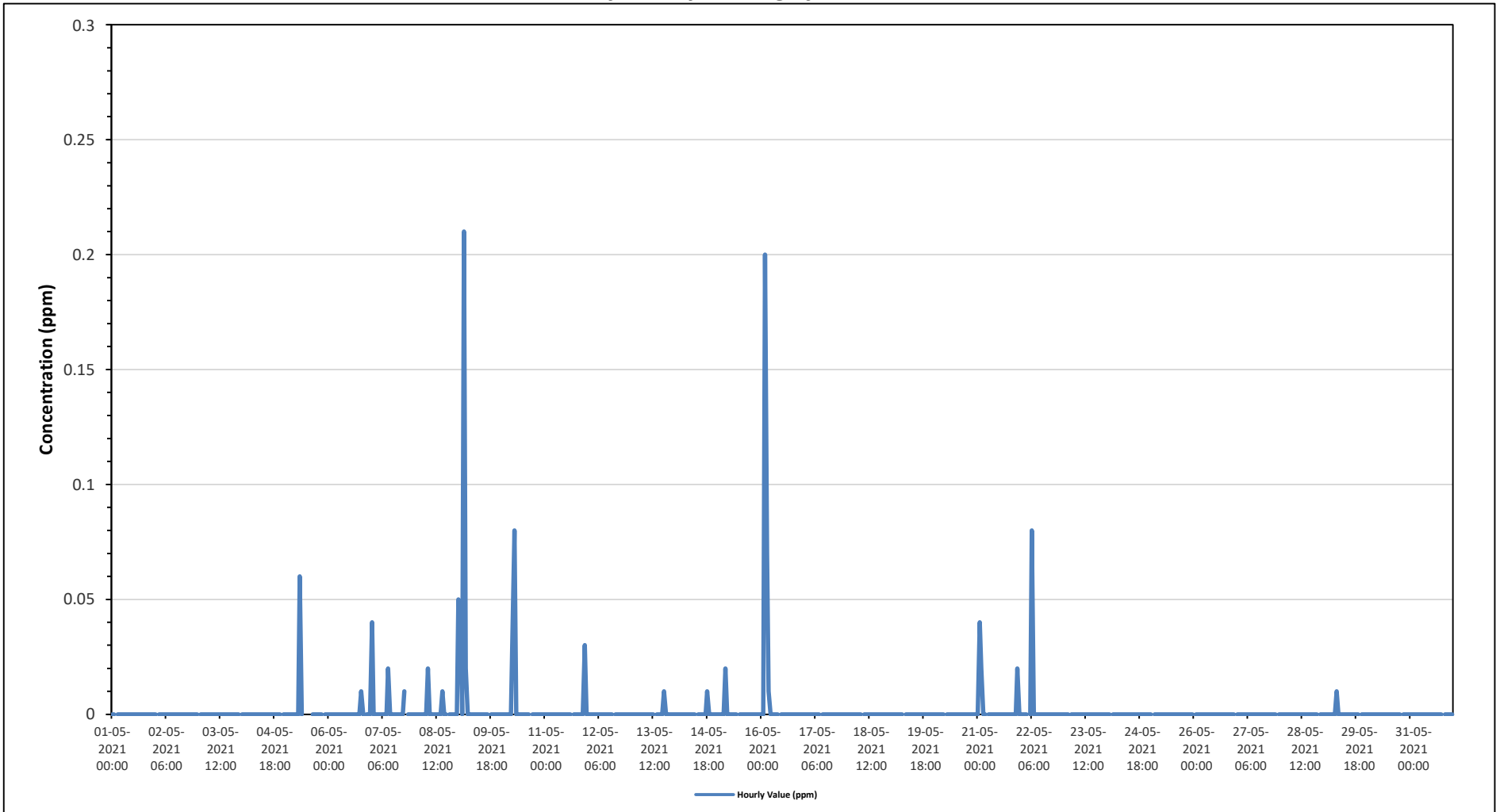
Maximum Hourly Value: 0.21 ppm on May 9 at hour 3	Hours in Service: 744
Maximum Daily Value: 0.01 ppm on May 9	Hours of Data: 706
Minimum Hourly Value: 0.00 ppm on May 1 at hour 0	Hours of Missing Data: 0
Minimum Daily Value: 0.00 ppm on May 1	Hours of Calibration: 38
Monthly Average: 0.00 ppm	Operational Uptime: 100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23						
May 1	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May 2	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 3	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	
May 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	C	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 7	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 9	0.05	0.04	0.00	0.21	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
May 10	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	
May 12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 15	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 16	0.00	0.00	0.20	0.07	0.01	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 20	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 21	0.00	0.04	0.02	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 22	0.00	0.00	0.00	0.00	S	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 23	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 24	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 25	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 26	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	
May 28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
May 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May 31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diurnal Maximum	0.05	0.04	0.20	0.21	0.02	0.00	0.08	0.08	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	
Diurnal Average	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

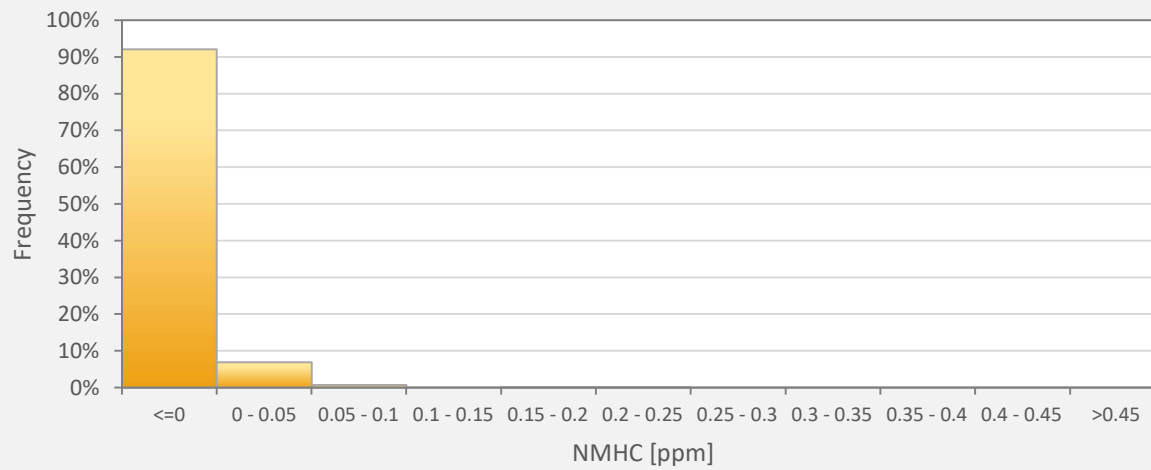
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance	
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance	P Power Failure
X Invalid Data (Equipment Malfunction/Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)		

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NMHC - Tamarack Site



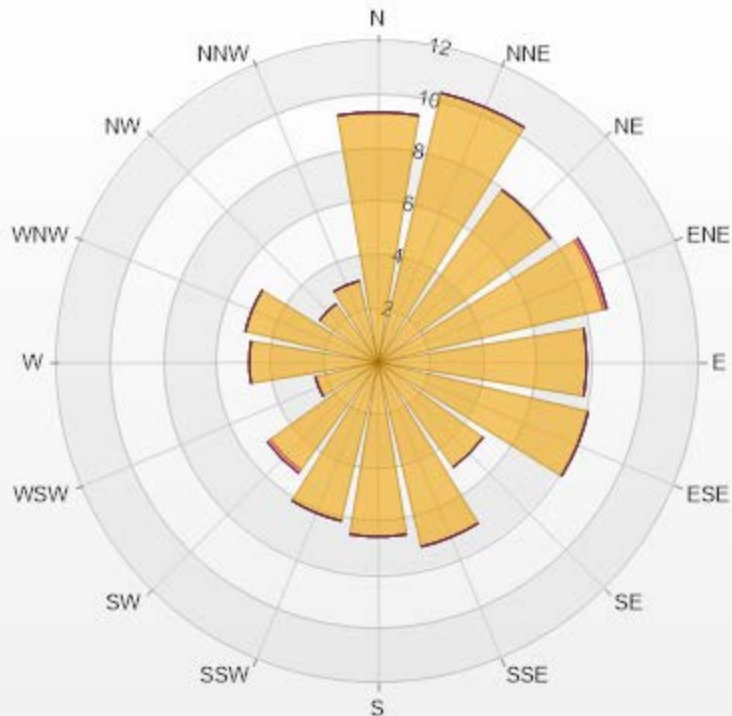
NMHC[ppm] Histogram: Tamarack Monthly: 05-2021 1 Hr.



Classes	NMHC
<=0	92.07%
0 - 0.05	6.94%
0.05 - 0.1	0.71%
0.1 - 0.15	0.00%
0.15 - 0.2	0.14%
0.2 - 0.25	0.14%
0.25 - 0.3	0.00%
0.3 - 0.35	0.00%
0.35 - 0.4	0.00%
0.4 - 0.45	0.00%
>0.45	0.00%

Wind: Tamarack Poll.: Tamarack-NMHC[ppm] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	9.35	0	0	0	0	9.35
NNE	10.34	0	0	0	0	10.34
NE	7.93	0	0	0	0	7.93
ENE	8.64	0.14	0	0	0	8.78
E	7.79	0	0	0	0	7.79
ESE	8.07	0	0	0	0	8.07
SE	4.82	0	0	0	0	4.82
SSE	7.08	0	0	0	0	7.08
S	6.52	0	0	0	0	6.52
SSW	6.09	0	0	0	0	6.09
SW	4.96	0.14	0	0	0	5.1
WSW	2.41	0	0	0	0	2.41
W	4.82	0	0	0	0	4.82
WNW	5.1	0	0	0	0	5.1
NW	2.69	0	0	0	0	2.69
NNW	3.12	0	0	0	0	3.12
Summary	100	0.28	0	0	0	100





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% Icon Classes (ppm)

100  0-0.1

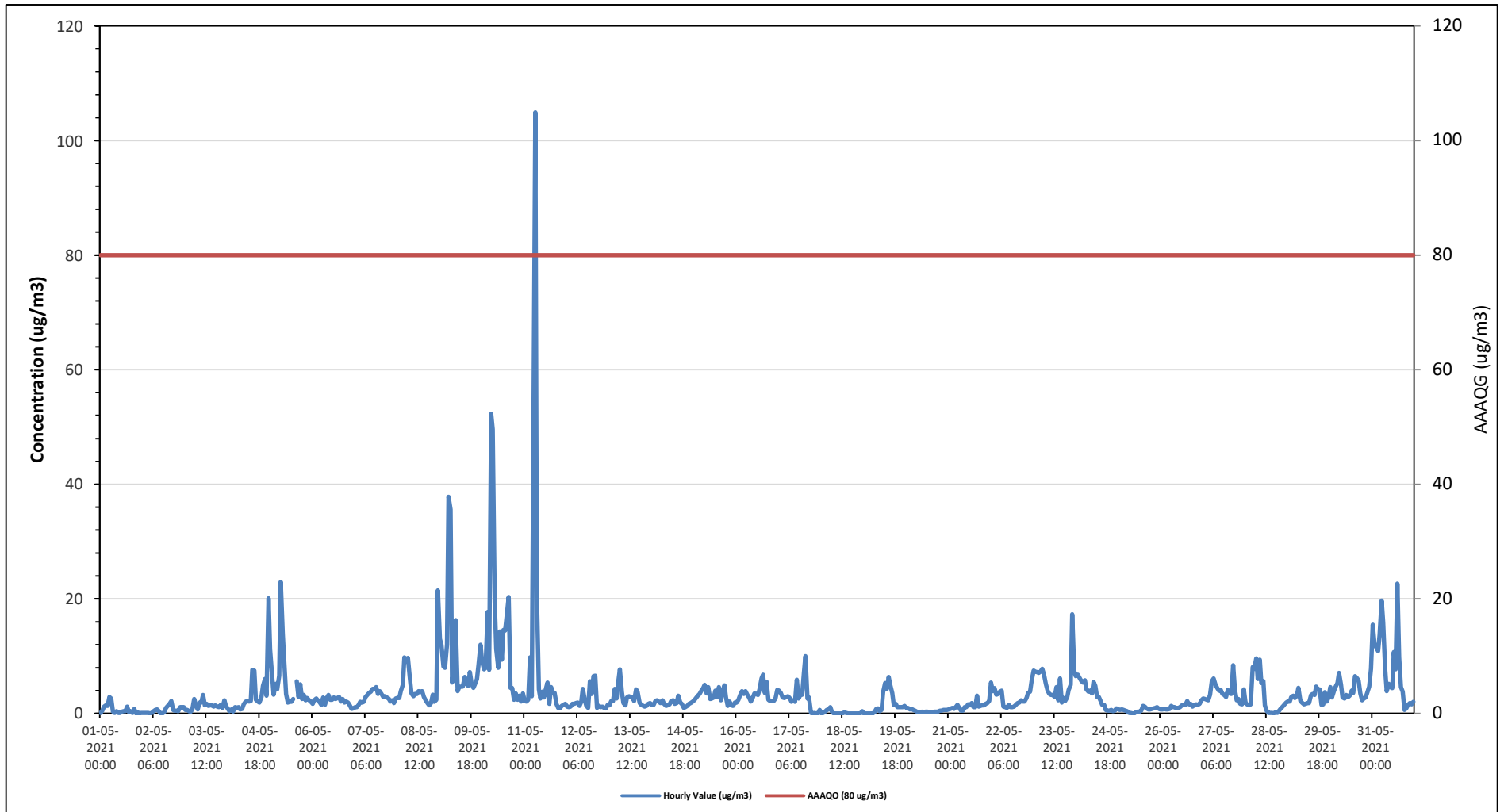
0  0.1-0.3

0  0.3-0.9

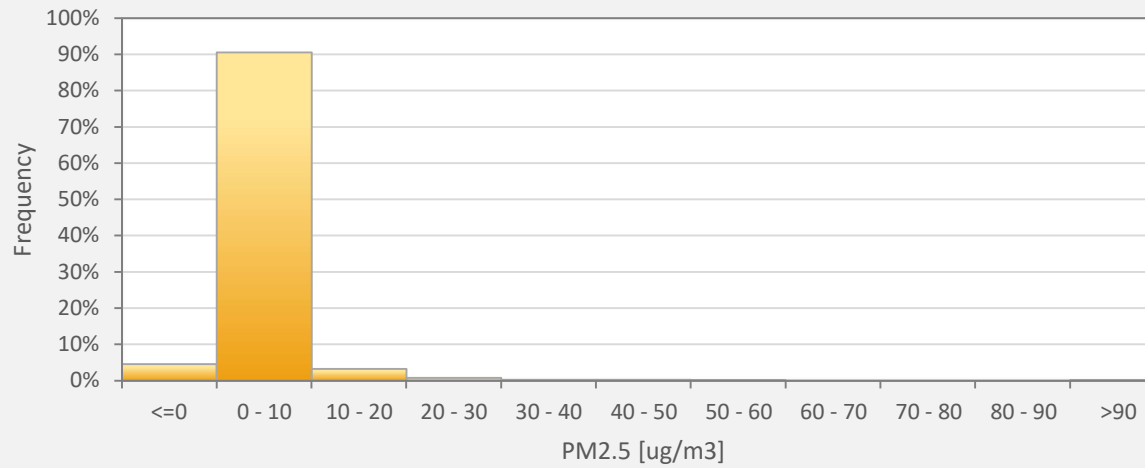
0  0.9-2

0  >2.0

Timeseries Chart of Hourly Average for PM2.5 - Tamarack Site



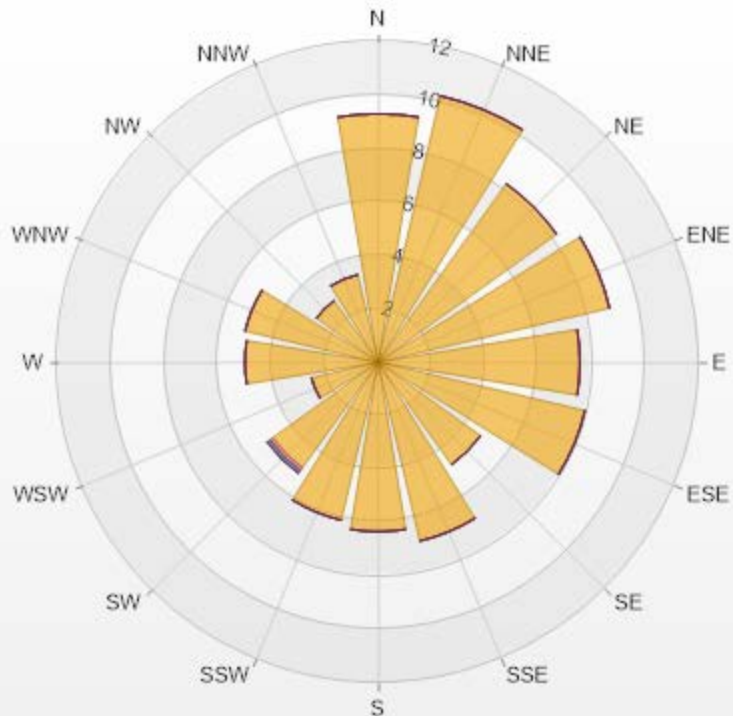
PM2.5[ug/m3(L)] Histogram: Tamarack Monthly: 05-2021 1 Hr.



Classes	PM2.5
<=0	4.58%
0 - 10	90.58%
10 - 20	3.23%
20 - 30	0.81%
30 - 40	0.27%
40 - 50	0.27%
50 - 60	0.13%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.13%

Wind: Tamarack Poll.: Tamarack-PM2.5[ug/m3(L)] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 99.87% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	9.29	0	0	0	0	9.29
NNE	10.23	0	0	0	0	10.23
NE	8.21	0	0	0	0	8.21
ENE	8.88	0	0	0	0	8.88
E	7.54	0	0	0	0	7.54
ESE	7.94	0	0	0	0	7.94
SE	4.71	0	0	0	0	4.71
SSE	6.86	0	0	0	0	6.86
S	6.33	0	0	0	0	6.33
SSW	6.06	0	0	0	0	6.06
SW	4.85	0.13	0.13	0	0	5.11
WSW	2.56	0	0	0	0	2.56
W	4.98	0	0	0	0	4.98
WNW	5.11	0	0	0	0	5.11
NW	2.83	0	0	0	0	2.83
NNW	3.36	0	0	0	0	3.36
Summary	100	0.13	0.13	0	0	100



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% Icon Classes (ug/m3(L))

100 0-50

0 50-80

0 80-120

0 120-240

0 >240.0



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Tamarack Site - May 2021 Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

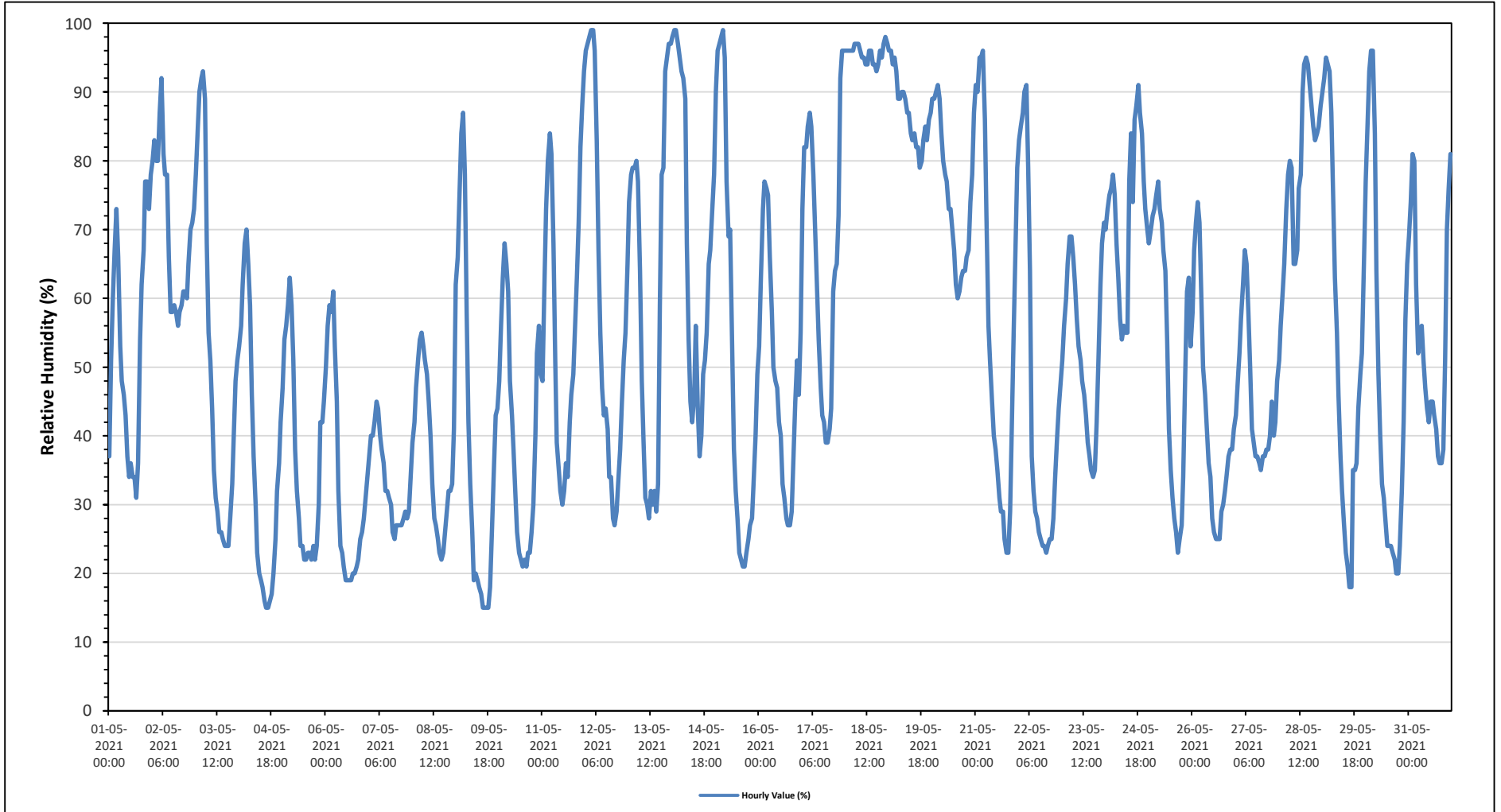
Maximum Hourly Value:	99 %	on May 12 at hour 3	Hours in Service:	744
Maximum Daily Value:	95.6 %	on May 18	Hours of Data:	744
Minimum Hourly Value:	15 %	on May 4 at hour 15	Hours of Missing Data:	0
Minimum Daily Value:	32.7 %	on May 6	Hours of Calibration:	0
Monthly Average:	54.8 %		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	37	51	60	67	73	66	53	48	46	43	37	34	36	34	34	31	36	54	62	67	77	77	73	78	31	78	53.1
May 2	80	83	80	80	87	92	81	78	78	66	58	58	59	58	56	58	59	61	61	60	65	70	71	73	56	92	69.7
May 3	78	85	90	92	93	89	68	55	51	44	35	31	29	26	26	25	24	24	24	28	33	40	48	51	24	93	49.5
May 4	53	56	62	68	70	65	59	46	37	30	23	20	19	18	16	15	15	16	17	20	25	32	36	42	15	70	35.8
May 5	47	54	56	59	63	59	51	38	32	28	24	24	22	22	23	23	22	24	22	24	30	42	42	45	22	63	36.5
May 6	50	56	59	58	61	53	45	32	24	23	21	19	19	19	19	20	20	21	22	25	26	28	31	34	19	61	32.7
May 7	37	40	40	42	45	44	40	38	36	32	32	31	30	26	25	27	27	27	27	28	29	28	29	34	25	45	33.1
May 8	39	42	47	51	54	55	53	51	49	45	40	33	28	27	25	23	22	23	26	29	32	32	33	41	22	55	37.5
May 9	62	66	74	84	87	78	58	42	33	26	19	20	19	18	17	15	15	15	15	18	27	34	43	44	15	87	38.7
May 10	48	56	63	68	65	61	48	43	38	31	26	23	22	21	22	21	23	23	26	30	40	52	56	49	21	68	39.8
May 11	48	61	73	80	84	81	68	51	39	35	32	30	32	36	34	42	46	49	55	63	71	82	88	93	30	93	57.2
May 12	96	97	98	99	99	96	83	67	55	47	43	44	41	34	34	28	27	29	33	38	45	51	55	65	27	99	58.5
May 13	74	78	79	79	80	77	64	48	39	31	30	28	32	30	32	29	33	59	78	79	93	95	97	97	28	97	60.9
May 14	98	99	99	97	95	93	92	89	68	54	45	42	46	56	44	37	40	49	51	55	65	67	73	78	37	99	68.0
May 15	90	96	97	98	99	95	77	69	70	53	38	32	28	23	22	21	21	23	25	27	28	33	40	49	21	99	52.3
May 16	53	63	73	77	76	75	66	58	50	48	47	42	40	33	31	28	27	27	29	37	45	51	46	55	27	77	49.0
May 17	73	82	82	85	87	85	78	70	62	54	47	43	42	39	39	41	44	61	64	65	72	92	96	96	39	96	66.6
May 18	96	96	96	96	96	97	97	97	96	95	95	94	94	96	96	94	94	93	94	96	95	97	98	97	93	98	95.6
May 19	96	96	94	95	93	89	89	90	90	89	87	87	84	83	84	82	82	79	80	83	85	83	86	87	79	96	87.2
May 20	89	89	90	91	89	84	80	78	77	73	73	70	67	62	60	61	63	64	64	66	67	74	78	87	60	91	74.8
May 21	91	90	95	95	96	86	72	56	51	45	40	38	35	31	29	29	25	23	23	29	42	55	67	79	23	96	55.1
May 22	83	85	87	90	91	79	64	37	32	29	28	26	25	24	24	23	24	25	25	28	34	40	44	48	23	91	45.6
May 23	51	56	60	65	69	69	66	62	57	53	51	48	46	43	39	37	35	34	35	42	51	62	68	71	34	71	52.9
May 24	70	73	75	76	78	75	68	63	57	54	56	55	55	77	84	74	86	88	91	87	84	77	73	70	54	91	72.8
May 25	68	70	72	73	75	77	73	71	67	64	54	41	35	31	28	26	23	25	27	34	49	61	63	53	23	77	52.5
May 26	58	67	71	74	71	59	50	46	41	36	34	28	26	25	25	25	29	30	32	34	37	38	38	41	25	74	42.3
May 27	43	47	52	57	62	67	65	58	50	41	39	37	37	36	35	37	37	38	38	40	45	40	42	48	35	67	45.5
May 28	51	56	61	65	73	78	80	79	65	65	67	76	78	90	94	95	94	91	88	85	83	84	85	88	51	95	78.0
May 29	90	92	95	94	93	87	75	63	55	46	37	32	27	23	21	18	18	35	35	36	44	49	52	65	18	95	53.4
May 30	77	85	93	96	96	84	64	49	40	33	31	28	24	24	24	23	22	20	20	24	32	42	57	65	20	96	48.0
May 31	69	74	81	80	62	52	55	56	51	47	44	42	45	45	43	41	37	36	36	38	51	70	76	81	36	81	54.7
Diurnal Maximum	98	99	99	99	99	97	97	97	96	95	95	94	94	96	96	95	94	93	94	96	95	97	98	97			
Diurnal Average	67.6	72.3	75.9	78.4	79.4	75.7	67.2	59.0	52.8	47.1	43.0	40.5	39.4	39.0	38.2	37.1	37.7	40.8	42.7	45.6	51.7	57.4	60.8	64.6			

C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for RH - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - May 2021 Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

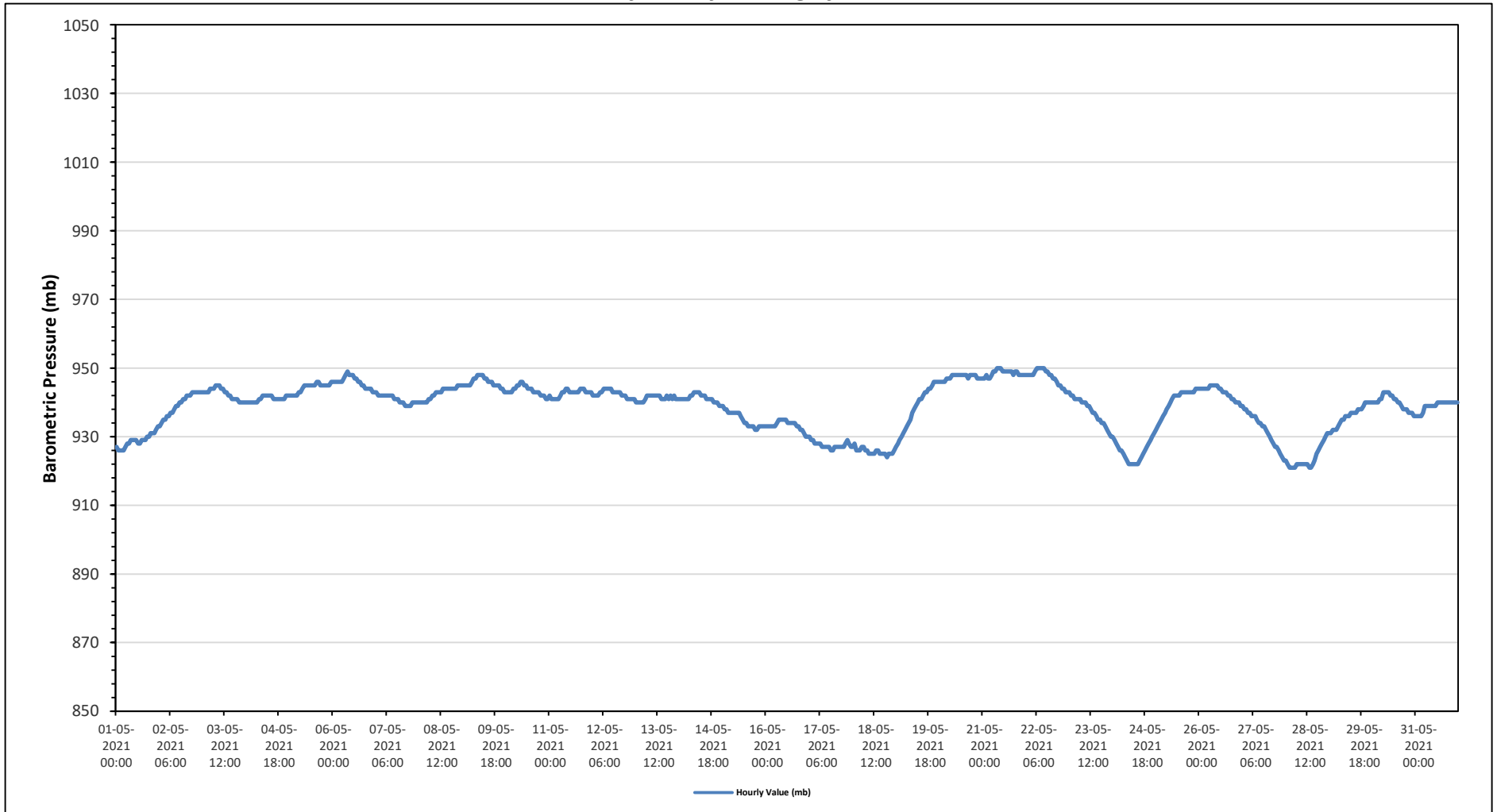
Maximum Hourly Value:	950 mb on May 21 at hour 8	Hours in Service:	744
Maximum Daily Value:	949 mb on May 21	Hours of Data:	744
Minimum Hourly Value:	921 mb on May 28 at hour 2	Hours of Missing Data:	0
Minimum Daily Value:	924 mb on May 28	Hours of Calibration:	0
Monthly Average:	939 mb	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
May 1	927	926	926	926	926	927	928	928	929	929	929	929	928	928	929	929	929	930	930	931	931	931	932	933	926	933	929	
May 2	933	934	935	935	936	936	937	937	938	939	939	940	940	941	941	942	942	942	943	943	943	943	943	943	943	943	943	939
May 3	943	943	943	943	944	944	944	945	945	945	944	944	943	943	942	942	941	941	941	941	940	940	940	940	940	940	945	943
May 4	940	940	940	940	940	940	940	941	941	942	942	942	942	942	942	941	941	941	941	941	941	941	942	942	940	942	941	
May 5	942	942	942	942	942	943	943	944	945	945	945	945	945	945	945	946	946	945	945	945	945	945	945	945	946	946	944	
May 6	946	946	946	946	946	946	947	948	949	948	948	948	947	947	946	946	945	945	944	944	944	944	943	943	943	949	946	
May 7	943	942	942	942	942	942	942	942	942	941	941	941	940	940	940	939	939	939	939	939	940	940	940	940	939	943	941	
May 8	940	940	940	940	940	941	941	942	942	943	943	943	943	944	944	944	944	944	944	944	944	945	945	945	940	945	943	
May 9	945	945	945	945	945	946	947	947	948	948	948	948	947	947	946	946	945	945	945	945	945	944	944	943	943	948	946	
May 10	943	943	943	943	944	944	945	945	946	946	945	945	944	944	944	943	943	943	942	942	942	941	941	941	941	946	944	
May 11	942	941	941	941	941	941	942	943	943	944	944	943	943	943	943	943	943	944	944	944	943	943	943	943	941	944	943	
May 12	942	942	942	942	943	943	944	944	944	944	944	943	943	943	943	942	942	942	941	941	941	941	941	941	941	944	943	
May 13	940	940	940	940	940	941	942	942	942	942	942	942	942	941	941	941	942	941	942	941	942	941	941	941	940	942	941	
May 14	941	941	941	941	941	941	942	942	943	943	943	943	942	942	942	941	941	941	941	940	940	940	939	939	939	943	941	
May 15	939	938	938	937	937	937	937	937	937	937	936	935	934	934	933	933	933	933	932	932	933	933	933	933	932	939	935	
May 16	933	933	933	933	933	933	934	935	935	935	935	935	934	934	934	934	933	933	932	932	931	930	930	930	930	935	933	
May 17	930	929	929	928	928	928	928	927	927	927	927	926	926	927	927	927	927	927	927	927	928	929	928	927	926	930	928	
May 18	927	928	926	926	926	927	927	926	926	925	925	925	925	926	926	925	925	925	925	924	925	925	925	926	924	928	926	
May 19	927	928	929	930	931	932	933	934	935	937	938	939	940	941	941	942	943	943	944	944	945	946	946	946	927	946	938	
May 20	946	946	946	946	947	947	947	948	948	948	948	948	948	948	948	947	948	948	948	948	948	947	947	947	946	948	947	
May 21	947	947	948	947	947	948	949	949	950	950	950	949	949	949	949	949	948	949	948	948	948	948	948	948	947	950	949	
May 22	948	948	948	948	948	949	950	950	950	950	950	949	949	948	948	947	947	946	945	945	944	944	943	943	943	950	947	
May 23	943	942	942	941	941	941	941	940	940	940	939	939	938	937	937	936	935	935	934	934	933	932	931	930	930	943	938	
May 24	930	929	928	927	926	926	925	924	923	922	922	922	922	922	922	923	924	925	926	927	928	929	930	931	922	931	926	
May 25	932	933	934	935	936	937	938	939	940	941	942	942	942	942	943	943	943	943	943	943	943	943	944	944	932	944	940	
May 26	944	944	944	944	944	944	945	945	945	945	945	944	944	943	943	943	942	942	941	941	940	940	940	939	939	945	943	
May 27	939	938	938	937	937	936	936	936	935	934	934	933	933	932	931	930	929	928	927	927	926	925	924	923	923	939	932	
May 28	923	922	921	921	921	921	922	922	922	922	922	922	922	921	921	922	923	925	926	927	928	929	930	931	921	931	924	
May 29	931	931	932	932	932	933	934	935	935	936	936	936	936	937	937	937	937	938	938	938	939	940	940	940	940	940	936	
May 30	940	940	940	940	941	941	943	943	943	943	942	942	941	941	940	940	939	938	938	938	937	937	936	936	936	943	940	
May 31	936	936	936	936	937	939	939	939	939	939	939	940	940	940	940	940	940	940	940	940	940	940	940	940	936	940	939	
Diurnal Maximum	948	948	948	948	948	949	950	950	950	950	950	949	949	949	949	949	948	949	948	948	948	948	948	948	948	948	948	
Diurnal Average	938	938	938	938	938	939	939	939	940	940	940	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	

C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRIM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for BP - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - May 2021 Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

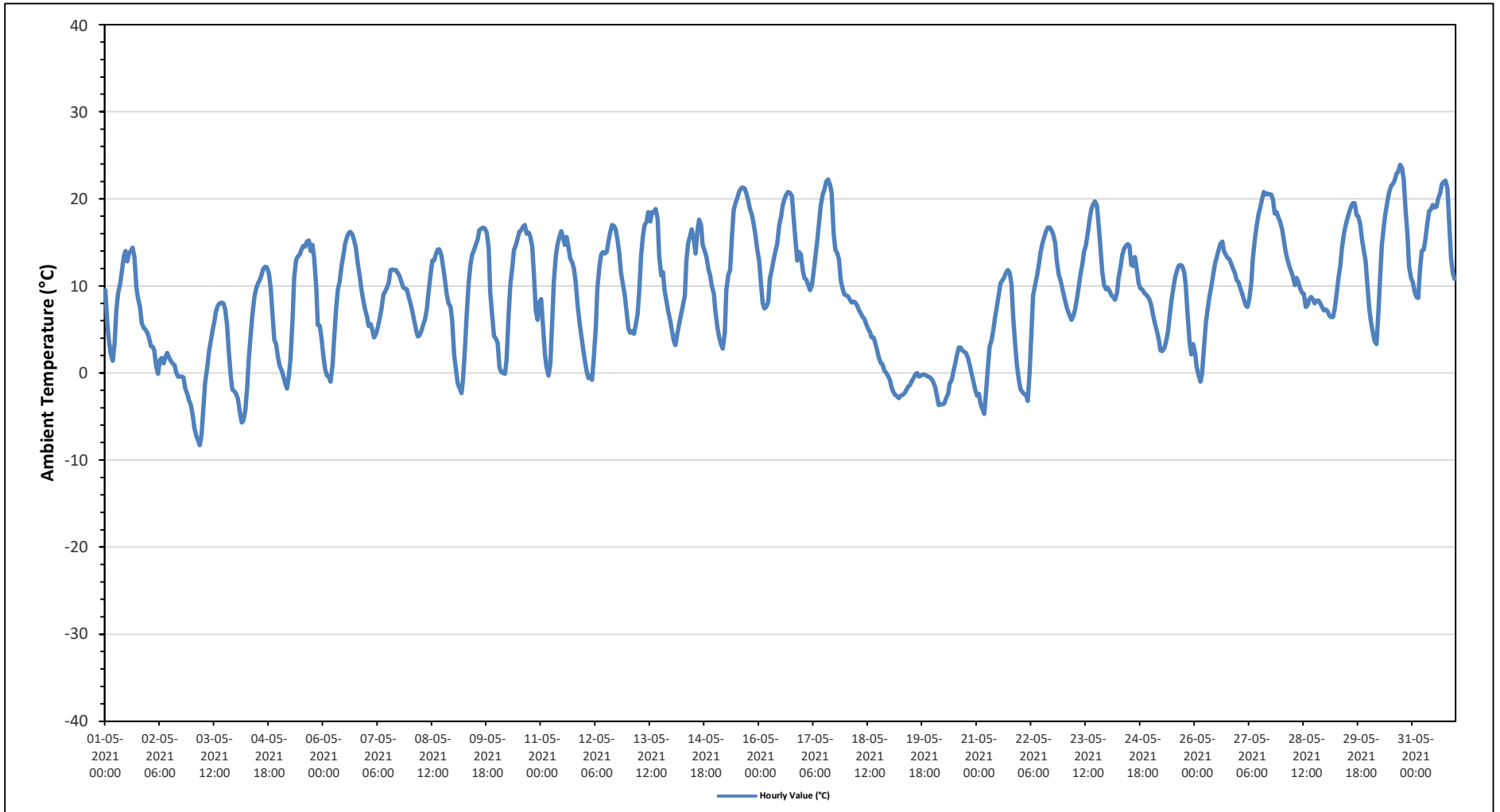
Maximum Hourly Value:	23.9 °C	on May 30 at hour 17	Hours in Service:	744
Maximum Daily Value:	16.1 °C	on May 31	Hours of Data:	744
Minimum Hourly Value:	-8.3 °C	on May 3 at hour 4	Hours of Missing Data:	0
Minimum Daily Value:	-1.3 °C	on May 19	Hours of Calibration:	0
Monthly Average:	9.0 °C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	9.5	5.8	3.7	2.2	1.4	3.3	7.2	9.2	10.2	11.5	13.3	14	12.8	13.8	14	14.4	13.3	9.8	8.6	7.6	5.7	5.2	5	4.6	1.4	14.4	8.6
May 2	4.1	3.1	3	2.6	0.7	-0.1	1.5	1.7	1.1	1.8	2.3	1.8	1.4	1.1	0.9	0.1	-0.4	-0.4	-0.4	-0.5	-1.8	-2.4	-3.1	-3.7	-3.7	4.1	0.6
May 3	-4.8	-6.3	-7.2	-7.8	-8.3	-7.1	-3.7	-1.1	0.5	2.4	3.6	4.8	6	7.1	7.8	8	8.1	8	7.3	5.6	2.5	-0.4	-1.9	-2.1	-8.3	8.1	0.9
May 4	-2.4	-3	-4.4	-5.7	-5.5	-4.3	-1.8	1.7	4.3	6.7	8.8	9.6	10.3	10.7	11.3	12	12.2	12.1	11.4	9.7	6.7	3.8	3.3	1.9	-5.7	12.2	4.6
May 5	0.8	0.3	-0.3	-1.2	-1.8	-0.4	1.8	6.3	10.9	13	13.4	13.6	14.2	14.6	14.5	15.1	15.2	14	14.7	13.1	9.8	5.5	5.4	3.9	-1.8	15.2	8.2
May 6	1.9	0.4	-0.3	-0.4	-1	0.9	3.8	7.4	9.6	10.5	12.2	13.6	14.8	15.6	16.1	16.2	15.9	15.2	14.3	12.6	11.1	9.7	8.3	7.3	-1.0	16.2	9.0
May 7	6.5	5.4	5.6	5	4.1	4.5	5.3	6.2	7.3	9	9.3	9.8	10.4	11.8	11.9	11.8	11.8	11.5	11.1	10.5	9.8	9.7	9.6	8.8	4.1	11.9	8.6
May 8	7.9	7.2	6	5	4.2	4.3	4.8	5.5	6.1	7.4	9.2	11.2	12.9	12.9	13.6	14.2	14.2	13.5	12.1	10.6	9	8	7.6	6.1	4.2	14.2	8.9
May 9	2.1	0.4	-1.2	-1.7	-2.3	-0.7	3.1	7	10.3	12.4	13.6	14.1	14.7	15.4	16.4	16.6	16.7	16.6	16.1	14.3	9.2	6.4	4.2	4	-2.3	16.7	8.7
May 10	3.5	0.7	0.1	0	-0.1	1.5	6.6	10.2	12.2	14.1	14.7	15.5	16.2	16.4	16.8	17	16	16.1	15.7	14.5	11.1	7.2	6.1	8.2	-0.1	17.0	10.0
May 11	8.5	5.5	2.1	0.7	-0.3	1	5.6	10.5	13.5	14.7	15.6	16.3	15.6	14.7	15.6	14.5	13.2	12.7	12	10.4	7.9	5.8	4.5	2.8	-0.3	16.3	9.3
May 12	1.4	0.2	-0.6	-0.3	-0.8	1.7	5.3	9.7	12.2	13.6	13.9	13.7	13.9	15	16.2	17	16.9	16.5	15.3	13.8	11.5	10.1	9.1	7	-0.8	17.0	9.7
May 13	5.1	4.6	4.8	4.5	5.4	6.7	9.6	13.5	15.7	17	17.4	18.5	17.4	18.5	18.4	18.8	17.7	13.5	11.2	11.6	9.5	8.2	7	6.1	4.5	18.8	11.7
May 14	4.9	3.6	3.2	4.6	5.7	6.7	7.7	8.9	12.9	14.9	15.8	16.5	15.4	13.7	16.2	17.6	16.9	14.7	14	13.3	11.9	11.3	10	9.1	3.2	17.6	11.2
May 15	7.1	5.2	4.1	3.3	2.8	4.6	9.5	11.3	11.8	15.6	18.7	19.5	20.1	20.8	21.2	21.3	21.2	20.6	19.8	18.8	18.1	17.2	15.7	14.1	2.8	21.3	14.3
May 16	12.9	10.4	8	7.4	7.6	8.2	10.8	11.9	13	14.1	14.8	17	17.9	19.3	20	20.5	20.8	20.7	20.3	18	15.2	12.9	13.9	13.6	7.4	20.8	14.6
May 17	11.7	10.9	10.7	10.1	9.5	10	11.6	13.3	15.1	17.4	19.2	20.5	21.1	22	22.2	21.6	20.7	16	14.1	13.8	13	10.6	9.6	9	9.0	22.2	14.7
May 18	8.9	8.8	8.4	8.1	8.2	8.1	7.7	7.2	6.9	6.4	6.2	5.6	5.1	4.7	4.1	4.1	3.4	2.6	1.7	1.1	1	0.3	0	-0.3	-0.3	8.9	4.9
May 19	-0.8	-1.7	-2.2	-2.5	-2.7	-2.9	-2.6	-2.5	-2.3	-2	-1.6	-1.4	-1	-0.6	-0.2	0	-0.4	-0.3	-0.2	-0.2	-0.3	-0.4	-0.5	-0.7	-2.9	0.0	-1.3
May 20	-1.1	-1.6	-2.8	-3.7	-3.6	-3.6	-3.5	-2.9	-2.4	-1.2	-0.8	0.2	1.1	2.1	2.9	2.9	2.6	2.4	2.3	1.7	0.9	-0.2	-0.9	-2	-3.7	2.9	-0.5
May 21	-2.6	-2.4	-3.6	-4.2	-4.7	-2.2	0.9	3	3.8	5	6.5	7.7	9.2	10.3	10.7	11	11.5	11.8	11.5	10.2	6.3	3.1	1	-0.8	-4.7	11.8	4.3
May 22	-1.9	-2.2	-2.4	-2.6	-3.2	-0.1	5	8.9	10.1	11.1	12.5	13.8	14.9	15.6	16.3	16.7	16.7	16.4	15.9	14.9	12.9	11.3	10.6	9.7	-3.2	16.7	9.2
May 23	8.8	7.8	7.2	6.6	6.1	6.5	7.3	8.5	9.8	11.3	12.5	13.9	14.7	16.1	17.6	18.8	19.4	19.7	19.2	16.9	14.3	11.6	10.1	9.6	6.1	19.7	12.3
May 24	9.8	9.4	8.9	8.7	8.4	9.2	10.9	12.2	13.6	14.3	14.6	14.8	14.6	12.4	12.3	13.3	11.9	10.3	9.7	9.6	9.2	9	8.8	8.4	8.4	14.8	11.0
May 25	7.7	6.6	5.7	4.9	4	2.6	2.5	2.8	3.5	4.7	6.3	8.3	9.7	10.9	11.7	12.3	12.4	12.3	11.6	10.1	6.5	3.6	2.1	3.3	2.1	12.4	6.9
May 26	2.3	0.7	-0.3	-1	-0.2	3	5.7	7.3	8.7	10	11.1	12.5	13.3	14.1	14.8	15.1	14	13.6	13.2	13.1	12.5	12	11.4	10.7	-1.0	15.1	9.1
May 27	10.4	9.7	9.1	8.4	7.7	7.6	8.5	10.4	13.2	15.4	16.9	18.2	19	20.1	20.8	20.5	20.6	20.5	20.5	19.9	18.3	18.5	17.8	17.4	7.6	20.8	15.4
May 28	16.5	15.2	13.9	13	12.2	11.7	11	10.1	10.9	10.4	9.7	9.2	9.1	7.6	7.8	8.5	8.7	8.4	8	8.3	8.3	8	7.6	7.2	7.2	16.5	10.1
May 29	7.3	7.1	6.6	6.4	6.4	7.4	9	10.8	12.4	14.3	16	17	17.7	18.5	19.1	19.5	19.5	18.1	18	17.1	15.3	13.9	12.9	9.8	6.4	19.5	13.3
May 30	7.3	5.9	4.6	3.6	3.3	6.7	11.4	14.7	16.9	18.5	19.7	20.8	21.5	21.7	22.1	22.9	23.1	23.9	23.6	22.2	18.8	15.8	12.2	10.9	3.3	23.9	15.5
May 31	10.4	9.3	8.7	8.6	11.9	14	14.2	15.3	17.2	18.6	18.8	19.3	19	19.1	20.1	20.6	21.7	21.9	22.1	21.2	17.7	13.2	11.5	10.8	8.6	22.1	16.1
Diurnal Maximum	16.5	15.2	13.9	13.0	12.2	14.0	14.2	15.3	17.2	18.6	19.7	20.8	21.5	22.0	22.2	22.9	23.1	23.9	23.6	22.2	18.8	18.5	17.8	17.4			
Diurnal Average	5.3	4.1	3.2	2.7	2.4	3.5	5.7	7.7	9.3	10.7	11.7	12.6	13.0	13.4	14.0	14.3	14.0	13.3	12.7	11.7	9.7	8.0	7.1	6.3			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for AT - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - May 2021 Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

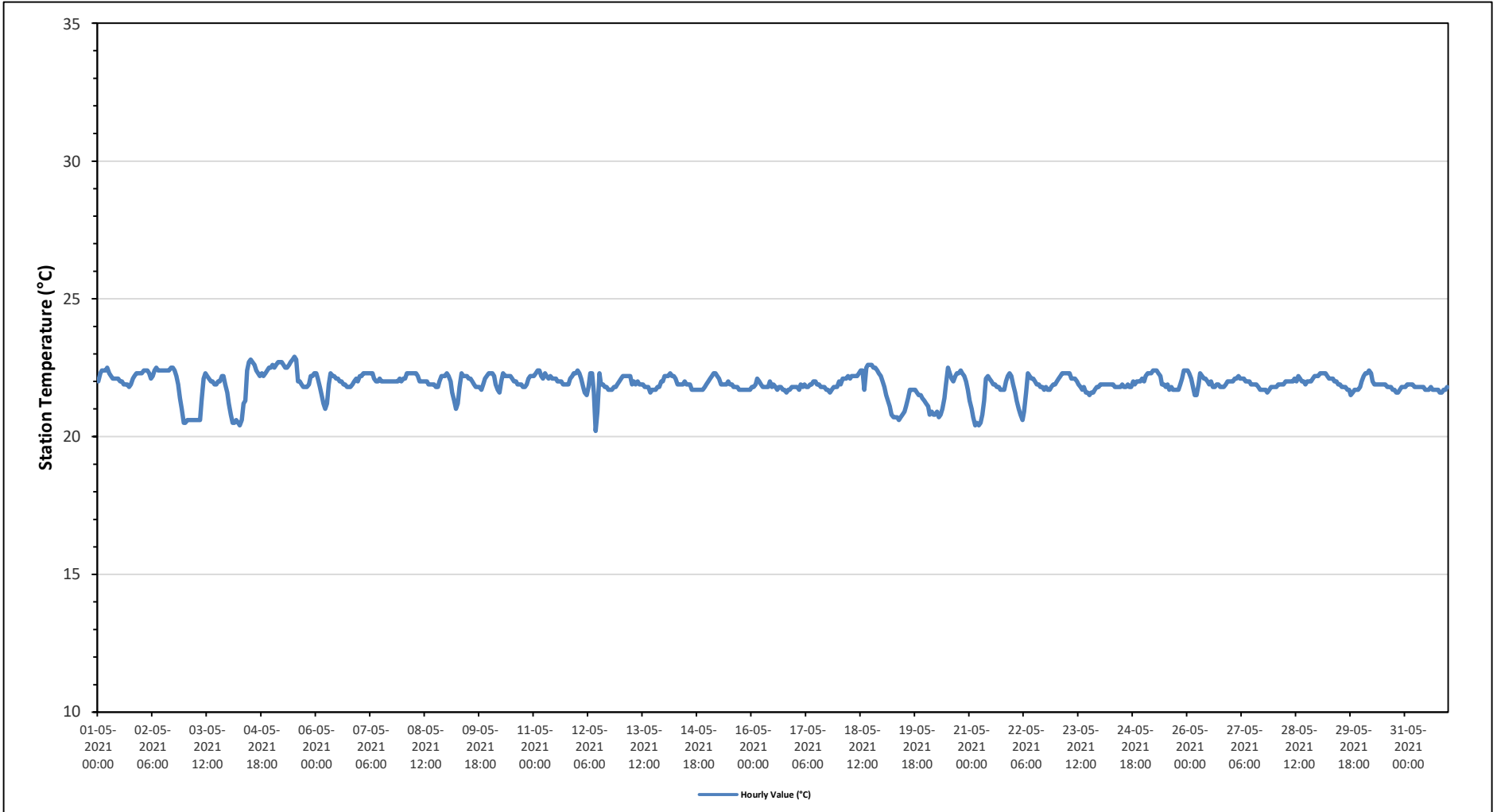
Maximum Hourly Value:	22.9 °C	on May 5 at hour 12	Hours in Service:	744
Maximum Daily Value:	22.4 °C	on May 5	Hours of Data:	744
Minimum Hourly Value:	20.2 °C	on May 12 at hour 10	Hours of Missing Data:	0
Minimum Daily Value:	21.3 °C	on May 19	Hours of Calibration:	0
Monthly Average:	21.9 °C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
May 1	22.0	22.3	22.4	22.4	22.4	22.5	22.3	22.2	22.1	22.1	22.1	22.0	22.0	21.9	21.9	21.9	21.8	21.9	22.1	22.2	22.3	22.3	22.3	21.8	22.5	22.1		
May 2	22.3	22.4	22.4	22.4	22.3	22.1	22.2	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.5	22.5	22.4	22.2	21.9	21.4	21.0	20.5	20.5	22.5	22.2		
May 3	20.5	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	21.3	22.1	22.3	22.2	22.0	22.0	21.9	21.9	22.0	22.2	22.2	21.9	21.6	20.5	22.3	21.5	21.5		
May 4	21.2	20.8	20.5	20.5	20.6	20.5	20.4	20.6	21.2	21.3	22.4	22.7	22.8	22.7	22.6	22.4	22.3	22.2	22.3	22.2	22.3	22.4	22.5	22.5	20.4	22.8	21.7	
May 5	22.6	22.5	22.6	22.7	22.7	22.7	22.6	22.5	22.5	22.6	22.7	22.8	22.9	22.8	22.0	22.0	21.9	21.8	21.8	21.8	21.9	22.2	22.2	22.3	21.8	22.9	22.4	
May 6	22.3	22.1	21.8	21.5	21.2	21.0	21.2	21.9	22.3	22.2	22.2	22.1	22.1	22.0	22.0	21.9	21.9	21.8	21.8	21.8	21.9	22.0	22.1	22.0	21.0	22.3	21.9	
May 7	22.2	22.2	22.3	22.3	22.3	22.3	22.3	22.3	22.1	22.0	22.0	22.1	22.1	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.1	22.0	22.0	22.3	22.1	
May 8	22.1	22.1	22.3	22.3	22.3	22.3	22.3	22.3	22.2	22.0	22.0	22.0	22.0	22.0	21.9	21.9	21.9	21.9	21.8	21.8	22.0	22.2	22.2	22.2	21.8	22.3	22.1	
May 9	22.3	22.2	22.0	21.6	21.3	21.0	21.2	21.8	22.3	22.2	22.2	22.2	22.1	22.1	22.0	21.9	21.8	21.8	21.8	21.7	21.9	22.1	22.2	22.3	21.0	22.3	21.9	
May 10	22.3	22.3	22.2	21.9	21.7	21.6	22.0	22.3	22.2	22.2	22.2	22.2	22.1	22.0	22.0	21.9	21.9	21.9	21.8	21.8	21.9	22.1	22.2	22.2	21.6	22.3	22.0	
May 11	22.2	22.3	22.4	22.4	22.2	22.1	22.3	22.2	22.1	22.2	22.1	22.1	22.1	22.0	22.0	22.0	21.9	21.9	21.9	21.9	22.1	22.2	22.3	22.3	21.9	22.4	22.1	
May 12	22.4	22.3	22.1	21.8	21.6	21.5	21.8	22.3	22.3	21.6	20.2	20.9	22.3	21.9	21.9	21.8	21.8	21.8	21.7	21.7	21.7	21.8	21.8	21.9	20.2	22.4	21.8	
May 13	22.1	22.2	22.2	22.2	22.2	22.2	21.9	22.0	21.9	22.0	21.9	21.9	21.9	21.8	21.8	21.8	21.6	21.7	21.7	21.7	21.8	21.8	22.0	22.0	21.6	22.2	21.9	
May 14	22.2	22.2	22.2	22.3	22.2	22.2	22.1	21.9	21.9	21.9	22.0	21.9	21.9	21.9	21.9	21.7	21.7	21.7	21.7	21.7	21.7	21.8	21.9	21.7	21.7	22.3	21.9	
May 15	22.0	22.1	22.2	22.3	22.3	22.2	22.1	21.9	21.9	21.9	21.9	22.0	21.9	21.9	21.8	21.8	21.8	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	22.3	21.9	
May 16	21.8	21.8	21.9	22.1	22.0	21.9	21.8	21.8	21.8	21.8	22.0	21.8	21.9	21.8	21.7	21.8	21.8	21.7	21.7	21.7	21.6	21.7	21.8	21.8	21.6	22.1	21.8	
May 17	21.8	21.8	21.7	21.9	21.8	21.9	21.8	21.8	21.9	21.9	22.0	22.0	21.9	21.9	21.8	21.8	21.8	21.7	21.7	21.7	21.6	21.7	21.8	21.8	21.6	22.0	21.8	
May 18	22.0	21.9	22.1	22.1	22.1	22.2	22.1	22.2	22.2	22.2	22.2	22.3	22.4	22.4	21.7	22.5	22.6	22.6	22.6	22.6	22.5	22.5	22.4	22.3	22.2	21.7	22.6	22.3
May 19	22.0	21.8	21.5	21.3	21.1	20.8	20.7	20.7	20.7	20.6	20.7	20.8	20.9	21.1	21.4	21.7	21.7	21.7	21.7	21.7	21.6	21.5	21.5	21.4	21.3	20.6	22.0	21.3
May 20	21.2	21.1	20.8	20.9	20.8	20.8	20.9	20.7	20.8	21.0	21.4	21.9	22.5	22.3	22.1	22.0	22.2	22.3	22.3	22.4	22.3	22.2	22.0	21.7	20.7	22.5	21.6	
May 21	21.3	21.0	20.7	20.4	20.5	20.4	20.5	20.8	21.3	22.1	22.2	22.1	22.0	21.9	21.9	21.8	21.8	21.7	21.7	21.7	21.7	22.0	22.2	22.3	20.4	22.3	21.5	
May 22	21.9	21.6	21.3	21.0	20.8	20.6	20.9	21.6	22.3	22.2	22.1	22.1	22.0	21.9	21.8	21.8	21.7	21.8	21.7	21.8	21.7	21.7	21.8	21.9	20.6	22.3	21.7	
May 23	22.0	22.1	22.2	22.3	22.3	22.3	22.3	22.1	22.1	22.1	22.1	22.0	21.9	21.8	21.7	21.8	21.6	21.6	21.5	21.6	21.6	21.7	21.8	21.8	21.5	22.3	21.9	
May 24	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	22.0	21.9	22.0	22.0	22.1	21.8	22.1	21.9		
May 25	22.0	22.2	22.3	22.3	22.3	22.4	22.4	22.4	22.3	22.2	21.9	21.9	21.8	21.9	21.7	21.8	21.7	21.7	21.7	21.7	21.9	22.1	22.4	22.4	21.7	22.4	22.1	
May 26	22.4	22.3	22.1	21.8	21.5	21.5	21.9	22.3	22.2	22.1	22.1	22.0	21.9	22.0	21.8	21.8	21.9	21.9	21.8	21.8	21.8	21.9	22.0	22.0	21.5	22.4	22.0	
May 27	22.0	22.0	22.1	22.1	22.2	22.1	22.1	22.1	22.0	22.0	22.0	22.0	21.9	21.9	21.9	21.8	21.7	21.7	21.7	21.7	21.6	21.7	21.8	21.8	21.6	22.2	21.9	
May 28	21.8	21.8	21.9	21.9	21.9	21.9	22.0	22.0	22.0	22.0	22.1	22.0	22.2	22.1	22.0	22.0	21.9	22.0	21.9	22.0	22.0	22.1	22.2	22.2	21.8	22.2	22.0	
May 29	22.2	22.3	22.3	22.3	22.3	22.2	22.1	22.1	22.1	22.0	22.0	21.9	21.9	21.8	21.8	21.8	21.7	21.7	21.5	21.6	21.7	21.7	21.8	21.8	21.5	22.3	21.9	
May 30	22.0	22.2	22.3	22.3	22.4	22.3	22.0	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.8	21.8	21.8	21.7	21.7	21.6	21.6	21.7	21.8	21.8	21.6	22.4	21.9	
May 31	21.8	21.9	21.9	21.9	21.9	21.8	21.8	21.8	21.8	21.8	21.8	21.7	21.7	21.7	21.8	21.7	21.7	21.7	21.7	21.7	21.6	21.6	21.7	21.8	21.6	21.9	21.8	
Diurnal Maximum	22.6	22.5	22.6	22.7	22.7	22.7	22.6	22.5	22.5	22.6	22.7	22.8	22.9	22.8	22.6	22.5	22.6	22.6	22.6	22.6	22.5	22.5	22.4	22.5	22.5	22.5	22.5	
Diurnal Average	22.0	21.9	21.9	21.9	21.8	21.7	21.8	21.9	21.9	21.9	22.0	22.0	22.0	22.0	21.9	21.9	21.9	21.9	21.9	21.9	21.8	21.9	22.0	21.9	21.9	22.0	21.9	

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for ST - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - May 2021 Summary of Hourly Averages

PRECIPITATION in mm

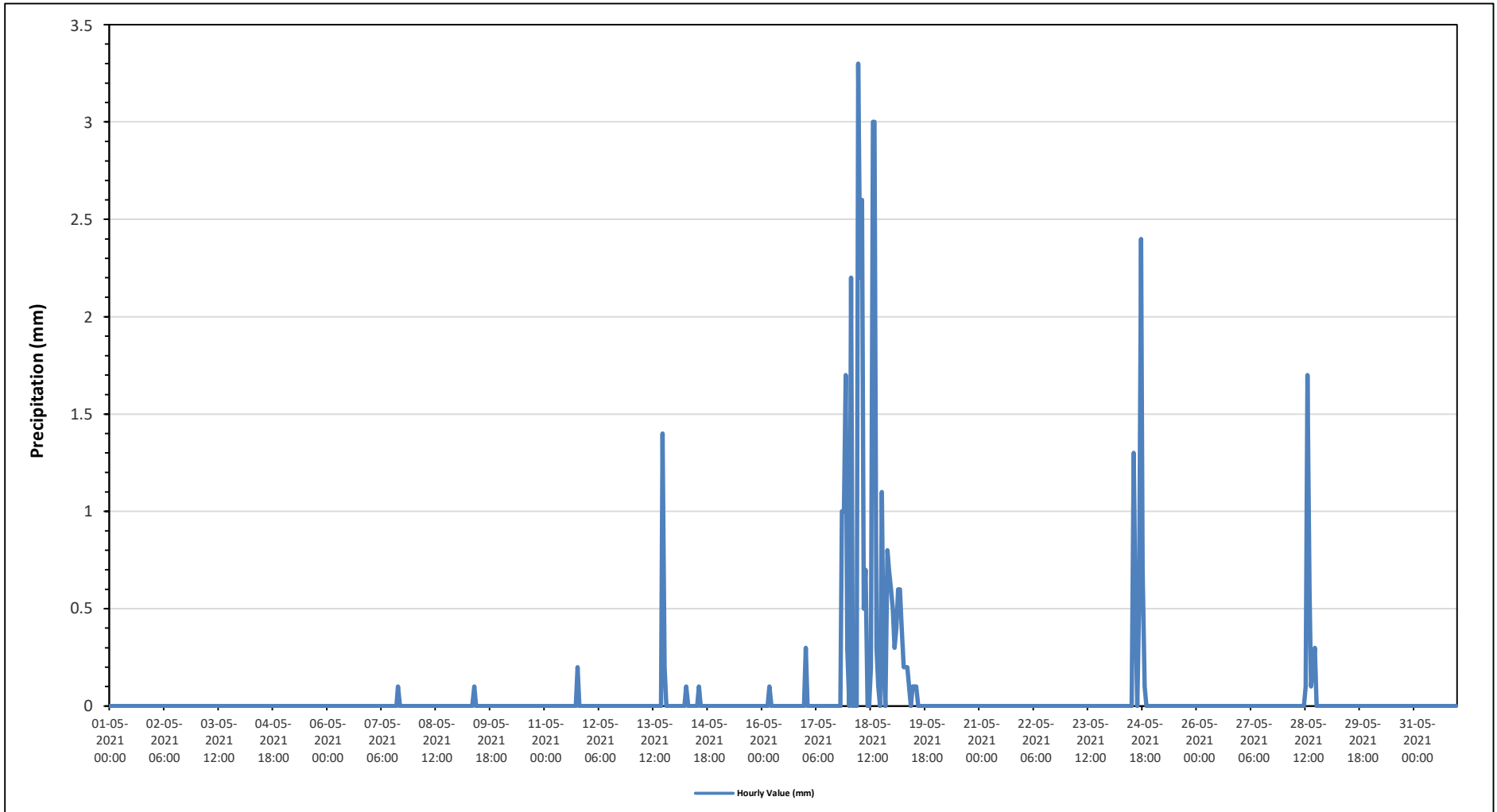
Maximum Hourly Value:	3.3 mm on May 18 at hour 5	Hours in Service:	744
Maximum Daily Value:	21.5 mm on May 18	Hours of Data:	744
Minimum Hourly Value:	0.0 mm on May 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0 mm on May 1	Hours of Calibration:	0
Monthly Total:	40.4 mm	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Total	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 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
May 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0.0	0.1	0.1
May 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 9	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
May 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0.0	0.2	0.2
May 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.4	0.2	0	0	0	0	0	0.0	1.4	1.6
May 14	0	0	0	0	0	0	0.1	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.2
May 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 16	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	0.1	0.1
May 17	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1.7	0.3	0.0	1.7	4.3
May 18	0	2.2	0	0	0	3.3	2.2	2.6	0.5	0.7	0	0	0.2	3	3	0.3	0.1	0	1.1	0.2	0	0.8	0.7	0.6	0.0	3.3	21.5
May 19	0.5	0.3	0.4	0.6	0.6	0.4	0.2	0.2	0.2	0.1	0	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0.0	0.6	3.8
May 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 24	0	0	0	0	0	0	0	0	0	0	0	0	0	1.3	0.5	0	0.5	2.4	0.7	0.1	0	0	0	0	0.0	2.4	5.5
May 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 28	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1.7	0.6	0.1	0.2	0.3	0	0	0	0	0	0	0.0	1.7	3.0
May 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Diurnal Maximum	0.5	2.2	0.4	0.6	0.6	3.3	2.2	2.6	0.5	0.7	0.0	0.1	0.2	3.0	3.0	0.3	0.5	2.4	1.1	0.2	1.0	1.0	1.7	0.6			
Diurnal Average	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0			

C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for Precipitation - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - May 2021 Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

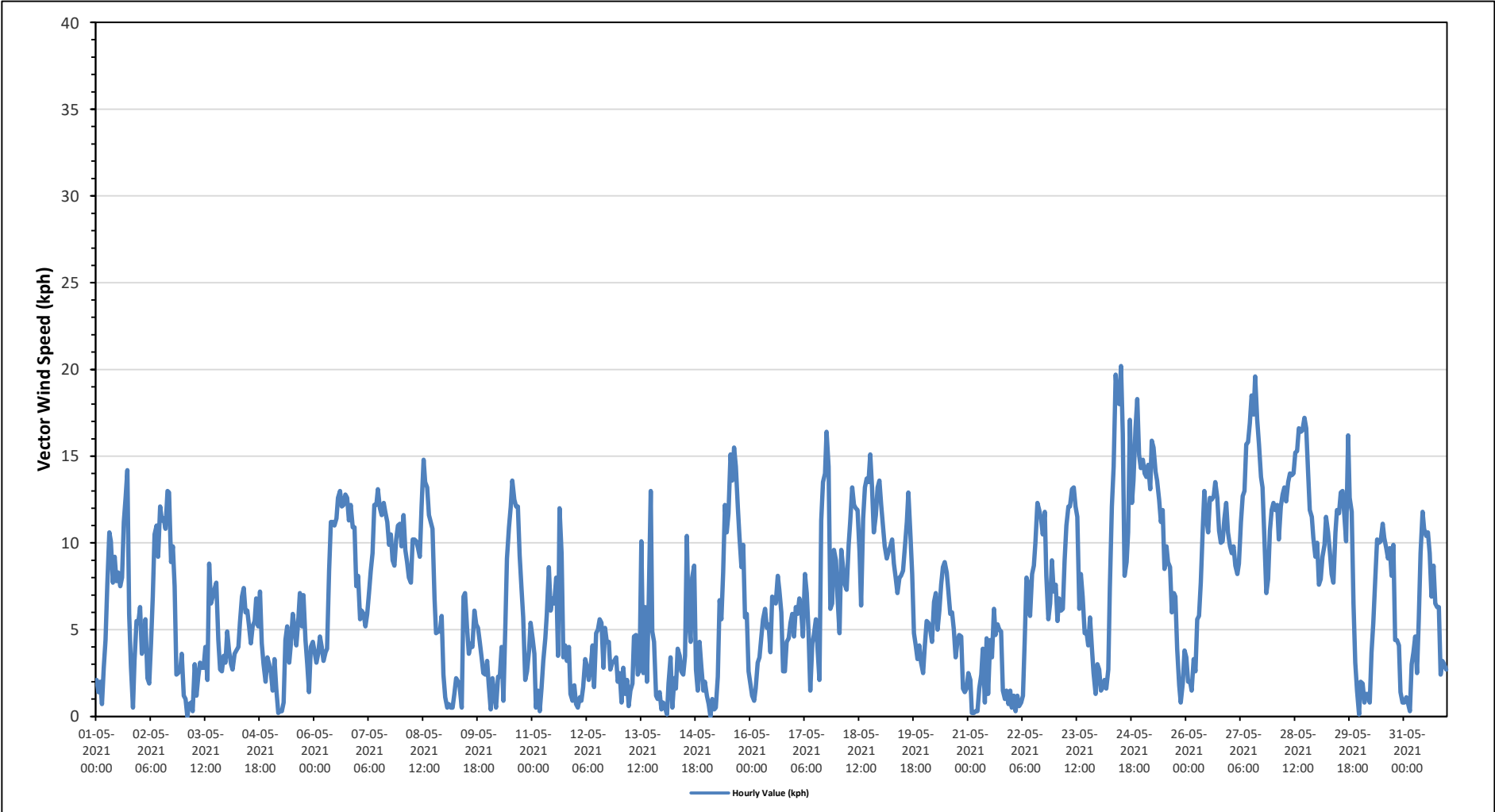
Maximum Hourly Value:	20.2 kph on May 24 at hour 12	Hours in Service:	744
Maximum Daily Value:	12.3 kph on May 27	Hours of Data:	744
Minimum Hourly Value:	0.0 kph on May 3 at hour 2	Hours of Missing Data:	0
Minimum Daily Value:	1.1 kph on May 12	Hours of Calibration:	0
Monthly Average:	0.9 kph	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	2.1	1.4	2.0	0.7	2.8	4.4	7.6	10.6	10.1	7.7	9.2	7.8	8.3	7.5	8.0	11.2	12.6	14.2	5.9	2.9	0.5	3.2	5.5	5.4	0.5	14.2	4.9
May 2	6.3	3.6	4.5	5.6	2.2	1.9	4.2	6.9	10.5	11.0	9.2	12.1	11.3	11.4	10.8	13.0	12.9	8.9	9.8	7.5	2.4	2.5	2.7	3.6	1.9	13.0	6.8
May 3	1.2	1.0	0.0	0.7	0.8	0.3	3.0	1.2	2.3	3.1	2.8	2.8	4.0	2.1	8.8	6.5	6.9	7.4	7.7	4.4	2.7	2.6	3.5	3.1	0.0	8.8	1.6
May 4	4.9	3.8	3.0	2.7	3.6	3.8	4.0	5.4	6.9	7.4	6.0	6.1	5.2	4.2	5.2	5.5	6.8	5.2	7.2	4.2	3.0	2.0	3.4	3.0	2.0	7.4	3.2
May 5	2.5	1.5	3.3	1.6	0.2	0.3	0.3	0.8	4.4	5.2	3.1	4.1	5.9	5.1	4.1	5.4	7.1	5.2	7.0	4.4	3.0	1.4	4.0	4.3	0.2	7.1	2.4
May 6	3.8	3.1	3.6	4.6	4.0	3.2	3.7	3.9	8.4	11.2	11.2	11.0	11.4	12.6	13.0	12.1	12.2	12.8	12.6	11.3	12.2	10.9	10.9	7.5	3.1	13.0	8.3
May 7	8.1	5.6	6.1	5.9	5.2	5.9	7.1	8.4	9.4	12.2	12.2	13.1	12.0	11.6	12.3	11.8	11.2	9.9	10.5	9.0	8.7	10.2	11.0	11.1	5.2	13.1	9.4
May 8	9.8	11.6	9.6	8.9	8.0	7.7	10.2	10.2	10.1	9.7	9.2	12.1	14.8	13.5	13.2	11.6	11.2	10.8	6.8	4.8	4.9	4.9	5.8	2.4	2.4	14.8	9.1
May 9	1.1	0.5	0.7	0.5	0.5	1.3	2.2	2.0	1.7	0.5	6.9	7.1	5.1	3.6	4.2	4.0	6.1	5.3	5.1	4.3	3.3	2.5	2.4	3.2	0.5	7.1	2.2
May 10	1.9	0.4	2.2	1.3	0.5	2.3	2.3	4.0	0.9	5.4	9.1	10.9	12.1	13.6	12.5	12.1	12.1	9.3	7.2	5.7	2.1	2.6	3.8	5.4	0.4	13.6	5.4
May 11	4.5	3.6	0.5	1.5	0.3	1.6	3.2	4.5	5.9	8.6	6.1	6.8	6.5	8.0	3.5	12.0	9.4	3.4	4.1	3.2	4.0	1.3	0.9	1.8	0.3	12.0	2.4
May 12	0.7	0.5	1.1	0.9	1.7	3.3	2.9	2.1	2.7	4.1	1.7	4.8	5.0	5.6	5.4	2.8	5.1	4.3	4.3	2.7	3.1	3.2	3.4	2.0	0.5	5.6	1.1
May 13	2.5	0.8	2.8	1.3	2.1	0.6	1.5	1.9	4.6	4.7	2.4	2.7	10.1	2.5	6.3	2.0	6.6	13.0	4.9	4.3	1.2	1.0	1.4	0.4	0.4	13.0	1.1
May 14	0.8	0.5	0.1	1.9	3.4	0.5	2.2	1.6	3.9	3.5	2.6	2.4	3.5	10.4	5.6	4.3	8.0	8.7	2.7	1.5	4.3	2.9	1.5	2.0	0.1	10.4	1.9
May 15	1.2	0.7	0.0	1.0	0.4	0.5	2.3	6.7	5.6	8.3	12.2	10.6	11.7	15.1	13.6	15.5	14.4	12.0	10.4	8.6	9.9	5.7	5.9	2.6	0.0	15.5	5.4
May 16	1.9	1.2	0.9	1.6	3.1	3.4	4.7	5.6	6.2	5.1	5.3	3.7	6.9	6.8	6.5	8.1	7.3	6.0	2.6	2.6	4.3	4.5	5.4	5.9	0.9	8.1	1.2
May 17	4.6	6.3	5.9	6.8	5.9	4.6	8.2	7.1	4.9	1.5	4.2	4.7	5.6	3.8	2.1	11.3	13.5	14.0	16.4	14.4	6.2	6.5	9.6	9.0	1.5	16.4	6.6
May 18	6.9	4.8	9.6	8.6	7.6	7.3	9.9	11.2	13.2	12.2	12.0	11.9	9.4	6.4	11.4	13.2	13.7	13.5	15.1	13.2	10.6	11.6	13.2	13.6	4.8	15.1	10.7
May 19	12.2	10.8	9.8	9.1	9.5	9.8	10.2	8.8	8.0	7.1	8.0	8.1	8.4	9.7	11.2	12.9	10.5	8.2	4.8	4.1	3.3	4.1	3.1	2.5	2.5	12.9	7.9
May 20	3.9	5.5	5.4	5.0	4.3	6.6	7.1	5.0	6.1	7.6	8.6	8.9	8.3	7.3	5.9	6.0	5.0	3.4	4.4	4.7	4.6	1.6	1.4	1.6	1.4	8.9	4.9
May 21	2.5	2.1	0.2	0.2	0.3	0.3	1.6	2.4	3.9	0.8	4.5	1.3	4.4	3.4	6.2	4.7	5.3	5.0	4.9	1.5	1.0	1.5	0.7	1.5	0.2	6.2	2.0
May 22	0.5	1.2	0.3	1.2	0.6	0.8	1.2	4.4	8.0	7.6	5.8	8.2	8.7	10.0	12.3	11.9	11.4	10.5	11.8	8.1	5.6	6.5	9.0	7.2	0.3	12.3	5.8
May 23	7.6	5.5	6.8	6.1	6.2	9.0	11.0	12.1	12.1	13.1	13.2	12.1	11.5	6.2	8.2	6.9	4.8	4.9	4.1	5.7	3.8	2.5	1.3	3.0	1.3	13.2	6.8
May 24	2.7	1.5	1.7	2.1	1.6	2.7	7.4	12.1	14.4	19.7	18.2	18.0	20.2	16.3	8.1	8.9	10.6	17.1	12.3	13.6	16.6	18.3	15.1	14.3	1.5	20.2	11.0
May 25	14.8	14.0	13.8	14.5	13.1	15.9	15.5	14.1	13.6	12.5	11.2	11.9	8.5	9.8	8.9	8.6	6.0	7.1	6.9	3.9	1.8	0.8	1.9	3.8	0.8	15.9	8.8
May 26	3.4	2.0	2.0	1.5	3.3	2.6	5.6	5.8	7.7	10.9	13.0	11.4	10.6	12.6	12.5	12.7	13.5	12.6	10.7	10.0	10.1	11.4	12.3	10.6	1.5	13.5	7.9
May 27	9.8	9.4	9.8	8.7	8.2	8.8	11.2	12.7	13.0	15.7	15.8	16.9	18.5	17.4	19.6	17.1	15.7	13.8	13.2	10.0	7.1	7.9	10.7	11.9	7.1	19.6	12.3
May 28	12.3	11.9	12.2	10.2	12.1	12.8	13.2	12.4	13.5	14.0	13.9	14.0	15.2	15.3	16.6	16.4	16.5	17.2	16.6	14.2	11.9	11.5	10.3	9.2	9.2	17.2	10.2
May 29	10.0	7.6	7.9	9.2	9.9	11.5	10.6	9.5	8.2	7.7	10.6	11.9	11.7	12.9	13.0	11.6	10.1	16.2	12.6	11.8	6.5	3.1	1.5	0.1	0.1	16.2	8.6
May 30	2.0	1.9	0.8	1.3	1.3	0.8	3.7	5.4	8.0	10.2	10.0	10.1	11.1	10.3	9.7	9.1	9.7	8.1	9.9	4.4	4.4	4.1	1.4	0.8	0.8	11.1	5.6
May 31	0.8	1.1	0.8	0.3	3.0	3.7	4.6	2.5	5.6	9.4	11.8	10.8	10.4	10.6	9.4	6.9	8.7	6.5	6.3	6.3	2.4	3.2	3.0	2.7	0.3	11.8	4.7
Diurnal Maximum	15	14	14	15	13	16	16	14	14	20	18	18	20	17	20	17	17	17	17	14	17	18	15	14			
Diurnal Average	4.8	4.0	4.1	4.0	4.1	4.5	5.9	6.5	7.5	8.3	8.7	9.0	9.6	9.2	9.3	9.6	9.8	9.5	8.3	6.7	5.3	5.0	5.4	5.0			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction/Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

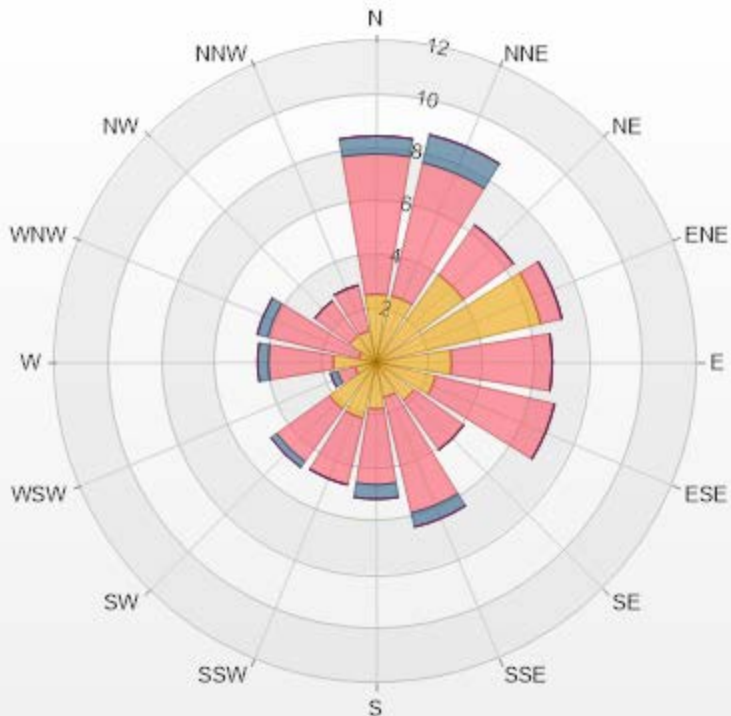
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for VWS - Tamarack Site



Wind: Tamarack Monitor: WDS [kph] Monthly: 05-2021 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 14.38% Valid Data: 100.00%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	2.55	5.24	0.67	0	0	8.46
NNE	2.55	5.11	1.08	0	0	8.74
NE	4.03	2.28	0	0	0	6.31
ENE	6.32	0.81	0	0	0	7.13
E	2.82	3.76	0	0	0	6.58
ESE	2.28	4.57	0	0	0	6.85
SE	1.75	2.28	0	0	0	4.03
SSE	1.34	4.44	0.54	0	0	6.32
S	1.75	2.82	0.54	0	0	5.11
SSW	2.15	2.55	0	0	0	4.7
SW	2.15	2.42	0.27	0	0	4.84
WSW	0.81	0.67	0.27	0	0	1.75
W	1.61	2.42	0.4	0	0	4.43
WNW	0.67	3.49	0.4	0	0	4.56
NW	1.21	1.61	0	0	0	2.82
NNW	1.21	1.75	0	0	0	2.96
Summary	35.2	46.22	4.17	0	0	85.59



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% Icon Classes (kph)

35 1.8-6.0

46 6.0-15.0

4 15.0-29.0

0 29.0-39.0

0 >39.0



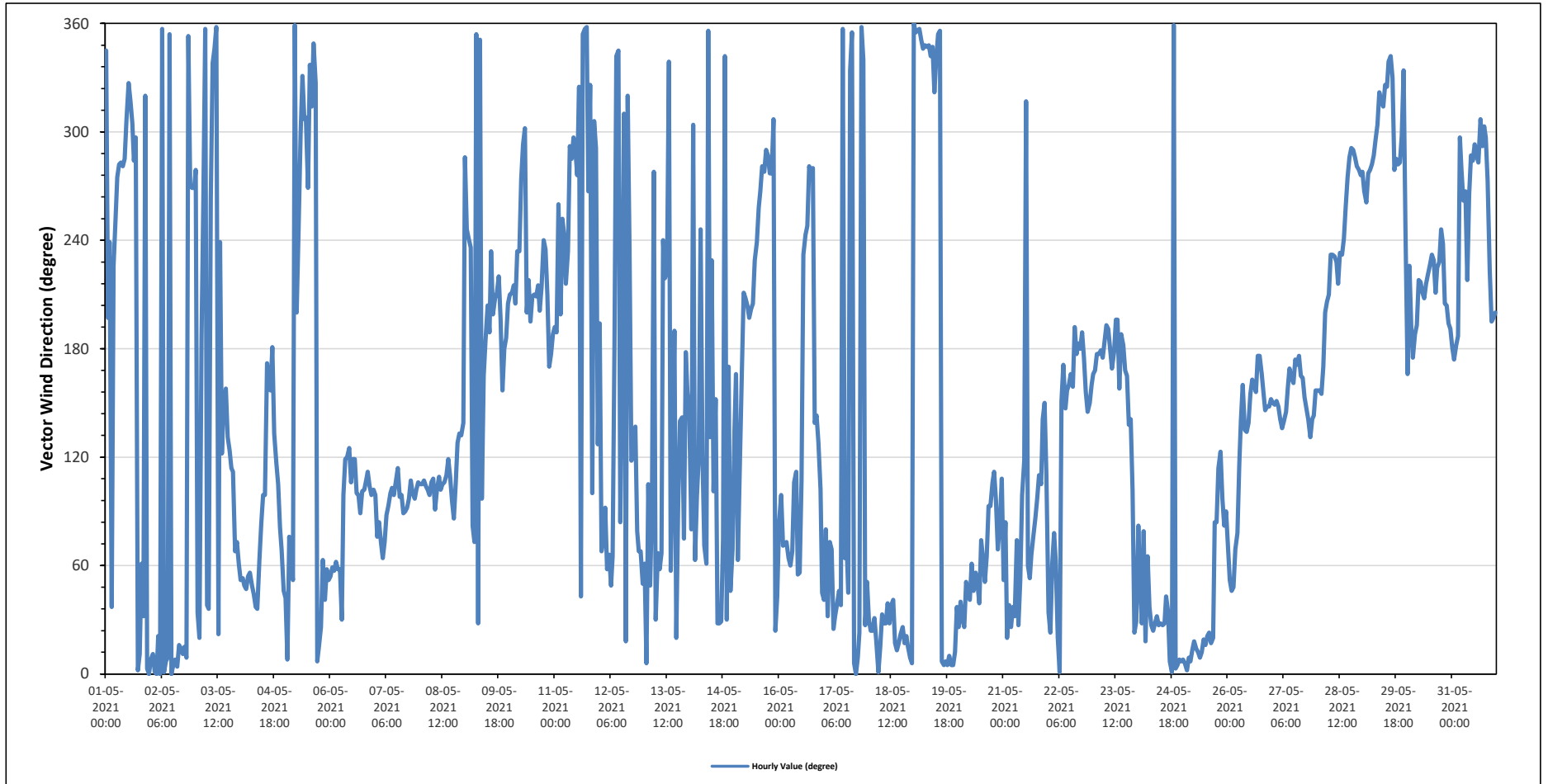
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - May 2021 Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:		67 (ENE) degree														Hours in Service:		744									
																Hours of Data:		744									
																Hours of Missing Data:		0									
																Hours of Calibration:		0									
																Operational Uptime:		100.0									
Day	Hourly Period Starting at (MST)																							Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant	
May 1	NNW	SSW	WSW	NE	SW	WSW	W	W	W	W	WNW	NW	NW	NW	WNW	WNW	WNW	N	NNE	ENE	NNE	NW	N	N	307	NW	
May 2	N	NNE	N	N	NNE	N	N	N	N	N	N	N	N	N	N	NNE	NNE	NNE	NNE	N	N	W	W	W	4	N	
May 3	W	NE	NNE	S	W	N	NE	NE	W	NNW	NNW	N	NNE	WSW	ESE	SSE	SE	ESE	ESE	ESE	ENE	ENE	ENE	106	ESE		
May 4	NE	NE	NE	NE	NE	NE	NE	NE	NE	ENE	E	E	E	S	SSE	SSE	S	SE	ESE	ESE	E	ENE	NE	85	E		
May 5	NE	N	ENE	ENE	NE	N	SSW	WSW	WNW	NNW	NW	NW	W	NNW	NW	NNW	NW	N	NNE	NNE	ENE	NE	ENE	NE	353	N	
May 6	NE	ENE	ENE	ENE	ENE	ENE	NNE	E	ESE	ESE	SE	ESE	ESE	ESE	E	E	E	E	ESE	ESE	ESE	E	E	E	101	E	
May 7	E	ENE	E	ENE	ENE	ENE	E	E	E	ESE	E	ESE	ESE	E	E	E	E	E	ESE	E	E	E	ESE	E	96	E	
May 8	ESE	ESE	ESE	ESE	E	E	ESE	ESE	E	E	ESE	E	ESE	ESE	ESE	ESE	ESE	E	ESE	SE	SE	SE	SE	SE	106	ESE	
May 9	WNW	WSW	WSW	SW	E	ENE	N	NNE	N	E	SSE	S	SSW	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	198	SSW	
May 10	SSW	SSW	SSW	SSW	SW	SW	W	WNW	WNW	SSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	212	SSW	
May 11	S	S	WSW	SSW	WSW	WSW	SW	SW	WNW	WNW	WNW	WNW	W	NW	NE	N	N	N	W	NW	E	NW	WNW	SE	302	WNW	
May 12	SSW	ENE	ENE	E	ENE	ENE	NE	ENE	S	NNW	NNW	E	S	NW	NNE	NW	SW	ESE	ESE	SE	ENE	ENE	NE	69	ENE		
May 13	ENE	N	ESE	NE	E	W	NNE	ENE	ENE	ENE	WSW	SW	SW	NNW	ENE	ESE	S	NNE	E	SE	SE	ENE	S	SSE	86	E	
May 14	SE	E	WNW	ENE	E	ESE	WSW	ESE	ENE	ENE	N	SE	SW	E	SSE	NNE	NNE	ENE	NNW	NNE	SSE	NE	ENE	69	ENE		
May 15	SE	SSE	ENE	ESE	SSE	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	258	WSW	
May 16	E	E	ENE	ENE	ENE	ENE	ENE	ENE	ESE	ESE	NE	NE	ESE	SW	WSW	WSW	W	W	W	SE	SE	SE	E	NE	102	E	
May 17	NE	E	NNE	ENE	ENE	NNE	NNE	NE	NE	NE	N	ENE	ENE	NE	NNW	N	N	N	N	NNE	N	NNW	NNE	NE	26	NNE	
May 18	NNE	NNE	NNE	NNE	NNE	N	NNE	NNE	NNE	NNE	NE	NNE	NE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	N	N	22	NNE	
May 19	N	N	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NW	NNW	N	N	N	N	N	N	N	N	N	NNE	NE	355	N	
May 20	NNE	NE	NNE	NNE	NE	NE	NE	ENE	NE	NE	NE	NE	ENE	ENE	NE	ENE	E	ESE	ESE	E	ENE	E	ESE	59	ENE		
May 21	NE	E	NNE	NE	NNE	NE	NNE	ENE	NNE	NE	E	ESE	NW	ENE	NE	ENE	ENE	E	ESE	ESE	SE	SSE	ESE	71	ENE		
May 22	NE	NNE	ENE	ENE	ENE	NNE	N	SSE	S	SE	SSE	SSE	SSE	SSE	S	S	S	S	S	S	SSE	SE	SSE	167	SSE		
May 23	SSE	SSE	S	S	S	S	S	S	S	S	SSE	S	SSW	SSW	SSE	S	S	SSE	SSE	SE	SE	E	NNE	NNE	176	S	
May 24	E	NE	NNE	ENE	ENE	ENE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	NE	N	N	N	N	N	N	N	N	21	NNE	
May 25	N	N	N	N	N	NNE	NNE	NNE	NNE	N	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	E	E	ESE	ESE	E	E	19	NNE	
May 26	ENE	NE	NE	NE	ENE	ENE	ESE	SE	SSE	SE	SE	SSE	SSE	SSE	SSE	S	S	SSE	SSE	SE	SE	SE	SE	SE	148	SE	
May 27	SSE	SSE	SSE	SE	SE	SE	SE	SE	SSE	SSE	SSE	S	S	S	SSE	SSE	SSE	SE	SE	SE	SE	SE	SE	SE	157	SSE	
May 28	SSE	SSE	SSE	SSE	SSW	SSW	SSW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	W	WNW	WNW	WNW	WNW	W	W	W	239	WSW	
May 29	W	W	W	W	W	W	WNW	WNW	WNW	NW	NW	NW	NW	NW	NNW	NNW	NNW	W	WNW	W	W	WNW	NNW	WSW	300	WNW	
May 30	SSE	SW	S	S	S	S	SW	SW	SSW	SSW	SW	SW	SW	SW	SSW	SSW	SW	SW	WSW	SW	SSW	SSW	S	SSW	220	SW	
May 31	S	S	S	S	WNW	W	W	W	SW	W	WNW	WNW	WNW	WNW	W	NW	WNW	WNW	WNW	W	SW	SSW	SSW	SSW	276	W	
C	Monthly Calibration						S	Daily Zero-Span Check						Q	Quality Assurance												
K	Collection Error						N	No Data (Machine Not in Service)						Y	Routine Maintenance						P	Power Failure					
X	Invalid Data (Machine Malfunction /Recovery)						NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																			
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																											
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																											

Timeseries Chart of Hourly Average for VWD - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - May 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr & WIND DIRECTION (VWD) in sector

WIND SPEED																											
Maximum Hourly Value: 20.2 kph on May 24 at hour 12										Hours in Service: 744																	
Maximum Daily Value: 12.3 kph on May 27										Hours of Data: 744																	
Minimum Hourly Value: 0.0 kph on May 3 at hour 2										Hours of Missing Data: 0																	
Minimum Daily Value: 1.1 kph on May 12										Hours of Calibration: 0																	
Monthly Average: 0.9 kph										Operational Uptime: 100																	
WIND DIRECTION																											
Monthly Average: 67 (ENE) degree																											
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
May 1	2.1	1.4	2.0	0.7	2.8	4.4	7.6	10.6	10.1	7.7	9.2	7.8	8.3	7.5	8.0	11.2	12.6	14.2	5.9	2.9	0.5	3.2	5.5	5.4	0.5	14.2	4.9
May 2	6.3	3.6	4.5	5.6	2.2	1.9	4.2	6.9	10.5	11.0	9.2	12.1	11.3	11.4	10.8	13.0	12.9	8.9	9.8	7.5	2.4	2.5	2.7	3.6	1.9	13.0	6.8
May 3	1.2	1.0	0.0	0.7	0.8	0.3	3.0	1.2	2.3	3.1	2.8	2.8	4.0	2.1	8.8	6.5	6.9	7.4	7.7	4.4	2.7	2.6	3.5	3.1	0.0	8.8	1.6
May 4	4.9	3.8	3.0	2.7	3.6	3.8	4.0	5.4	6.9	7.4	6.0	6.1	5.2	4.2	5.2	5.5	6.8	5.2	7.2	4.2	3.0	2.0	3.4	3.0	2.0	7.4	3.2
May 5	2.5	1.5	3.3	1.6	0.2	0.3	0.3	0.8	4.4	5.2	3.1	4.1	5.9	5.1	4.1	5.4	7.1	5.2	7.0	4.4	3.0	1.4	4.0	4.3	0.2	7.1	2.4
May 6	3.8	3.1	3.6	4.6	4.0	3.2	3.7	3.9	8.4	11.2	11.2	11.0	11.4	12.6	13.0	12.1	12.2	12.8	12.6	11.3	12.2	10.9	10.9	7.5	3.1	13.0	8.3
May 7	8.1	5.6	6.1	5.9	5.2	5.9	7.1	8.4	9.4	12.2	12.2	13.1	12.0	11.6	12.3	11.8	11.2	9.9	10.5	9.0	8.7	10.2	11.0	11.1	5.2	13.1	9.4
May 8	9.8	11.6	9.6	8.9	8.0	7.7	10.2	10.2	10.1	9.7	9.2	12.1	14.8	13.5	13.2	11.6	11.2	10.8	6.8	4.8	4.9	4.9	5.8	2.4	2.4	14.8	9.1
May 9	1.1	0.5	0.7	0.5	0.5	1.3	2.2	2.0	1.7	0.5	6.9	7.1	5.1	3.6	4.2	4.0	6.1	5.3	5.1	4.3	3.3	2.5	2.4	3.2	0.5	7.1	2.2
May 10	1.9	0.4	2.2	1.3	0.5	2.3	2.3	4.0	0.9	5.4	9.1	10.9	12.1	13.6	12.5	12.1	12.1	9.3	7.2	5.7	2.1	2.6	3.8	5.4	0.4	13.6	5.4
May 11	4.5	3.6	0.5	1.5	0.3	1.6	3.2	4.5	5.9	8.6	6.1	6.8	6.5	8.0	3.5	12.0	9.4	3.4	4.1	3.2	4.0	1.3	0.9	1.8	0.3	12.0	2.4
May 12	0.7	0.5	1.1	0.9	1.7	3.3	2.9	2.1	2.7	4.1	1.7	4.8	5.0	5.6	5.4	2.8	5.1	4.3	4.3	2.7	3.1	3.2	3.4	2.0	0.5	5.6	1.1
May 13	2.5	0.8	2.8	1.3	2.1	0.6	1.5	1.9	4.6	4.7	2.4	2.7	10.1	2.5	6.3	2.0	6.6	13.0	4.9	4.3	1.2	1.0	1.4	0.4	0.4	13.0	1.1
May 14	0.8	0.5	0.1	1.9	3.4	0.5	2.2	1.6	3.9	3.5	2.6	2.4	3.5	10.4	5.6	4.3	8.0	8.7	2.7	1.5	4.3	2.9	1.5	2.0	0.1	10.4	1.9
May 15	1.2	0.7	0.0	1.0	0.4	0.5	2.3	6.7	5.6	8.3	12.2	10.6	11.7	15.1	13.6	15.5	14.4	12.0	10.4	8.6	9.9	5.7	5.9	2.6	0.0	15.5	5.4
May 16	1.9	1.2	0.9	1.6	3.1	3.4	4.7	5.6	6.2	5.1	5.3	3.7	6.9	6.8	6.5	8.1	7.3	6.0	2.6	2.6	4.3	4.5	5.4	5.9	0.9	8.1	1.2
May 17	4.6	6.3	5.9	6.8	5.9	4.6	8.2	7.1	4.9	1.5	4.2	4.7	5.6	3.8	2.1	11.3	13.5	14.0	16.4	14.4	6.2	6.5	9.6	9.0	1.5	16.4	6.6
May 18	6.9	4.8	9.6	8.6	7.6	7.3	9.9	11.2	13.2	12.2	12.0	11.9	9.4	6.4	11.4	13.2	13.7	13.5	15.1	13.2	10.6	11.6	13.2	13.6	4.8	15.1	10.7
May 19	12.2	10.8	9.8	9.1	9.5	9.8	10.2	8.8	8.0	7.1	8.0	8.1	8.4	9.7	11.2	12.9	10.5	8.2	4.8	4.1	3.3	4.1	3.1	2.5	2.5	12.9	7.9
May 20	3.9	5.5	5.4	5.0	4.3	6.6	7.1	5.0	6.1	7.6	8.6	8.9	8.3	7.3	5.9	6.0	5.0	3.4	4.4	4.7	4.6	1.6	1.4	1.6	1.4	8.9	4.9



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - May 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr & WIND DIRECTION (VWD) in sector

WIND SPEED																																	
Maximum Hourly Value:	20.2 kph on May 24 at hour 12															Hours in Service:	744																
Maximum Daily Value:	12.3 kph on May 27															Hours of Data:	744																
Minimum Hourly Value:	0.0 kph on May 3 at hour 2															Hours of Missing Data:	0																
Minimum Daily Value:	1.1 kph on May 12															Hours of Calibration:	0																
Monthly Average:	0.9 kph															Operational Uptime:	100																
WIND DIRECTION																																	
Monthly Average:	67 (ENE) degree																																
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23									
May 21	2.5	2.1	0.2	0.2	0.3	0.3	1.6	2.4	3.9	0.8	4.5	1.3	4.4	3.4	6.2	4.7	5.3	5.0	4.9	1.5	1.0	1.5	0.7	1.5	0.2	6.2	2.0						
	NE	E	NNE	NE	NNE	NE	NNE	ENE	NNE	NE	E	ESE	NW	ENE	NE	ENE	ENE	E	E	ESE	ESE	SE	SSE	ESE									
May 22	0.5	1.2	0.3	1.2	0.6	0.8	1.2	4.4	8.0	7.6	5.8	8.2	8.7	10.0	12.3	11.9	11.4	10.5	11.8	8.1	5.6	6.5	9.0	7.2	0.3	12.3	5.8						
	NE	NNE	ENE	ENE	ENE	NNE	N	SSE	S	SE	SSE	SSE	SSE	SSE	S	S	S	S	S	S	SSE	SE	SSE	SSE									
May 23	7.6	5.5	6.8	6.1	6.2	9.0	11.0	12.1	12.1	13.1	13.2	12.1	11.5	6.2	8.2	6.9	4.8	4.9	4.1	5.7	3.8	2.5	1.3	3.0	1.3	13.2	6.8						
	SSE	SSE	S	S	S	S	S	S	S	SSE	S	SSW	SSW	SSE	S	S	SSE	SSE	SE	SE	E	NNE	NNE										
May 24	2.7	1.5	1.7	2.1	1.6	2.7	7.4	12.1	14.4	19.7	18.2	18.0	20.2	16.3	8.1	8.9	10.6	17.1	12.3	13.6	16.6	18.3	15.1	14.3	1.5	20.2	11.0						
	E	NE	NNE	ENE	NNE	ENE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	NE	N	N	N	N	N	N	N	N									
May 25	14.8	14.0	13.8	14.5	13.1	15.9	15.5	14.1	13.6	12.5	11.2	11.9	8.5	9.8	8.9	8.6	6.0	7.1	6.9	3.9	1.8	0.8	1.9	3.8	0.8	15.9	8.8						
	N	N	N	N	N	NNE	NNE	NNE	NNE	N	NNE	NNE	NNE	NNE	NNE	NNE	NNE	E	E	ESE	ESE	E	E	E									
May 26	3.4	2.0	2.0	1.5	3.3	2.6	5.6	5.8	7.7	10.9	13.0	11.4	10.6	12.6	12.5	12.7	13.5	12.6	10.7	10.0	10.1	11.4	12.3	10.6	1.5	13.5	7.9						
	ENE	NE	NE	NE	ENE	ENE	ESE	SE	SSE	SE	SE	SE	SSE	SSE	SSE	SSE	S	S	SSE	SSE	SE	SE	SE	SSE									
May 27	9.8	9.4	9.8	8.7	8.2	8.8	11.2	12.7	13.0	15.7	15.8	16.9	18.5	17.4	19.6	17.1	15.7	13.8	13.2	10.0	7.1	7.9	10.7	11.9	7.1	19.6	12.3						
	SSE	SSE	SSE	SE	SE	SE	SE	SE	SSE	SSE	SSE	S	S	S	SSE	SSE	SSE	SE	SE	SE	SE	SE	SE	SSE									
May 28	12.3	11.9	12.2	10.2	12.1	12.8	13.2	12.4	13.5	14.0	13.9	14.0	15.2	15.3	16.6	16.4	16.5	17.2	16.6	14.2	11.9	11.5	10.3	9.2	9.2	17.2	10.2						
	SSE	SSE	SSE	SSE	SSW	SSW	SSW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	W	WNW	WNW	WNW	WNW	W	W	W									
May 29	10.0	7.6	7.9	9.2	9.9	11.5	10.6	9.5	8.2	7.7	10.6	11.9	11.7	12.9	13.0	11.6	10.1	16.2	12.6	11.8	6.5	3.1	1.5	0.1	0.1	16.2	8.6						
	W	W	W	W	W	W	WNW	WNW	WNW	NW	NW	NW	NW	NNW	NNW	NNW	W	WNW	W	W	WNW	NNW	WSW										
May 30	2.0	1.9	0.8	1.3	1.3	0.8	3.7	5.4	8.0	10.2	10.0	10.1	11.1	10.3	9.7	9.1	9.7	8.1	9.9	4.4	4.4	4.1	1.4	0.8	0.8	11.1	5.6						
	SSE	SW	S	S	S	S	SW	SW	SSW	SSW	SW	SW	SW	SW	SSW	SW	SW	WSW	SW	SSW	SSW	SSW	SSW	S									
May 31	0.8	1.1	0.8	0.3	3.0	3.7	4.6	2.5	5.6	9.4	11.8	10.8	10.4	10.6	9.4	6.9	8.7	6.5	6.3	6.3	2.4	3.2	3.0	2.7	0.3	11.8	4.7						
	S	S	S	S	WNW	W	W	W	SW	W	WNW	WNW	WNW	WNW	W	NW	WNW	WNW	WNW	W	SW	SSW	SSW	SSW									
C	Monthly Calibration															S	Daily Zero-Span Check					Q	Quality Assurance										
K	Collection Error															N	No Data (Machine Not in Service)					Y	Routine Maintenance					P	Power Failure				
X	Invalid Data (Equipment Malfunction/Recovery)															NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																	
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																	



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - May 2021

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

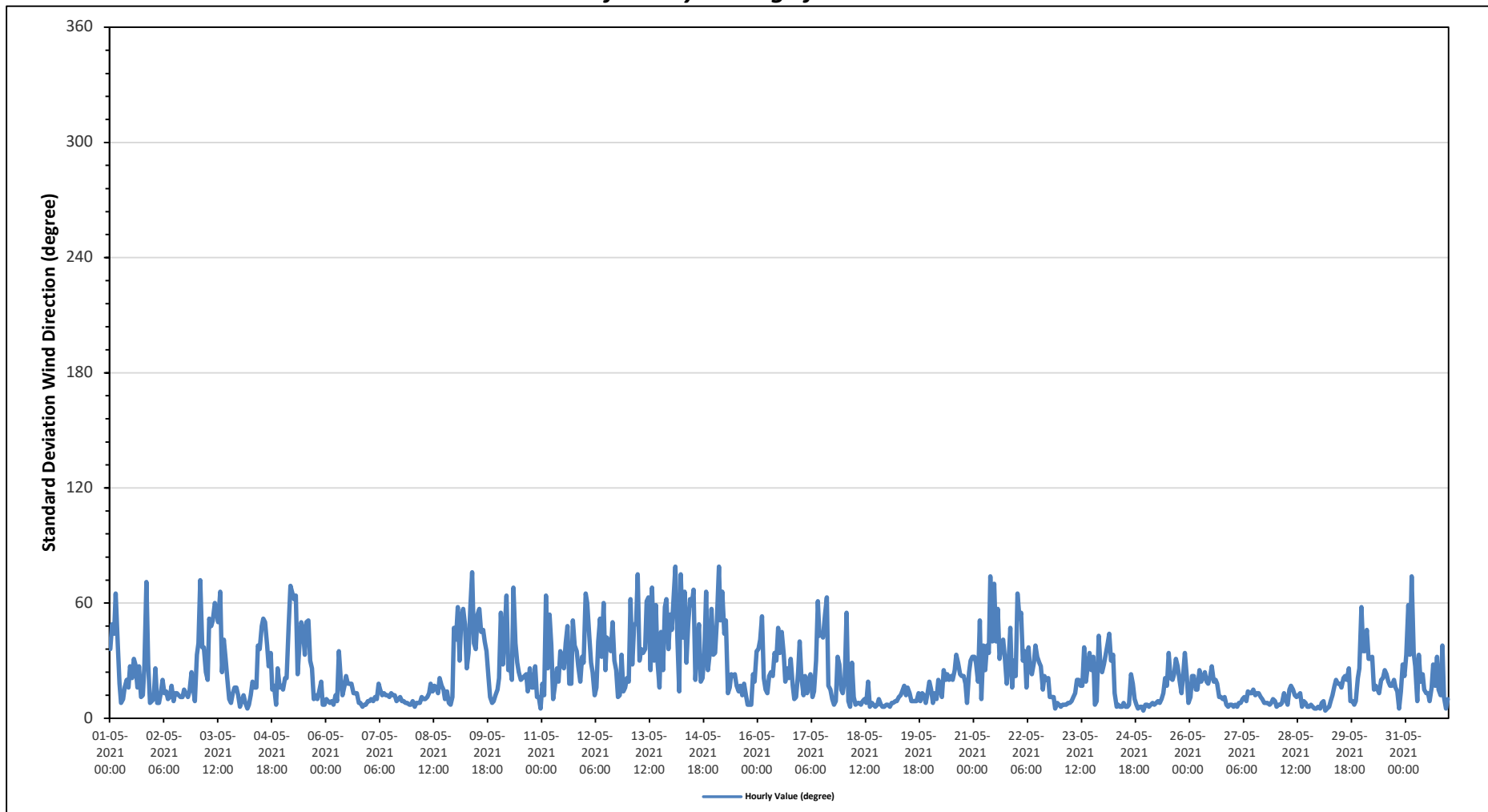
Maximum Hourly Value:	79 degree on May 14 at hour 2	Hours in Service:	744
Minimum Hourly Value:	4 degree on May 24 at hour 22	Hours of Data:	744
		Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily	Daily	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum
May 1	36	49	44	65	39	18	8	10	16	20	16	27	21	31	28	16	27	11	12	27	71	28	8	9	8	71
May 2	10	26	8	8	13	20	13	14	10	11	17	9	13	13	12	11	11	15	13	11	14	24	15	9	8	26
May 3	33	39	72	37	37	24	20	52	48	51	60	55	50	66	24	41	31	20	10	8	13	16	16	12	8	72
May 4	6	9	12	8	5	7	12	19	16	16	38	36	48	52	50	38	27	34	15	17	7	26	16	17	5	52
May 5	15	21	21	48	69	66	62	64	23	38	50	46	33	50	51	30	26	10	12	10	14	19	7	7	7	69
May 6	10	9	8	9	7	12	9	35	19	12	17	22	18	18	13	13	8	8	6	7	7	9	7	9	6	35
May 7	9	10	9	11	10	18	15	12	13	12	12	11	13	12	12	9	10	11	9	9	8	8	7	7	7	18
May 8	9	6	8	8	8	11	10	10	11	13	18	14	17	16	13	21	17	15	10	14	8	7	11	47	6	47
May 9	41	58	30	53	57	49	26	34	58	76	39	36	54	57	45	46	40	35	21	11	8	9	12	15	8	76
May 10	21	55	28	43	64	25	29	20	68	39	29	24	20	21	22	23	14	26	16	16	27	11	11	5	5	68
May 11	18	12	64	26	54	38	10	17	26	19	35	30	26	39	48	18	18	51	38	35	27	19	32	29	10	64
May 12	65	60	43	29	24	12	16	40	52	32	60	25	42	39	35	50	30	25	11	12	33	14	16	21	11	65
May 13	19	62	28	48	50	75	30	36	34	36	61	63	25	68	30	59	30	16	45	25	58	62	36	54	16	75
May 14	46	65	79	41	14	75	42	66	29	49	62	59	67	20	37	49	19	21	34	66	25	35	57	33	14	79
May 15	34	51	79	51	66	44	51	13	16	23	22	23	17	14	17	12	18	13	7	7	7	23	19	35	7	79
May 16	36	41	53	21	15	13	22	24	22	34	30	47	34	45	33	19	26	21	31	17	10	11	24	40	10	53
May 17	21	12	22	13	20	23	11	14	30	61	43	44	42	54	63	17	15	10	7	9	32	28	15	13	7	63
May 18	21	55	9	6	29	11	7	8	8	7	9	10	8	19	6	8	7	6	7	10	7	6	6	7	6	55
May 19	7	6	8	8	9	9	11	12	14	17	12	16	13	9	9	9	13	9	13	12	8	13	19	6	19	
May 20	15	8	13	10	20	15	11	25	20	23	20	22	20	25	33	29	23	22	22	18	8	24	30	32	8	33
May 21	32	29	19	51	10	38	25	38	34	74	40	70	40	57	31	39	41	31	18	29	47	16	30	22	10	74
May 22	65	52	55	30	35	16	37	26	23	29	38	32	29	27	15	22	20	21	11	11	11	5	8	7	5	65
May 23	6	7	7	7	8	8	9	11	13	20	20	17	17	37	19	27	34	25	32	7	9	43	29	24	6	43
May 24	28	33	39	44	30	33	13	6	7	6	6	6	6	7	23	18	10	7	5	6	6	4	7	7	4	44
May 25	7	6	7	8	7	8	9	8	10	13	21	17	34	21	20	23	31	27	20	13	22	34	21	8	6	34
May 26	11	22	22	15	15	25	19	21	24	19	18	22	27	19	20	18	11	11	10	11	7	6	7	7	6	27
May 27	6	7	6	8	8	10	11	9	14	13	13	15	12	13	13	11	10	8	8	8	7	8	10	9	6	15
May 28	6	7	7	8	13	10	7	15	17	15	12	11	12	13	6	9	8	6	6	7	6	5	5	6	5	17
May 29	5	8	9	4	5	6	9	12	17	20	18	18	16	21	22	20	26	9	9	7	9	21	26	58	4	58
May 30	35	35	46	31	31	32	15	17	15	13	20	21	25	23	19	17	17	20	16	14	5	14	28	22	5	46
May 31	33	59	33	74	34	27	9	33	19	23	15	13	13	9	16	28	17	32	15	12	38	11	5	10	5	74
Diurnal Minimum	5	6	6	4	5	6	7	6	7	6	6	8	6	6	6	8	7	6	6	5	5	5	4	5		
Diurnal Maximum	65	65	79	74	69	75	62	66	68	76	62	70	67	68	63	59	41	51	45	66	71	62	57	58		

C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Machine Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

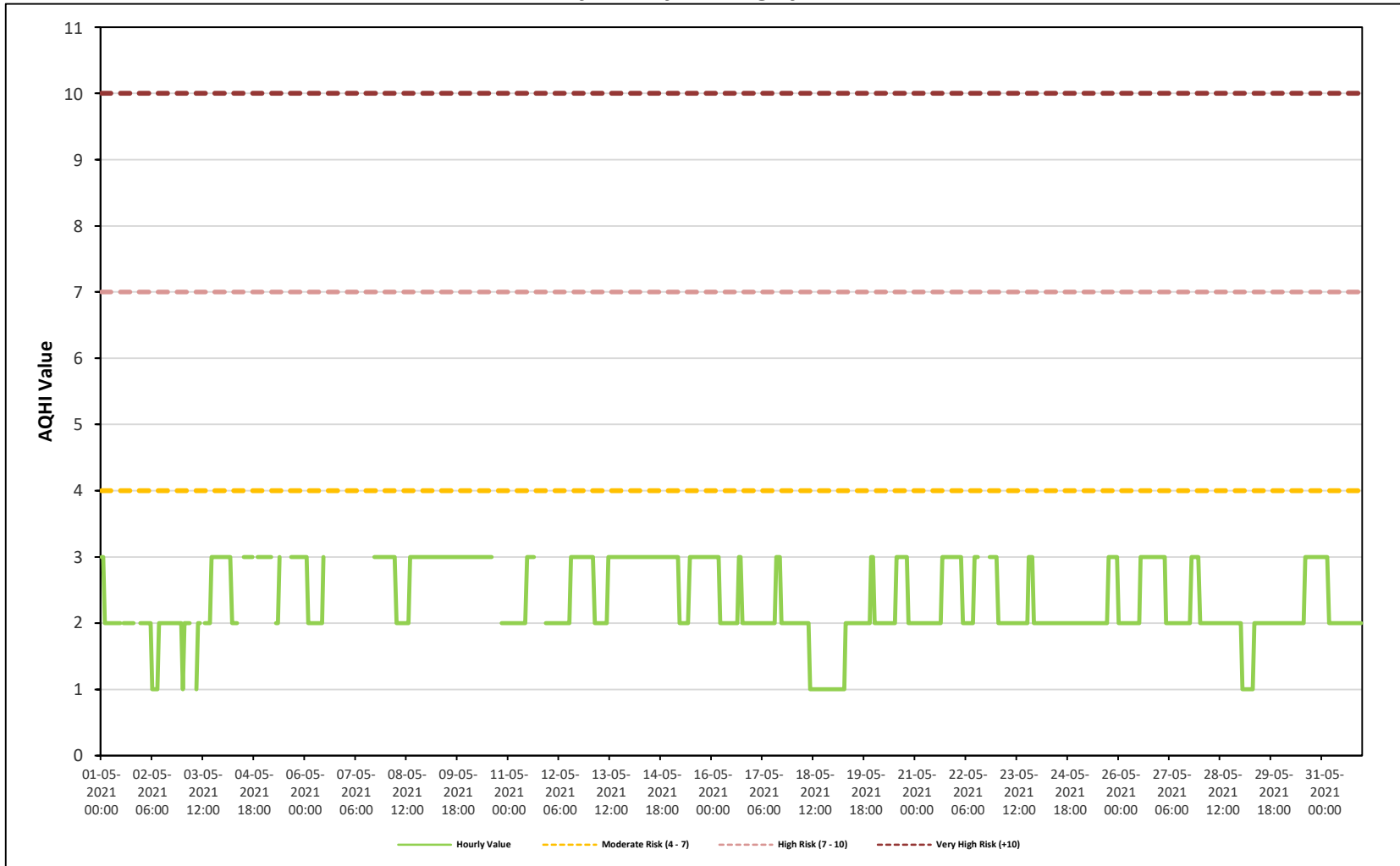
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for STDWD - Tamarack Site



ST. LINA STATION

Timeseries Chart of Hourly Average for AQHI - St. Lina Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - May 2021

Summary of Hourly Averages

SULPHUR DIOXIDE (SO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb

Number of 1-Hour Exceedences: 0 Number of 24-Hour Exceedences: 0 30-Day Exceedence: 0

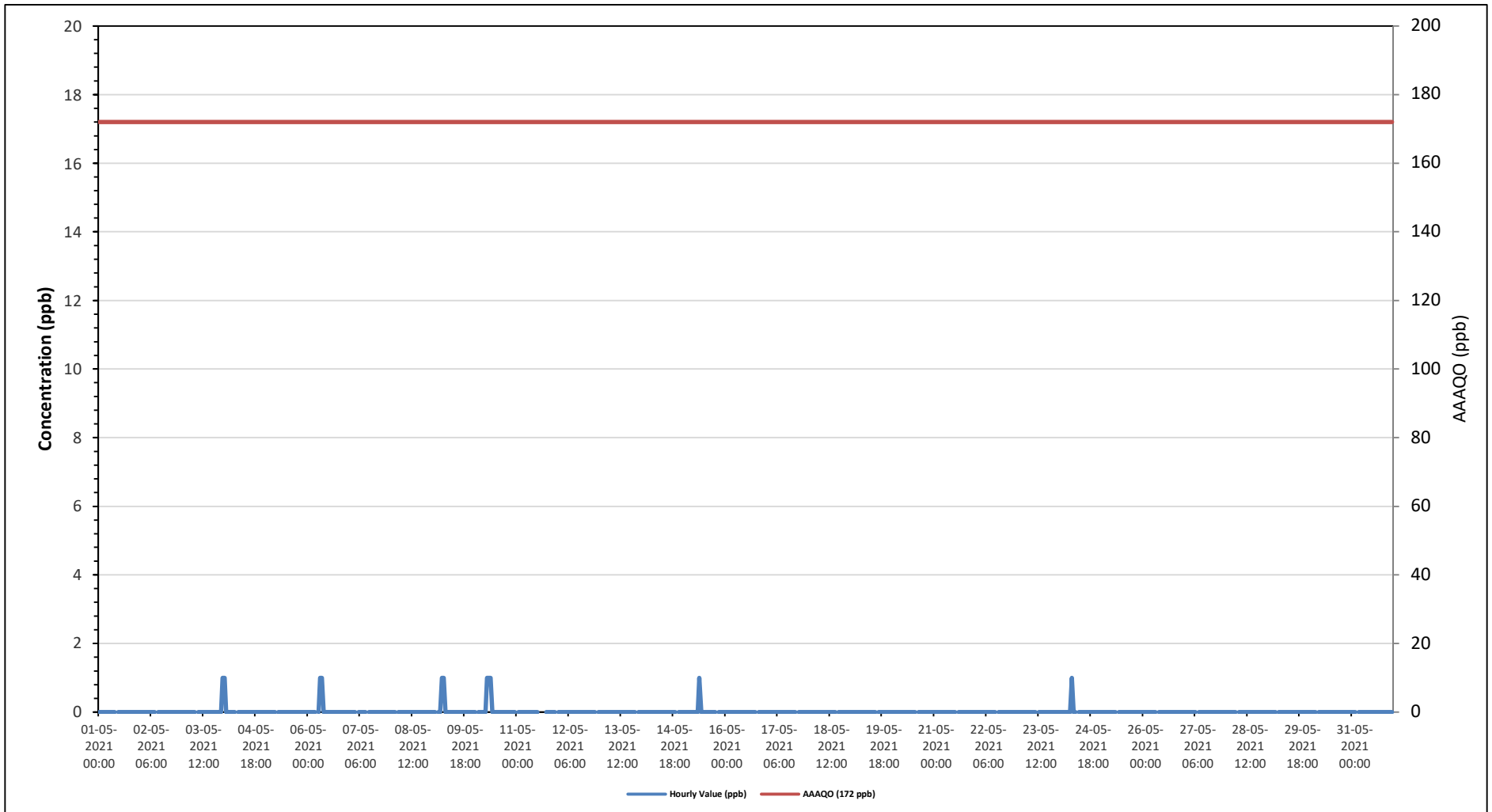
Maximum Hourly Value: 1 ppb on May 3 at hour 23 Hours in Service: 744
 Maximum Daily Value: 0.1 ppb on May 10 Hours of Data: 707
 Minimum Hourly Value: 0 ppb on May 1 at hour 0 Hours of Missing Data: 1
 Minimum Daily Value: 0.0 ppb on May 1 Hours of Calibration: 36
 Monthly Average: 0.0 ppb Operational Uptime: 99.9

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23													
May 1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
May 2	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
May 3	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
May 4	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
May 5	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
May 6	0	0	0	0	0	S	0	1	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		
May 7	0	0	0	0	S	0	0	0	0	0	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
May 8	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
May 9	0	0	S	S	0	0	1	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	
May 10	0	S	0	0	0	0	0	0	0	1	1	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	
May 11	S	0	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
May 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
May 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diurnal Maximum	1	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Daiurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

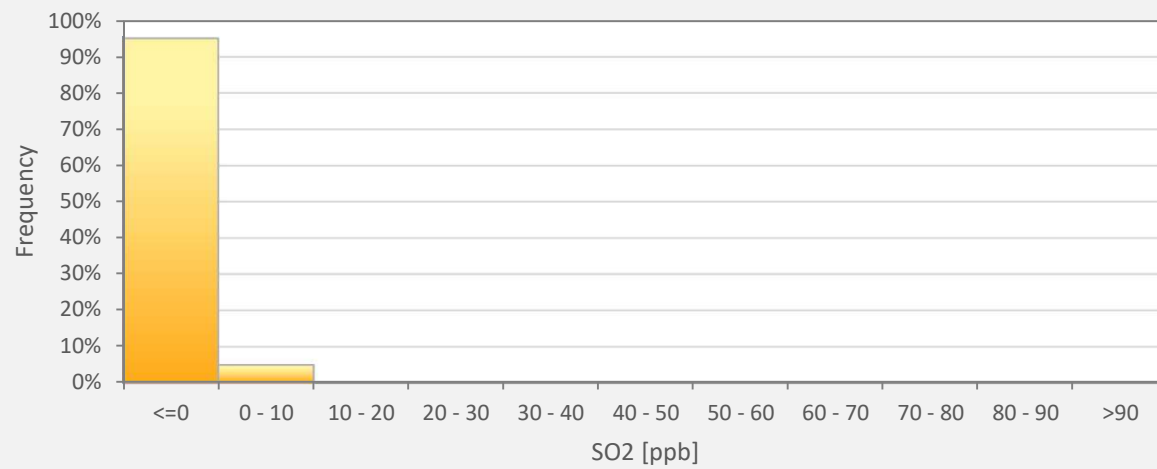
C Monthly Calibration S Daily Zero-Span Check Q Quality Assurance
 K Collection Error N No Data (Machine Not in Service) Y Routine Maintenance P Power Failure
 X InValid Data (Equipment Malfunction /Recovery) NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for SO2 - St. Lina Site



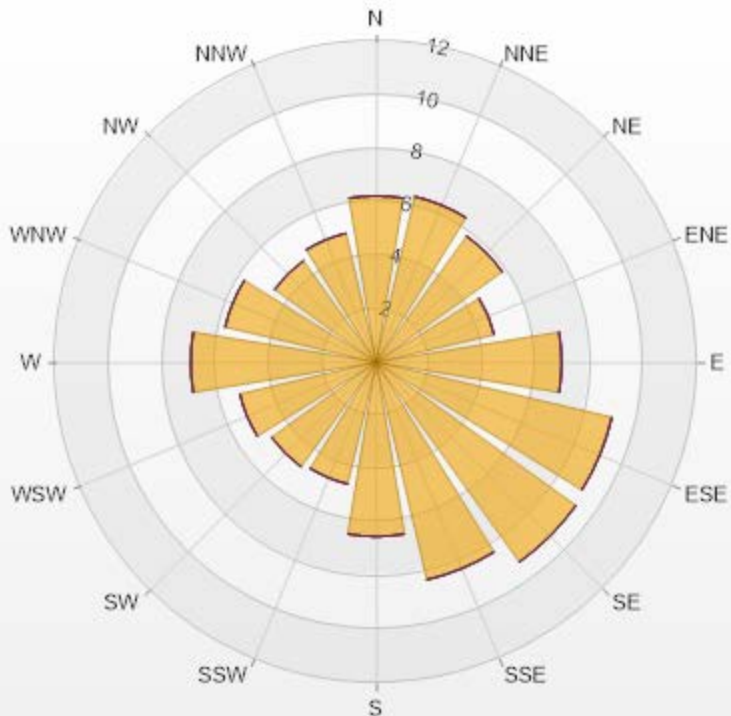
SO2[ppb] Histogram: St. Lina Monthly: 05-2021 1 Hr.



Classes	SO2
<=0	95.05%
0 - 10	4.95%
10 - 20	0.00%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: St. Lina Poll.: St. Lina-SO2[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	6.22	0	0	0	0	6.22
NNE	6.36	0	0	0	0	6.36
NE	5.8	0	0	0	0	5.8
ENE	4.53	0	0	0	0	4.53
E	6.93	0	0	0	0	6.93
ESE	9.05	0	0	0	0	9.05
SE	9.19	0	0	0	0	9.19
SSE	8.35	0	0	0	0	8.35
S	6.51	0	0	0	0	6.51
SSW	4.67	0	0	0	0	4.67
SW	4.81	0	0	0	0	4.81
WSW	5.23	0	0	0	0	5.23
W	6.93	0	0	0	0	6.93
WNW	5.8	0	0	0	0	5.8
NW	4.67	0	0	0	0	4.67
NNW	4.95	0	0	0	0	4.95
Summary	100	0	0	0	0	100



LICA-202105

% Icon Classes (ppb)

100 0-10

0 10-50

0 50-100

0 100-172

0 >172.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - May 2021

Summary of Hourly Averages

HYDROGEN SULPHIDE (H₂S) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 10 ppb, 24-Hour 3 ppb

Number of 1-Hour Exceedances: 0 Number of 24-Hour Exceedances: 0

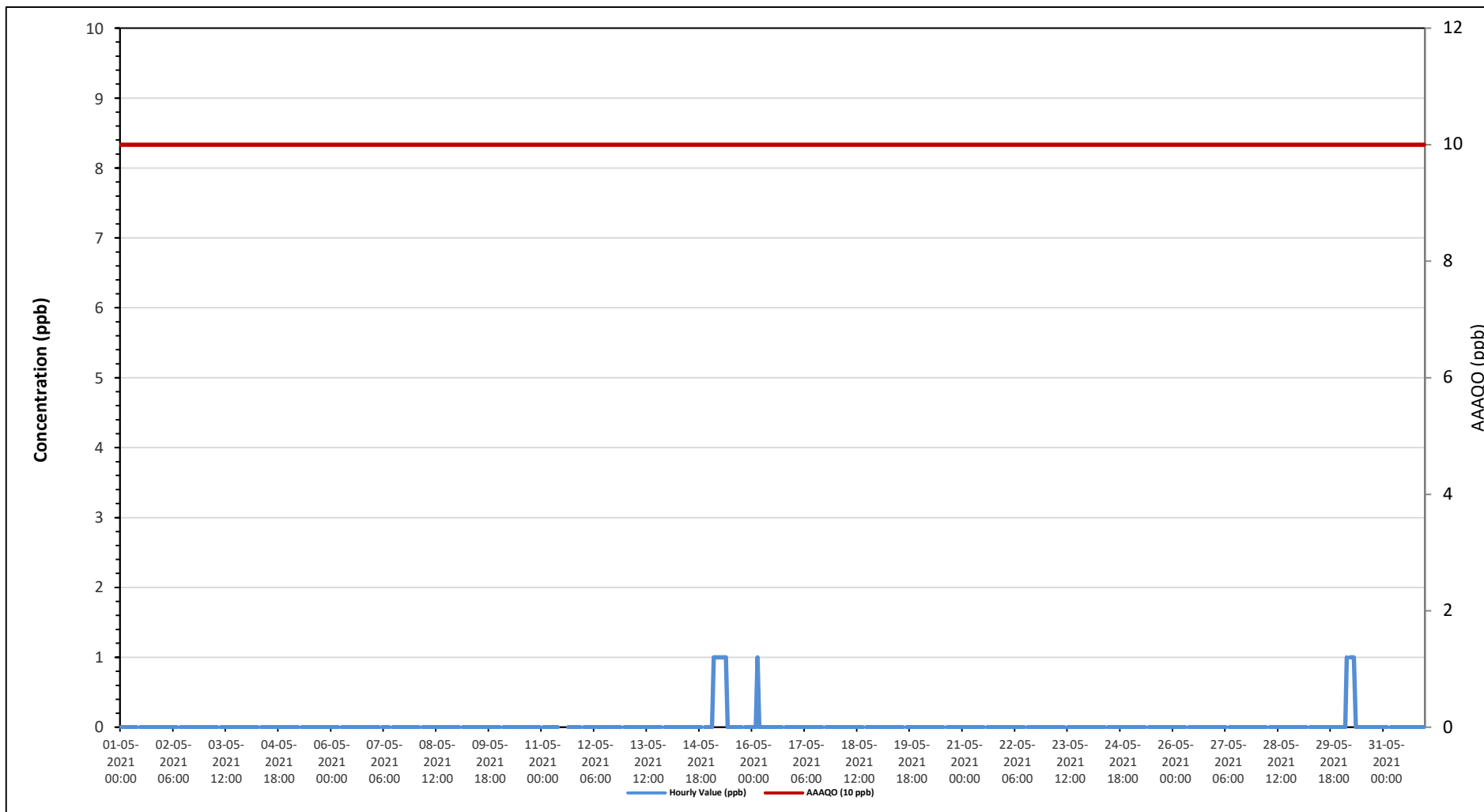
Maximum Hourly Value:	1 ppb on May 15 at hour 2	Hours in Service:	744
Maximum Daily Value:	0.3 ppb on May 15	Hours of Data:	706
Minimum Hourly Value:	0 ppb on May 1 at hour 0	Hours of Missing Data:	1
Minimum Daily Value:	0.0 ppb on May 1	Hours of Calibration:	37
Monthly Average:	0.0 ppb	Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average									
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23												
May 1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
May 2	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
May 3	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
May 4	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
May 5	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
May 6	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
May 7	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
May 8	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
May 9	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
May 10	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
May 11	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
May 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
May 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
May 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 15	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 16	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
May 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 30	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 31	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
Diurnal Maximum	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Diurnal Average	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

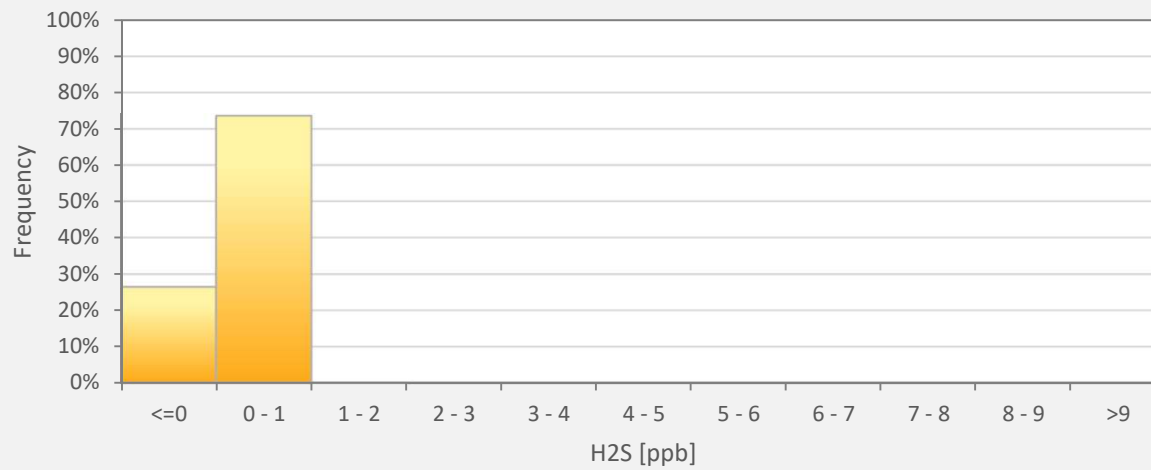
C Monthly Calibration **S** Daily Zero-Span Check **Q** Quality Assurance
K Collection Error **N** No Data (Machine Not in Service) **Y** Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery) **NRM** UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance) **P** Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for H2S - St. Lina Site



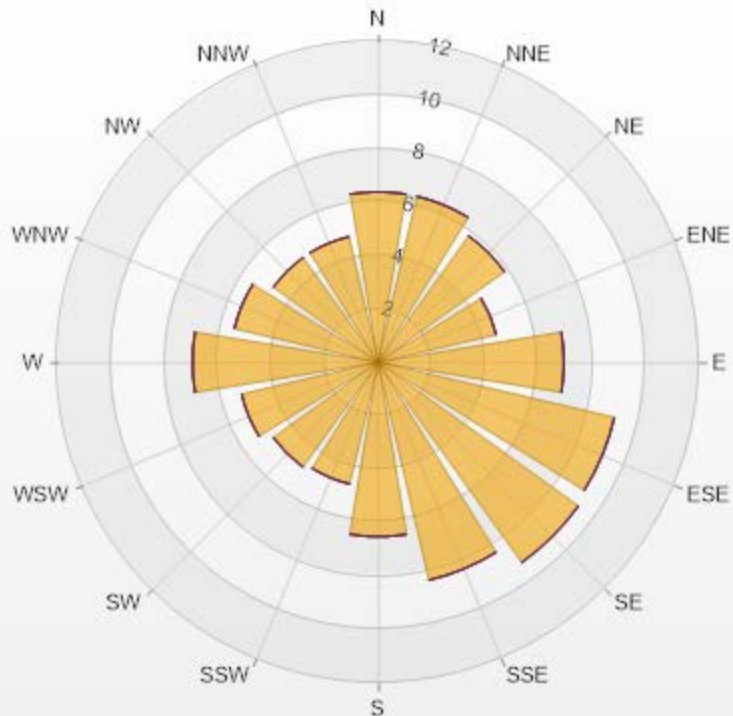
H2S[ppb] Histogram: St. Lina Monthly: 05-2021 1 Hr.



Classes	H2S
<=0	26.35%
0 - 1	73.51%
1 - 2	0.14%
2 - 3	0.00%
3 - 4	0.00%
4 - 5	0.00%
5 - 6	0.00%
6 - 7	0.00%
7 - 8	0.00%
8 - 9	0.00%
>9	0.00%

Wind: St. Lina Poll.: St. Lina-H2S[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	6.37	0	0	0	0	6.37
NNE	6.37	0	0	0	0	6.37
NE	5.81	0	0	0	0	5.81
ENE	4.53	0	0	0	0	4.53
E	6.94	0	0	0	0	6.94
ESE	9.07	0	0	0	0	9.07
SE	9.21	0	0	0	0	9.21
SSE	8.36	0	0	0	0	8.36
S	6.52	0	0	0	0	6.52
SSW	4.67	0	0	0	0	4.67
SW	4.82	0	0	0	0	4.82
WSW	5.24	0	0	0	0	5.24
W	6.94	0	0	0	0	6.94
WNW	5.52	0	0	0	0	5.52
NW	4.82	0	0	0	0	4.82
NNW	4.82	0	0	0	0	4.82
Summary	100	0	0	0	0	100



LICA-202105

% Icon Classes (ppb)

100 0-2

0 2-5

0 5-10

0 10-50

0 >50.0



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St. Lina Site - May 2021

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

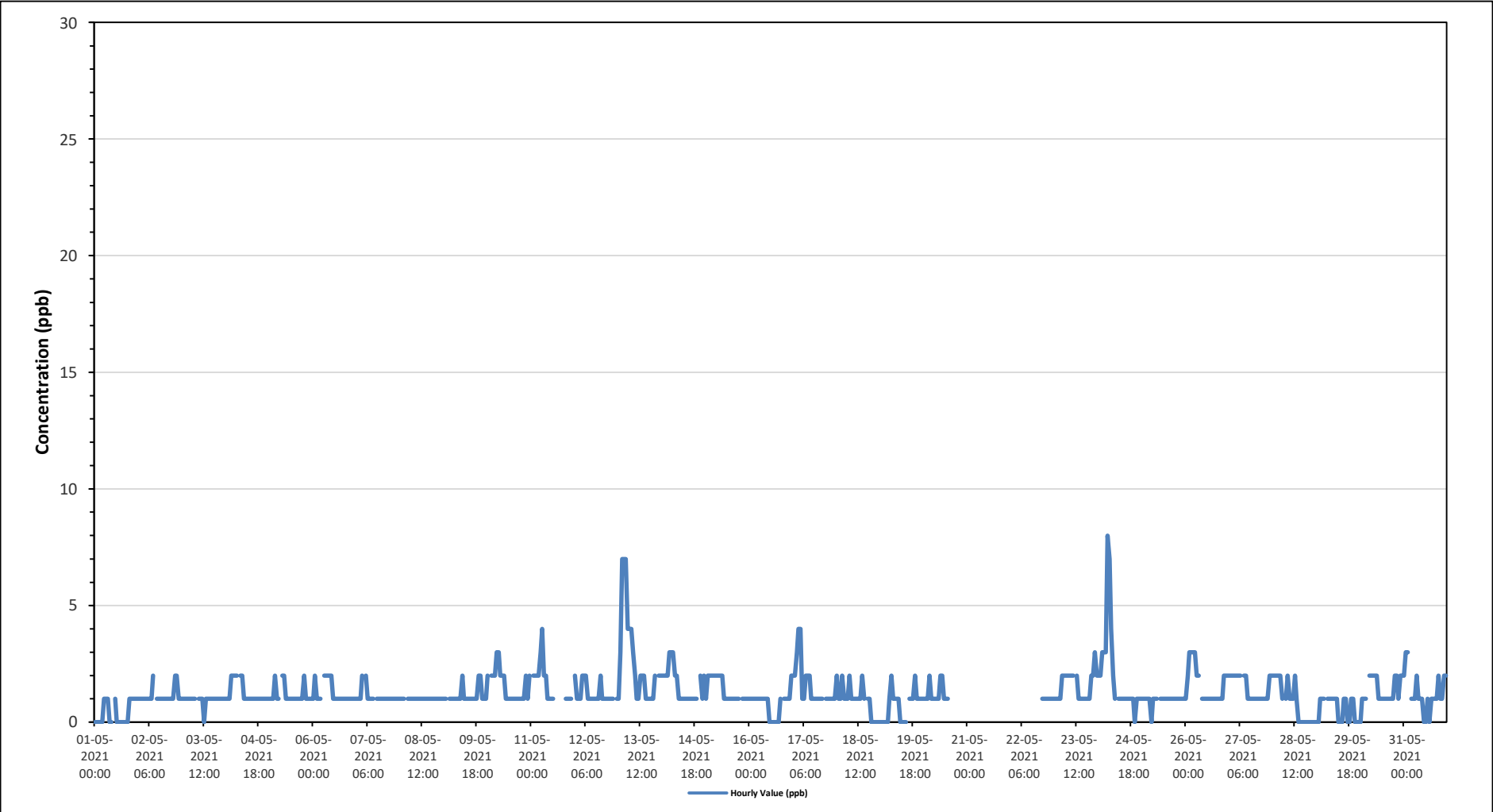
Maximum Hourly Value:	8 ppb on May 24 at hour 5	Hours in Service:	744
Maximum Daily Value:	2.7 ppb on May 13	Hours of Data:	657
Minimum Hourly Value:	0 ppb on May 1 at hour 0	Hours of Missing Data:	51
Minimum Daily Value:	0.4 ppb on May 1	Hours of Calibration:	36
Monthly Average:	1.2 ppb	Operational Uptime:	93.1

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23		
May 1	0	0	0	0	0	1	1	1	0	0	S	1	0	0	0	0	0	0	0	1	1	1	1	0	1	1	0	1	0.4
May 2	1	1	1	1	1	1	1	1	2	S	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	2	1.1	
May 3	1	1	1	1	1	1	1	1	S	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1.0
May 4	1	1	1	2	2	2	2	S	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.3
May 5	1	1	1	2	1	1	S	2	2	2	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	2	1.2
May 6	1	2	1	1	1	S	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.3
May 7	1	1	1	2	S	2	1	1	1	1	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1
May 8	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0
May 9	1	1	S	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	2	1.1
May 10	2	S	2	2	2	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	2	1	3	1.6
May 11	S	2	2	2	2	3	4	2	2	1	1	1	1	C	C	C	C	C	C	1	1	1	1	1	S	1	4	-	
May 12	2	1	1	1	2	2	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	S	1	1	2	1.2	
May 13	1	3	7	7	7	4	4	4	3	2	1	1	2	2	2	1	1	1	1	1	1	1	S	2	2	1	7	2.7	
May 14	2	2	2	2	3	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	S	2	1	2	1	3	1.6	
May 15	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	2	1.4	
May 16	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	S	1	1	1	1	2	0	0.8	
May 17	2	2	3	4	4	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	4	1.6
May 18	2	1	1	2	1	1	1	2	1	1	1	1	1	1	2	1	S	1	1	0	0	0	0	0	0	0	2	1.0	
May 19	0	0	0	0	0	1	2	1	1	1	1	0	0	0	0	S	1	1	1	2	1	1	1	1	1	0	2	0.7	
May 20	1	1	1	2	1	1	1	1	2	2	1	1	1	1	S	X	X	X	X	X	X	X	X	X	X	X	1	2	-
May 21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1	-
May 22	X	X	X	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	NRM	NRM	1	1	1	1	1	1	1	1	1	1	-	
May 23	1	1	1	1	2	2	2	2	2	2	2	S	2	1	1	1	1	1	1	1	1	2	2	3	2	1	3	1.6	
May 24	2	2	3	3	3	8	7	4	2	1	S	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	8	2.0	
May 25	1	1	1	1	1	0	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1.0	
May 26	1	2	3	3	3	3	2	2	S	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1	3	1.6	
May 27	2	2	2	2	2	2	2	S	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	1.5	
May 28	2	2	2	2	1	S	1	2	1	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.9	
May 29	0	0	1	1	1	S	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0.6	
May 30	0	1	1	1	S	2	2	2	2	2	1	1	1	1	1	1	1	1	1	2	2	1	2	2	2	0	2	1.3	
May 31	2	3	3	S	1	1	1	2	1	1	0	0	1	0	1	1	1	1	1	2	1	1	1	2	2	0	3	1.3	
Diurnal Maximum	2	3	7	7	7	8	7	4	3	2	2	1	2	2	2	2	2	2	2	2	2	2	2	3	2	2	3	2	
Diurnal Average	1.2	1.4	1.6	1.8	1.8	1.9	1.9	1.7	1.6	1.3	1.2	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	

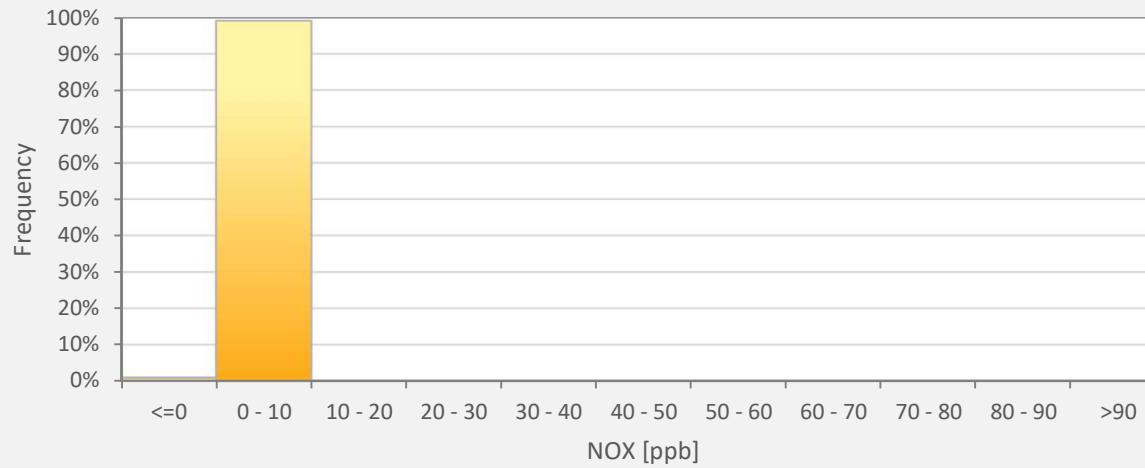
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction/Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NOx - St. Lina Site



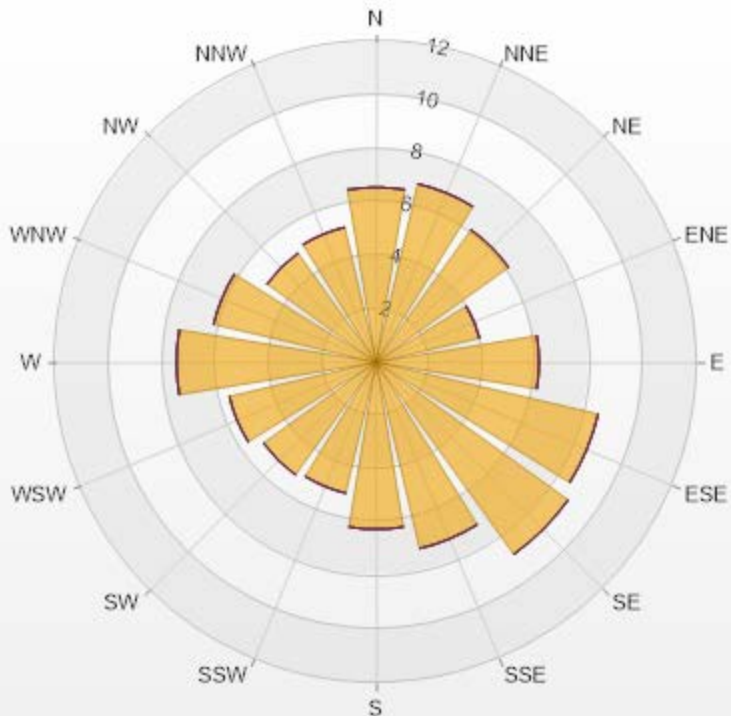
NOX[ppb] Histogram: St. Lina Monthly: 05-2021 1 Hr.



Classes	NOX
<=0	0.91%
0 - 10	99.09%
10 - 20	0.00%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: St. Lina Poll.: St. Lina-NOX[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 88.31% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	6.54	0	0	0	0	6.54
NNE	6.85	0	0	0	0	6.85
NE	6.09	0	0	0	0	6.09
ENE	3.96	0	0	0	0	3.96
E	6.09	0	0	0	0	6.09
ESE	8.52	0	0	0	0	8.52
SE	8.83	0	0	0	0	8.83
SSE	7.15	0	0	0	0	7.15
S	6.24	0	0	0	0	6.24
SSW	5.02	0	0	0	0	5.02
SW	5.18	0	0	0	0	5.18
WSW	5.63	0	0	0	0	5.63
W	7.46	0	0	0	0	7.46
WNW	6.24	0	0	0	0	6.24
NW	5.02	0	0	0	0	5.02
NNW	5.18	0	0	0	0	5.18
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100

0-30

0

30-50

0

50-76

0

76-159

0

>159.0



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St. Lina Site - May 2021

Summary of Hourly Averages

NITRIC OXIDE (NO) in ppb

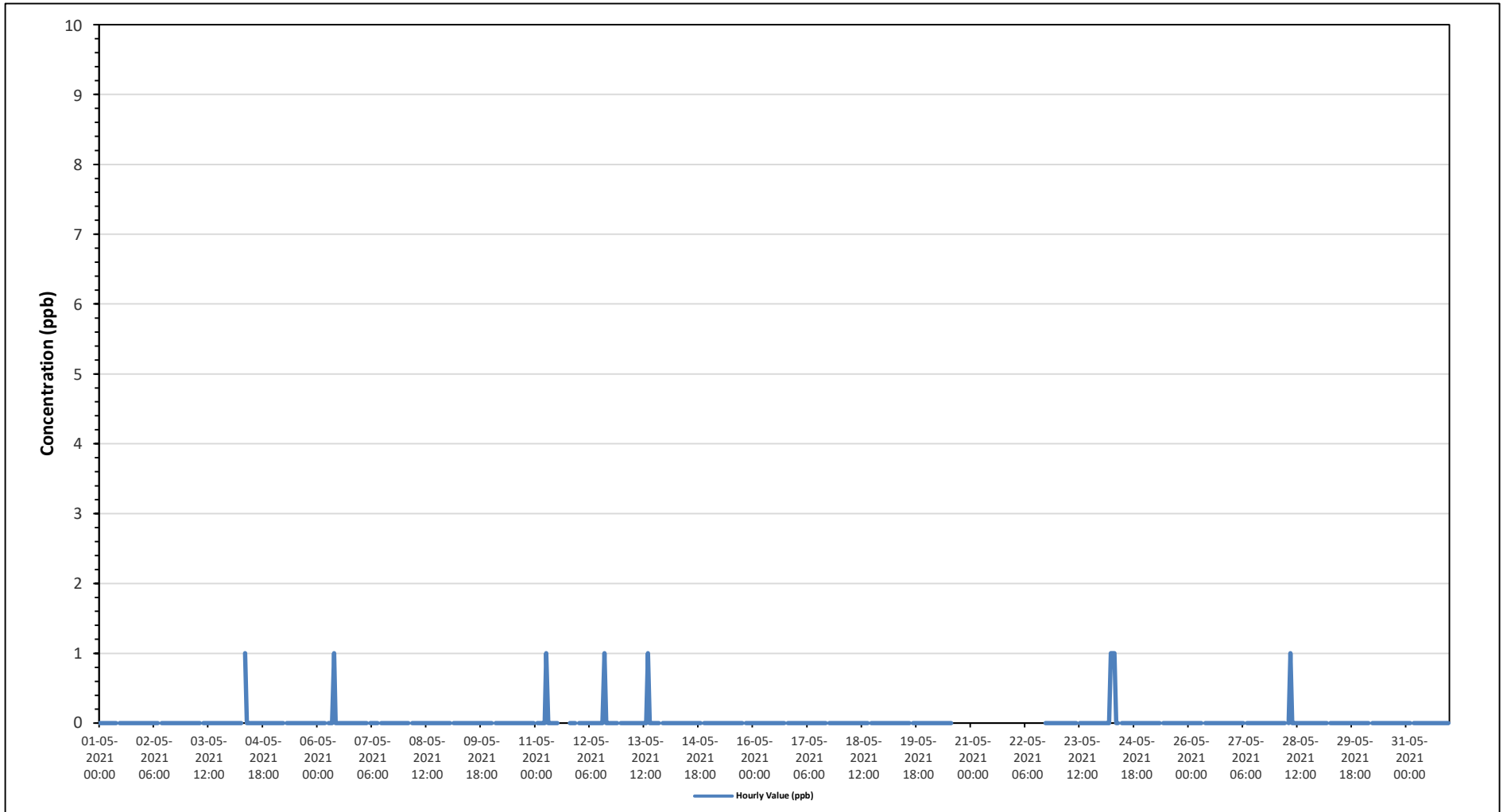
Maximum Hourly Value:	1 ppb on May 4 at hour 8	Hours in Service:	744
Maximum Daily Value:	0.1 ppb on May 24	Hours of Data:	657
Minimum Hourly Value:	0 ppb on May 1 at hour 0	Hours of Missing Data:	51
Minimum Daily Value:	0.0 ppb on May 1	Hours of Calibration:	36
Monthly Average:	0.0 ppb	Operational Uptime:	93.1

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average										
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23													
May 1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 2	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
May 3	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
May 4	0	0	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
May 5	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 6	0	0	0	0	0	S	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
May 7	0	0	0	0	S	0	0	0	0	0	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 8	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 9	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 10	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 11	S	0	0	0	0	0	1	0	0	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	-	
May 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	
May 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	
May 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0
May 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
May 22	X	X	X	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	NRM	NRM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 23	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 24	0	0	0	0	0	1	1	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
May 25	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 26	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 27	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 28	0	0	0	0	0	0	S	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
May 29	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 30	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May 31	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diurnal Maximum	0	0	0	0	0	1	1	1	1	1	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
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

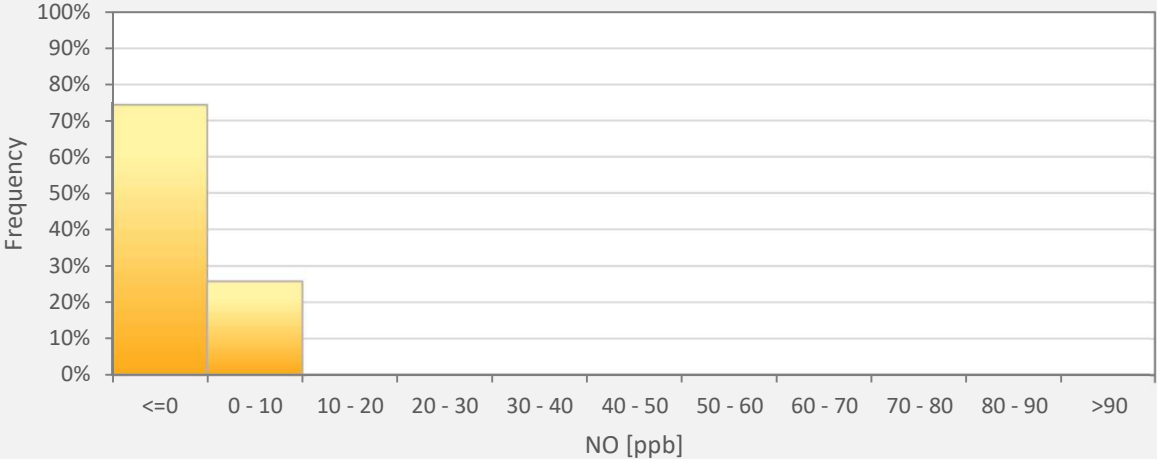
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction/Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NO - St. Lina Site



NO[ppb] Histogram: St. Lina Monthly: 05-2021 1 Hr.



Classes	NO
<=0	74.28%
0 - 10	25.72%
10 - 20	0.00%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: St. Lina Poll.: St. Lina-NO[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 88.31% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	6.54	0	0	0	0	6.54
NNE	6.85	0	0	0	0	6.85
NE	6.09	0	0	0	0	6.09
ENE	3.96	0	0	0	0	3.96
E	6.09	0	0	0	0	6.09
ESE	8.52	0	0	0	0	8.52
SE	8.83	0	0	0	0	8.83
SSE	7.15	0	0	0	0	7.15
S	6.24	0	0	0	0	6.24
SSW	5.02	0	0	0	0	5.02
SW	5.18	0	0	0	0	5.18
WSW	5.63	0	0	0	0	5.63
W	7.46	0	0	0	0	7.46
WNW	6.24	0	0	0	0	6.24
NW	5.02	0	0	0	0	5.02
NNW	5.18	0	0	0	0	5.18
Summary	100	0	0	0	0	100



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - May 2021

Summary of Hourly Averages

NITROGEN DIOXIDE (NO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb

Number of 1-Hour Exceedences: 0

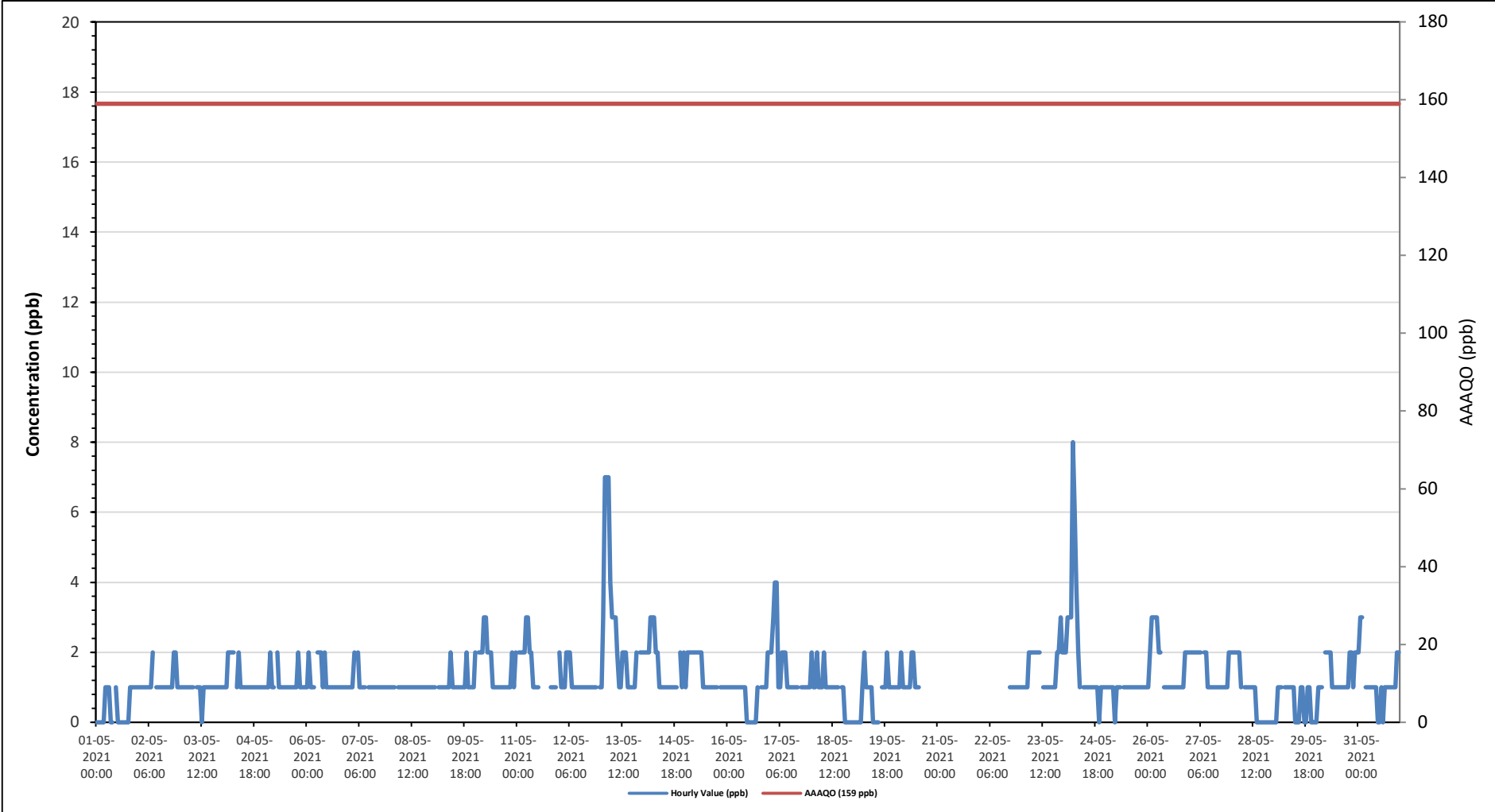
Maximum Hourly Value:	8 ppb on May 24 at hour 5	Hours in Service:	744
Maximum Daily Value:	2.6 ppb on May 13	Hours of Data:	657
Minimum Hourly Value:	0 ppb on May 1 at hour 0	Hours of Missing Data:	51
Minimum Daily Value:	0.4 ppb on May 1	Hours of Calibration:	36
Monthly Average:	1.2 ppb	Operational Uptime:	93.1

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
May 1	0	0	0	0	0	1	1	1	0	0	S	1	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1	0.4
May 2	1	1	1	1	1	1	1	1	1	2	S	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	2	1.1
May 3	1	1	1	1	1	1	1	1	1	S	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1.0
May 4	1	1	1	2	2	2	2	S	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.2
May 5	1	1	1	2	1	1	S	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	2	1.1
May 6	1	2	1	1	1	S	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.2
May 7	1	1	1	2	S	2	1	1	1	1	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1
May 8	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0
May 9	1	1	S	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	2	1.1
May 10	2	S	2	2	2	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	2	3	1.6
May 11	S	2	2	2	2	3	3	2	2	1	1	1	1	C	C	C	C	C	C	1	1	1	1	S	1	3	-	
May 12	2	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	2	1.2	
May 13	1	3	7	7	7	4	3	3	3	2	1	1	2	2	2	1	1	1	1	1	2	S	S	2	2	7	2.6	
May 14	2	2	2	2	3	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	2	S	2	1	2	1	3	1.6
May 15	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	2	1.4
May 16	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	S	1	1	1	1	2	0	2	0.8	
May 17	2	2	3	4	4	1	1	2	2	2	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	4	1.6
May 18	2	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	1	S	1	1	0	0	0	0	0	2	0.9	
May 19	0	0	0	0	0	1	2	1	1	1	1	0	0	0	S	1	1	1	2	1	1	1	1	1	1	2	0.7	
May 20	1	1	1	2	1	1	1	1	1	2	2	1	1	1	S	X	X	X	X	X	X	X	X	X	X	1	2	-
May 21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1	-
May 22	X	X	X	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	NRM	NRM	1	1	1	1	1	1	1	1	1	1	-
May 23	1	1	1	1	2	2	2	2	2	2	2	S	1	1	1	1	1	1	1	1	2	2	3	2	1	3	1.5	
May 24	2	2	3	3	3	8	6	4	2	1	S	1	1	1	1	1	1	1	1	1	0	1	1	1	0	8	2.0	
May 25	1	1	1	1	1	0	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1.0
May 26	1	2	3	3	3	3	2	2	S	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	3	1.6	
May 27	2	2	2	2	2	2	2	S	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	1.5	
May 28	2	2	2	2	2	1	S	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0.8	
May 29	0	0	1	1	1	S	1	1	1	1	1	1	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0.6	
May 30	0	1	1	1	S	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	2	1	2	2	0	2	1.3	
May 31	2	3	3	S	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1	1	2	2	0	3	1.2	
Diurnal Maximum	2	3	7	7	7	8	6	4	3	2	2	1	2	2	2	1	1	1	1	2	2	3	2	2	2	2	2	
Daiurnal Average	1.2	1.4	1.6	1.8	1.8	1.9	1.8	1.6	1.4	1.3	1.2	0.9	0.8	0.9	0.8	0.9	0.9	0.9	0.9	0.9	1.1	1.0	1.1	1.1	1.2	1.2		

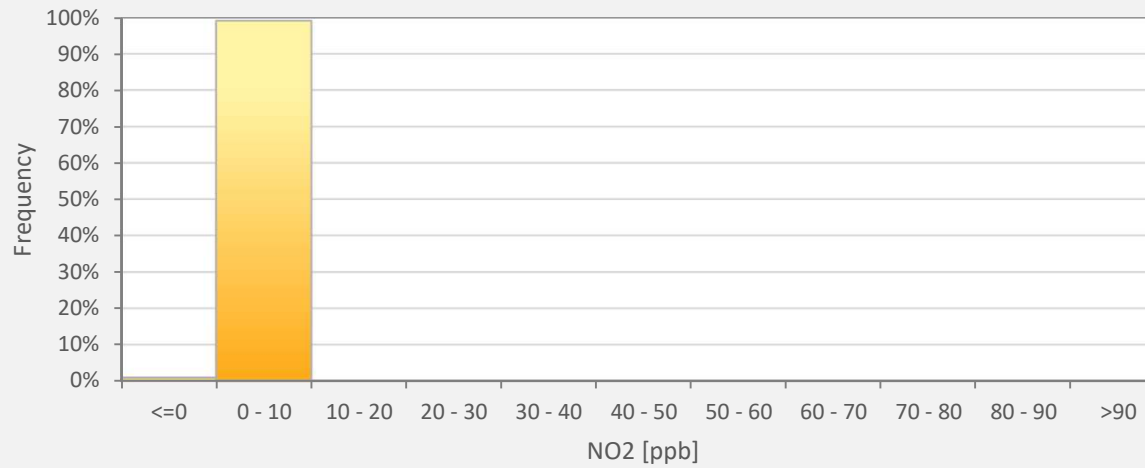
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for NO2 - St. Lina Site



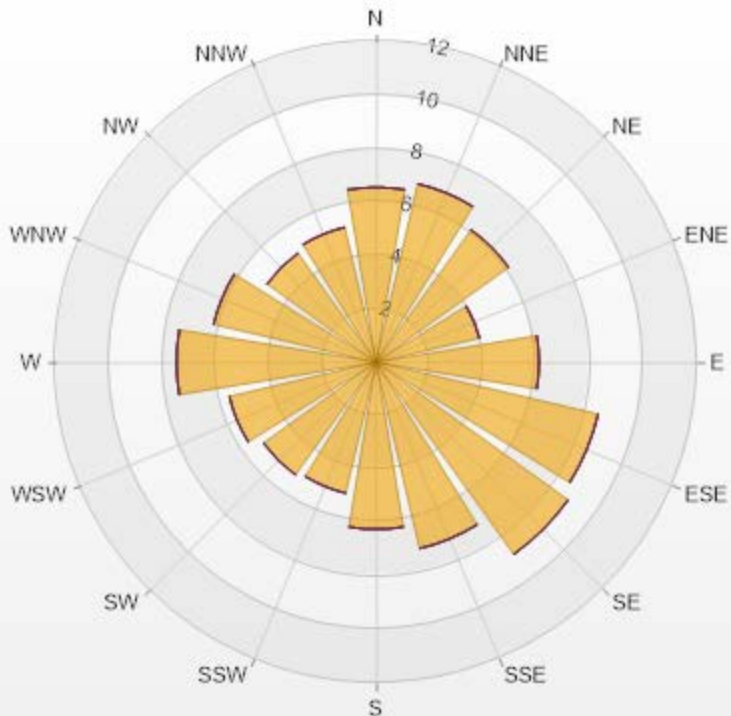
NO2[ppb] Histogram: St. Lina Monthly: 05-2021 1 Hr.



Classes	NO2
<=0	0.91%
0 - 10	99.09%
10 - 20	0.00%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: St. Lina Poll.: St. Lina-NO2[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 88.31% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	6.54	0	0	0	0	6.54
NNE	6.85	0	0	0	0	6.85
NE	6.09	0	0	0	0	6.09
ENE	3.96	0	0	0	0	3.96
E	6.09	0	0	0	0	6.09
ESE	8.52	0	0	0	0	8.52
SE	8.83	0	0	0	0	8.83
SSE	7.15	0	0	0	0	7.15
S	6.24	0	0	0	0	6.24
SSW	5.02	0	0	0	0	5.02
SW	5.18	0	0	0	0	5.18
WSW	5.63	0	0	0	0	5.63
W	7.46	0	0	0	0	7.46
WNW	6.24	0	0	0	0	6.24
NW	5.02	0	0	0	0	5.02
NNW	5.18	0	0	0	0	5.18
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)	100	0-30	0	30-50	0	50-76	0	76-159	0	>159.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - May 2021

Summary of Hourly Averages

OZONE (O₃) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb

Number of 1-Hour Exceedences: 0

Maximum Hourly Value:	56.8 ppb on May 9 at hour 16	Hours in Service:	744
Maximum Daily Value:	49.2 ppb on May 9	Hours of Data:	706
Minimum Hourly Value:	15.1 ppb on May 18 at hour 18	Hours of Missing Data:	1
Minimum Daily Value:	20.1 ppb on May 18	Hours of Calibration:	37
Monthly Average:	38.5 ppb	Operational Uptime:	99.9

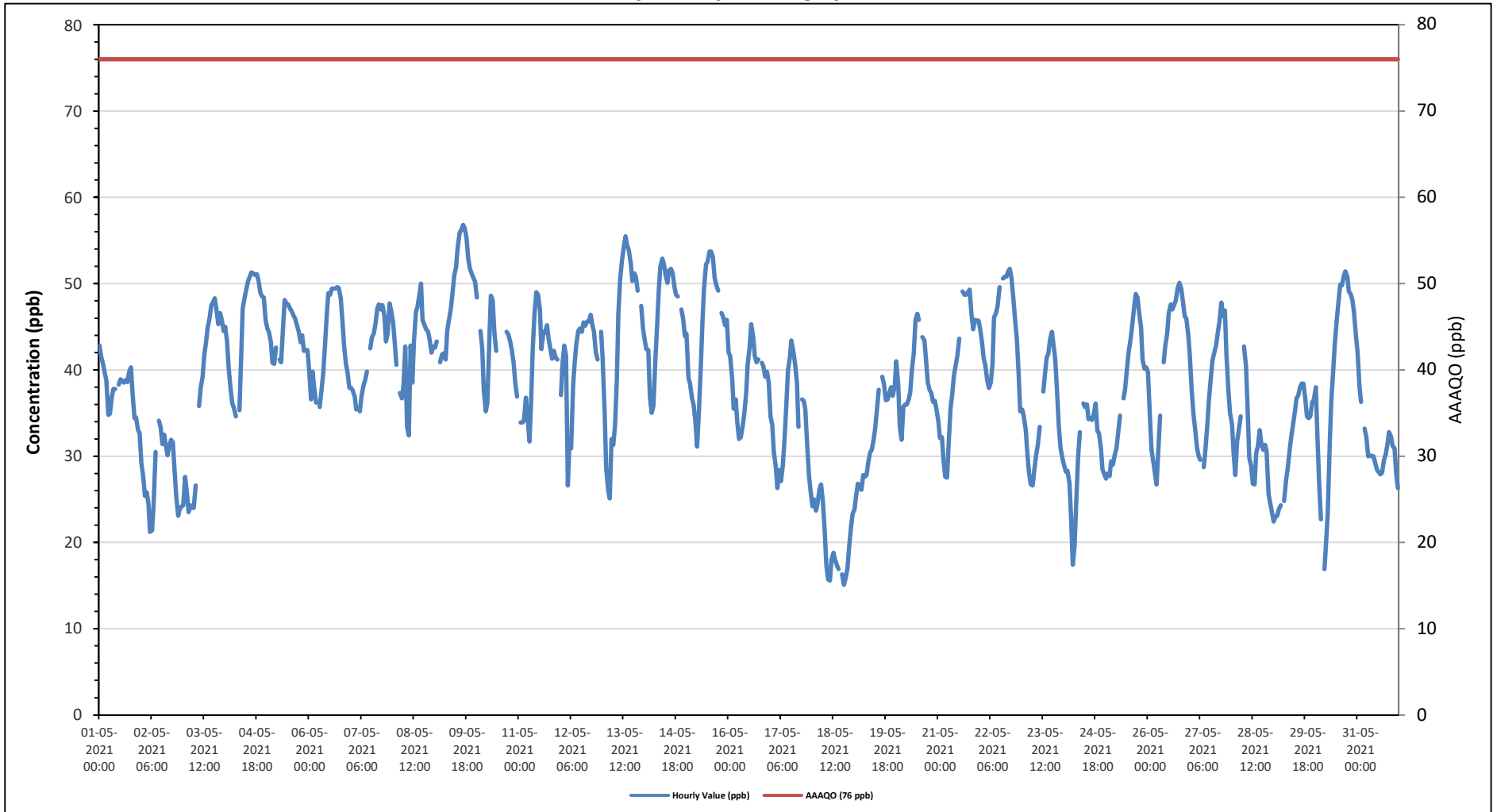
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
May 1	42.8	41.5	40.7	39.6	38.8	34.8	34.9	36.9	37.8	37.8	S	38.3	38.9	38.7	38.5	38.8	38.6	39.8	40.3	37.4	34.4	34.5	33	32.7	32.7	42.8	37.8	
May 2	29.2	27.7	25.4	25.8	24.5	21.2	21.4	24.3	30.5	S	34.1	33.3	31.4	32.5	31.1	30.1	31.3	31.9	31.6	28.2	25.1	23.1	23.9	24.2	21.2	34.1	27.9	
May 3	24.3	27.6	25.8	23.5	24.3	24	24	26.6	S	35.8	38	39.2	41.8	43.3	44.9	46.1	47.4	47.9	48.3	46.9	45.3	46.6	45.7	44.5	23.5	48.3	37.5	
May 4	45	43.4	40.1	37.9	36.1	35.6	34.6	S	35.3	40.7	47.1	48.3	49.3	50.3	50.8	51.3	51.2	51	51.1	50.4	49	48.5	48.4	45.8	34.6	51.3	45.3	
May 5	44.8	44.4	43.2	40.8	40.7	42.6	S	41.2	40.9	45	48.1	47.7	47.6	47.1	46.8	46.3	46	45.1	44.5	43.2	44	42.2	42.3	42.3	40.7	48.1	44.2	
May 6	39.8	36.6	39.8	37.5	36.2	S	35.7	37.6	39.6	42.4	46.4	48.9	48.7	49.4	49.4	49.6	49.5	48.3	45.9	42.8	40.8	39.6	37.9	35.7	49.6	43.1		
May 7	37.9	37.6	36.9	35.4	S	35.2	37	38.1	38.8	39.8	P	42.5	43.8	44.2	45.4	47.1	47.6	47	47.5	46.2	43.3	44.3	47.7	46.8	35.2	47.7	42.3	
May 8	45.5	43	40.6	S	37.3	36.7	38.2	42.7	33.4	32.4	42.8	38.5	43.2	46.7	47.3	48.6	50	45.8	45.2	44.7	44.4	43.5	42	42.7	32.4	50.0	42.4	
May 9	42.6	43.3	S	40.9	41.8	41.9	41.2	44.5	45.8	47	48.9	51	51.9	54.1	55.9	56.2	56.8	56.4	55.3	52.9	51.8	51.1	50.7	50.2	40.9	56.8	49.2	
May 10	48.4	S	S	44.5	42.5	37.8	35.2	36.1	43.5	48.6	48.1	44.3	42.2	C	C	C	C	C	44.4	44.1	43.3	42.2	40.7	38.5	36.9	35.2	48.6	42.3
May 11	S	33.9	33.9	34.1	36.8	34.8	31.7	36	42.5	46.6	49	48.7	47	42.4	44.4	44.3	45.2	43.7	42.5	41.3	42.2	41.4	41.2	S	31.7	49.0	41.1	
May 12	37.1	40.7	42.8	41.6	26.6	32.1	30.9	38.3	40.8	43.1	44.5	44.8	44.4	45.5	45.1	45.6	45.6	46.4	45.3	44.4	42.1	41.2	S	44.4	26.6	46.4	41.4	
May 13	41.4	35.1	28.6	26	25.1	32	31.3	33.6	38.9	46.6	50.5	52.6	54.2	55.5	54.4	53.9	52.3	50.3	51.2	50.8	49.2	S	47.4	44.8	25.1	55.5	43.7	
May 14	43.4	42.4	42.3	36.9	35	35.8	40.8	44.8	49.2	51.9	52.9	52.3	51	50.1	51.5	51.7	51.3	49.6	48.7	48.5	S	47	45.9	43.9	35.0	52.9	46.4	
May 15	44.2	39.1	38.4	36.7	36	34.1	31.1	35.1	40	45.5	49.3	52.2	52.5	53.7	53.7	53.1	50.7	49.9	49.2	S	46.6	46.1	45.2	45.8	31.1	53.7	44.7	
May 16	42	41.6	39	35.5	36.6	34	32	32.2	33.4	35	37.2	40.6	42.7	45.3	43.8	41.6	40.9	41.2	S	40.8	40.4	39.2	39.8	38.6	32.0	45.3	38.8	
May 17	34.6	33.6	30.5	28.7	26.3	28.4	27.1	28.8	31.8	35.8	40	41.4	43.4	42.1	40.9	38.5	33.4	S	36.6	36.4	35.4	31	27.9	25.9	25.9	43.4	33.8	
May 18	24.2	25	23.7	24.5	26.2	26.7	24.8	21.5	17.3	15.7	15.6	18	18.8	18	17.3	16.9	S	16.3	15.1	15.9	17	19.3	21.8	23.3	15.1	26.7	20.1	
May 19	23.9	25.4	26.8	26.6	26.1	27.8	27.6	27.8	29.3	30.4	30.8	31.9	33.2	35.7	37.7	S	39.2	38.3	36.5	36.6	37.4	38	37	38.1	23.9	39.2	32.3	
May 20	41	38.2	33.4	31.9	35.7	36	36	36.6	37.4	40.1	41.9	45.8	46.5	45.8	S	43.8	43.4	41.3	38.6	37.7	37.3	36.3	36.4	35.5	31.9	46.5	39.0	
May 21	34	32.1	32.2	29.5	27.6	27.5	31.8	35.6	37.3	39.3	40.7	41.7	43.6	S	49.1	48.7	49	49.3	46.5	44.7	45.8	45.7	45.7	45.7	27.5	49.3	40.3	
May 22	44.8	43.1	41.4	40.5	38.8	37.9	38.5	40.6	46.1	46.6	47.4	49.6	S	50.6	50.8	50.8	51.4	51.7	50.6	48.3	45.8	43.5	39.5	35.2	35.2	51.7	44.9	
May 23	35.4	34.6	33	30.4	28	26.7	26.6	28.5	30.2	31.2	33.4	S	37.5	39.3	41.4	41.9	43.6	44.4	42.7	41.2	37.6	33.5	30.9	29.8	26.6	44.4	34.9	
May 24	29	28.2	28.3	26.9	23.1	17.4	19.5	24.9	29.9	32.8	S	36.1	35.7	36	34.3	34.4	34.2	34.9	36.1	32.9	32.7	30.9	28.5	27.9	17.4	36.1	30.2	
May 25	27.4	28	27.7	29.4	29	30.1	30.9	32.8	34.7	S	36.7	37.8	40.3	42.1	43.4	45.1	47.1	48.8	48.4	46.7	44.9	41.1	40.1	40.3	27.4	48.8	37.9	
May 26	39.8	35.1	30.7	29.4	28.1	26.7	30.8	34.7	S	40.9	42.7	44.3	46.6	47.6	47	47.5	48.1	49.5	50.1	49.4	48.1	46.2	46	44	26.7	50.1	41.4	
May 27	41.6	37.8	34.9	33.1	31	30	29.6	S	28.7	31	33.7	36.5	39.2	41.1	42.1	42.8	44.3	45.7	47.8	46.2	46.9	41.8	37.5	35	28.7	47.8	38.2	
May 28	33.7	30.5	27.8	31.7	33.1	34.6	S	42.7	40.5	35.8	29.8	28.9	26.8	26.7	30.3	31.2	33	31.3	30.7	31.3	30.6	25.6	23.4	23.4	23.4	42.7	31.1	
May 29	22.4	23	23.1	23.9	24.3	S	24.8	27.3	28.5	30.7	32.2	33.6	35	36.7	37.1	38	38.4	38.4	36.8	34.6	34.4	34.6	36.3	36.5	22.4	38.4	31.8	
May 30	38	32.5	26.9	22.7	S	16.9	20.3	23.5	31.7	36.5	40.2	43.1	45.7	47.8	49.9	49.8	50.9	51.4	50.8	49.1	48.8	48.1	46.7	43.9	16.9	51.4	39.8	
May 31	42.2	38	36.3	S	33.2	32.2	30	30.1	30	30	29.3	28.4	28.2	27.9	28.1	29.5	30.2	31.4	32.8	32.3	31.2	30.9	28.1	26.3	26.3	42.2	31.2	
Diurnal Maximum	48	44	45	43	42	43	41	45	49	52	53	54	56	56	56	57	56	55	53	52	51	51	50					
Daiurnal Average	37.3	35.4	34.0	32.5	31.9	31.3	31.0	34.2	36.2	38.4	40.3	41.3	41.7	42.6	43.2	43.6	44.5	43.7	43.2	41.7	40.5	39.2	38.6	37.7				

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

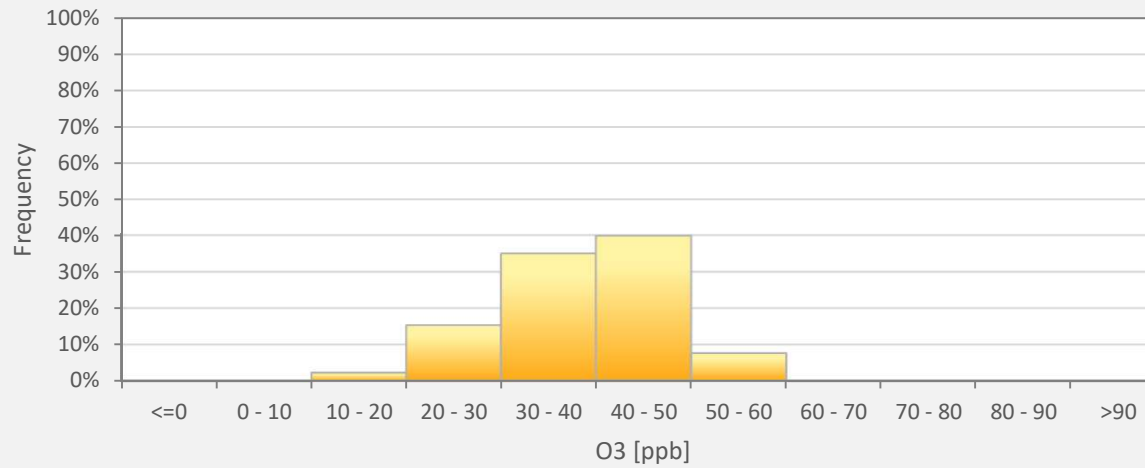
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.

Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for O3 - St. Lina Site



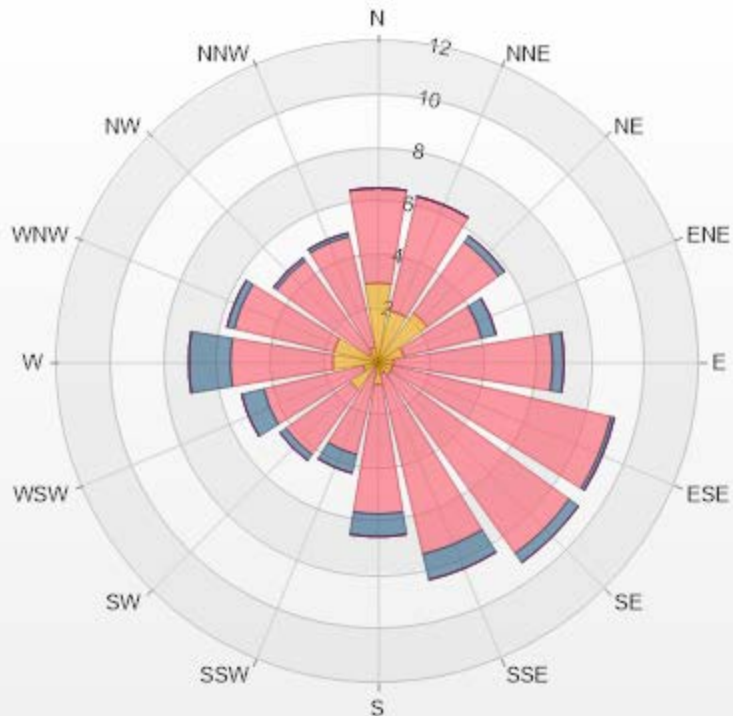
O3[ppb] Histogram: St. Lina Monthly: 05-2021 1 Hr.



Classes	O3
<=0	0.00%
0 - 10	0.00%
10 - 20	2.27%
20 - 30	15.30%
30 - 40	34.99%
40 - 50	39.80%
50 - 60	7.65%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: St. Lina Poll.: St. Lina-O3[ppb] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.97	3.54	0	0	0	6.51
NNE	1.98	4.39	0	0	0	6.37
NE	2.27	3.26	0.28	0	0	5.81
ENE	0.99	2.97	0.57	0	0	4.53
E	0.57	5.95	0.42	0	0	6.94
ESE	0.57	8.36	0.14	0	0	9.07
SE	0.57	8.22	0.42	0	0	9.21
SSE	0.42	6.94	0.99	0	0	8.35
S	0.85	4.82	0.85	0	0	6.52
SSW	0.14	3.4	0.71	0	0	4.25
SW	1.27	2.97	0.28	0	0	4.52
WSW	0.57	3.82	0.85	0	0	5.24
W	1.7	3.82	1.56	0	0	7.08
WNW	1.7	3.82	0.28	0	0	5.8
NW	0.42	4.25	0.14	0	0	4.81
NNW	0.57	4.25	0.14	0	0	4.96
Summary	17.56	74.78	7.63	0	0	100



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% Icon Classes (ppb)

18

0-30

75

30-50

8

50-76

0

76-159

0

>159.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - May 2021

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

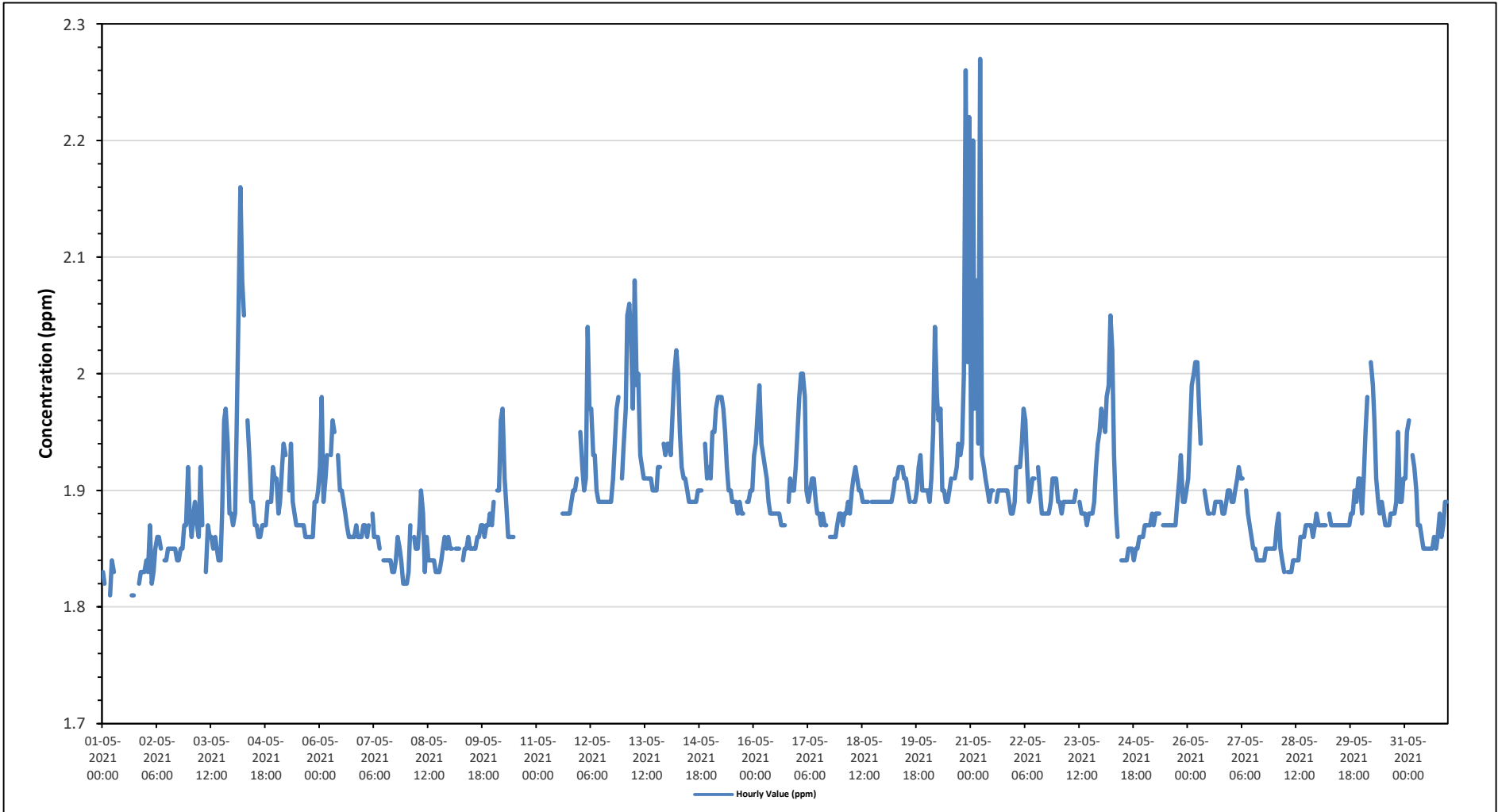
Maximum Hourly Value:	2.27 ppm on May 21 at hour 5	Hours in Service:	744
Maximum Daily Value:	1.96 ppm on May 20	Hours of Data:	671
Minimum Hourly Value:	1.81 ppm on May 1 at hour 4	Hours of Missing Data:	38
Minimum Daily Value:	1.85 ppm on May 7	Hours of Calibration:	35
Monthly Average:	1.90 ppm	Operational Uptime:	94.9

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23			
May 1	1.83	1.82	X	X	1.81	1.84	1.83	X	X	X	S	X	C	C	C	C	1.81	1.81	X	X	1.82	1.83	1.83	1.83	1.81	1.84	-			
May 2	1.84	1.83	1.87	1.82	1.83	1.85	1.86	1.86	1.85	S	1.84	1.84	1.85	1.85	1.85	1.85	1.85	1.84	1.84	1.84	1.85	1.85	1.87	1.87	1.92	1.82	1.92	1.85		
May 3	1.88	1.86	1.88	1.89	1.87	1.86	1.92	1.87	S	1.83	1.87	1.86	1.86	1.85	1.86	1.85	1.84	1.84	1.88	1.88	1.96	1.97	1.94	1.88	1.88	1.83	1.97	1.88		
May 4	1.87	1.88	1.95	2.06	2.16	2.08	2.05	S	1.96	1.93	1.89	1.89	1.87	1.87	1.86	1.86	1.87	1.87	1.87	1.89	1.89	1.89	1.92	1.91	1.86	2.16	1.93			
May 5	1.91	1.88	1.89	1.92	1.94	1.93	S	1.90	1.94	1.89	1.88	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.89	1.89	1.90	1.86	1.94	1.89		
May 6	1.92	1.98	1.89	1.91	1.93	S	1.93	1.96	1.95	X	1.93	1.90	1.90	1.89	1.88	1.87	1.86	1.86	1.86	1.86	1.87	1.86	1.86	1.86	1.86	1.86	1.98	1.90		
May 7	1.87	1.87	1.86	1.87	S	1.88	1.86	1.86	1.86	1.85	P	1.84	1.84	1.84	1.84	1.84	1.83	1.83	1.84	1.84	1.86	1.85	1.84	1.82	1.82	1.82	1.88	1.85		
May 8	1.82	1.83	1.87	S	1.86	1.85	1.85	1.87	1.90	1.88	1.83	1.86	1.84	1.84	1.84	1.84	1.83	1.83	1.83	1.84	1.85	1.86	1.85	1.86	1.82	1.90	1.85			
May 9	1.85	1.85	S	1.85	1.85	1.85	X	1.84	1.85	1.85	1.86	1.85	1.85	1.85	1.85	1.86	1.86	1.87	1.87	1.86	1.87	1.87	1.88	1.87	1.84	1.88	1.86			
May 10	1.89	S	1.90	1.90	1.96	1.97	1.91	1.89	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	1.86	1.97	-
May 11	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	1.88	1.88	1.88	1.88	1.88	1.89	1.90	1.90	1.91	S	1.88	1.91	-	
May 12	1.95	1.92	1.90	1.91	2.04	1.97	1.97	1.93	1.93	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.91	1.94	1.97	1.98	S	1.91	1.89	2.04	1.92		
May 13	1.94	1.97	2.05	2.06	2.03	1.97	2.08	1.99	2.00	1.93	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.90	1.92	1.92	S	1.94	1.93	1.90	2.08	1.95		
May 14	1.94	1.94	1.93	1.97	2.00	2.02	2.00	1.95	1.92	1.91	1.91	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.90	S	1.94	1.91	1.92	1.89	2.02	1.93	
May 15	1.91	1.95	1.95	1.97	1.98	1.98	1.98	1.97	1.95	1.92	1.90	1.90	1.89	1.89	1.89	1.88	1.89	1.88	1.88	1.88	S	1.89	1.89	1.90	1.90	1.88	1.98	1.92	1.91	
May 16	1.93	1.94	1.97	1.99	1.94	1.93	1.92	1.91	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.87	1.87	1.87	S	1.89	1.91	1.90	1.90	1.92	1.87	1.99	1.91	1.91		
May 17	1.95	1.98	2.00	2.00	1.98	1.90	1.89	1.90	1.91	1.91	1.89	1.88	1.88	1.87	1.88	1.87	1.87	S	1.86	1.86	1.86	1.86	1.87	1.88	1.86	2.00	1.90	1.88		
May 18	1.88	1.87	1.88	1.88	1.89	1.88	1.90	1.91	1.92	1.91	1.90	1.90	1.89	1.89	1.89	1.89	S	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.87	1.92	1.89		
May 19	1.89	1.89	1.89	1.89	1.89	1.90	1.91	1.91	1.92	1.92	1.92	1.91	1.91	1.90	1.89	S	1.89	1.89	1.90	1.92	1.93	1.90	1.90	1.90	1.89	1.93	1.90	1.90	1.90	
May 20	1.90	1.89	1.91	1.95	2.04	1.98	1.96	1.97	1.90	1.90	1.89	1.89	1.90	1.91	S	1.91	1.92	1.94	1.93	1.94	2.00	2.26	2.01	2.22	1.89	2.26	1.96	1.91		
May 21	1.91	2.20	1.97	2.08	1.94	2.27	1.93	1.92	1.91	1.90	1.89	1.90	1.90	S	1.89	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.88	2.27	1.94	1.94		
May 22	1.89	1.92	1.92	1.92	1.94	1.97	1.96	1.92	1.89	1.90	1.91	1.91	S	1.92	1.90	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.91	1.91	1.91	1.88	1.97	1.91	
May 23	1.89	1.89	1.88	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.90	S	1.89	1.88	1.88	1.88	1.87	1.88	1.88	1.88	1.89	1.92	1.94	1.95	1.87	1.95	1.89		
May 24	1.97	1.96	1.95	1.98	1.99	2.05	2.02	1.93	1.88	S	1.84	1.84	1.84	1.84	1.84	1.85	1.85	1.85	1.84	1.85	1.85	1.86	1.86	1.86	1.86	1.84	2.05	1.90		
May 25	1.87	1.87	1.87	1.87	1.88	1.87	1.88	1.88	1.88	S	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.89	1.91	1.93	1.89	1.89	1.90	1.87	1.93	1.88		
May 26	1.91	1.95	1.99	2.00	2.01	2.01	1.97	1.94	S	1.90	1.89	1.88	1.88	NRM	1.88	1.89	1.89	1.89	1.89	1.89	1.88	1.88	1.89	1.90	1.90	1.88	2.01	1.92		
May 27	1.89	1.89	1.90	1.91	1.92	1.91	1.91	S	1.90	1.88	1.87	1.86	1.85	1.85	1.84	1.84	1.84	1.84	1.84	1.84	1.85	1.85	1.85	1.85	1.85	1.84	1.92	1.87		
May 28	1.85	1.87	1.88	1.85	1.84	1.83	S	1.83	1.83	1.83	1.84	1.84	1.84	1.84	1.86	1.86	1.86	1.86	1.87	1.87	1.87	1.87	1.87	1.86	1.87	1.88	1.83	1.88	1.85	
May 29	1.87	1.87	1.87	1.87	1.87	S	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.88	1.88	1.90	1.89	1.91	1.87	1.91	1.88		
May 30	1.88	1.91	1.95	1.98	S	2.01	1.99	1.96	1.91	1.89	1.88	1.89	1.88	1.87	1.87	1.87	1.87	1.88	1.88	1.88	1.89	1.95	1.89	1.91	1.87	2.01	1.91	1.91		
May 31	1.91	1.95	1.96	S	1.93	1.92	1.90	1.87	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.86	1.85	1.86	1.86	1.88	1.86	1.87	1.89	1.89	1.85	1.96	1.88		
Diurnal Maximum	1.97	2.20	2.05	2.08	2.16	2.27	2.08	1.99	2.00	1.93	1.93	1.91	1.91	1.91	1.92	1.91	1.91	1.92	1.94	1.93	1.96	2.00	2.26	2.01	2.22	1.88	2.27	1.94		
Diurnal Average	1.89	1.91	1.92	1.93	1.94	1.94	1.93	1.91	1.90	1.89	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.88	1.89	1.89	1.90	1.89	1.90	1.85	1.96	1.88		

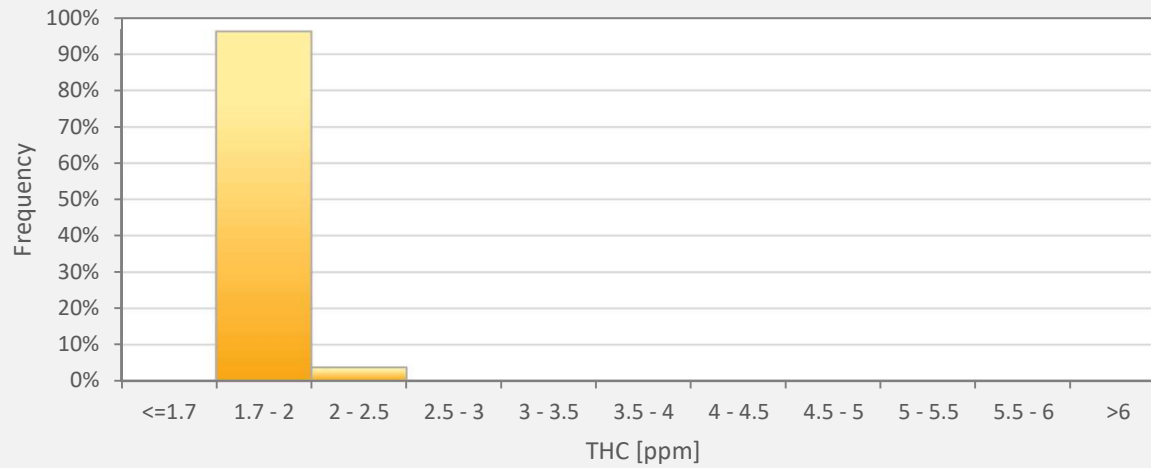
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction/Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for THC - St. Lina Site



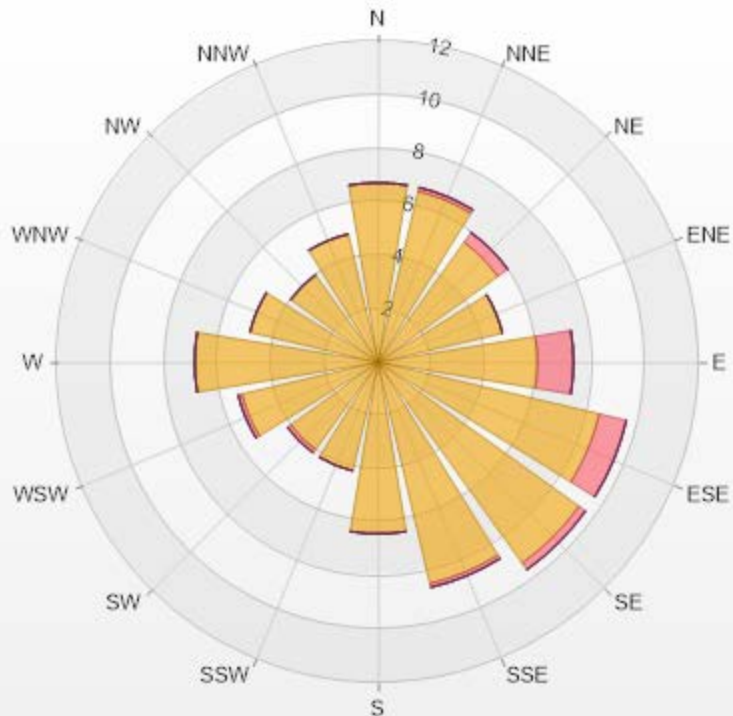
THC55[ppm] Histogram: St. Lina Monthly: 05-2021 1 Hr.



Classes	THC55
<=1.7	0.00%
1.7 - 2	96.27%
2 - 2.5	3.73%
2.5 - 3	0.00%
3 - 3.5	0.00%
3.5 - 4	0.00%
4 - 4.5	0.00%
4.5 - 5	0.00%
5 - 5.5	0.00%
5.5 - 6	0.00%
>6	0.00%

Wind: St. Lina Poll.: St. Lina-THC55[ppm] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 90.19% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	6.71	0	0	0	0	6.71
NNE	6.56	0.15	0	0	0	6.71
NE	5.51	0.45	0	0	0	5.96
ENE	4.77	0	0	0	0	4.77
E	5.96	1.34	0	0	0	7.3
ESE	8.49	1.04	0	0	0	9.53
SE	9.24	0.3	0	0	0	9.54
SSE	8.49	0.15	0	0	0	8.64
S	6.41	0	0	0	0	6.41
SSW	4.17	0	0	0	0	4.17
SW	4.02	0.15	0	0	0	4.17
WSW	5.22	0.15	0	0	0	5.37
W	6.86	0	0	0	0	6.86
WNW	4.92	0	0	0	0	4.92
NW	4.02	0	0	0	0	4.02
NNW	4.92	0	0	0	0	4.92
Summary	96.27	3.73	0	0	0	100



LICA-202105

% Icon Classes (ppm)

96 0-2

4 2-5

0 5-10

0 10-40

0 >40.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - May 2021
Summary of Hourly Averages

METHANE (CH4) in ppm

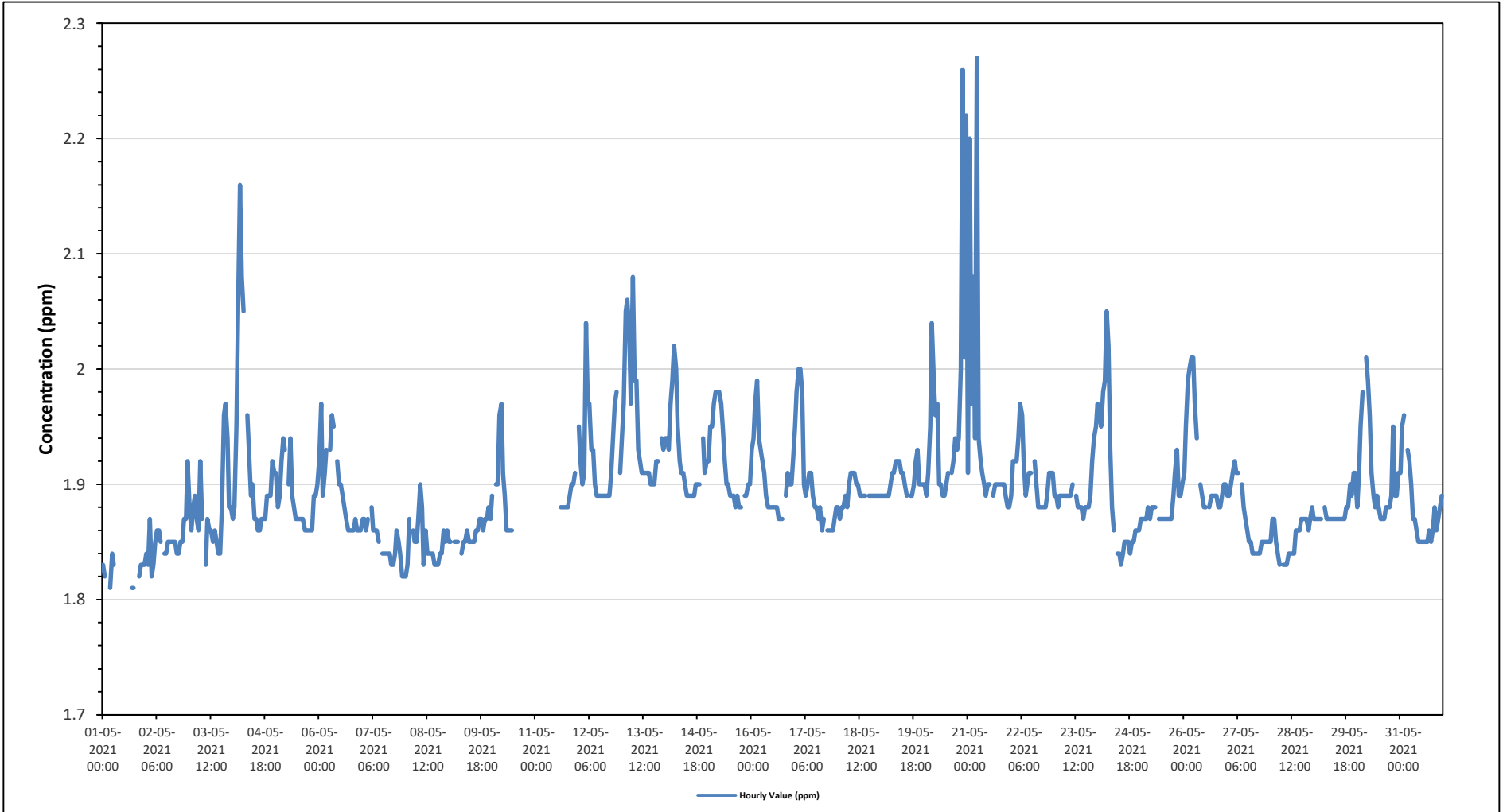
Maximum Hourly Value:	2.27 ppm on May 21 at hour 5	Hours in Service:	744
Maximum Daily Value:	1.96 ppm on May 20	Hours of Data:	671
Minimum Hourly Value:	1.81 ppm on May 1 at hour 4	Hours of Missing Data:	38
Minimum Daily Value:	1.85 ppm on May 7	Hours of Calibration:	35
Monthly Average:	1.90 ppm	Operational Uptime:	94.9

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23		
May 1	1.83	1.82	X	X	1.81	1.84	1.83	X	X	X	S	X	C	C	C	C	1.81	1.81	X	X	1.82	1.83	1.83	1.83	1.81	1.84	-		
May 2	1.84	1.83	1.87	1.82	1.83	1.85	1.86	1.86	1.85	1.83	1.84	1.84	1.85	1.85	1.85	1.85	1.84	1.84	1.84	1.85	1.85	1.87	1.87	1.92	1.82	1.92	1.85		
May 3	1.88	1.86	1.88	1.89	1.87	1.86	1.92	1.87	S	1.83	1.87	1.86	1.86	1.85	1.86	1.85	1.84	1.84	1.88	1.96	1.97	1.94	1.88	1.88	1.83	1.97	1.88		
May 4	1.87	1.88	1.95	2.06	2.16	2.08	2.05	S	1.96	1.93	1.89	1.90	1.87	1.87	1.86	1.86	1.87	1.87	1.87	1.89	1.89	1.89	1.92	1.91	1.86	2.16	1.93		
May 5	1.91	1.88	1.89	1.92	1.94	1.93	S	1.90	1.94	1.89	1.88	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.89	1.89	1.90	1.86	1.94	1.89		
May 6	1.92	1.97	1.89	1.91	1.93	S	1.93	1.96	1.95	X	1.92	1.90	1.90	1.89	1.88	1.87	1.86	1.86	1.86	1.86	1.87	1.86	1.86	1.86	1.86	1.97	1.90		
May 7	1.87	1.87	1.86	1.87	S	1.88	1.86	1.86	1.86	1.85	P	1.84	1.84	1.84	1.84	1.84	1.83	1.83	1.84	1.84	1.86	1.85	1.84	1.82	1.82	1.82	1.85		
May 8	1.82	1.83	1.87	S	1.86	1.85	1.85	1.87	1.90	1.88	1.83	1.86	1.84	1.84	1.84	1.84	1.83	1.83	1.83	1.84	1.84	1.86	1.85	1.86	1.82	1.90	1.85		
May 9	1.85	1.85	S	1.85	1.85	1.85	X	1.84	1.85	1.85	1.86	1.85	1.85	1.85	1.85	1.86	1.86	1.87	1.87	1.86	1.87	1.88	1.87	1.84	1.88	1.86			
May 10	1.89	S	1.90	1.90	1.96	1.97	1.91	1.89	1.86	1.86	1.86	1.86	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM		
May 11	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	1.88	1.88	1.88	1.88	1.88	1.89	1.90	1.90	1.91	S	1.88	1.91	-		
May 12	1.95	1.92	1.90	1.91	2.04	1.97	1.97	1.93	1.93	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.91	1.94	1.97	1.98	S	1.91	1.89	2.04	1.92	
May 13	1.94	1.97	2.05	2.06	2.03	1.97	2.08	1.99	1.99	1.93	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.90	1.92	1.92	S	1.94	1.93	1.90	2.08	1.95	
May 14	1.94	1.94	1.93	1.97	1.99	2.02	2.00	1.95	1.92	1.91	1.91	1.90	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.90	S	1.94	1.91	1.92	1.89	2.02	1.93	
May 15	1.92	1.95	1.95	1.97	1.98	1.98	1.98	1.97	1.95	1.92	1.90	1.90	1.89	1.89	1.89	1.88	1.89	1.88	1.88	1.88	S	1.89	1.89	1.90	1.90	1.88	1.98	1.92	
May 16	1.93	1.94	1.97	1.99	1.94	1.93	1.92	1.91	1.89	1.88	1.88	1.88	1.88	1.88	1.87	1.87	1.87	S	1.89	1.91	1.90	1.90	1.92	1.87	1.99	1.91	1.91		
May 17	1.95	1.98	2.00	2.00	1.98	1.90	1.89	1.90	1.91	1.91	1.89	1.88	1.88	1.87	1.88	1.86	1.87	S	1.86	1.86	1.86	1.86	1.87	1.88	1.86	2.00	1.90		
May 18	1.88	1.87	1.88	1.88	1.89	1.88	1.90	1.91	1.91	1.91	1.90	1.90	1.89	1.89	1.89	1.89	S	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.87	1.91	1.89		
May 19	1.89	1.89	1.89	1.89	1.89	1.90	1.91	1.91	1.92	1.92	1.92	1.91	1.91	1.90	1.89	S	1.89	1.89	1.90	1.92	1.93	1.90	1.90	1.90	1.89	1.93	1.90		
May 20	1.90	1.89	1.91	1.95	2.04	1.99	1.96	1.97	1.90	1.90	1.89	1.89	1.90	1.91	S	1.91	1.92	1.94	1.93	1.94	2.00	2.26	2.01	2.22	1.89	2.26	1.96		
May 21	1.91	2.20	1.97	2.08	1.94	2.27	1.94	1.92	1.91	1.90	1.89	1.90	1.90	S	1.89	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.88	1.88	1.88	2.27	1.94	
May 22	1.89	1.92	1.92	1.92	1.94	1.97	1.96	1.92	1.89	1.90	1.91	1.91	S	1.92	1.90	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.91	1.91	1.91	1.88	1.97	1.91	
May 23	1.89	1.89	1.88	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.90	S	1.89	1.88	1.88	1.88	1.87	1.88	1.88	1.88	1.89	1.92	1.94	1.95	1.87	1.95	1.89	
May 24	1.97	1.96	1.95	1.98	1.99	2.05	2.02	1.93	1.88	1.86	S	1.84	1.84	1.83	1.84	1.85	1.85	1.85	1.84	1.85	1.85	1.86	1.86	1.86	1.83	2.05	1.90		
May 25	1.87	1.87	1.87	1.87	1.88	1.87	1.88	1.88	1.88	S	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.89	1.91	1.93	1.89	1.89	1.90	1.87	1.93	1.88	
May 26	1.91	1.95	1.99	2.00	2.01	2.01	1.97	1.94	S	1.90	1.89	1.88	1.88	NRM	1.88	1.89	1.89	1.89	1.89	1.89	1.88	1.88	1.89	1.90	1.90	1.88	2.01	1.92	
May 27	1.89	1.89	1.90	1.91	1.92	1.91	1.91	S	1.90	1.88	1.87	1.86	1.85	1.85	1.84	1.84	1.84	1.84	1.84	1.85	1.85	1.85	1.85	1.85	1.84	1.92	1.87	1.87	
May 28	1.85	1.87	1.87	1.85	1.84	1.83	S	1.83	1.83	1.83	1.84	1.84	1.84	1.84	1.86	1.86	1.86	1.87	1.87	1.87	1.87	1.87	1.87	1.86	1.87	1.88	1.83	1.88	1.85
May 29	1.87	1.87	1.87	1.87	1.87	S	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.88	1.88	1.90	1.89	1.91	1.87	1.91	1.88		
May 30	1.88	1.91	1.95	1.98	S	2.01	1.99	1.96	1.91	1.89	1.88	1.89	1.88	1.87	1.87	1.87	1.88	1.88	1.88	1.88	1.89	1.95	1.89	1.91	1.87	2.01	1.91		
May 31	1.91	1.95	1.96	S	1.93	1.92	1.90	1.87	1.87	1.86	1.85	1.85	1.85	1.85	1.85	1.86	1.85	1.86	1.85	1.86	1.88	1.86	1.87	1.88	1.89	1.85	1.96	1.88	
Diurnal Maximum	1.97	2.20	2.05	2.08	2.16	2.27	2.08	1.99	1.99	1.93	1.92	1.91	1.91	1.91	1.92	1.91	1.91	1.92	1.94	1.93	1.96	2.00	2.26	2.01	2.22	1.89	2.26	1.96	
Diurnal Average	1.89	1.91	1.92	1.93	1.94	1.94	1.93	1.91	1.90	1.89	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.88	1.89	1.89	1.90	1.89	1.90	1.85	1.96	1.88	

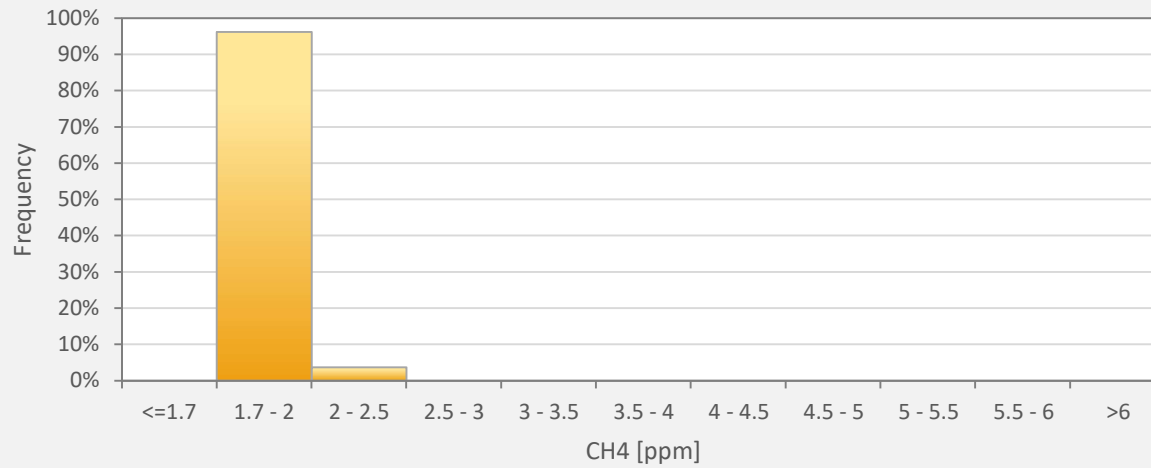
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction/Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for CH4 - St. Lina Site



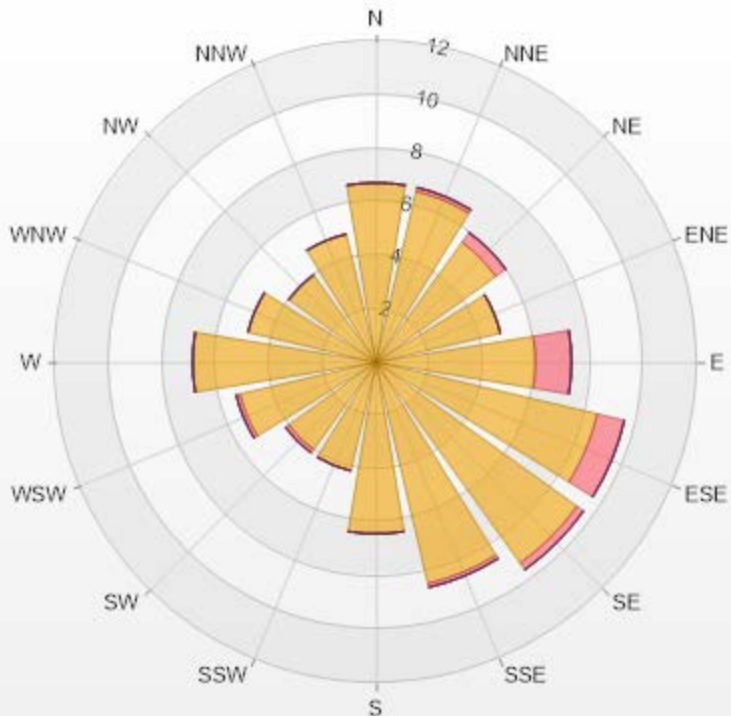
CH4[ppm] Histogram: St. Lina Monthly: 05-2021 1 Hr.



Classes	CH4
<=1.7	0.00%
1.7 - 2	96.27%
2 - 2.5	3.73%
2.5 - 3	0.00%
3 - 3.5	0.00%
3.5 - 4	0.00%
4 - 4.5	0.00%
4.5 - 5	0.00%
5 - 5.5	0.00%
5.5 - 6	0.00%
>6	0.00%

Wind: St. Lina Poll.: St. Lina-CH4[ppm] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 90.19% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	6.71	0	0	0	0	6.71
NNE	6.56	0.15	0	0	0	6.71
NE	5.51	0.45	0	0	0	5.96
ENE	4.77	0	0	0	0	4.77
E	5.96	1.34	0	0	0	7.3
ESE	8.49	1.04	0	0	0	9.53
SE	9.24	0.3	0	0	0	9.54
SSE	8.49	0.15	0	0	0	8.64
S	6.41	0	0	0	0	6.41
SSW	4.17	0	0	0	0	4.17
SW	4.02	0.15	0	0	0	4.17
WSW	5.22	0.15	0	0	0	5.37
W	6.86	0	0	0	0	6.86
WNW	4.92	0	0	0	0	4.92
NW	4.02	0	0	0	0	4.02
NNW	4.92	0	0	0	0	4.92
Summary	96.27	3.73	0	0	0	100



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% Icon Classes (ppm)

96 0-2

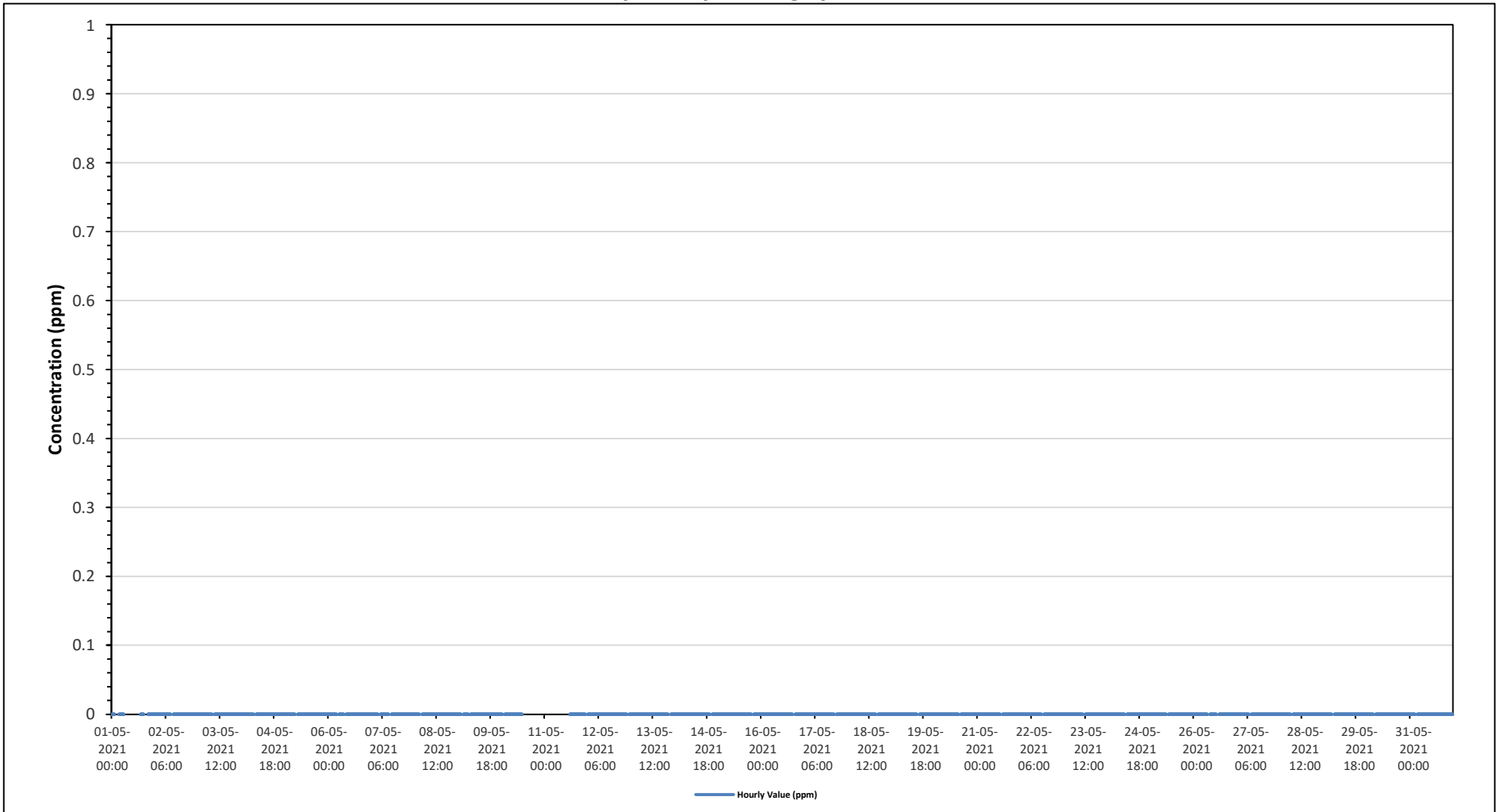
4 2-5

0 5-10

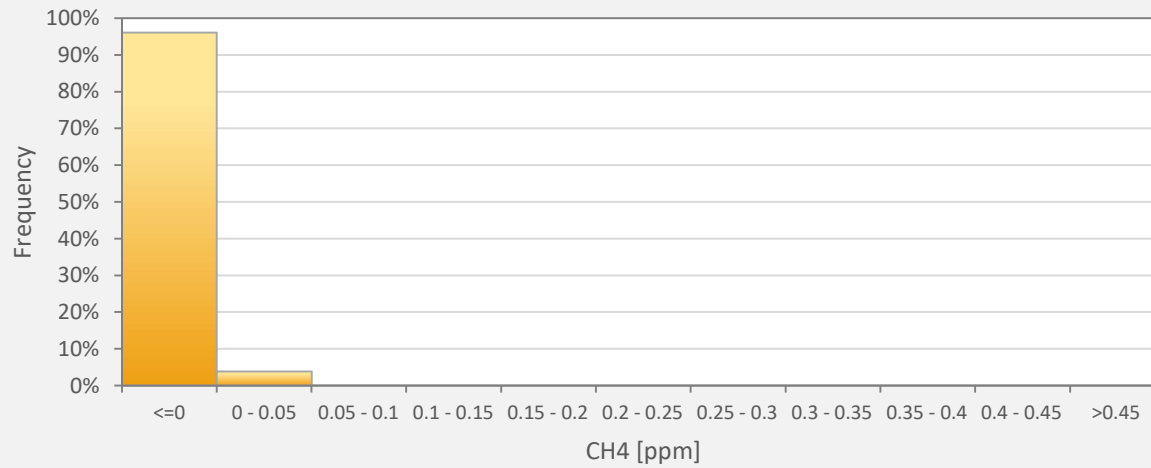
0 10-20

0 >20.0

Timeseries Chart of Hourly Average for NMHC - St. Lina Site



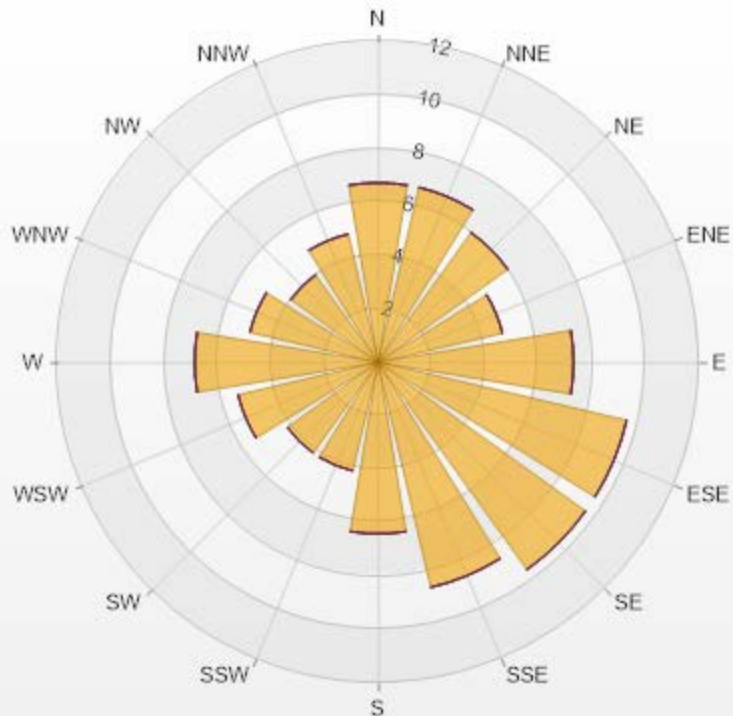
NMHC[ppm] Histogram: St. Lina Monthly: 05-2021 1 Hr.



Classes	NMHC
<=0	96.13%
0 - 0.05	3.87%
0.05 - 0.1	0.00%
0.1 - 0.15	0.00%
0.15 - 0.2	0.00%
0.2 - 0.25	0.00%
0.25 - 0.3	0.00%
0.3 - 0.35	0.00%
0.35 - 0.4	0.00%
0.4 - 0.45	0.00%
>0.45	0.00%

Wind: St. Lina Poll.: St. Lina-NMHC[ppm] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 90.19% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	6.71	0	0	0	0	6.71
NNE	6.71	0	0	0	0	6.71
NE	5.96	0	0	0	0	5.96
ENE	4.77	0	0	0	0	4.77
E	7.3	0	0	0	0	7.3
ESE	9.54	0	0	0	0	9.54
SE	9.54	0	0	0	0	9.54
SSE	8.64	0	0	0	0	8.64
S	6.41	0	0	0	0	6.41
SSW	4.17	0	0	0	0	4.17
SW	4.17	0	0	0	0	4.17
WSW	5.37	0	0	0	0	5.37
W	6.86	0	0	0	0	6.86
WNW	4.92	0	0	0	0	4.92
NW	4.02	0	0	0	0	4.02
NNW	4.92	0	0	0	0	4.92
Summary	100	0	0	0	0	100





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% Icon Classes (ppm)

100  0-0.1

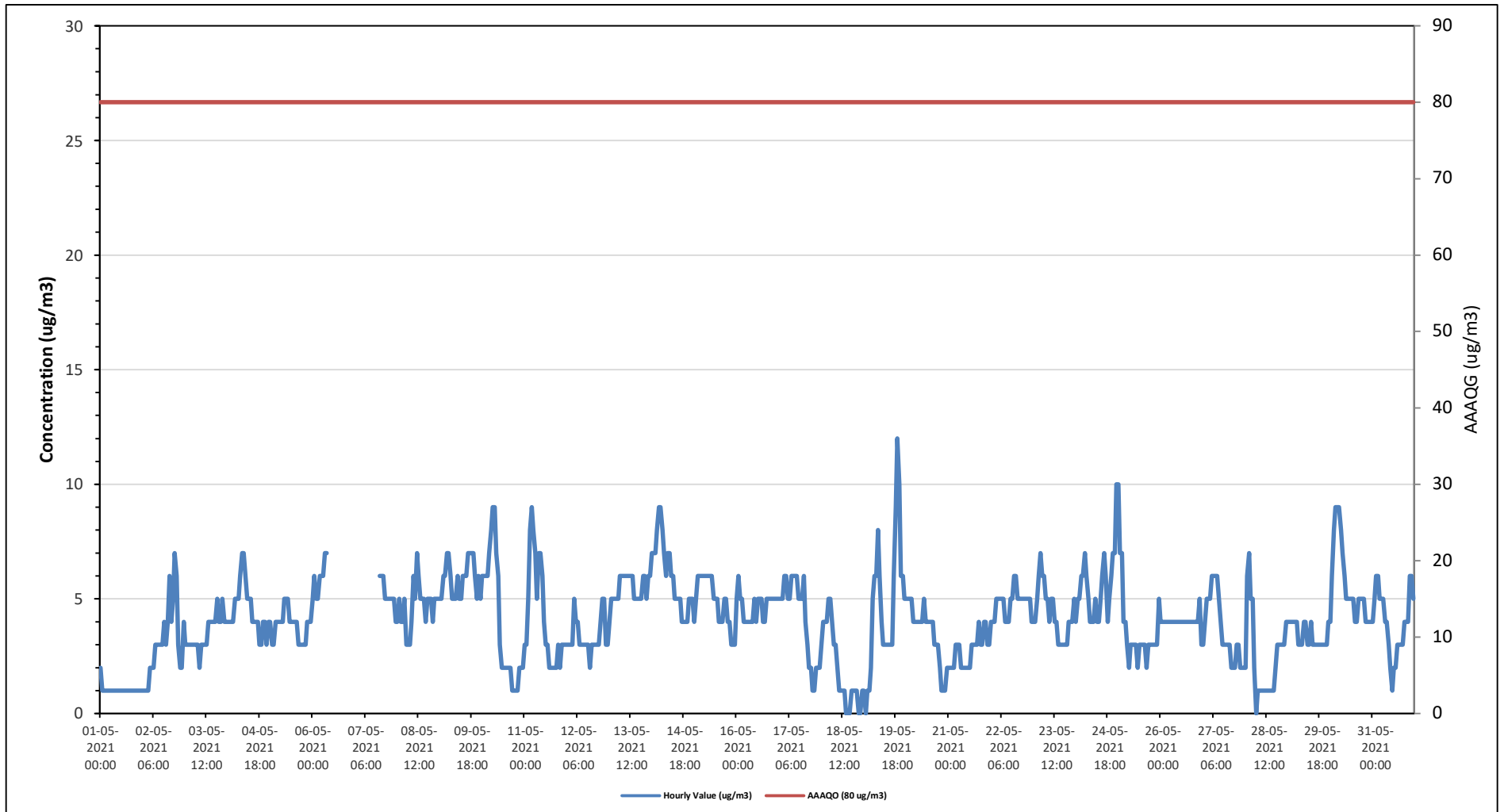
0  0.1-0.3

0  0.3-0.9

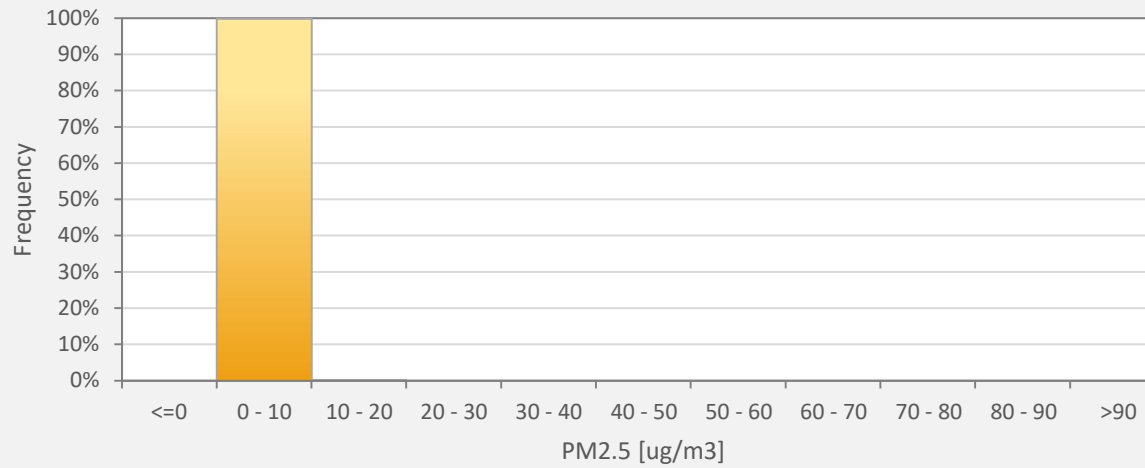
0  0.9-2

0  >2.0

Timeseries Chart of Hourly Average for PM2.5 - St. Lina Site



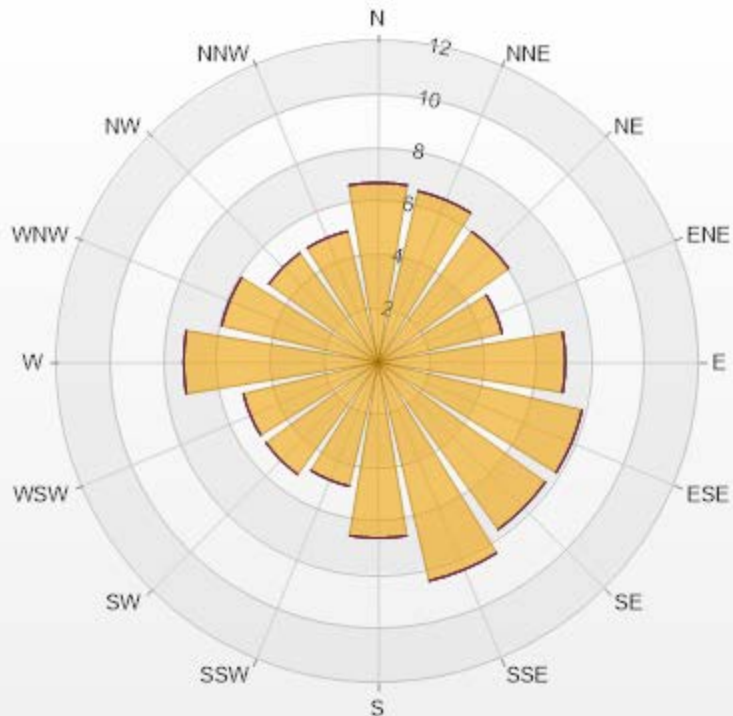
PM2.5[ug/m3(L)] Histogram: St. Lina Monthly: 05-2021 1 Hr.



Classes	PM2.5
<=0	0.00%
0 - 10	99.86%
10 - 20	0.14%
20 - 30	0.00%
30 - 40	0.00%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: St. Lina Poll.: St. Lina-PM2.5[ug/m3(L)] Monthly: 05-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 96.10% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	6.71	0	0	0	0	6.71
NNE	6.57	0	0	0	0	6.57
NE	6.01	0	0	0	0	6.01
ENE	4.76	0	0	0	0	4.76
E	6.99	0	0	0	0	6.99
ESE	7.83	0	0	0	0	7.83
SE	7.69	0	0	0	0	7.69
SSE	8.39	0	0	0	0	8.39
S	6.57	0	0	0	0	6.57
SSW	4.76	0	0	0	0	4.76
SW	5.17	0	0	0	0	5.17
WSW	5.17	0	0	0	0	5.17
W	7.27	0	0	0	0	7.27
WNW	6.01	0	0	0	0	6.01
NW	5.03	0	0	0	0	5.03
NNW	5.03	0	0	0	0	5.03
Summary	100	0	0	0	0	100




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% Icon Classes (ug/m3(L))

100  0-50

0  50-80

0  80-120

0  120-240

0  >240.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - May 2021

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

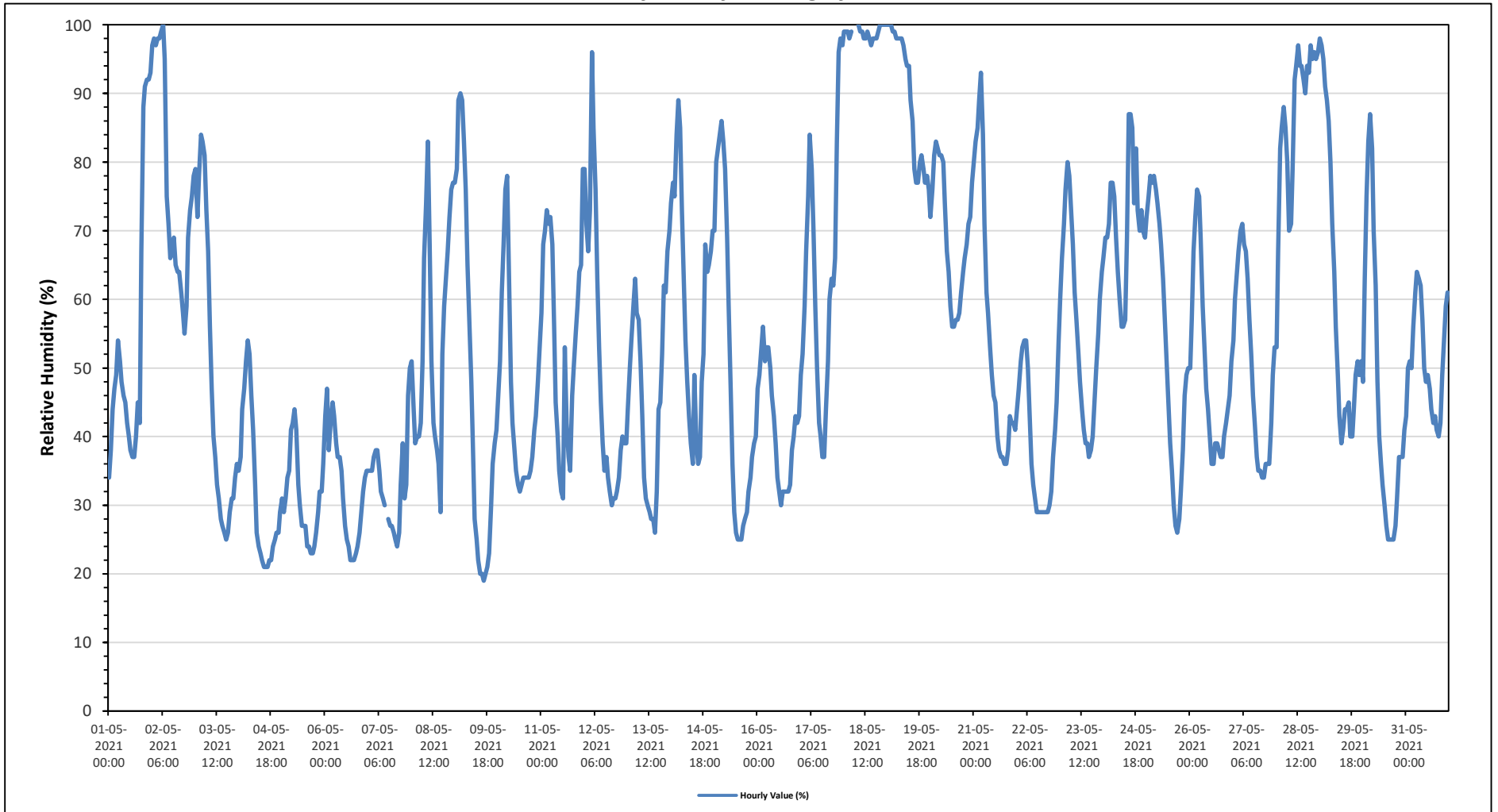
Maximum Hourly Value:	100 %	on May 2 at hour 6	Hours in Service:	744
Maximum Daily Value:	98.8 %	on May 18	Hours of Data:	740
Minimum Hourly Value:	19 %	on May 9 at hour 16	Hours of Missing Data:	4
Minimum Daily Value:	31.0 %	on May 5	Hours of Calibration:	0
Monthly Average:	54.6 %		Operational Uptime:	99.5

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	34	38	44	47	49	54	51	48	46	45	42	40	38	37	37	40	45	42	67	88	91	92	92	93	34	93	54.2
May 2	97	98	97	98	98	99	100	95	75	71	66	67	69	65	64	64	61	58	55	59	69	73	75	78	25	84	48.1
May 3	79	72	78	84	83	81	73	67	56	47	40	37	33	31	28	27	26	25	26	29	31	31	34	36	21	54	32.2
May 4	35	37	44	47	51	54	52	46	41	33	26	24	23	22	21	21	21	22	22	24	25	26	26	29	23	44	31.0
May 5	31	29	31	34	35	41	42	44	41	33	30	27	27	24	24	23	23	24	26	29	32	32	36	23	44	31.0	
May 6	43	47	38	42	45	43	39	37	37	35	31	27	25	24	22	22	22	23	24	26	29	32	34	35	22	47	32.6
May 7	35	35	35	37	38	38	35	32	31	30	P	28	27	27	26	25	24	26	33	39	31	33	46	50	24	50	33.1
May 8	51	44	39	40	40	42	51	66	74	83	68	51	42	40	38	36	29	52	59	63	67	72	76	77	29	83	54.2
May 9	77	79	89	90	89	83	76	65	57	48	39	28	25	22	20	20	19	20	21	23	30	36	39	41	19	90	47.3
May 10	46	51	61	68	76	78	64	48	42	38	35	33	32	33	34	34	34	35	37	41	43	48	53	32	78	45.8	
May 11	58	68	70	73	71	72	68	56	45	40	35	32	31	53	42	37	35	46	50	55	59	64	65	79	31	79	54.3
May 12	79	71	67	73	96	85	76	63	53	45	39	35	37	34	32	30	31	31	32	34	38	40	39	39	30	96	50.0
May 13	44	50	54	59	63	58	57	51	43	34	31	30	29	28	28	26	32	44	45	52	62	61	67	70	26	70	46.6
May 14	74	77	75	84	89	85	73	62	54	48	43	39	36	49	39	36	37	48	52	68	64	65	67	70	36	89	59.8
May 15	70	80	82	84	86	83	79	69	59	47	36	29	26	25	25	25	27	28	29	32	34	37	39	40	25	86	48.8
May 16	47	49	53	56	51	53	53	50	46	43	39	34	32	30	32	32	32	33	38	40	43	42	43	30	56	41.8	
May 17	49	52	59	67	75	84	79	70	59	50	42	40	37	37	44	51	60	63	62	66	83	96	98	97	37	98	63.3
May 18	99	99	99	98	99	X	X	X	100	99	99	98	98	99	98	97	98	98	98	99	100	100	100	100	97	100	98.8
May 19	100	100	100	99	99	98	98	98	98	97	95	94	94	89	86	79	77	77	80	81	79	77	78	76	76	100	89.5
May 20	72	76	81	83	82	81	81	80	74	67	64	59	56	56	57	57	58	61	64	66	68	71	72	77	56	83	69.3
May 21	80	83	85	89	93	84	71	61	58	53	49	46	45	40	38	37	37	36	36	38	43	42	42	41	36	93	55.3
May 22	44	47	51	53	54	54	50	43	36	33	31	29	29	29	29	29	29	30	32	37	41	45	54	29	54	39.1	
May 23	60	66	71	76	80	78	73	68	61	57	52	48	44	41	39	39	37	38	40	45	50	55	60	64	37	80	55.9
May 24	66	69	69	71	77	77	75	69	64	60	56	56	57	69	87	87	85	74	82	73	70	73	70	69	56	87	71.0
May 25	72	75	78	77	78	76	74	71	68	63	57	51	45	39	35	30	27	26	28	32	38	46	49	50	26	78	53.5
May 26	50	57	67	72	76	75	69	59	53	47	44	40	36	36	39	39	38	37	37	40	42	44	46	51	36	76	49.8
May 27	54	60	64	67	70	71	68	67	63	57	52	46	42	37	35	35	34	34	36	36	36	42	49	53	34	71	50.3
May 28	53	67	82	85	88	85	80	70	71	79	92	94	97	94	94	92	90	94	93	97	95	96	95	96	53	97	86.6
May 29	98	97	95	91	89	86	80	71	64	56	49	43	39	41	44	44	45	40	40	44	49	51	49	51	39	98	60.7
May 30	48	63	75	83	87	82	70	62	48	40	36	33	30	27	25	25	25	25	27	31	37	37	41	25	87	45.6	
May 31	43	50	51	50	56	61	64	63	62	57	50	48	49	47	44	42	43	41	40	42	49	54	59	61	40	64	51.1
Diurnal Maximum	100	100	100	99	99	100	98	100	99	99	98	98	99	98	97	98	98	98	98	99	100	100	100	100			
Diurnal Average	60.9	64.1	67.2	70.2	73.0	71.4	67.4	61.7	57.4	52.7	48.9	44.7	42.9	42.8	42.1	41.4	41.3	42.8	45.2	48.9	52.1	55.0	57.1	59.7			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for RH - St. Lina Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - May 2021

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

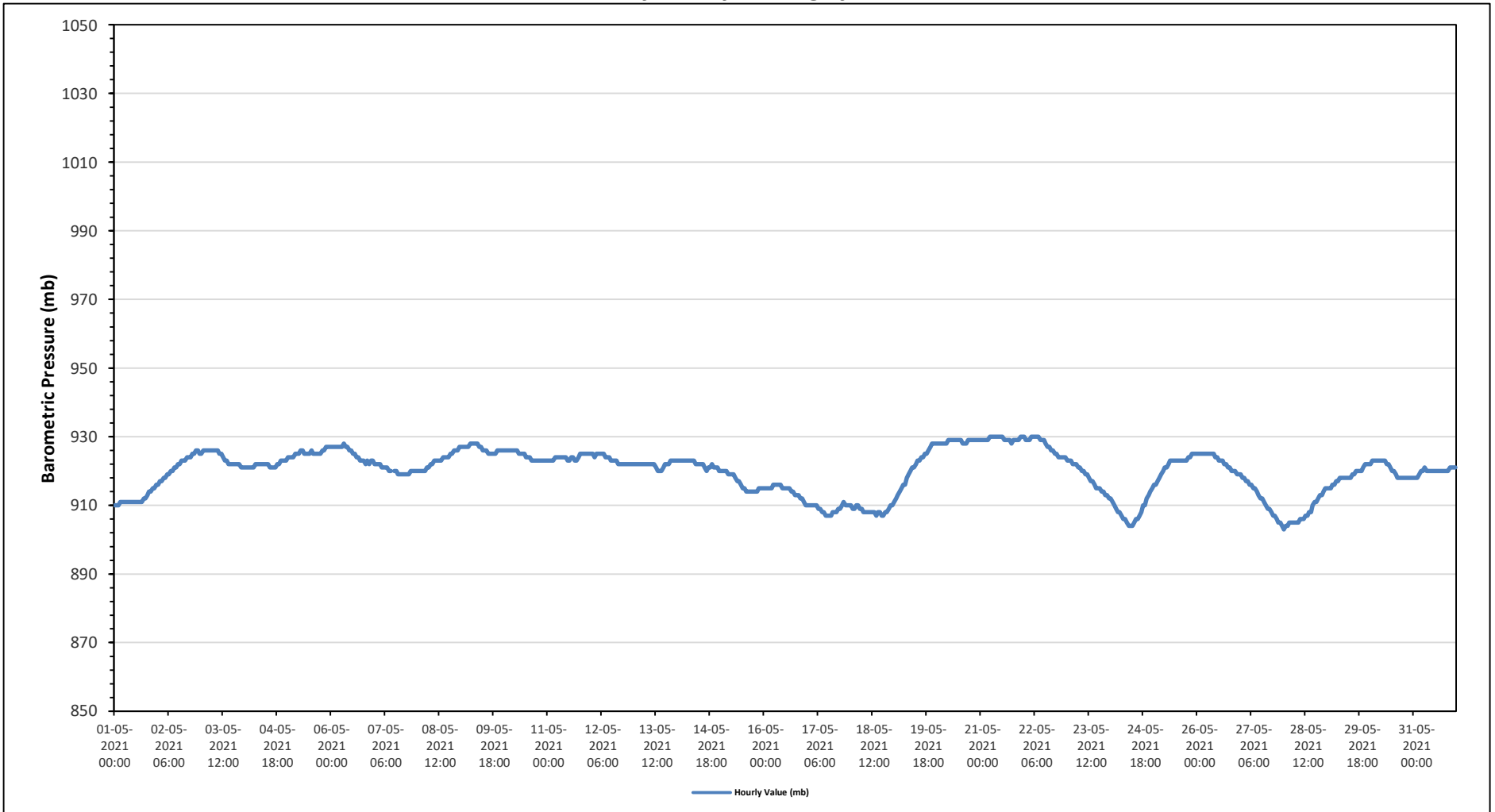
Maximum Hourly Value:	930 mb on May 21 at hour 5	Hours in Service:	744
Maximum Daily Value:	929 mb on May 21	Hours of Data:	743
Minimum Hourly Value:	903 mb on May 28 at hour 0	Hours of Missing Data:	1
Minimum Daily Value:	908 mb on May 28	Hours of Calibration:	0
Monthly Average:	920 mb	Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	910	910	910	911	911	911	911	911	911	911	911	911	911	911	911	911	912	912	913	914	914	915	915	916	910	916	912
May 2	916	917	917	918	918	919	919	920	920	921	921	922	922	923	923	923	924	924	924	925	925	926	926	925	916	926	922
May 3	925	926	926	926	926	926	926	926	926	926	926	925	925	924	923	923	922	922	922	922	922	922	921	921	921	926	924
May 4	921	921	921	921	921	921	922	922	922	922	922	922	922	922	921	921	921	921	922	922	923	923	923	923	921	923	922
May 5	924	924	924	924	925	925	925	926	926	925	925	925	926	925	925	925	925	925	926	926	927	927	927	924	927	925	
May 6	927	927	927	927	927	927	927	928	927	927	926	926	925	925	924	924	923	923	922	923	922	923	923	922	922	928	925
May 7	922	922	922	922	921	921	921	921	920	920	P	920	920	919	919	919	919	919	919	919	920	920	920	920	919	922	920
May 8	920	920	920	920	920	921	921	922	922	923	923	923	923	924	924	924	924	925	925	926	926	926	927	920	927	923	
May 9	927	927	927	927	927	928	928	928	928	927	927	926	926	926	925	925	925	925	925	926	926	926	926	925	928	927	927
May 10	926	926	926	926	926	926	926	926	926	925	925	925	924	924	924	923	923	923	923	923	923	923	923	923	923	926	924
May 11	923	923	923	923	924	924	924	924	924	924	924	923	923	924	924	923	923	924	925	925	925	925	925	923	925	924	924
May 12	925	925	924	925	925	925	925	925	924	924	924	923	923	923	922	922	922	922	922	922	922	922	922	922	922	925	923
May 13	922	922	922	922	922	922	922	922	922	922	922	921	920	920	920	921	922	922	922	922	923	923	923	923	920	923	922
May 14	923	923	923	923	923	923	923	923	923	923	922	922	922	922	922	921	920	921	921	922	921	921	921	920	920	923	922
May 15	920	920	920	920	919	919	919	919	918	917	917	916	915	915	914	914	914	914	914	914	914	915	915	915	914	920	917
May 16	915	915	915	915	915	916	916	916	916	916	915	915	915	915	914	914	913	913	913	912	912	911	910	910	910	916	914
May 17	910	910	910	910	910	910	909	909	908	908	907	907	907	908	908	908	909	909	910	911	910	910	910	910	907	911	909
May 18	910	909	909	910	910	909	909	908	908	908	908	908	908	907	908	908	907	907	908	908	909	910	910	910	907	910	909
May 19	911	912	913	914	915	916	916	918	919	920	921	921	922	923	923	924	924	925	925	926	927	928	928	928	911	928	921
May 20	928	928	928	928	928	929	929	929	929	929	929	929	928	928	928	928	929	929	929	929	929	929	929	928	928	929	929
May 21	929	929	929	929	929	930	930	930	930	930	930	930	930	929	929	929	928	929	929	929	929	929	929	928	928	930	929
May 22	930	929	929	929	930	930	930	930	930	929	929	929	928	927	927	926	926	925	925	924	924	924	924	924	924	930	927
May 23	923	923	923	922	922	922	921	921	920	920	919	919	918	917	917	916	915	915	915	914	914	913	913	912	912	923	918
May 24	912	911	910	909	908	908	907	906	906	905	904	904	905	906	906	907	908	910	910	912	913	914	915	915	904	915	908
May 25	916	916	917	918	919	920	921	921	922	923	923	923	923	923	923	923	923	923	924	924	925	925	925	916	925	922	
May 26	925	925	925	925	925	925	925	925	925	925	924	924	923	923	923	922	922	921	921	920	920	919	919	919	925	923	923
May 27	919	918	918	917	917	916	916	915	915	914	913	912	912	911	910	909	909	908	907	907	906	905	904	904	919	912	912
May 28	903	904	904	905	905	905	905	905	905	906	906	907	907	908	908	910	911	911	912	913	913	914	915	903	915	908	
May 29	915	915	915	916	916	917	917	918	918	918	918	918	918	919	919	920	920	920	920	921	922	922	922	915	922	918	
May 30	922	923	923	923	923	923	923	923	923	922	922	921	920	920	919	918	918	918	918	918	918	918	918	918	918	923	921
May 31	918	918	918	919	920	920	921	920	920	920	920	920	920	920	920	920	920	920	920	920	921	921	921	918	921	920	
Diurnal Maximum	930	929	929	929	930	930	930	930	930	930	930	930	930	929	929	929	929	929	929	929	929	929	930	930	930	930	930
Diurnal Average	920	920	920	920	920	920	920	921	920	920	920	920	920	920	920	919	919	919	920	920	920	920	920	920	920	920	920

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for BP - St. Lina Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - May 2021

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

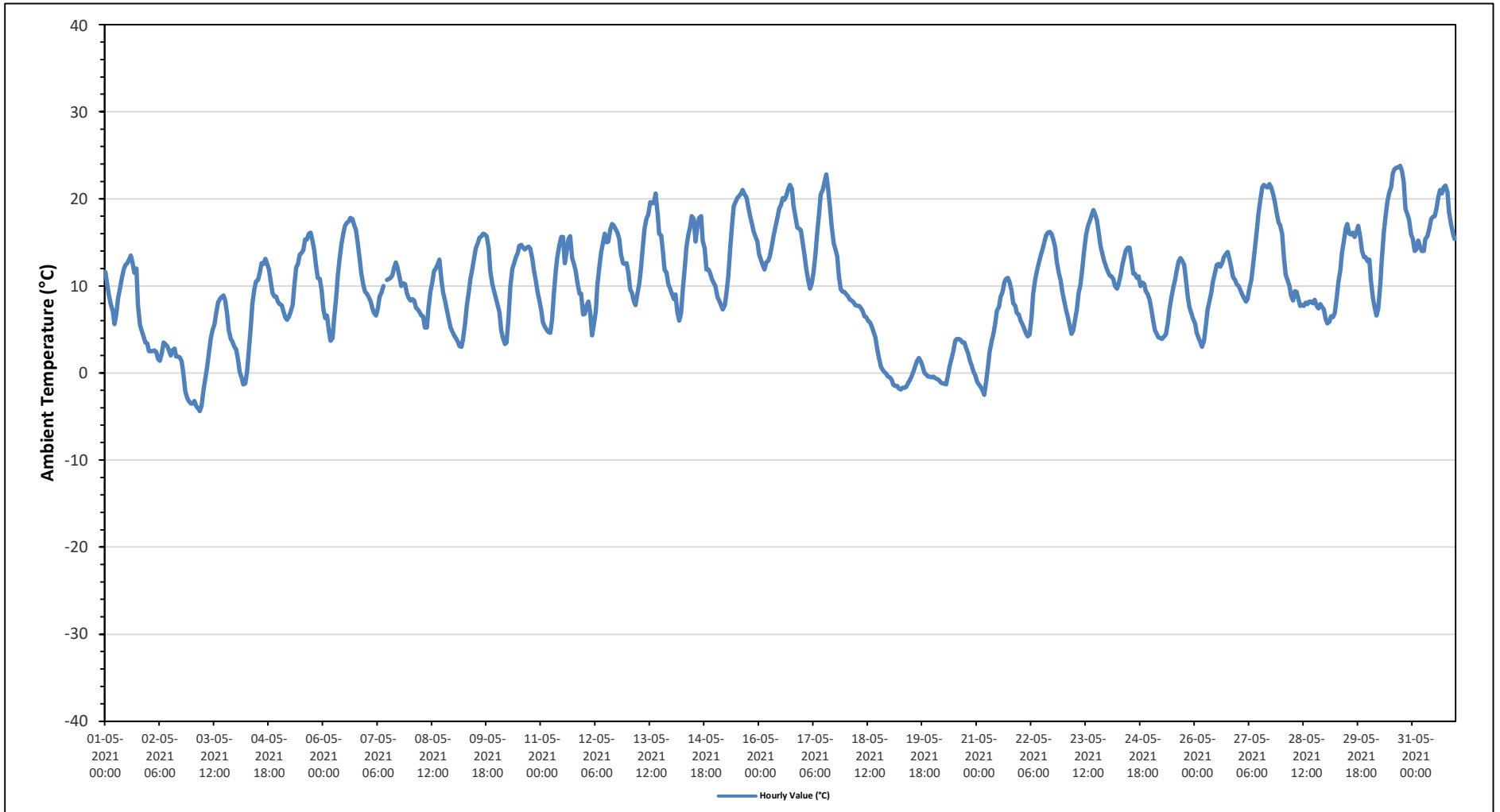
Maximum Hourly Value:	23.8 °C	on May 30 at hour 17	Hours in Service:	744
Maximum Daily Value:	17.2 °C	on May 31	Hours of Data:	743
Minimum Hourly Value:	-4.4 °C	on May 3 at hour 4	Hours of Missing Data:	1
Minimum Daily Value:	-0.5 °C	on May 19	Hours of Calibration:	0
Monthly Average:	10.0 °C		Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	11.6	10.2	8.9	7.9	7.1	5.6	6.8	8.6	9.8	10.8	11.9	12.4	12.6	13	13.5	12.6	11.5	12	7.8	5.5	4.8	4.2	3.5	3.4	3.4	13.5	9.0
May 2	2.5	2.5	2.5	2.6	2.4	1.6	1.4	2.2	3.5	3.3	3.1	2.6	2	2.6	2.8	1.9	1.9	1.8	1.3	-0.2	-2.1	-2.9	-3.2	-3.5	-3.5	3.5	1.4
May 3	-3.5	-3.2	-3.8	-4.1	-4.4	-3.8	-1.9	-0.8	0.7	2.3	3.9	4.9	5.6	6.8	8.1	8.5	8.7	8.9	8.3	6.9	4.9	3.9	3.6	3	-4.4	8.9	2.6
May 4	2.7	1.6	0.1	-0.6	-1.3	-1.2	0.2	2.6	5.1	8	9.7	10.5	10.7	11.5	12.6	12.5	13.1	12.6	11.9	10.5	9.2	8.8	8.8	8.2	-1.3	13.1	7.0
May 5	7.9	7.8	7.2	6.4	6.1	6.4	7	7.8	9.8	12.1	12.5	13.6	13.8	14.1	15.3	15.3	16	16.1	15.2	14.1	12.1	10.9	10.8	9.5	6.1	16.1	11.2
May 6	7.3	6.3	6.6	5	3.7	4	6.2	8.6	11.3	13.2	14.8	16.1	16.9	17.3	17.4	17.8	17.7	17	16.4	14.9	13	11.4	10.1	9.3	3.7	17.8	11.8
May 7	9.1	8.7	8.2	7.5	6.9	6.6	7.4	8.8	9.2	10	P	10.7	10.8	10.9	11.2	12.2	12.7	12	10.9	10	10.3	10.2	9.2	8.6	6.6	12.7	9.7
May 8	8.3	8.5	8.3	7.5	7.3	7	6.6	6.5	5.2	5.2	7.4	9.4	10.4	11.7	12	12.5	13	10.7	9.2	8.3	7.3	6.3	5.2	4.8	4.8	13.0	8.3
May 9	4.3	4	3.6	3.1	3	3.9	5.7	7.8	9.2	10.8	11.9	13.1	14.3	14.9	15.5	15.7	16	15.9	15.7	14.3	11.7	10.2	9.4	8.7	3.0	16.0	10.1
May 10	7.8	7	4.9	4	3.3	3.5	6.4	10	12	12.5	13.3	13.8	14.6	14.7	14.4	14.2	14.4	14.5	14.3	13.2	11.7	10.6	9.3	8.2	3.3	14.7	10.5
May 11	7.3	5.8	5.3	5	4.7	4.6	6.1	9.1	11.9	13.4	14.7	15.6	15.6	12.6	13.9	15.3	15.7	13.2	12.5	11.7	10.3	9.1	9.1	6.7	4.6	15.7	10.4
May 12	6.8	7.8	8.2	6.9	4.3	5.5	7.1	10.1	12.2	13.9	14.9	16	15	15.1	16.5	17.1	16.9	16.5	16.1	15.4	13.6	12.6	12.5	12.6	4.3	17.1	12.2
May 13	11.5	9.6	9.2	8.2	7.8	9.2	10.3	12.2	14.6	16.7	17.8	18.2	19.6	19.5	20.6	18.3	16	15.8	13.9	11.9	11.5	10.2	9.7	7.8	20.6	13.8	
May 14	9.1	8.5	9	6.9	6	6.9	9.6	12.2	14.4	15.8	16.8	18	17.7	15.1	16.8	17.8	18	15.2	14.3	11.9	11.9	11.5	10.8	10.3	6.0	18.0	12.7
May 15	10	8.7	8.3	7.8	7.3	7.8	9	11.2	14.2	16.8	19.1	19.6	20.1	20.3	20.6	21	20.5	20.2	19.1	18.1	17.1	16.3	15.6	15.1	7.3	21.0	15.2
May 16	13.6	13	12.4	11.9	12.7	12.9	13.4	14.6	15.8	16.9	17.7	18.9	19.3	20.1	19.9	20.4	21.1	21.6	21.1	19.2	17.9	16.7	16.6	16.4	11.9	21.6	16.8
May 17	14.8	13.6	11.8	10.6	9.7	10.3	11.6	13.5	16	18.4	20.5	21	21.9	22.8	21.2	18.9	16.9	14.9	14.2	13.4	11	9.6	9.3	9.3	9.3	22.8	14.8
May 18	9	8.8	8.4	8.3	8.1	7.8	7.7	7.7	7.5	7.1	6.5	6.4	6	5.8	5.4	4.7	4.1	2.8	1.7	0.7	0.4	0.1	-0.1	-0.4	-0.4	9.0	5.2
May 19	-0.5	-0.8	-1.4	-1.5	-1.5	-1.8	-1.9	-1.7	-1.7	-1.6	-1.2	-0.8	-0.4	0.2	0.8	1.4	1.7	1.3	0.8	0	-0.2	-0.4	-0.4	-0.5	-1.9	1.7	-0.5
May 20	-0.4	-0.6	-0.7	-0.8	-1.1	-1.2	-1.2	-1.3	-0.2	0.8	1.7	2.6	3.7	3.9	3.9	3.8	3.5	3.5	2.9	2.3	1.5	0.8	0.2	-0.3	-1.3	3.9	1.1
May 21	-1	-1.3	-1.6	-2	-2.5	-1.1	0.8	2.4	3.6	4.5	5.7	7.2	7.6	8.7	9.3	10.4	10.8	10.9	10.4	9.5	8	7.7	6.9	6.7	-2.5	10.9	5.1
May 22	6	5.6	5.1	4.5	4.2	4.4	6.4	9	10.7	11.7	12.7	13.4	14.2	15	15.8	16.1	16.2	16	15.4	14.4	12.8	11.5	10.7	9.3	4.2	16.2	10.9
May 23	8.3	7.2	6.5	5.4	4.5	4.9	6.1	7.3	9.2	10.1	12.1	13.9	15.8	16.8	17.4	18	18.7	18.3	17.5	16.1	14.6	13.7	12.9	12.2	4.5	18.7	12.0
May 24	11.7	11.2	11.1	10.8	10	9.7	10.2	11.2	12.4	13.3	14.1	14.4	14.4	13.1	11.4	11.4	10.9	11.1	10	10.4	10.2	9.4	9	8.4	8.4	14.4	11.2
May 25	7.3	6	4.9	4.5	4.1	4	3.9	4.2	4.4	5.8	7.3	8.7	9.8	10.7	11.8	12.8	13.2	12.9	12.4	10.9	8.8	7.5	6.9	6.2	3.9	13.2	7.9
May 26	5.7	4.6	4	3.5	3	3.7	5.4	7.3	8.2	9.3	10.5	11.5	12.4	12.5	12.2	12.7	13.3	13.6	13.9	13.2	12.1	11	10.7	10.2	3.0	13.9	9.4
May 27	10	9.5	9	8.6	8.2	8.5	9.7	10.7	12.2	14.3	16.2	18.3	19.8	21.3	21.6	21.4	21.3	21.7	21.3	20.6	19.7	18.5	17.3	17	8.2	21.7	15.7
May 28	16	13.3	11.3	10.7	10	8.9	8.3	9.4	9.3	8.5	7.7	7.8	7.7	8.1	7.9	8.2	8.2	8	8.4	7.7	7.4	7.9	7.6	7.3	7.3	16.0	9.0
May 29	6.2	5.7	5.9	6.5	6.4	6.9	8.5	10.4	11.8	13.7	15.2	16.6	17.1	16	15.9	16.1	15.6	16.3	16.9	15.6	14	13.3	13.3	12.8	5.7	17.1	12.4
May 30	13	10.6	8.6	7.5	6.6	7.4	10.2	13.1	16.2	18.1	19.7	20.7	21.4	22.9	23.4	23.6	23.6	23.8	23.2	22	18.8	18.2	17.6	15.9	6.6	23.8	16.9
May 31	15.4	14	14.2	15.2	14.5	14	14	15.4	15.7	16.5	17.7	17.9	18	18.9	20.2	21	20.6	21.3	21.5	20.8	18.5	17.1	16.1	15.4	14.0	21.5	17.2
Diurnal Maximum	16.0	14.0	14.2	15.2	14.5	14.0	14.0	15.4	16.2	18.4	20.5	21.0	21.9	22.9	23.4	23.6	23.6	23.8	23.2	22.0	19.7	18.5	17.6	17.0			
Diurnal Average	7.7	6.9	6.3	5.7	5.2	5.4	6.5	8.1	9.5	10.7	11.9	12.7	13.2	13.4	13.8	14.1	14.0	13.6	12.9	11.8	10.4	9.6	9.0	8.4			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for AT - St. Lina Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - May 2021

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

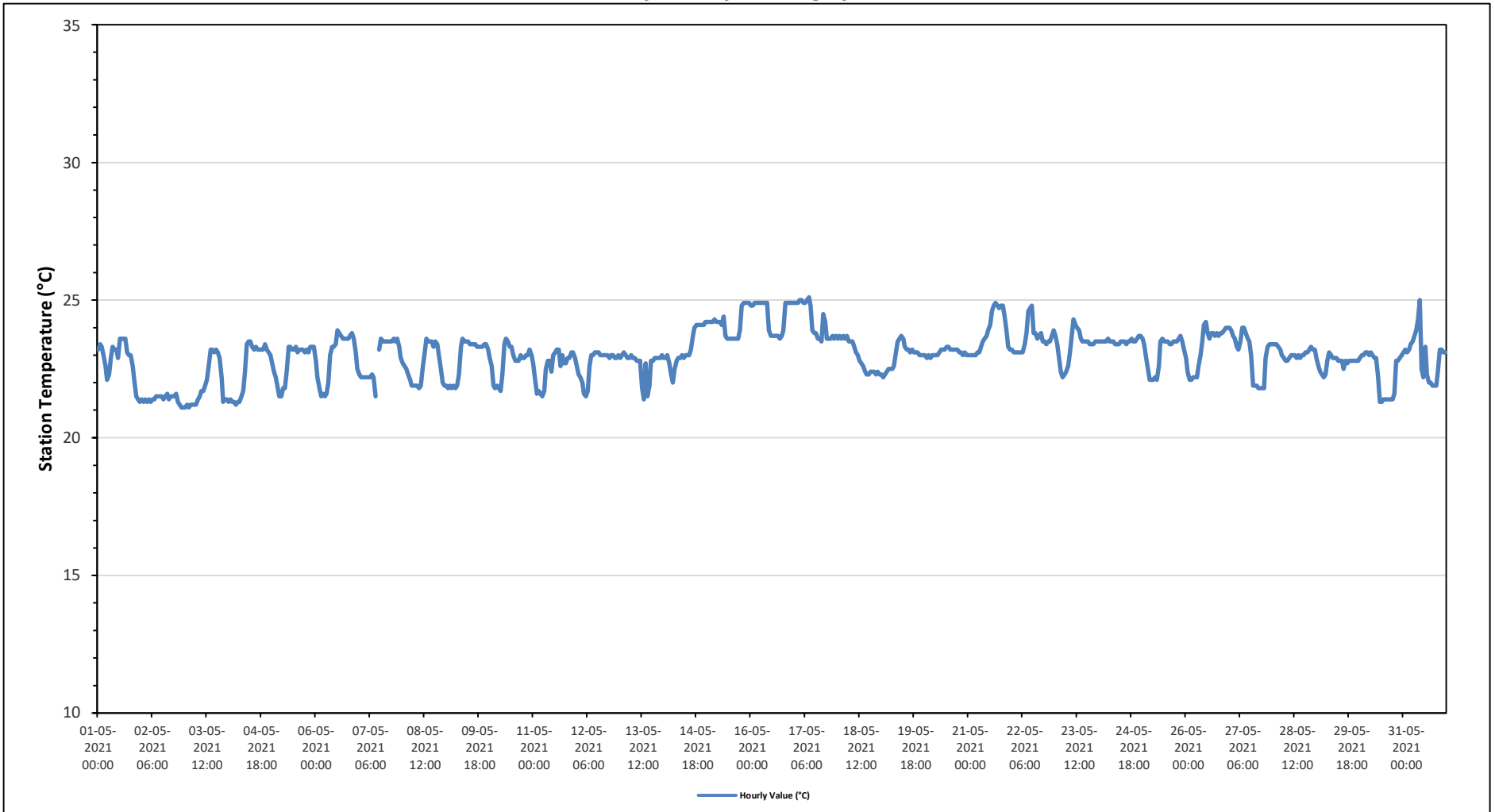
Maximum Hourly Value:	25.1 °C	on May 17 at hour 8	Hours in Service:	744
Maximum Daily Value:	24.5 °C	on May 16	Hours of Data:	743
Minimum Hourly Value:	21.1 °C	on May 2 at hour 22	Hours of Missing Data:	1
Minimum Daily Value:	21.4 °C	on May 2	Hours of Calibration:	0
Monthly Average:	23.0 °C		Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23		
May 1	23.2	23.4	23.3	23.0	22.6	22.1	22.3	22.9	23.3	23.2	23.2	22.9	23.6	23.6	23.6	23.6	23.1	23.0	23.0	22.6	22.1	21.5	21.4	21.3	21.3	21.3	23.6	22.8	
May 2	21.4	21.3	21.4	21.3	21.4	21.3	21.4	21.4	21.4	21.5	21.5	21.5	21.4	21.5	21.6	21.4	21.5	21.5	21.5	21.6	21.3	21.2	21.1	21.1	21.4	21.4	21.4	21.6	21.4
May 3	21.1	21.2	21.1	21.2	21.2	21.2	21.2	21.4	21.4	21.5	21.7	21.9	22.1	22.6	23.2	23.2	23.1	23.2	23.1	22.9	22.2	21.3	21.4	21.4	21.4	21.4	21.4	21.9	21.9
May 4	21.3	21.4	21.3	21.3	21.2	21.3	21.3	21.5	21.7	22.4	23.4	23.5	23.5	23.3	23.2	23.3	23.2	23.2	23.2	23.2	23.4	23.2	23.1	23.0	23.0	23.0	23.5	22.5	
May 5	22.7	22.4	22.2	21.8	21.5	21.5	21.8	21.8	22.4	23.3	23.3	23.2	23.2	23.3	23.1	23.2	23.2	23.2	23.1	23.2	23.1	23.3	23.3	23.3	23.3	23.3	23.3	22.8	
May 6	22.8	22.2	21.8	21.5	21.6	21.5	21.6	22.0	23.0	23.3	23.3	23.4	23.9	23.8	23.7	23.6	23.6	23.6	23.6	23.7	23.8	23.6	23.1	22.5	22.5	22.5	22.9	22.9	
May 7	22.3	22.2	22.2	22.2	22.2	22.2	22.2	22.3	22.2	21.5	P	23.2	23.6	23.5	23.5	23.5	23.5	23.5	23.5	23.6	23.5	23.6	23.3	22.9	22.9	23.6	22.9	22.9	
May 8	22.7	22.6	22.5	22.3	22.1	21.9	21.9	21.9	21.9	21.9	21.8	21.9	22.5	23.0	23.6	23.5	23.5	23.5	23.3	23.5	23.4	23.0	22.5	22.0	21.9	21.9	23.6	22.6	
May 9	21.9	21.8	21.9	21.8	21.9	21.8	21.9	22.3	23.3	23.6	23.5	23.5	23.5	23.4	23.4	23.4	23.4	23.3	23.3	23.3	23.4	23.4	23.4	23.2	23.2	23.6	22.9	22.9	
May 10	22.9	22.6	21.9	21.8	21.9	21.8	21.7	22.3	23.4	23.6	23.5	23.3	23.3	23.0	22.8	22.8	22.8	23.0	22.9	22.9	23.0	23.0	23.2	23.0	23.0	23.0	23.6	22.8	
May 11	22.7	22.1	21.6	21.7	21.6	21.5	21.7	22.5	22.8	22.8	22.4	23.0	23.1	23.2	23.2	22.6	23.0	22.7	22.7	22.9	22.9	23.1	23.1	22.9	22.9	23.2	22.6	22.6	
May 12	22.6	22.3	22.2	22.0	21.6	21.5	21.7	22.6	23.0	23.0	23.1	23.1	23.1	23.0	23.0	23.0	23.0	23.0	22.9	23.0	23.0	22.9	22.9	23.0	23.0	23.0	23.1	22.7	
May 13	22.9	23.0	23.1	23.0	22.9	22.9	23.0	22.9	22.8	22.8	22.8	21.8	21.4	22.7	21.5	21.9	22.8	22.8	22.9	22.9	22.9	22.9	23.0	23.0	23.0	23.0	23.0	22.7	22.7
May 14	22.9	22.9	23.0	22.7	22.3	22.0	22.5	22.8	22.9	22.9	23.0	23.0	23.0	23.0	23.0	23.2	23.7	24.0	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.2	23.2	
May 15	24.2	24.2	24.2	24.2	24.3	24.2	24.2	24.2	24.1	24.4	23.7	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.9	24.8	24.9	24.9	24.9	24.9	24.9	24.9	24.1	24.1
May 16	24.8	24.8	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	23.9	23.7	23.7	23.7	23.7	23.7	23.6	23.7	23.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.5	24.5
May 17	24.9	24.9	24.9	25.0	25.0	24.9	24.9	25.0	25.1	24.8	23.9	23.8	23.8	23.6	23.6	23.5	24.5	24.2	23.6	23.6	23.6	23.7	23.6	23.7	23.6	23.7	23.5	24.3	24.3
May 18	23.6	23.7	23.6	23.7	23.6	23.7	23.5	23.5	23.5	23.3	23.1	23.0	22.8	22.7	22.6	22.4	22.3	22.3	22.4	22.4	22.4	22.3	22.4	22.3	22.3	22.3	22.3	23.0	23.0
May 19	22.3	22.2	22.3	22.4	22.5	22.5	22.5	22.6	23.1	23.5	23.6	23.7	23.6	23.3	23.2	23.2	23.1	23.2	23.1	23.1	23.1	23.1	23.0	23.0	23.0	23.0	23.0	23.0	23.0
May 20	23.0	22.9	23.0	22.9	23.0	23.0	23.0	23.0	23.1	23.2	23.2	23.2	23.3	23.3	23.2	23.2	23.2	23.2	23.2	23.2	23.1	23.1	23.0	23.1	23.0	23.0	23.0	23.1	23.1
May 21	23.0	23.0	23.0	23.0	23.0	23.1	23.1	23.3	23.5	23.6	23.7	23.9	24.1	24.6	24.8	24.9	24.8	24.7	24.8	24.8	24.4	24.4	23.9	23.3	23.2	23.0	24.9	23.8	23.8
May 22	23.2	23.1	23.1	23.1	23.1	23.1	23.1	23.4	23.8	24.6	24.7	24.8	23.8	23.8	23.6	23.7	23.8	23.5	23.5	23.4	23.5	23.5	23.7	23.9	23.0	23.0	24.8	23.6	23.6
May 23	23.7	23.4	22.9	22.4	22.2	22.3	22.4	22.6	23.1	23.7	24.3	24.1	24.0	23.9	23.6	23.5	23.5	23.5	23.5	23.5	23.4	23.4	23.5	23.5	23.5	23.5	23.5	23.3	23.3
May 24	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.4	23.4	23.4	23.4	23.5	23.5	23.4	23.5	23.5	23.5	23.6	23.5	23.5	23.6	23.7	23.7	23.7	23.4	23.5	23.5
May 25	23.6	23.4	22.9	22.5	22.1	22.1	22.1	22.2	22.1	22.6	23.5	23.6	23.5	23.5	23.5	23.4	23.4	23.5	23.5	23.5	23.5	23.6	23.7	23.5	23.2	22.1	23.7	23.1	23.1
May 26	22.9	22.4	22.1	22.1	22.2	22.2	22.2	22.6	23.0	23.5	24.1	24.2	23.8	23.6	23.8	23.8	23.7	23.8	23.7	23.8	23.8	23.8	23.9	24.0	24.0	24.0	24.0	24.2	23.3
May 27	24.0	23.9	23.7	23.6	23.3	23.2	23.5	24.0	24.0	23.8	23.6	23.5	23.0	21.9	21.9	21.9	21.8	21.8	21.8	22.9	23.3	23.4	23.4	23.4	23.4	23.4	23.4	23.0	23.0
May 28	23.4	23.4	23.4	23.3	23.2	23.0	22.9	22.8	22.8	22.9	23.0	23.0	23.0	22.9	23.0	22.9	23.0	23.0	23.1	23.1	23.2	23.3	23.2	23.2	23.2	23.2	23.2	23.1	23.1
May 29	22.9	22.6	22.4	22.3	22.2	22.3	22.8	23.1	23.0	22.9	22.9	22.9	22.8	22.8	22.8	22.5	22.8	22.7	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.7
May 30	22.9	23.0	23.0	23.1	23.1	23.0	23.1	23.0	22.9	22.9	22.2	21.3	21.3	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.6	22.8	22.8	22.9	23.0	23.0	23.0	22.3	22.3
May 31	23.1	23.2	23.1	23.2	23.4	23.5	23.7	23.9	24.3	25.0	22.5	22.2	23.3	22.3	22.0	22.0	21.9	21.9	21.9	22.4	23.2	23.2	23.1	23.1	23.1	23.1	23.1	23.0	23.0
Diurnal Maximum	24.9	24.9	24.9	25.0	25.0	24.9	24.9	25.0	25.1	25.0	24.7	24.8	24.1	24.6	24.8	24.9	24.8	24.7	24.8	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9
Diurnal Average	23.0	22.9	22.8	22.7	22.6	22.6	22.6	22.8	23.1	23.2	23.2	23.2	23.2	23.2	23.1	23.1	23.1	23.1	23.1	23.1	23.2	23.2	23.1	23.1	23.1	23.1	23.1	23.1	23.1

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
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Timeseries Chart of Hourly Average for ST - St. Lina Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - May 2021 Summary of Hourly Averages

PRECIPITATION in mm

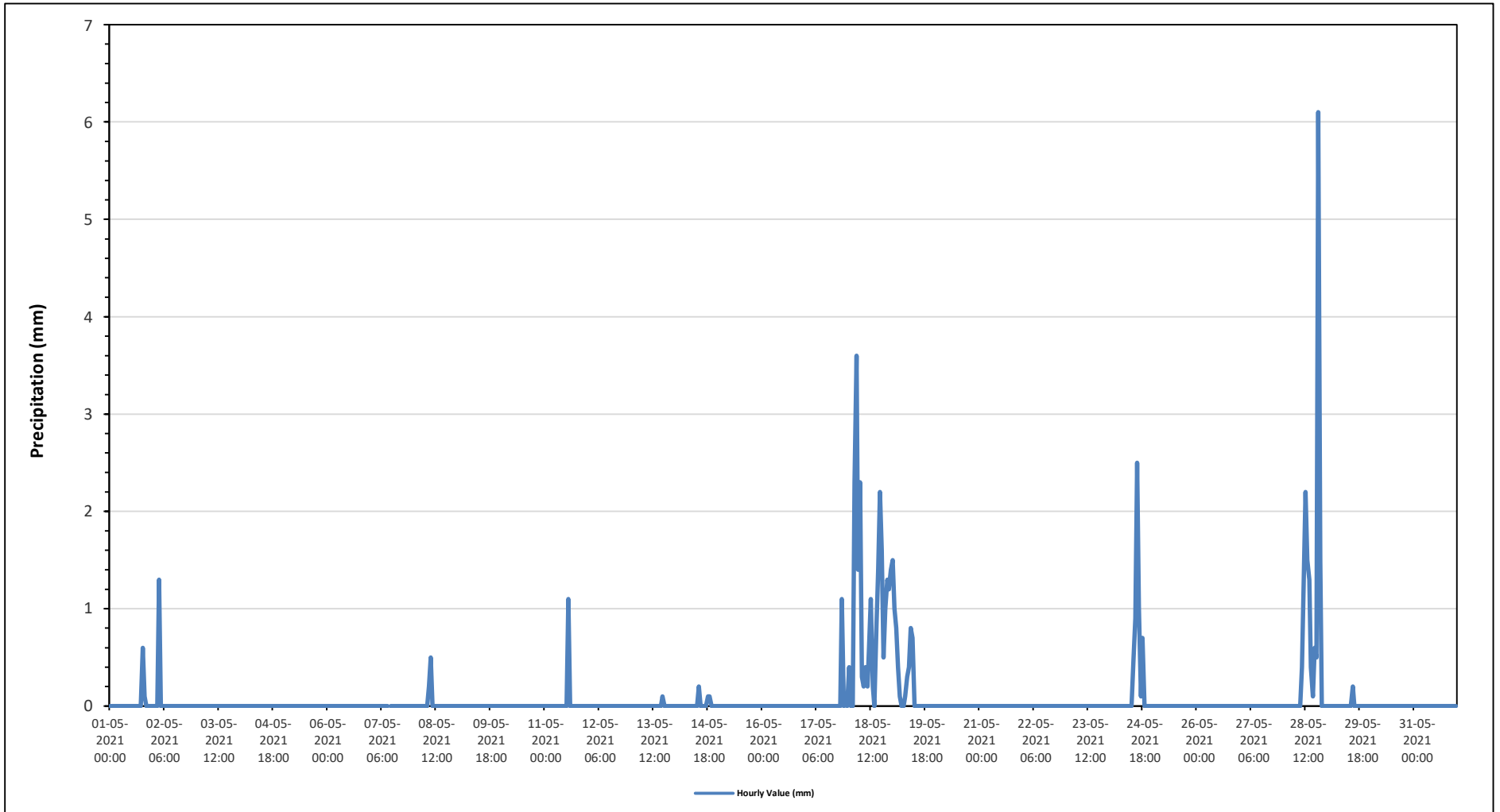
Maximum Hourly Value:	6.1 mm on May 28 at hour 19	Hours in Service:	744
Maximum Daily Value:	24.4 mm on May 18	Hours of Data:	743
Minimum Hourly Value:	0.0 mm on May 1 at hour 0	Hours of Missing Data:	1
Minimum Daily Value:	0.0 mm on May 3	Hours of Calibration:	0
Monthly Total:	57.8 mm	Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Total	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.1	0	0	0	0	0.0	0.6	0.7
May 2	0	0	0	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	1.3	1.3
May 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 7	0	0	0	0	0	0	0	0	0	0	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 8	0	0	0	0	0	0	0	0	0.2	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.5	0.7
May 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 11	0	0	0	0	0	0	0	0	0	0	0	0	0	1.1	0	0	0	0	0	0	0	0	0	0	0.0	1.1	1.1
May 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.0	0.1	0.1
May 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0.1	0.1	0	0	0	0	0.0	0.2	0.4
May 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.1	0	0.1	0	0.0	1.1	1.2
May 18	0.4	0	0	2.3	3.6	1.4	2.3	0.3	0.2	0.4	0.2	0.6	1.1	0.2	0	0.8	1.4	2.2	1.6	0.5	1	1.3	1.2	1.4	0.0	3.6	24.4
May 19	1.5	1	0.8	0.4	0.1	0	0	0.1	0.3	0.4	0.8	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0.0	1.5	6.1
May 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.9	2.5	1	0.1	0.7	0	0	0	0	0	0.0	2.5	5.7
May 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 28	0	0	0	0	0	0	0	0	0	0	0.4	1.3	2.2	1.5	1.3	0.4	0.1	0.6	0.5	6.1	1.5	0	0	0	0.0	6.1	15.9
May 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0.0	0.2	0.2
May 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
May 31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Diurnal Maximum	1.5	1.0	0.8	2.3	3.6	1.4	2.3	0.3	0.3	0.5	0.8	1.3	2.2	1.5	1.3	2.5	1.4	2.2	1.6	6.1	1.5	1.3	1.2	1.4			
Diurnal Average	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.0			

C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for Precipitation - St. Lina Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - May 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

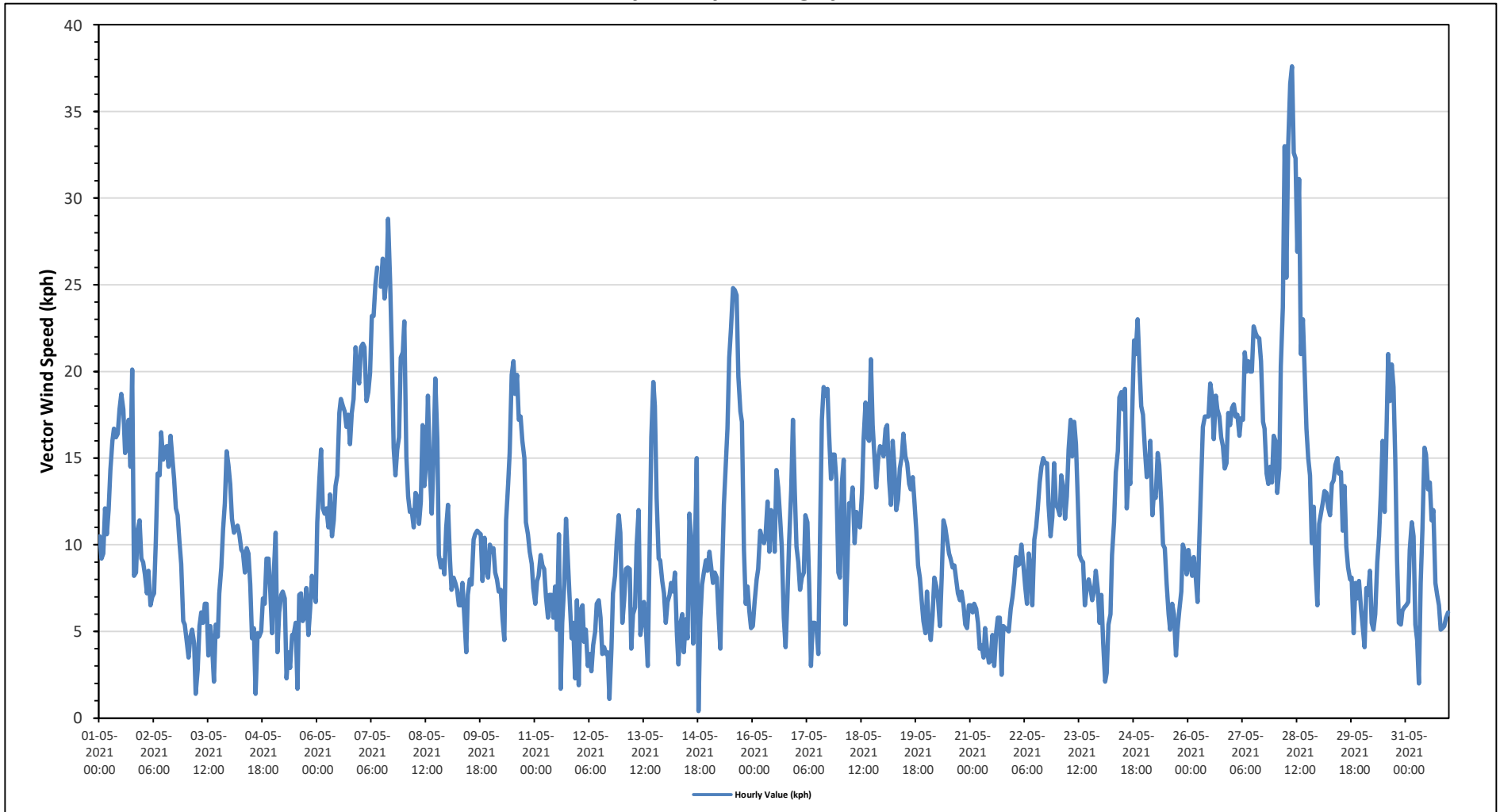
Maximum Hourly Value:	37.6 kph	on May 28 at hour 9	Hours in Service:	744
Maximum Daily Value:	21.3 kph	on May 7	Hours of Data:	743
Minimum Hourly Value:	0.4 kph	on May 14 at hour 18	Hours of Missing Data:	1
Minimum Daily Value:	2.0 kph	on May 12	Hours of Calibration:	0
Monthly Average:	1.0 kph		Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
May 1	10.5	9.2	9.5	12.1	10.6	12.0	14.3	16.0	16.7	16.2	16.4	17.8	18.7	17.8	15.3	16.3	17.2	14.5	20.1	8.2	8.4	10.8	11.4	9.2	8.2	20.1	13.0
May 2	9.0	8.3	7.2	8.5	6.5	7.0	7.2	10.2	14.1	14.0	16.5	14.9	15.6	15.7	14.5	16.3	15.2	13.8	12.1	11.7	10.2	8.9	5.6	5.4	5.4	16.5	9.5
May 3	4.4	3.5	4.7	5.1	4.3	1.4	2.8	5.3	6.1	5.5	6.6	6.6	3.6	5.3	4.1	2.1	5.4	4.7	7.2	8.7	10.9	12.4	15.4	14.6	1.4	15.4	4.8
May 4	13.5	11.5	10.7	10.9	11.1	10.6	9.7	9.6	8.4	9.8	9.5	7.7	4.6	5.2	1.4	4.9	4.7	5.0	6.9	6.6	9.2	9.2	7.3	4.9	1.4	13.5	7.2
May 5	8.4	10.7	3.8	6.1	7.1	7.3	6.9	2.3	3.8	2.9	4.8	4.8	5.5	1.7	7.1	7.2	5.6	5.9	7.5	4.8	6.3	8.2	7.4	6.7	1.7	10.7	2.5
May 6	11.3	13.7	15.5	12.1	11.8	12.1	11.0	12.9	10.5	11.4	13.4	14.0	17.6	18.4	18.0	17.7	16.8	17.5	15.8	17.6	18.4	21.4	19.9	19.3	10.5	21.4	14.6
May 7	21.4	21.6	21.4	18.3	18.8	19.9	23.2	23.2	25.0	26.0	P	24.9	26.5	24.2	25.4	28.8	25.2	21.0	15.6	14.0	15.5	16.2	20.8	21.1	14.0	28.8	21.3
May 8	22.9	15.1	12.8	11.9	12.0	11.0	13.0	12.8	11.2	12.5	16.9	13.4	15.0	18.6	14.2	11.8	15.0	19.6	16.1	9.4	8.7	9.1	8.3	11.0	8.3	22.9	6.5
May 9	12.3	9.1	7.4	8.1	7.8	7.4	6.5	6.5	7.8	5.7	3.8	7.1	8.0	7.7	10.3	10.6	10.8	10.7	10.6	7.9	10.4	8.6	8.1	10.0	3.8	12.3	2.3
May 10	9.6	9.8	8.4	8.0	7.3	7.4	5.7	4.5	11.4	13.5	15.3	19.8	20.6	18.7	19.8	17.2	17.4	16.0	15.0	11.3	10.6	9.6	8.9	7.5	4.5	20.6	10.4
May 11	6.6	7.9	8.2	9.4	8.8	8.6	7.0	5.8	7.1	7.1	5.8	7.6	5.1	10.6	1.7	5.5	7.7	11.5	9.2	7.0	4.6	5.5	2.3	6.8	1.7	11.5	3.6
May 12	1.9	6.2	6.5	4.4	5.1	3.0	3.7	2.7	4.2	5.0	6.6	6.8	5.8	3.7	4.1	3.7	3.8	1.1	4.0	7.2	8.2	10.2	11.7	10.7	1.1	11.7	2.0
May 13	5.5	6.8	8.6	8.7	8.6	4.0	6.0	6.4	9.9	12.0	4.8	5.6	6.7	5.1	3.0	9.4	16.2	19.4	18.0	12.7	9.2	9.1	7.9	7.2	3.0	19.4	3.2
May 14	5.5	6.7	7.1	7.8	7.3	8.4	4.8	3.1	5.4	6.0	3.8	5.7	4.6	11.8	10.3	4.3	9.1	15.0	0.4	5.7	7.7	8.4	9.1	8.5	0.4	15.0	3.4
May 15	9.6	8.7	7.8	8.4	8.1	6.2	4.0	8.4	12.3	14.5	16.7	20.8	22.5	24.8	24.7	24.4	19.7	17.7	17.1	9.7	6.6	7.6	6.2	5.2	4.0	24.8	10.8
May 16	5.3	6.7	8.0	8.6	10.8	10.4	10.1	10.5	12.5	9.6	12.0	11.8	9.6	14.3	13.3	11.4	9.9	5.8	4.1	6.8	10.2	13.1	17.2	13.2	4.1	17.2	5.7
May 17	9.9	9.0	7.4	8.1	8.4	11.7	11.3	7.7	3.0	5.5	5.5	5.4	3.7	10.7	17.2	19.1	18.6	19.0	16.5	13.8	15.2	15.2	13.7	8.4	3.0	19.1	9.3
May 18	8.1	13.6	14.9	5.4	8.5	12.4	12.3	13.3	10.1	11.9	11.3	11.0	13.0	16.0	18.2	16.2	16.0	20.7	16.9	15.1	13.3	15.0	15.7	15.6	5.4	20.7	12.9
May 19	15.1	16.7	16.9	13.7	12.3	16.0	14.4	12.0	12.6	14.4	15.1	16.4	15.1	14.7	13.5	13.2	13.9	12.4	10.8	8.8	8.1	6.8	5.6	4.9	4.9	16.9	11.1
May 20	7.3	5.3	4.5	5.9	8.1	7.6	6.8	5.3	8.1	11.4	11.0	10.3	9.5	9.2	8.7	8.8	8.0	7.2	6.8	7.3	6.5	5.4	5.2	6.5	4.5	11.4	7.0
May 21	6.5	6.1	6.6	6.3	5.5	4.0	4.2	3.5	5.2	3.9	3.2	3.3	4.8	3.0	5.0	5.8	5.8	2.5	5.3	5.2	5.1	5.0	6.3	7.0	2.5	7.0	4.3
May 22	7.8	9.3	8.8	8.9	10.0	8.8	7.6	6.6	9.5	8.4	6.5	10.3	11.0	12.0	13.6	14.5	15.0	14.7	14.7	12.3	10.5	11.6	14.7	12.3	6.5	15.0	10.4
May 23	12.1	11.7	14.0	13.3	11.5	12.8	15.5	17.2	15.1	17.1	15.8	12.7	9.4	9.1	9.0	6.5	7.6	8.0	7.5	6.8	7.4	8.5	7.4	5.5	5.5	17.2	9.5
May 24	7.1	4.4	2.1	2.6	5.4	6.0	9.4	11.3	14.2	15.4	18.5	18.8	17.8	19.0	12.1	14.2	13.5	17.3	21.8	21.0	23.0	20.4	18.0	17.5	2.1	23.0	12.6
May 25	15.4	13.9	14.1	16.0	11.7	13.0	12.7	15.3	14.6	12.4	10.0	9.8	7.8	6.0	5.1	6.6	6.0	3.6	5.1	6.2	7.3	10.0	9.6	8.3	3.6	16.0	7.7
May 26	9.7	8.8	8.2	9.3	8.1	6.7	10.3	13.6	16.8	17.4	17.4	17.4	19.3	18.6	16.1	18.6	17.8	17.4	16.2	15.7	14.4	14.7	17.6	16.9	6.7	19.3	14.2
May 27	17.9	18.1	17.4	17.5	16.3	17.3	17.2	21.1	20.0	20.6	20.0	20.0	22.6	22.2	22.0	21.9	20.6	17.1	16.7	14.1	13.5	14.5	13.6	16.3	13.5	22.6	18.1
May 28	16.0	13.0	14.4	20.3	23.7	33.0	25.4	33.0	36.6	37.6	32.6	32.3	26.9	31.1	21.0	23.0	20.4	16.7	15.0	14.0	10.1	12.2	8.9	6.5	6.5	37.6	19.9
May 29	11.2	11.8	12.4	13.1	13.0	12.2	11.7	13.5	13.7	14.6	15.0	14.1	14.2	10.8	13.4	9.9	8.7	8.0	8.1	4.9	7.8	6.9	7.9	6.3	4.9	15.0	10.0
May 30	5.4	4.1	7.5	7.1	8.5	5.5	5.1	6.0	9.0	10.5	12.9	16.0	11.9	15.6	21.0	18.3	20.4	19.1	14.9	9.1	5.5	5.4	6.2	6.4	4.1	21.0	9.9
May 31	6.5	6.7	9.7	11.3	10.5	5.4	4.5	2.0	7.8	10.9	15.6	15.2	13.2	13.6	11.4	12.0	7.8	7.1	6.5	5.1	5.2	5.3	5.8	6.1	2.0	15.6	7.3
Diurnal Maximum	23	22	21	20	24	33	25	33	37	38	33	32	27	31	25	29	25	21	22	21	23	21	21	21			
Diurnal Average	10.1	9.9	9.9	9.9	9.9	10.0	9.8	10.4	11.7	12.4	12.1	13.0	12.6	13.4	12.7	12.9	12.9	12.6	11.7	10.0	9.9	10.5	10.4	9.9			

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction/Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

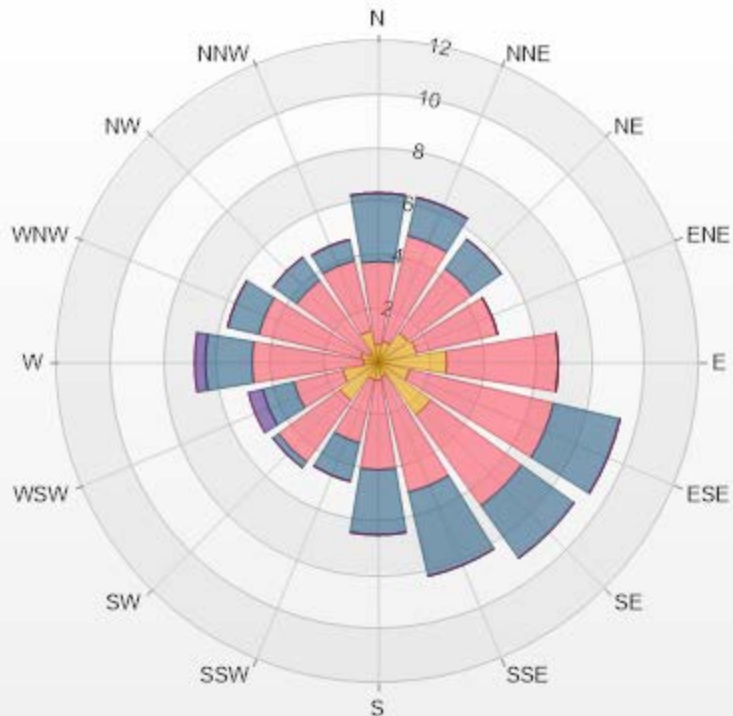
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for VWS - St. Lina Site



Wind: St. Lina Monitor: WDS [kph] Monthly: 05-2021 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.81% Valid Data: 99.87%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	0.67	3.1	2.56	0	0	6.33
NNE	0.81	4.04	1.48	0	0	6.33
NE	1.35	2.96	1.35	0	0	5.66
ENE	1.48	3.1	0	0	0	4.58
E	2.56	4.17	0	0	0	6.73
ESE	1.21	5.52	2.56	0	0	9.29
SE	2.42	4.17	2.42	0	0	9.01
SSE	0.54	4.44	3.23	0	0	8.21
S	0.67	3.36	2.42	0	0	6.45
SSW	0.67	2.42	1.48	0	0	4.57
SW	1.75	2.83	0.27	0	0	4.85
WSW	1.35	1.88	1.21	0.54	0	4.98
W	0.54	4.17	1.75	0.4	0	6.86
WNW	0.67	3.9	1.21	0	0	5.78
NW	0.4	3.36	1.08	0	0	4.84
NNW	1.21	2.69	0.81	0	0	4.71
Summary	18.3	56.11	23.83	0.94	0	99.18



LICA-202105

% Icon Classes (kph)	18	1.8-6.0	56	6.0-15.0	24	15.0-29.0	1	29.0-39.0	0	>39.0
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LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

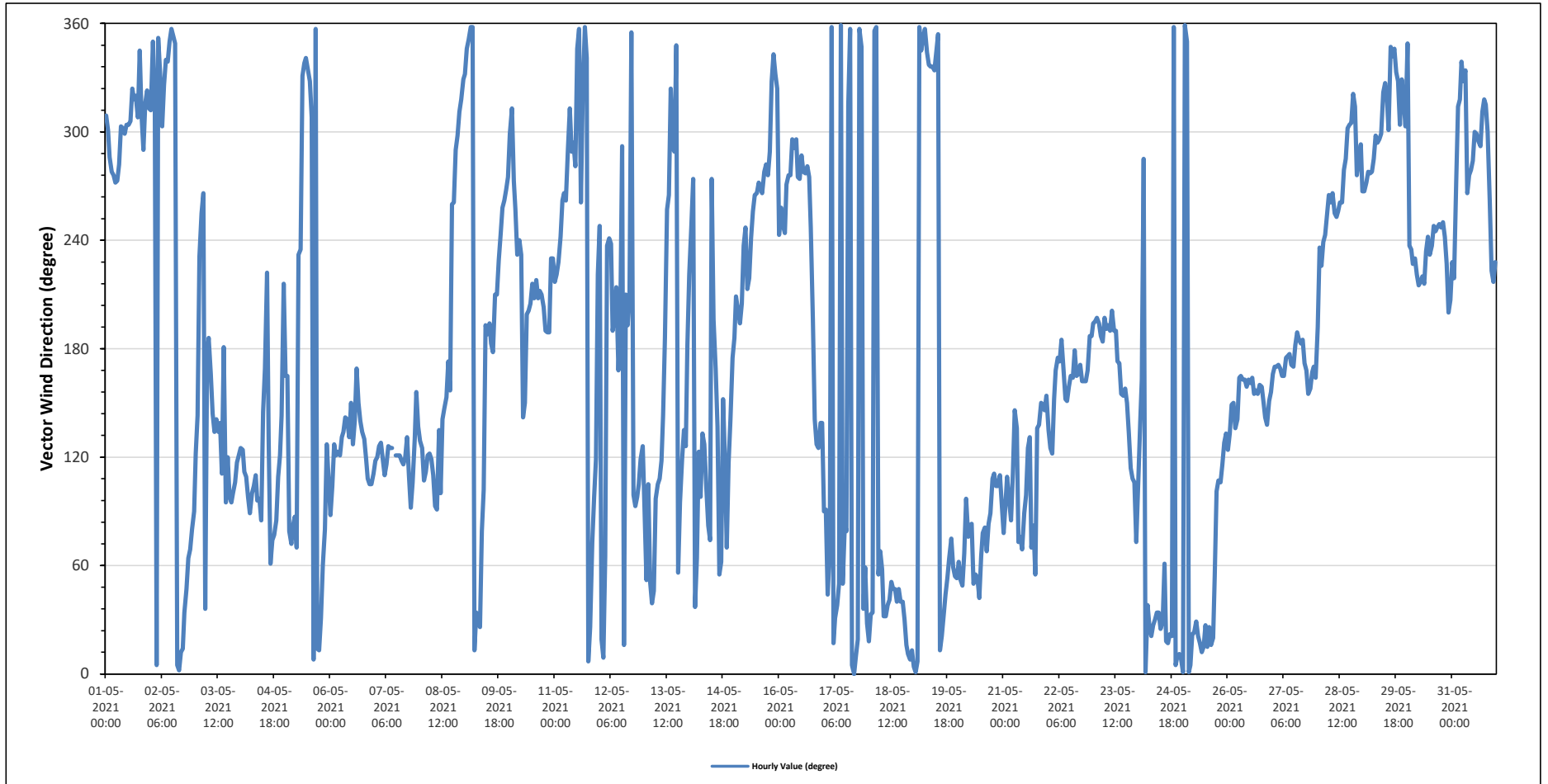
St. Lina Site - May 2021

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:		150 (SSE) degree														Hours in Service:		744									
																Hours of Data:		743									
																Hours of Missing Data:		1									
																Hours of Calibration:		0									
																Operational Uptime:		99.9									
Day	Hourly Period Starting at (MST)																							Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant	
May 1	NW	WNW	WNW	W	W	W	W	W	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NNW	NW	WNW	NW	NW	NW	304	WNW	
May 2	NW	N	NW	N	N	NNW	WNW	NW	NNW	NNW	N	N	NNW	N	N	NNE	NNE	NE	NE	ENE	ENE	E	E	E	2	N	
May 3	ESE	SE	SW	WSW	W	NE	S	S	SSE	SE	SE	SE	SE	ESE	S	E	ESE	E	E	E	ESE	ESE	ESE	ESE	128	SE	
May 4	SE	ESE	ESE	ESE	E	E	E	ESE	ESE	E	E	E	SE	SSE	SW	SE	ENE	ENE	ENE	E	ESE	ESE	SE	SW	109	ESE	
May 5	SSE	SSE	ENE	ENE	E	E	ENE	SW	SW	NNW	NNW	NNW	NNW	NW	N	N	NNE	NNE	ENE	E	SE	ESE	ESE	55	NE		
May 6	E	ESE	SE	ESE	ESE	ESE	SE	SE	SE	SE	SE	SSE	SE	SE	SSE	SSE	SE	SE	ESE	ESE	ESE	ESE	ESE	127	SE		
May 7	ESE	ESE	SE	SE	ESE	ESE	ESE	SE	SE	SE	P	ESE	ESE	ESE	ESE	ESE	ESE	SE	ESE	E	ESE	SE	SSE	SE	122	ESE	
May 8	SE	SE	ESE	ESE	ESE	ESE	ESE	ESE	E	E	SE	E	SE	SE	SSE	S	SSE	WSW	W	WNW	WNW	NW	NW	NNW	136	SE	
May 9	NNW	NNW	N	N	N	NNE	NE	NNE	NNE	ENE	E	S	S	SSW	S	S	SSW	SSW	SSW	SSW	WSW	WSW	W	W	W	263	W
May 10	WNW	NW	W	WSW	SW	WSW	SW	SE	SSE	SSW	SSW	SSW	SW	SSW	SW	SSW	SSW	SSW	SSW	SSW	S	S	S	SW	SW	214	SSW
May 11	SW	SW	SW	WSW	W	W	W	WNW	NW	WNW	WNW	W	NNW	N	W	NW	N	NNW	N	NNE	ENE	E	ESE	SW	296	WNW	
May 12	WSW	NNE	N	ENE	SW	WSW	SW	S	SSW	SSW	SSE	SSW	WNW	NNE	SSW	S	SSW	N	E	E	E	ESE	ESE	SE	142	SE	
May 13	E	NE	ESE	NE	NE	NE	E	ESE	ESE	ESE	SE	S	WSW	W	NW	WNW	WNW	NNW	NE	E	ESE	SE	SE	S	82	E	
May 14	SW	WSW	W	NE	ENE	ESE	E	SE	SE	E	E	ENE	W	SSW	SSE	SE	NE	ENE	SSE	ESE	ENE	ESE	SE	S	118	ESE	
May 15	S	SSW	SSW	SSW	SSW	SW	WSW	SSW	SW	WSW	WSW	W	W	W	W	W	W	W	W	W	WNW	NNW	NNW	NW	260	WSW	
May 16	WSW	WSW	WSW	WSW	W	W	W	WNW	WNW	WNW	W	W	WNW	W	W	W	W	WSW	SSW	SE	SE	SE	SE	SE	256	WSW	
May 17	E	E	NE	ENE	N	NNE	NNE	NE	NE	N	NE	E	ENE	NW	N	N	N	N	NNE	N	NNW	NE	ENE	NNE	22	NNE	
May 18	NNE	NNE	NE	N	N	NE	ENE	ENE	NNE	NNE	NE	NE	NE	NE	NE	NE	NE	NE	NNE	NNE	NNE	N	NNE	N	35	NE	
May 19	N	N	N	N	NNW	N	N	NNW	NNW	NNW	NNW	NNW	NNW	N	NNE	NNE	NE	NE	NE	ENE	ENE	ENE	NE	NE	6	N	
May 20	ENE	NE	NE	ENE	E	ENE	E	E	NE	NE	NE	NE	ENE	ENE	E	ENE	E	E	ESE	ESE	ESE	ESE	ESE	E	75	ENE	
May 21	ENE	E	ESE	E	E	ESE	SE	SE	ENE	ENE	ENE	E	E	SE	SE	ENE	E	NE	SE	SE	SSE	SSE	SE	SSE	110	ESE	
May 22	SE	SE	ESE	SSE	SSE	S	S	S	SSE	SSE	SSE	SSE	SSE	SSE	S	SSE	SSE	S	SSE	SSE	SSE	SSE	S	S	164	SSE	
May 23	SSW	SSW	SSW	SSW	S	S	SSW	S	S	S	SSW	S	S	S	S	SSE	SSE	SSE	SSE	SE	ESE	ESE	ESE	ENE	178	S	
May 24	ESE	SE	SSE	WNW	N	NE	NNE	NNE	NNE	NNE	NE	NE	NNE	NNE	ENE	ENE	NNE	NNE	NNE	N	N	N	NNE	N	22	NNE	
May 25	N	N	N	N	N	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	E	ESE	ESE	ESE	SE	SE	27	NNE	
May 26	ESE	SE	SSE	SSE	SE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SSE	SSE	155	SSE	
May 27	SSE	SSE	SSE	S	SSE	SSE	SSE	S	S	S	S	SSE	S	S	S	S	S	S	SSE	SSE	SSE	SSE	SSE	SSE	173	S	
May 28	S	SW	SW	WSW	WSW	WSW	W	W	W	WSW	WSW	WSW	W	W	W	WNW	WNW	WNW	WNW	NW	NW	W	WNW	WNW	264	W	
May 29	W	W	W	W	W	W	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	WNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	302	WNW	
May 30	NNW	SW	SW	SW	SW	SSW	SW	SW	SSW	SW	SW	SW	SW	WSW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	SSW	SSW	237	SW	
May 31	SW	SW	W	NW	NW	NNW	NNW	NNW	W	W	W	WNW	WNW	WNW	WNW	WNW	NW	NW	WNW	W	SW	SW	SW	287	WNW		
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance										
K	Collection Error							N	No Data (Machine Not in Service)							Y	Routine Maintenance							P	Power Failure		
X	Invalid Data (Machine Malfunction /Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																		
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																											
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																											

Timeseries Chart of Hourly Average for VWD - St. Lina Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - May 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr & WIND DIRECTION (VWD) in sector

WIND SPEED																											
Maximum Hourly Value: 37.6 kph on May 28 at hour 9													Hours in Service: 744														
Maximum Daily Value: 21.3 kph on May 7													Hours of Data: 743														
Minimum Hourly Value: 0.4 kph on May 14 at hour 18													Hours of Missing Data: 1														
Minimum Daily Value: 2.0 kph on May 12													Hours of Calibration: 0														
Monthly Average: 1.0 kph													Operational Uptime: 99.9														
WIND DIRECTION																											
Monthly Average: 150 (SSE) degree																											
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
May 1	10.5	9.2	9.5	12.1	10.6	12.0	14.3	16.0	16.7	16.2	16.4	17.8	18.7	17.8	15.3	16.3	17.2	14.5	20.1	8.2	8.4	10.8	11.4	9.2	8.2	20.1	13.0
	NW	WNW	WNW	W	W	W	W	W	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NNW	NW	NNW	NW	NW	NW	NW			
May 2	9.0	8.3	7.2	8.5	6.5	7.0	7.2	10.2	14.1	14.0	16.5	14.9	15.6	15.7	14.5	16.3	15.2	13.8	12.1	11.7	10.2	8.9	5.6	5.4	5.4	16.5	9.5
	NW	N	NW	N	N	NNW	WNW	NW	NNW	NNW	N	N	N	NNW	N	N	NNE	NNE	NE	NE	ENE	ENE	E	E			
May 3	4.4	3.5	4.7	5.1	4.3	1.4	2.8	5.3	6.1	5.5	6.6	6.6	3.6	5.3	4.1	2.1	5.4	4.7	7.2	8.7	10.9	12.4	15.4	14.6	1.4	15.4	4.8
	ESE	SE	SW	WSW	W	NE	S	S	SSE	SE	SE	SE	SE	SE	ESE	S	E	ESE	E	E	E	ESE	ESE	ESE			
May 4	13.5	11.5	10.7	10.9	11.1	10.6	9.7	9.6	8.4	9.8	9.5	7.7	4.6	5.2	1.4	4.9	4.7	5.0	6.9	6.6	9.2	9.2	7.3	4.9	1.4	13.5	7.2
	SE	ESE	ESE	ESE	E	E	E	ESE	ESE	E	E	E	SE	SSE	SW	SE	ENE	ENE	ENE	E	ESE	ESE	SE	SW			
May 5	8.4	10.7	3.8	6.1	7.1	7.3	6.9	2.3	3.8	2.9	4.8	4.8	5.5	1.7	7.1	7.2	5.6	5.9	7.5	4.8	6.3	8.2	7.4	6.7	1.7	10.7	2.5
	SSE	SSE	ENE	ENE	E	E	ENE	SW	NNW	NNW	NNW	NNW	NNW	NNW	NW	N	NNE	NNE	NNW	NNE	E	SE	ESE	ESE			
May 6	11.3	13.7	15.5	12.1	11.8	12.1	11.0	12.9	10.5	11.4	13.4	14.0	17.6	18.4	18.0	17.7	16.8	17.5	15.8	17.6	18.4	21.4	19.9	19.3	10.5	21.4	14.6
	E	ESE	SE	ESE	ESE	ESE	SE	SE	SE	SE	SSE	SE	SE	SSE	SE	SE	SSE	SE	SE	ESE	ESE	ESE	ESE	ESE			
May 7	21.4	21.6	21.4	18.3	18.8	19.9	23.2	23.2	25.0	26.0	P	24.9	26.5	24.2	25.4	28.8	25.2	21.0	15.6	14.0	15.5	16.2	20.8	21.1	14.0	28.8	21.3
	ESE	ESE	SE	SE	ESE	ESE	SE	SE	SE	SE	P	ESE	ESE	ESE	ESE	ESE	ESE	SE	ESE	E	ESE	SE	SSE	SE			
May 8	22.9	15.1	12.8	11.9	12.0	11.0	13.0	12.8	11.2	12.5	16.9	13.4	15.0	18.6	14.2	11.8	15.0	19.6	16.1	9.4	8.7	9.1	8.3	11.0	8.3	22.9	6.5
	SE	SE	ESE	ESE	ESE	ESE	ESE	E	E	SE	E	SE	SE	SSE	S	SSE	WSW	W	WNW	WNW	NW	NW	NNW				
May 9	12.3	9.1	7.4	8.1	7.8	7.4	6.5	6.5	7.8	5.7	3.8	7.1	8.0	7.7	10.3	10.6	10.8	10.7	10.6	7.9	10.4	8.6	8.1	10.0	3.8	12.3	2.3
	NNW	NNW	N	N	N	NNE	NE	NNE	NNE	ENE	E	S	S	SSW	S	S	SSW	SSW	SW	WSW	WSW	W	W	W			
May 10	9.6	9.8	8.4	8.0	7.3	7.4	5.7	4.5	11.4	13.5	15.3	19.8	20.6	18.7	19.8	17.2	17.4	16.0	15.0	11.3	10.6	9.6	8.9	7.5	4.5	20.6	10.4
	WNW	NW	W	WSW	SW	WSW	SW	SE	SSE	SSW	SSW	SSW	SW	NNW	SW	SSW	SSW	SSW	SSW	S	S	S	SW	SW			
May 11	6.6	7.9	8.2	9.4	8.8	8.6	7.0	5.8	7.1	7.1	5.8	7.6	5.1	10.6	1.7	5.5	7.7	11.5	9.2	7.0	4.6	5.5	2.3	6.8	1.7	11.5	3.6
	SW	SW	SW	WSW	W	W	W	WNW	NW	WNW	WNW	NW	NNW	N	W	NW	N	NNW	N	NNE	ENE	E	ESE	SW			
May 12	1.9	6.2	6.5	4.4	5.1	3.0	3.7	2.7	4.2	5.0	6.6	6.8	5.8	3.7	4.1	3.7	3.8	1.1	4.0	7.2	8.2	10.2	11.7	10.7	1.1	11.7	2.0
	WSW	NNE	N	ENE	SW	WSW	SW	S	SSW	SSW	SSE	SSW	NNW	NNE	SSW	S	SSW	N	E	E	E	ESE	ESE	SE			
May 13	5.5	6.8	8.6	8.7	8.6	4.0	6.0	6.4	9.9	12.0	4.8	5.6	6.7	5.1	3.0	9.4	16.2	19.4	18.0	12.7	9.2	9.1	7.9	7.2	3.0	19.4	3.2
	E	NE	ESE	NE	NE	E	ESE	ESE	ESE	SE	S	WSW	W	NW	WNW	WNW	NNW	NE	E	ESE	SE	SE	S				
May 14	5.5	6.7	7.1	7.8	7.3	8.4	4.8	3.1	5.4	6.0	3.8	5.7	4.6	11.8	10.3	4.3	9.1	15.0	0.4	5.7	7.7	8.4	9.1	8.5	0.4	15.0	3.4
	SW	WSW	W	NE	ENE	ESE	E	SE	SE	E	ENE	W	SSW	SSE	SE	NE	ENE	SSE	ESE	ENE	ESE	SE	S				
May 15	9.6	8.7	7.8	8.4	8.1	6.2	4.0	8.4	12.3	14.5	16.7	20.8	22.5	24.8	24.7	24.4	19.7	17.7	17.1	9.7	6.6	7.6	6.2	5.2	4.0	24.8	10.8
	S	SSW	SSW	SSW	SSW	SW	WSW	SSW	SW	WSW	WSW	W	W	W	W	W	W	W	W	W	WNW	NNW	NNW	NNW			
May 16	5.3	6.7	8.0	8.6	10.8	10.4	10.1	10.5	12.5	9.6	12.0	11.8	9.6	14.3	13.3	11.4	9.9	5.8	4.1	6.8	10.2	13.1	17.2	13.2	4.1	17.2	5.7
	WSW	WSW	WSW	WSW	W	W	W	WNW	WNW	WNW	W	W	WNW	W	W	W	W	WSW	SSW	SE	SE	SE	SE	SE			
May 17	9.9	9.0	7.4	8.1	8.4	11.7	11.3	7.7	3.0	5.5	5.5	5.4	3.7	10.7	17.2	19.1	18.6	19.0	16.5	13.8	15.2	15.2	13.7	8.4	3.0	19.1	9.3
	E	E	NE	ENE	N	NNE	NNE	NE	NE	N	NE	E	ENE	NW	N	N	N	N	NNE	N	NNW	NE	ENE	NNE			
May 18	8.1	13.6	14.9	5.4	8.5	12.4	12.3	13.3	10.1	11.9	11.3	11.0	13.0	16.0	18.2	16.2	16.0	20.7	16.9	15.1	13.3	15.0	15.7	15.6	5.4	20.7	12.9
	NNE	NNE	NE	N	N	NE	ENE	ENE	NNE	NNE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NNE	NNE	N	NNE			
May 19	15.1	16.7	16.9	13.7	12.3	16.0	14.4	12.0	12.6	14.4	15.1	16.4	15.1	14.7	13.5	13.2	13.9	12.4	10.8	8.8	8.1	6.8	5.6	4.9	4.9	16.9	11.1
	N	N	N	N	NNW	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNE	NNE	NE	NE	ENE	ENE	ENE	NE	NE			
May 20	7.3	5.3	4.5	5.9	8.1	7.6	6.8	5.3	8.1	11.4	11.0	10.3	9.5	9.2	8.7	8.8	8.0	7.2	6.8	7.3	6.5	5.4	5.2	6.5	4.5	11.4	7.0
	ENE	NE	NE	ENE	E	ENE	E	E	NE	NE	NE	NE	ENE	ENE	E	ENE	E	E	ESE	ESE	ESE	ESE	ESE	E			



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - May 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr & WIND DIRECTION (VWD) in sector

WIND SPEED																																			
Maximum Hourly Value:	37.6	kph	on May 28 at hour 9	Hours in Service:	744																														
Maximum Daily Value:	21.3	kph	on May 7	Hours of Data:	743																														
Minimum Hourly Value:	0.4	kph	on May 14 at hour 18	Hours of Missing Data:	1																														
Minimum Daily Value:	2.0	kph	on May 12	Hours of Calibration:	0																														
Monthly Average:	1.0	kph		Operational Uptime:	99.9																														
WIND DIRECTION																																			
Monthly Average:	150	(SSE)	degree																																
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average									
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23											
May 21	6.5	6.1	6.6	6.3	5.5	4.0	4.2	3.5	5.2	3.9	3.2	3.3	4.8	3.0	5.0	5.8	5.8	2.5	5.3	5.2	5.1	5.0	6.3	7.0	2.5	7.0	4.3								
	ENE	E	ESE	E	E	ESE	SE	SE	ENE	ENE	ENE	E	E	SE	SE	ENE	E	NE	SE	SE	SSE	SSE	SE	SSE											
May 22	7.8	9.3	8.8	8.9	10.0	8.8	7.6	6.6	9.5	8.4	6.5	10.3	11.0	12.0	13.6	14.5	15.0	14.7	14.7	12.3	10.5	11.6	14.7	12.3	6.5	15.0	10.4								
	SE	SE	ESE	SSE	SSE	S	S	S	SSE	SSE	SSE	SSE	SSE	S	SSE	SSE	S	SSE	SSE	SSE	SSE	SSE	S	S											
May 23	12.1	11.7	14.0	13.3	11.5	12.8	15.5	17.2	15.1	17.1	15.8	12.7	9.4	9.1	9.0	6.5	7.6	8.0	7.5	6.8	7.4	8.5	7.4	5.5	5.5	17.2	9.5								
	SSW	SSW	SSW	SSW	S	S	SSW	S	S	S	SSW	S	S	S	SSE	SSE	SSE	SSE	SE	ESE	ESE	ESE	ENE												
May 24	7.1	4.4	2.1	2.6	5.4	6.0	9.4	11.3	14.2	15.4	18.5	18.8	17.8	19.0	12.1	14.2	13.5	17.3	21.8	21.0	23.0	20.4	18.0	17.5	2.1	23.0	12.6								
	ESE	SE	SSE	WNW	N	NE	NNE	NNE	NNE	NNE	NE	NE	NNE	NNE	ENE	NNE	NNE	NNE	NNE	N	N	N	NNE	N											
May 25	15.4	13.9	14.1	16.0	11.7	13.0	12.7	15.3	14.6	12.4	10.0	9.8	7.8	6.0	5.1	6.6	6.0	3.6	5.1	6.2	7.3	10.0	9.6	8.3	3.6	16.0	7.7								
	N	N	N	N	N	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	E	ESE	ESE	ESE	SE	SE											
May 26	9.7	8.8	8.2	9.3	8.1	6.7	10.3	13.6	16.8	17.4	17.4	17.4	19.3	18.6	16.1	18.6	17.8	17.4	16.2	15.7	14.4	14.7	17.6	16.9	6.7	19.3	14.2								
	ESE	SE	SSE	SSE	SE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SSE	SSE	SSE												
May 27	17.9	18.1	17.4	17.5	16.3	17.3	17.2	21.1	20.0	20.6	20.0	20.0	22.6	22.2	22.0	21.9	20.6	17.1	16.7	14.1	13.5	14.5	13.6	16.3	13.5	22.6	18.1								
	SSE	SSE	SSE	S	SSE	SSE	SSE	S	S	S	SSE	S	S	S	S	S	S	SSE	SSE	SSE	SSE	SSE	SSE												
May 28	16.0	13.0	14.4	20.3	23.7	33.0	25.4	33.0	36.6	37.6	32.6	32.3	26.9	31.1	21.0	23.0	20.4	16.7	15.0	14.0	10.1	12.2	8.9	6.5	6.5	37.6	19.9								
	S	SW	SW	WSW	WSW	WSW	W	W	W	WSW	WSW	WSW	W	W	W	WNW	WNW	WNW	WNW	NW	NW	W	WNW	WNW											
May 29	11.2	11.8	12.4	13.1	13.0	12.2	11.7	13.5	13.7	14.6	15.0	14.1	14.2	10.8	13.4	9.9	8.7	8.0	8.1	4.9	7.8	6.9	7.9	6.3	4.9	15.0	10.0								
	W	W	W	W	W	W	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	WNW	NNW	NNW	NNW	NNW	NNW	WNW	NNW	NW	WNW											
May 30	5.4	4.1	7.5	7.1	8.5	5.5	5.1	6.0	9.0	10.5	12.9	16.0	11.9	15.6	21.0	18.3	20.4	19.1	14.9	9.1	5.5	5.4	6.2	6.4	4.1	21.0	9.9								
	NNW	SW	SW	SW	SW	SW	SSW	SW	SW	SW	SW	WSW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SSW	SSW											
May 31	6.5	6.7	9.7	11.3	10.5	5.4	4.5	2.0	7.8	10.9	15.6	15.2	13.2	13.6	11.4	12.0	7.8	7.1	6.5	5.1	5.2	5.3	5.8	6.1	2.0	15.6	7.3								
	SW	SW	W	NW	NW	NNW	NNW	NNW	W	W	W	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	WNW	W	SW	SW	SW											
C	Monthly Calibration								S	Daily Zero-Span Check								Q	Quality Assurance																
K	Collection Error								N	No Data (Machine Not in Service)								Y	Routine Maintenance								P	Power Failure							
X	Invalid Data (Equipment Malfunction/Recovery)								NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																									
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																			
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																			



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - May 2021

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

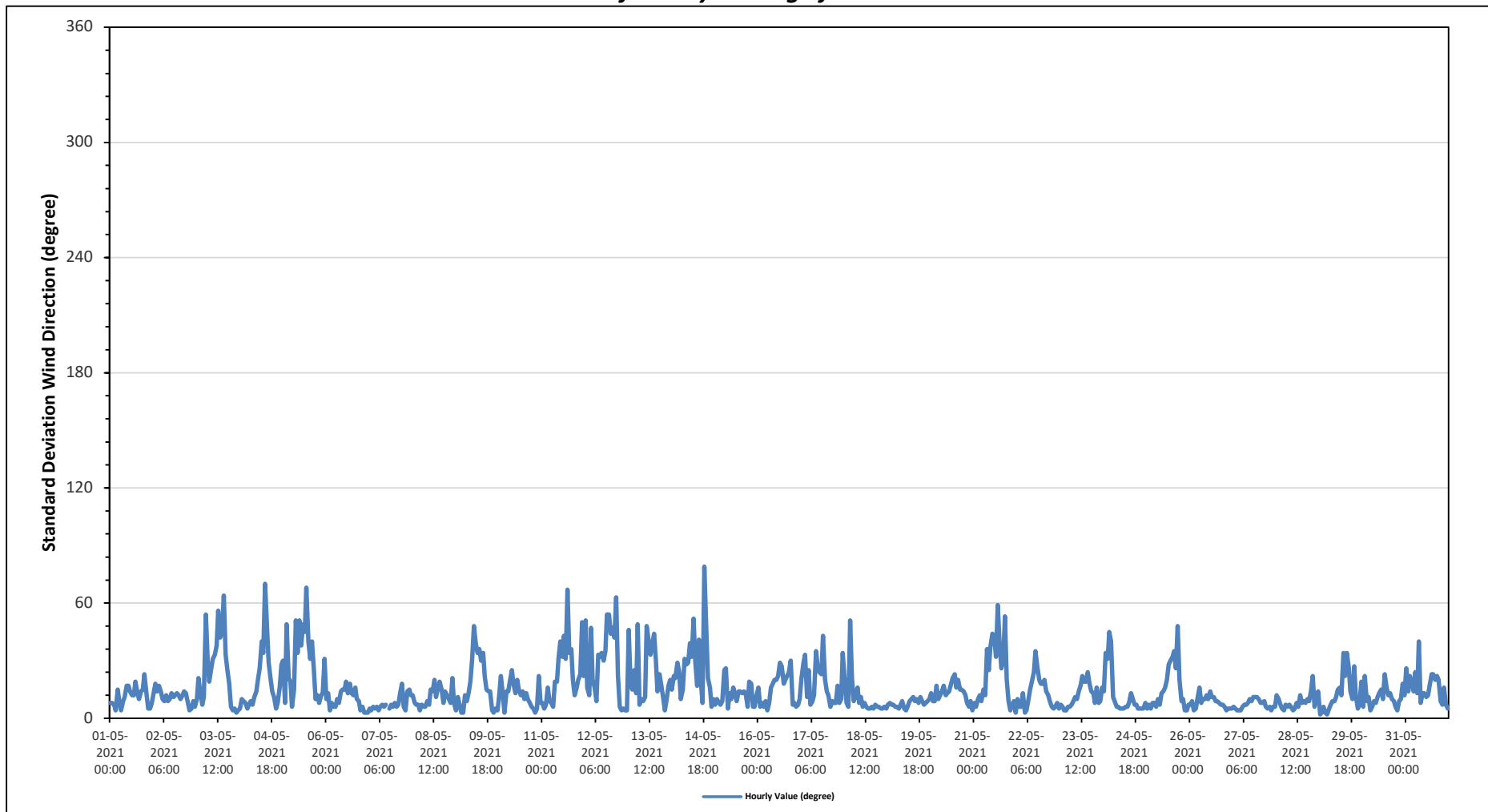
Maximum Hourly Value:	79 degree on May 14 at hour 18	Hours in Service:	744
Minimum Hourly Value:	2 degree on May 29 at hour 0	Hours of Data:	743
		Hours of Missing Data:	1
		Hours of Calibration:	0
		Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																							Daily	Daily	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum
May 1	8	8	7	4	15	8	4	9	11	17	17	14	12	12	19	13	10	14	15	23	13	5	5	8	4	23
May 2	13	18	14	17	14	10	9	12	9	10	13	11	12	13	12	10	12	14	13	8	4	5	9	6	4	18
May 3	10	21	14	7	11	54	30	19	26	31	33	38	56	42	46	64	33	25	18	6	4	5	3	4	3	64
May 4	5	10	9	8	5	7	9	7	11	14	20	26	40	34	70	46	29	20	14	11	5	8	16	28	5	70
May 5	30	8	49	21	19	6	15	51	34	51	38	49	45	68	40	31	40	26	10	12	8	12	13	31	6	68
May 6	10	13	4	8	6	6	10	8	14	15	15	19	13	18	13	12	16	10	9	4	6	3	3	3	3	19
May 7	5	4	6	5	6	4	6	7	6	7	P	5	7	6	8	6	7	13	18	6	4	14	15	12	4	18
May 8	12	8	7	7	4	7	6	6	9	7	15	14	20	11	16	19	15	8	14	12	10	8	21	8	4	21
May 9	4	11	7	3	3	12	9	13	19	31	48	39	34	36	30	34	22	15	14	14	4	3	5	4	3	48
May 10	11	22	12	3	14	14	19	25	18	13	20	15	12	14	10	13	10	8	6	5	3	5	22	8	3	25
May 11	8	5	7	16	9	8	6	19	19	31	40	32	43	31	67	34	36	20	12	16	20	23	50	22	5	67
May 12	51	16	12	47	20	16	9	33	32	34	30	35	54	54	44	47	42	63	22	6	4	5	4	4	4	63
May 13	46	18	15	25	13	49	7	10	9	11	48	41	33	38	44	30	14	23	18	11	4	9	17	20	4	49
May 14	15	22	21	29	24	10	15	31	28	29	39	32	52	29	17	41	20	8	79	49	21	16	6	10	6	79
May 15	7	10	8	7	9	25	26	5	13	10	16	13	9	14	14	13	14	13	6	19	18	6	6	12	5	26
May 16	16	6	8	6	9	4	8	16	18	20	20	22	29	27	18	20	22	24	30	7	8	6	7	10	4	30
May 17	21	29	33	11	25	7	9	12	35	26	24	23	43	20	14	12	6	9	8	8	17	8	10	34	6	43
May 18	19	8	6	51	21	9	12	16	8	11	6	8	6	5	5	6	5	7	6	6	5	5	6	5	5	51
May 19	7	8	7	7	6	6	5	7	9	5	4	6	9	10	11	9	10	8	11	9	7	8	9	10	4	11
May 20	13	9	9	17	10	12	14	17	12	13	14	18	21	23	16	20	15	15	14	12	8	6	9	4	4	23
May 21	8	6	10	12	9	15	12	36	25	37	44	43	32	59	39	26	30	53	20	9	4	7	9	3	3	59
May 22	10	6	6	13	3	4	10	15	19	24	35	27	20	18	18	20	14	12	9	6	5	6	8	5	3	35
May 23	7	6	4	4	6	6	7	9	11	10	14	17	22	19	19	24	18	14	13	8	16	8	9	16	4	24
May 24	14	34	31	45	40	11	9	6	6	5	5	6	6	8	13	10	7	7	5	5	5	5	8	5	5	45
May 25	5	7	5	8	8	6	10	7	13	14	16	20	28	30	32	35	26	48	20	9	10	4	4	7	4	48
May 26	7	9	4	5	10	16	8	10	10	12	10	14	11	11	9	9	8	7	7	6	4	5	5	5	4	16
May 27	6	5	4	4	4	6	7	7	8	10	9	11	11	11	10	8	8	9	6	5	6	4	6	6	4	11
May 28	12	10	7	5	4	7	6	7	6	4	5	8	6	12	8	9	8	10	9	14	22	6	11	14	4	22
May 29	2	3	6	3	2	5	7	9	9	11	15	16	12	34	22	34	26	14	10	27	12	5	7	19	2	34
May 30	6	22	9	11	4	6	9	8	11	13	15	10	23	16	12	13	10	9	6	4	9	10	18	12	4	23
May 31	26	14	22	19	14	24	13	40	8	13	13	11	12	17	23	23	20	22	20	9	7	16	7	5	5	40
Diurnal Minimum	2	3	4	3	2	4	4	5	6	4	4	5	6	5	5	6	5	7	6	4	3	3	3	3	3	3
Diurnal Maximum	51	34	49	51	40	54	30	51	35	51	48	49	56	68	70	64	42	63	79	49	22	23	50	34	34	34

C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Machine Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for STDWD - St. Lina Site



END OF REPORT

This page, 237 of 237, ends the May 2021 Monthly Ambient Air Quality Monitoring Report.



Lakeland Industry & Community Association

MAY 2021

Ambient Air Monitoring Calibration Report

- COLD LAKE SOUTH STATION-

CAL-LICA-202105-01174

Station Operation and Maintenance:

Bureau Veritas Canada

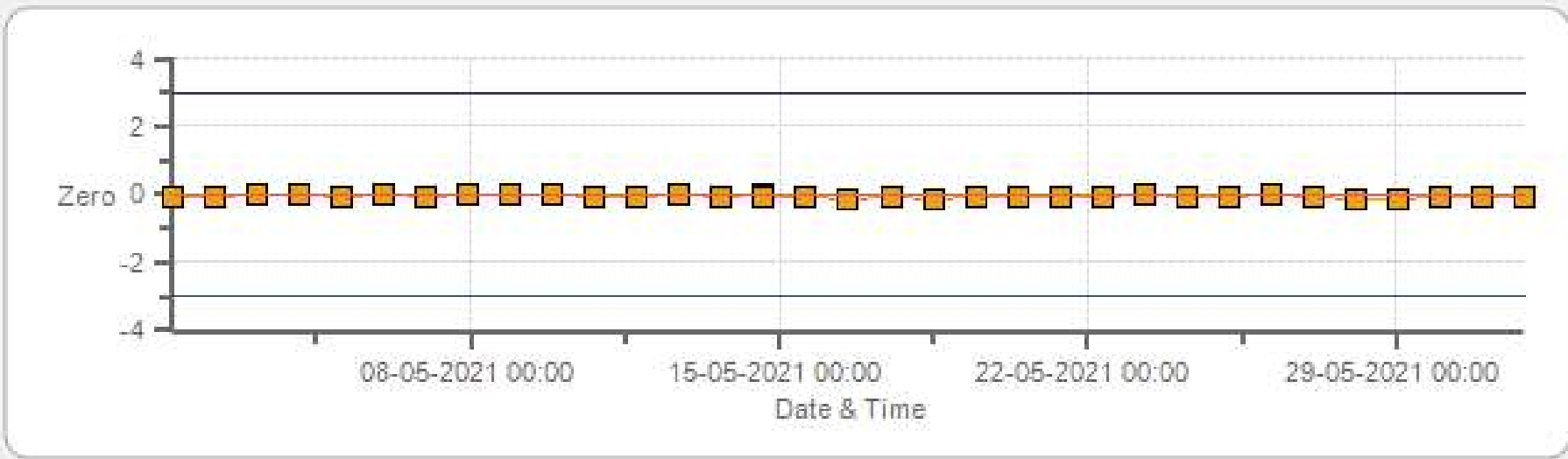
Data Validation and Report:

LICA / Bureau Veritas Canada

June 18, 2021

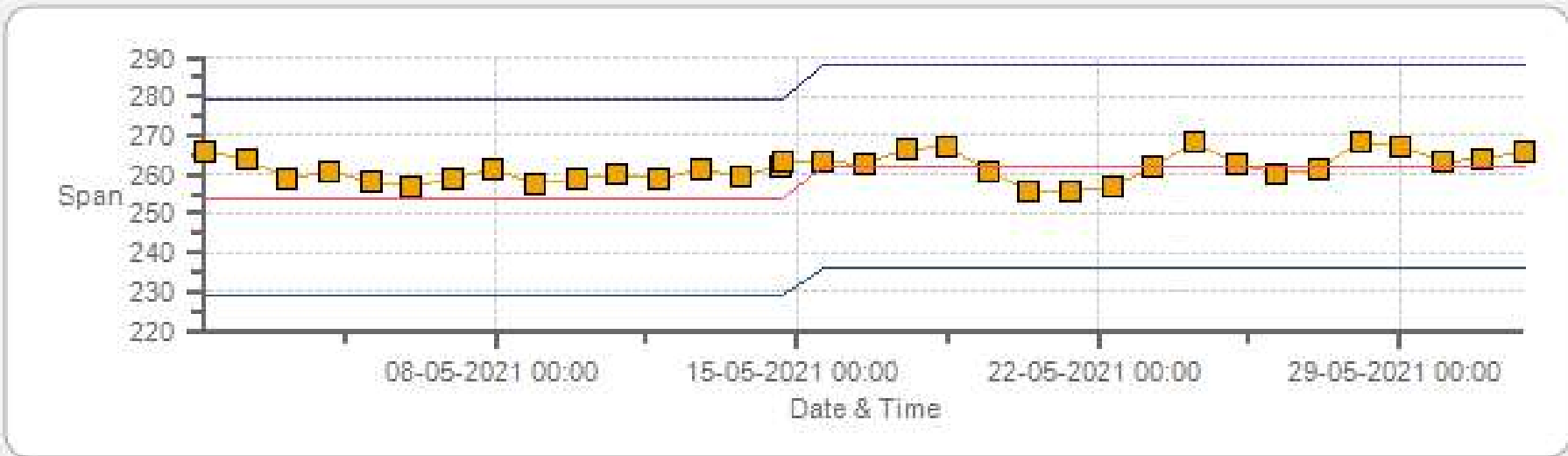
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: Cold Lake South Monthly: 05-2021 Type: SpanAndZero - Zero



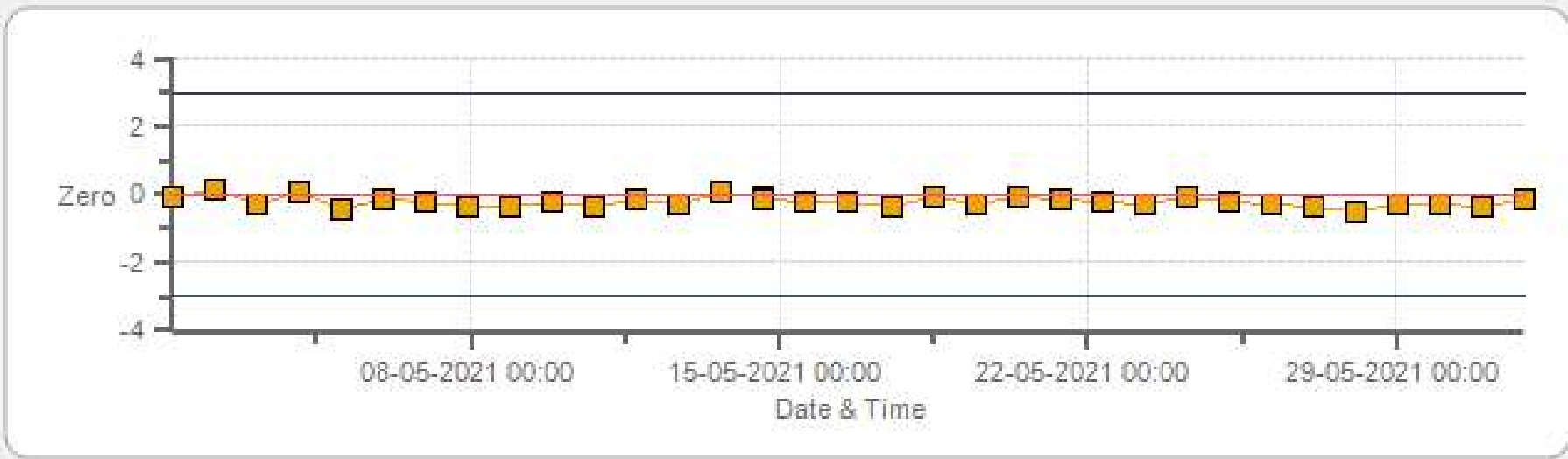
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: Cold Lake South Monthly: 05-2021 Type: SpanAndZero - Span



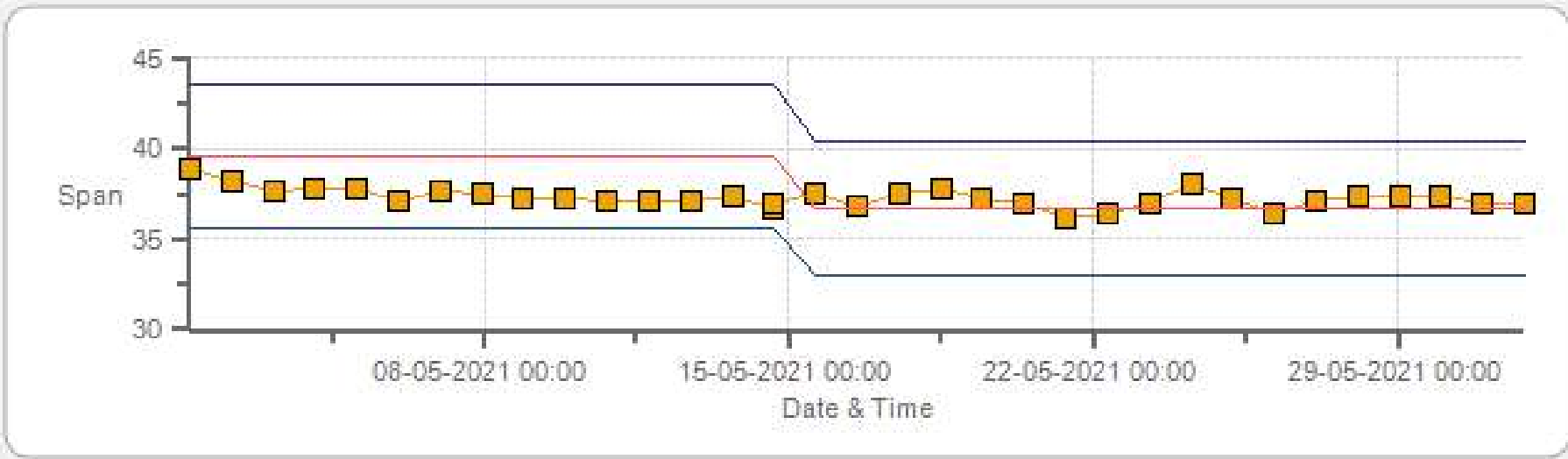
Span SpanRef Span Low Span High

TRS[ppb] Calibration: Cold Lake South Monthly: 05-2021 Type: SpanAndZero - Zero



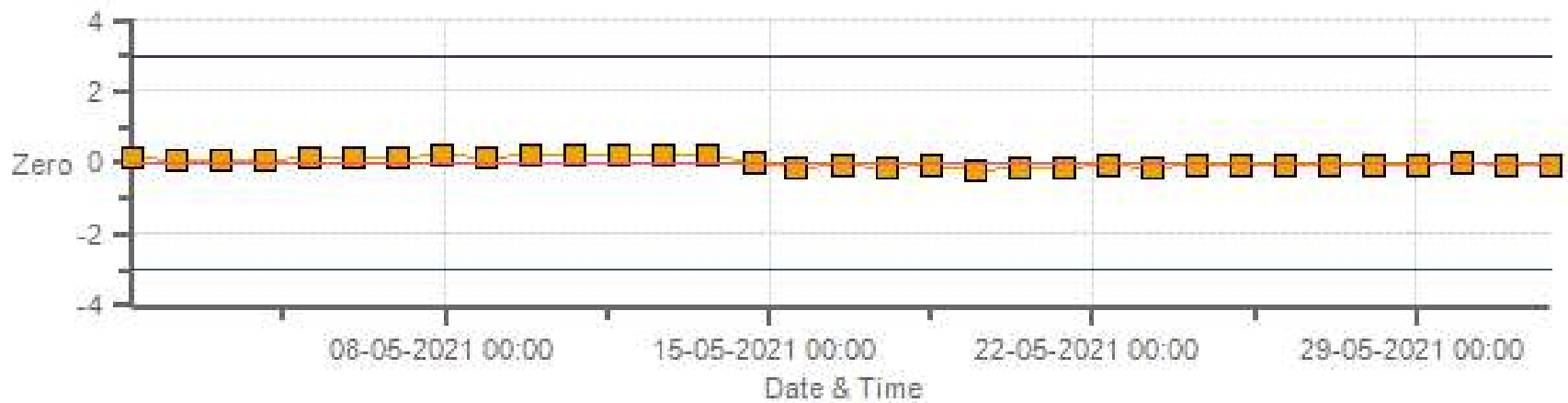
Zero Zero Ref Zero Low Zero High

TRS[ppb] Calibration: Cold Lake South Monthly: 05-2021 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

NOX[ppb] Calibration: Cold Lake South Monthly: 05-2021 Type: SpanAndZero - Zero

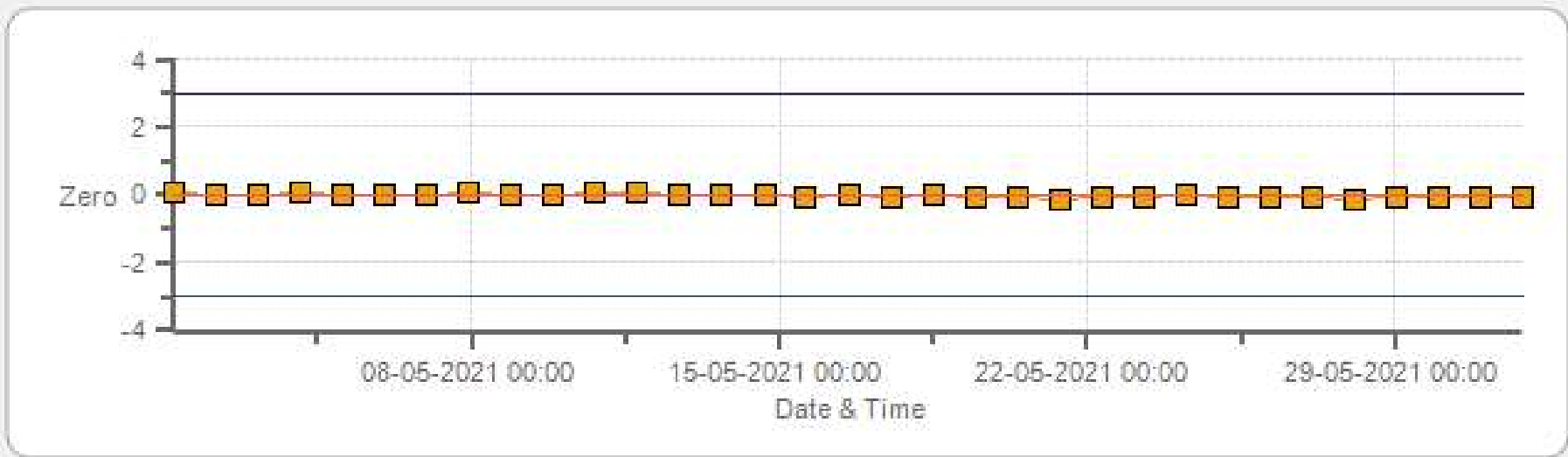


Zero Zero Ref Zero Low Zero High

NOX[ppb] Calibration: Cold Lake South Monthly: 05-2021 Type: SpanAndZero - Span

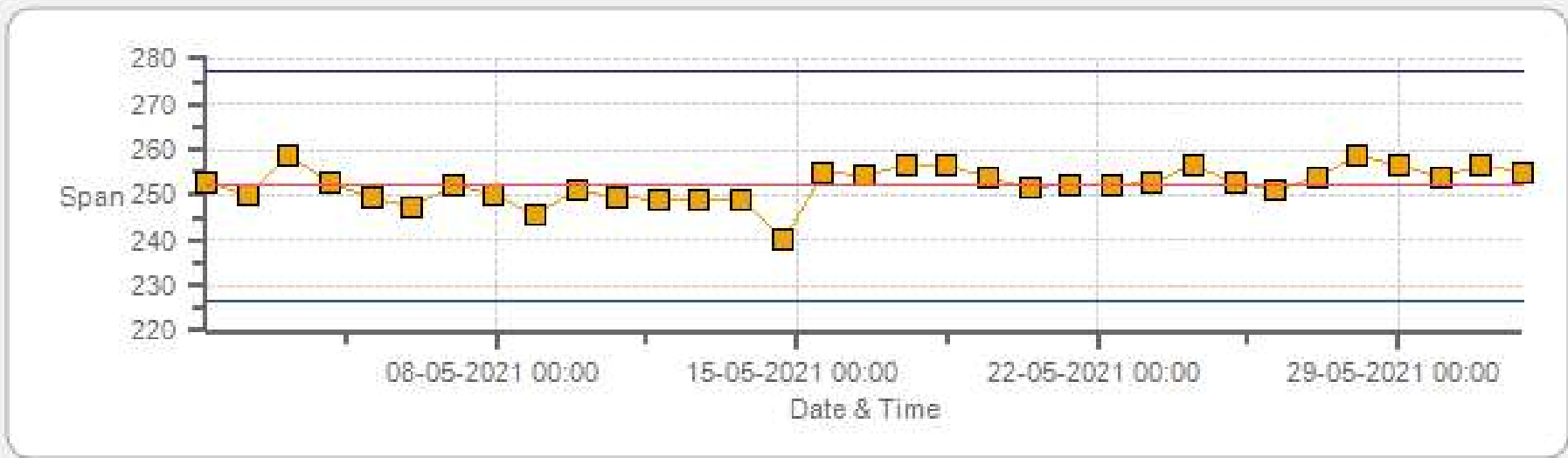


NO2[ppb] Calibration: Cold Lake South Monthly: 05-2021 Type: SpanAndZero - Zero



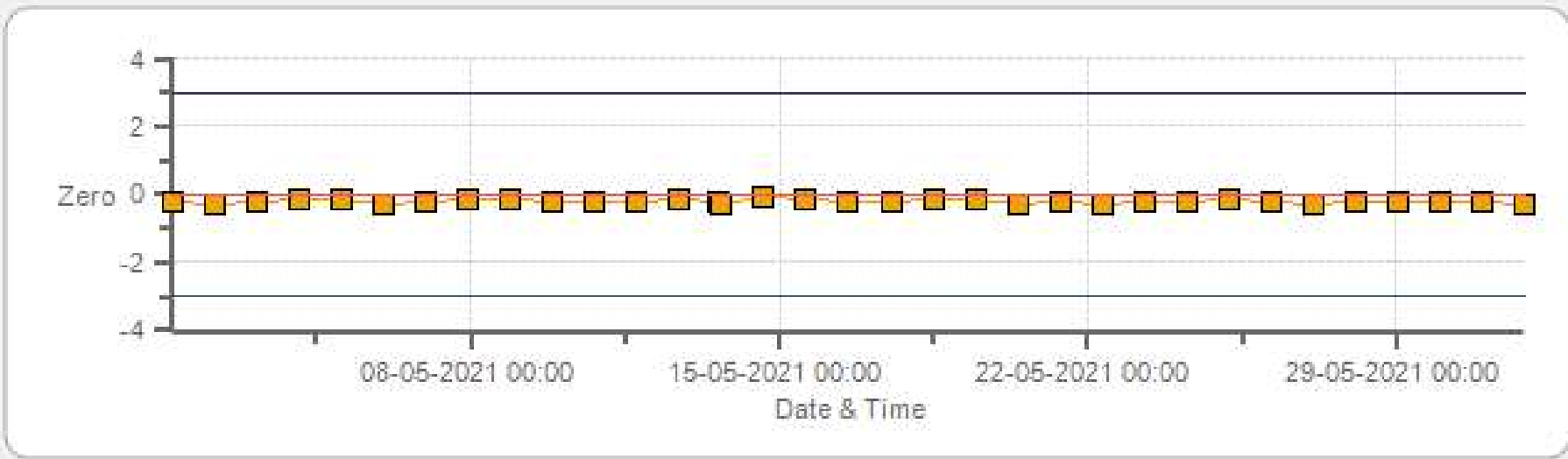
Zero Zero Ref Zero Low Zero High

NO2[ppb] Calibration: Cold Lake South Monthly: 05-2021 Type: SpanAndZero - Span



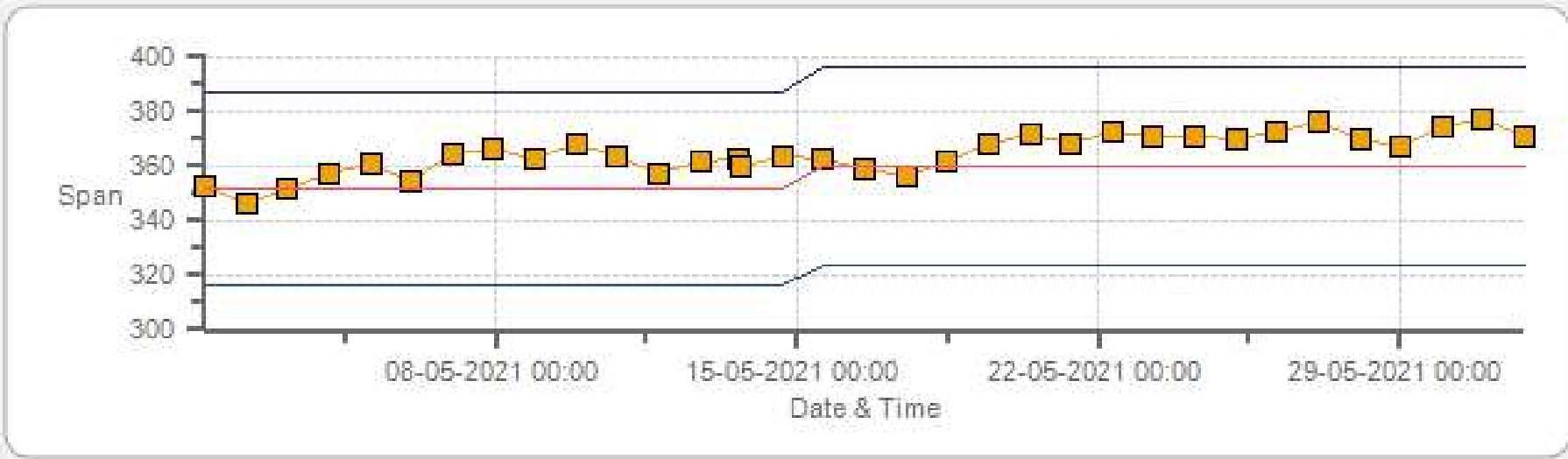
Span Span Ref Span Low Span High

O3[ppb] Calibration: Cold Lake South Monthly: 05-2021 Type: SpanAndZero - Zero



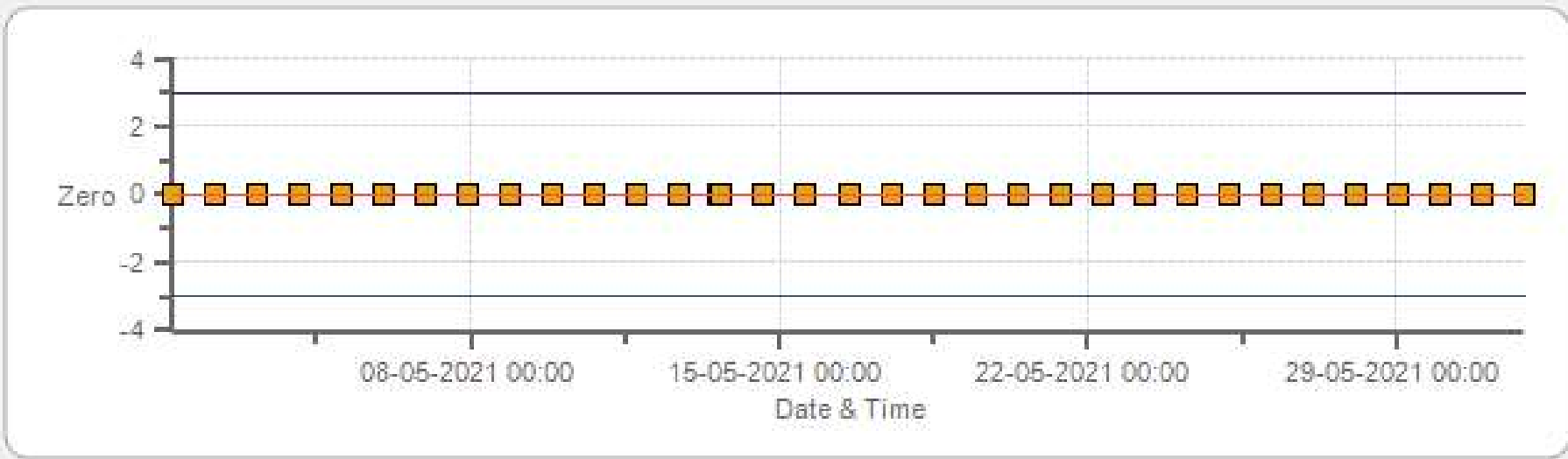
Zero Zero Ref Zero Low Zero High

O3[ppb] Calibration: Cold Lake South Monthly: 05-2021 Type: SpanAndZero - Span



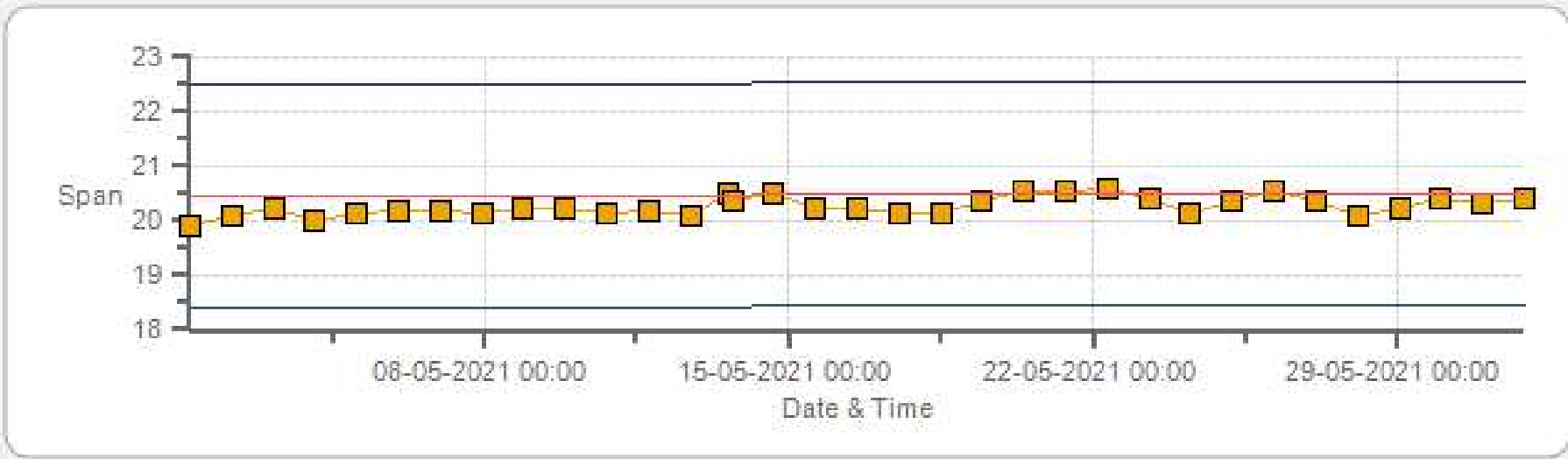
Span SpanRef Span Low Span High

THC55[ppm] Calibration: Cold Lake South Monthly: 05-2021 Type: SpanAndZero - Zero



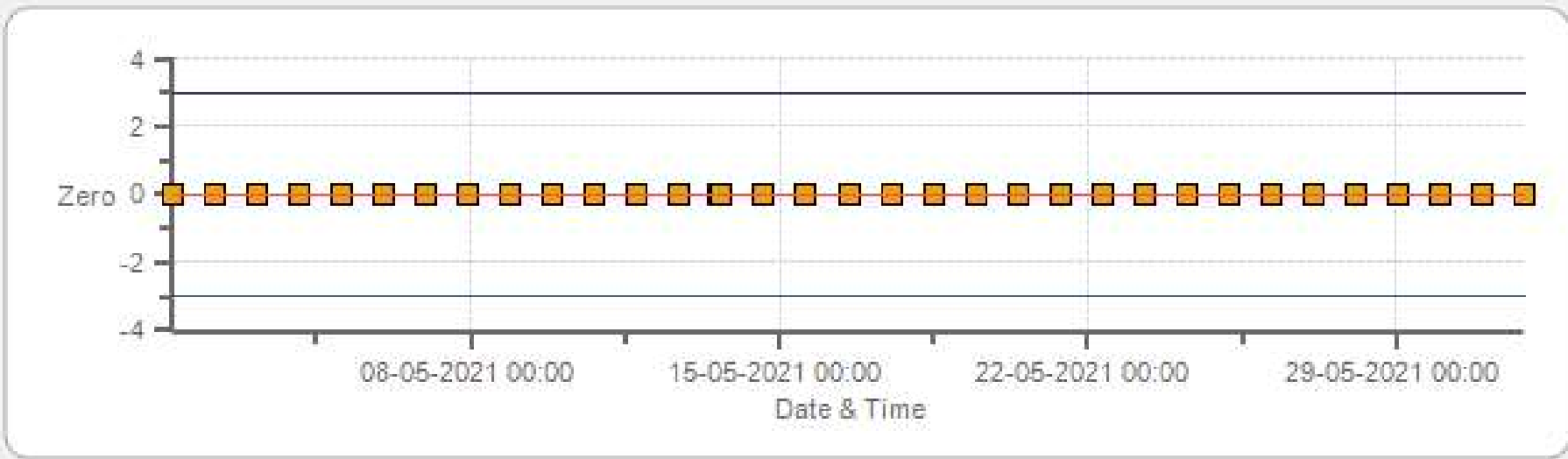
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: Cold Lake South Monthly: 05-2021 Type: SpanAndZero - Span



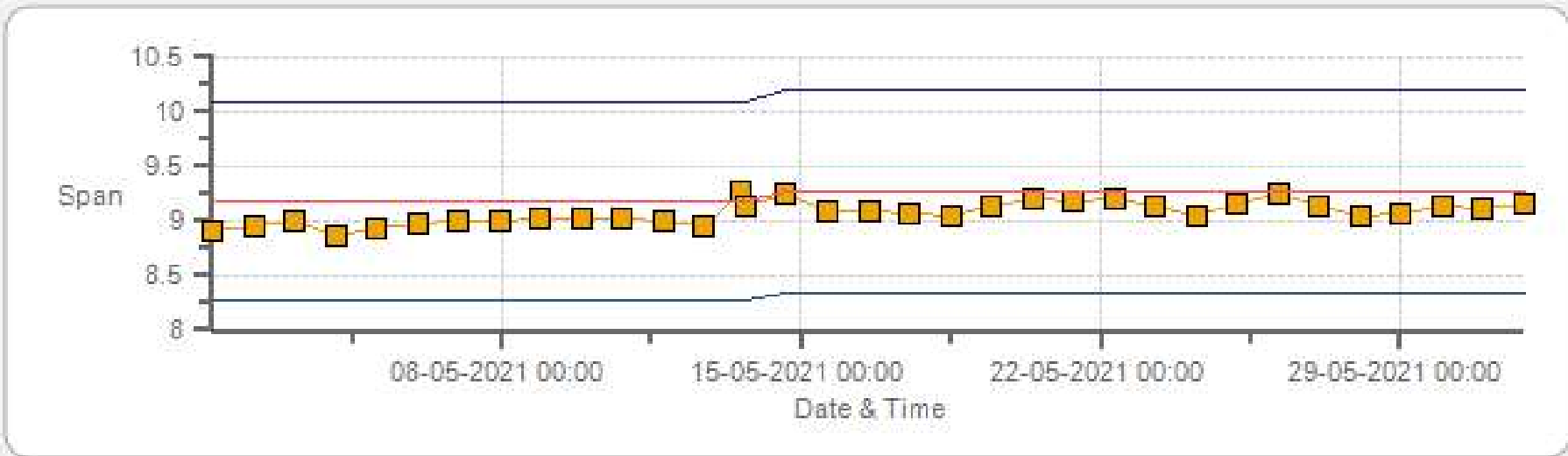
Span SpanRef Span Low Span High

CH4[ppm] Calibration: Cold Lake South Monthly: 05-2021 Type: SpanAndZero - Zero



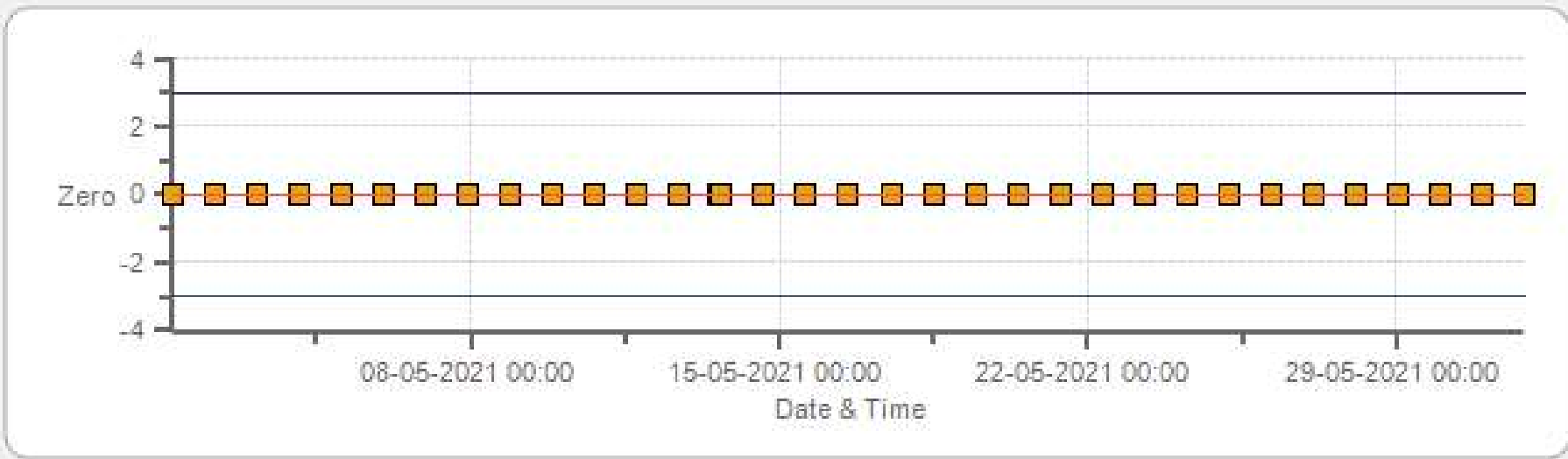
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: Cold Lake South Monthly: 05-2021 Type: SpanAndZero - Span



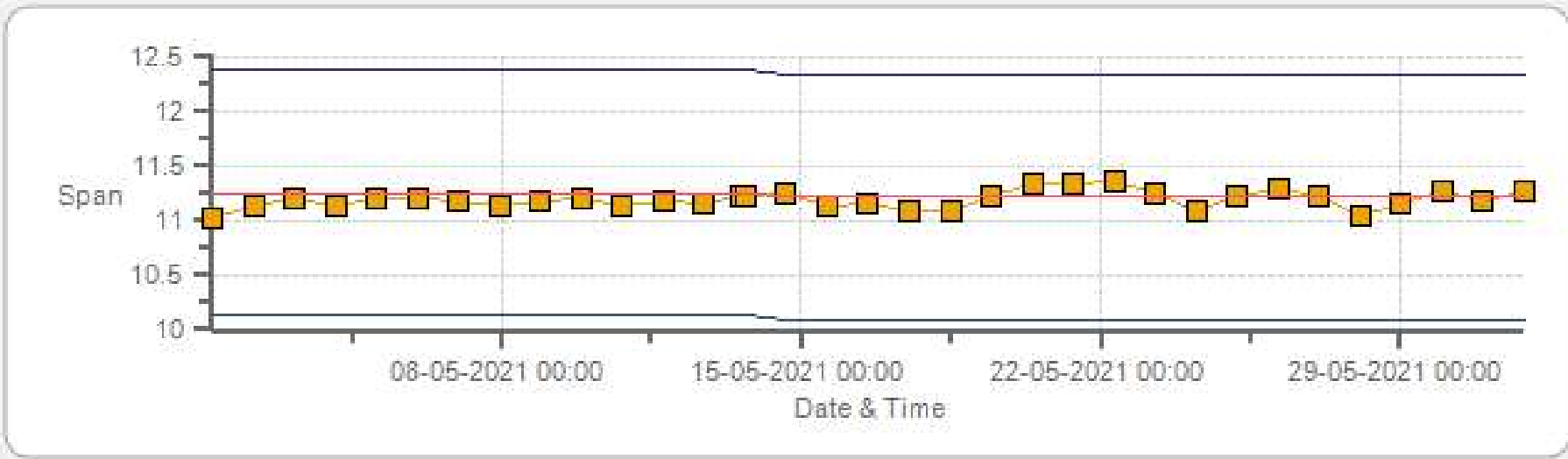
Span SpanRef Span Low Span High

NMHC[ppm] Calibration: Cold Lake South Monthly: 05-2021 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: Cold Lake South Monthly: 05-2021 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution



DATE:	14-May-2021	PREVIOUS CALIBRATION DATE:	19-Apr-2021
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	955
PURPOSE:	Routine	START TIME (MST):	10:29
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:46

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180260018	FLOW (mL/min)	452
INITIAL		FINAL	
BKG/OFFSET	2.02	BKG/OFFSET	2.03
COEF/SLOPE	0.976	COEF/SLOPE	0.976
Expected (reference) Value	254	Expected (reference) Value	262

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000851	HIGH ID	n/a
CONC (ppm):	51.60	EXPIRY DATE	n/a
CYLINDER (psi):	600	LOW ID	n/a
EXPIRY DATE	24-Feb-2028	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	390	190	95
RANGE	300 - 400	150 - 200	50 - 100

SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	38.70	5000	0.00	0	0	1.002	0.993
4961	38.70	5000	399.38	398.5	402.3	1.002	0.993
4982	17.60	5000	181.63	n/a	185.2	n/a	0.981
4991	8.80	5000	90.82	n/a	92.6	n/a	0.981

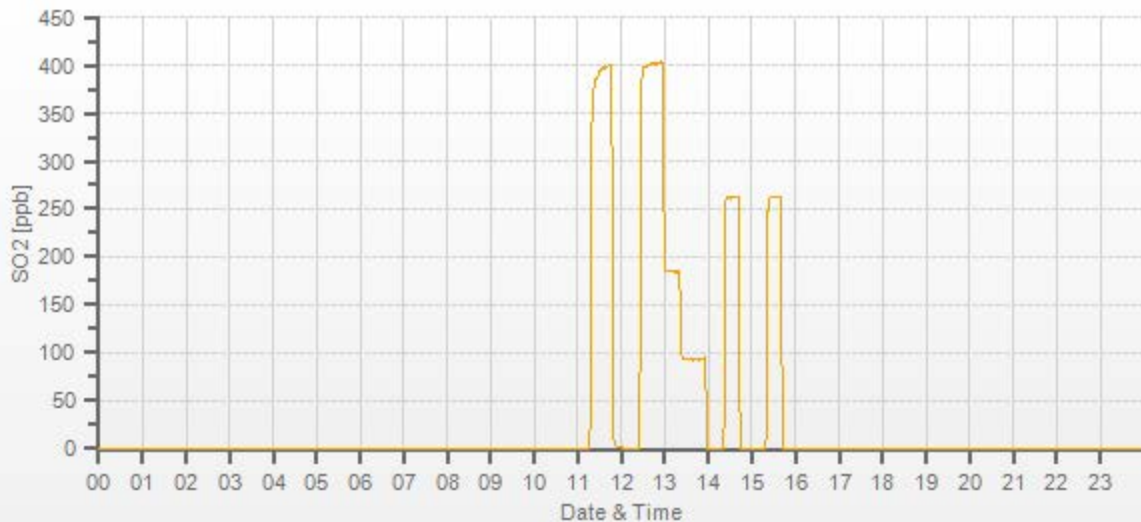
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.007	0.2%

COMMENTS:

Sample inlet filter was changed.

SO2[ppb] Station: Cold Lake South Daily: 14-05-2021 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202105-01174

TRS Analyzer Calibration by Dilution



DATE:	14-May-2021	PREVIOUS CALIBRATION DATE:	19-Apr-2021
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.003
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	955
PURPOSE:	Routine	START TIME (MST):	10:28
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:46

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	812728560	FLOW (mL/min)	495
INITIAL		FINAL	
BKG/OFFSET	20.9	BKG/OFFSET	21.7
COEF/SLOPE	1.038	COEF/SLOPE	1.06
Expected (reference) Value	39.9	Expected (reference) Value	36.7

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 19174	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	500	LOW ID	n/a
EXPIRY DATE	16-Jul-2022	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	78	38	19
RANGE	60 - 80	30 - 40	10 - 20

SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	10:31	SO2 Conc (ppb)	380
END TIME:	10:46	Analyzer Response (ppb)	n/a

CALIBRATION:

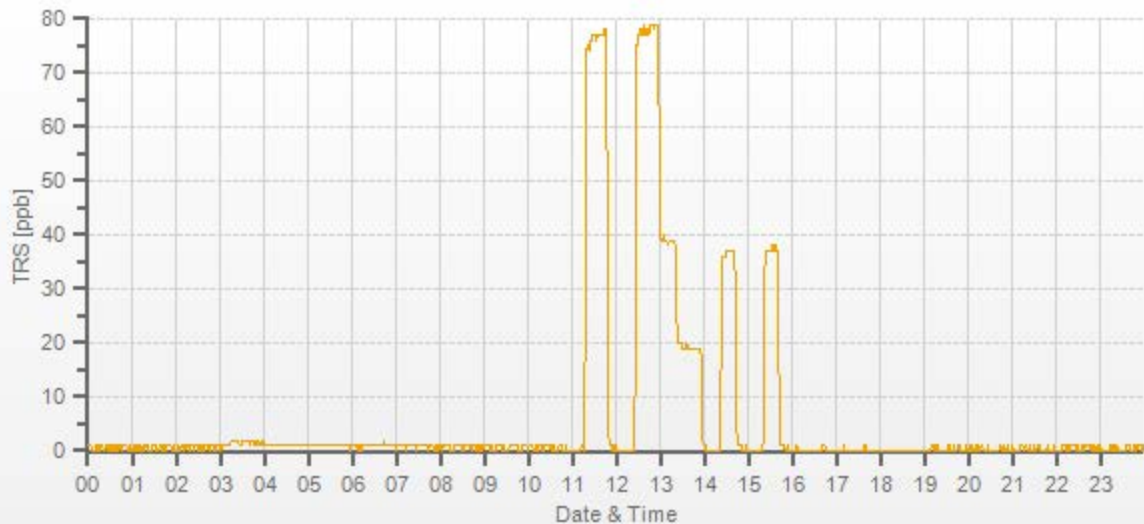
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	58.50	7500	0.00	0.4	0	1.016	0.995
7442	58.50	7500	78.00	77.2	78.4	1.016	0.995
7472	28.50	7500	38.00	n/a	38.5	n/a	0.987
7486	14.20	7500	18.93	n/a	19.1	n/a	0.991

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.005	0.1%

COMMENTS:

Sample inlet filter was changed.
Converter = CDN-101 #501



NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	14-May-2021	PREVIOUS CALIBRATION DATE:	19-Apr-2021	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1505664393	NOx	n/a
LOCATION:	CLS	BAROMETRIC (mBar):	955	FLOW (mL/min)	790	NO	n/a
PURPOSE:	Routine	START TIME (MST):	10:31	RANGE (ppb)	500	NO2	n/a
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:44	GPT FOR O3?		No	

CALIBRATION SYSTEM:							
CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	EY 0000851	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.9 51.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	600	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a	EXPIRY DATE	24-Feb-2028	LOW EXPIRY:	n/a

CALIBRATION SETTINGS:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	3.9	3.8	n/a	BKG/OFFSET:	4.3	4.1	n/a
SLOPE/COEF/CE:	1.003	0.944	0.998	SLOPE/COEF/CE:	1.003	0.958	0.998

EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	257.0	252.0	4.3		257.0	252.0	4.3

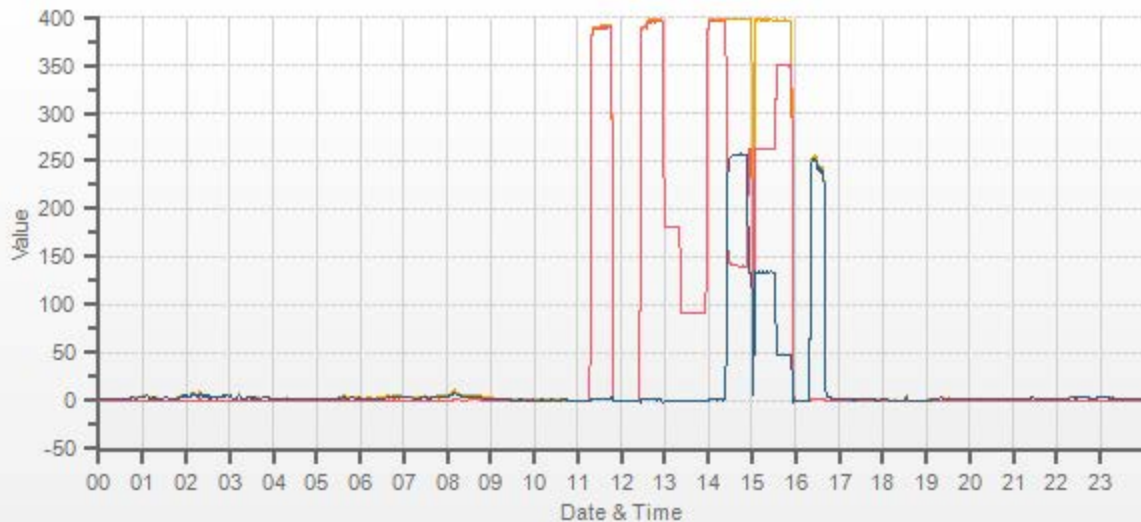
CALIBRATION PARAMETERS:				
POINT	NO TARGET (PPB)	NO2 TARGET (PPB)	NO2 RANGE	O3 POINT
HIGH	380	250	230-265	n/a
MID	180	125	115-150	n/a
LOW	90	45	40-55	n/a
EXTRA 1	n/a	n/a	n/a	n/a

NO/NOx CALIBRATION:																		
FLOW RATE			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)						
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL			
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	
5000	38.70	5000	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	1.014	1.012	0.998	0.997	0.992	0.991	
4959	38.70	4998	394.1	395.7	1.5	388.6	391.2	2.5	394.9	396.7	1.7	1.014	1.012	0.998	0.997	0.992	0.991	
4980	17.60	4998	179.2	179.9	0.7	n/a	n/a	n/a	180.6	181.6	0.7	n/a	n/a	0.992	0.991	0.984	0.983	
4989	8.80	4998	89.6	90.0	0.4	n/a	n/a	n/a	91.1	91.5	0.4	n/a	n/a	0.984	0.983			

GPT CALIBRATION:										
Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2				
REFERENCE	38.70	4997	0	395.2	397.4	2.1	255	255.1	1.000	100.04%
AS-FOUND HIGH	38.70	4997	250	140.2	397.5	257.2	255	255.1	1.000	100.04%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MID	38.70	4997	125	262.0	396.5	134.5	133.2	132.4	1.006	99.40%
LOW	38.70	4997	45	349.0	396.1	47.0	46.2	44.9	1.029	97.19%
NO2 adjustment not required.									AVERAGE:	98.87%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	1.001	0.15%	
NOx	1.000	1.002	0.16%	
NO2	1.000	1.007	-0.33%	

Sample inlet filter was changed.
15:00 = Daily ZS. Mid GPT point restarted.



CAL-LICA-202105-01174

Ozone Calibration by Photometer (Varying UV Lamp)



DATE:	13-May-2021	PREVIOUS CALIBRATION DATE:	19-Apr-2021
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.002
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	954
PURPOSE:	Routine	START TIME (MST):	11:00
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:15

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	700419951	FLOW (mL/min)	1468
INITIAL		FINAL	
BKG/OFFSET	0	BKG/OFFSET	0
COEF/SLOPE	1.042	COEF/SLOPE	1.043
Expected (reference) Value	352	Expected (reference) Value	360

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
RANGE	300 - 400	150 - 200	50 - 100

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	XXXX	5000	0.0	0.6	0.2	XXXX	XXXX
5000	XXXX	5000	378.0	376.2	376.5	1.006	1.005
5000	XXXX	5000	180.0	n/a	181.5	n/a	0.993
5000	XXXX	5000	61.0	n/a	62.6	n/a	0.978

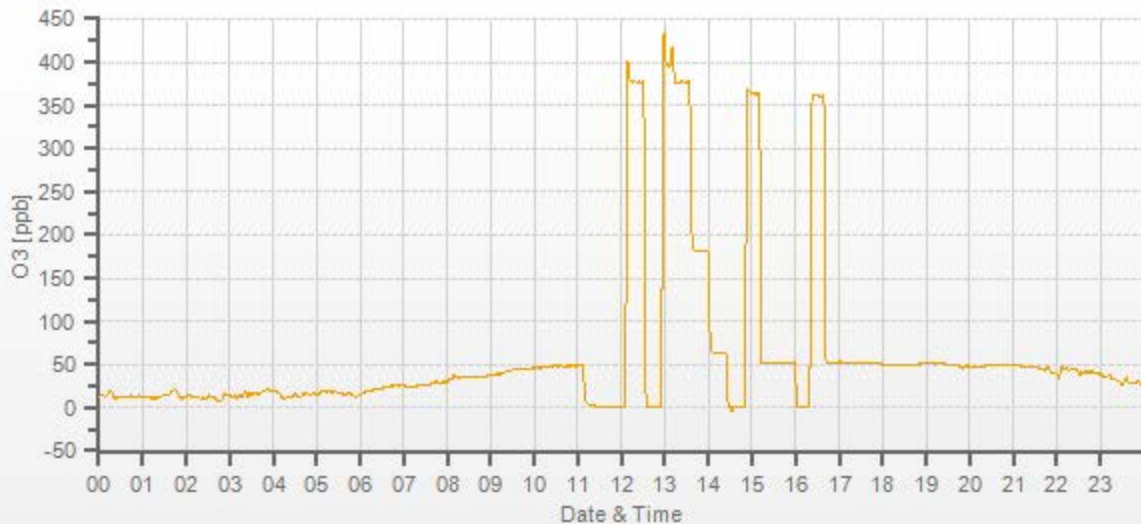
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.994	0.3%

COMMENTS:

Sample inlet filter was changed.

O3[ppb] Station: Cold Lake South Daily: 13-05-2021 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202105-01174

Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	13-May-2021	PREVIOUS CALIBRATION DATE:	19-Apr-2021	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.0		Thermo 55i	1180030034	1050
LOCATION:	CLS	BAROMETRIC (mBar):	954	PARAMETER:	CH4	NMHC	THC
PURPOSE:	Routine	START TIME (MST):	11:01	RANGE (ppm):	20	20	40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:30	PREVIOUS CF:	n/a	n/a	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 168375	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH ₄ /C ₃ H ₈ (ppm):	914.0 307.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	1500	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	115	EXPIRY DATE	21-Jan-2028	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH ₄ /NMHC)	HIGH	MID	LOW	CH ₄ EQUIVILANCE		
TARGET	14	7	3.5	C ₃ H ₈ as CH ₄		844.3
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄		1758.3

EXPECTED (REFERENCE) VALUE:

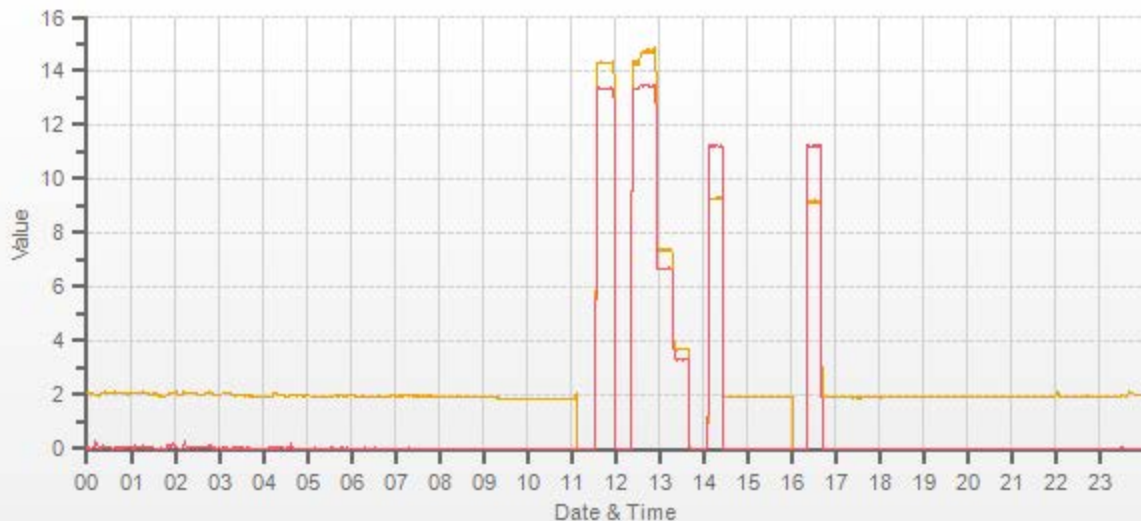
INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	9.18	11.26	20.44		9.28	11.22	20.50

CALIBRATION:

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3100	X	3100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	X
3051	49.40	3100	14.57	13.45	28.02	14.29	13.32	27.61	14.72	13.43	28.15	1.019	1.010	1.015	0.989	1.002	0.995
3075	24.70	3100	7.28	6.73	14.01	n/a	n/a	n/a	7.37	6.69	14.07	n/a	n/a	n/a	0.988	1.005	0.996
3088	12.40	3100	3.66	3.38	7.03	n/a	n/a	n/a	3.67	3.30	6.98	n/a	n/a	n/a	0.996	1.023	1.008

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT	Comments:	
CH ₄	1.000	1.011	0.0%	Sample inlet filter was changed.	
NMHC	1.000	1.000	-0.2%		
THC	1.000	1.006	-0.1%		
				Use Zero Chrom?	Yes



CAL-LICA-202105-01174



Teledyne T640 Audit/Calibration

Date/Previous Audit Date:	May 27, 2021	April 20, 2021	Weather Conditions:	Mainly sunny	
Company:	LICA		Start Time (mst):	10:08	
Station:	Cold Lake South		End Time (mst):	11:03	
Parameter:	PM 2.5	Performed By/Reviewer:	Alex Yakupov	Chris Wesson	
Instrument Data:					
Make/Model:	Teledyne T640		Serial Number:	575	
Owner:	LICA		Alarms (detail in comments):	No	
Reference Standards/I.D./Expiry Date:					
Flow Standard:	Maxxam ID #3 expires June 11, 2021		Temperature:	FS 170286131, expires June 5, 2021	
Digital Manometer:	Dwyer 475 Mark III id# 2 expires Feb 17, 2022		Pressure:	FS 130168457 expires Feb 17, 2022	
DIAGNOSTICS:					
Ambient Pressure (mmHg)	708.7	Ambient Temp (°C)	17.2	ASC Heater Duty (%)	0.0
Box Temp (°C)	27.7	Current PMT HV (V)	1438	LED Temp (°C)	37.12
P3 Value	52	PMT Setting (V)	1442	Pump PWM (%)	33
Sample Flow (L/min)	5.00	Sample RH (%RH)	22.5	Sample Temp (°C)	25.4
Monthly Audit/Calibration:					
Item:	As-found		As-left		Tolerance
	Reference	T640x	Reference	T640x	
Zero Test (Leak Check)	PM10	0.0	PM10	0.0	0.0 to 0.2
	PM2.5	0.0	PM2.5	0.0	
Ambient Pressure (mmHg)	709.0	708.7	n/a	n/a	+/- 10 mm Hg
Ambient Temperature (°C)	17.00	17.2	n/a	n/a	+/- 2°C
Sample Flow (L/min)	4.82	4.98	n/a	n/a	+/- 5% of T640x (e.g., 4.75 – 5.25 lpm)
Additional Monthly Maintenance :					Completed
Inlet cleaned?					Yes
Sample tubing inspected (inner and outer)?					Yes
Comments:					
No flow calibration was completed because of the influence of strong gusting wind.					



Meteorological Sensor Audit/Calibration

Location Information

Company: LICA
Audit Location: Cold Lake South
Audit Date: April 20, 2021
Calibration Purpose: installation
Performed By: Alex Yakupov
Reviewed By: Chris Wesson
Start/End Time (mst): 10:19 / 14:44
Weather Conditions: Mix of sun and clouds

Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	n/a
Sensor Model:	05305AQ	Velocity Unit Output Range:	0-180
Serial #:	177354	Direction Voltage Output Range:	n/a
Previous Cal/Audit Date:	September 25, 2021	Direction Unit Output Range:	0-360

Wind Calibrator Information

Calibrator I.D. and Expiry Date: RM Young 18802 id# CA4744 expires Aug 6, 2022

Wind Speed Audit Data ****+/- 2% of the average correction factor is the limit****

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.0	0.0	-
1000	18.4	18.2	18.2	1.013
2000	36.9	36.6	36.6	1.007
3000	55.3	55.1	55.1	1.003
4000	73.7	73.5	73.5	1.003
5000	92.2	92.0	92.0	1.002
6000	110.6	110.4	110.4	1.002
7000	129.0	128.8	128.8	1.002
8000	147.4	147.3	147.3	1.001
9000	165.9	165.7	165.7	1.001
10000	184.3	184.2	184.2	1.001
The audit meets AMD requirements.			Average Correction Factor=	1.003

Wind Direction Audit Data ****+/- 3° of the absolute average degrees difference for all points is the limit****

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	0	355	0.1	0.0	0.1
30	330	28	328	1.6	1.7	1.7
60	300	58	299	1.6	1.5	1.6
90	270	89	267	0.6	3.0	1.8
120	240	120	237	0.5	3.3	1.9
150	210	148	207	1.6	3.2	2.4
180	180	177	179	2.9	1.4	2.2
210	150	206	149	3.8	1.3	2.6
240	120	237	119	3.1	0.7	1.9
270	90	267	89	2.8	0.7	1.8
300	60	297	58	2.8	1.7	2.3
330	30	328	28	1.7	2.0	1.8
355	0	355	0	0.0	0.1	0.1
The audit meets AMD requirements.				Average Absolute Degrees Difference=		1.7

Comments:

Bearing Torque was also tested. Still at minimum threshold (like new) = No problem.

End of Report



Lakeland Industry & Community Association

MAY 2021

Ambient Air Monitoring Calibration Report

- TAMARACK STATION-

(Formerly Maskwa Station)

CAL-LICA-202105-01248

Station Operation and Maintenance:

Bureau Veritas Canada

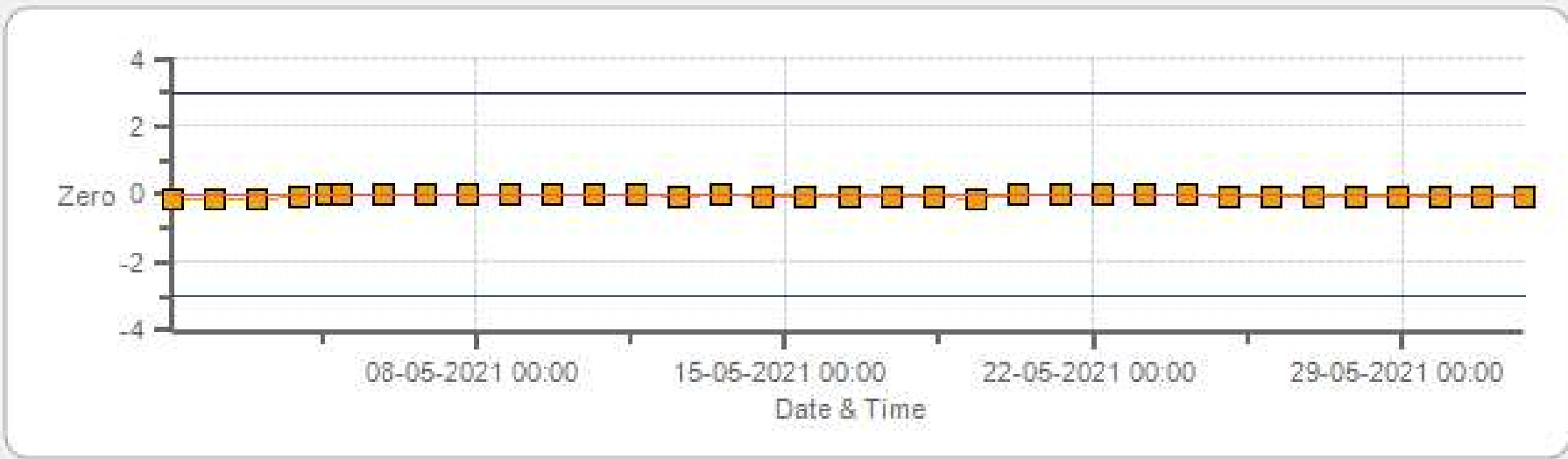
Data Validation and Report:

LICA / Bureau Veritas Canada

June 15, 2021

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: Tamarack Monthly: 05-2021 Type: SpanAndZero - Zero



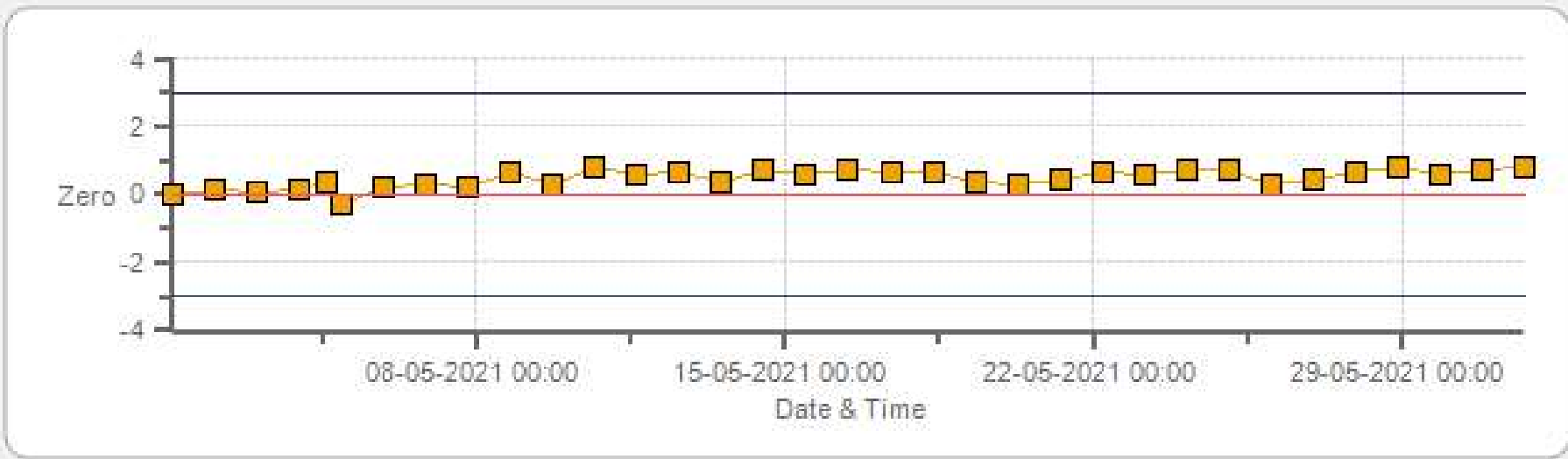
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: Tamarack Monthly: 05-2021 Type: SpanAndZero - Span



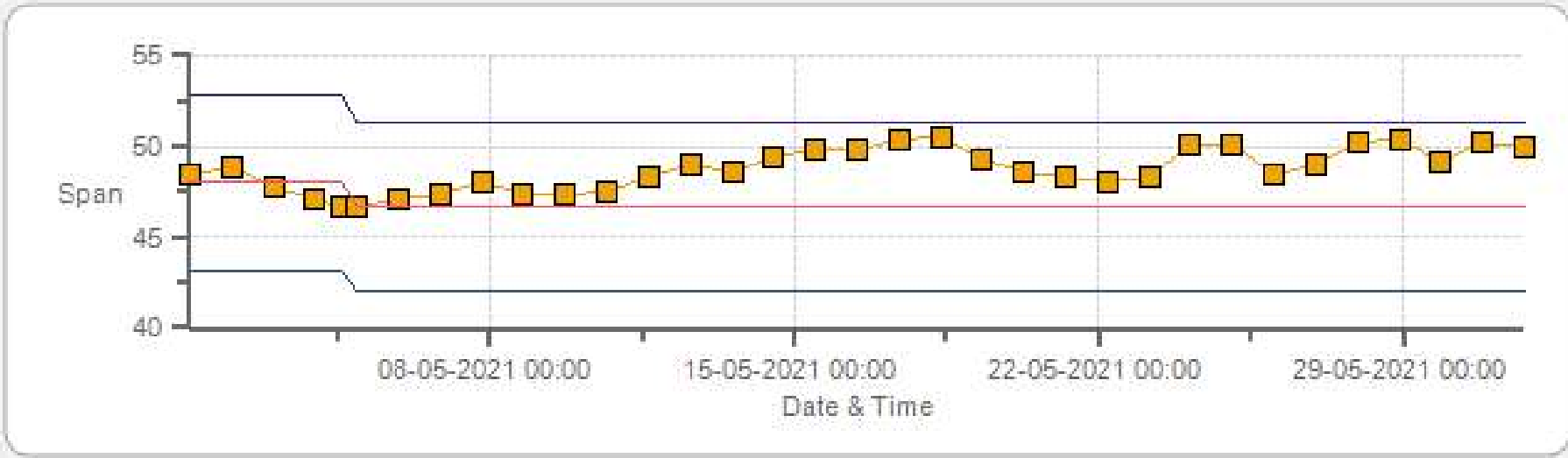
Span Span Ref Span Low Span High

H2S[ppb] Calibration: Tamarack Monthly: 05-2021 Type: SpanAndZero - Zero



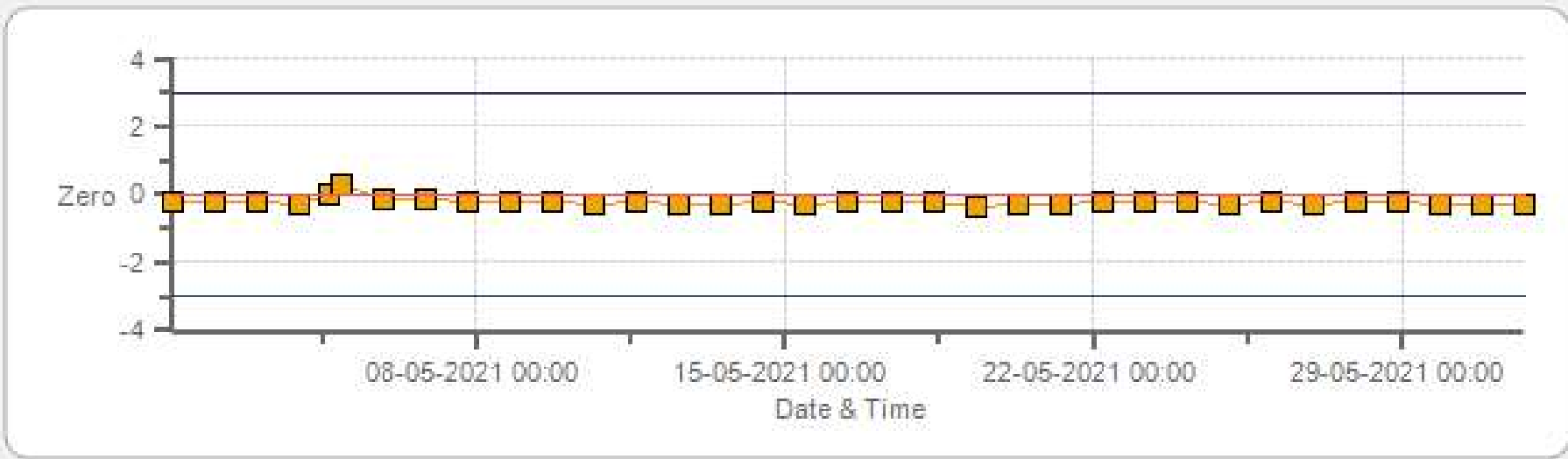
Zero Zero Ref Zero Low Zero High

H2S[ppb] Calibration: Tamarack Monthly: 05-2021 Type: SpanAndZero - Span



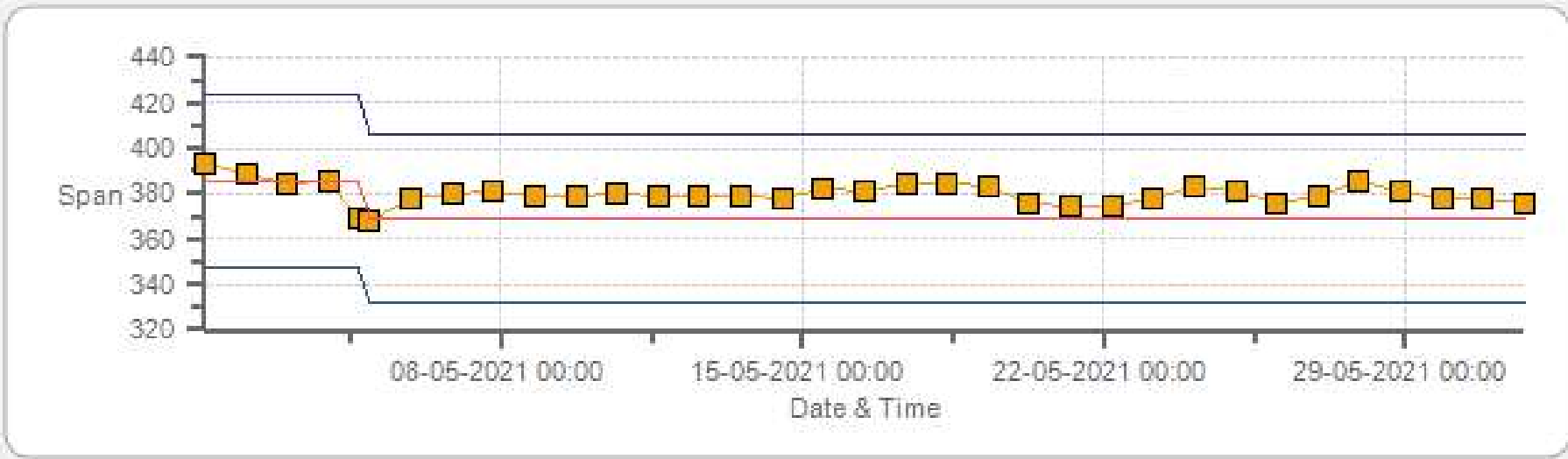
Span SpanRef Span Low Span High

NOX[ppb] Calibration: Tamarack Monthly: 05-2021 Type: SpanAndZero - Zero



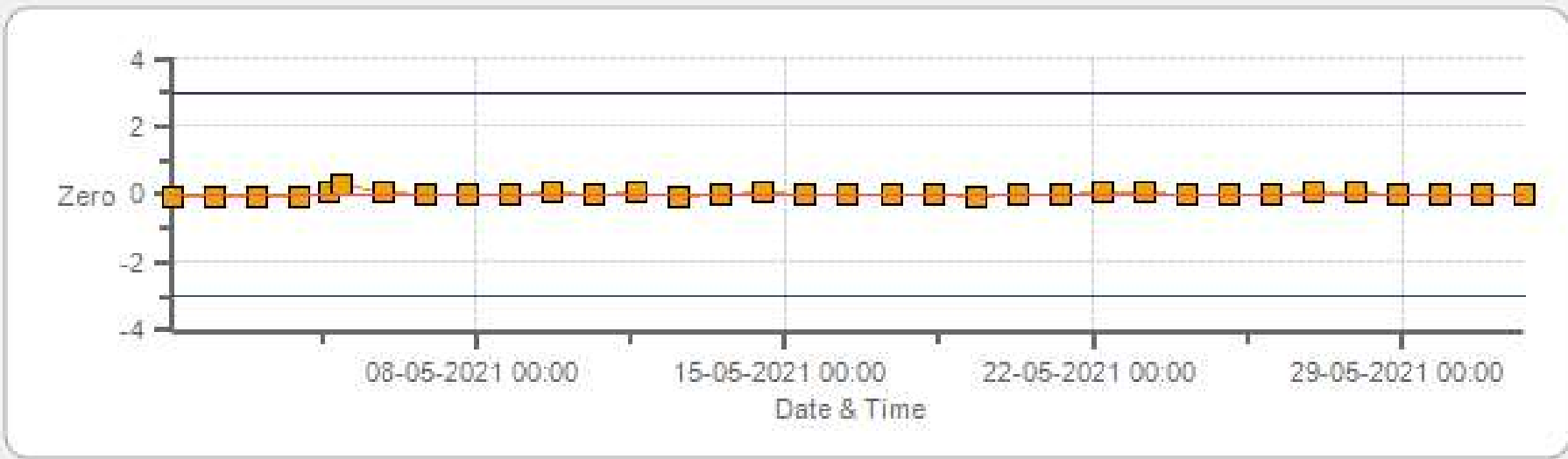
Zero Zero Ref Zero Low Zero High

NOX[ppb] Calibration: Tamarack Monthly: 05-2021 Type: SpanAndZero - Span



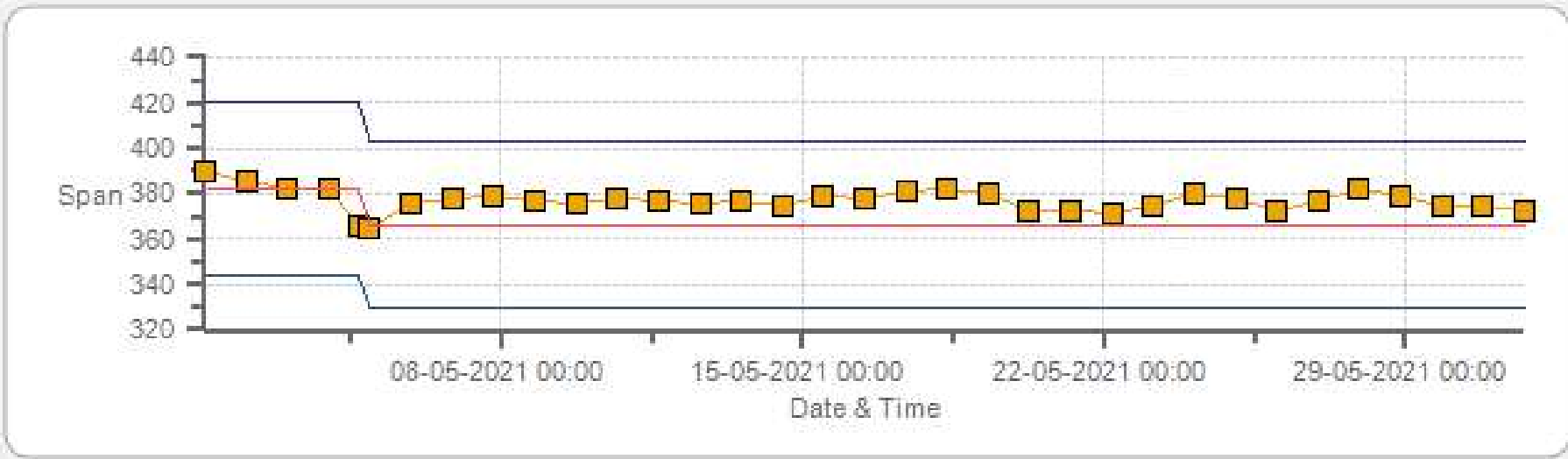
Span Span Ref Span Low Span High

NO2[ppb] Calibration: Tamarack Monthly: 05-2021 Type: SpanAndZero - Zero



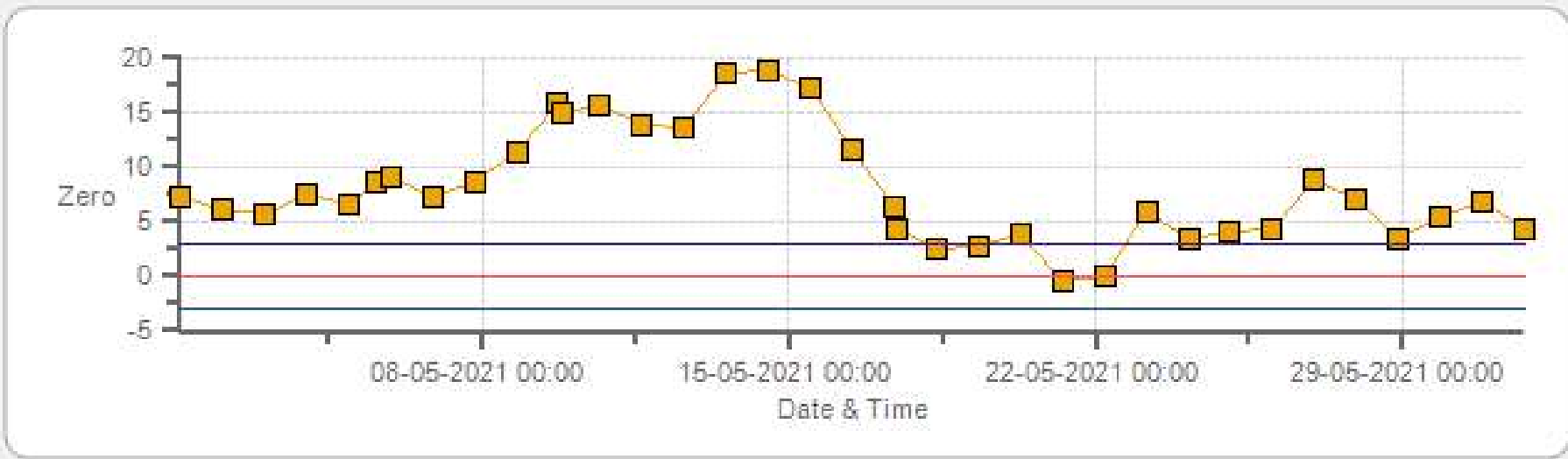
Zero Zero Ref Zero Low Zero High

NO2[ppb] Calibration: Tamarack Monthly: 05-2021 Type: SpanAndZero - Span



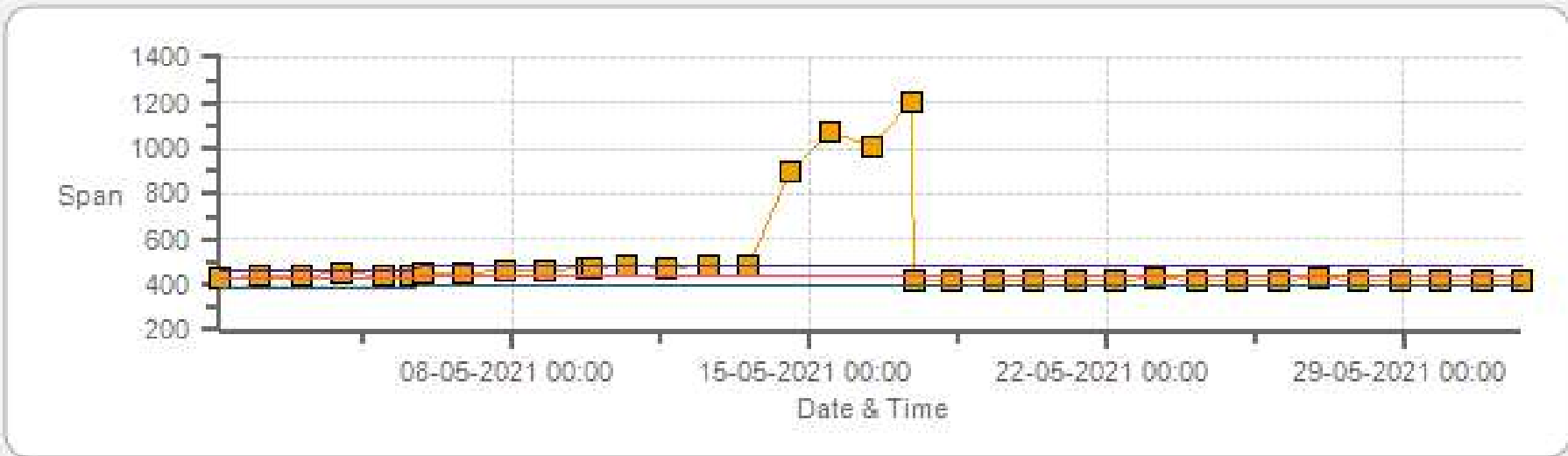
Span SpanRef Span Low Span High

O3[ppb] Calibration: Tamarack Monthly: 05-2021 Type: SpanAndZero - Zero



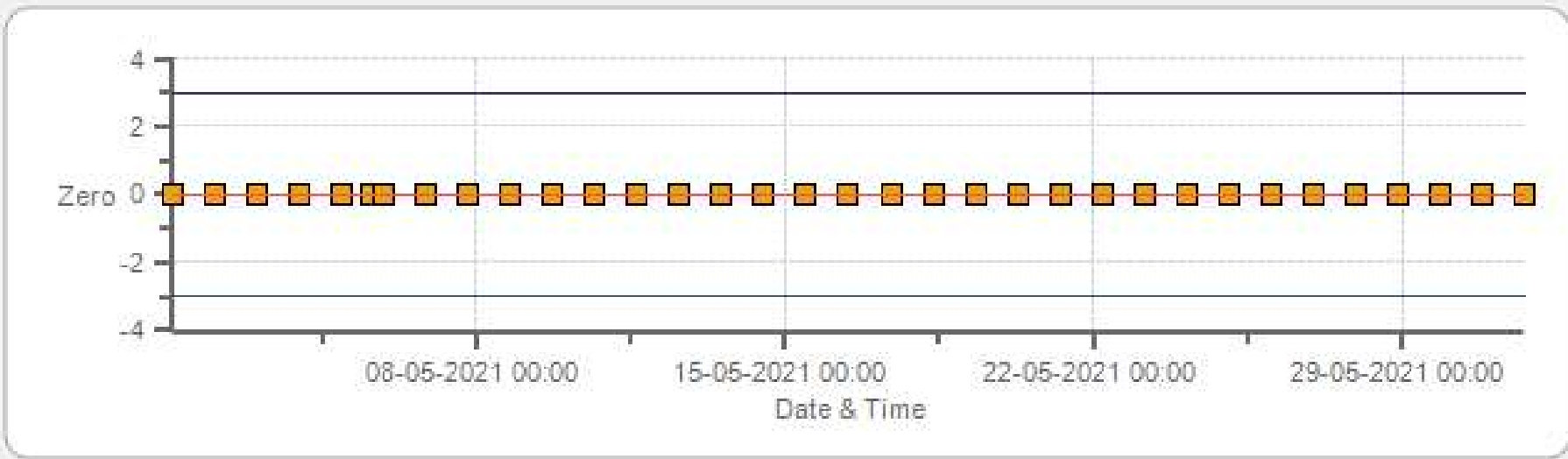
Zero Zero Ref Zero Low Zero High

O3[ppb] Calibration: Tamarack Monthly: 05-2021 Type: SpanAndZero - Span



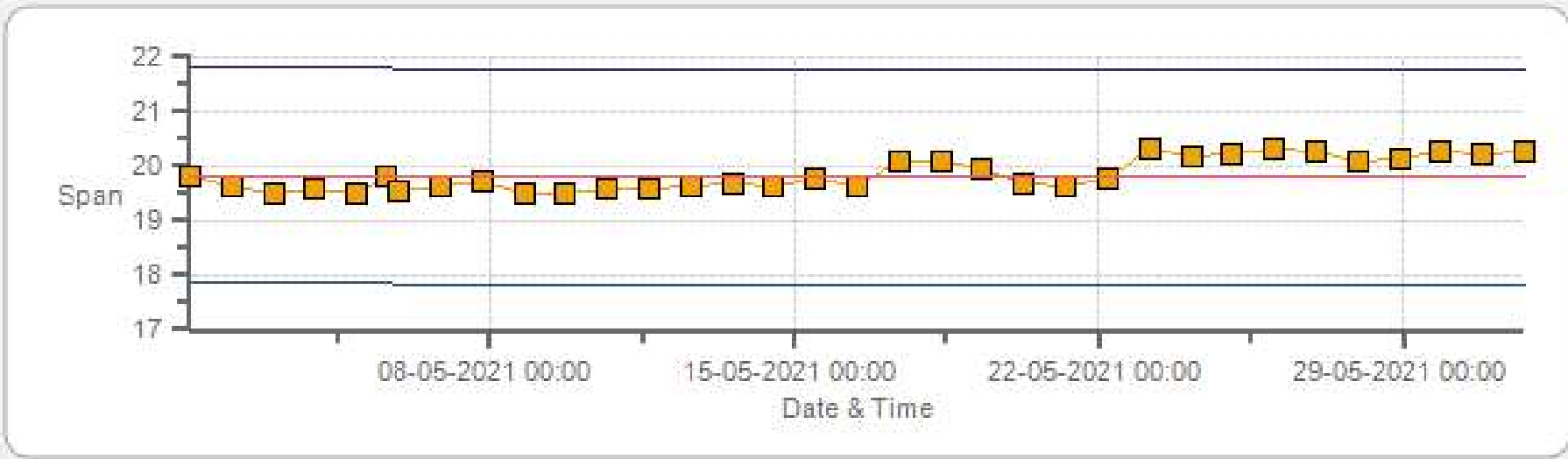
Span SpanRef Span Low Span High

THC55[ppm] Calibration: Tamarack Monthly: 05-2021 Type: SpanAndZero - Zero



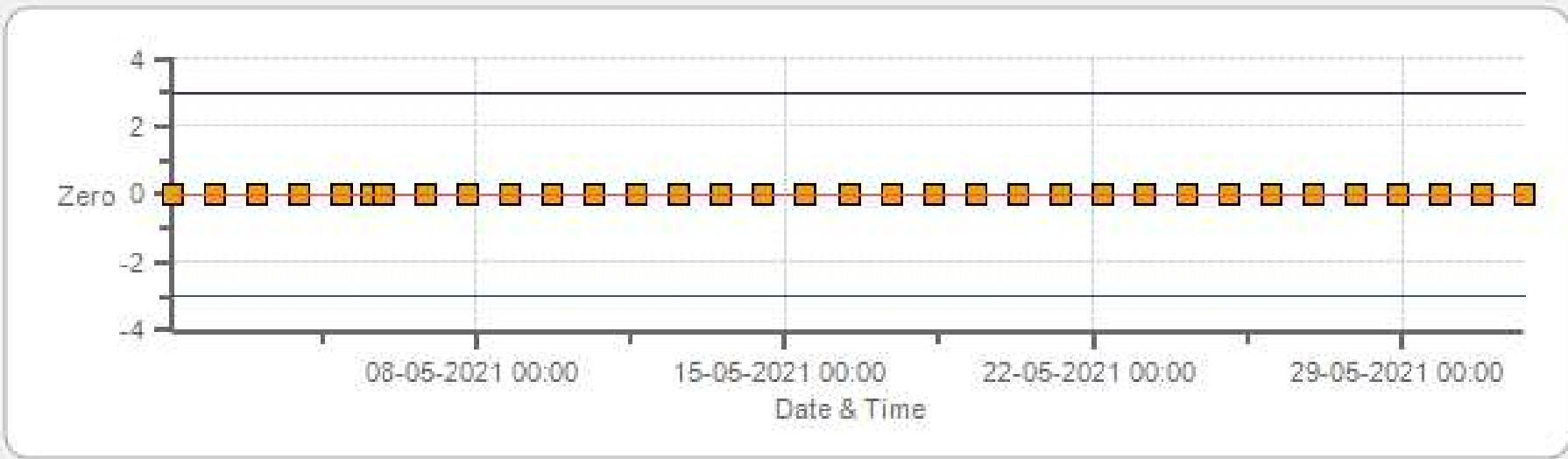
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: Tamarack Monthly: 05-2021 Type: SpanAndZero - Span



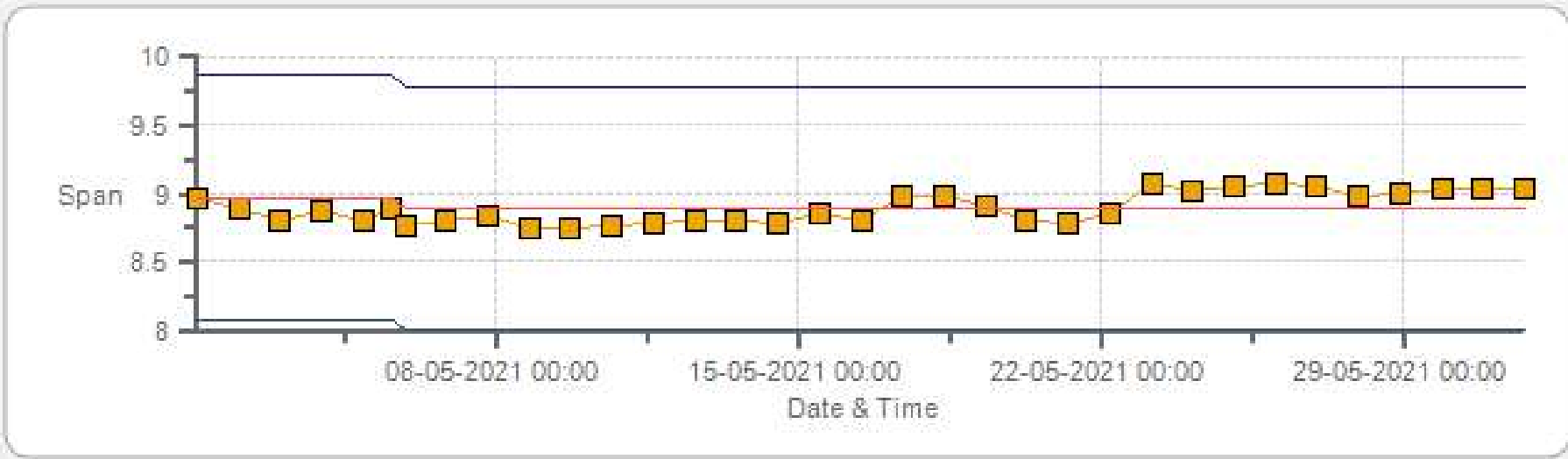
Span SpanRef Span Low Span High

CH4[ppm] Calibration: Tamarack Monthly: 05-2021 Type: SpanAndZero - Zero



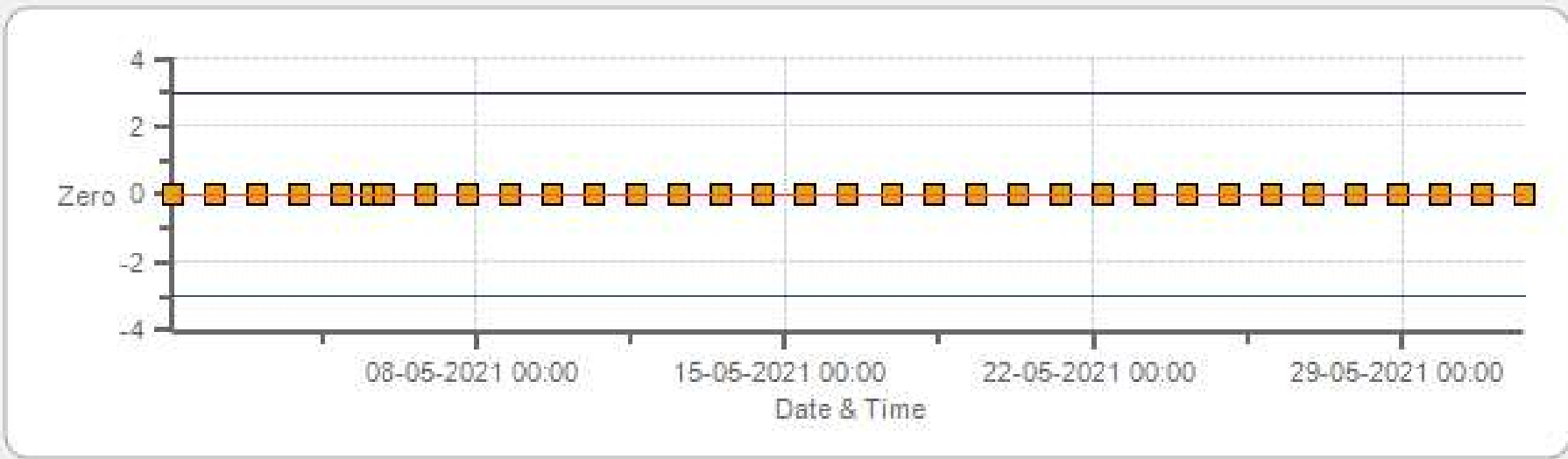
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: Tamarack Monthly: 05-2021 Type: SpanAndZero - Span



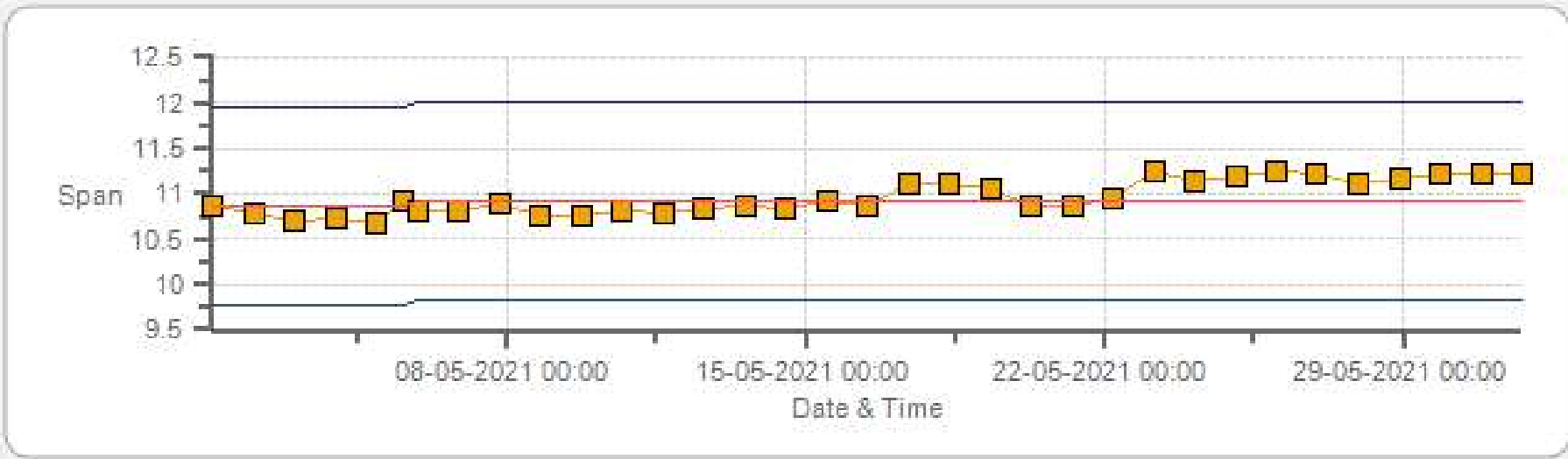
Span Span Ref Span Low Span High

NMHC[ppm] Calibration: Tamarack Monthly: 05-2021 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: Tamarack Monthly: 05-2021 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution



DATE:	04-May-2021	PREVIOUS CALIBRATION DATE:	07-Apr-2021
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.995
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	941
PURPOSE:	Routine	START TIME (MST):	10:01
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:15

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930031	FLOW (mL/min)	453
INITIAL		FINAL	
BKG/OFFSET	2.62	BKG/OFFSET	2.46
COEF/SLOPE	0.976	COEF/SLOPE	0.96
Expected (reference) Value	356	Expected (reference) Value	340.3

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000851	HIGH ID	n/a
CONC (ppm):	51.60	EXPIRY DATE	n/a
CYLINDER (psi):	500	LOW ID	n/a
EXPIRY DATE	24-Feb-2028	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	390	190	95
RANGE	300 - 400	150 - 200	50 - 100

SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	38.70	5000	0.00	0	0	0.985	0.996
4959	38.70	4998	399.54	405.8	401.3	0.985	0.996
4980	17.60	4998	181.70	n/a	182.6	n/a	0.995
4989	8.80	4998	90.85	n/a	91.4	n/a	0.994

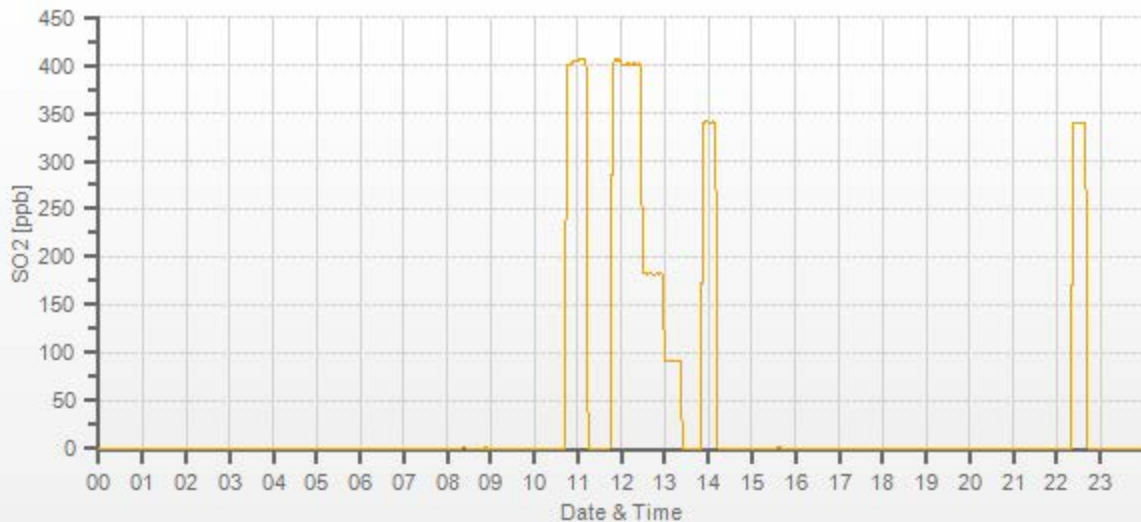
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.004	0.0%

COMMENTS:

Sample inlet filter was changed.

SO2[ppb] Station: Tamarack Daily: 04-05-2021 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202105-01248

H2S Analyzer Calibration by Dilution



DATE:	04-May-2021	PREVIOUS CALIBRATION DATE:	07-Apr-2021
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	0.997
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	941
PURPOSE:	Routine	START TIME (MST):	10:02
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:14

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 17360005	FLOW (mL/min)	879
INITIAL		FINAL	
BKG/OFFSET	27.7	BKG/OFFSET	27.1
COEF/SLOPE	0.821	COEF/SLOPE	0.819
Expected (reference) Value	48	Expected (reference) Value	46.7

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 19174	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	500	LOW ID	n/a
EXPIRY DATE	16-Jul-2022	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	78	38	19
RANGE	60 - 80	30 - 40	10 - 20

SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	10:11	SO2 Conc (ppb)	380
END TIME:	10:16	Analyzer Response (ppb)	0.0

CALIBRATION:

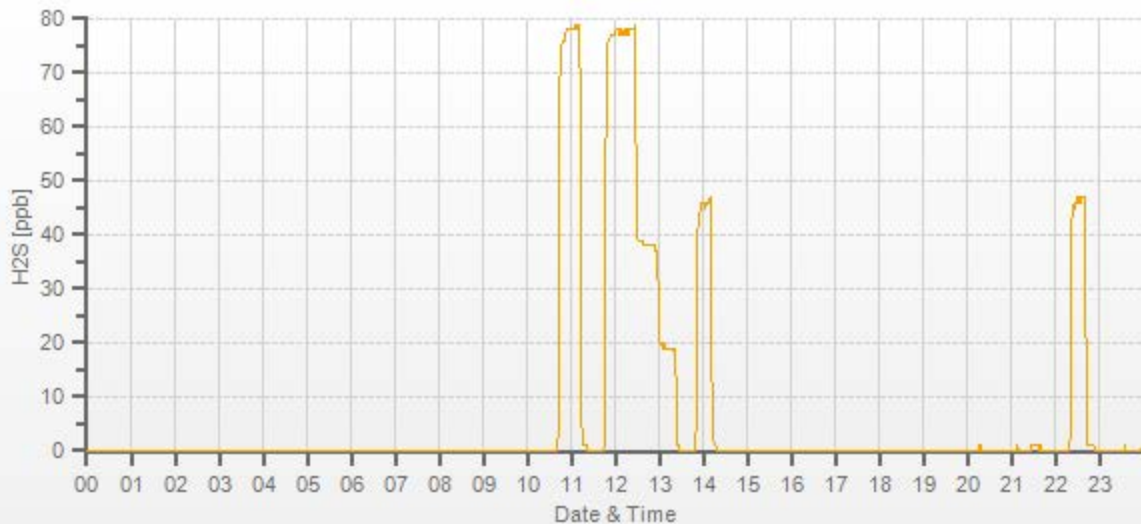
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	58.50	7500	0.00	0	0	0.995	1.001
7442	58.50	7500	78.00	78.4	77.9	0.995	1.001
7472	28.50	7500	38.00	n/a	38.3	n/a	0.992
7486	14.20	7500	18.93	n/a	19.1	n/a	0.991

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.998	0.1%

COMMENTS:

Sample inlet filter was changed.



NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	04-May-2021	PREVIOUS CALIBRATION DATE:	07-Apr-2021	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1180930028	NOx	0.998
LOCATION:	Tamarack	BAROMETRIC (mBar):	941	FLOW (mL/min)	503	NO	0.999
PURPOSE:	Routine	START TIME (MST):	10:00	RANGE (ppb)	500	NO2	1.002
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:07	GPT FOR O3?		No	

CALIBRATION SYSTEM:							
CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	EY 0000851	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.9 51.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	500	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a	EXPIRY DATE	24-Feb-2028	LOW EXPIRY:	n/a

CALIBRATION SETTINGS:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	3	2.9	n/a	BKG/OFFSET:	3	3	n/a
SLOPE/COEF/CE:	1.004	1.018	1	SLOPE/COEF/CE:	1.005	1.007	1

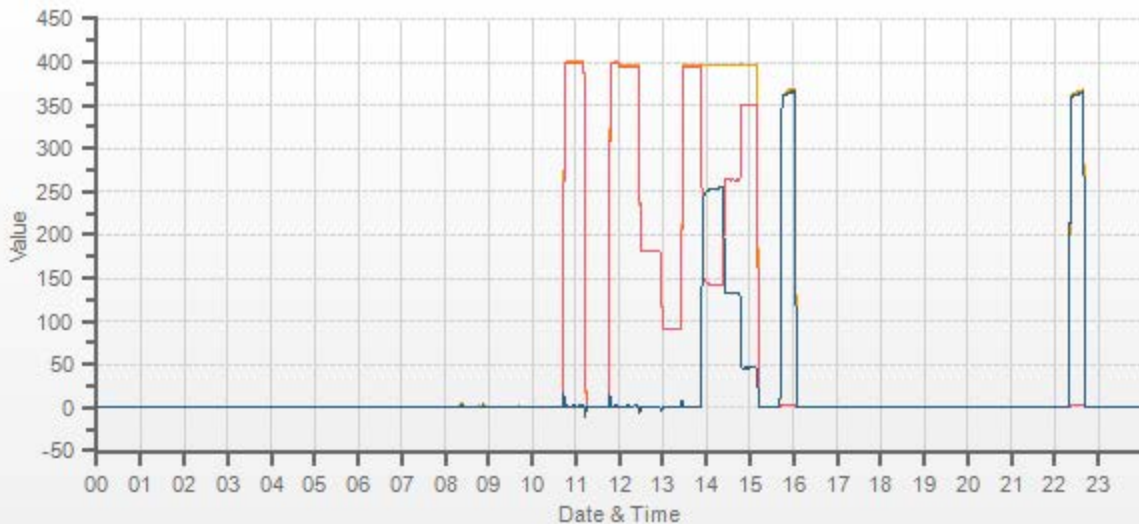
EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	385.3	3.0	382.2		369.0	366.0	2.8

CALIBRATION PARAMETERS:				
POINT	NO TARGET (PPB)	NO2 TARGET (PPB)	NO2 RANGE	O3 POINT
HIGH	380	250	230-265	n/a
MID	180	125	115-150	n/a
LOW	90	45	40-55	n/a
EXTRA 1	n/a	n/a	n/a	n/a

NO/NOx CALIBRATION:																		
FLOW RATE			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)						
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL			
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	
5000	38.70	5000	0.0	0.0	0.0	-0.1	0.0	0.1	0.0	0.0	0.0	0.988	0.986	0.986	0.999	0.997	0.986	
4959	38.70	4998	394.1	395.7	1.5	398.7	401.3	2.6	394.5	396.8	2.3	0.988	0.986	0.986	0.999	0.997	0.986	
4980	17.60	4998	179.2	179.9	0.7	n/a	n/a	n/a	180.9	181.9	1.0	n/a	n/a	0.986	0.991	0.989	0.986	
4989	8.80	4998	89.6	90.0	0.4	n/a	n/a	n/a	90.9	91.6	0.7	n/a	n/a	0.986	0.982	0.982	0.986	

GPT CALIBRATION:										
Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2				
REFERENCE	38.70	4997	0	394.6	396.6	1.9	252.1	251.8	1.001	99.88%
AS-FOUND HIGH	38.70	4997	240	142.5	396.3	253.7	252.1	251.8	1.001	99.88%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MID	38.70	4997	125	263.5	396.5	132.9	131.1	131	1.001	99.92%
LOW	38.70	4997	45	350.0	396.9	46.9	44.6	45	0.991	100.90%
NO2 adjustment not required.									AVERAGE:	100.23%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	1.000	0.16%	
NOx	1.000	1.002	0.17%	
NO2	1.000	0.997	0.09%	



CAL-LICA-202105-01248

Ozone Calibration by Photometer (Varying UV Lamp)



DATE:	05-May-2021	PREVIOUS CALIBRATION DATE:	06-Apr-2021
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	945
PURPOSE:	Routine	START TIME (MST):	10:18
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:33

ANALYZER:

MAKE/MODEL	Thermo 49iQ	RANGE	500 ppb
SERIAL #	1202068570	FLOW (mL/min)	1360
INITIAL		FINAL	
BKG/OFFSET	2.4	BKG/OFFSET	3.2
COEF/SLOPE	1.047	COEF/SLOPE	1.038
Expected (reference) Value	424	Expected (reference) Value	443

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
RANGE	300 - 400	150 - 200	50 - 100

CALIBRATION:

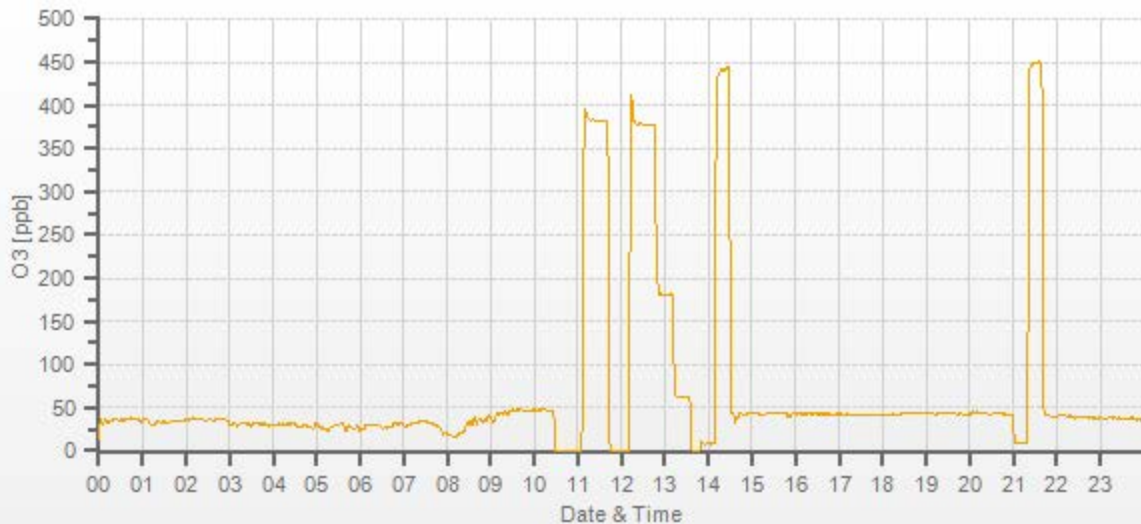
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	 	5000	0.0	0.0	0.0	 	
5000	 	5000	378.0	381.8	377.3	0.990	1.002
5000	 	5000	180.0	n/a	181.2	n/a	0.993
5000	 	5000	61.0	n/a	62.8	n/a	0.971

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.996	0.2%

COMMENTS:

Sample inlet filter was changed.



Ozone Calibration by Photometer (Varying UV Lamp)



DATE:	12-May-2021	PREVIOUS CALIBRATION DATE:	05-May-2021
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.002
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	945
PURPOSE:	As-Found	START TIME (MST):	10:28
PERFORMED BY:	Alex Yakupov	END TIME (MST):	12:39

ANALYZER:

MAKE/MODEL	Thermo 49iQ	RANGE	500 ppb
SERIAL #	1202068570	FLOW (mL/min)	1360
INITIAL		FINAL	
BKG/OFFSET	3.3	BKG/OFFSET	3.3
COEF/SLOPE	1.038	COEF/SLOPE	1.038
Expected (reference) Value	443	Expected (reference) Value	443

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
RANGE	300 - 400	150 - 200	50 - 100

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	5000	5000	0.0	-0.6	n/a	1.006	n/a
5000	5000	5000	378.0	375.1	n/a	1.006	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

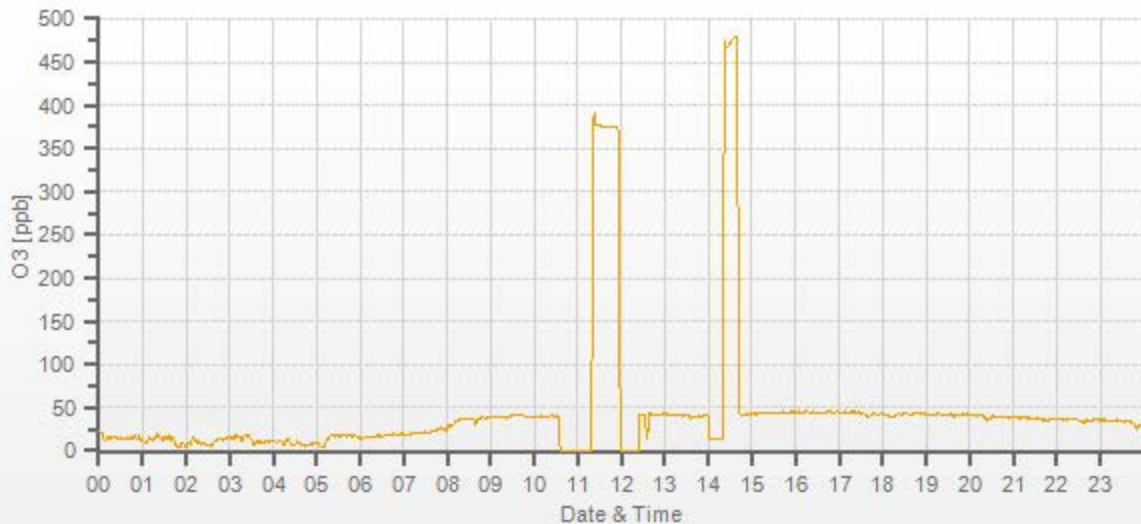
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	n/a	n/a	n/a

COMMENTS:

As Found calibration was completed to check Zero response due to zero drift.
 After As Found High Point, calibrator Zero phase was repeated: -0.5 ppb.
 Response is fast and consistent. No issues.

O3[ppb] Station: Tamarack Daily: 12-05-2021 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202105-01248

Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	05-May-2021	PREVIOUS CALIBRATION DATE:	06-Apr-2021	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.0		Thermo 55i	1314057759	1015
LOCATION:	Tamarack	BAROMETRIC (mBar):	945	PARAMETER:	CH4	NMHC	THC
PURPOSE:	Routine	START TIME (MST):	10:20	RANGE (ppm):	20	20	40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:33	PREVIOUS CF:	1.001	1.002	1.001

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 168375	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH ₄ /C ₃ H ₈ (ppm):	914.0 307.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	2000	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	115	EXPIRY DATE	21-Jan-2028	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH ₄ /NMHC)	HIGH	MID	LOW	CH ₄ EQUIVILANCE		
TARGET	14	7	3.5	C ₃ H ₈ as CH ₄		844.3
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄		1758.3

EXPECTED (REFERENCE) VALUE:

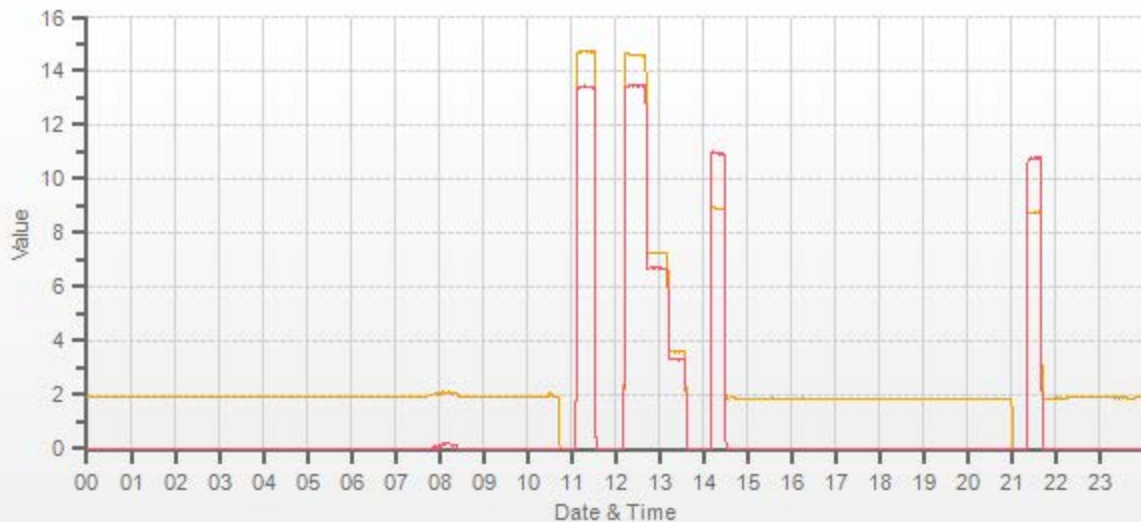
INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	8.97	10.87	19.84		8.89	10.92	19.81

CALIBRATION:

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3100	X	3100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	X
3051	49.40	3100	14.57	13.45	28.02	14.72	13.41	28.12	14.57	13.46	28.03	0.989	1.003	0.996	1.000	1.000	1.000
3075	24.70	3100	7.28	6.73	14.01	n/a	n/a	n/a	7.26	6.72	13.98	n/a	n/a	n/a	1.003	1.001	1.002
3088	12.40	3100	3.66	3.38	7.03	n/a	n/a	n/a	3.60	3.30	6.90	n/a	n/a	n/a	1.016	1.023	1.019

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT	Comments:	
CH ₄	1.000	1.001	-0.1%	Sample inlet filter was changed.	
NMHC	1.000	1.002	-0.2%		
THC	1.000	1.002	-0.2%		
				Use Zero Chrom?	Yes



CAL-LICA-202105-01248

Thermo 5030 SHARP Monitor Monthly Check

Date: <u>May 5, 2021</u>	Performed By/Reviewer: <u>Alex Yakupov</u> <u>Chris Wesson</u>
Company: <u>LICA</u>	Start Time (mst): <u>13:58</u>
Station Name/Location: <u>Tamarack</u>	End Time (mst): <u>14:38</u>
Previous Audit Date: <u>April 7, 2021</u>	Calibration Purpose: <u>routine monthly</u>
Parameter: <u>PM 2.5</u>	Weather Conditions: <u>Mainly sunny</u>

SHARP Information and Status:

Serial Number: <u>CM-2209</u>	Status: <u>0.00</u>
Approx Tape remaining: <u>1/10</u>	Error Code: <u>0.00</u>

Reference Standards: Air Flow

	Manometer	Orifice	Pressure:	Temperature:
Make:	Dwyer	Chinook Eng.	Fisher Scientific	Fisher Scientific
Model:	475-0-FM	FTS Flow Cell	FB61291	11-661-7A
Serial Number:	BV #1	BV#1/ FRM 1210	130168457	170286131
Calibration Expiration Date:	January 19, 2022	March 3, 2022	February 17, 2022	June 5, 2021

As found temperature and pressure:

Tolerance +/- 4°C	Tolerance +/- 13.33 hPa
SHARP T1 °C: <u>14.0</u>	SHARP P3 (hPa): <u>946.000</u>
Reference °C: <u>14.3</u>	Reference (hPa): <u>945.000</u>
Difference °C: <u>0.3</u>	Difference (hPa): <u>1.000</u>

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

Tolerance +/- 4°C	Tolerance +/- 13.33 hPa
SHARP T1 °C: <u>14.0</u>	SHARP P3 (hPa): <u>946.000</u>
Reference °C: <u>14.3</u>	Reference (hPa): <u>945.000</u>
Difference °C: <u>0.3</u>	Difference : <u>1.000</u>

As found flows:

Targets: 1000 l/hr / <90%	Flow Tolerance 16.67 lpm +/- 0.67 lpm
SHARP AirFlow l/hr: <u>1000.00</u>	SHARP Airflow (l/min): <u>16.67</u>
Pump Voltage (%): <u>45.40</u>	Reference AirFlow (l/min): <u>16.64</u>
	Difference (l/min): <u>-0.03</u>

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

Targets: 1000 l/hr / <90%	Flow Tolerance 16.67 lpm +/- 0.67 lpm
SHARP AirFlow l/hr: <u>1000.00</u>	SHARP Airflow (l/min): <u>16.67</u>
Pump Voltage (%): <u>45.40</u>	Reference AirFlow (l/min): <u>16.64</u>
	Difference (l/min): <u>-0.03</u>

Inlet Assembly:

	Yes/No?	If No, give reason
PM10 Inlet Cleaned	yes	
PM2.5 Cyclone Cleaned	yes	

Comments:

Leak check: 16.64 vs 16.55, 0.09 < 0.8 lpm, passed.



Meteorological Sensor Audit/Calibration

Location Information

Company: LICA
 Audit Location: Maskwa
 Audit Date: September 10, 2020
 Calibration Purpose: routine annual
 Performed By: Alex Yakupov
 Reviewed By: Chris Wesson
 Start/End Time (mst): 14:51 / 17:06
 Weather Conditions: Mix of sun and clouds

Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	0-1
Sensor Model:	05305VK	Velocity Unit Output Range:	0-200
Serial #:	161465	Direction Voltage Output Range:	0-1
Previous Cal/Audit Date:	September 19, 2019	Direction Unit Output Range:	0-360

Wind Calibrator Information

Calibrator I.D. and Expiry Date: Model 18860-90/18802 SN: CA 4744, expires - Aug 6, 2022

Wind Speed Audit Data ****+/- 2% of the average correction factor is the limit****

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.0	0.0	-
1000	18.4	18.5	18.5	0.996
2000	36.9	36.9	36.9	0.999
3000	55.3	55.4	55.4	0.998
4000	73.7	73.9	73.9	0.998
5000	92.2	92.4	92.5	0.997
6000	110.6	111.0	111.0	0.996
7000	129.0	129.5	129.5	0.996
8000	147.4	148.1	148.1	0.996
9000	165.9	166.7	166.7	0.995
10000	184.3	185.2	185.2	0.995
The audit meets AMD requirements.			Average Correction Factor=	0.997

Wind Direction Audit Data ****+/- 3° of the absolute average degrees difference for all points is the limit****

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	1	355	1.1	-0.1	0.6
30	330	32	330	-2.1	-0.4	1.2
60	300	64	301	-3.8	-1.0	2.4
90	270	93	272	-3.0	-1.9	2.4
120	240	123	243	-2.7	-2.7	2.7
150	210	152	213	-2.0	-3.2	2.6
180	180	183	183	-3.3	-3.1	3.2
210	150	212	153	-1.8	-3.2	2.5
240	120	241	124	-1.3	-3.7	2.5
270	90	271	94	-0.8	-4.0	2.4
300	60	300	65	0.1	-4.6	2.4
330	30	330	34	-0.4	-4.1	2.2
355	0	355	2	-0.1	1.5	0.8
The audit meets AMD requirements.				Average Absolute Degrees Difference=		2.2

Comments:

n/a

End of Report



Lakeland Industry & Community Association

MAY 2021

Ambient Air Monitoring Calibration Report

- ST. LINA STATION-

CAL-LICA-202105-01250

Station Operation and Maintenance:

Bureau Veritas Canada

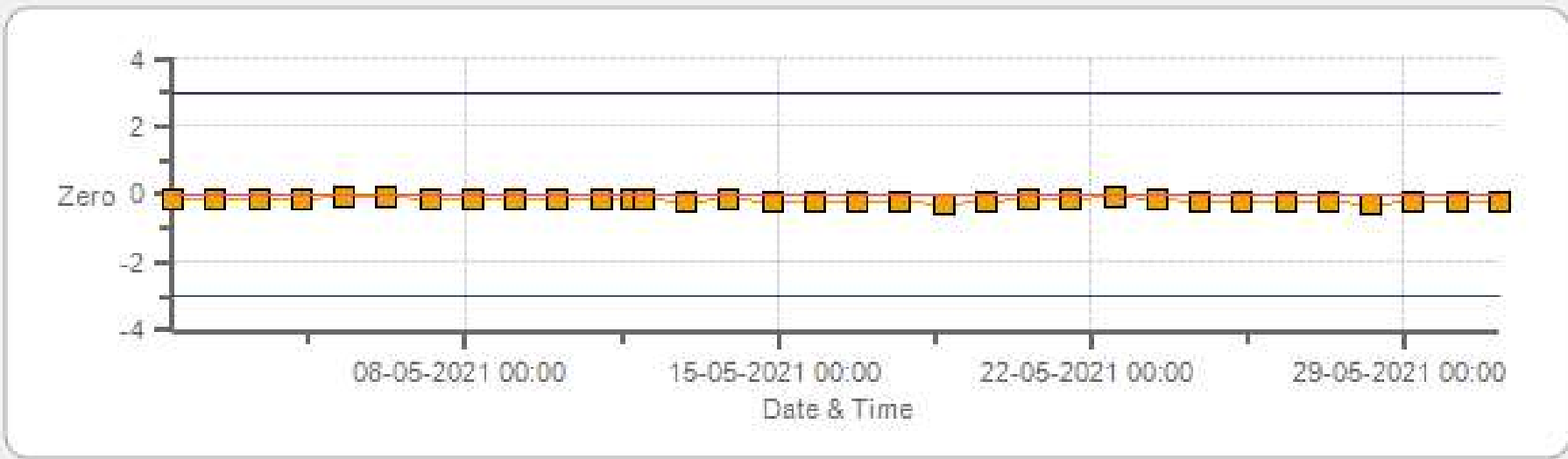
Data Validation and Report:

LICA / Bureau Veritas Canada

June 15, 2021

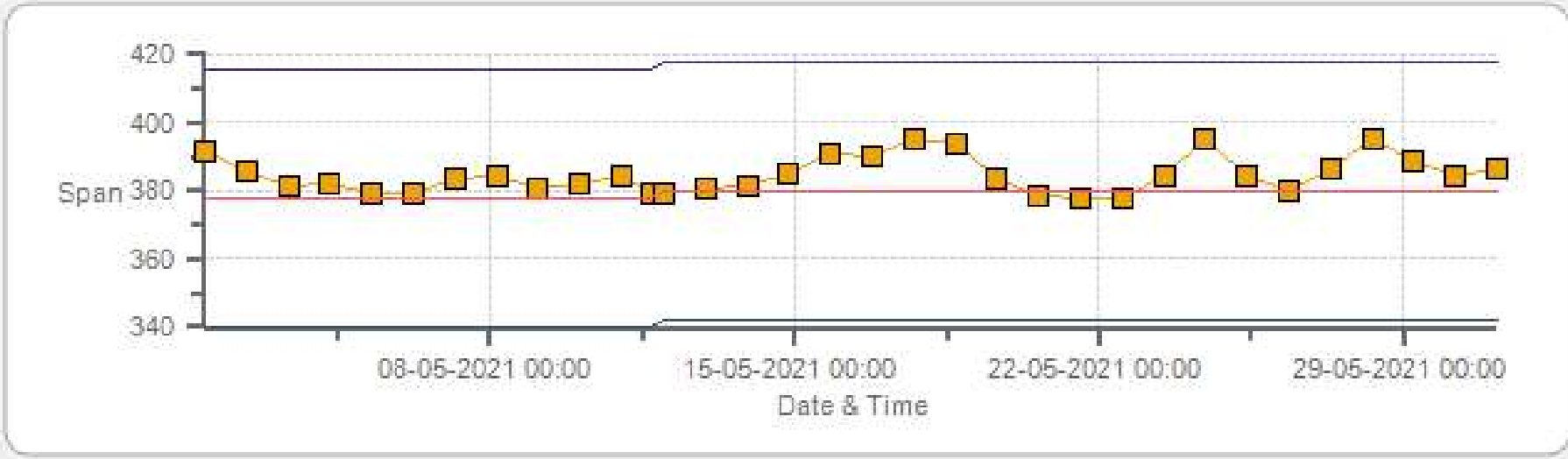
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: St. Lina Monthly: 05-2021 Type: SpanAndZero - Zero



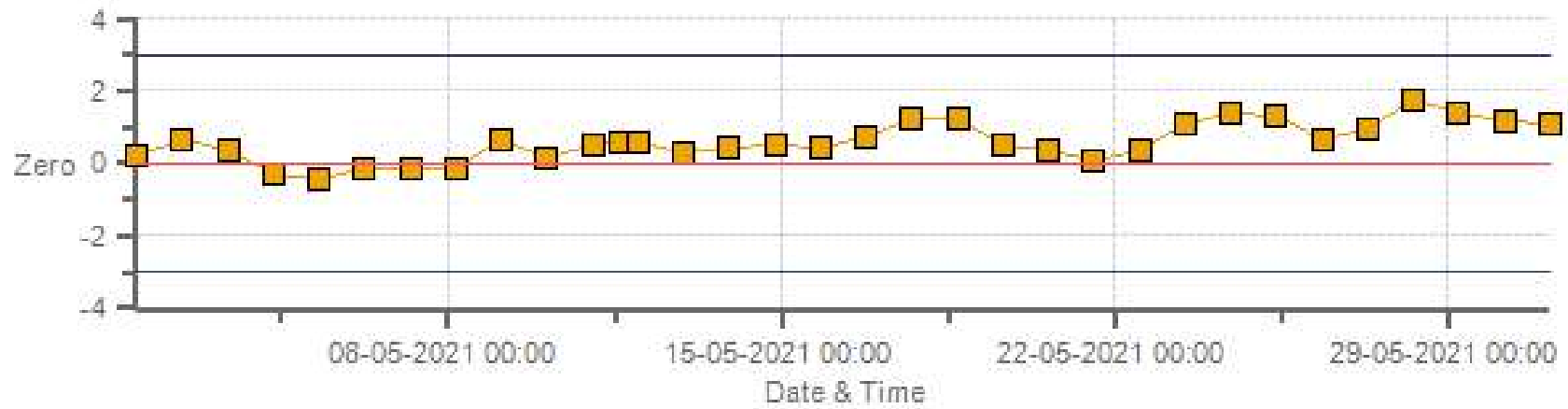
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: St. Lina Monthly: 05-2021 Type: SpanAndZero - Span



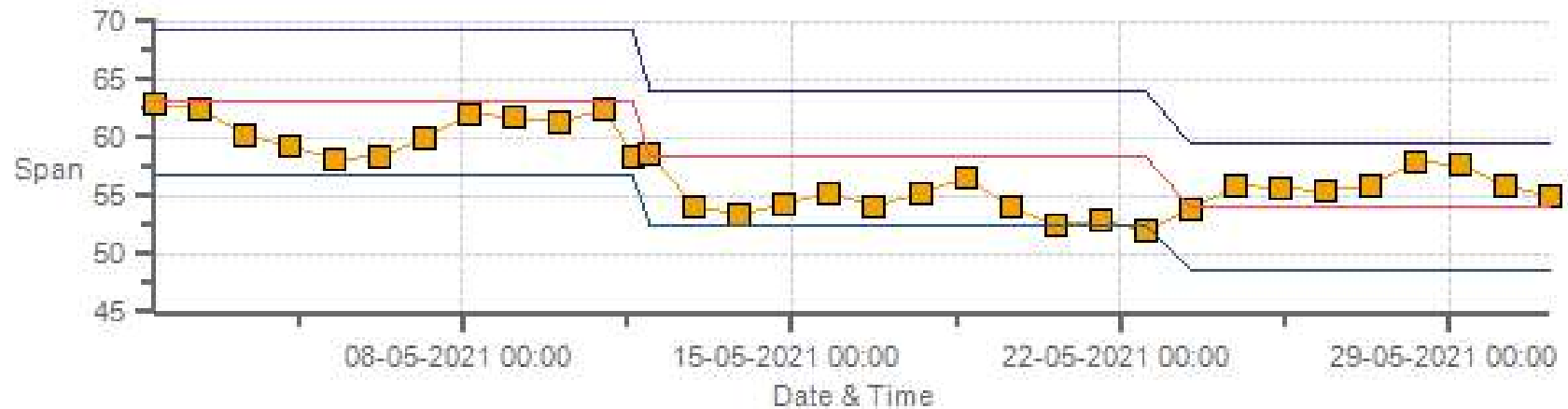
Span Span Ref Span Low Span High

H2S[ppb] Calibration: St. Lina Monthly: 05-2021 Type: SpanAndZero - Zero



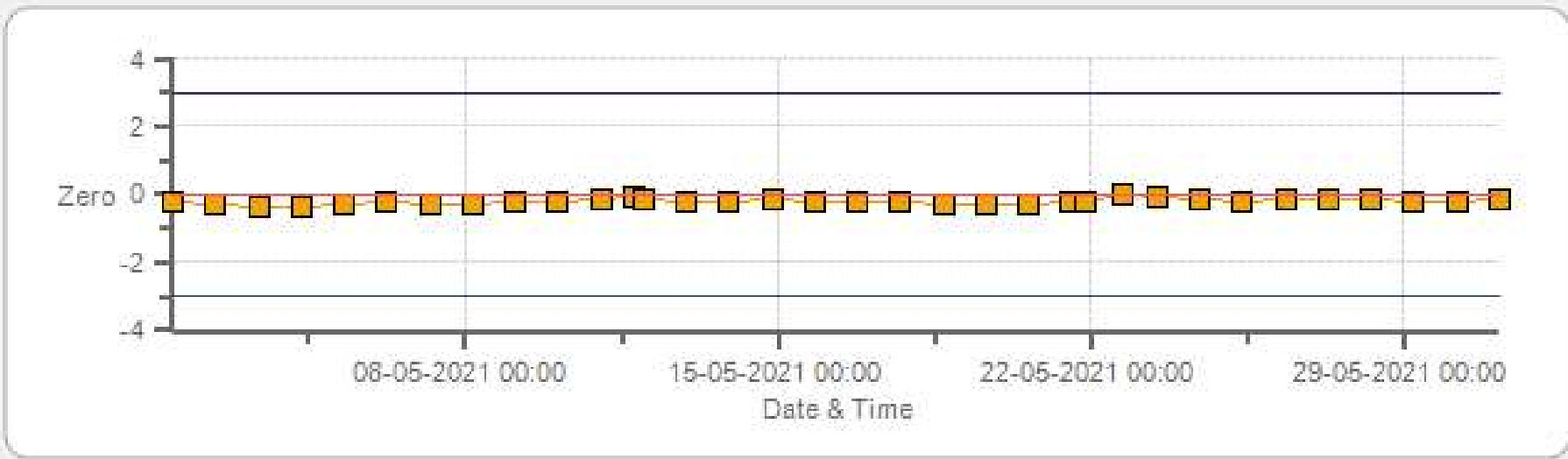
Zero Zero Ref Zero Low Zero High

H2S[ppb] Calibration: St. Lina Monthly: 05-2021 Type: SpanAndZero - Span



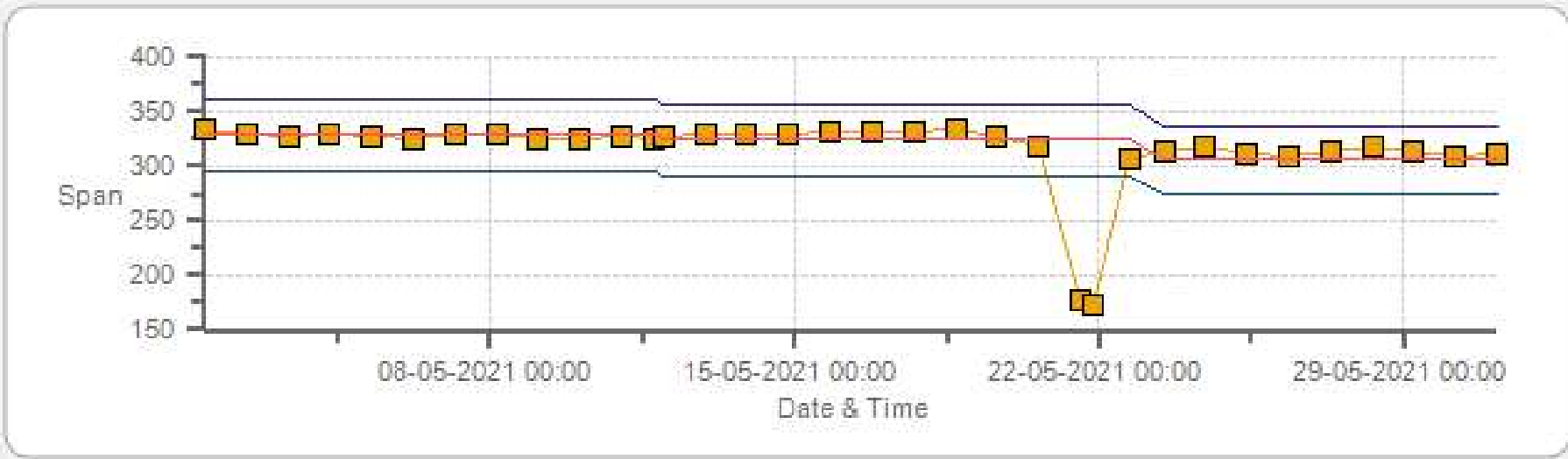
Span Span Ref Span Low Span High

NOX[ppb] Calibration: St. Lina Monthly: 05-2021 Type: SpanAndZero - Zero



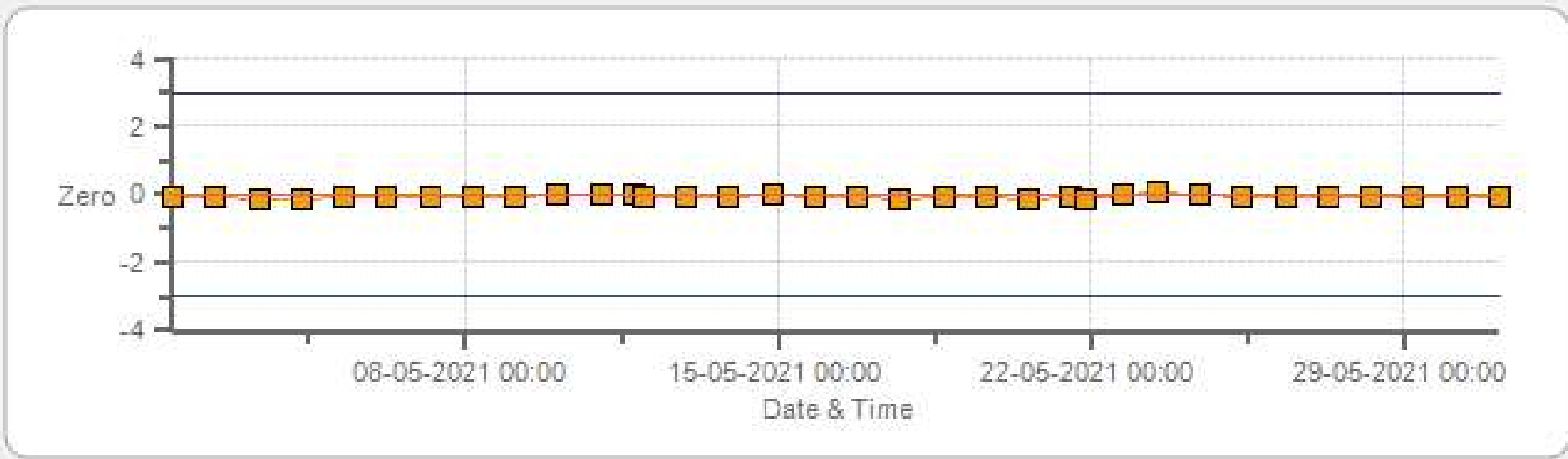
Zero Zero Ref Zero Low Zero High

NOX[ppb] Calibration: St. Lina Monthly: 05-2021 Type: SpanAndZero - Span



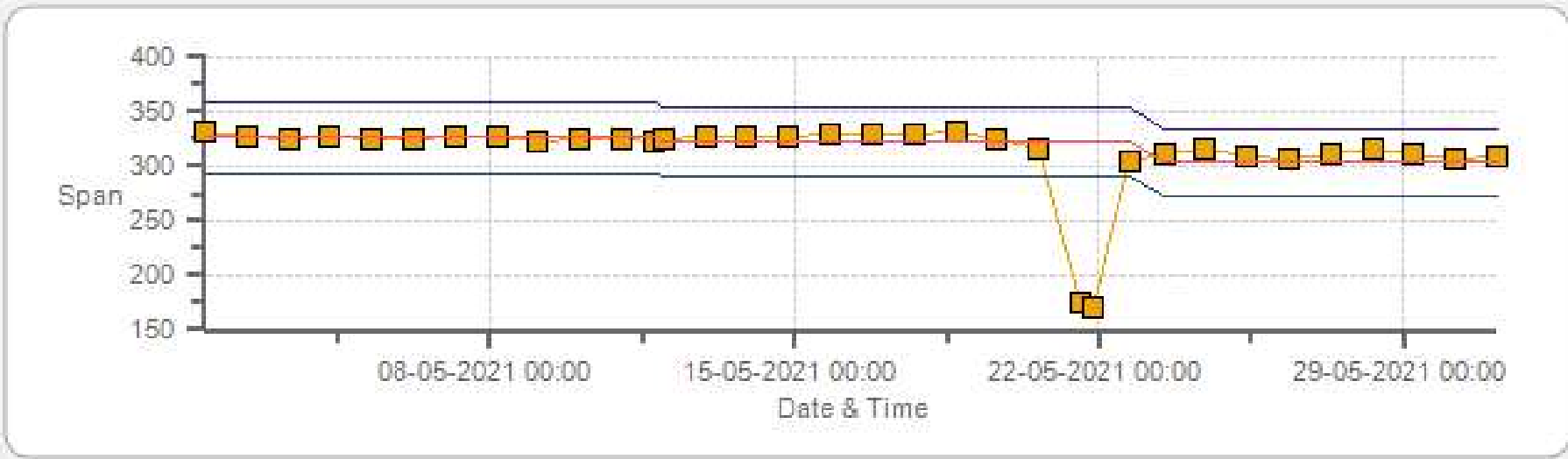
Span SpanRef Span Low Span High

NO2[ppb] Calibration: St. Lina Monthly: 05-2021 Type: SpanAndZero - Zero



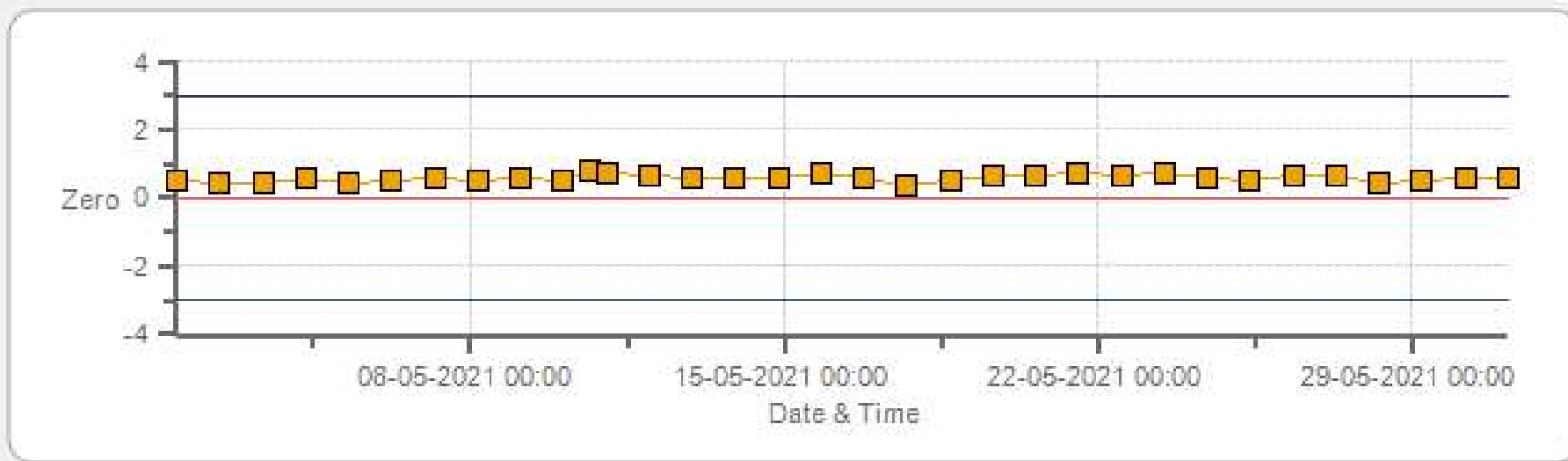
Zero Zero Ref Zero Low Zero High

NO2[ppb] Calibration: St. Lina Monthly: 05-2021 Type: SpanAndZero - Span



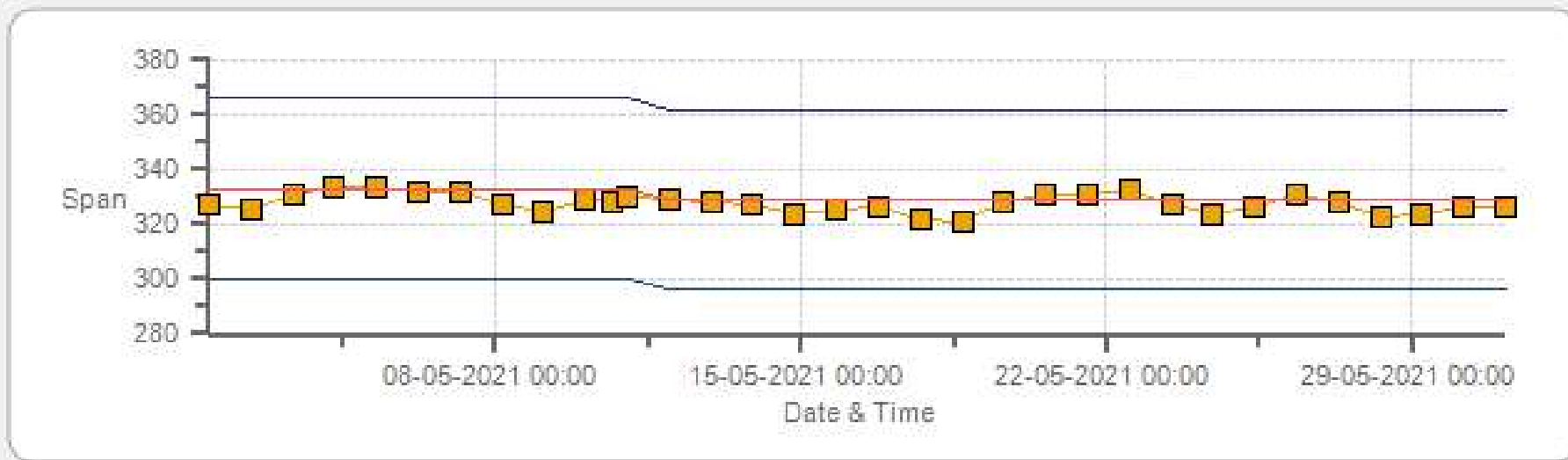
Span SpanRef Span Low Span High

O3[ppb] Calibration: St. Lina Monthly: 05-2021 Type: SpanAndZero - Zero



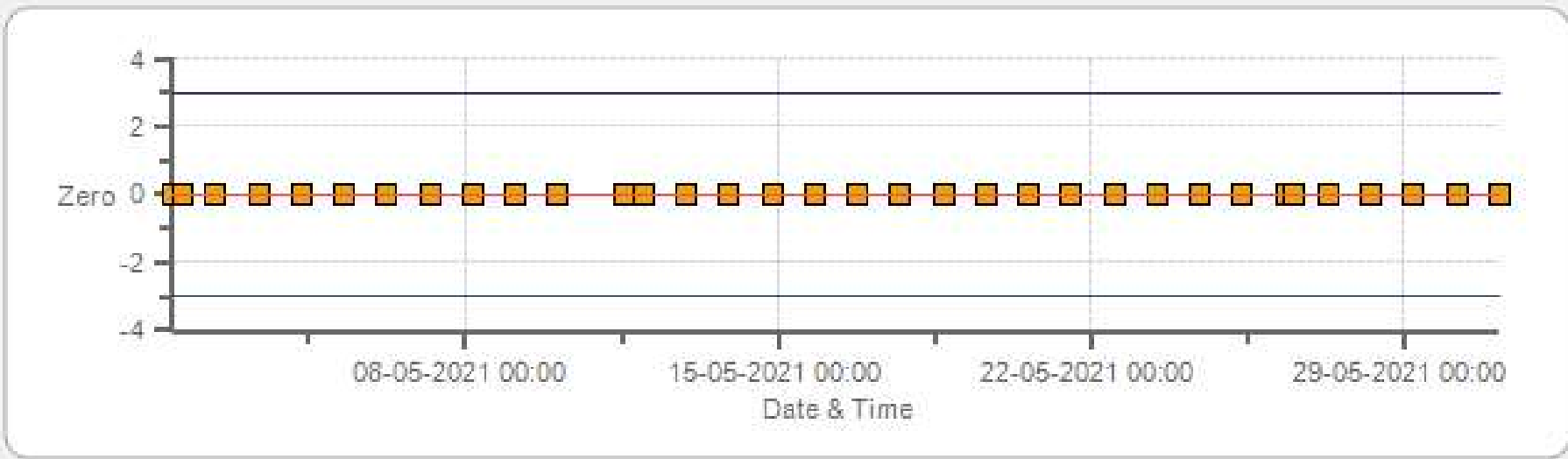
Zero Zero Ref Zero Low Zero High

O3[ppb] Calibration: St. Lina Monthly: 05-2021 Type: SpanAndZero - Span



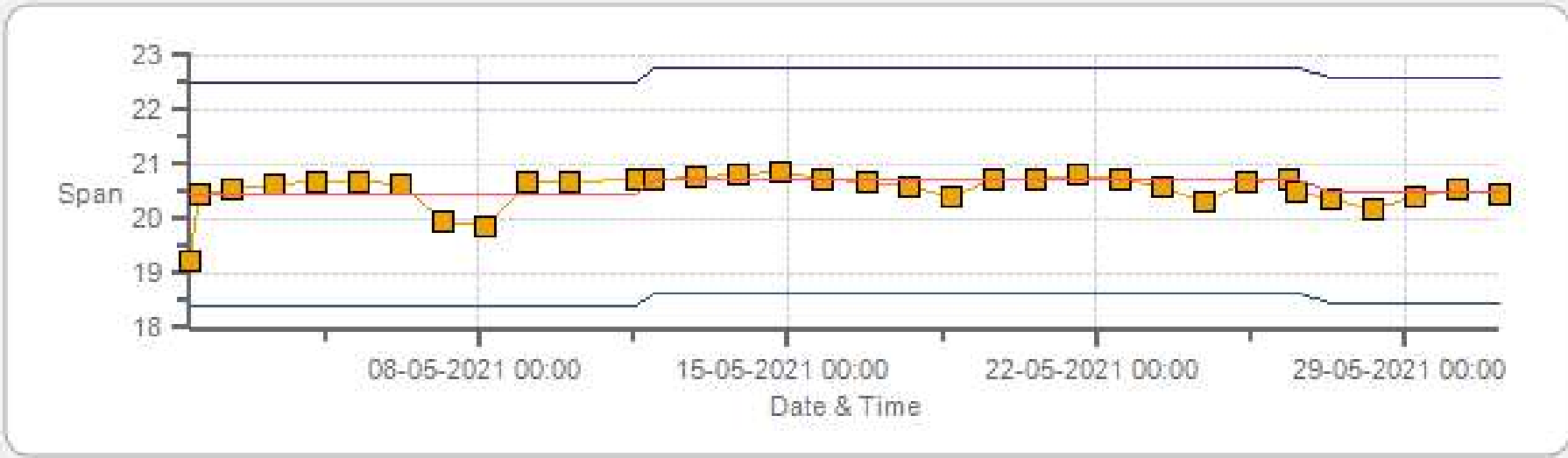
Span SpanRef Span Low Span High

THC55[ppm] Calibration: St. Lina Monthly: 05-2021 Type: SpanAndZero - Zero



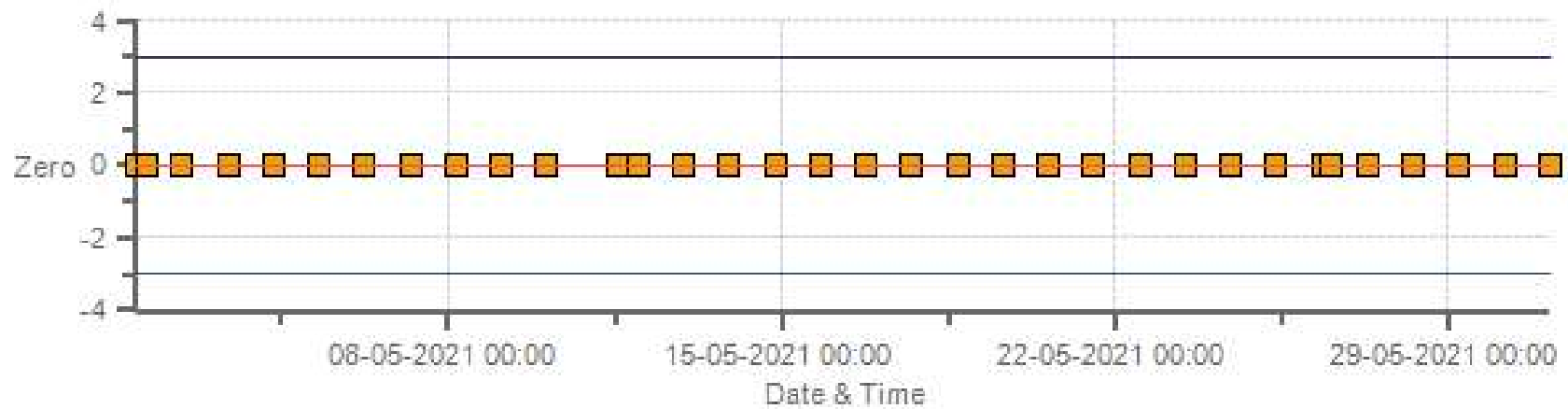
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: St. Lina Monthly: 05-2021 Type: SpanAndZero - Span



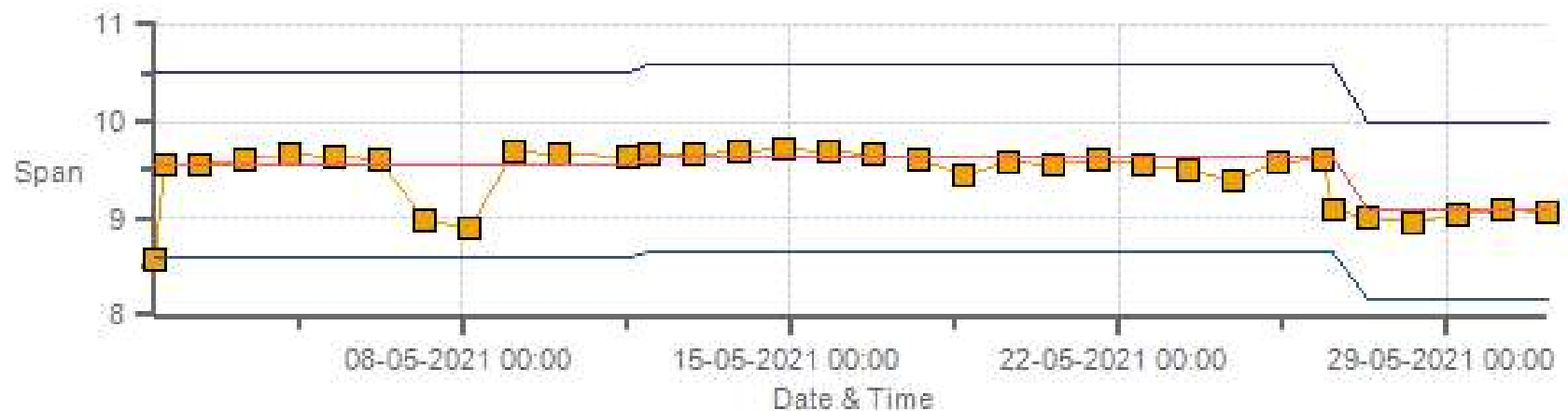
Span SpanRef Span Low Span High

CH4[ppm] Calibration: St. Lina Monthly: 05-2021 Type: SpanAndZero - Zero



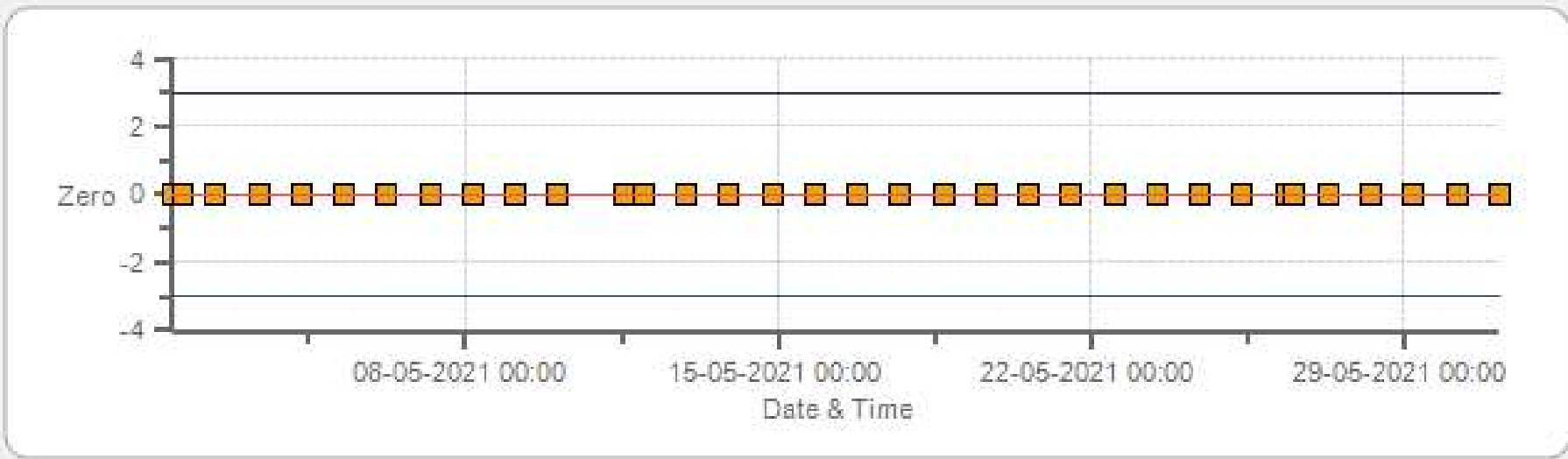
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: St. Lina Monthly: 05-2021 Type: SpanAndZero - Span



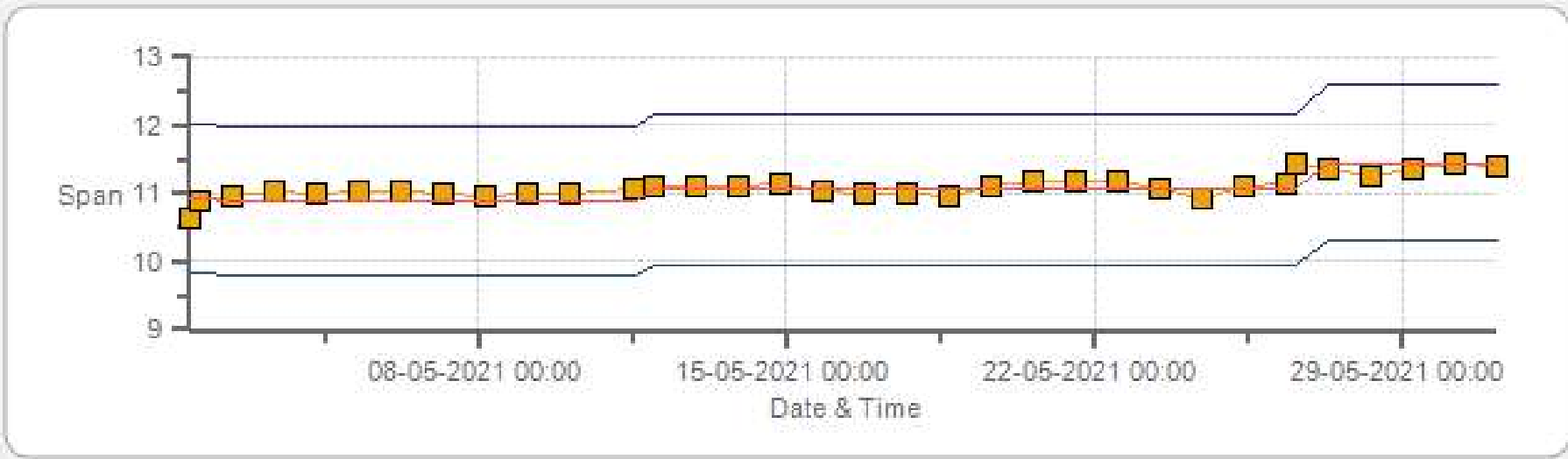
Span Span Ref Span Low Span High

NMHC[ppm] Calibration: St. Lina Monthly: 05-2021 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: St. Lina Monthly: 05-2021 Type: SpanAndZero - Span



Span Span Ref Span Low Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution



DATE:	11-May-2021	PREVIOUS CALIBRATION DATE:	14-Apr-2021
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	924
PURPOSE:	Routine	START TIME (MST):	13:09
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:57

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930030	FLOW (mL/min)	428
INITIAL		FINAL	
BKG/OFFSET	4.41	BKG/OFFSET	4.41
COEF/SLOPE	1.156	COEF/SLOPE	1.137
Expected (reference) Value	378	Expected (reference) Value	380

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000851	HIGH ID	n/a
CONC (ppm):	51.60	EXPIRY DATE	n/a
CYLINDER (psi):	500	LOW ID	n/a
EXPIRY DATE	24-Feb-2028	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	390	190	95
RANGE	300 - 400	150 - 200	50 - 100

SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

CALIBRATION:

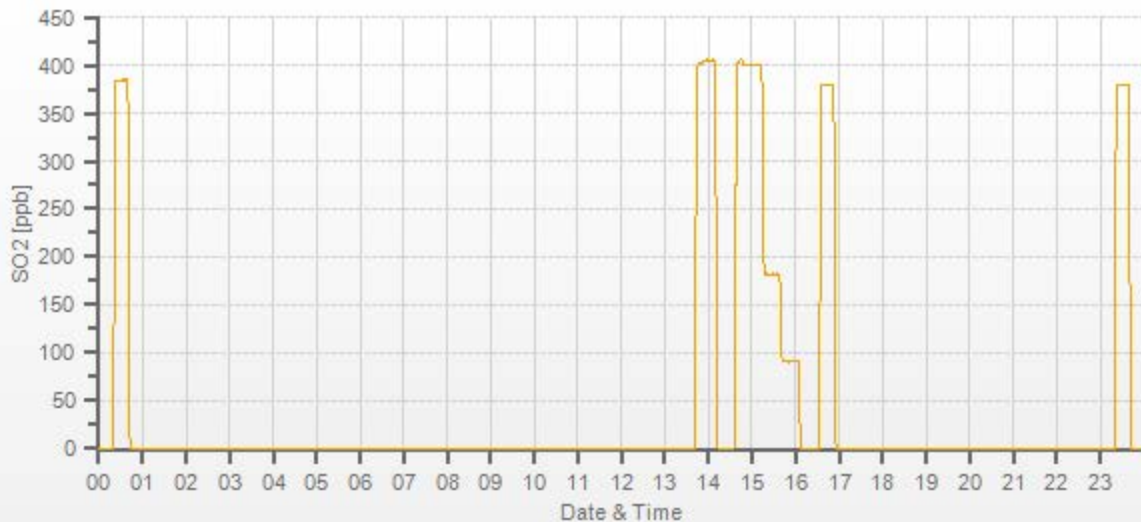
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	38.70	5000	0.00	-0.1	0	0.987	0.997
4959	38.70	4998	399.54	404.9	400.8	0.987	0.997
4981	17.60	4999	181.67	n/a	182.1	n/a	0.998
4989	8.80	4998	90.85	n/a	90.6	n/a	1.003

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.004	0.0%

COMMENTS:

Sample inlet filter was changed.



H2S Analyzer Calibration by Dilution



DATE:	11-May-2021	PREVIOUS CALIBRATION DATE:	14-Apr-2021
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	924
PURPOSE:	Routine	START TIME (MST):	10:22
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:41

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 18010058	FLOW (mL/min)	821
INITIAL		FINAL	
BKG/OFFSET	52.7	BKG/OFFSET	52.7
COEF/SLOPE	0.881	COEF/SLOPE	0.86
Expected (reference) Value	63.1	Expected (reference) Value	58.3

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 19174	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	500	LOW ID	n/a
EXPIRY DATE	16-Jul-2022	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	78	38	19
RANGE	60 - 80	30 - 40	10 - 20

SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	10:31	SO2 Conc (ppb)	380
END TIME:	10:46	Analyzer Response (ppb)	n/a

CALIBRATION:

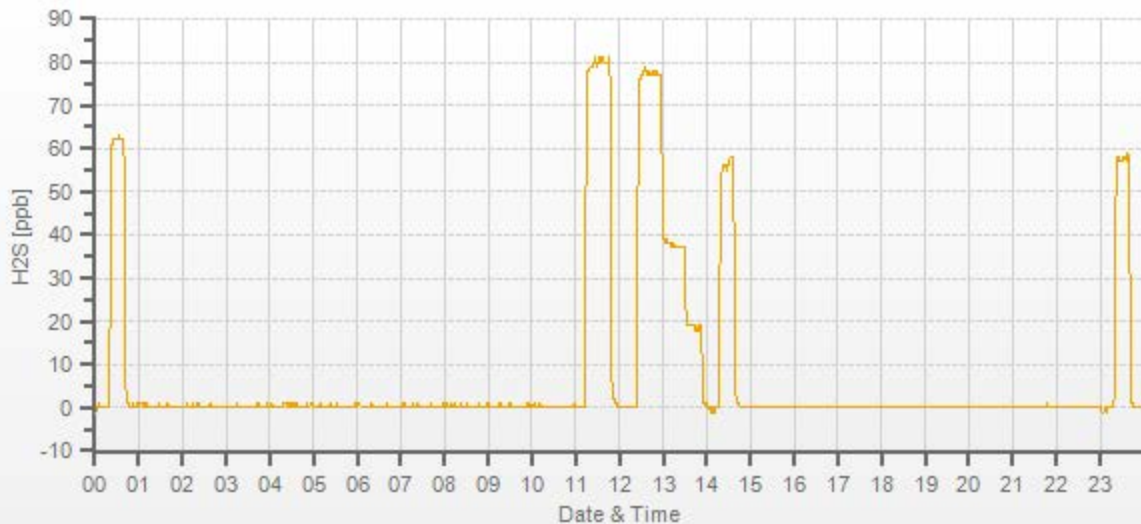
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
4000	31.20	4000	0.00	0.6	0	0.974	1.001
3969	31.20	4000	78.00	80.7	77.9	0.974	1.001
3985	15.20	4000	38.00	n/a	37.7	n/a	1.008
3992	7.60	4000	19.00	n/a	18.9	n/a	1.005

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.999	-0.1%

COMMENTS:

Sample inlet filter was changed.



NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	11-May-2021	PREVIOUS CALIBRATION DATE:	14-Apr-2021	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1180930029	NOx	0.999
LOCATION:	St. Lina	BAROMETRIC (mBar):	924	FLOW (mL/min)	467	NO	1.002
PURPOSE:	Routine	START TIME (MST):	13:10	RANGE (ppb)	500	NO2	1.002
PERFORMED BY:	Alex Yakupov	END TIME (MST):	18:31	GPT FOR O3?		No	

CALIBRATION SYSTEM:							
CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	EY 0000851	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.9 51.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	500	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a	EXPIRY DATE	24-Feb-2028	LOW EXPIRY:	n/a

CALIBRATION SETTINGS:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	6.4	6.2	n/a	BKG/OFFSET:	6.5	6.3	n/a
SLOPE/COEF/CE:	1.008	1.313	0.999	SLOPE/COEF/CE:	1.006	1.329	0.999

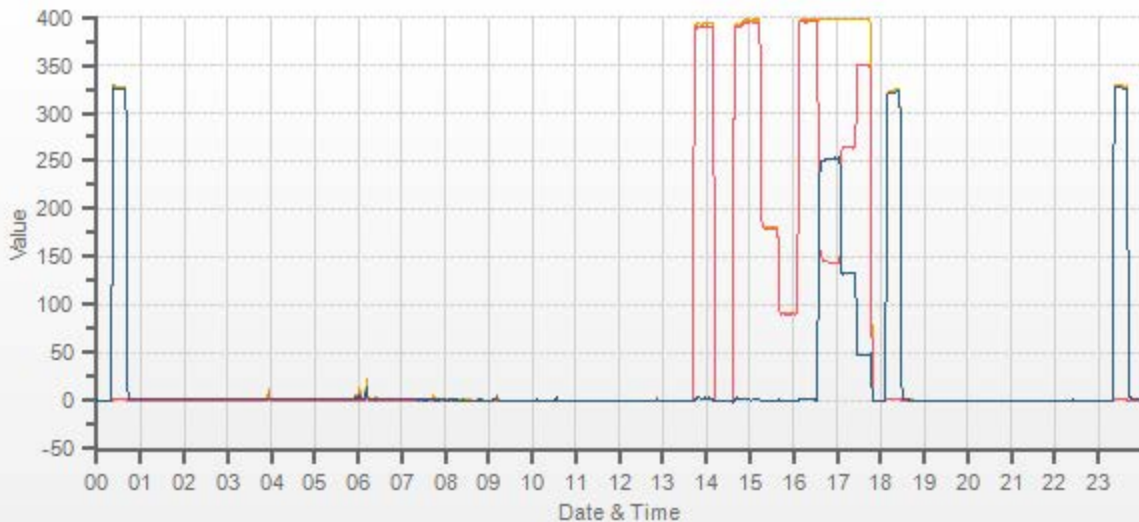
EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	329.0	2.2	327.0		324.0	2.2	322.0

CALIBRATION PARAMETERS:				
POINT	NO TARGET (PPB)	NO2 TARGET (PPB)	NO2 RANGE	O3 POINT
HIGH	380	250	230-265	n/a
MID	180	125	115-150	n/a
LOW	90	45	40-55	n/a
EXTRA 1	n/a	n/a	n/a	n/a

NO/NOx CALIBRATION:																		
FLOW RATE			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)						
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL			
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	
5000	38.70	5000	0.0	0.0	0.0	-0.1	0.1	0.2	0.0	0.0	0.0	1.011	1.007	0.998	1.000	0.998	0.999	
4959	38.70	4998	394.1	395.7	1.5	389.9	392.9	3.1	394.2	396.5	2.3	1.011	1.007	0.998	1.000	0.998	0.999	
4981	17.60	4999	179.2	179.9	0.7	n/a	n/a	n/a	180.2	181.1	0.9	n/a	n/a	0.994	0.993	0.993	0.993	
4989	8.80	4998	89.6	90.0	0.4	n/a	n/a	n/a	90.4	90.8	0.5	n/a	n/a	0.991	0.991	0.991	0.991	

GPT CALIBRATION:										
Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2				
REFERENCE	38.70	4998	0	395.3	397.4	2.0	251.6	251.3	1.001	99.88%
AS-FOUND HIGH	38.70	4998	240	143.7	397.0	253.3	251.6	251.3	1.001	99.88%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MID	38.70	4998	125	263.9	397.4	133.5	131.4	131.5	0.999	100.08%
LOW	38.70	4998	45	349.8	396.9	47.1	45.5	45.1	1.009	99.12%
NO2 adjustment not required.									AVERAGE:	99.69%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	1.000	0.10%	
NOx	1.000	1.002	0.09%	
NO2	1.000	1.000	-0.05%	



CAL-LICA-202105-01250

NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	22-May-2021	PREVIOUS CALIBRATION DATE:	n/a	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1180930029	NOx	n/a
LOCATION:	St. Lina	BAROMETRIC (mBar):	928	FLOW (mL/min)	838	NO	n/a
PURPOSE:	Install/Post-Repair	START TIME (MST):	11:39	RANGE (ppb)	500	NO2	n/a
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:34	GPT FOR O3?		No	

CALIBRATION SYSTEM:							
CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	EY 0000851	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.9 51.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	500	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a	EXPIRY DATE	24-Feb-2028	LOW EXPIRY:	n/a

CALIBRATION SETTINGS:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	n/a	n/a	n/a	BKG/OFFSET:	4	3.4	n/a
SLOPE/COEF/CE:	n/a	n/a	n/a	SLOPE/COEF/CE:	1.005	0.837	1.005

EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	n/a	n/a	n/a		306.0	1.9	304.0

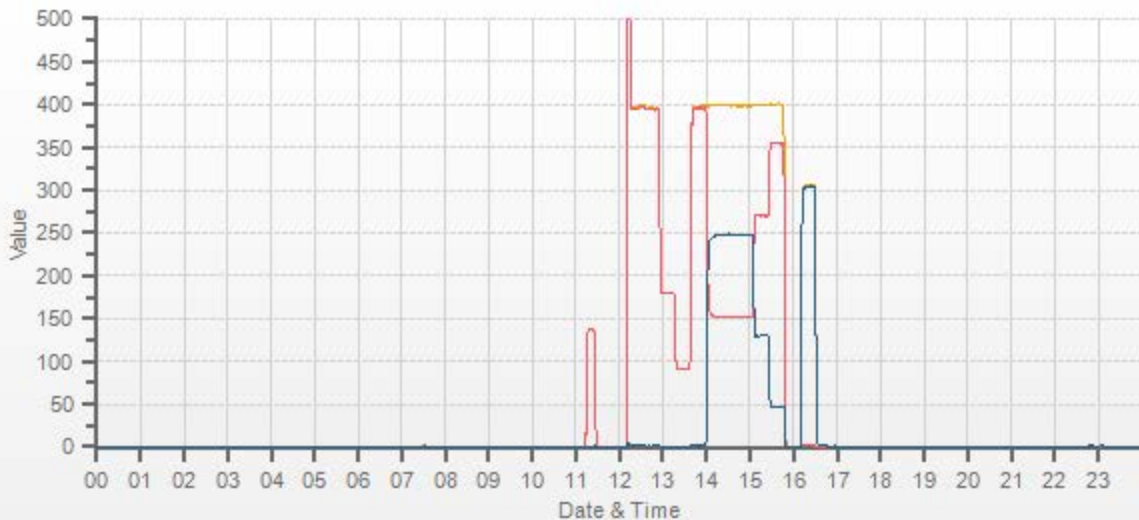
CALIBRATION PARAMETERS:				
POINT	NO TARGET (PPB)	NO2 TARGET (PPB)	NO2 RANGE	O3 POINT
HIGH	380	250	230-265	n/a
MID	180	125	115-150	n/a
LOW	90	45	40-55	n/a
EXTRA 1	n/a	n/a	n/a	n/a

NO/NOx CALIBRATION:																		
FLOW RATE			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)						
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL			
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	
5000	38.70	5000	0.0	0.0	0.0	n/a	n/a	n/a	0.0	0.0	0.0	n/a	n/a	n/a	n/a	n/a	n/a	
4959	38.70	4998	394.1	395.7	1.5	n/a	n/a	n/a	394.5	396.5	2.0	n/a	n/a	n/a	0.999	0.998	n/a	
4981	17.60	4999	179.2	179.9	0.7	n/a	n/a	n/a	180.2	181.2	1.1	n/a	n/a	n/a	0.994	0.993	n/a	
4989	8.80	4998	89.6	90.0	0.4	n/a	n/a	n/a	90.3	90.9	0.6	n/a	n/a	n/a	0.992	0.990	n/a	

GPT CALIBRATION:										
Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2				
REFERENCE	38.70	4998	0	396.6	398.4	1.8	n/a	n/a	n/a	n/a
AS-FOUND HIGH	38.70	4998	240	151.2	399.4	248.2	245.4	246.4	0.996	100.41%
ADJUSTED HIGH	38.70	4998	240	151.3	398.6	247.2	245.3	245.4	1.000	100.04%
MID	38.70	4998	125	269.6	399.6	130.0	127	128.2	0.991	100.94%
LOW	38.70	4998	45	353.7	400.4	46.7	42.9	44.9	0.955	104.66%
NO2 adjustment not required.									AVERAGE:	102.00%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	1.001	0.08%	
NOx	1.000	1.002	0.10%	
NO2	1.000	0.995	0.41%	

Post-repair calibration was completed after a new sample pump was installed.



CAL-LICA-202105-01250

Ozone Calibration by Photometer (Varying UV Lamp)



DATE:	10-May-2021	PREVIOUS CALIBRATION DATE:	15-Apr-2021
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.002
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	924
PURPOSE:	Routine	START TIME (MST):	12:04
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:28

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	1002240371	FLOW (mL/min)	1489
INITIAL		FINAL	
BKG/OFFSET	-0.5	BKG/OFFSET	-0.7
COEF/SLOPE	1.006	COEF/SLOPE	1.011
Expected (reference) Value	333	Expected (reference) Value	329

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Photometer (Varying UV Lamp)	
GPT DATE:	n/a	GPT END TIME:	n/a

CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
RANGE	300 - 400	150 - 200	50 - 100

CALIBRATION:

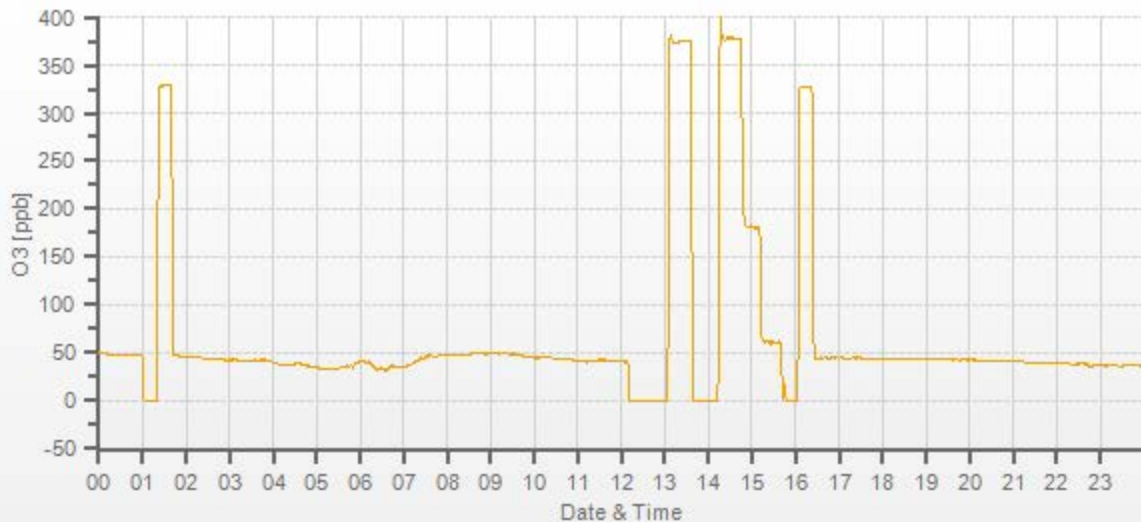
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	XXXX	5000	0.0	-1.1	0.0	XXXX	XXXX
5000	XXXX	5000	378.0	375.4	378.4	1.004	0.999
5000	XXXX	5000	180.0	n/a	181.8	n/a	0.990
5000	XXXX	5000	60.0	n/a	61.7	n/a	0.972

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	0.2%

COMMENTS:

Sample inlet filter was changed.



Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	01-May-2021	PREVIOUS CALIBRATION DATE:	22-Apr-2021	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.0		Thermo 55i	1180930025	1075
LOCATION:	St. Lina	BAROMETRIC (mBar):	911	PARAMETER:	CH4	NMHC	THC
PURPOSE	Routine	START TIME (MST):	11:50	RANGE (ppm):	20	20	40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:35	PREVIOUS CF:	1.001	1.002	1.001

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 168375	HIGH ID:	n/a
MODEL:	4010	MODEL:	T701	CH ₄ /C ₃ H ₈ (ppm):	914.0 307.0	HIGH EXPIRY:	n/a
ID:	08400311	ID:	132	CYLINDER (psi):	1500	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	115	EXPIRY DATE	21-Jan-2028	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH ₄ /NMHC)	HIGH	MID	LOW	CH ₄ EQUIVILANCE		
TARGET	14	7	3.5	C ₃ H ₈ as CH ₄		844.3
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄		1758.3

EXPECTED (REFERENCE) VALUE:

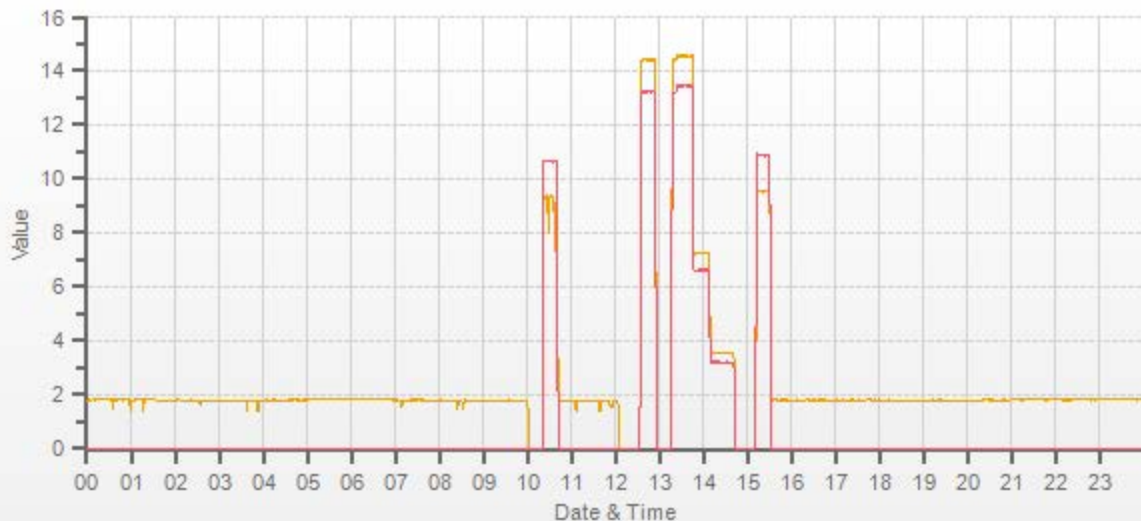
INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	9.55	10.91	20.47		9.56	10.89	20.45

CALIBRATION:

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3100	X	3100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	X
3051	49.40	3100	14.57	13.45	28.02	14.40	13.24	27.64	14.55	13.46	28.01	1.011	1.016	1.014	1.001	1.000	1.000
3075	24.70	3100	7.28	6.73	14.01	n/a	n/a	n/a	7.25	6.62	13.87	n/a	n/a	n/a	1.004	1.016	1.010
3088	12.40	3100	3.66	3.38	7.03	n/a	n/a	n/a	3.56	3.22	6.78	n/a	n/a	n/a	1.027	1.049	1.037

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT	Comments:			
CH ₄	1.000	1.001	-0.2%	Sample inlet filter was changed. Urgent monthly calibration was completed to fix the issue of frequent bad injections.			
NMHC	1.000	1.004	-0.4%				
THC	1.000	1.002	-0.3%				
				Use Zero Chrom?	Yes		



CAL-LICA-202105-01250

Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	11-May-2021	PREVIOUS CALIBRATION DATE:	n/a	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.0		Thermo 55i	1236656107	n/a
LOCATION:	St. Lina	BAROMETRIC (mBar):	924	PARAMETER:	CH4	NMHC	THC
PURPOSE	Install/Post-Repair	START TIME (MST):	10:21	RANGE (ppm):	20	20	40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	13:22	PREVIOUS CF:	n/a	n/a	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 168375	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH ₄ /C ₃ H ₈ (ppm):	914.0 307.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	1400	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	115	EXPIRY DATE	21-Jan-2028	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH ₄ /NMHC)	HIGH	MID	LOW	CH ₄ EQUIVILANCE		
TARGET	14	7	3.5	C ₃ H ₈ as CH ₄		844.3
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄		1758.3

EXPECTED (REFERENCE) VALUE:

INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	n/a	n/a	n/a		n/a	9.63	11.07

CALIBRATION:

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3100	X	3100	0.00	0.00	0.00	n/a	n/a	n/a	0.00	0.00	0.00	X	X	X	X	X	X
3051	49.40	3100	14.57	13.45	28.02	n/a	n/a	n/a	14.56	13.45	28.01	n/a	n/a	n/a	1.000	1.000	1.000
3075	24.70	3100	7.28	6.73	14.01	n/a	n/a	n/a	7.29	6.74	14.03	n/a	n/a	n/a	0.999	0.998	0.999
3088	12.40	3100	3.66	3.38	7.03	n/a	n/a	n/a	3.63	3.37	7.00	n/a	n/a	n/a	1.007	1.002	1.005

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH ₄	1.000	1.000	0.0%
NMHC	1.000	1.000	0.0%
THC	1.000	1.000	0.0%

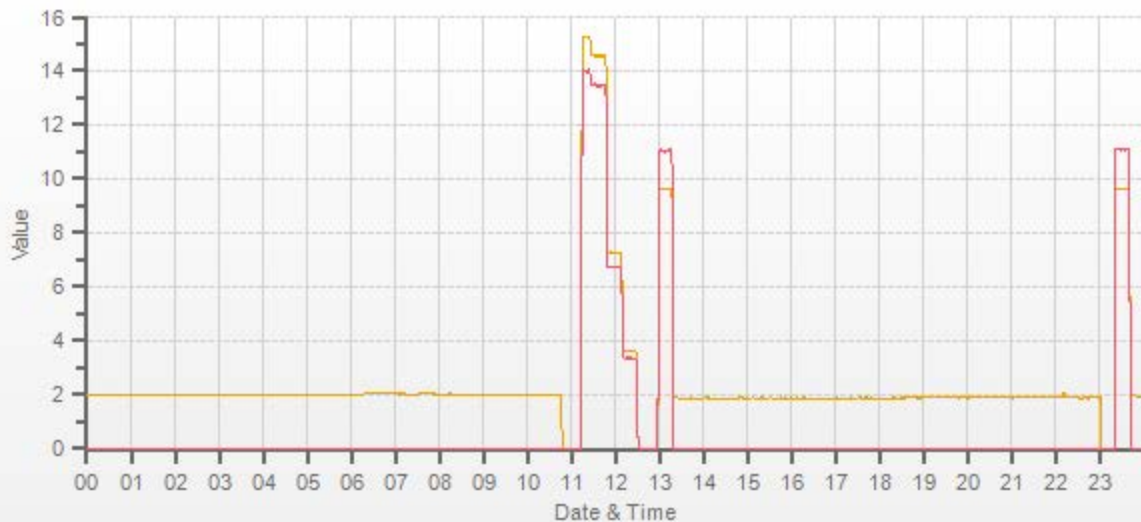
Comments:

Sample inlet filter was changed.

Use Zero Chrom?

Yes

Station: St. Lina Daily: 11-05-2021 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202105-01250

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— CH4 [ppm] — NMHC [ppm]

Thermo 5030i SHARP Monitor Calibration

Date: <u>May 7, 2021</u>	Performed By/Reviewer: <u>Alex Yakupov</u> <u>Chris Wesson</u>
Company: <u>LICA</u>	Start Time (mst): <u>9:31</u>
Station Name/Location: <u>St. Lina</u>	End Time (mst): <u>13:26</u>
Previous Audit Date: <u>n/a</u>	Calibration Purpose: <u>installation</u>
Parameter: <u>PM 2.5</u>	Weather Conditions: <u>A few clouds</u>

SHARP 5030i Information and Status:
 Serial Number: CM 17461021 Filter Tape Counter 2

Reference Standards: Air Flow						
	Manometer	Orifice	Pressure:		Temp / RH:	
Make:	Dwyer	Chinook	Fisher Scientific		Fisher Scientific	
Model:	475 Mk. III	FTS 091001	FB 61291		11-661-7A	
Serial Number:	#1	#1	130168457		170286131	
Expiry Date:	January 19, 2022	March 9, 2022	February 17, 2022		June 5, 2021	

Ambient Temperature (°C)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	n/a	n/a	#VALUE!	11.10	11.1	0.0
#2	n/a	n/a	#VALUE!	11.10	11.1	0.0
#3	n/a	n/a	#VALUE!	11.10	11.1	0.0
Average	#DIV/0!	#DIV/0!	#VALUE!	11.1	11.1	0.0

Temp Limit: ± 2°C

Ambient Relative Humidity (%RH)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Offset (ZERO)	Reference	SHARP	Offset (ZERO)
#1	n/a	n/a	#VALUE!	23.70	23.7	0.0
#2	n/a	n/a	#VALUE!	23.70	23.7	0.0
#3	n/a	n/a	#VALUE!	23.70	23.7	0.0
Average	#DIV/0!	#DIV/0!	#VALUE!	23.7	23.7	0.0

RH Limit: ± 2 %RH

Flow Temperature (°C)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	n/a	n/a	#VALUE!	23.20	23.2	0.0
#2	n/a	n/a	#VALUE!	23.20	23.2	0.0
#3	n/a	n/a	#VALUE!	23.20	23.2	0.0
Average	#DIV/0!	#DIV/0!	#VALUE!	23.2	23.2	0.0

Temp Limit: ± 2°C

Barometric Pressure (mmHg)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	n/a	n/a	#VALUE!	699.0	699.0	0.0

BP Limit: ± 2 mmHg

Nephelometer Relative Humidity (%RH)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	n/a	n/a	#VALUE!	10.90	10.9	0.0

RH Limit: ± 2 %RH

Nephelometer Temperature (%RH)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	n/a	n/a	#VALUE!	23.20	23.2	0.0

Temp Limit: ± 2°C

Nephelometer Source Level						
As Found:			As Left: (same as found if acceptable)			
	Variable	Value		Variable	Value	
	IRE D	n/a		IRE D	65	
	SRC LEVEL	n/a		SRC LEVEL	53	

*IRE D Limit (as found): 60-70 mA
Adjusted IRE D Limit (as left): 65 mA*

Detector Calibration (Auto)						
As Found:			As Left:			
Detector Auto Calibration Completed: YES			Variable	Value		
			HIGH VOLT	1450		
			BETA REF TH	390		
			ALPHA TH	1020		
			DIFF HV	n/a		

Mass Coefficient (Auto)						
Zero			Span			
	Variable	Value		Variable	Value	
	MASS COEF	7117.0		MASS COEF	7222.4	
	FOIL VALUE	1045		FOIL VALUE	1045	
	Beta Avg	9720		Beta Avg	8410	
	difference	Foil set # 4804		difference	1.5	

Foil Set: CM1597

Flow Calibration (L/min)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	n/a	n/a	#VALUE!	16.67	16.67	0.00
#2	n/a	n/a	#VALUE!	16.67	16.67	0.00
#3	n/a	n/a	#VALUE!	16.67	16.67	0.00
Average	#DIV/0!	#DIV/0!	#VALUE!	16.67	16.67	0.00

Flow Limit: 16.67 ± 0.33 L/min

Leak Check (L/min)						
Without Leak Check Adapter			With leak Check Adapter			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	16.67	16.67	0.00	16.64	16.64	0.00

Leak Limit: 0.08 L/min
LEAK RATE: 0.00



Meteorological Sensor Audit/Calibration

Location Information

Company: LICA
 Audit Location: St. Lina
 Audit Date: March 16, 2021
 Calibration Purpose: routine annual

Performed By: Alex Yakupov
 Reviewed By: Chris Wesson
 Start/End Time (mst): 12:17 / 14:32
 Weather Conditions: Mainly sunny

Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	0-1
Sensor Model:	05305VK	Velocity Unit Output Range:	0-200
Serial #:	161466	Direction Voltage Output Range:	0-1
Previous Cal/Audit Date:	February 26, 2020	Direction Unit Output Range:	0-360

Wind Calibrator Information

Calibrator I.D. and Expiry Date: Model 18860-90/18802 SN: CA 4744, expires - Aug 6, 2022

Wind Speed Audit Data ****+/- 2% of the average correction factor is the limit****

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.1	0.1	-
1000	18.4	18.5	18.5	0.996
2000	36.9	37.0	37.0	0.996
3000	55.3	55.5	55.5	0.996
4000	73.7	74.0	74.1	0.996
5000	92.2	92.6	92.6	0.995
6000	110.6	111.2	111.2	0.994
7000	129.0	129.7	129.7	0.995
8000	147.4	148.3	148.3	0.994
9000	165.9	167.0	167.0	0.993
10000	184.3	185.6	185.6	0.993
The audit meets AMD requirements.			Average Correction Factor=	0.995

Wind Direction Audit Data ****+/- 3° of the absolute average degrees difference for all points is the limit****

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	1	355	0.8	0.0	0.4
30	330	31	331	-0.6	-0.9	0.7
60	300	61	300	-1.4	-0.4	0.9
90	270	93	270	-2.8	0.0	1.4
120	240	123	242	-3.2	-1.8	2.5
150	210	153	212	-2.7	-2.3	2.5
180	180	183	183	-2.6	-2.9	2.8
210	150	212	154	-1.7	-3.8	2.8
240	120	241	124	-1.2	-4.1	2.6
270	90	270	94	-0.1	-4.0	2.1
300	60	301	64	-0.6	-3.6	2.1
330	30	330	32	0.3	-2.2	1.3
355	0	355	1	0.0	1.3	0.7
The audit meets AMD requirements.				Average Absolute Degrees Difference=		1.7

Comments:

n/a

End of Report